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ROCKWELL INTERNATIONAL NEWPORT BEACH CALIF COLLINS C--ETC F/G 9/5  
FABRICATION AND TESTING OF MOS SCALER/LOGIC AND OVERHEAD SAFETY--ETC(U)  
MAY 76 G L DONALDSON  
765-5608-001

HDL-CR-76-146-1

DAAG39-75-C-0146

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A038 513



HDL-CR- 76-146-1

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HDL-CR-76-146-1, Fabrication and Testing of MOS Scaler/Logic and Overhead Safety Integrated Circuit. Gerald L. Donaldson

**AD A 038513**

MAY 1976

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Prepared by

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① ROCKWELL INTERNATIONAL

4311 JAMBOREE BOULEVARD

② NEWPORT BEACH, CALIFORNIA 92663

Under Contract

DAAG39-75-C-0146

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U.S. Army Materiel Development  
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HARRY DIAMOND LABORATORIES  
Adelphi, Maryland 20783

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HDL-CR-76-146-1, Fabrication and Testing of MOS Scaler/Logic and Overhead Safety Integrated Circuit, Gerald L. Donaldson.

HDL-CR- 76-146-1

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FABRICATION AND TESTING OF  
MOS SCALER/LOGIC AND OVERHEAD SAFETY INTEGRATED CIRCUIT

MAY 1976

Prepared by

COLLINS COMMERCIAL TELECOMMUNICATIONS DIVISION  
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Under Contract  
DAAG39-75-C-0146

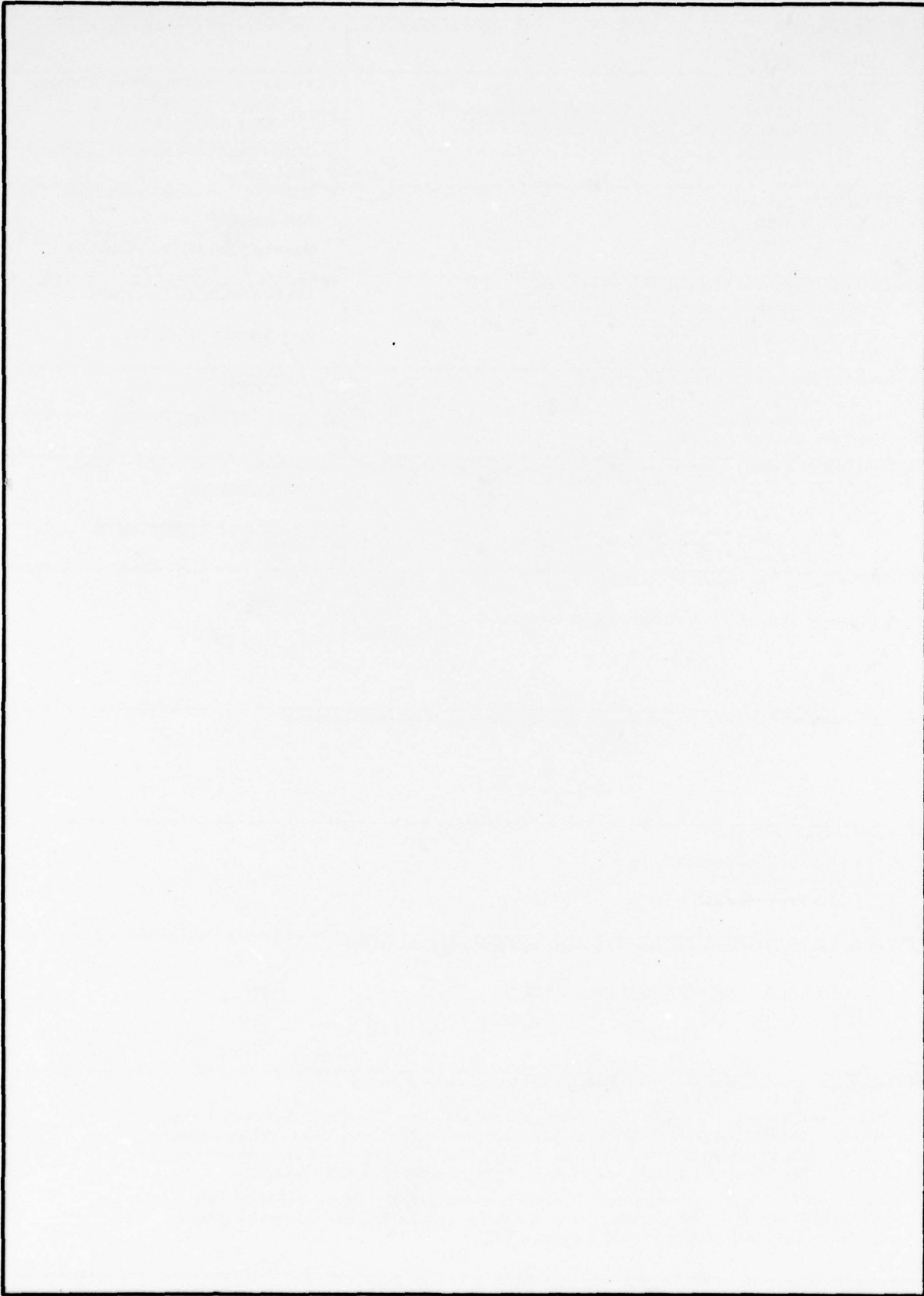


U.S. Army Materiel Development  
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Adelphi, Maryland 20783

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| 19. KEY WORDS (Continue on reverse side if necessary and identify by block number)<br>MOS<br>SCALER/LOGIC AND OVERHEAD SAFETY<br>FUZE   |                       |   |
| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br>This report presents the results of the fabrication and test effort of a MOS/LSI integrated circuit used in the XM587E2/XM724 Electronic Time Fuze designed by Harry Diamond Laboratories (HDL). The integrated circuit performs the scaling and overhead safety functions of the fuze system. The device was designed and produced under contract DAAG39-74-C-0161.<br>The MOS/LSI circuit was successfully fabricated and tested to all requirements of contract DAAG39-75-C-0146. One thousand first-article devices and six thousand production devices were successfully qualified and then shipped to HDL. |                       |   |

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SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)



## CONTENTS

|   | <i>Page</i> |
|---|-------------|
| 1. INTRODUCTION . . . . .   | 5           |
| 1.1 Scope . . . . .   | 5           |
| 1.2 Background . . . . .  | 5           |
| 2. FABRICATION . . . . .  | 7           |
| 3. PACKAGING . . . . .  | 9           |
| 3.1 Pin Definition . . . . .  | 9           |
| 3.2 Additional Ceramic Vendors . . . . .  | 9           |
| 3.3 Injection Molded Plastic Packages . . . . .                                 | 9           |
| 4. TEST . . . . .   | 10          |
| 4.1 Functional and Parametric Testing . . . . .                                 | 10          |
| 4.2 Device Testing . . . . .  | 10          |
| 4.3 Acceptance Testing . . . . .  | 10          |
| 5. CONCLUSIONS AND RECOMMENDATIONS . . . . .                                    | 16          |
| 5.1 Conclusions . . . . .   | 16          |
| 5.2 Recommendations . . . . .   | 16          |
| APPENDICES  |             |
| A. COLLINS PROCESS SPECIFICATION 765-4140-001 . . . . .                         | 17          |
| B. TEST PROGRAM FOR FAIRCHILD SENTRY 600 TESTER . . . . .                       | 23          |
| C. PARAMETRIC RESULTS OF FIRST ARTICLE QUALITY<br>ACCEPTANCE TESTING . . . . .  | 91          |
| D. PARAMETRIC RESULTS OF PRODUCTION LOT QUALITY<br>ACCEPTANCE TESTING . . . . . | 181         |
| DISTRIBUTION . . . . .  | 271         |

## ILLUSTRATIONS

| <i>Figure</i> |   | <i>Page</i> |
|---------------|---|-------------|
| 1             | Logic Diagram of MOS Scaler/Logic and Overhead Safety Circuit . . . . .     | 6           |
| 2             | Microphotograph of MOS Scaler/Logic and Overhead Safety Chip . . . . .      | 8           |
| 3             | Composite of Modified Input Protection Device . . . . .                     | 11          |
| 4             | Flow Chart of MIL-STD-883, Method 5004, Class B Screening Process . . . . . | 12          |
| 5             | Quality Assurance Acceptance Test - Part I . . . . .                        | 13          |
| 6             | Quality Assurance Acceptance Test - Part II . . . . .                       | 14          |
| 7             | Results of First Article Acceptance Tests . . . . .                         | 14          |
| 8             | Results of Production Lot Quality Acceptance Tests . . . . .                | 15          |



## 1. INTRODUCTION

### 1.1 Scope

The scope of the Harry Diamond Laboratories (HDL) contract DAAG39-75-C-0146 was to fabricate and test 7000 MOS Scaler/Logic and Overhead Safety Integrated Circuits. These devices were assembled in 16 pin, side-brazed, dual-in-line ceramic packages. The circuit operation is defined by HDL Specification Control Drawing 11711256. The circuit provides the scaling and overhead safety functions for the XM587E2/XM724 Electronic Time Fuze currently under development at HDL.

### 1.2 Background

The MOS Scaler/Logic and Overhead Safety Circuit as specified by HDL drawing 11711256 was originally designed, fabricated, and tested by Collins Radio under HDL contract DAAG39-74-C-0161. The results of this previous contract are enumerated in HDL-CR-75-161-1. Figure 1 is a detailed logic diagram of the MOS Scaler/Logic and Overhead Safety Circuit.

A014914

**introduction**

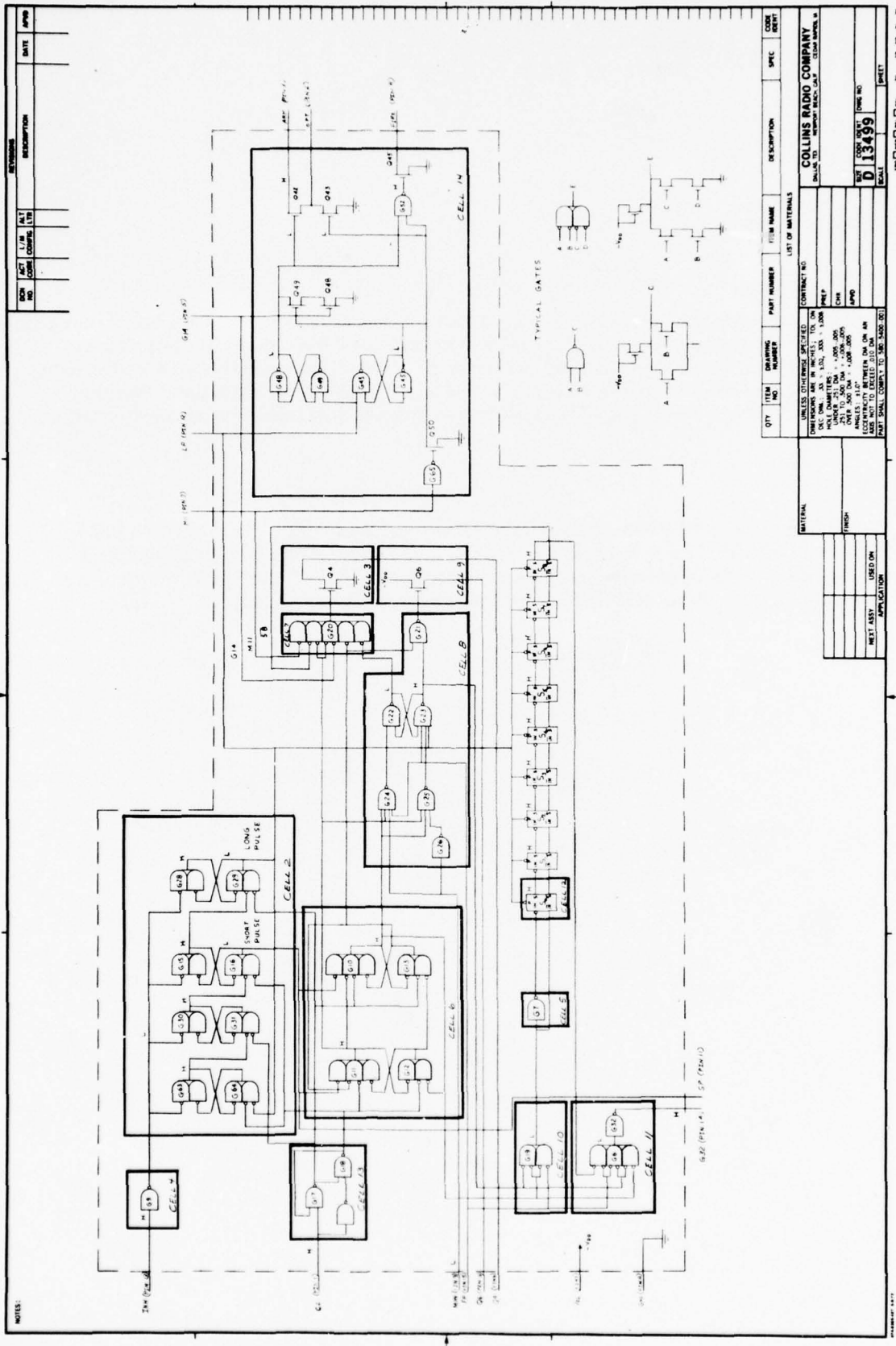


Figure 1. Logic Diagram of MOS Scaler/Logic and Overhead Safety Circuit.

## 2. FABRICATION

The MOS Scaler/Logic and Overhead Safety Circuit was fabricated by using the standard Collins Radio High Threshold PMOS Process. The characteristics of this particular MOS process are shown in appendix A.

Figure 2 shows a microphotograph of the chip after all processing steps have been completed. The chip size is 101.0 X 59.0 mils.

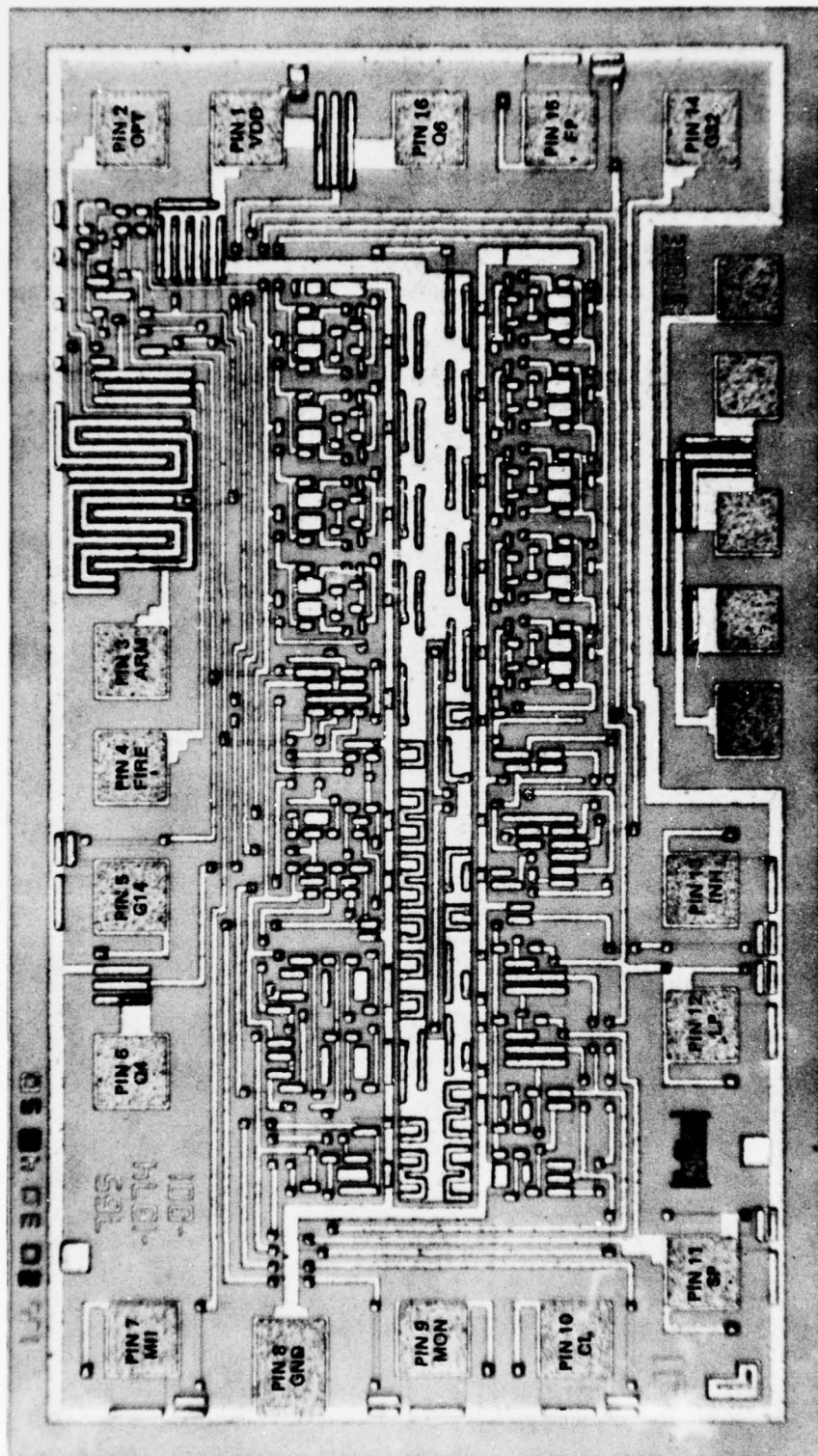


Figure 2. Microphotograph of MOS Scaler, Logic and Overhead Safety Chip.

### 3. PACKAGING

#### 3.1 Pin Definition

The MOS Scaler/Logic and Overhead Safety Circuit was delivered in a 16 pin, side-brazed, ceramic dual-in-line package. The functional description of each terminal is defined below.

| <u>PIN</u> | <u>DESCRIPTION</u>       |
|------------|--------------------------|
| 1          | VDD Power Supply         |
| 2          | OPT Output               |
| 3          | ARM Output               |
| 4          | FIRE Output              |
| 5          | G14 Input                |
| 6          | Q4 Output                |
| 7          | M11 Input                |
| 8          | GND (Substrate)          |
| 9          | MON Input (Monitor Line) |
| 10         | CL Input (Clock)         |
| 11         | SP Output (Short Pulse)  |
| 12         | LP Output (Long Pulse)   |
| 13         | INH Input (Inhibit)      |
| 14         | G32 Output               |
| 15         | FP Input (Fuze Power)    |
| 16         | Q6 Output                |

#### 3.2 Additional Ceramic Vendors

Only one vendor is qualified to supply the 16 lead side-brazed ceramic dip used for this contract. For large production orders, multiple sources are desirable. For this reason, Collins has researched the other vendors, and if HDL can allow the length dimension to increase from 0.755 to 0.805 in., two alternate sources are available. If a large production order is received, Collins will qualify the additional package vendor(s), provided the package dimensions are acceptable and approved by HDL.

#### 3.3 Injection Molded Plastic Packages

Another alternative to ceramic packages is injection-molded plastic packages. HDL and Collins jointly investigated the encapsulation of the MOS Scaler/Logic and Overhead Safety Circuit in 16 lead-molded plastic dual-in-line packages during the execution of HDL contract DAAG39-74-C-0161. The result of this mutual study is that the MOS Scaler/Logic and Overhead Safety Circuit can meet the HDL quality requirements when encapsulated in a 16-pin molded plastic dual-in-line package. This alternate packaging method will result in a lower unit cost for large production buys.

## 4. TEST

### 4.1 Functional and Parametric Testing

Both functional and parametric testing were performed on the HDL Scaler/Logic and Overhead Safety Circuit by a Fairchild Sentry 600 Tester located at the Collins Radio Group, Newport Beach facility.

The test program used was the same as that used on HDL Contract DAAG39-74-C-0161 with three minor exceptions.

- a. In order to provide more efficient and reliable temperature testing capabilities the program was modified to use a naked dip handler system rather than the previously used carrier-based system.
- b. To speed up go/no-go testing the program was modified to bypass the variable data measurements during go/no-go testing. Variables data is still available under test operator control.
- c. Improved test techniques, such as pre-conditioning before variables data measurement, were incorporated for more reliable, large volume testing. The implementation was on the recommendations of the Fairchild Sentry 600 Application group.

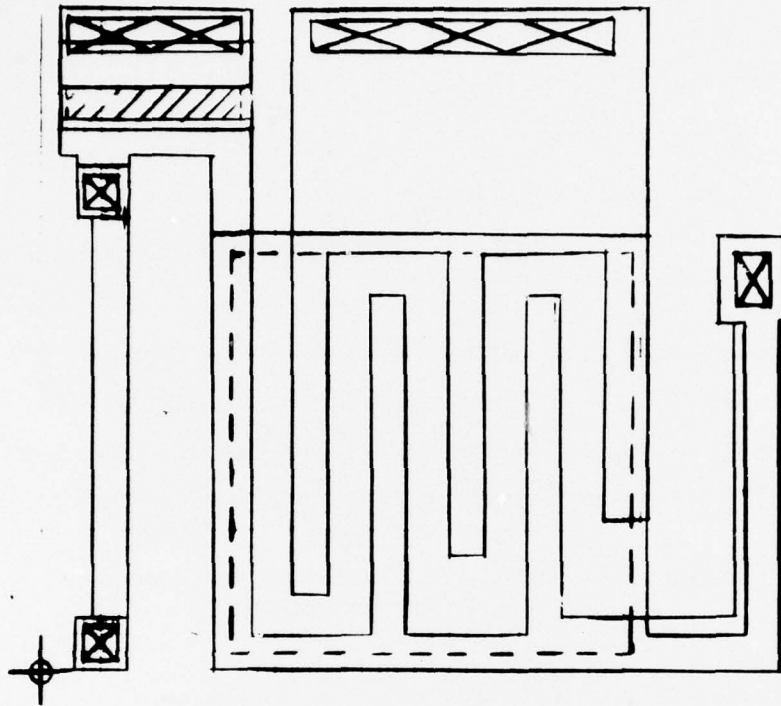
The listing of the Modified Symbolic Source Program used on the MOS Scaler/Logic and Overhead Safety Circuit is contained in appendix B.

### 4.2 Device Testing

Collins successfully tested all the devices to the specified requirements of HDL Specification Control Drawing 11711256. During the evaluation of the test results it was discovered that a large portion of the reject devices had failed due to a marginal negative input breakdown. Collins Design and Process Engineering has determined that a yield improvement can be achieved if the P-Region spacing on the field inversion transistor of the input protection device is increased from 0.4 to 0.5 mils. This modification can be accomplished via a single layer change (Layer 1). A composite of the modified input protection device is found in figure 3.

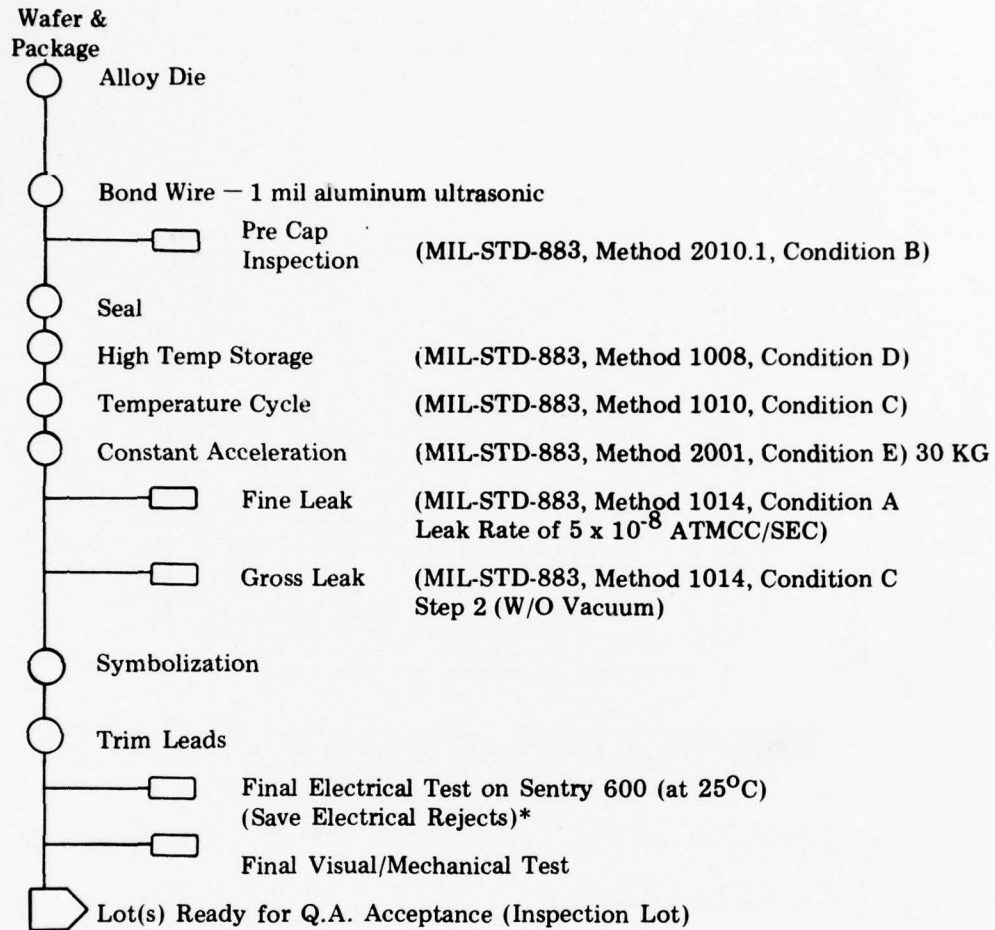
### 4.3 Acceptance Testing

Collins Radio Group meets all the Product Assurance requirements of MIL-M-38510, Appendix A, in addition to MIL-Q-9858. All MOS Scaler/Logic and Overhead Safety packages delivered to HDL were manufactured per MIL-STD-883, Method 5004, Class B. The Collins implementation of the HDL requirements is shown in the flow chart, figure 4. In addition, 164 devices from the first article lot of 1,000 devices, as well as 164 devices from the production lot, were subjected to the Group A, B and C Qualification Tests defined in HDL Specification Control Drawing 11711256. A flow chart of this Quality Assurance Acceptance Testing is shown in figures 5 and 6. A summary of the results is found in figures 7 and 8.



|   |              |              |  |
|---|--------------|--------------|--|
| <b>ROCKWELL INTERNATIONAL CORPORATION</b>                           |              |              |  |
| <b>COLLINS RADIO GROUP</b>  |              |              |  |
| DALLAS, TEX 75207 NEWPORT BEACH, CALIF 92863 CEDAR RAPIDS, IA 52406 |              |              |  |
| <i>HDL INPUT PAD / MOSAB</i>  |              |              |  |
| SIZE  | CODE IDENT   | DWG NO.      |  |
|   | <b>13499</b> | 602-1608-001 |  |
| SCALE 500/1   |              | SHEET 1 OF 1 |  |

Figure 3. Composite of Modified Input Protection Device.



\*These electrical rejects could be used in mechanical tests of Q.C. Acceptance.

Figure 4. Flow Chart of MIL-STD-883, Method 5004, Class B Screening Process.



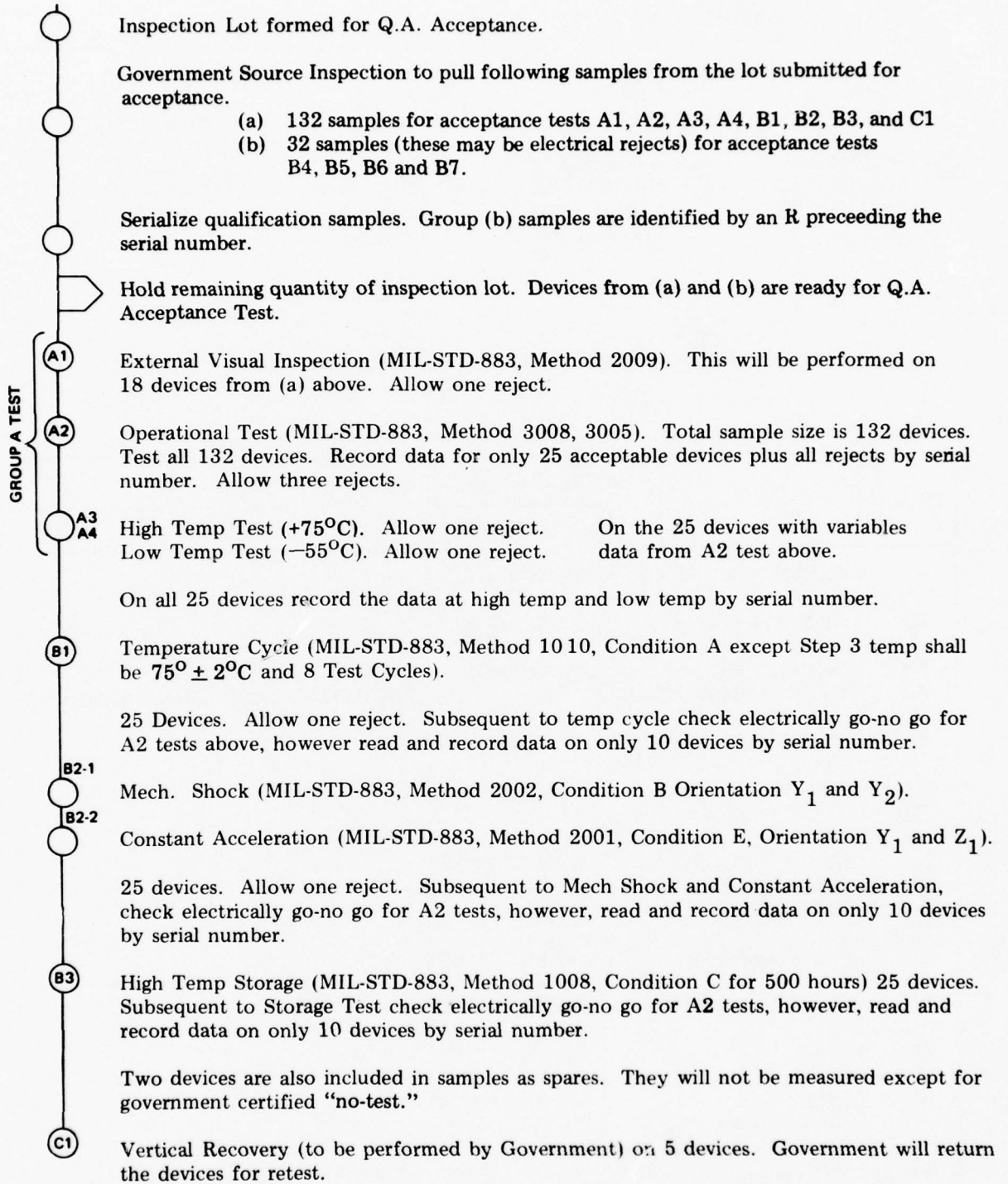


Figure 5. Quality Assurance Acceptance Test - Part I.

DESTRUCTIVE TESTS ON DEVICES NOS. R1 THROUGH R32

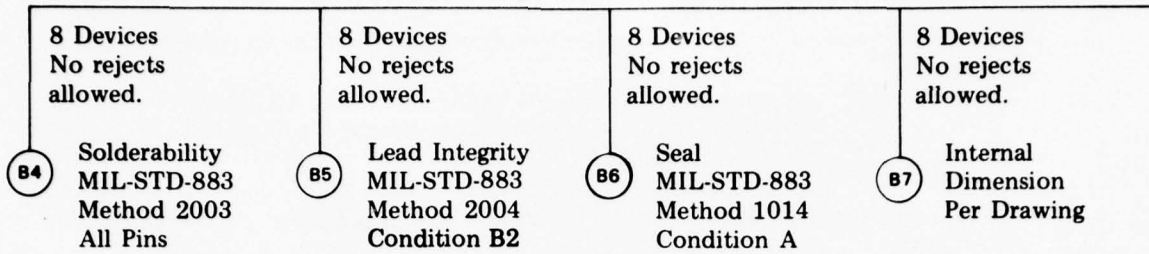


Figure 6. Quality Assurance Acceptance Test - Part II.

| SUB-GROUP    | RESULTS OF ACCEPTANCE TESTING     |             |   |
|--------------|-----------------------------------|-------------|---|
|              |                                   | RESULTS     | REMARKS   |
| A1           | EXTERNAL VISUAL                   | NO FAILURES | ONE FAILURE ALLOWED<br>PASSED SUBGROUP REQUIREMENTS |
| A2           | OPERATIONAL TEST                  | NO FAILURES |   |
| A3 & A4      | HIGH & LOW TEMPERATURE TEST       | 1 FAILURE   |   |
| B1           | TEMPERATURE CYCLE                 | NO FAILURES |   |
| B2.1<br>B2.2 | SHOCK AND ACCELERATION            | NO FAILURES |   |
| B3           | 500 HOUR HIGH TEMPERATURE STORAGE | NO FAILURES |   |
| B4           | SOLDERABILITY                     | NO FAILURES |   |
| B5           | LEAD INTEGRITY                    | NO FAILURES |   |
| B6           | SEAL                              | NO FAILURES |   |
| B7           | INTERNAL DIMENSIONS               | NO FAILURES |   |
| C1           | VERTICAL RECOVERY                 | NO FAILURES | 30,000G BY HDL                                      |

Figure 7. Results of First Article Quality Acceptance Tests.

| SUB-GROUP    | RESULTS OF ACCEPTANCE TESTING     |                |  |
|--------------|-----------------------------------|----------------|--|
|              |                                   | RESULTS        | REMARKS                                  |
| A1           | EXTERNAL VISUAL                   | THREE FAILURES | LEADS TOO THICK - WAIVER APPROVED BY HDL |
| A2           | OPERATIONAL TEST                  | NO FAILURES    |  |
| A3 & A4      | HIGH & LOW TEMPERATURE TEST       | NO FAILURES    |  |
| B1           | TEMPERATURE CYCLE                 | NO FAILURES    |  |
| B2.1<br>B2.2 | SHOCK AND ACCELERATION            | NO FAILURES    |  |
| B3           | 500 HOUR HIGH TEMPERATURE STORAGE | NO FAILURES    |  |
| B4           | SOLDERABILITY                     | NO FAILURES    |  |
| B5           | LEAD INTEGRITY                    | NO FAILURES    |  |
| B6           | SEAL                              | NO FAILURES    |  |
| B7           | INTERNAL DIMENSIONS               | NO FAILURES    |  |
| C1           | VERTICAL RECOVERY                 | NO FAILURES    | 30,000G BY HDL                           |

Figure 8. Results of Production Lot Acceptance Tests.

Three subgroup A1 (External Visual) failures occurred during the production lot quality acceptance testing because the leads were 0.01 in. too thick. These failures will be eliminated in the future by a tightened receiving inspection sample measurement of all leads.

It can be concluded that Collins successfully completed the quality acceptance testing as outlined in the HDL Specification Control Drawing 11711256, with the exception of the test dealing specifically with the dual-in-line package. For the test where package failures occurred, a one-time waiver was approved.

The parametric results of first-article and production lot acceptance testing are found in appendices C and D, respectively.

## 5. CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Conclusions

The Collins Radio Group of Rockwell International successfully completed the fabrication and testing of the Scaler/Logic and Overhead Safety Integrated Circuit in accordance with the HDL Specification Control Drawing 11711256. Upon completion of the contract all 7,000 acceptable devices were delivered to HDL.

Several important points resulting from this program are:

- a. The MOS Scaler/Logic and Overhead Safety Circuit chip can be fabricated and tested in production volumes.
- b. The MOS Scaler/Logic and Overhead Safety Circuit meets all requirements over the temperature range of -55 to +75°C.
- c. The MOS Scaler/Logic and Overhead Safety Circuit can be efficiently tested on the Sentry 600 tester.

### 5.2 Recommendations

The following suggestions are recommended to enhance the fabrication of production quantities of the MOS Scaler/Logic and Overhead Safety Circuit.

- a. Develop guard band test parameters for 25°C production testing.
- b. Encapsulate devices in molded plastic packages for lower unit cost and better shock environment.
- c. Use the high volume/high yield version (P/N 148-1350-001) of the P-Channel, high threshold process (P/N 765-4140-001) used on this contract.
- d. If using ceramic packages, delete the aging requirement from the Subgroup B4 test conditions.
- e. If using ceramic packages, change the package length dimension from a 0.755 to 0.805 in., which will allow up to two alternate sources to be approved.
- f. Modify input protection device to allow a higher breakdown and thus a higher yield.

**APPENDIX A**  
**COLLINS PROCESS SPECIFICATION**  
**765-4140-001**

↓  
REVISIONS

| DCN NO.     | ACT CODE | L/M CONFIG | ALT LTR | DESCRIPTION             | DATE   | APVD |
|-------------|----------|------------|---------|-------------------------|--------|------|
| RELEASED TO | RECORDS  |            | --      | RELEASED PER DRN-W64940 | 5-3-74 |      |
| MAY 03      | 1974     |            |         |                         |        |      |

UNDER REVISION CONTROL

|                      |       |   |   |   |   |   |   |   |  |
|----------------------|-------|---|---|---|---|---|---|---|--|
| REV STATUS OF SHEETS | REV   | - | - | - | - |   |   |   |  |
|                      | SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |

|              |                                |  |              |
|--------------|--------------------------------|--|--------------|
| CONTRACT NO. |                                | <b>COLLINS RADIO COMPANY</b>                                       |              |
|              |                                | DALLAS, TEX NEWPORT BEACH, CALIF CEDAR RAPIDS, IA                  |              |
| PREP         | <i>F. M. Ruddy</i> 5/1/74      | HIGH THRESHOLD/HIGH SHEET/P-CHANNEL<br>OXIDE PROCESS SPECIFICATION |              |
| CHK          | <i>John J. Sullivan</i> 5/2/74 |  |              |
| APVD         | <i>F. M. Ruddy</i> 5/1/74      | SIZE   | CODE IDENT   |
|              | <i>Al Kaplan</i> 5-2-74        | <b>A</b>   | <b>13499</b> |
|              |                                | DWG NO.  | 765-4140-001 |
| SCALE        |                                | SHEET 1 of 4   |              |

074-8365-421

↑ FRO  NFP  REL  REV\_\_ TC\_\_ CR\_QNB\_Z DL\_OTO\_0

PROCESS SPECIFICATION

765-4140-001

THIS DOCUMENT DEFINES THE MATERIAL AND ELECTRICAL CHARACTERISTICS FOR A HIGH THRESHOLD P-CHANNEL MOS PROCESS.

MATERIAL CHARACTERISTICS

ORIENTATION PLANE (111)

TYPE - CZOCHRALISKI

DOPING - PHOSPHOROUS (N)

OXYGEN CONTENT -  $10^{18}$  ATOMS/CM<sup>3</sup> MAXIMUM

DISLOCATION DENSITY - 500/CM<sup>2</sup> AVERAGE, 1000/CM<sup>2</sup> MAXIMUM

RESISTIVITY -  $5 \pm 1.5$  OHM CENTIMETER

MINORITY CARRIER LIFETIME - 5 MICROSECONDS MINIMUM

DIAMETER -  $2 \pm .01$  INCHES

THICKNESS -  $0.0011 \pm 0.0015$  INCHES

WAFER FLAT ORIENTATION - PARALLEL TO (110) PLANE  $\pm 1^\circ$

FRONT SURFACE FINISH - LESS THAN 3 MICROINCHES RMS

POLISHED FRONT, ETCHED BACK

|                  |                            |                         |
|------------------|----------------------------|-------------------------|
| SIZE<br><b>A</b> | CODE IDENT<br><b>13499</b> | DWG NO.<br>765-4140-001 |
| SCALE            | REV                        | SHEET 2                 |

074-0365-422 5-8-72

PROCESS PARAMETERS

(VALUES ARE  $\pm$  10% UNLESS OTHERWISE INDICATED)

|   |   |
|---|---|
| P-REGION SHEET RESISTIVITY<br>(4 POINT PROBE MEASUREMENT) | 120 OHMS PER SQUARE                             |
| DIFFUSION DEPTH VERTICAL                                  | 2.2 MICRONS                                     |
| LATERAL DIFFUSION   | 1.5 MICRONS                                     |
| ALUMINUM SHEET RESISTIVITY                                | 0.04 OHMS/SQUARE                                |
| ALUMINUM THICKNESS  | 10,000 ANG NOMINAL RANGE<br>8,500 TO 13,000 ANG |
| GATE OXIDE THICKNESS                                      | 1,400 ANG                                       |
| OXIDE THICKNESS OVER N-FIELD                              | 18,000 ANG                                      |
| OXIDE THICKNESS OVER P-DIFFUSION                          | 18,000 ANG                                      |
| CAPACITANCES  |   |
| GATE  | 0.15 PF/SQ MIL (VGS=-1V)                        |
| METAL OVER P-REGION                                       | 0.012 PF/SQ MIL                                 |
| METAL OVER N-FIELD  | 0.012 PF/SQ MIL                                 |
| P-REGION TO SUBSTRATE                                     | 0.04 PF/SQ MIL (VPS=-1V)                        |

TYPICAL PROCESS ELECTRICAL DEVICE CHARACTERISTICS

DEVICE CONSTANT -  $B' = 2K' \approx UKE/X$  (AVERAGE)

-55 DEG C, 10.3 MICROAMPERES PER VOLT-SQUARED  $V_D = -1V$ ,  $V_{GS} = -12V$

+25 DEG C, 5.9 MICROAMPERES PER VOLT-SQUARED  $V_D = -1V$ ,  $V_{GS} = -12V$

+125 DEG C, 4.5 MICROAMPERES PER VOLT-SQUARED  $V_D = -1V$ ,  $V_{GS} = -12V$

THRESHOLD VOLTAGE CHANGE WITH SOURCE-SUBSTRATE BACK BIAS

|                  |                            |                         |
|------------------|----------------------------|-------------------------|
| SIZE<br><b>A</b> | CODE IDENT<br><b>13499</b> | DWG NO.<br>765-4140-001 |
| SCALE            | REV                        | SHEET 3                 |

074-8365-422 5-8-72



SOURCE-SUBSTRATE BACK BIAS

-1V  
-4V  
-16V

THRESHOLD CHANGE

-0.4V  
-1.0V  
-2.4V

TEMPERATURE COEFFICIENT OF THRESHOLD VOLTAGE -4.0 MV/DEG C MAX

MOS TEST DEVICE SPECIFICATIONS AND TYPICAL

CHARACTERISTICS

A TEST DEVICE IS INCORPORATED IN ALL COLLINS MOS-LSI ARRAYS.  
MASK DIMENSIONS AND ELECTRICAL CHARACTERISTICS OF A TYPICAL  
DEVICE ARE:

MOS TEST DEVICE

GATE WIDTH 4.6 MIL  
GATE LENGTH 0.4 MIL

FIELD INVERSION TEST DEVICE

GATE WIDTH 4.8 MIL  
GATE LENGTH 0.4 MIL

THRESHOLD VOLTAGE

VTH AT IDS = 10 MICROAMPERES 3.4  
TO 4.4V

THRESHOLD CHANGE OVER LIFE  
BVDSS (DRAIN TO SOURCE BREAKDOWN)

LESS THAN 0.5 VOLT  
30 VOLTS MIN.  
35 - 40 VOLTS TYPICAL AT  
IDS = 10 MICROAMPERES

BVGSS (GATE OXIDE BREAKDOWN)  
VTF (FIELD INVERSION VOLTAGE)

100 VOLTS MIN  
32 VOLTS MIN  
40 VOLTS TYPICAL AT  
IDS = 10 MICROAMPERES

RON (DEVICE ON RESISTANCE)

1.0K + OR - 0.5K OHMS AT  
VGS = -12V, VDS = -1V

|                  |                            |                         |
|------------------|----------------------------|-------------------------|
| SIZE<br><b>A</b> | CODE IDENT<br><b>13499</b> | DWG NO.<br>765-4140-001 |
| SCALE            | REV                        | SHEET 4                 |

074-0365-422 9-0-72

**APPENDIX B**

**TEST PROGRAM FOR FAIRCHILD SENTRY 600 TESTER**

| <p><b>RELEASED</b><br/>TO ENGINEERING RECORDS<br/><br/>JAN 27 1976<br/><br/>UNDER REVISION CONTROL</p> | REVISIONS                |             |      |
|--|--------------------------|-------------|------|
|  | LTR                      | DESCRIPTION | DATE |
| -  | RELEASED PER DRN W-66380 | 2-27-76     |      |

THIS SPECIFICATION DETAILS A SENTRY TEST PROGRAM SOURCE LISTING FOR COMPREHENSIVE DEVICE TESTS ON THE SENTRY 600 MOS TESTER.

THE DEVICE NAME IS HARRY DIAMOND LABS MOS SCALER. THE DEVICE TOP LEVEL PART NUMBER IS 765-1905-001.

THIS SPECIFICATION SUPERCEDES 615-0552-400, (DELETED).

|                                     |   |              |               |
|-------------------------------------|---|--------------|---------------|
| CONTRACT NO.                        | <b>ROCKWELL INTERNATIONAL CORPORATION</b><br><b>COLLINS RADIO GROUP</b> |              |               |
| PREP G. THAYER <i>GT</i> 2-25-76    | DALLAS, TEX 75207 NEWPORT BEACH, CALIF 92663 CEDAR RAPIDS, IA 52406     |              |               |
| CHK D. MULLINS <i>DM</i> 2-25-76    | SENTRY 600 TEST PROGRAM FOR HARRY DIAMOND LABS MOS SCALER DEVICE        |              |               |
| APVD G. DONALDSON <i>GD</i> 2-25-76 | SIZE  | CODE IDENT   | DWG NO.       |
|                                     | <b>A</b>  | <b>13499</b> | 615-0552-401  |
|                                     | SCALE   |              | SHEET 1 OF 65 |

074-8365-421- REV 2-17-75

*By DM*

REL  REV \_\_\_ TC \_\_\_ CR 0 NB 2 DL 0 TO 0





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000003      IF SWITCH NEQ 0 THEN GOTO VARDAT ;
000005      WRITE (TTP) ' ';
000006      WRITE (TTP) '* IS LINE PRINTER OPERATIONAL ? *';
000007      WRITE (TTP) ' ';
000010      WRITE (TTP) '* TYPE "0" IF YES. "1" IF NOT. *';
000011      READ (TTK) GLOB3;
000012      IF GLOB3 NEQ 0 THEN GOTO INF;
000014
000014      WRITE (LP) '*****';
000015      WRITE (LP) '*      HARRY DIAMOND LABS - MOS SCALAR.  *';
000016      WRITE (LP) '*PROGRAM COMPILED JULY 1 1974.      *';
000017      WRITE (LP) '*1ST UPDATE PERFORMED AUG. 2 1974.    *';
000020      WRITE (LP) '*2ND UPDATE PERFORMED SEPT. 16 1974.   *';
000021      WRITE (LP) '*3RD UPDATE PERFORMED SEPT. 4 1975.    *';
000022      WRITE (LP) '*4TH UPDATE PERFORMED NOV. 6 1975.     *';
000023      WRITE (LP) '*****';
000024
INF:
000024      WRITE (TTP) '*****';
000025      WRITE (TTP) '*      REVISION 12 (PER SPECS)      *';
000026      WRITE (TTP) '*      DSN - 505524 01. SEPT. 4 1975. *';
000027      WRITE (TTP) '*PKG CPN          765-1905-001.    *';
000030      WRITE (TTP) '*CHIP CPN         765-1874-001.    *';
000031      WRITE (TTP) '*MPAB ASSY. CPN   765-1906-001.    *';
000032      WRITE (TTP) '*PERFORMANCE BD. CPN 765-1907-001. *';
000033      WRITE (TTP) '*DIE SIZE (101 X 59) MILS.      *';
000034      WRITE (TTP) '*NUMBER OF COMP. DIE/WAFER - 410.  *';
000035      WRITE (TTP) '*WAFER TEMP 85C. PKG T 25,75,-55. *';
000036      WRITE (TTP) '*****';
000037
000037      INSERT COMMENCE;
000037      REM *****
000037      COMMENCE          9/4/75.
000037      ***** ;
000037
RINI:
000037      WRITE (TTP) '*****';
000040      WRITE (TTP) '*----- OPERATOR NOTE -----*';
000041      WRITE (TTP) '*READ THE FOLLOWING DESCRIPTION OF TESTS*';
000042      WRITE (TTP) '* AND THEN TYPE THE DESIRED NUMBER *';
000043      WRITE (TTP) '*****';
000044      WRITE (TTP) ' ';
000045      WRITE (TTP) '      NAME OF TEST          TYPE NUMBER';
000046      WRITE (TTP) 'WAFER TEST (HOT)                1';
000047      WRITE (TTP) 'PACKAGE TEST AT ROOM TEMP.            2';
000050      WRITE (TTP) 'PACKAGE TEST AT ROOM TEMP.            2.1';
000051      WRITE (TTP) '(STATION 3D ONLY, HANDLER)';
000052      WRITE (TTP) 'PACKAGE TEST FINAL (HOT)              2.2';
000053      WRITE (TTP) 'PACKAGE TEST FINAL (COLD)             2.3';
000054      WRITE (TTP) 'SUMMARY OF WAFER TESTING              3';
000055      WRITE (TTP) 'SUMMARY OF PACKAGE TESTING           4';
000056      WRITE (TTP) 'ENGR WAFER TEST                      5';
000057      WRITE (TTP) 'ENGR PACKAGE TEST                   6';
000060      WRITE (TTP) 'SCHMOO PLOTS                        6.5-6.7';
000061      WRITE (TTP) 'SCOPE LOOP (WFR & PKG)              7';
000062      WRITE (TTP) 'VARIABLE DATA                      8';
000063
000064      READ (TTK) SWITCH ;

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appendix b

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000064 VARDAT:
000064
000064 IF GLOB13 EQ 1 THEN BEGIN
000065 GLOB13 = 0;
000066 PAUSE 1;
000067 GOTO DEVVAR;
000070 END;
000070 IF SWITCH EQ 3 THEN GOTO WAFSMRY;
000072 IF SWITCH EQ 4 THEN GOTO PKGSMRY;
000074 IF SWITCH LT 9 THEN GOTO DEVVAR;
000076
000076 WRITE (TTP) /-----BAD TEST NUMBER, RETYPE-----/;
000077 GOTO RTN1;
000100
000100 DEVVAR:
000100 DCL BIN[7]/1B, 42B, 2B, 4B, 10B, 10B, 20B/; REM CARR. SYSTEM;
000101
000101 PRESET:
000101 FORCE RESET;
000102 FORCE VF1 0.0, RNG2;
000103 FORCE VF2 0.0, RNG2;
000104 FORCE VF3 0.0, RNG2;
000105 SET DA * (60:1);
000106 SET MA * (60:0);
000107 SET PERIOD 1E-6;
000110 ENABLE DA, MA;
000110 SET F * (60:0);
000111 ENABLE TEST;
000112
000112 REM CHECK OF CORRECT PROGRAM LOAD;
000112
000112 IF (GLOB4 AND 1B) EQ 0 THEN BEGIN
000113 ENABLE DCT1 GT VC111 + 50E-9; ENABLE DCT0 LT VC121 - 50E-9;
000115 SET PMU SENSE, AUTO; FORCE VOLTAGE 0, RNG2;
000117 ENABLE RELAY; CPMU PIN 59; DISABLE RELAY;
000122 FORCE VOLTAGE -5.0, RNG2; SET DELAY 10E-3, DC;
000124 FORCE DELAY; MEASURE VALUE;
000126 IF VALUE LT (VC111+50E-9) AND VALUE GT (VC121-50E-9) THEN
000127 GOTO ENDCHK;
000130
000130 WMSG:
000130 IF GLOB3 EQ 0 THEN BEGIN
000131 WRITE (LP) / /; WRITE (LP) / /;
000133 WRITE (LP) /* WRONG TEST PROGRAM OR PERFORMANCE BOARD. */;
000134 WRITE (LP) /??? CHECK YOUR WORK ??? /;
000135 END;
000135 IF GLOB3 EQ 1 THEN BEGIN
000136 WRITE (TTP) / /; WRITE (TTP) / /;
000140 WRITE (TTP) /* WRONG TEST PROGRAM OR PERFORMANCE BOARD. */;
000141 WRITE (TTP) / ? ? ? CHECK YOUR WORK. ? ? ? /;
000142 END;
000142 GOTO ABORT;
000143
000143 ENDCHK:
000143 SET DELAY 0, DC;
000144 GLOB4 = GLOB4 + 1B;
000145 FORCE VOLTAGE 0, RNG2; ENABLE RELAY; XPMU PIN;
000150 DISABLE RELAY; DISABLE DCT0; DISABLE DCT1;
000153 END;
000153
000153 REM DELAY GENERATED BY S600 TESTER FOR DIACON HANDLER;
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000153      IF (SWITCH EQ 2.2 OR SWITCH EQ 2.3 OR SWITCH EQ 8) AND
000154      GLOB1 EQ 0 THEN BEGIN
000154      WRITE (TTP) '* ONE MINUTE DELAY INITIATED - SMILE - *';
000155      DCDLY = 5.0;
000156      SET DELAY DCDLY, DC;
000157      FOR I = 1 THRU 6 DO BEGIN
000160      FORCE DELAY; FORCE WAIT;
000162      END;
000162      REM 1 MIN DELAY FOR FIRST PACKAGE BEFORE TEST;
000162      SET DELAY 0.0, DC;
000163      STST:
000163      IF (SWITCH GT 2 AND SWITCH LT 3) OR SWITCH EQ 8 THEN BEGIN
000164      IF GLOB1 EQ 0 THEN BEGIN
000165      WRITE (TTP) 'IS THIS A STICK TO STICK HANDLER? (YES=0, NO=1)';
000166      READ (TTK) X;
000167      IF X EQ 0 THEN BEGIN
000170      WRITE (TTP) 'HOW MANY PARTS IN A FULL STICK?';
000171      READ (TTK) X;
000172      GLOB1 = X * 100B;
000173      END; END;
000173
000173      IF (GLOB1 AND 7700B) NEQ 0 THEN BEGIN
000174      DCL BIN(71/1B, 42B, 102B, 202B, 402B, 402B, 402B);
000175
000175      IF (GLOB1 AND 7700B)/100B EQ (GLOB1 AND 77B) THEN BEGIN
000176      GLOB1 = GLOB1 AND 7700B; REM RESET COUNT TO ZERO;
000177      WRITE (TTP) '* GOOD STICK IS FULL. *';
000200      WRITE (TTP) '* INSERT EMPTY STICK AND PUSH START BUTTON. *';
000201      WRITE (EIR) 1740B;
000202      PAUSE 4;
000203      END;
000203
000203      IF (GLOB1 AND 770000B)/100B EQ (GLOB1 AND 7700B) THEN BEGIN
000204      GLOB1 = GLOB1 AND 7700B;
000205      WRITE (TTP) '* REJECT STICK IS FULL. *';
000206      WRITE (TTP) '* INSERT EMPTY STICK AND PUSH START BUTTON. *';
000207      WRITE (EIR) 37B;
000210      PAUSE 5;
000211      END; END;
000211      IF GLOB1 EQ 0 AND SWITCH EQ 8 THEN GLOB1 = GLOB1 + 1;
000213      END;
000213
000213      NOISE VOLTS, AMPS, SECS, KHZ;
000213      IF SWITCH EQ 2 OR SWITCH EQ 2.1 THEN GLOB19 = V(8);
000215      IF SWITCH EQ 2.2 THEN GLOB19 = V(9);
000217      IF SWITCH EQ 2.3 THEN GLOB19 = V(10);
000221
000221      REM VARIABLE DEFINITIONS ;
000221      V1=-27.6 VOLTS ; REM VDD (A) ;
000222      V2=-21.5 VOLTS ; REM VDD (B) ;
000223      V3=-17.0 VOLTS ; REM VDD (C) ;
000224      V4=0.0 VOLTS ; REM GND, TCOM ;
000225      V5=-8.0 VOLTS ; REM DATA, CLK LOW LEVEL;
000226      V6=-2.0 VOLTS ; REM DATA, CLK HIGH LEVEL ;
000227      V7=-8.0 VOLTS ; REM OUT LOW GP 1;
000230      V8=-2.0 VOLTS ; REM OUT HIGH GP 1;
000231      V9=-4.0 VOLTS ; REM OUT LOW GP 2;
000232      V10=-0.1 VOLTS ; REM OUT HIGH GP 2;
000233      V11=-21.4 VOLTS ; REM OUT LOW GP 3;

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000234      V12=-2.6 VOLTS ;          REM OUT HIGH GP 3;
000235      V13=-16.9 VOLTS ;        REM OUT LOW GP 4;
000236      V14=-2.0 VOLTS ;          REM OUT HIGH GP 4;
000237      V15=-16.9 VOLTS ;        REM OUT LOW GP 5;
000240      V16=-10.0 VOLTS ;       REM OUT HIGH GP 5;
000241      T1=25 KHZ ;              REM T. FREQ. ;
000242      T2=40E-6 SECS ;          REM T. PERIOD ;
000243      T5=13E-6 SECS ;          REM DATA DELAY, TG2;
000244      T6=20E-6 SECS ;          REM DATA WIDTH, TG2;
000245      T7=30E-6 SECS ;          REM STROBE DELAY, TG7;
000246      T8=1E-6 SECS ;           REM STROBE WIDTH, TG7;
000247
000247      IAMIN=-2E-3 AMPS;
000250      IAMAX=-10E-3 AMPS;
000251
000251      BPASS = 0;
000252
000252      FCTEST:
000252      GLOB2 = GLOB2 + 1;          REM TOTAL DEVICE COUNTER;
000253      REM CONNECTIONS AND MASK DEFINITIONS ;
000253      SET LOGIC FOS ;
000254      SET DA * 10001 01111 00101 01000 (38:0)11 ;
000255      SET DB * 11001 01111 00101 01000 (38:0)11 ; REM OPT AS INPUT;
000256      SET MB * 00000 00000 11010 (45:0) ; REM OUTS 11,12,14 ;
000257      SET MA * (60:0) ;
000260      SET S * 01(58:0);
000261      CGEN TG2 5,7,9,13,15 ;     REM DATA PINS ;
000262      CONN DPS1 8,60 ;           REM GROUND ;
000263      CONN DPS2 1,17 ;          REM VDD ;
000264
000264      REM TEST SETUP ;
000264      FORCE VF1 0.0, RNG2 ;         REM GND ;
000265      FORCE VF2 V2, RNG3 ;         REM VDD SUPPLY ;
000266      FORCE E0 V5, RNG2 ;         REM DATA 0 ;
000267      FORCE E1 V6, RNG2 ;         REM DATA 1 ;
000270      FORCE EB0 0.0, RNG2;      REM ALT SUPPLY DATA;
000271      SET S0 V7, RNG2 ;          REM OUT REF. ZERO 1;
000272      SET S1 V8, RNG2 ;          REM OUT REF. ONE 1;
000273
000273      REM TIMING GENERATOR CONNECTIONS AND DEFINITIONS ;
000273      SET PERIOD T2, RNG1 ;
000274      SET TG2 DELAY T5, RNG0 ;    SET TG2 WIDTH T6, RNG0 ;
000276      SET TG7 DELAY T7, RNG0 ;  SET TG7 WIDTH T8, RNG0 ;
000300
000300      IF SWITCH LT 3 THEN ON FCT, CTEST ;
000302      IF SWITCH EQ 8 THEN ON FCT, VARD;
000304      NEXT0:  COMP = COMP + 1 ;   REM COUNTER FOR 5 OUTS LEVELS ;
000305
000305      AT 0 ;
000306      INSERT HDLP1 ;              REM FIRST L. M. LOAD 0-999 LOCS;
000306      REM HDL MOS SCALER LOAD 1 'HDLP1' CREATED 6/20/74.
000306      BY H. S. GILL. ;
000306      ENABLE DA, MB ;
000306      S1@ SET F 00001 01001 00111 00000 ;
000307      SET F 00001 01000 00111 10000 ;
000310      SET F 00001 01001 00111 00000 ;
000311      SET F 00001 01000 00111 10000 ;
000312      SET F 00001 01001 00111 00000 ;
000313      SET F 00001 01000 00111 10000 ;

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000314 SET F 00001 01001 00111 00000 ;
000315 SET F 00001 01000 00111 10000 ;
000316 SET F 00001 01001 00111 00000 ;
000317 SET F 00001 01000 00111 10000 ;
000320 SET F 00001 01001 00111 00001 ;
000321 SET F 00001 01000 00111 10000 ;
000322 SET F 00001 01001 00111 00000 ;
000323 SET F 00001 01000 00111 10000 ;
000324 SET F 00001 01001 00111 00000 ;
000325 SET F 00001 01000 00111 10000 ;
000326 SET F 00001 01001 00011 00000 ;
000327 SET F 00001 01000 00011 10000 ;
000330 SET F 00001 01001 00011 00000 ;
000331 SET F 00001 01000 10011 10000 ;
000332 SET F 00001 01001 11011 00001 ;
000333 SET F 00001 01000 11011 00000 ;
000334 SET F 00001 01001 11011 10000 ;
000335 SET F 00001 01000 11011 10000 ;
000336 SET F 00001 01001 11011 00000 ;
000337 SET F 00001 01000 11011 00000 ;
000340 SET F 00001 01001 11011 10000 ;
000341 SET F 00001 01000 11011 10000 ;
000342 SET F 00001 01001 11011 00000 ;
000343 SET F 00001 01000 11011 00000 ;
000344 SET F 00001 01001 11011 10001 ;
000345 SET F 00001 01000 11011 10000 ;
000346 SET F 00001 01001 11011 00000 ;
000347 SET F 00001 01000 11011 00000 ;
000350 SET F 00001 01001 11011 10000 ;
000351 SET F 00001 01000 11011 10000 ;
000352 SET F 00001 01001 11011 00000 ;
000353 SET F 00001 01000 11011 00000 ;
000354 SET F 00001 01001 11011 10000 ;
000355 SET F 00001 01000 11011 10000 ;
000356 SET F 00001 01011 11011 00001 ;
000357 SET F 00001 01010 11011 00000 ;
000360 SET F 00001 01011 11011 10000 ;
000361 SET F 00001 01010 11011 10000 ;
000362 SET F 00001 11011 11001 10000 ;
000363 SET F 00001 11010 11001 10000 ;
000364 SET F 00001 01011 11011 10000 ;
000365 SET F 00001 01010 11011 10000 ;
000366 SET F 00001 11011 11001 10000 ;
000367 SET F 00001 11010 11001 10000 ;
000370 SET F 00001 01011 11011 10001 ;
000371 SET F 00001 01010 11011 10000 ;
000372 SET F 00001 11011 11001 10000 ;
000373 SET F 00001 11010 11001 10000 ;
000374 SET F 00001 01011 11011 10000 ;
000375 SET F 00001 01010 11011 10000 ;
000376 SET F 00001 11011 11001 10000 ;
000377 SET F 00001 11010 11001 10000 ;
000400 SET F 00001 01011 11011 10000 ;
000401 SET F 00001 01010 11011 10000 ;
000402 SET F 00000 11011 11001 10001 ;
000403 SET F 00000 01010 11001 10000 ;
000404 SET F 00000 01011 11011 10000 ;
000405 SET F 00000 01010 11011 10000 ;
000406 SET F 00000 11011 11001 10000 ;

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appendix b

000407 SET F 00000 01010 11001 10000 ;  
000410 SET F 00000 01011 11011 10000 ;  
000411 SET F 00000 01010 11011 10000 ;  
000412 SET F 00000 11011 11001 10000 ;  
000413 SET F 00000 01010 11001 10000 ;  
000414 SET F 00000 01011 11011 10001 ;  
000415 SET F 00000 01010 11011 10000 ;  
000416 SET F 00000 11011 11001 10000 ;  
000417 SET F 00000 01010 11001 10000 ;  
000420 SET F 00000 01011 11011 10000 ;  
000421 SET F 00000 01010 11011 10000 ;  
000422 SET F 00000 11011 11001 10000 ;  
000423 SET F 00000 01010 11001 10000 ;  
000424 SET F 00000 01011 11011 10000 ;  
000425 SET F 00000 01010 11011 10000 ;  
000426 SET F 00001 11011 11001 10001 ;  
000427 SET F 00001 11010 11001 10000 ;  
000430 SET F 00001 01011 11011 10000 ;  
000431 SET F 00001 01010 11011 10000 ;  
000432 SET F 00001 11011 11001 10000 ;  
000433 SET F 00001 11010 11001 10000 ;  
000434 SET F 00001 01011 11011 10000 ;  
000435 SET F 00001 01010 11011 10000 ;  
000436 SET F 00001 11011 11001 10000 ;  
000437 SET F 00001 11010 11001 10000 ;  
000440 SET F 00001 01011 11011 10001 ;  
000441 SET F 00001 01010 11011 10000 ;  
000442 SET F 00001 11011 11001 10000 ;  
000443 SET F 00001 11010 11001 10000 ;  
000444 SET F 00001 01011 11011 10000 ;  
000445 SET F 00001 01010 11011 10000 ;  
000446 SET F 00001 11011 11001 10000 ;  
000447 SET F 00001 11010 11001 10000 ;  
000450 SET F 00001 01011 11011 10000 ;  
000451 SET F 00001 01010 11011 10000 ;  
000452 SET F 00001 00011 11001 10011 ;  
000453 SET F 00001 00010 11001 10000 ;  
000454 SET F 00001 00011 11011 10000 ;  
000455 SET F 00001 00010 11011 10000 ;  
000456 SET F 00001 00011 11001 10000 ;  
000457 SET F 00001 00010 11001 10000 ;  
000460 SET F 00001 00011 11011 10000 ;  
000461 SET F 00001 00010 11011 10000 ;  
000462 SET F 00001 00011 11001 10000 ;  
000463 SET F 00001 00010 11001 10000 ;  
000464 SET F 00001 00011 11011 10001 ;  
000465 SET F 00001 00010 11011 10000 ;  
000466 SET F 00001 00011 11001 10000 ;  
000467 SET F 00001 00010 11001 10000 ;  
000470 SET F 00001 00011 11011 10000 ;  
000471 SET F 00001 00010 11011 10000 ;  
000472 SET F 00001 00011 11001 10000 ;  
000473 SET F 00001 00010 11001 10000 ;  
000474 SET F 00001 00011 11011 10000 ;  
000475 SET F 00001 00010 11011 10000 ;  
000476 SET F 00001 11011 11001 10001 ;  
000477 SET F 00001 11010 11001 10000 ;  
000500 SET F 00001 01011 11011 10000 ;  
000501 SET F 00001 01010 11011 10000 ;

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000502 SET F 00001 11011 11001 10000 ;
000503 SET F 00001 11010 11001 10000 ;
000504 SET F 00001 01011 11011 10000 ;
000505 SET F 00001 01010 11011 10000 ;
000506 SET F 00001 11011 11001 10000 ;
000507 SET F 00001 11010 11001 10000 ;
000510 SET F 00001 01011 11011 10001 ;
000511 SET F 00001 01010 11011 10000 ;
000512 SET F 00001 11011 11001 10000 ;
000513 SET F 00001 11010 11001 10000 ;
000514 SET F 00001 01011 11011 10000 ;
000515 SET F 00001 01010 11011 10000 ;
000516 SET F 00001 11011 11001 10000 ;
000517 SET F 00001 11010 11001 10000 ;
000520 SET F 00001 01011 11011 10000 ;
000521 SET F 00001 01010 11011 10000 ;
000522 SET F 00001 11011 11001 10001 ;
000523 SET F 00001 11010 11001 10000 ;
000524 SET F 00001 01011 11011 10000 ;
000525 SET F 00001 01010 11011 10000 ;
000526 SET F 00001 11011 11001 10000 ;
000527 SET F 00001 11010 11001 10000 ;
000530 SET F 00001 01011 11011 10000 ;
000531 SET F 00001 01010 11011 10000 ;
000532 SET F 00001 11011 11001 10000 ;
000533 SET F 00001 11010 11001 10000 ;
000534 SET F 00001 01011 11011 10001 ;
000535 SET F 00001 01010 11011 10000 ;
000536 SET F 00001 11011 11001 10000 ;
000537 SET F 00001 11010 11001 10000 ;
000540 SET F 00001 01011 11011 10000 ;
000541 SET F 00001 01010 11011 10000 ;
000542 SET F 00001 11011 11001 10000 ;
000543 SET F 00001 11010 11001 10000 ;
000544 SET F 00001 01011 11011 10000 ;
000545 L1@ SET F 00001 01010 11011 10000 ;
000546 ENABLE DB,MB ;
000546 S2@ SET F 00101 01001 00111 00001 ;
000547 SET F 00101 01000 00111 10000 ;
000550 SET F 00101 01001 00111 00000 ;
000551 SET F 00101 01000 00111 10000 ;
000552 SET F 00101 01001 00111 00000 ;
000553 SET F 00101 01000 00111 10000 ;
000554 SET F 00101 01001 00111 00000 ;
000555 SET F 00101 01000 00111 10000 ;
000556 SET F 00101 01001 00111 00000 ;
000557 SET F 00101 01000 00111 10000 ;
000560 SET F 00101 01001 00111 00001 ;
000561 SET F 00101 01000 00111 10000 ;
000562 SET F 00101 01001 00111 00000 ;
000563 SET F 00101 01000 00111 10000 ;
000564 SET F 00101 01001 00111 00000 ;
000565 SET F 00101 01000 00111 10000 ;
000566 SET F 00101 01001 00111 00000 ;
000567 SET F 00101 01000 00111 10000 ;
000570 SET F 00101 01001 00111 00000 ;
000571 SET F 00101 01000 00111 10000 ;
000572 SET F 00101 01001 00111 00001 ;
000573 SET F 00101 01000 00111 10000 ;

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appendix b

000574 SET F 00101 01001 00111 00000 ;  
000575 SET F 00101 01000 00111 10000 ;  
000576 SET F 00101 01001 00111 00000 ;  
000577 SET F 00101 01000 00111 10000 ;  
000600 SET F 00101 01001 00111 00000 ;  
000601 SET F 00101 01000 00111 10000 ;  
000602 SET F 00101 01001 00111 00000 ;  
000603 SET F 00101 01000 00111 10000 ;  
000604 SET F 00101 01001 00111 00001 ;  
000605 SET F 00101 01000 00111 10000 ;  
000606 SET F 00101 01001 00111 00000 ;  
000607 SET F 00101 01000 00111 10000 ;  
000610 SET F 00101 01001 00111 00000 ;  
000611 SET F 00101 01000 00111 10000 ;  
000612 SET F 00101 01001 00111 00000 ;  
000613 SET F 00101 01000 00111 10000 ;  
000614 SET F 00101 01001 00111 00000 ;  
000615 SET F 00101 01000 00111 10000 ;  
000616 SET F 00101 01001 00111 00011 ;  
000617 SET F 00101 01000 00111 10000 ;  
000620 SET F 00101 01001 00111 00000 ;  
000621 SET F 00101 01000 00111 10000 ;  
000622 SET F 00101 01001 00111 00000 ;  
000623 SET F 00101 01000 00111 10000 ;  
000624 SET F 00101 01001 00111 00000 ;  
000625 SET F 00101 01000 00111 10000 ;  
000626 SET F 00101 01001 00111 00000 ;  
000627 SET F 00101 01000 00111 10000 ;  
000630 SET F 00101 01001 00111 00001 ;  
000631 SET F 00101 01000 00111 10000 ;  
000632 SET F 00101 01001 00111 00000 ;  
000633 SET F 00101 01000 00111 10000 ;  
000634 SET F 00101 01001 00111 00000 ;  
000635 SET F 00101 01000 00111 10000 ;  
000636 SET F 00101 01001 00111 00000 ;  
000637 SET F 00101 01000 00011 10000 ;  
000640 SET F 00101 01001 00011 00000 ;  
000641 SET F 00101 01000 10011 10000 ;  
000642 SET F 00101 01001 11011 00001 ;  
000643 SET F 00101 01000 11011 00000 ;  
000644 SET F 00101 01001 11011 10000 ;  
000645 SET F 00101 01000 11011 10000 ;  
000646 SET F 00101 01001 11011 00000 ;  
000647 SET F 00101 01000 11011 00000 ;  
000650 SET F 00101 01001 11011 10000 ;  
000651 SET F 00101 01000 11011 10000 ;  
000652 SET F 00101 01001 11011 00000 ;  
000653 SET F 00101 01000 11011 00000 ;  
000654 SET F 00101 01001 11011 10001 ;  
000655 SET F 00101 01000 11011 10000 ;  
000656 SET F 00101 01001 11011 00000 ;  
000657 SET F 00101 01000 11011 00000 ;  
000660 SET F 00101 01001 11011 10000 ;  
000661 SET F 00101 01000 11011 10000 ;  
000662 SET F 00101 01001 11011 00000 ;  
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000677 SET F 00101 11010 11001 10000 ;  
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000757 SET F 00101 11010 11001 10000 ;  
000760 SET F 00101 01011 11011 10000 ;  
000761 SET F 00101 01010 11011 10000 ;

appendix b

|        |                                 |
|--------|---------------------------------|
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| 000763 | SET F 00101 00010 11001 10000 ; |
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| 000765 | SET F 00101 00010 11011 10000 ; |
| 000766 | SET F 00101 00011 11001 10000 ; |
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| 000770 | SET F 00101 00011 11011 10000 ; |
| 000771 | SET F 00101 00010 11011 10000 ; |
| 000772 | SET F 00101 00011 11001 10000 ; |
| 000773 | SET F 00101 00010 11001 10000 ; |
| 000774 | SET F 00101 00011 11011 10001 ; |
| 000775 | SET F 00101 00010 11011 10000 ; |
| 000776 | SET F 00101 00011 11001 10000 ; |
| 000777 | SET F 00101 00010 11001 10000 ; |
| 001000 | SET F 00101 00011 11011 10000 ; |
| 001001 | SET F 00101 00010 11011 10000 ; |
| 001002 | SET F 00101 00011 11001 10000 ; |
| 001003 | SET F 00101 00010 11001 10000 ; |
| 001004 | SET F 00101 00011 11011 10000 ; |
| 001005 | SET F 00101 00010 11011 10000 ; |
| 001006 | SET F 00101 11011 11001 10001 ; |
| 001007 | SET F 00101 11010 11001 10000 ; |
| 001010 | SET F 00101 01011 11011 10000 ; |
| 001011 | SET F 00101 01010 11011 10000 ; |
| 001012 | SET F 00101 11011 11001 10000 ; |
| 001013 | SET F 00101 11010 11001 10000 ; |
| 001014 | SET F 00101 01011 11011 10000 ; |
| 001015 | SET F 00101 01010 11011 10000 ; |
| 001016 | SET F 00101 11011 11001 10000 ; |
| 001017 | SET F 00101 11010 11001 10000 ; |
| 001020 | SET F 00101 01011 11011 10001 ; |
| 001021 | SET F 00101 01010 11011 10000 ; |
| 001022 | SET F 00101 11011 11001 10000 ; |
| 001023 | SET F 00101 11010 11001 10000 ; |
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| 001032 | SET F 00101 11011 11001 10001 ; |
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| 001035 | SET F 00101 01010 11011 10000 ; |
| 001036 | SET F 00101 11011 11001 10000 ; |
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| 001040 | SET F 00101 01011 11011 10000 ; |
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| 001042 | SET F 00101 11011 11001 10000 ; |
| 001043 | SET F 00101 11010 11001 10000 ; |
| 001044 | SET F 00101 01011 11011 10001 ; |
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| 001046 | SET F 00101 11011 11001 10000 ; |
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| 001051 | SET F 00101 01010 11011 10000 ; |
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appendix b

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appendix b

|        |                                 |
|--------|---------------------------------|
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| 001531 | SET F 00101 01010 11011 10000 ; |
| 001532 | SET F 00101 11011 11001 10001 ; |
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| 001535 | SET F 00101 01010 11011 10000 ; |
| 001536 | SET F 00101 11011 11001 10000 ; |
| 001537 | SET F 00101 11010 11001 10000 ; |
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| 001547 | SET F 00101 11010 11001 10000 ; |
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| 001556 | SET F 00101 11011 11001 10001 ; |
| 001557 | SET F 00101 11010 11001 10000 ; |
| 001560 | SET F 00101 01011 11011 10000 ; |
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| 001563 | SET F 00101 11010 11001 10000 ; |
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| 001576 | SET F 00101 11011 11001 10000 ; |
| 001577 | SET F 00101 11010 11001 10000 ; |
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| 001607 | SET F 00101 11010 11001 10000 ; |
| 001610 | SET F 00101 01011 11011 10000 ; |
| 001611 | SET F 00101 01010 11011 10000 ; |
| 001612 | SET F 00101 11011 11001 10000 ; |
| 001613 | SET F 00101 11010 11001 10000 ; |
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| 001616 | SET F 00101 11011 11001 10000 ; |

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615 0552 401

appendix b

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002255 L2 @ SET F 00101 01010 11011 10000 ;
002256
002256 IF SWITCH EQ 7 THEN GOTO LOOP ;
002260 SET START 0 ;
002261 SET MAJOR 1, L1 ;
002262 SET MINOR 1, S1, L1 ;
002263 ENABLE TEST ; REM 1, VDD = B ;
002264 FORCE VF2 V1, RNG3 ; REM VDD = A;
002264

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appendix b

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appendix b

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002667 SET F 00101 11010 11001 10000 ;  
002670 SET F 00101 01011 11011 10000 ;  
002671 SET F 00101 01010 11011 10000 ;  
002672 SET F 00101 11011 11001 10000 ;  
002673 SET F 00101 11010 11001 10000 ;  
002674 SET F 00101 01011 11011 10000 ;  
002675 SET F 00101 01010 11011 10000 ;  
002676 SET F 00101 11011 11001 10001 ;  
002677 SET F 00101 11010 11001 10000 ;  
002700 SET F 00101 01011 11011 10000 ;  
002701 SET F 00101 01010 11011 10000 ;  
002702 SET F 00101 11011 11001 10000 ;  
002703 SET F 00101 11010 11001 10000 ;  
002704 SET F 00101 01011 11011 10000 ;  
002705 SET F 00101 01010 11011 10000 ;  
002706 SET F 00101 11011 11001 10000 ;  
002707 SET F 00101 01010 11001 10000 ;  
002710 SET F 00101 01011 11011 10001 ;  
002711 SET F 00101 01010 11011 10000 ;  
002712 SET F 00101 11011 11001 10000 ;  
002713 SET F 00101 01010 11001 10000 ;  
002714 SET F 00101 01011 11011 10000 ;  
002715 SET F 00101 01010 11011 10000 ;  
002716 SET F 00101 11011 11001 10000 ;  
002717 SET F 00101 01010 11001 10000 ;  
002720 SET F 00101 01011 11011 10000 ;  
002721 SET F 00101 01010 11011 10000 ;  
002722 SET F 00101 11011 11001 10001 ;  
002723 SET F 00101 01010 11001 10000 ;  
002724 SET F 00101 01011 11011 10000 ;  
002725 SET F 00101 01010 11011 10000 ;  
002726 SET F 00101 11011 11001 10000 ;

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002727 SET F 00101 01010 11001 10000 ;
002730 SET F 00101 01011 11011 10000 ;
002731 L3 @ SET F 00101 01010 11011 10000 ;
002732 S4@ SET F 00101 11011 11001 10000 ;
002733 SET F 00101 01010 11001 10000 ;
002734 SET F 00101 01011 11011 10001 ;
002735 SET F 00101 01010 11011 10000 ;
002736 SET F 00101 11011 11001 10000 ;
002737 SET F 00101 01010 11001 10000 ;
002740 SET F 00101 01011 11011 10000 ;
002741 SET F 00101 01010 11011 10000 ;
002742 SET F 00101 11011 11001 10000 ;
002743 SET F 00101 01010 11001 10000 ;
002744 SET F 00101 01011 11011 10000 ;
002745 L4@ SET F 00101 01010 11011 10000 ;
002746 ENABLE DA,MB ;
002746 S5@ SET F 00101 00001 00110 00011 ;
002747 SET F 00101 00000 00110 00000 ;
002750 SET F 00101 00001 00110 00000 ;
002751 SET F 00101 00000 00110 00000 ;
002752 SET F 00101 00001 00110 00000 ;
002753 SET F 00101 00000 00110 00000 ;
002754 SET F 00101 00001 00110 00000 ;
002755 SET F 00101 00000 00110 00000 ;
002756 SET F 00101 00001 00110 00000 ;
002757 SET F 00101 00000 00110 00000 ;
002760 SET F 00101 00001 00110 00001 ;
002761 SET F 00101 00000 00110 00000 ;
002762 SET F 00101 00001 00110 00000 ;
002763 SET F 00101 00000 00110 00000 ;
002764 SET F 00101 00001 00110 00000 ;
002765 SET F 00101 00000 00110 00000 ;
002766 SET F 00101 00001 00010 00000 ;
002767 SET F 00101 00000 00010 00000 ;
002770 SET F 00101 00001 00010 00000 ;
002771 SET F 00101 00000 10010 00000 ;
002772 SET F 00101 00001 11000 00001 ;
002773 SET F 00101 00000 11000 00000 ;
002774 SET F 00101 00001 11000 00000 ;
002775 SET F 00101 00000 11000 00000 ;
002776 SET F 00101 00001 11000 00000 ;
002777 SET F 00101 00000 11000 00000 ;
003000 SET F 00101 00001 11000 00000 ;
003001 SET F 00101 00000 11000 00000 ;
003002 SET F 00101 00001 11000 00000 ;
003003 SET F 00101 00000 11000 00000 ;
003004 SET F 00101 00001 11000 00001 ;
003005 SET F 00101 00000 11000 00000 ;
003006 SET F 00101 00001 11000 00000 ;
003007 SET F 00101 00000 11000 00000 ;
003010 SET F 00101 00001 11000 00000 ;
003011 SET F 00101 00000 11000 00000 ;
003012 SET F 00101 00001 11000 00000 ;
003013 SET F 00101 00000 11000 00000 ;
003014 SET F 00101 00001 11000 00000 ;
003015 SET F 00101 00000 11000 00000 ;
003016 SET F 00101 00001 11000 00001 ;
003017 SET F 00101 00000 11000 00000 ;
003020 SET F 00101 00001 11000 00000 ;

```

appendix b

|        |                                 |
|--------|---------------------------------|
| 003021 | SET F 00101 00000 11000 00000 ; |
| 003022 | SET F 00101 00001 11000 00000 ; |
| 003023 | SET F 00101 00000 11000 00000 ; |
| 003024 | SET F 00101 00001 11000 00000 ; |
| 003025 | SET F 00101 00000 11000 00000 ; |
| 003026 | SET F 00101 00001 11000 00000 ; |
| 003027 | SET F 00101 00000 11000 00000 ; |
| 003030 | SET F 00101 00001 11000 00001 ; |
| 003031 | SET F 00101 00000 11000 00000 ; |
| 003032 | SET F 00101 00001 11000 00000 ; |
| 003033 | SET F 00101 00000 11000 00000 ; |
| 003034 | SET F 00101 00001 11000 00000 ; |
| 003035 | SET F 00101 00000 11000 00000 ; |
| 003036 | SET F 00101 00001 11000 00000 ; |
| 003037 | SET F 00101 00000 11000 00000 ; |
| 003040 | SET F 00101 00001 11000 00000 ; |
| 003041 | SET F 00101 00000 11000 00000 ; |
| 003042 | SET F 00101 00011 11000 00001 ; |
| 003043 | SET F 00101 00010 11000 00000 ; |
| 003044 | SET F 00101 00011 11000 00000 ; |
| 003045 | SET F 00101 00010 11000 00000 ; |
| 003046 | SET F 00101 00011 11000 00000 ; |
| 003047 | SET F 00101 00010 11000 00000 ; |
| 003050 | SET F 00101 00011 11000 00000 ; |
| 003051 | SET F 00101 00010 11000 00000 ; |
| 003052 | SET F 00101 00011 11000 00000 ; |
| 003053 | SET F 00101 00010 11000 00000 ; |
| 003054 | SET F 00101 00011 11000 00001 ; |
| 003055 | SET F 00101 00010 11000 00000 ; |
| 003056 | SET F 00101 00011 11000 00000 ; |
| 003057 | SET F 00101 00010 11000 00000 ; |
| 003060 | SET F 00101 00011 11000 00000 ; |
| 003061 | SET F 00101 00010 11000 00000 ; |
| 003062 | SET F 00101 00011 11000 00000 ; |
| 003063 | SET F 00101 00010 11000 00000 ; |
| 003064 | SET F 00101 00011 11000 00000 ; |
| 003065 | SET F 00101 00010 11000 00000 ; |
| 003066 | SET F 00101 00011 11000 00001 ; |
| 003067 | SET F 00101 00010 11000 00000 ; |
| 003070 | SET F 00101 00011 11000 00000 ; |
| 003071 | SET F 00101 00010 11000 00000 ; |
| 003072 | SET F 00101 00011 11000 00000 ; |
| 003073 | SET F 00101 00010 11000 00000 ; |
| 003074 | SET F 00101 00011 11000 00000 ; |
| 003075 | SET F 00101 00010 11000 00000 ; |
| 003076 | SET F 00101 00011 11000 00000 ; |
| 003077 | SET F 00101 00010 11000 00000 ; |
| 003100 | SET F 00101 00011 11000 00001 ; |
| 003101 | SET F 00101 00010 11000 00000 ; |
| 003102 | SET F 00101 00011 11000 00000 ; |
| 003103 | SET F 00101 00010 11000 00000 ; |
| 003104 | SET F 00101 00011 11000 00000 ; |
| 003105 | SET F 00101 00010 11000 00000 ; |
| 003106 | SET F 00101 00011 11000 00000 ; |
| 003107 | SET F 00101 00010 11000 00000 ; |
| 003110 | SET F 00101 00011 11000 00000 ; |
| 003111 | SET F 00101 00010 11000 00000 ; |
| 003112 | SET F 00000 00001 11000 00011 ; |
| 003113 | SET F 00000 00000 11000 00000 ; |



003114 SET F 00000 00001 11000 00000 ;  
003115 SET F 00000 00000 11000 00000 ;  
003116 SET F 00000 00001 11000 00000 ;  
003117 SET F 00000 00000 11000 00000 ;  
003120 SET F 00000 00001 11000 00000 ;  
003121 SET F 00000 00000 11000 00000 ;  
003122 SET F 00000 00001 11000 00000 ;  
003123 SET F 00000 00000 11000 00000 ;  
003124 SET F 00000 00001 11000 00001 ;  
003125 SET F 00000 00000 11000 00000 ;  
003126 SET F 00000 00001 11000 00000 ;  
003127 SET F 00000 00000 11000 00000 ;  
003130 SET F 00000 00001 11000 00000 ;  
003131 SET F 00000 00000 11000 00000 ;  
003132 SET F 00000 00001 11000 00000 ;  
003133 SET F 00000 00000 11000 00000 ;  
003134 SET F 00000 00001 11000 00000 ;  
003135 SET F 00000 00000 11000 00000 ;  
003136 SET F 00001 00001 11000 00001 ;  
003137 SET F 00001 00000 11000 00000 ;  
003140 SET F 00001 00001 11000 00000 ;  
003141 SET F 00001 00000 11000 00000 ;  
003142 SET F 00001 00001 11000 00000 ;  
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003144 SET F 00001 00001 11000 00000 ;  
003145 SET F 00001 00000 11000 00000 ;  
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003147 SET F 00001 00000 11000 00000 ;  
003150 SET F 00001 00001 11000 00001 ;  
003151 SET F 00001 00000 11000 00000 ;  
003152 SET F 00001 00001 11000 00000 ;  
003153 SET F 00001 00000 11000 00000 ;  
003154 SET F 00001 00001 11000 00000 ;  
003155 SET F 00001 00000 11000 00000 ;  
003156 SET F 00001 00001 11000 00000 ;  
003157 SET F 00001 00000 11000 00000 ;  
003160 SET F 00001 00001 11000 00000 ;  
003161 SET F 00001 00000 11000 00000 ;  
003162 SET F 00001 00001 11000 00001 ;  
003163 SET F 00001 00000 11000 00000 ;  
003164 SET F 00001 00001 11000 00000 ;  
003165 SET F 00001 00000 11000 00000 ;  
003166 SET F 00001 00001 11000 00000 ;  
003167 SET F 00001 00000 11000 00000 ;  
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003171 SET F 00001 00000 11000 00000 ;  
003172 SET F 00001 00001 11000 00000 ;  
003173 SET F 00001 00000 11000 00000 ;  
003174 SET F 00001 00001 11000 00001 ;  
003175 SET F 00001 00000 11000 00000 ;  
003176 SET F 00001 00001 11000 00000 ;  
003177 SET F 00001 00000 11000 00000 ;  
003200 SET F 00001 00001 11000 00000 ;  
003201 SET F 00001 00000 11000 00000 ;  
003202 SET F 00001 00001 11000 00000 ;  
003203 SET F 00001 00000 11000 00000 ;  
003204 SET F 00001 00001 11000 00000 ;  
003205 SET F 00001 00000 11000 00000 ;  
003206 SET F 00001 00001 11000 00001 ;

appendix b

|        |                                 |
|--------|---------------------------------|
| 003207 | SET F 00001 00000 11000 00000 ; |
| 003210 | SET F 00001 00001 11000 00000 ; |
| 003211 | SET F 00001 00000 11000 00000 ; |
| 003212 | SET F 00001 00001 11000 00000 ; |
| 003213 | SET F 00001 00000 11000 00000 ; |
| 003214 | SET F 00001 00001 11000 00000 ; |
| 003215 | SET F 00001 00000 11000 00000 ; |
| 003216 | SET F 00001 00001 11000 00000 ; |
| 003217 | SET F 00001 00000 11000 00000 ; |
| 003220 | SET F 00001 00001 11000 00001 ; |
| 003221 | SET F 00001 00000 11000 00000 ; |
| 003222 | SET F 00001 00001 11000 00000 ; |
| 003223 | SET F 00001 00000 11000 00000 ; |
| 003224 | SET F 00001 00001 11000 00000 ; |
| 003225 | SET F 00001 00000 11000 00000 ; |
| 003226 | SET F 00001 00001 11000 00000 ; |
| 003227 | SET F 00001 00000 11000 00000 ; |
| 003230 | SET F 00001 00001 11000 00000 ; |
| 003231 | SET F 00001 00000 11000 00000 ; |
| 003232 | SET F 00001 00001 11000 00001 ; |
| 003233 | SET F 00001 00000 11000 00000 ; |
| 003234 | SET F 00001 00001 11000 00000 ; |
| 003235 | SET F 00001 00000 11000 00000 ; |
| 003236 | SET F 00001 00001 11000 00000 ; |
| 003237 | SET F 00001 00000 11000 00000 ; |
| 003240 | SET F 00001 00001 11000 00000 ; |
| 003241 | SET F 00001 00000 11000 00000 ; |
| 003242 | SET F 00001 00001 11000 00000 ; |
| 003243 | SET F 00001 00000 11000 00000 ; |
| 003244 | SET F 00001 00001 11000 00001 ; |
| 003245 | SET F 00001 00000 11000 00000 ; |
| 003246 | SET F 00001 00001 11000 00000 ; |
| 003247 | SET F 00001 00000 11000 00000 ; |
| 003250 | SET F 00001 00001 11000 00000 ; |
| 003251 | SET F 00001 00000 11000 00000 ; |
| 003252 | SET F 00001 00001 11000 00000 ; |
| 003253 | SET F 00001 00000 11000 00000 ; |
| 003254 | SET F 00001 00001 11000 00000 ; |
| 003255 | SET F 00001 00000 11000 00000 ; |
| 003256 | SET F 00011 01001 11000 00011 ; |
| 003257 | SET F 00011 01000 11000 00000 ; |
| 003260 | SET F 00011 01001 11000 00000 ; |
| 003261 | SET F 00011 01000 11000 00000 ; |
| 003262 | SET F 00011 01001 11000 00000 ; |
| 003263 | SET F 00011 01000 11000 00000 ; |
| 003264 | SET F 00011 01001 11000 00000 ; |
| 003265 | SET F 00011 01000 11000 00000 ; |
| 003266 | SET F 00011 01001 11000 00000 ; |
| 003267 | SET F 00011 01000 11000 00000 ; |
| 003270 | SET F 00011 01001 11000 00001 ; |
| 003271 | SET F 00011 01000 11000 00000 ; |
| 003272 | SET F 00011 01001 11000 00000 ; |
| 003273 | SET F 00011 01000 11000 00000 ; |
| 003274 | SET F 00011 01001 11000 00000 ; |
| 003275 | SET F 00011 01000 11000 00000 ; |
| 003276 | SET F 00011 01001 11000 00000 ; |
| 003277 | SET F 00011 01000 11000 00000 ; |
| 003300 | SET F 00011 01001 11000 00000 ; |
| 003301 | SET F 00011 01000 11000 00000 ; |

003302 SET F 00011 00001 11000 00001 ;  
 003303 SET F 00011 00000 11000 00000 ;  
 003304 SET F 00011 00001 11000 00000 ;  
 003305 SET F 00011 00000 11000 00000 ;  
 003306 SET F 00011 00001 11000 00000 ;  
 003307 SET F 00011 00000 11000 00000 ;  
 003310 SET F 00011 00001 11000 00000 ;  
 003311 SET F 00011 00000 11000 00000 ;  
 003312 SET F 00011 00001 11000 00000 ;  
 003313 SET F 00011 00000 11000 00000 ;  
 003314 SET F 00011 00001 11000 00001 ;  
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 003316 SET F 00011 00001 11000 00000 ;  
 003317 SET F 00011 00000 11000 00000 ;  
 003320 SET F 00011 00001 11000 00000 ;  
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 003324 SET F 00011 00001 11000 00000 ;  
 003325 SET F 00011 00000 11000 00000 ;  
 003326 SET F 00011 00001 11000 00001 ;  
 003327 SET F 00011 00000 11000 00000 ;  
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 003331 SET F 00011 00000 11000 00000 ;  
 003332 SET F 00011 00001 11000 00000 ;  
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 003334 SET F 00011 00001 11000 00000 ;  
 003335 SET F 00011 00000 11000 00000 ;  
 003336 SET F 00011 00001 11000 00000 ;  
 003337 SET F 00011 00000 11000 00000 ;  
 003340 SET F 00011 00001 11000 00001 ;  
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 003342 SET F 00011 00001 11000 00000 ;  
 003343 SET F 00011 00000 11000 00000 ;  
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 003352 SET F 00011 00001 11000 00001 ;  
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 003354 SET F 00011 00001 11000 00000 ;  
 003355 SET F 00011 00000 11000 00000 ;  
 003356 SET F 00011 00001 11000 00000 ;  
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 003361 SET F 00011 00000 11000 00000 ;  
 003362 SET F 00011 00001 11000 00000 ;  
 003363 SET F 00011 00000 11000 00000 ;  
 003364 SET F 00011 00001 11000 00001 ;  
 003365 SET F 00011 00000 11000 00000 ;  
 003366 SET F 00011 00001 11000 00000 ;  
 003367 SET F 00011 00000 11000 00000 ;  
 003370 SET F 00011 00001 11000 00000 ;  
 003371 SET F 00011 00000 11000 00000 ;  
 003372 SET F 00011 00001 11000 00000 ;  
 003373 SET F 00011 00000 11000 00000 ;  
 003374 SET F 00011 00001 11000 00000 ;

appendix b

003375 SET F 00011 00000 11000 00000 ;  
003376 SET F 00011 00001 11000 00001 ;  
003377 SET F 00011 00000 11000 00000 ;  
003400 SET F 00011 00001 11000 00000 ;  
003401 SET F 00011 00000 11000 00000 ;  
003402 SET F 00011 00001 11000 00000 ;  
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003420 SET F 00011 00001 11000 00000 ;  
003421 SET F 00011 00000 11000 00000 ;  
003422 SET F 00011 00001 11000 00011 ;  
003423 SET F 00011 00000 11000 00000 ;  
003424 SET F 00011 00001 11000 00000 ;  
003425 SET F 00011 00000 11000 00000 ;  
003426 SET F 00011 00001 11000 00000 ;  
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003477 SET F 00011 00000 11000 00000 ;  
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003503 SET F 00011 00000 11000 00000 ;  
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003527 SET F 00011 00000 11000 00000 ;  
003530 SET F 00011 00001 11000 00001 ;  
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003556 SET F 00011 00001 11000 00000 ;  
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003560 SET F 00011 00001 11000 00000 ;  
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003562 SET F 00011 00001 11000 00000 ;

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003564 SET F 00011 00001 11000 00000 ;  
003565 SET F 00011 00000 11000 00000 ;  
003566 SET F 00011 00001 11000 00011 ;  
003567 SET F 00011 00000 11000 00000 ;  
003570 SET F 00011 00001 11000 00000 ;  
003571 SET F 00011 00000 11000 00000 ;  
003572 SET F 00011 00001 11000 00000 ;  
003573 SET F 00011 00000 11000 00000 ;  
003574 SET F 00011 00001 11000 00000 ;  
003575 SET F 00011 00000 11000 00000 ;  
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appendix b

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appendix b

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004232 SET F 00011 00001 11000 00000 ;
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004235 SET F 00011 00000 11000 00000 ;
004236 SET F 00011 00001 11000 00000 ;
004237 SET F 00011 00000 11000 00000 ;
004240 SET F 00011 00001 11000 00000 ;
004241 L5@ SET F 00011 00000 11000 00000 ;
004242
004242 IF SWITCH EQ 7.1 THEN GOTO LOOP ;
004244
004244 SET START 0 ;
004245 SET MAJOR 1, L3 ;
004246 SET MINOR 1, S3, L3 ;
004247 ENABLE TEST ; REM 3, VDD = A ;
004250
004250 FORCE VF2 V2, RNG3 ; REM VDD = B ;
004251 SET START 288 ;
004252 SET MAJOR 1, L4 ;
004253 SET MINOR 1, S4, L4 ;
004254 ENABLE TEST ; REM 4, VDD = B ;
004255
004255 IF OUT EQ 6 OR OUT EQ 16 THEN GOTO SKIP ;
004257 FORCE VF2 V3, RNG3 ; REM VDD = C ;
004260 SET START 300 ;
004261 SET MAJOR 1, L5 ;
004262 SET MINOR 1, S5, L5 ;
004263 ENABLE TEST ; REM 5, VDD = C ;
004264
004264 AT 0 ;
004265 INSERT HDLP3 ; REM THIRD L. M. LOAD 2000-2600 ;
004265 REM HDL MOS SCALER PATTERN FOR LOAD 3 'HDLP3' 6/21/74.
004265 CREATED BY H. S. GILL.
004265 S6@ SET F 00011 00001 11000 00000 ;
004266 SET F 00011 00000 11000 00000 ;
004267 SET F 00011 00001 11000 00000 ;
004270 SET F 00011 00000 11000 00000 ;
004271 SET F 00011 00001 11000 00000 ;
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004314 SET F 00011 00000 11000 00000 ;
004315 SET F 00011 00001 11000 00000 ;
004316 SET F 00011 00000 11000 00000 ;

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appendix b

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004322 SET F 00011 00000 11000 00000 ;  
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004542 SET F 00011 00000 11000 00000 ;  
004543 SET F 00011 00001 11000 00000 ;  
004544 SET F 00011 00000 11000 00000 ;  
004545 SET F 00011 00001 11000 00000 ;  
004546 SET F 00011 00000 11000 00000 ;  
004547 SET F 00011 00001 11000 00000 ;  
004550 SET F 00011 00000 11000 00000 ;  
004551 SET F 00011 00001 11000 00001 ;  
004552 SET F 00011 00000 11000 00000 ;  
004553 SET F 00011 00001 11000 00000 ;  
004554 SET F 00011 00000 11000 00000 ;  
004555 SET F 00011 00001 11000 00000 ;  
004556 SET F 00011 00000 11000 00000 ;  
004557 SET F 00011 00001 11000 00000 ;  
004560 SET F 00011 00000 11000 00000 ;  
004561 SET F 00011 00001 11000 00000 ;  
004562 SET F 00011 00000 11000 00000 ;  
004563 SET F 00011 00001 11000 00001 ;  
004564 SET F 00011 00000 11000 00000 ;  
004565 SET F 00011 00001 11000 00000 ;  
004566 SET F 00011 00000 11000 00000 ;  
004567 SET F 00011 00001 11000 00000 ;  
004570 SET F 00011 00000 11000 00000 ;  
004571 SET F 00011 00001 11000 00000 ;  
004572 SET F 00011 00000 11000 00000 ;  
004573 SET F 00011 00001 11000 00000 ;  
004574 SET F 00011 00000 11000 00000 ;  
004575 SET F 00011 00001 11000 00011 ;  
004576 SET F 00011 00000 11000 00000 ;  
004577 SET F 00011 00001 11000 00000 ;

615 0552 401

004600 SET F 00011 00000 11000 00000 ;  
 004601 SET F 00011 00001 11000 00000 ;  
 004602 SET F 00011 00000 11000 00000 ;  
 004603 SET F 00011 00001 11000 00000 ;  
 004604 SET F 00011 00000 11000 00000 ;  
 004605 SET F 00011 00001 11000 00000 ;  
 004606 SET F 00011 00000 11000 00000 ;  
 004607 SET F 00011 00001 11000 00001 ;  
 004610 SET F 00011 00000 11000 00000 ;  
 004611 SET F 00011 00001 11000 00000 ;  
 004612 SET F 00011 00000 11000 00000 ;  
 004613 SET F 00011 00001 11000 00000 ;  
 004614 SET F 00011 00000 11000 00000 ;  
 004615 SET F 00011 00001 11000 00000 ;  
 004616 SET F 00011 00000 11000 00000 ;  
 004617 SET F 00011 00001 11000 00000 ;  
 004620 SET F 00011 00000 11000 00000 ;  
 004621 SET F 00011 00001 11000 00001 ;  
 004622 SET F 00011 00000 11000 00000 ;  
 004623 SET F 00011 00001 11000 00000 ;  
 004624 SET F 00011 00000 11000 00000 ;  
 004625 SET F 00011 00001 11000 00000 ;  
 004626 SET F 00011 00000 11000 00000 ;  
 004627 SET F 00011 00001 11000 00000 ;  
 004630 SET F 00011 00000 11000 00000 ;  
 004631 SET F 00011 00001 11000 00000 ;  
 004632 SET F 00011 00000 11000 00000 ;  
 004633 SET F 00011 00001 11000 00001 ;  
 004634 SET F 00011 00000 11000 00000 ;  
 004635 SET F 00011 00001 11000 00000 ;  
 004636 SET F 00011 00000 11000 00000 ;  
 004637 SET F 00011 00001 11000 00000 ;  
 004640 SET F 00011 00000 11000 00000 ;  
 004641 SET F 00011 00001 11000 00000 ;  
 004642 SET F 00011 00000 11000 00000 ;  
 004643 SET F 00011 00001 11000 00000 ;  
 004644 SET F 00011 00000 11000 00000 ;  
 004645 SET F 00011 00001 11000 00001 ;  
 004646 SET F 00011 00000 11000 00000 ;  
 004647 SET F 00011 00001 11000 00000 ;  
 004650 SET F 00011 00000 11000 00000 ;  
 004651 SET F 00011 00001 11000 00000 ;  
 004652 SET F 00011 00000 11000 00000 ;  
 004653 SET F 00011 00001 11000 00000 ;  
 004654 SET F 00011 00000 11000 00000 ;  
 004655 SET F 00011 00001 11000 00000 ;  
 004656 SET F 00011 00000 11000 00000 ;  
 004657 SET F 00011 00001 11000 00001 ;  
 004660 SET F 00011 00000 11000 00000 ;  
 004661 SET F 00011 00001 11000 00000 ;  
 004662 SET F 00011 00000 11000 00000 ;  
 004663 SET F 00011 00001 11000 00000 ;  
 004664 SET F 00011 00000 11000 00000 ;  
 004665 SET F 00011 00001 11000 00000 ;  
 004666 SET F 00011 00000 11000 00000 ;  
 004667 SET F 00011 00001 11000 00000 ;  
 004670 SET F 00011 00000 11000 00000 ;  
 004671 SET F 00011 00001 11000 00001 ;  
 004672 SET F 00011 00000 11000 00000 ;

004673 SET F 00011 00001 11000 00000 ;  
004674 SET F 00011 00000 11000 00000 ;  
004675 SET F 00011 00001 11000 00000 ;  
004676 SET F 00011 00000 11000 00000 ;  
004677 SET F 00011 00001 11000 00000 ;  
004700 SET F 00011 00000 11000 00000 ;  
004701 SET F 00011 00001 11000 00000 ;  
004702 SET F 00011 00000 11000 00000 ;  
004703 SET F 00011 00001 11000 00001 ;  
004704 SET F 00011 00000 11000 00000 ;  
004705 SET F 00011 00001 11000 00000 ;  
004706 SET F 00011 00000 11000 00000 ;  
004707 SET F 00011 00001 11000 00000 ;  
004710 SET F 00011 00000 11000 00000 ;  
004711 SET F 00011 00001 11000 00000 ;  
004712 SET F 00011 00000 11000 00000 ;  
004713 SET F 00011 00001 11000 00000 ;  
004714 SET F 00011 00000 11000 00000 ;  
004715 SET F 00011 00001 11000 00001 ;  
004716 SET F 00011 00000 11000 00000 ;  
004717 SET F 00011 00001 11000 00000 ;  
004720 SET F 00011 00000 11000 00000 ;  
004721 SET F 00011 00001 11000 00000 ;  
004722 SET F 00011 00000 11000 00000 ;  
004723 SET F 00011 00001 11000 00000 ;  
004724 SET F 00011 00000 11000 00000 ;  
004725 SET F 00011 00001 11000 00000 ;  
004726 SET F 00011 00000 11000 00000 ;  
004727 SET F 00011 00001 11000 00001 ;  
004730 SET F 00011 00000 11000 00000 ;  
004731 SET F 00011 00001 11000 00000 ;  
004732 SET F 00011 00000 11000 00000 ;  
004733 SET F 00011 00001 11000 00000 ;  
004734 SET F 00011 00000 11000 00000 ;  
004735 SET F 00011 00001 11000 00000 ;  
004736 SET F 00011 00000 11000 00000 ;  
004737 SET F 00011 00001 11000 00000 ;  
004740 SET F 00011 00000 11000 00000 ;  
004741 SET F 00011 00001 11000 00011 ;  
004742 SET F 00011 00000 11000 00000 ;  
004743 SET F 00011 00001 11000 00000 ;  
004744 SET F 00011 00000 11000 00000 ;  
004745 SET F 00011 00001 11000 00000 ;  
004746 SET F 00011 00000 11000 00000 ;  
004747 SET F 00011 00001 11000 00000 ;  
004750 SET F 00011 00000 11000 00000 ;  
004751 SET F 00011 00001 11000 00000 ;  
004752 SET F 00011 00000 11000 00000 ;  
004753 SET F 00011 00001 11000 00001 ;  
004754 SET F 00011 00000 11000 00000 ;  
004755 SET F 00011 00001 11000 00000 ;  
004756 SET F 00011 00000 11000 00000 ;  
004757 SET F 00011 00001 11000 00000 ;  
004760 SET F 00011 00000 11000 00000 ;  
004761 SET F 00011 00001 11000 00000 ;  
004762 SET F 00011 00000 11000 00000 ;  
004763 SET F 00011 00001 11000 00000 ;  
004764 SET F 00011 00000 11000 00000 ;  
004765 SET F 00011 00001 11000 00001 ;



004766 SET F 00011 00000 11000 00000 ;  
004767 SET F 00011 00001 11000 00000 ;  
004770 SET F 00011 00000 11000 00000 ;  
004771 SET F 00011 00001 11000 00000 ;  
004772 SET F 00011 00000 11000 00000 ;  
004773 SET F 00011 00001 11000 00000 ;  
004774 SET F 00011 00000 11000 00000 ;  
004775 SET F 00011 00001 11000 00000 ;  
004776 SET F 00011 00000 11000 00000 ;  
004777 SET F 00011 00001 11000 00001 ;  
005000 SET F 00011 00000 11000 00000 ;  
005001 SET F 00011 00001 11000 00000 ;  
005002 SET F 00011 00000 11000 00000 ;  
005003 SET F 00011 00001 11000 00000 ;  
005004 SET F 00011 00000 11000 00000 ;  
005005 SET F 00011 00001 11000 00000 ;  
005006 SET F 00011 00000 11000 00000 ;  
005007 SET F 00011 00001 11000 00000 ;  
005010 SET F 00011 00000 11000 00000 ;  
005011 SET F 00011 00001 11000 00001 ;  
005012 SET F 00011 00000 11000 00000 ;  
005013 SET F 00011 00001 11000 00000 ;  
005014 SET F 00011 00000 11000 00000 ;  
005015 SET F 00011 00001 11010 00000 ;  
005016 SET F 00011 00000 11010 00000 ;  
005017 SET F 00011 00001 11010 00000 ;  
005020 SET F 00011 00000 11010 00000 ;  
005021 SET F 00011 00001 11010 00000 ;  
005022 SET F 00011 00000 11010 00000 ;  
005023 SET F 00011 00001 11010 00001 ;  
005024 SET F 00011 00000 11010 00000 ;  
005025 SET F 00011 00001 11010 00000 ;  
005026 SET F 00011 00000 11010 00000 ;  
005027 SET F 00011 00001 11010 00000 ;  
005030 SET F 00011 00000 11010 00000 ;  
005031 SET F 00011 00001 11010 00000 ;  
005032 SET F 00011 00000 11010 00000 ;  
005033 SET F 00011 00001 11010 00000 ;  
005034 SET F 00011 00000 11010 00000 ;  
005035 SET F 00011 00001 11010 00001 ;  
005036 SET F 00011 00000 11010 00000 ;  
005037 SET F 00011 00001 11010 00000 ;  
005040 SET F 00011 00000 11010 00000 ;  
005041 SET F 00011 00001 11010 00000 ;  
005042 SET F 00011 00000 11010 00000 ;  
005043 SET F 00011 00001 11010 00000 ;  
005044 SET F 00011 00000 11010 00000 ;  
005045 SET F 00011 00001 11010 00000 ;  
005046 SET F 00011 00000 11010 00000 ;  
005047 SET F 00011 00001 11010 00001 ;  
005050 SET F 00011 00000 11010 00000 ;  
005051 SET F 00011 00001 11010 00000 ;  
005052 SET F 00011 00000 11010 00000 ;  
005053 SET F 00011 00001 11010 00000 ;  
005054 SET F 00011 00000 11010 00000 ;  
005055 SET F 00011 00001 11010 00000 ;  
005056 SET F 00011 00000 11010 00000 ;  
005057 SET F 00011 00001 11010 00000 ;  
005060 L6@ SET F 00011 00000 11010 00000 ;

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005061     ENABLE DB, MB ;
005061     S7@ SET F 00101 00001 00110 00001 ;
005062     SET F 00101 00000 00110 00000 ;
005063     SET F 00101 00001 00110 00000 ;
005064     SET F 00101 00000 00110 00000 ;
005065     SET F 00101 00001 00110 00000 ;
005066     SET F 00101 00000 00110 00000 ;
005067     SET F 00101 00001 00110 00000 ;
005070     SET F 00101 00000 00110 00000 ;
005071     SET F 00101 00001 00110 00000 ;
005072     SET F 00101 00000 00110 00000 ;
005073     SET F 00101 00001 00110 00001 ;
005074     SET F 00101 00000 00110 00000 ;
005075     SET F 00101 00001 00110 00000 ;
005076     SET F 00101 00000 00110 00000 ;
005077     SET F 00101 00001 00110 00000 ;
005100     SET F 00101 00000 00110 00000 ;
005101     SET F 00101 00001 00010 00000 ;
005102     SET F 00101 00000 00010 00000 ;
005103     SET F 00101 00001 00010 00000 ;
005104     SET F 00101 00000 10010 00000 ;
005105     SET F 00101 00001 11000 00011 ;
005106     SET F 00101 00000 11000 00000 ;
005107     SET F 00101 00001 11000 00000 ;
005110     SET F 00101 00000 11000 00000 ;
005111     SET F 00101 00001 11000 00000 ;
005112     SET F 00101 00000 11000 00000 ;
005113     SET F 00101 00001 11000 00000 ;
005114     SET F 00101 00000 11000 00000 ;
005115     SET F 00101 00001 11000 00000 ;
005116     SET F 00101 00000 11000 00000 ;
005117     SET F 00101 00001 11000 00001 ;
005120     SET F 00101 00000 11000 00000 ;
005121     SET F 00101 00001 11000 00000 ;
005122     SET F 00101 00000 11000 00000 ;
005123     SET F 00101 00001 11000 00000 ;
005124     SET F 00101 00000 11000 00000 ;
005125     SET F 00101 00001 11000 00000 ;
005126     SET F 00101 00000 11000 00000 ;
005127     SET F 00101 00001 11000 00000 ;
005130     SET F 00101 00000 11000 00000 ;
005131     SET F 00101 00011 11000 00001 ;
005132     SET F 00101 00010 11000 00000 ;
005133     SET F 00101 00011 11000 00000 ;
005134     SET F 00101 00010 11000 00000 ;
005135     SET F 00101 00011 11000 00000 ;
005136     SET F 00101 00010 11000 00000 ;
005137     SET F 00101 00011 11000 00000 ;
005140     SET F 00101 00010 11000 00000 ;
005141     SET F 00101 00011 11000 00000 ;
005142     SET F 00101 00010 11000 00000 ;
005143     SET F 00101 00011 11000 00001 ;
005144     SET F 00101 00010 11000 00000 ;
005145     SET F 00101 00011 11000 00000 ;
005146     SET F 00101 00010 11000 00000 ;
005147     SET F 00101 00011 11000 00000 ;
005150     SET F 00101 00010 11000 00000 ;
005151     SET F 00101 00011 11000 00000 ;
005152     SET F 00101 00010 11000 00000 ;
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005153 SET F 00101 00011 11000 00000 ;
005154 SET F 00101 00010 11000 00000 ;
005155 SET F 00101 00001 11000 00001 ;
005156 SET F 00101 00000 11000 00000 ;
005157 SET F 00101 00001 11000 00000 ;
005160 SET F 00101 00000 11000 00000 ;
005161 SET F 00101 00001 11000 00000 ;
005162 SET F 00101 00000 11000 00000 ;
005163 SET F 00101 00001 11000 00000 ;
005164 SET F 00101 00000 11000 00000 ;
005165 SET F 00101 00001 11000 00000 ;
005166 SET F 00101 00000 11000 00000 ;
005167 SET F 00101 00001 11000 00001 ;
005170 SET F 00101 00000 11000 00000 ;
005171 SET F 00101 00001 11000 00000 ;
005172 SET F 00101 00000 11000 00000 ;
005173 SET F 00101 00001 11000 00000 ;
005174 SET F 00101 00000 11000 00000 ;
005175 SET F 00101 00001 11000 00000 ;
005176 SET F 00101 00000 11000 00000 ;
005177 SET F 00101 00001 11000 00000 ;
005200 SET F 00101 00000 11000 00000 ;
005201 SET F 00000 00001 11000 00001 ;
005202 SET F 00000 00000 11000 00000 ;
005203 SET F 00000 00001 11000 00000 ;
005204 SET F 00000 00000 11000 00000 ;
005205 SET F 00000 00001 11000 00000 ;
005206 SET F 00000 00000 11000 00000 ;
005207 SET F 00000 00001 11000 00000 ;
005210 SET F 00000 00000 11000 00000 ;
005211 SET F 00000 00001 11000 00000 ;
005212 SET F 00000 00000 11000 00000 ;
005213 SET F 00000 00001 11000 00001 ;
005214 SET F 00000 00000 11000 00000 ;
005215 SET F 00000 00001 11000 00000 ;
005216 SET F 00000 00000 11000 00000 ;
005217 SET F 00000 00001 11000 00000 ;
005220 SET F 00000 00000 11000 00000 ;
005221 SET F 00000 00001 11000 00000 ;
005222 SET F 00000 00000 11000 00000 ;
005223 SET F 00000 00001 11000 00000 ;
005224 SET F 00000 00000 11000 00000 ;
005225 SET F 00001 00001 11000 00001 ;
005226 SET F 00001 00000 11000 00000 ;
005227 SET F 00001 00001 11000 00000 ;
005230 SET F 00001 00000 11000 00000 ;
005231 SET F 00001 00001 11000 00000 ;
005232 SET F 00001 00000 11000 00000 ;
005233 SET F 00001 00001 11000 00000 ;
005234 SET F 00001 00000 11000 00000 ;
005235 SET F 00001 00001 11000 00000 ;
005236 SET F 00001 00000 11000 00000 ;
005237 SET F 00001 00001 11000 00001 ;
005240 SET F 00001 00000 11000 00000 ;
005241 SET F 00001 00001 11000 00000 ;
005242 SET F 00001 00000 11000 00000 ;
005243 SET F 00001 00001 11000 00000 ;
005244 SET F 00001 00000 11000 00000 ;
005245 SET F 00001 00001 11000 00000 ;

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615 0552 401

appendix b

|        |                                 |
|--------|---------------------------------|
| 005246 | SET F 00001 00000 11000 00000 ; |
| 005247 | SET F 00001 00001 11000 00000 ; |
| 005250 | SET F 00001 00000 11000 00000 ; |
| 005251 | SET F 00001 00001 11000 00011 ; |
| 005252 | SET F 00001 00000 11000 00000 ; |
| 005253 | SET F 00001 00001 11000 00000 ; |
| 005254 | SET F 00001 00000 11000 00000 ; |
| 005255 | SET F 00001 00001 11000 00000 ; |
| 005256 | SET F 00001 00000 11000 00000 ; |
| 005257 | SET F 00001 00001 11000 00000 ; |
| 005260 | SET F 00001 00000 11000 00000 ; |
| 005261 | SET F 00001 00001 11000 00000 ; |
| 005262 | SET F 00001 00000 11000 00000 ; |
| 005263 | SET F 00001 00001 11000 00001 ; |
| 005264 | SET F 00001 00000 11000 00000 ; |
| 005265 | SET F 00001 00001 11000 00000 ; |
| 005266 | SET F 00001 00000 11000 00000 ; |
| 005267 | SET F 00001 00001 11000 00000 ; |
| 005270 | SET F 00001 00000 11000 00000 ; |
| 005271 | SET F 00001 00001 11000 00000 ; |
| 005272 | SET F 00001 00000 11000 00000 ; |
| 005273 | SET F 00001 00001 11000 00000 ; |
| 005274 | SET F 00001 00000 11000 00000 ; |
| 005275 | SET F 00011 01001 11000 00001 ; |
| 005276 | SET F 00011 01000 11000 00000 ; |
| 005277 | SET F 00011 01001 11000 00000 ; |
| 005300 | SET F 00011 01000 11000 00000 ; |
| 005301 | SET F 00011 01001 11000 00000 ; |
| 005302 | SET F 00011 01000 11000 00000 ; |
| 005303 | SET F 00011 01001 11000 00000 ; |
| 005304 | SET F 00011 01000 11000 00000 ; |
| 005305 | SET F 00011 01001 11000 00000 ; |
| 005306 | SET F 00011 01000 11000 00000 ; |
| 005307 | SET F 00011 01001 11000 00001 ; |
| 005310 | SET F 00011 01000 11000 00000 ; |
| 005311 | SET F 00011 01001 11000 00000 ; |
| 005312 | SET F 00011 01000 11000 00000 ; |
| 005313 | SET F 00011 01001 11000 00000 ; |
| 005314 | SET F 00011 01000 11000 00000 ; |
| 005315 | SET F 00011 01001 11000 00000 ; |
| 005316 | SET F 00011 01000 11000 00000 ; |
| 005317 | SET F 00011 01001 11000 00000 ; |
| 005320 | SET F 00011 01000 11000 00000 ; |
| 005321 | SET F 00011 00001 11000 00001 ; |
| 005322 | SET F 00011 00000 11000 00000 ; |
| 005323 | SET F 00011 00001 11000 00000 ; |
| 005324 | SET F 00011 00000 11000 00000 ; |
| 005325 | SET F 00011 00001 11000 00000 ; |
| 005326 | SET F 00011 00000 11000 00000 ; |
| 005327 | SET F 00011 00001 11000 00000 ; |
| 005330 | SET F 00011 00000 11000 00000 ; |
| 005331 | SET F 00011 00001 11000 00000 ; |
| 005332 | SET F 00011 00000 11000 00000 ; |
| 005333 | SET F 00011 00001 11000 00001 ; |
| 005334 | SET F 00011 00000 11000 00000 ; |
| 005335 | SET F 00011 00001 11000 00000 ; |
| 005336 | SET F 00011 00000 11000 00000 ; |
| 005337 | SET F 00011 00001 11000 00000 ; |
| 005340 | SET F 00011 00000 11000 00000 ; |

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005341 SET F 00011 00001 11000 00000 ;
005342 SET F 00011 00000 11000 00000 ;
005343 SET F 00011 00001 11000 00000 ;
005344 SET F 00011 00000 11000 00000 ;
005345 SET F 00011 00001 11000 00001 ;
005346 SET F 00011 00000 11000 00000 ;
005347 SET F 00011 00001 11000 00000 ;
005350 SET F 00011 00000 11000 00000 ;
005351 SET F 00011 00001 11000 00000 ;
005352 SET F 00011 00000 11000 00000 ;
005353 SET F 00011 00001 11000 00000 ;
005354 SET F 00011 00000 11000 00000 ;
005355 SET F 00011 00001 11000 00000 ;
005356 SET F 00011 00000 11000 00000 ;
005357 SET F 00011 00001 11000 00001 ;
005360 SET F 00011 00000 11000 00000 ;
005361 SET F 00011 00001 11000 00000 ;
005362 SET F 00011 00000 11000 00000 ;
005363 SET F 00011 00001 11000 00000 ;
005364 SET F 00011 00000 11000 00000 ;
005365 SET F 00011 00001 11000 00000 ;
005366 SET F 00011 00000 11000 00000 ;
005367 SET F 00011 00001 11000 00000 ;
005370 SET F 00011 00000 11000 00000 ;
005371 SET F 00011 00001 11000 00001 ;
005372 SET F 00011 00000 11000 00000 ;
005373 SET F 00011 00001 11000 00000 ;
005374 SET F 00011 00000 11000 00000 ;
005375 SET F 00011 00001 11000 00000 ;
005376 SET F 00011 00000 11000 00000 ;
005377 SET F 00011 00001 11000 00000 ;
005400 SET F 00011 00000 11000 00000 ;
005401 SET F 00011 00001 11000 00000 ;
005402 SET F 00011 00000 11000 00000 ;
005403 SET F 00011 00001 11000 00001 ;
005404 SET F 00011 00000 11000 00000 ;
005405 SET F 00011 00001 11000 00000 ;
005406 SET F 00011 00000 11000 00000 ;
005407 SET F 00011 00001 11000 00000 ;
005410 SET F 00011 00000 11000 00000 ;
005411 SET F 00011 00001 11000 00000 ;
005412 SET F 00011 00000 11000 00000 ;
005413 SET F 00011 00001 11000 00000 ;
005414 SET F 00011 00000 11000 00000 ;
005415 L7@ SET F 00011 00001 11000 00011 ;
005416
005416 IF SWITCH EQ 7.2 THEN GOTO LOOP ;
005420
005420 SET START 0 ;
005421 SET MAJOR 1, L6 ;
005422 SET MINOR 1, S6, L6 ;
005423 ENABLE TEST ; REM 6, VDD = C ;
005424
005424 FORCE VF2 V2, RNG3 ; REM VDD = B ;
005425 SET START 320 ;
005426 SET MAJOR 1, L7 ;
005427 SET MINOR 1, S7, L7 ;
005430 ENABLE TEST ; REM 7, VDD = B ;
005431

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appendix b

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005431     SKIP:      IF COMP EQ 0 THEN GOTO VTEST1;
005432
005433     IF COMP EQ 1 THEN BEGIN
005434     OUT = 16;
005435     SET MB * (15:0) 10000 (40:0) ; REM OUT 16 - Q6 ;
005436     SET SO V9, RNG2 ;           REM GP. 2 ;
005437     SET S1 V10, RNG2 ;
005440     END ;
005440     IF COMP EQ 2 THEN BEGIN
005441     OUT = 6;
005442     SET MB * 00000 10000 (50:0) ; REM OUT 6 - Q4 ;
005443     SET SO V11, RNG3 ;           REM GP. 3 ;
005444     SET S1 V12, RNG2 ;
005445     END ;
005445     IF COMP EQ 3 THEN BEGIN
005446     OUT = 3;
005447     SET MB * 00100 (05:0) ;       REM OUT 3 - ARM ;
005450     SET SO V13, RNG3 ;           REM GP. 4 ;
005451     SET S1 V14, RNG2 ;
005452     END ;
005452     IF COMP EQ 4 THEN BEGIN
005453     OUT = 4;
005454     SET MB * 00010 (05:0) ;       REM OUT 4 - FIRE ;
005455     SET SO V15, RNG3 ;           REM GP. 5 ;
005456     SET S1 V16, RNG2 ;
005457     END ;
005457     GOTO NEXT0 ;               REM LOOP 4 TIMES BEFORE EXIT.
005460
005460     VTEST1:     WRITE "PASSED FUND. TEST. ";
005461
005461     IF SWITCH NEQ 8 THEN GOTO IDDPAT;
005463     VARD:
005463     FORCE VF2 V1, RNG3;           REM VDD (A);
005464     DCL JPIN[0]/11,12,14,3,4;;   REM SP HI, LP HI,
005465     G32 LO, ARM LO, FIRE HI;
005465     DCL JVAL[0]/-1, 2, -0, 8, -19, 0, -27, 0, -2, 0;;
005466     DCDLY = 10E-3;
005467     SET DELAY DCDLY, DC;
005470
005470     RTN3:
005470     CYCLE = CYCLE + 1;
005471     FOR I = 1 THRU JPIN[0] DO BEGIN
005472     IP = JPIN[I];
005473     IV = JVAL[I];
005474
005474     SET PMU SENSE, AUTO;
005475     SET PMU FORCEV, AUTO;
005476
005476     CALL VDATA(IV, IP);
005477     END;
005477
005477     IF CYCLE EQ 1 THEN BEGIN
005500     DCL JVAL[0]/-0, 8, -0, 5, -14, 0, -21, 0, -2, 2;;
005501     FORCE VF2 V2, RNG3;           REM VDD (B);
005502     GOTO RTN3;
005503     END;
005503

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005503
005503      IF CYCLE EQ 2 THEN BEGIN
005504      DCL JVALIGJ/=-0.7, -0.35, -10.0, -17.0, -2.3/;
005505      FORCE VF2 V3, RN3;          REM VDD (C);
005506      GOTO R1N3;
005507      END;
005507      COMP = 0;
005510
005510      REM HDL IDD TEST;
005510      IDDPAT;
005510      XPMU FIN;
005511
005511      INSERT HDLP4;          REM 246 PATTERN LOAD FOR PWR T;
005511      REM HDL MDS SCALER PATTERN FOR LOAD 4 'HDLP4' 6/28/74.
005511      BY H. S. GILL;
005511      ENABLE DA-MB ;
005511      SP1@ SET F 00001 01001 00111 00000 ;
005512      SET F 00001 01000 00111 10000 ;
005513      SET F 00001 01001 00111 00000 ;
005514      SET F 00001 01000 00111 10000 ;
005515      SET F 00001 01001 00111 00000 ;
005516      SET F 00001 01000 00111 10000 ;
005517      SET F 00001 01001 00111 00000 ;
005520      SET F 00001 01000 00111 10000 ;
005521      SET F 00001 01001 00111 00000 ;
005522      SET F 00001 01000 00111 10000 ;
005523      SET F 00001 01001 00111 00001 ;
005524      SET F 00001 01000 00111 10000 ;
005525      SET F 00001 01001 00111 00000 ;
005526      SET F 00001 01000 00111 10000 ;
005527      SET F 00001 01001 00111 00000 ;
005530      SET F 00001 01000 00111 10000 ;
005531      SET F 00001 01001 00011 00000 ;
005532      SET F 00001 01000 00011 10000 ;
005533      SET F 00001 01001 00011 00000 ;
005534      SET F 00001 01000 10011 10000 ;
005535      SET F 00001 01001 11011 00001 ;
005536      SET F 00001 01000 11011 00000 ;
005537      SET F 00001 01001 11011 10000 ;
005540      SET F 00001 01000 11011 10000 ;
005541      SET F 00001 01001 11011 00000 ;
005542      SET F 00001 01000 11011 00000 ;
005543      SET F 00001 01001 11011 10000 ;
005544      SET F 00001 01000 11011 10000 ;
005545      SET F 00001 01001 11011 00000 ;
005546      SET F 00001 01000 11011 00000 ;
005547      SET F 00001 01001 11011 10001 ;
005550      SET F 00001 01000 11011 10000 ;
005551      SET F 00001 01001 11011 00000 ;
005552      SET F 00001 01000 11011 00000 ;
005553      SET F 00001 01001 11011 10000 ;
005554      SET F 00001 01000 11011 10000 ;
005555      SET F 00001 01001 11011 00000 ;
005556      SET F 00001 01000 11011 00000 ;
005557      SET F 00001 01001 11011 10000 ;
005560      SET F 00001 01000 11011 10000 ;
005561      SET F 00001 01011 11011 00001 ;
005562      SET F 00001 01010 11011 00000 ;

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615 0552 401

appendix b

005563 SET F 00001 01011 11011 10000 ;  
005564 SET F 00001 01010 11011 10000 ;  
005565 SET F 00001 11011 11001 10000 ;  
005566 SET F 00001 11010 11001 10000 ;  
005567 SET F 00001 01011 11011 10000 ;  
005570 SET F 00001 01010 11011 10000 ;  
005571 SET F 00001 11011 11001 10000 ;  
005572 SET F 00001 11010 11001 10000 ;  
005573 SET F 00001 01011 11011 10001 ;  
005574 SET F 00001 01010 11011 10000 ;  
005575 SET F 00001 11011 11001 10000 ;  
005576 SET F 00001 11010 11001 10000 ;  
005577 SET F 00001 01011 11011 10000 ;  
005600 SET F 00001 01010 11011 10000 ;  
005601 SET F 00001 11011 11001 10000 ;  
005602 SET F 00001 11010 11001 10000 ;  
005603 SET F 00001 01011 11011 10000 ;  
005604 SET F 00001 01010 11011 10000 ;  
005605 SET F 00000 11011 11001 10001 ;  
005606 SET F 00000 01010 11001 10000 ;  
005607 SET F 00000 01011 11011 10000 ;  
005610 SET F 00000 01010 11011 10000 ;  
005611 SET F 00000 11011 11001 10000 ;  
005612 SET F 00000 01010 11001 10000 ;  
005613 SET F 00000 01011 11011 10000 ;  
005614 SET F 00000 01010 11011 10000 ;  
005615 SET F 00000 11011 11001 10000 ;  
005616 SET F 00000 01010 11001 10000 ;  
005617 SET F 00000 01011 11011 10001 ;  
005620 SET F 00000 01010 11011 10000 ;  
005621 SET F 00000 11011 11001 10000 ;  
005622 SET F 00000 01010 11001 10000 ;  
005623 SET F 00000 01011 11011 10000 ;  
005624 SET F 00000 01010 11011 10000 ;  
005625 SET F 00000 11011 11001 10000 ;  
005626 SET F 00000 01010 11001 10000 ;  
005627 SET F 00000 01011 11011 10000 ;  
005630 SET F 00000 01010 11011 10000 ;  
005631 SET F 00001 11011 11001 10001 ;  
005632 SET F 00001 11010 11001 10000 ;  
005633 SET F 00001 01011 11011 10000 ;  
005634 SET F 00001 01010 11011 10000 ;  
005635 SET F 00001 11011 11001 10000 ;  
005636 SET F 00001 11010 11001 10000 ;  
005637 SET F 00001 01011 11011 10000 ;  
005640 SET F 00001 01010 11011 10000 ;  
005641 SET F 00001 11011 11001 10000 ;  
005642 SET F 00001 11010 11001 10000 ;  
005643 SET F 00001 01011 11011 10001 ;  
005644 SET F 00001 01010 11011 10000 ;  
005645 SET F 00001 11011 11001 10000 ;  
005646 SET F 00001 11010 11001 10000 ;  
005647 SET F 00001 01011 11011 10000 ;  
005650 SET F 00001 01010 11011 10000 ;  
005651 SET F 00001 11011 11001 10000 ;  
005652 SET F 00001 11010 11001 10000 ;  
005653 SET F 00001 01011 11011 10000 ;  
005654 SET F 00001 01010 11011 10000 ;  
005655 SET F 00001 00011 11001 10011 ;

615 0552 401



005656 SET F 00001 00010 11001 10000 ;  
 005657 SET F 00001 00011 11011 10000 ;  
 005660 SET F 00001 00010 11011 10000 ;  
 005661 SET F 00001 00011 11001 10000 ;  
 005662 SET F 00001 00010 11001 10000 ;  
 005663 SET F 00001 00011 11011 10000 ;  
 005664 SET F 00001 00010 11011 10000 ;  
 005665 SET F 00001 00011 11001 10000 ;  
 005666 SET F 00001 00010 11001 10000 ;  
 005667 SET F 00001 00011 11011 10001 ;  
 005670 SET F 00001 00010 11011 10000 ;  
 005671 SET F 00001 00011 11001 10000 ;  
 005672 SET F 00001 00010 11001 10000 ;  
 005673 SET F 00001 00011 11011 10000 ;  
 005674 SET F 00001 00010 11011 10000 ;  
 005675 SET F 00001 00011 11001 10000 ;  
 005676 SET F 00001 00010 11001 10000 ;  
 005677 SET F 00001 00011 11011 10000 ;  
 005700 SET F 00001 00010 11011 10000 ;  
 005701 SET F 00001 11011 11001 10001 ;  
 005702 SET F 00001 11010 11001 10000 ;  
 005703 SET F 00001 01011 11011 10000 ;  
 005704 SET F 00001 01010 11011 10000 ;  
 005705 SET F 00001 11011 11001 10000 ;  
 005706 SET F 00001 11010 11001 10000 ;  
 005707 SET F 00001 01011 11011 10000 ;  
 005710 SET F 00001 01010 11011 10000 ;  
 005711 SET F 00001 11011 11001 10000 ;  
 005712 SET F 00001 11010 11001 10000 ;  
 005713 SET F 00001 01011 11011 10001 ;  
 005714 SET F 00001 01010 11011 10000 ;  
 005715 SET F 00001 11011 11001 10000 ;  
 005716 SET F 00001 11010 11001 10000 ;  
 005717 SET F 00001 01011 11011 10000 ;  
 005720 SET F 00001 01010 11011 10000 ;  
 005721 SET F 00001 11011 11001 10000 ;  
 005722 SET F 00001 11010 11001 10000 ;  
 005723 SET F 00001 01011 11011 10000 ;  
 005724 SET F 00001 01010 11011 10000 ;  
 005725 SET F 00001 11011 11001 10001 ;  
 005726 SET F 00001 11010 11001 10000 ;  
 005727 SET F 00001 01011 11011 10000 ;  
 005730 SET F 00001 01010 11011 10000 ;  
 005731 SET F 00001 11011 11001 10000 ;  
 005732 SET F 00001 11010 11001 10000 ;  
 005733 SET F 00001 01011 11011 10000 ;  
 005734 SET F 00001 01010 11011 10000 ;  
 005735 SET F 00001 11011 11001 10000 ;  
 005736 SET F 00001 11010 11001 10000 ;  
 005737 SET F 00001 01011 11011 10001 ;  
 005740 SET F 00001 01010 11011 10000 ;  
 005741 SET F 00001 11011 11001 10000 ;  
 005742 SET F 00001 11010 11001 10000 ;  
 005743 SET F 00001 01011 11011 10000 ;  
 005744 SET F 00001 01010 11011 10000 ;  
 005745 SET F 00001 11011 11001 10000 ;  
 005746 SET F 00001 11010 11001 10000 ;  
 005747 SET F 00001 01011 11011 10000 ;  
 005750 SET F 00001 01010 11011 10000 ;

appendix b

005751 SET F 00101 01001 00111 00001 ;  
005752 SET F 00101 01000 00111 10000 ;  
005753 SET F 00101 01001 00111 00000 ;  
005754 SET F 00101 01000 00111 10000 ;  
005755 SET F 00101 01001 00111 00000 ;  
005756 SET F 00101 01000 00111 10000 ;  
005757 SET F 00101 01001 00111 00000 ;  
005760 SET F 00101 01000 00111 10000 ;  
005761 SET F 00101 01001 00111 00000 ;  
005762 SET F 00101 01000 00111 10000 ;  
005763 SET F 00101 01001 00111 00001 ;  
005764 SET F 00101 01000 00111 10000 ;  
005765 SET F 00101 01001 00111 00000 ;  
005766 SET F 00101 01000 00111 10000 ;  
005767 SET F 00101 01001 00111 00000 ;  
005770 SET F 00101 01000 00111 10000 ;  
005771 SET F 00101 01001 00111 00000 ;  
005772 SET F 00101 01000 00111 10000 ;  
005773 SET F 00101 01001 00111 00000 ;  
005774 SET F 00101 01000 00111 10000 ;  
005775 SET F 00101 01001 00111 00001 ;  
005776 SET F 00101 01000 00111 10000 ;  
005777 SET F 00101 01001 00111 00000 ;  
006000 SET F 00101 01000 00111 10000 ;  
006001 SET F 00101 01001 00111 00000 ;  
006002 SET F 00101 01000 00111 10000 ;  
006003 SET F 00101 01001 00111 00000 ;  
006004 SET F 00101 01000 00111 10000 ;  
006005 SET F 00101 01001 00111 00000 ;  
006006 SET F 00101 01000 00111 10000 ;  
006007 SET F 00101 01001 00111 00001 ;  
006010 SET F 00101 01000 00111 10000 ;  
006011 SET F 00101 01001 00111 00000 ;  
006012 SET F 00101 01000 00111 10000 ;  
006013 SET F 00101 01001 00111 00000 ;  
006014 SET F 00101 01000 00111 10000 ;  
006015 SET F 00101 01001 00111 00000 ;  
006016 SET F 00101 01000 00111 10000 ;  
006017 SET F 00101 01001 00111 00000 ;  
006020 SET F 00101 01000 00111 10000 ;  
006021 SET F 00101 01001 00111 00011 ;  
006022 SET F 00101 01000 00111 10000 ;  
006023 SET F 00101 01001 00111 00000 ;  
006024 SET F 00101 01000 00111 10000 ;  
006025 SET F 00101 01001 00111 00000 ;  
006026 SET F 00101 01000 00111 10000 ;  
006027 SET F 00101 01001 00111 00000 ;  
006030 SET F 00101 01000 00111 10000 ;  
006031 SET F 00101 01001 00111 00000 ;  
006032 SET F 00101 01000 00111 10000 ;  
006033 SET F 00101 01001 00111 00001 ;  
006034 SET F 00101 01000 00111 10000 ;  
006035 SET F 00101 01001 00111 00000 ;  
006036 SET F 00101 01000 00111 10000 ;  
006037 SET F 00101 01001 00111 00000 ;  
006040 SET F 00101 01000 00111 10000 ;  
006041 SET F 00101 01001 00111 00000 ;  
006042 SET F 00101 01000 00011 10000 ;  
006043 SET F 00101 01001 00011 00000 ;

615 0552 401

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006044 SET F 00101 01000 10011 10000 ;
006045 SET F 00101 01001 11011 00001 ;
006046 SET F 00101 01000 11011 00000 ;
006047 SET F 00101 01001 11011 10000 ;
006050 SET F 00101 01000 11011 10000 ;
006051 SET F 00101 01001 11011 00000 ;
006052 SET F 00101 01000 11011 00000 ;
006053 SET F 00101 01001 11011 10000 ;
006054 SET F 00101 01000 11011 10000 ;
006055 SET F 00101 01001 11011 00000 ;
006056 SET F 00101 01000 11011 00000 ;
006057 SET F 00101 01001 11011 10001 ;
006060 SET F 00101 01000 11011 10000 ;
006061 SET F 00101 01001 11011 00000 ;
006062 SET F 00101 01000 11011 00000 ;
006063 SET F 00101 01001 11011 10000 ;
006064 SET F 00101 01000 11011 10000 ;
006065 SET F 00101 01001 11011 00000 ;
006066 SET F 00101 01000 11011 00000 ;
006067 SET F 00101 01001 11011 10000 ;
006070 SET F 00101 01000 11011 10000 ;
006071 SET F 00101 01011 11011 00001 ;
006072 SET F 00101 01010 11011 00000 ;
006073 SET F 00101 01011 11011 10000 ;
006074 SET F 00101 01010 11011 10000 ;
006075 SET F 00101 11011 11001 10000 ;
006076 SP2@ SET F 00101 11010 11001 10000 ;
006077
006077 SET DA * 1100101111 0010101000;
006100 SET MB * (60:0);
006101 FORCE VF2 V1, RNG3; REM VDD (A);
006102 SET MAJOR 1, SP2;
006103 SET MINOR 1, SP1, SP2;
006104 ENABLE TEST ; REM TEST AT PATT. 246;
006105
006105 IF SWITCH NEQ 8 THEN GOTO VPASS;
006107 VTEST2: FORCE VF2 V1, RNG3; REM VDD (A);
006110 DCL KVAL[3]/0, = 6, = 3%; REM 06 HI, 04 HI, ARM HI;
006111 DCL KVAL[3]/0, = 72, = 28%;
006112 RTN4: CYCLE = CYCLE + 1;
006113 FOR I = 1 THRU KPINC[0] DO BEGIN
006114 IP = KPINC[I];
006115 IV = KVAL[I];
006116
006116 SET PMU SENSE, AUTO;
006117 SET PMU FORCEV, AUTO;
006120
006120 CALL VDATA(IV, IP);
006121 END;
006121
006121 IF CYCLE EQ 4 THEN BEGIN
006122 DCL KVAL[3]/0, = 76, = 24%;
006123 FORCE VF2 V2, RNG3; REM VDD (B);
006124 GOTO RTN4;
006125 END;
006125
006125 IF CYCLE EQ 5 THEN BEGIN
006126 DCL KVAL[3]/0, = 84, = 28%;

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615 0552 401

appendix b

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006127          FORCE VF2 V3, RNG3;          REM VDD (C);
006130          GOTO RTN4;
006131          END;
006131
006131          SUBR VDATA(IV, IP);
006131          FORCE PMU IV;
006132          ENABLE RELAY;
006133          CPMU FIN IP;
006134          DISABLE RELAY;
006135
006135          SET PMU SENSE, AUTO;
006136          SET PMU FORCE1, AUTO;
006137
006137          FORCE PMU 0;
006140          FORCE DELAY; MEASURE VALUE;
006142
006142          ENABLE RELAY;
006143          XPMU FIN;
006144          DISABLE RELAY;
006145          END;
006145
006145          VPASS:  IF SWITCH EQ 1 OR SWITCH EQ 5 THEN GOTO DCTEST;
006147                  IF SWITCH LT 3 OR SWITCH EQ 8 THEN ON DCT, DCPWR;
006151                  XPMU FIN;
006152                  FORCE VF2 V1, RNG3;
006153                  SET PMU SENSE, RNG3;
006154                  ENABLE DCT1 GT IAMIN AMPS;
006155                  ENABLE DCT0 LT IAMAX AMPS;
006156
006156                  FORCE VOLTAGE -27.6 VOLTS, RNG3;
006157                  ENABLE RELAY;
006160                  CPMU FIN 1;
006161                  DISABLE RELAY;
006162                  FORCE DELAY; MEASURE VALUE;
006164                  ENABLE RELAY;
006165                  XPMU FIN;
006166                  DISABLE RELAY;
006167                  FORCE VOLTAGE 0.0, RNG3;
006170
006170                  WRITE 'PASSED DC POWER TEST.';
006171                  DISABLE DCT1;
006172                  DISABLE DCT0;
006173
006173                  IF SWITCH NEQ 8 THEN GOTO DCTEST;
006175          VTEST3:  FORCE VF2 V1, RNG3;          REM VDD (A);
006176                  SET F 00001 01001 00111 00000;
006177                  ENABLE TEST;
006200                  SET PMU SENSE, RNG3;
006201                  FORCE CURRENT 0, RNG0;
006202                  DEL LPINC&J/11, 12, 13, 14, 6, 4//  REM SP LO, LP LO, Q6 LO,
006203                                                              G32 HI, Q4 LO, FIRE LO;
006203
006203          RTN5:  CYCLE = CYCLE + 1;
006204                  FOR I = 1 THRU LPINC0J DO BEGIN
006205                      CPMU FIN LPINC1J;
006206                      FORCE DELAY;
006207                      MEASURE VALUE;
006210                  END;
006210

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615 0552 401

appendix b

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006210      IF CYCLE EQ 7 THEN BEGIN
006211      FORCE VF2 V2, RNG3,
006212      END,
006212
006212      IF CYCLE EQ 7 THEN GOTO RTNS;
006214      IF CYCLE EQ 8 THEN BEGIN
006215      FORCE VF2 V3, RNG3,
006216      END,
006216
006216      IF CYCLE EQ 8 THEN GOTO RTNS;
006220
006220      CYCLE = 0;
006221
006221      DCTEST:
006221      REM   BREAKDOWN VOLTAGE TEST, DATA INPUTS, PP. A2.1;
006221      XPMU PIN;
006222      FORCE VF2 V3, RNG3;
006223      IF SWITCH EQ 5 THEN GOTO FPASS;
006225      IF SWITCH LT 3 OR SWITCH EQ 8 THEN ON DCT, DCBVOL;
006227      FORCE CURRENT 0, RNG1;
006230      SET DA * (60:1);
006231      SET MA * (60:0);
006232      DCDLY = 10E-3;
006233      SET DELAY DCDLY, DC;
006234      DCL MPIND(1/5, 7, 9, 10, 13, 15);
006235      SET PMU SENSE, RNG3;
006236      VERK = -28.0;
006237      ENABLE DCTO GT VERK VOLTS;
006240      FOR I = 1 THRU MPIND(1) DO BEGIN
006241      CPMU PIN MPIND(I);
006242      FORCE CURRENT -10E-6, RNG1 ;
006243      FORCE DELAY;
006244      MEASURE VALUE;
006245      FORCE CURRENT 0.0, RNG1;
006246      IF BPASS EQ 1 THEN
006247      WRITE ' ', MPIND(I), VALUE;
006250      END;
006250      XPMU PIN ;
006251      SET R (9:1);
006252      ENABLE DCTO GT 6 VOLTS ;
006253      CPMU PIN 9;
006254      FORCE CURRENT 3E-3, RNG2;
006255      FORCE DELAY;
006256      MEASURE VALUE;
006257      FORCE CURRENT 0, RNG2;
006260      IF BPASS EQ 1 THEN
006261      WRITE ' ', 9, VALUE;
006262      XPMU PIN ;
006263      SET R (60:0);
006264      WRITE 'PASSED DC BREAKDOWN VOL. TEST. ' ;
006265      IF SWITCH LT 3 OR SWITCH EQ 8 THEN GOTO FPASS
006267      ELSE GOTO DCTEST ;
006270
006270      LOOP:
006270      REM   SCOPE LOOP ;
006270      IF SWITCH EQ 7 THEN BEGIN
006271      SET MAJOR 1, L2 ;
006272      SET MINOR 1, S1, L2 ;
006273      END ;
006273      IF SWITCH EQ 7.1 THEN BEGIN

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615 0552 401

appendix b

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006274      SET MAJOR 1, L3 ;
006275      SET MINOR 1, S3, L3 ;
006276      END ;
006276      IF SWITCH EQ 7.2 THEN BEGIN
006277      SET MAJOR 1, L7 ;
006300      SET MINOR 1, S6, L7 ;
006301      END ;
006301      X = 0 ;
006302      AT X ; SET FII59J1 ;
006304      ENABLE TEST CONTIN ;
006305      PAUSE 1 ;
006306      ENABLE TEST MOMENT ;
006307      GOTO ABORT ;
006310
006310      CTEST:
006310      REM CONTINUITY TEST ;
006310      DCL IPINC15J/1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16/ ;
006311      DCL SPINC14J/2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16/ ;
006312      CONN DPS1 8, 60 ; REM GND, ESSW ;
006313
006313      INSERT FINISH;
006313      REM *****
006313      FINISH 7/30/75.
006313      ***** ;
006313      REM CONTINUITY TEST;
006313      DCDLY = 1E-3;
006314      ICONT = -10E-3;
006315      IOPEN = 2E-6;
006316      ISHORT = 1E-3;
006317      VFC = -1.5;
006320      XPMU PIN;
006321      SET DELAY DCDLY, DC;
006322
006322      FORCE E0 0.0, RNG2; FORCE E1 0.0, RNG2;
006324      FORCE E00 0.0, RNG2; FORCE EB1 0.0, RNG2;
006326      FORCE EA0 0.0, RNG2; FORCE EA1 0.0, RNG2;
006330      FORCE EC0 0.0, RNG2; FORCE EC1 0.0, RNG2;
006332      FORCE VF1 0.0, RNG2;
006333      FORCE VF2 0.0, RNG2;
006334      FORCE VF3 0.0, RNG2;
006335      XCON VF2; XCON VF3;
006337      SET R * (60:0);
006340      SET S * (60:0);
006341      SET DA * (60:1);
006342      SET MA * (60:0);
006343      ENABLE DA, MA;
006343      SET F * (60:0);
006344      ENABLE TEST;
006345
006345      IF SWITCH EQ 1 OR SWITCH EQ 5 THEN BEGIN
006346      FORCE CURRENT 0.0, RNG3;
006347      ENABLE RELAY;
006350      CPMU PIN 60;
006351      DISABLE RELAY;
006352      SET CLAMP NEG 4.5;
006353      SET FMU SENSE, RNG2;
006354      FORCE CURRENT ICONT, RNG3;
006355      FORCE DELAY; MEASURE VALUE;
006357      IF VALUE LT VFC THEN VFC = VALUE;

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615 0552 401

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006361          FORCE CURRENT 0.0, RNG3;
006362          WRITE /* VFC = %, VFC;
006363          END;
006364          XPMU FIN;
006365          SET CLAMP OFF;
006365  OP:
006366          IF SWITCH LT 3 THEN ON DCT, OPEN;
006367          SET DELAY 0.0, DC;
006370          FORCE VF1 VFC, RNG2;
006371          FORCE VOLTAGE 0.0, RNG2;
006372          SET PMU SENSE, RNG1;
006373          ENABLE DCTO LT IOFEN;
006374          DCDLY = SE-3;
006375
006375          FOR I = 1 THRU IPINCOJ DO BEGIN
006376          CPMU FIN IPINIJ;
006377          SET DELAY DCDLY, DC;
006400          FORCE DELAY, MEASURE VALUE;
006402          SET DELAY 0.0, DC;
006403          END;
006403          FORCE CURRENT 0;
006404          XPMU FIN;
006405
006405  SH:
006406          IF SWITCH LT 3 THEN ON DCT, SHORT;
006407          VFC = -0.2;
006410          DCDLY = 10E-3;
006411          SET DELAY 0.0, DC;
006412          FORCE E0 VFC, RNG2;
006413          FORCE VF1 VFC, RNG2;
006414          FORCE VOLTAGE 0.0, RNG1;
006415          SET PMU SENSE, RNG2;
006416          ENABLE DCTO GT ISHORT;
006417
006417          FOR I = 1 THRU SPINCOJ DO BEGIN
006420          CPMU FIN SPINIJ;
006421          SET DELAY DCDLY, DC;
006422          FORCE DELAY, MEASURE VALUE;
006424          SET DELAY 0.0, DC;
006425          END;
006425          FORCE CURRENT 0;
006426          XPMU FIN;
006427
006427          GLOB5 = 0; GLOB6 = 0;
006431          WRITE /* COMPLETED CONTINUITY TEST.*/;
006432          IF SWITCH LT 3 THEN GOTO FCFAIL
006434          ELSE GOTO ABORT;
006435
006435  OPEN:          GLOB5 = GLOB5 + 1B;          REM 1ST 4 BITS;
006436          GOTO RTN2;
006437  SHORT:        GLOB5 = GLOB5 + 20B;          REM 2ND 4 BITS;
006440
006440  RTN2:          GLOB5 = GLOB5 + 400B;          REM 3RD 4 BITS;
006441          IF (GLOB5 AND 4000B) NEQ 0 THEN BEGIN
006442          FOR I = 1 THRU 8 DO BEGIN
006443          WRITE (EIR) 0;
006444          WRITE (EIR) 1777B;
006445          END;

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appendix b

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006445      OPP = GLOB5 AND 17B;
006446      SHP = (GLOB5 AND 0360B)/10000B;
006447      IF GLOB3 EQ 0 THEN BEGIN
006450      WRITE (LP) ' ';
006451      WRITE (LP) '* OPENS = ', OPP, '* SHORTS = ', SHP;
006452      END;
006453      IF GLOB3 EQ 1 THEN BEGIN
006454      WRITE (TTP) ' ';
006455      WRITE (TTP) '* OPENS = ', OPP, '* SHORTS = ', SHP;
006456      END;
006457      GLOB2 = GLOB2 - 1;
006458      GLOB5 = 0;
006459      IF SWITCH EQ 1 THEN GLOB13 = GLOB13 + 1;
006460      WRITE (EIR) 0B;
006461      GOTO ENND;
006462      END;
006463      GOTO CTFAIL ;
006464
006464      FPASS:  GLOB7 = GLOB7 + 1;          REM TEST PASS COUNTER;
006465      GLOB5 = 0;
006466      IF (GLOB1 AND 77B) LT 77B THEN GLOB1 = GLOB1+1;
006467      WRITE '* PASSED TEST. *';
006468      WRITE (EIR) BIN[1];
006469      GOTO ABORT;
006470
006471      CTFAIL: IF (SWITCH GT 2 AND SWITCH LT 3) AND GLOB6 EQ 0
006472      THEN BEGIN
006473      WRITE (EIR) BIN[2];
006474      GLOB6 = 1;
006475      GLOB2 = GLOB2 - 1;
006476      GOTO ENND;
006477      END;
006500      GLOB6 = 0;
006501      GLOB8 = GLOB8 + 1;          REM CONT. FAILURE COUNTER;
006502      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006503      WRITE (EIR) BIN[3];
006504      WRITE '* FAILED CONT. TEST. *';
006505      GOTO ABORT;
006506
006507      FCFAIL: GLOB9 = GLOB9 + 1;          REM FUNC. FAILURE COUNTER;
006508      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006509      WRITE (EIR) BIN[4];
006510      WRITE '* FAILED FUNC. TEST. *';
006511      GOTO ABORT;
006512
006513      DCLEAK: GLOB10 = GLOB10 + 1;       REM LEAKAGE TEST FAIL COUNTER;
006514      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006515      WRITE (EIR) BIN[5];
006516      WRITE '* FAILED DC LEAKAGE TEST. *';
006517      GOTO ABORT;
006518
006519      DCBVOL: GLOB11 = GLOB11 + 1;       REM B. VOL FAIL COUNTER;
006520      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006521      WRITE (EIR) BIN[6];
006522      WRITE '* FAILED DC BREAKDOWN VOL. TEST. *';
006523      GOTO ABORT;
006524
006525      TRIPFL: GLOB12 = GLOB12 + 1;       REM TRIP FAILURE COUNTER;
006526      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
```



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006534      WRITE (EIR) BIN(7);
006535      WRITE (* FAILED CURRENT TRIP TEST. *);
006536      GOTO ABORT;
006537
006537      DCVOL:      GLOB19 = GLOB19 + 1;          REM DC VOL FAILURE COUNTER;
006540      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006542      WRITE (EIR) BIN(5);
006543      WRITE (* FAILED DC VOL TEST. *);
006544      GOTO ABORT;
006545
006545      DCVOH:      GLOB17 = GLOB17 + 1;          REM DC VOH FAILURE COUNTER;
006546      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006550      WRITE (EIR) BIN(5);
006551      WRITE (* FAILED DC VOH TEST. *);
006552      GOTO ABORT;
006553
006553      DCIIL:      GLOB18 = GLOB18 + 1;          REM DC IIL FAILURE COUNTER;
006554      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006556      WRITE (EIR) BIN(5);
006557      WRITE (* FAILED DC IIL TEST. *);
006560      GOTO ABORT;
006561
006561      DCLKIN:     GLOB14 = GLOB14 + 1;          REM DC INPUT LEAK FAIL. COUNT;
006562      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006564      WRITE (EIR) BIN(5);
006565      WRITE (* FAILED DC INPUT LEAKAGE TEST. *);
006566      GOTO ABORT;
006567
006567      DCLKOT:     GLOB15 = GLOB15 + 1;          REM DC OUTPUT LEAK FAIL COUNT;
006570      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006572      WRITE (EIR) BIN(5);
006573      WRITE (* FAILED DC OUTPUT LEAKAGE TEST. *);
006574      GOTO ABORT;
006575
006575      DCPWR:      GLOB16 = GLOB16 + 1;          REM DC PWR FAIL COUNTER;
006576      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006600      WRITE (EIR) BIN(5);
006601      WRITE (* FAILED DC PWR TEST. *);
006602      GOTO ABORT;
006603
006603      DCRESI:     GLOB17 = GLOB17 + 1;          REM DC PULL UP RES. FAIL COUNTER;
006604      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006606      WRITE (EIR) BIN(5);
006607      WRITE (* FAILED DC INPUT PULL UP RES. TEST. *);
006610      GOTO ABORT;
006611
006611      DCRES:      GLOB17 = GLOB17 + 1;          REM DC RES IMP. FAILURE COUNTER;
006612      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006614      WRITE (EIR) BIN(5);
006615      WRITE (* FAILED LINK/VER RES IMPEDANCE TEST. *);
006616      GOTO ABORT;
006617
006617      DCRDFF:     GLOB18 = GLOB18 + 1;          REM DC ROFF FAILURE COUNTER;
006617      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006620      WRITE (EIR) BIN(5);
006622      ON DCT, DUMF;
006623      ENABLE DCTO LT 50E-3;
006624

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615 0552 401

appendix b

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006625          SET PMU SENSE, RNG3;
006626          FORCE VOLTAGE 0.0, RNG1;
006627          CFMU PIN 59; MEASURE VALUE;
006631 DUMF:
006631          WRITE (TTP) 'FAILED DC ROFF TEST.';
006632          GOTO ABORT;
006633
006633 WAFSMRY: WRITE (TTP) '*****';
006634          WRITE (TTP) '*-----OPERATOR NOTE-----*';
006635          WRITE (TTP) '*TYPE THE WAFER LOT # TESTED*';
006636          WRITE (TTP) '*****';
006637
006637          READ (TTK) V[15];          REM WAFER LOT # ;
006640
006640          WRITE (TTP) '*****';
006641          WRITE (TTP) '*-----OPERATOR NOTE-----*';
006642          WRITE (TTP) '*TYPE THE NUMBER OF WAFERS TESTED IN THE LOT*';
006643          WRITE (TTP) '*****';
006644
006644          READ (TTK) V[16];          REM # OF WAFERS TESTED;
006645          V[17] = V[16] * V[5];      REM TOTAL # OF DIE;
006646          V[18] = V[17] - GLOB7;    REM TOT. BAD DIE;
006647          V[19] = GLOB7/V[17] * 100; REM WAFER YIELD;
006650
006650          WRITE (LP) '*****';
006651          WRITE (LP) '* SUMMARY OF WAFER TESTING. *';
006652          WRITE (LP) '*****';
006653          WRITE (LP) '* CHIP CPN ',/35/V[1],/39/'-',/40/V[2],/44/'-',
006654          /44/V[3];
006654          WRITE (LP) '* WAFER LOT # ',/35/V[15];
006655          WRITE (LP) '* WAFERS TESTED AT ',/35/V[4],/40/'C';
006656          WRITE (LP) '* NUMBER OF WAFERS TESTED ',/35/V[16];
006657          WRITE (LP) ' ';
006660          WRITE (LP) '* TOTAL # OF DIE ',/35/GLOB2;
006661          WRITE (LP) '* TOTAL # OF COMP. DIE ',/35/V[17];
006662          WRITE (LP) '* TOTAL GOOD DIE ',/35/GLOB7;
006663          WRITE (LP) ' ';
006664          WRITE (LP) '* # OF DIE FAILED CONT. TEST ',/35/GLOB8;
006665          WRITE (LP) '* # OF DIE FAILED FUNC. TEST ',/35/GLOB9;
006666          WRITE (LP) '* # OF DIE FAILED L/V IMP TEST ',/35/GLOB17;
006667          WRITE (LP) '* WAFER YIELD ',/35/V[19];
006670          WRITE (LP) '* *****';
006671
006671          GLOB1=0; GLOB2=0; GLOB3=0; GLOB4=0; GLOB5=0; GLOB6=0;
006677          GLOB7=0; GLOB8=0; GLOB9=0; GLOB10=0; GLOB11=0; GLOB12=0;
006705          GLOB14=0; GLOB15=0; GLOB16=0; GLOB17=0; GLOB18=0; GLOB19=0
006713          ;
006713          SWITCH = 1;
006714          GOTO ABORT;
006715
006715 PKGSMRY: WRITE (TTP) '*****';
006716          WRITE (TTP) '*-----OPERATOR NOTE-----*';
006717          WRITE (TTP) '*TYPE THE PACKAGE LOT # TESTED*';
006720          WRITE (TTP) '*****';
006721
006721          READ (TTK) V[20];          REM PKG LOT #;
006722          V[21] = GLOB7/GLOB2 * 100; REM PKG YIELD;
006723          V[22] = GLOB2 - GLOB7;    REM PKGS FAILED;
006724

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006724 WRITE (LP) /*****/
006725 WRITE (LP) * SUMMARY OF PACKAGE TESTING. */
006726 WRITE (LP) /*****/
006727 WRITE (LP) * PACKAGE CPN /, /35/VE11, /39/--, /40/VE61, /44/--,
006730 /44/VE71,
006730 WRITE (LP) * PACKAGE LOT # /, /35/VE201,
006731 WRITE (LP) * PACKAGES TESTED AT /, /35/GLOB19, /40/0/,
006732 WRITE (LP) /, /,
006733 WRITE (LP) * TOTAL # OF PACKAGES TESTED /, /35/GLOB2,
006734 WRITE (LP) * # OF PACKAGES PASSED /, /35/GLOB7,
006735 WRITE (LP) * # OF PACKAGES FAILED /, /35/VE221,
006736 WRITE (LP) /, /,
006737 WRITE (LP) * FAILED CONT. TEST /, /35/GLOB8,
006740 WRITE (LP) * FAILED FUND. TEST /, /35/GLOB9,
006741 WRITE (LP) * FAILED LEAKAGE TEST /, /35/GLOB10,
006742 WRITE (LP) * FAILED VOL. BREAKDOWN TEST /, /35/GLOB11,
006743 WRITE (LP) * FAILED IN LEAKAGE TEST /, /35/GLOB14,
006744 WRITE (LP) * FAILED OUT LEAKAGE TEST /, /35/GLOB15,
006745 WRITE (LP) * FAILED POWER TEST /, /35/GLOB16,
006746 WRITE (LP) * FAILED DL IMP. TEST /, /35/GLOB17,
006747 WRITE (LP) * FAILED DC ROFF TEST /, /35/GLOB18,
006750 WRITE (LP) /, /,
006751 WRITE (LP) * PACKAGE YIELD /, /35/VE211,
006752 WRITE (LP) * *****
006753
006753 GLOB1=0, GLOB2=0, GLOB3=0, GLOB4=0, GLOB5=0, GLOB6=0,
006761 GLOB7=0, GLOB8=0, GLOB9=0, GLOB10=0, GLOB11=0, GLOB12=0,
006767 GLOB14=0, GLOB15=0, GLOB16=0, GLOB17=0, GLOB18=0, GLOB19=0
006775 ;
006775 SWITCH = 0;
006776
006776 ABORT: FORCE CURRENT 0.0;
006777 XPMU FIN;
007000 FORCE RESET;
007001 GOTO ENND;
007002
007002 ENND : END ;
0000B COMPILATION ERRS

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**APPENDIX C**  
**PARAMETRIC RESULTS OF FIRST ARTICLE QUALITY ACCEPTANCE TESTING**

IDD (TERMINAL 1), 1A - SUBGROUP A2, A3, A4  
SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

DATE 7-24-75

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7527C                 | 4        |        |       |       |        |       |       | -7.21  | -4.89 | -4.15 |
| 7527A                 | 11       |        |       |       |        |       |       | -6.94  | -4.67 | -3.98 |
| 7528E                 | 16       |        |       |       |        |       |       | -7.26  | -4.91 | -4.19 |
| 7528G                 | 21       |        |       |       |        |       |       | -7.50  | -5.15 | -4.36 |
| 7527B                 | 22       |        |       |       |        |       |       | -6.70  | -4.53 | -3.82 |
| 7528J                 | 28       |        |       |       |        |       |       | -7.11  | -4.80 | -4.06 |
| 7528H                 | 48       |        |       |       |        |       |       | -7.17  | -4.84 | -4.07 |
| 7528K                 | 50       |        |       |       |        |       |       | -7.29  | -4.94 | -4.19 |
| 7527A                 | 51       |        |       |       |        |       |       | -8.15  | -5.58 | -4.75 |
| 7527K                 | 53       |        |       |       |        |       |       | -6.57  | -4.43 | -3.75 |
| 7527E                 | 58       |        |       |       |        |       |       | -7.41  | -5.03 | -4.31 |
| 7527J                 | 66       |        |       |       |        |       |       | -6.68  | -4.51 | -3.80 |
| 7527H                 | 70       |        |       |       |        |       |       | -7.95  | -5.37 | -4.54 |
| 7527H                 | 74       |        |       |       |        |       |       | -8.11  | -5.51 | -4.67 |
| 7527E                 | 76       |        |       |       |        |       |       | -6.59  | -4.47 | -3.78 |
| 7525B                 | 81       |        |       |       |        |       |       | -7.26  | -4.95 | -4.19 |
| 7527C                 | 87       |        |       |       |        |       |       | -6.59  | -4.68 | -3.98 |
| 7529K                 | 89       |        |       |       |        |       |       | -7.16  | -4.87 | -4.15 |
| 7529B                 | 94       |        |       |       |        |       |       | -7.25  | -4.94 | -4.16 |
| 7529H                 | 98       |        |       |       |        |       |       | -6.98  | -4.74 | -3.99 |
| 7529D                 | 110      |        |       |       |        |       |       | -7.66  | -5.14 | -4.37 |
| 7529N                 | 114      |        |       |       |        |       |       | -7.34  | -4.99 | -4.20 |
| 7529L                 | 118      |        |       |       |        |       |       | -6.79  | -4.61 | -3.89 |
| 7529B                 | 122      |        |       |       |        |       |       | -7.34  | -5.01 | -4.23 |
| 7529A                 | 133      |        |       |       |        |       |       | -6.90  | -4.66 | -3.90 |

TEST LIMITS = 2.0mA to 10.0mA

ARM (TERMINAL 3) - SUBGROUP A2, A3, A4  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-24-76  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |        | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7527C                 | 4        | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7527A                 | 11       | -17.00 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.60 | -27.56 | -27.56 |
| 7528E                 | 16       | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7528G                 | 21       | -17.00 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7527B                 | 22       | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.64 | -27.56 | -27.56 |
| 7528J                 | 28       | -17.00 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7528H                 | 48       | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7528K                 | 50       | -17.00 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.60 | -27.56 | -27.56 |
| 7527A                 | 51       | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7527K                 | 53       | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.64 | -27.56 | -27.56 |
| 7527E                 | 58       | -17.00 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7527J                 | 66       | -17.00 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.60 | -27.56 | -27.56 |
| 7527H                 | 70       | -17.00 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7527H                 | 74       | -17.00 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7527E                 | 76       | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.60 | -27.56 | -27.56 |
| 7525B                 | 81       | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7527C                 | 87       | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.64 | -27.56 | -27.56 |
| 7529K                 | 89       | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.60 | -27.56 | -27.56 |
| 7529B                 | 94       | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.64 | -27.56 | -27.56 |
| 7529H                 | 98       | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.64 | -27.56 | -27.56 |
| 7529D                 | 110      | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7529N                 | 114      | -17.00 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.60 | -27.56 | -27.56 |
| 7529L                 | 118      | -17.04 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7529B                 | 112      | -17.00 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |
| 7529A                 | 133      | -17.00 | -17.00 | -17.00 | -21.56 | -21.48 | -21.48 | -27.56 | -27.56 | -27.56 |

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) - SUBGROUP A2,A3,A4  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7527C                 | 4        | -.12   | -.28  | -.32  | -.16   | -.24  | -.28  | -.20   | -.28  | -.32  |
| 7527A                 | 11       | -.12   | -.28  | -.32  | -.16   | -.28  | -.28  | -.20   | -.28  | -.28  |
| 7528E                 | 16       | -.12   | -.24  | -.28  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7528G                 | 21       | -.12   | -.28  | -.32  | -.16   | -.28  | -.32  | -.20   | -.28  | -.32  |
| 7527B                 | 22       | -.12   | -.28  | -.36  | -.20   | -.28  | -.32  | -.24   | -.28  | -.32  |
| 7528J                 | 28       | -.12   | -.28  | -.32  | -.16   | -.28  | -.28  | -.20   | -.28  | -.32  |
| 7528H                 | 48       | -.12   | -.28  | -.36  | -.20   | -.28  | -.32  | -.20   | -.28  | -.32  |
| 7528K                 | 50       | -.12   | -.28  | -.32  | -.16   | -.28  | -.32  | -.20   | -.28  | -.32  |
| 7527A                 | 51       | -.12   | -.28  | -.32  | -.16   | -.28  | -.28  | -.20   | -.28  | -.32  |
| 7527K                 | 53       | -.12   | -.28  | -.36  | -.16   | -.28  | -.32  | -.20   | -.28  | -.32  |
| 7527E                 | 58       | -.12   | -.28  | -.32  | -.16   | -.28  | -.28  | -.20   | -.28  | -.28  |
| 7527J                 | 66       | -.12   | -.32  | -.36  | -.20   | -.28  | -.36  | -.24   | -.28  | -.36  |
| 7527H                 | 70       | -.12   | -.28  | -.36  | -.20   | -.28  | -.32  | -.20   | -.28  | -.32  |
| 7527H                 | 74       | -.12   | -.28  | -.32  | -.16   | -.28  | -.28  | -.20   | -.28  | -.28  |
| 7527E                 | 76       | -.16   | -.32  | -.36  | -.20   | -.28  | -.36  | -.24   | -.28  | -.36  |
| 7527B                 | 81       | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  | -.20   | -.28  | -.32  |
| 7527C                 | 87       | -.12   | -.28  | -.32  | -.16   | -.24  | -.28  | -.24   | -.28  | -.32  |
| 7529K                 | 89       | -.12   | -.28  | -.32  | -.16   | -.28  | -.28  | -.20   | -.28  | -.28  |
| 7529B                 | 94       | -.12   | -.24  | -.28  | -.16   | -.24  | -.28  | -.20   | -.28  | -.28  |
| 7529H                 | 98       | -.12   | -.28  | -.36  | -.16   | -.28  | -.32  | -.20   | -.28  | -.32  |
| REJECT                | 7529D    | 110    | -.16  | -.28  | -17.00 | -.20  | -.28  | -21.44 | -.20  | -.28  |
|                       | 7529N    | 114    | -.12  | -.28  | -.28   | -.16  | -.28  | -.28   | -.20  | -.28  |
|                       | 7529L    | 118    | -.12  | -.32  | -.40   | -.20  | -.28  | -.36   | -.24  | -.36  |
|                       | 7529B    | 112    | -.12  | -.28  | -.32   | -.16  | -.28  | -.32   | -.20  | -.28  |
|                       | 7529A    | 133    | -.12  | -.28  | -.32   | -.16  | -.28  | -.32   | -.20  | -.28  |

TEST LIMITS = 0.0V to -2.0V

FIRE (TERMINAL 4) - SUBGROUP A2,A3,A4  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-24-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |        | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7527C                 | 4        | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527A                 | 11       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7528E                 | 16       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7528G                 | 21       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527B                 | 22       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7528J                 | 28       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7528H                 | 48       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7528K                 | 50       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -17.60 | -27.60 | -27.60 |
| 7527A                 | 51       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -17.60 | -27.60 | -27.60 |
| 7527K                 | 53       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527E                 | 58       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527J                 | 66       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527H                 | 70       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527H                 | 74       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527E                 | 76       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7525B                 | 81       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527C                 | 87       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529K                 | 89       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529B                 | 94       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529H                 | 98       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529D                 | 110      | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529N                 | 114      | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -17.60 |
| 7529L                 | 118      | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529B                 | 112      | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529A                 | 133      | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |

TEST LIMITS = -16.9V to VDD



FIRE (TERMINAL 4) - SUBGROUP A2,A3,A4  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7527C                 | 4        | -1.36  | -2.56 | -2.96 | -1.72  | -2.52 | -2.88 | -2.16  | -2.72 | -3.04 |
| 7527A                 | 11       | -1.36  | -2.64 | -3.00 | -1.72  | -2.60 | -2.92 | -2.20  | -2.80 | -3.08 |
| 7528E                 | 16       | -1.28  | -2.32 | -2.64 | -1.68  | -2.40 | -2.68 | -2.12  | -2.64 | -2.92 |
| 7528G                 | 21       | -1.36  | -2.48 | -2.84 | -1.72  | -2.48 | -2.84 | -2.20  | -2.72 | -3.04 |
| 7527B                 | 22       | -1.40  | -2.92 | -3.40 | -1.76  | -2.72 | -3.12 | -2.24  | -2.84 | -3.16 |
| 7528J                 | 28       | -1.36  | -2.52 | -2.92 | -1.68  | -2.48 | -2.84 | -2.16  | -2.68 | -3.04 |
| 7528H                 | 48       | -1.36  | -2.76 | -3.16 | -1.72  | -2.64 | -3.00 | -2.20  | -2.76 | -3.12 |
| 7528K                 | 50       | -1.40  | -2.68 | -3.04 | -1.72  | -2.64 | -2.96 | -2.20  | -2.80 | -3.12 |
| 7527A                 | 51       | -1.36  | -2.52 | -2.88 | -1.72  | -2.52 | -2.84 | -2.16  | -2.72 | -3.04 |
| 7527K                 | 53       | -1.40  | -2.84 | -3.28 | -1.72  | -2.68 | -3.00 | -2.24  | -2.80 | -3.12 |
| 7527E                 | 58       | -1.40  | -2.56 | -2.96 | -1.72  | -2.52 | -2.88 | -2.20  | -2.76 | -3.04 |
| 7527J                 | 66       | -1.40  | -3.04 | -3.56 | -1.80  | -2.80 | -3.20 | -2.32  | -2.92 | -3.28 |
| 7527H                 | 70       | -1.40  | -2.76 | -3.16 | -1.72  | -2.68 | -3.00 | -2.20  | -2.80 | -3.12 |
| 7527H                 | 74       | -1.32  | -2.52 | -2.92 | -1.68  | -2.48 | -2.84 | -2.16  | -2.68 | -3.00 |
| 7527E                 | 76       | -1.44  | -2.88 | -3.32 | -1.84  | -2.80 | -3.16 | -2.36  | -2.96 | -3.32 |
| 7525B                 | 81       | -1.28  | -2.36 | -2.68 | -1.68  | -2.40 | -2.76 | -2.16  | -2.68 | -2.96 |
| 7527C                 | 87       | -1.40  | -2.56 | -2.96 | -1.76  | -2.52 | -2.88 | -2.24  | -2.76 | -3.08 |
| 7529K                 | 89       | -1.36  | -2.48 | -2.84 | -1.72  | -2.48 | -2.80 | -2.20  | -2.72 | -3.00 |
| 7529B                 | 94       | -1.32  | -2.36 | -2.76 | -1.68  | -2.40 | -2.76 | -2.16  | -2.68 | -3.00 |
| 7529H                 | 98       | -1.40  | -2.96 | -3.48 | -1.76  | -2.76 | -3.12 | -2.32  | -2.84 | -3.24 |
| 7529D                 | 110      | -1.36  | -2.48 | -2.80 | -1.72  | -2.48 | -2.80 | -2.20  | -2.72 | -3.00 |
| 7529N                 | 114      | -1.36  | -2.48 | -2.84 | -1.72  | -2.48 | -2.84 | -2.16  | -2.72 | -3.04 |
| 7529L                 | 118      | -1.48  | -3.08 | -3.60 | -1.84  | -2.84 | -3.28 | -2.36  | -3.00 | -3.36 |
| 7529B                 | 112      | -1.40  | -2.68 | -3.12 | -1.72  | -2.64 | -3.00 | -2.24  | -2.80 | -3.16 |
| 7529A                 | 133      | -1.36  | -2.52 | -2.96 | -1.68  | -2.52 | -2.88 | -2.16  | -2.72 | -3.08 |

TEST LIMITS = 0.0V to -10.0V

AD-A038 513

ROCKWELL INTERNATIONAL NEWPORT BEACH CALIF COLLINS C--ETC F/G 9/5  
FABRICATION AND TESTING OF MOS SCALER/LOGIC AND OVERHEAD SAFETY--ETC(U)  
MAY 76 G L DONALDSON DAAG39-75-C-0146

UNCLASSIFIED

765-5608-001

HDL-CR-76-146-1

NL

2 OF 3  
AD  
A038 513



G14 (TERMINAL 5), V5M--SUBGROUP A2,A3,A4  
 INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

DATE 7-24-75

| Device Identification |          | 10 $\mu$ A |       |       |        |        |        |       |       |       |
|-----------------------|----------|------------|-------|-------|--------|--------|--------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C  | +25°C  | +75°C  | -55°C | +25°C | +75°C |
| 7527C                 | 4        |            |       |       | -36.52 | -35.28 | -34.24 |       |       |       |
| 7527A                 | 11       |            |       |       | -33.04 | -32.28 | -31.72 |       |       |       |
| 7528E                 | 16       |            |       |       | -31.36 | -30.52 | -29.88 |       |       |       |
| 7528G                 | 21       |            |       |       | -35.20 | -34.24 | -33.44 |       |       |       |
| 7527B                 | 22       |            |       |       | -32.48 | -32.00 | -31.52 |       |       |       |
| 7528J                 | 28       |            |       |       | -35.52 | -34.48 | -33.60 |       |       |       |
| 7528H                 | 48       |            |       |       | -32.24 | -31.44 | -30.68 |       |       |       |
| 7528K                 | 50       |            |       |       | -35.40 | -34.28 | -33.40 |       |       |       |
| 7527A                 | 51       |            |       |       | -35.20 | -34.36 | -33.68 |       |       |       |
| 7527K                 | 53       |            |       |       | -32.48 | -31.80 | -31.28 |       |       |       |
| 7527E                 | 58       |            |       |       | -34.72 | -33.76 | -33.08 |       |       |       |
| 7527J                 | 66       |            |       |       | -38.52 | -37.56 | -36.72 |       |       |       |
| 7527H                 | 70       |            |       |       | -33.56 | -32.84 | -32.20 |       |       |       |
| 7527H                 | 74       |            |       |       | -34.40 | -33.56 | -32.88 |       |       |       |
| 7527E                 | 76       |            |       |       | -34.40 | -33.64 | -33.00 |       |       |       |
| 7525B                 | 81       |            |       |       | -32.64 | -31.88 | -31.28 |       |       |       |
| 7527C                 | 87       |            |       |       | -35.84 | -34.80 | -33.80 |       |       |       |
| 7529K                 | 89       |            |       |       | -36.04 | -34.80 | -33.84 |       |       |       |
| 7529B                 | 94       |            |       |       | -34.88 | -33.92 | -33.12 |       |       |       |
| 7529H                 | 98       |            |       |       | -33.72 | -32.64 | -31.76 |       |       |       |
| 7529D                 | 110      |            |       |       | -36.20 | -35.20 | -34.52 |       |       |       |
| 7529N                 | 114      |            |       |       | -34.72 | -33.72 | -32.92 |       |       |       |
| 7529L                 | 118      |            |       |       | -32.60 | -31.76 | -31.00 |       |       |       |
| 7529B                 | 122      |            |       |       | -34.68 | -33.72 | -32.92 |       |       |       |
| 7529A                 | 133      |            |       |       | -35.28 | -34.16 | -33.24 |       |       |       |

TEST LIMITS = -28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUP A2 ,A3,A4  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|-------|-------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7527C                 | 4        |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527A                 | 11       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7528E                 | 16       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7528G                 | 21       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527B                 | 22       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7528J                 | 28       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7528H                 | 48       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7528K                 | 50       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527A                 | 51       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527K                 | 53       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527E                 | 58       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527J                 | 66       |        |       |       | -21.56 | -21.52 | -21.56 | -27.60 | -27.60 | -27.60 |
| 7527H                 | 70       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527H                 | 74       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527E                 | 76       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7525B                 | 81       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7527C                 | 87       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529K                 | 89       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529B                 | 94       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529H                 | 98       |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529D                 | 110      |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529N                 | 114      |        |       |       | -21.56 | -21.52 | -21.56 | -27.60 | -27.60 | -27.60 |
| 7529L                 | 118      |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529B                 | 112      |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529A                 | 133      |        |       |       | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |

TEST LIMITS = -21.4V to VDD

Q4 (TERMINAL 6)- SUBGROUP A2,A3,A4  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |        | -27.6V |       |        |
|-----------------------|----------|--------|-------|-------|--------|-------|--------|--------|-------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C  | -55°C  | +25°C | +75°C  |
| 7527C                 | 4        |        |       |       | -.40   | -.72  | -.88   | -.44   | -.72  | -.84   |
| 7527A                 | 11       |        |       |       | -.40   | -.76  | -.88   | -.48   | -.76  | -.88   |
| 7528E                 | 16       |        |       |       | -.36   | -.68  | -.80   | -.44   | -.68  | -.76   |
| 7528G                 | 21       |        |       |       | -.40   | -.72  | -.84   | -.44   | -.72  | -.84   |
| 7527B                 | 22       |        |       |       | -.40   | -.76  | -.92   | -.48   | -.76  | -.88   |
| 7528J                 | 28       |        |       |       | -.40   | -.76  | -.88   | -.44   | -.72  | -.84   |
| 7528H                 | 48       |        |       |       | -.44   | -.76  | -.92   | -.48   | -.76  | -.88   |
| 7528K                 | 50       |        |       |       | -.40   | -.80  | -.92   | -.48   | -.76  | -.88   |
| 7527A                 | 51       |        |       |       | -.44   | -.84  | -1.00  | -.56   | -.80  | -.92   |
| 7527K                 | 53       |        |       |       | -.40   | -.80  | -.92   | -.48   | -.76  | -.88   |
| 7527E                 | 58       |        |       |       | -.40   | -.72  | -.84   | -.44   | -.72  | -.80   |
| 7527J                 | 66       |        |       |       | -.40   | -.80  | -.96   | -.48   | -.76  | -.88   |
| 7527H                 | 70       |        |       |       | -.40   | -.76  | -.88   | -.48   | -.72  | -.88   |
| 7527H                 | 74       |        |       |       | -.40   | -.76  | -.88   | -.48   | -.72  | -.84   |
| 7527E                 | 76       |        |       |       | -.44   | -.84  | -1.00  | -.52   | -.76  | -.92   |
| 7525B                 | 81       |        |       |       | -.40   | -.76  | -.88   | -.48   | -.76  | -.88   |
| 7527C                 | 87       |        |       |       | -.40   | -.76  | -.88   | -.48   | -.72  | -.88   |
| 7529K                 | 89       |        |       |       | -.40   | -.72  | -.88   | -.44   | -.72  | -.84   |
| 7529B                 | 94       |        |       |       | -.40   | -.76  | -.88   | -.48   | -.72  | -.88   |
| 7529H                 | 98       |        |       |       | -.40   | -.76  | -.92   | -.48   | -.72  | -.88   |
| REJECT 7529D          | 110      |        |       |       | -.44   | -.72  | -21.52 | -.44   | -.72  | -27.60 |
| 7529N                 | 114      |        |       |       | -.40   | -.76  | -.88   | -.44   | -.72  | -.88   |
| 7529L                 | 118      |        |       |       | -.44   | -.88  | -1.04  | -.56   | -.80  | -.96   |
| 7529B                 | 112      |        |       |       | -.40   | -.76  | -.88   | -.48   | -.72  | -.88   |
| 7529A                 | 133      |        |       |       | -.40   | -.76  | -.88   | -.48   | -.72  | -.88   |

TEST LIMITS = 0.0V TO -2.6V

M11 (TERMINAL 7), V7M - SUBGROUP A2,A3,A4 COLLINS DIVISIONS DATE 7-24-75  
 SCALER INPUT(NEGATIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7527C                 | 4        |                  |                  |                  | -37.08           | -35.80           | -34.76           |                  |                  |                  |
| 7527A                 | 11       |                  |                  |                  | -31.92           | -31.28           | -30.72           |                  |                  |                  |
| 7528E                 | 16       |                  |                  |                  | -32.28           | -32.44           | -30.68           |                  |                  |                  |
| 7528G                 | 21       |                  |                  |                  | -34.32           | -33.48           | -32.72           |                  |                  |                  |
| 7527B                 | 22       |                  |                  |                  | -32.80           | -32.08           | -31.48           |                  |                  |                  |
| 7528J                 | 28       |                  |                  |                  | -35.64           | -34.56           | -33.68           |                  |                  |                  |
| 7528H                 | 48       |                  |                  |                  | -33.40           | -32.44           | -31.64           |                  |                  |                  |
| 7528K                 | 50       |                  |                  |                  | -35.08           | -34.00           | -33.12           |                  |                  |                  |
| 7527A                 | 51       |                  |                  |                  | -32.92           | -32.24           | -31.64           |                  |                  |                  |
| 7527K                 | 53       |                  |                  |                  | -33.88           | -33.08           | -32.48           |                  |                  |                  |
| 7527E                 | 58       |                  |                  |                  | -34.84           | -33.88           | -33.20           |                  |                  |                  |
| 7527J                 | 66       |                  |                  |                  | -36.24           | -35.48           | -34.80           |                  |                  |                  |
| 7527H                 | 70       |                  |                  |                  | -33.68           | -32.92           | -32.28           |                  |                  |                  |
| 7527H                 | 74       |                  |                  |                  | -35.64           | -34.76           | -34.00           |                  |                  |                  |
| 7527E                 | 76       |                  |                  |                  | -34.12           | -33.36           | -32.72           |                  |                  |                  |
| 7525B                 | 81       |                  |                  |                  | -34.04           | -33.16           | -32.52           |                  |                  |                  |
| 7527C                 | 87       |                  |                  |                  | -36.80           | -35.64           | -34.64           |                  |                  |                  |
| 7529K                 | 89       |                  |                  |                  | -37.32           | -35.88           | -34.88           |                  |                  |                  |
| 7529B                 | 94       |                  |                  |                  | -33.88           | -32.96           | -32.20           |                  |                  |                  |
| 7529H                 | 98       |                  |                  |                  | -33.72           | -32.60           | -31.68           |                  |                  |                  |
| 7529D                 | 110      |                  |                  |                  | -34.04           | -33.12           | -32.44           |                  |                  |                  |
| 7529N                 | 114      |                  |                  |                  | -32.76           | -31.84           | -31.08           |                  |                  |                  |
| 7529L                 | 118      |                  |                  |                  | -32.84           | -31.60           | -30.88           |                  |                  |                  |
| 7529B                 | 122      |                  |                  |                  | -35.84           | -34.80           | -33.96           |                  |                  |                  |
| 7529A                 | 133      |                  |                  |                  | -35.64           | -34.48           | -33.52           |                  |                  |                  |

TEST LIMITS = -28.0V Minimum

MON (TERMINAL 9), V9M -SUBGROUP A2 ,A3,A4  
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

DATE 7-24-75

| Device Identification |          | 10 $\mu$ A |       |       |        |        |        |       |       |       |
|-----------------------|----------|------------|-------|-------|--------|--------|--------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C  | +25°C  | +75°C  | -55°C | +25°C | +75°C |
| 7527C                 | 4        |            |       |       | -35.20 | -34.00 | -32.92 |       |       |       |
| 7527A                 | 11       |            |       |       | -35.60 | -34.68 | -33.88 |       |       |       |
| 7528E                 | 16       |            |       |       | -31.32 | -30.44 | -29.72 |       |       |       |
| 7528G                 | 21       |            |       |       | -35.44 | -34.44 | -33.52 |       |       |       |
| 7527B                 | 22       |            |       |       | -35.00 | -34.04 | -33.24 |       |       |       |
| 7528J                 | 28       |            |       |       | -34.36 | -33.32 | -32.40 |       |       |       |
| 7528H                 | 48       |            |       |       | -35.00 | -33.96 | -33.04 |       |       |       |
| 7528K                 | 50       |            |       |       | -35.44 | -34.24 | -33.28 |       |       |       |
| 7527A                 | 51       |            |       |       | -32.40 | -31.72 | -31.08 |       |       |       |
| 7527K                 | 53       |            |       |       | -33.88 | -33.08 | -32.44 |       |       |       |
| 7527E                 | 58       |            |       |       | -36.56 | -35.56 | -34.76 |       |       |       |
| 7527J                 | 66       |            |       |       | -38.96 | -38.00 | -37.08 |       |       |       |
| 7527H                 | 70       |            |       |       | -36.56 | -35.60 | -34.76 |       |       |       |
| 7527H                 | 74       |            |       |       | -32.56 | -31.80 | -31.08 |       |       |       |
| 7527E                 | 76       |            |       |       | -34.56 | -33.72 | -32.92 |       |       |       |
| 7525B                 | 81       |            |       |       | -31.92 | -31.24 | -30.64 |       |       |       |
| 7527C                 | 87       |            |       |       | -36.80 | -35.64 | -34.56 |       |       |       |
| 7529K                 | 89       |            |       |       | -34.68 | -33.48 | -32.48 |       |       |       |
| 7529B                 | 94       |            |       |       | -34.48 | -33.52 | -32.60 |       |       |       |
| 7529H                 | 98       |            |       |       | -34.32 | -33.20 | -32.24 |       |       |       |
| 7529D                 | 110      |            |       |       | -33.08 | -32.20 | -31.52 |       |       |       |
| 7529N                 | 114      |            |       |       | -33.40 | -32.40 | -31.48 |       |       |       |
| 7529L                 | 118      |            |       |       | -32.00 | -31.12 | -30.24 |       |       |       |
| 7529B                 | 122      |            |       |       | -33.36 | -32.48 | -31.64 |       |       |       |
| 7529A                 | 133      |            |       |       | -35.64 | -34.48 | -33.48 |       |       |       |

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9), V9P - SUBGROUP A2, A3, A4 COLLINS DIVISIONS DATE 7-24-75  
 SCALAR INPUT (POSITIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 3mA   |       |       |       |       |       |       |       |       |
|-----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C |
| 7527C                 | 4        |       |       |       | +1.00 | + .92 | + .88 |       |       |       |
| 7527A                 | 11       |       |       |       | +1.04 | +1.04 | +1.04 |       |       |       |
| 7528E                 | 16       |       |       |       | +1.08 | +1.08 | +1.08 |       |       |       |
| 7528G                 | 21       |       |       |       | +1.08 | +1.08 | +1.08 |       |       |       |
| 7527B                 | 22       |       |       |       | +1.04 | +1.04 | +1.04 |       |       |       |
| 7528J                 | 28       |       |       |       | +1.08 | +1.12 | +1.12 |       |       |       |
| 7528H                 | 48       |       |       |       | +1.04 | +1.04 | +1.00 |       |       |       |
| 7528K                 | 50       |       |       |       | +1.04 | +1.04 | +1.04 |       |       |       |
| 7527A                 | 51       |       |       |       | +1.08 | +1.08 | +1.08 |       |       |       |
| 7527K                 | 53       |       |       |       | +1.08 | +1.08 | +1.08 |       |       |       |
| 7527E                 | 58       |       |       |       | +1.08 | +1.12 | +1.12 |       |       |       |
| 7527J                 | 66       |       |       |       | +1.12 | +1.16 | +1.16 |       |       |       |
| 7527H                 | 70       |       |       |       | +1.04 | +1.04 | +1.04 |       |       |       |
| 7527H                 | 74       |       |       |       | +1.16 | +1.28 | +1.32 |       |       |       |
| 7527E                 | 76       |       |       |       | +1.08 | +1.08 | +1.08 |       |       |       |
| 7525B                 | 81       |       |       |       | +1.04 | +1.04 | +1.04 |       |       |       |
| 7527C                 | 87       |       |       |       | +1.00 | + .92 | + .92 |       |       |       |
| 7529K                 | 89       |       |       |       | +1.20 | +1.32 | +1.36 |       |       |       |
| 7529B                 | 94       |       |       |       | +1.28 | +1.44 | +1.52 |       |       |       |
| 7529H                 | 98       |       |       |       | +1.04 | +1.04 | +1.04 |       |       |       |
| 7529D                 | 110      |       |       |       | +1.08 | +1.08 | +1.08 |       |       |       |
| 7529N                 | 114      |       |       |       | +1.20 | +1.36 | +1.44 |       |       |       |
| 7529L                 | 118      |       |       |       | +1.08 | +1.08 | +1.08 |       |       |       |
| 7529B                 | 122      |       |       |       | +1.36 | +1.52 | +1.68 |       |       |       |
| 7529A                 | 133      |       |       |       | +1.08 | +1.08 | +1.08 |       |       |       |

TEST LIMITS = 0.0V to +6.0V



CL (TERMINAL 10), V10M SUBGROUP A2,A3,A4  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 7-24-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |        |        |        |       |       |       |
|-----------------------|----------|------------|-------|-------|--------|--------|--------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C  | +25°C  | +75°C  | -55°C | +25°C | +75°C |
| 7527C                 | 4        |            |       |       | -33.72 | -32.60 | -31.64 |       |       |       |
| 7527A                 | 11       |            |       |       | -35.92 | -34.96 | -34.24 |       |       |       |
| 7528E                 | 16       |            |       |       | -30.88 | -30.04 | -29.40 |       |       |       |
| 7528G                 | 21       |            |       |       | -32.40 | -31.56 | -30.84 |       |       |       |
| 7527B                 | 22       |            |       |       | -35.02 | -34.02 | -34.12 |       |       |       |
| 7528J                 | 28       |            |       |       | -34.56 | -33.56 | -32.76 |       |       |       |
| 7528H                 | 48       |            |       |       | -33.24 | -32.40 | -31.64 |       |       |       |
| 7528K                 | 50       |            |       |       | -35.64 | -34.48 | -33.56 |       |       |       |
| 7527A                 | 51       |            |       |       | -32.60 | -32.00 | -31.44 |       |       |       |
| 7527K                 | 53       |            |       |       | -34.40 | -33.60 | -32.96 |       |       |       |
| 7527E                 | 58       |            |       |       | -36.24 | -35.20 | -34.48 |       |       |       |
| 7527J                 | 66       |            |       |       | -38.04 | -37.20 | -36.40 |       |       |       |
| 7527H                 | 70       |            |       |       | -35.16 | -34.36 | -33.68 |       |       |       |
| 7527H                 | 74       |            |       |       | -37.12 | -36.12 | -35.36 |       |       |       |
| 7527E                 | 76       |            |       |       | -33.40 | -32.64 | -31.96 |       |       |       |
| 7525B                 | 81       |            |       |       | -34.96 | -34.00 | -33.36 |       |       |       |
| 7527C                 | 87       |            |       |       | -37.20 | -36.04 | -35.00 |       |       |       |
| 7529K                 | 89       |            |       |       | -36.60 | -35.32 | -34.28 |       |       |       |
| 7529B                 | 94       |            |       |       | -33.60 | -32.72 | -31.92 |       |       |       |
| 7529H                 | 98       |            |       |       | -34.68 | -33.56 | -32.64 |       |       |       |
| 7529D                 | 110      |            |       |       | -32.92 | -32.16 | -31.56 |       |       |       |
| 7529N                 | 114      |            |       |       | -33.32 | -32.40 | -31.60 |       |       |       |
| 7529L                 | 118      |            |       |       | -32.96 | -32.04 | -31.28 |       |       |       |
| 7529B                 | 122      |            |       |       | -31.68 | -30.84 | -30.12 |       |       |       |
| 7529A                 | 133      |            |       |       | -35.72 | -34.52 | -33.60 |       |       |       |

TEST LIMITS = -28.0V Minimum

SP (TERMINAL 11) - SUBGROUP A2,A3,A4  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |        | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7527C                 | 4        | -10.48 | -10.40 | -10.36 | -14.36 | -14.24 | -14.20 | -19.72 | -19.48 | -19.44 |
| 7527A                 | 11       | -10.08 | -10.00 | -9.96  | -13.92 | -13.84 | -13.76 | -19.28 | -19.04 | -18.96 |
| 7528E                 | 16       | -10.52 | -10.44 | -10.36 | -14.40 | -14.28 | -14.20 | -19.76 | -19.56 | -19.44 |
| 7528G                 | 21       | -10.44 | -10.36 | -10.32 | -14.32 | -14.20 | -14.16 | -19.68 | -19.48 | -19.40 |
| 7527B                 | 22       | -9.56  | -9.48  | -9.44  | -13.36 | -13.24 | -13.20 | -18.60 | -18.40 | -18.32 |
| 7528J                 | 28       | -10.36 | -10.28 | -10.20 | -14.24 | -14.08 | -14.00 | -19.60 | -19.36 | -19.28 |
| 7528H                 | 48       | -9.76  | -9.68  | -9.64  | -13.60 | -13.48 | -13.40 | -18.84 | -18.68 | -18.60 |
| 7528K                 | 50       | -10.36 | -10.28 | -10.28 | -14.28 | -14.16 | -14.08 | -19.64 | -19.44 | -19.36 |
| 7527A                 | 51       | -10.52 | -10.48 | -10.44 | -14.44 | -14.32 | -14.28 | -19.80 | -19.60 | -19.52 |
| 7527K                 | 53       | -9.44  | -9.40  | -9.36  | -13.24 | -13.16 | -13.08 | -18.48 | -18.32 | -18.24 |
| 7527E                 | 58       | -10.56 | -10.48 | -10.44 | -14.48 | -14.36 | -14.32 | -19.84 | -19.64 | -19.60 |
| 7527J                 | 66       | -10.16 | -10.08 | -10.04 | -14.08 | -14.00 | -13.92 | -19.48 | -19.28 | -19.16 |
| 7527H                 | 70       | -10.32 | -10.28 | -10.16 | -14.20 | -14.04 | -14.00 | -19.52 | -19.32 | -19.24 |
| 7527H                 | 74       | -10.40 | -10.32 | -10.32 | -14.28 | -14.20 | -14.12 | -19.64 | -19.44 | -19.36 |
| 7527E                 | 76       | -9.88  | -9.80  | -9.72  | -13.68 | -13.56 | -13.52 | -16.36 | -17.08 | -17.68 |
| 7525B                 | 81       | -10.68 | -10.56 | -10.52 | -14.56 | -14.40 | -14.32 | -19.92 | -19.68 | -19.60 |
| 7527C                 | 87       | -10.16 | -10.08 | -10.08 | -14.00 | -13.92 | -13.88 | -19.32 | -19.12 | -19.04 |
| 7529K                 | 89       | -10.08 | -10.04 | -9.96  | -13.96 | -13.84 | -13.76 | -19.28 | -19.04 | -18.96 |
| 7529B                 | 94       | -10.48 | -10.40 | -10.36 | -14.36 | -14.28 | -14.20 | -19.76 | -19.52 | -19.44 |
| 7529H                 | 98       | -9.56  | -9.52  | -9.48  | -13.40 | -13.28 | -13.24 | -18.68 | -18.48 | -18.40 |
| REJECT 7529D          | 110      | -10.40 | -10.32 | -.28   | -14.28 | -14.16 | -.40   | -19.64 | -19.40 | -.04   |
| 7529N                 | 114      | -10.64 | -10.52 | -10.48 | -14.52 | -14.36 | -14.32 | -19.84 | -19.64 | -19.56 |
| 7529L                 | 118      | -9.24  | -9.20  | -9.16  | -13.04 | -12.96 | -12.92 | -18.32 | -18.12 | -18.04 |
| 7529B                 | 112      | -10.36 | -10.28 | -10.28 | -14.28 | -14.12 | -14.04 | -19.60 | -19.40 | -19.32 |
| 7529A                 | 133      | -10.16 | -10.04 | -10.00 | -14.00 | -13.84 | -13.72 | -19.28 | -19.04 | -18.92 |

TEST LIMITS = -8.0V to VDD

SP (TERMINAL 11) - SUBGROUP A2,A3,A4  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-24-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7527C                 | 4        | -.48   | -.60  | -.76  | -.80   | -.84  | -1.00 | -1.28  | -1.28 | -1.28 |
| 7527A                 | 11       | -.48   | -.60  | -.80  | -.80   | -.84  | -1.00 | -1.28  | -1.28 | -1.28 |
| 7528E                 | 16       | -.48   | -.60  | -.76  | -.76   | -.80  | -.96  | -1.24  | -1.24 | -1.24 |
| 7528G                 | 21       | -.48   | -.64  | -.80  | -.84   | -.88  | -1.04 | -1.28  | -1.32 | -1.36 |
| 7527B                 | 22       | -.44   | -.60  | -.80  | -.76   | -.84  | -1.04 | -1.23  | -1.28 | -1.28 |
| 7528J                 | 28       | -.48   | -.64  | -.80  | -.80   | -.84  | -1.00 | -1.28  | -1.28 | -1.28 |
| 7528H                 | 48       | -.48   | -.60  | -.84  | -.80   | -.80  | -1.04 | -1.28  | -1.28 | -1.32 |
| 7528K                 | 50       | -.48   | -.64  | -.84  | -.84   | -.88  | -1.04 | -1.36  | -1.36 | -1.36 |
| 7527A                 | 51       | -.56   | -.72  | -.92  | -.88   | -.92  | -1.12 | -1.44  | -1.48 | -1.48 |
| 7527K                 | 53       | -.44   | -.60  | -.80  | -.76   | -.80  | -1.00 | -1.24  | -1.28 | -1.28 |
| 7527E                 | 58       | -.52   | -.68  | -.84  | -.84   | -.88  | -1.04 | -1.36  | -1.36 | -1.36 |
| 7527J                 | 66       | -.48   | -.72  | -.84  | -.80   | -.92  | -1.04 | -1.28  | -1.32 | -1.36 |
| 7527H                 | 70       | -.56   | -.72  | -.88  | -.88   | -.92  | -1.12 | -1.40  | -1.44 | -1.44 |
| 7527H                 | 74       | -.52   | -.68  | -.84  | -.88   | -.88  | -1.08 | -1.40  | -1.40 | -1.40 |
| 7527E                 | 76       | -.48   | -.64  | -.80  | -.76   | -.84  | -1.04 | -1.28  | -1.28 | -1.28 |
| 7525B                 | 81       | -.52   | -.64  | -.80  | -.84   | -.84  | -1.04 | -1.28  | -1.32 | -1.36 |
| 7527C                 | 87       | -.48   | -.60  | -.76  | -.80   | -.80  | -1.00 | -1.28  | -1.28 | -1.36 |
| 7529K                 | 89       | -.48   | -.60  | -.80  | -.80   | -.84  | -1.04 | -1.28  | -1.28 | -1.32 |
| 7529B                 | 94       | -.52   | -.64  | -.80  | -.84   | -.88  | -1.04 | -1.36  | -1.36 | -1.36 |
| 7529H                 | 98       | -.48   | -.64  | -.84  | -.76   | -.84  | -1.04 | -1.28  | -1.28 | -1.32 |
| 7529D                 | 110      | -.52   | -.64  | -.08  | -.84   | -.88  | -.08  | -1.36  | -1.36 | -.00  |
| 7529N                 | 114      | -.52   | -.64  | -.84  | -.84   | -.88  | -1.04 | -1.36  | -1.36 | -1.36 |
| 7529L                 | 118      | -.48   | -.64  | -.88  | -.80   | -.88  | -1.08 | -1.36  | -1.36 | -1.40 |
| 7529B                 | 112      | -.52   | -.64  | -.84  | -.84   | -.88  | -1.04 | -1.36  | -1.36 | -1.36 |
| 7529A                 | 133      | -.48   | -.60  | -.76  | -.76   | -.80  | -.96  | -1.24  | -1.24 | -1.24 |

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUP A2,A3,A4  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-24-76  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |        | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7527C                 | 4        | -10.52 | -10.44 | -10.36 | -14.44 | -14.28 | -14.20 | -19.76 | -19.56 | -19.44 |
| 7527A                 | 11       | - 9.92 | - 9.84 | - 9.80 | -13.76 | -13.64 | -13.56 | -19.04 | -18.84 | -18.76 |
| 7528E                 | 16       | -10.52 | -10.44 | -10.36 | -14.40 | -14.28 | -14.20 | -19.76 | -19.56 | -19.44 |
| 7528G                 | 21       | -10.40 | -10.32 | -10.28 | -14.32 | -14.20 | -14.08 | -19.64 | -19.44 | -19.36 |
| 7527B                 | 22       | - 9.60 | - 9.52 | - 9.48 | -13.40 | -13.32 | -13.24 | -18.68 | -18.48 | -18.40 |
| 7528J                 | 28       | -10.32 | -10.28 | -10.16 | -14.20 | -14.04 | -14.00 | -19.48 | -19.32 | -19.20 |
| 7528H                 | 48       | - 9.80 | - 9.72 | - 9.68 | -13.64 | -13.52 | -13.44 | -18.92 | -18.76 | -18.64 |
| 7528K                 | 50       | -10.16 | -10.08 | -10.04 | -14.04 | -13.92 | -13.88 | -19.36 | -19.20 | -19.12 |
| 7527A                 | 51       | -10.04 | -10.00 | - 9.92 | -13.88 | -13.76 | -13.72 | -19.12 | -18.96 | -18.88 |
| 7527K                 | 53       | - 9.44 | - 9.36 | - 9.32 | -13.24 | -13.12 | -13.08 | -18.48 | -18.32 | -18.20 |
| 7527E                 | 58       | -10.44 | -10.32 | -10.32 | -14.32 | -14.20 | -14.16 | -19.64 | -19.48 | -19.40 |
| 7527J                 | 66       | -10.04 | -10.00 | - 9.92 | -13.96 | -13.84 | -13.76 | -19.32 | -19.12 | -19.00 |
| 7527H                 | 70       | -10.44 | -10.36 | -10.32 | -14.32 | -14.04 | -14.16 | -19.64 | -19.48 | -19.40 |
| 7527H                 | 74       | -10.44 | -10.36 | -10.32 | -14.32 | -14.20 | -14.16 | -19.64 | -19.48 | -19.40 |
| 7527E                 | 76       | -10.08 | -10.00 | - 9.92 | -13.92 | -13.80 | -13.72 | -19.16 | -19.00 | -18.88 |
| 7525B                 | 81       | -10.64 | -10.52 | -10.48 | -14.52 | -14.40 | -14.32 | -19.84 | -19.64 | -19.56 |
| 7527C                 | 87       | -10.16 | -10.08 | -10.04 | -14.00 | -13.92 | -13.84 | -19.28 | -19.12 | -19.04 |
| 7529K                 | 89       | -10.16 | -10.04 | -10.04 | -14.00 | -13.88 | -13.80 | -19.32 | -19.12 | -19.00 |
| 7529B                 | 94       | -10.44 | -10.36 | -10.28 | -14.32 | -14.20 | -14.08 | -19.64 | -19.44 | -19.32 |
| 7529H                 | 98       | - 9.72 | - 9.60 | - 9.56 | -13.56 | -13.40 | -13.36 | -18.80 | -18.64 | -18.52 |
| 7529D                 | 110      | -10.44 | -10.36 | -10.28 | -14.32 | -14.20 | -14.08 | -19.64 | -19.44 | -19.36 |
| 7529N                 | 114      | -10.56 | -10.48 | -10.44 | -14.48 | -14.32 | -14.32 | -19.76 | -19.56 | -19.56 |
| 7529L                 | 118      | - 9.32 | - 9.24 | - 9.20 | -13.12 | -13.04 | -12.92 | -18.36 | -18.20 | -18.12 |
| 7529B                 | 112      | -10.36 | -10.28 | -10.28 | -14.28 | -14.08 | -14.04 | -19.60 | -19.40 | -19.28 |
| 7529A                 | 133      | -10.12 | -10.04 | - 9.96 | -13.96 | -13.84 | -13.72 | -19.20 | -19.00 | -18.92 |

TEST LIMITS =-8.0V to VDD

LP (TERMINAL 12) -SUBGROUP A2,A3,A4  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-24-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7527C                 | 4        | -.24   | -.40  | -.40  | -.40   | -.48  | -.52  | -.60   | -.64  | -.64  |
| 7527A                 | 11       | -.24   | -.40  | -.44  | -.40   | -.48  | -.52  | -.60   | -.64  | -.64  |
| 7528E                 | 16       | -.24   | -.40  | -.40  | -.40   | -.48  | -.48  | -.60   | -.60  | -.60  |
| 7528G                 | 21       | -.28   | -.40  | -.44  | -.44   | -.52  | -.52  | -.64   | -.64  | -.68  |
| 7527B                 | 22       | -.24   | -.44  | -.44  | -.40   | -.52  | -.52  | -.60   | -.64  | -.68  |
| 7528J                 | 28       | -.24   | -.40  | -.40  | -.40   | -.48  | -.48  | -.60   | -.64  | -.64  |
| 7528H                 | 48       | -.24   | -.44  | -.44  | -.40   | -.52  | -.52  | -.60   | -.64  | -.68  |
| 7528K                 | 50       | -.24   | -.44  | -.44  | -.40   | -.52  | -.52  | -.60   | -.64  | -.68  |
| 7527A                 | 51       | -.24   | -.44  | -.44  | -.44   | -.56  | -.56  | -.68   | -.72  | -.72  |
| 7527K                 | 53       | -.24   | -.40  | -.44  | -.40   | -.48  | -.48  | -.60   | -.64  | -.64  |
| 7527E                 | 58       | -.28   | -.44  | -.44  | -.44   | -.52  | -.52  | -.64   | -.68  | -.68  |
| 7527J                 | 66       | -.24   | -.44  | -.44  | -.40   | -.52  | -.52  | -.60   | -.64  | -.64  |
| 7527H                 | 70       | -.28   | -.44  | -.44  | -.44   | -.56  | -.56  | -.72   | -.72  | -.76  |
| 7527H                 | 74       | -.28   | -.44  | -.44  | -.44   | -.56  | -.56  | -.68   | -.72  | -.72  |
| 7527E                 | 76       | -.24   | -.44  | -.44  | -.40   | -.52  | -.52  | -.64   | -.64  | -.68  |
| 7525B                 | 81       | -.24   | -.40  | -.44  | -.40   | -.52  | -.52  | -.64   | -.64  | -.68  |
| 7527C                 | 87       | -.28   | -.40  | -.40  | -.44   | -.48  | -.52  | -.60   | -.64  | -.64  |
| 7529K                 | 89       | -.24   | -.40  | -.40  | -.40   | -.48  | -.52  | -.64   | -.64  | -.64  |
| 7529B                 | 94       | -.24   | -.40  | -.40  | -.40   | -.48  | -.52  | -.64   | -.64  | -.68  |
| 7529H                 | 98       | -.24   | -.40  | -.44  | -.40   | -.48  | -.52  | -.60   | -.64  | -.64  |
| 7529D                 | 110      | -.28   | -.44  | -.44  | -.44   | -.52  | -.52  | -.64   | -.68  | -.72  |
| 7529N                 | 114      | -.28   | -.40  | -.44  | -.44   | -.52  | -.52  | -.64   | -.64  | -.68  |
| 7529L                 | 118      | -.24   | -.44  | -.44  | -.40   | -.56  | -.56  | -.64   | -.68  | -.72  |
| 7529B                 | 112      | -.24   | -.44  | -.44  | -.40   | -.52  | -.52  | -.64   | -.64  | -.68  |
| 7529A                 | 133      | -.24   | -.40  | -.40  | -.40   | -.48  | -.48  | -.60   | -.60  | -.60  |

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M - SUBGROUP A2,A3,A4 COLLINS DIVISIONS DATE 7-24-76  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |        |        |        |       |       |       |
|-----------------------|----------|------------|-------|-------|--------|--------|--------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C  | +25°C  | +75°C  | -55°C | +25°C | +75°C |
| 7527C                 | 4        |            |       |       | -34.24 | -33.12 | -32.16 |       |       |       |
| 7527A                 | 11       |            |       |       | -33.96 | -33.12 | -32.48 |       |       |       |
| 7528E                 | 16       |            |       |       | -31.24 | -30.36 | -29.68 |       |       |       |
| 7528G                 | 21       |            |       |       | -33.20 | -32.44 | -31.68 |       |       |       |
| 7527B                 | 22       |            |       |       | -32.36 | -31.60 | -32.00 |       |       |       |
| 7528J                 | 28       |            |       |       | -35.72 | -34.68 | -33.84 |       |       |       |
| 7528H                 | 48       |            |       |       | -33.20 | -32.28 | -31.48 |       |       |       |
| 7528K                 | 50       |            |       |       | -36.60 | -35.48 | -34.64 |       |       |       |
| 7527A                 | 51       |            |       |       | -34.48 | -33.64 | -32.96 |       |       |       |
| 7527K                 | 53       |            |       |       | -33.04 | -32.28 | -31.76 |       |       |       |
| 7527E                 | 58       |            |       |       | -35.56 | -34.56 | -33.84 |       |       |       |
| 7527J                 | 66       |            |       |       | -35.56 | -34.84 | -34.20 |       |       |       |
| 7527H                 | 70       |            |       |       | -34.92 | -34.08 | -33.40 |       |       |       |
| 7527H                 | 74       |            |       |       | -36.80 | -35.80 | -35.00 |       |       |       |
| 7527E                 | 76       |            |       |       | -35.48 | -34.56 | -33.84 |       |       |       |
| 7525B                 | 81       |            |       |       | -36.28 | -35.20 | -34.44 |       |       |       |
| 7527C                 | 87       |            |       |       | -36.08 | -35.00 | -34.00 |       |       |       |
| 7529K                 | 89       |            |       |       | -37.56 | -36.24 | -35.16 |       |       |       |
| 7529B                 | 94       |            |       |       | -33.24 | -32.44 | -31.68 |       |       |       |
| 7529H                 | 98       |            |       |       | -36.80 | -35.68 | -34.72 |       |       |       |
| 7529D                 | 110      |            |       |       | -34.72 | -33.80 | -33.12 |       |       |       |
| 7529N                 | 114      |            |       |       | -35.92 | -34.88 | -34.04 |       |       |       |
| 7529L                 | 118      |            |       |       | -32.44 | -31.60 | -30.88 |       |       |       |
| 7529B                 | 122      |            |       |       | -32.88 | -32.00 | -31.28 |       |       |       |
| 7529A                 | 133      |            |       |       | -36.20 | -35.04 | -34.04 |       |       |       |

TEST LIMITS = -28.0V Min.

G32 (TERMINAL 14) SUBGROUP A2,A3,A4  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |        | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7527C                 | 4        | -10.64 | -10.52 | -10.48 | -14.52 | -14.36 | -14.32 | -19.84 | -19.64 | -19.56 |
| 7527A                 | 11       | - 9.88 | - 9.80 | - 9.76 | -13.72 | -13.56 | -13.52 | -19.00 | -18.76 | -18.68 |
| 7528E                 | 16       | -10.48 | -10.36 | -10.32 | -14.36 | -14.20 | -14.16 | -19.72 | -19.48 | -19.40 |
| 7528G                 | 21       | -10.60 | -10.48 | -10.44 | -14.52 | -14.36 | -14.32 | -19.88 | -19.68 | -19.60 |
| 7527B                 | 22       | - 9.80 | - 9.72 | - 9.68 | -13.68 | -13.56 | -13.44 | -18.96 | -18.76 | -18.68 |
| 7528J                 | 28       | -10.32 | -10.16 | -10.16 | -14.20 | -14.00 | -13.96 | -19.48 | -19.28 | -19.16 |
| 7528H                 | 48       | - 9.88 | - 9.80 | - 9.72 | -13.72 | -13.60 | -13.56 | -19.04 | -18.84 | -18.76 |
| 7528K                 | 50       | -10.08 | -10.04 | -10.00 | -14.00 | -13.88 | -13.84 | -19.32 | -19.12 | -19.04 |
| 7527A                 | 51       | -10.16 | -10.08 | -10.04 | -14.00 | -13.88 | -13.84 | -19.28 | -19.12 | -19.00 |
| 7527K                 | 53       | - 9.44 | - 9.36 | - 9.32 | -13.24 | -13.12 | -13.04 | -18.48 | -18.32 | -18.20 |
| 7527E                 | 58       | -10.32 | -10.20 | -10.16 | -14.20 | -14.04 | -14.00 | -19.48 | -19.32 | -19.20 |
| 7527J                 | 66       | -10.00 | - 9.88 | - 9.84 | -13.88 | -13.72 | -13.64 | -19.16 | -18.96 | -18.84 |
| 7527H                 | 70       | -10.36 | -10.28 | -10.28 | -14.28 | -14.16 | -14.04 | -19.60 | -19.40 | -19.32 |
| 7527H                 | 74       | -10.44 | -10.36 | -10.32 | -14.36 | -14.20 | -14.16 | -19.68 | -19.48 | -19.44 |
| 7527E                 | 76       | -10.04 | - 9.96 | - 9.88 | -13.92 | -13.76 | -13.68 | -19.16 | -18.96 | -18.84 |
| 7525B                 | 81       | -10.64 | -10.52 | -10.48 | -14.52 | -14.36 | -14.32 | -19.84 | -19.64 | -19.52 |
| 7527C                 | 87       | -10.28 | -10.12 | -10.08 | -14.04 | -13.92 | -13.88 | -19.32 | -19.16 | -19.04 |
| 7529K                 | 89       | -10.16 | -10.08 | -10.04 | -14.04 | -13.88 | -13.84 | -19.32 | -19.12 | -19.04 |
| 7529B                 | 94       | -10.08 | -10.00 | - 9.92 | -13.92 | -13.80 | -13.72 | -19.16 | -19.00 | -18.88 |
| 7529H                 | 98       | - 9.96 | - 9.84 | - 9.80 | -13.84 | -13.68 | -13.64 | -19.16 | -18.96 | -18.84 |
| 7529D                 | 110      | -10.16 | -10.04 | -10.00 | -14.00 | -13.88 | -13.76 | -19.28 | -19.04 | -18.96 |
| 7529N                 | 114      | -10.36 | -10.28 | -10.20 | -14.20 | -14.08 | -14.00 | -19.48 | -19.32 | -19.20 |
| 7529L                 | 118      | - 9.76 | - 9.68 | - 9.60 | -13.64 | -13.52 | -13.44 | -18.96 | -18.76 | -18.68 |
| 7529B                 | 112      | -10.36 | -10.28 | -10.16 | -14.24 | -14.08 | -14.00 | -19.56 | -19.36 | -19.28 |
| 7529A                 | 133      | -10.12 | -10.04 | - 9.96 | -14.00 | -13.84 | -13.72 | -19.20 | -19.00 | -18.92 |

TEST LIMITS = -8.0V to VDD

G32 (TERMINAL 14) - SUBGROUP A2,A3,A4  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-24-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7527C                 | 4        | -.68   | -.72  | -.72  | -.84   | -.88  | -.88  | -1.00  | -1.08 | -1.08 |
| 7527A                 | 11       | -.72   | -.72  | -.72  | -.84   | -.88  | -.88  | -1.00  | -1.08 | -1.08 |
| 7528E                 | 16       | -.64   | -.64  | -.68  | -.76   | -.80  | -.84  | -.92   | -1.04 | -1.04 |
| 7528G                 | 21       | -.72   | -.72  | -.76  | -.84   | -.88  | -.88  | -1.04  | -1.08 | -1.12 |
| 7527B                 | 22       | -.76   | -.76  | -.76  | -.88   | -.88  | -.92  | -1.04  | -1.12 | -1.12 |
| 7528J                 | 28       | -.68   | -.72  | -.72  | -.80   | -.88  | -.88  | -.96   | -1.08 | -1.08 |
| 7528H                 | 48       | -.72   | -.72  | -.76  | -.84   | -.88  | -.88  | -1.00  | -1.08 | -1.12 |
| 7528K                 | 50       | -.72   | -.72  | -.76  | -.84   | -.88  | -.88  | -1.04  | -1.08 | -1.12 |
| 7527A                 | 51       | -.72   | -.76  | -.76  | -.88   | -.92  | -.92  | -1.08  | -1.12 | -1.20 |
| 7527K                 | 53       | -.72   | -.72  | -.76  | -.84   | -.88  | -.88  | -.96   | -1.08 | -1.08 |
| 7527E                 | 58       | -.72   | -.72  | -.72  | -.84   | -.88  | -.88  | -1.04  | -1.08 | -1.08 |
| 7527J                 | 66       | -.72   | -.72  | -.72  | -.84   | -.88  | -.88  | -1.00  | -1.08 | -1.08 |
| 7527H                 | 70       | -.76   | -.76  | -.76  | -.88   | -.92  | -.92  | -1.08  | -1.12 | -1.20 |
| 7527H                 | 74       | -.72   | -.76  | -.76  | -.88   | -.92  | -.92  | -1.08  | -1.12 | -1.16 |
| 7527E                 | 76       | -.72   | -.72  | -.76  | -.84   | -.88  | -.88  | -1.04  | -1.08 | -1.12 |
| 7525B                 | 81       | -.68   | -.72  | -.72  | -.84   | -.88  | -.88  | -1.04  | -1.08 | -1.08 |
| 7527C                 | 87       | -.72   | -.72  | -.72  | -.84   | -.88  | -.88  | -1.04  | -1.08 | -1.12 |
| 7529K                 | 89       | -.68   | -.72  | -.72  | -.80   | -.88  | -.88  | -1.00  | -1.08 | -1.08 |
| 7529B                 | 94       | -.68   | -.72  | -.72  | -.80   | -.84  | -.88  | -.96   | -1.04 | -1.08 |
| 7529H                 | 98       | -.72   | -.72  | -.76  | -.84   | -.88  | -.88  | -1.00  | -1.08 | -1.08 |
| 7529D                 | 110      | -.68   | -.72  | -.72  | -.80   | -.88  | -.88  | -.96   | -1.08 | -1.08 |
| 7529N                 | 114      | -.72   | -.72  | -.72  | -.84   | -.88  | -.88  | -1.04  | -1.08 | -1.12 |
| 7529L                 | 118      | -.76   | -.80  | -.80  | -.88   | -.92  | -.96  | -1.08  | -1.16 | -1.20 |
| 7529B                 | 122      | -.72   | -.72  | -.76  | -.84   | -.88  | -.88  | -1.04  | -1.08 | -1.12 |
| 7529A                 | 133      | -.64   | -.72  | -.72  | -.76   | -.84  | -.88  | -.96   | -1.04 | -1.08 |

TEST LIMITS = 0.0V to - 2.0V



FP (TERMINAL 15), V15M-SUBGROUP A2, A3, A4  
SCALER INPUT (NEGATIVE BREAKDOWN) VOLTS

COLLINS DIVISIONS  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

DATE 7-24-75

| Device Identification |          | 10 $\mu$ A |       |       |        |        |        |       |       |       |
|-----------------------|----------|------------|-------|-------|--------|--------|--------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C  | +25°C  | +75°C  | -55°C | +25°C | +75°C |
| 7527C                 | 4        |            |       |       | -36.04 | -34.84 | -33.80 |       |       |       |
| 7527A                 | 11       |            |       |       | -34.36 | -33.52 | -32.84 |       |       |       |
| 7528E                 | 16       |            |       |       | -32.24 | -31.36 | -30.64 |       |       |       |
| 7528G                 | 21       |            |       |       | -34.24 | -33.36 | -32.56 |       |       |       |
| 7527B                 | 22       |            |       |       | -33.76 | -32.96 | -32.36 |       |       |       |
| 7528J                 | 28       |            |       |       | -35.60 | -34.48 | -33.60 |       |       |       |
| 7528H                 | 48       |            |       |       | -36.12 | -35.04 | -34.16 |       |       |       |
| 7528K                 | 50       |            |       |       | -37.08 | -36.00 | -35.08 |       |       |       |
| 7527A                 | 51       |            |       |       | -34.56 | -33.72 | -33.08 |       |       |       |
| 7527K                 | 53       |            |       |       | -32.88 | -32.12 | -31.60 |       |       |       |
| 7527E                 | 58       |            |       |       | -35.32 | -34.36 | -33.56 |       |       |       |
| 7527J                 | 66       |            |       |       | -40.24 | -39.20 | -38.36 |       |       |       |
| 7527H                 | 70       |            |       |       | -36.92 | -35.96 | -35.16 |       |       |       |
| 7527H                 | 74       |            |       |       | -35.60 | -34.68 | -33.92 |       |       |       |
| 7527E                 | 76       |            |       |       | -34.12 | -33.24 | -32.56 |       |       |       |
| 7525B                 | 81       |            |       |       | -35.12 | -34.16 | -33.40 |       |       |       |
| 7527C                 | 87       |            |       |       | -36.96 | -35.84 | -34.84 |       |       |       |
| 7529K                 | 89       |            |       |       | -35.32 | -34.24 | -33.36 |       |       |       |
| 7529B                 | 94       |            |       |       | -36.84 | -32.92 | -32.16 |       |       |       |
| 7529H                 | 98       |            |       |       | -36.76 | -35.64 | -34.60 |       |       |       |
| 7529D                 | 110      |            |       |       | -33.52 | -32.60 | -31.96 |       |       |       |
| 7529N                 | 114      |            |       |       | -36.44 | -35.36 | -34.40 |       |       |       |
| 7529L                 | 118      |            |       |       | -31.84 | -31.08 | -30.36 |       |       |       |
| 7529B                 | 122      |            |       |       | -32.56 | -31.76 | -31.00 |       |       |       |
| 7529A                 | 133      |            |       |       | -37.16 | -35.96 | -34.96 |       |       |       |

TEST LIMITS = -28.0V minimum

Q6 (TERMINAL 16) - SUBGROUP A2 ,A3, A4  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-24-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|-------|-------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7527C                 | 4        |        |       |       | -12.72 | - 7.84 | - 7.60 | -14.00 | -12.72 | -11.76 |
| 7527A                 | 11       |        |       |       | -12.24 | - 7.20 | - 6.96 | -13.36 | -11.36 | -11.08 |
| 7528E                 | 16       |        |       |       | -12.40 | - 7.80 | - 7.52 | -13.72 | -12.00 | -11.68 |
| 7528G                 | 21       |        |       |       | -12.44 | - 6.72 | - 7.52 | -13.92 | -12.04 | -11.72 |
| 7527B                 | 22       |        |       |       | -11.36 | - 6.72 | - 6.52 | -12.52 | -10.84 | -10.52 |
| 7528J                 | 28       |        |       |       | - 7.60 | - 7.24 | - 6.96 | -12.44 | -11.32 | -11.00 |
| 7528H                 | 48       |        |       |       | - 9.96 | - 6.68 | - 6.48 | -12.08 | -10.84 | -10.52 |
| 7528K                 | 50       |        |       |       | -11.56 | - 6.96 | - 6.76 | -12.84 | -11.12 | -10.80 |
| 7527A                 | 51       |        |       |       | -12.08 | - 7.16 | - 6.92 | -13.16 | -11.28 | -10.92 |
| 7527K                 | 53       |        |       |       | -10.76 | - 6.32 | - 6.12 | -11.92 | -10.44 | -10.16 |
| 7527E                 | 58       |        |       |       | -11.92 | - 7.20 | - 6.96 | -13.16 | -11.36 | -11.04 |
| 7527J                 | 66       |        |       |       | -11.00 | - 6.52 | - 6.24 | -12.12 | -10.60 | -10.28 |
| 7527H                 | 70       |        |       |       | -12.00 | - 7.04 | - 6.84 | -13.08 | -11.16 | -10.84 |
| 7527H                 | 74       |        |       |       | -12.32 | - 7.40 | - 7.16 | -13.56 | -11.64 | -11.28 |
| 7527E                 | 76       |        |       |       | -11.96 | - 6.96 | - 6.68 | -12.92 | -11.00 | -10.68 |
| 7525B                 | 81       |        |       |       | -12.60 | - 7.76 | - 7.48 | -13.88 | -11.92 | -11.56 |
| 7527C                 | 87       |        |       |       | - 7.48 | - 7.24 | - 7.00 | -11.72 | -11.28 | -11.00 |
| 7529K                 | 89       |        |       |       | - 8.64 | - 7.40 | - 7.16 | -13.08 | -11.60 | -11.28 |
| 7529B                 | 94       |        |       |       | -10.44 | - 7.77 | - 7.44 | -13.56 | -11.96 | -11.60 |
| 7529H                 | 98       |        |       |       | - 8.92 | - 7.80 | - 6.56 | -12.40 | -11.00 | -10.64 |
| 7529D                 | 110      |        |       |       | - 7.76 | - 7.32 | - 7.08 | -12.48 | -11.44 | -11.12 |
| 7529N                 | 114      |        |       |       | -11.88 | - 7.56 | - 7.28 | -13.40 | -11.72 | -11.36 |
| 7529L                 | 118      |        |       |       | -10.28 | - 6.20 | - 6.00 | -11.48 | -10.28 | - 9.88 |
| 7529B                 | 112      |        |       |       | -12.36 | - 7.64 | - 7.36 | -13.72 | -11.92 | -11.48 |
| 7529A                 | 133      |        |       |       | - 7.88 | - 7.20 | - 6.92 | -12.40 | -11.32 | -10.96 |

TEST LIMITS = -4.0 to VDD

Q6 (TERMINAL 16) - SUBGROUP A2,A3,A4  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7527C                 | 4        |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7527A                 | 11       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7528E                 | 16       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7528G                 | 21       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7527B                 | 22       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7528J                 | 28       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7528H                 | 48       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7528K                 | 50       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7527A                 | 51       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7527K                 | 53       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7527E                 | 58       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7527J                 | 66       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7527H                 | 70       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7527H                 | 74       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7527E                 | 76       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7525B                 | 81       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7527C                 | 87       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7529K                 | 89       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7529B                 | 94       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7529H                 | 98       |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7529D                 | 110      |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7529N                 | 114      |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7529L                 | 118      |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7529B                 | 112      |        |       |       | ↓      | ↓     | ↓     | ↓      | ↓     | ↓     |
| 7529A                 | 133      |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |

TEST LIMITS = 0.0V to -0.1V

IDD (TERMINAL 1), 1A - SUBGROUP B1  
SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS      DATE 7-28-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 2        |        |       |       |        |       |       |        | -5.19 |       |
| 7528D                 | 8        |        |       |       |        |       |       |        | -4.70 |       |
| 7527C                 | 13       |        |       |       |        |       |       |        | -4.74 |       |
| 7528G                 | 20       |        |       |       |        |       |       |        | -5.07 |       |
| 7528C                 | 25       |        |       |       |        |       |       |        | -4.94 |       |
| 7527C                 | 30       |        |       |       |        |       |       |        | -4.91 |       |
| 7528C                 | 33       |        |       |       |        |       |       |        | -5.13 |       |
| 7527B                 | 36       |        |       |       |        |       |       |        | -4.57 |       |
| 7528K                 | 49       |        |       |       |        |       |       |        | -4.86 |       |
| 7527H                 | 54       |        |       |       |        |       |       |        | -5.27 |       |

TEST LIMITS = 2.0mA to 10.0mA

ARM (TERMINAL 3) - SUBGROUP B1  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 2        |        | -17.04 |       |        | -21.56 |       |        | -27.64 |       |
| 7528D                 | 8        |        | -17.04 |       |        | -21.56 |       |        | -27.64 |       |
| 7527C                 | 13       |        | -17.04 |       |        | -21.56 |       |        | -27.64 |       |
| 7528G                 | 20       |        | -17.04 |       |        | -21.56 |       |        | -27.64 |       |
| 7528C                 | 25       |        | -17.04 |       |        | -21.56 |       |        | -27.64 |       |
| 7527C                 | 30       |        | -17.04 |       |        | -21.56 |       |        | -27.64 |       |
| 7528C                 | 33       |        | -17.04 |       |        | -21.56 |       |        | -27.64 |       |
| 7527B                 | 36       |        | -17.04 |       |        | -21.56 |       |        | -27.64 |       |
| 7528H                 | 49       |        | -17.04 |       |        | -21.56 |       |        | -27.64 |       |
| 7527H                 | 54       |        | -17.00 |       |        | -21.56 |       |        | -27.64 |       |

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) - SUBGROUP B1  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 2        |        | -.28  |       |        | -.24  |       |        | -.28  |       |
| 7528D                 | 8        |        | -.28  |       |        | -.24  |       |        | -.28  |       |
| 7527C                 | 13       |        | -.24  |       |        | -.24  |       |        | -.28  |       |
| 7528G                 | 20       |        | -.24  |       |        | -.24  |       |        | -.24  |       |
| 7528C                 | 25       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7527C                 | 30       |        | -.24  |       |        | -.24  |       |        | -.28  |       |
| 7528C                 | 33       |        | -.24  |       |        | -.24  |       |        | -.28  |       |
| 7527B                 | 36       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7528K                 | 49       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7527H                 | 54       |        | -.28  |       |        | -.24  |       |        | -.24  |       |

TEST LIMITS = 0.0V to -2.0V

FIRE (TERMINAL 4) -SUBGROUP B1  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-28-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 2        |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7528D                 | 8        |        | -17.00 |       |        | -21.52 |       |        | -27.64 |       |
| 7527C                 | 13       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7528G                 | 20       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7528C                 | 25       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7527C                 | 30       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7528C                 | 33       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7527B                 | 36       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7528K                 | 49       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7527H                 | 54       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |

TEST LIMITS =-16.9V to VDD

FIRE (TERMINAL 4) - SUBGROUP B1  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 2        |        | -2.48 |       |        | -2.48 |       |        | -2.76 |       |
| 7528D                 | 8        |        | -2.48 |       |        | -2.48 |       |        | -2.68 |       |
| 7527C                 | 13       |        | -2.56 |       |        | -2.52 |       |        | -2.72 |       |
| 7528G                 | 20       |        | -2.36 |       |        | -2.40 |       |        | -2.68 |       |
| 7528C                 | 25       |        | -2.52 |       |        | -2.52 |       |        | -2.76 |       |
| 7527C                 | 30       |        | -2.40 |       |        | -2.44 |       |        | -2.68 |       |
| 7528C                 | 33       |        | -2.44 |       |        | -2.48 |       |        | -2.76 |       |
| 7527B                 | 36       |        | -2.52 |       |        | -2.52 |       |        | -2.72 |       |
| 7528K                 | 49       |        | -2.76 |       |        | -2.64 |       |        | -2.76 |       |
| 7527H                 | 54       |        | -2.48 |       |        | -2.48 |       |        | -2.68 |       |

TEST LIMITS = 0.0V to -10.0V



G14 (TERMINAL 5), V5M - SUBGROUP B1  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 2        |            |       |       |       | -32.56 |       |       |       |       |
| 7528D                 | 8        |            |       |       |       | -32.92 |       |       |       |       |
| 7527C                 | 13       |            |       |       |       | -31.32 |       |       |       |       |
| 7528G                 | 20       |            |       |       |       | -33.72 |       |       |       |       |
| 7528C                 | 25       |            |       |       |       | -33.12 |       |       |       |       |
| 7527C                 | 30       |            |       |       |       | -32.92 |       |       |       |       |
| 7528C                 | 33       |            |       |       |       | -34.00 |       |       |       |       |
| 7527B                 | 36       |            |       |       |       | -32.44 |       |       |       |       |
| 7528K                 | 49       |            |       |       |       | -30.96 |       |       |       |       |
| 7527H                 | 54       |            |       |       |       | -36.12 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUP B1  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|-------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 2        |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7528D                 | 8        |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527C                 | 13       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7528G                 | 20       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7528C                 | 25       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527C                 | 30       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7528C                 | 33       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527B                 | 36       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7528K                 | 49       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527H                 | 54       |        |       |       |        | -21.56 |       |        | -27.64 |       |

TEST LIMITS = -21.4 to VDD

Q4 (TERMINAL 6) SUBGROUP B1  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 2        |        |       |       |        | -.76  |       |        | -.72  |       |
| 7528D                 | 8        |        |       |       |        | -.80  |       |        | -.76  |       |
| 7527C                 | 13       |        |       |       |        | -.72  |       |        | -.68  |       |
| 7528G                 | 20       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7528C                 | 25       |        |       |       |        | -.84  |       |        | -.76  |       |
| 7527C                 | 30       |        |       |       |        | -.76  |       |        | -.72  |       |
| 8528C                 | 33       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7527B                 | 36       |        |       |       |        | -.84  |       |        | -.76  |       |
| 7528K                 | 49       |        |       |       |        | -.88  |       |        | -.80  |       |
| 7527H                 | 54       |        |       |       |        | -.88  |       |        | -.76  |       |

TEST LIMITS = 0.0V to -2.6V

M11 (TERMINAL 7), V7M -SUBGROUP B1  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 7-28-76  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 2        |            |       |       |       | -36.00 |       |       |       |       |
| 7528D                 | 8        |            |       |       |       | -33.76 |       |       |       |       |
| 7527C                 | 13       |            |       |       |       | -32.84 |       |       |       |       |
| 7528G                 | 20       |            |       |       |       | -31.92 |       |       |       |       |
| 7528C                 | 25       |            |       |       |       | -33.84 |       |       |       |       |
| 7527C                 | 30       |            |       |       |       | -32.56 |       |       |       |       |
| 7528C                 | 33       |            |       |       |       | -33.44 |       |       |       |       |
| 7527B                 | 36       |            |       |       |       | -33.04 |       |       |       |       |
| 7528K                 | 49       |            |       |       |       | -33.32 |       |       |       |       |
| 7527H                 | 54       |            |       |       |       | -34.96 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

MON (TERMINAL 9), V9M - SUBGROUP B1  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7528C                 | 2        |                  |                  |                  |                  | -35.16           |                  |                  |                  |                  |
| 7528D                 | 8        |                  |                  |                  |                  | -34.00           |                  |                  |                  |                  |
| 7527C                 | 13       |                  |                  |                  |                  | -32.72           |                  |                  |                  |                  |
| 7528G                 | 20       |                  |                  |                  |                  | -30.16           |                  |                  |                  |                  |
| 7528C                 | 25       |                  |                  |                  |                  | -34.00           |                  |                  |                  |                  |
| 7527C                 | 30       |                  |                  |                  |                  | -35.76           |                  |                  |                  |                  |
| 7528C                 | 33       |                  |                  |                  |                  | -34.40           |                  |                  |                  |                  |
| 7527B                 | 36       |                  |                  |                  |                  | -34.36           |                  |                  |                  |                  |
| 7528K                 | 49       |                  |                  |                  |                  | -32.72           |                  |                  |                  |                  |
| 7527H                 | 54       |                  |                  |                  |                  | -35.44           |                  |                  |                  |                  |

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9) V9P - SUBGROUP B1  
 SCALER INPUT (POSITIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 7-28-76  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 3mA   |       |       |       |       |       |       |       |       |
|-----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 2        |       |       |       |       | +1.08 |       |       |       |       |
| 7528D                 | 8        |       |       |       |       | +1.16 |       |       |       |       |
| 7527C                 | 13       |       |       |       |       | + .92 |       |       |       |       |
| 7528G                 | 20       |       |       |       |       | +1.08 |       |       |       |       |
| 7528C                 | 25       |       |       |       |       | +1.28 |       |       |       |       |
| 7527C                 | 30       |       |       |       |       | + .92 |       |       |       |       |
| 7528C                 | 33       |       |       |       |       | +1.04 |       |       |       |       |
| 7527B                 | 36       |       |       |       |       | +1.04 |       |       |       |       |
| 7528K                 | 49       |       |       |       |       | +1.08 |       |       |       |       |
| 7527H                 | 54       |       |       |       |       | +1.20 |       |       |       |       |

TEST LIMITS = 0.0V to +6.0V

CL (TERMINAL 10), V10M-SUBGROUP B1  
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 7-28-76  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 2        |            |       |       |       | -35.12 |       |       |       |       |
| 7528D                 | 8        |            |       |       |       | -31.60 |       |       |       |       |
| 7527C                 | 13       |            |       |       |       | -33.08 |       |       |       |       |
| 7528G                 | 20       |            |       |       |       | -30.64 |       |       |       |       |
| 7528C                 | 25       |            |       |       |       | -32.76 |       |       |       |       |
| 7527C                 | 30       |            |       |       |       | -34.64 |       |       |       |       |
| 7528C                 | 33       |            |       |       |       | -33.52 |       |       |       |       |
| 7527B                 | 36       |            |       |       |       | -34.52 |       |       |       |       |
| 7528K                 | 49       |            |       |       |       | -33.20 |       |       |       |       |
| 7527H                 | 54       |            |       |       |       | -33.56 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

SP (TERMINAL 11)- SUBGROUP B1  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 2        |        | -10.28 |       |        | -14.08 |       |        | -19.36 |       |
| 7528D                 | 8        |        | -10.52 |       |        | -14.36 |       |        | -19.68 |       |
| 7527C                 | 13       |        | -10.20 |       |        | -14.00 |       |        | -19.28 |       |
| 7528G                 | 20       |        | -10.32 |       |        | -14.16 |       |        | -19.40 |       |
| 7528C                 | 25       |        | -10.12 |       |        | -13.92 |       |        | -19.20 |       |
| 7527C                 | 30       |        | -10.20 |       |        | -14.00 |       |        | -19.28 |       |
| 7528C                 | 33       |        | -10.28 |       |        | -14.04 |       |        | -19.28 |       |
| 7527B                 | 36       |        | -10.04 |       |        | -13.84 |       |        | -19.04 |       |
| 7528K                 | 49       |        | -10.00 |       |        | -13.84 |       |        | -19.12 |       |
| 7527H                 | 54       |        | -10.04 |       |        | -13.88 |       |        | -19.12 |       |

TEST LIMITS = -8.0V tc VDD



SP (TERMINAL 11) - SUBGROUP B1  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 2        |        | -.68  |       |        | -.88  |       |        | -1.36 |       |
| 7528D                 | 8        |        | -.64  |       |        | -.84  |       |        | -1.28 |       |
| 7527C                 | 13       |        | -.60  |       |        | -.80  |       |        | -1.28 |       |
| 7528G                 | 20       |        | -.60  |       |        | -.80  |       |        | -1.24 |       |
| 7528C                 | 25       |        | -.64  |       |        | -.88  |       |        | -1.36 |       |
| 7527C                 | 30       |        | -.60  |       |        | -.84  |       |        | -1.36 |       |
| 7528C                 | 33       |        | -.64  |       |        | -.84  |       |        | -1.28 |       |
| 7527B                 | 36       |        | -.60  |       |        | -.80  |       |        | -1.24 |       |
| 7528K                 | 49       |        | -.64  |       |        | -.84  |       |        | -1.32 |       |
| 7527H                 | 54       |        | -.68  |       |        | -.88  |       |        | -1.40 |       |

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUP B1  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 2        |        | -10.32 |       |        | -14.16 |       |        | -19.36 |       |
| 7528D                 | 8        |        | -10.04 |       |        | -13.84 |       |        | -19.00 |       |
| 7527C                 | 13       |        | -10.04 |       |        | -13.80 |       |        | -19.28 |       |
| 7528G                 | 20       |        | -10.28 |       |        | -14.04 |       |        | -19.32 |       |
| 7528C                 | 25       |        | - 9.96 |       |        | -13.76 |       |        | -19.00 |       |
| 7527C                 | 30       |        | -10.28 |       |        | -14.04 |       |        | -19.28 |       |
| 7528C                 | 33       |        | -10.48 |       |        | -14.30 |       |        | -19.60 |       |
| 7527B                 | 36       |        | -10.04 |       |        | -13.80 |       |        | -19.00 |       |
| 7528K                 | 49       |        | -10.04 |       |        | -13.88 |       |        | -19.12 |       |
| 7527H                 | 54       |        | -10.16 |       |        | -14.00 |       |        | -19.20 |       |

TEST LIMITS = -8.0V to VDD

LP (TERMINAL 12) - SUBGROUP B1  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-28-76  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 2        |        | -.44  |       |        | -.52  |       |        | -.68  |       |
| 7528D                 | 8        |        | -.40  |       |        | -.48  |       |        | -.60  |       |
| 7527C                 | 13       |        | -.40  |       |        | -.48  |       |        | -.60  |       |
| 7528G                 | 20       |        | -.40  |       |        | -.48  |       |        | -.60  |       |
| 7528C                 | 25       |        | -.44  |       |        | -.52  |       |        | -.64  |       |
| 7527C                 | 30       |        | -.40  |       |        | -.48  |       |        | -.64  |       |
| 7528C                 | 33       |        | -.40  |       |        | -.52  |       |        | -.68  |       |
| 7527B                 | 36       |        | -.40  |       |        | -.48  |       |        | -.60  |       |
| 7528K                 | 49       |        | -.44  |       |        | -.52  |       |        | -.68  |       |
| 7527H                 | 54       |        | -.44  |       |        | -.56  |       |        | -.72  |       |

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M -SUBGROUP B1  
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7528C                 | 2        |                  |                  |                  |                  | -33.24           |                  |                  |                  |                  |
| 7528D                 | 8        |                  |                  |                  |                  | -32.88           |                  |                  |                  |                  |
| 7527C                 | 13       |                  |                  |                  |                  | -35.42           |                  |                  |                  |                  |
| 7528G                 | 20       |                  |                  |                  |                  | -33.28           |                  |                  |                  |                  |
| 7528C                 | 25       |                  |                  |                  |                  | -31.92           |                  |                  |                  |                  |
| 7527C                 | 30       |                  |                  |                  |                  | -34.44           |                  |                  |                  |                  |
| 7528C                 | 33       |                  |                  |                  |                  | -31.60           |                  |                  |                  |                  |
| 7527B                 | 36       |                  |                  |                  |                  | -35.28           |                  |                  |                  |                  |
| 7528K                 | 49       |                  |                  |                  |                  | -31.60           |                  |                  |                  |                  |
| 7527H                 | 54       |                  |                  |                  |                  | -34.84           |                  |                  |                  |                  |

TEST LIMITS = -28.0V Min.

G32 (TERMINAL 14)- SUBGROUP B1  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 2        |        | -10.44 |       |        | -14.28 |       |        | -19.56 |       |
| 7528D                 | 8        |        | -10.20 |       |        | -14.04 |       |        | -19.28 |       |
| 7527C                 | 13       |        | - 9.88 |       |        | -13.68 |       |        | -18.84 |       |
| 7528G                 | 20       |        | -10.16 |       |        | -13.96 |       |        | -19.16 |       |
| 7528C                 | 25       |        | -10.00 |       |        | -13.80 |       |        | -19.00 |       |
| 7527C                 | 30       |        | -10.32 |       |        | -14.16 |       |        | -19.40 |       |
| 7528C                 | 33       |        | -10.48 |       |        | -14.32 |       |        | -19.60 |       |
| 7527B                 | 36       |        | - 9.96 |       |        | -13.72 |       |        | -18.92 |       |
| 7528K                 | 49       |        | - 9.84 |       |        | -13.64 |       |        | -18.88 |       |
| 7527H                 | 54       |        | -10.08 |       |        | -13.92 |       |        | -19.16 |       |

TEST LIMITS = 0.0V to -2.0V

G32 (TERMINAL 14) - SUBGROUP B1  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-28-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 2        |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7528D                 | 8        |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7527C                 | 13       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7528G                 | 20       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7528C                 | 25       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7527C                 | 30       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7528C                 | 33       |        | -.68  |       |        | -.84  |       |        | -1.08 |       |
| 7527B                 | 36       |        | -.72  |       |        | -.84  |       |        | -1.04 |       |
| 7528K                 | 49       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7527H                 | 54       |        | -.76  |       |        | -.92  |       |        | -1.12 |       |

TEST LIMITS = -8.0V to VDD

FP (TERMINAL 15), V15M - SUBGROUP B1  
 SCALER INPUT (NEGATIVE BREAKDOWN) VOLTS

COLLINS DIVISIONS      DATE 7-25-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          |                  |                  |                  | 10 $\mu$ A       |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7528C                 | 2        |                  |                  |                  |                  | -33.68           |                  |                  |                  |                  |
| 7528D                 | 8        |                  |                  |                  |                  | -33.84           |                  |                  |                  |                  |
| 7527C                 | 13       |                  |                  |                  |                  | -34.96           |                  |                  |                  |                  |
| 7528G                 | 20       |                  |                  |                  |                  | -31.84           |                  |                  |                  |                  |
| 7528C                 | 25       |                  |                  |                  |                  | -33.92           |                  |                  |                  |                  |
| 7527C                 | 30       |                  |                  |                  |                  | -33.12           |                  |                  |                  |                  |
| 7528C                 | 33       |                  |                  |                  |                  | -32.80           |                  |                  |                  |                  |
| 7527B                 | 36       |                  |                  |                  |                  | -34.48           |                  |                  |                  |                  |
| 7528K                 | 49       |                  |                  |                  |                  | -32.48           |                  |                  |                  |                  |
| 7527H                 | 54       |                  |                  |                  |                  | -35.92           |                  |                  |                  |                  |

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) - SUBGROUP B1  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-25-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |        |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 2        |        |       |       |        | -1.44 |       |        | -11.64 |       |
| 7528D                 | 8        |        |       |       |        | -7.28 |       |        | -11.44 |       |
| 7527C                 | 13       |        |       |       |        | -7.60 |       |        | -12.56 |       |
| 7528G                 | 20       |        |       |       |        | -7.60 |       |        | -11.84 |       |
| 7528C                 | 25       |        |       |       |        | -7.28 |       |        | -11.44 |       |
| 7527C                 | 30       |        |       |       |        | -8.08 |       |        | -13.16 |       |
| 7528C                 | 33       |        |       |       |        | -4.96 |       |        | -12.16 |       |
| 7527B                 | 36       |        |       |       |        | -4.12 |       |        | -11.00 |       |
| 7528K                 | 49       |        |       |       |        | -7.12 |       |        | -11.32 |       |
| 7527H                 | 54       |        |       |       |        | -7.44 |       |        | -11.64 |       |

TEST LIMITS = -4.0V to VDD



Q6 (TERMINAL 16) - SUBGROUP B1  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 7-25-76  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 2        |        |       |       |        | -0.00 |       |        | -0.00 |       |
| 7528D                 | 8        |        |       |       |        | ↑     |       |        | ↑     |       |
| 7527C                 | 13       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7528G                 | 20       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7528C                 | 25       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7527C                 | 30       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7528C                 | 33       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7527B                 | 36       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7528K                 | 49       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7527H                 | 54       |        |       |       |        | -0.00 |       |        | -0.00 |       |

TEST LIMITS = 0.0V to -0.1V

IDD (TERMINAL 1), 1A - SUBGROUP B2  
SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS      DATE 8-19-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 6        |        |       |       |        |       |       |        |       | -4.60 |
| 7528D                 | 10       |        |       |       |        |       |       |        |       | -5.35 |
| 7528C                 | 15       |        |       |       |        |       |       |        |       | -4.51 |
| 7528H                 | 23       |        |       |       |        |       |       |        |       | -4.86 |
| 7528C                 | 27       |        |       |       |        |       |       |        |       | -4.70 |
| 7528J                 | 29       |        |       |       |        |       |       |        |       | -4.96 |
| 7527D                 | 35       |        |       |       |        |       |       |        |       | -4.89 |
| 7527D                 | 39       |        |       |       |        |       |       |        |       | -5.03 |
| 7527K                 | 44       |        |       |       |        |       |       |        |       | -4.53 |
| 7527E                 | 52       |        |       |       |        |       |       |        |       | -5.05 |

TEST LIMITS = 2.0mA to 10.0mA

ARM (TERMINAL 3) - SUBGROUP B2  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 6        |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7528D                 | 10       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7528C                 | 15       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7528H                 | 23       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7528C                 | 27       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7528J                 | 29       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7527D                 | 35       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7527D                 | 39       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7527K                 | 44       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7527E                 | 52       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) -SUBGROUP B2  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 6        |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7528D                 | 10       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7528C                 | 15       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7528H                 | 23       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7528C                 | 27       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7528J                 | 29       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7527D                 | 35       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7527D                 | 39       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7527K                 | 44       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7527E                 | 52       |        | -.28  |       |        | -.28  |       |        | -.28  |       |

TEST LIMITS = 0.0V to -2.0V

FIRE (TERMINAL 4) - SUBGROUP B2  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-76  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 6        |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7528D                 | 10       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7528C                 | 15       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7528H                 | 23       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7528C                 | 27       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7528J                 | 29       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7527D                 | 35       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7527D                 | 39       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7527K                 | 44       |        | -17.04 |       |        | -21.56 |       |        | -27.60 |       |
| 7527E                 | 52       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |

TEST LIMITS = -16.9V to VDD

FIRE (TERMINAL 4) SUBGROUP B2  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 6        |        | -2.52 |       |        | -2.52 |       |        | -2.72 |       |
| 7528D                 | 10       |        | -2.48 |       |        | -2.48 |       |        | -2.72 |       |
| 7528C                 | 15       |        | -2.64 |       |        | -2.60 |       |        | -2.80 |       |
| 7528H                 | 23       |        | -2.44 |       |        | -2.48 |       |        | -2.68 |       |
| 7528C                 | 27       |        | -2.40 |       |        | -2.48 |       |        | -2.68 |       |
| 7528J                 | 29       |        | -2.48 |       |        | -2.48 |       |        | -2.68 |       |
| 7527D                 | 35       |        | -2.72 |       |        | -2.68 |       |        | -2.84 |       |
| 7527D                 | 39       |        | -2.68 |       |        | -2.68 |       |        | -2.84 |       |
| 7527K                 | 44       |        | -2.80 |       |        | -2.68 |       |        | -2.84 |       |
| 7527E                 | 52       |        | -2.60 |       |        | -2.60 |       |        | -2.80 |       |

TEST LIMITS = 0.0V to -10.0V

G14 (TERMINAL 5), V5M - SUBGROUP B2  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7528C                 | 6        |                  |                  |                  |                  | -31.16           |                  |                  |                  |                  |
| 7528D                 | 10       |                  |                  |                  |                  | -34.24           |                  |                  |                  |                  |
| 7528C                 | 15       |                  |                  |                  |                  | -33.48           |                  |                  |                  |                  |
| 7528H                 | 23       |                  |                  |                  |                  | -30.64           |                  |                  |                  |                  |
| 7528C                 | 27       |                  |                  |                  |                  | -33.68           |                  |                  |                  |                  |
| 7528J                 | 29       |                  |                  |                  |                  | -32.24           |                  |                  |                  |                  |
| 7527D                 | 35       |                  |                  |                  |                  | -33.32           |                  |                  |                  |                  |
| 7527D                 | 39       |                  |                  |                  |                  | -33.48           |                  |                  |                  |                  |
| 7527K                 | 44       |                  |                  |                  |                  | -31.16           |                  |                  |                  |                  |
| 7527E                 | 52       |                  |                  |                  |                  | -32.92           |                  |                  |                  |                  |

TEST LIMITS = -28.0V Minimum

Q4 (TERMINAL 6) -SUBGROUP B2  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|-------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 6        |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7528D                 | 10       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7528C                 | 15       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7528H                 | 23       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7528C                 | 27       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7528J                 | 29       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527D                 | 35       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527D                 | 39       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527K                 | 44       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527E                 | 52       |        |       |       |        | -21.56 |       |        | -27.64 |       |

TEST LIMITS = -21.4V to VDD



Q4 (TERMINAL 6) - SUBGROUP B2  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 6        |        |       |       |        |       |       |        |       |       |
| 7528D                 | 10       |        |       |       |        |       |       |        |       |       |
| 7528C                 | 15       |        |       |       |        |       |       |        |       |       |
| 7528H                 | 23       |        |       |       |        |       |       |        |       |       |
| 7528C                 | 27       |        |       |       |        |       |       |        |       |       |
| 7528J                 | 29       |        |       |       |        |       |       |        |       |       |
| 7527D                 | 35       |        |       |       |        |       |       |        |       |       |
| 7527D                 | 39       |        |       |       |        |       |       |        |       |       |
| 7527K                 | 44       |        |       |       |        |       |       |        |       |       |
| 7527E                 | 52       |        |       |       |        |       |       |        |       |       |

TEST LIMITS = 0.0V to -2.6V

M11 (TERMINAL 7), V7M - SUBGROUP B2  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 6        |            |       |       |       | -31.64 |       |       |       |       |
| 7528D                 | 10       |            |       |       |       | -32.56 |       |       |       |       |
| 7528C                 | 15       |            |       |       |       | -35.48 |       |       |       |       |
| 7528H                 | 23       |            |       |       |       | -32.52 |       |       |       |       |
| 7528C                 | 27       |            |       |       |       | -31.60 |       |       |       |       |
| 7528J                 | 29       |            |       |       |       | -33.36 |       |       |       |       |
| 7527D                 | 35       |            |       |       |       | -31.48 |       |       |       |       |
| 7527D                 | 39       |            |       |       |       | -33.24 |       |       |       |       |
| 7527K                 | 44       |            |       |       |       | -31.64 |       |       |       |       |
| 7527E                 | 52       |            |       |       |       | -32.64 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

appendix c

MON (TERMINAL 9), V9M- SUBGROUP B2  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 6        |            |       |       |       | -31.72 |       |       |       |       |
| 7528D                 | 10       |            |       |       |       | -33.20 |       |       |       |       |
| 7528C                 | 15       |            |       |       |       | -31.96 |       |       |       |       |
| 7528H                 | 23       |            |       |       |       | -32.40 |       |       |       |       |
| 7528C                 | 27       |            |       |       |       | -32.88 |       |       |       |       |
| 7528J                 | 29       |            |       |       |       | -33.68 |       |       |       |       |
| 7527D                 | 35       |            |       |       |       | -35.00 |       |       |       |       |
| 7527D                 | 39       |            |       |       |       | -31.16 |       |       |       |       |
| 7527K                 | 44       |            |       |       |       | -31.16 |       |       |       |       |
| 7527E                 | 52       |            |       |       |       | -32.28 |       |       |       |       |

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9), V9P - SUBGROUP B2  
 SCALER INPUT (POSITIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 3mA   |       |       |       |       |       |       |       |       |
|-----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 6        |       |       |       |       | 1.08  |       |       |       |       |
| 7528D                 | 10       |       |       |       |       | 1.28  |       |       |       |       |
| 7528C                 | 15       |       |       |       |       | 1.12  |       |       |       |       |
| 7528H                 | 23       |       |       |       |       | 1.04  |       |       |       |       |
| 7528C                 | 27       |       |       |       |       | 1.08  |       |       |       |       |
| 7528J                 | 29       |       |       |       |       | 1.04  |       |       |       |       |
| 7527D                 | 35       |       |       |       |       | 1.04  |       |       |       |       |
| 7527D                 | 39       |       |       |       |       | 1.08  |       |       |       |       |
| 7527K                 | 44       |       |       |       |       | 1.32  |       |       |       |       |
| 7527E                 | 52       |       |       |       |       | 1.04  |       |       |       |       |

TEST LIMITS = 0.0V to +6.0V

CL (TERMINAL 10), V10M - SUBGROUP B2  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7528C                 | 6        |                  |                  |                  |                  | -33.40           |                  |                  |                  |                  |
| 7528D                 | 10       |                  |                  |                  |                  | -36.24           |                  |                  |                  |                  |
| 7528C                 | 15       |                  |                  |                  |                  | -32.88           |                  |                  |                  |                  |
| 7528H                 | 23       |                  |                  |                  |                  | -31.92           |                  |                  |                  |                  |
| 7528C                 | 27       |                  |                  |                  |                  | -33.20           |                  |                  |                  |                  |
| 7528J                 | 29       |                  |                  |                  |                  | -34.08           |                  |                  |                  |                  |
| 7527D                 | 35       |                  |                  |                  |                  | -36.08           |                  |                  |                  |                  |
| 7527D                 | 39       |                  |                  |                  |                  | -31.32           |                  |                  |                  |                  |
| 7527K                 | 44       |                  |                  |                  |                  | -31.36           |                  |                  |                  |                  |
| 7527E                 | 52       |                  |                  |                  |                  | -32.56           |                  |                  |                  |                  |

TEST LIMITS = -28.0V Minimum

SP (TERMINAL 11) - SUBGROUP B2  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 6        |        | -10.04 |       |        | -13.88 |       |        | -19.04 |       |
| 7528D                 | 10       |        | -10.04 |       |        | -13.84 |       |        | -19.04 |       |
| 7528C                 | 15       |        | - 9.96 |       |        | -13.72 |       |        | -18.96 |       |
| 7528H                 | 23       |        | -10.36 |       |        | -14.20 |       |        | -19.44 |       |
| 7528C                 | 27       |        | -10.16 |       |        | -13.92 |       |        | -19.12 |       |
| 7528J                 | 29       |        | - 9.92 |       |        | -13.68 |       |        | -18.88 |       |
| 7527D                 | 35       |        | -10.04 |       |        | -13.80 |       |        | -19.00 |       |
| 7527D                 | 39       |        | -10.28 |       |        | -14.04 |       |        | -19.32 |       |
| 7527K                 | 44       |        | - 9.76 |       |        | -13.56 |       |        | -18.76 |       |
| 7527E                 | 52       |        | - 9.88 |       |        | -13.68 |       |        | -18.88 |       |

TEST LIMITS =-8.0V to VDD

SP (TERMINAL 11) - SUBGROUP B2  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-19-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 6        |        | -.60  |       |        | -.80  |       |        | -1.24 |       |
| 7528D                 | 10       |        | -.72  |       |        | -.88  |       |        | -1.44 |       |
| 7528C                 | 15       |        | -.60  |       |        | -.80  |       |        | -1.24 |       |
| 7528H                 | 23       |        | -.60  |       |        | -.80  |       |        | -1.24 |       |
| 7528C                 | 27       |        | -.60  |       |        | -.80  |       |        | -1.24 |       |
| 7528J                 | 29       |        | -.64  |       |        | -.84  |       |        | -1.28 |       |
| 7527D                 | 35       |        | -.64  |       |        | -.88  |       |        | -1.36 |       |
| 7527D                 | 39       |        | -.68  |       |        | -.88  |       |        | -1.40 |       |
| 7527K                 | 44       |        | -.64  |       |        | -.84  |       |        | -1.36 |       |
| 7527E                 | 52       |        | -.68  |       |        | -.88  |       |        | -1.36 |       |

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUP B2  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 6        |        | -10.28 |       |        | -14.08 |       |        | -19.36 |       |
| 7528D                 | 10       |        | -10.08 |       |        | -13.88 |       |        | -19.12 |       |
| 7528C                 | 15       |        | - 9.96 |       |        | -13.72 |       |        | -18.92 |       |
| 7528H                 | 23       |        | -10.16 |       |        | -14.00 |       |        | -19.24 |       |
| 7528C                 | 27       |        | -10.16 |       |        | -14.00 |       |        | -19.16 |       |
| 7528J                 | 29       |        | -10.00 |       |        | -13.76 |       |        | -18.96 |       |
| 7527D                 | 35       |        | -10.00 |       |        | -13.76 |       |        | -18.96 |       |
| 7527D                 | 39       |        | -10.28 |       |        | -14.04 |       |        | -19.32 |       |
| 7527K                 | 44       |        | - 9.72 |       |        | -13.52 |       |        | -18.68 |       |
| 7527E                 | 52       |        | -10.08 |       |        | -13.92 |       |        | -19.12 |       |

TEST LIMITS = -8.0V to VDD



LP (TERMINAL 12) - SUBGROUP B2  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 6        |        | -.40  |       |        | -.48  |       |        | -.64  |       |
| 7528D                 | 10       |        | -.44  |       |        | -.56  |       |        | -.72  |       |
| 7528C                 | 15       |        | -.40  |       |        | -.48  |       |        | -.60  |       |
| 7528H                 | 23       |        | -.40  |       |        | -.48  |       |        | -.60  |       |
| 7528C                 | 27       |        | -.40  |       |        | -.48  |       |        | -.60  |       |
| 7528J                 | 29       |        | -.44  |       |        | -.52  |       |        | -.64  |       |
| 7527D                 | 35       |        | -.40  |       |        | -.52  |       |        | -.64  |       |
| 7527D                 | 39       |        | -.44  |       |        | -.56  |       |        | -.72  |       |
| 7527K                 | 44       |        | -.44  |       |        | -.52  |       |        | -.64  |       |
| 7527E                 | 52       |        | -.44  |       |        | -.56  |       |        | -.68  |       |

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M SUBGROUP B2  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10μA  |       |       |       |        |       |       |       |       |
|-----------------------|----------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 6        |       |       |       |       | -31.52 |       |       |       |       |
| 7528D                 | 10       |       |       |       |       | -32.88 |       |       |       |       |
| 7528C                 | 15       |       |       |       |       | -35.32 |       |       |       |       |
| 7528H                 | 23       |       |       |       |       | -32.12 |       |       |       |       |
| 7528C                 | 27       |       |       |       |       | -34.40 |       |       |       |       |
| 7528J                 | 29       |       |       |       |       | -32.76 |       |       |       |       |
| 7527D                 | 35       |       |       |       |       | -32.28 |       |       |       |       |
| 7527D                 | 39       |       |       |       |       | -34.00 |       |       |       |       |
| 7527K                 | 44       |       |       |       |       | -31.56 |       |       |       |       |
| 7527E                 | 52       |       |       |       |       | -32.40 |       |       |       |       |

TEST LIMITS = -28.0V Min.

G32 (TERMINAL 14)- SUBGROUP B2  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 6        |        | -10.04 |       |        | -13.88 |       |        | -19.04 |       |
| 7528D                 | 10       |        | -10.28 |       |        | -14.09 |       |        | -19.32 |       |
| 7528C                 | 15       |        | - 9.84 |       |        | -13.64 |       |        | -18.80 |       |
| 7528H                 | 23       |        | -10.28 |       |        | -14.08 |       |        | -19.32 |       |
| 7528C                 | 27       |        | -10.20 |       |        | -14.00 |       |        | -19.28 |       |
| 7528J                 | 29       |        | -10.48 |       |        | -14.32 |       |        | -19.60 |       |
| 7527D                 | 35       |        | -10.08 |       |        | -13.88 |       |        | -19.04 |       |
| 7527D                 | 39       |        | -10.00 |       |        | -13.84 |       |        | -19.04 |       |
| 7527K                 | 44       |        | - 9.72 |       |        | -13.52 |       |        | -18.68 |       |
| 7527E                 | 52       |        | -10.16 |       |        | -13.96 |       |        | -19.20 |       |

TEST LIMITS = -8.0V to VDD

G32 (TERMINAL 14)- SUBGROUP B2  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 6        |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7528D                 | 10       |        | -.76  |       |        | -.92  |       |        | -1.20 |       |
| 7528C                 | 15       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7528H                 | 23       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7528C                 | 27       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7528J                 | 29       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7527D                 | 35       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7527D                 | 39       |        | -.76  |       |        | -.88  |       |        | -1.12 |       |
| 7527K                 | 44       |        | -.76  |       |        | -.88  |       |        | -1.08 |       |
| 7527E                 | 52       |        | -.76  |       |        | -.88  |       |        | -1.12 |       |

TEST LIMITS = 0.0V to -2.0V

FP (TERMINAL 15), V15M - SUBGROUP B2  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 8-19-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7528C                 | 6        |                  |                  |                  |                  | -32.64           |                  |                  |                  |                  |
| 7528D                 | 10       |                  |                  |                  |                  | -34.76           |                  |                  |                  |                  |
| 7528C                 | 15       |                  |                  |                  |                  | -33.40           |                  |                  |                  |                  |
| 7528H                 | 23       |                  |                  |                  |                  | -33.32           |                  |                  |                  |                  |
| 7528C                 | 27       |                  |                  |                  |                  | -33.56           |                  |                  |                  |                  |
| 7528J                 | 29       |                  |                  |                  |                  | -33.52           |                  |                  |                  |                  |
| 7527D                 | 35       |                  |                  |                  |                  | -34.04           |                  |                  |                  |                  |
| 7527D                 | 39       |                  |                  |                  |                  | -32.24           |                  |                  |                  |                  |
| 7527K                 | 44       |                  |                  |                  |                  | -32.20           |                  |                  |                  |                  |
| 7527E                 | 52       |                  |                  |                  |                  | -34.48           |                  |                  |                  |                  |

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) -SUBGROUP B2  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |        |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 6        |        |       |       |        | -7.44 |       |        | -11.60 |       |
| 7528D                 | 10       |        |       |       |        | -7.44 |       |        | -11.60 |       |
| 7528C                 | 15       |        |       |       |        | -7.64 |       |        | -11.88 |       |
| 7528H                 | 23       |        |       |       |        | -7.60 |       |        | -11.80 |       |
| 7528C                 | 27       |        |       |       |        | -7.68 |       |        | -11.88 |       |
| 7528J                 | 29       |        |       |       |        | -7.76 |       |        | -11.92 |       |
| 7527D                 | 35       |        |       |       |        | -7.52 |       |        | -11.68 |       |
| 7527D                 | 39       |        |       |       |        | -7.28 |       |        | -11.44 |       |
| 7527K                 | 44       |        |       |       |        | -6.72 |       |        | -10.80 |       |
| 7527E                 | 52       |        |       |       |        | -6.96 |       |        | -11.12 |       |

TEST LIMITS = -4.0V to VDD

Q6 (TERMINAL 16) -SUBGROUP B2  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-19-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 6        |        |       |       |        | -.04  |       |        | -.00  |       |
| 7528D                 | 10       |        |       |       |        | -.00  |       |        | -.00  |       |
| 7528C                 | 15       |        |       |       |        |       |       |        |       |       |
| 7528H                 | 23       |        |       |       |        |       |       |        |       |       |
| 7528C                 | 27       |        |       |       |        |       |       |        |       |       |
| 7528J                 | 29       |        |       |       |        |       |       |        |       |       |
| 7527D                 | 35       |        |       |       |        |       |       |        |       |       |
| 7527D                 | 39       |        |       |       |        |       |       |        |       |       |
| 7527K                 | 44       |        |       |       |        |       |       |        |       |       |
| 7527E                 | 52       |        |       |       |        |       |       |        |       |       |

TEST LIMITS = 0.0V to -0.1V

IDD (TERMINAL 1), 1A--SUBGROUP B3  
 SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 3        |        |       |       |        |       |       |        | -5.03 |       |
| 7527D                 | 9        |        |       |       |        |       |       |        | -4.93 |       |
| 7528A                 | 14       |        |       |       |        |       |       |        | -4.96 |       |
| 7527C                 | 14       |        |       |       |        |       |       |        | -4.99 |       |
| 7527A                 | 19       |        |       |       |        |       |       |        | -4.51 |       |
| 7527B                 | 26       |        |       |       |        |       |       |        | -4.69 |       |
| 7528H                 | 32       |        |       |       |        |       |       |        | -4.51 |       |
| 7527A                 | 38       |        |       |       |        |       |       |        | -4.78 |       |
| 7528C                 | 40       |        |       |       |        |       |       |        | -5.13 |       |
| 7527B                 | 42       |        |       |       |        |       |       |        | -5.36 |       |

TEST LIMITS = 2.0mA to 10.0mA



ARM (TERMINAL 3)--SUBGROUP B3  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 3        |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7527D                 | 9        |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7528A                 | 14       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7527C                 | 14       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7527A                 | 19       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7527B                 | 26       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7528H                 | 32       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7527A                 | 38       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7528C                 | 40       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |
| 7527B                 | 42       |        | -17.00 |       |        | -21.48 |       |        | -27.56 |       |

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) SUBGROUP B3  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 3        |        | -.24  |       |        | -.24  |       |        | -.24  |       |
| 7527D                 | 9        |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7528A                 | 14       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7527C                 | 14       |        | -.24  |       |        | -.24  |       |        | -.24  |       |
| 7527A                 | 19       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7527B                 | 26       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7528H                 | 32       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7527A                 | 38       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7528C                 | 40       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7527B                 | 42       |        | -.28  |       |        | -.24  |       |        | -.28  |       |

TEST LIMITS = 0.0V to -2.0V

FIRE (TERMINAL 4) - SUBGROUP B3  
SCALER QIITPIIT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 3        |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7527D                 | 9        |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7528A                 | 14       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7527C                 | 14       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7527A                 | 19       |        | -17.04 |       |        | -21.56 |       |        | -27.60 |       |
| 7527B                 | 26       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7528H                 | 32       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7527A                 | 38       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7528C                 | 40       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7527B                 | 42       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |

TEST LIMITS = -16.9V to VDD

FIRE (TERMINAL 4)- SUBGROUP B3  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 3        |        | -2.44 |       |        | -2.48 |       |        | -2.72 |       |
| 7527D                 | 9        |        | -2.68 |       |        | -2.64 |       |        | -2.80 |       |
| 7528A                 | 14       |        | -2.52 |       |        | -2.52 |       |        | -2.72 |       |
| 7527C                 | 14       |        | -2.40 |       |        | -2.40 |       |        | -2.60 |       |
| 7527A                 | 19       |        | -2.96 |       |        | -2.76 |       |        | -2.84 |       |
| 7527B                 | 26       |        | -2.60 |       |        | -2.52 |       |        | -2.76 |       |
| 7528H                 | 32       |        | -2.68 |       |        | -2.56 |       |        | -2.76 |       |
| 7527A                 | 38       |        | -2.64 |       |        | -2.60 |       |        | -2.80 |       |
| 7528C                 | 40       |        | -2.48 |       |        | -2.48 |       |        | -2.76 |       |
| 7527B                 | 42       |        | -2.44 |       |        | -2.44 |       |        | -2.64 |       |

TEST LIMITS = 0.0V to -10.0V

G14 (TERMINAL 5), V5M -SUBGROUP B3  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          |       |       |       | 10 $\mu$ A |        |       |       |       |       |
|-----------------------|----------|-------|-------|-------|------------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C      | +25°C  | +75°C | -55°C | +25°C | +75°C |
| &528C                 | 3        |       |       |       |            | -32.96 |       |       |       |       |
| 7527D                 | 9        |       |       |       |            | -33.08 |       |       |       |       |
| 7528A                 | 14       |       |       |       |            | -32.96 |       |       |       |       |
| 7527C                 | 17       |       |       |       |            | -32.12 |       |       |       |       |
| 7527A                 | 19       |       |       |       |            | -31.00 |       |       |       |       |
| 7527B                 | 26       |       |       |       |            | -35.44 |       |       |       |       |
| 7528H                 | 32       |       |       |       |            | -35.80 |       |       |       |       |
| 7527A                 | 38       |       |       |       |            | -34.80 |       |       |       |       |
| 7528C                 | 40       |       |       |       |            | -34.04 |       |       |       |       |
| 7527B                 | 42       |       |       |       |            | -32.60 |       |       |       |       |

TEST LIMITS  $\cong$  -28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUP B3  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|-------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 3        |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527D                 | 9        |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7528A                 | 14       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527C                 | 14       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527A                 | 19       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527B                 | 26       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7528H                 | 32       |        |       |       |        | -21.56 |       |        | -27.64 |       |
| 7527A                 | 38       |        |       |       |        | -21.52 |       |        | -27.64 |       |
| 7528C                 | 40       |        |       |       |        | -21.52 |       |        | -27.64 |       |
| 7527B                 | 42       |        |       |       |        | -21.52 |       |        | -27.64 |       |

TEST LIMITS = -21.4V to VDD

Q4 (TERMINAL 6) - SUBGROUP B3  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 3        |        |       |       |        |       |       |        |       |       |
| 7527D                 | 9        |        |       |       |        |       |       |        |       |       |
| 7528A                 | 14       |        |       |       |        |       |       |        |       |       |
| 7527C                 | 14       |        |       |       |        |       |       |        |       |       |
| 7527A                 | 19       |        |       |       |        |       |       |        |       |       |
| 7527B                 | 26       |        |       |       |        |       |       |        |       |       |
| 7528H                 | 32       |        |       |       |        |       |       |        |       |       |
| 7527A                 | 38       |        |       |       |        |       |       |        |       |       |
| 7528C                 | 40       |        |       |       |        |       |       |        |       |       |
| 7527B                 | 42       |        |       |       |        |       |       |        |       |       |

TEST LIMITS = 0.0V TO -2.6V

M11 (TERMINAL 7), V7M - SUBGROUP B3

COLLINS DIVISIONS DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

| Device Identification |          |       |       |       | 10 $\mu$ A |        |       |       |       |       |
|-----------------------|----------|-------|-------|-------|------------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C      | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 3        |       |       |       |            | -31.36 |       |       |       |       |
| 7527D                 | 9        |       |       |       |            | -34.92 |       |       |       |       |
| 7528A                 | 14       |       |       |       |            | -34.04 |       |       |       |       |
| 7527C                 | 17       |       |       |       |            | -34.20 |       |       |       |       |
| 7527A                 | 19       |       |       |       |            | -33.40 |       |       |       |       |
| 7527B                 | 26       |       |       |       |            | -33.80 |       |       |       |       |
| 7528H                 | 32       |       |       |       |            | -35.92 |       |       |       |       |
| 7527A                 | 38       |       |       |       |            | -32.12 |       |       |       |       |
| 7528C                 | 40       |       |       |       |            | -33.40 |       |       |       |       |
| 7527B                 | 42       |       |       |       |            | -33.12 |       |       |       |       |

TEST LIMITS = -28.0V Minimum



MON (TERMINAL 9), V9M -SUBGROUP B3  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          |       |       |       | 10 $\mu$ A |       |       |       |       |       |
|-----------------------|----------|-------|-------|-------|------------|-------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C      | +25°C | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 3        |       |       |       |            |       |       |       |       |       |
| 7527D                 | 9        |       |       |       |            |       |       |       |       |       |
| 7528A                 | 14       |       |       |       |            |       |       |       |       |       |
| 7527C                 | 17       |       |       |       |            |       |       |       |       |       |
| 7527A                 | 19       |       |       |       |            |       |       |       |       |       |
| 7527B                 | 26       |       |       |       |            |       |       |       |       |       |
| 7528H                 | 32       |       |       |       |            |       |       |       |       |       |
| 7527A                 | 38       |       |       |       |            |       |       |       |       |       |
| 7528C                 | 40       |       |       |       |            |       |       |       |       |       |
| 7527B                 | 42       |       |       |       |            |       |       |       |       |       |

TEST LIMITS = -28.0 Minimum

MON ( TERMINAL 9 ), V9P - SUBGROUP B3  
 SCALER INPUT ( POSITIVE BREAKDOWN ), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          |       |       |       | 3mA   |       |       |       |       |       |
|-----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 3        |       |       |       |       | 1.16  |       |       |       |       |
| 7527D                 | 9        |       |       |       |       | 1.20  |       |       |       |       |
| 7528A                 | 14       |       |       |       |       | 1.16  |       |       |       |       |
| 7527C                 | 17       |       |       |       |       | 1.00  |       |       |       |       |
| 7527A                 | 19       |       |       |       |       | 1.04  |       |       |       |       |
| 7527B                 | 26       |       |       |       |       | 1.16  |       |       |       |       |
| 7528H                 | 32       |       |       |       |       | 1.08  |       |       |       |       |
| 7527A                 | 36       |       |       |       |       | 1.08  |       |       |       |       |
| 7528C                 | 40       |       |       |       |       | 1.36  |       |       |       |       |
| 7527B                 | 42       |       |       |       |       | 1.08  |       |       |       |       |

TEST LIMITS = 0.0V to +6.0V

CL (TERMINAL 10), V10M - SUBGROUP B3  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10uA  |       |       |       |        |       |       |       |       |
|-----------------------|----------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 3        |       |       |       |       | -31.44 |       |       |       |       |
| 7527D                 | 9        |       |       |       |       | -34.56 |       |       |       |       |
| 7528A                 | 14       |       |       |       |       | -34.80 |       |       |       |       |
| 7527C                 | 17       |       |       |       |       | -34.52 |       |       |       |       |
| 7527A                 | 19       |       |       |       |       | -31.24 |       |       |       |       |
| 7527B                 | 26       |       |       |       |       | -34.44 |       |       |       |       |
| 7528H                 | 32       |       |       |       |       | -35.92 |       |       |       |       |
| 7527A                 | 38       |       |       |       |       | -32.88 |       |       |       |       |
| 7528C                 | 40       |       |       |       |       | -33.52 |       |       |       |       |
| 7527B                 | 42       |       |       |       |       | -34.12 |       |       |       |       |

TEST LIMITS= -28.0V Minimum

SP (TERMINAL 11) -SUBGROUP B3  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 3        |        | -10.40 |       |        | -14.20 |       |        | -19.44 |       |
| 7527D                 | 9        |        | -10.32 |       |        | -14.12 |       |        | -19.40 |       |
| 7528A                 | 14       |        | -10.12 |       |        | -13.92 |       |        | -19.12 |       |
| 7527C                 | 14       |        | -10.00 |       |        | -13.76 |       |        | -19.00 |       |
| 7527A                 | 19       |        | -10.20 |       |        | -14.04 |       |        | -19.32 |       |
| 7527B                 | 26       |        | -10.16 |       |        | -13.92 |       |        | -19.16 |       |
| 7528H                 | 32       |        | - 9.96 |       |        | -13.72 |       |        | -18.92 |       |
| 7527A                 | 38       |        | -10.20 |       |        | -14.00 |       |        | -19.28 |       |
| 7528C                 | 40       |        | -10.52 |       |        | -14.36 |       |        | -19.68 |       |
| 7527B                 | 42       |        | -10.48 |       |        | -14.36 |       |        | -19.68 |       |

TEST LIMITS = -8.0V to VDD

SP (TERMINAL 11) - SUBGROUP B3  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 3        |        | -.60  |       |        | -.84  |       |        | -1.28 |       |
| 7527D                 | 9        |        | -.64  |       |        | -.84  |       |        | -1.28 |       |
| 7528A                 | 14       |        | -.64  |       |        | -.24  |       |        | -1.36 |       |
| 7527C                 | 14       |        | -.60  |       |        | -.76  |       |        | -1.24 |       |
| 7527A                 | 19       |        | -.64  |       |        | -.88  |       |        | -1.36 |       |
| 7527B                 | 26       |        | -.60  |       |        | -.80  |       |        | -1.24 |       |
| 7528H                 | 32       |        | -.60  |       |        | -.80  |       |        | -1.24 |       |
| 7527A                 | 38       |        | -.60  |       |        | -.84  |       |        | -1.28 |       |
| 7528C                 | 40       |        | -.64  |       |        | -.88  |       |        | -1.36 |       |
| 7527B                 | 42       |        | -.68  |       |        | -.88  |       |        | -1.40 |       |

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) -SUBGROUP B3  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 3        |        | -10.16 |       |        | -13.96 |       |        | -19.16 |       |
| 7527D                 | 9        |        | -10.32 |       |        | -14.16 |       |        | -19.44 |       |
| 7528A                 | 14       |        | -10.04 |       |        | -13.88 |       |        | -19.08 |       |
| 7527C                 | 14       |        | -10.32 |       |        | -14.16 |       |        | -19.40 |       |
| 7527A                 | 19       |        | - 9.64 |       |        | -13.36 |       |        | -18.52 |       |
| 7527B                 | 26       |        | -10.16 |       |        | -13.96 |       |        | -19.16 |       |
| 7528H                 | 32       |        | - 9.92 |       |        | -13.72 |       |        | -18.88 |       |
| 7527A                 | 38       |        | -10.16 |       |        | -14.00 |       |        | -19.20 |       |
| 7528C                 | 40       |        | -10.48 |       |        | -14.32 |       |        | -19.64 |       |
| 7527B                 | 42       |        | -10.48 |       |        | -14.32 |       |        | -19.64 |       |

TEST LIMITS = -8.0V to VDD

LP (TERMINAL 12) - SUBGROUP B3  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 3        |        | -.40  |       |        | -.48  |       |        | -.60  |       |
| 7527D                 | 9        |        | -.40  |       |        | -.48  |       |        | -.64  |       |
| 7528A                 | 14       |        | -.44  |       |        | -.52  |       |        | -.68  |       |
| 7527C                 | 17       |        | -.40  |       |        | -.52  |       |        | -.64  |       |
| 7527A                 | 19       |        | -.40  |       |        | -.48  |       |        | -.64  |       |
| 7527B                 | 26       |        | -.40  |       |        | -.48  |       |        | -.64  |       |
| 7528H                 | 32       |        | -.40  |       |        | -.48  |       |        | -.60  |       |
| 7527A                 | 38       |        | -.40  |       |        | -.48  |       |        | -.64  |       |
| 7528C                 | 40       |        | -.44  |       |        | -.52  |       |        | -.69  |       |
| 7527B                 | 42       |        | -.44  |       |        | -.56  |       |        | -.72  |       |

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M -SUBGROUP B3  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 3        |            |       |       |       | -32.96 |       |       |       |       |
| 7527D                 | 9        |            |       |       |       | -35.84 |       |       |       |       |
| 7528A                 | 14       |            |       |       |       | -32.80 |       |       |       |       |
| 7527C                 | 17       |            |       |       |       | -34.68 |       |       |       |       |
| 7527A                 | 19       |            |       |       |       | -34.48 |       |       |       |       |
| 7527B                 | 26       |            |       |       |       | -34.48 |       |       |       |       |
| 7528H                 | 32       |            |       |       |       | -36.08 |       |       |       |       |
| 7527A                 | 38       |            |       |       |       | -32.64 |       |       |       |       |
| 7528C                 | 40       |            |       |       |       | -32.00 |       |       |       |       |
| 7527B                 | 42       |            |       |       |       | -35.32 |       |       |       |       |

TEST LIMITS = -28.0V Min.



G32 (TERMINAL 14)--SUBGROUP B3  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 3        |        | -10.28 |       |        | -14.00 |       |        | -19.20 |       |
| 7527D                 | 9        |        | -10.36 |       |        | -14.20 |       |        | -19.44 |       |
| 7528A                 | 14       |        | - 9.92 |       |        | -13.72 |       |        | -18.92 |       |
| 7527C                 | 14       |        | -10.44 |       |        | -14.32 |       |        | -19.60 |       |
| 7527A                 | 19       |        | - 9.68 |       |        | -13.44 |       |        | -18.60 |       |
| 7527B                 | 26       |        | -10.12 |       |        | -13.92 |       |        | -19.12 |       |
| 7528H                 | 32       |        | - 9.92 |       |        | -13.68 |       |        | -18.88 |       |
| 7527A                 | 38       |        | -10.32 |       |        | -14.16 |       |        | -19.40 |       |
| 7528C                 | 40       |        | -10.48 |       |        | -14.32 |       |        | -19.60 |       |
| 7527B                 | 42       |        | - 9.80 |       |        | -13.56 |       |        | -18.76 |       |

TEST LIMITS = -8.0V to VDD

G32 (TERMINAL 14)- SUBGROUP B3  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 3        |        | -.68  |       |        | -.84  |       |        | -1.08 |       |
| 7527D                 | 9        |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7528A                 | 14       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7527C                 | 17       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7527A                 | 19       |        | -.76  |       |        | -.88  |       |        | -1.08 |       |
| 7527B                 | 26       |        | -.72  |       |        | -.84  |       |        | -1.08 |       |
| 7528H                 | 32       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7527A                 | 38       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7528C                 | 40       |        | -.72  |       |        | -.88  |       |        | -1.12 |       |
| 7527B                 | 42       |        | -.76  |       |        | -.88  |       |        | -1.08 |       |

TEST LIMITS = 0.0V to -2.0V

FP (TERMINAL 15), V15M -SUBGROUP B3  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7528C                 | 3        |            |       |       |       | -33.80 |       |       |       |       |
| 7527D                 | 9        |            |       |       |       | -33.08 |       |       |       |       |
| 7528A                 | 14       |            |       |       |       | -32.96 |       |       |       |       |
| 7527C                 | 17       |            |       |       |       | -32.12 |       |       |       |       |
| 7527A                 | 19       |            |       |       |       | -31.00 |       |       |       |       |
| 7527B                 | 26       |            |       |       |       | -35.44 |       |       |       |       |
| 7528H                 | 32       |            |       |       |       | -35.80 |       |       |       |       |
| 7527A                 | 38       |            |       |       |       | -34.80 |       |       |       |       |
| 7528C                 | 40       |            |       |       |       | -34.04 |       |       |       |       |
| 7527B                 | 42       |            |       |       |       | -32.00 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) - SUBGROUP B3  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |        |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C |
| 7528C                 | 3        |        |       |       |        | -7.76 |       |        | -12.04 |       |
| 7527D                 | 9        |        |       |       |        | -7.80 |       |        | -12.00 |       |
| 7528A                 | 14       |        |       |       |        | -7.60 |       |        | -11.84 |       |
| 7527C                 | 14       |        |       |       |        | -7.56 |       |        | -11.76 |       |
| 7527A                 | 19       |        |       |       |        | -6.76 |       |        | -10.80 |       |
| 7527B                 | 26       |        |       |       |        | -7.12 |       |        | -11.20 |       |
| 7528H                 | 32       |        |       |       |        | -6.96 |       |        | -11.00 |       |
| 7527A                 | 38       |        |       |       |        | -7.28 |       |        | -11.40 |       |
| 7528C                 | 40       |        |       |       |        | -7.72 |       |        | -11.92 |       |
| 7527B                 | 42       |        |       |       |        | -7.32 |       |        | -11.48 |       |

TEST LIMITS = -4.0V to VDD

appendix c

Q6 (TERMINAL 16)- SUBGROUP B3  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 8-18-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7528C                 | 3        |        |       |       |        | .00   |       |        | .00   |       |
| 7527D                 | 9        |        |       |       |        | .00   |       |        | .00   |       |
| 7528A                 | 14       |        |       |       |        | .00   |       |        | -.04  |       |
| 7527A                 | 19       |        |       |       |        | .00   |       |        | .00   |       |
| 7527B                 | 26       |        |       |       |        | .00   |       |        | .00   |       |
| 7528H                 | 32       |        |       |       |        | .00   |       |        | .00   |       |
| 7527A                 | 38       |        |       |       |        | .00   |       |        | -.04  |       |
| 7528C                 | 40       |        |       |       |        | .00   |       |        | -.04  |       |
| 7527B                 | 42       |        |       |       |        | .00   |       |        | -.04  |       |

TEST LIMITS = 0.0V to -0.1V

APPENDIX D

PARAMETRIC RESULTS OF PRODUCTION LOT QUALITY ACCEPTANCE TESTING

appendix d

IDD(TERMINAL 1), 1A - SUBGROUP A2,A3,A4

COLLINS DIVISIONS DATE 9-30-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

SCALER BIAS (IDD CURRENT), MA

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7530 M                | 1        |        |       |       |        |       |       | -7.40  | -5.00 | -4.20 |
| 7538 K                | 2        |        |       |       |        |       |       | -7.70  | -5.20 | -4.30 |
| 7532 H                | 3        |        |       |       |        |       |       | -8.10  | -5.40 | -4.60 |
| 7538 J                | 4        |        |       |       |        |       |       | -6.90  | -4.60 | -3.90 |
| 7532 A                | 5        |        |       |       |        |       |       | -7.80  | -5.30 | -4.30 |
| 7530 M                | 6        |        |       |       |        |       |       | -7.40  | -5.00 | -4.20 |
| 7530 M                | 7        |        |       |       |        |       |       | -6.90  | -4.60 | -3.90 |
| 7538 B                | 8        |        |       |       |        |       |       | -7.20  | -4.90 | -4.10 |
| 7538 E                | 9        |        |       |       |        |       |       | -7.00  | -4.70 | -4.00 |
| 7538 A                | 10       |        |       |       |        |       |       | -6.70  | -4.50 | -3.80 |
| 7538 N                | 11       |        |       |       |        |       |       | -6.90  | -4.70 | -3.90 |
| 7538 R                | 12       |        |       |       |        |       |       | -6.70  | -4.60 | -3.80 |
| 7538 R                | 13       |        |       |       |        |       |       | -7.30  | -5.00 | -4.20 |
| 7538 H                | 14       |        |       |       |        |       |       | -7.30  | -5.00 | -4.20 |
| 7532 PP               | 15       |        |       |       |        |       |       | -7.60  | -5.10 | -4.30 |
| 7532 KK               | 16       |        |       |       |        |       |       | -7.60  | -5.10 | -4.30 |
| 7530 T                | 17       |        |       |       |        |       |       | -7.30  | -4.90 | -4.10 |
| 7538 C                | 18       |        |       |       |        |       |       | -6.90  | -4.60 | -3.90 |
| 7538 M                | 19       |        |       |       |        |       |       | -7.10  | -4.80 | -4.10 |
| 7529 P                | 20       |        |       |       |        |       |       | -7.70  | -5.20 | -4.30 |
| 7532 DD               | 21       |        |       |       |        |       |       | -7.30  | -4.90 | -4.10 |
| 7532 NN               | 22       |        |       |       |        |       |       | -7.40  | -5.00 | -4.10 |
| 7532 P                | 23       |        |       |       |        |       |       | -7.40  | -5.00 | -4.10 |
| 7532 N                | 24       |        |       |       |        |       |       | -7.50  | -5.10 | -4.20 |
| 7532 Z                | 25       |        |       |       |        |       |       | -7.40  | -5.00 | -4.20 |

TEST LIMITS = 2.0 mA to 10.0 mA

appendix d

ARM(TERMINAL 3) - SUBGROUP A2,A3,A4  
SCALER OUTPUT (LOW LEVEL),VOLTS

COLLINS DIVISIONS DATE 9-30-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |        | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7530 M                | 1        | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7538 K                | 2        | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.44 | -27.52 | -27.52 | -27.52 |
| 7532 H                | 3        | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7538 J                | 4        | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7532 A                | 5        | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7530 M                | 6        | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7530 M                | 7        | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7538 B                | 8        | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7538 E                | 9        | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7538 A                | 10       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7538 N                | 11       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7538 R                | 12       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7538 R                | 13       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7538 H                | 14       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7532 PF               | 15       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7538KK                | 16       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7530 T                | 17       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7538 C                | 18       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7538 M                | 19       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7529 P                | 20       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7532 DD               | 21       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7532 NN               | 22       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7532 P                | 23       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7532 N                | 24       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |
| 7532 N                | 25       | -16.96 | -16.96 | -16.96 | -21.52 | -21.52 | -21.52 | -27.52 | -27.52 | -27.52 |

TEST LIMITS =-16.9V to VDD



appendix dARM (TERMINAL 3) - SUBGROUP A2,A3,A4  
SCALER OUTPUT (HIGH LEVEL), VOLTSCOLLINS DIVISIONS      DATE 9-30-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7530 M                | 1        | -.12   | -.24  | -.32  | -.16   | -.24  | -.28  | -.20   | -.28  | -.28  |
| 7532 K                | 2        | -.16   | -.28  | -.28  | -.20   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7532 H                | 3        | -.12   | -.20  | -.28  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7538 J                | 4        | -.12   | -.24  | -.36  | -.16   | -.24  | -.32  | -.20   | -.28  | -.32  |
| 7532 A                | 5        | -.12   | -.24  | -.28  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7530 M                | 6        | -.12   | -.24  | -.28  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7530 M                | 7        | -.12   | -.28  | -.32  | -.16   | -.28  | -.32  | -.20   | -.28  | -.32  |
| 7538 B                | 8        | -.12   | -.24  | -.28  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7538 E                | 9        | -.12   | -.24  | -.32  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7538 A                | 10       | -.12   | -.24  | -.28  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7538 N                | 11       | -.12   | -.28  | -.36  | -.20   | -.24  | -.32  | -.20   | -.28  | -.32  |
| 7538 R                | 12       | -.12   | -.24  | -.32  | -.16   | -.24  | -.32  | -.20   | -.28  | -.32  |
| 7538 R                | 13       | -.16   | -.28  | -.36  | -.20   | -.28  | -.32  | -.24   | -.28  | -.32  |
| 7538 H                | 14       | -.12   | -.28  | -.32  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7532 PP               | 15       | -.12   | -.28  | -.32  | -.16   | -.24  | -.28  | -.20   | -.28  | -.28  |
| 7532 KK               | 16       | -.12   | -.20  | -.28  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7530 T                | 17       | -.16   | -.28  | -.32  | -.20   | -.24  | -.28  | -.20   | -.28  | -.32  |
| 7538 C                | 18       | -.12   | -.20  | -.32  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7538 M                | 19       | -.12   | -.24  | -.32  | -.16   | -.28  | -.28  | -.20   | -.28  | -.32  |
| 7529 P                | 20       | -.12   | -.24  | -.28  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7532 DD               | 21       | -.12   | -.28  | -.32  | -.16   | -.24  | -.32  | -.20   | -.28  | -.32  |
| 7532 NN               | 22       | -.12   | -.24  | -.32  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7532 P                | 23       | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7532 N                | 24       | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  | -.20   | -.24  | -.28  |
| 7532 Z                | 25       | -.12   | -.24  | -.28  | -.16   | -.24  | -.28  | -.20   | -.24  | -.28  |

TEST LIMITS = 0.0V to -2.0V

FIRE (TERMINAL 4) - SUBGROUP A2,A3,A4  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 9-30-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |        | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7530 M                | 1        | -17.00 | -17.00 | -17.00 | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 K                | 2        | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 H                | 3        | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 J                | 4        | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 A                | 5        | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7530 M                | 6        | -17.00 | -17.00 | -17.00 | -21.52 | -21.56 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7530 M                | 7        | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 B                | 8        | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 E                | 9        | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 A                | 10       | -17.00 | -17.00 | -17.00 | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 N                | 11       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 R                | 12       | -17.00 | -17.00 | -17.00 | -21.52 | -21.56 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 R                | 13       | -17.00 | -17.00 | -17.00 | -21.52 | -21.56 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 H                | 14       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 PP               | 15       | -17.00 | -17.00 | -17.00 | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 KK               | 16       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7530 T                | 17       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 C                | 18       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 M                | 19       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7529 P                | 20       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.64 | -27.60 |
| 7532 DD               | 21       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 NN               | 22       | -17.00 | -17.04 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 P                | 23       | -17.00 | -17.00 | -17.00 | -21.56 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 N                | 24       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 Z                | 25       | -17.00 | -17.00 | -17.00 | -21.52 | -21.52 | -21.56 | -27.60 | -27.60 | -27.60 |

TEST LIMITS = 16.9V to VDD

FIRE (TERMINAL 4)-SUBGROUPS A2,A3,A4

COLLINS DIVISIONS  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

DATE 9-30-75

SCALER OUTPUT (HIGH LEVEL), VOLTS

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7530 M                | 1        | -1.40  | -2.56 | -3.00 | -1.76  | -2.56 | -2.96 | -2.24  | -2.80 | -3.16 |
| 7538 K                | 2        | -1.20  | -2.32 | -2.76 | -1.52  | -2.32 | -2.68 | -2.00  | -2.48 | -2.80 |
| 7532 H                | 3        | -1.28  | -2.32 | -2.68 | -1.64  | -2.36 | -2.72 | -2.12  | -2.60 | -2.96 |
| 7538 J                | 4        | -1.36  | -2.76 | -3.32 | -1.72  | -2.64 | -3.04 | -2.20  | -2.76 | -3.12 |
| 7532 A                | 5        | -1.28  | -2.32 | -2.72 | -1.64  | -2.36 | -2.76 | -2.20  | -2.64 | -3.00 |
| 7530 M                | 6        | -1.36  | -2.48 | -2.92 | -1.72  | -2.48 | -2.88 | -2.20  | -2.72 | -3.12 |
| 7530 M                | 7        | -1.36  | -2.68 | -3.16 | -1.72  | -2.56 | -3.00 | -2.20  | -2.76 | -3.12 |
| 7538 B                | 8        | -1.20  | -2.36 | -2.80 | -1.56  | -2.32 | -2.68 | -2.00  | -2.48 | -2.84 |
| 7538 B                | 9        | -1.36  | -2.56 | -3.04 | -1.68  | -2.48 | -2.92 | -2.16  | -2.68 | -3.04 |
| 7538 A                | 10       | -1.20  | -2.32 | -2.76 | -1.52  | -2.32 | -2.68 | -2.00  | -2.48 | -2.84 |
| 7538 N                | 11       | -1.40  | -2.76 | -3.28 | -1.76  | -2.64 | -3.04 | -2.24  | -2.80 | -3.20 |
| 7538 R                | 12       | -1.28  | -2.64 | -3.08 | -1.64  | -2.48 | -2.84 | -2.12  | -2.64 | -2.96 |
| 7538 R                | 13       | -1.44  | -2.88 | -3.44 | -1.84  | -2.72 | -3.16 | -2.36  | -2.88 | -3.28 |
| 7538 H                | 14       | -1.40  | -2.52 | -3.00 | -1.72  | -2.48 | -2.88 | -2.20  | -2.72 | -3.08 |
| 7532 PP               | 15       | -1.28  | -2.36 | -2.80 | -1.64  | -2.40 | -2.80 | -2.08  | -2.56 | -2.96 |
| 7532 KK               | 16       | -1.28  | -2.36 | -2.80 | -1.68  | -2.40 | -2.80 | -2.12  | -2.64 | -3.00 |
| 7530 T                | 17       | -1.36  | -2.44 | -2.92 | -1.68  | -2.48 | -2.88 | -2.16  | -2.68 | -3.12 |
| 7538 C                | 18       | -1.36  | -2.56 | -3.04 | -1.72  | -2.52 | -2.96 | -2.16  | -2.68 | -3.12 |
| 7538 M                | 19       | -1.40  | -2.64 | -3.12 | -1.76  | -2.60 | -3.00 | -2.24  | -2.80 | -3.20 |
| 7529 P                | 20       | -1.36  | -2.36 | -2.80 | -1.72  | -2.44 | -2.84 | -2.16  | -2.68 | -3.08 |
| 7532 DD               | 21       | -1.28  | -2.40 | -2.88 | -1.68  | -2.44 | -2.84 | -2.16  | -2.64 | -3.04 |
| 7532 NN               | 22       | -1.24  | -2.32 | -2.76 | -1.60  | -2.36 | -2.72 | -2.04  | -2.48 | -2.88 |
| 7532 P                | 23       | -1.24  | -2.28 | -2.68 | -1.56  | -2.32 | -2.68 | -2.04  | -2.48 | -2.88 |
| 7532 N                | 24       | -1.24  | -2.36 | -2.80 | -1.64  | -2.36 | -2.80 | -2.08  | -2.56 | -2.96 |
| 7538 Z                | 25       | -1.20  | -2.20 | -2.64 | -1.56  | -2.28 | -2.68 | -2.04  | -2.48 | -2.84 |

TEST LIMITS = 0.0V to -10.0V

appendix d

G14(TERMINAL 5), V5M - SUBGROUPS A2,A3,A4 COLLINS DIVISIONS DATE 9-30-75  
 SCALER INPUT(NEGATIVE BREAKDOWN),VOLTS ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7530 M                | 1        |                  |                  |                  | -35.64           | -34.80           | -34.00           |                  |                  |                  |
| 7538 K                | 2        |                  |                  |                  | -33.60           | -32.68           | -31.76           |                  |                  |                  |
| 7532 H                | 3        |                  |                  |                  | -32.12           | -31.40           | -30.68           |                  |                  |                  |
| 7538 J                | 4        |                  |                  |                  | -37.48           | -36.44           | -35.48           |                  |                  |                  |
| 7532 A                | 5        |                  |                  |                  | -32.08           | -31.52           | -30.92           |                  |                  |                  |
| 7530 M                | 6        |                  |                  |                  | -31.80           | -31.04           | -30.32           |                  |                  |                  |
| 7530 M                | 7        |                  |                  |                  | -31.96           | -31.28           | -30.64           |                  |                  |                  |
| 7538 B                | 8        |                  |                  |                  | -35.04           | -34.12           | -33.16           |                  |                  |                  |
| 7538 E                | 9        |                  |                  |                  | -33.20           | -32.44           | -31.60           |                  |                  |                  |
| 7538 A                | 10       |                  |                  |                  | -38.12           | -37.00           | -35.84           |                  |                  |                  |
| 7538 N                | 11       |                  |                  |                  | -34.32           | -33.44           | -32.48           |                  |                  |                  |
| 7538 R                | 12       |                  |                  |                  | -31.36           | -30.80           | -30.20           |                  |                  |                  |
| 7538 R                | 13       |                  |                  |                  | -36.24           | -35.28           | -34.24           |                  |                  |                  |
| 7538 H                | 14       |                  |                  |                  | -33.52           | -32.48           | -31.40           |                  |                  |                  |
| 7532PP                | 15       |                  |                  |                  | -35.16           | -34.20           | -33.20           |                  |                  |                  |
| 7532KK                | 16       |                  |                  |                  | -35.40           | -34.40           | -33.40           |                  |                  |                  |
| 7530 T                | 17       |                  |                  |                  | -32.96           | -32.08           | -31.16           |                  |                  |                  |
| 7538 C                | 18       |                  |                  |                  | -36.48           | -35.36           | -34.20           |                  |                  |                  |
| 7538 M                | 19       |                  |                  |                  | -36.72           | -35.64           | -34.52           |                  |                  |                  |
| 7529 P                | 20       |                  |                  |                  | -30.08           | -29.44           | -28.76           |                  |                  |                  |
| 7532 DD               | 21       |                  |                  |                  | -35.32           | -32.28           | -33.20           |                  |                  |                  |
| 7532 NN               | 22       |                  |                  |                  | -31.16           | -30.32           | -29.40           |                  |                  |                  |
| 7532 P                | 23       |                  |                  |                  | -37.72           | -36.60           | -35.48           |                  |                  |                  |
| 7532 N                | 24       |                  |                  |                  | -33.28           | -32.40           | -31.36           |                  |                  |                  |
| 7532 Z                | 25       |                  |                  |                  | -36.12           | -35.12           | -34.00           |                  |                  |                  |

TEST LIMITS =-28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUPS A2,A3,A4  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 9-30-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|-------|-------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7530 M                | 1        |        |       |       | -21.52 | -21.52 | -21.52 | -27.64 | -27.64 | -27.64 |
| 7538 K                | 2        |        |       |       | -21.52 | -21.52 | -21.56 | -27.64 | -27.60 | -27.60 |
| 7532 H                | 3        |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.64 | -27.60 |
| 7538 J                | 4        |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 A                | 5        |        |       |       | -21.52 | -21.52 | -21.52 | -27.64 | -27.60 | -27.60 |
| 7530 M                | 6        |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7530 M                | 7        |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 B                | 8        |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.64 | -27.64 |
| 7538 E                | 9        |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.64 |
| 7538 A                | 10       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.64 |
| 7538 N                | 11       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 R                | 12       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 R                | 13       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.64 |
| 7538 H                | 14       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 PP               | 15       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 KK               | 16       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7530 T                | 17       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 C                | 18       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7538 M                | 19       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.64 |
| 7529 P                | 20       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 DD               | 21       |        |       |       | -21.52 | -21.52 | -21.52 | -27.64 | -27.60 | -27.60 |
| 7532 NN               | 22       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |
| 7532 P                | 23       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.64 | -27.60 |
| 7532 N                | 24       |        |       |       | -21.52 | -21.52 | -21.52 | -27.64 | -27.60 | -27.60 |
| 7532 Z                | 25       |        |       |       | -21.52 | -21.52 | -21.52 | -27.60 | -27.60 | -27.60 |

TEST LIMITS = -21.4V to VDD

Q4 (TERMINAL 6) - SUBGROUPS A2,A3,A4  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 9-30-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7530 M                | 1        |        |       |       | -.40   | -.76  | -.88  | -.48   | -.72  | -.88  |
| 7538 K                | 2        |        |       |       | -.36   | -.72  | -.84  | -.44   | -.68  | -.84  |
| 7532 H                | 3        |        |       |       | -.36   | -.72  | -.80  | -.44   | -.64  | -.76  |
| 7538 J                | 4        |        |       |       | -.40   | -.76  | -.88  | -.48   | -.72  | -.88  |
| 7532 A                | 5        |        |       |       | -.36   | -.68  | -.84  | -.44   | -.68  | -.80  |
| 7530 M                | 6        |        |       |       | -.44   | -.72  | -.88  | -.44   | -.72  | -.84  |
| 7530 M                | 7        |        |       |       | -.40   | -.76  | -.92  | -.48   | -.72  | -.88  |
| 7538 B                | 8        |        |       |       | -.36   | -.68  | -.84  | -.44   | -.64  | -.76  |
| 7538 E                | 9        |        |       |       | -.40   | -.76  | -.88  | -.44   | -.72  | -.88  |
| 7538 A                | 10       |        |       |       | -.36   | -.72  | -.84  | -.44   | -.64  | -.80  |
| 7538 N                | 11       |        |       |       | -.40   | -.84  | -1.00 | -.52   | -.76  | -.92  |
| 7538 R                | 12       |        |       |       | -.40   | -.76  | -.92  | -.48   | -.72  | -.88  |
| 7538 R                | 13       |        |       |       | -.40   | -.76  | -.92  | -.48   | -.72  | -.88  |
| 7538 H                | 14       |        |       |       | -.40   | -.72  | -.88  | -.44   | -.68  | -.84  |
| 7532 PP               | 15       |        |       |       | -.40   | -.72  | -.88  | -.44   | -.72  | -.88  |
| 7532 KK               | 16       |        |       |       | -.40   | -.72  | -.88  | -.44   | -.68  | -.84  |
| 7530 T                | 17       |        |       |       | -.40   | -.76  | -.88  | -.44   | -.72  | -.88  |
| 7538 C                | 18       |        |       |       | -.40   | -.76  | -.92  | -.48   | -.72  | -.88  |
| 7538 M                | 19       |        |       |       | -.40   | -.76  | -.92  | -.48   | -.72  | -.88  |
| 7529 P                | 20       |        |       |       | -.36   | -.68  | -.84  | -.44   | -.68  | -.84  |
| 7532 DD               | 21       |        |       |       | -.48   | -.72  | -.88  | -.56   | -.88  | -1.04 |
| 7532 NN               | 22       |        |       |       | -.40   | -.72  | -.88  | -.44   | -.72  | -.88  |
| 7532 P                | 23       |        |       |       | -.36   | -.72  | -.88  | -.44   | -.72  | -.88  |
| 7532 N                | 24       |        |       |       | -.40   | -.72  | -.88  | -.44   | -.68  | -.84  |
| 7532 Z                | 25       |        |       |       | -.36   | -.68  | -.84  | -.44   | -.64  | -.80  |

TEST LIMITS = 0.0V TO -2.6V

M11 (TERMINAL 7), V7M-SUBGROUPS A2,A3,A4  
 SCALER INPUT(NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 9-30-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7530 M                | 1        |                  |                  |                  | -35.76           | -34.88           | -34.04           |                  |                  |                  |
| 7538 K                | 2        |                  |                  |                  | -33.08           | -32.16           | -31.25           |                  |                  |                  |
| 7532 H                | 3        |                  |                  |                  | -30.52           | -29.92           | -29.32           |                  |                  |                  |
| 7538 J                | 4        |                  |                  |                  | -35.52           | -34.64           | -33.72           |                  |                  |                  |
| 7532 A                | 5        |                  |                  |                  | -31.52           | -30.84           | -30.04           |                  |                  |                  |
| 7530 M                | 6        |                  |                  |                  | -31.28           | -30.52           | -29.72           |                  |                  |                  |
| 7530 M                | 7        |                  |                  |                  | -35.04           | -34.16           | -33.28           |                  |                  |                  |
| 7538 B                | 8        |                  |                  |                  | -35.12           | -34.16           | -33.16           |                  |                  |                  |
| 7538 E                | 9        |                  |                  |                  | -35.80           | -34.76           | -33.72           |                  |                  |                  |
| 7538 A                | 10       |                  |                  |                  | -38.36           | -37.24           | -36.08           |                  |                  |                  |
| 7538 N                | 11       |                  |                  |                  | -35.08           | -34.04           | -32.92           |                  |                  |                  |
| 7538 R                | 12       |                  |                  |                  | -32.92           | -32.28           | -31.60           |                  |                  |                  |
| 7538 R                | 13       |                  |                  |                  | -36.64           | -35.64           | -34.52           |                  |                  |                  |
| 7538 H                | 14       |                  |                  |                  | -33.82           | -32.28           | -31.20           |                  |                  |                  |
| 7532 PP               | 15       |                  |                  |                  | -34.92           | -33.96           | -32.92           |                  |                  |                  |
| 7532 KK               | 16       |                  |                  |                  | -33.48           | -32.52           | -31.52           |                  |                  |                  |
| 7530 T                | 17       |                  |                  |                  | -33.24           | -32.24           | -31.32           |                  |                  |                  |
| 7538 C                | 18       |                  |                  |                  | -36.08           | -35.00           | -33.80           |                  |                  |                  |
| 7538 M                | 19       |                  |                  |                  | -37.68           | -36.56           | -35.32           |                  |                  |                  |
| 7529 P                | 20       |                  |                  |                  | -33.56           | -32.64           | -31.76           |                  |                  |                  |
| 7532 DD               | 21       |                  |                  |                  | -35.88           | -34.80           | -33.68           |                  |                  |                  |
| 7532 NN               | 22       |                  |                  |                  | -35.12           | -34.12           | -33.08           |                  |                  |                  |
| 7532 P                | 23       |                  |                  |                  | -33.20           | -32.56           | -31.80           |                  |                  |                  |
| 7532 N                | 24       |                  |                  |                  | -33.40           | -32.48           | -31.44           |                  |                  |                  |
| 7532 Z                | 25       |                  |                  |                  | -32.92           | -31.92           | -30.84           |                  |                  |                  |

TEST LIMITS = -28.0V Minimum

MON (TERMINAL 9), V9M-SUBGROUPS A2, A3, A4  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 9-30-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |        |        |        |       |       |       |
|-----------------------|----------|------------|-------|-------|--------|--------|--------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C  | +25°C  | +75°C  | -55°C | +25°C | +75°C |
| 7530 M                | 1        |            |       |       | -34.84 | -34.00 | -33.16 |       |       |       |
| 7538 K                | 2        |            |       |       | -34.48 | -33.52 | -32.48 |       |       |       |
| 7532 H                | 3        |            |       |       | -32.20 | -31.48 | -30.68 |       |       |       |
| 7538 J                | 4        |            |       |       | -34.20 | -33.26 | -32.40 |       |       |       |
| 7532 A                | 5        |            |       |       | -33.88 | -33.04 | -32.08 |       |       |       |
| 7530 M                | 6        |            |       |       | -33.20 | -32.40 | -31.48 |       |       |       |
| 7530 M                | 7        |            |       |       | -34.48 | -33.64 | -32.72 |       |       |       |
| 7538 B                | 8        |            |       |       | -33.28 | -32.40 | -31.40 |       |       |       |
| 7538 E                | 9        |            |       |       | -35.76 | -34.80 | -33.68 |       |       |       |
| 7538 A                | 10       |            |       |       | -37.68 | -36.60 | -35.44 |       |       |       |
| 7538 N                | 11       |            |       |       | -34.32 | -33.40 | -32.36 |       |       |       |
| 7538 R                | 12       |            |       |       | -33.20 | -32.48 | -31.76 |       |       |       |
| 7538 R                | 13       |            |       |       | -37.04 | -36.08 | -34.96 |       |       |       |
| 7538 H                | 14       |            |       |       | -33.88 | -32.80 | -31.64 |       |       |       |
| 7532 PP               | 15       |            |       |       | -35.68 | -34.68 | -33.60 |       |       |       |
| 7532 KK               | 16       |            |       |       | -34.52 | -33.52 | -32.44 |       |       |       |
| 7530 T                | 17       |            |       |       | -30.64 | -29.96 | -29.12 |       |       |       |
| 7538 C                | 18       |            |       |       | -36.56 | -35.44 | -34.20 |       |       |       |
| 7538 M                | 19       |            |       |       | -37.84 | -36.72 | -35.44 |       |       |       |
| 7529 P                | 20       |            |       |       | -32.96 | -32.08 | -31.12 |       |       |       |
| 7532 DD               | 21       |            |       |       | -34.68 | -33.60 | -32.44 |       |       |       |
| 7532 NN               | 22       |            |       |       | -34.52 | -33.52 | -32.44 |       |       |       |
| 7532 P                | 23       |            |       |       | -36.72 | -35.64 | -34.48 |       |       |       |
| 7532 N                | 24       |            |       |       | -34.36 | -33.40 | -32.28 |       |       |       |
| 7532 Z                | 25       |            |       |       | -32.16 | -31.12 | -30.00 |       |       |       |

TEST LIMITS = -28.0 Minimum



MON ( TERMINAL 9), V9P-SUBGROUPS A2,A3,A4 COLLINS DIVISIONS DATE 9-30-75  
 ROCKWELL INTERNATIONAL  
 SCALF INPUT (POSITIVE BREAKDOWN), VOLTS NEWPORT BEACH, CALIF.

| Device Identification |          | 3mA   |       |       |       |       |       |       |       |       |
|-----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C |
| 7530 M                | 1        |       |       |       | +1.04 | +1.04 | +1.04 |       |       |       |
| 7538 K                | 2        |       |       |       | +1.16 | +1.20 | +1.28 |       |       |       |
| 7532 H                | 3        |       |       |       | +1.16 | +1.20 | +1.28 |       |       |       |
| 7538 J                | 4        |       |       |       | +1.04 | +1.00 | +1.00 |       |       |       |
| 7532 A                | 5        |       |       |       | +1.04 | +1.04 | +1.04 |       |       |       |
| 7530 M                | 6        |       |       |       | +1.12 | +1.12 | +1.12 |       |       |       |
| 7530 M                | 7        |       |       |       | +1.16 | +1.32 | +1.36 |       |       |       |
| 7538 B                | 8        |       |       |       | +1.04 | +1.04 | +1.00 |       |       |       |
| 7538 E                | 9        |       |       |       | +1.04 | +1.00 | +1.00 |       |       |       |
| 7538 A                | 10       |       |       |       | +1.04 | +1.00 | +1.00 |       |       |       |
| 7538 N                | 11       |       |       |       | +1.16 | +1.32 | +1.36 |       |       |       |
| 7538 R                | 12       |       |       |       | +1.00 | + .96 | + .92 |       |       |       |
| 7538 R                | 13       |       |       |       | +1.08 | +1.08 | +1.12 |       |       |       |
| 7538 H                | 14       |       |       |       | +1.20 | +1.32 | +1.14 |       |       |       |
| 7532 PP               | 15       |       |       |       | +1.04 | +1.00 | +1.00 |       |       |       |
| 7532 KK               | 16       |       |       |       | +1.28 | +1.44 | +1.52 |       |       |       |
| 7530 T                | 17       |       |       |       | +1.16 | +1.28 | +1.36 |       |       |       |
| 7538 C                | 18       |       |       |       | +1.04 | +1.00 | +1.00 |       |       |       |
| 7538 M                | 19       |       |       |       | +1.20 | +1.32 | +1.36 |       |       |       |
| 7529 P                | 20       |       |       |       | +1.08 | +1.04 | +1.04 |       |       |       |
| 7532 DD               | 21       |       |       |       | +1.08 | +1.08 | +1.08 |       |       |       |
| 7532 NN               | 22       |       |       |       | +1.08 | +1.08 | +1.08 |       |       |       |
| 7532 P                | 23       |       |       |       | +1.04 | +1.00 | +1.00 |       |       |       |
| 7532 N                | 24       |       |       |       | +1.28 | +1.44 | +1.56 |       |       |       |
| 7532 Z                | 25       |       |       |       | +1.04 | +1.04 | +1.00 |       |       |       |

TEST LIMITS = 0.V to +6.0V

CL (TERMINAL 10), V10M-SUBGROUPS A2,A3,A4 COLLINS DIVISIONS DATE 9-30-75  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7530 M                | 1        |                  |                  |                  | -36.00           | -35.08           | -34.20           |                  |                  |                  |
| 7538 K                | 2        |                  |                  |                  | -32.76           | -31.92           | -31.00           |                  |                  |                  |
| 7532 H                | 3        |                  |                  |                  | -30.48           | -29.88           | -29.24           |                  |                  |                  |
| 7538 J                | 4        |                  |                  |                  | -35.40           | -34.48           | -33.60           |                  |                  |                  |
| 7532 A                | 5        |                  |                  |                  | -33.68           | -32.28           | -32.12           |                  |                  |                  |
| 7530 M                | 6        |                  |                  |                  | -33.52           | -32.60           | -31.76           |                  |                  |                  |
| 7530 M                | 7        |                  |                  |                  | -32.44           | -31.84           | -31.20           |                  |                  |                  |
| 7538 B                | 8        |                  |                  |                  | -34.84           | -33.92           | -32.92           |                  |                  |                  |
| 7538 E                | 9        |                  |                  |                  | -34.16           | -33.36           | -32.44           |                  |                  |                  |
| 7538 A                | 10       |                  |                  |                  | -38.08           | -36.96           | -35.80           |                  |                  |                  |
| 7538 N                | 11       |                  |                  |                  | -35.68           | -34.68           | -33.56           |                  |                  |                  |
| 7538 R                | 12       |                  |                  |                  | -33.88           | -33.12           | -32.44           |                  |                  |                  |
| 7538 R                | 13       |                  |                  |                  | -35.40           | -34.48           | -33.52           |                  |                  |                  |
| 7538 H                | 14       |                  |                  |                  | -33.84           | -32.80           | -31.72           |                  |                  |                  |
| 7532 PP               | 15       |                  |                  |                  | -36.60           | -35.56           | -34.48           |                  |                  |                  |
| 7532 KK               | 16       |                  |                  |                  | -34.40           | -33.52           | -32.52           |                  |                  |                  |
| 7530 T                | 17       |                  |                  |                  | -31.40           | -30.56           | -29.80           |                  |                  |                  |
| 7538 C                | 18       |                  |                  |                  | -36.60           | -35.48           | -34.32           |                  |                  |                  |
| 7538 M                | 19       |                  |                  |                  | -38.00           | -36.88           | -35.68           |                  |                  |                  |
| 7529 P                | 20       |                  |                  |                  | -31.60           | -30.84           | -30.00           |                  |                  |                  |
| 7532 DD               | 21       |                  |                  |                  | -34.32           | -33.32           | -32.24           |                  |                  |                  |
| 7532 NN               | 22       |                  |                  |                  | -34.44           | -33.52           | -32.52           |                  |                  |                  |
| 7532 P                | 23       |                  |                  |                  | -37.16           | -36.08           | -34.96           |                  |                  |                  |
| 7532 N                | 24       |                  |                  |                  | -33.28           | -32.44           | -31.44           |                  |                  |                  |
| 7532 Z                | 25       |                  |                  |                  | -33.24           | -32.36           | -31.28           |                  |                  |                  |

TEST LIMITS = -28.0V Minimum

AD-A038 513

ROCKWELL INTERNATIONAL NEWPORT BEACH CALIF COLLINS C--ETC F/G 9/5  
FABRICATION AND TESTING OF MOS SCALER/LOGIC AND OVERHEAD SAFETY--ETC(U)  
MAY 76 G L DONALDSON

DAAG39-75-C-0146

UNCLASSIFIED

765-5608-001

HDL-CR-76-146-1

NL

3 OF 3  
AD  
A038 513



END  
DATE  
FILMED  
5 - 77

SP (TERMINAL 11)-SUBGROUPS A2,A3,A4  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 9-30-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |        | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7530 M                | 1        | -10.04 | -10.00 | - 9.92 | -13.92 | -13.80 | -13.12 | -19.16 | -19.00 | -18.92 |
| 7538 K                | 2        | -10.36 | -10.32 | -10.28 | -14.28 | -14.20 | -14.08 | -19.64 | -19.48 | -19.40 |
| 7532 H                | 3        | -10.56 | -10.48 | -10.40 | -14.48 | -14.32 | -14.24 | -19.76 | -19.60 | -19.48 |
| 7538 J                | 4        | -10.16 | -10.08 | -10.04 | -14.04 | -13.92 | -13.88 | -19.36 | -19.20 | -19.12 |
| 7532 A                | 5        | -10.48 | -10.36 | -10.32 | -14.32 | -14.20 | -14.08 | -19.64 | -19.44 | -19.32 |
| 7530 M                | 6        | -10.52 | -10.44 | -10.36 | -14.44 | -14.28 | -14.20 | -19.76 | -19.56 | -19.44 |
| 7530 M                | 7        | -10.00 | 9.88   | - 9.84 | -13.88 | -13.72 | -13.64 | -19.16 | -19.00 | -18.84 |
| 7538 B                | 8        | -10.48 | -10.36 | -10.32 | -14.36 | -14.24 | -14.16 | -19.68 | -19.52 | -19.40 |
| 7538 E                | 9        | -10.04 | 9.96   | - 9.92 | -13.92 | -13.84 | -13.72 | -19.20 | -19.04 | -19.00 |
| 7538 A                | 10       | -10.00 | 9.98   | - 9.84 | -13.80 | -13.68 | -13.60 | -19.04 | -18.84 | -18.76 |
| 7538 N                | 11       | - 9.52 | 9.52   | - 9.48 | -13.36 | -13.32 | -13.24 | -18.68 | -18.52 | -18.84 |
| 7538 R                | 12       | - 9.84 | 9.80   | - 9.72 | -13.80 | -13.68 | -13.60 | -19.12 | -19.00 | -18.88 |
| 7538 R                | 13       | -10.32 | -10.28 | -10.16 | -14.20 | -14.08 | -14.00 | -19.56 | -19.44 | -19.32 |
| 7538 H                | 14       | -10.00 | 9.96   | - 9.88 | -13.88 | -13.76 | -13.72 | -19.12 | -19.00 | -18.92 |
| 7532 PP               | 15       | -10.36 | -10.28 | -10.28 | -14.24 | -14.16 | -14.04 | -19.56 | -19.40 | -19.28 |
| 7532 KK               | 16       | -10.68 | -10.60 | -10.52 | -14.64 | -14.48 | -14.36 | -19.96 | -19.76 | -19.68 |
| 7530 T                | 17       | - 9.96 | 9.88   | - 9.80 | -13.76 | -13.64 | -13.56 | -19.00 | -18.80 | -18.68 |
| 7538 C                | 18       | -10.04 | 9.92   | - 9.88 | -13.84 | -13.72 | -13.68 | -19.12 | -18.96 | -18.84 |
| 7538 M                | 19       | -10.08 | -10.04 | -10.00 | -13.92 | -13.84 | -13.76 | -19.20 | -19.04 | -19.00 |
| 7529 P                | 20       | -10.64 | -10.52 | -10.44 | -14.52 | -14.36 | -14.28 | -19.80 | -19.64 | -19.48 |
| 7532 DD               | 21       | -10.48 | -10.36 | -10.32 | -14.36 | -14.24 | -14.16 | -19.68 | -19.48 | -19.40 |
| 7532 NN               | 22       | -10.36 | -10.28 | -10.20 | -14.24 | -14.16 | -14.00 | -19.56 | -19.40 | -19.28 |
| 7532 P                | 23       | - 9.92 | 9.84   | -9.80  | -13.72 | -13.60 | -13.52 | -18.92 | -18.76 | -18.64 |
| 7532 N                | 24       | -10.52 | -10.44 | -10.40 | -14.44 | -14.32 | -14.24 | -19.76 | -19.60 | -19.48 |
| 7532 Z                | 25       | -10.36 | -10.32 | -10.28 | -14.28 | -14.16 | -14.04 | -19.60 | -19.40 | -19.28 |

TEST LIMITS = -8.0V to VDD

SP (TERMINAL 11) - SUBGROUPS A2,A3,A4  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 9-30-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7530 M                | 1        | -.48   | -.64  | -.84  | -.84   | -.84  | -1.04 | -1.36  | -1.36 | -1.36 |
| 7538 K                | 2        | -.48   | -.60  | -.76  | -.76   | -.80  | -1.00 | -1.24  | -1.24 | -1.28 |
| 7532 H                | 3        | -.52   | -.60  | -.80  | -.84   | -.84  | -1.00 | -1.32  | -1.28 | -1.32 |
| 7538 J                | 4        | -.44   | -.56  | -.76  | -.76   | -.76  | -0.96 | -1.24  | -1.24 | -1.24 |
| 7532 A                | 5        | -.52   | -.64  | -.80  | -.84   | -.84  | -1.04 | -1.28  | -1.32 | -1.36 |
| 7530 M                | 6        | -.52   | -.64  | -.80  | -.84   | -.84  | -1.04 | -1.32  | -1.32 | -1.36 |
| 7530 M                | 7        | -.48   | -.60  | -.80  | -.80   | -.80  | -1.04 | -1.28  | -1.28 | -1.32 |
| 7538 B                | 8        | -.44   | -.56  | -.76  | -.76   | -.76  | -.92  | -1.20  | -1.20 | -1.20 |
| 7538 E                | 9        | -.44   | -.56  | -.76  | -.76   | -.76  | -.96  | -1.24  | -1.24 | -1.24 |
| 7538 A                | 10       | -.44   | -.56  | -.76  | -.72   | -.72  | -.88  | -1.12  | -1.12 | -1.16 |
| 7538 N                | 11       | -.44   | -.60  | -.80  | -.76   | -.80  | -1.04 | -1.28  | -1.28 | -1.32 |
| 7538 R                | 12       | -.44   | -.56  | -.76  | -.76   | -.76  | -.88  | -1.20  | -1.24 | -1.24 |
| 7538 R                | 13       | -.52   | -.64  | -.84  | -.84   | -.84  | -1.04 | -1.36  | -1.36 | -1.40 |
| 7538 H                | 14       | -.48   | -.60  | -.80  | -.80   | -.84  | -1.00 | -1.28  | -1.28 | -1.28 |
| 7532 PP               | 15       | -.48   | -.60  | -.80  | -.80   | -.80  | -1.04 | -1.28  | -1.28 | -1.32 |
| 7532 KK               | 16       | -.52   | -.60  | -.80  | -.84   | -.84  | -1.00 | -1.28  | -1.28 | -1.36 |
| 7530 T                | 17       | -.48   | -.60  | -.76  | -.80   | -.80  | -1.00 | -1.28  | -1.28 | -1.28 |
| 7538 C                | 18       | -.44   | -.56  | -.76  | -.76   | -.76  | -.92  | -1.20  | -1.20 | -1.20 |
| 7538 M                | 19       | -.48   | -.60  | -.80  | -.80   | -.80  | -1.04 | -1.28  | -1.28 | -1.32 |
| 7529 P                | 20       | -.56   | -.64  | -.76  | -.84   | -.88  | -1.00 | -1.32  | -1.32 | -1.32 |
| 7532 DD               | 21       | -.48   | -.60  | -.76  | -.80   | -.80  | -1.00 | -1.28  | -1.28 | -1.28 |
| 7532 NN               | 22       | -.56   | -.68  | -.76  | -.76   | -.88  | -1.00 | -1.24  | -1.24 | -1.28 |
| 7532 P                | 23       | -.48   | -.60  | -.76  | -.76   | -.76  | -.96  | -1.24  | -1.24 | -1.24 |
| 7532 N                | 24       | -.48   | -.60  | -.76  | -.80   | -.80  | -1.00 | -1.28  | -1.28 | -1.28 |
| 7532 Z                | 25       | -.48   | -.56  | -.76  | -.76   | -.76  | -.92  | -1.20  | -1.20 | -1.24 |

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUPS A2,A3,A4  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 9-30-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |        | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7530 M                | 1        | - 9.96 | - 9.88 | - 9.84 | -13.80 | -13.68 | -13.60 | -19.04 | -18.88 | -18.80 |
| 7538 K                | 2        | -10.44 | -10.36 | -10.36 | -14.36 | -14.28 | -14.20 | -19.76 | -19.60 | -19.48 |
| 7532 H                | 3        | -10.64 | -10.52 | -10.48 | -14.56 | -14.44 | -14.32 | -19.92 | -19.72 | -19.64 |
| 7538 J                | 4        | -10.04 | -10.00 | - 9.92 | -13.92 | -13.84 | -13.72 | -19.20 | -19.08 | -19.00 |
| 7532 A                | 5        | -10.32 | -10.28 | -10.16 | -14.20 | -14.00 | -13.92 | -19.44 | -19.24 | -19.12 |
| 7530 M                | 6        | -10.48 | -10.36 | -10.32 | -14.36 | -14.20 | -14.12 | -19.64 | -19.44 | -19.32 |
| 7530 M                | 7        | - 9.80 | - 9.72 | - 9.68 | -13.68 | -13.52 | -13.44 | -18.96 | -18.76 | -18.64 |
| 7538 B                | 8        | -10.40 | -10.32 | -10.28 | -14.28 | -14.16 | -14.08 | -19.60 | -19.44 | -19.32 |
| 7538 E                | 9        | -10.08 | -10.04 | -10.00 | -14.00 | -13.88 | -13.84 | -19.32 | -19.16 | -19.08 |
| 7538 A                | 10       | - 9.88 | - 9.84 | - 9.80 | -13.72 | -13.60 | -13.52 | -18.96 | -18.76 | -18.68 |
| 7538 N                | 11       | - 9.68 | - 9.60 | - 9.60 | -13.56 | -13.48 | -13.40 | -18.84 | -18.68 | -18.64 |
| 7538 R                | 12       | - 9.72 | - 9.64 | - 9.56 | -13.60 | -13.52 | -13.40 | -18.96 | -18.76 | -18.68 |
| 7538 R                | 13       | -10.00 | - 9.88 | - 9.88 | -13.84 | -13.72 | -13.68 | -19.12 | -19.00 | -18.92 |
| 7538 A                | 14       | -10.04 | -10.00 | - 9.92 | -13.92 | -13.84 | -13.76 | -19.20 | -19.08 | -19.00 |
| 7532 PP               | 15       | -10.40 | -10.32 | -10.28 | -14.28 | -14.16 | -14.04 | -19.60 | -19.44 | -19.32 |
| 7532 KK               | 16       | -10.56 | -10.48 | -10.44 | -14.48 | -14.32 | -14.24 | -19.76 | -19.60 | -19.48 |
| 7530 T                | 17       | -10.40 | -10.32 | -10.28 | -14.28 | -14.16 | -14.04 | -19.60 | -19.40 | -19.28 |
| 7538 C                | 18       | -10.00 | - 9.92 | - 9.88 | -13.84 | -13.72 | -13.64 | -19.04 | -18.92 | -18.80 |
| 7538 M                | 19       | -10.08 | -10.04 | -10.00 | -13.92 | -13.84 | -13.76 | -19.20 | -19.04 | -18.96 |
| 7529 P                | 20       | -10.80 | -10.72 | -10.64 | -14.72 | -14.60 | -14.52 | -20.12 | -19.92 | -19.76 |
| 7532 DD               | 21       | -10.48 | -10.36 | -10.32 | -14.36 | -14.24 | -14.16 | -19.72 | -19.48 | -19.40 |
| 7532 NN               | 22       | -10.40 | -10.32 | -10.28 | -14.32 | -14.20 | -14.04 | -19.64 | -19.44 | -19.32 |
| 7532 P                | 23       | - 9.88 | - 9.84 | - 9.76 | -13.68 | -13.56 | -13.48 | -18.88 | -18.68 | -18.60 |
| 7532 N                | 24       | -10.48 | -10.40 | -10.36 | -14.36 | -14.28 | -14.20 | -19.72 | -19.56 | -19.44 |
| 7532 Z                | 25       | -10.48 | -10.40 | -10.32 | -14.36 | -14.24 | -14.16 | -19.72 | -19.52 | -19.40 |

TEST LIMITS = -8.0V to VDD

LP (TERMINAL 12) - SUBGROUPS A2,A3,A4  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 9-30-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7530M                 | 1        | -.24   | -.40  | -.44  | -.40   | -.52  | -.52  | -.64   | -.64  | -.68  |
| 7538K                 | 2        | -.24   | -.40  | -.40  | -.40   | -.48  | -.52  | -.60   | -.64  | -.64  |
| 7532H                 | 3        | -.24   | -.40  | -.40  | -.40   | -.52  | -.52  | -.60   | -.64  | -.68  |
| 7538J                 | 4        | -.24   | -.40  | -.40  | -.36   | -.44  | -.48  | -.56   | -.60  | -.60  |
| 7532A                 | 5        | -.24   | -.40  | -.40  | -.40   | -.48  | -.48  | -.60   | -.64  | -.64  |
| 7530M                 | 6        | -.24   | -.40  | -.40  | -.40   | -.48  | -.52  | -.60   | -.64  | -.64  |
| 7530M                 | 7        | -.24   | -.40  | -.44  | -.40   | -.48  | -.52  | -.60   | -.64  | -.64  |
| 7538B                 | 8        | -.24   | -.40  | -.40  | -.36   | -.44  | -.44  | -.56   | -.56  | -.60  |
| 7538E                 | 9        | -.24   | -.40  | -.40  | -.40   | -.48  | -.48  | -.60   | -.60  | -.64  |
| 7538A                 | 10       | -.24   | -.36  | -.36  | -.36   | -.44  | -.44  | -.56   | -.56  | -.56  |
| 7538N                 | 11       | -.24   | -.44  | -.44  | -.40   | -.52  | -.56  | -.64   | -.68  | -.68  |
| 7538R                 | 12       | -.24   | -.40  | -.40  | -.36   | -.44  | -.48  | -.56   | -.60  | -.60  |
| 7538R                 | 13       | -.24   | -.40  | -.40  | -.40   | -.48  | -.48  | -.60   | -.64  | -.64  |
| 7538H                 | 14       | -.24   | -.40  | -.40  | -.40   | -.48  | -.48  | -.60   | -.64  | -.64  |
| 7532PP                | 15       | -.24   | -.40  | -.44  | -.40   | -.52  | -.52  | -.60   | -.64  | -.68  |
| 7532KK                | 16       | -.24   | -.40  | -.40  | -.40   | -.48  | -.48  | -.60   | -.64  | -.64  |
| 7530T                 | 17       | -.28   | -.44  | -.44  | -.44   | -.52  | -.52  | -.64   | -.64  | -.68  |
| 7538C                 | 18       | -.24   | -.40  | -.40  | -.40   | -.44  | -.48  | -.56   | -.60  | -.60  |
| 7538M                 | 19       | -.24   | -.40  | -.40  | -.40   | -.48  | -.52  | -.60   | -.64  | -.64  |
| 7529P                 | 20       | -.28   | -.40  | -.44  | -.44   | -.52  | -.52  | -.64   | -.68  | -.68  |
| 7532DD                | 21       | -.24   | -.40  | -.40  | -.40   | -.48  | -.48  | -.60   | -.60  | -.64  |
| 7532NN                | 22       | -.28   | -.40  | -.40  | -.40   | -.48  | -.48  | -.60   | -.60  | -.64  |
| 7532P                 | 23       | -.24   | -.40  | -.40  | -.40   | -.48  | -.48  | -.60   | -.60  | -.60  |
| 7532N                 | 24       | -.24   | -.40  | -.40  | -.40   | -.48  | -.48  | -.60   | -.64  | -.64  |
| 7532Z                 | 25       | -.24   | -.40  | -.40  | -.40   | -.48  | -.48  | -.56   | -.60  | -.60  |

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M-SUBGROUPS A2,A3,A4 COLLINS DIVISIONS DATE 9-30-75  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |        |        |        |       |       |       |
|-----------------------|----------|------------|-------|-------|--------|--------|--------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C  | +25°C  | +75°C  | -55°C | +25°C | +75°C |
| 7530 M                | 1        |            |       |       | -34.84 | -34.08 | -33.32 |       |       |       |
| 7538 K                | 2        |            |       |       | -33.84 | -32.88 | -31.92 |       |       |       |
| 7532 H                | 3        |            |       |       | -30.96 | -30.28 | -29.64 |       |       |       |
| 7538 J                | 4        |            |       |       | -39.52 | -33.80 | -32.92 |       |       |       |
| 7532 A                | 5        |            |       |       | -33.36 | -32.44 | -31.60 |       |       |       |
| 7530 M                | 6        |            |       |       | -37.08 | -36.08 | -35.12 |       |       |       |
| 7530 M                | 7        |            |       |       | -33.04 | -32.28 | -31.56 |       |       |       |
| 7538 B                | 8        |            |       |       | -33.24 | -32.40 | -31.48 |       |       |       |
| 7538 E                | 9        |            |       |       | -31.96 | -31.16 | -30.36 |       |       |       |
| 7538 A                | 10       |            |       |       | -36.84 | -35.76 | -34.72 |       |       |       |
| 7538 N                | 11       |            |       |       | -36.08 | -35.12 | -34.04 |       |       |       |
| 7538 R                | 12       |            |       |       | -33.76 | -33.08 | -32.36 |       |       |       |
| 7538 R                | 13       |            |       |       | -37.28 | -36.24 | -35.12 |       |       |       |
| 7538 H                | 14       |            |       |       | -33.68 | -32.88 | -32.00 |       |       |       |
| 7532 PP               | 15       |            |       |       | -34.04 | -33.12 | -32.16 |       |       |       |
| 7532 KK               | 16       |            |       |       | -32.60 | -31.80 | -30.84 |       |       |       |
| 7530 T                | 17       |            |       |       | -30.92 | -30.24 | -29.52 |       |       |       |
| 7538 C                | 18       |            |       |       | -37.12 | -36.00 | -34.80 |       |       |       |
| 7538 M                | 19       |            |       |       | -37.44 | -36.36 | -35.16 |       |       |       |
| 7529 P                | 20       |            |       |       | -33.52 | -32.64 | -31.80 |       |       |       |
| 7532 DD               | 21       |            |       |       | -35.96 | -34.84 | -33.72 |       |       |       |
| 7532 NN               | 22       |            |       |       | -35.04 | -34.04 | -32.96 |       |       |       |
| 7532 P                | 23       |            |       |       | -39.20 | -38.00 | -36.84 |       |       |       |
| 7532 N                | 24       |            |       |       | -36.08 | -35.12 | -34.04 |       |       |       |
| 7532 Z                | 25       |            |       |       | -35.48 | -34.44 | -33.32 |       |       |       |

TEST LIMITS = -28.0V Min.



G32 (TERMINAL 14)-SUBGROUPS A2,A3,A4  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 9-30-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |        | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7530 M                | 1        | -10.36 | -10.28 | -10.16 | -14.28 | -14.08 | -14.00 | -19.60 | -19.40 | -19.28 |
| 7538 K                | 2        | -10.36 | -10.28 | -10.28 | -14.28 | -14.16 | -14.08 | -19.64 | -19.48 | -19.40 |
| 7532 H                | 3        | -10.80 | -10.68 | -10.64 | -14.76 | -14.60 | -14.52 | -20.12 | -19.92 | -19.80 |
| 7538 J                | 4        | -10.08 | -10.00 | - 9.96 | -13.96 | -13.84 | -13.76 | -19.28 | -19.12 | -19.00 |
| 7532 A                | 5        | -10.36 | -10.28 | -10.16 | -14.20 | -14.04 | -13.96 | -19.48 | -19.28 | -19.12 |
| 7530 M                | 6        | -10.40 | -10.32 | -10.28 | -14.32 | -14.16 | -14.04 | -19.60 | -19.40 | -19.28 |
| 7530 M                | 7        | -10.16 | -10.04 | -10.00 | -14.08 | -13.92 | -13.88 | -19.44 | -19.20 | -19.12 |
| 7538 B                | 8        | -10.36 | -10.32 | -10.28 | -14.32 | -14.16 | -14.04 | -19.64 | -19.44 | -19.32 |
| 7538 E                | 9        | -10.04 | - 9.92 | - 9.88 | -13.88 | -13.80 | -13.72 | -19.20 | -19.04 | -18.96 |
| 7538 A                | 10       | - 9.88 | - 9.80 | - 9.76 | -13.72 | -13.56 | -13.52 | -18.96 | -18.76 | -18.64 |
| 7538 N                | 11       | - 9.80 | - 9.72 | - 9.72 | -13.68 | -13.56 | -13.52 | -19.00 | -18.84 | -18.76 |
| 7538 R                | 12       | - 9.72 | - 9.64 | - 9.60 | -13.64 | -13.52 | -13.40 | -19.00 | -18.80 | -18.68 |
| 7538 R                | 13       | -10.08 | -10.00 | - 9.96 | -14.00 | -13.88 | -13.80 | -19.32 | -19.12 | -19.04 |
| 7538 H                | 14       | - 9.92 | - 9.88 | - 9.84 | -13.80 | -13.68 | -13.64 | -19.12 | -18.96 | -18.84 |
| 7532 PP               | 15       | -10.64 | -10.52 | -10.48 | -14.56 | -14.44 | -14.36 | -19.96 | -19.76 | -19.64 |
| 7532 KK               | 16       | -10.84 | -10.76 | -10.68 | -14.80 | -14.64 | -14.56 | -20.16 | -19.96 | -19.84 |
| 7530 T                | 17       | -10.16 | -10.08 | -10.04 | -14.04 | -13.92 | -13.84 | -19.32 | -19.12 | -19.00 |
| 7538 C                | 18       | -10.00 | - 9.88 | - 9.84 | -13.84 | -13.68 | -13.64 | -19.04 | -18.88 | -18.80 |
| 7538 M                | 19       | -10.16 | -10.04 | -10.00 | -14.00 | -13.88 | -13.84 | -19.32 | -19.12 | -19.00 |
| 7529 P                | 20       | -10.68 | -10.60 | -10.52 | -14.64 | -14.48 | -14.36 | -19.96 | -19.76 | -19.64 |
| 7532 DD               | 21       | -10.48 | -10.40 | -10.36 | -14.40 | -14.28 | -14.20 | -19.76 | -19.56 | -19.44 |
| 7532 NN               | 22       | -10.48 | -10.40 | -10.36 | -14.44 | -14.28 | -14.20 | -19.76 | -19.60 | -19.48 |
| 7532 P                | 23       | - 9.96 | - 9.84 | - 9.80 | -13.76 | -13.64 | -13.52 | -19.00 | -18.76 | -18.68 |
| 7532 N                | 24       | -10.48 | -10.36 | -10.36 | -14.36 | -14.24 | -14.16 | -19.68 | -19.48 | -19.40 |
| 7532 Z                | 25       | -10.48 | -10.36 | -10.32 | -14.36 | -14.20 | -14.16 | -19.68 | -19.48 | -19.36 |

TEST LIMITS = -8.0V to VDD

G32 (TERMINAL 14)-SUBGROUPS A2,A3,A4  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 9-30-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7530 M                | 1        | -.72   | -.72  | -.76  | -.84   | -.88  | -.88  | -1.04  | -1.08 | -1.12 |
| 7538 K                | 2        | -.68   | -.72  | -.72  | -.84   | -.88  | -.88  | -1.00  | -1.08 | -1.08 |
| 7532 H                | 3        | -.68   | -.72  | -.72  | -.80   | -.88  | -.88  | -1.00  | -1.08 | -1.08 |
| 7538 J                | 4        | -.64   | -.68  | -.68  | -.76   | -.84  | -.84  | -.96   | -1.04 | -1.08 |
| 7532 A                | 5        | -.64   | -.68  | -.72  | -.80   | -.84  | -.88  | -.96   | -1.04 | -1.08 |
| 7530 M                | 6        | -.68   | -.72  | -.72  | -.80   | -.88  | -.88  | -1.00  | -1.08 | -1.08 |
| 7530 M                | 7        | -.72   | -.76  | -.76  | -.88   | -.88  | -.88  | -1.04  | -1.08 | -1.12 |
| 7538 B                | 8        | -.60   | -.64  | -.64  | -.76   | -.76  | -.80  | -.92   | -.96  | -1.04 |
| 7538 E                | 9        | -.68   | -.68  | -.72  | -.80   | -.84  | -.88  | -.96   | -1.04 | -1.08 |
| 7538 A                | 10       | -.60   | -.60  | -.64  | -.76   | -.76  | -.76  | -.88   | -.92  | -.96  |
| 7538 N                | 11       | -.76   | -.76  | -.76  | -.88   | -.88  | -.92  | -1.04  | -1.08 | -1.12 |
| 7538 R                | 12       | -.68   | -.72  | -.72  | -.80   | -.84  | -.88  | -.96   | -1.04 | -1.08 |
| 7538 R                | 13       | -.72   | -.72  | -.72  | -.84   | -.88  | -.88  | -1.04  | -1.08 | -1.08 |
| 7538 H                | 14       | -.64   | -.68  | -.72  | -.76   | -.84  | -.84  | -.92   | -1.04 | -1.08 |
| 7532 PP               | 15       | -.72   | -.76  | -.76  | -.88   | -.88  | -.92  | -1.04  | -1.12 | -1.16 |
| 7532 KK               | 16       | -.68   | -.72  | -.72  | -.84   | -.88  | -.88  | -1.04  | -1.08 | -1.12 |
| 7530 T                | 17       | -.68   | -.72  | -.72  | -.80   | -.88  | -.88  | -1.00  | -1.08 | -1.08 |
| 7538 C                | 18       | -.64   | -.68  | -.68  | -.76   | -.80  | -.84  | -.92   | -1.04 | -1.04 |
| 7538 M                | 19       | -.72   | -.72  | -.72  | -.84   | -.88  | -.88  | -1.04  | -1.0  | -1.12 |
| 7529 P                | 20       | -.68   | -.72  | -.72  | -.80   | -.88  | -.88  | -1.00  | -1.08 | -1.12 |
| 7532 DD               | 21       | -.68   | -.68  | -.72  | -.80   | -.84  | -.88  | -1.00  | -1.08 | -1.08 |
| 7532 NN               | 22       | -.72   | -.72  | -.72  | -.84   | -.88  | -.88  | -1.04  | -1.08 | -1.12 |
| 7532 P                | 23       | -.68   | -.72  | -.72  | -.80   | -.84  | -.88  | -.96   | -1.08 | -1.08 |
| 7532 N                | 24       | -.68   | -.72  | -.72  | -.80   | -.84  | -.88  | -1.00  | -1.08 | -1.08 |
| 7532 Z                | 25       | -.64   | -.64  | -.68  | -.76   | -.80  | -.84  | -.92   | -1.04 | -1.04 |

TEST LIMITS = 0.0V to -2.0V

appendix d

FP (TERMINAL 15), V15M-SUBGROUPS A2, A3, A4 COLLINS DIVISIONS DATE 9-30-75  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |        |        |        |       |       |       |
|-----------------------|----------|------------|-------|-------|--------|--------|--------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C  | +25°C  | +75°C  | -55°C | +25°C | +75°C |
| 7530 M                | 1        |            |       |       | -35.16 | -34.40 | -33.64 |       |       |       |
| 7538 K                | 2        |            |       |       | -34.24 | -33.28 | -32.36 |       |       |       |
| 7532 H                | 3        |            |       |       | -33.48 | -32.64 | -31.92 |       |       |       |
| 7538 J                | 4        |            |       |       | -39.52 | -33.80 | -37.48 |       |       |       |
| 7532 A                | 5        |            |       |       | -33.40 | -32.44 | -31.76 |       |       |       |
| 7530 M                | 6        |            |       |       | -37.84 | -36.64 | -35.80 |       |       |       |
| 7530 M                | 7        |            |       |       | -34.20 | -33.36 | -32.48 |       |       |       |
| 7538 B                | 8        |            |       |       | -36.32 | -35.36 | -34.36 |       |       |       |
| 7538 E                | 9        |            |       |       | -36.20 | -35.12 | -34.08 |       |       |       |
| 7538 A                | 10       |            |       |       | -36.68 | -35.64 | -34.60 |       |       |       |
| 7538 N                | 11       |            |       |       | -37.92 | -36.76 | -35.60 |       |       |       |
| 7538 R                | 12       |            |       |       | -33.08 | -32.44 | -31.72 |       |       |       |
| 7538 R                | 13       |            |       |       | -36.44 | -35.52 | -34.48 |       |       |       |
| 7538 H                | 14       |            |       |       | -36.48 | -35.32 | -34.12 |       |       |       |
| 7532 PP               | 15       |            |       |       | -34.36 | -33.40 | -32.44 |       |       |       |
| 7532 KK               | 16       |            |       |       | -37.24 | -36.16 | -35.04 |       |       |       |
| 7530 T                | 17       |            |       |       | -34.68 | -33.64 | -32.64 |       |       |       |
| 7538 C                | 18       |            |       |       | -34.96 | -33.88 | -32.76 |       |       |       |
| 7538 M                | 19       |            |       |       | -35.52 | -34.64 | -33.64 |       |       |       |
| 7529 P                | 20       |            |       |       | -31.64 | -31.00 | -30.24 |       |       |       |
| 7532 DD               | 21       |            |       |       | -35.24 | -34.36 | -33.40 |       |       |       |
| 7532 NN               | 22       |            |       |       | -34.24 | -33.36 | -32.36 |       |       |       |
| 7532 P                | 23       |            |       |       | -34.32 | -33.40 | -32.44 |       |       |       |
| 7532 N                | 24       |            |       |       | -37.12 | -36.12 | -35.00 |       |       |       |
| 7532 Z                | 25       |            |       |       | -35.28 | -34.20 | -33.08 |       |       |       |

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) - SUBGROUPS A2,A3,A4

COLLINS DIVISIONS DATE 9-30-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

SCALER OUTPUT (LOW LEVEL), VOLTS

| Device Identification |          | -17.0V |       |       | -21.5V |        |        | -27.6V |        |        |
|-----------------------|----------|--------|-------|-------|--------|--------|--------|--------|--------|--------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C  | -55°C  | +25°C  | +75°C  |
| 7530 M                | 1        |        |       |       | -11.36 | - 6.84 | - 6.56 | -12.44 | -11.00 | -10.52 |
| 7538 K                | 2        |        |       |       | - 8.76 | - 7.60 | - 7.32 | -13.40 | -11.88 | -11.48 |
| 7532 H                | 3        |        |       |       | -10.60 | - 8.12 | - 7.88 | -14.04 | -12.44 | -12.04 |
| 7538 J                | 4        |        |       |       | -10.68 | - 6.76 | - 6.52 | -12.08 | -11.20 | -10.52 |
| 7532 A                | 5        |        |       |       | -12.08 | - 8.04 | - 7.72 | -14.08 | -12.28 | -11.88 |
| 7530 M                | 6        |        |       |       | -10.52 | - 7.52 | - 7.24 | -13.40 | -11.72 | -11.28 |
| 7530 M                | 7        |        |       |       | -11.48 | - 6.96 | - 6.72 | -12.76 | -11.36 | -10.80 |
| 7538 B                | 8        |        |       |       | -12.40 | - 7.64 | - 7.36 | -13.68 | -12.16 | -11.52 |
| 7538 E                | 9        |        |       |       | -11.64 | - 7.08 | - 6.84 | -12.88 | -11.88 | -10.88 |
| 7538 A                | 10       |        |       |       | -12.56 | - 7.92 | - 7.60 | -13.92 | -12.40 | -11.88 |
| 7538 N                | 11       |        |       |       | -11.28 | - 6.84 | - 6.56 | -12.60 | -11.32 | -10.64 |
| 7538 R                | 12       |        |       |       | -10.92 | - 6.80 | -6.60  | -12.44 | -11.20 | -10.68 |
| 7538 R                | 13       |        |       |       | -10.32 | - 7.00 | - 6.76 | -12.56 | -11.28 | -10.80 |
| 7538 H                | 14       |        |       |       | - 7.76 | - 7.44 | - 7.16 | -12.08 | -11.64 | -11.32 |
| 7532 PP               | 15       |        |       |       | -8.24  | - 7.40 | - 7.12 | -13.20 | -11.60 | -11.20 |
| 7532 KK               | 16       |        |       |       | -12.92 | - 7.68 | - 7.40 | -14.04 | -12.88 | -11.48 |
| 7530 T                | 17       |        |       |       | -10.28 | - 7.60 | - 7.28 | -13.16 | -11.76 | -11.32 |
| 7538 C                | 18       |        |       |       | -12.04 | - 7.32 | - 7.08 | -13.20 | -12.24 | -11.16 |
| 7538 M                | 19       |        |       |       | -12.24 | - 7.48 | - 7.20 | -13.56 | -12.40 | -11.28 |
| 7529 P                | 20       |        |       |       | -13.04 | - 8.12 | - 7.80 | -14.64 | -12.48 | -11.96 |
| 7532 DD               | 21       |        |       |       | -10.04 | - 7.60 | - 7.28 | -13.36 | -11.76 | -11.36 |
| 7532 NN               | 22       |        |       |       | -10.92 | - 7.20 | - 6.88 | -12.92 | -11.36 | -10.96 |
| 7532 P                | 23       |        |       |       | -11.92 | - 7.20 | - 6.92 | -13.08 | -12.00 | -10.88 |
| 7532 N                | 24       |        |       |       | -12.44 | - 7.68 | - 7.40 | -13.80 | -12.60 | -11.52 |
| 7532 Z                | 25       |        |       |       | -11.04 | - 7.80 | - 7.48 | -14.00 | -12.08 | -11.64 |

TEST LIMITS = -4.0V to VDD

Q6 (TERMINAL 16)-SUBGROUPS A2,A3,A4

COLLINS DIVISIONS

DATE 9-30-75

SCALER OUTPUT (HIGH LEVEL), VOLTS

ROCKWELL INTERNATIONAL

NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7530 M                | 1        |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7538 K                | 2        |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7532 H                | 3        |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7538 J                | 4        |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7532 A                | 5        |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7530 M                | 6        |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7530 M                | 7        |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7538 B                | 8        |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7538 E                | 9        |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7538 A                | 10       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7538 N                | 11       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7538 R                | 12       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7538 R                | 13       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7538 H                | 14       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7532 PP               | 15       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7532 KK               | 16       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7530 T                | 17       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7538 C                | 18       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7538 M                | 19       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7529 P                | 20       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7532 DD               | 21       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7532 NN               | 22       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7532 P                | 23       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7532 N                | 24       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |
| 7532 Z                | 25       |        |       |       | -0.00  | -0.00 | -0.00 | -0.00  | -0.00 | -0.00 |

TEST LIMITS = 0.0V to -0.1V

IDD (TERMINAL 1), 1A-SUBGROUP B1

COLLINS DIVISIONS DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

SCALER BIAS (IDD CURRENT), MA

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 AA               | 26       |        |       |       |        |       |       |        | -4.60 |       |
| 7530 S                | 27       |        |       |       |        |       |       |        | -5.00 |       |
| 7538 T                | 28       |        |       |       |        |       |       |        | -4.90 |       |
| 7538 X                | 29       |        |       |       |        |       |       |        | -5.00 |       |
| 7532 M                | 30       |        |       |       |        |       |       |        | -5.10 |       |
| 7538 Z                | 31       |        |       |       |        |       |       |        | -5.60 |       |
| 7538 S                | 32       |        |       |       |        |       |       |        | -4.90 |       |
| 7532 X                | 33       |        |       |       |        |       |       |        | -5.00 |       |
| 7532 K                | 34       |        |       |       |        |       |       |        | -4.90 |       |
| 7530 N                | 35       |        |       |       |        |       |       |        | -5.00 |       |
| 7532 X                | 36       |        |       |       |        |       |       |        | -4.90 |       |
| 7532 L                | 37       |        |       |       |        |       |       |        | -4.70 |       |
| 7532 C                | 38       |        |       |       |        |       |       |        | -4.80 |       |
| 7532 BB               | 39       |        |       |       |        |       |       |        | -5.10 |       |
| 7532 D                | 40       |        |       |       |        |       |       |        | -4.60 |       |
| 7538 AA               | 41       |        |       |       |        |       |       |        | -5.80 |       |
| 7538 G                | 42       |        |       |       |        |       |       |        | -4.40 |       |
| 7530 J                | 43       |        |       |       |        |       |       |        | -5.40 |       |
| 7530 K                | 44       |        |       |       |        |       |       |        | -5.20 |       |
| 7530 G                | 45       |        |       |       |        |       |       |        | -4.70 |       |
| 7530 A                | 46       |        |       |       |        |       |       |        | -5.00 |       |
| 7530 U                | 47       |        |       |       |        |       |       |        | -5.00 |       |
| 7532 EE               | 48       |        |       |       |        |       |       |        | -5.10 |       |
| 7532 J                | 49       |        |       |       |        |       |       |        | -4.90 |       |
| 7532 H                | 50       |        |       |       |        |       |       |        | -4.90 |       |

TEST LIMITS =2.0mA to 10.0 mA

ARM (TERMINAL 3) - SUBGROUP B1  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7532 AA               | 26       |        | -16.96 |       |        | -21.44 |       |        | -27.55 |       |
| 7530 S                | 27       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7538 T                | 28       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7538 X                | 29       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7532 M                | 30       |        | -16.96 |       |        | -21.44 |       |        | -37.52 |       |
| 7538 Z                | 31       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7538 S                | 32       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7532 X                | 33       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7532 K                | 34       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7530 N                | 35       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7532 X                | 36       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7532 L                | 37       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7532 C                | 38       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7532 BB               | 39       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7532 D                | 40       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7538 AA               | 41       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7538 G                | 42       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7530 J                | 43       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7530 K                | 44       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7530 G                | 45       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7530 A                | 46       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7530 U                | 47       |        | -16.96 |       |        | -21.44 |       |        | -26.60 |       |
| 7532 EE               | 48       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7532 J                | 49       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |
| 7532 H                | 50       |        | -16.96 |       |        | -21.44 |       |        | -27.52 |       |

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) - SUBGROUP B1  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 AA               | 26       |        | -.24  |       |        | -.24  |       |        | -.28  |       |
| 7530 S                | 27       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7538 T                | 28       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7538 X                | 29       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7532 M                | 30       |        | -.24  |       |        | -.24  |       |        | -.28  |       |
| 7538 Z                | 31       |        | -.24  |       |        | -.24  |       |        | -.24  |       |
| 7538 S                | 32       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7532 X                | 33       |        | -.20  |       |        | -.24  |       |        | -.24  |       |
| 7532 K                | 34       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7530 N                | 35       |        | -.24  |       |        | -.24  |       |        | -.28  |       |
| 7532 X                | 36       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7532 L                | 37       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7532 C                | 38       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7532 BB               | 39       |        | -.24  |       |        | -.24  |       |        | -.28  |       |
| 7532 D                | 40       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7538 AA               | 41       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7538 G                | 42       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7530 J                | 43       |        | -.24  |       |        | -.24  |       |        | -.28  |       |
| 7530 K                | 44       |        | -.24  |       |        | -.24  |       |        | -.28  |       |
| 7530 G                | 45       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7530 A                | 46       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7530 U                | 47       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7532 EE               | 48       |        | -.24  |       |        | -.24  |       |        | -.28  |       |
| 7532 J                | 49       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7532 H                | 50       |        | -.28  |       |        | -.28  |       |        | -.28  |       |

TEST LIMITS = 0.0V to -2.0V



FIRE (TERMINAL 4) - SUBGROUP B1  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7532 AA               | 26       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7530 S                | 27       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7538 T                | 28       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7538 X                | 29       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7532 M                | 30       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7538 Z                | 31       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7538 S                | 32       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7532 X                | 33       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7532 K                | 34       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7530 N                | 35       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7532 X                | 36       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7532 L                | 37       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7532 C                | 38       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7532 BB               | 39       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7532 D                | 40       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7538 AA               | 41       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7538 G                | 42       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7530 J                | 43       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7530 K                | 44       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7530 G                | 45       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7530 A                | 46       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7530 U                | 47       |        | -17.00 |       |        | -21.52 |       |        | -27.60 |       |
| 7532 EE               | 48       |        | -17.04 |       |        | -21.56 |       |        | -27.60 |       |
| 7532 J                | 49       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |
| 7532 H                | 50       |        | -17.00 |       |        | -21.56 |       |        | -27.60 |       |

TEST LIMITS = -16.9V to VDD

FIRE (TERMINAL 4) - SUBGROUP B1  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 AA               | 26       |        | -2.84 |       |        | -2.68 |       |        | -2.80 |       |
| 7530 S                | 27       |        | -2.52 |       |        | -2.52 |       |        | -2.76 |       |
| 7538 T                | 28       |        | -2.40 |       |        | -2.36 |       |        | -2.52 |       |
| 7538 X                | 29       |        | -2.36 |       |        | -2.36 |       |        | -2.52 |       |
| 7532 M                | 30       |        | -2.32 |       |        | -2.36 |       |        | -2.52 |       |
| 7538 Z                | 31       |        | -2.24 |       |        | -2.32 |       |        | -2.48 |       |
| 7538 S                | 32       |        | -2.44 |       |        | -2.40 |       |        | -2.56 |       |
| 7532 X                | 33       |        | -2.16 |       |        | -2.20 |       |        | -2.44 |       |
| 7532 K                | 34       |        | -2.52 |       |        | -2.52 |       |        | -2.72 |       |
| 7530 N                | 35       |        | -2.48 |       |        | -2.48 |       |        | -2.68 |       |
| 7532 X                | 36       |        | -2.48 |       |        | -2.52 |       |        | -2.76 |       |
| 7532 L                | 37       |        | -2.72 |       |        | -2.64 |       |        | -2.80 |       |
| 7532 C                | 38       |        | -2.56 |       |        | -2.52 |       |        | -2.72 |       |
| 7532 BB               | 39       |        | -2.52 |       |        | -2.56 |       |        | -2.80 |       |
| 7532 D                | 40       |        | -2.60 |       |        | -2.52 |       |        | -2.68 |       |
| 7538 AA               | 41       |        | -2.48 |       |        | -2.40 |       |        | -2.56 |       |
| 7538 G                | 42       |        | -2.68 |       |        | -2.60 |       |        | -2.76 |       |
| 7530 J                | 43       |        | -2.32 |       |        | -2.36 |       |        | -2.60 |       |
| 7530 K                | 44       |        | -2.40 |       |        | -2.48 |       |        | -2.68 |       |
| 7530 G                | 45       |        | -2.44 |       |        | -2.44 |       |        | -2.64 |       |
| 7530 A                | 46       |        | -2.64 |       |        | -2.56 |       |        | -2.76 |       |
| 7530 U                | 47       |        | -2.64 |       |        | -2.64 |       |        | -2.84 |       |
| 7532 EE               | 48       |        | -2.20 |       |        | -2.28 |       |        | -2.48 |       |
| 7532 J                | 49       |        | -2.76 |       |        | -2.64 |       |        | -2.80 |       |
| 7532 H                | 50       |        | -3.12 |       |        | -2.80 |       |        | -2.92 |       |

TEST LIMITS = 0.0V to -10.0V

appendix d

G14 (TERMINAL 5), V5M - SUBGROUP B1  
 SCALER INPUT(NEGATIVE BREAKDOWN),VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          |       |       |       | 10 $\mu$ A |        |       |       |       |       |
|-----------------------|----------|-------|-------|-------|------------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C      | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7532 AA               | 26       |       |       |       |            | -35.84 |       |       |       |       |
| 7530 S                | 27       |       |       |       |            | -34.00 |       |       |       |       |
| 7538 T                | 28       |       |       |       |            | -40.44 |       |       |       |       |
| 7538 X                | 29       |       |       |       |            | -36.92 |       |       |       |       |
| 7532 M                | 30       |       |       |       |            | -32.48 |       |       |       |       |
| 7538 Z                | 31       |       |       |       |            | -31.60 |       |       |       |       |
| 7538 S                | 32       |       |       |       |            | -39.24 |       |       |       |       |
| 7532 X                | 33       |       |       |       |            | -31.80 |       |       |       |       |
| 7532 K                | 34       |       |       |       |            | -33.72 |       |       |       |       |
| 7530 N                | 35       |       |       |       |            | -30.52 |       |       |       |       |
| 7532 X                | 36       |       |       |       |            | -32.12 |       |       |       |       |
| 7532 L                | 37       |       |       |       |            | -32.24 |       |       |       |       |
| 7532 C                | 38       |       |       |       |            | -32.88 |       |       |       |       |
| 7532 BB               | 39       |       |       |       |            | -30.80 |       |       |       |       |
| 7532 D                | 40       |       |       |       |            | -33.36 |       |       |       |       |
| 7538 AA               | 41       |       |       |       |            | -34.08 |       |       |       |       |
| 7538 G                | 42       |       |       |       |            | -32.00 |       |       |       |       |
| 7530 J                | 43       |       |       |       |            | -28.80 |       |       |       |       |
| 7530 K                | 44       |       |       |       |            | -33.76 |       |       |       |       |
| 7530 G                | 45       |       |       |       |            | -34.52 |       |       |       |       |
| 7530 A                | 46       |       |       |       |            | -38.60 |       |       |       |       |
| 7530 U                | 47       |       |       |       |            | -33.36 |       |       |       |       |
| 7532 EE               | 48       |       |       |       |            | -34.52 |       |       |       |       |
| 7532 J                | 49       |       |       |       |            | -31.04 |       |       |       |       |
| 7532 H                | 50       |       |       |       |            | -36.60 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUP B1  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|-------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7532 AA               | 26       |        |       |       |        | -21.52 |       |        | -27.60 |       |
| 7530 S                | 27       |        |       |       |        | -21.52 |       |        | -27.60 |       |
| 7538 T                | 28       |        |       |       |        | -21.52 |       |        | -27.60 |       |
| 7538 X                | 29       |        |       |       |        | ↑      |       |        | ↑      |       |
| 7532 M                | 30       |        |       |       |        |        |       |        |        |       |
| 7538 Z                | 31       |        |       |       |        |        |       |        |        |       |
| 7538 S                | 32       |        |       |       |        |        |       |        |        |       |
| 7532 X                | 33       |        |       |       |        |        |       |        |        |       |
| 7532 K                | 34       |        |       |       |        |        |       |        |        |       |
| 7530 N                | 35       |        |       |       |        |        |       |        |        |       |
| 7532 X                | 36       |        |       |       |        |        |       |        |        |       |
| 7532 L                | 37       |        |       |       |        |        |       |        |        |       |
| 7532 C                | 38       |        |       |       |        |        |       |        |        |       |
| 7532 BB               | 39       |        |       |       |        |        |       |        |        |       |
| 7532 D                | 40       |        |       |       |        |        |       |        |        |       |
| 7538 AA               | 41       |        |       |       |        |        |       |        |        |       |
| 7538 G                | 42       |        |       |       |        |        |       |        |        |       |
| 7530 J                | 43       |        |       |       |        |        |       |        |        |       |
| 7530 K                | 44       |        |       |       |        |        |       |        |        |       |
| 7530 G                | 45       |        |       |       |        |        |       |        |        |       |
| 7530 A                | 46       |        |       |       |        |        |       |        |        |       |
| 7530 U                | 47       |        |       |       |        |        |       |        |        |       |
| 7532 EE               | 48       |        |       |       |        |        |       |        |        |       |
| 7532 J                | 49       |        |       |       |        | ↓      |       |        | ↓      |       |
| 7532 H                | 50       |        |       |       |        | -21.52 |       |        | -27.60 |       |

TEST LIMITS = -21.4V to VDD

appendix d

Q4 (TERMINAL 6) - SUBGROUP B1  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 AA               | 26       |        |       |       |        | -.76  |       |        | -.76  |       |
| 7530 S                | 27       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7538 T                | 28       |        |       |       |        | -.72  |       |        | -.72  |       |
| 7538 X                | 29       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7532 M                | 30       |        |       |       |        | -.72  |       |        | -.68  |       |
| 7538 Z                | 31       |        |       |       |        | -.72  |       |        | -.68  |       |
| 7538 S                | 32       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7532 X                | 33       |        |       |       |        | -.64  |       |        | -.64  |       |
| 7532 K                | 34       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7530 N                | 35       |        |       |       |        | -.72  |       |        | -.68  |       |
| 7532 X                | 36       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7532 L                | 37       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7532 C                | 38       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7532 BB               | 39       |        |       |       |        | -.72  |       |        | -.72  |       |
| 7532 D                | 40       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7538 AA               | 41       |        |       |       |        | -.72  |       |        | -.68  |       |
| 7538 G                | 42       |        |       |       |        | -.76  |       |        | -.76  |       |
| 7530 J                | 43       |        |       |       |        | -.68  |       |        | -.64  |       |
| 7530 K                | 44       |        |       |       |        | -.72  |       |        | -.68  |       |
| 7530 G                | 45       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7530 A                | 46       |        |       |       |        | -.72  |       |        | -.72  |       |
| 7530 U                | 47       |        |       |       |        | -.80  |       |        | -.76  |       |
| 7532 EE               | 48       |        |       |       |        | -.68  |       |        | -.68  |       |
| 7532 J                | 49       |        |       |       |        | -.76  |       |        | -.76  |       |
| 7532 H                | 50       |        |       |       |        | -.80  |       |        | -.76  |       |

TEST LIMITS = 0.0V TO -2.6V

M11 (TERMINAL 7), V7M -SUBGROUP B1  
 SCALER INPUT(NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7532 AA               | 26       |            |       |       |       | -36.00 |       |       |       |       |
| 7530 S                | 27       |            |       |       |       | -35.64 |       |       |       |       |
| 7538 T                | 28       |            |       |       |       | -39.32 |       |       |       |       |
| 7538 X                | 29       |            |       |       |       | -38.84 |       |       |       |       |
| 7532 M                | 30       |            |       |       |       | -36.76 |       |       |       |       |
| 7538 Z                | 31       |            |       |       |       | -33.52 |       |       |       |       |
| 7538 S                | 32       |            |       |       |       | -36.44 |       |       |       |       |
| 7532 X                | 33       |            |       |       |       | -33.84 |       |       |       |       |
| 7532 K                | 34       |            |       |       |       | -32.96 |       |       |       |       |
| 7530 N                | 35       |            |       |       |       | -30.84 |       |       |       |       |
| 7532 X                | 36       |            |       |       |       | -34.16 |       |       |       |       |
| 7532 L                | 37       |            |       |       |       | -32.28 |       |       |       |       |
| 7532 C                | 38       |            |       |       |       | -33.84 |       |       |       |       |
| 7532 BB               | 39       |            |       |       |       | -32.68 |       |       |       |       |
| 7532 D                | 40       |            |       |       |       | -33.84 |       |       |       |       |
| 7538 AA               | 41       |            |       |       |       | -36.64 |       |       |       |       |
| 7538 G                | 42       |            |       |       |       | -31.76 |       |       |       |       |
| 7530 J                | 43       |            |       |       |       | -30.60 |       |       |       |       |
| 7530 K                | 44       |            |       |       |       | -31.72 |       |       |       |       |
| 7530 G                | 45       |            |       |       |       | -36.28 |       |       |       |       |
| 7530 A                | 46       |            |       |       |       | -38.56 |       |       |       |       |
| 7530 U                | 47       |            |       |       |       | -34.88 |       |       |       |       |
| 7532 EE               | 48       |            |       |       |       | -34.00 |       |       |       |       |
| 7532 J                | 49       |            |       |       |       | -33.12 |       |       |       |       |
| 7532 H                | 50       |            |       |       |       | -36.48 |       |       |       |       |

TEST LIMITS = -28.0V MINIMUM

appendix d

MON (TERMINAL 9), V9M-SUBGROUP B1  
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          |       |       |       | 10 $\mu$ A |        |       |       |       |       |
|-----------------------|----------|-------|-------|-------|------------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C      | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7532 AA               | 26       |       |       |       |            | -36.64 |       |       |       |       |
| 7530 S                | 27       |       |       |       |            | -36.44 |       |       |       |       |
| 7538 T                | 28       |       |       |       |            | -39.96 |       |       |       |       |
| 7538 X                | 29       |       |       |       |            | -35.04 |       |       |       |       |
| 7532 M                | 30       |       |       |       |            | -36.76 |       |       |       |       |
| 7538 Z                | 31       |       |       |       |            | -31.80 |       |       |       |       |
| 7538 S                | 32       |       |       |       |            | -38.16 |       |       |       |       |
| 7532 X                | 33       |       |       |       |            | -34.56 |       |       |       |       |
| 7532 K                | 34       |       |       |       |            | -33.20 |       |       |       |       |
| 7530 N                | 35       |       |       |       |            | -30.96 |       |       |       |       |
| 7532 X                | 36       |       |       |       |            | -34.00 |       |       |       |       |
| 7532 L                | 37       |       |       |       |            | -31.40 |       |       |       |       |
| 7532 C                | 38       |       |       |       |            | -35.36 |       |       |       |       |
| 7532 BB               | 39       |       |       |       |            | -31.60 |       |       |       |       |
| 7532 D                | 40       |       |       |       |            | -33.20 |       |       |       |       |
| 7538 AA               | 41       |       |       |       |            | -35.60 |       |       |       |       |
| 7538 G                | 42       |       |       |       |            | -31.68 |       |       |       |       |
| 7530 J                | 43       |       |       |       |            | -30.28 |       |       |       |       |
| 7530 K                | 44       |       |       |       |            | -33.20 |       |       |       |       |
| 7530 G                | 45       |       |       |       |            | -38.44 |       |       |       |       |
| 7530 A                | 46       |       |       |       |            | -36.20 |       |       |       |       |
| 7530 U                | 47       |       |       |       |            | -34.56 |       |       |       |       |
| 7532 EE               | 48       |       |       |       |            | -34.84 |       |       |       |       |
| 7532 J                | 49       |       |       |       |            | -33.40 |       |       |       |       |
| 7532 H                | 50       |       |       |       |            | -36.88 |       |       |       |       |

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9), V9P - SUBGROUP B1  
 SCALER INPUT (POSITIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          |       |       |       | 3mA   |       |       |       |       |       |
|-----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C |
| 7532 AA               | 26       |       |       |       |       | +1.04 |       |       |       |       |
| 7530 S                | 27       |       |       |       |       | +1.00 |       |       |       |       |
| 7538 T                | 28       |       |       |       |       | +1.28 |       |       |       |       |
| 7538 X                | 29       |       |       |       |       | +1.68 |       |       |       |       |
| 7532 M                | 30       |       |       |       |       | +1.04 |       |       |       |       |
| 7538 Z                | 31       |       |       |       |       | +1.44 |       |       |       |       |
| 7538 S                | 32       |       |       |       |       | +1.52 |       |       |       |       |
| 7532 X                | 33       |       |       |       |       | +1.00 |       |       |       |       |
| 7532 K                | 34       |       |       |       |       | +1.16 |       |       |       |       |
| 7530 N                | 35       |       |       |       |       | +1.08 |       |       |       |       |
| 7532 X                | 36       |       |       |       |       | +1.24 |       |       |       |       |
| 7532 L                | 37       |       |       |       |       | +1.04 |       |       |       |       |
| 7532 C                | 38       |       |       |       |       | +1.04 |       |       |       |       |
| 7532 BB               | 39       |       |       |       |       | +1.04 |       |       |       |       |
| 7532 D                | 40       |       |       |       |       | +1.04 |       |       |       |       |
| 7538 AA               | 41       |       |       |       |       | +1.28 |       |       |       |       |
| 7538 G                | 42       |       |       |       |       | +1.00 |       |       |       |       |
| 7530 J                | 43       |       |       |       |       | +1.04 |       |       |       |       |
| 7530 K                | 44       |       |       |       |       | +1.04 |       |       |       |       |
| 7530 G                | 45       |       |       |       |       | +1.04 |       |       |       |       |
| 7530 A                | 46       |       |       |       |       | +1.04 |       |       |       |       |
| 7530 U                | 47       |       |       |       |       | +1.16 |       |       |       |       |
| 7532 EE               | 48       |       |       |       |       | +1.04 |       |       |       |       |
| 7532 J                | 49       |       |       |       |       | +1.04 |       |       |       |       |
| 7532 H                | 50       |       |       |       |       | +1.32 |       |       |       |       |

TEST LIMITS = 0.0V to +6.0V



appendix d

CL (Terminal 10), V10M-SUBGROUP B1  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 11-12-25  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7532 AA               | 26       |            |       |       |       | -36.60 |       |       |       |       |
| 7530 S                | 27       |            |       |       |       | -37.16 |       |       |       |       |
| 7538 T                | 28       |            |       |       |       | -40.44 |       |       |       |       |
| 7538 X                | 29       |            |       |       |       | -37.04 |       |       |       |       |
| 7532 M                | 30       |            |       |       |       | -37.04 |       |       |       |       |
| 7538 Z                | 31       |            |       |       |       | -32.08 |       |       |       |       |
| 7538 S                | 32       |            |       |       |       | -39.60 |       |       |       |       |
| 7532 X                | 33       |            |       |       |       | -35.48 |       |       |       |       |
| 7532 K                | 34       |            |       |       |       | -33.16 |       |       |       |       |
| 7530 N                | 35       |            |       |       |       | -30.68 |       |       |       |       |
| 7532 X                | 36       |            |       |       |       | -33.52 |       |       |       |       |
| 7532 L                | 37       |            |       |       |       | -31.20 |       |       |       |       |
| 7532 C                | 38       |            |       |       |       | -35.76 |       |       |       |       |
| 7532 BB               | 39       |            |       |       |       | -31.48 |       |       |       |       |
| 7532 D                | 40       |            |       |       |       | -33.32 |       |       |       |       |
| 7538 AA               | 41       |            |       |       |       | -37.00 |       |       |       |       |
| 7538 G                | 42       |            |       |       |       | -32.12 |       |       |       |       |
| 7530 J                | 43       |            |       |       |       | -33.28 |       |       |       |       |
| 7530 K                | 44       |            |       |       |       | -33.36 |       |       |       |       |
| 7530 G                | 45       |            |       |       |       | -38.04 |       |       |       |       |
| 7530 A                | 46       |            |       |       |       | -35.76 |       |       |       |       |
| 7530 U                | 47       |            |       |       |       | -35.04 |       |       |       |       |
| 7532 EE               | 48       |            |       |       |       | -35.44 |       |       |       |       |
| 7532 J                | 49       |            |       |       |       | -33.72 |       |       |       |       |
| 7532 H                | 50       |            |       |       |       | -37.08 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

SP (TERMINAL 11) - SUBGROUP B1  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7532 AA               | 26       |        | - 9.88 |       |        | -13.72 |       |        | -19.00 |       |
| 7530 S                | 27       |        | -10.20 |       |        | -14.00 |       |        | -19.20 |       |
| 7538 T                | 28       |        | -10.16 |       |        | -14.00 |       |        | -19.28 |       |
| 7538 X                | 29       |        | -10.00 |       |        | -13.80 |       |        | -19.00 |       |
| 7532 M                | 30       |        | -10.16 |       |        | -13.92 |       |        | -19.12 |       |
| 7538 Z                | 31       |        | -10.60 |       |        | -14.52 |       |        | -19.84 |       |
| 7538 S                | 32       |        | -10.48 |       |        | -14.36 |       |        | -19.72 |       |
| 7532 X                | 33       |        | -10.48 |       |        | -14.36 |       |        | -19.64 |       |
| 7532 K                | 34       |        | - 9.84 |       |        | -13.56 |       |        | -18.68 |       |
| 7530 N                | 35       |        | -10.16 |       |        | -14.04 |       |        | -19.36 |       |
| 7532 X                | 36       |        | -10.04 |       |        | -13.84 |       |        | -19.04 |       |
| 7532 L                | 37       |        | -10.08 |       |        | -13.88 |       |        | -19.12 |       |
| 7532 C                | 38       |        | -10.00 |       |        | -13.84 |       |        | -19.04 |       |
| 7532 BB               | 39       |        | -10.56 |       |        | -14.44 |       |        | -19.76 |       |
| 7532 D                | 40       |        | - 9.72 |       |        | -13.52 |       |        | -18.72 |       |
| 7538 AA               | 41       |        | -10.16 |       |        | -14.00 |       |        | -19.28 |       |
| 7538 G                | 42       |        | -10.00 |       |        | -13.84 |       |        | -19.04 |       |
| 7530 J                | 43       |        | -10.48 |       |        | -14.36 |       |        | -19.64 |       |
| 7530 K                | 44       |        | -10.32 |       |        | -14.16 |       |        | -19.40 |       |
| 7530 G                | 45       |        | - 9.80 |       |        | -13.56 |       |        | -18.76 |       |
| 7530 A                | 46       |        | -10.16 |       |        | -14.00 |       |        | -19.20 |       |
| 7530 U                | 47       |        | -10.04 |       |        | -13.88 |       |        | -19.08 |       |
| 7532 EE               | 48       |        | -10.48 |       |        | -14.32 |       |        | -19.56 |       |
| 7532 J                | 49       |        | - 9.88 |       |        | -13.72 |       |        | -18.96 |       |
| 7532 H                | 50       |        | - 9.72 |       |        | -13.52 |       |        | -18.76 |       |

TEST LIMITS = -8.0V to VDD

appendix d

SP (TERMINAL 11) - SUBGROUP B1  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 AA               | 26       |        | -.60  |       |        | -.80  |       |        | -1.28 |       |
| 7530 S                | 27       |        | -.64  |       |        | -.84  |       |        | -1.36 |       |
| 7538 T                | 28       |        | -.60  |       |        | -.84  |       |        | -1.28 |       |
| 7538 X                | 29       |        | -.64  |       |        | -.84  |       |        | -1.28 |       |
| 7532 M                | 30       |        | -.60  |       |        | -.80  |       |        | -1.24 |       |
| 7538 Z                | 31       |        | -.68  |       |        | -.88  |       |        | -1.40 |       |
| 7538 S                | 32       |        | -.64  |       |        | -.88  |       |        | -1.36 |       |
| 7532 X                | 33       |        | -.56  |       |        | -.76  |       |        | -1.24 |       |
| 7532 K                | 34       |        | -.60  |       |        | -.80  |       |        | -1.28 |       |
| 7530 N                | 35       |        | -.60  |       |        | -.84  |       |        | -1.28 |       |
| 7532 X                | 36       |        | -.60  |       |        | -.84  |       |        | -1.36 |       |
| 7532 L                | 37       |        | -.64  |       |        | -.84  |       |        | -1.32 |       |
| 7532 C                | 38       |        | -.60  |       |        | -.84  |       |        | -1.28 |       |
| 7532 BB               | 39       |        | -.64  |       |        | -.88  |       |        | -1.36 |       |
| 7532 D                | 40       |        | -.60  |       |        | -.80  |       |        | -1.28 |       |
| 7538 AA               | 41       |        | -.72  |       |        | -.92  |       |        | -1.44 |       |
| 7538 G                | 42       |        | -.56  |       |        | -.76  |       |        | -1.20 |       |
| 7530 J                | 43       |        | -.60  |       |        | -.84  |       |        | -1.32 |       |
| 7530 K                | 44       |        | -.60  |       |        | -.84  |       |        | -1.36 |       |
| 7530 G                | 45       |        | -.60  |       |        | -.80  |       |        | -1.28 |       |
| 7530 A                | 46       |        | -.60  |       |        | -.84  |       |        | -1.28 |       |
| 7530 U                | 47       |        | -.64  |       |        | -.84  |       |        | -1.36 |       |
| 7532 EE               | 48       |        | -.60  |       |        | -.80  |       |        | -1.24 |       |
| 7532 J                | 49       |        | -.60  |       |        | -.84  |       |        | -1.32 |       |
| 7532 H                | 50       |        | -.64  |       |        | -.84  |       |        | -1.36 |       |

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUP B1  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7532 AA               | 26       |        | - 9.88 |       |        | -13.72 |       |        | -19.04 |       |
| 7530 S                | 27       |        | -10.16 |       |        | -13.92 |       |        | -19.12 |       |
| 7538 T                | 26       |        | -10.16 |       |        | -14.04 |       |        | -19.32 |       |
| 7538 X                | 29       |        | -10.16 |       |        | -14.00 |       |        | -19.28 |       |
| 7532 M                | 30       |        | -10.56 |       |        | -14.48 |       |        | -19.76 |       |
| 7538 Z                | 31       |        | -10.64 |       |        | -14.56 |       |        | -19.92 |       |
| 7538 S                | 32       |        | -10.32 |       |        | -14.20 |       |        | -19.44 |       |
| 7532 X                | 33       |        | -10.80 |       |        | -14.64 |       |        | -20.00 |       |
| 7532 K                | 34       |        | -10.08 |       |        | -13.84 |       |        | -19.00 |       |
| 7530 N                | 35       |        | -10.08 |       |        | -14.00 |       |        | -19.28 |       |
| 7532 X                | 36       |        | -10.04 |       |        | -13.84 |       |        | -19.04 |       |
| 7532 L                | 37       |        | -10.12 |       |        | -14.00 |       |        | -19.28 |       |
| 7532 C                | 38       |        | - 9.96 |       |        | -13.76 |       |        | -19.00 |       |
| 7532 BB               | 39       |        | -10.44 |       |        | -14.28 |       |        | -19.52 |       |
| 7532 D                | 40       |        | - 9.68 |       |        | -13.48 |       |        | -18.68 |       |
| 7538 AA               | 41       |        | -10.20 |       |        | -14.04 |       |        | -19.40 |       |
| 7538 G                | 42       |        | - 9.84 |       |        | -13.64 |       |        | -18.84 |       |
| 7530 J                | 43       |        | -10.52 |       |        | -14.44 |       |        | -19.72 |       |
| 7530 K                | 44       |        | -10.16 |       |        | -14.00 |       |        | -19.28 |       |
| 7530 G                | 45       |        | -9.80  |       |        | -13.56 |       |        | -18.76 |       |
| 7530 A                | 46       |        | -10.16 |       |        | -14.00 |       |        | -19.20 |       |
| 7530 U                | 47       |        | -10.08 |       |        | -13.92 |       |        | -19.16 |       |
| 7532 EE               | 48       |        | -10.48 |       |        | -14.32 |       |        | -19.60 |       |
| 7532 J                | 49       |        | -10.00 |       |        | -13.84 |       |        | -19.12 |       |
| 7532 H                | 50       |        | - 9.72 |       |        | -13.52 |       |        | -18.68 |       |

TEST LIMITS = -8.0V to VDD

appendix d

LP (TERMINAL 12) - SUBGROUPS B1  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 AA               | 26       |        | -.40  |       |        | -.48  |       |        | -.64  |       |
| 7530 S                | 27       |        | -.40  |       |        | -.52  |       |        | -.64  |       |
| 7538 T                | 28       |        | -.40  |       |        | -.52  |       |        | -.64  |       |
| 7538 X                | 29       |        | -.44  |       |        | -.52  |       |        | -.64  |       |
| 7532 M                | 30       |        | -.40  |       |        | -.48  |       |        | -.64  |       |
| 7538 Z                | 31       |        | -.44  |       |        | -.56  |       |        | -.72  |       |
| 7538 S                | 32       |        | -.40  |       |        | -.48  |       |        | -.64  |       |
| 7532 X                | 33       |        | -.40  |       |        | -.48  |       |        | -.60  |       |
| 7532 K                | 34       |        | -.40  |       |        | -.52  |       |        | -.64  |       |
| 7530 N                | 35       |        | -.40  |       |        | -.48  |       |        | -.64  |       |
| 7532 X                | 36       |        | -.44  |       |        | -.52  |       |        | -.64  |       |
| 7532 L                | 37       |        | -.44  |       |        | -.52  |       |        | -.64  |       |
| 7532 C                | 38       |        | -.44  |       |        | -.52  |       |        | -.64  |       |
| 7532 BB               | 39       |        | -.40  |       |        | -.52  |       |        | -.64  |       |
| 7532 D                | 40       |        | -.44  |       |        | -.52  |       |        | -.64  |       |
| 7538 AA               | 41       |        | -.44  |       |        | -.56  |       |        | -.72  |       |
| 7538 G                | 42       |        | -.40  |       |        | -.44  |       |        | -.60  |       |
| 7530 J                | 43       |        | -.40  |       |        | -.52  |       |        | -.64  |       |
| 7530 K                | 44       |        | -.44  |       |        | -.52  |       |        | -.68  |       |
| 7530 G                | 45       |        | -.40  |       |        | -.48  |       |        | -.60  |       |
| 7530 A                | 46       |        | -.40  |       |        | -.52  |       |        | -.64  |       |
| 7530 U                | 47       |        | -.44  |       |        | -.52  |       |        | -.64  |       |
| 7532 EE               | 48       |        | -.40  |       |        | -.48  |       |        | -.64  |       |
| 7532 J                | 49       |        | -.44  |       |        | -.52  |       |        | -.64  |       |
| 7532 H                | 50       |        | -.44  |       |        | -.52  |       |        | -.68  |       |

TEST LIMITS = 0.0V to - 2.0V

INH (TERMINAL 13), V13M-SUBGROUP B1

COLLINS DIVISIONS  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

DATE 11-12-75

SCALER INPUT (NEGATIVE BREAKDOWN) VOLTS

| Device Identification |          |                  |                  |                  | 10 $\mu$ A       |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7532 AA               | 26       |                  |                  |                  |                  | -37.68           |                  |                  |                  |                  |
| 7530 S                | 27       |                  |                  |                  |                  | -34.64           |                  |                  |                  |                  |
| 7538 T                | 28       |                  |                  |                  |                  | -40.96           |                  |                  |                  |                  |
| 7538 X                | 29       |                  |                  |                  |                  | -38.96           |                  |                  |                  |                  |
| 7532 M                | 30       |                  |                  |                  |                  | -33.48           |                  |                  |                  |                  |
| 7538 Z                | 31       |                  |                  |                  |                  | -32.36           |                  |                  |                  |                  |
| 7538 S                | 32       |                  |                  |                  |                  | -38.84           |                  |                  |                  |                  |
| 7532 X                | 33       |                  |                  |                  |                  | -31.60           |                  |                  |                  |                  |
| 7532 K                | 34       |                  |                  |                  |                  | -34.04           |                  |                  |                  |                  |
| 7530 N                | 35       |                  |                  |                  |                  | -31.12           |                  |                  |                  |                  |
| 7532 X                | 36       |                  |                  |                  |                  | -34.60           |                  |                  |                  |                  |
| 7532 L                | 37       |                  |                  |                  |                  | -31.68           |                  |                  |                  |                  |
| 7532 C                | 38       |                  |                  |                  |                  | -33.04           |                  |                  |                  |                  |
| 7532 BB               | 39       |                  |                  |                  |                  | -30.96           |                  |                  |                  |                  |
| 7532 D                | 40       |                  |                  |                  |                  | -32.60           |                  |                  |                  |                  |
| 7538 AA               | 41       |                  |                  |                  |                  | -37.32           |                  |                  |                  |                  |
| 7538 G                | 42       |                  |                  |                  |                  | -32.48           |                  |                  |                  |                  |
| 7530 J                | 43       |                  |                  |                  |                  | -33.20           |                  |                  |                  |                  |
| 7530 K                | 44       |                  |                  |                  |                  | -33.24           |                  |                  |                  |                  |
| 7530 G                | 45       |                  |                  |                  |                  | -36.44           |                  |                  |                  |                  |
| 7530 A                | 46       |                  |                  |                  |                  | -33.76           |                  |                  |                  |                  |
| 7530 U                | 47       |                  |                  |                  |                  | -34.52           |                  |                  |                  |                  |
| 7532 EE               | 48       |                  |                  |                  |                  | -34.56           |                  |                  |                  |                  |
| 7532 J                | 49       |                  |                  |                  |                  | -31.48           |                  |                  |                  |                  |
| 7532 H                | 50       |                  |                  |                  |                  | -32.56           |                  |                  |                  |                  |
|                       |          |                  |                  |                  |                  | -                |                  |                  |                  |                  |

TEST LIMITS = -28.0V Min.

appendix d

G32 (TERMINAL 14) - SUBGROUP B1  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7532 AA               | 26       |        | - 9.92 |       |        | -13.80 |       |        | -19.12 |       |
| 7530 S                | 27       |        | -10.32 |       |        | -14.16 |       |        | -19.40 |       |
| 7538 T                | 28       |        | - 9.80 |       |        | -13.64 |       |        | -18.84 |       |
| 7538 X                | 29       |        | -10.08 |       |        | -13.88 |       |        | -19.12 |       |
| 7532 M                | 30       |        | -10.48 |       |        | -14.36 |       |        | -19.64 |       |
| 7538 Z                | 31       |        | -10.68 |       |        | -14.60 |       |        | -19.96 |       |
| 7538 S                | 32       |        | -10.60 |       |        | -14.52 |       |        | -19.80 |       |
| 7532 X                | 33       |        | -10.56 |       |        | -14.44 |       |        | -19.76 |       |
| 7532 K                | 34       |        | -10.16 |       |        | -13.92 |       |        | -19.12 |       |
| 7530 N                | 35       |        | -10.04 |       |        | -13.92 |       |        | -19.20 |       |
| 7532 X                | 36       |        | -10.04 |       |        | -13.84 |       |        | -19.08 |       |
| 7532 L                | 37       |        | -10.04 |       |        | -13.88 |       |        | -19.16 |       |
| 7532 C                | 38       |        | -10.12 |       |        | -14.00 |       |        | -19.24 |       |
| 7532 BB               | 39       |        | -10.48 |       |        | -14.32 |       |        | -19.64 |       |
| 7532 D                | 40       |        | - 9.56 |       |        | -13.36 |       |        | -18.60 |       |
| 7538 AA               | 41       |        | -10.44 |       |        | -14.36 |       |        | -19.68 |       |
| 7538 G                | 42       |        | -10.08 |       |        | -13.92 |       |        | -19.16 |       |
| 7530 J                | 43       |        | -10.52 |       |        | -14.36 |       |        | -19.68 |       |
| 7530 K                | 44       |        | -10.12 |       |        | -13.92 |       |        | -19.16 |       |
| 7530 G                | 45       |        | - 9.80 |       |        | -13.60 |       |        | -18.80 |       |
| 7530 A                | 46       |        | -10.16 |       |        | -14.00 |       |        | -19.80 |       |
| 7530 U                | 47       |        | -10.04 |       |        | -13.88 |       |        | -19.12 |       |
| 7532 EE               | 48       |        | -10.56 |       |        | -14.40 |       |        | -19.68 |       |
| 7532 J                | 49       |        | -10.00 |       |        | -13.88 |       |        | -19.12 |       |
| 7532 H                | 50       |        | - 9.92 |       |        | -13.80 |       |        | -19.04 |       |

TEST LIMITS = -8.0V to VDD

G32 (TERMINAL 14) - SUBGROUP B1

COLLINS DIVISIONS DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

SCALER OUTPUT (HIGH LEVEL), VOLTS

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 AA               | 26       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7530 S                | 27       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7538 T                | 28       |        | -.72  |       |        | -.84  |       |        | -1.08 |       |
| 7538 X                | 29       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7532 M                | 30       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7538 Z                | 31       |        | -.76  |       |        | -.92  |       |        | -1.16 |       |
| 7538 S                | 32       |        | -.76  |       |        | -.84  |       |        | -1.08 |       |
| 7532 X                | 33       |        | -.64  |       |        | -.80  |       |        | -1.04 |       |
| 7532 K                | 34       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7530 N                | 35       |        | -.72  |       |        | -.84  |       |        | -1.04 |       |
| 7532 X                | 36       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7532 L                | 37       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7532 C                | 38       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7532 BB               | 39       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7532 D                | 40       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7538 AA               | 41       |        | -.76  |       |        | -.92  |       |        | -1.20 |       |
| 7538 G                | 42       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7530 J                | 43       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7530 K                | 44       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7530 G                | 45       |        | -.72  |       |        | -.84  |       |        | -1.04 |       |
| 7530 A                | 46       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7530 U                | 47       |        | -.76  |       |        | -.88  |       |        | -1.12 |       |
| 7532 EE               | 48       |        | -.68  |       |        | .84   |       |        | -1.08 |       |
| 7532 J                | 49       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7532 H                | 50       |        | -.76  |       |        | -.88  |       |        | -1.12 |       |

TEST LIMITS = 0.0V to -2.0V



appendix d

FP (TERMINAL 15), V15M-SUBGROUP B1

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

SCALER INPUT(NEGATIVE BREAKDOWN)VOLTS

| Device Identification |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7532 AA               | 26       |                  |                  |                  |                  | -37.80           |                  |                  |                  |                  |
| 7530 S                | 27       |                  |                  |                  |                  | -33.52           |                  |                  |                  |                  |
| 7538 T                | 28       |                  |                  |                  |                  | -40.48           |                  |                  |                  |                  |
| 7538 X                | 29       |                  |                  |                  |                  | -40.40           |                  |                  |                  |                  |
| 7532 M                | 30       |                  |                  |                  |                  | -35.96           |                  |                  |                  |                  |
| 7538 Z                | 31       |                  |                  |                  |                  | -33.24           |                  |                  |                  |                  |
| 7538 S                | 32       |                  |                  |                  |                  | -39.96           |                  |                  |                  |                  |
| 7532 X                | 33       |                  |                  |                  |                  | -36.72           |                  |                  |                  |                  |
| 7532 K                | 34       |                  |                  |                  |                  | -35.00           |                  |                  |                  |                  |
| 7530 N                | 35       |                  |                  |                  |                  | -33.04           |                  |                  |                  |                  |
| 7532 X                | 36       |                  |                  |                  |                  | -32.24           |                  |                  |                  |                  |
| 7532 L                | 37       |                  |                  |                  |                  | -33.64           |                  |                  |                  |                  |
| 7532 C                | 38       |                  |                  |                  |                  | -32.68           |                  |                  |                  |                  |
| 7532 BB               | 39       |                  |                  |                  |                  | -34.36           |                  |                  |                  |                  |
| 7532 D                | 40       |                  |                  |                  |                  | -33.60           |                  |                  |                  |                  |
| 7538 AA               | 41       |                  |                  |                  |                  | -33.52           |                  |                  |                  |                  |
| 7538 G                | 42       |                  |                  |                  |                  | -33.08           |                  |                  |                  |                  |
| 7530 J                | 43       |                  |                  |                  |                  | -30.48           |                  |                  |                  |                  |
| 7530 K                | 44       |                  |                  |                  |                  | -32.24           |                  |                  |                  |                  |
| 7530 G                | 45       |                  |                  |                  |                  | -37.16           |                  |                  |                  |                  |
| 7530 A                | 46       |                  |                  |                  |                  | -36.36           |                  |                  |                  |                  |
| 7530 U                | 47       |                  |                  |                  |                  | -35.68           |                  |                  |                  |                  |
| 7532 EE               | 48       |                  |                  |                  |                  | -34.20           |                  |                  |                  |                  |
| 7532 J                | 49       |                  |                  |                  |                  | -32.68           |                  |                  |                  |                  |
| 7532 H                | 50       |                  |                  |                  |                  | -34.32           |                  |                  |                  |                  |

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) - SUBGROUP B1  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-76  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|-------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7532 AA               | 26       |        |       |       |        | - 6.96 |       |        | -11.16 |       |
| 7530 S                | 27       |        |       |       |        | - 7.36 |       |        | -11.56 |       |
| 7538 T                | 28       |        |       |       |        | - 7.44 |       |        | -12.08 |       |
| 7538 X                | 29       |        |       |       |        | - 7.92 |       |        | -12.28 |       |
| 7532 M                | 30       |        |       |       |        | - 7.68 |       |        | -11.96 |       |
| 7538 Z                | 31       |        |       |       |        | - 8.24 |       |        | -12.84 |       |
| 7538 S                | 32       |        |       |       |        | - 7.76 |       |        | -12.08 |       |
| 7532 X                | 33       |        |       |       |        | - 8.04 |       |        | -13.12 |       |
| 7532 K                | 34       |        |       |       |        | - 7.00 |       |        | -11.08 |       |
| 7530 N                | 35       |        |       |       |        | - 7.00 |       |        | -11.56 |       |
| 7532 X                | 36       |        |       |       |        | - 7.68 |       |        | -12.40 |       |
| 7532 L                | 37       |        |       |       |        | - 7.24 |       |        | -11.64 |       |
| 7532 C                | 38       |        |       |       |        | - 7.32 |       |        | -11.72 |       |
| 7532 BB               | 39       |        |       |       |        | -7.60  |       |        | -12.24 |       |
| 7532 D                | 40       |        |       |       |        | - 6.80 |       |        | -10.96 |       |
| 7538 AA               | 41       |        |       |       |        | - 7.32 |       |        | -11.64 |       |
| 7538 G                | 42       |        |       |       |        | - 7.32 |       |        | -11.48 |       |
| 7530 J                | 43       |        |       |       |        | - 8.12 |       |        | -13.16 |       |
| 7530 K                | 44       |        |       |       |        | - 7.44 |       |        | -11.64 |       |
| 7530 G                | 45       |        |       |       |        | - 7.28 |       |        | -11.48 |       |
| 7530 A                | 46       |        |       |       |        | - 7.12 |       |        | -11.16 |       |
| 7530 U                | 47       |        |       |       |        | - 7.44 |       |        | -11.64 |       |
| 7532 EE               | 48       |        |       |       |        | - 8.04 |       |        | -12.32 |       |
| 7532 J                | 49       |        |       |       |        | - 7.04 |       |        | -11.28 |       |
| 7532 H                | 50       |        |       |       |        | - 7.00 |       |        | -11.60 |       |

TEST LIMITS = -4.0V to VDD

appendix d

Q6 (TERMINAL 16) - SUBGROUP B1  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 AA               | 26       |        |       |       |        | -0.00 |       |        | -0.00 |       |
| 7530 S                | 27       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7538 T                | 28       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7538 X                | 29       |        |       |       |        | ↑     |       |        | -0.04 |       |
| 7532 M                | 30       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7538 Z                | 31       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7538 S                | 32       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7532 X                | 33       |        |       |       |        | ↑     |       |        | -0.04 |       |
| 7532 K                | 34       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7530 N                | 35       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7532 X                | 36       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7532 L                | 37       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7532 C                | 38       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7532 BB               | 39       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7532 D                | 40       |        |       |       |        | ↑     |       |        | -0.04 |       |
| 7538 AA               | 41       |        |       |       |        | ↑     |       |        | -0.04 |       |
| 7538 G                | 42       |        |       |       |        | ↑     |       |        | -0.04 |       |
| 7530 J                | 43       |        |       |       |        | ↑     |       |        | -0.04 |       |
| 7530 K                | 44       |        |       |       |        | ↑     |       |        | -0.04 |       |
| 7530 G                | 45       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7530 A                | 46       |        |       |       |        | ↑     |       |        | -0.04 |       |
| 7530 U                | 47       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7532 EE               | 48       |        |       |       |        | ↑     |       |        | -0.04 |       |
| 7532 J                | 49       |        |       |       |        | ↑     |       |        | -0.00 |       |
| 7532 H                | 50       |        |       |       |        | ↓     |       |        | -0.00 |       |

TEST LIMITS = 0.0V to -0.1V

IDD (TERMINAL 1), 1A - SUBGROUP B2  
 SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          |       |       |       |       |       |       | -27.6V |       |       |
|-----------------------|----------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 G                | 51       |       |       |       |       |       |       |        | -4.20 |       |
| 7532 Y                | 52       |       |       |       |       |       |       |        | -4.80 |       |
| 7538 CC               | 53       |       |       |       |       |       |       |        | -5.00 |       |
| 7538 DD               | 54       |       |       |       |       |       |       |        | -4.80 |       |
| 7538 D                | 55       |       |       |       |       |       |       |        | -4.70 |       |
| 7531 A                | 56       |       |       |       |       |       |       |        | -4.60 |       |
| 7538EE                | 57       |       |       |       |       |       |       |        | -5.40 |       |
| 7538GG                | 58       |       |       |       |       |       |       |        | -4.60 |       |
| 7538DD                | 59       |       |       |       |       |       |       |        | -4.70 |       |
| 7538EE                | 60       |       |       |       |       |       |       |        | -5.90 |       |

TEST LIMITS = 2.0mA to 10.0mA

appendix d

ARM (TERMINAL 3) - SUBGROUP B2  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7532 G                | 51       |        | -17.00 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 Y                | 52       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538 CC               | 53       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538 DD               | 54       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538 D                | 55       |        | -17.00 |       |        | -21.48 |       |        | -27.52 |       |
| 7531 A                | 56       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538EE                | 57       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538GG                | 58       |        | -16.92 |       |        | -21.48 |       |        | -27.52 |       |
| 7538DD                | 59       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538EE                | 60       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) - SUBGROUP B2  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 G                | 51       |        | -.21  |       |        | -.21  |       |        | -.24  |       |
| 7532 Y                | 52       |        | -.28  |       |        | -.24  |       |        | -.28  |       |
| 7538 CC               | 53       |        | -.23  |       |        | -.21  |       |        | -.22  |       |
| 7538 DD               | 54       |        | -.24  |       |        | -.20  |       |        | -.24  |       |
| 7538 D                | 55       |        | -.25  |       |        | -.24  |       |        | -.25  |       |
| 7531 A                | 56       |        | -.28  |       |        | -.24  |       |        | -.24  |       |
| 7538EE                | 57       |        | -.20  |       |        | -.20  |       |        | -.24  |       |
| 7538GG                | 58       |        | -.26  |       |        | -.24  |       |        | -.28  |       |
| 7538DD                | 59       |        | -.22  |       |        | -.22  |       |        | -.22  |       |
| 7538EE                | 60       |        | -.22  |       |        | -.24  |       |        | -.24  |       |

TEST LIMITS = 0.0V to -2.0V

appendix d

FIRE (TERMINAL 4) - SUBGROUP B2  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7532 G                | 51       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 Y                | 52       |        | -16.92 |       |        | -21.48 |       |        | -27.52 |       |
| 7538 CC               | 53       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538 DD               | 54       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538 D                | 55       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7531 A                | 56       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538EE                | 57       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538GG                | 58       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538DD                | 59       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538EE                | 60       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |

TEST LIMITS = -16.9V to VDD

FIRE (TERMINAL 4) - SUBGROUP B2  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 G                | 51       |        | -2.24 |       |        | -2.32 |       |        | -2.68 |       |
| 7532 Y                | 52       |        | -2.28 |       |        | -2.36 |       |        | -2.68 |       |
| 7538 CC               | 53       |        | -2.36 |       |        | -2.36 |       |        | -2.44 |       |
| 7538 DD               | 54       |        | -2.36 |       |        | -2.40 |       |        | -2.60 |       |
| 7538 D                | 55       |        | -2.60 |       |        | -2.60 |       |        | -2.80 |       |
| 7531 A                | 56       |        | -2.64 |       |        | -2.60 |       |        | -2.76 |       |
| 7538EE                | 57       |        | -2.28 |       |        | -2.24 |       |        | -2.44 |       |
| 7538GG                | 58       |        | -2.76 |       |        | -2.56 |       |        | -2.52 |       |
| 7538DD                | 59       |        | -2.24 |       |        | -2.32 |       |        | -2.60 |       |
| 7538EE                | 60       |        | -2.00 |       |        | -2.16 |       |        | -2.44 |       |

TEST LIMITS =0.0V to -10.0V



appendix d

G14 (TERMINAL 5), V5M-SUBGROUP B2  
 SCALER INPUT(NEGATIVE BREAKDOWN),VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7532 G                | 51       |            |       |       |       | -32.04 |       |       |       |       |
| 7532 Y                | 52       |            |       |       |       | -34.80 |       |       |       |       |
| 7538 CC               | 53       |            |       |       |       | -36.72 |       |       |       |       |
| 7538 DD               | 54       |            |       |       |       | -39.40 |       |       |       |       |
| 7538 D                | 55       |            |       |       |       | -33.04 |       |       |       |       |
| 7531 A                | 56       |            |       |       |       | -31.64 |       |       |       |       |
| 7538EE                | 57       |            |       |       |       | -36.12 |       |       |       |       |
| 7538GG                | 58       |            |       |       |       | -38.36 |       |       |       |       |
| 7538DD                | 59       |            |       |       |       | -40.08 |       |       |       |       |
| 7538EE                | 60       |            |       |       |       | -33.24 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUP B2  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |        |       | -27.6V |        |       |  |
|-----------------------|----------|--------|-------|-------|--------|--------|-------|--------|--------|-------|--|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |  |
| 7532 G                | 51       |        |       |       |        | -21.48 |       |        | -27.52 |       |  |
| 7532 Y                | 52       |        |       |       |        | -21.48 |       |        | -27.52 |       |  |
| 7538 CC               | 53       |        |       |       |        | -21.48 |       |        | -27.52 |       |  |
| 7538 DD               | 54       |        |       |       |        | ↑<br>↓ |       |        | ↑<br>↓ |       |  |
| 7538 D                | 55       |        |       |       |        |        |       |        |        |       |  |
| 7531 A                | 56       |        |       |       |        |        |       |        |        |       |  |
| 7538EE                | 57       |        |       |       |        |        |       |        |        |       |  |
| 7538GG                | 58       |        |       |       |        |        |       |        |        |       |  |
| 7538DD                | 59       |        |       |       |        |        |       |        |        |       |  |
| 7538EE                | 60       |        |       |       |        | -21.48 |       |        | -27.52 |       |  |

TEST LIMITS = -21.4V to VDD

Q4(TERMINAL 6) - SUBGROUP B2  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 G                | 51       |        |       |       |        | -.76  |       |        | -.80  |       |
| 7532 Y                | 52       |        |       |       |        | -.56  |       |        | -.60  |       |
| 7538 CC               | 53       |        |       |       |        | -.76  |       |        | -.52  |       |
| 7538 DD               | 54       |        |       |       |        | -.56  |       |        | -.56  |       |
| 7538 D                | 55       |        |       |       |        | -.48  |       |        | -.60  |       |
| 7531 A                | 56       |        |       |       |        | -.84  |       |        | -.80  |       |
| 7538EE                | 57       |        |       |       |        | -.48  |       |        | -.60  |       |
| 7538GG                | 58       |        |       |       |        | -.84  |       |        | -.60  |       |
| 7538DD                | 59       |        |       |       |        | -.76  |       |        | -.76  |       |
| 7538EE                | 60       |        |       |       |        | -.56  |       |        | -.52  |       |

TEST LIMITS = 0.0V to -2.6V

M 11 (TERMINAL 7), V7M - SUBGROUP B2  
 SCALER INPUT(NEGATIVE BREAKDOWN),VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | $10_{\mu}A$ |       |       |       |        |       |       |       |       |
|-----------------------|----------|-------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C       | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7532 G                | 51       |             |       |       |       | -32.24 |       |       |       |       |
| 7532 Y                | 52       |             |       |       |       | -35.44 |       |       |       |       |
| 7538 CC               | 53       |             |       |       |       | -32.44 |       |       |       |       |
| 7538 DD               | 54       |             |       |       |       | -40.08 |       |       |       |       |
| 7538 D                | 55       |             |       |       |       | -36.20 |       |       |       |       |
| 7531 A                | 56       |             |       |       |       | -32.04 |       |       |       |       |
| 7538EE                | 57       |             |       |       |       | -35.96 |       |       |       |       |
| 7538GG                | 58       |             |       |       |       | -37.52 |       |       |       |       |
| 7538DD                | 59       |             |       |       |       | -40.68 |       |       |       |       |
| 7538EE                | 60       |             |       |       |       | -35.96 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

appendix d

MON ( TERMINAL 9), V9M-SUBGROUP B2

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

ROCKWELL INTERNATIONAL

NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7532 G                | 51       |                  |                  |                  |                  | -31.68           |                  |                  |                  |                  |
| 7532 Y                | 52       |                  |                  |                  |                  | -35.48           |                  |                  |                  |                  |
| 7538 CC               | 53       |                  |                  |                  |                  | -31.60           |                  |                  |                  |                  |
| 7538 DD               | 54       |                  |                  |                  |                  | -40.52           |                  |                  |                  |                  |
| 7538 D                | 55       |                  |                  |                  |                  | -36.76           |                  |                  |                  |                  |
| 7531 A                | 56       |                  |                  |                  |                  | -32.44           |                  |                  |                  |                  |
| 7538EE                | 57       |                  |                  |                  |                  | -37.72           |                  |                  |                  |                  |
| 7538GG                | 58       |                  |                  |                  |                  | -38.24           |                  |                  |                  |                  |
| 7538DD                | 59       |                  |                  |                  |                  | -40.64           |                  |                  |                  |                  |
| 7538EE                | 60       |                  |                  |                  |                  | -36.56           |                  |                  |                  |                  |

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9),V9P - SUBGROUP B2  
 SCALER INPUT (POSITIVE BREAKDOWN),VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 3m A  |       |       |       |       |       |       |       |       |
|-----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C |
| 7532 G                | 51       |       |       |       |       | +1.04 |       |       |       |       |
| 7532 Y                | 52       |       |       |       |       | +1.04 |       |       |       |       |
| 7538 CC               | 53       |       |       |       |       | +1.20 |       |       |       |       |
| 7538 DD               | 54       |       |       |       |       | +1.36 |       |       |       |       |
| 7538 D                | 55       |       |       |       |       | +1.04 |       |       |       |       |
| 7531 A                | 56       |       |       |       |       | +1.28 |       |       |       |       |
| 7538EE                | 57       |       |       |       |       | +4.08 |       |       |       |       |
| 7538GG                | 58       |       |       |       |       | +1.20 |       |       |       |       |
| 7538DD                | 59       |       |       |       |       | +1.44 |       |       |       |       |
| 7538EE                | 60       |       |       |       |       | +1.20 |       |       |       |       |

TEST LIMITS = 0.0V to +6.0V

appendix d

CL (TERMINAL 10), V10M-SUBGROUP B2

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

ROCKWELL INTERNATIONAL

NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7532 G                | 51       |            |       |       |       | -31.88 |       |       |       |       |
| 7532 Y                | 52       |            |       |       |       | -35.96 |       |       |       |       |
| 7538 CC               | 53       |            |       |       |       | -34.56 |       |       |       |       |
| 7538 DD               | 54       |            |       |       |       | -39.64 |       |       |       |       |
| 7538 D                | 55       |            |       |       |       | -36.92 |       |       |       |       |
| 7531 A                | 56       |            |       |       |       | -32.76 |       |       |       |       |
| 7538EE                | 57       |            |       |       |       | -39.00 |       |       |       |       |
| 7538GG                | 58       |            |       |       |       | -38.56 |       |       |       |       |
| 7538DD                | 59       |            |       |       |       | -40.80 |       |       |       |       |
| 7538EE                | 60       |            |       |       |       | -37.32 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

SP (TERMINAL 11) - SUBGROUP B2  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7532 G                | 51       |        | -10.20 |       |        | -14.00 |       |        | -19.20 |       |
| 7532 Y                | 52       |        | -10.16 |       |        | -14.00 |       |        | -19.28 |       |
| 7538 CC               | 53       |        | -10.72 |       |        | -14.64 |       |        | -20.04 |       |
| 7538 DD               | 54       |        | -10.04 |       |        | -13.88 |       |        | -19.12 |       |
| 7538 D                | 55       |        | -10.08 |       |        | -13.88 |       |        | -19.12 |       |
| 7531 A                | 56       |        | - 9.88 |       |        | -13.68 |       |        | -18.88 |       |
| 7538EE                | 57       |        | -10.20 |       |        | -14.04 |       |        | -19.32 |       |
| 7538GG                | 58       |        | - 9.88 |       |        | -13.72 |       |        | -18.96 |       |
| 7538DD                | 59       |        | - 9.92 |       |        | -13.76 |       |        | -19.00 |       |
| 7538EE                | 60       |        | -10.36 |       |        | -14.24 |       |        | -19.56 |       |

TEST LIMITS = -8.0V to VDD



appendix d

SP (TERMINAL 11) - SUBGROUP B2  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 G                | 51       |        | -.56  |       |        | -.72  |       |        | -1.12 |       |
| 7532 Y                | 52       |        | -.76  |       |        | -.80  |       |        | -1.68 |       |
| 7538 CO               | 53       |        | -.56  |       |        | -1.08 |       |        | -1.64 |       |
| 7538 DD               | 54       |        | -.60  |       |        | -.80  |       |        | -1.24 |       |
| 7538 D                | 55       |        | -.61  |       |        | -.76  |       |        | -1.72 |       |
| 7531 A                | 56       |        | -.56  |       |        | -.76  |       |        | -1.20 |       |
| 7538EE                | 57       |        | -.76  |       |        | -.80  |       |        | -1.52 |       |
| 7538GG                | 58       |        | -.56  |       |        | -.44  |       |        | -1.28 |       |
| 7538DD                | 59       |        | -.76  |       |        | -1.32 |       |        | -1.20 |       |
| 7538EE                | 60       |        | -.68  |       |        | -.96  |       |        | -1.48 |       |

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUP B2  
SCALER OUTPUT (LOW LEVEL) VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7532 G                | 51       |        | -10.20 |       |        | -14.00 |       |        | -19.24 |       |
| 7532 Y                | 52       |        | -10.16 |       |        | -14.00 |       |        | -19.28 |       |
| 7538 CC               | 53       |        | -10.76 |       |        | -14.68 |       |        | -20.08 |       |
| 7538 DD               | 54       |        | -10.00 |       |        | -13.48 |       |        | -19.04 |       |
| 7538 D                | 55       |        | -10.24 |       |        | -14.08 |       |        | -19.36 |       |
| 7531 A                | 56       |        | -10.00 |       |        | -13.84 |       |        | -19.04 |       |
| 7538EE                | 57       |        | -10.16 |       |        | -14.00 |       |        | -19.28 |       |
| 7538GG                | 58       |        | - 9.72 |       |        | -13.52 |       |        | -18.68 |       |
| 7538DD                | 59       |        | -10.08 |       |        | -13.92 |       |        | -19.20 |       |
| 7538EE                | 60       |        | -10.32 |       |        | -14.20 |       |        | -19.44 |       |

TEST LIMITS = -8.0V to VDD

LP (TERMINAL 12)-SUBGROUPS B2  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 G                | 51       |        | -.34  |       |        | -.24  |       |        | -.76  |       |
| 7532 Y                | 52       |        | -.36  |       |        | -.56  |       |        | -.84  |       |
| 7538 CC               | 53       |        | -.44  |       |        | -.84  |       |        | -.76  |       |
| 7538 DD               | 54       |        | -.36  |       |        | -.44  |       |        | -.56  |       |
| 7538 D                | 55       |        | -.39  |       |        | -.56  |       |        | -.76  |       |
| 7531 A                | 56       |        | -.44  |       |        | -.44  |       |        | -.84  |       |
| 7538EE                | 57       |        | -.44  |       |        | -.56  |       |        | -.56  |       |
| 7538GG                | 58       |        | -.44  |       |        | -.44  |       |        | -.76  |       |
| 7538DD                | 59       |        | -.44  |       |        | -.48  |       |        | -.76  |       |
| 7538EE                | 60       |        | -.48  |       |        | -.76  |       |        | -.48  |       |

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M - SUBGROUP B2 COLLINS DIVISIONS DATE 11-12-75  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          |            |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
|                       |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7532 G                | 51       |            |       |       |       | -30.88 |       |       |       |       |
| 7532 Y                | 52       |            |       |       |       | -35.08 |       |       |       |       |
| 7538 CC               | 53       |            |       |       |       | -29.68 |       |       |       |       |
| 7538 DD               | 54       |            |       |       |       | -40.08 |       |       |       |       |
| 7538 D                | 55       |            |       |       |       | -33.24 |       |       |       |       |
| 7531 A                | 56       |            |       |       |       | -31.16 |       |       |       |       |
| 7538EE                | 57       |            |       |       |       | -37.76 |       |       |       |       |
| 7538GG                | 58       |            |       |       |       | -39.28 |       |       |       |       |
| 7538DD                | 59       |            |       |       |       | -40.84 |       |       |       |       |
| 7538EE                | 60       |            |       |       |       | -38.80 |       |       |       |       |

TEST LIMITS = -28.0V Min.

G32 (TERMINAL 14) - SUBGROUP B4  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7532 G                | 51       |        | -10.28 |       |        | -14.08 |       |        | -19.32 |       |
| 7532 Y                | 52       |        | -10.16 |       |        | -14.00 |       |        | -19.28 |       |
| 7538 CC               | 53       |        | -10.60 |       |        | -14.52 |       |        | -19.84 |       |
| 7538 DD               | 54       |        | - 9.92 |       |        | -13.76 |       |        | -19.00 |       |
| 7538 D                | 55       |        | -10.20 |       |        | -14.04 |       |        | -19.32 |       |
| 7531 A                | 56       |        | -10.08 |       |        | -13.92 |       |        | -19.16 |       |
| 7538EE                | 57       |        | -10.20 |       |        | -14.04 |       |        | -19.32 |       |
| 7538GG                | 58       |        | - 9.80 |       |        | -13.56 |       |        | -18.80 |       |
| 7538DD                | 59       |        | - 9.96 |       |        | -13.76 |       |        | -19.00 |       |
| 7538EE                | 60       |        | -10.32 |       |        | -14.00 |       |        | -19.48 |       |

TEST LIMITS = -8.0V to VDD  
 244

appendix d

G32 (TERMINAL 14) - SUBGROUP B2

COLLINS DIVISIONS  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

DATE 11-12-75

SCALER OUTPUT (HIGH LEVEL), VOLTS

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 G                | 51       |        | -.60  |       |        | -.76  |       |        | -.92  |       |
| 7532 Y                | 52       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7538 CC               | 53       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7538 DD               | 54       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7538 D                | 55       |        | -.68  |       |        | -.84  |       |        | -1.08 |       |
| 7531 A                | 56       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7538EE                | 57       |        | -.72  |       |        | -.84  |       |        | -1.08 |       |
| 7538GG                | 58       |        | -.72  |       |        | -.84  |       |        | -1.04 |       |
| 7538DD                | 59       |        | -.72  |       |        | -.84  |       |        | -1.04 |       |
| 7538EE                | 60       |        | -.76  |       |        | -.88  |       |        | -1.12 |       |

TEST LIMITS = 0.0V to -2.0V

appendix d

FP (TERMINAL 15), V15M- SUBGROUP B2

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

| Device Identification |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7532 G                | 51       |                  |                  |                  |                  | -33.52           |                  |                  |                  |                  |
| 7532 Y                | 52       |                  |                  |                  |                  | -35.56           |                  |                  |                  |                  |
| 7538 CC               | 53       |                  |                  |                  |                  | -36.40           |                  |                  |                  |                  |
| 7538 DD               | 54       |                  |                  |                  |                  | -39.08           |                  |                  |                  |                  |
| 7538 D                | 55       |                  |                  |                  |                  | -36.24           |                  |                  |                  |                  |
| 7531 A                | 56       |                  |                  |                  |                  | -33.24           |                  |                  |                  |                  |
| 7538EE                | 57       |                  |                  |                  |                  | -36.88           |                  |                  |                  |                  |
| 7538GG                | 58       |                  |                  |                  |                  | -38.00           |                  |                  |                  |                  |
| 7538DD                | 59       |                  |                  |                  |                  | -40.12           |                  |                  |                  |                  |
| 7538EE                | 60       |                  |                  |                  |                  | -37.80           |                  |                  |                  |                  |

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) - SUBGROUP B2  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |        |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C |
| 7532 G                | 51       |        |       |       |        | -7.04 |       |        | -11.16 |       |
| 7532 Y                | 52       |        |       |       |        | -7.52 |       |        | -12.28 |       |
| 7538 CC               | 53       |        |       |       |        | -8.44 |       |        | -12.92 |       |
| 7538 DD               | 54       |        |       |       |        | -7.28 |       |        | -11.72 |       |
| 7538 D                | 55       |        |       |       |        | -7.20 |       |        | -11.76 |       |
| 7531 A                | 56       |        |       |       |        | -7.28 |       |        | -11.76 |       |
| 7538EE                | 57       |        |       |       |        | -8.12 |       |        | -12.44 |       |
| 7538GG                | 58       |        |       |       |        | -6.32 |       |        | -10.72 |       |
| 7538DD                | 59       |        |       |       |        | -7.60 |       |        | -11.92 |       |
| 7538EE                | 60       |        |       |       |        | -8.36 |       |        | -12.08 |       |

TEST LIMITS = -4.0V to VDD



Q6 (TERMINAL 16)-SUBGROUP B2  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7532 G                | 51       |        |       |       |        | -0.00 |       |        | -0.00 |       |
| 7532 Y                | 52       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7538 CC               | 53       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7538 DD               | 54       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7538 D                | 55       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7531 A                | 56       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7538EE                | 57       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7538GG                | 58       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7538DD                | 59       |        |       |       |        | ↑     |       |        | ↑     |       |
| 7538EE                | 60       |        |       |       |        | ↑     |       |        | ↑     |       |

TEST LIMITS = 0.0V to -0.1V

IDD (TERMINAL 1), 1A-Subgroup B3  
SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7538 NN               | 76       |        |       |       |        |       |       |        | -5.00 |       |
| 7538 X                | 77       |        |       |       |        |       |       |        | -4.90 |       |
| 7538 LL               | 78       |        |       |       |        |       |       |        | -4.80 |       |
| 7532 NN               | 79       |        |       |       |        |       |       |        | -4.70 |       |
| 7532 H                | 80       |        |       |       |        |       |       |        | -5.00 |       |
| 7532 PP               | 81       |        |       |       |        |       |       |        | -5.00 |       |
| 7532 CC               | 82       |        |       |       |        |       |       |        | -5.00 |       |
| 7532 K                | 83       |        |       |       |        |       |       |        | -5.10 |       |
| 7532 BB               | 84       |        |       |       |        |       |       |        | -4.70 |       |
| 7532 U                | 85       |        |       |       |        |       |       |        | -4.60 |       |

TEST LIMITS = 2.0mA to 10.0mA

ARM (TERMINAL 3) - SUBGROUP B3  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7538 NN               | 76       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538 X                | 77       |        | -17.00 |       |        | -21.48 |       |        | -27.52 |       |
| 7538 LL               | 78       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 NN               | 79       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 H                | 80       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 PP               | 81       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 CC               | 82       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 K                | 83       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 BB               | 84       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 U                | 85       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) - SUBGROUP B3  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7538 NN               | 76       |        | -.24  |       |        | -.24  |       |        | -.24  |       |
| 7538 X                | 77       |        | -.28  |       |        | -.24  |       |        | -.28  |       |
| 7538 LL               | 78       |        | -.24  |       |        | -.24  |       |        | -.24  |       |
| 7532 NN               | 79       |        | -.23  |       |        | -.24  |       |        | -.25  |       |
| 7532 H                | 80       |        | -.24  |       |        | -.24  |       |        | -.24  |       |
| 7532 PP               | 81       |        | -.28  |       |        | -.28  |       |        | -.28  |       |
| 7532 CC               | 82       |        | -.24  |       |        | -.28  |       |        | -.28  |       |
| 7532 K                | 83       |        | -.23  |       |        | -.24  |       |        | -.24  |       |
| 7532 BB               | 84       |        | -.24  |       |        | -.24  |       |        | -.25  |       |
| 7532 U                | 85       |        | -.24  |       |        | -.24  |       |        | -.25  |       |

TEST LIMITS = 0.0V to -2.0V

appendix d

FIRE (TERMINAL 4) - SUBGROUP B3  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7538 NN               | 76       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538 X                | 77       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7538 LL               | 78       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 NN               | 79       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 H                | 80       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 PP               | 81       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 CC               | 82       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 K                | 83       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 BB               | 84       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |
| 7532 U                | 85       |        | -16.96 |       |        | -21.48 |       |        | -27.52 |       |

TEST LIMITS = -16.9V to VDD

FIRE (TERMINAL 4) - SUBGROUP B3  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7538 NN               | 76       |        | -2.36 |       |        | -2.28 |       |        | -2.40 |       |
| 7538 X                | 77       |        | -2.52 |       |        | -2.44 |       |        | -2.40 |       |
| 7538 LL               | 78       |        | -2.28 |       |        | -2.28 |       |        | -2.60 |       |
| 7532 NN               | 79       |        | -2.52 |       |        | -2.40 |       |        | -2.60 |       |
| 7532 H                | 80       |        | -2.52 |       |        | -2.44 |       |        | -2.76 |       |
| 7532 PP               | 81       |        | -2.60 |       |        | -2.40 |       |        | -2.76 |       |
| 7532 CC               | 82       |        | -2.36 |       |        | -2.40 |       |        | -2.60 |       |
| 7532 K                | 83       |        | -2.44 |       |        | -2.44 |       |        | -2.60 |       |
| 7532 BB               | 84       |        | -2.60 |       |        | -2.60 |       |        | -2.88 |       |
| 7532 U                | 85       |        | -2.60 |       |        | -2.60 |       |        | -2.72 |       |

TEST LIMITS = 0.0V to -10.0V

appendix d

G14 (TERMINAL 5), V5M-SUBGROUP B3  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7538 NN               | 76       |            |       |       |       | -33.16 |       |       |       |       |
| 7538 X                | 77       |            |       |       |       | -35.80 |       |       |       |       |
| 7538 LL               | 78       |            |       |       |       | -40.04 |       |       |       |       |
| 7532 NN               | 79       |            |       |       |       | -34.24 |       |       |       |       |
| 7532 H                | 80       |            |       |       |       | -33.08 |       |       |       |       |
| 7532 PP               | 81       |            |       |       |       | -31.68 |       |       |       |       |
| 7532 CC               | 82       |            |       |       |       | -30.20 |       |       |       |       |
| 7532 K                | 83       |            |       |       |       | -31.16 |       |       |       |       |
| 7532 BB               | 84       |            |       |       |       | -33.24 |       |       |       |       |
| 7532 U                | 85       |            |       |       |       | -32.88 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUP B3  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|-------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7538 NN               | 76       |        |       |       |        | -21.48 |       |        | -27.52 |       |
| 7538 X                | 77       |        |       |       |        | -21.48 |       |        | -27.52 |       |
| 7538 LL               | 78       |        |       |       |        | -21.48 |       |        | -27.52 |       |
| 7532 NN               | 79       |        |       |       |        | -21.48 |       |        | -27.52 |       |
| 7532 H                | 80       |        |       |       |        | -21.48 |       |        | -27.52 |       |
| 7532 PP               | 81       |        |       |       |        | -21.48 |       |        | -27.52 |       |
| 7532 CC               | 82       |        |       |       |        | -21.48 |       |        | -27.52 |       |
| 7532 K                | 83       |        |       |       |        | -21.48 |       |        | -27.52 |       |
| 7532 BB               | 84       |        |       |       |        | -21.48 |       |        | -27.52 |       |
| 7532 U                | 85       |        |       |       |        | -21.48 |       |        | -27.52 |       |

TEST LIMITS = -21.4V to VDD



appendix d

Q4 (TERMINAL 6) - SUBGROUP B3  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7538 NN               | 76       |        |       |       |        | -.56  |       |        | -.52  |       |
| 7538 X                | 77       |        |       |       |        | -.56  |       |        | -.72  |       |
| 7538 LL               | 78       |        |       |       |        | -.84  |       |        | -.60  |       |
| 7532 NN               | 79       |        |       |       |        | -.84  |       |        | -.72  |       |
| 7532 H                | 80       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7532 PP               | 81       |        |       |       |        | -.84  |       |        | -.80  |       |
| 7532 CC               | 82       |        |       |       |        | -.76  |       |        | -.72  |       |
| 7532 K                | 83       |        |       |       |        | -.84  |       |        | -.60  |       |
| 7532 BB               | 84       |        |       |       |        | -.84  |       |        | -.72  |       |
| 7532 U                | 85       |        |       |       |        | -.56  |       |        | -.72  |       |

TEST LIMITS = 0.0V to -2.6V

M11 (TERMINAL 7), V7M - SUBGROUP B3  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7538 NN               | 76       |            |       |       |       | -37.68 |       |       |       |       |
| 7538 X                | 77       |            |       |       |       | -34.16 |       |       |       |       |
| 7538 LL               | 78       |            |       |       |       | -40.12 |       |       |       |       |
| 7532 NN               | 79       |            |       |       |       | -33.40 |       |       |       |       |
| 7532 H                | 80       |            |       |       |       | -32.08 |       |       |       |       |
| 7532 PP               | 81       |            |       |       |       | -32.32 |       |       |       |       |
| 7532 CC               | 82       |            |       |       |       | -32.00 |       |       |       |       |
| 7532 K                | 83       |            |       |       |       | -30.36 |       |       |       |       |
| 7532 BB               | 84       |            |       |       |       | -33.84 |       |       |       |       |
| 7532 U                | 85       |            |       |       |       | -32.52 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

appendix d

MON (TERMINAL 9), V9M-SUBGROUP B3  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A. |       |       |       |        |       |       |       |       |
|-----------------------|----------|-------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C       | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7538 NN               | 76       |             |       |       |       | -34.80 |       |       |       |       |
| 7538 X                | 77       |             |       |       |       | -36.40 |       |       |       |       |
| 7538 LL               | 78       |             |       |       |       | -40.28 |       |       |       |       |
| 7532 NN               | 79       |             |       |       |       | -34.56 |       |       |       |       |
| 7532 H                | 80       |             |       |       |       | -33.00 |       |       |       |       |
| 7532 PP               | 81       |             |       |       |       | -31.92 |       |       |       |       |
| 7532 CC               | 82       |             |       |       |       | -33.60 |       |       |       |       |
| 7532 K                | 83       |             |       |       |       | -31.08 |       |       |       |       |
| 7532 BB               | 84       |             |       |       |       | -35.00 |       |       |       |       |
| 7532 U                | 85       |             |       |       |       | -33.44 |       |       |       |       |

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9), V9P - SUBGROUP B3

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT (POSITIVE BREAKDOWN), VOLTS

ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | 3mA   |       |       |       |       |       |       |       |       |
|-----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C | -55°C | +25°C | +75°C |
| 7538 NN               | 76       |       |       |       |       | +1.16 |       |       |       |       |
| 7538 X                | 77       |       |       |       |       | +1.28 |       |       |       |       |
| 7538 LL               | 78       |       |       |       |       | +1.12 |       |       |       |       |
| 7532 NN               | 79       |       |       |       |       | +1.16 |       |       |       |       |
| 7532 H                | 80       |       |       |       |       | +1.36 |       |       |       |       |
| 7532 PP               | 81       |       |       |       |       | +1.04 |       |       |       |       |
| 7532 CC               | 82       |       |       |       |       | +1.04 |       |       |       |       |
| 7532 K                | 83       |       |       |       |       | +1.08 |       |       |       |       |
| 7532 BB               | 84       |       |       |       |       | +1.16 |       |       |       |       |
| 7532 U                | 85       |       |       |       |       | +1.36 |       |       |       |       |

TEST LIMITS = 0.0V to +6.0V

appendix d

CL (TERMINAL 10), V10M - SUBGROUP B3

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

ROCKWELL INTERNATIONAL

NEWPORT BEACH, CALIF.

| Device Identification |          |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                       |          | 10 $\mu$ A       |                  |                  |                  |                  |                  |                  |                  |                  |
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7538 NN               | 76       |                  |                  |                  |                  | -36.76           |                  |                  |                  |                  |
| 7538 X                | 77       |                  |                  |                  |                  | -36.12           |                  |                  |                  |                  |
| 7538 LL               | 78       |                  |                  |                  |                  | -40.28           |                  |                  |                  |                  |
| 7532 NN               | 79       |                  |                  |                  |                  | -34.40           |                  |                  |                  |                  |
| 7532 H                | 80       |                  |                  |                  |                  | -33.40           |                  |                  |                  |                  |
| 7532 PP               | 81       |                  |                  |                  |                  | -32.36           |                  |                  |                  |                  |
| 7532 CC               | 82       |                  |                  |                  |                  | -31.84           |                  |                  |                  |                  |
| 7532 K                | 83       |                  |                  |                  |                  | -31.68           |                  |                  |                  |                  |
| 7532 BB               | 84       |                  |                  |                  |                  | -35.84           |                  |                  |                  |                  |
| 7532 U                | 85       |                  |                  |                  |                  | -35.00           |                  |                  |                  |                  |

TEST LIMITS = -28.0V Minimum

SP (TERMINAL 11) - SUBGROUP B3  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7538 NN               | 76       |        | -10.52 |       |        | -14.48 |       |        | -19.76 |       |
| 7538 X                | 77       |        | -10.04 |       |        | -13.88 |       |        | -19.20 |       |
| 7538 LL               | 78       |        | - 9.96 |       |        | -13.76 |       |        | -19.00 |       |
| 7532 NN               | 79       |        | -10.16 |       |        | -13.96 |       |        | -19.20 |       |
| 7532 H                | 80       |        | -10.08 |       |        | -13.92 |       |        | -19.20 |       |
| 7532 PP               | 81       |        | -10.48 |       |        | -14.36 |       |        | -19.64 |       |
| 7532 CC               | 82       |        | -10.36 |       |        | -14.20 |       |        | -19.48 |       |
| 7532 K                | 83       |        | -10.32 |       |        | -14.20 |       |        | -19.44 |       |
| 7532 BB               | 84       |        | -10.04 |       |        | -13.84 |       |        | -19.00 |       |
| 7532 U                | 85       |        | -10.28 |       |        | -14.16 |       |        | -19.44 |       |

TEST LIMITS = -8.0V to VDD

SP (TERMINAL 11) - SUBGROUPS B3  
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7538 NN               | 76       |        | -.72  |       |        | -.84  |       |        | -1.20 |       |
| 7538 X                | 77       |        | -.84  |       |        | -.76  |       |        | -1.36 |       |
| 7538 LL               | 78       |        | -.56  |       |        | -.80  |       |        | -1.52 |       |
| 7532 NN               | 79       |        | -.76  |       |        | -.80  |       |        | -1.28 |       |
| 7532 H                | 80       |        | -.60  |       |        | -.76  |       |        | -1.32 |       |
| 7532 PP               | 81       |        | -.76  |       |        | -.80  |       |        | -1.32 |       |
| 7532 CC               | 82       |        | -.56  |       |        | -1.08 |       |        | -1.72 |       |
| 7532 K                | 83       |        | -.68  |       |        | -.80  |       |        | -1.36 |       |
| 7532 BB               | 84       |        | -.76  |       |        | -.76  |       |        | -1.36 |       |
| 7532 U                | 85       |        | -.60  |       |        | -.76  |       |        | -1.28 |       |

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUP B3  
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7538 NN               | 76       |        | -10.48 |       |        | -14.44 |       |        | -19.72 |       |
| 7538 X                | 77       |        | - 9.96 |       |        | -13.88 |       |        | -19.16 |       |
| 7538 LL               | 78       |        | -10.00 |       |        | -13.80 |       |        | -19.00 |       |
| 7532 NN               | 79       |        | -10.16 |       |        | -14.00 |       |        | -19.20 |       |
| 7532 H                | 80       |        | - 9.96 |       |        | -13.76 |       |        | -19.00 |       |
| 7532 PP               | 81       |        | -10.32 |       |        | -14.20 |       |        | -19.44 |       |
| 7532 CC               | 82       |        | -10.32 |       |        | -14.20 |       |        | -19.44 |       |
| 7532 K                | 83       |        | -10.36 |       |        | -14.24 |       |        | -19.56 |       |
| 7532 BB               | 84       |        | -10.04 |       |        | -13.84 |       |        | -19.00 |       |
| 7532 U                | 85       |        | -10.32 |       |        | -14.32 |       |        | -19.48 |       |

TEST LIMITS = -8.0V to VDD



appendix d

LP (TERMINAL 12) - SUBGROUP B3  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7538 NN               | 76       |        | -.36  |       |        | -.56  |       |        | -.84  |       |
| 7538 X                | 77       |        | -.44  |       |        | -.44  |       |        | -.48  |       |
| 7538 LL               | 78       |        | -.36  |       |        | -.24  |       |        | -.56  |       |
| 7532 NN               | 79       |        | -.36  |       |        | -.44  |       |        | -.84  |       |
| 7532 H                | 80       |        | -.36  |       |        | -.44  |       |        | -.48  |       |
| 7532 PP               | 81       |        | -.32  |       |        | -.44  |       |        | -.56  |       |
| 7532 CC               | 82       |        | -.40  |       |        | -.40  |       |        | -.48  |       |
| 7532 K                | 83       |        | -.40  |       |        | -.48  |       |        | -.56  |       |
| 7532 BB               | 84       |        | -.40  |       |        | -.44  |       |        | -.76  |       |
| 7532 U                | 85       |        | -.36  |       |        | -.44  |       |        | -.76  |       |

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M- SUBGROUP B3 COLLINS DIVISIONS DATE 11-12-75  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          |                  |                  |                  | 10 $\mu$ A       |                  |                  |                  |                  |                  |
|-----------------------|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| DATE CODE             | UNIT NO. | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C | -55 $^{\circ}$ C | +25 $^{\circ}$ C | +75 $^{\circ}$ C |
| 7538 NN               | 76       |                  |                  |                  |                  | -35.20           |                  |                  |                  |                  |
| 7538 X                | 77       |                  |                  |                  |                  | -33.52           |                  |                  |                  |                  |
| 7538 LL               | 78       |                  |                  |                  |                  | -40.12           |                  |                  |                  |                  |
| 7532 NN               | 79       |                  |                  |                  |                  | -32.08           |                  |                  |                  |                  |
| 7532 H                | 80       |                  |                  |                  |                  | -33.20           |                  |                  |                  |                  |
| 7532 PP               | 81       |                  |                  |                  |                  | -32.08           |                  |                  |                  |                  |
| 7532 CC               | 82       |                  |                  |                  |                  | -31.80           |                  |                  |                  |                  |
| 7532 K                | 83       |                  |                  |                  |                  | -31.00           |                  |                  |                  |                  |
| 7532 BB               | 84       |                  |                  |                  |                  | -35.00           |                  |                  |                  |                  |
| 7532 U                | 85       |                  |                  |                  |                  | -33.44           |                  |                  |                  |                  |

TEST LIMITS = -28.0V Min.

appendix d

G32 (TERMINAL 14) - SUBGROUP B3  
SCALER OUTPUT (LOW LEVEL),

COLLINS DIVISIONS      DATE 11-12-75  
ROCKWELL INTERNATIONAL  
NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |        |       | -21.5V |        |       | -27.6V |        |       |
|-----------------------|----------|--------|--------|-------|--------|--------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C | -55°C  | +25°C  | +75°C |
| 7538 NN               | 76       |        | -10.48 |       |        | -14.36 |       |        | -19.68 |       |
| 7538 X                | 77       |        | -10.00 |       |        | -13.88 |       |        | -19.20 |       |
| 7538 LL               | 78       |        | -10.04 |       |        | -13.88 |       |        | -19.12 |       |
| 7532 NN               | 79       |        | -10.16 |       |        | -14.00 |       |        | -19.20 |       |
| 7532 H                | 80       |        | - 9.92 |       |        | -13.72 |       |        | -19.00 |       |
| 7532 PP               | 81       |        | -10.44 |       |        | -14.32 |       |        | -19.60 |       |
| 7532 CC               | 82       |        | -10.32 |       |        | -14.20 |       |        | -19.22 |       |
| 7532 K                | 83       |        | -10.08 |       |        | -13.92 |       |        | -19.16 |       |
| 7532 BB               | 84       |        | -10.04 |       |        | -13.88 |       |        | -19.04 |       |
| 7532 U                | 85       |        | -10.32 |       |        | -14.16 |       |        | -19.44 |       |

TEST LIMITS = -8.0V to VDD

G32 (TERMINAL 14) - SUBGROUP B3  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7538 NN               | 76       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7538 X                | 77       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7538 LL               | 78       |        | -.68  |       |        | -.84  |       |        | -1.04 |       |
| 7532 NN               | 79       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7532 H                | 80       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7532 PP               | 81       |        | -.72  |       |        | -.84  |       |        | -1.08 |       |
| 7532 CC               | 82       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7532 K                | 83       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7532 BB               | 84       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |
| 7532 U                | 85       |        | -.72  |       |        | -.88  |       |        | -1.08 |       |

TEST LIMITS = 0.0V to -2.0V

appendix d

FP (TERMINAL 15), V16M - SUBGROUP B3  
 SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | 10 $\mu$ A |       |       |       |        |       |       |       |       |
|-----------------------|----------|------------|-------|-------|-------|--------|-------|-------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C      | +25°C | +75°C | -55°C | +25°C  | +75°C | -55°C | +25°C | +75°C |
| 7538 NN               | 76       |            |       |       |       | -36.00 |       |       |       |       |
| 7538 X                | 77       |            |       |       |       | -34.04 |       |       |       |       |
| 7538 LL               | 78       |            |       |       |       | -40.12 |       |       |       |       |
| 7532 NN               | 79       |            |       |       |       | -32.64 |       |       |       |       |
| 7532 H                | 80       |            |       |       |       | -32.24 |       |       |       |       |
| 7532 PP               | 81       |            |       |       |       | -32.60 |       |       |       |       |
| 7532 CC               | 82       |            |       |       |       | -32.92 |       |       |       |       |
| 7532 K                | 83       |            |       |       |       | -32.28 |       |       |       |       |
| 7532 BB               | 84       |            |       |       |       | -35.44 |       |       |       |       |
| 7532 U                | 85       |            |       |       |       | -34.40 |       |       |       |       |

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) - SUBGROUP B3  
 SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |        |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|--------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C  | +75°C |
| 7538 NN               | 76       |        |       |       |        | -8.56 |       |        | -13.24 |       |
| 7538 X                | 77       |        |       |       |        | -7.80 |       |        | -11.76 |       |
| 7538 LL               | 78       |        |       |       |        | -7.28 |       |        | -11.48 |       |
| 7532 NN               | 79       |        |       |       |        | -7.80 |       |        | -11.92 |       |
| 7532 H                | 80       |        |       |       |        | -7.28 |       |        | -11.48 |       |
| 7532 PP               | 81       |        |       |       |        | -8.08 |       |        | -12.20 |       |
| 7532 CC               | 82       |        |       |       |        | -7.60 |       |        | -11.48 |       |
| 7532 K                | 83       |        |       |       |        | -8.12 |       |        | -11.76 |       |
| 7532 BB               | 84       |        |       |       |        | -6.88 |       |        | -11.76 |       |
| 7532 U                | 85       |        |       |       |        | -7.28 |       |        | -11.96 |       |

TEST LIMITS = -4.0V to VDD

Q6 (TERMINAL 16) - SUBGROUP B3  
 SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS      DATE 11-12-75  
 ROCKWELL INTERNATIONAL  
 NEWPORT BEACH, CALIF.

| Device Identification |          | -17.0V |       |       | -21.5V |       |       | -27.6V |       |       |
|-----------------------|----------|--------|-------|-------|--------|-------|-------|--------|-------|-------|
| DATE CODE             | UNIT NO. | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C | -55°C  | +25°C | +75°C |
| 7538 NN               | 76       |        |       |       |        | -0.00 |       |        | -0.00 |       |
| 7538 X                | 77       |        |       |       |        | ↓     |       |        | ↓     |       |
| 7538 LL               | 78       |        |       |       |        | ↓     |       |        | ↓     |       |
| 7532 NN               | 79       |        |       |       |        | ↓     |       |        | ↓     |       |
| 7532 H                | 80       |        |       |       |        | ↓     |       |        | ↓     |       |
| 7532 PP               | 81       |        |       |       |        | ↓     |       |        | ↓     |       |
| 7532 CC               | 82       |        |       |       |        | ↓     |       |        | ↓     |       |
| 7532 K                | 83       |        |       |       |        | ↓     |       |        | ↓     |       |
| 7532 BB               | 84       |        |       |       |        | ↓     |       |        | ↓     |       |
| 7532 U                | 85       |        |       |       |        | -0.00 |       |        | -0.00 |       |

TEST LIMITS = 0.0V to -0.1V

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