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Report No. NADC-79078-30

RECEIVING SET TEST SET TS-3683A/SKR-6 AND INTERFACE ADAPTER

George C. Hoguet
Tele-Dynamics
525 Virginia Drive
Fort Washington, Pa. 19034

29 September 1980
Revision A, 12 December 1980

Final Report

Prepared for
NAVAL AIR DEVELOPMENT CENTER
Warminster, Pa. 18974

NAVAL AIR DEVELOPMENT CENTER
Code 3032

UNITED
TECHNOLOGIES
TELE-DYNAMICS

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Fort Washington, PA 19034
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5 January 1981

NAVAL AIR DEVELOPMENT CENTER
Warminster, Pennsylvania 18974

Attention: Code 3032

Subject: REVISION A TO TECHNICAL MANUAL AND FINAL REPORT FOR RECEIVING SET TEST SET TS-3683A/SKR-6

Reference: Contract N62269-79-C-0480

Enclosed are copies of the revised pages for the technical manual and a revised copy of the final report for the TS-3683A/SKR-6.

If you have any questions concerning these revisions, contact the undersigned.

Very truly yours,

TELE-DYNAMICS

Daniel Buckley
Manager,
Integrated Logistics Support

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b. Test Equipment
c. Signal Simulator
d. Test Generator
e. Data Link Transmitter Simulator
f. Transmitter Simulator

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Tele-Dynamics designed, fabricated, inspected, and acceptance tested two Test Sets TS-3683A/SKR-6 and associated interface adapters for testing Receiving Set AN/SKR-6 by generating a simulated AN/AKT-22 test signal which is either antenna coupled or direct coupled to the AN/SKR-6.

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SUMMARY

This is the Final Report for the Modified TS-3683/SKR-6 Test Set, here-in identified as the TS-3683A/SKR-6 Test Set and the Interface Adapter. The report is issued in compliance with the Contract Data Requirement List, Item A004, and Data Item Description UDI-E-21353A/AE-219E, under Contract No. N62269-79-C-0480.

The report contains the following:

a) Statement of work performed

b) Technical description of operation with diagrams and sketches

c) Test procedure

d) Test data

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

Tele-Dynamics Drawing 50812, Acceptance Test Procedure Test Set TS-3683A/SKR-6, has a self-contained set of test set-up illustrations.

1.0 STATEMENT OF WORK PERFORMED

The work performed consisted of the design, fabrication, inspection and acceptance testing of two TS-3683A/SKR-6 Test Sets and associated Interface Adapters for use with the AN/SKR-6 Receiving Set. The AN/SKR-6 is an ASW Telemetric Data Receiving Set used with the carrier-based anti-submarine warfare module (CV-ASWM). The TS-3683A/SKR-6 and Interface adapter permit end-around (system) and direct testing of the AN/SKR-6 Receiving Set.

2.0 TECHNICAL DESCRIPTION

2.1 TS-3683A/SKR-6

The TS-3683A/SKR-6 test set can be directly added to the existing CV-ASWM installation to extend the Bite and Voltage Monitor functions of the inplace AN/SKR-6. The test set is designed for direct installation in the Audio Switch Matrix rack as a replacement for the present TS-3683/SKR-6 RF test set. Existing cables and mating connectors are used and only minor additional cabling must be added to fully utilize the new test set's capability. Figure 1 depicts the test set interface with the other equipments of the Sonobuoy Data Relay (SBDR).

2.1.1 Test Set Operational Modes

The test set when used in conjunction with the AN/SQX-1 FTA tape recorder and/or the SG-1196/S Acoustic Signal Generator simulates operational sonobuoys for analysis by the FTA operator, and also generates selected test signals when used with theBite and Voltage Monitor function of the R-2088/SKR-6 receiver.

Operation of the test set is available in the following modes:

a. SKR-6 test mode - An S-band 2200 MHz to 2300 MHz carrier on one of 20 selectable frequencies is radiated by the AS-4003/SKR-5 test antenna and is received by the AN/SKR-6 through the mast mounted

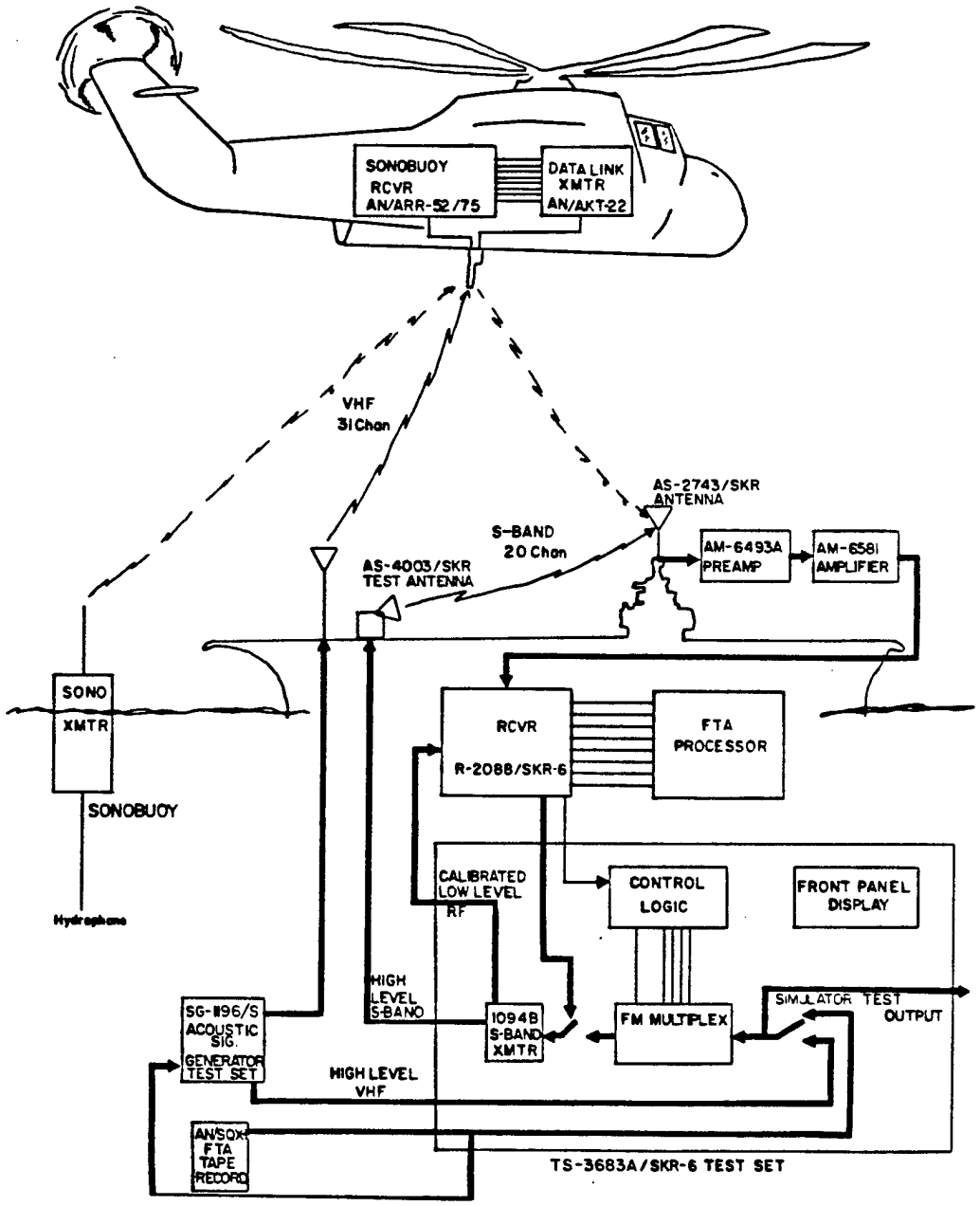

Figure 1. Sonobuoy Data Relay Test System, Functional Diagram

receiving antenna AS-2743/SKR-4. The information from either the SG-1196/S signal generator or the AN/SQX-1 FTA tape recorder is transmitted on the full complement of subcarriers contained within the test set transmitter-multiplex system.

Individual subcarrier modulation is also available and is controlled from the front panel of the TS-3683A/SKR-6 test set.

In addition, single subcarriers can be simulated within the Bite and Voltage Monitor of the R-2088/SKR-6 receiver and used to modulate the S-band carrier of the test set.

b. R-2088/SKR-6 receiver test mode - all the capability provided in a. above is also available on a separate low level calibrated RF output which can be directly used to excite the R-2088/SKR-6 receiver and bypass the mast mounted components of the AN/SKR-6 system.

c. In addition to the through mode of operation listed above, the TS-3683A/SKR-6 test set has built-in capability to allow for system sensitivity and bandwidth measurements on each of the 20 RF S-band channels.

2.1.2 Electrical Design

The transmitter portion of the test set consists of a standard Tele-Dynamics 1094B S-band transmitter and its associated multiplexer. The 1094B transmitter and multiplexer are also used in the AN/AKT-22(V), which is a part of the airborne equipment used for ASW data link applications.

2.1.2.1 Output Power

A block diagram of the test set is shown in figure 2. The nominal output power of the 1094B is 6 watts. The RF output of the transmitter is applied to an attenuator, to provide a nominal 240 mw output. The output of the attenuator is applied to a variable attenuator which drives a two-port power splitter to supply a calibrated 100-mw output to the antenna connector and also an

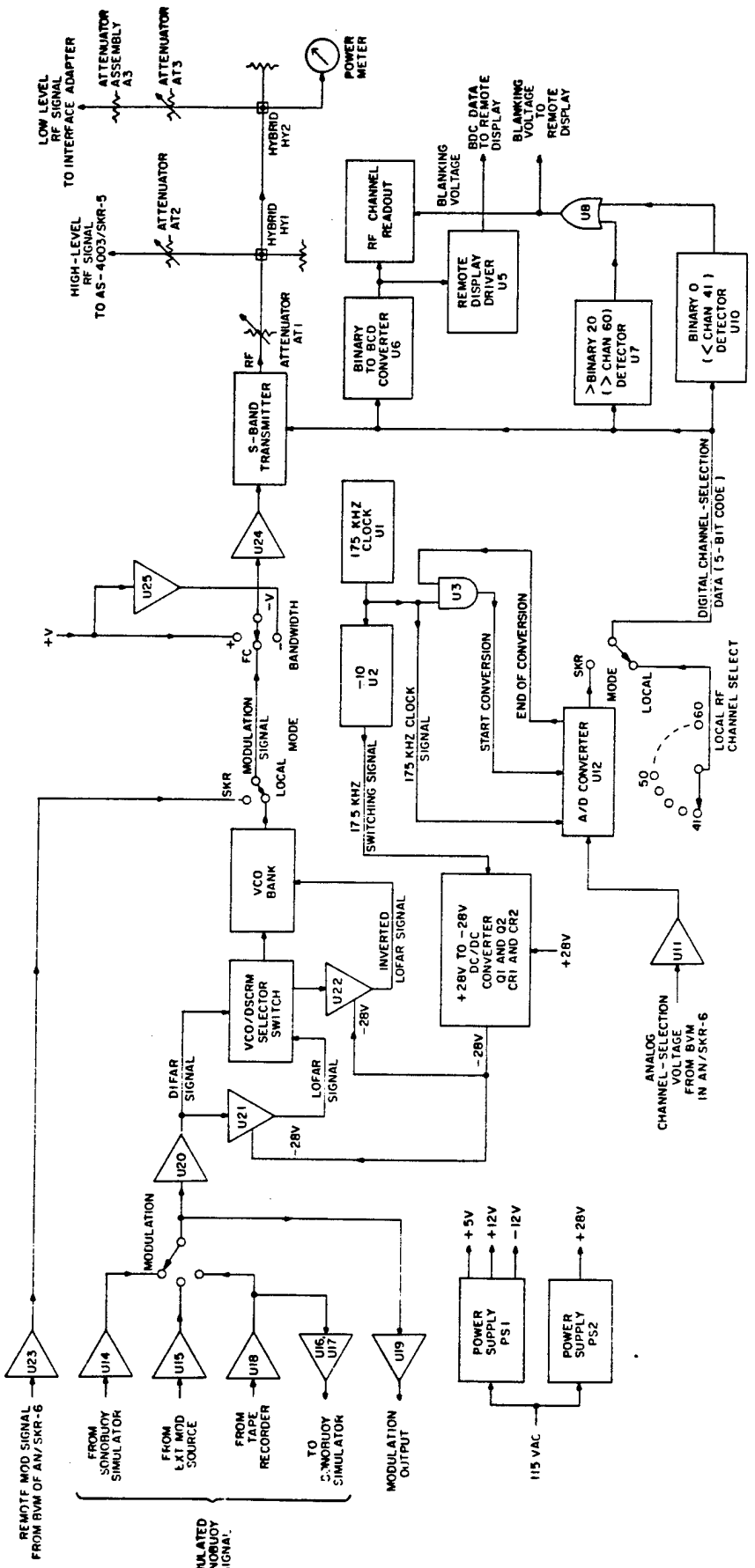

Figure 2. Test Set TS-3683A/SKR-6, Block Diagram

isolated output to drive a shielded attenuator (3-38 dB variable) to a separate type "N" RF connector. This low-level RF output supplies a -45 dBm signal through a length of cable directly to the interface adapter in the R-2088/SKR-6 receiver rack for use in both direct and sensitivity testing of the R-2088/SKR-6.

2.1.2.2 Modulation

The 1094B transmitter is modulated by a bank of voltage-controlled oscillators (VCO's), one for each sonic data channel. The VCO's can be modulated one at a time or all simultaneously. Modulation input for the VCO's can be applied from the AN/SQX-1 Fast Time Analyzer Tape Recorder, the SG-1196/S Acoustic Signal Generator Test Set, an external signal generator or from the Bite and Voltage Monitor Panel of the R-2088/SKR-6. The test set also buffers and feeds the AN/SQX-1 Tape Recorder signal to the external modulation input of the SG-1196/S. The VCO bank is also a standard subassembly of the AN/AKT-22(V).

2.1.2.3 Channel Selection

Channel selection (1 of 20) for the transmitter is controlled from a front panel selector switch (local) or remotely from the RF Adjust Control (located on the Bite and Voltage Monitor). The analog output from the Bite and Voltage Monitor is converted to a 5-bit digital format by an A/D converter. The 5-bit digital signal is used to select one of the 20 available RF channels. The 5-bit digital signal also drives a 2-digit LED channel indicator mounted on the front panel.

2.1.2.4 Operating Power

The test set is powered by 115 volts, 60 Hz. The input power is protected by a dual circuit breaker and filtered by an internally mounted power line feedthrough filter. Separate voltage regulators provide +5 volts and ±12 volts for internal circuit operation. A separate power supply is used to supply +28 volts to the 1094B transmitter and VCO's.

2.1.2.5 Filtering and Buffering Provisions

All power and signal lines to the 1094B are filtered by feedthrough filters, mounted in the transmitter compartment of the test set, which has an electrical shield to isolate it from the remainder of the test set. All external signals into the test set are applied via operational amplifiers to provide buffering and impedance matching.

2.1.2.6 Interface and Coupling Provisions

The test set interfaces with the Bite and Voltage Monitor and the test antenna through existing cables and connections. A separate shielded output is provided at -45 dBm for direct coupling to the R-2088/SKR-6 receiver. This output is derived by attenuating the 100-mw calibrated signal. This signal, when directly coupled to the AN/SKR-6 via the Interface Adapter is capable of testing the 20-dB signal/noise quieting of the AN/SKR-6.

2.1.2.7 Bandwidth Measurements

System bandwidth measurements are made by switching the S-band carrier from f_c to $f_c \pm 250$ kHz. When making bandedge measurements, 6 dB is removed from the attenuator to provide a calibrated output of 400 mw.

2.1.3 Mechanical Design

2.1.3.1 Chassis and Panel Fabrication

The chassis assembly is configured as a standard 19-inch rack-mounted drawer that has a depth of 24 inches and a panel height of 8.72 inches. The completed assembly consists of a 3/32-inch thick aluminum alloy chassis which is finished with a chemical conversion coating per MIL-C-5541, to prevent corrosion because of salt air and moisture that may be present during the life of the system. The front panel is fabricated from high strength aluminum alloy, 1/8-inch thick. The panel is finished with several coats of honeycomb enamel paint. All panel instrument functions are permanently engraved, using the required MIL-Spec contrasting black enamel for readability. The drawer

assembly is slide-mounted to the equipment rack for access and ease of maintenance. The complete drawer assembly weighs approximately 75 pounds.

2.1.3.2 Chassis Layout

The TS-3683A/SKR-6 Test Set is shown in figure 3. It includes the multiplexer-exciter capability of the AN/AKT-22(V) and a 28-volt power supply. The chassis is partitioned through the center of the unit, from front to back, to separate the power supply components from the multiplexer-exciter assemblies. This serves as a thermal barrier, by preventing the power supply heat dissipation from entering the transmitter area, since the transmitter is more sensitive to heat rise. A simplified thermal analysis is included later in this report.

The connector types and pin connections of the existing TS-3683/SKR-6 are retained with additional connectors being added for the multiplexer. The present harness, as configured for the shelf-mounted TS-3683/SKR-6 test set, can be used with the new rack-mounted test set.

2.1.3.3 Thermal Analysis

2.1.3.3.1 1094B Transmitter

Input: 3 amperes at 32 volts max = 96 watts - 6 watts output = 90 watts dissipation max.

The equation used to determine the quantity of air required to carry away the heat is:

$$Q = MC_p (\Delta t),$$

or the heat removed equals the weight of the coolant multiplied by the specific heat of the coolant multiplied by the temperature of the coolant. When this equation is applied on a rate basis, it reduces to:

$$CFM = \frac{BTU/hr}{1.95 (\Delta t_c)} = \frac{1760 \text{ kw}}{(\Delta t_c)}$$

for the cubic feet of air required per minute when the heat to be removed is known in BTU/hr or kilowatts and when the permitted average air temperature rise is known in degrees centigrade.

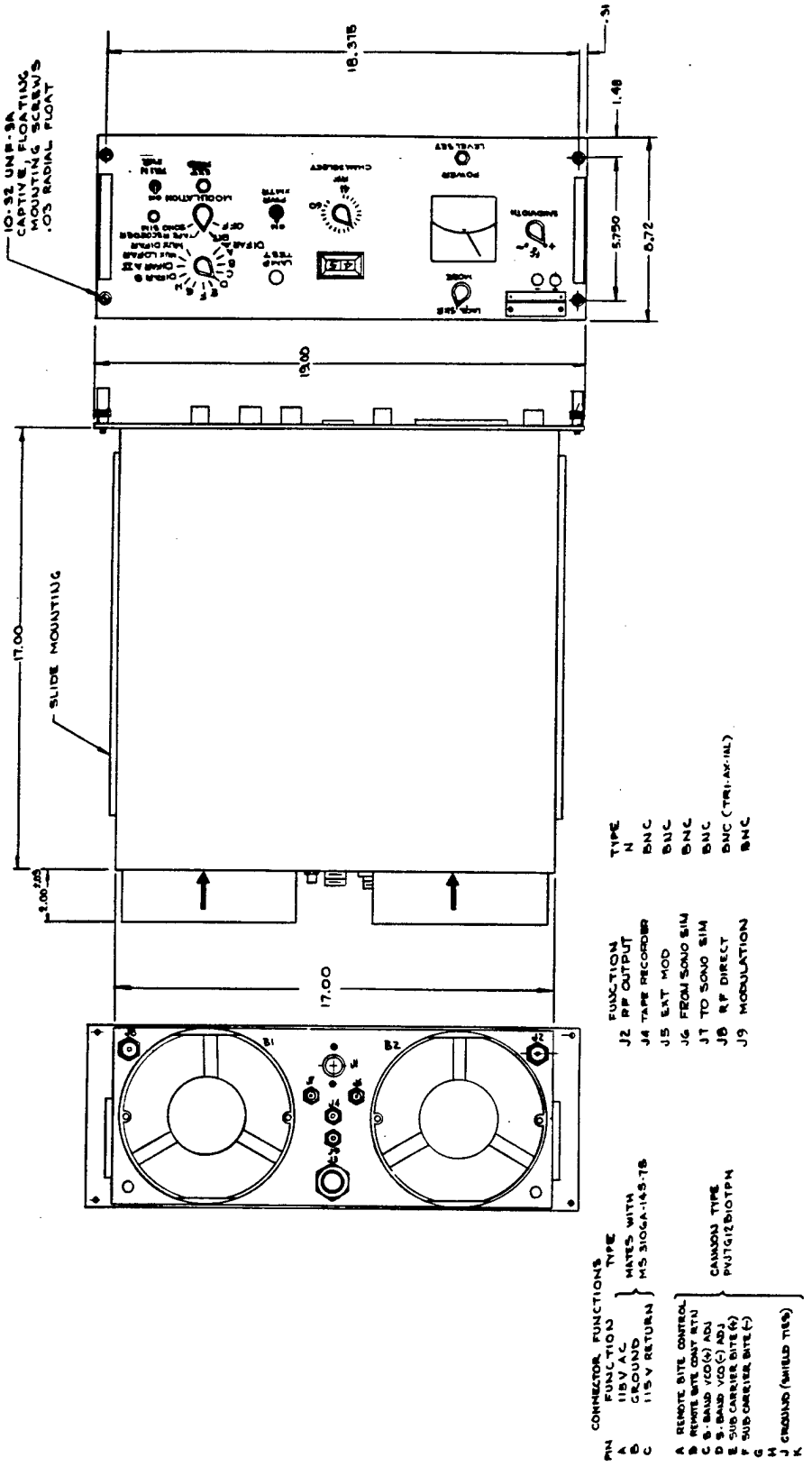

Figure 3. Test Set, TS-3683A/SKR-6, Outline Drawing

For this analysis, the temperature rise of the transmitter baseplate will be maintained at 10°C rise in a worst-case ambient temperature of 50°C (per MIL-E-16400 environmental conditions - ship or shore).

$$CFM = \frac{1760\ (0.09\ \text{kilowatts})}{10°C} = 15.8$$

Add 30% safety factor = 4.7 CFM.

Therefore, to limit the Δt to 10°C rise on the transmitter in an ambient temperature of 50°C maximum, the required air flow is,

15.8 CFM
4.7 CFM (safety)
Total = 20.5 CFM

The head loss in inches of water due to resistance offered by the heat sink fins is estimated to be 0.6 inch of H_2O. The fan performance curve shown in figure 4 indicates that a Rotron MIL-901 model will supply 50 CFM of cooling air at 0.6 inch H_2O. The MIL-901 model is dimensionally appropriate for the 8.72-inch height of drawer, as designed for the TS-3683A/SKR-6.

Power Supply and Logic Circuitry:

Logic Circuitry:	0.5 amps	+12 V	=	6 watts
	0.5 amps	-12 V	=	6 watts
	3.0 amps	5 V	=	15 watts
Power supply and regulator	50% eff		=	27 watts
28 V power supply for 1094B transmitter transformers and diode bridge				12 watts
		Total	=	66 watts

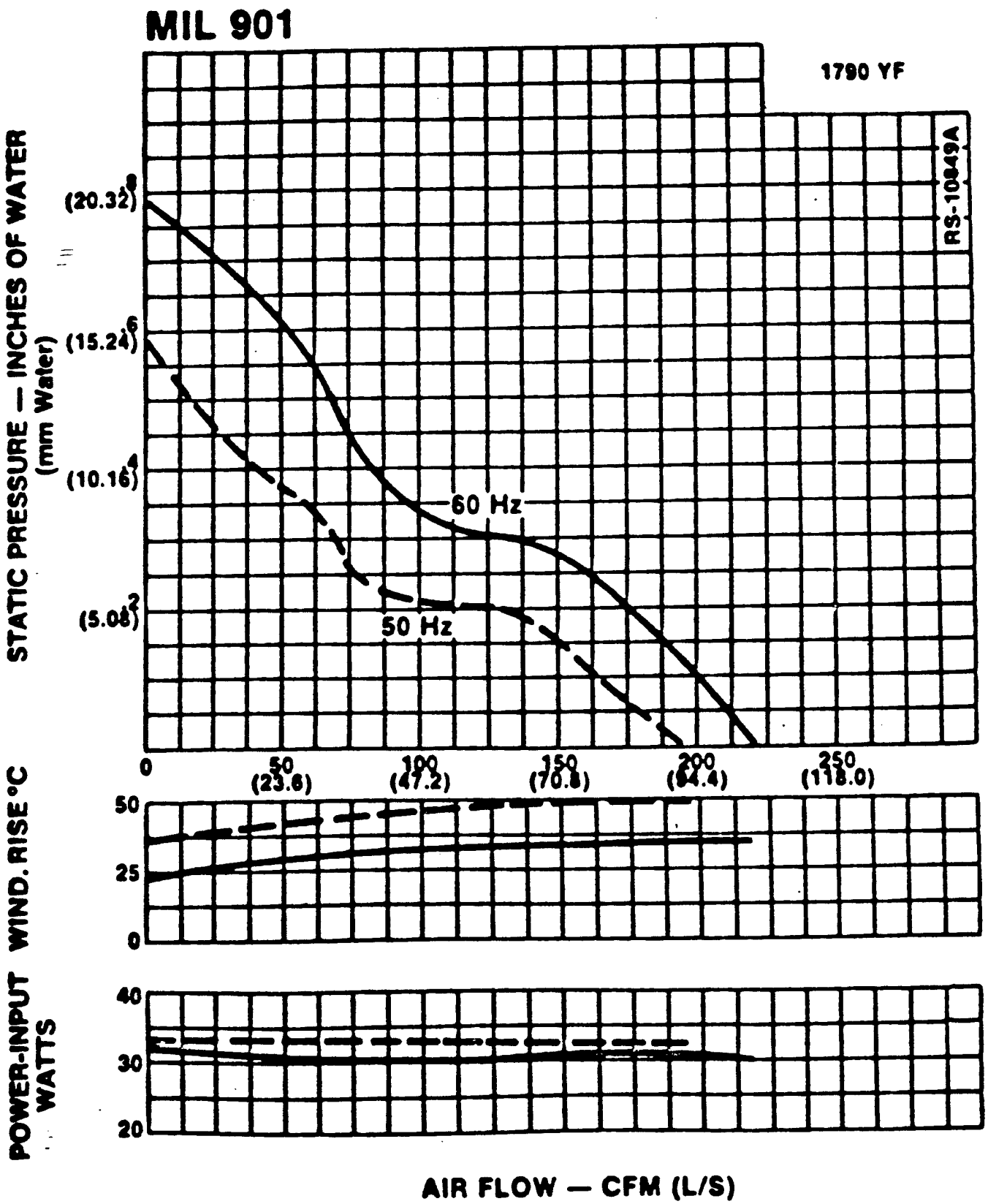

Figure 4. Fan Airflow Curve

For the power supply and logic circuitry considerations, the power dissipation is a total of 66 watts of which 39 watts is due to the power supplies alone. For this reason, the power supplies are considered separately for cooling and, because the maximum operating ambient temperature for these units is 71°C which, when considered in an ambient temperature of +50°C, allows that the Δt (temperature rise) must not exceed 19°C. Using the same formula as in the transmitter analysis, the air flow in CFM is determined as follows:

$$CFM = \frac{1760 \text{ kw}}{(t_c)} = \frac{1760\ (0.039)}{10°C} = 6.86$$

Adding a safety factor of 30% = 2.1 CFM, to limit the Δt to 10°C rise on the power supplies, the required air flow is 9 CFM.

The same head loss of 0.6 inch H_2O is realized, since the heat sink used is identical to the transmitter. Here again, a MIL-901 Rotron fan will adequately cool the power supplies.

The remaining circuitry dissipation is spread out over the entire surface area of the drawer and equates to a flux density of only 0.09 watts/in^2. These components will be located within the drawer assembly such that they will receive the same cooling air as supplied to the larger heat dissipaters.

2.1.3.4 EMI Considerations-Transmitter

The type 1094B Transmitter is completely shielded in an EMI/RFI enclosure. The enclosure is fabricated from aluminum alloy with all seams and openings gasketed, using chomerics type 1250 conductive EMI material, or equivalent. The enclosure is tin-plated, so that no oxidation will form at gasket/enclosure seam interfaces, maintaining good conductivity throughout.

All wires between the enclosure shield and the transmitter connectors are terminated to feedthrough filters that are soldered to the enclosure walls. The enclosure incorporates a removable cover that provides easy access to the transmitter.

2.2 INTERFACE ADAPTER

2.2.1 Electrical/Mechanical Design (Figure 5)

2.2.1.1 Electrical Design

The Interface Adapter consists of a power splitter, an attenuator, and a coaxial switch. In addition, the front panel has a jack for monitoring the input level from the test set and a test/operate switch (with an indicator) for control of the coaxial switch. The input from the test set (approximately -45 dBm) is applied to the input of the power splitter via a rear panel connector (front panel for 2 prototypes). One output of the power splitter is applied to the attentuator input, and the other output from the splitter is connected to the front panel monitor jack.

The output from the attenuator is connected to one input of the coaxial switch, and the antenna input is connected to the other input. The output from the coaxial switch is connected to the post amplifier in the AN/SKR-6. The front panel test/ operate switch controls the coaxial switch. Input power, +28 volts is supplied through a connector on the rear of the panel.

2.2.1.2 Mechanical Design

The Interface Adapter consists of a panel which mounts in the AN/SKR-6 in the space previously occupied by a blank panel between the A4 and A5 subassemblies. The panel is fastened to the AN/SKR-6 rack using standard mounting hardware in existing mounting holes. The test set input signal is applied to a triaxial type connector on the rear of the panel, along with the antenna and post amplifier connections. The unit is slidemounted with a cable retractor.

This design permits easy installation and provides a means of fast switchover from the receiving antenna to the test set for test and evaluation purposes.

3.0 TEST PROCEDURE

Reference: Appendix I
Acceptance Test Procedure for Test Set TS-3683A/SKR-6 (including

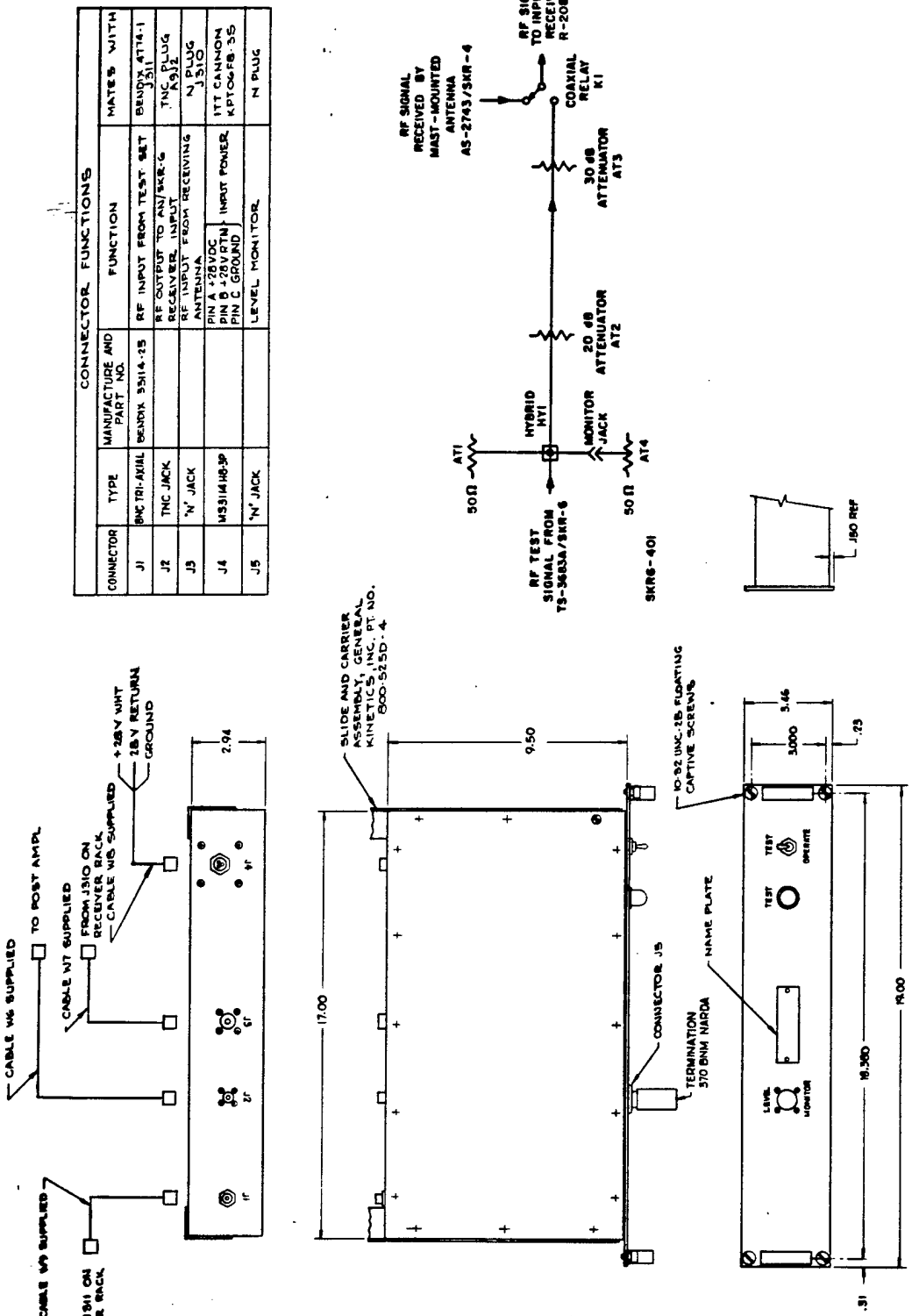

Figure 5. Interface Adapter for Test Set TS-3683A/SKR-6

Interface Adapter) per Tele-Dynamics Drawing 50812 defines the test methods and techniques, test set-up diagrams and equipment, test measurements, conditions and specifications, and includes data forms for recording test results.

4.0 TEST DATA

Reference: Appendix I

The complete acceptance test data forms, located at the end of the Acceptance Test Procedure in Appendix I, is typical test data that reflects acceptable performance within specification limits during the three basic phases:

- Base Line Test
- Preperformance (Environmental) Test
- Final Test.

Appendix I

Acceptance Test Procedure
for
Test Set TS-3683A/SKR-6
(Including Interface Adapter)

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	LTR	DESCRIPTION	DATE	APPROVED
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		A	REVISED PER ECN 12754	12/23/80	D. Bud 12/23

SHEET	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112
REV.																												
SHEET	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84
REV																												
SHEET	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
REV.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
REV.	A	—	A	—	—	—	—	—	—	—	A	—	—	—	—	—	—	—	A	—	—	—	—	—	—	—	—	—

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APPD [illegible]

TELE>DYNAMICS

DIVISION OF AMBAC INDUSTRIES INCORPORATED
FORT WASHINGTON, PA. 19034

ACCEPTANCE TEST PROCEDURE
TEST SET TS-3683A/SKR-6
(Including Interface Adapter)

SIZE	FSCM	DWG NO.
A	98853	50812

REV. A SHEET 1 OF 56

TABLE OF CONTENTS

1.0 GENERAL

1.1 Scope

This document describes the acceptance test procedure required to demonstrate contractual compliance of the TS-3683A/SKR-6 Test Set (and Interface Adapter).

1.2 Applicable Specifications

NADC Spec. 554-77-001 Revised 26 Oct. 1977	Receiving Set, Telemetric Data, AN/SKR-6.
TD 47745 (Classified)	Spec, Transmitter

1.3 Standard Test Conditions

All tests shall be performed under the following conditions unless otherwise specified:

a. Standard Input Power - 115 ± 1 VAC, 60 ± 3 Hz, single phase, 3 amp.

b. Atmospheric Conditions - Prevailing factory conditions of ambient temperature, pressure, and humidity.

1.4 Test Application

This Acceptance Test Procedure shall be performed on all equipments submitted for acceptance.

1.5 Definitions

1.5.1 The equipment referenced herein is the:

a. Test Set TS-3683A/SKR-6,P/N 50450-501

b. Interface Adapter,P/N 50705-501

1.5.2 Failure

A failure will have occurred when the data measurements do not meet the requirements of each test defined herein, or when mechanical damage causes deterioration that will prevent the system from meeting the requirements defined herein.

1.6 Test Sequence

1.6.1 The functional portion of the test shall be performed in three parts as follows:

a. Preliminary Test, Paragraph 3.0

b. Pre-performance Burn-in, Paragraph 4.0

c. Final Test, Paragraph 3.0.

1.6.2 Para. 1.9 (Mechanical/Visual) shall be performed prior to para. 3.0.

1.6.3 Read the Running Time Meter at end of tests (see fig. 1). Record reading on sign-off sheet of data sheet package.

1.7 Test Requirements

1.7.1 Equipment

	Mech./Visual	System Functional
a. Test Set TS-3683A/SKR-6, P/N 50450-501	X	X
b. Interface Adapter, 50705-501	X	X

1.8 Precautions

a. The operator must be familiar with the test equipment instruction manuals and operating procedures for all equipment used in this test.

1.9 Mechanical/Visual

Verify that all units have been inspected to meet their mechanical requirements. Check to see that inspection cards have been approved.

* Record results on Data Sheet 1.

2.0 TEST EQUIPMENT REQUIRED

The following test equipment or equivalent is required. All test equipment shall be allowed a minimum of 5 minutes warm-up time, except RF equipment which shall have a minimum of 25 minutes warm-up.

	EQUIPMENT	MFG	MODEL
2.1	Power Source, commercial 115 volts, 60 Hz, single phase, controllable ± 10%.		
2.2	VTVM AC/DC	HP	400D
2.3	RF Wattmeter/Bolometer	HP	432B/478A
2.4	AC VTVM/dB Meter	HP	400E
2.5	Spectrum Analyzer	Tektronix	7L13
2.6	Frequency Counter, "S-band"	HP	5245L
2.7	Test Oscillator	HP	651B
2.8	Variable DC Power Supply	NJE	LVC 50-.5
2.9	Wave Analyzer, HF	HP	310B
2.10	Oscilloscope	Tektronix	7834/547
2.11	AC 60 Hz Ammeter	Weston	930
2.12	Spectrum Analyzer	Singer	RTA-5/VR3
2.13	Telemetric Receiver	T-D	AN/SKR-( )
2.14	30 dB Coaxial Attenuator	Narda	771
2.15	PC Card Extender	T-D	50818
2.16	S-Band Signal Generator	HP	3205A
2.17	Receiver/dB Meter Cable	TD	49847-501
2.18	Dial-A-Volt Power Supply	GRI	DA4-44
2.19	Elapsed Time Meter	N/A	-N/A
2.20	20 dB Coaxial Attenuator	Narda	771

3.0 SYSTEM FUNCTIONAL

3.1 General

The equipment shall be tested in conjunction with a calibrated AN/SKR-( ) and commercial test equipment. Within the text, an asterisk (*) denotes a data measurement. Test equipment is indicated by parentheses, within which is contained the equipment number listed in para. 2.0.

3.2 Initial Control Settings

Initial equipment control settings before application of input power shall be as follows:

a. Test Set

MAIN PWR	Off
MODE	LOCAL
PWR XMTR	Off
BANDWIDTH	F_C
MODULATION	OFF
VCO/DSCRM	MUX LOFAR
RF CHAN SELECT	41

b. Interface Adapter ..... Connected to TS-3683A/SKR-6 main unit via 30 dB attenuator representing 100 ft. of tri-axial interconnection cable.

TEST/OPERATE ..... TEST

3.3 AC Power

Set-up equipment as shown in figure 1. Apply 115 VAC, 60 Hz single phase power (2.1) to unit under test. Set MAIN PWR circuit breaker CB1 to ON position and observe that main power light is illuminated * and that both fans blow inward *. Using AC ammeter (2.11) as shown in figure 1, measure AC input current*. Limit = 3A maximum. Record results on Data Sheet 1.

3.4 RF CW Power

The objectives of these tests are to demonstrate that a -95 dBm standard RF signal can be provided to the AN/SKR-( ) post amplifier with a dynamic

adjustment range to accommodate attenuations and losses by either air (antenna to antenna) or cable (direct) RF paths.

3.4.1 -95 dBm Direct

Connect a spectrum analyzer (2.5) to the Interface Adapter output jack (J2), using a length of low-loss coaxial or heliax cable. Set the analyzer to its minimum available bandwidth. Set the Test Set/Interface Adapter controls per para. 3.2, except set MAIN PWR to ON.
Set PWR XMTR switch to ON. Observe the RF signal on the analyzer. Signal amplitude shall be -95 ± 2 dBm*. Record results on Data Sheet 1.

3.4.2 -13 dBm (Antenna-to-Antenna)

In a typical ship installation, there is approximately 82 dB of path loss between J2 of the Test Set and the AN/SKR-( ) post amplifier. The output level at J2 must be -13 dBm in order to supply a -95 dBm input signal to the post amplifier (-95 -(-82) = -13). Connect a power meter (2.3) to Test Set jack J2. Meter should read -13 ± 2 dBm*. Enter results on Data Sheet 1.

3.4.3 ± f_c Bandwidth

Connect an S-Band frequency counter (2.6) to Test Set jack J2. Set controls per para. 3.2, except set MAIN PWR and PWR XMTR switches to ON. Note the RF center frequency of channel 41.

3.4.3.1 + Bandwidth

Set the BANDWIDTH switch to + position and observe that the POWER monitor meter reads +6 ± 1 dB*. Frequency counter should read the center frequency noted in para. 3.4.3 plus 250 ± 70 kHz*. Record deviation from true center frequency in kHz on Data Sheet 1.

3.4.3.2 - Bandwidth

Set the BANDWIDTH switch to - position and observe that the POWER monitor meter reads +6 ± 1 dB*. Frequency counter should read the center frequency noted in para. 3.4.3 minus 250 ± 70 kHz*. Record deviation from true center frequency in kHz on Data Sheet 1.

3.5 RF Channel Selection

Refer to classified frequency channel code found in TD drawing 47745.

3.5.1 RF Center Frequency

With controls set as indicated in para. 3.2, connect S-band frequency counter (2.6) to Test Set jack J2. Set MAIN PWR to ON. Set PWR XMTR switch to ON. In succession, select each position of the RF CHAN SELECT switch and read frequency for each position as indicated on S-Band Counter. Each channel

frequency shall be within ± 70 kHz of the frequency listed in the classified channel list. Record on Data Sheet 1 the deviation from true center frequency for each channel in kHz*.

3.5.2 LED Display

Select in succession each position of the RF CHAN SELECT switch and verify that the LED display indicates the proper channel number *. Record results on Data Sheet 2.

3.5.3 Remote Channel Selection

The AN/SKR-6 Bite and Voltage Monitor (BVM) supplies a +20 to +25 VDC variable RF control voltage to the Test Set, which provides control of the RF output frequency over the range of 2.2 to 2.3 GHz. The object of this test is to demonstrate that this DC control can be used to remotely select any of the 20 channels (41 through 60) of the Test Set.

a. Set-up equipment as shown in figure 2, with the Test Set controls set per para. 3.2, and the MODE switch set to the SKR position. Set MAIN PWR switch to ON. Apply primary and dc voltages to BVM. Set BVM MODE switch to BITE RF. Vary the RF ADJUST control of the BVM and monitor the LED display of the Test Set. Verify that all channels (41 through 60) of the Test Set are selected by the full rotation of the BVM RF ADJUST control *. Verify the frequencies of channels 41 and 60, using the frequency counter (2.6)*. Record results on Data Sheet 2.

b. As an alternate method, use a variable DC power supply of +20 to +25 Vdc capacity (2.8), and inject it into Test Set jack J3, pins C(+) and D (return). Perform test of para. 3.5.3 a.

3.6 Multiplex Calibration

3.6.1 LOFAR VCO Levels

Connect a wave analyzer (2.9) monitored by a frequency counter (2.6) to the receiver output of the AN/SKR-( ) telemetry receiver. Connect the post amp input of the AN/SKR-( ) receiver to Test Set output jack J2 through 50 dB of attenuation (see fig. 1). Set the Test Set controls per para. 3.2, except set MAIN PWR, and PWR XMTR switches to ON. Tune the wave analyzer in turn to each VCO subcarrier frequency listed below and measure the VCO subcarrier level for each*. Levels should be within values given in list below*. Enter results on Data Sheet 2.

3.6.2 LOFAR VCO Frequencies

Maintain the test conditions of para. 3.6.1. Tune wave analyzer to each VCO frequency listed below and record actual frequency of each VCO as displayed on frequency counter*. Frequencies should be within those listed below. Enter results on Data Sheets 2 and 3.

Channel	Frequency (±100 Hz) (kHz)	Level (mVRMS)
VCO A	12.5	115 ± 23
VCO B	20.8	115 ± 23
VCO C	29.2	115 ± 23
VCO D	37.5	115 ± 23
VCO E	45.8	150 ± 30
VCO F	54.2	175 ± 35
VCO G	62.5	200 ± 40
VCO H	93.0	300 ± 60

3.7 Signal Conditioning

3.7.1 SONO SIM Input (J6)

Connect Test Set output jack J2 to input of AN/SKR-( ) receiver through 50 dB of attenuation (2.14,2.20). Set Test Set controls per para. 3.2, except set VCO/DSCRM switch to MUX LOFAR position, MODULATION switch to SONO SIM position, and MAIN PWR, and PWR XMTR switches to ON. Using an audio oscillator (2.7) monitored by an AC VTVM (2.4), inject a 300 Hz at 2.0 ± 0.05 VRMS signal into Test Set rear panel jack J6. Using the AC VTVM, measure the output of each discriminator for each channel*. Value should be 1 ± 0.1 VRMS for each channel. Enter results on Data Sheet 3.

3.7.2 Modulation Out (J9)

With the test conditions of para. 3.7.1 intact, connect the AC VTVM (2.4) to rear panel jack J9. Measure a signal of 2.0 ± 0.1 VRMS amplitude*. Enter results on Data Sheet 3.

3.7.3 External Modulation (J5)

Maintain test conditions of para. 3.7.1, except set MODULATION switch to EXT position, and inject test signal into front panel jack J5 (EXT MOD). Repeat the test of para. 3.7.1 on any one discriminator output*. Enter results on Data Sheet 3.

3.7.4 Tape Recorder Input (J4)

Maintain the test conditions of para. 3.7.1, except set MODULATION switch to TAPE RECORDER position and inject a 300 Hz at 1 ± 0.05 VRMS test signal into rear panel jack J4 and repeat the test of para. 3.7.1 on any one discriminator output*. Enter results on Data Sheet 3.

3.7.5 Differential Output (J7)

With the test conditions of para. 3.7.4 intact, measure the signal level at rear panel DIFFERENTIAL jack J7, using the AC VTVM (2.4). Meter should read 1 ± 0.11 VRMS from the center conductor to chassis ground and 1 ± 0.11 VRMS from the outer conductor to chassis ground. Add these two measured values together*. Enter result on Data Sheet 7.

3.7.6 Remote VCO Input (J3)

Connect BVM to Test Set as shown in figure 2. Connect input of AN/SKR-( ) receiver (2.13) to output jack of Test Set (J2), through 50 dB of attenuation (2.14,2.20). Set the Test Set controls per para. 3.2, except set MODE switch to SKR, MAIN PWR switch to ON, and MODULATION switch to ON. Set the BVM MODE switch to BITE RF, the RF ADJUST control to obtain channel 41, MODULATION switch to INT, and VCO/DSCRM switch to A. With AN/SKR-( )receiver set to channel 41, measure output of channel A discriminator with AC VTVM (2.4). Meter should read +1.0 ±0.3 VRMS*. Record result on Data Sheet 3.

3.7.7 Selected LOFAR (A through H) Switching

Connect the output of the Test Set (J2) to the input of the AN/SKR-( ) receiver through 50 dB attenuation(2.14,2.20). Set the MODE switch to LOCAL, and the MODULATION switch to TAPE RECORDER. Using the audio oscillator (2.7), inject a 300 Hz at 1 ±0.1 VRMS test signal into Test Set rear panel input jack J4. Select in turn each LOFAR position (A through H), of the VCO/DSCRM switch. Observe via an oscilloscope (2.10) that the signal is present on only the selected LOFAR channel as observed at the AN/SKR-( ) LOFAR discriminator outputs*. Enter results on Data Sheet 3.

3.7.8 MUX LOFAR Switching

Maintain the test conditions of para. 3.7.7, except set VCO/DSCRM switch to MUX LOFAR position. Verify with the oscilloscope that the test signal is present on all LOFAR channels (A through H), as observed at the discriminator outputs of the AN/SKR-( ) receiver*. Enter results on Data Sheet 3.

3.8 DIFAR

3.8.1 DIFAR B VCO Center Frequency

Connect Test Set output jack J2 to input of AN/SKR-( ) receiver through 50 dB of attenuation (2.14,2.20). Set Test Set controls per para. 3.2, except set VCO/DSCRM switch to either DIFAR B or MUX DIFAR position, and MODULATION switch to EXT position. Set MAIN PWR and PWR XMTR switches to ON. Without any modulation applied to the EXT MOD jack J5, connect a frequency counter (2.6) to the AN/SKR-( )VHF receiver output. Frequency counter should read 70 ±1.4 kHz*. Enter result on Data Sheet 4.

3.8.2 DIFAR B VCO Sensitivity

Maintain the test conditions of para. 3.8.1. Set Test Set controls per para. 3.2, except set VCO/DSCRM switch to DIFAR B, and

MODULATION switch to SONO SIM position. Set MAIN PWR, and PWR XMTR switches ON. Using the audio oscillator (2.7), monitored by the AC VTVM (2.4), inject a 1 kHz at 2 ± 0.1 VRMS signal into rear panel SONO SIM input jack J6. Using the AC VTVM, measure the output of the AN/SKR-( ) DIFAR B discriminator. Meter should read 1 ±0.2 VRMS*. Enter results on Data Sheet 4.

3.8.3 DIFAR A

Maintain the test conditions of para. 3.8.2, except set VCO/DSCRM switch to DIFAR A position. Using the AC VTVM (2.4), measure the output of the AN/SKR-( ) DIFAR A low pass filter. Meter should read 1 ± 0.2 VRMS*. Enter results on Data Sheet 4.

3.8.4 MUX DIFAR Level

Maintain the test conditions of para. 3.8.2, except set VCO/DSCRM switch to MUX DIFAR position. Using the AC VTVM (2.4), measure a MUX DIFAR signal level of 0.87 ± 0.05 VRMS at the AN/SKR-( ) receiver output*. Enter results on Data Sheet 4.

3.8.5 MUX DIFAR Ratio

Maintain the test conditions of para. 3.8.4. Using an oscilloscope (2.10), connected to the AN/SKR-( ) receiver output, measure signal levels of 2.0 ± 0.2 Vp-p at 1 kHz, and 1.0 ± 0.2 Vp-p at 70 kHz, with a resultant 1 kHz to 70 kHz ratio of 2 to 1*. Enter results on Data Sheet 4.

3.9 Lamp Test

Set Test Set controls per para. 3.2, except set MAIN PWR switch to ON. Depress the front panel LAMP TEST pushbutton. Observe the following*:

a. LED display shows "8.8."

b. "+" lamp lit

c. "-" lamp lit.

Enter results on Data Sheet 4.

3.10 Interface Adapter Attenuation Test

Connect a length of coaxial cable to Test Set jack J2. Measure power at end of cable with power meter (2.3), with Test Set MAIN PWR and PWR XMTR switches set to ON. Disconnect power meter. Connect cable to jack J3 of Interface Adapter. Connect power meter to jack J2 of Adapter. Set TEST/OPERATE switch to OPERATE. Read power*. Enter results on Data Sheet 4.

Record time indicated by running time meter* on sign-off sheet.

4.0 PRE-PERFORMANCE TESTING

The pre-performance test consists of a minimum 72 hour operational burn-in, including the time for sinusoidal vibration, voltage and frequency variation and temperature tests defined herein.

4.1 Conditions

a. Operational Burn-in

1) 72 hours continuous except for time necessary to establish test set-ups per para. 4.3, 4.4, and 4.5.

2) 24 hours minimum of un-interrupted error free operation will be completed during burn-in, even if it requires extension of the 72 hour period.

3) Operation during burn-in will be at standard conditions per para. 1.3, except as required per para. 4.3, 4.4, and 4.5.

b. Vibration: Sinusoidal 5 to 33 cycles, 1 minute per cycle, amplitude per para. 4.3 below, axes selected by Tele-Dynamics.

c. Voltage and Frequency Variation: per para. 4.5.4 of MIL-E-16400F (Table 5).

d. Temperature: per para. 4.5.8.2.4 of MIL-E-16400F, Class 4.

e. Running Time meter must be part of set-up for these tests.

4.2 Data Requirements

Two levels of testing are specified within the environmental section of this procedure to ensure proper operation of the equipment prior to, during, and after such environmental testing, as follows:

4.2.1 In most cases, the following tests (as modified below), shall be performed prior to and after environmental tests, as required.

a. Para. 3.3 AC Power, except for fan direction test.

b. Para. 3.5.1 RF Center Frequency, for channel 41, only.

c. Para. 3.5.2 LED Display, for channel 41, only.

d. Para. 3.4.2 RF CW Power (-13 dBm).

e. Para. 3.6.1 VCO LOFAR Levels.

4.2.2 In most cases, the following tests (as modified below), shall be performed during the environmental tests, as required.

a. Para. 3.3 AC Power, except for fan direction test.

b. Para. 3.5.1 RF Center Frequency, for channel 41 only.

c. Para. 3.4.2 RF CW Power (-13 dBm).

d. Para. 3.6.1 VCO LOFAR Levels.

e. Para. 4.2.3 Signal Conditioning and VCO LOFAR Stability.

4.2.3 Signal Conditioning and VCO LOFAR Stability

a. Set up equipment per figure 3. Set Test Set and Interface Adapter controls per para. 3.2, except set MODULATION switch to TAPE RECORDER, and MAIN PWR, and PWR XMTR switches to ON.
Using the audio oscillator (2.7), monitored by the AC VTVM (2.4), inject a 1 kHz, 1 ± 0.05 VRMS signal into rear panel jack J4. Using a dual trace oscilloscope as an indicator, monitor the output signals at J9 (MODULATION Out), and J7 (DIFFERENTIAL Output). The output at J9 should be 2 ± 0.1 VRMS and the output at J7 (from center conductor to chassis ground, as measured), should be 1 ± 0.11 VRMS*. If these levels are correct, enter results in the form of a check mark on Data Sheet.

b. Maintain the test conditions of para. 4.2.3a, except disconnect audio oscillator from TAPE RECORDER input (J4). Using the low frequency spectrum analyzer (2.10, 2.12), connected to the AN/SKR-( ) receiver output, as an indicator,observe the composite signal. VCO signal levels should remain stable in both amplitude and frequency. Any jitter or instability on display indicates a problem. If display is stable, enter result in form of a check mark on Data Sheet*.

4.3 Vibration

4.3.1 Requirement

A variable frequency test shall be conducted in the principal directions of vibration as determined by the contractor or by previous testing. The equipment shall be vibrated from 5 Hz to 33 Hz in discrete frequency intervals of 1 Hz as shown below. At each integral frequency the vibration shall be maintained for at least 1 minute.

Table Amplitude

FREQUENCY RANGE (Hz)	PLUS OR MINUS (INCH)
5-15	0.03 ± 0.006
15-25	0.02 ± 0.004
26-33	0.01 ± 0.002

4.3.2 Test

a. Mount the equipment directly on the vibration table in the upright (vertical) position and establish the system test set-up.

b. Apply standard power per para. 1.2 and repeat data per para. 4.2.1.

c. Vibrate the equipment from 5 to 33 Hz in discrete frequency intervals of 1 Hz at vibration table amplitude per para. 4.3.1. The vibration shall be maintained for 1 minute minimum at each integral frequency.

Monitor the data per para. 4.2.2 during the vibration.

d. Repeat data requirements of para. 4.2.1. The post data of the vertical axis will be used as the predata for the horizontal major axis.

e. Mount the system on the vibration table in the horizontal major axis.

f. Repeat para. 4.3.2c.

g. Repeat data requirements of 4.2.1.

4.4 Primary Power

4.4.1 Requirements

The voltage and frequency tests shall be conducted according to section 4.5.4 of MIL-E-16400F.

4.4.2 Primary Power

4.4.2.1 Voltage and Frequency Variations

a. Establish the system test set-up.

b. Monitor the input voltage and frequency.

c. Operate the equipment for a minimum of 15 minutes at each of the combinations of input line voltage and frequency listed below. Adjust the variable frequency, variable voltage power source to each specified condition.

d. Monitor the requirements of para. 4.2.2 during each step and record data at the completion of each 15 minute period per para. 4.2.1.

Supply Line Voltages and Frequencies

	(a)	(b)
VRMS (± 10%)	103.5	126.5
Freq. (± 5%)	57	63

4.4.2.2 Transient Voltage

a. Repeat 4.4.2.1a.

b. Monitor the input voltage on oscilloscope.

c. Operate the equipment per each of the steady state (ss) input transient conditions listed below.

d. Record the data per para. 4.2.2 after each transient has ceased.

e. Record the data requirements of para. 4.2.1 after completion of all transients.

Input Transient Conditions

	(a)	(b)	(c)	(d)
SS VRMS	130	105	115	115
SS FREQ. Hz	60	60	62	58
TRANSIENT VRMS	+20% (156)	-20% (84)	NA	NA
TRANSIENT FREQ.	NA	NA	+3% (64)	-3% (56)
TRANSIENT TIME	2 sec	2 sec	2 sec	2 sec

4.4.2.3 Power Interruption

a. Repeat 4.4.2.1a.

b. Operate the equipment.

c. Interrupt the input power for 3 to 4 seconds.

d. Record the data per para. 4.2.2.

e. Interrupt the input power for 29 to 30 seconds.

f. Repeat 4.4.2.3d.

g. Repeat 4.4.2.3c. to f. a total of 5 times.

h. Record the data requirements of para. 4.2.1. This data will be the predata for temperature test.

No damage to the equipment shall be incurred as a result of the power interruptions.

4.5 Temperature

4.5.1 Requirement

The equipment shall be capable of normal operation (without alignment or adjustment other than the accessible controls employed for operation of the equipment) throughout the following temperature cycle; tolerance shall be as specified in Para. 4.2 Data Requirements.

4.5.2 Test

a. Install the equipment in the temperature chamber and establish the system test set-up.

b. Apply standard power per para. 1.3 and repeat data per para. 4.2.1 and maintain power ON.

c. Decrease the chamber ambient temperature to 0° ± 2°C and maintain for 24 hours.

d. Record the data requirements of para. 4.2.1.

e. Increase chamber temperature in steps of 10 degrees each, at 30 minutes per step, until +50° ± 2°C is reached and hold at that temperature for a period of 4 hours.

f. Repeat the data requirements of para. 4.2.1.

g. Reduce room temperature in steps of 10° each at 30 minutes per step until +25° ± 2°C is reached and hold at that temperature for 4 hours.

h. Repeat the Data Requirements of para. 4.2.1.

4.6 Burn-In

4.6.1 Requirement

a. 72 hours continuous operation except as noted in para. 4.1a, with a minimum of 24 un-interrupted error free operating hours.

4.6.2 Test

Review the running time meter hours and the data log of para. 4.3, 4.4, and 4.5 and determine if the requirements of para. 4.6.1 have been met.

If the requirements have not been met, continue operation per para. 4.1 "Note" until both the 72 hour burn-in and the 24 hour un-interrupted error free operating periods have been completed.

Repeat data per para. 4.2.1 if required, in order to determine compliance with the error free operation.

5.0 FINAL TEST

Perform the Final Test of paragraph 3.0.

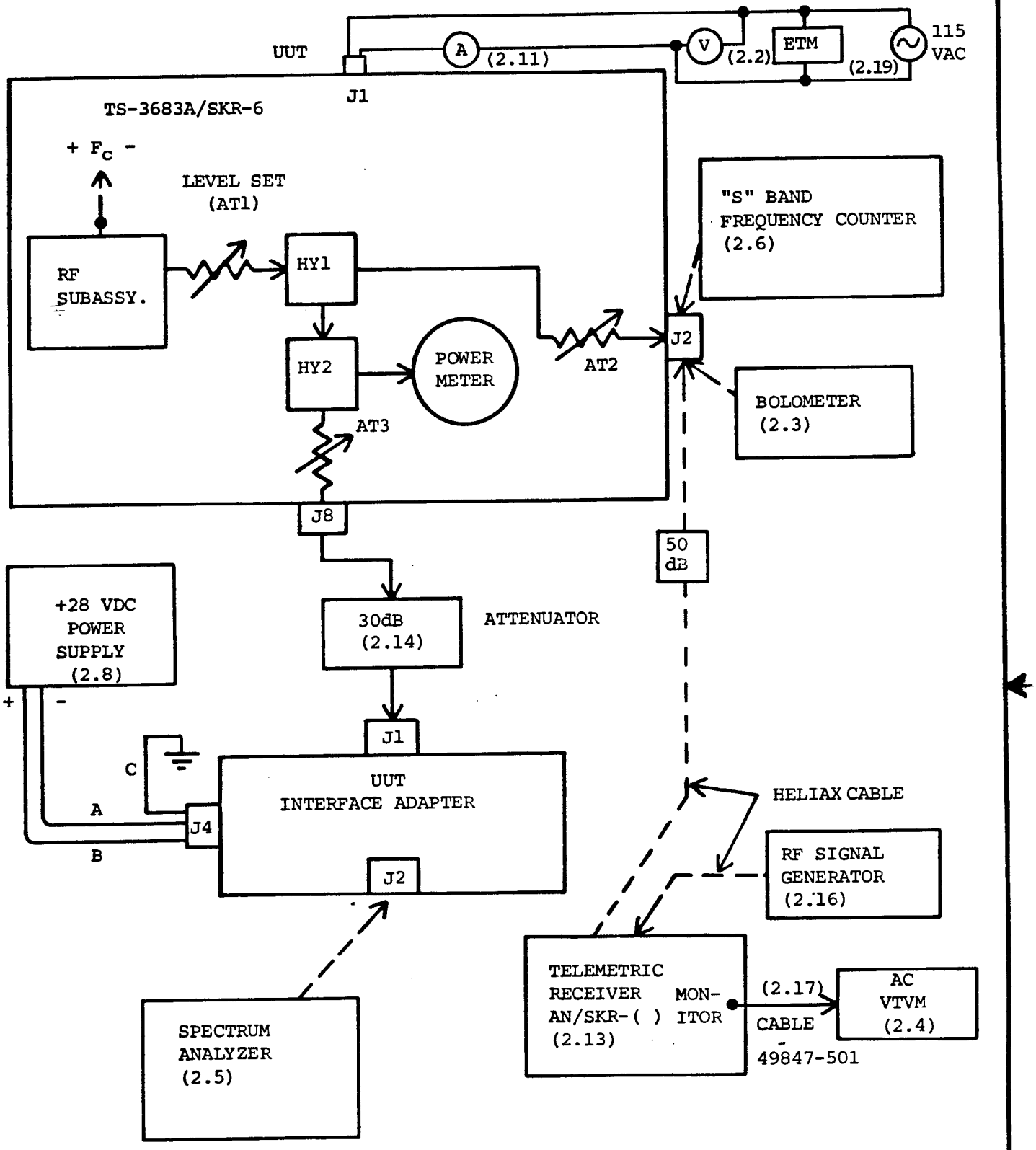

Figure 1. RF Power and Frequency Test Setup

PREPARED BY:	ACCEPTANCE TEST PROCEDURE TEST SET TS-3683A/SKR-6 (Including Interface Adapter)	SIZE A	50812
APPROVED BY:	TELE>DYNAMICS DIVISION OF AMBAC INDUSTRIES INCORPORATED	FSCM 98853	SHEET 17

REVISED

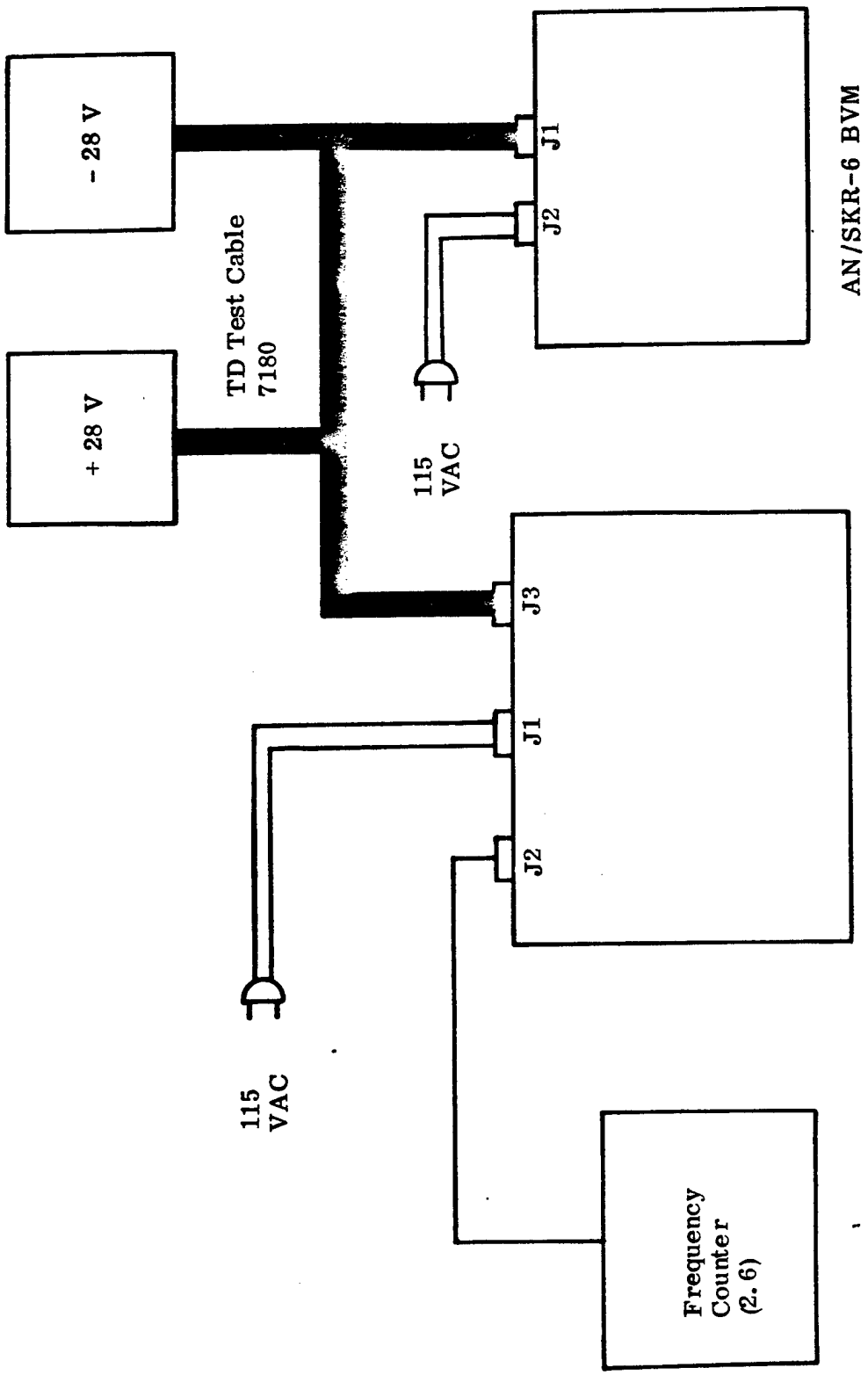

Figure 2. BVM and Test Set RF Control Test Setup

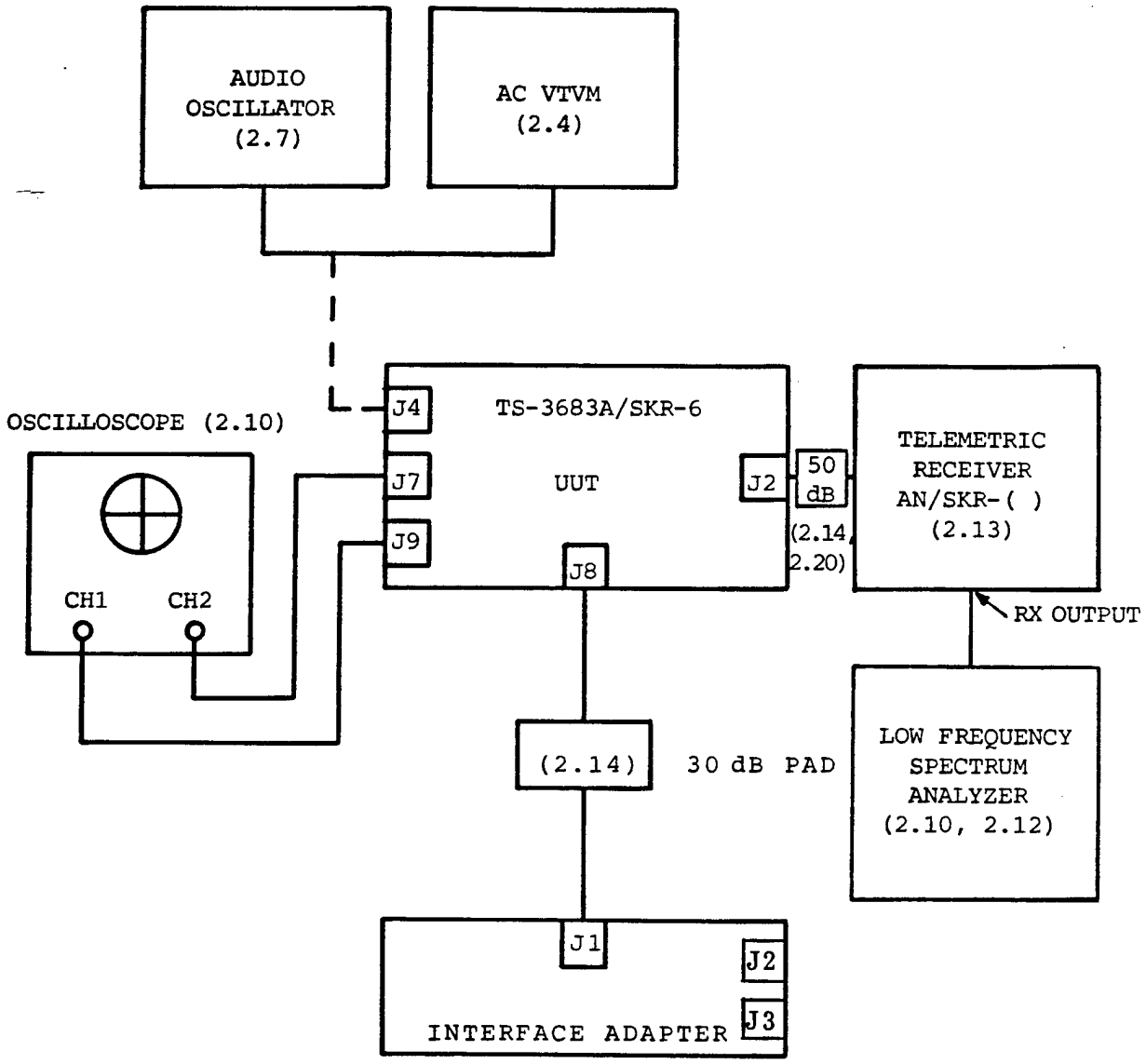

Figure 3. Signal Conditioning and VCO LOFAR Stability Test Setup

ACCEPTANCE TEST DATA
TEST SET
TS - 3683A/SKR-6

(INCLUDING INTERFACE ADAPTER)

SERIAL # 002

DATE STARTED 8/19/80

DATE FINISHED 8/22/80

PERFORMED BY * R. Stevens
A. Gelletich

APPROVED BY [QA] 8/22/80

JOB # 3243

* Initial each Data Sheet

Elapsed Time Meter 72.7

SUBASSEMBLY IDENTIFICATION

Name	Type	Serial Number
Test Set TS-3683A/SKR-6	50450-501	002
Low Pass Filter (A)	43878-505	2976
Chan A VCO	20230-501	6577
Low Pass Filter (B)	43878-505	2991
Chan B VCO	20230-502	6498
Low Pass Filter (C)	43878-505	2984
Chan C VCO	20230-503	6556
Low Pass Filter (D)	43878-505	2992
Chan D VCO	20230-504	6548
Low Pass Filter (E)	43878-505	2979
Chan E VCO	20230-505	6455
Low Pass Filter (F)	43878-505	2993
Chan F VCO	20230-506	6549
Low Pass Filter (G)	43878-505	2464
Chan G VCO	20230-507	6488
Low Pass Filter (H)	43878-506	2932
Chan H VCO	19819-527	6440
Voice Low Pass Filter	43878-504	3008
DIFAR Low Pass Filter	43787-502	5658
DIFAR B VCO	43887-501	0024
Mixer Amplifier	28238-505	1198
RF Transmitter	46178-502	223
Synthesizer Assembly	48915-501	223
RF Converter Assembly	49060-501	223
Printed Circuit Assembly	50484-501	002
Interface Adapter	50705-501	002

BASELINE DATA

Data Sheet No. 1

S/N 002

Date 8/19/80

Procedure Para. No.	Parameter Description	Requirement Min	Requirement Max	Units	Actual Reading
1.9	Mechanical/Visual Check (✓) if no discrepancies. Discrepancies if any _____	No Discrepancies		N/A	✓
3.3	AC Power				
	Power Indicator Lit	Lit	-	Observation	✓
	Fans Blow Inward	In	-	Observation	✓
	AC Current	-	3 Amp.	Amperes	2.1
3.4.1	-95 dBm Direct Power	-97 dBm	-93 dBm	dBm	-95
3.4.2	Ability to Set -13 dBm	-15 dBm	-11 dBm	dBm	-13
3.4.3.1	+FC Power Meter	+5 dB	+7 dB	Relative Power	+6
	+FC Frequency, Relative	+180	+320	kHz	+211
3.4.3.2	-FC Power Meter	+5 dB	+7 dB	Relative Power	+6
	-FC Frequency, Relative	-180	-320	kHz	-226
3.5.1	RF Center Frequency 41	-70 kHz	+70 kHz	Δ kHz from true center frequency (fc)	-35
	42				-35
	43				-35
	44				-35
	45				-35
	46				-35
	47				-36
	48				-36
	49				-36
	50				-37
	51				-37
	52				-37
	53				-37
	54				-37
	55				-37
	56				-38
	57				-39
	58				-39
	59				-40
	60				-40

BASELINE DATA

Data Sheet No. 2

S/N 002

Date 8/19/80

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
3.5.2	LED Display OK		Yes	No	Observation	
		41				YES
		42				"
		43				
		44				
		45				
		46				
		47				
		48				
		49				
		50				
		51				
		52				
		53				
		54				
		55				
		56				
		57				
		58				
		59				✓
		60				YES
3.5.3 a or b	Remote RF Channel Selection					
	Chan 41 Display		Yes	No	Observation	YES
	Chan 60 Display		Yes	No	Observation	YES
	Chan 41 Freq		-70 kHz	+70 kHz	ΔF_C, kHz	-42
	Chan 60 Freq		-70 kHz	+70 kHz	ΔF_C, kHz	-42
3.6.1	VCO Level	Channel A	92	138	MV, RMS	115
		B	92	138	MV, RMS	115
		C	92	138	MV, RMS	116
		D	92	138	MV, RMS	119
		E	120	180	MV, RMS	156
		F	140	205	MV, RMS	185
		G	160	240	MV, RMS	215
		H	240	360	MV, RMS	330
3.6.2	VCO Center Frequency	A	12400	12600	Hz	12500
		B	20700	20900	Hz	20800
		C	29100	29300	Hz	29190
		D	37400	37600	Hz	37490
		E	45700	45900	Hz	45810

PREPARED BY: RWS

APPROVED BY:

REVISED

TEST DATA FOR TS-3683A/SKR-6

SIZE A

50812

TELE>DYNAMICS DIVISION OF AMBAC INDUSTRIES INCORPORATED

FSCM 98853

SHEET 23

BASELINE DATA

Data Sheet No. 3

S/N 002

Date 8/19/80

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
3.6.2 (cont'd)		F	54100	54300	Hz	54160
		G	62400	62600	Hz	62520
		H	92900	93100	Hz	92990
3.7.1	Sonobuoy Simulation (J6)	A	0.9	1.1	Volts,RMS	1.1
		B	↑	↑	↓	1.1
		C	↓	↓	↓	1.1
		D	↓	↓	↓	1.1
		E	↓	↓	↓	1.1
		F	↓	↓	↓	1.1
		G	↓	↓	↓	0.9
		H	0.9	1.1	Volts,RMS	1.0
3.7.2	Modulation Out (J9)		1.9	2.1	Volts,RMS	2.1
3.7.3	External Modulation (J5)		0.9	1.1	Volts, RMS	1.1
3.7.4	Tape Recorder Input (J4)		0.9	1.1	Volts, RMS	1.1
3.7.5	Differential Output (J7)		1.78	2.22	Volts, RMS	1.07+1.07 = 2.14
3.7.6	Remote VCO Input (J3)		0.7	1.3	Volts, RMS	1.3
3.7.7	LOFAR Switching	A			Observation	✓
		B			↓	✓
		C			↓	✓
		D			↓	✓
		E			↓	✓
		F			↓	✓
		G			↓	✓
		H			Observation	✓
3.7.8	MUX LOFAR	A			Observation	✓
		B			↓	✓
		C			↓	✓
		D			↓	✓
		E			↓	✓
		F			↓	✓
		G			↓	✓
		H			Observation	✓

BASELINE DATA

Data Sheet No. 4

S/N 002

Date 8/19/80

Procedure Para. No.	Parameter Description	Requirement Min	Requirement Max	Units	Actual Reading
3.8.1	DIFAR B Cent Freq	69.6	71.4	kHz	70.0
3.8.2	DIFAR B Sensitivity	0.8	1.2	VRMS	1.1
3.8.3	DIFAR A	0.80	1.20	VRMS	0.98
3.8.4	MUX DIFAR Level	0.82	0.92	VPP	0.88
3.8.5	MUX DIFAR Ratio				
	1 kHz	1.8	2.2	VPP	2.0
	70 kHz	0.8	1.2	VPP	1.2
3.9	Lamp Test a.	LED	8.8	Observation	✓
	b.	+	lit	Observation	✓
	c.	-	lit	Observation	✓
3.10	Int. Adapter Atten. Test	Within 1 dB of input level to J3		Δ dBm from input level to J3.	-1

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TEST DATA FOR TS-3683A/SKR-6

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Data Sheet No. 5

Date 8/21/80

PRETEST DATA (4.3.2b)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.1a	AC Power					✓
	Power Indicator Lit		Lit	-	Observation	
	AC Current		-	3 Amp.	Amperes	2.1
4.2.1b	RF Center Frequency	41	-70 kHz	+70 kHz	OK?	-19
4.2.1c	LED Display	41	Yes	No	Observation	YES
4.2.1d	RF Power		-15 dBm	-11 dBm	dBM	-13.8
4.2.1e	VCO Levels, Channel	A	92	138	MV, RMS	120
		B	92	138	MV, RMS	125
		C	92	138	MV, RMS	125
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	195
		G	160	240	MV, RMS	227
		H	240	360	MV, RMS	250

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Data Sheet No. 6

Date 8/21/80

POST 1ST AXIS DATA (4.3.2d)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.1a	AC Power					
	Power Indicator Lit		Lit	-	Observation	✓
	AC Current		-	3 Amp.	Amperes	2.1
4.2.1b	RF Center Frequency	41	-70 kHz	+70 kHz	OK?	-15
4.2.1c	LED Display	41	Yes	No	Observation	Yes
4.2.1d	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.1e	VCO Levels, Channel	A	92	138	MV, RMS	125
		B	92	138	MV, RMS	125
		C	92	138	MV, RMS	126
		D	92	138	MV, RMS	127
		E	120	180	MV, RMS	167
		F	140	205	MV, RMS	198
		G	160	240	MV, RMS	230
		H	240	360	MV, RMS	355

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Data Sheet No. 7

Date 8/21/80

POST VIBRATION TEST DATA (4.3.2g)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.1a	AC Power					✓
	Power Indicator Lit		Lit	-	Observation	
	AC Current		-	3 Amp.	Amperes	2.1
4.2.1b	RF Center Frequency	41	-70 kHz	+70 kHz	OK?	-16
4.2.1c	LED Display	41	Yes	No	Observation	✓
4.2.1d	RF Power		-15 dBm	-11 DBm	dBm	-13.1
4.2.1e	VCO Levels, Channel	A	92	138	MV, RMS	126
		B	92	138	MV, RMS	125
		C	92	138	MV, RMS	126
		D	92	138	MV, RMS	127
		E	120	180	MV, RMS	168
		F	140	205	MV, RMS	200
		G	160	240	MV, RMS	232
		H	240	360	MV, RMS	355

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Data Sheet No. 8

Date 8/19/80

PRE-TEMP TEST DATA (4.5.2b)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.1a	AC Power					✓
	Power Indicator Lit		Lit	-	Observation	
	AC Current		-	3 Amp.	Amperes	2.05
4.2.1b	RF Center Frequency	41	-70 kHz	+70 kHz	OK?	-35
4.2.1c	LED Display	41	Yes	No	Observation	Yes
4.2.1d	RF Power		-15 dBm	-11 dBm	dBm	-13.4
4.2.1e	VCO Levels, Channel	A	92	138	MV, RMS	126
		B	92	138	MV, RMS	126
		C	92	138	MV, RMS	120
		D	92	138	MV, RMS	124
		E	120	180	MV, RMS	160
		F	140	205	MV, RMS	194
		G	160	240	MV, RMS	224
		H	240	360	MV, RMS	345

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TEST DATA FOR TS-3683A/SKR-6

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Data Sheet No. 9

Date 8/20/80

POST 24 HR.(0°C) SOAK DATA (4.5.2d)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.1a	AC Power					✓
	Power Indicator Lit		Lit	-	Observation	
	AC Current		-	3 Amp.	Amperes	2.05
4.2.1b	RF Center Frequency	41	-70 kHz	+70 kHz	OK?	-26
4.2.1c	LED Display	41	Yes	No	Observation	Yes
4.2.1d	RF Power		-15 dBm	-11 dBm	dBm	-13.5
4.2.1e	VCO Levels, Channel	A	92	138	MV, RMS	125
		B	92	138	MV, RMS	125
		C	92	138	MV, RMS	126
		D	92	138	MV, RMS	128
		E	120	180	MV, RMS	169
		F	140	205	MV, RMS	200
		G	160	240	MV, RMS	21[illegible]
		H	240	360	MV, RMS	3[illegible]

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Data Sheet No. 10

Date 8/20/80

POST 4 HR. (+50°C) SOAK DATA (4.5.2f)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.1a	AC Power Power Indicator Lit AC Current		 Lit -	 - 3 Amp.	 Observation Amperes	 ✓ 2.65
4.2.1b	RF Center Frequency	41	-70 kHz	+70 kHz	OK?	-55
4.2.1c	LED Display	41	Yes	No	Observation	✓
4.2.1d	RF Power		-15 dBm	-11 dBm	dBm	-12
4.2.1e	VCO Levels, Channel	A	92	138	MV, RMS	122
		B	92	138	MV, RMS	121
		C	92	138	MV, RMS	122
		D	92	138	MV, RMS	123
		E	120	180	MV, RMS	162
		F	140	205	MV, RMS	151
		G	160	240	MV, RMS	222
		H	240	360	MV, RMS	240

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Data Sheet No. 11

Date 8/21/80

POST-TEMP TEST DATA (4.5.2h)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.1a	AC Power					✓
	Power Indicator Lit		Lit	-	Observation	
	AC Current		-	3Amp.	Amperes	2.07
4.2.1b	RF Center Frequency	41	-70 kHz	+70 kHz	OK?	-20
4.2.1c	LED Display	41	Yes	No	Observation	
4.2.1d	RF Power		-15 dBm	-11dBm	dBm	-13.4
4.2.1e	VCO Levels, Channel	A	92	138	MV, RMS	115
		B	92	138	MV, RMS	115
		C	92	138	MV, RMS	118
		D	92	138	MV, RMS	118
		E	120	180	MV, RMS	155
		F	140	205	MV, RMS	172
		G	160	240	MV, RMS	214
		H	240	360	MV, RMS	225

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Data Sheet No. 12

Date 8/21/80

POST 103.5 VAC @ 57 Hz TEST DATA (4.4.2.1d)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.1a	AC Power Power Indicator Lit AC Current		 Lit -	 - 3 Amp.	 Observation Amperes	✓ 2.0
4.2.1b	RF Center Frequency	41	-70 kHz	+70 kHz	OK?	-20
4.2.1c	LED Display	41	Yes	No	Observation	✓
4.2.1d	RF Power		-15 dBm	-11 dBm	dBm	-13.5
4.2.1e	VCO Levels, Channel	A	92	138	MV, RMS	120
		B	92	138	MV, RMS	120
		C	92	138	MV, RMS	124
		D	92	138	MV, RMS	124
		E	120	180	MV, RMS	162
		F	140	205	MV, RMS	190
		G	160	240	MV, RMS	224
		H	240	360	MV, RMS	340

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Data Sheet No. 13

Date 8/21/80

POST 126.5 VAC @ 63 Hz TEST DATA (4.4.2.1d)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.1a	AC Power					✓
	Power Indicator Lit		Lit	-	Observation	
	AC Current		-	3 Amp.	Amperes	2.2
4.2.1b	RF Center Frequency	41	-70 kHz	+70 kHz	OK?	-20
4.2.1c	LED Display	41	Yes	No	Observation	✓
4.2.1d	RF Power		-15 dBm	-11 dBm	dBm	-13.5
4.2.1e	VCO Levels, Channel	A	92	138	MV, RMS	122
		B	92	138	MV, RMS	122
		C	92	138	MV, RMS	124
		D	92	138	MV, RMS	124
		E	120	180	MV, RMS	164
		F	140	205	MV, RMS	183
		G	160	240	MV, RMS	224
		H	240	360	MV, RMS	350

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Data Sheet No. 14

Date 8/21/80

POST TRANSIENT (a) TEST DATA (4.4.2.2d)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.36
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-18
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.5
4.2.2d	VCO Levels	A	92	138	MV, RMS	132
		B	92	138	MV, RMS	132
		C	92	138	MV, RMS	135
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	145
		F	140	205	MV, RMS	145
		G	160	240	MV, RMS	232
		H	240	360	MV, RMS	252
4.2.2e	Signal Conditioning and VCO Stability					
		a.	Check (✓) if no discrepancies. Discrepancies if any ____.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any ____.			✓

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Data Sheet No. 15

Date 8/21/80

POST TRANSIENT (b) TEST DATA (4.4.2.2d)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.05
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-18
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.9
4.2.2d	VCO Levels	A	92	138	MV, RMS	124
		B	92	138	MV, RMS	124
		C	92	138	MV, RMS	125
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	195
		G	160	240	MV, RMS	227
		H	240	360	MV, RMS	350
4.2.2e	Signal Conditioning and VCO Stability	a.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

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Data Sheet No. 16

Date 8/21/80

POST TRANSIENT (c) TEST DATA (4.4.2.2d)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.1
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-18
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.2d	VCO Levels	A	92	138	MV, RMS	124
		B	92	138	MV, RMS	124
		C	92	138	MV, RMS	125
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	195
		G	160	240	MV, RMS	225
		H	240	360	MV, RMS	355
4.2.2e	Signal Conditioning and VCO Stability	a.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

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Data Sheet No. 17

Date 8/21/80

POST TRANSIENT (d) TEST DATA (4.4.2.2d)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3Amp.	Amperes	2.1
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-18
4.2.2c	RF Power		-15 dBm	-H dBm	dBm	-13.8
4.2.2d	VCO Levels	A	92	138	MV, RMS	124
		B	92	138	MV, RMS	124
		C	92	138	MV, RMS	125
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	185
		G	160	240	MV, RMS	221
		H	240	360	MV, RMS	250
4.2.2e	Signal Conditioning and VCO Stability					✓
		a.	Check (✓) if no discrepancies. Discrepancies if any ✓.			
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

PREPARED BY: RW3

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Data Sheet No. 18

Date 8/21/80

POST TRANSIENT TEST DATA (4.4.2.2e)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.1a	AC Power Power Indicator Lit AC Current		 Lit -	 - 3Amp.	 Observation Amperes	 ✓ 2.1
4.2.1b	RF Center Frequency	41	-70 kHz	+70 kHz	OK?	-20
4.2.1c	LED Display	41	Yes	No	Observation	✓
4.2.1d	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.1e	VCO Levels, Channel	A	92	138	MV, RMS	124
		B	92	138	MV, RMS	124
		C	92	138	MV, RMS	125
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	195
		G	160	240	MV, RMS	227
		H	240	360	MV, RMS	350

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Data Sheet No. 19

Date 8/21/80

POST 1ST 4 SEC. INTERRUPT (4.4.2.3d)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.1
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-17
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.2d	VCO Levels	A	92	138	MV, RMS	124
		B	92	138	MV, RMS	[illegible]
		C	92	138	MV, RMS	[illegible]
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	195
		G	160	240	MV, RMS	227
		H	240	360	MV, RMS	250
4.2.2e	Signal Conditioning and VCO Stability					
		a.	Check (✓) if no discrepancies. Discrepancies if any ✓.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

PREPARED BY: [illegible]

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S/N 002

Data Sheet No. 20

Date 8/21/80

POST 1ST 30 SEC. INTERRUPT (4.4.2.3f)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.1
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	- .60
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.2d	VCO Levels	A	92	138	MV, RMS	124
		B	92	138	MV, RMS	124
		C	92	138	MV, RMS	125
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	162
		F	140	205	MV, RMS	198
		G	160	240	MV, RMS	229
		H	240	360	MV, RMS	255
4.2.2e	Signal Conditioning and VCO Stability	a.	Check (✓) if no discrepancies. Discrepancies if any ____.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any ____.			✓

PREPARED BY: lw3

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Data Sheet No. 21

Date 8/21/80

POST 2ND 4 SEC. INTERRUPT (4.4.2.3g)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.1
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-16
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.9
4.2.2d	VCO Levels	A	92	138	MV, RMS	124
		B	92	138	MV, RMS	124
		C	92	138	MV, RMS	125
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	195
		G	160	240	MV, RMS	227
		H	240	360	MV, RMS	355
4.2.2e	Signal Conditioning and VCO Stability					
		a.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

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Data Sheet No. 22

Date 8/21/80

POST 2ND 30 SEC. INTERRUPT (4.4.2.3g)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.1
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-22
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.2d	VCO Levels	A	92	138	MV, RMS	124
		B	92	138	MV, RMS	124
		C	92	138	MV, RMS	125
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	186
		G	160	240	MV, RMS	227
		H	240	360	MV, RMS	350
4.2.2e	Signal Conditioning and VCO Stability	a.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

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Data Sheet No. 23

Date 8/21/80

POST 3RD 4 SEC. INTERRUPT (4.4.2.3g)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.1
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-16
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.9
4.2.2d	VCO Levels	A	92	138	MV, RMS	124
		B	92	138	MV, RMS	124
		C	92	138	MV, RMS	124
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	160
		F	140	205	MV, RMS	195
		G	160	240	MV, RMS	227
		H	240	360	MV, RMS	350
4.2.2e	Signal Conditioning and VCO Stability					
		a.	Check (✓) if no discrepancies. Discrepancies if any ✓.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

PREPARED BY: [illegible]

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TELE>DYNAMICS DIVISION OF AMBAC INDUSTRIES INCORPORATED

FSCM 98853

SHEET 44

ENVIRONMENTAL

S/N 902

Data Sheet No. 24

Date 8/21/80

POST 3RD 30 SEC. INTERRUPT (4.4.2.3g)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.15
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-16
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.2d	VCO Levels	A	92	138	MV, RMS	134
		B	92	138	MV, RMS	134
		C	92	138	MV, RMS	135
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	195
		G	160	240	MV, RMS	227
		H	240	360	MV, RMS	350
4.2.2e	Signal Conditioning and VCO Stability					
		a.	Check (✓) if no discrepancies. Discrepancies if any ✓.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

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SHEET 45

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ENVIRONMENTAL

S/N 002

Data Sheet No. 25

Date 5/21/80

POST 4TH 4 SEC. INTERRUPT (4.4.2.3g)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3Amp.	Amperes	2.1
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-20
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.2d	VCO Levels	A	92	138	MV, RMS	124
		B	92	138	MV, RMS	124
		C	92	138	MV, RMS	125
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	186
		G	160	240	MV, RMS	224
		H	240	360	MV, RMS	350
4.2.2e	Signal Conditioning and VCO Stability					
		a.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

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SHEET 46

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ENVIRONMENTAL

S/N 002

Data Sheet No. 26

Date 8/21/80

POST 4TH 30 SEC. INTERRUPT (4.4.2.3g)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.15
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-15
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.2d	VCO Levels	A	92	138	MV, RMS	125
		B	92	138	MV, RMS	124
		C	92	138	MV, RMS	127
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	175
		F	140	205	MV, RMS	195
		G	160	240	MV, RMS	233
		H	240	360	MV, RMS	350
4.2.2e	Signal Conditioning and VCO Stability					
		a.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

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SHEET 47

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ENVIRONMENTAL

S/N 002

Data Sheet No. 27

Date 8/21/80

POST 5TH 4 SEC. INTERRUPT (4.4.2.3g)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3Amp.	Amperes	2.1
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	OK
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.2d	VCO Levels	A	92	138	MV, RMS	134
		B	92	138	MV, RMS	134
		C	92	138	MV, RMS	135
		D	92	138	MV, RMS	135
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	175
		G	160	240	MV, RMS	220
		H	240	360	MV, RMS	320
4.2.2e	Signal Conditioning and VCO Stability					
		a.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

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SHEET 48

ENVIRONMENTAL

S/N 002

Data Sheet No. 28

Date 8/21/80

POST 5TH 30 SEC. INTERRUPT (4.4.2.3g)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.15
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-15
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.2d	VCO Levels	A	92	138	MV, RMS	124
		B	92	138	MV, RMS	124
		C	92	138	MV, RMS	125
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	195
		G	160	240	MV, RMS	227
		H	240	360	MV, RMS	350
4.2.2e	Signal Conditioning and VCO Stability					
		a.	Check (✓) if no discrepancies. Discrepancies if any ✓.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

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S/N 002

Data Sheet No. 29

Date 8/21/80

POST 6TH 4 SEC. INTERRUPT (4.4.2.3g)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.1
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-19
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.2d	VCO Levels	A	92	138	MV, RMS	[illegible]
		B	92	138	MV, RMS	[illegible]
		C	92	138	MV, RMS	[illegible]
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	[illegible]
		G	160	240	MV, RMS	[illegible]
		H	240	360	MV, RMS	350
4.2.2e	Signal Conditioning and VCO Stability					
		a.	Check (✓) if no discrepancies. Discrepancies if any ✓.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

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SHEET 50

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S/N 002

Data Sheet No. 30

Date 8/21/80

POST 6TH 30 SEC. INTERRUPT (4.4.2.3g)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.2a	AC Power Power Indicator Lit		Lit	-		✓
	AC Current		-	3 Amp.	Amperes	2.15
4.2.2b	RF Frequency		-70 kHz	+70 kHz	OK?	-15
4.2.2c	RF Power		-15 dBm	-11 dBm	dBm	-13.8
4.2.2d	VCO Levels	A	92	138	MV, RMS	129
		B	92	138	MV, RMS	129
		C	92	138	MV, RMS	135
		D	92	138	MV, RMS	135
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	195
		G	160	240	MV, RMS	227
		H	240	360	MV, RMS	350
4.2.2e	Signal Conditioning and VCO Stability	a.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓
		b.	Check (✓) if no discrepancies. Discrepancies if any _____.			✓

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FSCM 98853

SHEET 51

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ENVIRONMENTAL

S/N 002

Data Sheet No. 31

Date 8/21/80

POST POWER INTERRUPT TEST (4.4.2.3h)

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
4.2.1a	AC Power					✓
	Power Indicator Lit		Lit	-	Observation	
	AC Current		-	3. Amp.	Amperes	2.1
4.2.1b	RF Center Frequency	41	-70 kHz	+70 kHz	OK?	-19
4.2.1c	LED Display	41	Yes	No	Observation	✓
4.2.1d	RF Power		-15 dBm	-11 dBm	dBm	-12.8
4.2.1e	VCO Levels, Channel	A	92	138	MV, RMS	134
		B	92	138	MV, RMS	134
		C	92	138	MV, RMS	125
		D	92	138	MV, RMS	125
		E	120	180	MV, RMS	165
		F	140	205	MV, RMS	195
		G	160	240	MV, RMS	227
		H	240	360	MV, RMS	350

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FINAL TEST

Data Sheet No. 32

S/N 002

Date 8/12/80

Procedure Para. No.	Parameter Description	Requirement Min	Requirement Max	Units	Actual Reading
1.9	Mechanical/Visual Check (✓) if no discrepancies. Discrepancies if any _____	No Discrepancies		N/A	✓
3.3	AC Power				✓
	Power Indicator Lit	Lit	-	Observation	✓
	Fans Blow Inward	In	-	Observation	2.1
	AC Current	-	3 Amp.	Amperes	
3.4.1	-95 dBm Direct Power	-97 dBm	-93 dBm	dBm	-93
3.4.2	Ability to Set -13 dBm	-15 dBm	-11 dBm	dBm	-13.6
3.4.3.1	+FC Power Meter	+5 dB	+7 dB	Relative Power	+5.7
	+FC Frequency, Relative	+180	+320	kHz	+.4
3.4.3.2	-FC Power Meter	+5 dB	+7 dB	Relative Power	+5.9
	-FC Frequency, Relative	-180	-320	kHz	-245
3.5.1	RF Center Frequency	-70 kHz	+70 kHz	Δ kHz from true center frequency (fc)	-2
	41				-2
	42				-2
	43				-2
	44				-2
	45				-2
	46				-2
	47				-2
	48				-2
	49				-2
	50				-2
	51				-2
	52				-2
	53				-2
	54				-2
	55				-2
	56				-2
	57				-3
	58				-3
	59				-3
	60				

FINAL TEST

Data Sheet No. 33

S/N 002

Date 8/22/80

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
3.5.2	LED Display OK		Yes	No	Observation	
		41				Yes
		42				OK
		43				
		44				
		45				
		46				
		47				
		48				
		49				
		50				
		51				
		52				
		53				
		54				
		55				
		56				
		57				
		58				
		59				
		60				Yes
3.5.3 a or b	Remote RF Channel Selection					
	Chan 41 Display		Yes	No	Observation	Yes
	Chan 60 Display		Yes	No	Observation	Yes
	Chan 41 Freq		-70 kHz	+70 kHz	ΔF_C, kHz	-2
	Chan 60 Freq		-70 kHz	+70 kHz	ΔF_C, kHz	-2
3.6.1	VCO Level	Channel A	92	138	MV, RMS	120
		B	92	138	MV, RMS	120
		C	92	138	MV, RMS	121
		D	92	138	MV, RMS	121
		E	120	180	MV, RMS	160
		F	140	205	MV, RMS	190
		G	160	240	MV, RMS	220
		H	240	360	MV, RMS	350
3.6.2	VCO Center Frequency	A	12400	12600	Hz	12540
		B	20700	20900	Hz	20800
		C	29100	29300	Hz	29200
		D	37400	37600	Hz	37520
		E	45700	45900	Hz	45830

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FINAL TEST

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Data Sheet No. 34

Date 8/22/80

Procedure Para. No.	Parameter Description		Requirement Min	Requirement Max	Units	Actual Reading
3.6.2 (cont'd)		F	54100	54300	Hz	54240
		G	62400	62600	Hz	62520
		H	92900	93100	Hz	93000
3.7.1	Sonobuoy Simulation (J6)	A	0.9	1.1	Volts RMS	1.1
		B	↕	↕	↕	1.1
		C				1.1
		D				1.1
		E				1.1
		F				1.1
		G				1.0
		H	0.9	1.1	Volts, RMS	1.0
3.7.2	Modulation Out (J9)		1.9	2.1	Volts, RMS	2.1
3.7.3	External Modulation (J5)		0.9	1.1	Volts, RMS	1.0
3.7.4	Tape Recorder Input (J4)		0.9	1.1	Volts, RMS	1.0
3.7.5	Differential Output (J7)		1.78	2.22	Volts, RMS	2.12
3.7.6	Remote VCO Input (J3)		0.7	1.3	Volts, RMS	1.0
3.7.7	LOFAR Switching	A			Observation	✓
		B			↕	✓
		C				✓
		D				✓
		E				✓
		F				✓
		G				✓
		H			Observation	✓
3.7.8	MUX LOFAR	A			Observation	✓
		B			↕	✓
		C				✓
		D				✓
		E				✓
		F				✓
		G				✓
		H			Observation	✓

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FINAL TEST

Data Sheet No. 35

S/N 002

Date 8/22/80

Procedure Para. No.	Parameter Description	Requirement Min	Requirement Max	Units	Actual Reading
3.8.1	DIFAR B Cent Freq	69.6	71.4	kHz	69.7
3.8.2	DIFAR B Sensitivity	0.8	1.2	VRMS	1.1
3.8.3	DIFAR A	0.80	1.20	VRMS	0.96
3.8.4	MUX DIFAR Level	0.82	0.92	VPP	0.87
3.8.5	MUX DIFAR Ratio				
	1 kHz	1.8	2.2	VPP	2.2
	70 kHz	0.8	1.2	VPP	1.2
3.9	Lamp Test a.	LED	8.8	Observation	✓
	b.	+	lit	Observation	✓
	c.	-	lit	Observation	✓
3.10	Int. Adapter Atten. Test	Within 1 dB of input level to J3.		ΔdBm from input level to J3.	-1

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