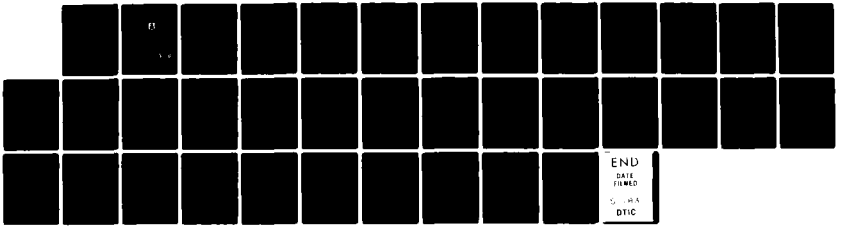
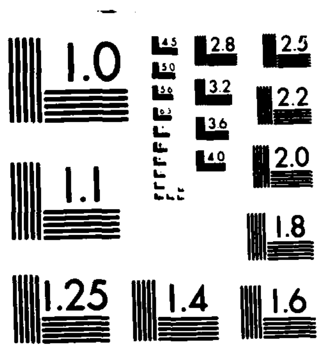
AD-A126 985 STATE STANDARDS OF THE USSR (GOST 5104271 AND GOST 5104371)(U) FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OH 02 MAR 83 FTD-ID(RS)T-1792-82 1/1

UNCLASSIFIED F/G 17/2 NL





FTD-ID(RS)T-1792-82

AD A126985

FOREIGN TECHNOLOGY DIVISION

STATE STANDARDS OF THE USSR
(GOST 5.1042.71 and GOST 5.1043.71)

DTIC
ELECTE
APR 15 1983
S D
D

Approved for public release;
distribution unlimited.

DTIC FILE COPY

83 04 15 017

EDITED TRANSLATION

FTD-ID(RS)T-1792-82 2 March 1983

MICROFICHE NR: FTD-83-C-000282

STATE STANDARDS OF THE USSR (GOST 5.1042.71 and GOST 5.1043.71)

English pages: 32

Source: GOST 5.1042-71 and GOST 5.1043.71, pp. 1-14; 1-13

Country of origin: USSR
Translated by: Robert D. Hill
Requester: FTD/TQCC

PREPARED BY:

TRANSLATION DIVISION
FOREIGN TECHNOLOGY DIVISION
WP-AFB, OHIO.

Table of Contents

U. S. BOARD ON GEOGRAPHIC NAMES TRANSLITERATION SYSTEM

Block	Italic	Transliteration	Block	Italic	Transliteration
А а	*А а*	A, a	Р р	*Р р*	R, r
Б б	*Б б*	B, b	С с	*С с*	S, s
В в	*В в*	V, v	Т т	*Т т*	T, t
Г г	*Г г*	G, g	У у	*У у*	U, u
Д д	*Д д*	D, d	Ф ф	*Ф ф*	F, f
Е е	*Е е*	Ye, ye; E, e*	Х х	*Х х*	Kh, kh
Ж ж	*Ж ж*	Zh, zh	Ц ц	*Ц ц*	Ts, ts
З з	*З з*	Z, z	Ч ч	*Ч ч*	Ch, ch
И и	*И и*	I, i	Ш ш	*Ш ш*	Sh, sh
Й й	*Й й*	Y, y	Щ щ	*Щ щ*	Shch, shch
К к	*К к*	K, k	Ъ ъ	*Ъ ъ*	"
Л л	*Л л*	L, l	Ы ы	*Ы ы*	Y, y
М м	*М м*	M, m	Ь ь	*Ь ь*	'
Н н	*Н н*	N, n	Э э	*Э э*	E, e
О о	*О о*	O, o	Ю ю	*Ю ю*	Yu, yu
П п	*П п*	P, p	Я я	*Я я*	Ya, ya

*ye initially, after vowels, and after ъ, ь; e elsewhere.
When written as ё in Russian, transliterate as yё or ё.

RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English	Russian	English	Russian	English
sin	sin	sh	sinh	arc sh	$\sinh^{-1}$
cos	cos	ch	cosh	arc ch	$\cosh^{-1}$
tg	tan	th	tanh	arc th	$\tanh^{-1}$
ctg	cot	cth	coth	arc cth	$\coth^{-1}$
sec	sec	sch	sech	arc sch	sech^{-1}
cosec	csc	csch	csch	arc csch	csch^{-1}

Russian	English
rot	curl
lg	log

GRAPHICS DISCLAIMER

All figures, graphics, tables, equations, etc. merged into this translation were extracted from the best quality copy available.

TRANSMITTING FACSIMILE APPARATUS FAK-DM - GOST 5.1042-71
Quality Requirements for Certified Production

By decree of the State Committee of Standards of the Council of Ministers of the USSR from 18 August 1971, No. 1450. Period of putting into service is from 1 December 1971.

This standard extends to the transmitting facsimile apparatus FAK-DM with a plane scanning designed for the transmission of weather charts, weather forecasts, text material, and black and white images [photos] along short-wave (SW) and ultrashort-wave (USW) telephone channels with an effectively transmittable frequency band of 300 Hz to 2700 Hz and telephone wire channels with an effectively transmittable freqency band of 300 Hz to 3400 Hz.

Considered in the standard are requirements of recommendations of the World Meteorological Organization (WMO) with respect to signals of automatics (publication of the WMO/OMM, No. 9 TR.4, 1966).

The State Sign of Quality has been conferred on the apparatus FAK-DM in established order.

1. Basic parameters and dimensions

1.1. The basic parameters and dimensions of the apparatus must correspond to those given in Table 1.

[Table 1 and key are given on next page.]

Table 1

a) Параметры	b) Нормы
1. Шаг развертки, мм/строк (допускаемые отклонения ±1%)	0,265; 0,530
2. Полезная длина строки, мм, не менее	456
3. Максимальные размеры передаваемого бланка, мм, не более	480×700
4. Качания развертывающей системы, мм, не более	±0,12
5. Режим работы:	
по проводным каналам с амплитудно-частотной модуляцией (АЧМ) с нормалями девиации, Гц	1500—2300; 2000—2600
по радиоканалам с частотной модуляцией (ЧМ) с нормалями девиации, Гц	1500—2300; 2000—2600
6. Разрешающая способность в режиме работы АЧМ при шаге развертки 0,265 мм/строк, с нормалями девиации 2000—2600 Гц, лин/мм, не менее:	
при скорости 60 строк/мин	5
при скорости 120 строк/мин	3,8
7. Изменение тока фотоэлектронного умножителя относительно среднего значения при передаче однородной строки, %, не более	±7
8. Скорость развертки, строк/мин	60; 90; 120
9. Номинальная частота синхронизации, Гц	1200
10. Выходное сопротивление, Ом	600±90

Key to Table 1: a) Parameters; b) Standards.

1. Scanning pitch, mm/line (permitted deviations ±1%). 2. Useful length of the line, mm, not less than. 3. Maximum dimensions of the recording blank being transmitted, mm, not more than. 4. Swingings of the scanning system, mm, not more than. 5. Operating mode: along wire channels with amplitude-frequency modulation (AFM) with normals of deviation, Hz; along radio channels with frequency modulation (FM) with normals of deviation, Hz. 6. Resolution in operating mode AFM with scanning pitch of 0.265 mm/line, in seconds [s], with normals of deviation of 2000-2600 Hz, lines/mm, not less than: at a rate of

Table 1 continued

а) Параметры	б) Норма
11. Уровень выходного сигнала, дБ:	
в режиме АЧМ от черного поля с нормалью 1500 Гц, не менее	17
в режиме ЧМ	
минимальный не более	в) минус 13
максимальный не менее .	г) плюс 17
12. Напряжение питания сети переменного тока, В:	
частотой 50 Гц	127; 220
частотой 400 Гц	115
13. Потребляемая мощность, ВА, не более	250
14. Нестабильность частоты синхронизации, относительных единиц:	
в интервале температур от 5 до 50°С	$\pm 1{,}5 \cdot 10^{-5}$
при изменении напряжения питания на ±10% от номинального значения	$\pm 5 \cdot 10^{-6}$
15. Регулировка частоты синхронизации относительно номинального значения, %, не менее	±0,003
16. Масса, кг, не более	92

[key cont'd] 60 lines/min; at a rate of 120 lines/min. 7. Change in current of photomultiplier with respect to the average value with transmission of the uniform line, in %, not more than. 8. Scanning rate, lines/min. 9. Nominal synchronization frequency, Hz. 10. Output impedance, Ohms. 11. Level of output signal, dB: in AFM mode from a black field with a normal of 1500 Hz, not less than; in the FM mode; minimal not more than; c) minus 13; maximal not less than; d) plus 17. 12. Voltage of power supply of line of alternating current, V: at a frequency of 50 Hz; at a frequency of 400 Hz. 13. Consummable power, VA, not more than. 14. Instability of synchronization frequency, relative units: in a temperature range of 5° to 50°C; with a change in the power supply voltage at ±10% from the nominal value. 15. Control of synchronization frequency with respect to nominal value, %, not less than. 16. Weight, kg, not more than.

2. Technical requirements

2.1. The facsimile transmitting apparatus FAK-DM must be manufactured in conformity with requirements of this standard according to drawings and other technical documentation confirmed in established order.

2.2. The quality of the materials and articles making up a complete set must conform to the standards and technical documentation confirmed in established order.

2.3. In the apparatus it should be possible to monitor the voltage of the line, filament voltage of the illuminating tube and output levels of the signal by means of a built-in needle indicator and by external instruments of all rectified voltages except the voltage of power supply of the FEU [Photomultiplier].

2.4. The apparatus should maintain an efficiency with a change in the voltage of the power supply line at the minus 15% and plus 10% of the relatively nominal value.

2.5. The apparatus should generate remote control signals indicated on Table 2.

Table 2

a) Назначение сигнала	b) Характеристика сигналов дистанционного управления
1. Выбор индекса взаимодействия	c) 5-секундная передача попеременно сигналов «белого» и «черного» на следующих частотах: d) 300 Гц для индекса 576; e) 675 Гц для индекса 288
2. Выбор скорости и фазирование	c) 30-секундная передача попеременно сигналов «белого» и «черного» со следующими частотами: d) 1 Гц для скорости 60 строк/мин; e) 1,5 Гц для скорости 90 строк/мин; f) 2 Гц для скорости 120 строк/мин. g) Форма сигналов должна быть асимметричной: 95% длительности строки — сигналы «черного» и 5% — сигналы «белого». h) Передний фронт сигналов «белого» должен соответствовать по фазе началу развертки рабочей части строки
3. Нерабочая часть строки	c) Передача сигналов «белого» длительностью 5% строки
4. Остановка двигателя	c) 5-секундная передача попеременно сигналов «черного» и «белого» с частотой 450 Гц, затем 10-секундная передача сигнала «черного»

[Key to Table 2 begins on next page.]

Key to Table 2: а. Designation of signal; b. Characteristic of remote control signals; 1. Selection of interaction index; c) 5-second transmission of alternating signals of "white" and "black" at the following frequencies: d) 300 Hz for index 576; e) 675 Hz for index 288. 2. Selection of rate and phasing; c) 30-second transmission of alternating "white" and "black" signals with the following frequencies: d) 1 Hz for a rate of 60 lines/min; e) 1.5 Hz for a rate of 90 lines/min; f) 2 Hz for a rate of 120 lines/min; g) shape of signals must be asymmetric: 95% of duration of the line - signals of "black" and 5% - signals of "white"; h) leading edge of the "white" signals must correspond in phase to the beginning of the scanning of the nonoperating part of the line. 3. Nonoperating part of the line; c) transmission of "white" signals with duration of 5% of the line. 4. Stopping of the motor; c) 5-second transmission of alternating "black" and "white" signals at a frequency of 450 Hz, then a 10-second transmission of the "black" signal.

Notes: 1. Permissible deviations of the values indicated above are the following: for time intervals, ± 5%, and for frequencies, ±1%. 2. The envelopes of the signals being transmitted must be similar in shape to rectangular [square]. 3. The signal level of the nonoperating part must correspond to the level of the "white" signal.

2.6. The apparatus must operate stably:

a) after being for two days in conditions of relative air humidity of 95-98% at a temperature of 40±2°C;

b) at a temperature of 5°C and after holding at a temperature of -50±2°C and after holding at a temperature of 65±2°C for 4 hours.

2.7. The apparatus must operate stably after being transported over dirt and cobblestone roads in packed form at a distance of 200 km at a speed of 25-30 km/h.

2.8. The mean time between failures of the apparatus must not be less than 300 hours.

3. Completeness of units

3.1. The following should be included in making up the complete set of the apparatus: transmitting apparatus FAK-DM - 1 item; instruments and accessories - 1 complete unit; a table for placing the

apparatus - 1 item; technical description - 1 copy; album of drawings - 1 copy; logbook - 1 copy.

4. Acceptance rules

4.1. The apparatus must be accepted by the technical control of the manufacturing enterprise in conformity with requirements of this standard and technical documentation confirmed in established order.

4.2. To check for the conformity to requirements of this standard and technical documentation confirmed in established order, the apparatus is subjected to acceptance, periodic and standard tests and reliability tests.

4.3. The manufacturing plant conducts all forms of tests.

4.4. Acceptance tests.

4.4.1.Each apparatus undergoes the acceptance tests in volume and in the sequence indicated in Table 3.

Table 3

a) Виды проверок	b) Пункты технических требований	c) Пункты методов испытаний
1) Проверка соответствия стандартам, чертежам и технической документации, комплектности и маркировки	2.1; 2.2; 2.3 3.1; 6.1; 6.2	5.3
2) Проверка шага развертки	Table 1 табл. 1	5.4
3) Проверка полезной длины строки	Table 2 табл. 1	5.5
4) Проверка механизма протяжки при передаче максимального бланка	" 3 табл. 1	5.6
5) Проверка механических качаний	" 4 табл. 1	5.7
6) Проверка работоспособности аппарата	" 5 табл. 1	5.8
7) Проверка разрешающей способности	" 6 табл. 1	5.9
8) Проверка постоянства тока ФЭУ вдоль строки развертки	" 7 табл. 1	5.10
9) Проверка скорости развертки	" 8 табл. 1	5.11

Table 3 continued

10) Проверка номинальной частоты синхронизации	" 9 табл. 1	5.12
11) Проверка выходного сопротивления	" 10. табл. 1	5.13
12) Проверка уровней выходного сигнала	" 11 табл. 1	5.14
13) Проверка напряжений питания и работоспособности при изменении питающих напряжений	" 12 табл. 1; Item п. 2.4	5.15
14) Проверка потребляемой мощности	" 13 табл. 1	5.16
15) Проверка возможности контроля напряжений в аппаратуре	2.3	5.19
16) Проверка работы элементов автоматики	2.5	5.20

Key to Table 3: a) Forms of checks; b) Items of technical requirements; c) Items of methods of tests; 1) Check of the conformity to standards, drawings and technical documentation, completeness of the set and marking; 2) Check of scanning pitch; 3) Check of useful length of line; 4) Check of the drawing [pulling] with transmission of the maximal recording blank; 5) Check of mechanical swingings; 6) Check of efficiency of the apparatus; 7) Check of resoulution; 8) Check of constancy of current of FEU along the scanning line; 9) Check of the scanning rate; 10) Check of the nominal synchronization frequency; 11) Check of output impedance; 12) Check of levels of output signal; 13) Check of voltages of power supply and efficiency in a change of the feed voltages; 14) Check of the consumable power; 15) Check of the possibility of monitoring of voltages in the apparatus; 16) Check of operation of elements of automatics.

4.4.2. Each apparatus should pass a 24-hour running test before the acceptance tests.

4.4.3. If in the process of the tests a noncompliance is discovered, even if relating to one of the items of Table 3, the apparatus is rejected.

Repeated tests of the apparatus are conducted in full volume of the acceptance tests after eliminating the defects. On agreement with a representative of technical inspection or the customer, the repeated tests can be conducted only with respect to items of

nonconformity.

4.5. Periodic tests.

4.5.1. Periodic tests are given to one apparatus which passed the acceptance tests not less than once a year in the volume and sequence indicated in Table 4.

Table 4

1) Виды проверок	2) Пункты технических требований	3) Пункты методов испытаний
Проверка на соответствие пунктам табл. 3 4)		
Проверка стабильности частоты синхронизации и ее регулировки 5)	14, 15 табл. 1	5.17
Проверка массы 6)	16 табл. 1	5.18
Климатические испытания 7)	2.6	5.21; 5.22; 5.23
Проверка на транспортирование 8)	2.7	5.24

Key: 1) Kinds of checks; 2) Items of technical requirements; 3) Items of methods of tests; 4) Check for conformity to items of Table 3; 5) Check of stability of synchronization frequency and its control; 6) Check of weight; 7) Climatic tests; 8) Check for transporting.

4.5.2. When unsatisfactory results of the tests are obtained, even if with respect to one of the items of Table 4, repeated tests of double the number of apparatuses are conducted.

With unsatisfactory results of repeated tests, the whole represented lot is rejected.

The possibility of further production of the apparatuses is solved by a representative of the customer and manufacturing representative.

4.6. Standard tests.

4.6.1. The apparatuses undergo standard tests when there are changes in the schematic diagram, design, materials, and industrial processes affecting the parameters of the apparatuses.

The program of the tests and quantity of models for the tests

are established by the manufacturer jointly with a representative of the customer.

4.7. Tests for reliability.

4.7.1. Reliability tests are given to two apparatuses which passed the acceptance tests not less than once during three years.

5. Methods of the tests

5.1. Tests in the description of which there are no special instructions are conducted in normal climatic conditions:

at a temperature of 25±10°C, relative humidity of 65±15% and atmospheric pressure of 750±30 mm Hg and rated voltage of power supply.

5.2. In cases requiring a check in the efficiency of the apparatus by the method of recording of the test pattern 0159K-12, a recording is produced on the receiver FAK-P.

5.3. Check for conformity to requirements of items 2.1, 2.2, 3.1, 6.1, and 6.2 and by external inspection and comparison with drawings.

5.4. Check for conformity to requirements of item 1 of Table 1 in the following way:

apply two horizontal lines 265 mm from each other onto the recording blank [disc]. Load the blank into the apparatus and record the location of the first reference line on the apparatus.

Then at the same time turn on the power and stopwatch.

When the second reference line is joined with the recorded location of the first reference line, stop the stopwatch.

The feed δ is determined from the formula:

$$\delta = \frac{265}{V \cdot t},$$

where:

t is the time in seconds [s]; and v is the rate of operation of the apparatus equal to the number of lines of scanning per second.

5.5. Check for conformity to requirements of item 2 of Table 1 in the following way.

Apply a horizontal line 456 mm long onto the recording blank, and on one end of the line apply a sector equal to an allowance of 4 mm.

The recording blank is loaded into the apparatus so that the beginning of the line is combined with the beginning of the movement of the white spot. If the end of the path of the white spot lies in the sector of allowance, this means that the apparatus satisfies the given item.

5.6. Check for conformity to requirements of item 3 of Table 1 in the following way.

Place the rectangular sheet of paper not less than 1000 mm long under the drawing rollers.

Draw the paper manually so that the upper and lower edges of the sheet are even, then return by the pressing rollers the sheet of paper to the initial position.

Turn on the apparatus, motor and feed.

Upon completion of the drawing of the recording blank for a length of 700 mm, turn off the feed and with a scale ruler measure the skewness of the blank with respect to any of the edges.

5.7. Check for conformity to requirements of item 4 of Table 1 by a recording on apparatus FAK-P of the complete blank with a number of parallel lines or two test patterns 0159K-12 magnified two times with the subsequent measurement on an instrumental microscope at several arbitrarily selected places of magnitudes of the most noticeable standard overshoots. The magnitude of the swingings is determined as the arithmethic mean of results of 10-15 arbitrary measurements of the overshoots. The magnitude of the overshoots in each measurement is considered half of the distance from the projection to the depression of the overshoots.

5.8. Check for conformity to requirements of item 5 of Table 1 in the following way.

Connect the output of the apparatus "Provod" [Wire], with the level indicator the input impedance of which equals 600 Ohms.

Turn on the toggle switch "line" in the apparatus and level indicator.

Adjust the normals "black" and "white".

Read on the level indicator the drop in levels from black and white field at the appropriate positions of the toggle switches switching the discriminator of the apparatus.

Connect the outputs of "Radio" and "Provod" [Wire] of the transmitting apparatus with inputs of two receivers of the FAK-P type, and after a tuning of the apparatuses transfer the test patterns in the modes indicated in item 5 of Table 1, according to which the clearness of the recording is defined.

5.9. Check for conformity to requirements of item 6 of Table 1 without a communications channel in the following way.

Measure by a tube voltmeter the voltage on the load of the FEU with passage of the light spot of line "1000" on the test pattern 0159K-12 magnified twice, and the voltage should vary by not less than two times. The light spot is moved manually.

Make a recording of the test pattern 0159K-12 magnified two-fold with the rate of the transmitter of 60 lines/min and of the receiver of type FAK-P of 120 lines/min.

Lines with the number "900" should be distinguishable on the recorded copy.

Make a recording of the test pattern 0159K-12 magnified two-fold at a rate of 120 lines/min. Lines with the number "700" should be distinguishable on the recorded copy.

5.10. Check for conformity to requirements of item 7 of Table 1 by a tube voltmeter connected to a load impedance of the FEU. By smoothly moving the light spot along the whole useful part of the line according to the uniform white field of the recording blank, fix the position of the voltmeter needle.

When at separate points there are overshoots higher than the allowance, it is necessary to move the blank, having excluded thereby the possible nonuniformity of the field of the blank.

5.11. Check for conformity to requirements of item 8 of Table 1 by an external inspection and switching of the toggle switch of rates to positions 60, 90 and 120.

5.12. Check for conformity to requirements of item 9 of Table 1 in

the following way.

Record test patterns with the joint operation with the receiver of type FAK-P at rates of 60, 90 and 120 lines/min with a change in the voltage of the feeding line at ±10% of the rated value.

Make a three to four-fold inclusion of the motor of the transmitter with a change in the line by ±10% with respect to the rated value.

Check the efficiency of the apparatus from an external stable source of 1200 Hz with a voltage of 1 V to 2.5 V connected to the appropriate terminals of the apparatus with switching of the toggle switch on the stabilization unit to position "Vneshnyaya sinkhronizatsiya" [External synchronization].

5.13. Check for conformity to requirements of item 10 of Table 1 by means of a bridge for measuring the total resistances or by any other method which allows taking measurements with an accuracy of ±5%.

The measurements are taken under the following conditions:

at frequencies of the normals - in the modes "Radio" and "Wire";

the level of the voltage being fed to the measureable terminals of the transmitter must be the same as the rated value of the output level of voltage of the apparatus under condition of measurement by the bridge for measuring the total resistances;

with the scanning turned off with respect to the line and feed.

The result of the measurement is determined by calculation according to the formulas given in the certificate of the bridge.

5.14. Check for conformity to requirements of item 11 of Table 1 by means of the level indicator with the input impedance of 600 Ohms or by a tube voltmeter of alternating current with an error of ±4%, and the output contacts of the apparatus "Radio" and "Wire" must be loaded for the resistance of 600±60 Ohms.

Check for conformity to requirements of item 12 of Table 1 and item 2.4 with the joint operation with the receiver FAK-P.

Connect the transmitter through the autotransformer to the line indicated in item 12 of Table 1. Measure the voltage of the line

by a voltmeter of alternating current with limits of measurement (0-300) V of the class 0.5.

After recording the test patterns in the power modes indicated in item 12 of Table 1 and item 2.4, make a comparison of the copies with each other and the original. The quality of the transmission with a change in the line (voltage) should not deteriorate. The frequency of the feeding line voltage must not affect the quality of the recording.

5.16. Check for the conformity to requirements of item 13 of Table 1 by measuring the consumable power of the apparatus by any of the existing methods which allow taking a measurement with an accuracy of ±5%.

5.17. Check for the conformity to requirements of items 14 and 15 of Table 1 under the following conditions:

a) determine the nominal value of the frequency of the tuning-fork oscillator after switching the apparatus into the line for two hours;

b) determine the rating of frequency of the tuning-fork oscillator by means of an oscillographic measurement and comparison with the standard frequency of 1000 Hz (or other) obtained from the bay of the secondary standard of frequency being checked by signals from the All-Union Scientific Research Institute of Metrology (VNIIM);

c) with a check of the tuning-fork oscillator, in the apparatus itself a preliminary fine tuning of its nominal value of frequency is allowed;

d) measure the change in the synchronization frequency with a change in temperature of the ambient in the interval from +5°C to +50°C with a test of the equipment for the cold and thermal stability by the method of the comparison with the secondary standard of frequency;

e) check the frequency stability with a change in the voltage of power supply sources at ±10% with respect to the nominal value at a normal ambient temperature by measuring the frequency by the method described above.

Compute the stability of frequency β from the formula:

$$\beta = \frac{\Delta f_{max}}{f},$$

where Δf_{max} is the measured maximum frequency drift of the oscillator with respect to its nominal value of frequency f_0, in Hz;

f) check the limits of control of the frequency of the tuning-fork oscillator by the method of measuring the frequency of extreme positions of the regulator of frequency.

5.18. Check for the conformity to requirements of item 16 of Table 1 by means of weighing the apparatus on scales with an accuracy of ±1 kg.

5.19. Check for conformity to requirements of item 2.3 by turning the meter of the apparatus. In all the modes the needle of the instrument should be within the red sector.

Check of the dc voltages must be made by a voltmeter (dc) of a class not lower than 2.5 with the input impedance not lower than 10,000 Ohms/V of the scale.

5.20. Check for conformity to requirements of item 2.5 under conditions of a combined operation of the transmitting and receiving apparatuses.

Monitor the output of signals of automatic control on the screen of the oscillograph.

Measure the duration of the output of the signals by a stopwatch. Item 2.5 is considered carried out if provided in the serviceable receiving apparatus FAK-$\overset{are}{P_A}$ the automatic selection of the index, the selection of rate, start of the motor, phasing, and stopping of the motor of the receiving apparatus.

Before turning on the illuminator, the drawing of the recording blank up to 2 mm is permitted.

5.21. Conduct tests for conformity to requirements of item 2.6a in the following way:

place the apparatus into a humidity chamber, and turn on and check the efficiency by the method of recording of the test pattern. Turn the apparatus off. In the chamber create a relative humidity of 95-98% at a temperature of +40±2°C and keep the apparatus in this

mode for 48 hours. After holding the apparatus for six hours in normal conditions, check the efficiency by the method of recording of the test pattern.

The fine tuning of frequencies of the normals [standards] is permitted. Perform an external inspection.

5.22. Conduct tests for conformity to requirements of item 2.6b in the following way.

Put the apparatus in a cold chamber, turn it on, and check the efficiency by the method of recording of the test pattern under normal conditions.

Measure the synchronization frequency. Establish in the chamber an operating temperature of $+5\pm2^{\circ}C$, keep the apparatus with the electric motor turned on and feed turned off for 6 hours; then check the efficiency by the method of recording of the test pattern and measure the synchronization frequency.

Turn off the apparatus. In the chamber create a temperature of $-50\pm2^{\circ}C$ and keep the apparatus here for two hours. Raise the temperature in the chamber to the normal, keep the apparatus at this temperature for four hours, and turn on the apparatus and check the efficiency by the method of recording of the test pattern. Perform tuning of the "white" frequency after a 10-minute turning on of the illuminator. Fine tuning of frequencies of the normals is permitted.

5.23. Perform tests for conformity to requirements of item 2.6c in the following way:

Put the apparatus into a heat chamber, turn it on, and check the efficiency by the method of recording of the test pattern in normal conditions.

Measure the synchronization frequency.

In the chamber create a temperature of $+50\pm2^{\circ}C$, and keep the apparatus at this temperature for 10 hours with the electric motor turned on and feed turned off. Signals from a stationary test pattern must be issued into the line.

After the holding, check the efficiency of the apparatus by the method of recording of the test pattern and measure the synchronization frequency.

Turn off the apparatus. In the chamber create conditions of +65+2°C and hold the apparatus here for four hours. Then lower the temperature in the chamber down to the normal, hold it for four hours and check the efficiency by the method of recording of the test pattern.

5.24. Check for conformity to requirements of item 2.7 by means of transporting of the packed apparatus in a truck for a distance of 200 km ±5% over dirt or country roads as a speed of 25-30 km/h.

The apparatus in packed form must be attached to the body of the truck and protected from atmospheric precipitation entering directly into it.

Before the transporting, the apparatus must be checked for efficiency by means of the combined operation with the receiver of the FAK-P type.

After the transporting and a 4-hour holding in normal condtions in packed form and a 2-hour holding without packing, perform an external inspection and check of the efficiency. Check the efficiency by means of transmission and reception of the test pattern at three rates of 60, 90 and 120 lines/min and feeds of 0.265 mm/line and 0.530 mm/line.

5.24.[sic] Check for conformity to requirements of item 1.7 of Table 1 according to GOST 13216-67.

6. Marking, packing, transporting, and storing

6.1. On each apparatus the following must be indicated:

trade mark of manufacturer; type of apparatus; serial number and year of manufacture; number of present standard; State Mark of Quality according to GOST 1.9-67.

6.2. All the accompanying documentation must contain the drawing of the State Mark of Quality according to GOST 1.9-67.

6.3. Place the apparatus packed in a jacket of artificial leather according to GOST 9236-59, the instrument, accessories, technical documentation, and packing sheet into a plank nonsectional box according to GOST 2991-69 lined on the inside with roofing parchment paper according to GOST 2697-64.

Packing must ensure the safety of the apparatus during the transporting.

6.4. Put a platform for the packing of the apparatus into the plank nonsectional box according to GOST 2991-69.

Perform marking of the trasport container according to GOST 14192-69.

6.5. The weight of the box with the apparatus must not be more than 180 kg.

6.6. Transporting of the compete set of the apparatus must be done by railroad or truck with a secure attachment of the packing box in the body of the truck or platform.

When transporting the apparatus on open platforms [flat cars] and trucks, the protection of the apparatus from atmospheric precipitation must be provided.

6.7. The apparatus in the packed form must be stored in closed warehouse rooms at a temperature of 5°C to 30°C and relative humidity of up to 80% with the absence in the surrounding air of dust, vapors of acids or alkali and other active substances causing corrosion.

7. Manufacturer's warranty

7.1. The manufacturer must guarantee the compliance of the apparatuses to requirements of this standard when the user observes conditions of operation (use), transporting and storage established by this standard.

The warranted period is established at 18 months from the day put into operation but not more than 30 months from time the consignee receives the apparatus.

RECEIVING FACSIMILE APPARATUS FAK-P

GOST 5.1043-71

Quality Requirements for Certified Production

By decree of the State Committee of Standards of the Council of Ministers of the USSR from 18 August 1971, No. 1450. Period of putting into service is from 1 December 1971.

This standard applies to the receiving facsimile apparatus FAK-P designed for the reception of weather charts, weather forecasts, text material, and back and white images [photos] with reproduction onto electrochemical paper.

The State Mark of Quality has been conferred on the apparatus FAK-P.

1. Basic parameters and dimensions

1.1. The basic parameters and dimensions of the apparatus must correspond to those given in Table 1.

Table 1.

a) Параметры	b) Норма
1. Скорость развертки, строк/мин	60; 90; 120
2. Шаг подачи, мм/строк (допустимые отклонения ±1%)	0,265; 0,530
3. Индекс взаимодействия	576; 288

[Table 1 continued on next page.]

a) Параметры	b) Нормы
4. Полезная длина строки, мм, не менее	476
5. Неравномерность оптической плотности, относительные единицы, не более	±0,1
6. Качание развертывающей системы, мм, не более	±0,13
7. Входное сопротивление, Ом	600±90
8. Максимальный ток записи, мА, не менее	180
9. Разрешающая способность в направлении развертки в режиме АЧМ с нормалями девиации 2000—2600 Гц при скорости развертки 120 строк/мин и в режиме ЧМ с нормалями девиации 1500—2300 Гц при скорости развертки 120 строк/мин, лин/мм, не менее	3,8
10. Регулировка частоты синхронизации, % относительно номинального значения 1200 Гц, не менее	±0,003
11. Напряжение питания сети переменного тока, В: частотой 50 Гц частотой 400 Гц	127; 220 115
2. Потребляемая мощность, ВА, не более	200
3. Масса аппарата, кг, не более	95

Key to Table 1: a) Parameters; b) Standards; 1. Scanning rate, lines/ /min; 2. Feed pitch, mm/line (permissible deviations of ±1%); 3. Index of interaction; 4. Useful length of the line, in mm, not less than; 5. Nonuniformity of optical density, relative units, not more than; 6. Swinging of scanning system, mm, not more than; 7. Input impedance; 8. Maximum current of recording, mA, not less than; 9. Resolution in direction of scanning in mode AFM with normals of deviation of 2000- -2600 Hz at a scanning rate of 120 lines/min, lines/mm, not less than; 10. Control of synchronization frequency, in %, with respect to the nominal value of 1200 Hz, not less than; 11. Line power voltage of alternating current, V: at frequency of 50 Hz and frequency of 400 Hz; 12. Consumed power, VA, not more than; 13. Weight of apparatus, kg, not more than.

2. Technical requirements

2.1. The receiving facsimile apparatus FAK-P must be used in conformity with requirements of this standard according to drawings and other technical documentation confirmed in established order.

2.2. The quality of the materials and articles making up the complete set must conform to the acting standards and technical documentation confirmed in established order.

2.3. The recording must be done on electrochemical paper EKhB-6 in reels with these dimensions: length, $489 \pm \frac{1}{2}$, and diameter, not more than 60 mm. It is permitted to use paper EKhB-4 with the same dimensions.

2.4. The apparatus must provide for the reception of signals along wire channels by the method of AM and AFM with a level of -17 dB to +17 dB and normals of deviation of 2000 Hz - black field, 2600 Hz - white field, with the depth of modulation of 25 dB, and also with a depth of modulation of 12 dB.

2.5. The apparatus must provide for the reception of signals by the FM method with a level of -34 dB to +17 dB and normals of deviation of 1500 Hz - black field, and 2300 Hz - white field.

2.6. The amplitude characteristic of the recording amplifier without limitation with respect to the minimum must be linear within 10 mA to 150 mA with an allowance of ±15%.

2.7. The apparatus must ensure manual and automatic operation jointly with the transmitting apparatus, which has signals of remote control given in Table 2.

Table 2

a) Назначение сигнала	b) Характеристика сигналов дистанционного управления
1. Выбор индекса взаимодействия	в) 5-секундное чередование сигналов «черного» и «белого» на частотах: 300 Гц для индекса 576 675 Гц для индекса 288

[Table 2 and key continued on next page.]

a) Назначение сигнала	b) Характеристика сигналов дистанционного управления
2. Выбор скорости и фазирование	2b. 30-секундное чередование сигналов «черного» и «белого» на следующих частотах: 2c) 1 Гц для скорости 60 строк/мин, 1,5 Гц для скорости 90 строк/мин, 2 Гц для скорости 120 строк/мин. 2d) Форма сигналов должна быть асимметричной: 95% длительности строки — сигналы «черного» и 5% — сигналы «белого». 2e) Передний фронт сигналов «белого» должен соответствовать по фазе началу развертки нерабочей части строки
3. Нерабочая часть строки	3b. Передача сигналов «белого» длительностью 5% строки
4. Остановка двигателя	4b. 5-секундное чередование сигналов «черного» и «белого» с частотой 450 Гц, а затем 10-секундная передача сигналов «черного»

Key to Table 2: a) Designation of the signal; b) Characteristic of signals of remote control; 1. Selection of the index of interaction; 1b. 5-second alternation of signals "black" and "white" at frequencies: 300 Hz for index 576, 675 Hz for index 288; 2. Selection of rate and phasing; 2b. 30-second alternation of signals "black" and "white" at following frequencies: 2c. 1 Hz for a rate of 60 lines/min, 1.5 Hz for a rate of 90 lines/min, and 2 Hz for a rate of 120 " / "; 2d. Shape of signals must be asymmetric: 95% of length of the line - signals of "black" and 5% - signals of "white"; 2e. Leading edge of signals of the "white" field must correspond in phase to the beginning of the scanning of the nonoperating part of the line; 3. Nonoperating part of the line; 3b. Transmission of signals of "white" field with a length of 5% of the line; 4. Stopping of the motor; 4b. 5-second alternation of signals of the "black" and "white" fields with frequency of 450 Hz and then a 10-second transmission of signals of "black" field.

Notes: 1. Permissible deviations of the values given above are the following: for time intervals, ±5%, and for frequencies, ±1%. 2. The envelopes of the transmitted signals must be similar in shape to rectangular [square]. 3. In the automatic mode of operation, the relative magnitude of the failures in the selection of the index, rate and phase must not be more than 1/20.

2.8 The apparatus must maintain efficiency with a change in the power line voltage at -15% and +10% with respect to the rated value.

2.9. The apparatus must operate stably after staying for two days under conditions of relative humidity of the air of 95-98% at a temperature of $40\pm2^{\circ}C$.

2.10. The apparatus must operate stably: a) at a temperature of $5\pm2^{\circ}C$ and after exposure at a temperature of $-50\pm2^{\circ}C$ for two hours; b) at a temperature of $50\pm2^{\circ}C$ and after exposure at a temperature of $65\pm2^{\circ}C$ for two hours.

2.11. The apparatus must be efficient after the action of shock loads - 2000 shocks with an acceleration of 15 g; duration of the pulse is 5-10 ms.

2.12. The apparatus must be efficient after a test for 30 minutes for vibration stability at one frequency lying within 20-25 Hz at an acceleration of 2 g.

2.13. The mean time between failures of the apparatus must be not less than 300 hours.

3. Completeness of the unit

3.1. The following must be included in making up the complete set of the apparatus: the apparatus FAK-P - 1 item; portable table - 1 item; shock-absorption frame of the apparatus - 2 items; shock--absorption frame of power supply unit - 2 items; connecting cable - 1 item; electrical connector [socket] - 1 item; instrument kit and accessories - 1 item; kit of operational documents - 1 item.
Note: Variants of the deliveryof the apparatus with installation on a table or framework are coordinated with the customer.

4. Acceptance rules

4.1. The apparatus must be accepted by the technical control of the manufacturer in conformity with requirements of this standard and technical documentation confirmed in established order.

4.2. To check for the conformity to requirements of this standard, drawings and technical documentation, the apparatus undergoes acceptance, periodic, standard, and reliability tests.

4.3. Each apparatus undergoes the acceptance tests in volume and in the sequence indicated in Table 3.

Table 3

1) Виды проверок	Пункты технических требований 2)	Пункты методов испытаний 3)
4) Проверка соответствия стандартам, чертежам и технической документации, комплектности и маркировки	2.1; 2.2; 3.1; 6.1; 6.2	5.2
5) Проверка полезной длины строки	4 табл. 1 (3)	5.4
6) Проверка качаний развертывающей системы	6 табл. 1 (3)	5.6
7) Проверка входного сопротивления	7 табл. 1 (3)	5.7
8) Проверка разрешающей способности	9 табл. 1 (3)	5.9
9) Проверка напряжения питания	11 табл. 1; 2.8 (3)	5.11
10) Проверка приема АМ—АЧМ сигналов	2.4	5.13
11) Проверка приема ЧМ сигналов	2.5	5.14
12) Проверка автоматической работы	2.7	5.15

Key: 1) Forms of checks; 2) Items of technical requirements; 3) Items of methods of tests; 4) Check of the conformity to standards, drawings and technical documentation, completeness of the set, and marking; 5) Check of useful length of the line; 6) Check of swingings of scanning system; 7) Check of input impedance; 8) Check of resolution; 9) Check of power fedd voltage; 10) Check of reception of AM-AFM signals; 11) Check of reception of FM signals; 12) Check of automatic operation; 13) of Table 1.

4.4. Upon detection of a noncompliance, even if by just one of the items of Table 3, the apparatus is rejected.

Repeated tests of the apparatus are performed after eliminating the defects in the complete volume of the acceptance tests. On agreement with a representative of the customer, repeated tests can be conducted only with respect to the items of noncompliance.

4.5. Two apparatuses which passed the acceptance tests undergo periodic tests not less than once a year. The volume and sequence of the tests are indicated in Table 4.

Selection of the models is conducted by the method of random sampling.

Table 4

1) Виды проверок	Пункты технических требований 2)	Пункты методов испытаний 3)
Проверка на соответствие пунктам табл. 3 4)		
Проверка скорости развертки 5)	1. табл. 1 6)	5.2
Проверка шага подачи и индекса взаимодействия 7)	2 и 3 табл. 1 8) 6)	5.3
Проверка неравномерности оптической плотности 9)	5 табл. 1 6)	5.5
Проверка регулировки частоты синхронизации 10)	10 табл. 1 6)	5.10
Проверка потребляемой мощности 11)	12 табл. 1 6)	5.12
Проверка применения ЭХБ 12)	2.3	5.2
Проверка амплитудной характеристики и максимального тока записи 13)	2.6; 8 табл. 1 6)	5.8
Климатические испытания 14)	2.9; 2.10	5.16; 5.17
Механические испытания 15)	2.11; 2.12	5.18; 5.19
Проверка массы 16)	13 табл. 1 6)	5.21

Key: 1) Kinds of checks; 2) Items of technical requirements; 3) Items of methods of tests; 4) Check for conformity to items of Table 3; 5) Check of scanning rate; 6) of Table 1; 7) Check of the pitch [step] of the feed and interaction index; 8) and; 9) Check of nonuniformity of optical density; 10) Check of control of synchronization frequency; 11) Check of consumable power; 12) Check of use of EKhB [Electrochemical paper]; 13) Check of amplitude characteristic and maximal recording current; 14) Climatic tests; 15) Mechanical tests; 16) Check of weight.

4.6. When obtaining unsatisfactory results, even if with respect to one of the items of Table 4, conduct repeated tests of double the number of apparatuses.

When the results of the repeated tests are unsatisfactory, reject the whole lot.

The question of the further production of the apparatuses is solved by the manufacturer and representative of the customer.

4.7. The apparatuses undergo the standard tests when there is a change in the schematic diagram, design, materials, and industrial processes which affect the parameters of the apparatuses.

The program of the tests and quantity of specimens for the tests are established jointly by the manufacturer with a representative of the customer.

4.8. Two apparatuses which passed the acceptance tests undergo reliability tests not less than once in three years.

5. Methods of tests

5.1. Conduct all the tests, if it is not stipulated otherwise in their description, under normal climatic conditions: at a temperature of 25±10°C, relative air humidity of 65±15% and atmospheric pressure of 750±30 mm Hg and at the rated power supply voltage.

5.2. Check for the conformity to requirements of item 1 of Table 1 and items 2.1, 2.2, 2.3, 3.1, 6.1, and 6.2 by an external inspection and measurement of the rule with an accuracy of up to ±1 mm.

5.3. Check for the conformity to requirements of items 2 and 3 of Table 1 by measuring the diameter of the extended roller and calculation of the step of the feed δ according to the formula

$$\delta = \pi d i,$$

where

δ is the magnitude of the feed in mm on one turn of the cylinder; d - diameter of the extended roller, mm; i - gear ratio from the cylinder to the extended roller.

5.4. Check for the conformity to requirements of item 4 of Table 1 by measuring the width of the recording of the uniform field with a rule correct to ±1 mm in the mode "Proverka" [Check] at a rate of 120 lines/min slowly after the recording.

5.5. Check for the conformity to requirements of item 5 of Table 1 by measuring at three points the density of the recorded uniform field by a densiometer with an error of ±0.05 on a dried blank. Perform the recording of the field at a rate of 60 lines/min and on the step of the feed of 0.265 mm/line by signals with a frequency of 2000 Hz from the audio-frequency oscillator with an output impedance of 600 ohms. Set the current of the recording at 65-75 mA.

5.6. Check for the conformity to requirements of item 6 of Table 1 by the method of recording in the AFM mode and manual control of a

number of lines perpendicular to the scanning by signals from the transmitting apparatus or device synchronized by the frequency of the tuning-fork oscillator of the apparatus with the subsequent measurement on an instrumental microscope with a measuring accuracy of 0.05 of several magnitudes of the most noticeable overshoots. The magnitude of the swingings is determined as the arithmetic mean of results of 3-5 measurements.

5.7. Check for the conformity to requirements of item 7 of Table 1 at a frequency of 1000 Hz by a level of the signal 0 dB by the method of substitution or any method which ensures the accuracy of the measurement of ±5%.

5.8. Check for the conformity to requirements of item 8 of Table 1 and item 2.6 with the stopped motor in the AM mode, manual control and in the position of switch of rates of 120 lines/min. Feed signals with a frequency of 2000 Hz and level of 0 dB to the input of the apparatus from the audio-frequency oscillator with an output impedance of 600 ohms. Set the regulator of the "white" (field) at the zero position. Set by the regulator of the "black" (field), on an external instrument, the recording current of 150 mA, and then decrease by steps the input signal and measure the recording current of 10 mA. From the results of the measurements construct an amplitude characteristic, which should not be distinguished from a straight line connecting the points with points of the recording of 10 mA and 150 mA by more than ±15%.

By increasing the current of the recording by the regulator of "black" (field), check the maximal value of the current.

Check for conformity to requirements of item 9 of Table 1 in the combined operation with the transmitting apparatus FAK-DM in the direct connection in the mode of manual operation by means of a visual definition of the resolution with respect to the test pattern 0159K-12 recorded by the receiving apparatus:

a) in the AFM mode with the recording of the test pattern with normals of deviation of 2000-2600 Hz, depth of modulation of 25 dB and at a rate of 120 lines/min;

b) in the FM mode with recording of the test pattern with normals of deviation of 1500-2300 Hz, depth of modulation of 25 dB and at a

rate of 60 lines/min. Produce a recording of the test pattern from one copy in each operating mode.

5.10. Check for conformity to requirements of item 10 of Table 1 by measuring the maximal and minimal values of the synchronization frequency by the method of comparison with the frequency of the secondary standard with a change in the position of the regulator of the tuning-fork oscillator.

5.11. Check for conformity to requirements of item 11 of Table 1 and item 2.8 with power feed from the line voltage of 127/220 V with a frequency of 50 Hz and voltage of 115 V with a frequency of 400 Hz in the automatic mode in a joint operation with the transmitting device FAK-DM by the method of the three-fold starting and stopping of the receiving apparatus by signals of automatic control at rates of 60, 90 and 120 lines/min and by the method of recording of the test pattern 0159K-12 in the AFM mode. Make changes in the power feed voltages by an autotransformer at ±10%. With a decrease in the power feed voltage from a -15% to a +10%, manual control must be carried out by a switch of the power feed voltage. The selection of the index, rate, start, phasing, and stopping of the motor must be accomplished automatically.

5.12. Check for conformity to requirements of item 12 of Table 1 by measuring the consumed power by an ammeter and voltmeter in the automatic mode at a rate of 120 lines/min with the recording of the uniform field by current of 150 mA and of power feed by voltage of 127/220 V with a frequency of 50 Hz and voltage of 115 V with a frequency of 400 Hz or by any method which ensures the accuracy of the measurement of ±5%.

5.13. Check for conformity to requirements of item 2.4 in the joint operation in the manual mode of AM with the transmitter FAK-DM tuned to normals of deviation of 2000-2600 Hz. Set the level of the "black" signal at the input of apparatus FAK-P equal to a +17 dB and then a +17 dB, and monitor on a level indicator of any type with an input impedance of 600 ohms. The operating rate is 120 lines/min. Set the recording current of 120 mA by the toggle switch "recording current" and potentiometer "Regulirovka-Chernoye" [Control-Black]. Produce the recording of the test pattern 0159K-12 with the depth of

modulation of the input signal of 25 dB and 12 dB measured by the level indicator.

With the depth of the modulation of the input signal of 12 dB, perform the control [adjustment] of the "white" by the potentiometer "Regulirovka Beloye" [Control-White] and "black" by the potentiometer "Regulirovka Chernoye" [Control-Black] in order to provide a recording of the test pattern on the white background of the paper.

5.14. Check for conformity to requirements of item 2.5 with the combined operation in the FM mode, the disconnected [turned-off] band filter PF1-2.8 kHz, manual control with the transmitter tuned to normals of deviation of 1500-2300 Hz, and depth of modulation of 25 dB.

Feed the signal "Black" with a level of -34 dB from the transmitter through the attenuator into the input of the apparatus FAK-P. The operating rate is 60 lines/min.

By the contol knob of "Black" set the current of the recording of 90 mA on the equivalent resistor R84 (motor is stopped). Check the recording current on an instrument on the control panel. Then increase the input level up to the +17 dB and check the recording current, which should not be more than ±10% different from the established current. Then make a recording of the test pattern at the input levels of +17 dB and -34 dB.

Check the change in the recording current from the change in the input level by the feed of signals either from the transmitter or audio-frequency oscillator with an output impedance of 600 ohms with a frequency of 1500 Hz and levels of +17 dB and -34 dB.

5.15. Check for conformity to requirements of item 2.7 with the joint operation with the transmitter, which has signals of remote control given in Table 2, the nominal power feed voltage and with its change ±10%.

Feed signals with levels from a -17 dB to a +17 dB in modes AM and AFM and from -34 dB to -17 dB in the FM mode to the input of the apparatus.

With manual control check the index setting, switching of the rates (motor is stopped), starting of the motor, the turning on and

turning off of the accelerated drawing through of the paper, and and stopping of the motor.

With automatic control, signals of remote control with the levels given above are fed to the input of the apparatus, and the current of the recording of the "black" (field) is regulated.

Turn on the receiving apparatus and in the receiver check for the correctness of the selection of the index, the selection of rate, the start of the motor, the presence of the automatic accelerated drawing of the paper and possibility of turning it off, and the presence of automatic phasing. Turn off the motor of the transmitter and check the stopping of the motor of the receiver. Perform a threefold starting and stopping of the motor of the transmitter at each rate, and in the written recording blank check the accuracy of the apparatus of the cophased position by measurement by a scaled rule of the magnitude of the maximal and minimal deviation from the perpendicular to the line of the beginning of the phase signal. Check the turning on and turning off of the automatic drawing of the paper.

5.16. Check for conformity to requirements of item 2.9 in the following way. Put the apparatus into the humidity chamber and turn it on. After 15 minutes check the efficiency of the apparatus in the combined operation with the transmitter FAK-DM in the FM and AFM modes with automatic control by the method of recording of the test pattern 0159K-12 with respect to one model at each rate. Turn off the apparatus.

In the chamber create a relative humidity of 95-98% at a temperature of $+40\pm2^{\circ}$C and keep the apparatus in it for two days. Turn on the apparatus and after a heating up of 15 minutes check the efficiency of the apparatus by the method of recording of the test pattern.

After holding the apparatus for six hours under normal conditions, check the efficiency of it by the method of recording of the test pattern.

5.17. Check for conformity to requirements of item 2.10a in the following manner.

Put the apparatus into the cold chamber and after heating it up for 30 minutes check the efficiency of the apparatus in the joint operation with the transmitter FAK-DM by the method of recording of the test pattern 0159K-12 with respect to one model at each rate with automatic control in the AFM and FM modes.

Turn off the apparatus. In the chamber lower the temperature down to $+5\pm2^{\circ}C$, keep it there for two hours, turn on the apparatus, and after a 30-minute warmup check the efficiency of the apparatus by the method of the recording of the test pattern.

Turn off the apparatus. In the chamber lower the temperature down to a $-50\pm2^{\circ}C$, and hold it for two hours. Raise the temperature in the chamber to the normal and keep the apparatus there for four hours. Turn on the apparatus, and after a 30-min. warmup check the efficiency by the method of a test pattern recording.

Check for conformity to requirements of item 2.10b in the following manner.

Put the apparatus into the heat chamber, turn it on, and after a 30-min. warmup check the efficiency of the apparatus in the joint operation with the transmitter FAK-DM by the method of recording of the test pattern 0159K-12 with respect to one model at each rate with automatic control in the FM and AFM modes.

Turn off the apparatus. In the chamber raise the temperature to $+50\pm2^{\circ}C$, hold it there for three hours, turn on the apparatus, and after a 30-min. warmup check its efficiency by the method of test pattern recording.

Turn off the apparatus. In the chamber raise the temperature to $+65\pm2^{\circ}C$, and hold it there for two hours. Then lower the temepature down to the normal, and hold it there for four hours. Turn the apparatus on, and after a 30-min. warmup check the efficiency by the method of test pattern recording.

5.18. Check for conformity to requirements of item 2.11 in the following way: check the efficiency of the apparatus by the method of test pattern recording 0159K-12 in the joint operation with the transmitter FAK-DM in the FM and AFM modes with respect to one model at rates of 60, 90 and 120 lines/min with automatic operation.

Perform an external inspection of the apparatus.

Set the apparatus and feeding device separately onto the impact stand in an operating position, and secure it with clamps, which provide a reliable fastening to the platform.

Conduct the tests. After the tests are completed, perform an external inspection of the apparatus, its modules and feeding device for the purpose of revealing mechanical damages.

Turn on the apparatus and check the efficiency by the method of test pattern recording.

5.19. Check for conformity to requirements of item 2.12 in the following way.

Perform an external inspection of the apparatus.

Check the efficiency by the method of test pattern recording 0159K-12 in the joint operation with the transmitter FAK-DM at rates of 60, 90 and 120 lines/min with automatic operation in the FM and AFM modes.

Rigidly fasten the apparatus and feeding device to the platform of the test stand in the operating position. Perform the tests.

After the tests are completed, make an external inspection for the purpose of revealing mechanical damages. Turn on the apparatus and check the efficiency by the test pattern recording method.

5.20. Check for conformity to requirements of item 2.13 according to GOST 13216-67.

Check for conformity to requirements of item 13 of Table 1 by weighing on scales correct to ±1 kg.

6. Marking, packing, transporting, storing

6.1. On each apparatus the following must be indicated:

trade mark of manufacturer; type of apparatus; serial number and year and month of manufacture; and number of this standard; and the State Mark of Quality according to GOST 1.9-67.

6.2. All the accompanying documentation must contain the drawing of the State Mark of Quality according to GOST 1.9-67.

6.3. Place the following into a plank box, in compliance with

GOST 2991-69, lined on the inside with roofing paper in compliance with GOST 2697-64: a) the packing sheet; b) the apparatus and feeding device packed into jackets of artificial leather of GOST 9236-59; c) operational-technical documentation; d) portable table or shock absorption frames; e) an instrument and accessories.

6.4. Perform marking of the transport container according to GOST 14192-69.

6.5. The packing of the apparatus and feeding device must ensure safety during the transporting.

6.6. The weight of the box with the apparatus must not be more than 200 kg.

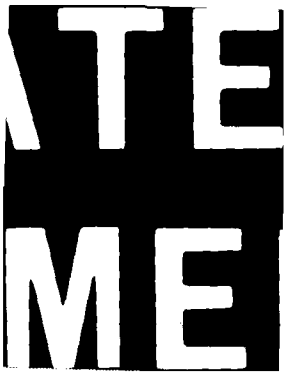
6.7. The transporting of the packed apparatus must be produced by all forms of ground transport and sea transport under the condition of the protection from atmospheric precipitation.

6.8. The apparatus in packed form must be stored in closed warehouse rooms at a temperature of 5°C to 30°C and relative humidity of up to 80% with the absence in the surrounding air of dust, and vapors of acids, alkalis and other active substances causing corrosion.

7.1. Manufaturer's warranty

7.1. The manufacturer must guarantee the compliance of the apparatuses to requirements of this standard when the user observes conditions of operation (use), transporting and storage established by this standard.

The warranted period is established at 30 months from the day of putting the apparatus into operation but not more than 42 months from the time the consignee receives the apparatus.


TE
ME