MILITARY SPECIFICATION

TEST SET, DATA LINK CONTROLLER AN/ASM-496B

This specification is approved for use within the Naval Air Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification establishes the design, performance, and acceptance requirements for the Data Link Controller Test Set AN/ASM-496B, herein referred to as the test set. The test set is for flight line use and performs operational tests of the command and control functions of Control Group OK-293A/AWW available at the aircraft interface for Guided Weapon Monitor-Control Set AN/AWW-12A or AN/AWW-9A.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these document shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

FEDERAL

PPP-B-636 - Boxes, Shipping, Fiberboard

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer, Naval Air Engineering Center, Systems Engineering and Standardization Department (SESD) Code 53, Lakehurst, NJ 08733-5100, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

MILITARY

MIL-P-116	- Preservation, Methods of
MIL-T-5422	- Testing, Environmental, Airborne Electronic and Associated Equipment
MIL-E-17555	- Electronic and Electrical Equipment, Accessories, and Provisioned Items (Repair Parts): Packaging of
MIL-N-18307	- Nomenclature and Identification for Aeronautical Systems Including Joint Electronics Type Designated Systems and Associated Support Systems
MIL-T-21200	- Test Equipment for use with Electronic and Electrical Equipment, General Specification for
MIL-T-28800	- Test Equipment for use with Electrical and Electronic Equipment, General Specification for

STANDARDS

MILITARY

MIL-STD-129	- Marking for Shipment and Storage
MIL-STD-454	- Standard General Requirements for Electronic Equipment
MIL-STD-461	- Electromagnetic Emission and Susceptibility Requirements for the Control of Electromagnetic Interference
MIL-STD-462	- Electromagnetic Interference Characteristics, Measurement of
MIL-STD-704	- Aircraft Electric Power Characteristics
MIL-STD-781	- Reliability Design Qualification and Production Acceptance Tests: Exponential Distribution

2.1.2 Other Government documents and drawings. The following other Government documents and drawings form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

DRAWINGS

NAVAL AIR SYSTEMS COMMAND

DL 410AS500	- Data List for Data Link Controller Test Set AN/ASM-496B and all drawings listed therein

DOCUMENTS

ANA Bulletin No. 400	- Air Force-Navy Aeronautical Bulletin Electronic Equipment: Aircraft and Guided Missile, Applicable Documents

(Copies of specifications, standards, drawings and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets of MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Item description. The AN/ASM-496B Data Link Controller Test Set shall not require any associated equipment to perform its intended function. The test set shall be capable of performing a partial checkout of aircraft stores stations which have been modified to carry Monitor-Control Set AN/AWW-12A or AN/AWW-9A (Data Pod). Operating power for the test set shall be supplied from the aircraft via Umbilical Interface Cable Assembly (W2). The test set shall consist of the items specified in table I.

TABLE I. Test subassemblies.

Type Designation	Part No.	Applicable Paragraph
Panel Assembly	410AS510	3.6.1
Service Cable Assembly (W1)	410AS540	3.6.3
Switch Box Assembly	410AS550	3.6.2
Case and Cover	410AS503	3.6.4
Umbilical Interface Cable Assembly (W2)	410AS545	3.6.5

3.2 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.4 and 6.3).

3.3 Parts and materials.

3.3.1 General. The parts and materials specified in the drawings and related documents for use in the construction of this equipment were selected to ensure the fulfillment of all the requirements of this specification. Any deviation by the contractor from the use of these specified parts and materials necessarily places both the burden of proof for the acceptability of the change and the associated cost upon the contractor. Authorization for deviations must be requested from the procuring activity by the contractor and granted by the procuring activity prior to submission of equipments for first article tests. Authorization of parts and material deviations shall not be construed by the contractor to constitute a waiver of the performance requirements or any other requirements of this specification.

3.3.2 Nonstandard parts and materials approval. Approval for the use of nonstandard parts and material shall be obtained by the contractor as specified in MIL-T-21200.

3.3.3 Supplemental requirements. In the event that the contractor proposes to alter the equipment delineated by this specification and applicable drawings, the supplemental requirements specified in 3.3.3.1 and 3.3.3.2 for the selection of parts and materials shall be applicable.

3.3.3.1 Basic conformance. Parts and materials selected for use in the equipment shall be as specified in MIL-T-21200. Parts shall be selected from those parts included in ANA Bulletin No. 400. If the parts listed therein will not perform adequately in the intended applications and environments specified herein, see 3.3.2.

3.3.3.2 Interchangeability. All parts and materials shall meet the interchangeability requirements of MIL-T-28800. DL 410AS500 shall be the standard for measuring interchangeability of all applicable units, assemblies, subassemblies and parts.

3.4 Design and construction. The test set shall be manufactured in accordance with DL 410AS500, except that errors of omission or commission on the drawings may be incompatible with the requirements of this specification. In any case, it is a condition of final acceptance that the equipment manufactured shall meet all the design, construction and workmanship requirements of this specification.
3.4.1 Reliability.

3.4.1.1 Operational stability. The test set shall operate as required, continuously or intermittently, for a period of at least 150 hours. During this time, it shall be unnecessary to readjust any controls that are inaccessible to the operator during normal use.

3.4.1.2 Operating life. The test set shall have a minimum total operating life of not less than 1000 hours with approved servicing and replacement of parts. Parts requiring scheduled replacement due to wear during the life of the equipment and the wearout life of such parts shall be determined by the contractor and submitted to the procuring agency.

3.4.1.3 Reliability in mean-time-between-failures (MTBF). The test set shall have a specified mean (operating) time between failures of 200 hours when tested in accordance with 4.5.3.

3.4.2 Standard conditions. The following conditions shall be used to establish the normal performance characteristics under standard conditions for performing laboratory bench tests:

a.	Temperature	Room Ambient (30 ± 10 ^{o}C)
b.	Altitude	Normal ground (10,000 ft. maximum)
c.	Vibration	None
d.	Humidity	Room ambient up to 90 percent relative humidity
e.	Input Power Voltage	115 ± 1.5 volts ac, 400 ±5 Hz, +28 ±4 volts dc

3.4.2.1 Service conditions. The test set shall meet the operating test requirements of this specification under any environmental service condition or combination of conditions specified in MIL-T-28800 for Class 2 equipment.

3.4.3 Warm-up time. The time required for the test set to warm up prior to operations shall be not greater than 2.5 minutes under standard and extreme service conditions.

3.4.4 Primary input power requirements. The test set shall be capable of required operation when supplied input power having characteristics as specified in MIL-T-28800 for Class 2 equipment. The power required shall be of the following types and shall be not greater than the specified amount.

a. AC Power, Single Phase, 115 ± 11.5 volts ac, 380-420 Hz, 30 VA.

b. +28 ± 4 volts dc at 1.5 amperes capacity.

3.4.4.1 Protection. The test set shall be capable of withstanding input variations as imposed by abnormal electrical system operations as specified in MIL-STD-704.

3.4.5 Interference control. The generation of electromagnetic interference by the test set and the vulnerability of the test set to electromagnetic interference shall be within the requirements specified in 3.4.5.1 through 3.4.5.10.

3.4.5.1 Conducted emissions 30 Hz to 15 KHz, power and interconnecting leads. Conducted emissions from power and interconnecting leads shall be within the limits of MIL-STD-461, Requirement CE01, over the frequency range of 30 Hz to 15 KHz.

3.4.5.2 Conducted emissions, 15KHz to 50 MHz, power and interconnecting leads, CE03. Conducted emissions from the ac and dc power leads shall be within the limits of MIL-STD-461, Requirement CE03, over the frequency range of 15 KHz to 50 MHz with the following exception: narrowband emissions measured on the +28 volt dc. Switching transients from ac and dc power leads shall be within the limits of figures 1, 2, 3, 4 and 5.

3.4.5.3 Radiated emissions, 30 Hz to 50 KHz, magnetic field, RE01. Radiated emissions shall be within the limits of MIL-STD-461, Requirement RE01, over the frequency range of 30 Hz to 30 KHz.

3.4.5.4 Radiated emissions, 14 KHz to 10 GHz, electric field, RE02. Radiated emissions shall be within the limits of MIL-STD-461, Requirement RE02, over the frequency range of 14 KHz to 10 GHz. Radiated emissions due to switching transients shall be within the limits shown on figure 6 over the frequency range of 14 KHz to 10 GHz.

3.4.5.5 Conducted susceptibility, 30 Hz to 50 KHz, power leads, CS01. The test set shall not be susceptible to signals of 30 Hz to 50 KHz injected on 28 volt dc and 115 volt ac power leads at the rms voltage levels shown on figure 7.

3.4.5.6 Conducted susceptibility, 50KHz to 400 MHz, power leads, CS02. The test set shall not be susceptible to signals from 50 KHz to 400 MHz injected on the 28 volt dc and 115 volt ac power leads at rms voltage levels of less than 0.5 volt from a 50 ohm source.

3.4.5.7 Conducted susceptibility, spike, power leads, CS06. The test set shall not be susceptible to spike interference injected on the dc and ac power leads in accordance with MIL-STD-461, Requirement, CS06.

3.4.5.8 Radiated susceptibility, 30 Hz to 50 KHz, magnetic field, RS01. The test set shall not be susceptible to radiated signals from 30 Hz to 30 KHz as specified in MIL-STD-461, Requirement RS01.

3.4.5.9 Radiated susceptibility, induction field, RS02. The test set shall not be susceptible to radiated fields as specified in MIL-STD-461, Requirement RS02.

3.4.5.10 Radiated susceptibility, 14 KHz to 12 GHz, electric field, RS03. The test set shall not be susceptible to radiated fields as specified in MIL-STD-461, Requirement RS03, except radiated levels shall be as shown in table II.

TABLE II. Radiated susceptibility levels.

Frequency Range	Signal Level
10 KHz - 1.9 MHz	1 V/M
2.0 MHz - 29.99 MHz	5 V/M
30 MHz - 39.99 MHz	10 V/M
40 MHz - 97.99 MHz	4 V/M
98 MHz - 100 MHz	10 V/M
100.01 MHz - 119.99 MHz	1.2 V/M
120.01 MHz - 919.99 MHz	0.79 V/M
920 MHz - 12.4 GHz	5 V/M

3.4.6 Form Factor. The overall dimensions of the Test Set, AN/ASM-496B Case Data Link Controller, excluding latches, shall be not greater than the following limits:

a. Length - 12.5 inches.

b. Width - 14 inches.

c. Height - 13 inches.

3.4.7 Weight. The total weight of the test set, including cable shall be not greater than 25 pounds.

3.4.8 Identification plate and item markings. Nomenclature and identification marking for the test set shall be in accordance with MIL-N-18307 and as specified in DL 410AS500.

3.5 Performance. The performance of the test set shall be as specified herein in addition to the performance requirements specified in DL 410AS500. Unless otherwise specified herein, these requirements shall apply under both standard and extreme service conditions. When reduced performance requirements for service conditions are acceptable, such variations will be specified.

3.5.1 Functions. The test set shall test the functions which are peculiar to the installation of the Guided Weapon Control Group OK-293A/AWW in the A7-E aircraft. All tests shall be made through the umbilical interface which normally mates with the data link pod. The test set shall provide a GO, NO-GO indication confirming that the data link signals supplied to the data pod are within the frequency ranges specified herein.

3.5.1.1 Multiplex input. The test set shall provide a virtual ground input for the current source signal drive originating in the Data Link Control Group OK-293A/AWW. The test set shall decode the signals when the current components are of the magnitudes shown in table LII.

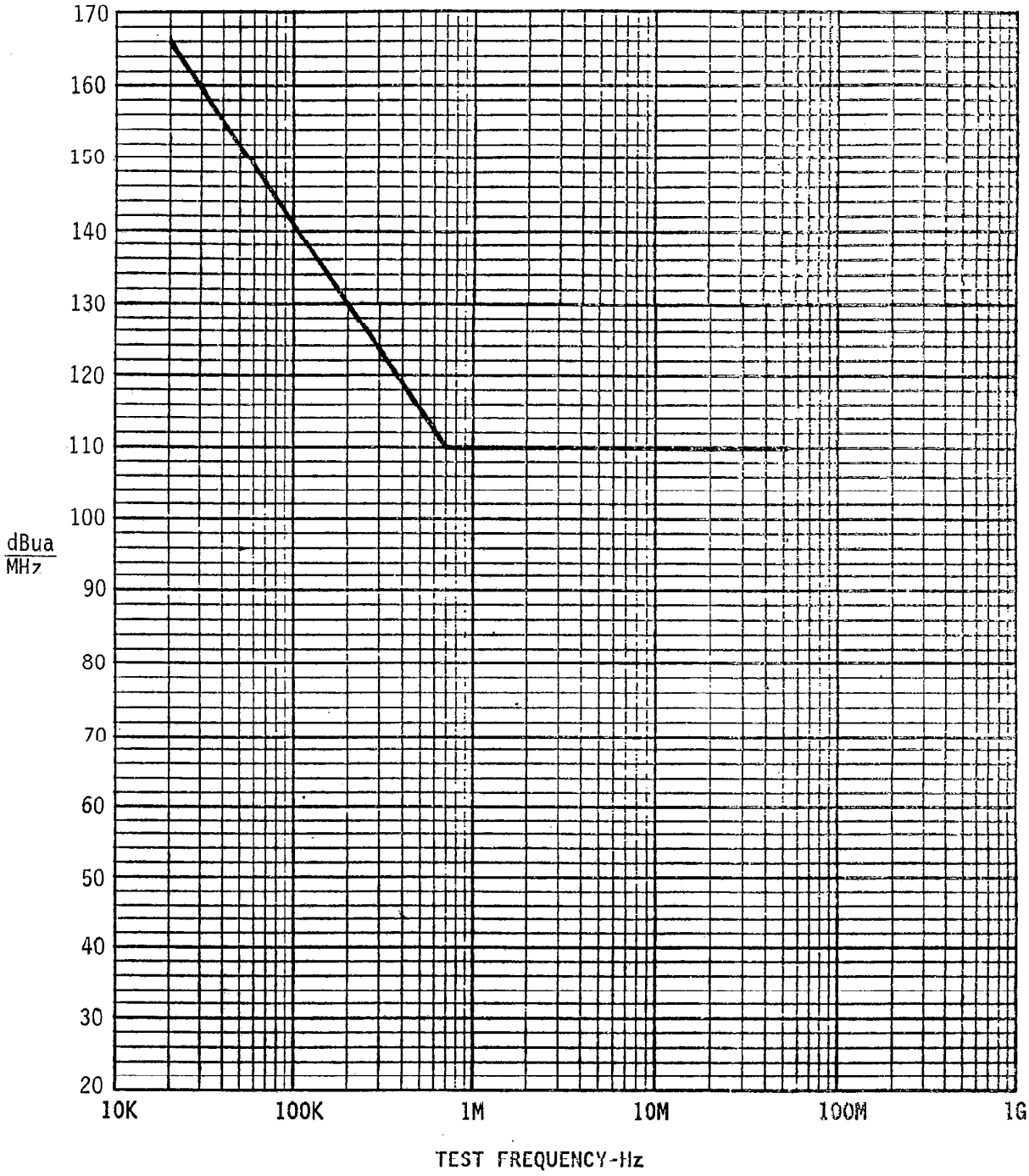

FIGURE 1. Emission limits for conducted emissions measured on 115 volts ac line during switching of test set power ON/OFF switch.

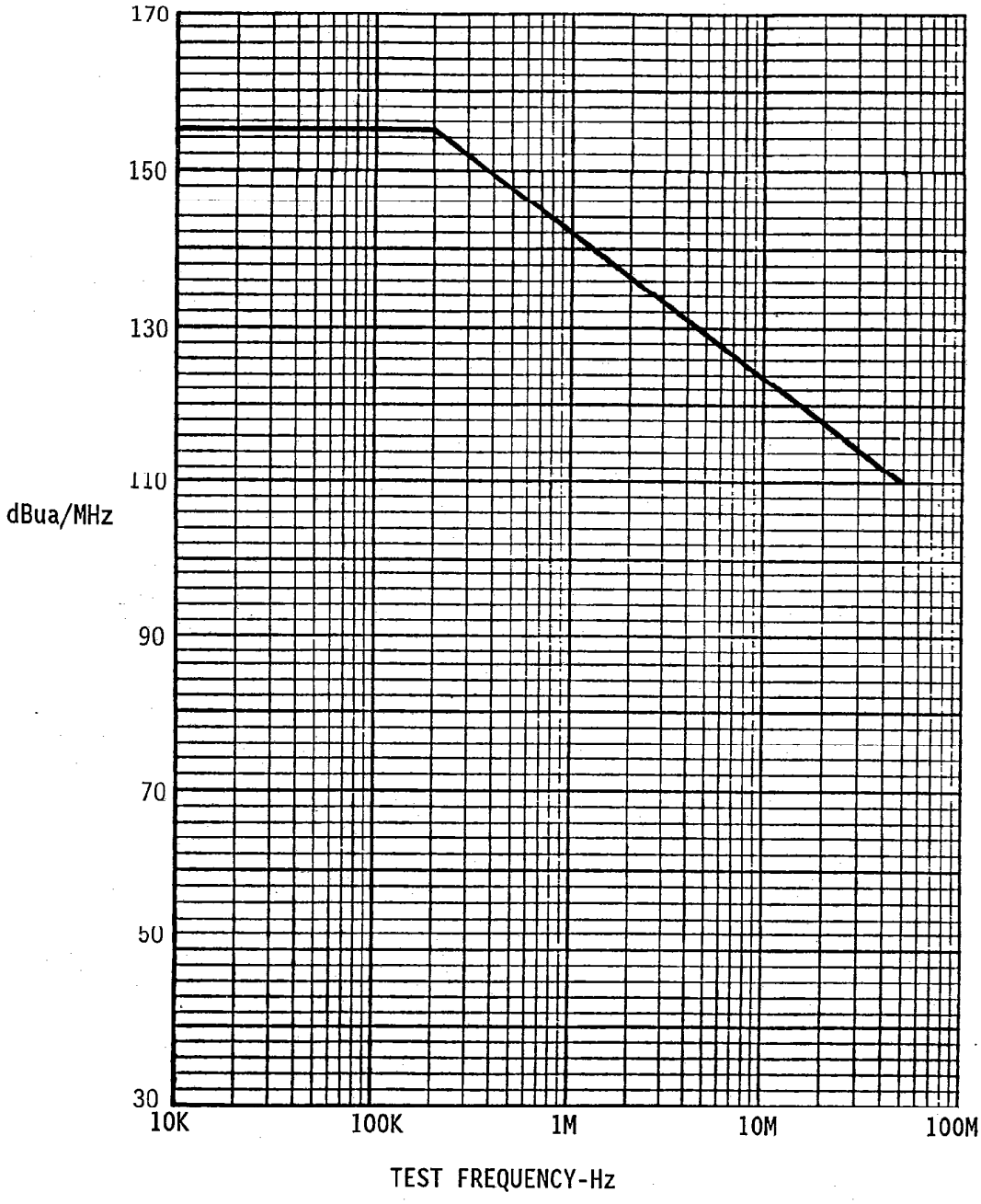

FIGURE 2. Emissions limits for conducted emissions measured on power ground lines during switching of test set power ON/OFF switch.

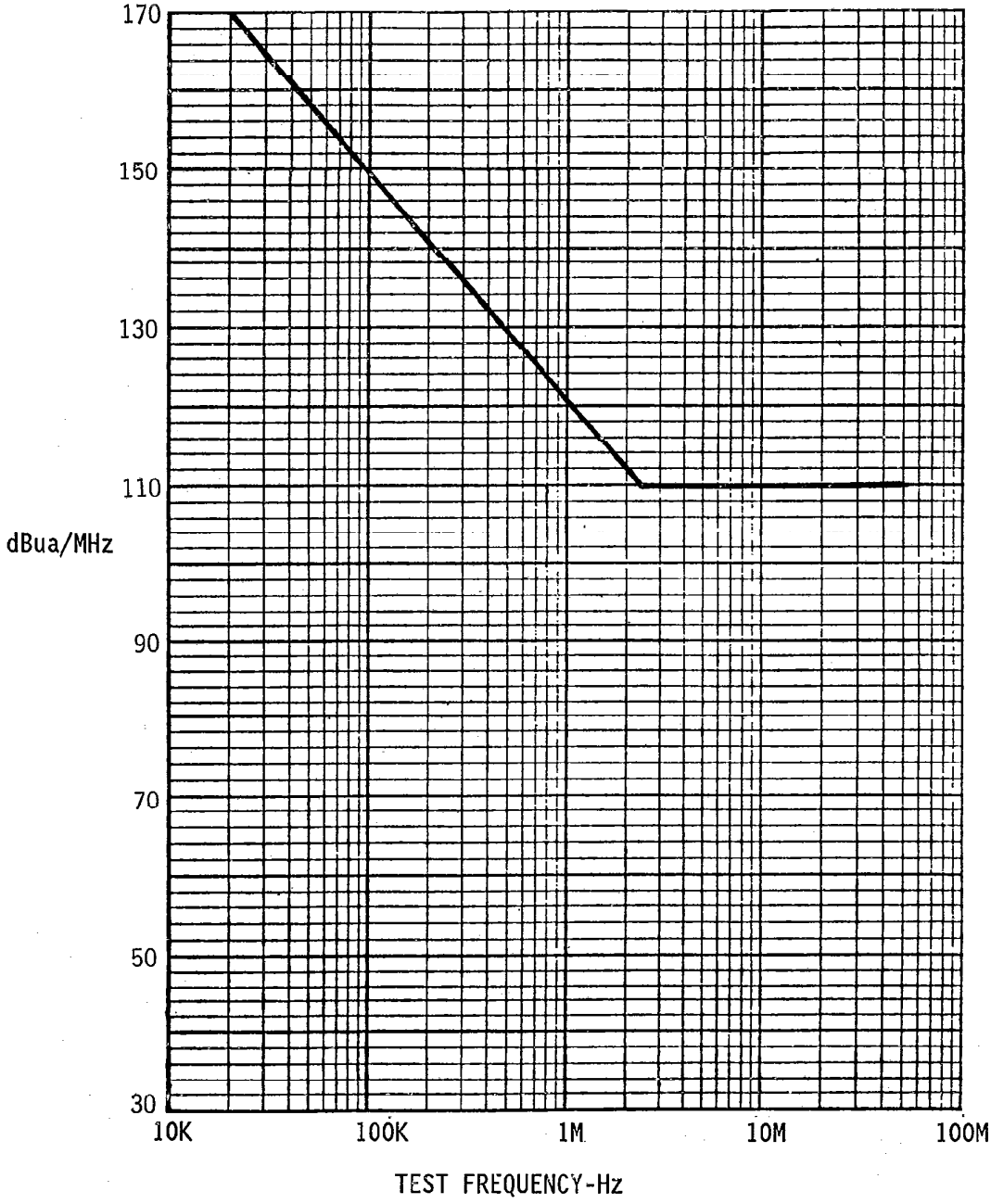

FIGURE 3. Emission limits for conducted emissions measured on 28 volt dc line during switching of test set power ON/OFF switch.

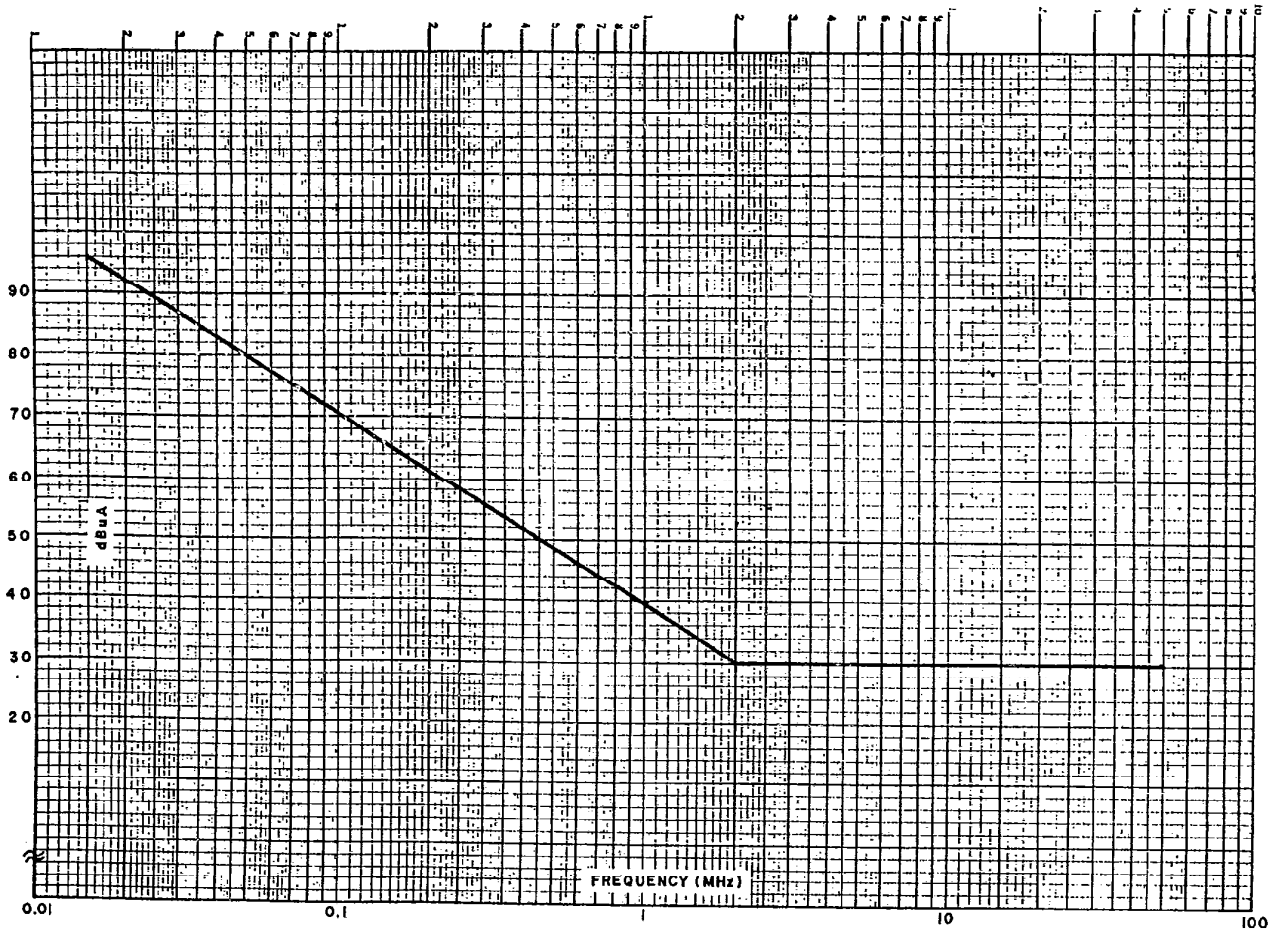

FIGURE 4. Emission limits for conducted emissions measured on leads for steady state - narrowband emissions.

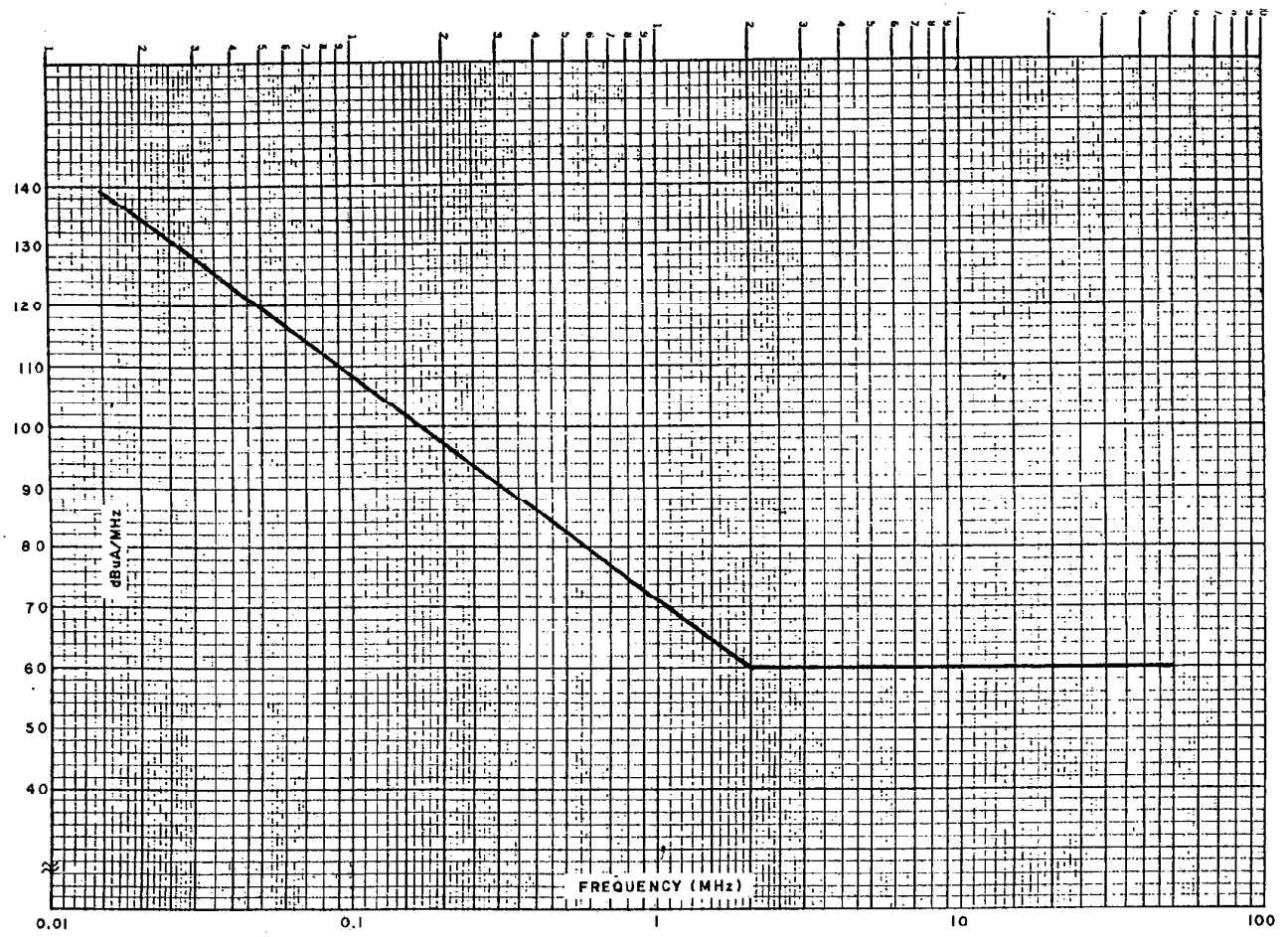

FIGURE 5. Emission limits for conducted emissions measured on leads for steady state - wideband emissions.

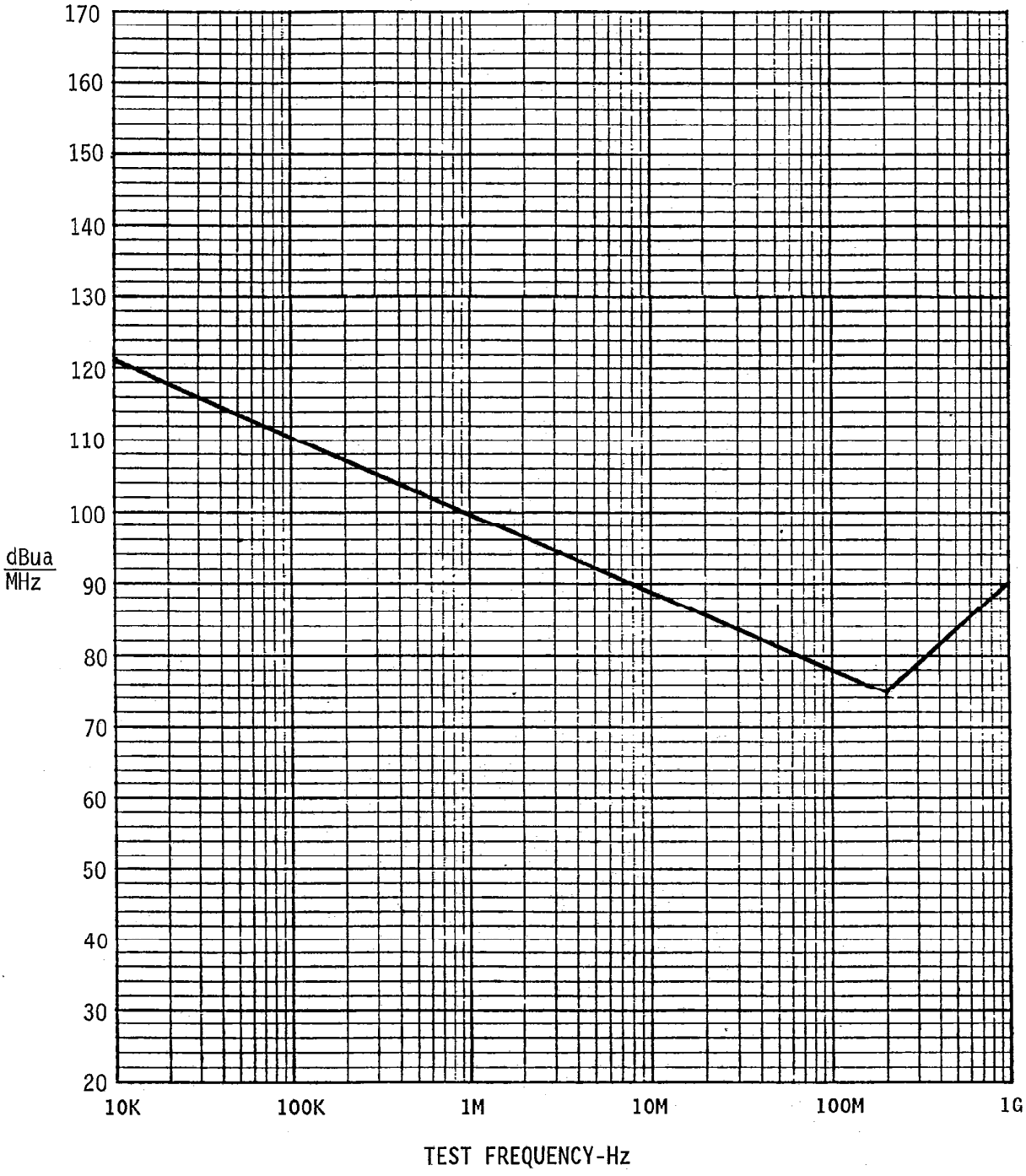

FIGURE 6. Emission limits for radiated emissions measured during switching of test set switches.

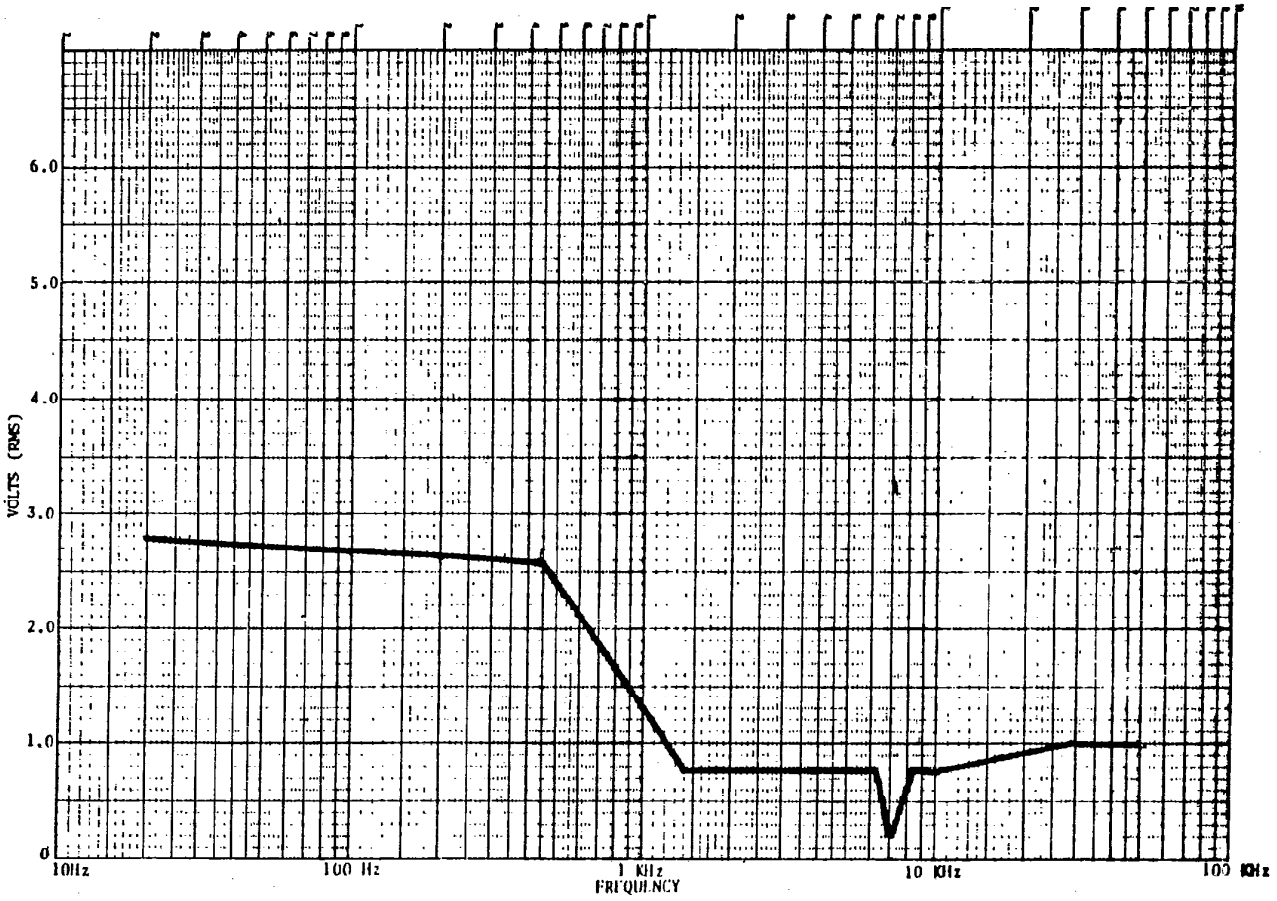

FIGURE 7. Susceptibility levels for conducted susceptibility test.

TABLE III. Input signal and voltage component.

Nominal Frequency (Hz)	Voltage Component (volts - peak to peak)
1,300 + 5	0.28 ± .030
1,700 ± 10	0.28 ± .030
5,400 ± 10	0.33 ± .030
7,350 ± 10	0.50 ± .050
10,500 ± 10	0.77 ± .080
22,000 ± 50	2.0 ± .200
30,000 ± 50	3.3 ± .200

3.5.1.2 Input power. The test set shall perform as required when 115 VAC, 400 Hz and +28 VDC input power from the aircraft is in accordance with MIL-STD-704.

3.5.2 Test functions. The test of all functions shall be accomplished by selecting the appropriate function and activating the PUSH A or B switch. The specified result shall be indicated on the QUALITY meter.

3.5.2.1 Discrete functions, FUNCTION switch positions 1 through 5. Push A or B switch in the A position. For positions 1 through 5 of the Function switch the QUALITY meter indicator shall move from the no signal area, marked by ▼, to an active signal indicating area when the appropriate voltage controlled oscillator (VCO) in the control group is activated. The results shall be a GO indication with the VCO voltages and frequencies are as shown in table IV. A GO indication is considered as a reading within the limits of the meter area marked by ●. For frequencies outside of the bands shown in the NO-GO column of table IV the indicator of the QUALITY meter shall indicate a NO-GO condition (indicating within the ▼ area).

TABLE IV. Discrete functions, FUNCTION switch position 1 through 5.

Function Switch Position	GO Frequency (Hz)	Nominal Voltage volts P-P (Ref)	NO-GO Frequency (Hz)
1	1,300 ± 26	.28	1,248 < f > 1,352
2	1,700 ± 34	.28	1,632 < f > 1,768
3	5,400 + 108	.33	5,184 < f > 5,616
4	7,350 ± 148	.50	7,054 < f > 7,646
5	10,500 ± 210	.77	10,080 < f > 10,920

3.5.2.2 Proportional functions, FUNCTION switch positions 6 and 7. Push A or B switch in the A position. The test set shall decode two proportional deviation multiplex channels and provide a GO, NO-GO indication of deviation and polarity. The frequencies associated with the proportional channels and the frequencies and voltage magnitudes required to give a GO indication are shown in table V.

TABLE V. Proportional functions, FUNCTION switch positions 6 and 7.

Function Switch Position	Frequency (Hz)	Nominal Voltage volts P-P (Ref)	GO, Meter Indication
6	22,000 ± 10	2.0	●
6	23,650 ± 330	2.0	□
6	20,350 ± 330	2.0	■
7	30,000 ± 10	3.3	●
7	32,250 ± 450	3.3	□
7	27,750 ± 450	3.3	■

3.5.2.3 Internal power supply self-test, FUNCTION switch positions 8 through 11. The test set shall provide a GO, NO-GO indication of the internal (test set) power supply voltages in accordance with the data shown in table VI.

TABLE VI. Internal power supply self-test FUNCTION switch positions 8 through 11.

Function Switch Position	Voltage Volts DC	GO, Meter Indication
8	+5.0 ± 0.3	▽
9	+12.0 ± 0.5	▽
10	-5.0 ± 0.3	▼
11	-12.0 ± 0.5	▼

3.5.2.4 Frequency select functions. For the positions of the function switch, the Push A/B switch, and the Channel Select (CS), the test set shall provide the GO indication shown in table VII when the input is as specified in 3.5.2.4.1 and table VII.

TABLE VII. Frequency select function tests.

Function Switch Position	Push A or B Position	Digital Fwd/Aft Antenna	Word Bit		Status		Pin J1-25 CS-A	Pin J1-26 CS-B	Pin J1-28 CS-C	Go Indication
			4th Bit	5th Bit	6th Bit	7th Bit				
←				1/						→
1	A	1	X	X	X	X	Open	Open	Open	◉
1	B	X	1	0	0	0	Open	Open	Open	▽
2	B	0	1	0	0	0	Open	Open	Open	▽
3	B	X	1	1	0	0	Open	Open	Open	▽
4	B	X	0	0	1	0	Open	Open	Open	▽
5	B	X	1	0	1	0	Open	Open	Open	▽
6	B	X	0	1	1	0	Open	Open	Open	▽
7	B	X	1	1	1	0	Open	Open	Open	▽
8	B	X	0	0	1	1	Open	Open	Open	▽

TABLE VII. Frequency select function tests - Continued.

Function Switch Position	Push A or B Position	Digital Fwd/Aft Antenna	Word Bit 4th Bit	Word Bit 5th Bit	Status 6th Bit	Status 7th Bit	Pin J1-25 CS-A	Pin J1-26 CS-B	Pin J1-28 CS-C	Go Indication
1	B	←		2/		→	28v	Open	Open	▽
2	B	←		2/		→	Open	28v	Open	▽
3	B	←		2/		→	28v	28v	Open	▽
4	B	←		2/		→	Open	Open	28v	▽
5	B	←		2/		→	28v	Open	28v	▽
6	B	←		2/		→	Open	28v	28v	▽
7	B	←		2/		→	28v	28v	28v	▽

1/ All other combinations of Bits of the digital word shall result in a NO GO indication.

2/ No digital word shall be present during these tests.

3.5.2.4.1 Frequency select input signal. The frequency select functions shall be controlled by the modulation of the 1.3 KHz tone specified in 3.5.1.1 and by the digital word shown on figure 8. The pulse width is determined by the frequency of the 1.3 KHz tone. The 1.3 KHz tone is divided by 26 and this signal is then used as the clock frequency to generate the digital word. This results in the pulse widths for sync, clock, "1" Bit, and "0" Bit shown on figure 8. The digital word shall modulate the 1.3 KHz tone such that:

a. A sync or clock bit shall produce a 1258 to 1342 Hz tone.

b. A zero bit shall produce a 1186 to 1250 Hz tone.

c. A one bit shall produce a 1351 to 1414 Hz tone.

3.6 Detailed requirements.

3.6.1 Panel assembly. This assembly shall contain all of the electronics and controls for performing the test functions. The panel assembly shall be in accordance with Drawing 410AS510.

3.6.2 Switch box assembly. The switch box can be substituted for the Control, Guided Weapon Assembly C-9743A/AWW (Joystick), part of the Control Group OK-293A/AWW to isolate a test failure to the proper weapon replaceable assembly. The switch box simulates the switch functions of the joystick and uses switches to simulate joystick handle displacement. The switch box shall be in accordance with Drawing 410AS550.

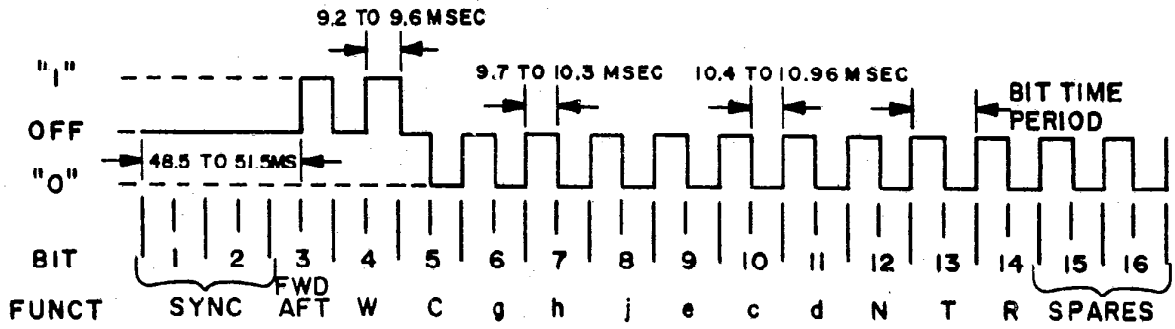

FIGURE 8. Digital word waveform.

3.6.3 Service cable assembly. The Service Cable Assembly shall be manufactured in accordance with Drawing 410AS540. This cable shall be used for test set maintenance, calibration, alignment and fault isolation. The cable provides terminals for bench test inputs and power application.

3.6.4 Case and cover. The case and cover shall be manufactured in accordance with Drawing 410AS503. The cover shall be suitable for storage of the switch box and service cable.

3.6.5 Umbilical Interface Cable Assembly (W2). The umbilical interface cable assembly shall be manufactured in accordance with Drawing 410AS545. This cable shall be used for mating with A7-E and F/A-18 aircrafts.

3.6.6 Material. Materials shall be in accordance with DL 410AS500.

3.6.7 Workmanship. Workmanship shall be in accordance with WS-6536.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies

submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.4).

b. Quality conformance inspections (see 4.5).

4.3 Inspection conditions. Unless otherwise specified, all inspections shall be performed in accordance with the test conditions specified in 3.4.2.

4.3.1 Performance characteristics.

4.3.1.1 Before testing. The test set shall satisfy the requirements for interference control (see 3.4.5) and warm-up time (see 3.4.3).

4.3.1.2 During inspection acceptance testing. The test set shall satisfy the requirements of section 3.

4.4 First article inspection. First article tests shall be made on a test set representative of the production test sets to be supplied under the contract. First article test performance shall be the responsibility of the contractor and shall be performed in accordance with approved test procedures (see 4.6 and 6.2.2). No first article inspections shall be conducted prior to acceptance of the first article test procedure by the contracting officer.

4.4.1 Scope of first article tests. First article tests shall include all tests deemed necessary by the procuring activity to determine that the test set meets all the requirements of this specification and the contract. These shall include environmental and interference tests in accordance with MIL-T-5422 and MIL-STD-462, respectively, as specified in MIL-T-28800 (see 6.2.2).

4.4.2 First article approval. Approval of the first articles shall be by the procuring activity upon the contractor meeting the requirements of all tests. No production test sets shall be delivered prior to the approval of the first article. Prefabrication of production equipment prior to the approval of the first article is at the contractor's own risk. The approved first article sample shall be retained by the contractor for his use in the fabrication and testing of test sets to be submitted for acceptance. The first article sample shall not be considered as one of the deliverable test sets under the contract.

4.4.3 Production test sets. Test sets supplied under the contract shall, in all respects including design, construction, workmanship, performance and quality, be equal to the approved first article sample. Each test set shall be capable of successfully completing the same tests as imposed on the first article sample. Evidence of non-compliance with the above shall constitute cause for rejection of a test set and of a test set already accepted by the Government. The contractor shall make necessary corrections as approved by the procuring activity.

4.5 Quality conformance inspection. The contractor shall furnish all samples and shall be responsible for accomplishing the quality conformance tests. All inspection and testing shall be to the approved quality conformance test procedures under the supervision of the Government inspector (see 6.2.2). Quality conformance or approval of material during the course of manufacture shall not be construed as a guarantee of the acceptance of the finished product. Tests shall consist of the following:

a. Individual tests (see 4.5.1).

b. Sampling tests (see 4.5.2) or reliability assurance tests (see 4.5.3).

c. Special tests (see 4.5.4).

d. Life tests (see 4.5.6).

4.5.1 Individual tests. Each test set made available for acceptance shall be subjected to the individual tests. These tests shall be adequate to determine compliance with the requirements of material, workmanship, operational adequacy and reliability. As a minimum, each test set accepted shall have passed the following tests:

a. Examination of product (see 4.5.1.1).

b. Operational test (see 4.5.1.2).

c. Manufacturing run-in test (see 4.5.1.3).

4.5.1.1 Examination of product. Each test set shall be examined carefully to determine that the material and workmanship requirements have been met.

4.5.1.2 Operational test. Each test set shall be operated long enough to permit the temperature to stabilize and to check sufficient characteristics and record adequate data to assure required test set operation.

4.5.1.3 Manufacturing run-in test. Each test set shall be operated under the conditions specified herein for a period of 50 hours without failure. A failure shall be considered as anything which causes a malfunctioning of the equipment. Only those adjustments will be permitted which can be made using controls that are accessible to the operator during normal use of the equipment.

a.	Temperature	Room ambient
b.	Humidity	Room ambient
c.	Vibration	Any selected frequency within the range of 20 to 30 Hz (excluding resonant points) and and an amplitude of not less than ± 3 g's

The test set shall be vibrated (without vibration isolators) for a period of 10 minutes prior to the beginning of the 50-hour period of operation. Where feasible, the test set shall be operated during this vibration period for the purpose of detecting flaws and imperfect workmanship. Operation within the specified limits of required performance is not necessarily required during the vibration period. The direction of vibration shall be vertical to the normal

mounting plane for 5 minutes and lateral to the plane for 5 minutes. Where it is not feasible to vibrate the test set in two directions, the vertical shall be used. During the 50-hour period of operation following the 10-minute vibration period, the test set shall be mechanically cycled periodically through its various phases of operation. Should a failure occur, the test set shall be repaired and the test started over, except that the 10-minute vibration period need not be repeated when it is established that the failure was not a result of vibration. Should failures occur repeatedly, corrective action shall be taken to eliminate this defect from future test sets. The 50-hour period specified above may be made up of several shorter periods to conform to normal working hours.

4.5.2 Sampling tests. Test sets selected for sampling tests shall first have passed the individual tests. (Sampling tests shall not be conducted unless reliability assurance tests of 4.5.3 are deleted by contractual action.) Equipments will be selected for sampling tests by the Government inspector in accordance with table VIII.

TABLE VIII. Sampling test sample selection.

Quantity of equipments offered for acceptance	Quantity to be selected for sampling tests
First 10	1
Next 50	1
Next 75	1
Next 100	1
	1 for each additional 200 or fraction thereof.

4.5.2.1 Scope of tests. As a minimum, each test set selected for sampling tests shall be subjected to the following:

a. Complete operational test at ambient room conditions, making all necessary measurements to assure that all requirements have been met.

b. Operational test at certain environmental conditions. The conditions may vary for each test set tested and should be based on results of the first article, individual and special tests.

c. Manufacturing run-in test specified in 4.5.1.3 except that the test duration shall be 120 hours with no restriction on the number of failures (see 6.2.2)

4.5.3 Reliability qualification phase. Prior to the acceptance of test sets under the contract or purchase order, a minimum of three test sets shall be subjected to the combined reliability qualification requirements of MIL-STD-781, using Test Plan IIIC therein (θ = 200).

4.5.3.1 Reliability acceptance phase. Production lot samples of the test set shall be subjected to the combined production reliability acceptance requirements of MIL-STD-781, using Test Plan VC therein (see 6.2.2).

4.5.3.1.1 Acceptance phase sample size. The entire contract quantity (except for those equipments used in the qualification phase) shall be considered one lot. The reliability acceptance sample size shall be 10 percent of the contract quantity, but not less than three units. The test program shall start the first month after the qualification phase has been completed. The samples shall be tested until an accept/reject decision has been reached. In the meantime, other equipments manufactured may be shipped in place, with approval from the contracting officer. The procuring activity reserves the right to stop the acceptance of equipment anytime one or more reject decisions have been reached, pending a review of the contractor's efforts to improve the equipment, parts, or quality control in order that the entire contract quantity will result in an accept decision.

4.5.4 Special tests. Special tests shall be conducted on a quantity of test sets as specified in the contract (see 6.2.1) for the purpose of checking the effect of any design or material change on the performance of the test set and to assure quality control. The test sets selected for special tests may be from test sets previously subjected to the sampling or reliability assurance tests.

4.5.4.1 Special test schedule. Selection of test sets for special test shall be made as follows:

a. On early equipments after an engineering or material change.

b. Whenever failure reports or other evidences indicate that additional test are required. (This will be determined by the procuring activity.)

4.5.4.2 Scope of tests. Special tests shall consist of such tests as are acceptable to the procuring activity. Test procedures previously approved for the first article test may be used where applicable.

4.5.5 Test set failure. Should a failure occur during either the sampling, reliability assurance or special tests, the following action shall be taken:

a. Determine the cause of the failure.

b. Determine if the failure is an isolated case or due to design defect.

c. Where practical, include a test (in the individual test) to check all test sets for this requirement until assurance is forthcoming that the defect has been corrected.

4.5.6 Life test. The contractor shall furnish all samples and shall be responsible for accomplishing the life test. The test shall be of 300 hours duration and shall be conducted on test sets that have passed the individual tests. The life test shall be performed under the conditions specified in 4.5.6.1. The life test sample will be selected by the Government inspector in accordance with table IX. (Test sets which have successfully completed the sampling tests, reliability tests, or special tests may be selected for life tests.)

TABLE IX. Life test sample selection. 1/

Quantity of test sets offered for acceptance	Quantity to be selected for life test
First 25	1
Next 175	1
Next 300	1
	1 for each additional 500 or fraction thereof.

1/ When reliability test are conducted, the life test may be omitted if, during the reliability tests, a quantity of test sets equal to or more than that listed above receive at least 300 hours each of test time.

4.5.6.1 Life test conditions. The life test shall be conducted under the following simulated service conditions:

a.	Temperature	Room ambient ($30^{o}C \pm 10^{o}C$)
b.	Altitude	Normal ground (0 - 5000 ft.)
c.	Humidity	Room ambient up to 90 percent relative humidity
d.	Input voltage	Nominal
e.	Vibration	None

4.5.6.2 Life test period. The life test may be run continuously or intermittently. Any period of operation shall be of sufficient duration to permit the test set temperature to stabilize. Periodically, the test set shall be turned on and off several times, and put through its various phases of operation.

4.5.6.3 Performance check. At approximately 8-hour intervals during the test, a limited performance check shall be made. The performance check shall be proposed by the contractor for acceptance by the procuring activity (see 6.2.2).
4.5.6.4 Failure report. In the event of a failure, the Government inspector shall be notified immediately (see 6.2.2).

4.6 Presubmission testing. No item, part, or complete test set shall be delivered by the contractor until it has been previously tested and inspected by the contractor and found to comply with all applicable requirements of this specification.

4.7 Environmental tests. The test set shall operate as required when subjected to the tests specified in MIL-T-28800 and tested in accordance with MIL-T-5422.

4.8 Electromagnetic interference (EMI) tests. The following EMI tests shall be performed in accordance with MIL-STD-462. All tests shall be performed with the test set grounded to the ground plane. For susceptibility tests of 4.8.4 through 4.8.9, susceptibility is considered as any incorrect indication of the test set Quality meter caused by the susceptibility signal.

4.8.1 Conducted emission, 30 Hz to 15 KHz, power and interconnecting leads, CE01. This test shall be performed in accordance with MIL-STD-462, Method CE01. The test set data shall be within the requirements of 3.4.5.1 herein.

4.8.2 Radiated emission, 30 Hz to 30 KHz, magnetic field, RE01. This test shall be performed in accordance with MIL-STD-462, Method RE01. The test test set data shall be within the requirements of 3.4.5.3 herein

4.8.3 Radiated emission, 14 KHz to 10 GHz, electric field, RE02. This test shall be performed in accordance with MIL-STD-462, Method RE02. The test set data shall be within the requirements of 3.4.5.4 herein.

4.8.4 Conducted susceptibility, 30 Hz to 50 KHz, power leads, CS01. This test shall be performed in accordance with MIL-STD-462, Method CS01. The test set susceptibility data shall be within the requirements of 3.4.5.5 herein.

4.8.5 Conducted susceptibility, 50 KHz to 400 MHz, power leads, CS02. This test shall be performed in accordance with MIL-STD-462, Method CS02. The test set susceptibility data shall be within the requirements of 3.4.5.6 herein.

4.8.6 Conducted susceptibility, spike, power leads, CS06. This test shall be performed in accordance with MIL-STD-462, Method CS06. The test set susceptibility data shall be within the requirements of 3.4.5.7 herein.

4.8.7 Radiated susceptibility, 30 Hz to 50 KHz, magnetic field, RS01. This test shall be performed in accordance with MIL-STD-462, Method RS01. The test set susceptibility data shall be within the requirements of 3.4.5.8 herein.

4.8.8 Radiated susceptibility, induction field RS02. This test shall be performed in accordance with MIL-STD-462, Method RS02. The test set susceptibility data shall be within the requirements of 3.4.5.9 herein.

4.8.9 Radiated susceptibility, 14 KHz to 12 GHz, electric field, RS03. This test shall be performed in accordance with MIL-STD-462, Method RS03. The test set susceptibility data shall be within the requirements of 3.4.5.10 herein.

4.9 Methods of examination and test. The procuring activity or the Government inspector reserves the right to modify the tests or require any additional tests deemed necessary to determine compliance with the requirements of this specification and the contract (see 6.2.2).

5. PACKAGING

5.1 General. Packaging shall be in accordance with the general requirements of MIL-E-17555, supplemented by 5.2 through 5.3.1.

5.2 Preservation-packaging. Unless otherwise specified in the contract or purchase order (see 6.2.1), preservation-packaging shall be in accordance with MIL-P-116, Method III.

5.3 Packing. Unless otherwise specified in the contract or purchase order (see 6.2.1), packing shall be level C. The packaged test sets shall be packed in fiberboard containers conforming to PPP-B-636, Class Weather Resistant, Style Optional, normal requirements. Sealing (taping) and reinforcing (banding) shall be in accordance with the appendix to PPP-B-636.

5.3.1 Unitized loads. Unitized loads, commensurate with the level of packing specified herein or in the contract, shall be used whenever the total quantities for shipment to one destination equal 40 cubic feet or more. Quantities less than 40 cubic feet need not be unitized. Unitized loads shall be uniform in size and quantities to the greatest extent possible.

5.4 Marking. In addition to any special marking specified in the contract (see 6.2.1); each unit package, intermediate and exterior container and unitized load shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. The Data Link Controller Test Set AN/ASM-496B (test set) is a small portable flight line test device used to perform preflight and periodic performance evaluation of Control Group, Guided Weapon OK-293A/AWW (control group). The control group initiates certain data link commands, and proportional signals for the Guided Weapon Monitor-Control Sets AN/AWW-12A and AN/AWW-9A. The test set is used in conjunction with Aircraft Weapon Control Test Set AN/ASM-184B(V)-1 to provide an evaluation of the aircraft interface for the Guided Weapons Monitor-Control Set AN/AWW-12A and AN/AWW-9A. The control group output frequencies can be evaluated with the test result displayed on the quality meter mounted on the front of the test set.

6.2 Ordering data.

6.2.1 Acquisition documents. Acquisition documents should specify the following:

a. Title, number, and date of this specification.

b. Frequency (detector subsystem) (see 3.5.2 and 3.5.2.2).

c. Selection of applicable levels of packaging and packing (see 5.2, 5.3).

d. When a first article is required for inspection and approval (see 4.4, 6.3).

6.2.2 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL), incorporated into the contract. When the provisions of DOD FAR Supplement, Part 27, Sub-Part 27.410-6 (DD Form 1423) are invoked and the DD Form 1423 is not used, the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification are cited in the following paragraphs.

Paragraph No.	Data requirement title	Applicable DID no.	Option
4.5, 4.5.6.4	Reports, Production Inspection	DI-T-3721A	-----
4.5.3.1	Procedures, Reliability Test	DI-RELI-80251	-----
4.9, 4.5.6.3	Procedures, Production/ Acceptance Inspection	UDI-T-23732B	-----
4.5.5	Plan, Failure Data Analysis and Corrective Action	DI-RELI-80253	-----
4.4	Procedure, First Article Inspection	DI-T-3721A	-----
4.5.6.4	Report, Failure	DI-R-21598	-----

(Data item descriptions related to this specification, and identified in section 6, will be approved and listed as such in DOD 5010.12-L AMSDL. Copies of data item descriptions required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.3 First article. When a first article inspection is required, the item should be a first article sample. The first article should consist of one unit. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results and disposition of first articles. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract.

6.4 Subject term (key word) listing.

Aircraft
Control-monitor set
Data link
Data link controller test set
Data pod
Electromagnetic interference
Guided weapon
Pod
Test set
Umbilical connector

Preparing Activity:
Navy - AS
(Project 1450-N053)