

NAVSHIPS 94200.4-2 Directory of Electronics Test  
Equipment - Supplement 2  
Section 4.6 Impedance and Standing Wave Ratio  
Test Equipment

8 December 1965

Cog Service: USN FSN: 2N6625-086-6840

INSULATION TEST SET AN/PSM-2B  
Functional Class:

USA

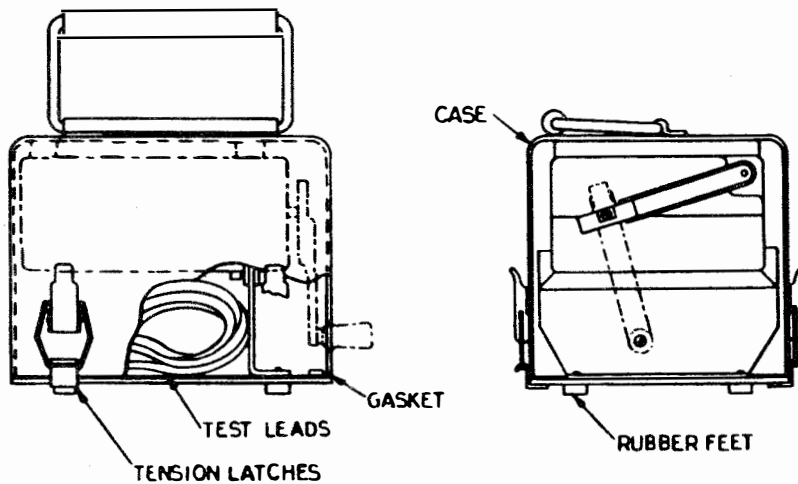
USN

USAF

TYPE CLASS:

Used By

MANUFACTURER'S NAME/CODE NUMBER: James G. Biddle Co., (07239).



INSULATION TEST SET AN/PSM-2B

**FUNCTIONAL DESCRIPTION:**

Insulation Test Set AN/PSM-2B measures the resistance in megohms, to the flow of current through and/or over the surface of electrical equipment insulation. The test results are used to detect the presence of dirt, moisture, and insulation deterioration.

No field changes in effect at time of preparation (11 October 1965).

**RELATION TO OTHER EQUIPMENT:**

The AN/PSM-2B is two-way interchangeable with previous versions of AN/PSM-2. Maintenance parts differ.

**EQUIPMENT REQUIRED BUT NOT SUPPLIED:** None.

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9 October 1964

STANDING WAVE RATIO MEASURING SET AN/USM-37B

Cog Service: USN FSN: 2F6625-973-2921

Functional Class:

USA

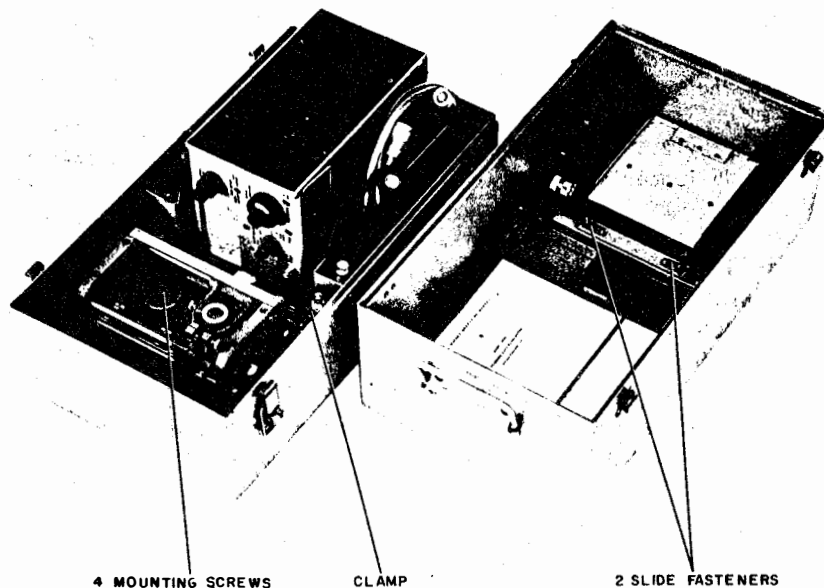
USN

USAF

TYPE CLASS:

Used by

MANUFACTURER'S NAME/CODE NUMBER: Hewlett Packard Company, (28480).



STANDING WAVE RATIO MEASURING SET AN/USM-37B

#### FUNCTIONAL DESCRIPTION:

Standing Wave Ratio Measuring Set AN/USM-37B is a complete laboratory-quality test set for making accurate standing-wave measurements in waveguide and coaxial transmission systems over the frequency range 3.0 to 12.4 kilomegacycles.

No field changes in effect at time of preparation (5 October 1964)

#### RELATION TO OTHER EQUIPMENT:

The AN/USM-37B is two-way interchangeable with AN/USM-37A, and with AN/USM-37. In the AN/USM-37B the indicator unit circuitry is transistorized and maintenance parts and configuration of case differ.

#### EQUIPMENT REQUIRED BUT NOT SUPPLIED:

# AN/USM-37B STANDING WAVE RATIO MEASURING SET

## TECHNICAL CHARACTERISTICS:

### STANDING WAVE RATIO METER

#### INPUT

CRYSTAL: 200 ohms and 200K ohms input impedance.

BOLOMETER: 200 ohms input impedance; bias provided for 8.7 ma (high) and 4.3 ma (low) current bolometers; bias variable  $\pm 10\%$  positive bolometer protection.

INPUT CONNECTOR: BNC.

SENSITIVITY: 0.1 uv rms at 30 cps bandwidth and 25 to 55° C. (decreases to approx 0.2 uv at 0° C).

FREQUENCY: 1000 cps, adj; 5%. Other frequencies between 400 and 2500 cps available.

BANDWIDTH: Variable, 15 to 100 cps.

RANGE: 70 db in 10 and 2.5 db steps.

ACCURACY:  $\pm 0.1/10$  db step, max cumulative  $\pm 0.2$  db;  $\pm 0.1$  db when switching from any 10 db step (NORM) to any 2.5 db step (EXPAND), except  $\pm 0.05$  db when switching to 0.0 (EXPAND).  $\pm 0.02$  db linearity on EXPAND scales.

#### OUTPUT

DC: - 0 - 1 ma into 1500 ohms max at the recorder jack (one side grounded).

AC: 0 - 1 v rms into 10K ohms min at the ac amplifier terminals.

METER SCALES: Calibrated for square law detectors.

SWR: 1-4, 3.2-10, 1-1.3 (EXPAND)

DB: 0-10, 0-2.5 (EXPAND)

BOLLO CURRENT: 8.7 ma and 4.3 ma adj  $\pm 10\%$ .

POWER: 115 or 230 v  $\pm 10\%$ , 50 to 1000 cps, 2 W power line freq or multiples thereof must not be at the tuned amplifier freq. Optional rechargeable battery provides up to 36 hrs continuous operation.

### UNIVERSAL PROBE CARRIAGE

PROBE TRAVEL: 10 cm.

CALIBRATION: Metric Vernier permits readings to 0.1 mm. Provision for dial gauge installation.

ACCURACY: When used with waveguide sections, standing wave ratio of 1.02 can be easily read. Slope error of slotted sections may be eliminated by adjustment.

### COAXIAL SLOTTED SECTION

FREQUENCY RANGE: 3000 to 12000 mc.

IMPEDANCE: 50 ohms.

#### RESIDUAL SWR

LESS THAN 1.04: 3000 to 8000 mc.

APPROX 1.06: 8000 to 10000 mc.

APPROX 1.10: 10000 to 12000 mc.

PROBE PICKUP VARIATION ALONG LINE: Less than 0.1 db except at extreme ends of where it is 0.2 db.

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Standing Wave Ratio, Measuring Set AN/USM-37B includes:	2F6625-973-2921		
1	Indicator, Standing Wave Ratio IM-157B/U		9 x 9 x 12	
4.6	AN/USM-37B: 2			

**STANDING WAVE RATIO MEASURING SET AN/USM-37B**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Probe Waveguide MX-1546/USM-37		1-1/4 x 2	
1	Carriage Probe MX-1545/USM-37		6 x 7-1/2 x 8	
1	Waveguide Assembly CG-1106/USM-37		1-7/8 x 2-1/2 x 10-1/4	
1	Waveguide Assembly CG-1107/USM-37		1-5/8 x 2-1/2 x 10-1/4	
1	Slotted Line IM-100/USM-37		1-3/16 x 2-1/2 x 9-3/4	
1	Adapter UG-1389/U		1-7/8 x 1-7/8 x 3-3/8	
1	Adapter UG-1053/U		1-3/4 x 1-7/8 x 2-3/8	
1	Adapter UG-1054/U		1-9/16 x 1-5/8 x 2-1/8	
1	Cord CG-92D/U		72	
1	Cord CG-409/U		120	
1	Cable Assembly Power Elec- trical CX-8312/USM-37B			
1	Case, Indicator CY-2964A/USM-37A		12 x 12 x 22	
2	Instruction Books		1/2 x 9 x 11-1/2	

**REFERENCE DATA AND LITERATURE:**

NAVSHIPS 94654: Operating and Servicing Manual for Indicator Standing Wave Ratio AN/USM-37B.

**TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:**

TUBES: Not required.

CRYSTALS: Not required.

SEMI-CONDUCTORS: (1) 2N1183 (4) 2N1370 (6) 2N117 (2) 2N1304 (2) 2N383  
(11) CCTO-RD1626 (1) CHS-D2361 (2) CCNL-PS-8135 (1) CCNL-PS-8400

**SHIPPING DATA**

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

**PROCUREMENT DATA**

PROCURING SERVICE: USN  
SPEC &/OR DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Hewlett Packard Co.	Palo Alto, California	N0bsr-87602	\$1320.00

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