

1 March 1963  
Cog Service: USN FSN: F6625-613-5646

FREQUENCY DEVIATION METER AN/URM-115  
Functional Class: 2.5.2

USA

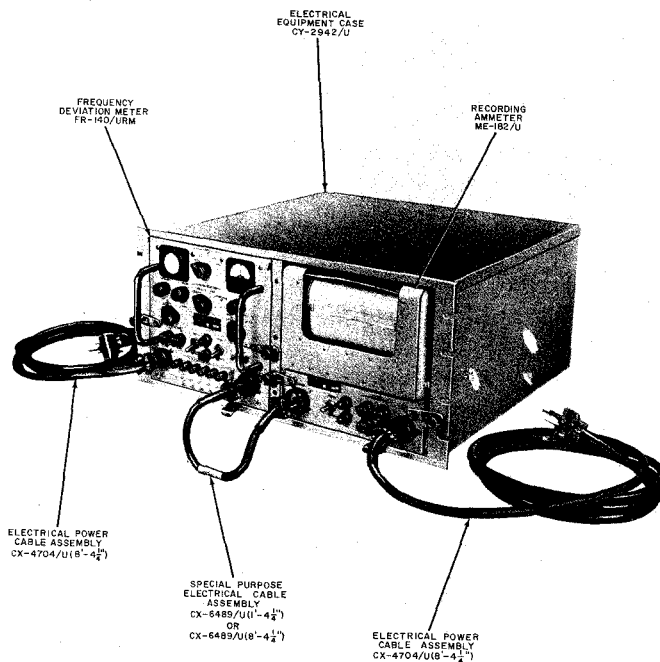
USN

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TYPE CLASS:

Std

MANUFACTURER'S NAME/CODE NUMBER: Aircraft Radio Corp., (00781).



*Frequency Deviation Meter AN/URM-115*

#### FUNCTIONAL DESCRIPTION:

Frequency Deviation Meter AN/URM-115 is a rack-mounted, transistorized test set designed to measure and record differences in frequency between two highly accurate sine-wave frequency standards. The AN/URM-115 compares 100 kc, 1.0 mc, 2.5 mc, and 5.0 mc secondary standards to 100 kc, 1.0 mc, or 5.0 mc primary standard, and measures and records the frequency deviations of the secondary standard. The AN/URM-115 measures and records frequency deviations of from 1 part in 100000 ( $10^5$ ) to 1 part in 10000000000 ( $10^{10}$ ).

No field changes in effect at time of preparation (8 June 1962).

#### TECHNICAL CHARACTERISTICS:

POWER REQUIREMENTS: 115 porm 11.5 v, 60 cyc, single ph, 41 W (nominal) 50 W (max).

OPERATING TEMPERATURE RANGE: 0 deg C to 50 deg C (32 deg F to 122 deg F).

FREQUENCY DEVIATION METER FR-140/URM

## AN/URM-115 FREQUENCY DEVIATION METER

MAXIMUM NUMBER OF SECONDARY FREQUENCY STANDARD INPUTS: 6.

INPUT FREQUENCIES: 100 kc, 1.0 mc, 2.5 mc and 5.0 mc.

INPUT IMPEDANCE: 500 ohms, nominal.

INPUT VOLTAGE: 0.5 to 10.0 v.

ISOLATION BETWEEN INPUT CIRCUITS: 100 db (min).

OPERATING VOLTAGE REQUIREMENTS: 115 porm 11.5 v, 50, 60 or 400 cyc, single ph.

OPERATING POWER REQUIREMENTS: 28 W (nominal); 37 W (max).

POWER SUPPLY REGULATION: Porm 0.1% of rated output from no load to 120% of full-rated load.

DISCRIMINATOR OVEN WARM-UP TIME: 1.0 hr.

DEVIATION METER ACCURACY: Porm 4% (M12.5 v and P125 v positions of meter selection switch), porm 2% (portable  $\Delta F$  position, porm 5% ( $\Delta F$  position).

### RECORDING AMMETER ME-182/U

OPERATING VOLTAGE REQUIREMENTS: 115 porm 11.5 v, 60 cyc, single ph.

OPERATING POWER REQUIREMENTS: 12.6 W.

CHART SPEEDS: 12, 6, 3, 1.5, 0.75 in./hr or per minute.

CHART SIZE: 6 in. w x 100 ft lg.

CHART CALIBRATION: Rectilinear; 5 major divisions each side of 0; 5 subdivisions to each major division; each major division equals 2 error parts; each subdivision equals 0.40 error part.

FULL-SCALE PEN DEFLECTION CURRENT: Porm 0.5 ma.

FULL-SCALE RECORDING ACCURACY: Porm 1%.

RELATION TO OTHER EQUIPMENT: None.

### EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Discriminator Test Adapter; (1) Electronic Counter CAQI-524D; (1) Multimeter AN/PSM-4C; (1) Oscilloscope AN/USM-105A; (1) RF Cable CG-409/U (0 ft 5 in.); (2) RF Oscillator O-76/U; (1) Vacuum Tube Voltmeter CAQI-400H; (1) Signal Generator AN/URM-25D; (1) T Adapter UG-274/U.

### MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Frequency Deviation Meter			79.6
	AN/URM-115 includes:			
1	Electrical Equipment Case			20.75
	CY-2942/U			
1	Frequency Deviation Meter			26.75
	FR-140/URM			
1	Recording Ammeter ME-182/U			28.75
2	Cable Assy, Power,		100-1/4 lg	1.75
	Electrical CX-4704/U			
1	Cable Assy, Special		100-1/4 lg	0.9
	Purpose, Electrical			
	CX-6489/U			

# **FREQUENCY DEVIATION METER AN/URM-115**

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Cable Assy, Special Purpose, Electrical CX-6489/U		16-1/4 lg	0.4
1	Pen-Cleaning Wire (music wire 0.004 to 0.008 in. dia)			
1	Red Ink Texas Instrument no. 84867			0.2
1	Syringe Texas Instrument no. 89241			0.1
2	Technical Manual			

## **REFERENCE DATA AND LITERATURE:**

NAVSHIPS 94136: Technical Manual for Frequency Deviation Meter AN/URM-115.

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

TUBES: (1) 1EP1

CRYSTALS: (2) 999.9850 kc (1) 1 mc

SEMI-CONDUCTORS: (12) 1N198 (4) 1N538 (6) 1N758A (2) 1N1731 (2) 2N43A (31) 2N274  
(2) 2N333 (2) 2N384 (4) 2N539A (2) 2N1303 (4) 3N35

## **SHIPPING DATA**

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	11.8	162

## **PROCUREMENT DATA**

PROCURING SERVICE: USN

DESIGN COG: USN, BuShips

SPEC &/OR DWG: SHIPS-F-3252

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Aircraft Radio Corp.	Boonton, N.J.	NObsr-75741, 29 April 1959	\$4,516.00