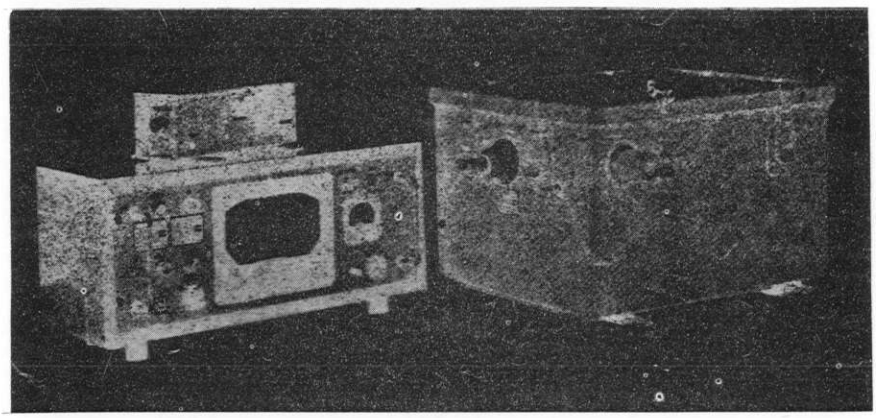
21 July 1964 ANTENNA COUPLER GROUP AN/URA-27

Cog Service:	FSN:	Functional Class:
USA	USN	USAF

Used by

TYPE CLASS:

MANUFACTURER'S NAME/CODE NUMBER: The Technical Materiel Corporation, (82679).



ANTENNA COUPLER GROUP AN/URA-27

FUNCTIONAL DESCRIPTION:

Antenna Coupler Group AN/URA-27 is a remotely controlled antenna coupler designed to couple the unbalanced output of any 1 kw radio transmitter, to a suitable antenna. Instantaneous readings of forward power, reflected power, and voltage standing wave ratio aid in transmitter tuning and provide indications of transmission system efficiency.

No field changes in effect at time of preparation (15 June 1964).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

ANTENNA COUPLER GROUP AN/URA-27

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: 2 to 30 mc.
POWER RATING: 1,000 W input continuous at 100% modulation.
INPUT IMPEDANCE: Nom 50 ohms unbalanced.
STANDING WAVE RATIO: Better than 2.5 to 1.
POWER REQUIREMENTS: 115 or 230 v, 50 to 60 cyc, single ph, 150 W.

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Antenna Coupler Group AN/URA-27 includes:		
1	Coupler, Antenna CU-772/URA-27	8-1/4 x 12 x 15-1/4	49
1	Coupler, Directional CU-773/URA-27	3-1/2 x 3-1/2 x 9-1/2	2
1	Control-Indicator C-2995/URA-27	8-1/2 x 9-3/4 x 20-1/2	25

REFERENCE DATA AND LITERATURE: None.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	11.9	175

PROCUREMENT DATA

PROCURING SERVICE: USN
DESIGN COG: USN, BuShips
SPEC &/OR DWG:

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
The Technical Materiel Corp.	Mamaroneck, New York	NObsr-75916	$900.00
		NObsr-75917	
Model No. ATS-50-2		NObsr-81106	$900.00
		NObsr-81394	$900.00

ELECTRONIC EQUIPMENT - PRELIMINARY DATA
NAVSHIPS 4457 (Rev. 9-62)

DESIGNATION: AN/URA-30A

CLASSIFICATION of equip.	ITEM NAME	DATE of request
UNCLASSIFIED	Modulator-Oscillator Group	24 January 1962
SPECIFICATION: -	CONTRACT NUMBER AND DATE: NObsr-87149, Item 3	QUANTITY ON ORDER: -

CONTRACTOR'S NAME AND ADDRESS:
The Technical Materiel Corporation
700 Fenimore Road
Mamaroneck, New York

SERVICE APPROVAL LETTER - SERIAL AND DATE: -

ELECTRICAL CHARACTERISTICS

POWER INPUT: 115 v 50-60 CYCLE 1 PHASE ____ AMPS ____ WATTS | 230 v 50-60 CYCLE 1 PHASE ____ AMPS ____ WATTS

OUTPUT SIGNAL CHARACTERISTICS (REP. RATE, I.F. ETC.)	WAVE GUIDE OR CABLE LIMITATIONS	INPUT SIGNAL CHARACTERISTICS	POWER OUTPUT
-	-	-	-

OPERATING FREQ. AND FREQ. RANGE	EMISSION OR RECEPTION (TYPE)	FREQ. CONTROL (TYPE)	NO. OF CHANNELS
2 to 4 mcs (1 band)	(see reverse)	(see reverse)	20,000

ANTENNA OR TRANSDUCER (TYPE)	IMPEDANCE (OHMS)	FEED TYPE	BEAM PATTERN
-	-	-	- °HORIZ. - °VERT.

REFERENCE DATA AND LITERATURE

DRAWING	DWG. NUMBER	DIST. DATE	PUBLICATION	PUB. NUMBER
			TECHNICAL MANUAL	
			OPERATING INSTRUCTION CHART	
			PERFORMANCE STANDARD SHEET	
			MAINTENANCE STANDARD BOOK	

MAJOR UNITS

QTY	NOMENCLATURE AND NAME	OVERALL DIMENSIONS (IN) HEIGHT	WIDTH	DEPTH	H.D. (UNITS)	WEIGHT (LBS)
	Modulator-Oscillator Group AN/URA-30A consists of:	79	23	21		
1	Radio Frequency Oscillator O-714/UR					
1	Power Distribution Panel SB-1114/UR					
1	Radio Frequency Amplifier AM-2505A/URA-31					
1	Frequency Divider CV-928/URA-31					
1	Radio Frequency Oscillator O-715A/URA-31					
1	Radio Frequency Oscillator O-716/URA-31					
1	Audio Frequency Oscillator O-717/URA-31					
1	Power Supply PP-2561A/URA-31					
1	Power Supply PP-2562/URA-31					
1	Electrical Equipment Cabinet CY-2823/URA-30					
		1.6	AN/URA-30A: 1			

CHANGE 64 - 687C2

IF ADDITIONAL EQUIPMENTS OR UNITS ARE REQUIRED, ATTACH ADDITIONAL SHEETS AND SPECIFY SOURCE

599

DESIGNATION	ITEM NAME
AN/URA-30A	Modulator-Oscillator Group

FUNCTIONAL DESCRIPTION: SKETCH, MFG. DIMENSIONS, ETC.

The AN/URA-30A is a transmitting-mode selector capable of SSB, ISB, DSB (with any degree of carrier suppression down to a maximum of -55 db), CW, AM, and FS (with appropriate FS exciter). The unit is continuously tuneable in the frequency range of 1750 to 33750 Kcs in 100 cycle increments and a frequency stability of one part in 100,000,000 per day. The unit incorporates two independent, 600-ohm audio inputs which may be switched to either sideband. The audio bandwidth of each channel is plus or minus 1.5 db from 350 to 7500 cycles. The Modulator-Oscillator uses amplitude modulation (single or double sideband). Amplifier data: 1 watt PEP, and 1750 to 33750 Kcs (120,000 channels).

The unit is synthesized frequency controlled with a stability of 1 part in 10^8 per day and continuous frequency coverage from 1750 to 33750 Kcs in 100 cycle increments.

The AN/URA-30A is for general-purpose use. It is two-way interchangeable mechanically and electrically with AN/URA-30 in the field. Maintenance parts vary slightly.

No unit cost available.

Source of information: Request for Nomenclature.

609

14 August 1967 — OSCILLATOR POWER-SUPPLY-GROUP AN/URA-31A

Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: The Technical Material Corp., (82679).

FUNCTIONAL DESCRIPTION:

The Oscillator Power Supply Group AN/URA-31A is a synthesizer controlled, precision oscillator with a stability of one part in 100,000,000 per day. The unit may be used to provide precise frequency control in transmitting or receiving system applications. An automatic load and drive control is incorporated to limit distortion during load changes or high drive peaks.

No field changes in effect at time of preparation (14 April 66).

RELATION TO OTHER EQUIPMENT:

The AN/URA-31A is mechanically and electrically one-way interchangeable with AN/URA-31A.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: 1.750 to 33.750 mc, 4 bands in 100 cycle increments.
FREQUENCY CONTROL: Synthesized type.
FREQUENCY STABILITY: 1 part in 100,000,000 per day.

601

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Oscillator Power Supply Group AN/URA-31A, includes:		
1	Amplifier, Radio Frequency: AM-2505A/URA-31		
1	Power Supply: PP-2561A/URA-31.		
1	Oscillator, Radio Frequency: O-715/URA-31.		
1	Oscillator, Radio Frequency: O-716/URA-31.		
1	Frequency Divider: CV-928/URA-31		
1	Oscillator, Audio Frequency: O-717/URA-31		
1	Power Supply: PP-2562/URA-31		

REFERENCE DATA AND LITERATURE:

The Technical Material Corporation: Technical Manual for Operating Instructions for Transmitting Set, Radio, Model GPT-10K Synthesized.

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
The Technical Material Corp. (Mfr's Model CPO-1A).	Mamaroneck, N.Y.	NObsr-81599	

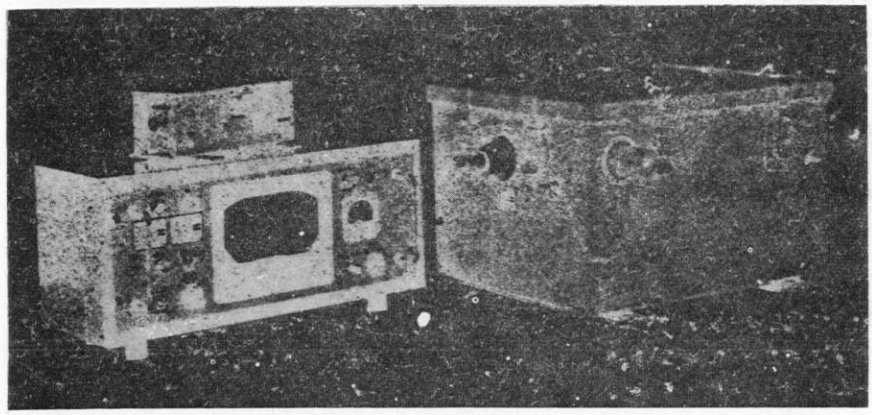
602

Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Technical Material Corporation, (82679).



ANTENNA COUPLER GROUP AN/URA-34

FUNCTIONAL DESCRIPTION:

Antenna Coupler Group AN/URA-34 is a remote controlled antenna coupler designed to couple the output of any 1000 watt transmitter, with an unbalanced output of 70 ohms, to a 35 foot whip antenna. The use of a new VSWR meter in the control indicator makes transmitter tuning easier and in most cases will permit increased power to the antenna.

No field changes in effect at time of preparation (1 April 1965).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

TECHNICAL CHARACTERISTICS:

TYPE OF ANTENNA: 35 ft whip type antenna.
INPUT IMPEDANCE: 70 ohms.
OPERATING FREQUENCY RANGE: 2 to 30 mc.
POWER RATING
ANTENNA COUPLER: 1000 W input continuous at 100% modulation.
DIRECTIONAL COUPLER: 1000 W input continuous at 100% modulation.
STANDING WAVE RATIO: 2.5 to 1.
SENSITIVITY: Better than 20 db.

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Antenna Coupler Group AN/URA-34 includes:		
1	Control Indicator C-2995/URA-27	7 x 7-3/8 x 20	
1	Antenna, Coupler CU-772/URA-27	12 x 16 x 19	
1	Directional, Coupler CU-820/URA-34	3-1/4 x 3-3/8 x 9-1/4	

REFERENCE DATA AND LITERATURE:

NAVSHIPS 93400: Preliminary Data Form for Antenna Coupler Group AN/URA-34.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: Not available.

CRYSTALS: Not available.

SEMI-CONDUCTORS: Not available.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN
DESIGN COG: USN, BuShips
SPEC &/OR DWG:

ANTENNA COUPLER GROUP AN/URA-34

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Technical Material Corporation, Model No. ATS-70-2	Mamaroneck, N. Y.	NObsr-75917	$915.00

605

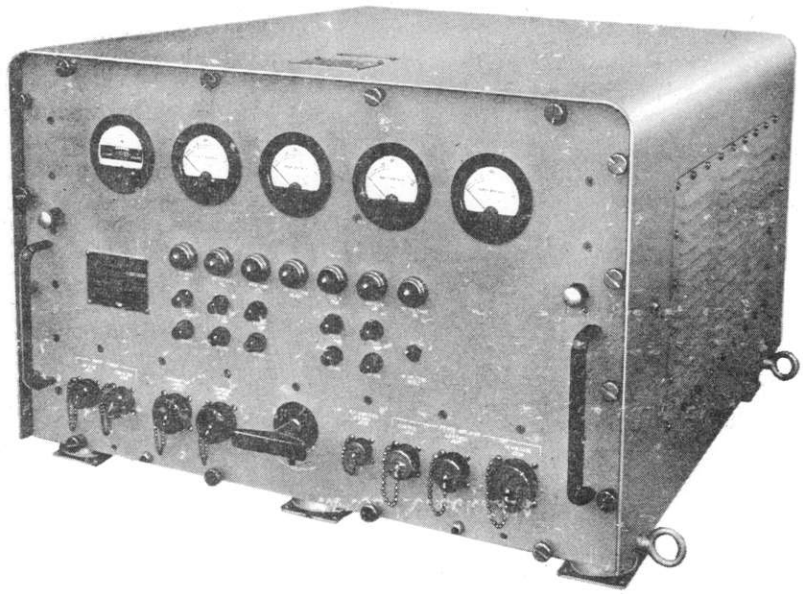
8 July 1965 POWER SUPPLY SET AN/URA-35

Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Babcock Electronics Corp., (82050).



POWER SUPPLY SET AN/URA-35

FUNCTIONAL DESCRIPTION:

Power Supply Set AN/URA-35 provides all necessary bias and plate power to Amplifier, Radio Frequency AM-2643/UR. The power supply AN/URA-35 is equipped with time-delay relay circuits, which control the application of plate voltage to the radio-frequency amplifier and enable a cooling blower in the AM-2643/UR to remain in operation for a brief period after shutdown.

No field changes in effect at time of preparation (27 April 1965).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Test Harness, Transmitting Set AN/URM-111A.

TECHNICAL CHARACTERISTICS:

OUTPUT VOLTAGE CHARACTERISTICS
- HIGH VOLTAGE: 2500 v dc.
- BAIS VOLTAGE: - 30 v dc.

INPUT POWER
- OPERATING VOLTAGE LIMITS: 102 to 126 v, single ph.
- OPERATING FREQUENCY LIMITS: 55 to 65 cyc, single ph.
- OPERATING POWER: 115 v, 600 W max.
- STANDBY POWER: 115 v, 500 W.
- OPERATING VOLTAGE LIMITS: 204 to 252 v, 3 ph.
- OPERATING FREQUENCY LIMITS: 55 to 65 cyc, 3 ph.
- OPERATING POWER: 3000 W max, 230 v, 3 ph.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Power Supply Set AN/URA-35 includes:		19-7/8 x 32-9/32 x 34-1/8	642
1	Power Supply PP-2658/UR			
1	Control Radio Set Transfer C-3307/UR			
1	Case, Power Supply CY-2925/URA-35			

607

626

REFERENCE DATA AND LITERATURE:

NAVWEPS 16-30URA35-1: Handbook of operation and Service Instructions with Illustrated Parts Breakdown for Power Supply Set AN/URA-35 and Amplifier Radio Frequency AM-2643/UR with case, Amplifier CY-2921/UR.

TUBE, CRYSTAL &/OR SEMI-CONDUCTOR DATA:

TUBES: (1) 6080 (1) 12AT7WA (2) 0B2WA (3) 4B32 (1) 5814WA (2) 5751/12AX7

CRYSTALS: Not required.

SEMI-CONDUCTORS: (22) M-500 (5) 1N540

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG:

DESIGN COG: USN, BuWeps

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Babcock Electronic Corp.	Costa Mesa, California	NOas 60-6083C	

ELECTRONIC EQUIPMENT - PRELIMINARY DATA
NAVSHIPS 4457 (Rev. 9-62)

DESIGNATION: AN/URA-36A

CLASSIFICATION of Equip.	ITEM NAME	DATE
UNCLASSIFIED	Amplifier-Power Supply Group	25 May 1961
SPECIFICATION: -	CONTRACT NUMBER AND DATE: NObsr-81599	QUANTITY ON ORDER: -

CONTRACTOR'S NAME AND ADDRESS
The Technical Materiel Corporation
700 Fenimore Road
Mamaroneck, New York

SERVICE APPROVAL LETTER - SERIAL AND DATE
695C3B-1053
11 September 1961

ELECTRICAL CHARACTERISTICS

POWER INPUT
- v - CYCLE - PHASE - AMPS - WATTS
- v - CYCLE - PHASE - AMPS - WATTS

OUTPUT SIGNAL CHARACTERISTICS (REP. RATE, I.F. ETC.)	WAVE GUIDE OR CABLE LIMITATIONS	INPUT SIGNAL CHARACTERISTICS	POWER OUTPUT
-	-	-	1000 W

OPERATING FREQ. AND FREQ. RANGE	EMISSION OR RECEPTION (TYPE)	FREQ. CONTROL (TYPE)	NO. OF CHANNELS
2 to 32 mc	-	-	-

ANTENNA OR TRANSDUCER (TYPE)	IMPEDANCE (OHMS)	FEED TYPE	BEAM PATTERN
-	-	-	- °HORIZ. - °VERT.

REFERENCE DATA AND LITERATURE

DRAWING	DWG. NUMBER	DIST. DATE	PUBLICATION	PUB. NUMBER
-	-	-	TECHNICAL MANUAL	-
			OPERATING INSTRUCTION CHART	-
			PERFORMANCE STANDARD SHEET	-
			MAINTENANCE STANDARD BOOK	-

MAJOR UNITS

QTY	NOMENCLATURE AND NAME	OVERALL DIMENSIONS (IN) HEIGHT	WIDTH	DEPTH	H.D. (UNITS)	WEIGHT (LBS)
	Amplifier Power Supply Group AN/URA-36A(Mfr's Model PAL-1KA) consists of:					
1	RF Amplifier AM-2785A/URA-36					
1	Power Supply PP-2765A/URA-36					
1	Power Supply PP-2766/URA-36					

1.2 AN/URA-36A: 1

DESIGNATION	ITEM NAME
AN/URA-36A	Amplifier-Power Supply Group

FUNCTIONAL DESCRIPTION: SKETCH, MFG. DIMENSIONS, ETC.

The AN/URA-36A is a linear power amplifier delivering 1000 watts PEP single sideband or 1000 watts CW and FS throughout the frequency range 2 to 32 mc. The unit is completely band-switched and continuously tunable throughout the range. There are no plug-in components and all controls are on the front panel. The group is mechanically and electrically one-way interchangeable with AN/URA-36.

The unit is rugged and compact, fully metered. It has front-panel neutralization adjustment, interlock protection, and a self-contained ventilation system.

No unit cost available.

Source of information: Request for Nomenclature
Nomenclature correspondence

610

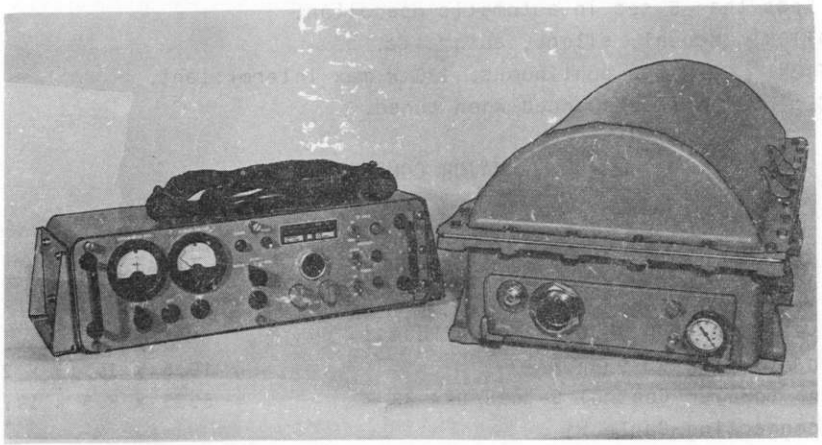
17 July 1967 ANTENNA COUPLER GROUP AN/URA-38

Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: RF Communications, Inc., (14304).



ANTENNA COUPLER GROUP AN/URA-38

FUNCTIONAL DESCRIPTION:

Antenna Coupler Group AN/URA-38 is an automatic antenna tuning system intended primarily for surface ship and shore use with Radio Transmitting Set AN/URT-23(V). However, the equipment design includes provisions for manual and semi-automatic tuning, thus making the system readily adaptable for use with other radio transmitters. In addition, the manual tuning capability is useful when a failure occurs in the automatic tuning circuitry. The AN/URA-38 can also be tuned without the use of RF power (silent tuning). This method is useful in installations where radio silence must be maintained except for brief transmission periods. The AN/URA-38 matches the impedance of a 15, 25, or 35 foot whip antenna to the impedance of a 50 ohm transmission line at any frequency in the 2 to 30 megacycle range. A 50 to 250 watt CW signal is required for tuning, after which the system is capable of handling 1 kilowatt of average and peak envelope power. The AN/URA-38 consists of an antenna coupler, normally mounted at the base of the antenna, and an antenna coupler control, normally mounted with the associated radio transmitter.

No field changes in effect at time of preparation (4 April 1967).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Antenna, whip, 15, 25, 28, or 35 ft; (4) Cable, interconnecting; (1) Pressurization Kit, MK-260/U; (1) Ground Strap; (1) Antenna Simulator; (1) Dummy Load, Electrical, DA-75/U; (1) Voltmeter, IS-189; (1) DC Differential Voltmeter, CYK 198A; (1) RF Wattmeter w/1000H plug-in CAWY Model 43; (1) Technical Manual for Voltmeter IS 189; (1) Technical Manual for DC Differential Voltmeter.

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: 2 to 30 mc.
RF SIGNAL CAPABILITY: LSB, ISB, USB, CW, FSK, and compatible AM.
RF POWER CAPABILITY: 1000 W avg and PEP.
POWER REQUIREMENTS: 115 v, 48 to 63 or 350 to 450 cps, single ph.
VSWR: 1.5:1 max when tuned.
ANTENNA TYPES: 15, 25, 28, or 35 ft whip.
TUNING TIME: Less than 5 sec in automatic operation.
MODES OF OPERATION: Manual, silent, automatic.
POWER CONSUMPTION: 80 W max continuous; 130 W max intermittant.
INPUT IMPEDANCE: 50 ohms unbalanced when tuned.

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Antenna Coupler Group AN/URA-38, includes:		
1	Antenna Coupler CU-938/URA-38	10.5 x 15.13 x 25.5	72
1	Antenna Coupler Control C-3698/URA-38	5.25 x 8.5 x 19.69	22
1	Interconnecting Cable W1		2
1	Kit, Mating Connectors		2
2	Technical Manuals	0.25 x 9.5 x 11.5	
1	Performance Standards Sheet		
1	Maintenance Standard Book	0.13 x 9.5 x 11.5	
1	Operator's Instruction Chart		

REFERENCE DATA AND LITERATURE:

NAVSHIPS 0967-204-0010: Technical Manual for Antenna Coupler Group, AN/URA-38.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	1.65	132

ANTENNA COUPLER GROUP AN/URA-38

PROCUREMENT DATA

PROCURING SERVICE: USN DESIGN COG: USN, NavShips

SPEC &/OR DWG:

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
RF Communications, Inc.	Rochester, N. Y.	NObsr 93367	

27 May 1965

Cog Service: USN FSN:

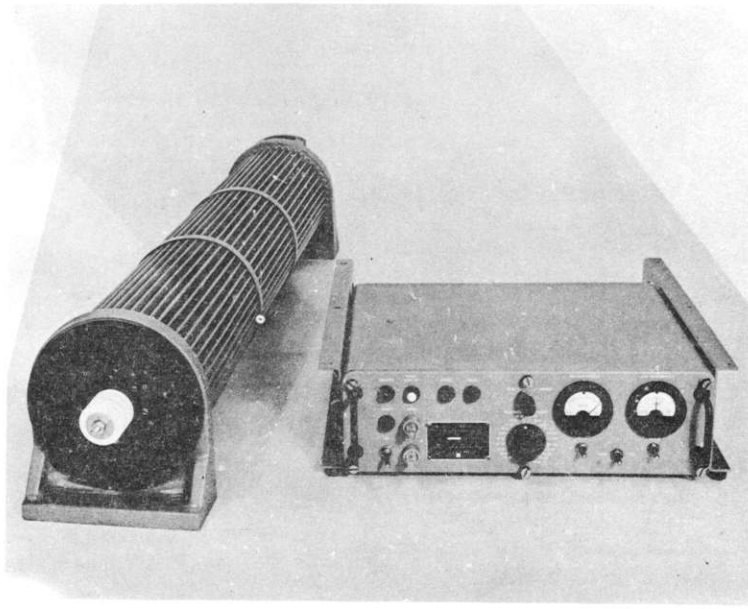
ANTENNA COUPLER GROUP AN/URA-38(XN-1)

Functional Class:

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: RF Communications Incorporated, (14304).



ANTENNA COUPLER GROUP AN/URA-38(XN-1)

FUNCTIONAL DESCRIPTION:

Antenna Coupler Group AN/URA-38(XN-1) is an automatic antenna coupler system for use with shipboard or ground communication transmitters. The equipment was designed primarily for use with Radio Transmitter AN/URT-23(V). It is also useful as a general purpose antenna coupler by manual control. A silent tuning feature allows the coupler elements to be preset without transmitting a signal. This is useful in submarine installation.

No field changes in effect at time of preparation (26 April 1965).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

Cable as required.

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: 2 to 32 mc.
TYPE OF SIGNAL: AM, SSB, ISB, FSK, CW.
RF POWER CAPABILITY: 1000 W average and PEP max.
INPUT VSWR (AFTER TUNING) 1.5: One max.
PRIMARY POWER: 115 v ± 10%, 1 ph, 48 to 450 cps, 120 W.
INPUT IMPEDANCE (WHEN TUNED): 50 ohms unbalanced.
TUNING TIME (AUTOMATIC OPERATION): 5 sec.
MODES OF OPERATION: Automatic, silent or manual.
FUSE: 1.5 amp.
TYPES OF ANTENNAS: 15-25-35 ft whip.
ENVIRONMENTAL TEMPERATURE
ANTENNA COUPLER: − 28 to + 65° C.
COUPLER CONTROL: 0 to 50° C.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Antenna Coupler Group AN/URA-38(XN-1) includes:			
1	Control Antenna Coupler C-3698(XN-1)/URA-38		5-1/4 x 18 x 19-9/16	35
1	Coupler Antenna CU-938(XN-1)/URA-38		8-7/16 x 9-1/4 x 43	56
1	Set Cable Connectors			
2	Technical Manuals NAVSHIPS 96033			
1	Bag Hardware			

615

REFERENCE DATA AND LITERATURE:

NAVSHIPS 96033: Technical Manual (Service Test Type) for Antenna Coupler Group AN/URA-38(XN-1).

TUBE, CRYSTALS AND/OR SEMI-CONDUCTOR DATA:

TUBES: Not required.

CRYSTALS: Not required.

SEMI-CONDUCTORS: (14) 1N277 (8) 1N914 (16) 1N547 (4) 1N1614 (3) 1N753A (4) 2N398
(4) 2N297A (16) 2N696 (2) 2N1412

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
RF Communications Inc.	Rochester, New York	NObsr 89069	

ELECTRONIC EQUIPMENT - PRELIMINARY DATA
NAVSHIPS 4457 (Rev. 9-62)

DESIGNATION: AN/URA-39(V)

CLASSIFICATION of Equip.	ITEM NAME	DATE
UNCLASSIFIED	Single Sideband Exciter Group	12 April 1961
SPECIFICATION	**CONTRACT NUMBER AND DATE**	**QUANTITY ON ORDER**
-	NObsr-85253	Two Units

CONTRACTOR'S NAME AND ADDRESS
Manson Laboratories, Inc.
Stamford, Connecticut

SERVICE APPROVAL LETTER - SERIAL AND DATE: -

ELECTRICAL CHARACTERISTICS

POWER INPUT: 115 V 60 CYCLE 1 PHASE - AMPS - WATTS | - V - CYCLE - PHASE - AMPS - WATTS

OUTPUT SIGNAL CHARACTERISTICS (REP. RATE, I.F. ETC.)	WAVE GUIDE OR CABLE LIMITATIONS	INPUT SIGNAL CHARACTERISTICS	POWER OUTPUT
-	-	-	(see reverse)
OPERATING FREQ. AND FREQ. RANGE	**EMISSION OR RECEPTION (TYPE)**	**FREQ. CONTROL (TYPE)**	**NO. OF CHANNELS**
2-32 mc	(see reverse)	-	-

ANTENNA OR TRANSDUCER (TYPE)	IMPEDANCE (OHMS)	FEED TYPE	BEAM PATTERN
-	-	-	- °HORIZ. - °VERT.

REFERENCE DATA AND LITERATURE

DRAWING	DWG. NUMBER	DIST. DATE	PUBLICATION	PUB. NUMBER
-	-	-	TECHNICAL MANUAL	-
			OPERATING INSTRUCTION CHART	-
			PERFORMANCE STANDARD SHEET	-
			MAINTENANCE STANDARD BOOK	-

MAJOR UNITS

QTY	NOMENCLATURE AND NAME	OVERALL DIMENSIONS (IN) HEIGHT	WIDTH	DEPTH	H.D. (UNITS)	WEIGHT (LBS)
	Single Sideband Exciter Group AN/URA-39(V)(Mfr's Model 508)	24 in.	22 in.	22 in.		
V	Electronic Digital Counter CP-616/U(V) one or none					
1	Electrical Frequency Synthesizer O-839/UR					
1	Electrical Frequency Converter CV-1182/URA-39(V)					
1	Radio Transmitter Modulator MD-414/URA-39(V)					
V	Frequency Calibrator O-840/UR one or none					
V	Electrical Equipment Mounting Rack MT-2543/U one or none					
1	Electrical Equipment Rack MT-2542/URA-39(V)					

1.2 AN/URA-39(V): 1

213 CHANGE 65-687C2

IF ADDITIONAL EQUIPMENTS OR UNITS ARE REQUIRED, ATTACH ADDITIONAL SHEETS AND SPECIFY SOURCE

DESIGNATION	ITEM NAME
AN/URA-39(V)	Single Sideband Exciter Group

FUNCTIONAL DESCRIPTION: SKETCH, MFG. DIMENSIONS, ETC.

The AN/URA-39(V) is a single sideband exciter for general-purpose use in ship and shore radio installations.

Electrical Characteristics: Output 20 to 32 mc continuous coverage.
Output frequency readout and monitor with digital type counter.
SSB Generator operating modes: CW, FSK, AM, SSB, SSB with carrier, direct SSB, DSB with carrier, indirect SB or indirect SB with carrier.
Output power: Continuously adjustable from zero to maximum of 100 mw PEP, across 100 ohms nominal impedance.
Frequency stability: $\pm$ part in 10^8 per day.
Audio input: Two independent 600-ohm channels balanced or unbalanced -20 db level for full RF output (terminal or microphone).
Audio response: Within 3 db from 300 cycles to 6000 cycles.

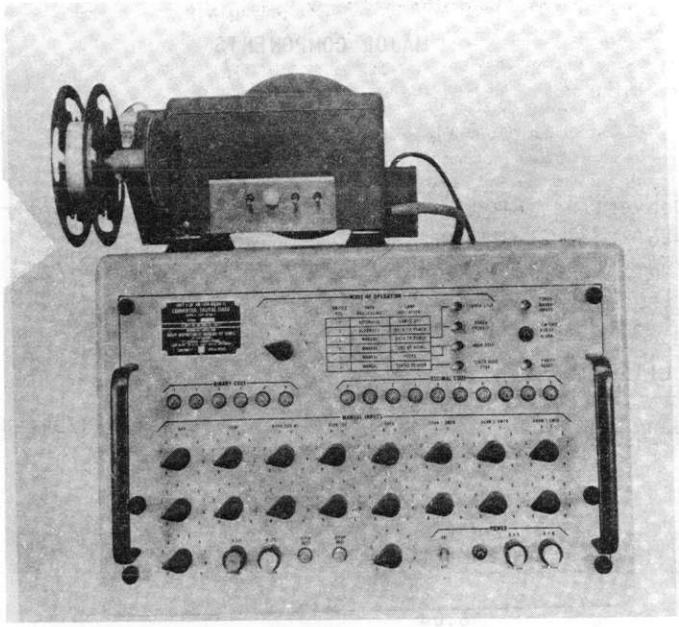
Unit cost: $20,000.00

Source of information: Request for Nomenclature
Contract

618

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: ITT Federal Laboratories, a Division of International Telephone and Telegraph Corporation, (90348).



DIGITAL CONVERTING PROGRAMMING GROUP AN/URA-40(XN-1)

FUNCTIONAL DESCRIPTION:

The Digital Converting Programming Group AN/URA-40(XN-1) is used to convert analog signals from an omega receiver to a binary code. The Friden equipment is used to record this code on tape. The punched tape, the binary code record, is then used by a alphanumeric computer (Burroughs 220) to analyze the performance of the omega navigation equipment being monitored.

The analog signals from the receiver are routed to the Digital Data Converter. In the converter these signals are programmed to determine the order in which they shall be converted to binary code and punched on tape. The information to be recorded, a 4-word, 48-bit sequence, is fed directly from the converter to the tape punch. In normal operation the conversion of the analog signals and punching of the binary code takes about 48 seconds, and it occurs once every 6 minutes.

No field changes in effect at time of preparation (8 April 1966).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Cable: Part No. W-1.

(1) Cable: Part No. W-4.

TECHNICAL CHARACTERISTICS:

COOLING REQUIREMENT: Adequate air space must be allowed at the rear and sides of the equipment.

POWER REQUIREMENTS: 115 v ac, 60 cyc, single ph.

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Digital Converting, Programming Group AN/URA-40(XN-1) includes:	13 x 18 x 19-1/2	97
1	Friden Motorized Tape Punch, Model 2, DWG No. D2227652.	9 x 12-1/2 x 19-1/2	28

REFERENCE DATA AND LITERATURE:

NAVSHIPS 94408: Technical Manual for Digital Data Converter AN/URA-40(XN-1).

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	6.04	126
1	4.6	54

PROCUREMENT DATA

PROCURING SERVICE: USN DESIGN COG: USN, BUSHIPS

SPEC &/OR DWG:

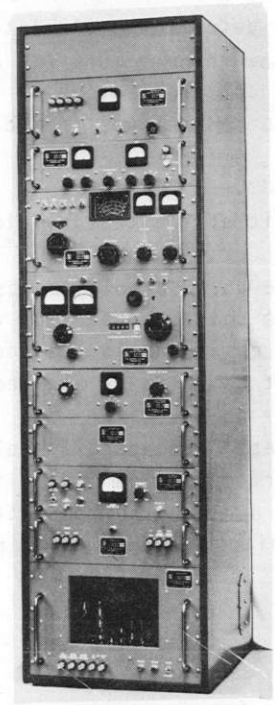
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
ITT Federal Laboratories A Division of International Telephone and Telegraph Corp.	Nutley, N.J.	NObsr-81592	

Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: The Technical Materiel Corp. (82679)



MODULATOR OSCILLATOR GROUP AN/URA-41B

FUNCTIONAL DESCRIPTION:

The Modulator, Oscillator Group AN/URA-41B is a synthesized oscillator/exciter unit that provides highly stable 100 cycle incremental tuning in the VLF/LF/HF portions of the frequency spectrum. Units feature frequency stability and resettable accuracy of one part in 10^8 for twenty-four hours. The Low Frequency Sideband Exciter units are used to replace the master oscillator of conventional transmitters for cw operation, or to provide SSB, ISB, compatible AM and cw modes of operation when applied to a linear amplifier. Tone FSK or FAX is possible by means of a Keyer such as Model TIS-3. A phase detector comparison circuit with direct meter indication allows the built-in standard to be compared to and corrected to a master station standard without degrading either standard.

No field changes in effect at time of preparation (3 June 1966).

RELATION TO OTHER EQUIPMENT: None

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None

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TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: SBG-1M; 10 to 50 kc in 100 cps steps and 1.75 to 33.75 mcs in 100 cps steps; SBG-1L: 50 to 500 kc in 100 cps steps and 1.75 to 33.75 mcs in 100 cps steps.

OPERATING MODES: SSB, ISB, AM equivalent and CW(FSK and FAX with external tone keyers).

OUTPUT POWER: SBG-1M: 10 to 50 kc continuously adjustable from 0 to 5 watts PEP; SBG-1L; 50 to 500 kc continuously adjustable from 0 to 5 watts PEP; BOTH: 1.75 to 33.75 mcs continuously adjustable from 0 to 1 watt PEP.

OUTPUT IMPEDANCE: 50 ohms nominal.

FREQUENCY STABILITY: 1 part in 10^8 per day for ambient temperature change.

FREQUENCY CONTROL: All frequency determining elements referenced to a built-in 1 mc source.

SIGNAL/DISTORTION RATIO: 45 db down from 2 tone PEP output.

UNWANTED SIDEBAND REJECTION: 500 cps single tone at least 60 db down from full output.

SPURIOUS SIGNALS: All spurious 60 cps removed from carrier are down better than 60 db

NOISE LEVEL: 70db below PEP.

CARRIER INSERTION: − 50 db to 0 db.

HARMONIC SUPPRESSION: 2nd harmonic at least 50db below PEP output, all others at least 60 db. below output.

AUDIO RESPONSE: Flat within ± 1.5 db, 250 to 7500 cps, crystal lattice filters, both upper and lower channels; 250 to 3300 cps response flat within ± 1.5 db is also available.

AUDIO INPUT: Two independent 600 ohm channels, balanced or unbalanced, − 20 db level for full RF output. An unbalanced input can also be applied.

HUM LEVEL: − 55 db below full PEP output.

ALDC: MODELS SBG 1L, 1M will accept 0 to approximately − 8 volts dc from the ALDC circuit of its associated linear amplifier to improve linearity, limit distortion, and deliver a relatively constant output level during high modulation peaks or load changes.

METERING: Front panel meters monitor all critical circuits.

TEMPERATURE: 0 to 50 deg C.

HUMIDITY: 95% humidity.

ALTITUDE: 10,000 ft.

COOLING: Filtered forced air.

CW KEYING: Rear panel connections for CW Keying.

POWER REQUIREMENT: 115 to 230 v ac, 50 to 60 cps, single phase, approximately 900 watts.

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MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Modulator-Oscillator Group AN/URA-41B includes:	21 x 23 x 74-1/2	550
1	Cabinet, Electrical Equipment: CY-3442/URA-41	20-3/4 x 23-1/2 x 75	330
1	Amplifier, Radio Frequency: AM-4270/URA-41A	5-1/4 x 12 x 19	24
1	Oscillator, R.F.: O-714/UR	5-1/4 x 10-3/4 x 19	16-1/4
1	Amplifier R.F.: AM-2505C/URA-31	10-1/2 x 19 x 19-1/4	42
1	Frequency Divider: CV-928/URA-31	5-1/4 x 15 x 19	20
1	Oscillator A.F.: O-717/URA-31	5-1/4 x 19 x 19	25
1	Oscillator R.F.: O-716/URA-31	10-1/2 x 15 x 19	40
1	Oscillator R.F.: O-715C/URA-31	5-1/4 x 16-1/2 x 19	20
1	Power Supply: PP-2561A/URA-31	5-1/4 x 16-1/2 x 19	30
1	Power Supply: PP-2562/URA-31	12-1/4 x 16 x 19	67

REFERENCE DATA AND LITERATURE:

The Technical Materiel Corp., Bulletin 2013 for Modulator-Oscillator Group AN/URA-41B.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT(LBS)
1	35.6	485
1	12.1	175
1	12.1	166
1	12.1	181
1	5.5	118

PROCUREMENT DATA

PROCURING SERVICE: USN

DESIGN COG: USN, NavShips

SPEC &/OR DWG:

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
The Technical Materiel Corp. Mfr's Model SBG-1L and Model SBG-1M	Mamaroneck, N.Y.	N600(63133)65387	

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ELECTRONIC EQUIPMENT - PRELIMINARY DATA
NAVSHIPS 4457 (Rev. 9-62)

CLASSIFICATION of Equip. UNCLASSIFIED	ITEM NAME Single Sideband Converter Group	DESIGNATION AN/URA-42
		DATE of Request. 29 December 1961
SPECIFICATION -	CONTRACT NUMBER AND DATE NObsr-81106, 13 November 1959	QUANTITY ON ORDER 10
CONTRACTOR'S NAME AND ADDRESS -		SERVICE APPROVAL LETTER - SERIAL AND DATE 695C3B-149 5 February 1962

ELECTRICAL CHARACTERISTICS

POWER INPUT
115/230 50-60 cycles, 1 phase ____ WATTS | ____ V - CYCLE - PHASE - AMPS - WATTS

OUTPUT SIGNAL CHARACTERISTICS (REP. RATE, I.F. ETC.)	WAVE GUIDE OR CABLE LIMITATIONS	INPUT SIGNAL CHARACTERISTICS	POWER OUTPUT
-	-	-	-

OPERATING FREQ. AND FREQ. RANGE	EMISSION OR RECEPTION (TYPE)	FREQ. CONTROL (TYPE)	NO. OF CHANNELS
-	-	-	-

ANTENNA OR TRANSDUCER (TYPE)	IMPEDANCE (OHMS)	FEED TYPE	BEAM PATTERN
-	-	-	- °HORIZ. - °VERT.

REFERENCE DATA AND LITERATURE

DRAWING	DWG. NUMBER	DIST. DATE	PUBLICATION	PUB. NUMBER
-	-	-	TECHNICAL MANUAL	-
			OPERATING INSTRUCTION CHART	-
			PERFORMANCE STANDARD SHEET	-
			MAINTENANCE STANDARD BOOK	-

MAJOR UNITS

QTY	NOMENCLATURE AND NAME	OVERALL DIMENSIONS (IN) HEIGHT	WIDTH	DEPTH	H.D. (UNITS)	WEIGHT (LBS)
	Single Sideband Converter Group AN/URA-42 (Mfr's Model SBC-1) consists of:					
1	Single Sideband Converter CV-1288/UR					
1	Receiver Control C-4071/UR					

1.5 AN/URA-42: 1

DESIGNATION	ITEM NAME
AN/URA-42	Single Sideband Converter Group

FUNCTIONAL DESCRIPTION: SKETCH, MFG. DIMENSIONS, ETC.

The AN/URA-42 is a combination of the C-4071/UR and CV-1288/UR. The group provides AGC control which may be derived from the upper or lower sideband, the carrier, or (in ISB operation) the sideband with the strongest signal. AGC is available to control the receiver where required. The group is for general-purpose use.

Special features are dual-loop all electronic automatic frequency control; electronic memory circuit; and dual IF and audio channels with front panel selection of IF. Bandwidths are 3-kc lower sideband, 7.5-kc lower sideband, 3-kc upper sideband, and 7.5-kc upper sideband.

The equipment is used with Radio Receivers R-840/URR and R-390A/URR.

Unit cost: $2,000.00

Source of information: Request for Nomenclature
Contract
Nomenclature correspondence

ELECTRONIC EQUIPMENT - PRELIMINARY DATA
NAVSHIPS 4457 (Rev. 9-62)

DESIGNATION: AN/URA-42A

CLASSIFICATION of Equip.	ITEM NAME	DATE of Request.
UNCLASSIFIED	Single Sideband Converter Group	18 April 1962
SPECIFICATION: -	CONTRACT NUMBER AND DATE: NObsr-81106 13 Nov. 1959	QUANTITY ON ORDER: 10
CONTRACTOR'S NAME AND ADDRESS: -		SERVICE APPROVAL LETTER - SERIAL AND DATE: 679C3B-687 18 June 1962

ELECTRICAL CHARACTERISTICS

POWER INPUT: 115 or 230 VOLTS, 50-60 CYCLES, SINGLE PHASE | - VOLTS - CYCLE - PHASE - AMPS - WATTS

OUTPUT SIGNAL CHARACTERISTICS (REP. RATE, I.F. ETC.)	WAVE GUIDE OR CABLE LIMITATIONS	INPUT SIGNAL CHARACTERISTICS	POWER OUTPUT
-	-	-	-
OPERATING FREQ. AND FREQ. RANGE	**EMISSION OR RECEPTION (TYPE)**	**FREQ. CONTROL (TYPE)**	**NO. OF CHANNELS**
-	-	(see reverse)	-

ANTENNA OR TRANSDUCER (TYPE)	IMPEDANCE (OHMS)	FEED TYPE	BEAM PATTERN
-	-	-	- °HORIZ. - °VERT.

REFERENCE DATA AND LITERATURE

DRAWING	DWG. NUMBER	DIST. DATE	PUBLICATION	PUB. NUMBER
-	-	-	TECHNICAL MANUAL	-
			OPERATING INSTRUCTION CHART	-
			PERFORMANCE STANDARD SHEET	-
			MAINTENANCE STANDARD BOOK	-

MAJOR UNITS

QTY	NOMENCLATURE AND NAME	OVERALL DIMENSIONS (IN) HEIGHT	WIDTH	DEPTH	H.D. (UNITS)	WEIGHT (LBS)
	Single Sideband Converter Group AN/URA-42A consists of:					
1	Single Sideband Converter CV-1288/UR	10-1/2	18	19		
1	Receiver Control CV-4071A/UR					

1.2 AN/URA-42A: 1

221 CHANGE 65 - 687C3

IF ADDITIONAL EQUIPMENTS OR UNITS ARE REQUIRED, ATTACH ADDITIONAL SHEETS AND SPECIFY SOURCE

ELECTRONIC EQUIPMENT - PRELIMINARY DATA NAVSHIPS 93400
NAVSHIPS 4457 (Rev. 9-62) (CONT'D)

DESIGNATION	ITEM NAME
AN/URA-42A	Single Sideband Converter Group

FUNCTIONAL DESCRIPTION: SKETCH, MFG. DIMENSIONS, ETC.

The AN/URA-42A is a modern replacement for the CV-157/URR. The combination of the C-4071A/UR and CV-1288/UR provides AGC control which may be derived from the upper or lower sideband, the carrier, or (in ISB operation) the sideband with the strongest signal. AGC is available to control the receiver where required.

Special features are dual loop all electronic automatic frequency control, electronic memory circuit, and dual IF and audio channels with front panel selection of IF bandwidths. Bandwidths are 3-kc lower sideband, 7.5-kc lower sideband, 3-kc upper sideband, and 7.5-kc upper sideband. Plug-in IF channels.

The equipment is used with the R-840/URR and R-390A/URR. It is two-way interchangeable with the AN/URA-42.

UNIT COST: $2,000.00

Source of information: Request for Nomenclature
Contract
Nomenclature Correspondence

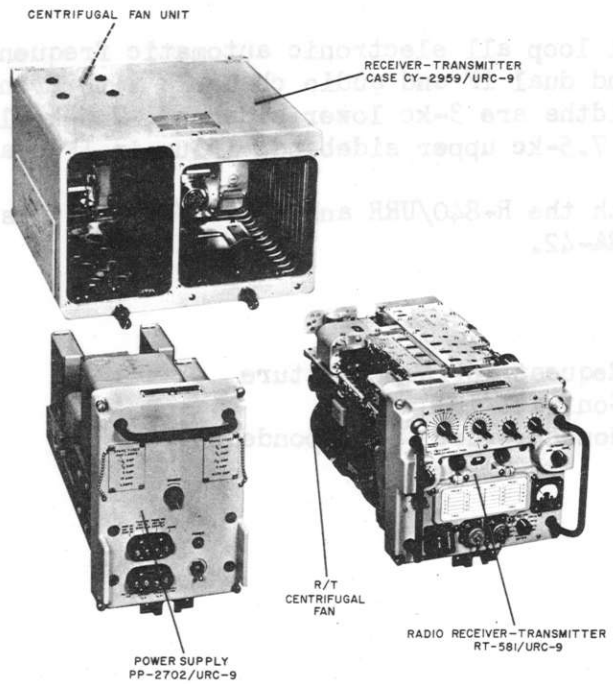
627

Cog Service: USN FSN: Functional Class:

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Collins Radio Co., (13499).



RADIO SET AN/URC-9

FUNCTIONAL DESCRIPTION:

Radio Set AN/URC-9 provides UHF "point to point" and "ground to air" radio communications for shipboard and shore installations. It functions as a triple conversion, superheterodyne receiver during standby operation. When the microphone push-to-talk switch is pushed, a series of T/R (Transmit-receive) relays convert the unit to a transmitter which uses many of the same RF, IF, and audio circuits used on receive. Three crystal controlled oscillators provide stable RF and IF frequencies on both transmit and receive. Receiver-Transmitter RT-581/URC-9 is automatically tuned by standard Autopositioners, which are controlled on the front panel or remote control.

No field changes in effect at time of preparation (18 August 1965).

RELATION TO OTHER EQUIPMENT:

The AN/URC-9 is p/o Radio Sets AN/SRC-20, 21.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

TECHNICAL CHARACTERISTICS:

FREQUENCY
RANGE: 225.0 to 399.9 mc.
SELECTION: 1750 automatically-selectable channels spaced 0.1 mc apart.
CHANNEL PRESETTING: 19 preset channels available on local or remote control plus manual frequency selection on local control.
ACCURACY: At + 150° F, ± 12 kc; at + 100° F, ± 10 kc; at ambient temperature, ± 10 kc; at − 40° F, ± 15 kc; at − 65° F, ± 20 kc.
CRYSTAL CONTROL
FIRST IF AMPLIFIER
DESIGNATION: Type CR-55/U.
TYPE OF CUT: AT-cut.
FREQUENCY RANGE OF CRYSTAL CIRCUIT: 17.0 to 26.0 mc.
OPERATING TEMPERATURE: − 55° C to + 105° C (− 67° F to + 221° F).
ACCURACY: ± 0.0005%.
STABILITY: ± 0.005% over temperature range.
SECOND IF AMPLIFIER
DESIGNATION: CR-18A/U.
TYPE OF CUT: AT-cut.
FREQUENCY RANGE OF CRYSTAL CIRCUIT: 3.0 to 3.9 mc.
OPERATING TEMPERATURE: − 55° C to + 105° C (− 67° F to + 221° F).
ACCURACY: ± 0.0005%.
STABILITY: ± 0.005%.
FREQUENCY MULTIPLIER OSCILLATOR
DESIGNATION: CR-76/U.
TYPE OF CUT: AT-cut.
FREQUENCY RANGE OF CRYSTAL CIRCUIT: 31.1 mc to 45.0 mc.
OPERATING TEMPERATURE: − 55° C to + 105° C (− 67° F to + 221° F).
ACCURACY: ± 0.0025%.
STABILITY: 0.0005%.
RECEIVER CHARACTERISTICS
TYPE: Triple-conversion superheterodyne, with automatic noise limiting and carrier-operated squelch relay circuits.
INPUT IMPEDANCE: 50 ohms.
SENSITIVITY: 6 uv or less for 10 db signal plus noise-to-noise ratio.
SELECTIVITY (THIRD I-F BANDWIDTH): 8 kc min at 6 db attenuation, 150 kc max at 60 db attenuation.
INTERMEDIATE FREQUENCIES: 20.0 to 29.9 mc variable, 3.0 to 3.9 mc variable, 500 kc fixed.
AVC CHARACTERISTICS: Audio output constant within ± 2 db from 10 uv to 0.25 v with 100 uv, modulated 30% at 1000 cps, and 500 mw audio output level as reference.
FREQUENCY RESPONSE
NORMAL: 300 cps, ± 5 db; 500 cps, ± 4 db; 1000 cps, Ø db; 3500 cps, ± 4 db.
BROADBAND: Within − 3 db at 100 cps to − 7 db at 25000 cps, 1000 cps reference.
AUDIO OUTPUTS
LOCAL OUTPUT: 2 W, 600 ohms.
REMOTE OUTPUT: 2 W, 600 ohms.
AUDIO DISTORTION: 10% max.

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SQUELCH
NORMAL OPERATION: 3 db signal-plus-noise/noise ratio.
RETRANSMIT: 3 uv carrier level.

TRANSMITTER CHARACTERISTICS
POWER OUTPUT: 16 W min into 50 ohm resistive load.
MODULATION: Amplitude modulation.
FREQUENCY RESPONSE
NORMAL: Within ± 3 db from 300 to 3500 cps, 1000 cps reference.
BROADBAND: 300 cps, + 0.0 to − 3.0 db; 1000 cps, 0.0 (ref); 10000 cps, ± 1.0 db; 25000 cps, + 0 to − 6 db.
AUDIO DISTORTION: Less than 7.5% at 3 db below 80% modulation.
BROADBAND SIDETONE: 175 mw, 300 to 3000 cps into 600 ohms.
SPURIOUS RADIATION: All spurious radiation suppressed 60 db below carrier level from 245.0 to 380.0 mc. On any freq outside this range not more than one spurious radiation which must be at least 30 db below carrier.
OPERATING TEMPERATURE: − 54° C to + 65° C (−67° F to + 149° F).
TYPES OF EMISSION: Radio telephone (A3), Tone (A2).
AUDIO INPUTS
MICROPHONE: 0.08 v, 82 ohms nom.
RETRANSMISSION: 0.31 v.
BROADBAND: 1.55 v peak-to-peak.
SIDETONE OUTPUT: 175 mw, 300 to 3500 cps, from 600 ohm receiver audio output.
FIDELITY: Within ± 3 db from 300 to 3500 cps, 1000 cps reference.
DUTY CYCLE: Continuous transmission with 80% modulation at + 65° C (+ 149° F).
POWER REQUIREMENTS: 115 or 230 v, 50/60 cps, 1 ph.

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MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set AN/URC-9 includes:		13-13/16 x 19 x 19-1/2	157
1	Radio Receiver-Transmitter RT-581/URC-9			
1	Power Supply PP-2707/URC-9			
1	Receiver-Transmitter Case CY-2959/URC-9			
1	Installation Kit MK-620/UR			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 94695A: Technical Manual for Radio Sets AN/SRC-20 and AN/SRC-21.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (1) 4X150A (10) 5654/6AK5W (6) 5670 (6) 6J4WA (1) 6442 (1) 7554 (4) 7558

CRYSTALS: (15) CR-76/U (10) CR-18/U (10) CR-55/U

SEMI-CONDUCTORS: (2) 1N82A (3) 2N697 (4) 1N249AR (6) 1N457 (2) 1N458 (1) 1N538
(4) 1N547 (4) 1N560 (1) 1N663 (2) 1N749A (1) 1N958 (1) 1N1892
(1) 1N2982B

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG: SHIPS-R-3827

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Collins Radio Co.	Cedar Rapids, Iowa	NObsr 91284	

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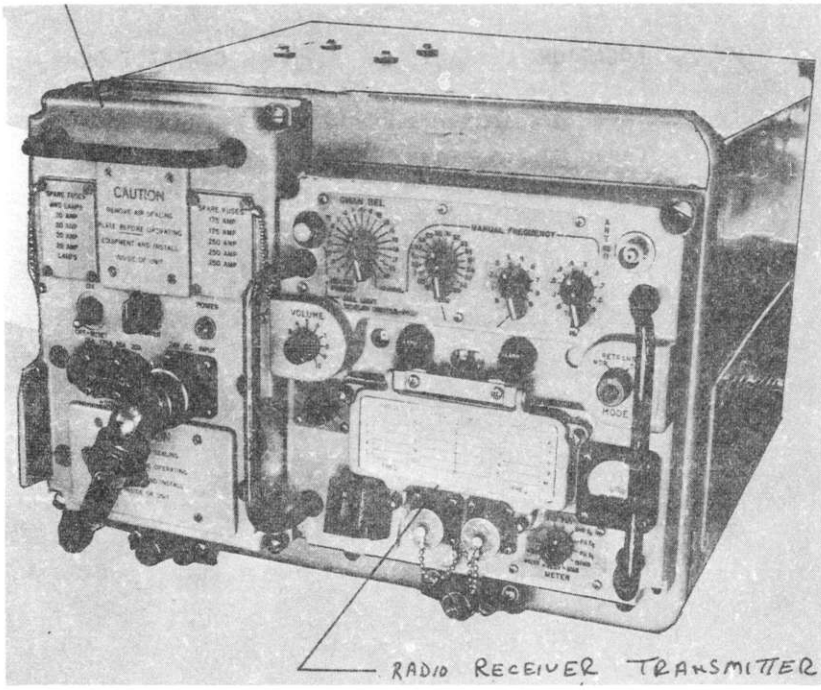
12 July 1967 RADIO SET AN/URC-9Y

Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Teledyne Systems Co., Dubrow Electronics Div., (89114).



RADIO SET AN/URC-9Y

FUNCTIONAL DESCRIPTION:

Radio Set AN/URC-9Y provides simplex radio communications with aircraft, ships, and shore installations from aboard ship and ashore in fixed stations. The radio set functions as triple-conversion, superhetrodyne receiver during non-transmitting conditions. When the microphone push-to-talk switch is pushed a series of T/R (transmit-receive) relays converts the unit to a transmitter. Any of 19 preset channels from 225 to 399.9 mc can be selected from the front panel. Any one of the 1750 channels within the 225 to 399.9 mc frequency range can be selec ted automatically using the manual frequency control on the front panel.

No field changes in effect at time of preparation (16 February 1967).

RELATION TO OTHER EQUIPMENT:

The AN/URC-9Y is similar to Radio Set AN/URC-9.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Headset, NT49985A; (1) Microphone M-58/U, or Handset H-51/U; (1) Control C-1138/UR or

C-1207/UR; (1) RF Wattmeter AN/URM-43 and 96; (1)Multimeter, AN/USM-116 and 143; (1) Signal Generator AN/USM-44A; (1) Signal Generator AN/URM-25D; (1) Audio Oscillator AN/URM-127; (1) Oscilloscope AN/USM-140A.

TECHNICAL CHARACTERISTICS

TYPE OF RECEPTION AND TRANSMISSION: A3(phone) and A2(MCW).
FREQUENCY RANGE: 225 to 399.9 mc.
POWER OUTPUT: 16 W at 300 mc.
OUTPUT SIGNAL CHARACTERISTICS FOR VISUAL OR AUDIO OUTPUTS
METERS: Panel mtd relative power meter to monitor transmission operations; panel mtd "S" meter.
SIDETONE OUTPUT: Adjustable from 0 to 175 mw.
RECEIVE AUDIO OUTPUT: Adjustable from 0 to 2W.
RANGES AS RATED: Line of sight.
ACCURACIES: At +150°F, ±12kc; at +100°F, ±10kc; at ambient temp, ±10kc; at -40°F, ±15kc; at -65°F, ±20kc, from nom transmit/receive freq.
POWER REQUIREMENTS: 23 to 29 v dc.
HEAT DISSIPATION: 715 W max.

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set, AN/URC-9Y, includes:		
1	Receiver-Transmitter, Radio RT-581/URC	9 x 9-1/2 x 19	
1	Power Supply PP-4706/URC-9Y	7-1/4 x 10-3/4 x 18-1/2	
1	Cabinet, Electrical Equipment CY-2959/URC-9	13-3/16 x 19 x 19-1/2	
1	Cable Assy, Special Purpose CX-7259/U		
1	Cable Assy, Power, Electrical, CX-10332/URC-9Y		
1	Installation Kit, Electrical Equip. MK-620/UR		
1	Technical Manual NAVSHIPS 0967-032-5000, w/revisions		
	Technical Manual NAVSHIPS 0967-032-5010 w/revisions		
	Perf. Stds Sheet NAVSHIPS 94695.32A		
	Maintenance Stds. Book NAVSHIPS 94695.42A w/revisions		

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REFERENCE DATA AND LITERATURE:

NAVSHIPS 0967-032-5000, Vol 1 w/Revisions: Technical Manual for Radio Sets SRC-20 and AN/AN/SRC-21.
NAVSHIPS 0967-032-5010, Vol 2: Technical Manual for Radio Sets AN/SRC-20 and AN/SRC-21.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	5	175

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG: SHIPS-P-4770

DESIGN COG: USN, NavShips

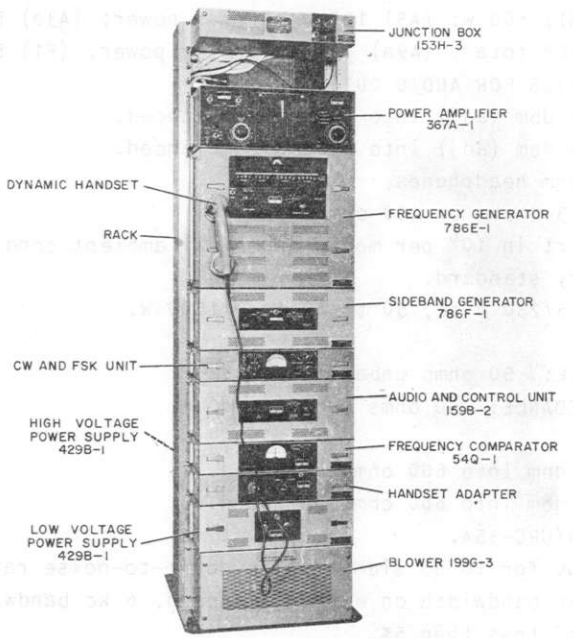
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Teledyne Systems Co., Dubrow Electronics Div.	Burlington, N. J.	NObsr-93164	

Cog Service: USN FSN: Functional Class:

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Collins Radio Company, (13499).



RADIO SET AN/URC-32A

FUNCTIONAL DESCRIPTION:

Radio Set AN/URC-32A is a manually operated radio communications transceiver for operation in the 2 to 30 megacycle high-frequency range with a transmit peak-envelope-power output of 500 Watts. The equipment is primarily designed for single-sideband transmission and reception on upper sideband, lower sideband or two independent sidebands with separate audio and IF channels for each sideband. In addition to single-sideband operation, provisions are included for compatible AM (carrier reinserted), cw or fsk operation. The frequency range of 2 to 30 megacycles is covered in four bands, the desired operating being set to one-kilocycle increments on a direct-reading frequency counter. Frequency accuracy and stability are controlled by a self-contained frequency standard. Provivions are provided for using an external frequency standard such as the AN/URQ-9.

No field changes in effect at time of preparation (15 July 1965).

RELATION TO OTHER EQUIPMENT:

The AN/URC-32A is a military version of the Collins Radio KWT-6 Type 8 Transceiver.

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EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Antenna; (1) Antenna Feed System.

TECHNICAL CHARACTERISTICS:

TYPE OF RECEPTION AND TRANSMISSION: CW telegraphy (A1); Double sideband full carrier (A3) on receive; Single sideband, reduced carrier (A3a); Two independent sidebands, reduced carrier (A3b); Composite transmission (A9); Single sideband, full carrier (A9a) on transmit; Frequency shift telegraphy (F1).
FREQUENCY RANGE: 2.0 to 30.0 mc.
TRANSMIT POWER OUTPUT: (A1) 500 W; (A3) 125 W carrier power; (A3a) 500 W PEP; (A3b) 500 W PEP total; (A9) 500 W PEP total; (A9a) 125 W carrier power; (F1) 500 W.
OUTPUT SIGNAL CHARACTERISTICS FOR AUDIO OUTPUTS
USB LINE: + 14 to − 34 dbm (adj) into 600 ohms balanced.
LSB LINE: + 14 to − 34 dbm (adj) into 600 ohms balanced.
PHONES: Standard 600 ohm headphones.
SPEAKER: 3 W max into 3-4 ohm or 600 ohm speaker.
FREQUENCY STABILITY: 1 part in 10^6 per month under all ambient conditions, using the equipments internal frequency standard.
POWER SOURCE REQUIRED: 115/230 v ac, 50 to 60 cps, 1500 W.
HEAT DISSIPATION: 1500 W.
RECEIVER RF INPUT IMPEDANCE: 50 ohms unbalanced.
TRANSMITTER RF OUTPUT IMPEDANCE: 50 ohms unbalanced.
AUDIO INPUTS
USB LINE: − 38 to + 8 dbm into 600 ohms balanced.
LSB LINE: − 38 to + 8 dbm into 600 ohms balanced.
HANDSET: Included w/AN/URC-35A.
RECEIVER SENSITIVITY: 1 uv for 10 db signal pulse noise-to-noise ratio.
RECEIVER SELECTIVITY: 3 kc bandwidth on either sideband, 6 kc bandwidth on AM.
RECEIVER AUDIO DISTORTION: Less than 5%.
DISTORTION ON TRANSMIT: 35 db below PEP output (3rd order distortion).
CARRIER SUPPRESSION: 45 db below PEP output.
UNDESIRED SIDEBAND SUPPRESSION: 35 db below PEP output.

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set AN/URC-35A includes:		
1	RF Amplifier AM-2061/URT	6-7/8 x 8-1/2 x 19	21.00
1	Converter Oscillator CV-731	7 x 15-5/8 x 19	43.50
1	Amplifier Converter Modulator AM-2064/URC	6-7/8 x 7 x 19	14.50
1	Amplifier Control AM-2062A/URC	6-7/8 x 7 x 19	15.25
1	Power Supply PP-2153/U	8-1/2 x 15-5/8 x 19	93.00
1	Power Supply PP-2154/U	6-7/8 x 7 x 19	33.00
1	Cooler Air, Electronic Equipment HD-347/U	8-7/8 x 11-1/4 x 19	22.00

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Control Power Supply C-2691/URC		3-1/2 x 7 x 19	12.00
1	Signal Comparator CM-126/UR		3-1/2 x 7 x 19	5.75
1	Converter-Monitor CV-730/URC		3-1/2 x 7 x 19	7.50
1	Rack Electrical Equipment MT-2092/U		17-1/2 x 21-1/2 x 73	200.00
1	Interconnecting Box J-1007/U		3-1/2 x 7 x 19	
1	Air Duct Kit			
1	Cable Kit			
2	20 Ampere Fuses			
2	Technical Manuals			
1	Maintenance Standards Book			
1	Operators Chart			
1	Handset H-169/U and Cord CX-1846A/U			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 93285(A): Technical Manual for Radio Set AN/URC-32A.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (1) 0B2 (2) 6021 (1) 6BE6 (2) 7580 (3) 6CL6 (1) 12AT7 (1) 12AU7 (9) 5636 (3) 5654 (1) 5670 (6) 5749 (1) 5750 (3) 5814A (2) 5840 (14) 5899

CRYSTALS: Not required.

SEMI-CONDUCTORS: (10) 2N526 (2) 1N91 (7) 2N117 (5) 1N198 (8) 2N128 (6) 1N251 (2) 2N158A (8) 1N252 (6) 2N243 (8) 1N270 (55) 1N1095 (1) 1N315 (1) 2N274 (2) 1N1086 (1) 2N527 (1) 1N361A (1) 650C0 (1) 2N537 (2) 1.5M13ZR (1) HC7022 (3) 2N540 (22) 1N457 (1) HD2123 (2) 1N458 (2) 2N1039 (1) HD2160 (5) 2N1150 (2) 1N459 (1) S1159 (10) J-213 (1) 1N721A (3) 1N67A (14) 1N816

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	48.7	800

PROCUREMENT DATA

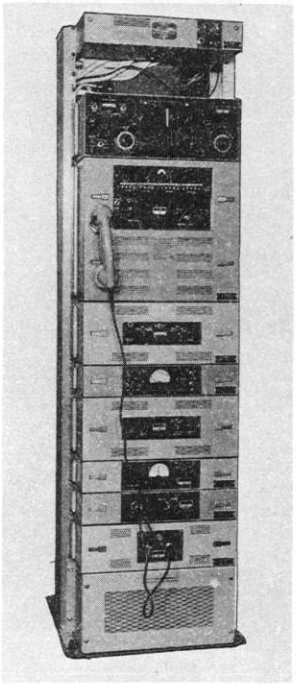
PROCURING SERVICE: USN DESIGN COG: USN, BuShips
SPEC &/OR DWG:

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Collins Radio Company	Cedar Rapids, Iowa	NObsr-87622	

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Collins Radio Company (13499).



RADIO SET AN/URC-32B

FUNCTIONAL DESCRIPTION:

Radio Set AN/URC-32B is a manually operated radio communications transceiver for operation in the 2 to 30 megacycle high frequency range with a peak-envelope-power output of 500 watts. The AN/URC-32B is primarily designed for single-sideband transmission and reception on upper sideband, lower sideband or two independant sidebands with separate audio and IF channels for each sideband. In addition to single-sideband operation, provisions are included for compatible AM (carrier reinserted), CW or FSK operation. The frequency range of 2 to 30 mc is covered in four bands. The desired operating frequency being set to 0.1 kc increments on a direct-reading frequency counter. Frequency accuracy and stability are controlled by a self contained frequency standard. Provisions are provided for using an external frequency standard such as the AN/URQ-9.

Data on this sheet reflects the following field changes: 1 thru 16, (10 January 1967).

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RELATION TO OTHER EQUIPMENT:

The Radio Set AN/URC-32B is two-way interchangeable with AN/URC-32 and AN/URC-32A previously supplied. The improved version with CV-731A/UR allows tuning in 100 cycle increments where the original unit tuned in 1000 cycle increments maintenance parts differ.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

Radio Set AN/URC-32B is a complete radio communications transceiver requiring only an antenna, an antenna feed system with a transmitter termination of 50 ohms unbalanced, and a 115 or 230 volt, 50 to 60 cps, single phase power source capable of delivering 1500 watts.

TECHNICAL CHARACTERISTICS:

TYPE OF RECEPTION AND TRANSMISSION:
- CW TELEGRAPHY: (A-1);
- DOUBLE SIDEBAND FULL CARRIER: (A3) on Receive.
- SINGLE SIDEBAND REDUCED CARRIER: (A3).
- TWO INDEPENDENT SIDEBAND, REDUCED CARRIER: ($A3_b$).
- COMPOSITE TRANSMISSION: (A9).
- SINGLE SIDEBAND: Full carrier (A9a) on transmit.
- FREQUENCY SHIFT: Telegraphy (F-1).

FREQUENCY RANGE:
- 2.0 to 30.0 megacycles.

TRANSMIT POWER OUTPUT:
- (A1) 500 watts.
- (A3) 125 watts carrier power.
- (A3a) 500 watts PEP.
- (A3b) 500 watts PEP total.
- (A9) 500 watts PEP total.
- (A9a) 125 watts carrier power.
- (F1) 500 watts.

OUTPUT SIGNAL CHARACTERISTICS FOR AUDIO OUTPUTS:
- USB LINE: +14 to -34 dbj (adjustable) into 600 ohms balanced.
- LSB LINE: +14 to -34 dbm (adjustable) into 600 ohms balanced.
- PHONES: Standard 600-ohm headphones.
- SPEAKER: 3 watts maximum into 3 to 4 ohm or 600-ohm speaker.

FREQUENCY STABILITY:
- 1 part in 10^6 per month under all ambient conditions, using the equipments internal frequency standard.

POWER SOURCE REQUIRED:
- 115 to 230 v ac, 50 to 60 cps, 1500 watts.

HEAT DISSIPATION:
- 1500 watts.

RECEIVER RF INPUT IMPEDANCE:
- 50 ohms uhbalanced.

TRANSMITTER RF OUTPUT IMPEDANCE:
- 50 ohms unbalanced.

AUDIO INPUTS:

USB LINE: -38 to +8 dbm into 600 ohms balanced.
LSB LINE: -38 to +8 dbm into 600 ohms balanced.
HANDSET: Included with AN/URC-32B.

RECEIVER SENSITIVITY:
3 kc bandwidth on either sideband.
6 kc bandwidth on AM.

RECEIVER AUDIO DISTORTION:
Less than 5%.

DISTORTION ON TRANSMIT:
35 db below PEP output (3rd order distortion).

CARRIER SUPPRESSION:
45 db below PEP output.

UNDESIRED SIDEBAND SUPPRESSION:
35 db below PEP output.

HOW INSTALLED:
Radio Set AN/URC-32 is mounted on a standard 19 inch rack which may be bolted to the floor. Normally a shipboard shock mounting kit is supplied as an accessory and used to mount the rack.

WEIGHT: 467 pounds (with shockmounts).

FLOOR SPACE REQUIRED: 3.3 square feet: Number of operators required: One.

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set: AN/URC-32B includes:		467
1	RF Amplifier: AM-2061/URT	6-7/8 x 8-1/2 x 19	21
1	Converter-Oscillator: CV-731/URC	7 x 15-5/8 x 19	43.5
1	Amplifier-Converter Modulator AM-2064/URC	6-7/8 x 7 x 19	14.5
1	Amplifier-Control: AM-2062A/URC	6-7/8 x 7 x 19	15.25
1	Power Supply: PP-2153/U	8-1/2 x 15-5/8 x 19	93.0
1	Power Supply: PP-2154/U	6-7/8 x 7 x 19	33.0
1	Cooler, Air, Electronic Equipment HD-347/U	8-7/8 x 11-1/4 x 19	22.0
1	Control-Power Supply: C-2691/URC	3-1/2 x 7 x 19	12.0
1	Signal Comparator: CM-126/UR	3-1/2 x 7 x 19	5.75
1	Converter-Monitor: CV-730/URC	3-1/2 x 7 x 19	7.5
1	Rack, Electrical Equipment: MT-2092/U	17-1/2 x 21-1/2 x 73	200.0
1	Interconnecting Box: J-1007/U	3-1/2 x 7 x 19	
1	Air Duct Kit		
1	Cable Kit		
2	20 Ampere Fuse		
2	Technical Manual		
1	Maintenance Standards Book		
1	Operators Chart		
1	Handset: H-169/U and Cord: CX-1846A/U		

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REFERENCE DATA AND LITERATURE:

NAVSHIPS 92385(A): Technical Manual for Radio Set AN/URC-32B.
NAVSHIPS 0967-066-7010: Technical Manual for Radio Set AN/URC-32B, Formerly NAVSHIPS 93285(B) Change 2.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	48.7	800

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG:

DESIGN COG: USN, NAVSHIPS

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Collins Radio Co. Part No. 522-3468-00	Cedar Rapids, Iowa	NObsr-89170 NObsr-93369	

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Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Hammarlund Mfg. Co., Inc., (80583).

RADIO SET AN/URC-45

FUNCTIONAL DESCRIPTION:

The Radio Set AN/URC-45 is designed for operation at one or more remote positions, with only one remote position having the facility to change channels. A second fixed frequency "guard" receiver is employed so that two frequencies may be monitored at each remote position. The complete equipment provides two basic facilities: (1) General 2-way communications on any of six pretuned switch-selected channels within a 1 mc band; (2) Independant and continuous monitoring of any single channel.

Operation of the radio set is accomplished at up to two remote control points located up to 200 and 300 feet from a Receiver-Transmitter that houses the principal circuitry.

No field changes in effect at time of preparation (12 April 1966).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

TECHNICAL CHARACTERISTICS:

RECEIVER TRANSMITTER RADIO: RT-673/URC-45.

TRANSMITTER DATA

EMISSION: Type F-3.

POWER OUTPUT: 35 watts max.

FREQUENCY RANGE: 152 to 174 mc, 1 band 6 channels, any 6 channels within one megacycle.

R.F. POWER OUTPUT: 25 watts min. into a 50 ohm lead.

DUTY CYCLE: 1 minute on, 4 minutes off.

CRYSTAL MULTIPLICATION: 12 times.

FREQUENCY STABILITY: ±.0005% from -30 to +60 deg C ambient temp range.

MODULATION: Adjustable to ±15 kc deviation (36F3).

MODULATION LIMITING: Instantaneous and automatic 0.25 volts input for threshold of limiter.

AUDIO RESPONSE: Within + 1 and − 3 db of 6 db per octave pre-emphasis curve from 300 to 3000 cp/s (1000 cp/s ref.).

DISTORTION: Less than 5% at 1000 cp/s, 2/3 system deviation.

SPURIOUS AND HARMONIC RADIATION: At least 60 db below max output at operating frequency.

HUM AND NOISE: At least 40 db below ±10 kc deviation at 1 kc/s modulating frequency.

RECEIVER DATA

EMISSION: Type F-3.

FREQUENCY RANGE: 154 to 172 mc, 1 band, 6 channels, 145 to 172 mc, 1 band 1 channel.

FREQUENCY STABILITY: ±.0005% from -30 to +60 deg C ambient temperature range.

SENSITIVITY: Not poorer than 1.0 microvolt for 20 db quieting on all channels.

SQUELCH SENSITIVITY: 0.25 microvolts or less threshold sensitivity.

SELECTIVITY: At least 100 db down at ±50 kc/s per EIA standard RS-204.

SPURIOUS RESPONSE: At least 100 db down except f-5.35 mc which is greater than 85 db down.

AUDIO RESPONSE: Within +2 and -8 db of a 6 db per octave de-emphasis curve from 300 to 3000 cp/s (1000 cp/s ref.).

AUDIO OUTPUT: At least 1.5 watts-at less than 10% distortion.

RECEIVER RADIO R-1154/URC-45

FREQUENCY RANGE: 152 to 174 mc; same as receiver portion of RT-673/URC-45 except any single channel in frequency range; Sensitivity not poorer than 0.7 microvolts for 20 db quieting.

RADIO SET AN/URC-45

POWER REQUIREMENTS: 117 v ac ± 10%, 60 cyc, single phase.

RECEIVING: 195 watts max.

TRANSMITTING: 320 watts max.

MULTICHANNEL RECEIVER-TRANSMITTER RT-673/URC-45 CHANNEL 1-L: 156.30 mc.

CHANNEL-1: 156.30 mc.

CHANNEL-2: 156.60 mc.

CHANNEL-3: 156.65 mc.

CHANNEL-4: 156.80 mc.

CHANNEL-5: 157.10 mc.

CHANNEL-6: 157.15 mc.

R-1154/URC-45 GUARD-RECEIVER

(Single Channel) 156.80 mc; Note that guard receiver frequency is the same as that of Channel 4 in, Multichannel Receiver-Transmitter.

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set: AN/URC-45 includes:	7-3/16 x 14-7/16 x 19	
1	Radio Receiver-Transmitter: RT-673/URC-45		
1	Radio Receiver: R-1154/URC-45		
1	Radio Set Control: C-4373/URC-45	5-7/16 x 6-1/2 x 8	
1	Radio Set Control: C-4374/URC-45	5-7/16 x 6-1/2 x 8	

REFERENCE DATA AND LITERATURE:

HAMMERLUND MFG. CO.: Technical Manual for VHF-FM Radio Set AN/URC-45.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN DESIGN COG: USN, USCG

SPEC &/OR DWG: SPEC: EEE-21-62

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Hammarlund Mfg. Co., Inc.	New York, N.Y.	TCG-42024 CG-555-324A	

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ELECTRONIC EQUIPMENT - PRELIMINARY DATA
NAVSHIPS 4457 (Rev. 9-62)

DESIGNATION: AN/URC-48(XN-1)

CLASSIFICATION of Equip.	ITEM NAME	DATE
UNCLASSIFIED	Radio Set	7 September 1962
SPECIFICATION: -	CONTRACT NUMBER AND DATE: NObsr-85104	QUANTITY ON ORDER: -

CONTRACTOR'S NAME AND ADDRESS: Raytheon Manufacturing Company, Waltham, Massachusetts

SERVICE APPROVAL LETTER - SERIAL AND DATE: Serial 679C3B-1235, 30 October 1962

ELECTRICAL CHARACTERISTICS

POWER INPUT									
115 V	60 CYCLE	1 PHASE	- AMPS	- WATTS	- V	- CYCLE	- PHASE	- AMPS	- WATTS

OUTPUT SIGNAL CHARACTERISTICS (REP. RATE, I.F. ETC.)	WAVE GUIDE OR CABLE LIMITATIONS	INPUT SIGNAL CHARACTERISTICS	POWER OUTPUT
-	-	-	1 w max

OPERATING FREQ. AND FREQ. RANGE	EMISSION OR RECEPTION (TYPE)	FREQ. CONTROL (TYPE)	NO. OF CHANNELS
Receive-5925 to 7425 mc, 5 bands, Transmit- 2 bands	F1	-	1

ANTENNA OR TRANSDUCER (TYPE)	IMPEDANCE (OHMS)	FEED TYPE	BEAM PATTERN
-	-	-	- °HORIZ. - °VERT.

REFERENCE DATA AND LITERATURE

DRAWING	DWG. NUMBER	DIST. DATE	PUBLICATION	PUB. NUMBER
-	-	-	TECHNICAL MANUAL	-
			OPERATING INSTRUCTION CHART	-
			PERFORMANCE STANDARD SHEET	-
			MAINTENANCE STANDARD BOOK	-

MAJOR UNITS

QTY	NOMENCLATURE AND NAME	OVERALL DIMENSIONS (IN) HEIGHT	WIDTH	DEPTH	H.D. (UNITS)	WEIGHT (LBS)
	Radio Set AN/URC-48(XN-1) (Mfr's Model KTR-1000G (F.S.) modified) consists of:					
1	Transmitting Dish Unit 1					
1	Transmitting Waveguide Unit 2					
1	Transmitter Unit 3					
1	Transmitter Control Panel Unit 4					
1	Regenerator Unit 5					
1	Regenerator with Equalizer Unit 6					
1	Receiver Control Panel Unit 7					
1	Receiver Unit 8					
1	Receiving Waveguide Unit 9					
1	Receiving Dish Unit 10					
		1.6	AN/URC-48(XN-1):	1		
	CHANGE 67 - 687B/696C			UNCLASSIFIED		

IF ADDITIONAL EQUIPMENTS OR UNITS ARE REQUIRED, ATTACH ADDITIONAL SHEETS AND SPECIFY SOURCE

DESIGNATION	ITEM NAME
AN/URC-48(XN-1)	Radio Set

FUNCTIONAL DESCRIPTION: SKETCH, MFG. DIMENSIONS, ETC.

The AN/URC-48(XN-1) is a general-purpose, microwave link equipment for transmitting data from shore-to-shore, shore-to-ship, or ship-to-shore when ships are moved in harbor or dock facilities, It is used with digital data sets.

No unit cost available.

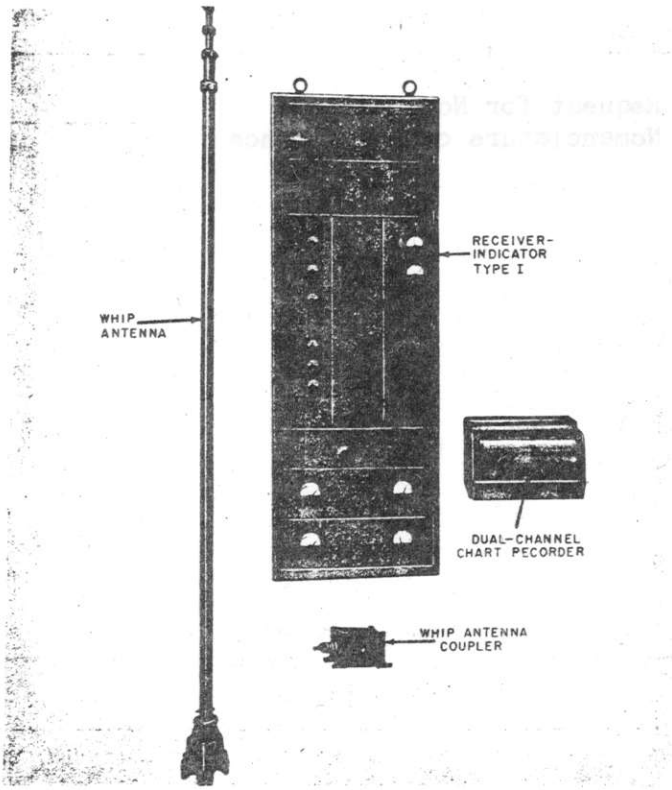
Source of information: Request for Nomenclature
Nomenclature correspondence

Cog Service: USN FSN: Functional Class:

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: ITT Federal Laboratories Div. of International Telephone and Telegraph Corporation, (16235).



OMEGA NAVIGATIONAL SET, TYPE 1 AN/URN-18(XN-1)

FUNCTIONAL DESCRIPTION

Omega Navigational Set, Type 1 AN/URN-18(XN-1) basically consists of a receiver and associated antenna system for receiving omega navigational signals and of timing and phase measuring equipment for determining position.

The omega system of navigation is based on the principle that the velocity of propagation of electromagnetic radiation is constant. This means that differences in distance from a receiving station to each of two synchronized transmitting stations, transmitting at the same frequency, is indicated by the differences in the phase of signals received. At the operating frequencies of the omega system, the signal from the more distant station is received later than the signal from the closer station. The difference may be a portion of a wavelength or many wavelengths, depending on the relative distances between the receiver and each transmitter.

No field changes in effect at time of preparation (8 June 1964).

AN/URN-18(XN-1) OMEGA NAVIGATIONAL SET, TYPE 1

RELATION TO OTHER EQUIPMENT:

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE
RECEIVER: 8.2 to 15.2 kc continuous.
LOCAL OSCILLATOR SYNTHESIZER: Stepped 10, 11, 12, 13, 14, 15, 16, and 17 kc.
FREQUENCY STANDARD CONTROL: Manual or automatic (phase locked to master transmitter).
RECEIVER TYPE: Superheterodyne.
TYPE OF RECEPTION: Pulse cw at pulse repetition rates of 0.2 or 0.1 cps.
BANDWIDTH: 100 cps.
ANTENNA TYPES: 35 ft whip antenna with or without antenna coupler.
DYNAMIC RANGE: 3 to 90,000 uv.
MAX PHASE TRACKING RATE: 48° per minute.
ACCURACY DATA: Differential phase error within 2°.
OPERATING CONDITIONS: Standby and operate.
AMBIENT TEMPERATURE LIMITATIONS
ANTENNA COUPLER: − 28 to + 65° C; (− 18.4 to + 149° F)
RECEIVER INDICATOR: 0 to + 50° C (+ 32 to + 122° F).
POWER REQUIREMENTS: 115 v, 1 ph, 60 cyc, 12 amp.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Omega Navigational Set Type 1 AN/URN-18(XN-1) includes;			
1	Receiver-Indicator Type 1 includes:		15-1/2 x 19-1/2 x 55	150
1	Single Channel Oscilloscopes Mod K-10R		5-1/4 x 11-3/8 x 19	21
1	1Mc Higher Stability Oscillator Mod RD-146		4-1/2 x 8 x 19	
1	Regenerative Divider Mod RD-125			
1	Power Supplies Mod C-481		5-1/4 x 14-3/8 x 19	53
1	Whip Antenna			
1	Whip Antenna Coupler		3 x 5 x 5	
1	Retilinear Recording Milliammeter (Dual Channel Chart Recorder)		9-1/4 x 13-1/2 x 15	47

OMEGA NAVIGATIONAL SET, TYPE 1 AN/URN-18(XN-1)

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Technical Manual for Receiver-Indicator		8-1/2 x 11	
1	Instruction Book for Oscilloscope Mod K-10R		8-1/2 x 11	
1	Instruction Book for 1 mc Higher Stability Oscillator and 10:1		5-3/4 x 8	
1	Instruction Book for Rectilinear Recording Milliammeter		8-1/2 x 11	
1	Instruction Book for Power Supplies Model C-481M		8-1/2 x 11	

REFERENCE DATA AND LITERATURE:

NAVSHIPS 94114: Technical Manual for Omega Navigational Set Type 1 AN/URN-18(XN-1).

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (2) 1X2A (2) 3TF12 (2) 4KP2 (2) 5Y3 (2) 6AH6 (2) 6AQ6 (1) 6BE6
(4) 6CL6 (4) 6J6 (12) 6L6GB (2) 6X4 (4) 12AT7 (13) 12AT7WA (12) 12AU7
(6) 12AX7 (2) 884 (2) 5651 (12) 5670 (1) 5725 (16) 5814 (3) 5881
(3) 6627/0A2 (4) 0B2 (2) 0B2WA

CRYSTALS: None required.

SEMI-CONDUCTORS: (4) 1N40 (1) 1N54 (1) 1N120 (6) 1N251 (4) 1N276 (1) 1N277
(7) 1N351 (12) 1N459 (2) 1N751 (8) 1N1124 (2) 1N1778 (2) 2N1039-1
(4) 2N1373

SHIPPING DATA

PKG	VOLUME (CU FT)	WEIGHT (LBS)
1	22	450
1	4.6	80

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG:

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
ITT Federal Laboratories Div. of International Telephone and Telegraph Corp.	Nutley, New Jersey	NObsr 81592, 31 May 1961	

ELECTRONIC EQUIPMENT - PRELIMINARY DATA
NAVSHIPS 4457 (Rev. 9-62)

DESIGNATION: AN/URN-20

CLASSIFICATION of Equip.	ITEM NAME	DATE of Assignment
UNCLASSIFIED	Radio Set	30 Novenmber 1961
SPECIFICATION: -	CONTRACT NUMBER AND DATE: -	QUANTITY ON ORDER: -

CONTRACTOR'S NAME AND ADDRESS:
BuShips
Washington 25, D. C.

SERVICE APPROVAL LETTER - SERIAL AND DATE: -

ELECTRICAL CHARACTERISTICS

POWER INPUT		OUTPUT SIGNAL CHARACTERISTICS (REP. RATE, I.F. ETC.)	WAVE GUIDE OR CABLE LIMITATIONS	INPUT SIGNAL CHARACTERISTICS	POWER OUTPUT
308 and 440 V, 60 CYCLE, 3 PHASE, AMPS, WATTS	120 V, 60 CYCLE, 1 PHASE, AMPS, WATTS	-	-	-	7.5 kw max. pk.

OPERATING FREQ. AND FREQ. RANGE	EMISSION OR RECEPTION (TYPE)	FREQ. CONTROL (TYPE)	NO. OF CHANNELS
(see reverse)	F9	-	126

ANTENNA OR TRANSDUCER (TYPE)	IMPEDANCE (OHMS)	FEED TYPE	BEAM PATTERN
-	-	-	- °HORIZ. - °VERT.

REFERENCE DATA AND LITERATURE

DRAWING	DWG. NUMBER	DIST. DATE	PUBLICATION	PUB. NUMBER
-	-	-	TECHNICAL MANUAL	-
			OPERATING INSTRUCTION CHART	
			PERFORMANCE STANDARD SHEET	
			MAINTENANCE STANDARD BOOK	

MAJOR UNITS

QTY	NOMENCLATURE AND NAME	OVERALL DIMENSIONS (IN) HEIGHT	WIDTH	DEPTH	H.D. (UNITS)	WEIGHT (LBS)
	Radio Set AN/URN-20 consists of:					
1	Receiver					
1	Coder-Keyer					
1	Modulator					
1	High Voltage Power Supply					
1	Medium Voltage Power Supply					
1	Low Voltage Power Supply					
	Meters					
1	Transfer Control					
1	Synchroscope					
1	Signal Generator					
1	Monitor No. 1					
1	Monitor No. 2					
1	Step-Down Transformer (440 to 120 volts)					
1	Antenna Group					
1	High-Band or Low-Band Antenna					
1	Pedestal					
1	Amplifier Group					
1	Radome					
	1.3 AN/URN-20: 1					

CHANGE 65 - 685B

UNCLASSIFIED

293 IF ADDITIONAL EQUIPMENTS OR UNITS ARE REQUIRED, ATTACH ADDITIONAL SHEETS AND SPECIFY SOURCE

217419

DESIGNATION	ITEM NAME
AN/URN-20	Radio Set

FUNCTIONAL DESCRIPTION: SKETCH, MFG. DIMENSIONS, ETC.

The AN/URN-20 is a radio beacon that will accept interrogations from 100 interrogating aircrafts. The beacon adds a 50-microsecond delay to the received distance-measuring interrogations and retransmits them to the aircraft as replies at the transmitting frequency of the aircraft. The radio beacon periodically transmits its identifying call in International Morse Code, thus enabling the aircraft to determine the radio beacon with which it is in contact.

Operating frequencies: Transmit - 962 to 1024 mcs and 1151 to 1213 mcs
Receive - 1025 to 1150 mcs

The set is functionally but not mechanically interchangeable with AN/URN-3A, AN/SRN-6, AN/SRN-6A, and AN/GRN-9A, B, C, D.

No unit cost available.

Source of information: Request for Nomenclature.

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ELECTRONIC EQUIPMENT - PRELIMINARY DATA
NAVSHIPS 4457 (Rev. 9-62)

CLASSIFICATION of Equip. UNCLASSIFIED	ITEM NAME Beach Marking and Navigation System	DESIGNATION AN/URN-21( )
SPECIFICATION SHIPS-E-4152	CONTRACT NUMBER AND DATE NObsr-87701, 29 June 1962	DATE of Request. 8 February 1963
CONTRACTOR'S NAME AND ADDRESS Admiral Corporation 3800 West Courtland Street Chicago 47, Illinois		QUANTITY ON ORDER (see reverse) SERVICE APPROVAL LETTER - SERIAL AND DATE -

ELECTRICAL CHARACTERISTICS

POWER INPUT - V - CYCLE - PHASE - AMPS - WATTS	- V - CYCLE - PHASE - AMPS - WATTS		
OUTPUT SIGNAL CHARACTERISTICS (REP. RATE, I.F. ETC.) -	WAVE GUIDE OR CABLE LIMITATIONS -	INPUT SIGNAL CHARACTERISTICS -	POWER OUTPUT -
OPERATING FREQ. AND FREQ. RANGE 2424 mc	EMISSION OR RECEPTION (TYPE) -	FREQ. CONTROL (TYPE) crystal	NO. OF CHANNELS -
ANTENNA OR TRANSDUCER (TYPE) -	IMPEDANCE (OHMS) -	FEED TYPE -	BEAM PATTERN - °HORIZ. - °VERT.

REFERENCE DATA AND LITERATURE

DRAWING	DWG. NUMBER	DIST. DATE
-	-	-

PUBLICATION	PUB. NUMBER
TECHNICAL MANUAL	A.
OPERATING INSTRUCTION CHART	N.P.
PERFORMANCE STANDARD SHEET	N.P.
MAINTENANCE STANDARD BOOK	N.P.

MAJOR UNITS

QTY	NOMENCLATURE AND NAME	OVERALL DIMENSIONS (IN) HEIGHT	WIDTH	DEPTH	H.D. (UNITS)	WEIGHT (LBS)
	Beach Marking and Navigation System AN/URN-21C(Mfr's Model No. 03889) consists of:					
1	Type I Beach Marking Station (Mfr's Dwg No. 598D21) which consists of:					
1	Transmitter (Mfr's Dwg. No. 597D185)					
1	Battery Case (Mfr's Dwg. No. 597D186)					
1	Antenna (Mfr's Dwg. No. 597D187)					
1	Antenna Support Mast (Mfr's Dwg. No. 597D188)					
1	Cable Assembly (Mfr's Dwg. No. 589C-49-1)					
1	Type II Ship Marking Station (Mfr's Dwg. No. 598D22) which consists of:					
1	Transmitter (Mfr's Dwg. No. 597D185)					
1	Power Converter (Mfr's Dwg. No. 597D189)					
1	Antenna (Mfr's Dwg. No. 597D190)					
1	Cable Assembly (Mfr's Dwg. No. 589C49-2)					
	(SEE REVERSE)					

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DESIGNATION	ITEM NAME
AN/URN-21( )	Beach Marking and Navigation System

FUNCTIONAL DESCRIPTION: SKETCH, MFG. DIMENSIONS, ETC.

The AN/URN-21( ) is a system of beach marking and navigation which uses three major stations to assist landing craft and other small craft navigation between ships and specific points on the beach. The system includes two 2424 mc, 0.5 usec pulse, triad transmitters that can be coded. One transmitter is located on the ships and one on the beach. The third station is a direction-finding, selective receiver system mounted on a small craft. The operating range of the navigation system is approximately 50 to 17,000 yards. The receiver accuracy is approximately ± 1/2 degree.

No unit cost avilable. The first phase of NObsr 87701 authorizes the construction of three complete AN/URN-21( ) systems and one extra Type I unit at a total estimated cost of $131,208.00.

Source of information: Request for Nomenclature.
Contract.

Major Units (continued)

1 Type III Landing Craft Direction Indicating Station which consists of:
1 Receiver (Mfr's Dwg. No. 597D191)
1 Power Converter (Mfr's Dwg. No. 597D195)
1 Antenna (Mfr's Dwg. No. 597D192)
1 Antenna Support (Mfr's Dwg. No. 597D193)
1 Indicator (Mfr's Dwg. No. 597D194)
1 Cable Assembly (Mfr's Dwg. No. 589C49-3)
1 Cable Assembly (Mfr's Dwg. No. 589C48)
1 Cable Assembly (Mfr's Dwg. No. 589C50)

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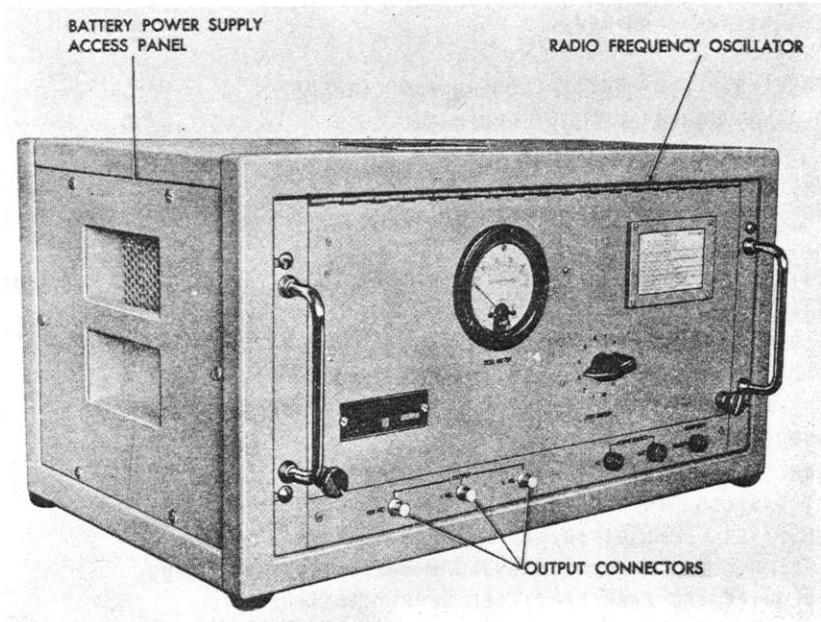
Cog Service: USN **FSN:** 2F5820-799-8840 **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Borg Equipment Div. of Amphenol Borg Electronics Corp., (96791).



FREQUENCY STANDARD AN/URQ-9

FUNCTIONAL DESCRIPTION:

Frequency Standard AN/URQ-9 is a highly stable, multiple-purpose frequency standard designed for continuous-duty use aboard ship and at shore facilities. It provides three output frequencies (5.0 mc, 1.0 mc, and 100 kc) and a regulated power output of 26.5 volts dc at 0.5 amp for use by other equipment.

The frequency standard can be used for laboratory frequency measurements and to drive precision timing devices such as a time comparator. It can also be used as a standby oscillator unit for other frequency/time-base standards such as Frequency-Time Standard AN/BSQ-2A.

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

RELATION TO OTHER EQUIPMENT:

The frequency standard AN/URQ-9 is an improved and modified version of Frequency Standards

AN/URQ-9(XN-2) and AN/URQ-9(XN-3).

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

TECHNICAL CHARACTERISTICS:

OUTPUT FREQUENCIES: 5.0 mc, 1.0 mc, and 100 kc.
TYPE OF FREQUENCY CONTROL: Crystal oscillator.
FREQUENCY CONTROL CRYSTAL DATA
  GOVERNMENT DESIGNATION: CR-71/U.
  TYPE OF CUT: AT.
FREQUENCY ADJUSTMENT RANGE OF CRYSTAL OSCILLATOR CIRCUIT
  COARSE CONTROL: 500 parts per 10^9 parts min.
  FINE CONTROL: 100 parts per 10^9 parts.
OSCILLATOR FREQUENCY: 5.0 mc.
CRYSTAL OPERATING TEMPERATURE: 65 to 75° C (149 to 167° F) (factory set to turning point of crystal).
FREQUENCY STABILITY: Frequency drift is less than 1 part in 10^9 parts per day.
ELECTRICAL INPUT AND OUTPUT DATA
  INPUT: 115 v (± 10%) at 60 cps (± 3 cps).
  OUTPUT: 1 v min across 50 ohms at all three output frequencies.
  EXTERNAL STATUS AND ALARM OUTPUT: 5.0 mc, 1.0 mc, and 100 kc.
  CLOCK POWER OUTPUTS: 100 kc and 26.5 v dc.
AMBIENT TEMPERATURE LIMITATIONS: 0 to 50° C (32 to 122° F).
OPERATING CHARACTERISTICS OF POWER SUPPLY
  OUTPUT VOLTAGES: 27 v rms at 60 cps and regulated 26.5 v dc.
  POWER INPUT: 56 W normal operation; 240 W max battery charging.
  POWER FACTOR REQUIRED AT EACH SPECIFIED SUPPLY VOLTAGE
    STARTING: Outer oven heater on, 0.74.
    CONTINUOUS DUTY CYCLE: Outer oven heater on 0.75; outer oven heater off 0.61.
  BATTERY CHARGING: 0.75.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Frequency Standard AN/URQ-9, includes:	2F5820-799-8840	11 x 13 x 21	70.8
1	Oscillator Radio Frequency O-471/U		8-3/4 x 10-3/4 x 19	24.9
1	Battery Power Supply BB-265/U		4 x 8-1/2 x 10-3/4	11.9
1	Power Supply PP-2223/U		4-5/8 x 5-1/4 x 19	19.4
1	Equipment Case		11 x 13 x 21	14.6
1	Operating Instructions Chart for AN/URQ-9A NAVSHIPS 93806.21		8-1/2 x 11	

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Crystal Data Sheet			
2	Technical Manual NAVSHIPS 93806(A)			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 93806(A): Technical Manual for Frequency Standard AN/URQ-9.
NAVSHIPS 93806.21: Operating Instructions Chart for Frequency Standard AN/URQ-9.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (4) 5840 (5) 5654/6AK5W (2) 5725/6AS6W

CRYSTALS: (1) CR-71/U

SEMI-CONDUCTORS: (2) 1N252 (5) 1N645 (5) 1N758A (3) 1N662 (4) 1N647 (5) 1N429
(4) 1N1614 (1) 2N497 (8) 2N333 (4) 2N539 (1) 2N343

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN DESIGN COG: USN, BuShips
SPEC &/OR DWG: MIL-F-22078A(SHIPS) Amend 1

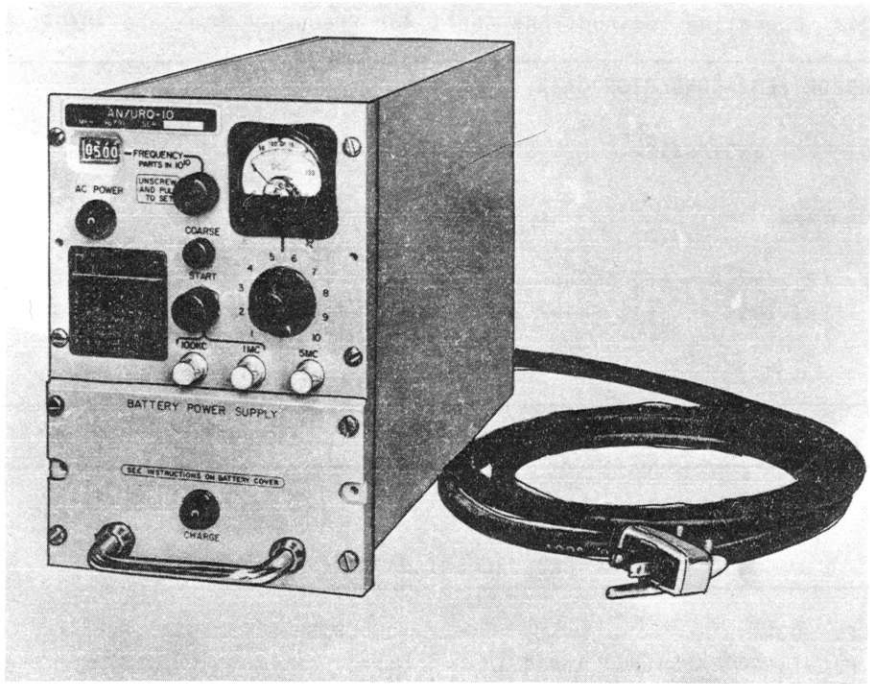
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Borg Equipment Div. of Amphenol Borg Electronics Corporation	Janesville, Wisconsin	NObsr 81228, 22 March 1962	
Bridge Electronics Co., Inc.	Beverly, New Jersey	NObsr 87195	$1427.37

Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Amphenol Controls, Div. of Amphenol-Borg Electronics Corp., (96791).



FREQUENCY STANDARD AN/URQ-10

FUNCTIONAL DESCRIPTION:

The Frequency Standard AN/URQ-10 is a compact, highly stable, multiple-purpose frequency standard designed for continuous-duty use aboard ship and at shore facilities. It provides three output frequencies 5.0 mc, 1.0 mc, and 100 kc. The frequency standard can be used for laboratory frequency measurements and to drive precision timing devices such as a time comparator. It can also be used as a standby oscillator unit for other frequency/time-base standards such as Frequency-Time Standard AN/BSQ-2A.

No field changes in effect at time of preparation (9 January 1967).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

TECHNICAL CHARACTERISTICS:

INPUT VOLTAGE: 115 v rms, 50 to 400 cps, single ph.

INPUT POWER (BATTERY FULLY CHARGED): 15 W (nominal).
OUTPUT FREQUENCIES: 5 mc, 1 mc, and 100 kc.
OUTPUT LEVELS:
50 OHMS LOAD: 1 v rms (minimum) at all frequencies.
1 MEGOHM LOAD: 2 v rms (maximum) at all frequencies.
OPERATING TEMPERATURE RANGE: 0 to 50 degree C.
CONTINUOUS OPERATION TIME FROM BATTERY AFTER LOSS OF PRIMARY POWER: 8 hours (minimum, with fully charged battery).
OUTPUT SPURIOUS LEVELS (50 OHM LOAD): 0.1 mv rms (maximum).
OUTPUT HARMONIC LEVELS (50 OHM LOAD): 10 mv rms (maximum).
OUTPUT FREQUENCY: 5 mc.
OUTPUT LEVELS: 50 ohm load, 1 v rms (minimum); 1 megohm load, 2 v rms (maximum).
POWER REQUIREMENTS: 115 v ac, 50 to 400 cps, single phase, 20 W, ac power source available through a grounded female plug.
NUMBER OF CHANNELS: 3 channels.

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Frequency Standard, AN/URQ-10 includes:	5-1/2 x 7-13/16 x 15-5/16	22
1	Radio Frequency Oscillator O-1283/URQ-10	4-7/16 x 4-7/16 x 6-3/8	2
1	Power Supply PP-4354/URQ-10	2-31/32 x 4-1/2 x 5-9/32	5
1	Battery Power Supply BB-605/URQ-10	3-3/16 x 5-1/2 x 9-1/8	8
1	Frequency Divider Module 5 mc to 1 mc	1-1/2 x 3 x 4-3/16	.68
1	Frequency Divider Module 1 mc to 100 kc	1-1/2 x 3 x 4-3/16	.68
1	Regulator and Battery Control Module	1-1/2 x 3 x 4-3/16	.68
1	Operating Instructions Chart for AN/URQ-10 NavShips 0967-053-7020	9 x 12	
2	Technical Manual NavShips 0967-053-7010	8-1/2 x 11	
1	Crystal Data Sheet		

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REFERENCE DATA AND LITERATURE:

NAVSHIPS 0967-053-7010: Technical Manual for Frequency Standard AN/URQ-10.
NAVSHIPS 0967-053-7020: Operating Instruction Chart for Frequency Standard AN/URQ-10.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	2.2	27

PROCUREMENT DATA

PROCURING SERVICE: USN
DESIGN COG; USN, NavShips
SPEC &/OR DWG: MIL-F-21584(SHIPS)

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Amphenol Controls, Div. of Amphenol-Borg Electronics Corp. Part No. 15-81778 Model No. 1210	Janesville, Wisconsin	N00024-67C-1001 NObsr 93097(FBM)	

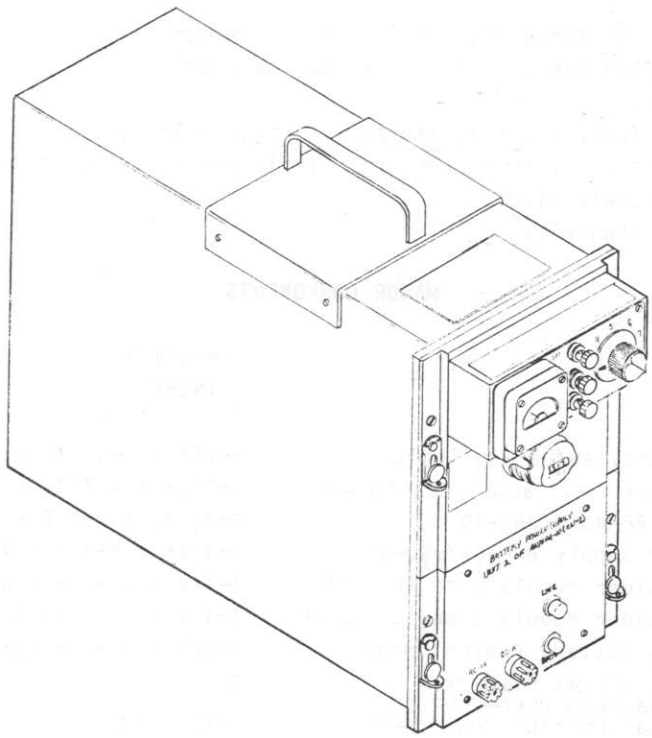
23 July 1964 FREQUENCY STANDARD AN/URQ-10(XN-2)

Cog Service: USN FSN: Functional Class:

USA USN USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: The James Knights Company, (75378).



FREQUENCY STANDARD AN/URQ-10(XN-2)

FUNCTIONAL DESCRIPTION:

Frequency Standard AN/URQ-10(XN-2) is a highly stable, multiple-purpose, all transistorized unit designed for continuous-duty use aboard ship and at shore facilities. It provides output frequency of 5.0 mc, 1.0 mc, and 100 kc.

The frequency standard can be used for laboratory frequency measurements and to drive precision timing devices such as a time comparator. It can also be used as a standby oscillator unit for other frequency-time-base standards such as Frequency-Time Standard AN/BSQ-2A.

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

RELATION TO OTHER EQUIPMENT:

The Frequency Standard AN/URQ-10(XN-2) is similar to the AN/URQ-9 which performs a similar function. It differs from the AN/URQ-9 in that it is completely transistorized and is therefore much smaller and lighter, but it provides the same outputs (except that it does not provide voltage to run an external clock).

AN/URQ-10(XN-2) FREQUENCY STANDARD

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

TECHNICAL CHARACTERISTICS:

OUTPUT FREQUENCIES: 5.0 mc, 1.0 mc, and 100 kc (sinusoidal).
FREQUENCY STABILITY: Frequency drift is less than 5 parts in 10^{10} per day.
TYPE OF FREQUENCY CONTROL: Crystal oscillator.
FREQUENCY CONTROL CRYSTAL DATA
- GOVERNMENT DESIGNATION: CR-71/U.
- TYPE OF CUT: AT
- FREQUENCY ADJUSTMENT RANGE OF CRYSTAL OSCILLATOR CIRCUIT
  - COARSE CONTROL: 1,000 parts per 10^9 min.
  - FINE CONTROL: 100 parts per 10^9 parts.
- OSCILLATOR FREQUENCY: 5.0 mc.
- CRYSTAL OPERATING TEMPERATURE: 70 to 80° C (158 to 176° F) factory set to turning point of crystal.

ELECTRICAL INPUT AND OUTPUT DATA
- INPUT: 115 v (± 10%) at 60 cps (± 3 cps).
- OUTPUT: 1 v rms min across 50 ohms of all three output frequencies.

AMBIENT TEMPERATURE LIMITATIONS: 0 to 50° C (32 to 122° F).
OPERATING CHARACTERISTICS OF POWER SUPPLY
- OUTPUT VOLTAGE: Regulated 23 v dc.
- POWER INPUT: 25 W at + 25° C ambient temperature.
- POWER FACTOR REQUIRED AT THE SPECIFIED SUPPLY VOLTAGE: 0.885.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Frequency Standard AN/URQ-10 (XN-2) includes:		5-1/2 x 7-13/16 x 14-1/4	21.8
1	Oscillator Radio Frequency Unit 1		4-1/2 x 5-1/2 x 12-9/16	4.6
1	Battery Power Supply Unit 2		3-5/16 x 5 x 5-1/2	3.1
1	Battery Pack Unit 3		3 x 4 x 8-3/4	7.1
1	Cabinet Unit 4		5-1/2 x 7-13/16 x 13-1/2	7.0
2	Technical Manual NAVSHIPS 94452			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 94452: Technical Manual for Frequency Standard AN/URQ-10(XN-2).

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: None required.

CRYSTALS: (1) BG61AH-5 (Bliley)

SEMI-CONDUCTORS: (2) 1N757A (13) 1N662 (5) 1N538 (1) 1N967B (1) 1N2990B (13) 2N916 or 2N957 (8) 2N333 or T1494 (4) 2N697 or 2N1986 (3) 2N1485 or 2N1701

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG: MIL-F-21584A(SHIPS)

DESIGN COG: USN, BuShips

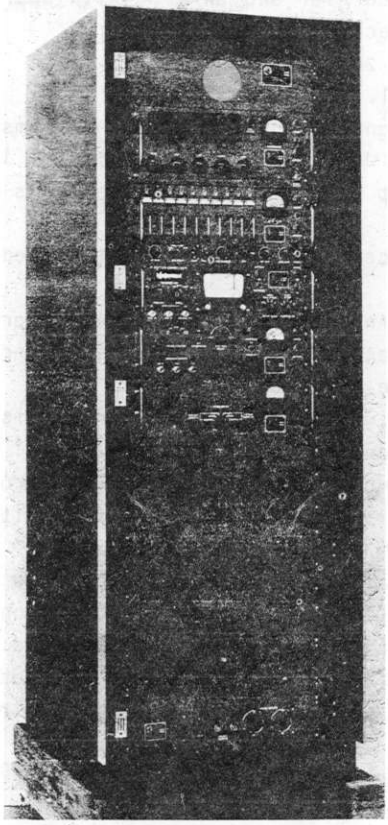
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
The James Knights Company	Sandwich, Illinois	NObsr 81368	$12,500.00

Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: The Technical Material Corporation, (82679).



COMPARATOR RECEIVING SET AN/URR-50(V)

FUNCTIONAL DESCRIPTION:

The Comparator Receiving Set AN/URR-50(V) provides for the direct comparison and correction of a local standard to practically the same stability as the transmitting station. The word "practically" is used due to the diurnal frequency shift to the transmitting station at sunrise and sunset. To defeat this, measurements should be taken when the effect is not present. In the event of power failure, the unit will automatically switch to battery power, when battery power is included in the system. Once the signal has been received and the station standard "locked on", not only can the variation be observed and recorded, but by simple accessory equipment, this ultrastable frequency can now be distributed to a number of synthesized transmitters or receivers.

No field changes in effect at time of preparation (11 May 1966).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: 10 to 100 kc with plug-in fixed tuned RF amplifiers selectable by front panel control. Up to 10 plug-in modules can be inserted into the receiver.

MODES OF OPERATION: Continuous carrier and CW, FSK with appropriate converter.

STABILITY: 1. Continuously corrected to pairs in 10^9;
2. 1 part in 10^9 for 24 hours.

INPUT IMPEDANCE: 50 ohms nominal.

SENSITIVITY: A 0.1 microvolt signal impressed across 50 ohms at the input of the receiver will produce a minimum of 10 db signal + noise ratio at 100 cycles per second bandwidth.

IF BANDWIDTH: 100 cycles at 3 db points, 50 cps bandpass is available at a slight increase in cost.

TUNING: 1 cycle steps from 10 kcs to 99.99 kcs and displayed on 1 inch illuminated nixie indicators.

REFERENCE STANDARD CORRECTION: An internal phase detector provides a dc correction voltage to the reference standard that is derived from the difference between the received RF signals phase and that of the synthesizer output.

RF NOISE CANCELLATION: An R.F. noise cancelling circuit is incorporated in the individual R.F. tuning modules and is controlled on the front panel.

FREQUENCY STANDARD ADJUSTMENT: Multi-turn front panel control with 1000 dial divisions provides total deviation of ±100 parts in 10^9 with resettable accuracy of 1 part in 10^9.

ELECTRONIC CORRECTION (FROM SYNTHESIZER): ±100 parts in 10^9 (BNC connector).

OUTPUTS (FRONT PANEL): (1) 1 mc at 1 volt across 50 ohm load (BNC); (2) 100 kc at 1 volt across 50 ohm load (BNC), (3) 10 mc at 1 volt across 50 ohm load (BNC).

OUTPUTS (REAR PANEL): (1) 1 mc at 1 volt across 50 ohm load (BNC); (2) 100 kc at 1 volt across 50 ohm load (BNC); (3) 10 mc at 1 volt across 50 ohm load (BNC); (1, 2, and 3 are in parallel with front panel outputs); (4) 1 mc output direct from standard through isolation resistor.

ERROR READABILITY: Minimum detectable error ±2 parts in 10^{10}.

MAXIMUM ERROR DISPLAY TIME: Maximum time to display; 1 part in 10^{10}, 1 second; 1 part in 10^{11}, 10 seconds.

ERROR MULTIPLICATION FACTOR: Adjustable error multiplication rate from 10 to 10,000 in 4 detended switch positions.

BANDWIDTH: 100 cycles, 50 cps bandwidth available at slight increase in cost.

AGC: Amplified and delayed AGC provides no greater than 3 db change in output for an 80 db change in input signal.

TYPE OF DETECTION: Product detector.

BFO: Adjustable 0 to 2.5 kc from IF frequency.

DISTORTION: Total harmonic and intermodulation distortion 1% or less at full power output.

AUDIO OUTPUT: 500 milliwatts, 4 ohm unbalanced and one milliwatt (odbm) 600 ohm balanced center tapped output.

AUDIO AMPLIFIER RESPONSE: Constant within ±1.5 db from 100 to 7500 cps.

ENVIRONMENTAL CONDITIONS: Designed to operate in any ambient temperature range from 0 to 50 deg C and any value of humidity up to 90%.

BATTERY: A battery drawer is provided that will accept up to four BA-101 plug-in batteries

(listed under OPTIONS/ACCESSORIES) to provide up to 16 hours emergency operation when batteries are used in the system, they are maintained on trickle charge.

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Comparator Receiver Set AN/URR-50(V) includes:	20-1/2 x 21-1/2 x 30-1/2	110
6	Type BA-101, Batteries (26.5 v, 2.5 amp)		

REFERENCE DATA AND LITERATURE:

The Technical Material Corporation Bulletin Number 6003A for AN/URR-50(V).

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	50	608
2	13	215
3	19.4	210

PROCUREMENT DATA

PROCURING SERVICE: USN
DESIGN COG: USN, NavShips
SPEC &/OR DWG:

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
The Technical Material Corp. Mfr's No. VLFC-1	Mamaroneck, N.Y.	N600(63133)65131	

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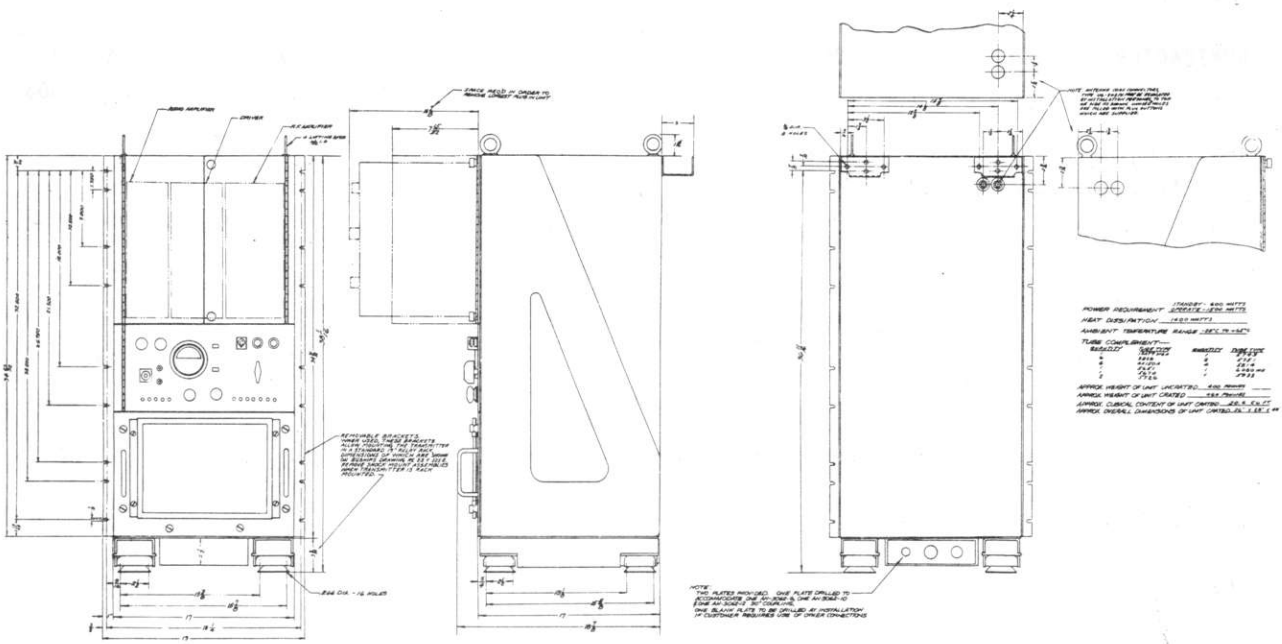
Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Federal Telephone and Radio Co., (88421).



TRANSMITTING SET RADIO AN/URT-11(XN-1)

1.6 AN/URT-11(XN-1): 1

FUNCTIONAL DESCRIPTION:

Transmitting Set Radio AN/URT-11(XN-1) is for radio telephone communication in the 225 to 400 mc frequency range. It is designed for ships, submarines or shore stations. It provides for remote operation by use with a Control Radio Set C-1138/UR.

No field changes in effect at time of preparation (27 July 1967).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Microphone;
(1) Handset
(1) Antenna
(1) Radio Set Control C-1138/UR

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: 225 to 400 mc.
NOMINAL CARRIER OUTPUT: 100 W.
TYPE EMISSION: A3.
MODULATION CAPABILITY: 100%.
TYPE FREQUENCY CONTROL: crystal or master oscillator.
FREQUENCY STABILITY: 0.01%.
IMPEDANCE DATA
MICROPHONE INPUT: 200 ohms.
LINE INPUT: 600 ohms.
ANTENNA OUTPUT: 50 ohms.
AUDIO INPUT VOLTAGE: -25 to +5 db from a 6 mw ref level (0.1 to 3.4 v).
AUDIO FREQUENCY RESPONSE: Flat within ±1 db from a 1000 cps ref at 300 to 3500 cps -50 db at 5000 cps and over.
INPUT TO CLIPPING JTAGE: Normally held 20 ±2 db above clipping level by action of AVC circuit for variations in input of -25 to +5 db from 6 mw ref level.
AMBIENT TEMPERATURE RANGE: -28 to +65° C.
HEAT DISSIPATION: 1400 W.
POWER REQUIREMENTS: 440 v, 60 cps, 3 ph, 600 W standby, 1500 W operating, 89% pf.

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MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Transmitting Set Radio AN/URT-11(XN-1)	18-7/8 x 19 x 40	400

REFERENCE DATA AND LITERATURE:

NAVSHIP 93007: Technical Manual for Transmitting Set Radio AN/URT-11(XN-1)

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	20.6	460

PROCUREMENT DATA

PROCURING SERVICE: USN
DESIGN COG: USN, NavShips
SPEC &/OR DWG:

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Federal Telephone and Radio Co.	New York, N.Y.	NObsr-63226	

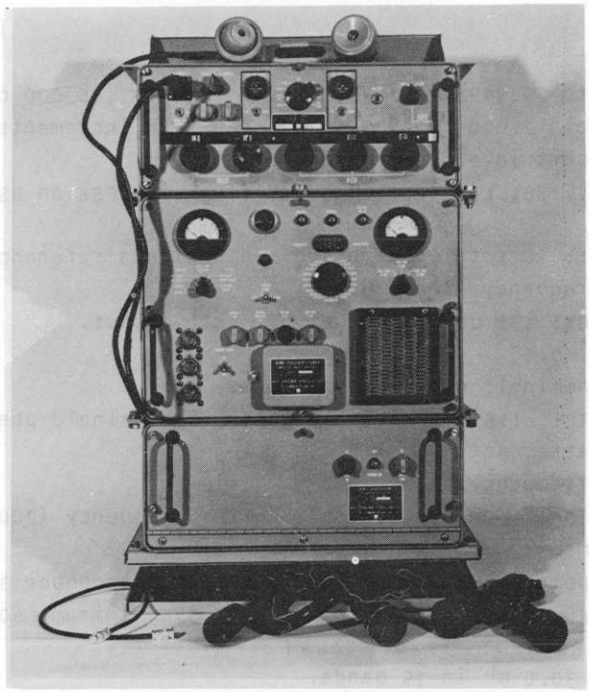
6 September 1967 TRANSMITTING SET, RADIO AN/URT-23(V)

Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: R.F. Communications, Inc. (14304)



TRANSMITTING SET, RADIO AN/URT-23(V)

FUNCTIONAL DESCRIPTION:

The Transmitting Set, Radio AN/URT-23(V) is a 1 kw single-sideband radio transmitting set capable of general purpose voice, continuous wave, and radio teletypewriter transmissions on any one of up to 280,000 channels in the 2.0 to 30.0 mc frequency range. The exact spacing and number of channels available for operation is dependent on the model of Radio Transmitter T-827/URT supplied as a part of the AN/URT-23(V). Rack or stock mounting may be used to install the units of the AN/URT-23(V) in a ship or shore fixed installation with other ancillary equipment to form a complete communications system such as that shown in figure 1-1. Any one of three-phase primary power sources can be used to provide operating power to the AN/URT-23 (V): 115 volts line-to-line, 400 cps; or 208 or 440 volts line-to-line, 60 cps.

No field changes in effect at time of preparation (9 January 1966).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Teletypewriter Panel: TT-23/SG: (1) Teletypewriter Control Panel: C-1004/SG; (1)Teletypewriter Power Supply: SB-315/U; (3) Radio Remote Control: C-1138/UR; (2) Audio Oscillator: AN/URM-127; (2) Voltmeter: ME-26/U with HP-11042A Tee-Probe-Connector; (1) Multimeter: AN/PSM-6; (1) Oscilloscope: AN/USM-38; (1) Sweep Generator: Telonic LH-2; (1) Dummy RF Load: DA-75/U; (1) Signal Generator: AN/GRM-50;(1) Analyzer Test Set: TS-1379/U; (1) Average Responding Voltmeter: ME-30A/U. (7) Instruction Books for: AN/URM-127, ME-26/U, AN/PSM-6; AN/USM-38; AN/GRM-50; TS-1379/U and ME-30A/U.

TECHNICAL CHARACTERISTICS:

RADIO TRANSMITTER T-827/URT

FREQUENCY RANGE: 2.000 to 29.9995 mc in 0.5 kc increments (56,000 channels). Model T-827A/URT and later models 2.000 to 29.9999 mc in 0.1 kc increments (280,000 channels).

FREQUENCY STABILITY: 1 part in 10^8 per day.

MODES OF OPERATION: USB, ISB, LSB, FSK, ISB/FSK (ISB with FSK on USB), CW and compatible AM.

TYPE OF FREQUENCY CONTROL: Crystal controlled synthesizers referenced to a 5 megacycle internal or external frequency standard.

INTERMODULATION DISTORTION: 35 db maximum at 0.1 watt output.

CARRIER SUPPRESSION: 50 db.

POWER OUTPUT: 0.1 watt nominal; 0.25 watt maximum.

PRIMARY POWER REQUIREMENTS: 115 vac ±10%, 48 to 450 cps, single phase.

POWER CONSUMPTION: 65 watts.

CW MODE: Keyed carrier frequency.

FSK MODE: 850 cps total shift on a selectable center frequency (2000 or 2550 cps).

OUTPUT IMPEDANCE: 50 ohms.

AUDIO INPUT IMPEDANCE: Remote, 600 ohms; local, carbon microphone 30 ohms nominal.

TELETYPEWRITER LOOP CURRENT INPUT: SPACE 0-MA; MARK-5MA minimum, 60 MA maximum.

AMPLIFIER, RADIO FREQUENCY AM-3924(P)/URT

FREQUENCY RANGE: 2.0 to 30.0 mc in 19 bands.

AMPLIFIER, RADIO FREQUENCY AM-3924(P)URT

POWER OUTPUT: 1 kilowatt PEP for USB, LSB, ISB and compatible AM(250 watts of carrier) emissions; 1 kilowatt of average power for CW, FSK and FAX emissions.

INTERMODULATION DISTORTION: 40 db.

PRIMARY POWER: 115 volts ±10% line-to-line, 400 cps, three phase, three-wire; or 208 or 440 volt ±10% line-to-line, 60 cps, three phase, three-wire.

POWER CONSUMPTION: 3500 watts at rated full power output.

HEAT DISSIPATION: 2500 watts at rated full power output.

RF POWER INPUT: 100 milliwatts nominal.

TUNING TIME: 5 seconds.

AMBIENT TEMPERATURE LIMITATIONS (during operation): 0 to 50°C.

REQUIRED RF LOAD: 50 ohms with a maximum VSWR of 4 to 1.

POWER SUPPLY: PP-3916/UR

PRIMARY INPUT VOLTAGE: 208 volts ±10% line-to-line, 48 to 63 cps, or 440 volts ±10% line-to line, 60 cps ±5%, three phase, 0.88 minimum power factor.

POWER CONSUMPTION: 4000 watts.

POWER DISSIPATION: 150 watts.

OUTPUT VOLTAGES: (1) 115 volt, 60 cps, single phase, 140 watts

(2) 115 volt, 400 cps, single phase, square wave 70 watts,
(3) 500 v dc at 0.9 amperes
(4) 2250 v dc at 1.2 ampere 3(un-filtered).

POWER SUPPLY: PP-3917/UR
PRIMARY INPUT VOLTAGE: 115 volts ± 10%, line-to-line, 380 to 420 cps, three phase, 0.88 minimum power factor.
POWER CONSUMPTION: 4000 watts.
POWER DISSIPATION: 150 watts.
OUTPUT VOLTAGES: (1) 115 volt, 60 cps, single phase, square wave, 40 watts;
(2) 115 volt, 400 cps, single phase, 200 watts;
(3) 500 volts dc at 0.9 amperes;
(4) 2250 volts dc at 1.2 amperes (unfiltered).

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Transmitting Set, Radio: AN/URT-23(V) includes:		
1	Radio Frequency Amplifier: AM-3924(P)/URT	12-23/64 x 17-3/8 x 19.0	95
1	Power Supply: PP-3917/UR		30
1	Power Supply: PP-3916/UR	7-7/64 x 17-3/8 x 19.0	135
1	Radio Transmitter: T-827/URT	7 x 17-3/8 x 18-29/32	70
1	Base, Shock Mount, Electrical Equipment: MT-3399/U	3-1/2 x 17 x 19-3/4	10
1	Interconnecting Cable: W-1		1.0
1	Interconnecting Cable: W-2		3.0
1	Interconnecting Cable: W-3		2.0
1	Mating Connector Kit		2.0
2	Technical Manual for Radio Transmitting Set: AN/URT-23(V)		
1	Maintenance Standards Book for Radio Transmitting Set: AN/URT-23(V)		
1	Performance Standards Sheet for Radio Transmitting Set: AN/URT-23(V)		
1	Operator's Instruction Chart for Radio Transmitting Set: AN/URT-23(V)		

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REFERENCE DATA AND LITERATURE:

Manuscript Catalog Sheet: for Radio Transmitting Set AN/URT-23(V).
Manuscript Catalog Sheet: for Maintenance Standards Book for Radio Transmitting Set AN/URT-23(V).
Manuscript Catalog Sheet: Performance Standards Sheet for Radio Transmitting Set AN/URT-23(V).
Manuscript Catalog Sheet: Operator's Instruction Chart for Radio Transmitting Set AN/URT-23(V).
NAVSHIPS 0967-032-0010: Technical Manual for Radio Transmitter T-827/URT.
NAVSHIPS 0967-032-0020: Operator's Handbook for Radio Transmitter T-827/URT.
NAVSHIPS 0961-032-0030: Maintenance Standards Book for Radio Transmitter T-827/URT.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	6.2	400

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG: SPEC: R-4884, (SHIPS)

DESIGN COG: USN, NAVSHIPS

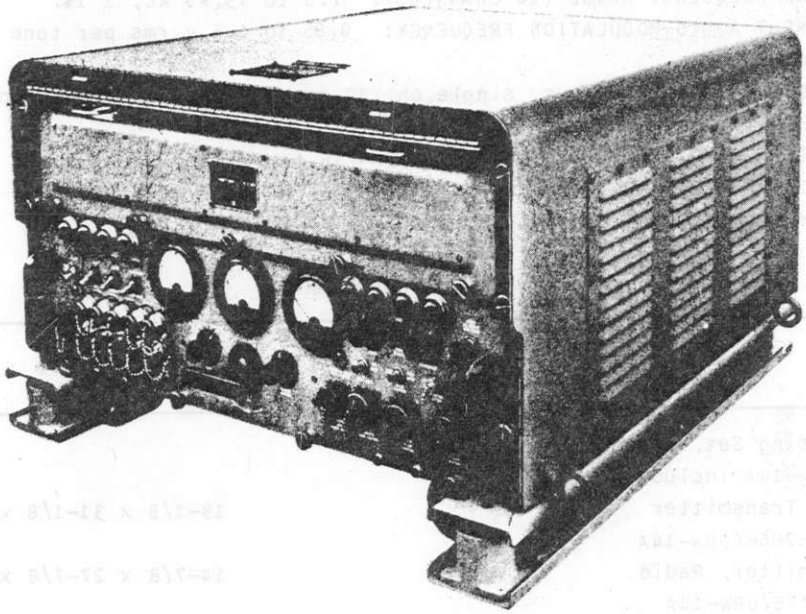
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
R.F. Communications, Inc. Part No. 391-0000	Rochester, N.Y.	NObsr-93367	

23 July 1964 TRANSMITTING SET, RADIO AN/URW-14A
Cog Service: USN FSN: Functional Class:

USA USN USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Babcock Electronics Corp., (82050).



TRANSMITTING SET, RADIO AN/URW-14A

FUNCTIONAL DESCRIPTION:

Transmitting Set, Radio AN/URW-14A is a FM transmitter. It contains a coder for transforming flight-control commands received from a remote control box into coded, audio frequency modulating signals. These signals frequency-modulate a RF carrier. The RF carrier is transmitted to an airborne receiver to control a target drone, pilotless aircraft, or missiles.

No field changes in effect at time of preparation (1 July 1964).

RELATION TO OTHER EQUIPMENT:

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Transmitting Set Test Harness AN/URM-111A; (2) Antenna AT-781A/U or AT-948/U.

AN/URW-14A TRANSMITTING SET, RADIO

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: 406 to 549.5 mc in 1/2 mc increments.
ACCURACY OF FREQUENCY RANGE: ± 0.005% of center freq.
RF POWER OUTPUT: 75 W min.
OUTPUT LOAD IMPEDANCE: 50 ohms nom.
NORMAL RF CARRIER DEVIATION: ± 300 kc.
OSCILLATOR FREQUENCY RANGE: 36.16666 to 60.08333 mc.
MIXER OSCILLATOR CRYSTAL FREQUENCY: 25.4 mc.
MASTER OSCILLATOR FREQUENCY: 6.1 mc.
AUDIO-MODULATION FREQUENCY RANGE (20 CHANNELS): 7.5 to 73.95 kc, ± 1%.
AMPLITUDE OF INPUT AUDIO-MODULATION FREQUENCY: 0.85 to 1.5 v rms per tone across 560 ohm resistive load.
POWER REQUIREMENTS: 115 v, 60 cyc, single ph, 10 amp; 28 v dc in remote operation modes.
MAXIMUM WARM-UP TIME: 10 minutes.
OPERATING TEMPERATURE RANGE: - 28 to + 65° C (- 18 to + 150° F).
NON-OPERATING TEMPERATURE RANGE: - 62 to + 75° C (- 80 to + 165° F).
HUMIDITY RANGE: Up to 90% humidity.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Transmitting Set, Radio AN/URW-14A includes:			
1	Case, Transmitter CY-2858/URW-14A		18-1/8 x 31-1/8 x 34-1/8	135
1	Transmitter, Radio T-775/URW-14A		14-7/8 x 27-7/8 x 29-9/16	275
1	Coder, Audio Frequency KY-336/URW-14A		4-3/4 x 10-1/16 x 20-3/16	16
1	Amplifier, Frequency Multiplier AM-2538/URW-14A		5-7/8 x 10-1/16 x 20-7/32	23
1	Amplifier-Modulator AM-2539/URW-14A		6-3/8 x 7-7/16 x 17-3/8	9.50
1	Power Supply PP-2603/URW-14A		14-7/8 x 28-5/16	227
1	Case, Crystal-Oven CY-2575A/U		2-7/8 x 9-13/32 x 10-9/32	5
1	Case, Crystal-Oven CY-2857/U		2-7/8 x 9-13/32 x 10-9/32	5
1	Mounting Template			

REFERENCE DATA AND LITERATURE:

NAVWEPS 16-30URW14-2: Handbook of Operation Maintenance Instructions with Illustrated Parts Breakdown for Transmitting Set, Radio AN/URW-14A.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (2) 0A2WA (1) 0B2WA (1) 4CX250B (7) 6AU6WA (4) 6CB6 (1) 6CL6 (9) 12AT7WA (2) 5726/6AL5W (1) 5750/6BE6W (1) 5751 (4) 5814A (10) 5814WA (2) 6080WA

1.6 AN/URW-14A: 2

TUBES: (1) 6360 (1) 6907

CRYSTALS: (288) CR-32/U

SEMI-CONDUCTORS: (1) 1N538 (4) 1N540 (4) 10LF (2) 1N645 (50) M-500

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN DESIGN COG: USN, BuWeps
SPEC &/OR DWG: MIL-T-21010A

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Babcock Electronics Corp.	Costa Mesa, California	NOw 60-0658-f	

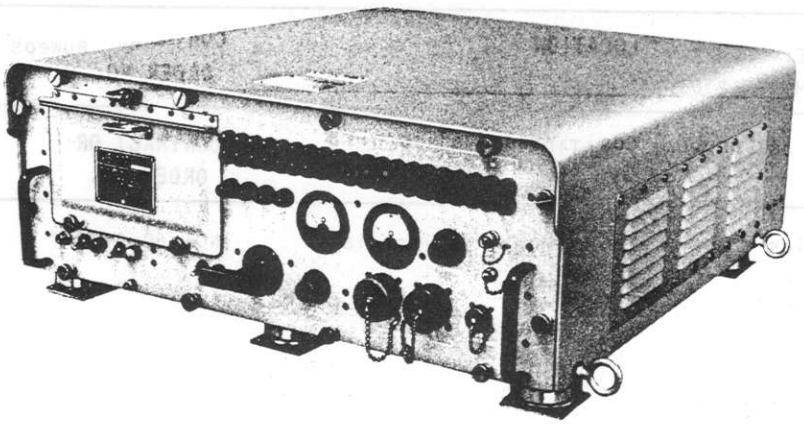
27 July 1964

Cog Service: USN FSN: RECEIVING SET, RADIO AN/URW-16 Functional Class:

USA USN USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Babcock Electronics Corp., (82050).



RECEIVING SET, RADIO AN/URW-16

FUNCTIONAL DESCRIPTION:

Receiving Set, Radio AN/URW-16 is a frequency-modulation receiver, operating in the range of 406 to 549.5 mc. The equipment is used to monitor the operation of a transmitting set, which is used for control of target aircraft and missiles. The AN/URW-16 provides visual indication, by means of indicator lamps, of signals being transmitted by the control system.

No field changes in effect at time of preparation (1 July 1964).

RELATION TO OTHER EQUIPMENT:

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Signal Generator CAQI-612A; (1) Audio Oscillator TS-382/U; (1) Oscilloscope AN/USM-24;

AN/URW-16 RECEIVING SET, RADIO

(1) Frequency Counter AN/USM-26; (1) Multimeter AN/PSM-6.

TECHNICAL CHARACTERISTICS:

RF FREQUENCY RANGE: 406 to 549.5 mc, FM.
PRESET RF FREQUENCIES: 6 oscillator xtals selected.
RF FREQUENCY STABILITY: ± 0.005%.
IF FREQUENCY: 33.5 mc.
AUDIO-DECODER FREQUENCIES
  CHANNEL: 1 to 20.
  FREQUENCY: 7,500 to 73,950 cps.
AUDIO-FREQUENCY TOLERANCE: ± 1.0%.
OUTPUT CHARACTERISTICS
  INDICATOR LAMPS: 20 red-colored lamps indicate active audio channels; 20 green-colored lamps indicate inactive audio channels.
  SUPPLEMENTARY OUTPUTS: 20 SPDT relay contact connections (1 contact for ea channel, ea capable of conducting 2 amp at 28 v dc).
SENSITIVITY
  HIGH SENSITIVITY: 5 to 100,000 uv.
  LOW SENSITIVITY (- 60 DB): 50,000 to 500,000 uv.
SELECTIVITY
  BROAD-BAND IF: Suitable for ± 120 to ± 300 kc deviation.
  NARROW-BAND IF: Suitable for ± 120 kc deviation, or less.
POWER REQUIREMENTS 102 to 126 v, 55 to 65 cyc, 200 W max (operating), 110 W max (standby).

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Receiving Set, Radio AN/URW-16 includes:	V5895-842-2139		
1	Receiver, Radio R-999/URW-16		10-1/8 x 27-3/4 x 29-9/16	116
1	Case, Radio Receiving Set CY-2922/URW-16		11-15/16 x 31-5/8 x 34-1/8	120
1	Case, Crystal-Oven CY-2923/U	V5895-736-4631	3 x 9-1/2 x 10-3/8	4.75
1	Case, Crystal-Oven CY-2924/U	V5895-736-4632	3 x 9-1/2 x 10-3/8	4.75

REFERENCE DATA AND LITERATURE:

NAVWEPS 16-30URW16-1: Handbook of Operation and service Instructions with Illustrated Parts Breakdown for Receiving Set, Radio AN/URW-16.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (1) 0B2WA (1) 6AH6A (2) 6AU6WA (1) 6BC4 (10) 6CB6 (14) 12AU7WA (1) 5722 (1) 5725/6AS6W (3) 5726/6AL5W (1) 6080WA (1) 7077

CRYSTALS: (144) 21126 (144) 21167

SEMI-CONDUCTORS: (1) 1N82A (1) 1N87A (5) 1N540 (1) 1N1779 (16) M-500

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG:

DESIGN COG: USN, BuWeps

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Babcock Electronics Corp.	Costa Mesa, California	NOas 60-6083c	

ELECTRONIC EQUIPMENT - PRELIMINARY DATA
NAVSHIPS 4457 (Rev. 9-62)

DESIGNATION: AN/USA-16(V)

CLASSIFICATION of Equip,	ITEM NAME	DATE
UNCLASSIFIED	Communications Control Console	27 March 1962
SPECIFICATION: -	CONTRACT NUMBER AND DATE: N600(11)57799	QUANTITY ON ORDER: -

CONTRACTOR'S NAME AND ADDRESS
Dixon Industries, Inc.
118 North Frederick Avenue
Gaithersburg, Maryland

SERVICE APPROVAL LETTER - SERIAL AND DATE: -

ELECTRICAL CHARACTERISTICS

POWER INPUT
110 V 60 CYCLE 1 PHASE - AMPS - WATTS
- V - CYCLE - PHASE - AMPS - WATTS

OUTPUT SIGNAL CHARACTERISTICS (REP. RATE, I.F. ETC.)	WAVE GUIDE OR CABLE LIMITATIONS	INPUT SIGNAL CHARACTERISTICS	POWER OUTPUT
-	-	-	-
OPERATING FREQ. AND FREQ. RANGE	**EMISSION OR RECEPTION (TYPE)**	**FREQ. CONTROL (TYPE)**	**NO. OF CHANNELS**
-	-	-	-

ANTENNA OR TRANSDUCER (TYPE)	IMPEDANCE (OHMS)	FEED TYPE	BEAM PATTERN
-	-	- -	- °HORIZ. - °VERT.

REFERENCE DATA AND LITERATURE

DRAWING	DWG. NUMBER	DIST. DATE	PUBLICATION	PUB. NUMBER
-	-	-	TECHNICAL MANUAL	-
			OPERATING INSTRUCTION CHART	-
			PERFORMANCE STANDARD SHEET	-
			MAINTENANCE STANDARD BOOK	-

MAJOR UNITS

QTY	NOMENCLATURE AND NAME	OVERALL DIMENSIONS (IN) HEIGHT	WIDTH	DEPTH	H.D. (UNITS)	WEIGHT (LBS)
	Communications Control Console AN/USA-16(V)(Mfr's Model MCS-102-6)consists of:	60	41	40		
3	Customer 10-Pushbutton Assembly (Mfr's Model No. OPER-10)					
2	Line 10-Pushbutton Assembly (Mfr's Model No. LPBR-10)					
3	Customer Selector Assembly (Mfr's Model No. CSR-2)					
2	Line Selector Assembly (Mfr's Model No. LSR-1)					
1	Master Matrix Assembly (Mfr's model No. CBSM-20)					
2	Line/Customer Selector Assembly (Mfr's Model No. LCBS-12)					
2	Line/Customer Lamp Assembly (Mfr's Model No. LCLA-12)					
1	Master Control and Equipment Housing (Mfr's Model No. CHE-6)					
1	Master Power Supply (Mfr's Model No. MPS-30)					
				1.5 AN/USA-16(V): 1		

DESIGNATION	ITEM NAME
AN/USA-16(V)	Communications Control Console

FUNCTIONAL DESCRIPTION: SKETCH, MFG. DIMENSIONS, ETC.

The AN/USA-16(V) is a master switching system complex capable of connecting from 1 to 99 program sources to any one of 1 to 999 customer loops simultaneously. The basic switching complex provides a preset selection or clear of each individual program or customer loop; an automatic, individual-circuit-status indication; test-signal circuits provided automatically; complete shielding of all program circuits through triaxial cable; and ancillary items providing DC-to-tone conversion, tone-to-DC conversion, automatic loop-current limiting, video bridging, and isolation. The unit is sectionalized in from one to 10 consoles, depending on the installation.

The switching console is capable of switching any quantity, up to 999, of the following lines: interphone, radio, intercommunication, telephone, radio monitoring, radio recording, public address; also, teletype and video. These lines may be switched in any increments desired, up to an accumulative total of 999.

No unit cost available.

Source of information: Request for Nomenclature.
Nomenclature correspondence.
No contract available.

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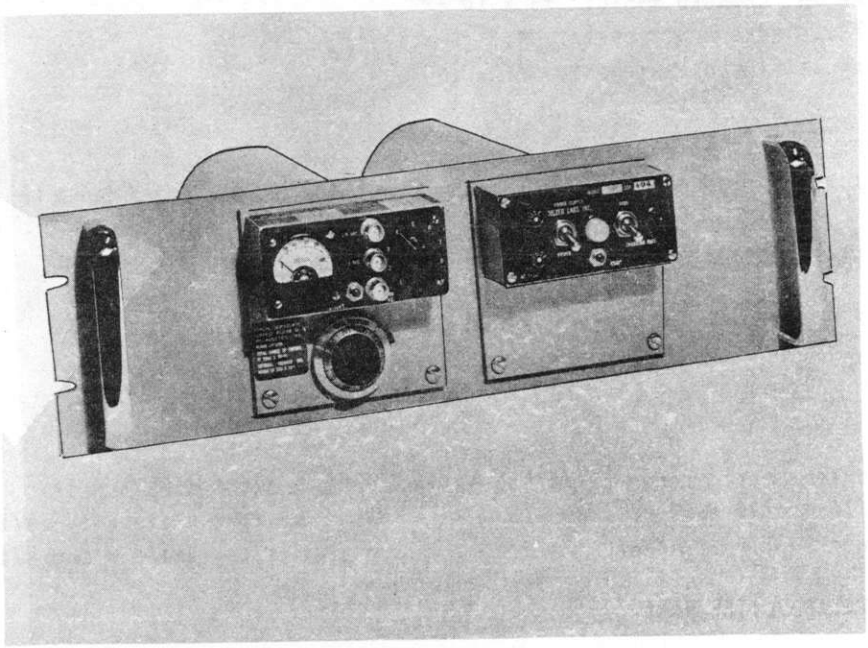
6 September 1967
Cog Service: USN **FSN:**

CALIBRATOR SET, FREQUENCY AN/USQ-38
Functional Class:

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Tracor, Inc. (19397)



CALIBRATOR SET, FREQUENCY AN/USQ-38

FUNCTIONAL DESCRIPTION:

Calibrator Set, Frequency AN/USQ-38 is designed to generate highly stable output frequencies of 5 mc, 1 mc, and 100 kc. Each of these outputs has excellent waveform and spectral purity. The instrument employs a high-quality, ruggedized 5 megacycle quartz crystal unit which, with the special oscillator circuitry, is mounted in a double proportional oven. A highly stabilized feedback amplifier is used in connection with a suitably designed AVC system to maintain the crystal power at the low, constant value that is necessary to attain high frequency stability. The Calibrator Set is an excellent frequency source for laboratory measurements, for primary frequency and time standard systems, and for microwave spectroscopy. Its output, 1V rms to a 50 ohm load, is sufficient to drive most other commercial clocks, frequency multipliers and frequency dividers.

No field changes in effect at time of preparation (7 December 1966).

CALIBRATOR SET, FREQUENCY AN/USQ-38

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

TECHNICAL CHARACTERISTICS:

POWER REQUIREMENTS: 22 to 32 v dc, 0.25 amp.
OUTPUT: 1 v -20% +50% to 50 ohm loads at 5 mc, 1 mc, and 100 kc simultaneously.
STABILITY
INPUT 27 VDC CHANGED ±5v: $\pm 2 \times 10^{-10}$
LOAD 50 OHMS CHANGED ±20%: $\pm 2 \times 10^{-10}$
AMBIENT TEMP 25° CHANGED ±35°C: $\pm 5 \times 10^{-10}$
TIME, 24 HRS AFTER 1 MONTH OPERATION: $\pm 5 \times 10^{-10}$.
TIME, 24 HRS AT TIME OF SHIPMENT: $\pm 1 \times 10^{-9}$.
TIME, 0.1 SEC: 8×10^{-10} rms.
TIME, 1 SEC: 8×10^{-11} rms.
FREQUENCY ADJUSTMENT: 100×10^{-9} from front panel approx 1×10^{-10} per dir; internal adjustment 600×10^{-9} or more.
POWER SUPPLY INPUT REQUIREMENTS: 115v, 60 cps, 1 ph.

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Calibrator Set, Frequency AN/USQ-38 includes:	5-1/4 x 11-3/4 x 19	
1	Calibrator Frequency SG715/U	4-1/2 x 4-1/2 x 14-13/16	6.5
1	Power Supply PP-4636/U	4-1/2 x 4-1/2 x 14-13/16	12

REFERENCE DATA AND LITERATURE:

Instruction Manual for Model 5A Frequency Standard (AN/USQ-38).
TRACOR INC. Catalog sheets for Sulzer Frequency Standards Model 12.5 and 5A with 5P POWER SUPPLY.

SHIPPING DATA

PKG | VOLUME (CU FT) | WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG:
DESIGN COG: USN, NAVELEX

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Tracor, Inc.	Austin, Texas	N600(63133-126) 64468	

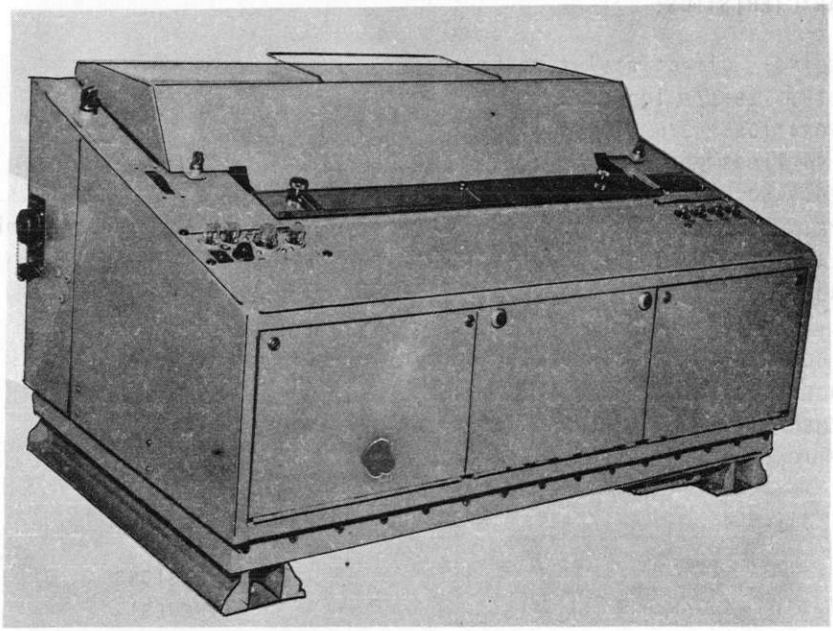
7 September 1967 FACSIMILE, RECORDER SET AN/UXH-2B

Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Litton Systems Inc. Westrex Communications Division, (97983).



FACSIMILE, RECORDER SET AN/UXH-2B

FUNCTIONAL DESCRIPTION:

The Facsimile, Recorder Set AN/UXH-2B, is a continuous-page facsimile recorder designed to make a succession of direct recordings of weather maps, tactical graphic information, sketches, typewritten, printed, or written data which is transmitted over land lines or radio. When receiving from a transmitter which sends the proper control signals, the recorder will operate automatically. The unit will phase, start recording at the beginning of a transmission, stop when the transmission is complete, and compensate for changes of signal level during the recording. The unit can be operated manually when receiving from any transmitter having characteristics compatible with the recorder. In general, facsimile signals can be received over a circuit designed for voice-frequency transmission. No field changes in effect at time of preparation (11 January 1967).

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RELATION TO OTHER EQUIPMENT:

The AN/UXH-2B is one-way interchangeable with AN/UXH-2; AN/UXH-2A. This recorder set is interchangeable as noted, provided radio frequency radiation is not important. In these areas the AN/UXH-2 cannot be used. The two units differ in the method of printing only, the UXH-2 uses electo sensitive type paper; the UXH-2(B) uses carbon and bond paper and printing is accomplished by pressure recording principle.

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Frequency Shift Converter: CV-1066A/UX (for radio operation).

TECHNICAL CHARACTERISTICS:

TYPE OF RECORDING: direct stylus recording.
RECORDING WIDTH: 18-1/2 inches.
INDEX OF COOPERATION: 576 (International); 1810 (I.R.E.).
RESOLUTION: 96 lines per inch.
SCANNING SPEED: 60, 90, or 120 scans per minute.
RECORDING TIME: 19.2 minutes for 12 by 18-1/2 inch copy at 60 scans per minute.
TYPE OF MODULATION: amplitude modulation.
INPUT FREQUENCY: 600 to 4200 cps.
SIGNAL LEVEL: + 4 to ± 20 dbm.
INPUT SIGNAL CONTRAST: 8 to 16 db (automatic); 6 to 36 db (manual).
INPUT IMPEDANCE: 600 ohms.
POWER REQUIREMENTS: 115 or 220 vac, 55 to 65 cps, single phase.
POWER CONSUMPTION: 275 watts at 115 or 220 volts.

MAJOR COMPONENTS

QTY	ITEM	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Facsimile Recorder Set, AN/UXH-2B includes:	17-1/2 x 21 x 32	214
7	Spare fuses		
3	Retainer Ring Pliers		
1	Magnet		
1	Amplifier, Electrical-Control: AM-4218A/UXH-2A	7 x 9-9/32 x 29-5/8	
1	Recorder, Facsimile: RO-293/UXH-2B	11-3/8 x 14-3/4 x 27-3/4	
1	Power Supply: PP-1901A/UXH-2	8-7/8 x 16 x 21	
1	Lubrication Chart: NAVSHIPS 0967-050-1030	8-1/2 x 11	

REFERENCE DATA AND LITERATURE:

MANUSCRIPT DOCUMENT: For Facsimile Recorder Set, AN/UXH-2B.
ENGINEERING TEST SPECIFICATION: Number 40008.

FACSIMILE, RECORDER SET AN/UXH-2B

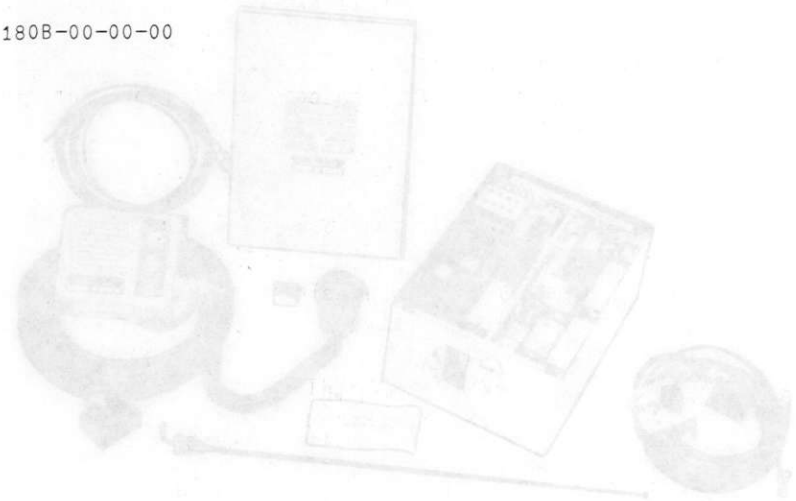
SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1	14	269

PROCUREMENT DATA

PROCURING SERVICE: USN
DESIGN COG: USN, NavShips
SPEC &/OR DWG: SPEC: MIL-F-19480

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Litton Systems Inc. Westrex Communications Division Part No. 180B-00-00-00	New Rochelle, N.Y.	N0bsr-93420	



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Cog Service: USN FSN: Functional Class:

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Communications Company Incorporated, (13848).

RADIO SET AN/VRC-51X

FUNCTIONAL DESCRIPTION:

Radio Set AN/VRC-51X is a mobile installation, fixed-tuned, crystal-controlled, of a single preset channel type used for reception and transmission of F3 (FM) emission. The set is used with fixed-station Radio Sets AN/FRC-70 and AN/FRC-70A. It will work with other equipments that are of equal frequency, deviation, and stability. It is a compact and light weight, high performance unit. It features compact equipment packaging by combining the control head, speaker, and transistorized power supply in one small assembly. The receiver subchassis strips are similar to those used in the AN/FRC-70, AN/FRC-70A, and AN/VRC-42, except for improved performance. The transmitter subchassis strips are similar to those used in the AN/VRC-42, except for circuit changes necessitated by differences in the power supply. The AN/VRC-51X power output is variable, depending upon the frequency of operation and the primary input voltages.

No field changes in effect at time of preparation (18 August 1965).

RELATION TO OTHER EQUIPMENT:

The AN/VRC-51X is similar to AN/VRC-51 except for operating power changes.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

TECHNICAL CHARACTERISTICS:

FREQUENCY STABILITY: 0.0005% with temperature control.
AMBIENT TEMPERATURE RANGE: − 30° C to + 60° C (− 22° F to 140° F).
SENSITIVITY: 0.6 uv or less for 20 db noise quieting.
AUDIO POWER OUTPUT: 1.5 W with less than 10% distortion.
AUDIO OUTPUT IMPEDANCE: 4 and 500 ohms.
INPUT IMPEDANCE: 125 ohms for microphone or handset.
POWER OUTPUT: 15 W min, typical output 20 to 22 W.
ANTENNA TYPE: Whip.
FREQUENCY RANGE: 132 to 152 mc.
TYPE OF EMISSION: F3 (FM).
TYPE OF FREQUENCY CONTROL: Crystal.
NUMBER OF CHANNELS: 1.
POWER REQUIREMENTS: 13.8 v dc or 6.5 v dc.

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MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set AN/VRC-51X includes:			
1	Radio Receiver-Transmitter RT-670/VRC-51X includes:		5-1/2 x 9-1/4 x 12-1/2	14.75
1	Receiver-Transmitter Case CY-3161/URC-51		5-1/2 x 9-1/4 x 12-1/2	9.50
1	Control-Power Supply C-4285/VRC-51X		3 x 5 x 6	9.50
1	Battery cable Assembly		3 x 8 x 8	1.50
1	Antenna Assembly Antenna Specialist Co. Model ASPR1LM			
1	Fuseholder Bracket Assy Mfr Type No. 624-3H-201X			
1	Power Input Voltage Selector Plug and Cable Mfr Pt No. 400-6P			
1	Reluctance Transistorized Microphone Mfr Pt No. CR4W	N5965-679-5626	3-3/8 x 4-7/8 x 10-1/4	1.250
1	Installation Hardware Kit Mfr Pt No. 400-51K		1/2 x 2-7/8 x 5-1/4	0.250

REFERENCE DATA AND LITERATURE:

NAVSHIPS 93400: Electronic Equipment-Preliminary Data for Radio Set AN/VRC-51X.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: Not available.

CRYSTALS: Not available.

SEMI-CONDUCTORS: Not available.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG: SHIPS-R-3603 and MIL-R-19116B w/Amend 1

DESIGN COG: USN, BuShips

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Communications Co. Inc.	Coral Gables, Fla.	NObsr 85523 Mod 3	$294.00

RR9

Cog Service: USN FSN: 2F5820-083-8433 Functional Class:

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Communications Company, Incorporated, (13848).

RADIO SET AN/VRC-52

FUNCTIONAL DESCRIPTION:

Radio Set AN/VRC-52 is designed for operation in the 132 to 152 mc band. It is especially designed for rugged dependable service in the frequency band.

No field changes in effect at time of preparation (1 July 1964).

RELATION TO OTHER EQUIPMENT:

EQUIPMENT REQUIRED BUT NOT SUPPLIED:

AN/VRC-52 RADIO SET

TECHNICAL CHARACTERISTICS:

FREQUENCY RANGE: 132 to 152 mc.
TYPE OF EMISSION: 16F3 (narrow band, ± 5 kc deviation).
OVER-ALL RECEIVER SENSITIVITY: 1.2 uv for 20 db noise quieting.
SQUELCH SENSITIVITY: Better than 0.5 uv (source signal).
AUDIO FREQUENCY RESPONSE: Within + 2 to - 8 db of a std 6 db per octave.
AUDIO POWER OUTPUT: 1.5 W with less than 10% distortion.
AUDIO OUTPUT IMPEDANCE: 3.2 ohms.
RF POWER OUTPUT: 25 W min.
POWER REQUIREMENTS: 12 or 24 v dc.

MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set AN/VRC-52 includes:	2F5820-083-8433		25
1	Receiver, Radio R-1146/VRC-52		4-3/4 x 6-1/4 x 7-1/2	4.87
1	Transmitter-Power Supply T-891/VRC-52		6 x 7-1/4 x 13-1/4	10.12
1	Microphone		2-1/32 x 2-3/4 x 3-13/16	0.75
1	Cable Assy, Antenna		204 lg	
1	Cable Assy, Microphone			
1	Cable Assy		204 lg	
1	Cable Assy		192 lg	
1	Cable Assy, RF		216 lg	
1	Cable Assy		216 lg	
1	Antenna			

REFERENCE DATA AND LITERATURE:

NAVSHIPS 94473: Technical Manual for Radio Set AN/URC-52.

TUBE, CRYSTAL AND/OR SEMI-CONDUCTOR DATA:

TUBES: (2) 6AK6 (2) 6BH6 (1) 6BJ6 (1) 12BR7 (1) 6883 (1) 7551

CRYSTALS: (1) CR-18A/U (2) CR-65/U

SEMI-CONDUCTORS: (4) 1N69A (3) 1N625 (5) 2N441 (4) 2N591 (2) 2N634A (1) 2N718
(1) 2N1501 (4) 2N1524 (2) 2N1742 (2) 2N1743 (2) 2N1744 (2) 2N1867
(1) 2N2092

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)
1		32

PROCUREMENT DATA

PROCURING SERVICE: USN
DESIGN COG: USMC
SPEC &/OR DWG: SHIPS-R-3837

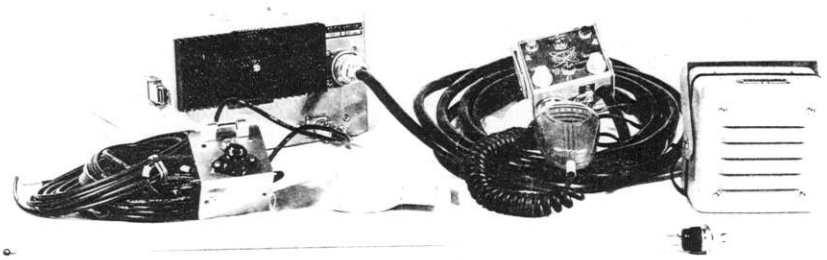
CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Communications Co., Inc. Model No. 905	Coral Gables, Fla.	NObsr-87064	$488.00

Cog Service: USN **FSN:** **Functional Class:**

USA	USN	USAF

TYPE CLASS: Used by

MANUFACTURER'S NAME/CODE NUMBER: Communications Company, Incorporated, (13848).



RADIO SET AN/VRC-58

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FUNCTIONAL DESCRIPTION:

Radio Set AN/VRC-58 is a mobile dual channel radio-telephone designed for FM operation in the 150 to 174 Mc/s frequency band.

No field changes in effect at time of preparation (31 January 1966).

RELATION TO OTHER EQUIPMENT: None.

EQUIPMENT REQUIRED BUT NOT SUPPLIED: None.

TECHNICAL CHARACTERISTICS:

TRANSMITTER POWER SUPPLY
VOLTAGE OUTPUTS
LOW B +: 220 v dc.

HIGH B +: 480.

DUTY CYCLE: Intermittent (20% transmit duty cyc at + 60° C room ambient temperature).

BATTERY POLARITY: Positive or Negative ground.

RECEIVER

FREQUENCY RANGE: 150 to 174 mc/s.

FREQUENCY STABILITY

TEMPERATURE CONTROLLED: ± 0.0005%.

NON-TEMPERATURE CONTROLLED: ± 0.0002%.

AMBIENT TEMPERATURE RANGE: − 30° C to + 60° C; 25° C reference (exterior of case).

SENSITIVITY: 0.6 uv or less impressed across the antenna input terminals through a 50 ohm source resistance for 20 db noise quieting; 1.2 uv or less for 20 db noise quieting by the EIA method of measurement (source signal).

SQUELCH SENSITIVITY: 0.3 uv or less impressed across the antenna input terminals through a 50 ohm source resistance for 20 db noise quieting.

SPURIOUS RESPONSE ATTENUATION: 85 db.

RECEPTION: FM, superheterodyne dual channel, crystal controlled, dual conversion, using 8.8 mc/s and 455 kc/s IF's.

AUDIO FREQUENCY RESPONSE: Within + 2 to − 8 db of a standard 6 db per octave de-emphasis over the frequency range of 300 to 3000 cps; the reference level being 1000 cps.

AUDIO POWER OUTPUT: 5 W into 3 to 4 ohms with less than 10% distortion.

AUDIO OUTPUT IMPEDANCE: 3 to 4 ohms.

ANTENNA INPUT IMPEDANCE: 50 ohms nom.

TRANSMITTER

FREQUENCY RANGE: 150 to 174 mc/s.

MODULATION: FM with direct crystal control (phase modulation) Type F3 emission.

MODULATION DEVIATION: Wide band operation, ± 15 kc/s (for 36 or 40F3 emission).

ANTENNA OUTPUT IMPEDANCE: 50 to 52 ohms.

INPUT IMPEDANCE: Will accept microphone or handset impedance of 125 to 4700 ohms.

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MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Set AN/VRC-58 includes:			
1	Receiver-Transmitter RT-715/VRC-58		5-3/4 x 9-7/8 x 13-1/8	11.75
1	Control Unit C-6027/VRC-58		2-7/8 x 3 x 4-1/4	3.85
1	Loudspeaker LS-502/VRC-58		3 x 5 x 5	2.00
1	Microphone			
1	Antenna Assy			
1	Control Cable			
1	Battery Cable Assy			
1	Antenna Cable RG-58A/U			
1	Loudspeaker Cable			
1	Kit Installation Hardware			

REFERENCE DATA AND LITERATURE:

Technical Manual for Radio Set AN/VRC-58.

SHIPPING DATA

PKGS	VOLUME (CU FT)	WEIGHT (LBS)

PROCUREMENT DATA

PROCURING SERVICE: USN
SPEC &/OR DWG: EE-27-63

DESIGN COG: USN, USCG

CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Communications Company, Inc.	Coral Gables, Florida	Tcg-58-855A	