

27 July 1962

Cog Service: USN FSN: 5820-302-9532

RADIO SET AN/URC-8(XN-1)

Functional Class:

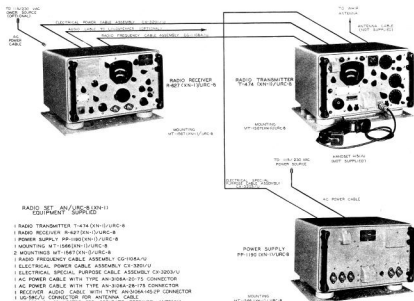
USA

USN

USAF

TYPE CLASS: Used by Used by

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



Radio Set AN/URC-8(XN-1)

**FUNCTIONAL DESCRIPTION:**

The Radio Set AN/URC-8(XN-1) is designed for radio-telegraph (A1) and radio telephone (A3) communications in the 2 to 30 megacycle (MC) range. The radio set is especially suitable for shipboard, mobile and fixed station operation where a rugged, easily operated and easily maintained installation is required.

No field changes in effect at time of preparation (22 January 1962).

**TECHNICAL CHARACTERISTICS:**

TYPE OF INSTALLATION: Shipboard mobile and fixed-station.

**TRANSMITTER DATA**

TYPE OF EMISSION: A1 & A3 type.

FREQUENCY RANGE: 2 to 30 mc.

NUMBER OF BANDS: 4 bands.

## AN/URC-8(XN-1) RADIO SET

BAND ONE FREQUENCY: 2 to 4 mc.

BAND TWO FREQUENCY: 4 to 8 mc.

BAND THREE FREQUENCY: 8 to 16 mc.

BAND FOUR FREQUENCY: 16 to 30 mc.

NUMBER OF PRESET FREQUENCIES: 16.

TYPE OF FREQUENCY CONTROL: Choice of permeability-tuned oscillator for continuous tuning or crystal oscillator (four crystals) for preset frequencies.

### POWER OUTPUT

NOMINAL: 42 W.

MINIMUM: 32 W.

DUTY CYCLE: Continuous duty w/100% sine-wave modulation under any conditions.

KEYING RATE: Up to 40 words per minute.

FREQUENCY STABILITY: Porm 0.03% w/permeability-tuned oscillator; porm 0.015% using nearest 100 kc check point.

AUDIO FREQUENCY RESPONSE: 300 to 3500 cps porm 2 db.

DISTORTION: Less than 7% with 90% modulation.

SPURIOUS OUTPUT: Greater than 50 db below fundamental.

HUM AND NOISE: Greater than 40 db below 100% modulation.

OPERATING TEMPERATURE RANGE: M30 deg to P65 deg C.

### RECEIVER DATA

TYPE OF EMISSION: A1, A2, A3 type.

TYPE OF RECEIVER: Dual-conversion superheterodyne.

FREQUENCY RANGE: 2 to 30 mc.

NUMBER OF BANDS: 4 bands.

BAND ONE FREQUENCY: 2 to 4 mc.

BAND TWO FREQUENCY: 4 to 8 mc.

BAND THREE FREQUENCY: 8 to 16 mc.

BAND FOUR FREQUENCY: 16 to 30 mc.

NUMBER OF PRESET FREQUENCIES: 16.

TYPE OF FREQUENCY CONTROL: Choice of permeability-tuned master oscillator for continuous tuning or crystal oscillator (four crystals) for preset frequencies.

RECEIVE OUTPUT: 1-1/2 w into 600 ohm load.

INTERMEDIATE FREQUENCY: 455 kc.

FREQUENCY STABILITY: Porm 0.040% or 2 kc using master oscillator; porm 0.009% or 1 kc using crystal oscillator.

IMAGE AND IF REJECTION: Greater than 60 db.

AUDIO FREQUENCY RESPONSE: 300 to 3500 cps porm 2 db.

AUDIO DISTORTION: Less than 5% at 1 kc with 1-1/2 watts into 600 ohm load.

### SELECTIVITY

NARROW BAND: At least 2 kc at 6 db down and less than 5.4 kc at 60 db down.

BROAD BAND: At least 8.4 kc at 6 db down and less than 20 kc at 60 db.

OPERATING POWER RQMT: 115/230 v ac, 50 to 60 or 400 cps, single ph, 650 W.

**RELATION TO OTHER EQUIPMENT:** None.

### EQUIPMENT REQUIRED BUT NOT SUPPLIED:

(1) Radio Frequency Cable Type RG-10/U; (1) Antenna (Emission & Reception); (4) Crystal Unit CR-18/U (for Transmitter Frequency Control); (4) Crystal Unit CR-18/U (for Receiver

Frequency Control); (1) Handset Type H-51/U; (1) Telegraph Key; (1) Headphone (600 ohm impedance); (1) to (4) Radio Phone Unit Type 23500; (1) Loudspeaker (600 ohm impedance); (1) Motor-Generator PU-340(XN-1)/U; (1) Motor-Generator PU-341(XN-1)/U; (1) Motor-Generator PU-342(XN-1)/U; (1) Electrical Power Cable Ass'y CX-3202/U.

## MAJOR COMPONENTS

QTY	ITEM	STOCK NUMBERS	DIMENSIONS (INCHES)	WEIGHT (LBS)
1	Radio Transmitter w/cover T-474(XN-1)/URC-8		10-15/32 x 17-1/4 x 17-7/8	86
1	Radio Receiver R-627(XN-1)/URC-8		10-15/32 x 17-1/4 x 18-5/16	91
1	Power Supply w/cover PP-1190(XN-1)/URC-8		10-15/32 x 17-1/4 x 17-25/32	122
1	Mounting MT-1566(XN-1)/URC-8		1-7/8 x 15 x 18	16
2	Mounting MT-1567(XN-1)/URC-8		1-7/8 x 15 x 18	16 ea
1	R. F. Cable Ass'y CG-1108A/U		96 lg	
1	Electrical Power Cable Ass'y CX-3201/U		96 lg	
1	Electrical Special Power Cable Ass'y CX-3203/U		96 lg	
1	AC Power Cable W/AN-3106A-20-7S Connector		96 lg	
1	AC Power Cable W/AN-3106A-28-17S Connector		120 lg	
1	Audio Cable		96 lg	
1	Connector for Antenna Cable Transmitter UG-59A/U			
1	Connector for Antenna Cable, Receiver UG-573A/U			
2	Technical Manual NAVSHIPS 92831		3/4 x 8-1/2 x 11	

## REFERENCE DATA AND LITERATURE:

NAVSHIPS 92831: Technical Manual for Radio Set AN/URC-8(XN-1).

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

TUBES: (2) 0A2WA (2) 3B28 (2) 5R4WGB (3) 6AU6WA (1) 5686 (2) 5726 (10) 5749  
(1) 5751 (9) 5814A (4) 5933 (2) 6005.

CRYSTALS: (8) CR-18/U.

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**AN/URC-8(XN-1) RADIO SET**

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SEMI-CONDUCTORS: None used.

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**SHIPPING DATA**

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PKGS	VOLUME (CU FT)	WEIGHT (LBS)
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**PROCUREMENT DATA**

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PROCURING SERVICE: USN  
SPEC &/OR DWG: MIL-R-17165

DESIGN COG: USN, BuShips

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CONTRACTOR	LOCATION	CONTRACT OR ORDER NO.	APPROX. UNIT COST
Collins Radio Co.	Cedar Rapids, Iowa	N0bsr-63161, 23 December 1952	

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