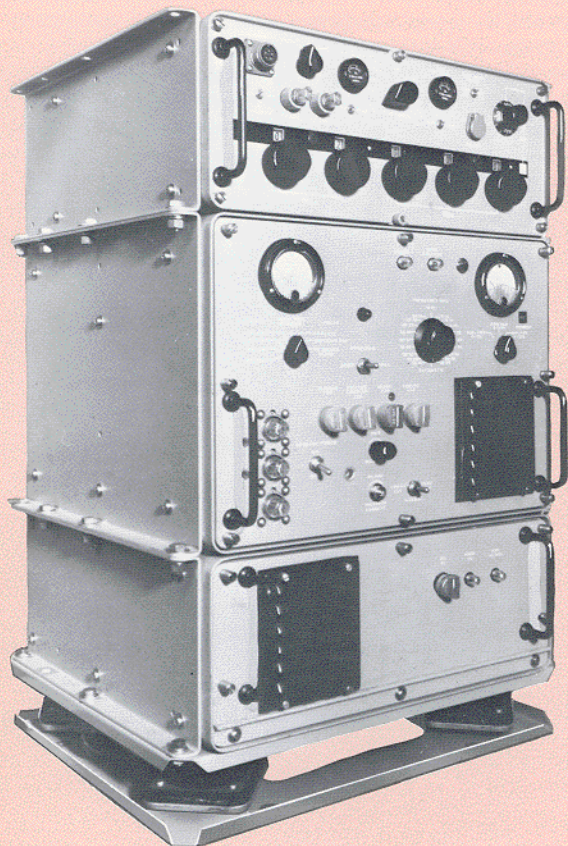


# AN/URT-23B(V)

## RADIO TRANSMITTING SET



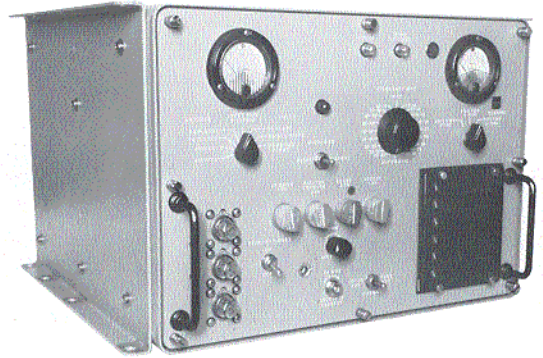
### FEATURES

- Phase locked output frequencies provided by digital frequency synthesizer.
- Automatic rf amplifier bandswitching.
- Protection against open and short circuits, overheating, excessive rf drive, mistuning, and improper rf loading.
- All silicon semiconductors for high reliability.
- Modular construction for ease of maintenance.

Radio Transmitting Set AN/URT-23B(V) is a 1 kW PEP independent sideband radio transmitting set designed for reduced and suppressed carrier applications including voice and radio teletype at shipboard, submarine, and fixed station installations. Seven operating modes allow transmission of voice, continuous wave, teletype and simultaneous voice/teletype signals from either local or remote locations. The complete 2 to 29.9999 MHz frequency range is covered in synthesized 100 Hz increments permitting rapid selection

of any one of the 280,000 available communication channels. The AN/URT-23B(V) is designed for use with Antenna Coupler Group AN/URA-38 to provide automatic antenna system tuning and with a standard twelve-wire cable remote control system using up to three Radio Control Sets C-1138/UR. Two available power supplies allow operation from a three phase primary power source of either 115 Vac, 400 Hz or 440/208 Vac, 60 Hz.

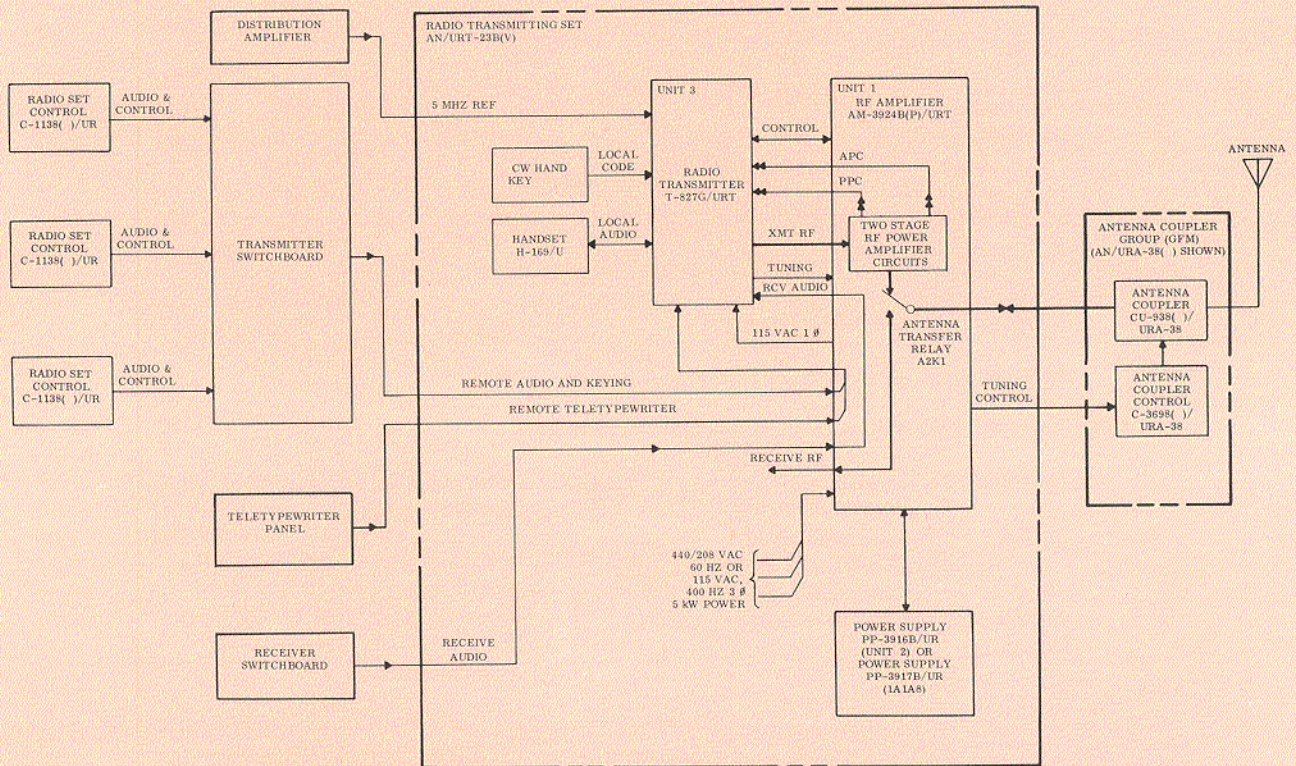
**RADIO FREQUENCY AMPLIFIER AM-3924B(P)/URT.** Two stages of linear amplification provide a 40 dB power gain and increase the rf drive level from the T-827G/URT to a minimum peak-envelope-power output of 1 kW. Power output may be continuously varied from 100 W PEP to full rated output with a front panel control. One of nineteen broadband transformer assemblies provides interstage coupling; the appropriate transformer assemblies are automatically positioned by a motor-driven bandswitch whenever a new transmitting frequency is selected at the T-827G/URT. A front panel switch also allows for manual frequency band selection when desired. Output stage circuitry monitors the rf drive and forward/reflected rf power levels which are used to generate the average power and peak power dc control voltages applied to the T-827G/URT. Closed loop power control circuitry within the AM-3924B(P)/URT fully protects the rf amplifier against damage due to open or shorted antenna systems, excessive VSWR, or failure of the external power control loop. Rf drive power, forward and reflected rf power, and critical stage currents and voltages are conveniently measured with two front panel meters.



AM-6675/URT(SA) EQUAL TO AM-3924B(P)/URT

**CONSTRUCTION.** The transmitter and rf amplifier chassis are mounted in frames which, when withdrawn from the aluminum cases, permit the chassis to be oriented and locked +90 degrees from the normal horizontal position. Retractable cable assemblies permit operation of the equipment in this configuration and eliminate the need for accessory cables. The PP-3916B/UR chassis and panel assembly may be released to a horizontal position for maintenance.

Air filters for the PP-3916B/UR and AM-3924B(P)/URT cooling systems are readily cleaned or replaced and are easily accessible from the front of the equipment. Rapid maintenance is also facilitated through the use of plug-in modules for both the T-827G/URT and AM-3924B(P)/URT. Extender cables are available to allow access to components of the plug-in assemblies for maintenance.



Typical AN/URT-23B(V) Shipboard Installation.

# SPECIFICATIONS

## ITEMS

## CHARACTERISTICS

<b>FREQUENCY RANGE MODES</b>	2.0000 to 29.9999 MHz in synthesized 100 Hz increments. AM, CW, USB, LSB, ISB, radio teletype, and simultaneous ISB telephony and radio teletype
<b>FREQUENCY STABILITY</b>	1 part in 10 <sup>8</sup> per day using the T-827G/URT internal 5 MHz standard. Connections provided for external standard and distribution of internal standard to ancillary equipment.
<b>RF OUTPUT</b>	1 kW PEP in sideband and compatible AM modes, 1 kW average in CW and teletype modes into a 50 ohm load. Front panel control allows continuous power reduction to 100 W PEP.
<b>VSWR</b>	Automatic power limiting to prevent equipment damage for VSWR greater than 1:1.
<b>KEYING RATE</b>	80 baud in radio teletype mode, 32 baud in CW mode. Selectable $\pm 85$ Hz or $\pm 425$ Hz radio teletype frequency shift keying.
<b>SIDEBAND CHARACTERISTICS</b>	Less than 3 dB variation between 300 and 3500 Hz, response down at least 20 dB at 50 and 4000 Hz.
<b>AUDIO INPUT</b>	30 ohm local and balanced 600 ohm remote connectors. Audio compression allows input levels to T-827G/URT as great as 20 dB above standard input level.
<b>CARRIER SUPPRESSION</b>	- 40 dB referenced to 250 W single tone output.
<b>OPPOSITE SIDEBAND SUPPRESSION</b>	- 50 dB referenced to 250 W single tone output.
<b>SPURIOUS SUPPRESSION</b>	- 50 dB referenced to single tone of 250 W for out-of-band products.
<b>HARMONIC SUPPRESSION</b>	- 45 dB for second order, - 55 dB for third and higher order, referenced to 1 kW single tone output.
<b>INTERMODULATION DISTORTION</b>	- 33 dB referenced to either tone of a 1 kW PEP standard two-tone envelope.
<b>PRIMARY POWER SOURCE</b>	440 or 208 Vac $\pm 10\%$ , three phase, 60 Hz $\pm 5\%$ with PP-3916B/UR. 115 Vac $\pm 10\%$ three phase, 400 Hz $\pm 5\%$ with PP-3917B/UR.
<b>POWER CONSUMPTION</b>	5 kW maximum transmitting (1 kW standby) at 440/208 Vac, 60 Hz or 115 Vac, 400 Hz.
<b>SHOCK</b>	MIL-S-901 (Grade A, Class II, Type A).
<b>VIBRATION</b>	MIL-STD-167 (Type I).
<b>TEMPERATURE</b>	0° to +50° C operating; -62° to +75° C storage.
<b>RELATIVE HUMIDITY</b>	Operation to 95% with continuous duty cycle.
<b>DIMENSIONS</b>	35-1/3 in. H $\times$ 19-3/4 in. W $\times$ 20 in. D (89.7 $\times$ 50.0 $\times$ 50.8 cm) with PP-3916B/UR, 28-3/16 in. H $\times$ 19-3/4 in. W $\times$ 20 in. D (71.6 $\times$ 50.0 $\times$ 50.8 cm) with PP-3917B/UR.
<b>WEIGHT</b>	352 pounds (159.5 kg) with PP-3916B/UR. 249 pounds (112.8 kg) with PP-3917B/UR.