



32M-1 R/T UNIT



387B-1 CONTROL BOX

Collins

32MS-1

SSB COMMUNICATION SYSTEM

APPLICATION

The Collins 32MS-1 SSB Communication System provides operation on four preset channels in the frequency range of 1.6 to 15 mc with a transmitter output of 100 watts PEP. Power supplies are available for 12 v dc, 28/32 v dc or 115/230 v, 50-60 cycles, providing versatility for operation in fixed stations, ships and vehicles of all types. High stability and a minimum of operating controls permit reliable operation by unskilled personnel. Single sideband offers spectrum conservation and improved voice communication, with greater effective talking power and lower susceptibility to selective fading than AM.

DESCRIPTION

The 32MS-1 System consists of a transceiver, control box, power supply, shock or table mount, antenna tuner, interconnecting cables, antennas and other accessories.

The 32M-1 Transceiver has a power output of 100 watts PEP (two-tone test) and a receiver sensitivity of less than 1 microvolt for 10 db signal-to-noise ratio. The equipment may be ordered for operation on either upper or lower sideband. Compatible AM operation can be provided by the addition of a simple conversion kit which may be either installed in the factory or added in the future by the customer. Each channel is tunable through the entire frequency range of 1.6 to 15 mc.

The 32M-1 Transceiver is of panel chassis construction and is housed in a drip proof, welded aluminum case. Access to adjustment controls is by means of a removable hinged door, and visual indication of proper adjustment is provided by a multimeter on the front panel.

Circuitry of the 32M-1 Transceiver is basically the same as that of the Collins 32RS-1 except that the tube types have been selected for reliable operation under the more extreme requirements of mobile operation. One CR27/U crystal and one coil kit are required for each channel. These coil kits and crystals are identical to those used in the 32RS-1 Transceiver.

Operation of the 32M-1 Transceiver is possible directly from the front panel with an accessory telephone handset or low impedance microphone and headset. Remote operation is provided by the 387B-1 Control Box. The 387B-1 includes all operating controls required for the 32MS-1 System except channel selection, which is accomplished manually on the 32M-1 Transceiver. Remote channel selection by means of a switch on the control box may be provided through the addition of an optional kit which may be either factory or customer installed at any time. A loudspeaker, telephone handset, volume control, on/off switch, SSB/AM mode switch and ALC/S meter are incorporated in the control box. Press to talk (PTT) or voice operated control (VOX) is featured. Control is possible over distances up to 300 feet.

The 180VM-1 Antenna Coupler is a reversible L-type with preset circuits to match a variety of antennas to the 32M-1 Transceiver. Antenna tuner switching is automatically controlled by the channel selection in the transceiver unit. In addition to common antenna operation, it is possible to use individual antennas for each channel. Whip, dipole or long wire antennas may be employed.

EQUIPMENT SPECIFICATIONS

FREQUENCY RANGE: 1.6-15 mc on all channels.

MODE: Single sideband (or compatible AM as an optional accessory).

STABILITY: ± 1 part per million or ± 5 parts per million depending upon type of crystal oven selected.

TRANSMIT POWER OUTPUT: 100 watts PEP.

TRANSMIT OUTPUT IMPEDANCE: 52 ohms with SWR not to exceed 2.5 to 1.

HARMONIC AND OTHER SPURIOUS RADIATION:

Second harmonic — At least 50 db down from peak signal.

Carrier — At least 50 db down from peak signal in SSB service.

NOTE: Up to 25 watts of carrier power may be reinserted in the compatible amplitude modulation mode.

Lower sideband — At least 50 db down from peak signal.

Spurious radiation — 9-12 mc, 50 db down; 2-9 mc, 65 db down from peak signal.

DISTORTION PRODUCTS: At least 30 db down from peak signal (2-tone signal).

TRANSMIT AUDIO INPUT: Telephone handset at control box; high or low impedance microphone at transceiver unit.

AUDIO FREQUENCY RESPONSE: ± 2 db, 500 to 3000 cps.

TRANSMIT AUDIO DISTORTION: Not more than 6%.

AUTOMATIC LOAD CONTROL: Capable of at least 6 db compression.

RECEIVER SELECTIVITY: 3 kc nominal single sideband; 6 kc nominal

in compatible amplitude modulated.

RECEIVER SENSITIVITY: Less than 0.5 microvolt input signal required for 10 db signal/noise ratio in single sideband service; less than 3.0 microvolts for 10 db signal/noise ratio in compatible amplitude modulated service.

RECEIVER IMAGE REJECTION: At least 50 db.

RECEIVER AUDIO OUTPUT POWER: 2.0 watts maximum. More than 50 mw with 1 microvolt input signal for SSB. More than 50 mw with 2 microvolts input in compatible AM service.

RECEIVE AUDIO DISTORTION: Less than 6% harmonic. Inter-modulation down 30 db at 0.5 watt audio output for SSB. Less than 6% harmonic at 0.5 watt audio output in amplitude modulated service.

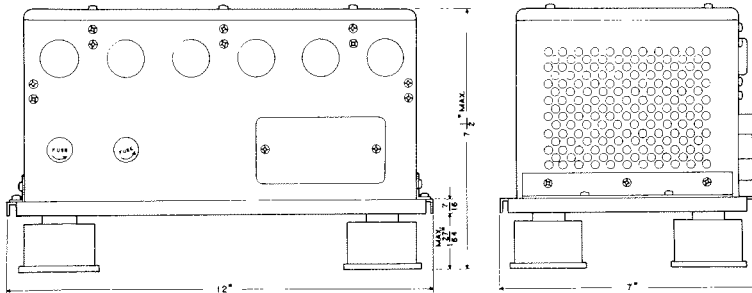
PRIMARY POWER: 12 v dc, 28/32 v dc, or 115/230 v, 1 phase, 50-60 cps.

POWER CONSUMPTION: Transmit — 350 watts (full output 2 tone).
Receive — 195 watts.

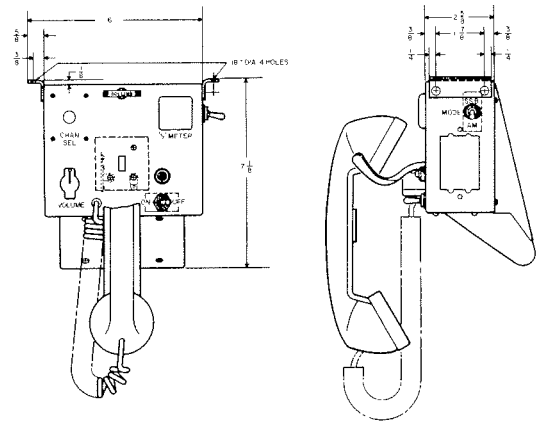
DIMENSIONS & WEIGHTS:

Unit	Dimensions (in.)			Weight (lbs.)
	D	W	H	
32M-1 Transceiver	23 $\frac{7}{16}$	15 $\frac{5}{16}$	7 $\frac{3}{4}$	30
387B-1 Control Box	2 $\frac{5}{8}$	6 $\frac{5}{8}$	7 $\frac{1}{8}$	3 $\frac{1}{2}$
516E-1, -2 DC Supplies	6 $\frac{3}{4}$	10	5 $\frac{1}{2}$	14
516F-3 AC Supply	10	14	8 $\frac{1}{4}$	40
180VM-1 Antenna Tuner	12	12	7 $\frac{7}{8}$	13 $\frac{1}{4}$

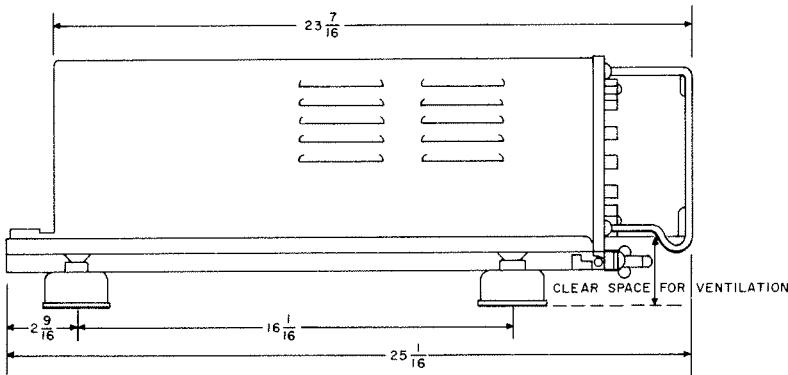
OUTLINE DIMENSIONAL DRAWINGS



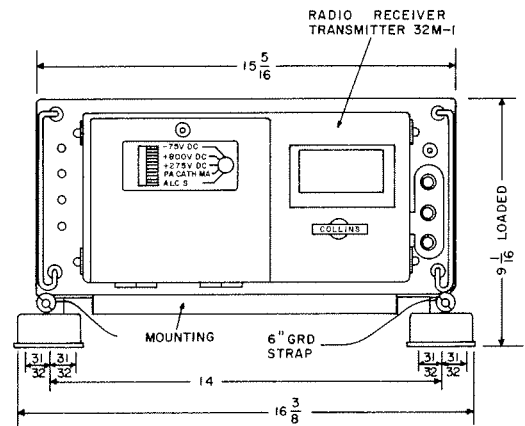
516E-1 DC Power Supply



387B-1 Control Box



32M-1 Transceiver



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