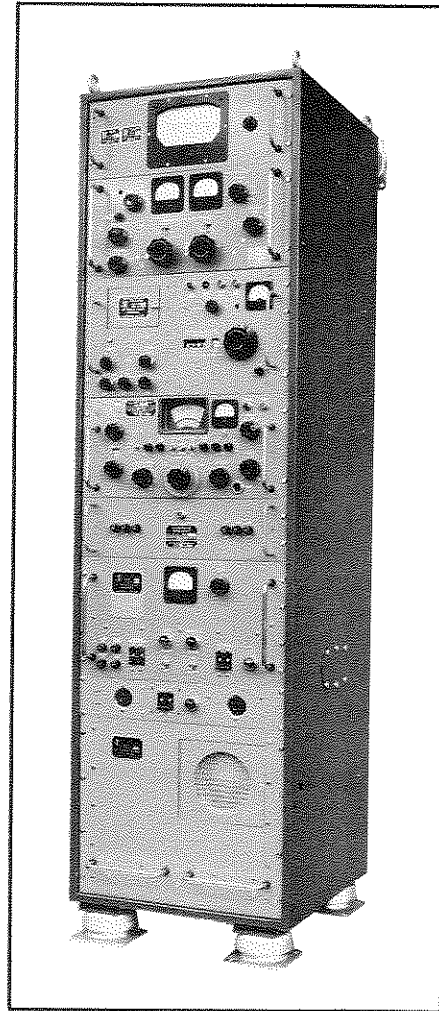


## SALES SERVICE BULLETIN NUMBER 237

Single Sideband Transmitter  
TMC Model SBT-1K

**NEW**

1000 WATTS PEP  
COMPLETELY BANDSWITCHED  
CONTINUOUSLY TUNABLE  
(2-32 MC)  
COMPACT  
RUGGED  
SERVICEABLE



The TMC Model SBT-1K is a general purpose radio transmitter providing SSB, ISB, DSB, AM, CW and FS operation throughout the frequency range of 2 to 32 megacycles.

This transmitter is versatile, easy to install, operate and maintain. It is completely bandswitched with all tuning done from the front panel. Drawers slide out and tilt over for quick and easy replacement of components and repairs. The cabinet is pressurized with a filtered forced air system providing maximum heat dissipation.

The SBT-1K is compact and rugged. Its sturdy mechanical and electrical construction make the SBT-1K suitable for fixed plant, mobile and marine operation.

Each model is supplied with a coaxial antenna changeover relay and a directional coupler as standard items.

The ATS-2, Antenna Tuning System, or the SWR-1K, Standing Wave Ratio Indicator, are optional.

TECHNICAL SPECIFICATIONS:

FREQUENCY RANGE: 2—32 megacycles continuously tunable.

OUTPUT POWER: At least 1000 watts PEP—1000 watts CW-FS.

| OPERATING MODES |    |    |     |    |     |     |     |
|-----------------|----|----|-----|----|-----|-----|-----|
| MODEL           | AM | CW | MCW | FS | ISB | DSB | SSB |
| SBT-1KA         | x  | x  |     |    | x   | x   | x   |
| SBT-1KB         | x  | x  |     |    | x   | x   | x   |
| SBT-1KC         |    | x  |     | x  |     |     |     |
| SBT-1KD         |    | x  |     | x  |     |     |     |
| SBT-1KE*        | x  | x  | x   | x  | x   | x   | x   |

\*Synthesizer controlled-specifications upon request.

OUTPUT IMPEDANCE: With ATS-2 50 or 70 ohm system: will match a 35 foot whip antenna with an R of 2—650 ohms.  
With SWR-1K—50 or 70 ohms unbalanced.

INPUT CONNECTIONS: Type UHF Coaxial.

OUTPUT CONNECTIONS: Type QDS Coaxial.

SIGNAL/DISTORTION RATIO: 40 db down from full PEP output.

HARMONIC SUPPRESSION: Second: at least 40 db down from PEP output.  
Third: at least 50 db down from full PEP output.

STABILITY: SBE-2—Crystal controlled. 1 part in  $10^6$ .  
VOX—Better than 20 PPM for 30° change in ambient.  
Synthesizer controlled. One part in  $10^8$ .

FREQUENCY CONTROL: VOX—Continuously tunable, direct reading VFO.  
XFK—3 oven control crystals.  
SBE—10 oven controlled crystal positions plus provision for external VFO.

TUNING: All tuning and bandswitching controls are on the front panels. (No plug-in components)

UNWANTED SIDEBAND REJECTION: 1000 cycle single tone, 60 db down.

CARRIER INSERTION: —55 db to full output.

AUDIO RESPONSE: A. Flat within plus or minus 1.5 db, 350 to 3300 cycles.\*  
(Each Sideband)

TECHNICAL SPECIFICATIONS: (cont'd)

B. Flat within plus or minus 1.5 db, 350 to 7500 cycles.\*

\* Depending upon the Model SBE ordered.

VOX OPERATION:

Voice control with anti trip features.  
Adjustable gain and squelch.

METERING:

Large size illuminated meters accurately indicate operation of all circuits.

OUTPUT STAGE:

PL-172 ceramic tube.  
Pi output network.

AUDIO INPUT:

500 K ohms for high impedance crystal or dynamic mike. —50 db for full RF Output. Two independent 600 ohm channels, balanced or unbalanced —20 db level for full output.

KEYING SPEED:

XFK—1000 wpm.

KEYING INPUTS:

XFK: 1. Contact closing to ground.  
2. Polar or neutral positive.  
3. Linear input 30,000 ohms impedance.

ALDC:

An automatic load and drive control is provided to limit distortion during high drive peaks or load changes.

COOLING:

Pressurized cabinet forced air system for maximum heat dissipation.

TEMPERATURE AND HUMIDITY:

Designed to operate in any ambient temperature between the limits of 0-50 degrees C for any value of humidity up to 90%.

SAFETY FEATURES:

Full interlock protection.  
Full overload and fuse protection.

COMPONENTS AND CONSTRUCTION:

Equipment is manufactured in accordance with JAN/MIL specifications wherever is practicable.

SIZE:

All models are housed in TMC RAK-9 measuring 72" H x 20½" W x 21½" D.

**POWER REQUIREMENTS:**

|   |                                       |                                       |
|---|---------------------------------------|---------------------------------------|
| 115/230 Volts<br>Single Phase<br>50/60 Cycle AC | SBT-1KA and B                         | SBT-1KC and D                         |
|   | 2120 Watts Average<br>2140 Watts Peak | 2100 Watts Average<br>2330 Watts Peak |

**APPROXIMATE SHIPPING WEIGHTS:**

|          |           |          |           |
|----------|-----------|----------|-----------|
| SBT-1KA  | SBT-1KB   | SBT-1KC  | SBT-1KD   |
| 979 lbs. | 1139 lbs. | 900 lbs. | 1009 lbs. |

**TMC Equipment used in the SBT-1K( ) Series**

|         |        |        |                |  |       |
|---------|--------|--------|----------------|--|-------|
| SBT-1KA | SWR-1K | PAL-1K | VOX (0-330/FR) | SBE-2 (AN/URA-23A)<br>or SBE-3 (AN/URA-28) | APP-2 |
| SBT-1KB | ATS-2  | PAL-1K | VOX (0-330/FR) | SBE-2 (AN/URA-23A)<br>or SBE-3 (AN/URA-28) | APP-2 |
| SBT-1KC | SWR-1K | PAL-1K | VOX (0-330/FR) | XFK (C-2749/URT)                           | APP-2 |
| SBT-1KD | ATS-2  | PAL-1K | VOX (0-330/FR) | XFK (C-2749/URT)                           | APP-2 |

**BRIEF DESCRIPTION OF EACH TMC UNIT:**

**SWR-1K Standing Wave Ratio Indicator**

The TMC Model SWR-1K, Standing Wave Ratio Indicator, provides an accurate indication of the voltage standing wave ratio over the frequency range 2-30 megacycles. The SWR-1K permits simultaneous indications of incident R. F. Power, reflected R. F. Power and direct reading of Standing Wave Ratio. The SWR-1K may be used in 50 or 70 ohm unbalanced systems.

**ATS-2 (AN/URA-27) Antenna Tuning System**

The TMC Model ATS-2, Antenna Tuning System, is a remotely controlled antenna coupler designed to couple the output of any Transmitter up to 1000 watts, with an unbalanced output of 50 or 70 ohms, to a 35 foot whip antenna over the frequency range of 2-30 mcs.

**The PAL-1K Linear Power Amplifier With Power Supply**

The TMC Model PAL-1K is a conservatively rated Linear Power Amplifier delivering 1000 watts PEP SSB or 1000 watts CW and FS throughout the frequency range of 2 to 32 mcs.

The PAL-1K consists of three (3) units, an RF Amplifier (TMC Model RFD), a low voltage power supply (TMC Model PS-4) and a high voltage power supply (TMC Model PS-5).

VOX (0-330/FR) Variable Frequency Oscillator

The TMC Model VOX is a direct reading Variable Frequency Oscillator which provides continuously variable output from 2 to 64 mcs.

SBE-2 (AN/URA-23A) Mode Selector With Power Supply

The SBE-2, Mode Selector, Transmitting, is a universal exciter permitting the transmission of any intelligence on single or double sideband, with or without carrier. The SBE-2 is continuously tunable from 2-32 mcs. and is frequency controlled by means of temperature controlled crystals or external VFO. The SBE-2 has an audio bandwidth of 350 to 3300 cycles.

SBE-3 (AN/URA-28) Mode Selector With Power Supply

The Model SBE-3, Mode Selector, is the same as the SBE-2 but has an audio bandwidth of 350-7500 cycles.

XFK (C-2749/URT) Frequency Shift Keyer

The Model XFK Frequency Shift Exciter is a high stability radio frequency oscillator which provides a means of shifting an RF carrier in accordance with the variations of an audio or pulse signal.

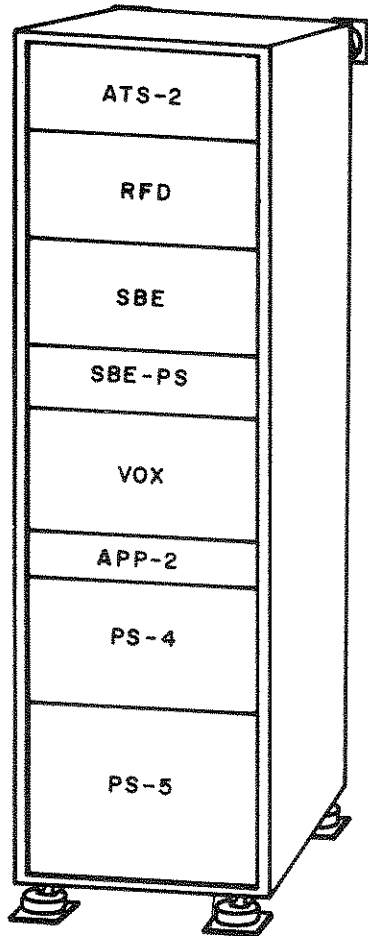
APP-2

All models are equipped with an Auxiliary Power Panel, TMC Model APP-2. This panel includes a main circuit breaker with pilot light indicator and two A. C. convenience outlets.

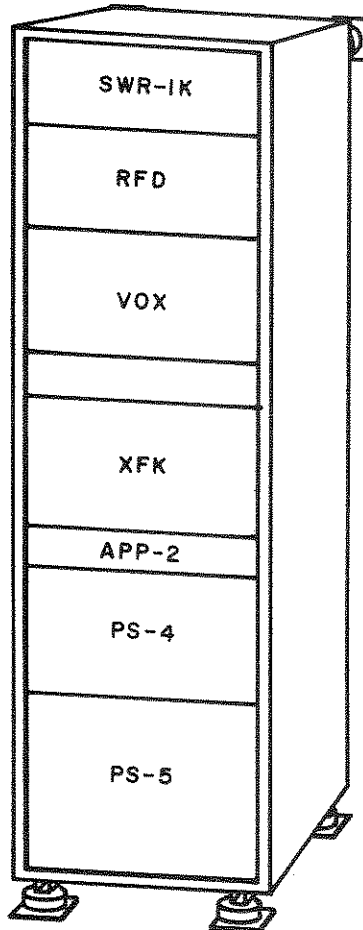
For further technical information concerning accessories and TMC equipment used in the SBT-1K series, please request the following Sales Service Bulletins:

|              |         |             |          |
|--------------|---------|-------------|----------|
| SWR-1K ..... | SSB 234 | SBE-2 ..... | SSB 195C |
| ATS-2 .....  | SSB 235 | VOX .....   | SSB 134A |
| PAL-1K ..... | SSB 221 | XFK .....   | SSB 118  |

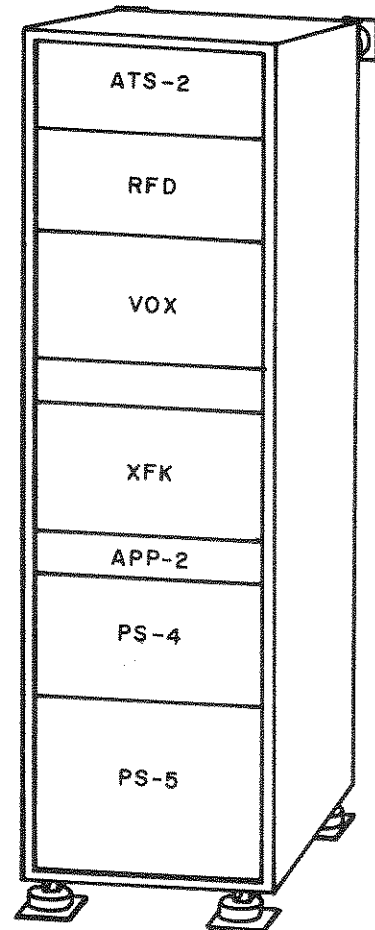
SBT-1K B



SBT-1K C



SBT-1K D

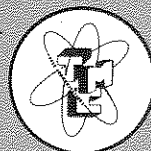


# THE TECHNICAL MATERIEL CORPORATION

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MAMARONECK, NEW YORK

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