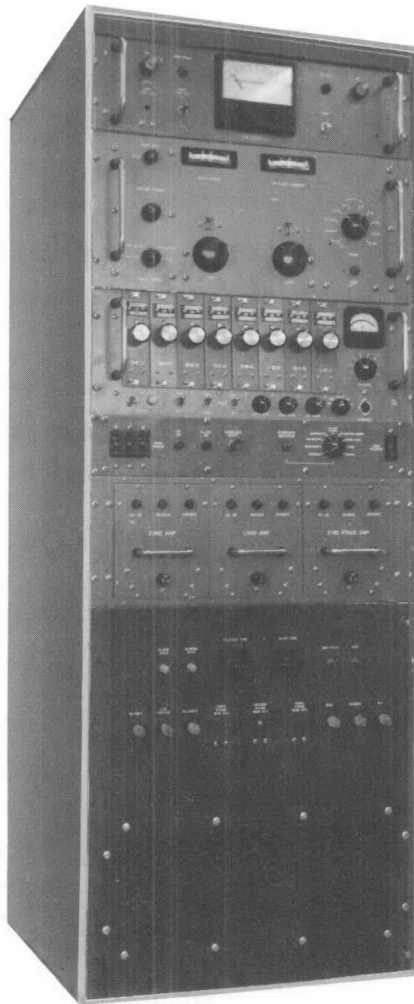




## TECHNICAL BULLETIN NUMBER 1019A

TechniMatic\* Tuned Sideband Transmitter  
TMC Model TSTA-2.5K



- 2 to 32 megacycles
- Solid state (less final)
- Automatically tuned with TechniMatic\* Tuning
- Manual override
- Tunes in an average of 10 seconds
- USB, LSB, AM Equivalent, CW, FAX, FSK
- 1 part in  $10^6$  stability

The Technical Materiel Corporation offers a 2,500 watt PEP TechniMatic\* tuned transmitter that provides rapid selection of 8 preset frequencies in the 2-32 mcs. range.

A unique voice processing circuit within the exciter provides a much higher level average power in the speech envelope and prevents overdrive of the final amplifier. Also, automatic compensation for power distribution between carrier and sideband intelligence allows rapid change

\*Trademark applied for.

## Sideband Transmitter

between AM Equivalent and single sideband modes of operation without the necessity for front panel adjustments.

The in-station control facility is of telephone desk-set construction and has push buttons for the selection of any one of the 8 preset frequencies, as well as upper or lower sideband selection. This transmitter is particularly useful for ground-to-air, shore-to-ship, telephone extension service; for any application where single sideband and AM compatibility are required for medium to long range communications. In addition to the telephone remote control set, a push-to-talk handset is provided on the equipment along with push-button selection of the operating channels and modes, so that the unit may also be operated from the front of the cabinet.

The tuning system that is incorporated within the final amplifier of the transmitter is provided with protection circuits that prevent the transmitter from aligning itself with any signal other than the desired RF output signal.

Accessibility to the solid state power supply and the location of the components within the lower part of the transmitter affords easy access for maintenance personnel. Additionally, the solid state power supply provides long-life, trouble-free operation.

### TECHNICAL SPECIFICATIONS, TMC MODEL TSTA-2.5K

FREQUENCY RANGE:	2 to 32 mcs.
MODES OF OPERATION:	CW, FSK, FAX, AM Equivalent, USB and LSB.
POWER OUTPUT:	2500 watts PEP in SSB and AM equivalent Modes, 2500 watts average under locked key conditions for FSK and CW Modes
OUTPUT IMPEDANCE:	50 ohms unbalanced. Tuning network will match a load with VSWR up to 2:1.
FREQUENCY STABILITY:	Crystal oven controlled, 1 part in $10^6$ per day.
INTERMODULATION DISTORTION:	Distortion products are at least 35 db below either tone of a two tone test at full PEP output from 2 to 32 mcs.
UNWANTED SIDEBAND REJECTION:	A signal at 500 cps is at least 60 db down from full PEP in the unwanted sideband.
SPURIOUS SIGNALS:	All spurious signals are at least 55 db below full PEP output.

## TMC Model TSTA-2.5K

NOISE LEVEL:	Noise level is at least 55 db down from either tone or a two tone test.
CARRIER INSERTION:	—6, —20 and —50 db from full output.
HARMONIC SUPPRESSION:	2nd harmonics are at least 40 db below full PEP output. 3rd harmonics are at least 50 db below full PEP output.
AUDIO RESPONSE:	$\pm 2$ db, 300-3300 cps mechanical filter provided as standard. $\pm 2$ db 250-3000 cps crystal filter can be provided at a slight increase in cost.
AUDIO INPUT:	<ol style="list-style-type: none"><li>1. 600 ohm balanced, —10 to —20 dbm input. —20 dbm input will provide full RF output.</li><li>2. Carbon microphone</li><li>3. High impedance at —55 db below 1 milliwatt.</li></ol>
ALDC:	The Automatic Load and Drive Control improves linearity, limits distortion and maintains a relatively constant output level during high peaks of modulation or load changes. The front panel control allows adjustment of the level at which the ALDC takes effect or switching off the ALDC as desired.
VOICE OPERATED RELAY:	Voice control which includes anti-trip feature, adjustable gain and squelch is provided.
METERING:	Front panel meters provide indications of the operation of all critical circuits.
ENVIRONMENTAL CONDITIONS:	Designed to operate in any ambient temperature between 0 and 50° C, and any value of humidity up to 90%.
COOLING:	Air-cooled.
SAFETY FEATURES:	Interlocks are provided in all high voltage circuits to protect personnel.
INSTALLATION DATA:	Weight: Approximately 700 lbs. Size: 69" high $\times$ 24½" wide $\times$ 30" deep.