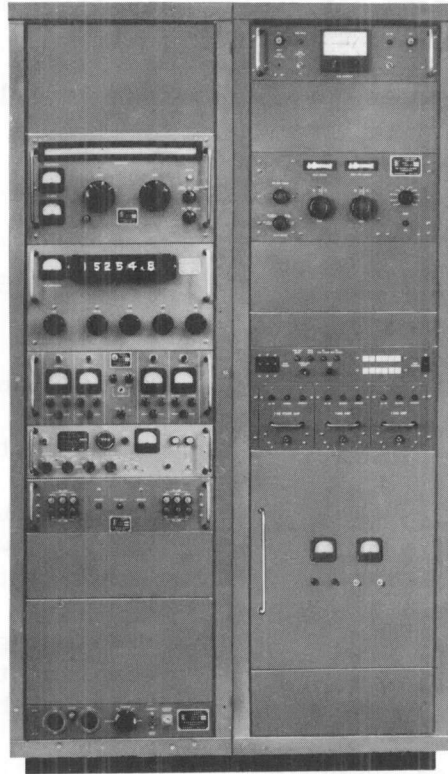




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TECHNICAL BULLETIN 1801
TMC MODEL TSTD-2.5K
GENERAL PURPOSE TRANSMITTER



- . 2 mc to 30 mc frequency range.
- . 2.5 kw power amplifier tunes automatically in seconds.
- . TechniMatic* remote-control tuning available.
- . 1 part in 10^8 frequency stability, with 1 part in 10^9 optional.
- . AM, AM Equivalent, CW, SSB, ISB, FSK, FAX, Pulse, and Phase modulation.
- . Solid state high-voltage power supply.

TMC Model TSTD-2.5K General Purpose Transmitter provides 2 mc to 30 mc output in 100 cps increments. Standard frequency stability is 1 part in 10^8 per day, with 1 part in 10^9 per day stability available as an option. Power output of the TSTD-2.5K is 2.5 kw PEP.

The TechniMatic* tuning system that is incorporated in the 2.5 kw power amplifier of the TSTD-2.5K prevents the transmitter from tuning to any frequency other than the desired output frequency. This system automatically tunes the 2.5 kw power amplifier in a matter of seconds to the frequency selected by the operator.

*Trademark applied for

TechniMatic* remote-control tuning of the entire transmitter may be added, by field modification, at any time. This modification consists of adding controls at remote position, and interconnecting cables, so that the transmitter can be controlled from the remote position. With this addition, the entire transmitter tunes automatically to the frequency selected by an operator at the remote position.

Manual override of the TechniMatic* tuning system is a standard feature. All assemblies and subassemblies are designed to allow easy access for maintenance.

The solid state 2.5 kw power supply provides long-life, trouble-free operation.

TECHNICAL SPECIFICATIONS, TMC MODEL TSTD-2.5K

Frequency Range:	2 mc to 30 mc
Modes of Operation:	AM, AME, CW, SSB, ISB, FSK, FAX, Pulse, and Phase modulation
Power Output:	2500 watts PEP, 1250 watts average
Output Impedance:	50 ohms unbalanced. Tuning network will match antenna with VSWR up to 2:1
Frequency Stability:	Following stabilities are for ambient temperature change of 15°C within the range 0°C to 50°C: <ol style="list-style-type: none">1. one part in 10^8 per day, standard2. one part in 10^9 per day, optional
Frequency Control:	All radio frequency determining elements referenced to self-contained 1 mc standard
Tuning System:	<ol style="list-style-type: none">1. TechniMatic* tuning automatically tunes 2.5 kw power amplifier in seconds2. Provision for manual override of TechniMatic* tuning system is a standard feature3. TechniMatic* remote-control tuning of entire transmitter may be added at any time
Intermodulation Distortion:	Distortion products are at least 35 db below either tone of a two-tone test, at 2.5 kw PEP, from 2 mc to 30 mc.

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 either tone of a two-tone test

Noise Level:

Noise level is at least 55 db below either tone of a two-tone test.

Carrier Insertion:

-55 db to full output.

Harmonic Suppression:

Second harmonic at least 50 db below full PEP output.
Third harmonic at least 60 db below full PEP output.

Audio Response:

Selection of any one of the following pairs of filters:

1. Crystal lattice filters flat within ± 1.5 db 250 to 7500 cps.
2. Crystal lattice filters flat within ± 1.5 db 250 to 6000 cps.
3. Multiplexing of four 250 to 3040 cps, ± 1.5 db, channels at CCIR or National Standard frequencies.
4. Symmetrical filters ± 1.5 db in 1, 6 and 15 kc bandpass.
5. Crystal lattice filters flat within ± 1.5 db 250 to 3040 cps.
6. Crystal lattice filters flat within ± 1.5 db can be provided to meet special requirements.

Audio Input:

600 ohm balanced, -20 dbm to +10 dbm
Continuously adjustable to full PEP output.
Unbalanced input can also be applied
-20 dbm input will produce full RF output.

ALDC:

Automatic Load and Drive Control (ALDC) improves linearity, limits distortion, and maintains relatively constant output level during modulation peaks or load changes. Front panel control turns ALDC on and off, and adjusts level of ALDC voltage.

Metering: Front panel meters provide indications of the operation of all critical circuits.

Environmental Conditions: Designed to operate in any ambient temperature from 0°C to 50°C, and any value of humidity up to 90%.

Cooling: Forced air.

Safety Features: Interlocks are provided on all cabinets enclosing high voltage circuits, to protect personnel.

Installation Data: Weight: Approximately 1300 lb.
Size: 69" h x 42-1/2" w x 30" d.

Primary Power: 220/440 vac $\pm 10\%$, 50/60 cycles, three phase.

Power Requirements: Under steady state conditions, with 2.5 kw PEP output, transmitter requires approximately 3200 watts.

Instruction Book: TMC IN 1019

Loose Items:

1. Two instruction books
2. Mating RF connectors

Components and Construction: All equipment manufactured in accordance with JAN/MIL specifications wherever practicable.

**Options/Accessories:
(priced separately)**

1. Frequency standard with stability of one part in 10^9 per day.
2. TechniMatiC* remote-control tuning of entire transmitter.

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