

TST( ) - 2.5K

- . TechniMatiCally\* tuned from input to antenna in seconds
- . 2 to 32 mcs, 100 cps steps
- . SSB, ISB, CW, AM, AME (FSK and FAX using external adapters)
- . 1 part in  $10^8$  per day stability
- . Direct reading frequency (illuminated numeric display)
- . 2500 watts PEP, 2500 watts average
- . Four 3 KC channels (others optional)
- . HV Solid State Power Supply
- . No rolling contacts

This new transmitter series, Model TST( )-2.5K embodies the stability of a primary standard, the ruggedness of solid state construction, the maintainability of modular construction, and linear amplification for conventional and sideband modes of operation.

Tuning of this transmitter in any of its operational modes is done as easily as tuning a receiver. Positive indication of correct RF frequency is assured

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by illuminated digital numerals and large sliderule dial presentation.

Positive tuning to the assigned frequency is assured by circuitry that protects against tuning up on spurious or harmonics. The simplified tuning control circuitry does not utilize frequency following techniques; therefore, adjustments to newly assigned operating frequencies are accomplished quickly and easily.

TechniMatic\* tuning is built into the high level RF section, as standard equipment. TechniMatic\* tuning to the exciter portion of "in station" or "distant remote operation" can be factory fitted or may be field installed at a later date (see Options/Accessories).

Unlike other remote tuning systems currently on the market, once the tuning sequence has been completed, the tuning motors are deactivated.

#### TECHNICAL SPECIFICATIONS, TMC MODEL TST( ) - 2.5K

FREQUENCY RANGE: 2 to 32 mcs, 100 cps steps.

MODES OF OPERATION: CW, AM, AME, SSB, ISB, FSK and FAX by external tone keyers.

POWER OUTPUT: 2500 watts PEP, SSB; 2500 watts average CW, Class C, FSK and FAX locked key conditions.

OUTPUT IMPEDANCE: 50 ohm unbalanced. Will maintain output into VSWR of up to 2 to 1.

VSWR PROTECT CIRCUITS: The final amplifier is provided with a power meter that may be preset to disable the transmitter when reflected power exceeds a VSWR of 2 to 1. The front panel switch allows the operator to use this meter to read forward and reflected power to compute VSWR.

FREQUENCY STABILITY: 1 part in  $10^8$  per day for ambient temperature change of  $15^\circ$  C within the range of  $0-50^\circ$  C.

FREQUENCY CONTROL: All frequency determining elements referenced to a built-in 1 mc source.

TUNING (AUTOMATIC): Tuning to any of the 300,000 channels by those models fitted with one of the TechniMatic\* tuning systems.

TUNING (MANUAL): All tuning and bandswitching controls are on the front panel (no plug-in components or internal mechanical adjustments.) Self-cleaning contacts of RF bandswitches (no rolling contacts). Manual override can be accomplished at the transmitter without affecting the remote

tuning: however, changes manually accomplished are instantly recorded on the remote indicator for those models equipped with TechniMatic\* tuning.

**SIGNAL/DISTORTION RATIO:** Distortion products are at least 40 db below either tone of a standard two tone test at full PEP output.

**UNWANTED SIDEBAND REJECTION:** A signal at 500 cps is at least 60 db down from full PEP in the unwanted sideband.

**SPURIOUS SIGNALS:** Spurious signals as a result of internal mixing are down at least 60 db at full PEP output.

**HUM AND NOISE LEVEL:** Hum at least 50 db below full PEP. All other noise down at least 70 db.

**CARRIER INSERTION:** Preset at 0, -5, -15, -20, and -55 db.

**HARMONIC SUPPRESSION:** Second harmonics are suppressed at least 50 db below full PEP output when measured with standard two tone test. All others are suppressed at least 55 db.

Note: For harmonic suppression to meet DCA specifications, see OPTIONS/ACCESSORIES.

**FILTER RESPONSE:**

1. Four multiplexed channels of  $\pm 1.5$  from 250 to 3040 cps are provided as standard.
2. A separate position within the exciter allows the insertion of other filters for symmetrical or sideband use.

**AUDIO INPUT:**

1. Four audio input connections, 600 ohms balanced and centertapped.
2. A fifth input is provided for optional symmetrical filters.

**MICROPHONE INPUT:** Front panel provisions for carbon and dynamic microphone.

**AUDIO DYNAMIC RANGE:** Special audio input circuitry compensates for input level changes from +10 to -30 dbm by maintaining the residual audio to within  $\pm 2$  db.

**CHANNEL PRIORITY:** Front panel control, with selectable meter allows adjustment of the percentage of power allocated to the active channels.

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**SPECIAL FEATURES:**

ALDC (Automatic Load and Drive Control) is provided to improve linearity, limit distortion and deliver a relatively constant RF output level during high modulation peaks or load changes. Front panel control allows adjustment of the level at which the ALDC takes effect, or switching off the ALDC if desired.

**METERING:**

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

**ENVIRONMENTAL CONDITIONS:**

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

**STORAGE CONDITIONS:**

Equipment will not be materially affected under storage of -62° C to +75° C.

**SAFETY FEATURES:**

Full interlock protection and full overload and fuse protection for high voltage circuits.

**INSTALLATION DATA:**

Weight: Approximately 1200 lbs.  
Size: 49½" w x 72" h x 30" d.

**POWER REQUIREMENTS:**

Under steady state conditions, in SSB mode with full PEP output, transmitter requires approximately 5000 watts. Under steady state conditions in CW mode with 2500 watts (average) output, transmitter requires approximately 7000 watts.

**INSTRUCTION BOOKS:**

TMC IN 1022.

**COMPONENTS AND CONSTRUCTION:**

All equipment manufactured in accordance with JAN/MIL specifications wherever practicable.

**OPTIONS/ACCESSORIES:**

Priced separately.

**BROADBAND FILTER:**

A plug-in filter assembly is available to provide 15 kc symmetrical response.

**DCA FILTERS:**

To meet the communication criteria of DCA as set forth in DCA/CIR-175-2A are available on special order.

**POWER TRANSFORMERS:**

Power input transformers to accommodate standard 3 phase mains from 380 to 440 volts, 50/60 cps, are available at a slight increase in cost.

**HARMONIC FILTER:**

RF filter is available which will suppress second harmonic at least 85 db below full PEP output measured with standard two tone test and will suppress all other harmonics at least 90 db.

ORDERING INFORMATION

MODEL NUMBER

OPERATIONAL CAPABILITIES

TSTE-2.5K

Provides 4 discrete audio channels, each channel 250-3040 cps with option of fifth wideband channel, fitted with memory unit and timing device for complete TechniMatic\* remote control by means of teletypewriter message format.

TSTF-2.5K

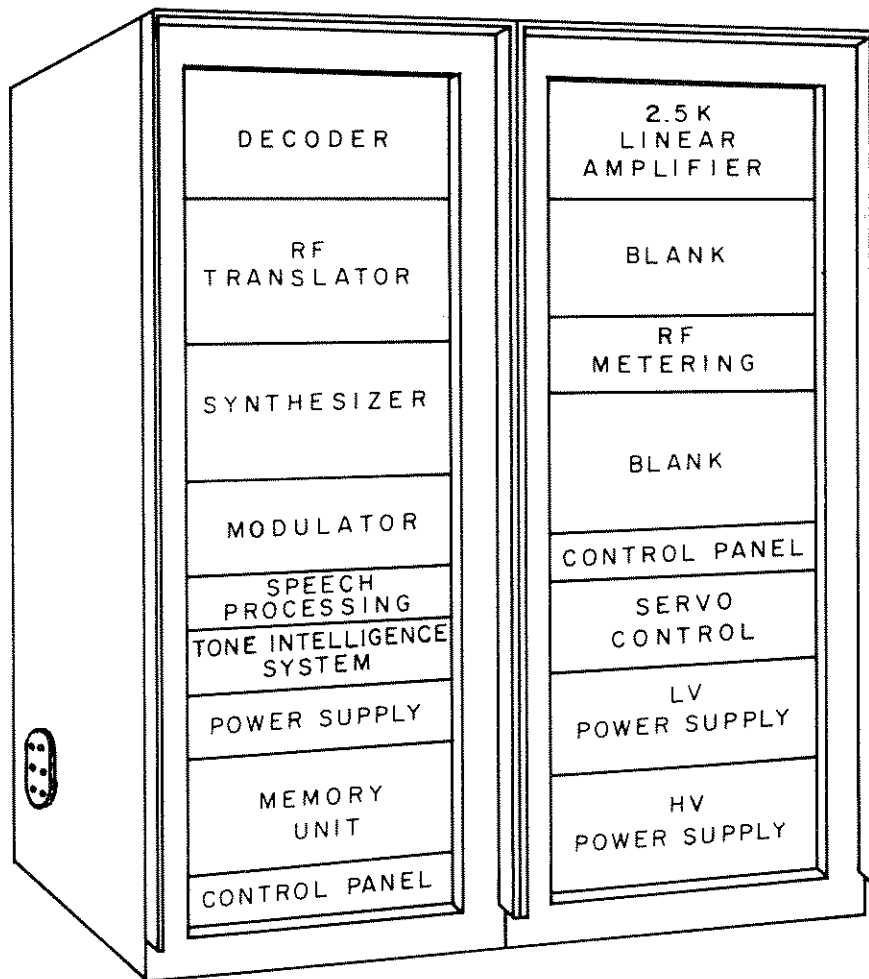
Same as TSTE-2.5K but it has a pushbutton control for 10 pre-set frequencies with manual tuning of the remaining frequencies.

TSTH-2.5K

Same as TSTE-2.5K. Manually tuned and capable of adaptation to TechniMatic\* tuning by field modification.

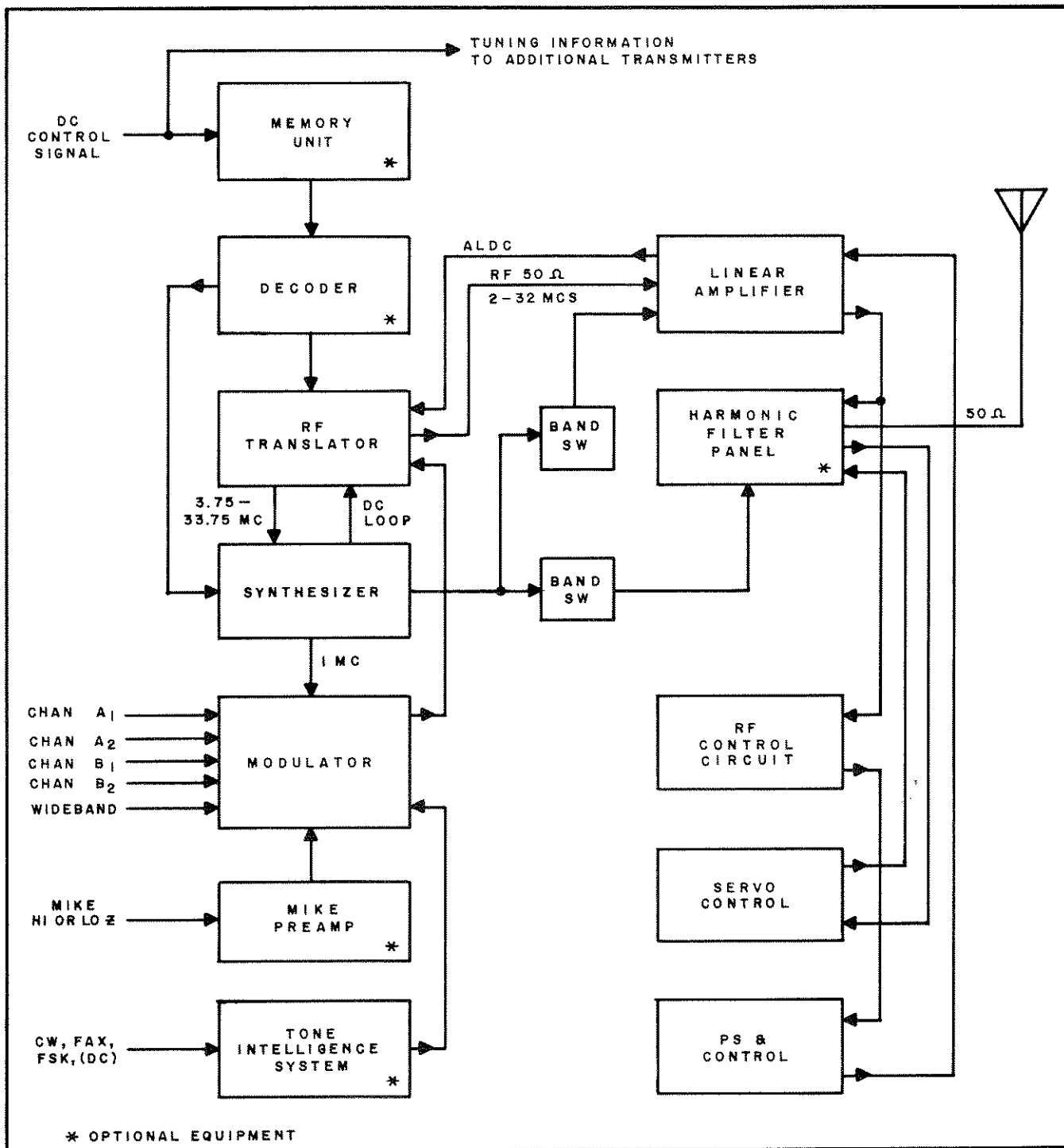
TSTJ-2.5K

Same as TSTE-2.5K but fitted with TechniMatic\* tuning for in-station control.



TSTE - 2.5 KB

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FUNCTIONAL BLOCK DIAGRAM, MODEL TST( )-2.5K

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