



MODEL	DESCRIPTION	BULLETIN	
		<u>OLD</u>	<u>NEW</u>
GPT-1K	1 KW HF/SSB TRANSMITTER		202-2119
HFT-1K	1 KW HF/ISB TRANSMITTER		202-2116
HFT-10K	10 KW HF/ISB TRANSMITTER		202-2112



General Purpose H.F. Transmitter Model GPT-1K

TECHNICAL BULLETIN 202-2119

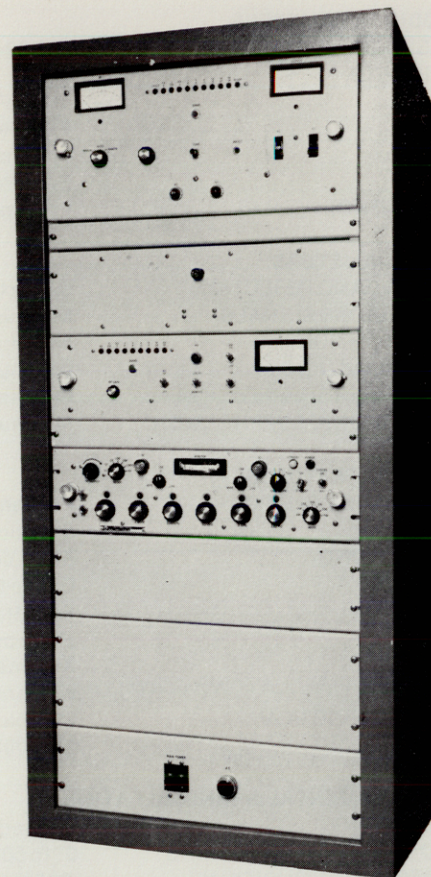
- **1000 Watts PEP 2-26MHz**
- **Synthesized or Multi-Channel**
- **Full Protection Against Overload**
- **Totally Automated with Manual Override**
- **CW, AM, AME, USB, LSB, ISB, FSK, FAX**
- **Rugged, Modular Construction**
- **Compact and Light-weight**
- **Reliable, Solid-State Power Supplies**

The GPT-1K series of general purpose HF transmitter operate continuously at 1,000 watts PEP throughout the frequency range 2-26MHz. The equipment is well-suited for point-to-point communications and is specially designed for transportable stations. All standard operating modes are provided in the GPT-1K including CW, AM equivalent, single sideband, independent sideband, and optionally frequency shift teletype or facsimile. Two basic models are available: the multi-channel GPT-1K/E which provides up to ten pre-set channels, and the synthesized GPT-1K/J which provides full-frequency coverage in 100Hz steps. The transmitter tuning is completely automatic with manual "over-ride" of all operating controls built in to each unit. Remote control of the transmitter is optional using a SCR or TCR control system. Many other accessories are available to build upon the basic capability of the transmitter.

The GPT-1K is manufactured as an integrated system of sub-modules. Each module is designed to perform a specific function in the transmitter and can be interchanged with other like units in the field. The exciter module provides the RF drive and requires no tuning or peaking once the operating frequency is selected by front panel control. This RF output in turn drives the intermediate and final amplifier stages to full output. The final amplifier delivers in excess of 1,000 watts to an unbalanced 50-ohm load and will operate into a 2-to-1 mismatch without damage. To operate properly, the transmitter requires only primary power, a suitable antenna system and an audio or keying input.

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The GPT-1K circuits are solid-state except those handling high power in the final RF output stages. Maximum use is made of removeable assemblies that are securely fastened to the chassis yet easily removed for servicing. This type design simplifies troubleshooting and ensures that the equipment is continuously in service. The GPT-1K can be serviced completely from the front of the equipment. No access is required from the sides or rear. If space is limited, several transmitters can be installed next to each other without affecting performance or reducing capability.



THE TECHNICAL MATERIEL CORPORATION

TECHNICAL SPECIFICATIONS GTP-1K

OPERATING PARAMETERS

FREQUENCY RANGE 2-30MHz multi-channel or synthesized in 100Hz increments.
FREQUENCY STABILITY One part in 10^6 per day. Optional one part in 10^8 per day and higher.
MODES OF OPERATION CW, AME, USB, or LSB. Optional MCW, AM, AFSK, FSK, FAX, 2ISB.
POWER OUTPUT 1000 watts PEP (SSB). 400 watts average (CW/FSK) key down and locked 2-26MHz.
26-30MHz at reduced power.
OUTPUT IMPEDANCE 50 ohms, unbalanced. Output network will match into a 2:1 load VSWR.
TUNING Automatic with front-panel, manual over-ride of all operating controls.

AUDIO PARAMETERS

SIDEBAND RESPONSE 250-3040Hz CCIR ± 1.5 db. Optional 250-6080Hz CCIR; equalized filters; others.
INPUTS Audio: Two independent 600 ohm channels. -20 to +5dbm.
Mike: Front panel jack for low-level dynamic input. -55db into 47,000 ohms.
FSK: Rear panel connector of 75 baud or higher. $\pm 42.5/85/170/425$ Hz shift; others.
Input 20/60ma, 50 or 100 volts, dry contact, + /- to ground.
FAX: Rear panel connector for up to 800Hz linear shift. Input + 1 to + 10vdc.
CONTROL Front panel "fader" controls ease selection of line or mike inputs for USB or LSB.

RF PARAMETERS

SIDEBAND REJECTION 500Hz tone is minimum 50db below PEP in the unwanted sideband.
SPURIOUS SIGNALS Minimum 50db below PEP.
DISTORTION Minimum 30db below full PEP output..
HUM and NOISE Minimum 50db below PEP at least 120Hz removed from carrier.
CARRIER SUPPRESSION Selectable at -6/-20/-30/-55db (adjustable).
HARMONIC SUPPRESSION Minimum 45db below PEP without accessory TFP output filter.

SPECIAL FEATURES

REMOTE CONTROL Full remote control of frequency, mode, carrier, power output, antenna selection, antenna direction, and keying is available with SCR or TCR control systems.
METERING Front panel meters and indicators provide continuous status display of transmitter operation to the module level.
SAFETY Each transmitter module is fully high-voltage interlocked with fuse, overload, and audible alarm protection. Protective plates — labelled in red — are used throughout.
ALDC Automatic load and drive control is included to improve linearity, limit distortion, and provide a relatively constant output during input peaks or load changes.
CONSTRUCTION Completely solid-state, including power supply, up to the final RF output stages. US/Military Standard components are used whenever practicable.

ENVIRONMENTAL and INSTALLATION

COOLING Filtered, forced air in semi-pressurized cabinet. Nominal 200cfm air flow.
OPERATING CONDITIONS 0° to 50°C. Up to 90% relative humidity at MSL.
STORAGE CONDITIONS -30° to + 75°C. Up to 90% relative humidity at MSL.
PRIMARY POWER 115/230V/AC, 50/60Hz. Single-phase. Nominal 1200 watts.
HEAT DISSIPATION Nominal 600 watts.
SIZE and WEIGHT 24.5" (62.2 cm) high x 23" (58.4 cm) wide x 26" (66.0 cm) deep. 356 pounds/162Kg.
SHIPPING DATA Size and weight varies slightly with accessories selected.
Commercial packing for U.S. shipment. Special packing available at additional cost.
LOOSE ITEMS Two (2) containers. Largest 54" x 27" x 34". Weight/cube — 480 lbs./40 cu. ft.
Technical manual (1) and mating RF/signal connectors.

ORDERING INFORMATION

MODELS GPT-1K/E Multi-channel 1KW HF/SSB Transmitter.
GPTR-1K/E Model GPT-1K/E with remote control interface circuits.
GPT-1K/J Synthesized 1KW HF/SSB Transmitter.
GPTR-1K/J Model GPT-1K/J with remote control interface circuits.

ACCESSORY PRODUCTS are described in sections 4-9 of the General Catalog and include RF/antenna, terminal, data, connector and power equipment. **TECHNICAL SERVICES** in design, engineering, training, and related areas are described in section 10. **OPTIONS** are listed after each TMC product in part A of the Price List.

Technical Specifications Are Subject to Change Without Notice

THE TECHNICAL MATERIEL CORPORATION

700 FENIMORE ROAD, MAMARONECK, NY 10543 U.S.A.

CABLE: TEPEI

TEL: 914-698-4800

TWX: 710-566-1100

TLX: 137-358

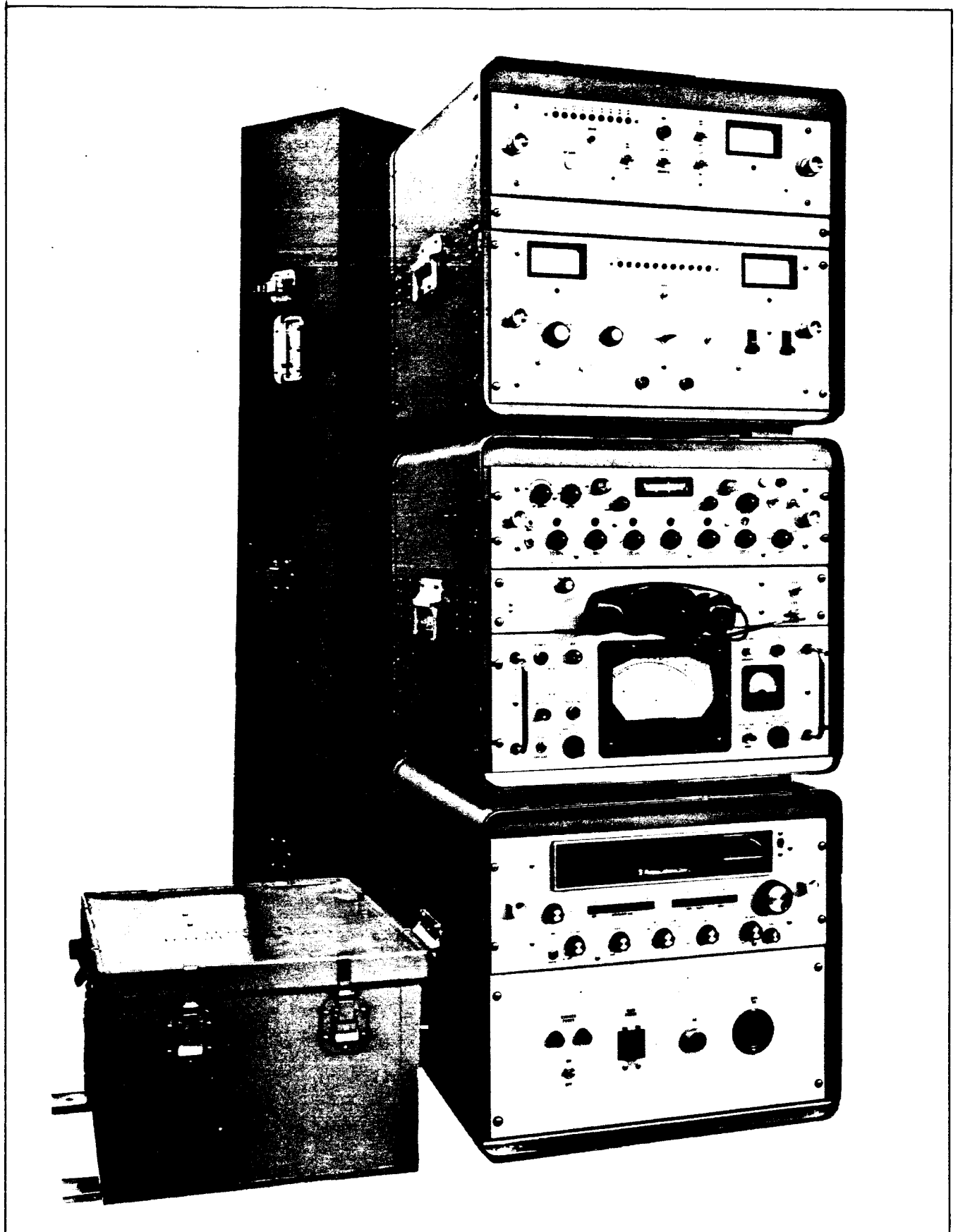
TMC (CANADA) LIMITED

TMC INTERNATIONAL

RR No. 5, Ottawa K1G 3N3 Ontario CANADA

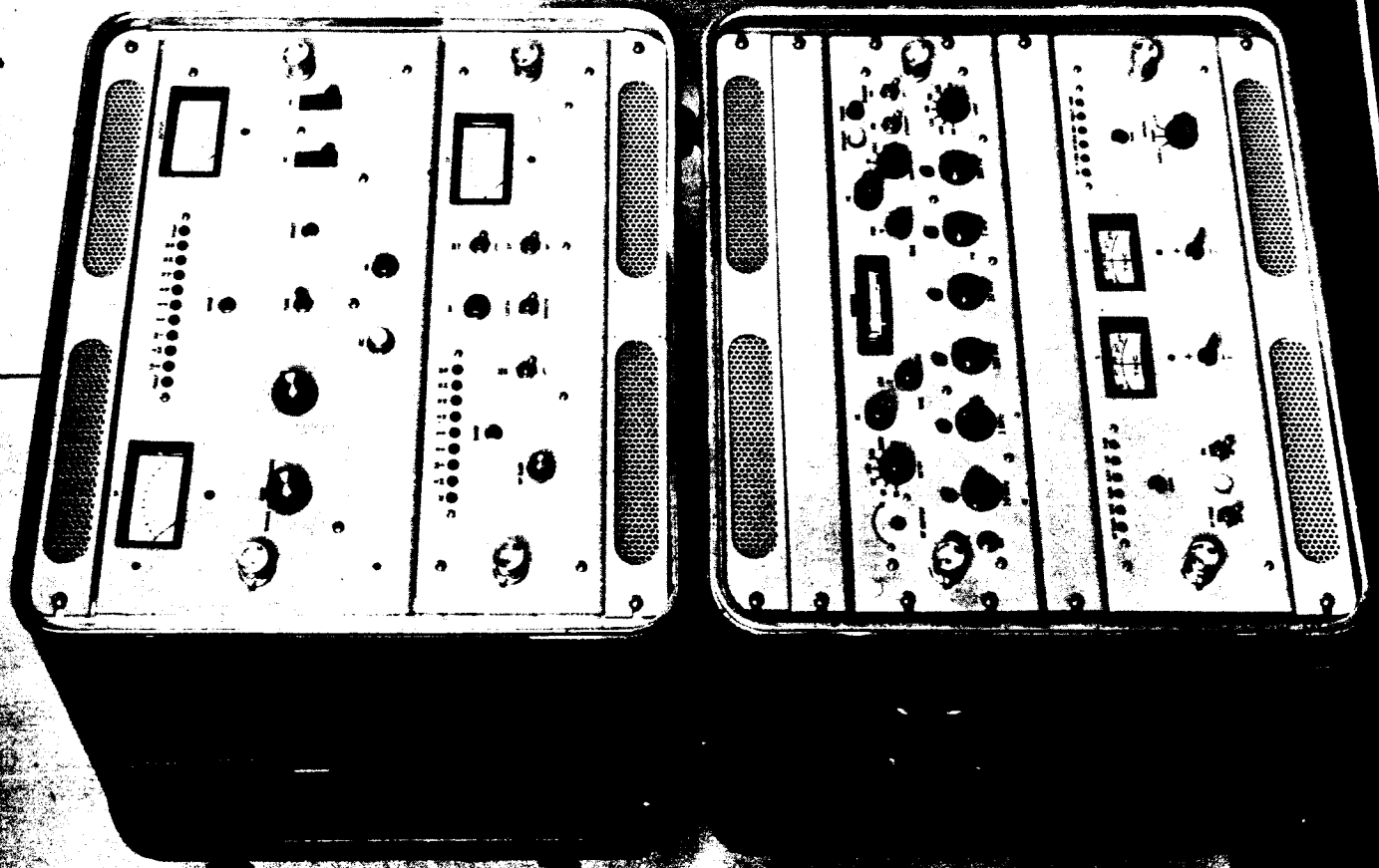
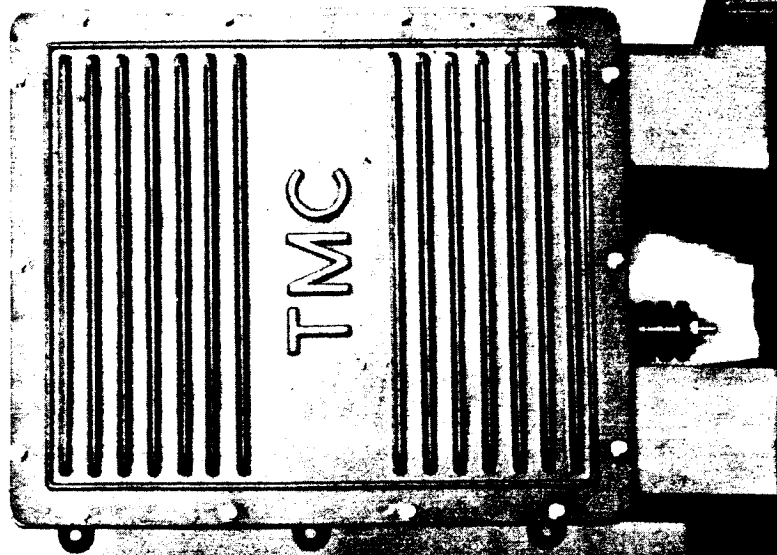
TEL: 613-521-2050

TLX: 053-4146



Complete High Power (1KW) Transmitter-Receiver in portable cases.
These stations are complete with readily erectable antenna and tuner.

THE TECHNICAL MATERIEL CORPORATION

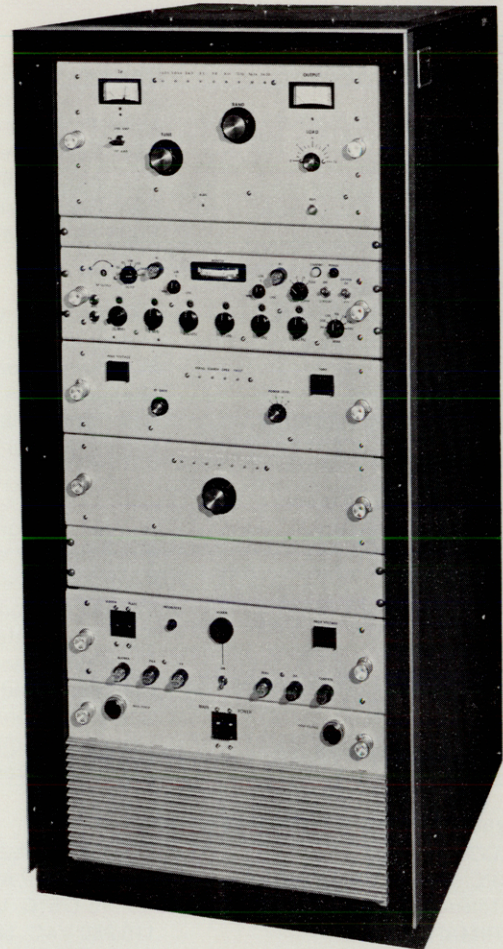




High Frequency Transmitter Model HFT-1K

TECHNICAL BULLETIN 202-2116

- **No rolling contacts**
- **Operational simplicity**
- **CW, AM, SSB, ISB, FAX, FSK**
- **1000 watts PEPIAVG, 2-30 MHz**
- **Solid-state Exciter and Power Supplies**
- **Modular configuration for compact and economical system installations.**
- **Maritime and transportable applications for military and commercial installations.**
- **Full Remote Control Capability**



The HFT-1KJ2 is a professional synthesized or channelized transmitter that meets all current regulations and quality standards. FCC Type Accepted for Parts 81, 83, 85 and 87, it is designed with the professional radio operator in mind but features many new concepts that make it an extremely simple device to operate and service.

The transmitter is modular in construction and uses the new ceramic-type 8576 as the final output tube. This tube is capable of dissipating enough power to allow the transmitter to operate at a 1000 watt peak and average power output level. Cooling is by forced air and safety interlocks are included for personnel protection.

In the automated version, complete tuning of the transmitter is accomplished in less than five seconds. By simply selecting the frequency and operating mode, and then pressing the tune button, the transmitter is ready for operation. No further tuning or adjustment is necessary. If the Model ATS-3 Antenna Tuning System is used, automated tuning through to a 35-foot vertical antenna is possible. Switchable harmonic filters, such as the Model TFP-1K, are available for additional rejection of unwanted harmonics and spurious.

THE TECHNICAL MATERIEL CORPORATION

TECHNICAL SPECIFICATIONS HFT-1K

OPERATING PARAMETERS

FREQUENCY RANGE	2-30MHz multi-channel or synthesized in 100Hz increments.
FREQUENCY STABILITY	One part in 10 ⁶ per day. Optional one part in 10 ⁸ day and higher.
MODES OF OPERATION	CW, AME, USB, LSB, 2ISB, FSK, FAX. Optional AM, 4ISB.
POWER OUTPUT	1000 watts PEP (SSB). 1000 watts (CW/FSK) key down and locked.
OUTPUT IMPEDANCE	50 ohms unbalanced. Output network will match into a 2:1 load VSWR.
TUNING	Automatic with front-panel, over-ride of all operating controls.

AUDIO PARAMETERS

SIDEBAND RESPONSE	250-3040 Hz CCIR \pm 1.5 db. Optional 250-6080Hz CCIR; equalized filters; others.
INPUTS	Audio: Two independent 600 ohm channels. -20 to \pm 5 dbm. Optional 4-channel ISB. Mike: Front panel jack for low-level dynamic input. -55 db into 47,000 ohms. FSK: Rear panel connector of 75 baud or higher. \pm 42.5/85/170/425Hz shifts; others. Input 20/60ma, 50 or 100 volts, dry contact, +/- to ground. FAX: Rear panel connector for up to 800Hz linear shift. Input - 1 to + 10vdc.
CONTROL	Front panel "fader" controls ease selection of line or mike inputs for USB or LSB.

RF PARAMETERS

SIDEBAND REJECTION	500Hz tone is minimum 50db below PEP in the unwanted sideband.
SPURIOUS SIGNALS	Minimum 50db below PEP.
DISTORTION	Minimum 35db below either tone of a two-tone test at rated PEP output.
HUM and NOISE	Minimum 50db below PEP at least 120Hz removed from carrier.
CARRIER SUPPRESSION	Selectable at -6/-20/-30/-55db (adjustable).
HARMONIC SUPPRESSION	Minimum 45db below PEP without accessory TFP output filter.

SPECIAL FEATURES

REMOTE CONTROL	Full remote control frequency, mode, carrier, power output, antenna selection, antenna direction, and keying is available with SCR or TCR control systems.
METERING	Front panel meters and indicators provide continuous status display of transmitter operation to the module level.
SAFETY	Each transmitter module is fully high-voltage interlocked with fuse, overload, and audible alarm protection. Protective plates — labelled in red — are used throughout.
ALDC	Automatic load and drive control is included to improve linearity, limit distortion, and provide a relatively constant output during input peaks or load changes.
CONSTRUCTION	Completely solid-state, including power supply, up to the final RF output stages. US/Military Standard components are used whenever practicable.

ENVIRONMENTAL and INSTALLATION

COOLING	Filtered, forced air in semi-pressurized cabinet. Nominal 350cfm airflow.
OPERATING CONDITIONS	0° to 50°. UP to 90% relative humidity at MSL.
STORAGE CONDITIONS	-30° to +75°C. Up to 90% relative humidity at MSL.
PRIMARY POWER	115/230 VAC, 50/60Hz. Single-phase with + 10% taps. Nominal 2.2KW. Optional 230 or 380 VAC, three-phase. Other ratings on request.
HEAT DISSIPATION	Nominal 1400 watts.
SIZE and WEIGHT	35" (89cm) high x 23" (58.4cm) wide x 26" (66cm) deep. 600 pounds/273Kg. Size and weight varies slightly with accessories selected.
SHIPPING DATA	Commercial packing for U.S. shipment. Special packing available at additional cost. Six (6) containers. Largest 65" x 27" x 34". Weight/cube — 960lbs./66 cu. ft.
LOOSE ITEMS	Technical manual (1) and mating RF/single connectors.

ORDERING INFORMATION

MODELS	HFTM-1K/E Multi-channel manually tuned 1 KW Transmitter HFTM-1K/J Synthesized manually tuned 1 KW Transmitter HFTA-1K/E Multi-channel automatically tuned 1 KW Transmitter HFTA-1K/J Synthesized automatically tuned 1 KW Transmitter HFTR-1K/E Multi-channel automatically tuned Transmitter with remote control interface HFTR-1K/J Synthesized automatically tuned Transmitter with remote control interface
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Specifications Are Subject to Change Without Notice

THE TECHNICAL MATERIEL CORPORATION

700 FENIMORE ROAD, MAMARONECK, NY 10543 U.S.A.

CABLE:TEPEI

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TLX:137-358

TMC [CANADA] LIMITED

TMC INTERNATIONAL

RR No. 5, Ottawa K1G 3N3 Ontario CANADA

TEL: 613-521-2050

TLX: 053-4146



High Frequency Transmitter Model HFT-10K

TECHNICAL BULLETIN 202-2112

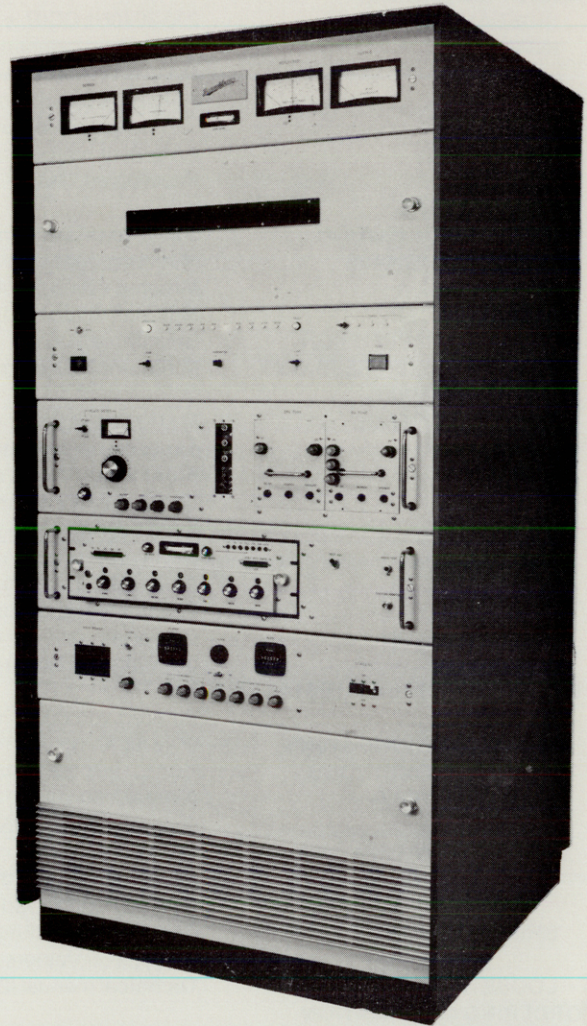
- **Frequency Range 1.6 to 30 MHz**
- **Synthesized or Multi-Channel**
- **Automatic Tuning with Manual Override**
- **Complete Safety Interlock Protection**
- **Precision Frequency Control**
- **Reliable, Solid-State Design**
- **Rugged, Modular Construction**
- **U.S. Military Nomenclature AN/URT-37(V)**
- **Remote Control Capability**

The HFT-10K high frequency transmitter group designed and manufactured by TMC, provides in excess of ten kilowatts of RF power for broadcast and long-haul, point-to-point communications. One of the most efficient 10KW transmitter systems yet developed by TMC, the HFT-10K is small in size and lightweight. Its proven design is measured by the large number of active stations worldwide using this transmitter at fixed sites, in transportable vans, on board ships, and in military aircraft.

Many new features are incorporated in the HFT-10K including pre-set power output levels, microprocessor remote control, built-in monitoring of critical circuits, and complete manual override of all operating controls. Proven advances in solid-state circuitry are used to make an extremely reliable system that is simple to operate and service. Internal improvements include circuits designed to interface the HFT-10K with a variety of accessories enabling stations to expand their capabilities without replacing capital equipment. The main power tube is the Eimac 4CX10000J which enables operation in excess of 10KW PEP and average.

All circuits in the HFT-10K are solid-state, excluding those handling higher power in the final RF stages. Maximum use is made of removeable assemblies securely fastened to the main chassis yet easily removed for servicing. Replacement parts are totally accessible from the front of the transmitter which simplifies maintenance and allows side-by-side installation of more than one system. Extension track slides are mounted to most modules with interconnect cables of sufficient length to permit complete operation of the HFT-10K during servicing. A safety interlock system is built-in to each transmitter for protection of both the operator and the equipment.

THE TECHNICAL MATERIEL CORPORATION



TECHNICAL SPECIFICATIONS HFT-10K

OPERATING PARAMETERS

FREQUENCY RANGE	2-30MHz multi-channel or synthesized in 100Hz increments.
FREQUENCY STABILITY	One part in 10 ⁶ per day. Optional one part in 10 ⁸ day and higher.
MODES OF OPERATION	CW, AM, AME, USB, LSB, ISB, FSK, FAX. Optional 4ISB.
POWER OUTPUT	10,000 watts PEP (SSB). 10,000 watts average (CW/FSK) key down and locked.
OUTPUT IMPEDANCE	50 ohms unbalanced. Output network will match into a 2:1 load VSWR.
TUNING	Automatic with front-panel, over-ride of all operating controls.

AUDIO PARAMETERS

SIDE BAND RESPONSE	250-3040Hz CCIR \pm 1.5db. Optional 250-6080Hz CCIR; equalized filters; others.
INPUTS	Audio: Two independent 600 ohm channels. -20 to + 5dbm. Optional 4-channel ISB. Mike: Front panel jack for low-level dynamic input. -55db into 47,000 ohms. FSK: Rear panel connector of 75 baud or higher. \pm 42.5/85/170/425Hz shifts; others. Input 20/60 ma, 50 or 100 volts, dry contact, + /- to ground. FAX: Rear panel connector for up to 800Hz linear shift. Input + 1 to + 10 vdc. Front panel "fader" controls ease selection of line or mike inputs for USB or LSB.

CONTROL

RF PARAMETERS

SIDE BAND REJECTION	500Hz tone is minimum 50db below PEP in the unwanted sideband.
SPURIOUS SIGNALS	Minimum 50db below PEP.
DISTORTION	Minimum 35db below either tone of a two-tone test at rated PEP output.
HUM and NOISE	Minimum 50db below PEP at least 120Hz removed from carrier.
CARRIER SUPPRESSION	Selectable at -6/-20/-30/-55db (adjustable).
HARMONIC SUPPRESSION	Minimum 45db below PEP without accessory TFP output filter.

SPECIAL FEATURES

REMOTE CONTROL	Full remote control of frequency, mode, carrier, power output, antenna selection, antenna direction, and keying is available with SCR or TCR control systems.
METERING	Front panel meters and indicators provide continuous status display of transmitter operation to the module level.
SAFETY	Each transmitter module is fully high-voltage interlocked with fuse, overload, and audible alarm protection. Protective plates — labelled in red — are used throughout.
ALDC	Automatic load and drive control is included to improved linearity, limit distortion, and provide a relatively constant output during input peaks or load changes.
CONSTRUCTION	Completely solid-state, including power supply, up to the final RF output stages. US/Military Standard components are used whenever practicable.

ENVIRONMENTAL and INSTALLATION

COOLING	Filtered, forced air in semi-pressurized cabinet. Nominal 600cfm airflow.
OPERATING CONDITIONS	0° to 50°C. Up to 90% relative humidity at MSL.
STORAGE CONDITIONS	-30° to + 75°C. Up to 90% relative humidity at MSL.
PRIMARY POWER	230 VAC, 50/60Hz. Three-phase with \pm 10% taps. Nominal 22KW. Optional 380 VAC, 50/60Hz. Three-phase. Other ratings on request.
HEAT DISSIPATION	Nominal 14KW.
SIZE and WEIGHT	60" (175cm) high x 33" (84cm) wide x 38" (97cm) deep. 1200 pounds/545Kg. Size and weight varies slightly with accessories selected.
SHIPPING DATA	Commercial packing for U.S. shipment. Special packing available at additional cost. Eight (8) containers. Largest 80" x 47" x 48". Weight/cube — 2520 lbs./177 cu. ft.
LOOSE ITEMS	Technical manual (2) and mating RF/signal connectors.

ORDERING INFORMATION

MODELS	HFT-10K/E Multi-channel 10KW HF/ISB Transmitter. HFTR-10K/E Model HFT-10K/E with remote control interface circuits. HFT-10K/J Synthesized 10KW HF/ISB Transmitter HFTR-10K/J Model HFT-10K/J with remote control interface circuits.
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ACCESSORY PRODUCTS are described in sections 4-9 of the General Catalog and include RF/antenna, terminal, data, connector and power equipment. **TECHNICAL SERVICES** in design, engineering, training, and related areas are described in section 10. **OPTIONS** are listed after each TMC product in part A if the Price List.

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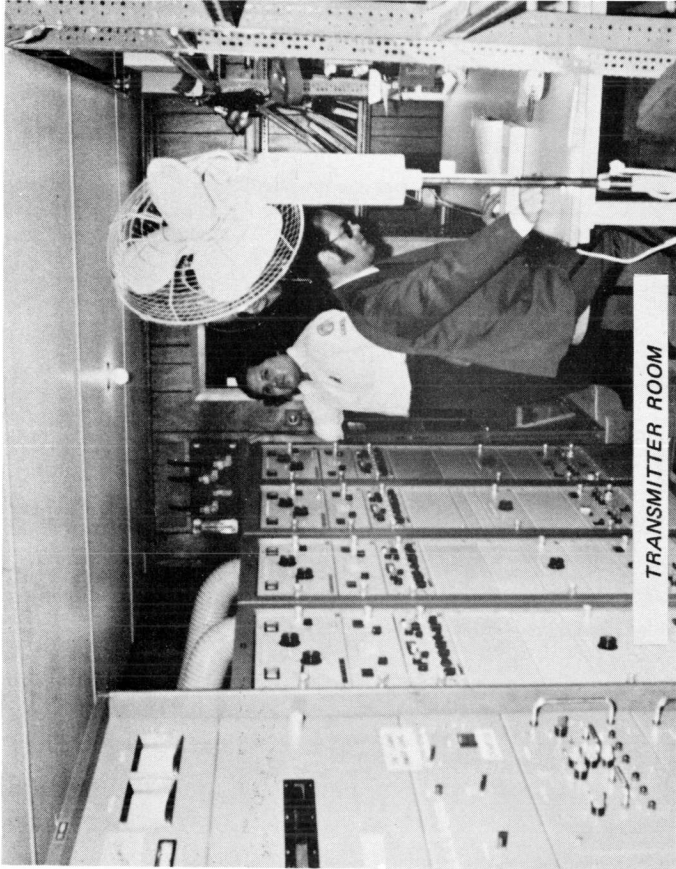
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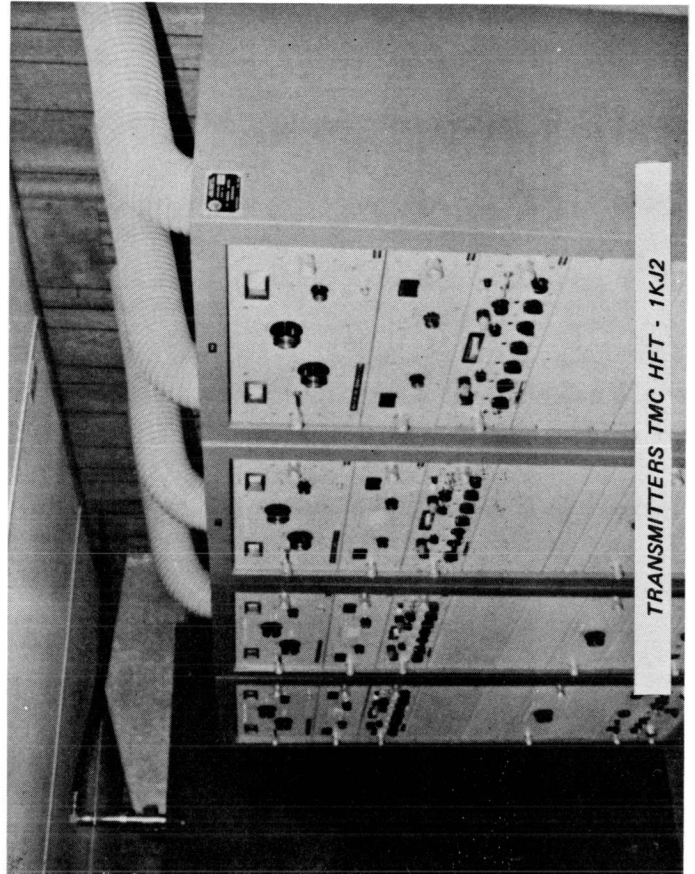
TLX: 053-4146



TRANSMITTER ROOM



RECEIVING TERMINALS SYM. 3202



TRANSMITTERS TMC HFT - 1KJ2

TYPICAL INSTALLATION OF TMC EQUIPMENT IN THE MEDITERRANEAN AREA

Upper Left — Transmitter room, TMC automatic 10KW transmitter in the foreground, four HFT1-K automatics adjacent.

Upper Right — Four 3202 receiving terminals for complete receiving control.

Lower Left — Four HFT1-K transmitters. Note the proper ducting of exhaust air.

This installation including the automatic transmitters is in operation twenty four hours a day.