



# High Frequency Transmitter Model HFT-10K

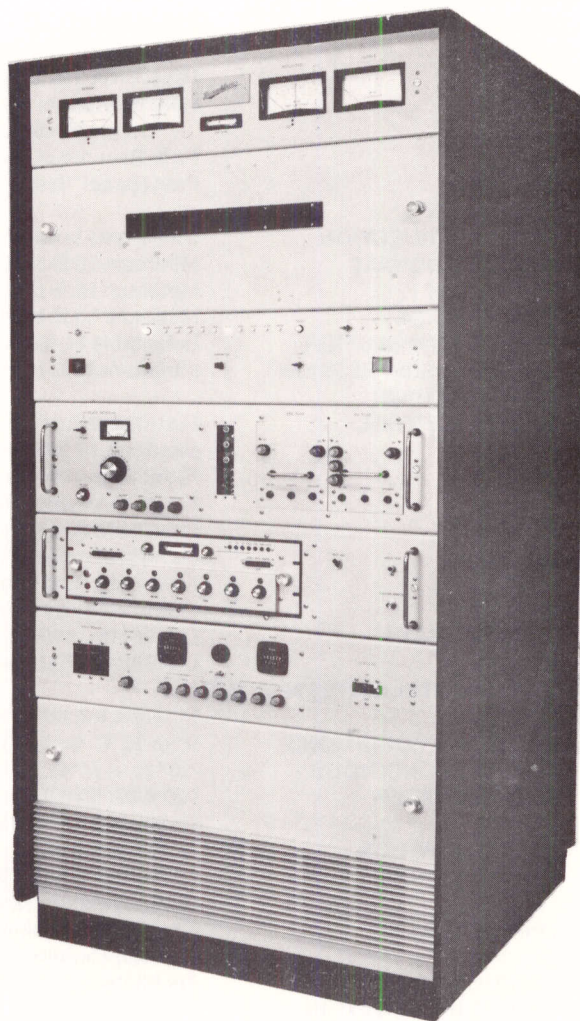
TECHNICAL BULLETIN 202-2112

- **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 <sup>6</sup> per day. Optional one part in 10 <sup>8</sup> 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**

SIDEBAND 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**

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 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. Technical manual (2) and mating RF/signal connectors.

**LOOSE ITEMS**

**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.

*Specifications Are Subject to Change Without Notice*

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