



# High Frequency Transmitter Model HFT-1K

TECHNICAL BULLETIN 202-2116

- **No rolling contacts**
- **Operational simplicity**
- **CW, AM, SSB, ISB, FAX, FSK**
- **1000 watts PEP/AVG, 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 is solid state throughout up to the final tube which is the new ceramic-type 8576. 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,  $\pm$  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.  
HEAT DISSIPATION Optional 230 or 380 VAC, three-phase. Other ratings on request.  
SIZE and WEIGHT Nominal 1400 watts.  
SHIPPING DATA 35" (89cm) high x 23" (58.4cm) wide x 26" (66cm) deep. 600 pounds/273Kg.  
LOOSE ITEMS Size and weight varies slightly with accessories selected.  
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.  
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

*Specifications Are Subject to Change Without Notice*

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