

HIGH FREQUENCY SYNTHESIZED TRANSMITTER, 10 KW PEP/AVERAGE

**HFT-10KJ2**

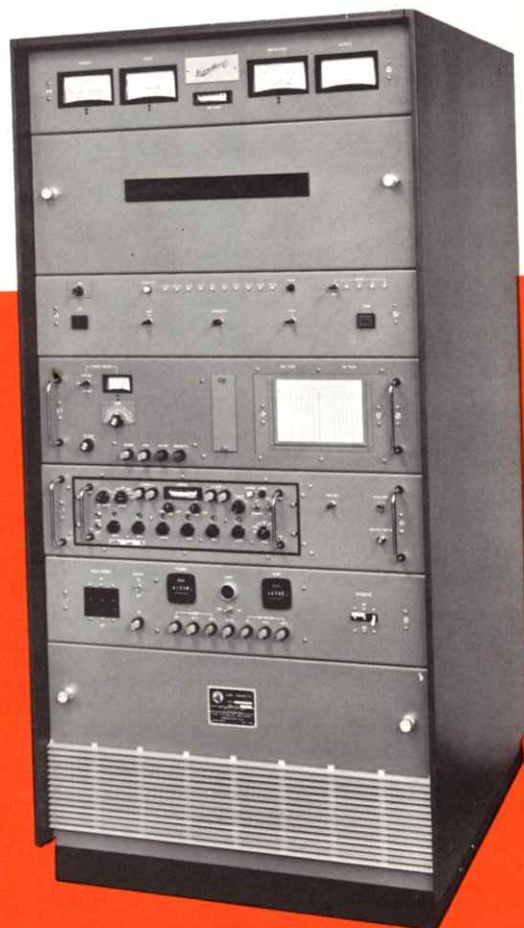
The new HFT-10KJ2 transmitter is the smallest, lightest and most efficient ten kilowatt transmitter TMC has ever produced. Nominally rated at ten kilowatts PEP and AVERAGE, it will in fact deliver substantially higher power with no overload.

The drive unit is the MMX-2 multi-mode exciter that provides up to 250 milliwatts drive in all modes normally encountered in the HF spectrum. Stability is nominally one part in  $10^8$  per day and frequencies in the 1.6 to 30 MHz range can be selected instantly at 100 Hz intervals.

All components are accessible from the front as required for transportable and air-borne communications. The output tube is the new RCA 8794, specially designed for side-band work, with plate dissipation of 12 KW as against previous models using tubes with a plate dissipation of only 6 KW. The transmitter is much quieter in operation because of a reduced airflow requirement, and much lighter - 1200 pounds in 9 square feet—as a result of modern technology applied to the design. Hum and noise are at a new low since DC filaments are used in the driver. In addition, both fixed low-pass filters and switchable harmonic filters are available on special order for additional harmonic rejection.

In the automated version, the transmitter will tune in less than five seconds to all previously selected in-band frequencies and less than 10 seconds for full frequency excursion. The HFT-10KJ may be remotely controlled on special order using the COPC-2 control system. In this condition, the transmitter is automated and has the capability of being pre-set to one of four specific power output levels.

Peak reading devices for indicating true peak power under multi-tone conditions are available on special order. The HFT-10K is nomenclatured AN/URT-37(v)1 in the United States.



Model HFT-10KJ2

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Supersedes 1012



THE TECHNICAL MATERIEL CORPORATION

AND SUBSIDIARIES

Printed in U.S.A.

## TECHNICAL SPECIFICATIONS

### FREQUENCY INFORMATION

- Range**  
2 to 30 MHz  
1.6 to 30 MHz OPTIONAL
- Stability**  
One part in  $10^8$  per day  
One part in  $10^9$  OPTIONAL
- Presentation**  
Direct reading, digital

### OPERATING PARAMETERS

- Modes**  
CW(A1); AM(A3); AME(A3H);  
USB(A3A,A3J); LSB; ISB(A3B)  
OPTIONAL:  
FSK(F1); FAX(F4)
- Power Output**  
10,000 Watts two-tone PEP  
12 to 15 KW with slight distortion.  
10 to 12 KW Average based on frequency.  
Four-level power output adjust, pre-set.
- Output Impedance**  
50 ohms nominal, unbalanced  
OPTIONAL: 70 ohms unbalanced
- VSWR Rating**  
Maximum of 2:1 without degrading  
transmitter performance. Automatic  
protection if VSWR exceeds 3:1.
- Carrier Suppression**  
Continuously adjustable from -55db to  
full PEP output by front panel adjust.
- Tuning**  
Manual with local override control.  
OPTIONAL: Automated tuning.  
OPTIONAL: Remote control automation.  
Local override control on all models.
- ALDC**  
Automatic Load and Drive Control  
with front panel "attack" level adjust.
- Metering**  
Illuminated meters with special overload  
protection for monitoring critical circuits
- Safety Features**  
Overload and bias protection with inter-  
locks at all high voltage points for personnel  
protection.
- Construction**  
Exciter and power supply modules are  
completely solid state. Ceramic-type tubes  
are used in the final RF stages.

### DISTORTION AND NOISE

- Spurious**  
Minimum 60db below full PEP output
- Hum and Noise**  
Minimum 55db below full PEP output
- Harmonic Suppression**  
Second Harmonics:  
Minimum 50db below full PEP output  
Third and Higher Harmonics:  
Minimum 55db below full PEP output  
Filters available for additional rejection
- Unwanted Sideband Rejection**  
500Hz tone 60db below full PEP output
- Intermodulation**  
Distortion products are at least 40db below  
either tone of a standard two tone test at  
full rated PEP. At 12 and 15 KW PEP,  
ratio is typically 35db.

### AUDIO

- Sideband Response**  
250-3040 Hz, +/-1.5db (CCIR)  
OPTIONAL:  
250-6080 Hz, +/-1.5db (CCIR)  
250-2400 Hz (FCC)  
Additional bandwidths available on request
- Input**  
Two independent 600-ohm channels  
-20 to +5dbm, balanced or unbalanced  
Low level dynamic microphone  
-55db in 47K-ohm; front panel jack.
- Control**  
Controlled injection of audio inputs into  
either sideband.

### KEYING INFORMATION

- CW** Up to 300 WPM, carrier keying  
Dry contact
- FSK** 50 to 100 Baud  
Neutral or polar keying
- FAX** +1 to 10 VDC produces a  
800 Hz linear shift of the carrier.

### ENVIRONMENTAL AND INSTALLATION

- Operating Conditions**  
0 to +50°C; Up to 90% relative humidity.
- Primary Power**  
210/220/230/240/250 volts, 50 or 60 Hz.  
370/380/390 volts with external transformer  
All three phase; Approximately 27,000 watts
- Size and Weight**  
HFT-10KJ (Manual Tuning)  
HFHTA-10KJ2 (Automated Tuning)  
69" high X 33 1/2" wide X 38" deep  
Approximately 1200 lbs. installed.  
Cabinet included with all models.
- Loose Items**  
Mating RF connectors  
All interconnect cables  
Base mounted equipment cabinet  
Two copies of Operating Manual

### OPTIONAL ACCESSORIES

- Model CSS-2 Frequency Standard**  
Technical Bulletin 6020-3  
Provides one part in  $10^9$  frequency stability.
- Model LPFA-10K Low Pass Filter**  
Technical Bulletin 2045  
Provides an additional 25db harmonic rejection
- Model TFP-10K Harmonic Filter**  
Technical Bulletin 2046  
Provides additional 25db harmonic rejection
- Model TIS-3D Audio Tone Keyer**  
Technical Bulletin 2025A  
Enables A7J (FSK/FAX) operation.
- Model COPC-2 Control System**  
Technical Bulletin 6010-2  
Enables programmed remote control
- Kit "White Noise"**  
Hum and noise are reduced 70db below  
full PEP output using this kit.



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