HIGH FREQUENCY SYNTHESIZED TRANSMITTER, 10 KW PEP/AVERAGE

HFT-10KJ2

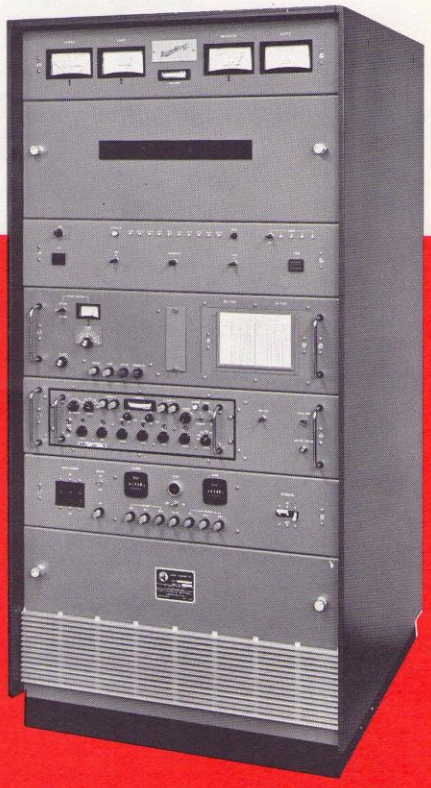
The new HFT 10KJ2 transmitter is the smallest, lightest and most efficient ten kilowatt transmitter TMC has ever produced. Nominally rated at ten kilowatts PEP and AVERAGE, it will in fact deliver substanstially higher power with no overload.

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 sideband 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

Revised 15 Aug 1971
Supersedes 1012

THE TECHNICAL MATERIEL CORPORATION

AND SUBSIDIARIES

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 interlocks 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)
HFTA–10KJ2 (Automated Tuning)
69" high X 33½" 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.

We reserve the right to make engineering changes

WORLD WIDE SUPPLIERS OF ELECTRONIC COMMUNICATIONS EQUIPMENT

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