



# 40KW HIGH FREQUENCY TRANSMITTER

## Model HFT-40K

Product Bulletin 1B02111

**Synthesized**

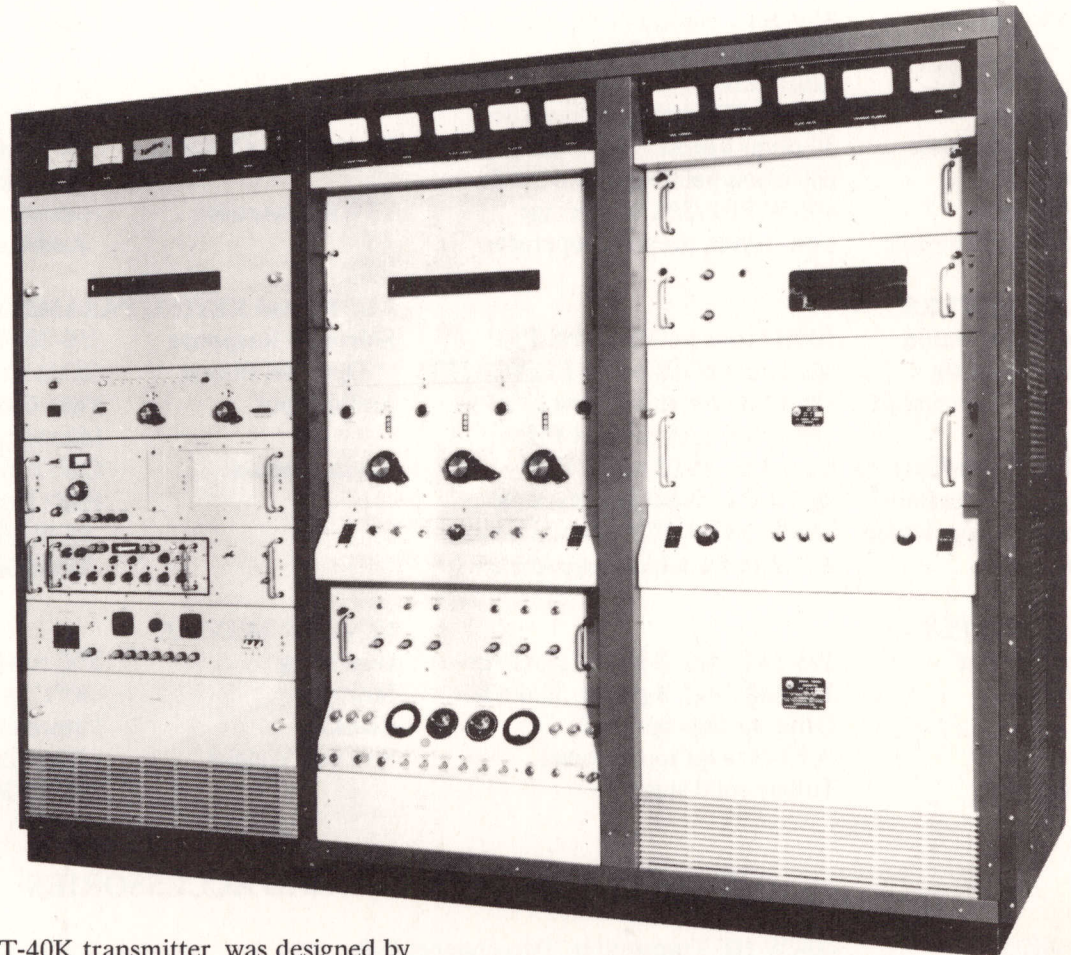
**2 to 30MHz**

**All Modes**

**40KW PEP**

**Modular**

**Field-Proven**



The HFT-40K transmitter was designed by TMC for general purpose applications that require full-frequency, long-haul communications at RF power levels in excess of forty kilowatts. Currently installed worldwide, the HFT-40K is actively providing reliable service from shore installations, transportable communications shelters, and fixed ground stations. Compact and rugged, the HFT-40K is one of the most efficient 40KW transmitters available on the world market today. It is equipped with all standard operating modes used in broadcast and point-to-point transmission, including AM, AME, USB, LSB, CW, FSK, FAX and two-channel ISB. With the synthesized SBG-4 exciter, the transmitter operates in the four-channel ISB mode with DCA-type equalized filters used in the transmission of data. RF output power is conservatively rated at 40KW PEP/20KW average.

The HFT-40K is configured in three racks of interconnected modules that are isolated from each other to prevent coupling of unwanted energy and degrading of the output signal. The modular construction of the HFT-40K - basic to all TMC transmitter designs - simplifies routine servicing by enabling the technician to access all major components from the front. In addition, the HFT-40K is designed to continuously monitor the performance of the complete transmitter system, including its associated antenna. Any abnormalities are immediately sensed and an automatic response taken to protect the system without operator-intervention. This built-in protection is a trademark of TMC designs and virtually guarantees the low-cost, reliable operation that TMC transmitters are known to provide.

**THE TECHNICAL MATERIEL CORPORATION**

## TECHNICAL SPECIFICATIONS

### GENERAL

Frequency Range	2-30MHz
Frequency Entry	Front-panel select, digital display
Frequency Stability	1 part in 10 <sup>8</sup> /day/15°C change
Frequency Selection	Direct synthesis in 100Hz steps
Tuning	Front-panel control, bandswitched
Operating Modes	CW(A1), AME(A3H), AM(A3) USB/LSB(A3A, A3J) 2ISB(A3B), FSK(F1), FAX(F4) 4ISB(A9B) with SBG-4 exciter
Optional:	
Output Impedance	50 ohms unbalanced, 3-1/8" EIA
Optional:	600 ohms balanced, twin bowls
Power Output	40KW PEP/20KW Average
Power Output Preset	Four levels, preset by operator

### RF PARAMETERS

Sideband Rejection	500Hz tone >60dB below PEP
Spurious Signals	Minimum 60dB below PEP(CCITT)
Distortion (Intermod)	>35dB below either tone of a two-tone test at rated PEP
Residual Noise/Hum	Minimum 55dB below PEP
Carrier Suppression	-6/-20/-30/-55dB(full)/variable
Harmonic Suppression	>50dB below PEP (second order)
Optional:	RF filter for added suppression

### POWER SUPPLY

Primary Power	195-240VAC, 3-phase, 50/60Hz
Optional:	390-480VAC, 3-phase, 50/60Hz
	Other ratings optional
	70KW/0.97pf input power
Construction	Totally solid state

### SPECIAL FEATURES

Safety	High-voltage interlocked with fuse, overload, and alarm indications
Metering	Continuous front-panel display of transmitter performance to the module level; BITE optional.
ALDC	Automatic load and drive control to improve linearity, limit distortion and provide relatively constant output during input/load changes
Bandswitch Contacts	Self-cleaning contacts are provided. No rolling contacts
VSWR Protection	Automatic if mismatch exceeds 3:1. Audible alarm with contact closure

### AUDIO and KEYING PARAMETERS

Sideband Response	250-3040Hz, +/-1.5dB CCITT
Optional filters:	6KHz CCITT/3KHz equalized/Others
Audio Input	Twin 600-ohm, rear panel, +10dBm Microphone preamplifier, front panel
Keying Inputs	CW: Key jack, front panel, 200 baud FSK: Rear panel, 200 baud +/-42.5/85/170/425Hz shifts 20ma/60ma/50V/100V, dry contact

### ENVIRONMENTAL

Operating	0°C to +55°C, 90% R.H.
Storage	-30°C to +75°C; 90% R.H.
Cooling	Filtered forced air
Size and Weight	85H x 120W x 44D inches, 5400 lbs. 216H x 305W x 112D cm, 2455Kg.

## ORDERING INFORMATION AND ACCESSORIES

HFT-40K/J	40KW HF Transmitter, Two-channel ISB		
HFT-40K/S	40KW HF Transmitter, Four-channel ISB		
TER-25K	Antenna Terminator/Dummy Load	Product Bulletin 1B02208	
TMA-40K	Balanced Output Meter Assembly	Provides RF metering of current in each side of a 600-ohm balance output line	
TRC-20K	Transmitting Antenna Coupler	Product Bulletin 1B02209	
2B02111	Spare Parts - Initial (90-day)	2C02111	Spare Parts - Operating (1-year)
2D02111	Spare Parts - Maintenance (2-year)	2E02111	Spare Parts - Depot (5-year)
2F02111	Spare Parts - Replacement Modules	3A02111	Technical Manual (Complete set)

**The Technical Materiel Corporation**  
Communication Engineers

700 FENIMORE ROAD  
MAMARONECK, NEW YORK 10543 U.S.A.  
Phone: 914 698 4800 Telex: 137 358 TECHMAT MECK

TMC Agent/Representative:

## TECHNICAL SPECIFICATIONS

### GENERAL

Frequency Range	2-30MHz
Frequency Entry	Front-panel select, digital display
Frequency Stability	1 part in 10 <sup>8</sup> /day/15°C change
Frequency Selection	Direct synthesis in 100Hz steps
Tuning	Front-panel control, bandswitched
Operating Modes	CW(A1), AME(A3H), AM(A3) USB/LSB(A3A, A3J) 2ISB(A3B), FSK(F1), FAX(F4) 4ISB(A9B) with SBG-4 exciter
Optional:	
Output Impedance	50 ohms unbalanced, 3-1/8" EIA
Optional:	600 ohms balanced, twin bowls
Power Output	40KW PEP/20KW Average
Power Output Preset	Four levels, preset by operator

### RF PARAMETERS

Sideband Rejection	500Hz tone >60dB below PEP
Spurious Signals	Minimum 60dB below PEP(CCITT)
Distortion (Intermod)	>35dB below either tone of a two-tone test at rated PEP
Residual Noise/Hum	Minimum 55dB below PEP
Carrier Suppression	-6/-20/-30/-55dB(full)/variable
Harmonic Suppression	>50dB below PEP (second order)
Optional:	RF filter for added suppression

### POWER SUPPLY

Primary Power	195-240VAC, 3-phase, 50/60Hz
Optional:	390-480VAC, 3-phase, 50/60Hz
	Other ratings optional
	70KW/0.97pf input power
Construction	Totally solid state

### SPECIAL FEATURES

Safety	High-voltage interlocked with fuse, overload, and alarm indications
Metering	Continuous front-panel display of transmitter performance to the module level; BITE optional.
ALDC	Automatic load and drive control to improve linearity, limit distortion and provide relatively constant output during input/load changes
Bandswitch Contacts	Self-cleaning contacts are provided. No rolling contacts
VSWR Protection	Automatic if mismatch exceeds 3:1. Audible alarm with contact closure

### AUDIO and KEYING PARAMETERS

Sideband Response	250-3040Hz, +/-1.5dB CCITT
Optional filters:	6KHz CCITT/3KHz equalized/Others
Audio Input	Twin 600-ohm, rear panel, +10dBm Microphone preamplifier, front panel
Keying Inputs	CW: Key jack, front panel, 200 baud FSK: Rear panel, 200 baud +/-42.5/85/170/425Hz shifts 20ma/60ma/50V/100V, dry contact

### ENVIRONMENTAL

Operating	0°C to +55°C, 90% R.H.
Storage	-30°C to +75°C; 90% R.H.
Cooling	Filtered forced air
Size and Weight	85H x 120W x 44D inches, 5400 lbs. 216H x 305W x 112D cm, 2455Kg.

## ORDERING INFORMATION AND ACCESSORIES

HFT-40K/J	40KW HF Transmitter, Two-channel ISB		
HFT-40K/S	40KW HF Transmitter, Four-channel ISB		
TER-25K	Antenna Terminator/Dummy Load	Product Bulletin 1B02208	
TMA-40K	Balanced Output Meter Assembly	Provides RF metering of current in each side of a 600-ohm balance output line	
TRC-20K	Transmitting Antenna Coupler	Product Bulletin 1B02209	
2B02111	Spare Parts - Initial (90-day)	2C02111	Spare Parts - Operating (1-year)
2D02111	Spare Parts - Maintenance (2-year)	2E02111	Spare Parts - Depot (5-year)
2F02111	Spare Parts - Replacement Modules	3A02111	Technical Manual (Complete set)

**The Technical Materiel Corporation**  
Communication Engineers

700 FENIMORE ROAD  
MAMARONECK, NEW YORK 10543 U.S.A.  
Phone: 914 698 4800 Telex: 137 358 TECHMAT MECK

TMC Agent/Representative: