

TECHNICAL BULLETIN NUMBER 1007A

General Purpose Transmitters

TMC Models GPT-750

AN/URT-17()

AN/FRT-55()

PURPOSE

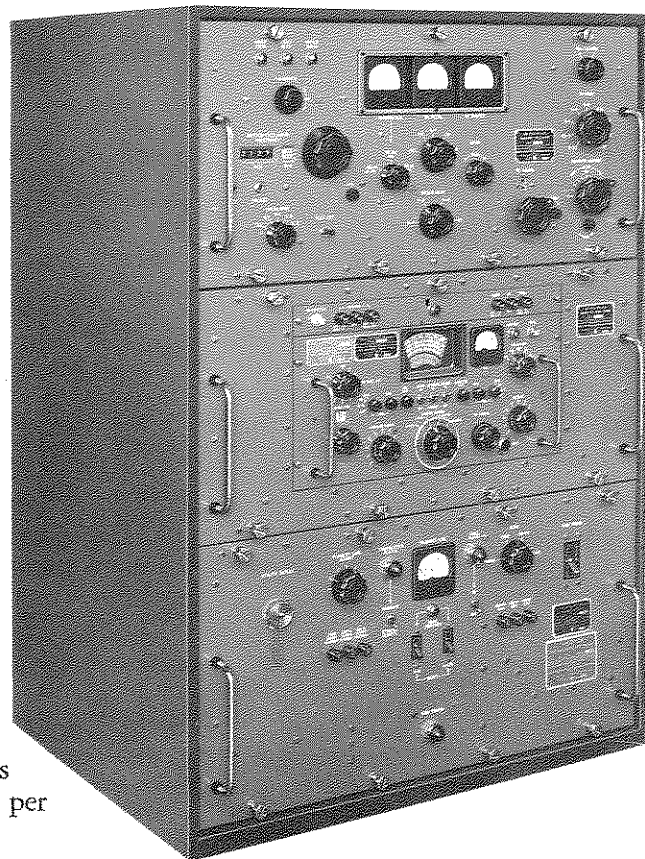
The Technical Materiel Corporation's GPT-750 series are a family of rugged single sideband and general purpose transmitters that offer a wide variety of capabilities for voice and data transmission requirements. These transmitters cover the frequency range of 2 to 32 mcs and carry a conservative rating of 750 watts PEP and 1000 watts average power output.

APPLICATION

- Ship-to-Shore
- Ship-to-Ship
- Shore-to-Ship
- Ground-to-Air
- Point-to-Point Service
- Coastal Telephone Service
- OCD Communication Service
- Inland Waterway Shipping Control
- Transportable Communication Facility
- Contingency Communication Service
- School Training and Experimental Services
- Laboratory Testing

FEATURES

- 2 to 32 mcs
- 750 watts PEP
- 750 watts Average AM
- 1000 watts, CW, FSK, and FAX
- Meets CCIR or U. S. Bandpass Requirements
- Crystal Controlled Stability of 1 part x 10^6 per day
- VFO Control
- Rugged Construction
- Shock Mountable



MODEL GPT-750F2

For nomenclature on our product line see Field Engineering Bulletin 4.

General Purpose Transmitters

DISCUSSION

This "work horse" transmitter series has received wide spread application in military and commercial service, and several models have received military nomenclature. Over 900 of these versatile transmitters are currently in military and commercial service throughout more than 20 nations under widely varying climatic conditions from the heat of the tropics to the severe cold of the DEW Line and Antarctic installations. The modular construction of this series of transmitters allows, by the simple insertion of one of its drawers, a change in its operating modes. Input and Output connections are easily accessible so that installation of this transmitter by inexperienced personnel in a minimum period of time is possible. 3 kilocycle and 6 kilocycle bandpass requirements of CCIR are met by the models available in this series. A chart showing the available models is on the rear page.

TECHNICAL SPECIFICATIONS

FREQUENCY RANGE:	2 to 32 mcs., bandswitched.
MODES OF OPERATION:	See Chart.
POWER OUTPUT:	1000 watts output, CW, FSK or FAX 750 watts output, AM 750 watts output PEP, SSB or ISB
MODULATION CHARACTERISTICS:	Capable of 100% sine wave plate modulation. (AM Model)
OUTPUT IMPEDANCE:	HN connector for 50 or 70 ohm coax provided. Transmitter will match any load from 30 to 1000 ohms at 0 degrees phase angle or any load from 50 to 700 ohms at ± 45 degrees phase angle. UHF fitting provided for RF monitor.
FREQUENCY STABILITY:	Less than .002% for 30 degree change in ambient using variable oscillator. 1 part in 10 to the sixth per day using oven controlled crystals.
FREQUENCY CONTROL:	Built-in high stability master oscillator plus provision for 2 temperature-controlled crystal positions and one non-temperature controlled crystal position. Ten crystal positions in the SBE, and three in the XFK (all oven-controlled).
TUNING:	All tuning and bandswitching from front panel (no plug-in components).
DISTORTION:	High level AM—less than 10%. SSB — signal/distortion ratio: 750 watts PEP 40 db below full PEP output. 500 watts PEP—45 db below full PEP output.
UNWANTED SIDEBAND REJECTION:	500 cycle, single tone, 60 db down from full PEP output.
SPURIOUS SIGNALS:	50 db down from full PEP output.

TMC Models GPT-750

NOISE LEVEL:	At least 60 db down from full PEP output.
CARRIER INSERTION:	0 to -55 db down from full PEP output.
HARMONIC SUPPRESSION:	2nd at least 40 db down from full PEP output. 3rd at least 50 db down from full PEP output.
AUDIO FREQUENCY RESPONSE:	± 1.5 db from 100 to 5000 cps. (high level AM). SBE-8: ± 1.5 db from 250 to 3040 CPS. SBE-9: ± 1.5 db from 250 to 7500 CPS. SBE-10: ± 1.5 db from 250 to 6080 CPS.
AUDIO INPUTS:	1. 600 ohms balanced, (SBE or RTM). 2. High impedance microphone with SBE or RTC. (Available as an accessory is a 12 volt 0.50 amp DC supply for energizing a carbon mike designed for use in a standard Navy remote phone system. TMC Part A-1504-12.)
HUM LEVEL:	-55 db from full PEP output.
HEAT DISSIPATION:	Approximately 2 kw.
T/R FUNCTION:	See accessory equipment.
M. O. BYPASS SWITCH:	A feature of the GPT-750()2 is the M. O. BY-PASS/NORMAL switch which permits continued operation of the M. O. Oven elements when the balance of the transmitter is in the POWER OFF condition.
VOICE-OPERATED RELAY:	Models with SBE have voice control with anti-trip features, adjustable gain and squelch.
METERING:	All critical circuits and output readings are metered on the front panel.
TEMPERATURE & HUMIDITY:	Designed to operate in any ambient temperature between the limits of 0 and 50° C. for any value of relative humidity up to 95%.
ALTITUDE:	10,000 ft.
COOLING:	Forced filtered air (2 separate blowers).
OVERLOAD PROTECTION AND SAFETY:	Overload relays protect against abnormal operating levels of final amplifier and safety interlocks provide personnel protection.
KEYING INFORMATION:	
XFK Frequency Shift	Linear to 1000 cps.
XFK Keying Sources	1. Polar or neutral positive. 2. Linear input—30,000 ohms impedance.
XFK Keying Speed	750 bauds (1000 WPM) maximum.
XFK Keying Impedance	Polar or neutral operation into 100,000 ohms may be bridged by external 1800 ohms loop resistance.
XFK Keying Bias	Not greater than 10% at 750 bauds.

TMC MODEL NUMBER	MILITARY NOMENCLATURE	STABILITY I PART IN	CAPABILITIES						COMPONENTS					SHIPPING DATA		
			SSB	ISB	AM	CW	MCW *	FSK	FAX	RTM-2 AM MODULATOR DRAWER	RTS-2 EXCITER DRAWER WITH SBE-8 250 TO 3040 HZ	RTS-2 EXCITER DRAWER WITH SBE-9 250 TO 8500 HZ	RTS-2 EXCITER DRAWER WITH SBE-10 250 TO 6080 HZ	RTX-2 FREQUENCY SHIFT KEYSER DRAWER WITH XPK	RTY-2 BLANK PANEL	WEIGHT (LBS)
GPT-750-A2						*								X	1190	66
GPT-750-B2					*	*	*		X						1415	81
GPT-750-C2					*	*	*	*					X		1404	81
GPT-750-F2 †	AN/URT-17()	10 ⁶	*	*	*	*	*				X				1425	81
GPT-750-G2 †	AN/URT-55()	10 ⁶	*	*	*	*	*					X			1425	81
GPT-750-H2		10 ⁶	*	*	*	*	*					X			1425	81

* USING EXTERNAL SOURCE KEYING TONE (AS PROVIDED BY TMC MODEL RTC, REMOTE CONTROL AMPLIFIER).

† GPT-750-F2 REPLACES GPT-750-D2.
† GPT-750-G2 REPLACES GPT-750-E2.

ISB BANDPASS

GPT-750-F2 250-3040 HZ
GPT-750-G2 250-8500 HZ
GPT-750-H2 250-6080 HZ



MODEL GPT-750B2



MODEL GPT-750C2

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