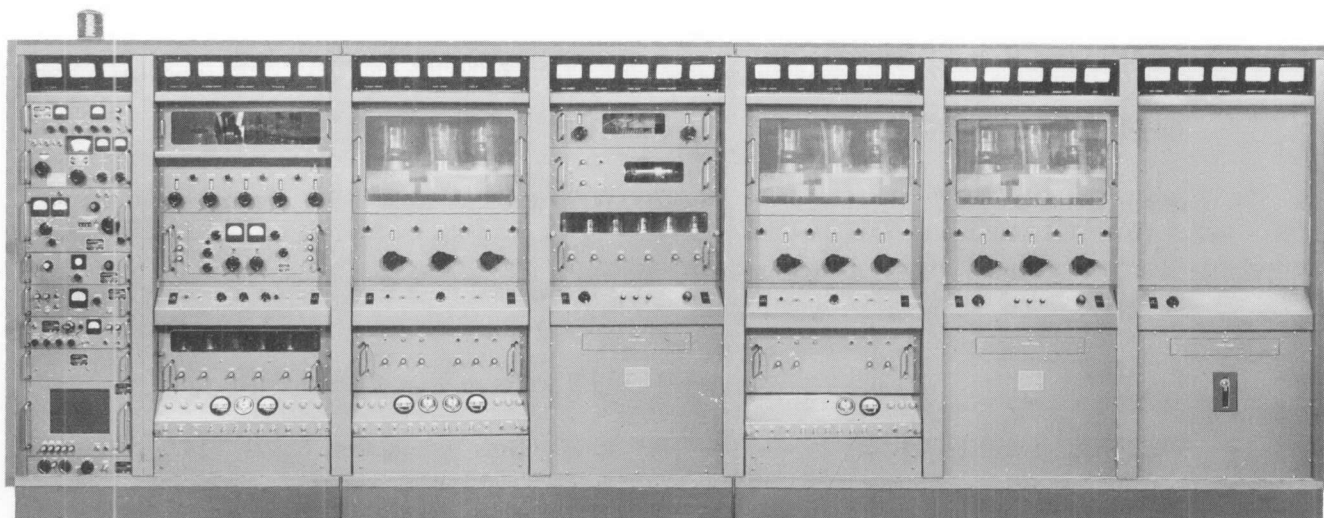


APR 20 1962



TECHNICAL BULLETIN NUMBER 1014

General Purpose Transmitter
TMC Model GPT-200K



TMC Model GPT-200K General Purpose Synthesized Transmitter provides SSB, ISB, AM, CW, FSK and FAX modes of operation in the frequency range of 2 to 28 megacycles.

Model GPT-200K is conservatively rated at 200,000 watts PEP, 100,000 watts average power outputs. Under conditions of a 64 tone voice frequency modulation, the GPT-200K will deliver approximately 500,000 watts PEP on a 20% duty cycle, with better than 35 db signal to distortion ratio, or 1,000,000 Watts PEP at 10% duty cycle.

The GPT-200K features synthesized frequency control with 100 cps incremental tuning throughout the tuning range, with stability and accuracy of 1 part in 10^8 for a 24 hour period. In the event of failure of the built-in standard, the exciter provides an emergency frequency stability of 1 part in 10^6 per day. Also, should low power transmission be required, or for emergency conditions, 40 kw, 10 kw, or 1 kw transmission capabilities are readily available. All amplifier stages are linear. The over-all minimum bandwidth of the GPT-200K is at least 20 kc between 3 db voltage points over the entire frequency range.

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The synthesizer of the GPT-200K may be "locked" to a station standard of very high stability if desired.

Front panel bandswitching and tuning reduces frequency change-over time to a minimum (no plug-in components or mechanical adjustments). Bandswitches are of the self-cleaning type. The modular design lends itself to ease of installation, maintenance, and repairs such as: drawers on tilting slides, front panel interlock circuit continuity indicators, blown fuse indicators, and bias and overload protection with automatic recycling and audio alarm.

TECHNICAL SPECIFICATIONS: Model GPT-200K

FREQUENCY RANGE:	2 to 28 megacycles bandswitched.
OPERATING MODES:	SSB, ISB, CW, AM, FSK and FAX.
POWER OUTPUT:	200,000 watts 2 tone PEP. Signal to distortion ratio at least 35 db. 100,000 watts 2 tone PEP. Signal to distortion ratio at least 40 db. 125,000 watts average CW or FSK.
OUTPUT IMPEDANCE:	50 or 70 ohms unbalanced 6 1/8" EIA Flange or 600 ohms balanced. Pi-L network will match a load with VSWR of 2:1 maximum.
STABILITY AND FREQUENCY CONTROL:	1. All radio frequency determining elements referenced to a built-in 1 mc standard. 2. Stability of 1 part in 10^8 per day for ambient temperature change of 15° C within the range of $0-50^{\circ}$ C.
TUNING:	All tuning and bandswitching controls are on the front panel (no-plug-in components or mechanical adjustments) Self-cleaning contacts on RF bandswitches.
DISTORTION PRODUCTS:	See Power Output.
UNWANTED SIDEBAND REJECTION:	500 cps single tone 60 db down from full PEP output.
SPURIOUS SIGNALS: (as defined by CCIR)	At least 60 db below full PEP output.
CARRIER INSERTION:	-55 db to full PEP output.

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HARMONIC SUPPRESSION:	All harmonics better than 65 db down from full PEP output. (not to exceed 50 milliwatts).
AUDIO RESPONSE:	CBE-1 Crystal lattice filters flat within ± 1.5 db 250 to 7500 cps. CBE-2 Crystal lattice filters flat within ± 1.5 db 250 to 3300 cps.
AUDIO INPUTS:	600 ohms balanced -20 to +10 dbm continuously adjustable to full output. An unbalanced input can also be applied.
HEAT DISSIPATION:	Maximum 200 kw.
SPECIAL FEATURES:	ALDC (Automatic Load and Drive Control) is provided to improve linearity, limit distortion, and deliver a relatively constant RF output level during high modulation peaks or load changes. Front panel control allows adjustment of the level at which the ALDC takes effect or switching off the ALDC, if desired.
METERING:	Large scale meters are mounted on tilted panels at the top of the units to accurately indicate operation of all critical circuits. These meters are externally illuminated for ease in reading.
ENVIRONMENTAL:	Designed to operate in any ambient temperature between the limits of 0 and 50° C. for any value of humidity up to 90%.
COOLING:	Filtered forced air cooling, semi-pressurized cabinet.
SAFETY FEATURES:	Overload and bias protection with automatic recycling and alarm. Safety interlocks are provided on all high voltage points.
NOISE:	Power supply ripple 55 db down from full PEP output. Other, 70 db down from full PEP output.
TIS-3 KEYING INFORMATION:	See TB #2025 (Old SSB 245B)

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PRIMARY POWER REQUIREMENTS:

Transformer Primary tapped for 190/200/210
220/240/250 volts AC, 50-60 cycles 3 phase.
Approx. 300 kw. Primary of transformer may be
connected for either DELTA or "Y" input.

INSTALLED WEIGHT:

COMPONENTS AND CONSTRUCTION:

All equipment manufactured in accordance with
JAN/MIL specifications wherever practicable.

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