

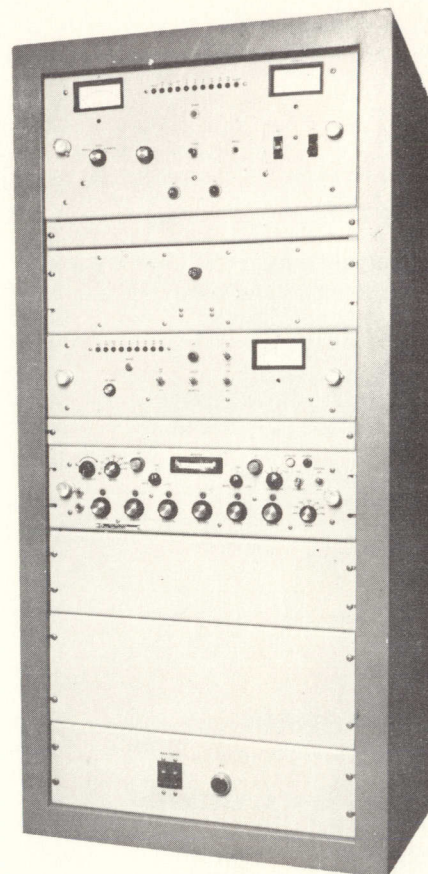


# General Purpose H.F. Transmitter Model GPT-1K

TECHNICAL BULLETIN 202-2119

- **1000 Watts PEP 2-26MHz**
- **Synthesized or Multi-Channel**
- **Full Protection Against Overload**
- **Totally Automated with Manual Override**
- **CW, AM, AME, USB, LSB, ISB, FSK, FAX**
- **Rugged, Modular Construction**
- **Compact and Light-weight**
- **Reliable, Solid-State Power Supplies**

The GPT-1K series of general purpose HF transmitter operate continuously at 1,000 watts PEP throughout the frequency range 2-26MHz. The equipment is well-suited for point-to-point communications and is specially designed for transportable stations. All standard operating modes are provided in the GPT-1K including CW, AM equivalent, single sideband, independent sideband, and optionally frequency shift teletype or facsimile. Two basic models are available: the multi-channel GPT-1K/E which provides up to ten pre-set channels, and the synthesized GPT-1K/J which provides full-frequency coverage in 100Hz steps. The transmitter tuning is completely automatic with manual "over-ride" of all operating controls built in to each unit. Remote control of the transmitter is optional using a SCR or TCR control system. Many other accessories are available to build upon the basic capability of the transmitter.



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The GPT-1K is manufactured as an integrated system of sub-modules. Each module is designed to perform a specific function in the transmitter and can be interchanged with other like units in the field. The exciter module provides the RF drive and requires no tuning or peaking once the operating frequency is selected by front panel control. This RF output in turn drives the intermediate and final amplifier stages to full output. The final amplifier delivers in excess of 1,000 watts to an unbalanced 50-ohm load and will operate into a 2-to-1 mismatch without damage. To operate properly, the transmitter requires only primary power, a suitable antenna system and an audio or keying input.

The GPT-1K circuits are solid-state except those handling high power in the final RF output stages. Maximum use is made of removeable assemblies that are securely fastened to the chassis yet easily removed for servicing. This type design simplifies troubleshooting and ensures that the equipment is continuously in service. The GPT-1K can be serviced completely from the front of the equipment. No access is required from the sides or rear. If space is limited, several transmitters can be installed next to each other without affecting performance or reducing capability.

**THE TECHNICAL MATERIEL CORPORATION**

## TECHNICAL SPECIFICATIONS GTP-1K

### OPERATING PARAMETERS

FREQUENCY RANGE  
FREQUENCY STABILITY  
MODES OF OPERATION  
POWER OUTPUT

2-30MHz multi-channel or synthesized in 100Hz increments.  
One part in 10<sup>6</sup> per day. Optional one part in 10<sup>8</sup> per day and higher.  
CW, AME, USB, or LSB. Optional MCW, AM, AFSK, FSK, FAX, 2ISB.  
1000 watts PEP (SSB). 400 watts average (CW/FSK) key down and locked 2-26MHz.  
26-30MHz at reduced power.  
50 ohms, unbalanced. Output network will match into a 2:1 load VSWR.  
Automatic with front-panel, manual over-ride of all operating controls.

OUTPUT IMPEDANCE  
TUNING

### AUDIO PARAMETERS

SIDEBAND RESPONSE  
INPUTS

250-3040Hz CCIR  $\pm$  1.5db. Optional 250-6080Hz CCIR; equalized filters; others.  
Audio: Two independent 600 ohm channels. -20 to + 5dbm.  
Mike: Front panel jack for low-level dynamic input. -55db into 47,000 ohms.  
FSK: Rear panel connector of 75 baud or higher.  $\pm$  42.5/85/170/425Hz shift; others.  
Input 20/60ma, 50 or 100 volts, dry contact, +/- to ground.  
FAX: Rear panel connector for up to 800Hz linear shift. Input + 1 to + 10vdc.  
Front panel "fader" controls ease selection of line or mike inputs for USB or LSB.

CONTROL

### RF PARAMETERS

SIDEBAND REJECTION  
SPURIOUS SIGNALS  
DISTORTION  
HUM and NOISE  
CARRIER SUPPRESSION  
HARMONIC SUPPRESSION

500Hz tone is minimum 50db below PEP in the unwanted sideband.  
Minimum 50db below PEP.  
Minimum 30db below full PEP output..  
Minimum 50db below PEP at least 120Hz removed from carrier.  
Selectable at -6/-20/-30/-55db (adjustable).  
Minimum 45db below PEP without accessory TFP output filter.

### SPECIAL FEATURES

REMOTE CONTROL

Full remote control of frequency, mode, carrier, power output, antenna selection, antenna direction, and keying is available with SCR or TCR control systems.

METERING

Front panel meters and indicators provide continuous status display of transmitter operation to the module level.

SAFETY

Each transmitter module is fully high-voltage interlocked with fuse, overload, and audible alarm protection. Protective plates — labelled in red — are used throughout.

ALDC

Automatic load and drive control is included to improve linearity, limit distortion, and provide a relatively constant output during input peaks or load changes.

CONSTRUCTION

Completely solid-state, including power supply, up to the final RF output stages.  
US/Military Standard components are used whenever practicable.

### ENVIRONMENTAL and INSTALLATION

COOLING  
OPERATING CONDITIONS  
STORAGE CONDITIONS  
PRIMARY POWER  
HEAT DISSIPATION  
SIZE and WEIGHT

Filtered, forced air in semi-pressurized cabinet. Nominal 200cfm air flow.  
0° to 50°C. Up to 90% relative humidity at MSL.  
-30° to + 75°C. Up to 90% relative humidity at MSL.  
115/230V/AC, 50/60Hz. Single-phase. Nominal 1200 watts.  
Nominal 600 watts.  
24.5" (62.2 cm) high x 23" (58.4 cm) wide x 26" (66.0 cm) deep. 356 pounds/162Kg.  
Size and weight varies slightly with accessories selected.

SHIPPING DATA

Commercial packing for U.S. shipment. Special packing available at additional cost.  
Two (2) containers. Largest 54" x 27" x 34". Weight/cube — 480 lbs./40 cu. ft.

LOOSE ITEMS

Technical manual (1) and mating RF/signal connectors.

### ORDERING INFORMATION

MODELS

GPT-1K/E Multi-channel 1KW HF/SSB Transmitter.  
GPTR-1K/E Model GPT-1K/E with remote control interface circuits.  
GPT-1K/J Synthesized 1KW HF/SSB Transmitter.  
GPTR-1K/J Model GPT-1K/J with remote control interface circuits.

**ACCESSORY PRODUCTS** are described in sections 4-9 of the General Catalog and include RF/antenna, terminal, data, connector and power equipment. **TECHNICAL SERVICES** in design, engineering, training, and related areas are described in section 10. **OPTIONS** are listed after each TMC product in part A of the Price List.

*Technical Specifications Are Subject to Change Without Notice*

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