

GENERAL PURPOSE SINGLE CHANNEL HF TRANSMITTER, 500 WATTS PEP

**GPT-500D5**  
**GPT-500YA**



The GPT-500D5 and GPT-500YA are conservatively rated 500 watt sideband transmitters, operating within the frequency range of 2 to 30 MHz. Designed around an extremely versatile 500-watt linear amplifier, the transmitters offer CW, sideband, and compatible AM capability in one channel. The GPT-500YA is used extensively by the operating companies of the North American telephone system for many coastal harbor nets now in service. When working in this system, the GPT-500YA is used with its companion receive system: the Codan-operated COR-4B described in Technical Bulletin 3019B.

The compact, rugged construction and reliable, solid state design of the GPT-500 makes it an excellent choice for land mobile, shipboard, or fixed station installations. With the wide environmental operating range and the capability of remote keying, the transmitter can be operated from a control console located many miles from the unattended equipment site.

The GPT-500 offers overload, fuse, and interlock protection. An automatic load and drive control (ALDC) network prevents distortion due to overdriving the transmitter on voice peaks. Additional strength and protection is afforded by the optional reinforced fiberglass cases designated TOC-7 and TOC-8.

The GPT-500YA is type accepted by the FCC under Part 81 and is type approved by the Department of Transport in Canada.

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Supersedes 1008



THE TECHNICAL MATERIEL CORPORATION

AND SUBSIDIARIES

Printed in U.S.A.

## TECHNICAL SPECIFICATIONS

### FREQUENCY INFORMATION

- Range**  
2 to 30 MHz; Bandswitched
- Stability**  
+/-50 Hz max deviation, -30 to +50°C  
+/-10 Hz max deviation in 2 to 4 MHz range
- Control**  
Plug-in RF modules pre-tuned to frequency

### OPERATING PARAMETERS

- Modes**  
CW(A1); MCW(A2H); AME(A3H); USB(A3A)  
OPTIONAL: USB/LSB Selectable A3J)
- Power Output**  
500 Watts PEP  
350 Watts Average, key down CW
- Output Impedance**  
Matches unbalanced load: 30-1000 ohms at zero phase angle or any load: 50-700 ohms at +/-45° phase angle. With LPFA-1K RF filter, impedance is 50 ohms.
- Carrier Suppression**  
Pre-set at -50, -20 and -6db below PEP by front panel mode select switch.
- VSWR**  
Maximum 2:1 without degrading operation
- Tuning**  
Pre-set to operating frequency.
- ALDC**  
Automatic Load and Drive Control  
Improves linearity, limits distortion, and maintains constant output.
- Metering**  
Front panel multi-meter provides indication of operation of primary critical circuits.
- Safety Features**  
Full interlock, fuse and overload protection
- Construction**  
Solid state up to the final tubes in the power amplifier output stage.
- Loose Items**  
Mating RF Connectors/All Cabling  
Two Copies Operating Instructions

### AUDIO

- Sideband Response**  
300-3000 Hz, +/-2 db maximum  
Additional bandwidths available on request.
- Inputs**  
600-ohm channel, balanced. Full power output with -20 to +0dbm input.  
High or low impedance microphone.
- Voice Keying**  
Voice-operated relay can be provided with VOX and anti-VOX controls.

### CHARACTERISTICS

- Spurious**  
Min 50db below full PEP output
- Noise**  
Min 40db below full PEP output
- Harmonic Suppression**  
Second Harmonics  
Min 40db below full PEP output  
Third and Higher Harmonics  
Min 50db below full PEP output  
RF filters are available for additional rejection
- Unwanted Sideband Rejection**  
Min 50db rejection referenced to full PEP
- Intermodulation**  
Distortion products are at least 40db below either tone of a standard two tone test.

### ENVIRONMENTAL AND INSTALLATION

- Operating Conditions**  
0 to +50°C; Up to 95% relative humidity.
- Cooling**  
High capacity, filtered forced air.
- Primary Power**  
115/230 VAC, 50/60 Hz, single phase  
Approximately 1150 watts.
- Size and Weight**  
24 1/4" high X 20 1/2" wide X 19 1/4" deep  
CAB-30 is included (WE relay rack)  
Approximately 230 lbs.

### OPTIONAL ACCESSORIES

#### Model ATS-2A Antenna Tuning System

Technical Bulletin 2053  
Provides tuning of transmitter into a 35-foot vertical transmitting antenna.

#### Model TIS-3D Audio Tone Keyer

Enables A7J (FSK/FAX) operation eliminating use of carrier normally suppressed in SSB mode  
Technical Bulletin 2025A

#### Model DAC-10 Dipole Antenna Coupler

Technical Bulletin 2052  
Used for single or fan dipole antenna systems.

#### Model LPFA-1K Low Pass RF Filter

Technical Bulletin 2045  
Provides an additional 25db rejection of unwanted RF energy at 1 MHz interval cutoff frequencies.

#### Model PAL-350 Linear Amplifier

Technical Bulletin 2035-3  
Used as power amplifier in the GPT-350 series; provides 350 watts PEP output.

#### Model VTA-2 Vertical Transmitting Antenna

Technical Bulletin 2060  
Used with ATS-2A tuning system.

#### KIT GPT-500YA

Converts Model GPT-500D5 to the Model GPT-500YA and provides a remote control capability for mode select, carrier level, and power off/output level.



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