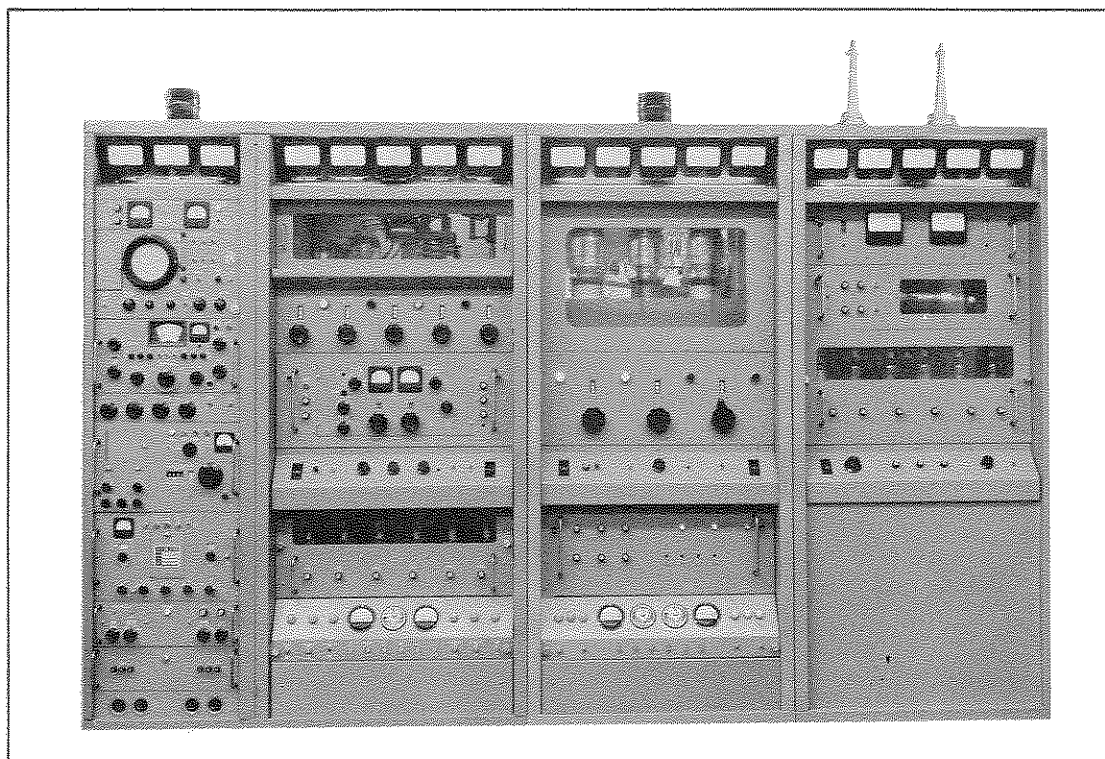
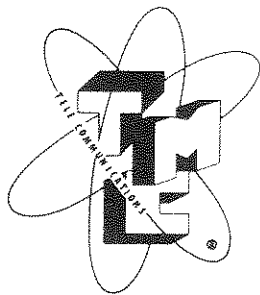


SALES SERVICE BULLETIN NO. 206C

Model GPT-40K Radio Transmitter
AN/FRT-40 Transmitting Set, Radio



PH-982

TMC Model GPT-40K (AN/FRT-40) Radio Transmitter

The TMC Model GPT-40K (AN/FRT-40), Radio Transmitter, is a conservatively rated general purpose transmitter capable of providing 40,000 watts PEP throughout the frequency range of 4 to 28 megacycles.

All amplifier stages are linear and the 2nd IPA stage uses a ceramic type tube for increased efficiency while the final tube is a 6697, protected by a hydrogen thyatron crowbar. Although designed primarily for single sideband service, the transmitter may, due to its large power reserve and versatility, be used for many modes of operation as listed below:

1. CW (keyed carrier).
2. Frequency shift telegraphy and facsimile.
3. Single sideband suppressed carrier.
4. Double sideband suppressed carrier. (same intelligence.)
5. Independent sideband suppressed carrier. (seperate intelligence).
6. Single or double sideband AM or MCW.

The Model GPT-40K is a completely self-contained transmitter, including all power supply units and ventilating equipment. The components are housed in four modular assemblies occupying only 40 square feet of floor space. No external assemblies are required.

The first two modules of the 40K transmitter are the TMC Model GPT-10K (AN/FRT-39) Radio Transmitter, which has had wide acceptance. The remaining two modules contain the final amplifier section, the power supply section, the antenna tuner section and control circuits.

As in the Model GPT-10K, the Model GPT-40K exciter section provides a Spectrum Analyzer, a two tone generator and an extremely stable oscillator. These units in conjunction with a specially designed coaxial switch panel permit immediate monitoring and testing of all vital operating points.

To provide for complete flexibility in operation, the 1 Kw and 10 Kw outputs are readily available for reduced power or emergency operation.

ALDC (automatic load and drive control) and inverse feedback are used to improve linearity and suppress unwanted transmission products. Frequency changes are accomplished in a minimum period due to complete bandswitching throughout.

The Model GPT-40K is available with or without synthesizer control.

TECHNICAL SPECIFICATIONS:

FREQUENCY RANGE:	4 to 28 megacycles, bandswitched.
OUTPUT POWER:	40,000 watts, 2 tone PEP, 35 db signal to distortion ratio. 20,000 watts, 2 tone PEP, 40 db signal to distortion ratio. 25,000 watts, CW or FS.
OPERATING MODES:	CW, MCW, SSB, ISB, DSB, FS, FAX.
OUTPUT IMPEDANCE:	Nominally 72 ohms unbalanced, 600 ohms balanced, with a 2/1 VSWR maximum.
TUNING:	All tuning and bandswitching controls are on the front panels. (No plug-in components).
STABILITY:	VOX: Better than 20 PPM for 30 degree change in ambient temperature. SBE: Crystal controlled. 1 part in 10^6 . Synthesizer control available. 1 part in 10^8 .
FREQUENCY CONTROL:	Continuously tuneable, direct reading Variable Frequency Oscillator (Model VOX). 10 oven controlled crystal positions in the Sideband Exciter (Model SBE), and 3 oven controlled crystal positions in the Frequency Shift Exciter (Model XFK).
UNWANTED SIDEBAND REJECTION:	1,000 cycle single tone, 60 db down.
HARMONIC SUPPRESSION:	Second harmonic at least 50 db from PEP output. Third harmonic at least 65 db from PEP output.
CARRIER INSERTION:	-55 db to full output.
ALDC:	An automatic load and drive control is provided to

limit distortion during high drive peaks or load changes.

AUDIO INPUTS: 600 ohms balanced, -20 +10 dbm continuously adjustable, for full RF output.

AUDIO RESPONSE: (each sideband)

1. Flat within ± 1.5 db, 350 to 3,300. cps. *
2. Flat within ± 1.5 db, 350 to 7,500 cps. *

 * Depending upon the Model SBE ordered.

METERING: Large size illuminated meters accurately indicate operation of all circuits.

PRIMARY POWER REQUIREMENTS: 190/200/210/220/230/240/250 volts AC, 50 - 60 cycles, three phase. Approximately 60 Kw.

SAFETY: Overload and bias protection with automatic recycling and alarm.

Safety interlocks are used throughout the unit to protect personnel.

COOLING: Filtered forced air cooling, semi-pressurized cabinet.

TEMPERATURE AND HUMIDITY: Designed to operate in any ambient temperature between the limits of 0 and 50 degrees C with any value of relative humidity up to 90%.

SIZE: 10-1/2 feet wide x 3 feet deep x 7 feet high.

WEIGHT: Approximately 7000 pounds.

COMPONENTS AND CONSTRUCTION: Equipment is manufactured in accordance with JAN/MIL specifications wherever practicable.

TUBE COMPLIMENT: This is a tube compliment for the basic Model GPT-40K which contains all test units and exciter units necessary for operation in the modes outlined above.

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|----------------|--------------|
| 1 ea. CH-1095 | 3 ea. 6BE6 |
| 1 ea. PL172 | 2 ea. 6BH6 |
| 10 ea. OA2 | 1 ea. 6C6 |
| 2 ea. OB2 | 3 ea. 6CL6 |
| 1 ea. 2E26 | 1 ea. 6J6 |
| 1 ea. 4CX5000A | 6 ea. 6U8 |
| 1 ea. 5ADP7 | 2 ea. 6U8A |
| 1 ea. 5BE6 | 5 ea. 6X4 |
| 4 ea. 5R4 | 2 ea. 6146 |
| 1 ea. 5U4G | 1 ea. 6336 |
| 1 ea. 5V4G | 1 ea. 6697 |
| 1 ea. 5Y3GT | 6 ea. 6895 |
| 2 ea. 5651 | 6 ea. 872A |
| 5 ea. 6AB4 | 1 ea. 12AL5 |
| 4 ea. 6AH6 | 12 ea. 12AT7 |
| 1 ea. 6AL5 | 17 ea. 12AU7 |
| 6 ea. 6AQ5 | 1 ea. 12AX7 |
| 1 ea. 6AS7G | 1 ea. 12BE6 |
| 2 ea. 6AU6 | |

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