



**Model 1700T1G2z5,
M1 through M13
1700 Watts CW
1GHz–2.5GHz**

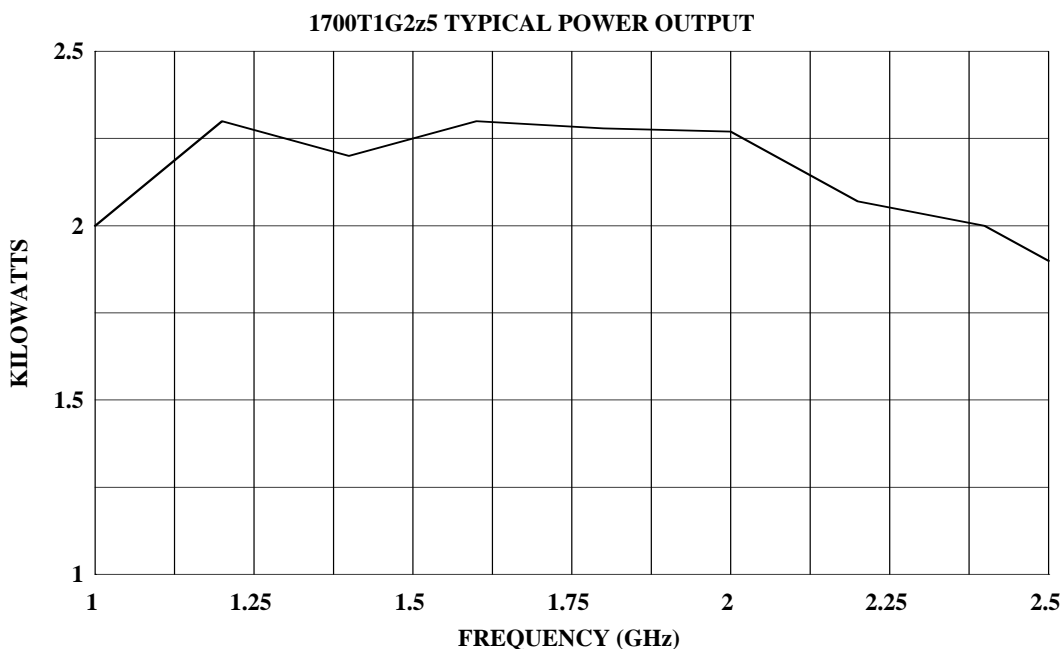
The Model 1700T1G2z5 is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier designed for applications where instantaneous bandwidth, high gain and high power output are required. Reliable TWT subsystems provide a conservative 1700 watts minimum at the amplifier output connector over most of the frequency range. Stated power specifications are at the fundamental frequency.

The amplifier's front panel digital display shows forward and reflected output plus extensive system status information accessed through a series of menus via soft keys. Status indicators include power on, warm-up, standby, operate, faults, excess reflected power warning and remote. Standard features include a built-in IEEE-488 (GPIB) interface, 0dBm input, VSWR protection, gain control, RF output sample ports, plus monitoring of TWT helix current, cathode voltage, collector voltage, heater current, heater voltage, baseplate temperature and cabinet temperature. Modular design of the power supply and RF components allow for easy access and repair. Use of a switching mode power supply results in significant weight reduction.

The rated power is developed by efficiently power combining the outputs from two 1000 watts (nominal) microwave tubes that are factory matched in gain and phase to offer moderate harmonic levels without added filters. Amplifier includes wheels, leveling feet and lifting hooks.

The Model 1700T1G2z5 provides readily available RF power for a variety of applications in Test and Measurement, (including EMC RF susceptibility testing), Industrial and University Research and Development, and Service applications.

Refer to the Model Configurations for package, prime power selection, and special features.



SPECIFICATIONS, MODEL 1700T1G2z5

POWER (fundamental), CW, @ OUTPUT CONNECTOR

Nominal 2000 watts
Minimum 1700 watts

FLATNESS..... ± 15 dB maximum, ± 8 dB maximum at rated power

FREQUENCY RESPONSE 1 – 2.5 GHz instantaneously

INPUT FOR RATED OUTPUT 1.0 milliwatt maximum

GAIN (at maximum setting) 62 dB minimum

GAIN ADJUSTMENT (continuous range)..... 35 dB minimum

INPUT IMPEDANCE..... 50 ohms, VSWR 2.0:1 maximum

OUTPUT IMPEDANCE 50 ohms, VSWR 2.5:1 typical

MISMATCH TOLERANCE..... Output power foldback protection at reflected power exceeding 400 watts. Will operate without damage or oscillation with any magnitude and phase of source and load impedance. May oscillate with unshielded open due to coupling to input. Should not be tested with connector off.

MODULATION CAPABILITY..... Will faithfully reproduce AM, FM, or pulse modulation appearing on the input signal. AM peak envelope power limited to specified power.

NOISE POWER DENSITY Minus 70 dBm/Hz (maximum)
Minus 80 dBm/Hz (typical)

HARMONIC DISTORTION..... Minus 15dBc maximum, Minus 20dBc typical

PRIMARY POWER See Model Configuration

CONNECTORS

RF input Type N female on rear panel
RF output Type DIN 7-16 on rear panel
RF output sample ports (forward and reflected) Type N female on rear panel
GPIB..... IEEE-488 female on rear panel
Interlock DB-15 female on rear panel

COOLING..... Forced air (self contained fans), air entry and exit in rear.

WEIGHT (approximate) 273 kg (600 lb)

SIZE (WxHxD)..... 56 x 160 x 82.3 cm, 22.1 x 63 x 32.4 in

MODEL CONFIGURATIONS, 1700T1G2z5

- E Package Alternatives.** May select an alternative from the following [E1C or (E1C and E2S) and/or E3H]:
- E1C Cabinet:** Without outer enclosure, supplied in 19 inch rack mountable sub-chassis for mounting either:
- A) In not more than two side by side rack spaces, with individual rack space not exceeding 18U or
- B) In one 30 U maximum rack space.
- Total size when stacked 48 x 134 (30 U maximum) x 79 cm, 19 x 52.5 (30 U maximum) x 31 in. Total weight approximately 182 kg, 400 lbs
- E2S Slides:** Slides installed on each chassis. Add 13kg, 28 lbs, to weight of E1C
- E3H Handles:** Front pull handles installed on each chassis.
- E4SC Shielded Cabinet:** Mounted in EMC-shielded cabinet providing >40dB isolation. Cabinet dimensions: 56 x 160 x 97.5 cm, 22.1 x 63 x 38.4 in. *NOTE: No penetrations through shielded cabinet. AC & RF penetrations to be made by end-user.*
- P Prime Power:** Must select one primary power from the following [P1 or P2]
- P1 208V, US:** 208 ± 10% VAC, 3 phase, delta (4 wire) 50/60 Hz, 14 KVA maximum
- P2 400V, Europe:** 360-435 VAC, 3 phase, WYE (5 wire) 50/60 Hz, 14 KVA maximum. CE marked to comply with EMC European Directive 89/336/EEC for operation inside a shielded room.
- S Special Features:** May select a special feature (extra cost) from the following [S1F and/or S2R and/or S3C and/or S4C and/or S5L]
- S1F Front panel connectors:** Input, forward and reflected power sample ports on front panel, not on rear panel.
- S2R Remote interface:** RS-232 serial, DB-9 female connector on rear panel. Replaces built-in IEEE-488 GPIB interface.
- S3C Connector:** RF output connector 1 5/8 EIA on rear panel.
- S4C Covers:** RF connectors have protective metal covers
- S5L Leveling:** External automatic level control (ALC) via use of external leveling input port (type BNC female connector on rear panel, 0 to +5 Volts nominal input voltage range for use with detectors with positive output only and with other positive voltage sources.) to control TWTA Gain to set output power level. External leveling mode is selected via menu, and offers a time constant of 0.5 seconds nominal. Level and Loop Gain adjustments are user selectable via the front panel knob. Control and limited status are available via GPIB interface.

Model Number	Features		
	E	P	S
1700T1G2z5	Base model	P1	–
M1	E1C	P1	–
M2	E3H	P1	–
M3	E1C & E3H	P1	–
M4	E1C & E2S	P1	–
M5	E1C & E2S & E3H	P1	–
M6	–	P2	–
M7	E1C	P2	–
M8	E3H	P2	–
M9	E1C & E3H	P2	–
M10	E1C & E2S	P2	–
M11	E1C & E2S & E3H	P2	–
M12	–	P1	S5L
M13	E4SC	P1	S3C

Model number example: Model 1700T1G2z5M2 would have option E3H, front pull handles, installed and prime power 208 VAC.