



Model 500T2z5G7z5

M1-M17

500 Watts CW

2.5GHz-7.5GHz

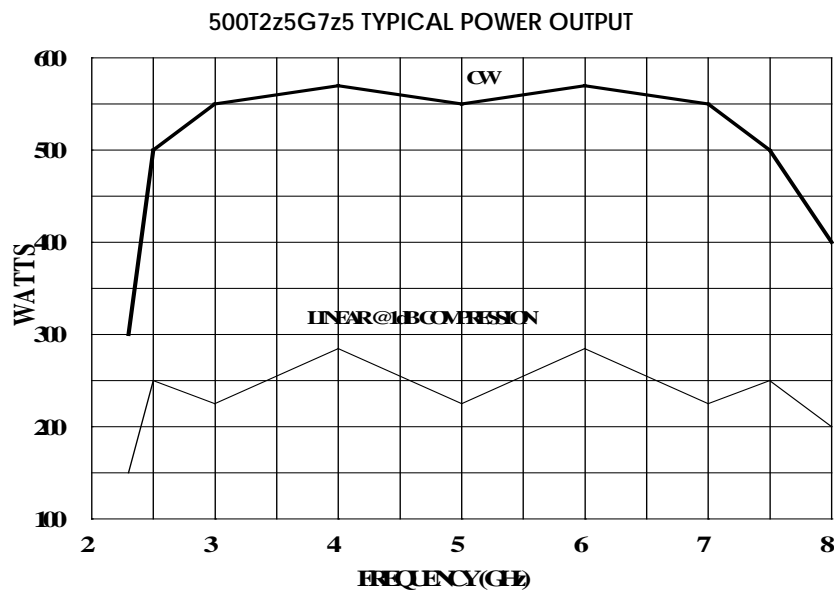
The Model 500T2z5G7z5 is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier designed for applications where instantaneous bandwidth and high gain are required. A reliable TWT provides a conservative 500 watts minimum at the amplifier output connector. Stated power specifications are at 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 port, auto sleep, 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.

Housed in a stylish contemporary cabinet, this unit is designed for benchtop use, but can be removed from the cabinet for rack mounting. The Model 500T2z5G7z5 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.

See model configuration for package alternatives, alternate primary power, and special features.

The export classification for this equipment is EAR99. These commodities, technology or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.



SPECIFICATIONS, MODEL 500T2z5G7z5

POWER (FUNDAMENTAL), CW, @ OUTPUT CONNECTOR

Nominal.....	541 watts
Minimum	500 watts
Linear @ 1 dB Compression	125 watts minimum

FLATNESS±8 dB maximum, equalized for ±5 dB maximum at rated power

FREQUENCY RESPONSE2.5–7.5 GHz instantaneously

INPUT FOR RATED OUTPUT1.0 milliwatt maximum

GAIN (AT MAXIMUM SETTING)57 dB minimum

GAIN ADJUSTMENT (CONTINUOUS RANGE)35 dB minimum

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

OUTPUT IMPEDANCE50 ohms, VSWR 2.5:1 typical

MISMATCH TOLERANCEOutput power foldback protection at reflected power exceeding 100 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 CAPABILITYWill faithfully reproduce AM, FM, or pulse modulation appearing on the input signal. AM peak envelope power limited to specified power.

NOISE POWER DENSITYMinus 85 dBm/Hz (maximum)
Minus 95 dBm/Hz (typical)

HARMONIC DISTORTIONMinus 3dBc maximum, Minus 3.5dBc typical

PRIMARY POWER208 VAC ± 10% three phase 50/60 Hz 3.5 KVA maximum

CONNECTORS

RF input.....	Type N female on rear panel. See S7C option, if applicable.
RF output.....	7-16 DIN female on rear panel
RF output sample port.....	Type N female on rear panel. See S7C option, if applicable.
GPIO.....	IEEE-488 (f) on rear panel. See S7C option, if applicable.
Interlock.....	DB-15 (f) on rear panel. See S7C option, if applicable.

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

SIZE (W x H x D)48.26 x 25.4 x 73.7 cm, 19 x 10 x 29 in

WEIGHT (approximate)55 kg, 120 lbs.

EXPORT CLASSIFICATION.....EAR99

MODEL CONFIGURATIONS MODEL 500T2z5G7z5

- E** **Package Alternatives.** May select an alternative from the following [E1C or (E1C and E2S) and/or E3H]:
- E1C** **Cabinet:** Without outer enclosure, 48.3 x 22.2(5U) x 66.1 cm, 19 x 8.75(5U) x 27 in. Subtract approximately 14 kg, 30 lbs, for removal of outer enclosure.
- E2S** **Slides:** slides installed, add approximately 2 kg, 5 lbs.
- E3H** **Handles:** Front pull handles installed.
- P** **Primary Power.** May select alternate primary power from the following [P1]
- P1** 190-260 VAC single phase 50/60 Hz, 3.5 KVA maximum
- S** **Special Features:** May select a special feature (extra cost) [S1R and/or S2V]
- S1R** **Reflected sample port on rear panel,** type N female connector. Forward and reflected sample port calibration data supplied on disk in Excel format at 51 points, evenly spaced over the specified frequency range.
- S2V** **Video pulse capability,** to offer blanking capability to use for noise quieting or primary power reduction.
VIDEO PULSE CAPABILITY
 -Pulse Width: up to CW
 -Pulse Rate (PRF): up to 100 kHz
 -RF Rise and Fall: 30 ns max (10% to 90%)
 -Delay: 300 ns max from pulse input to RF90%
 -Pulse width distortion: ± 30 ns max (50% points of output pulse width compared to 50% points of input pulse width)
NOISE POWER DENSITY
 -(pulse off): Minus 140 dBm/Hz (typical)
CONNECTOR
 -Video: BNC-female on rear panel
- S3P** Power minimum 350 watts from 7.5 GHz to 8.0 GHz (400 watts typical).
- S5F** Shipped without an outer cabinet and supplied with an external filter assembly. Feature specified at output of filter assembly for 100 watts minimum at 1 dB compression and harmonic distortion minus 20 dBc maximum. Filter assembly intended to mount below TWTA in a rack, and is within the depth of the TWTA. It includes switched harmonic filters mounted behind a rack panel, that allow user to select an appropriate filter band, high or low, via this TWTA. Filter assembly is 3U. Rear panel contains user accessible connectors for TWTA input, filtered output, forward and reflected coupled ports, offering connector types as specified for TWTA. Interconnecting cables are included. Add 18 kg (40 lbs). Total package is two sub-assemblies: 48.3 x 22.2 (5U) x 66.1 cm, 19 x 8.75 (5U) x 26 in and S6F package: 48.3 x 13.3 (3U) x 66.1 cm; 19 x 5.25 (3U) x 26 in.
- S6F** Same as S5F but with TWTA input, filtered output and forward and reflected coupled ports on front of subassembly.
- S7C** RF output on rear panel with all other connectors on front panel. Interlock connector BNC. RF output sample port 60dB coupling factor.

Model Number	Features		
	E	P	S
500T2z5G7z5	Base model	-	-
M1	E1C	-	-
M2	E3H	-	-
M3	E1C & E3H	-	-
M4	E1C & E2S	-	-
M5	E1C & E2S & E3H	-	-
M6	-	P1	-
M7	E1C	P1	-
M8	E1C & E2S & E3H	P1	-
M9	-	-	S1R
M10	-	P1	S1R
M11	E1C	P1	S1R
M12	-	P1	S2V
M13	E1C	-	S3P, S6F
M14	E1C, E2S	-	S5F
M15	-	-	S3P
M16	E1C & E2S & E3H	P1	S1R
M17	E1C & E3H	P1	S7C

Model number example: Model 500T2z5G7z5M2 would have option E3H front handles installed.