

500T2G8

- M2–M98
- 500 Watts CW
- 2.5GHz–7.5GHz

Features

The Model 500T2G8 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.

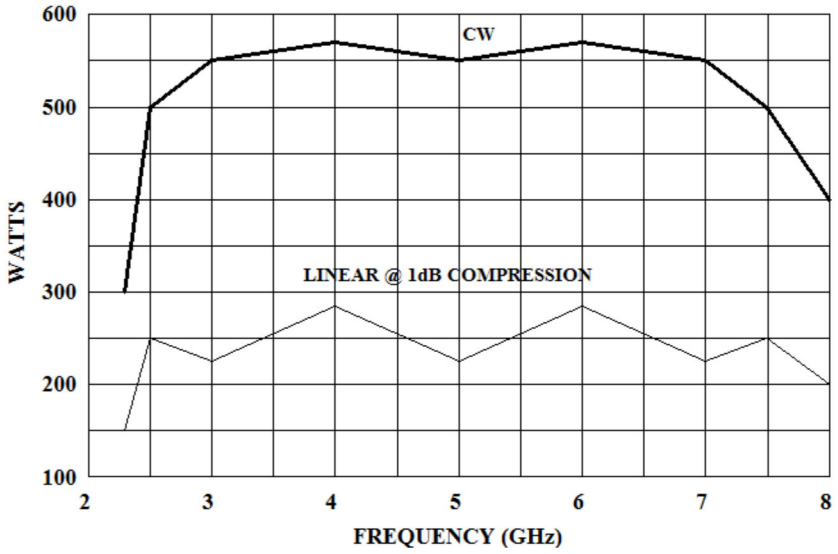
The amplifier's front panel digital display shows forward and reflected output plus extensive system status information accessed through a series of menus via soft keys. Status indicators include power on, warm-up, standby, operate, faults, excess reflected power warning and remote. Standard features 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 500T2G8 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 primary power, alternative packaging 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.

500T2G8 TYPICAL POWER OUTPUT



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Specifications

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 RESPONSE: 2.5–7.5 GHz instantaneously

INPUT FOR RATED OUTPUT: 1.0 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 IMPEDANCE: 50 ohms, VSWR 2.5:1 typical

MISMATCH TOLERANCE: Output 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 CAPABLITY: 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 85 dBm/Hz (maximum); Minus 95 dBm/Hz (typical)

HARMONIC DISTORTION: Minus 3dBc maximum; Minus 3.5dBc typical

CONNECTORS:

RF input:	Type N female, rear
RF output:	7-16 DIN female, rear
RF output sample port:	Type N female, rear
GPIB:	IEEE–488 (f), rear
Interlock:	DB-15 (f), rear

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

WEIGHT AND SIZE: See Model Configurations

EXPORT CLASSIFICATION: EAR99

Model Configurations

E Must select one enclosure type from the following [E1 or E2 or E2S]:

E1 removable outer enclosure, size 20 x 10 x 27 in., 50.8 x 25.4 x 68.6 cm; add 14 kg (30 lbs) to weight of E2.

E2 without outer enclosure, size 20 x 8.75 x 26 in, 50.8 x 22.2 x 66.1 cm; weight 41 kg (90 lbs).

E2S enclosure removed for rack mounting; slides and handles installed, size 20 x 8.75 x 26 in, 50.8 x 22.2 x 66.1 cm; add 2 kg (5 lbs) to weight of E2.

P Must select one primary power from the following [P1 or P2]

P1 208 VAC ± 10% three phase 50/60 Hz 3.5 KVA maximum

P2 190-260 VAC single phase 50/60 Hz 3.5 KVA maximum

S May select a special feature (extra cost) from the following [{S3V or (S1R and/or S4P and/or S5V}):

S1R Reflected power port, type N female connector on rear panel. Forward and reflected sample port calibration data supplied on disk in Excel format at 51 points, evenly spaced over specified frequency response.

S3V Shipped without outer cabinet, flatness ± 3 dB max at rated power, and a video pulse capability to offer blanking capability to use for noise quieting. See Video Pulse Capability table below.

S4P Power minimum 650 watts from 3.0 GHz to 3.6 GHz.

S5V Video pulse capability to offer blanking capability to use for noise quieting. See Video Pulse Capability table below.

S6F RF Input connector on front panel

S5V & S3V - VIDEO PULSE CAPABILITY

Pulse Width:	0.05 microseconds min
Pulse Rate (PRF):	100 kHz max
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%
Noise Power Density, (pulse off):	Minus 140 dBm/Hz (typical)
Connector, Video:	BNC-female on rear panel

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Model Configurations

Model	Features			Model	Features			Model	Features		
	E	P	S		E	P	S		E	P	S
500T2G8	E1	P1	-	M32	E1	P1	S1R & S4P	M77	E1	P2	S4P & S5V
M2	E2	P1	-	M33	E2	P1	S1R & S4P	M78	E2	P2	S4P & S5V
M3	E1	P2	-	M34	E2S	P1	S1R & S4P	M79	E2S	P2	S4P & S5V
M4	E2	P2	-	M35	E1	P2	S1R & S4P	M80	E1	P1	S1R & S4P & S5V
M5	E2S	P1	-	M36	E2	P2	S1R & S4P	M81	E2	P1	S1R & S4P & S5V
M6	E2S	P2	-	M37	E2S	P2	S1R & S4P	M82	E2S	P1	S1R & S4P & S5V
M7	E2	P2	S3V	M50	E1	P1	S5V	M83	E1	P2	S1R & S4P & S5V
M8	E2S	P2	S3V	M51	E2	P1	S5V	M84	E2	P2	S1R & S4P & S5V
M11	E1	P1	S1R	M52	E2S	P1	S5V	M85	E2S	P2	S1R & S4P & S5V
M12	E2	P1	S1R	M53	E1	P2	S5V	M86	E1	P2	S6F
M13	E1	P2	S1R	M54	E2	P2	S5V	M87	E1	P2	S4P & S6F
M14	E2	P2	S1R	M55	E2S	P2	S5V	M88	E1	P2	S6F
M15	E2S	P1	S1R	M56	E1	P1	S1R & S5V	M98 See Individual Specification Sheet			
M16	E2S	P2	S1R	M57	E2	P1	S1R & S5V				
M25	E2S	P2		M58	E2S	P1	S1R & S5V				
M26	E1	P1	S4P	M59	E1	P2	S1R & S5V				
M27	E2	P1	S4P	M60	E2	P2	S1R & S5V				
M28	E2S	P1	S4P	M61	E2S	P2	S1R & S5V				
M29	E1	P2	S4P	M74	E1	P1	S4P & S5V				
M30	E2	P2	S4P	M75	E2	P1	S4P & S5V				
M31	E2S	P2	S4P	M76	E2S	P1	S4P & S5V				