产品手册

仪器型号：AR**放大器**250T8G18

西安安泰测试科技有限公司

仪器维修|租赁|销售|测试

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250T8G18

- M1 through M10
- 250 Watts CW
- 7.5GHz–18GHz

Features

The Model 250T8G18 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 250 watts minimum at the amplifier output flange. Stated power specifications are at the fundamental frequency.

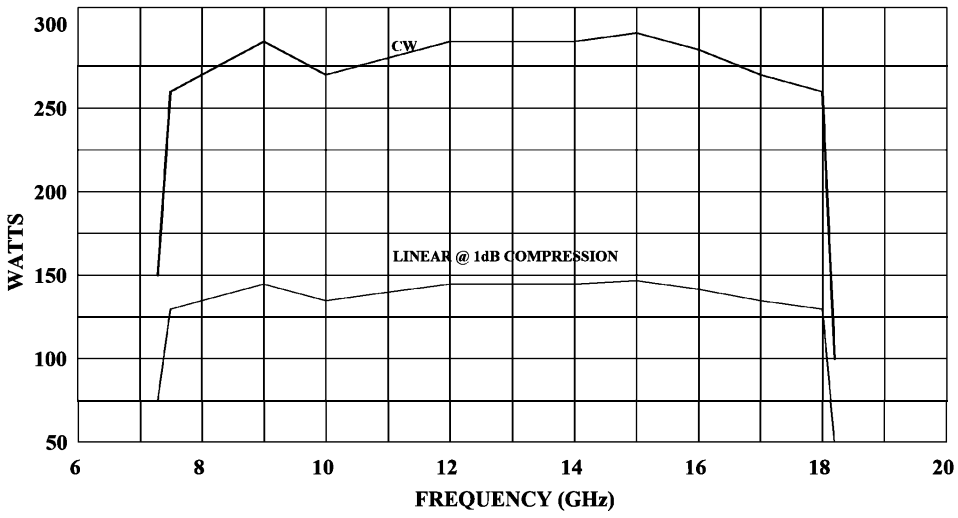
The amplifier's front panel digital display shows forward and reflected output plus extensive system status information accessed through a series of menus via soft keys. Status indicators include power on, warm-up, standby, operate, faults, excess reflected power warning and remote. Standard features include a built-in IEEE-488 (GPIB) interface, 0 dBm input, VSWR protection, gain control, RF output sample port, auto sleep, plus monitoring of TWT helix current, cathode voltage, collector voltage, external video pulsing, 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 external video pulsing feature reduces prime power use for pulse applications.

Housed in a stylish contemporary cabinet, this unit is designed for bench top use, but can be removed from the cabinet for rack mounting. The Model 250T8G18 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 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.

250T8G18 TYPICAL POWER OUTPUT



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Specifications

POWER (fundamental), CW @ OUTPUT FLANGE:

Nominal	300 watts
Minimum	250 watts
Linear @ 1dB Compression	70 watts minimum

FLATNESS: ±12 dB maximum, equalized for ±5 dB maximum at rated power

FREQUENCY RESPONSE: 7.5-18 GHz instantaneously

INPUT FOR RATED OUTPUT: 1.0 milliwatt maximum

GAIN (at maximum setting): 54 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 fold back protection at reflected power exceeding 50 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.

VIDEO PULSE CAPABILITY:

Pulse Width	0.05 microseconds min
Pulse Rate (PRF)	100kHz max
RF Rise and Fall	30 ns max (10% to 90%)
Delay	300 ns max from pulse input to RF 90%
Pulse width distortion	±30 ns max (50% points of output pulse width compared to 50% points of input pulse width)

NOISE POWER DENSITY:

(pulse on)	Minus 70 dBm/Hz (maximum), Minus 72 dBm/Hz (typical)
(pulse off)	Minus 140 dBm/Hz (typical)

HARMONIC DISTORTION:
Below 10 GHz, minus 5 dBc max., minus 7 dBc typ.
10-12 GHz, minus 8 dBc max., minus 12 dBc typ.
Above 12 GHz, minus 20 dBc max., minus 30 dBc typ.

SPURIOUS: -50dBc max (excluding harmonics)

PRIMARY POWER: 190-260 VAC, 50/60 Hz single phase, 2.5 KVA maximum

CONNECTORS:

RF input	Type N female on rear panel
RF output	Type WRD –750D24 waveguide flange on rear panel
RF output sample port	Type N female on rear panel
GPIB	IEEE-488 (f) on rear panel
Interlock	DB-15 (f) on rear panel
Video	BNC-female on rear panel

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

SIZE AND WEIGHT: See Model Configurations

ENVIRONMENTAL:

OPERATING: 0° - 40°C

STORAGE: -40° - 70°C

EXPORT CLASSIFICATION: EAR99

Model Configurations

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

E1 removable outer enclosure, size 19.8 x 11.7 x 27 in., 50.3 x 29.7 x 68.6 cm; add 14kg (30 lbs) to weight of E2.

E2 without outer enclosure, size 19 x 10.5 x 27 in, 48.3 x 26.7 x 68.6 cm; weight 39kg (85 lbs).

E2S without outer enclosure; slides and front handles installed for rack mounting; size same as E2, add 3kg (5 lbs) to weight of E2.

S May select a special feature (extra cost) [S1R or S2K]

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.

S2K Supplied with one TF type externally-mountable harmonic filter and a switch kit that allows user to select an appropriate filter band: high (bypasses the filter) or low (inserts the filter), via this TWTA. Insertion loss when used with filter is maximum 1.5 dB and maximum 0.5 dB when bypassed. See TF Filter Type specification table below. Dimensions and enclosures are for TWTA's only without kits and filters. Add filter weight, plus add 2 kg (5 lbs) for switch kit.

S3E Ethernet Remote Interface: Removes IEEE-488 GPIB interface and replace with RJ-45 Ethernet on rear panel.

Model Number	Features	
	E	S
250T8G18	E1	-
250T8G18M1	E2	
250T8G18M2	E2S	-
250T8G18M3	E1	S1R
250T8G18M4	E2	S1R
250T8G18M5	E2S	S1R
250T8G18M6	See Individual Specification Sheet	
250T8G18M7	E2	S2K
250T8G18M8	E1	S2K
250T8G18M9	E1	S3E
250T8G18M10	E2S	S3E

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S2K – TF Type Filter Specification

Microwave Filter Model TF Type	TF type TF2005
For Use with AR TWTA Model	250T8G18 with WRD750D24 waveguide flange, requires one filter
Pass Band (GHz)	7.5-12.4
Insertion Loss (dB Max)	0.5
Reject Band (GHz)	15–36
Rejection (dB Min)	25
Power (fundamental & harmonic, watts, max)	400 & 100
Input Connector	WRD750D24 waveguide flange
Output Connector	WRD750D24 waveguide flange
Size L x W x D (cm, in max)	28 x 5 x 13 cm (11 x 2 x 5 in)
Weight (kg, lbs typical)	1kg (2 lbs)
Input VSWR in Pass band (typical)	1.3:1
Input VSWR in Reject band (typical)	2.5:1