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**MODEL 1000TP1G2,
M1 through M17
1000 WATTS PULSE
1 - 2.5 GHz**

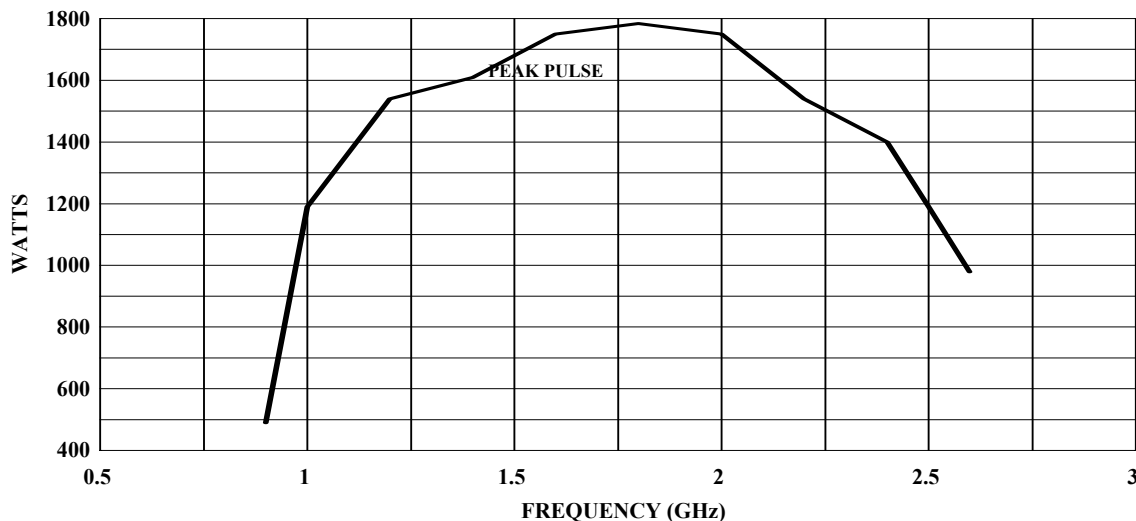
The Model 1000TP1G2 is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier designed for pulse applications at low to moderate duty factors where instantaneous bandwidth and high gain are required. A reliable TWT provides a conservative 925 watts minimum peak RF pulse power at the amplifier output connector. Stated power specifications are at the fundamental frequency.

The amplifier's front panel digital display shows forward and reflected average power output or forward and reflected peak power, 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 average or peak reflected power warning and remote. Standard features include a built-in IEEE-488 (GPIB) interface, 0 dBm input, TTL Gating, 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, the Model 1000TP1G2 provides readily available pulsed RF power for a variety of applications in Test and Measurement, (including EMC RF pulse susceptibility testing), Industrial and University Research and Development, and Service applications. AR also offers a broad range of amplifiers for CW (Continuous Wave) applications.

See Model Configurations for alternative packaging and special features.

1000TP1G2 TYPICAL POWER OUTPUT



SPECIFICATIONS

Model 1000TP1G2

Power (Fundamental), Peak Pulse, @ Output Connector	
Nominal	1400 watts
Minimum	925 watts
Flatness	±10 dB maximum, equalized for ±3 dB maximum at rated power
Frequency response	1 - 2.5 GHz instantaneously
Input for rated output	1.0 milliwatt maximum
Gain (at maximum setting)	60 dB minimum
Gain Adjustment (continuous range)	35 dB minimum
Input Impedance	50 ohms, VSWR 2.5:1 maximum
Output Impedance	50 ohms, VSWR 2.5:1 typical
Mismatch Tolerance	Output pulse width foldback protection at peak reflected power exceeding 500 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.
Pulse Capability	
Pulse Width	0.07 – 100 microseconds.
Pulse Rate (PRF)	100 kHz maximum
Duty Cycle	4% maximum.
RF Rise and Fall	30 ns max (10% to 90%).
Delay	300 ns maximum from pulse input to RF 90%
Pulse Width Distortion	±30 ns maximum (50% points of output pulse width compared to 50% points of input pulse width)
Pulse Off Isolation	80 dB minimum, 90 dB typical
Pulse Input	TTL level, 50 ohm nominal termination
Noise Power Density	
(pulse on)	Minus 90 dBm/Hz (maximum), minus 93 dBm/Hz (typical)
(pulse off)	Minus 140 dBm/Hz (typical)
Harmonic Distortion	Minus 0 dBc maximum, Minus 5 dBc typical
Primary Power	190-260 VAC, single phase
	50/60 Hz
	1.0 KVA maximum
Connectors	
RF input	Type N female on rear panel
RF output	Type N female on rear panel
RF output forward sample port	Type N female on rear panel
Pulse input	Type BNC 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 and Size	See Model Configurations

MODEL CONFIGURATIONS

Model 1000TP1G2

- E** Must select one enclosure type from the following [E1 or E2 or E2S]:
- E1** removable outer enclosure, size 19.8 x 10 x 35 in., 50.3 x 25.4 x 89 cm.
- E2** without outer enclosure, size 19 x 8.75 x 35 in, 48.3 x 22.2 x 89 cm.
- E2S** without outer enclosure; slides and front handles installed for rack mounting.
- S** May select a special feature (extra cost) from the following [(S1R or S1F) and/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.
- S1F** Reflected sample port on front panel, type N female connector. Input and forward sample port on front panel. 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 two TF type externally mountable harmonic filters and a switch kit that allows user to select an appropriate filter band, high or low, via this TWTA. Insertion loss when used with filters is maximum 1.5 dB. See TF type Filter specification table below. Dimensions listed are for TWTA's only without kits and filters.

Model Number	Weight	Features	
		E	S
1000TP1G2	68 kg (150 lbs)	E1	-
1000TP1G2M1	55 kg (120 lbs)	E2	
1000TP1G2M2	57 kg (125 lbs)	E2S	-
1000TP1G2M3	68 kg (150 lbs)	E1	S1R
1000TP1G2M4	55 kg (120 lbs)	E2	S1R
1000TP1G2M5	57 kg (125 lbs)	E2S	S1R
1000TP1G2M6	68 kg (150 lbs)	E1	S1F
1000TP1G2M7	55 kg (120 lbs)	E2	S1F
1000TP1G2M8	57 kg (125 lbs)	E2S	S1F
1000TP1G2M9	82 kg (180 lbs)	E1	S2K
1000TP1G2M10	68 kg (150 lbs)	E2	S2K
1000TP1G2M11	71 kg (155 lbs)	E2S	S2K
1000TP1G2M12	82 kg (180 lbs)	E1	S2K & S1R
1000TP1G2M13	68 kg (150 lbs)	E2	S2K & S1R
1000TP1G2M14	71 kg (155 lbs)	E2S	S2K & S1R
1000TP1G2M15	82 kg (180 lbs)	E1	S2K & S1F
1000TP1G2M16	68 kg (150 lbs)	E2	S2K & S1F
1000TP1G2M17	71 kg (155 lbs)	E2S	S2K & S1F

S2K – TF TYPE FILTER SPECIFICATIONS

Microwave Filter Model	For Use with AR TWTA Model	Pass Band (GHz)	Insertion Loss(dB max)	Reject Band (GHz)	Rejection (dB min)	Power (fundamental & harmonic, watts, max)	Input Connector	Output connector	Size L x W x D (cm, in max)	Weight (kg, lbs typical)	Input VSWR in Pass band (typical)	Input VSWR in Reject band (typical)
TF type filter 1	1000TP1G2 with N connector, requires two filters	1.0–1.6	0.5	2 – 5.0	25	150 & 100 average, 3000 & 2000 peak	N male (or N female plus supplied adapter or short cable)	N female	15 x 8 x 18, 6.0 x 3 x 7	4.5, 10	1.3:1	2.5:1
filter 2		1.6–2.5	0.5	3.2 – 5.0	25	150 & 100 average, 3000 & 2000 peak			15 x 8 x 18, 6.0 x 3 x 7	4.5, 10	1.3:1	2.5:1