



## 5700TP12G18

- Pulse Amplifier
- M1-M12
- 5700 Watts
- 12GHz-18GHz

### Features

The Model 5700TP12G18 is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier system designed for pulse applications at low to moderate duty factors where instantaneous bandwidth and high gain are required. Reliable TWT subsystems provide a conservative 5700 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, 0dBm input, TTL Gating, VSWR protection, gain control, RF output sample ports, 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 switching mode power supplies results in significant weight reduction.

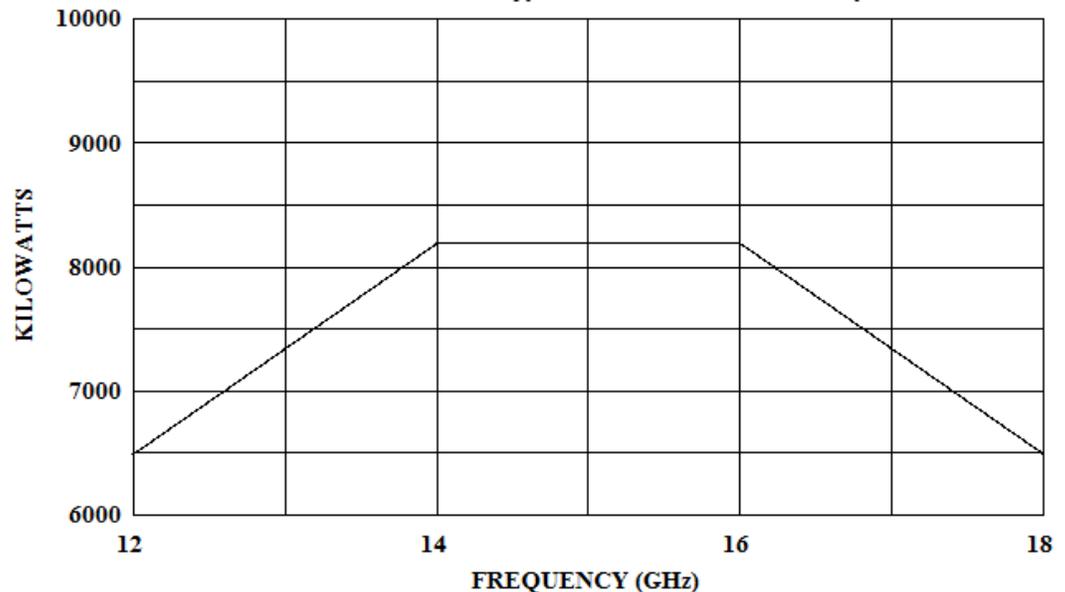
The rated power is developed by efficiently power combining the outputs from two 3400 watts (nominal) pulse TWTs that are factory matched in gain and phase, resulting in an excellent combination of wide instantaneous bandwidth with improved harmonic levels.

Housed in a stylish contemporary cabinet, the amplifier 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.

The Model Configurations for alternative packaging and prime power selection.

The export classification for this equipment is 3A999.d. 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.

Model 5700TP12G18 Typical Peak Pulse Power Output



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## Specifications

**POWER (Fundamental), Peak Pulse, @ Output:** Nominal, 7,000 watts; Minimum, 5,700 watts

**FLATNESS:** ±10 dB maximum, ±5 dB at rated power

**FREQUENCY RESPONSE:** 12-18 GHz

**INPUT FOR RATED OUTPUT:** 1.0 milliwatt maximum

**GAIN (at maximum setting):** 67 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 3000 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	0.2 – 50 microseconds.
Pulse Rate (PRF)	100 kHz maximum
Duty Cycle	4% maximum.
RF Rise and Fall Delay	35 ns max (10% to 90%). 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

## Model Configurations

**E Package Alternatives.** May select an alternative from the following [E1C or (E1C and E2S) and/or E3H]:

**E1C Cabinet:** Without outer enclosure for rack mounting, size (W x H x D) 49 x 40 (9U) x 76 cm, 19 x 15.75 (9U) x 30 in., Subtract approximately 16 kg, 35 lbs, for removal of outer enclosure.

**E2S Slides:** slides installed, add approximately 5 kg, 10 lbs.

**E3H Handles:** Front pull handles installed.

**P Prime Power:** Must select one primary power from the following [P1 or P2]

**P1 208V, US:** 208 VAC ± 10%, 3 phase, delta (4 wire) 50/60 Hz, 5 KVA maximum

**P2 400V, Europe:** 360-435 VAC, 3 phase, WYE (5 wire) 50/60 Hz, 5 KVA maximum. CE marked to comply with EMC European Directive 89/336/EEC for operation inside a shielded room.

**P3 190-260VAC** single phase, 50/60Hz, 5kVa max

**S Special Feature:** May select a special feature (extra cost) [S1C]:

**S1C** RF output on rear panel with all other connectors on front panel. Interlock connector BNC. RF output sample port 60dB coupling factor. This option also removes reflected sample port.

**NOISE POWER DENSITY:**

(pulse on)	Minus 55 dBm/Hz (maximum); Minus 80 dBm/Hz (typical)
(pulse off)	Minus 140 dBm/Hz (typical)

**HARMONIC DISTORTION:** Minus 15 dBc maximum

**PRIMARY POWER:** See Model Configurations

**CONNECTORS (See S1C option, if applicable):**

RF input:	Type N precision female, rear panel.
RF output:	Type WR-62 waveguide flange/coax, rear panel
RF output sample ports (forward and reflected):	Type N precision female, rear panel.
Pulse input:	Type BNC female, rear panel.
GPIB:	IEEE-488 female, rear panel.
Interlock:	DB-15 female, rear panel.

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

**SIZE (W x H x D):** 50.3 x 43 x 84 cm, 19.8 x 17 x 33 in

**WEIGHT (approximate):** 121 kg, 265 lbs

**EXPORT CLASSIFICATION:** 3A999.d

Model No.	Features		
	E	P	S
<b>5700TP12G18</b>	Base model	P1	–
<b>M1</b>	E1C	P1	–
<b>M2</b>	E3H	P1	–
<b>M3</b>	E1C & E3H	P1	–
<b>M4</b>	E1C & E2S	P1	–
<b>M5</b>	E1C & E2S & E3H	P1	–
<b>M6</b>	–	P3	–
<b>M7</b>	E1C	P3	–
<b>M8</b>	E3H	P3	–
<b>M9</b>	E1C & E3H	P3	–
<b>M10</b>	E1C & E2S	P3	–
<b>M11</b>	E1C & E2S & E3H	P3	–
<b>M12</b>	E1C & E3H	P3	S1C

Model number example: Model 5700TP12G18M2 would have option E3H front pull handles installed.