



## 7400TP4G8

- Pulse Amplifier
- M1-M11
- 7400 Watts
- 4GHz-8GHz

### Features

The Model 7400TP4G8 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 7400 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.

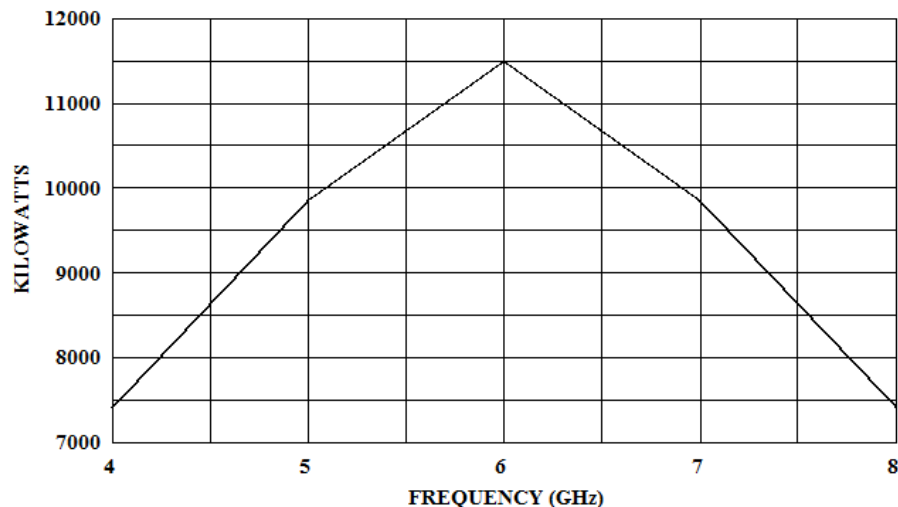
The rated power is developed by efficiently power combining the outputs from two 4500 watts (nominal) pulse TWTs that are factory matched in gain and phase, resulting in an excellent combination of wide instantaneous bandwidth with improved harmonic levels.

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.

See 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 7400TP4G8 Typical Peak Pulse Power Output



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## Specifications

**POWER (Fundamental), Peak Pulse, @ Output:** Nominal, 10,000 watts; Minimum, 7,400 watts

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

**FREQUENCY RESPONSE:** 4-8 GHz

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

**GAIN (at maximum setting):** 69 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 2000 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	70 ns max (10% to 90%). 500 ns maximum from pulse input to RF 90%
Pulse Width Distortion	±50 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 49 (11U) x 89 cm, 19 x 19.25 (11U) x 35 in., Subtract approximately 18 kg, 40 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

**NOISE POWER DENSITY:**

(pulse on)	Minus 65 dBm/Hz (maximum); Minus 85 dBm/Hz (typical)
(pulse off)	Minus 140 dBm/Hz (typical)

**HARMONIC DISTORTION:** Minus 12 dBc maximum

**PRIMARY POWER:** See Model Configurations

**CONNECTORS:**

RF input:	Type N female, rear panel
RF output:	Type WRD-350 waveguide flange, rear panel
RF output sample ports (forward and reflected):	Type N 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 53 x 91 cm, 19.8 x 21 x 36 in

**WEIGHT (approximate):** 123 kg, 270 lbs

**EXPORT CLASSIFICATION:** 3A999.d

Model No.	Features	
	E	P
<b>7400TP4G8</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

Model number example: Model 7400TP4G8M2 would have option E3H front pull handles installed