



## PT-KW HP-Series Pulse TWT Microwave Power Amplifiers

**1.0 – 18.0 GHz • up to – 10,000 watts, Minimum Rated Power**

The PT HP-series of KW High Power Pulse amplifiers built by IFI; are high power, “State-of-the-art” Pulse TWT amplifiers specifically designed for microwave testing applications. Our elegant approach provides up to 12,000 Watts of pulse power for various frequency ranges from 1.0 to 18.0 Gigahertz in various packages that offers all the controls and communications needed for today's automated test systems. These amplifiers have field proven reliability and unsurpassed performance as the best in the industry.

From the ground up the PT HP-Series amps are built to withstand rugged handling, whether it's being shipped to you or hauled around from site to site. Our amplifiers feature modular construction and this concept of modular design minimizes internally produced EMI signal leakage and provides easy access for field service and rapid turnaround at depot level repair facilities. Redundant thermal and airflow sensors prevent the TWT from overheating. In addition, high VSWR protection is built in.

The PT HP-Series “State-of-the-art” interface is sophisticated yet simple to use. The backlit LCD screen shows forward/reverse power indication, status and self-diagnostic information. All the amplifiers operating parameters are simultaneously available in the amplifier front panel display as well as over the remote bus. Selection switches allow you to switch the amplifier to the desired mode of operation for local control if the unit is not being operated remotely. For computer automation, both an RS-232 and IEEE-488 interface are included. To meet individual requirements, the PT HP-Series amplifiers can be easily customized with our available options that may be required for your application.

With all this capability and its reliable elegant design, the PT HP-Series amplifiers are the perfect amplifier for your testing needs.

### IFI Pulse TWT Amplifier Features:

- ∞ Solid State Power Supply Designs
- ∞ Instantaneous Broadband Frequency ranges
- ∞ Modular Design Construction
- ∞ Rugged construction & High Reliability
- ∞ Backlit LCD screen
- ∞ Integrated Force Air Cooling
- ∞ Self-diagnostic circuitry
- ∞ IEEE-488 interface, RS232 & Ethernet Remote



### Models & General Specifications:

Model Number	Frequency Range (GHz)	Rated Power (kW minimum)	Gain (dB min)	Mains (kVA)	Weight (pounds)	Size (Inches)
PT21-5KW	1.0-2.0	5.0	67	4.0	85	14.0" H x 19" W x 30.00 D
PT231-10KW	1.0-2.3	10.0	70	8.0	85	Rack Integrated
PT2719-6KW	1.9-2.7	6.0	60	2.5	85	14.0" H x 19" W x 25.25 D
PT42-5KW*	2.0-4.0	5.0	67	2.5	85	14.0" H x 19" W x 25.25 D
PT42-8KW	2.0-4.0	8.0	69	2.5	85	14.0" H x 19" W x 25.25 D
PT5727-4KW	2.7-5.7	4.0	60	2.5	85	14.0" H x 19" W x 25.25 D
PT64-6W	4.0-6.0	6.0	68	2.5	85	14.0" H x 19" W x 25.25 D
PT84-5KW*	4.0-8.0	5.0	67	2.5	85	14.0" H x 19" W x 25.25 D
PT5653-8KW	5.35-5.65	8.0	68	2.5	85	14.0" H x 19" W x 25.25 D
PT115-1.75KW	5.0-11.0	1.75	63	2.5	85	14.0" H x 19" W x 25.25 D
PT128-5KW	8.0-12.0	5.0	67	2.5	85	14.0" H x 19" W x 25.25 D
PT9593-8KW	9.3-9.5	8.0	68	2.5	85	14.0" H x 19" W x 25.25 D
PT118-8KW	8.0-11.0	8.0	68	2.5	85	14.0" H x 19" W x 25.25 D
PT128-8KW	8.0-12.0	8.0	68	2.5	85	14.0" H x 19" W x 25.25 D
PT128-3KW	8.2-12.4	3.0	65	2.5	85	14.0" H x 19" W x 25.25 D
PT1087-4KW	8.7-10.5	4.0	66	2.5	85	14.0" H x 19" W x 25.25 D
PT1088-8KW	8.8-10.5	8.0	68	2.5	85	14.0" H x 19" W x 25.25 D
PT1088-8.5KW	8.8-10.5	8.5	68	2.5	85	14.0" H x 19" W x 25.25 D
PT109-8KW	9.0-10.0	8.0	68	2.5	85	14.0" H x 19" W x 25.25 D
PT1715-4KW	15.0-17.0	4.0	66	2.5	85	14.0" H x 19" W x 25.25 D
PT1812-3.5KW	12-18	3.5	66	1.5	85	14.0" H x 19" W x 25.25 D

\* Over the majority of the band



## PT-KW HP-Series Pulse TWT Microwave Power Amplifiers

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### Standard Features for IFI PT-HP-Series High Power Pulse TWT Amplifiers

<b>Standard Features</b>	VSWR Reflected Power Protection, the unit operates without damage or oscillation into any magnitude of phase or load impedance, Open & Short Circuit Protection. * Alternate Prime Power (specify at time of order)
	GPIB IEEE 488 & RS232 Remote Control
	RF Sample Port on the Front Panel, <a href="#">112R for rear panel</a>
	Internal Pre-amplification to obtain rated output power with an input level of 0 dBm or less.
	RF Input/Output Connectors on the Front Panel, <a href="#">118R for rear panel</a>
	Internal Systems Diagnostics & Status Indicators
	Filament/Beam Elapsed Time Metering in hours
	RF Safety Interlock
	Forward/Reflected Power Indication simultaneously on Front Panel display

### PT HP-Series Specifications:

Frequency Range:	As Specified in Model Table
Rated Output Power:	As Specified in Model Table
Gain @ Rated Power:	As Specified in Model Table
Prime Power:	As Required for Customer (Some are listed below)
Input/output Impedance:	50 ohms
RF Input/ Sample Connectors:	Type N Female, unless specified otherwise
RF Output Connector:	Type SC or 716 Female up to 8 GHz, 8-12 GHz is WR90, 12-18 GHz is WR62, 7.5-18 GHz is WRD750, 6.5-18 GHz is WRD650 <a href="#">Other waveguides available by request or specification (see Option 117)</a>
Input VSWR/Output VSWR:	2.0:1/ 2.5:1
Pulse Input:	BNC Female Front Panel {TTL into 50ohms standard} consult factory for special requirements
Pulse Width Range:	100nsec – 100usec
PRF Range:	Up to 100 KHz Standard, Higher PRF ranges available consult factory
Duty Cycle:	6% Standard, Lower & Higher PRF ranges subject to TWT spec.
Rise & Fall Time:	15 ns nominal; 20 ns maximum
Pulse to Pulse Jitter:	+/- 5 nsec maximum
Pulse Width Jitter;(Distortion)	+/- 5 nsec maximum
Pulse Recovery Time:	150 nsec maximum
Pulse Delay:	250 nsec maximum / 180 nsec typical
Pulse Droop:	0.5 dB/100usecs, 0.1dB/10usec
Power Output Stability:	0.2dB Pulse to Pulse at constant drive level & PRF
Pulse On/Off Ratio:	80 dB
Phase Stability Pulse to Pulse:	+/- 1 degree nominal
Temperature:	0° to 50° C operating, -40° to 70° C non-operating
Humidity:	95% without condensation
Altitude:	10,000 feet operating, 50,000 non-operating
Cooling System:	Air cooled, self-contained
Modulation:	All types, AM, FM, Pulse
Configuration:	Rack Mount as specified in Model Table or Rack Integrated
Spurious Outputs:	<-60 dBc nominal

### Standard Prime Powers:

100, 115, 120 VAC ±10% 50/60 Hz, single phase
200, 220, 230, 240VAC ±10% 50/60 Hz, single phase
100/200VAC,115/208 or 200/220/230/240VAC ±10% 50/60 Hz, three phase Wye or Delta and/or 400 Hz power is available.
Special Prime Powers other than listed are subject to availability

### Some Available Options for IFI PT HP-Series TWT Amplifiers

<b>Option 103 G/D:</b>	VSWR Reflected Power Protection "Graceful Degradation Feature" which will automatically reduce the input drive and fold back the output power when the average reflected power exceeds a preset limit of 3.0:1. The unit operates without damage or oscillation into any magnitude of phase or load impedance.
<b>Option 110-1E:</b>	GPIB IEEE-488 RS232 and Ethernet Remote Control
<b>Option 110-2:</b>	GPIB IEEE-488 and RS 422 Remote Control
<b>Option 110-3:</b>	GPIB IEEE-488 and RS 485 Remote Control
<b>Option 113:</b>	Chassis Slides for 19" Rack Mounting
<b>Option 118F or R:</b>	Front Panel RF Connections 118R for Rear Panel RF Connections
<b>Option 123F or R:</b>	Reflected RF Sample Port -40, -50 or -60dB N or SMA, Front or Rear Panel



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*The Power Of Choice*

Pulse TWT

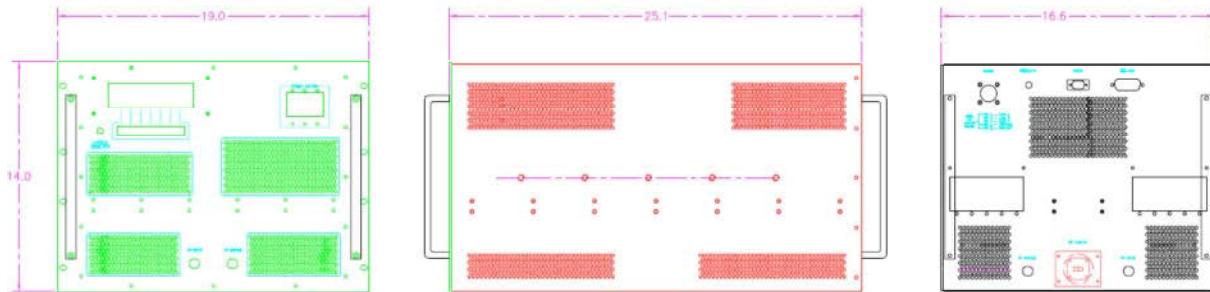
AMPLIFIERS

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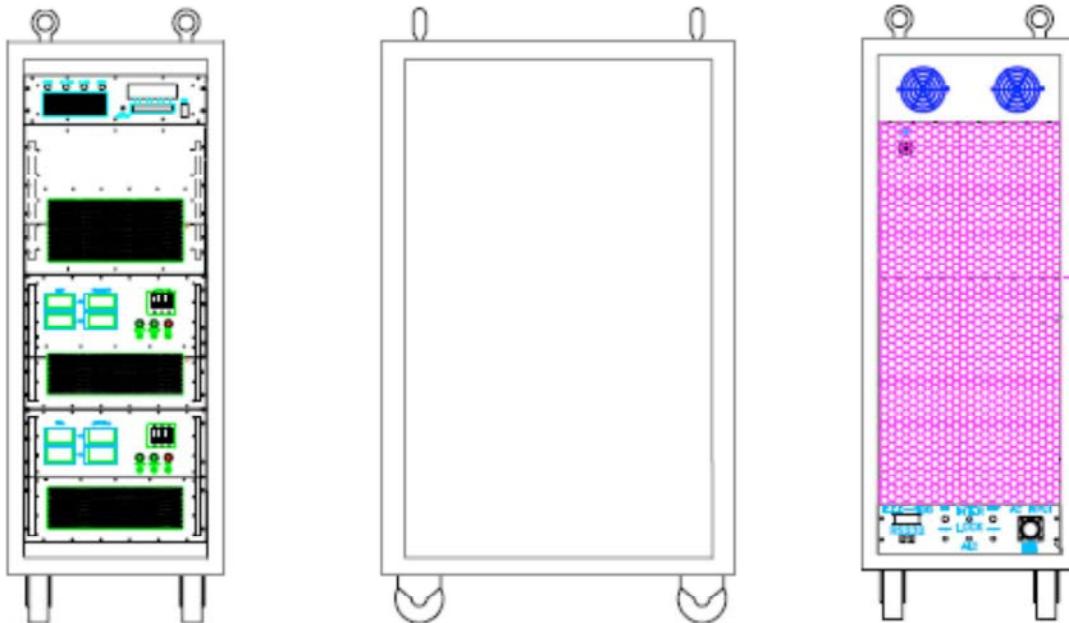
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### Outline Configurations:

#### 14" High Chassis



#### Rack Integration



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