




<u>IFI Pulse TWT Amplifier Specifications</u>	
IFI Model:	PT186-2KW
Frequency Range:	6.5-18 GHz
Rated OP Pulse:	2000 Watts 1500 Watts minimum; (7.0-18GHz)
Gain @ rated power:	63 dB minimum
Prime Power:	120/240 VAC +/-10%, 50/60 Hz, Single Phase
Input/Output Impedance:	50 ohms (VSWR 2.0:1)
RF I/O Connectors:	N-F / WRD650
Input/Output VSWR:	2.0:1
Pulse Input:	BNC Female Front Panel
Pulse Width:	150 nsec nominal – 100 µsec maximum
PRF Range:	0 – 100 KHz
RF Pulse on/off ratio:	80 dB minimum
Duty Cycle:	Up to 6%
Rise & Fall Time:	25 nsec maximum, 15 nsec nominal
Pulse to Pulse Jitter:	<0.1 dB
Pulse Width Jitter:	±5 nsec maximum
Pulse Delay:	250 nsec maximum
Pulse to Pulse Stability:	+/-0.1 dB
Temperature / Altitude:	0° to 50° C / Altitude:10,000 feet
Non-operating Temp:	-20° to 70° C (50,000 feet max)
Weight:	90 pounds maximum, 70 pounds typical
Cooling System:	Air cooled, self contained
Modulation:	AM/FM/Pulse
Configuration:	10.5”H x 19”W x 25.25”D, ~70lbs (smaller units available consult factory)
Features: 	VSWR Protection against any output mismatch; will operate without damage or oscillation against any magnitude and phase of source and load impedance.
	GPIB IEEE 488 & RS232 Remote Control
	Forward RF Sample Port on the Front Panel, Type N-F connector
	Internal Pre-amplification to obtain rated output power with an input level of 0dBm or less.
	RF Input Connector on the Front Panel
	RF Output Connector on the Rear Panel
	Internal Systems Diagnostics
	Filament/Beam Elapsed Time Metering in hours
	RF Safety Interlock, Type BNC Connector
	Forward/Reflected Power Indication simultaneously on Front Panel display



August 09 2012

IFI Pulse Series of TWT Amplifiers

Complete TWT Protection

Safety Requirement of IEC-348
VSWR Reflected Power Protection (reverse power monitor)
Cathode Over/under voltage Protection
Collector over-voltage protection
Helix Overcurrent Protection
TWT Overtemperature
Power Supply Overtemperature
Input energy protection
Air Flow Fault Protection
Excess Duty Cycle Protection
Filament over/under voltage Protection
+/-Grid Undervoltage Protection
Solid State Power Supply for Increased Reliability
Modulation, AM, FM & PULSE
High Stability For: **Operation**
Very Low Phase Ripple
Very Low Amplitude Ripple
Very Low Pulse/Phase Droop
Front Panel Fault Isolation
DC TWT Filaments
Front Panel display 4 lines
Including: Operating Mode, Cathode voltage, Collector voltages, Helix Current, Filament & Operate Time

Additional Standard Features

Front Panel Controls and Indicators
Power On/Off
Standby/Operate
Local/Remote Gain Control (Available as an Option)
Fault Reset
Air-cooled (Integrated Forced Air – self-contained)
IEEE GPIB 488 & RS232 Remote Control
Self-Diagnostic Circuitry
EM Filter built-in



IFI PT Series Amplifiers are pulsed amplifiers that amplify RF signals applied to the RF input. This amplifier has a Pulse input connector that accepts a TTL pulse level from an external pulse generator or signal source for modulation of the TWT. The TWT is modulated from the pulse input connector via the internal TWT pulse modulator. The Modulator is floating at Cathode voltage and switches the TWT on and off at very fast rates. This method of pulse modulation turns the beam off via the modulator when the pulse input connector is at a TTL low. This means there will be no noise power being created by the TWT. This is sometimes referred to as blanking in amplifiers but it is a modulator in TWT amplifiers. The RF rise/fall times are based on the speed that the modulator switches. Typically the rise/fall times are 10-15 nsecs for PT amps. RF pulse bursts can be applied to the RF input while the pulse input is modulating the TWT. Various combinations can be applied to fulfill whatever your test requirement specifies.

Front Panel Back-Lit Display

Collector Current	Forward RF Power Indication	Reflected RF Power Indication
Cathode Voltage	*Duty Cycle/PW and PRF Rate	Beam Hours
Collector Voltage	Helix Current	Filament Hours
GPIB Address Front Panel Settable		

The TWT Amplifier monitors and transfers the power supply operating voltages and currents to a LCD multi-character Front Panel Display. This aids the user in troubleshooting in the event of a failure. This amplifier model indicates on the display where the fault has occurred.

Maintainability

The IFI Pulse TWT Amplifiers are designed to permit easy field repair of the amplifier. **Please note**, no RF components, including the TWT, need to be removed to service the power supply. IFI has also refrained from using potting compounds as a cure for high voltage arcs. These compounds make repairs very time consuming and expensive. At an operating facility, repair of the amplifier can typically be completed in less than one hour, thereby reducing the system downtime.

Additional Features

- Small Lightweight Design
- Air Cooling Self-Contained Fans
- Modular Design for ease of Maintenance
- 3 minutes of Warm-up Time

*** This feature is implemented and available only from IFI. This feature allows the user to view the duty cycle, pulse width (PW) or pulse repetition frequency (PRF) on the front panel display.**
