T-500 Series High Power TWT Microwave Power Amplifiers

1.0 – 18 GHz • 500 watts, Minimum Rated Power

Instruments for Industry, T-500 Series Amplifiers provide outstanding RF performance. Our "T-500 Series" products are a mature design but incorporate the latest features with respect to control and monitoring. These amplifiers are "State of the Art"; have field proven reliability and unsurpassed performance as the best in the industry. These products are available in a wide range of frequency bands from 1GHz-18GHz at 500 watts.

Operation safety and ease of use are paramount in *IFI* product designs. The IFI T-500 Series include a full complement of RF and hardware protection systems including high VSWR, over-current and voltage protection as well as redundant thermal and airflow sensors to prevent the TWT from overheating. In addition, the T-500 series includes a state-of-the-art interface that is sophisticated, comprehensive, but yet simple to use. 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.

The backlit LCD screen shows forward/reverse power indication, system status and self-diagnostic information. All the amplifier 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 application needs, the

T-500 Series amplifiers can be easily customized with harmonic filters or other options. With this capability and its reliable elegant design, the T-500 series amplifiers are the perfect amplifier for your microwave needs. *IFI* offers different size packages and configurations to best suit your application. A product and design built to last!

IFI RF Power Amplifier Features:

- Instantaneous Broadband Frequency range
- Modular Design Construction
- Rugged Construction & High Reliability
- Backlit LCD Display
- Integrated Force Air Cooling
- Self-diagnostic circuitry
- IEEE-488 interface, RS232
- Solid State Power Supply





Models & General Specifications:								
Model	Frequency	Rated Power	P1dB Power	Gain	Mains	Weight	Size	
Number	Range (GHz)	(watts minimum)	(nominal)	(dB min)	(kVA)	(Pounds)	(Inches)	
T21-500	1.0-2.0	500	250	57	3.0	85	10.5"H x 19"W x 27.00"D	
T251-500	1.0-2.5	500	250	57	3.0	85	10.5"H x 19"W x 27.00"D	
T42-500	2.0-4.0	500	250	57	3.0	85	10.5"H x 19"W x 25.25"D	
T62-500	2.0-6.0	500	250	57	3.0	85	10.5"H x 19"W x 25.25"D	
T7525-500	2.5-7.5	500	250	57	3.0	85	10.5"H x 19"W x 25.25"D	
T82-500	2.0-8.0	500	250	57	3.0	85	10.5"H x 19"W x 25.25"D	
T825-500	2.5-8.0	500	250	57	3.0	85	10.5"H x 19"W x 25.25"D	
T84-500	4.0-8.0	500	250	57	3.0	85	10.5"H x 19"W x 25.25"D	
T186-500	6.0-18.0	500	250	57	4.0	120	14.0"H x 19"W x 27.00"D	
T188-500	8.0-18.0	500	250	57	4.0	120	14.0"H x 19"W x 27.00"D	
T128-500	8.0-12.0	500	250	57	4.0	120	14.0"H x 19"W x 27.00"D	
T1812-500	12.0-18.0	500	250	57	4.0	120	14.0"H x 19"W x 27.00"D	

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Standard Features for IFI T-500 Series TWT Amplifiers

Standard Features

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, 112R for rear panel

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, 118R for rear panel

Internal Systems Diagnostics & Status Indicators

Filament/Beam Elapsed Time Metering in hours

RF Safety Interlock

Forward/Reflected Power Indication simultaneously on Front Panel display

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 Other waveguides available by request or specification (see Option 117)				
Input VSWR:	2.0:1				
Output VSWR:	2.5:1				
Operating Temp:	0° to 50° C				
Non-operating Temp/Altitude:	-40° to 70° C (50,000 feet max)				
Humidity:	95% without condensation				
Operating Altitude:	10,000 feet				
Cooling System:	Air cooled, self-contained				
Modulation:	All types, AM, FM, Pulse				
Configuration:	Rack Mount as specified in Model Table, or Cabinet Integrated as needed				
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 then listed are subject to availability

Some Available Options for IFI T-500 Series TWT Amplifiers					
Option 103 G/D:	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.				
Option 110-1E:	GPIB IEEE-488 RS232 and Ethernet Remote Control				
Option 110-2:	GPIB IEEE-488 and RS 422 Remote Control				
Option 110-3	GPIB IEEE-488 and RS 485 Remote Control				
Option 113:	Chassis Slides for 19" Rack Mounting				
Option 118F or R:	Front Panel RF Connections 118R for Rear Panel RF Connections				
Option 123F or R:	Reflected RF Sample Port -40, -50 or -60dB N or SMA, Front or Rear Panel				

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Option 129E:	External Harmonic	Filtering			

Internal Switchable Harmonic Filtering

Option 129S:

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Outline Configurations:





