



GT-400 Series Gridded (Pulse & CW) TWT Microwave Power Amplifiers

1.0 – 18.0 GHz • 400Watts, Minimum Rated Power

Instruments for Industry, GT-400 Series Amplifiers provide outstanding RF performance. Our “GT-400 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 1.0GHz-18.0GHz at 400 watts.

Operation safety and ease of use are paramount in IFI product designs. The IFI GT-400 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 GT-400 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 GT-400 Series amplifiers can be easily customized with harmonic filters or other options. With this capability and its reliable elegant design, the GT-400 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 Pulse/CW 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 Number | Frequency Range (GHz) | Rated Power (watts minimum) | P1dB Power (nominal) | Gain (dB min) | Mains (kVA) | Weight (Pounds) | Size (Inches) |
|--------------|-----------------------|-----------------------------|----------------------|---------------|-------------|-----------------|-------------------------|
| GT21-400 | 1.0-2.0 | 400 | 200 | 56 | 3.0 | 85 | 10.5”H x 19”W x 27.00”D |
| GT251-400 | 1.0-2.5 | 400 | 200 | 56 | 3.0 | 85 | 10.5”H x 19”W x 27.00”D |
| GT281-400 | 1.0-2.8 | 400 | 200 | 56 | 3.0 | 80 | 10.5”H x 19”W x 27.00”D |
| GT42-400 | 2.0-4.0 | 400 | 200 | 56 | 2.5 | 75 | 10.5”H x 19”W x 25.25”D |
| GT62-400 | 2.0-6.0 | 400 | 200 | 56 | 2.5 | 75 | 10.5”H x 19”W x 25.25”D |
| GT7525-400 | 2.5-7.5 | 400 | 200 | 56 | 2.5 | 75 | 10.5”H x 19”W x 25.25”D |
| GT825-400 | 2.5-8.0 | 400 | 200 | 56 | 2.5 | 75 | 10.5”H x 19”W x 25.25”D |
| GT84-400 | 4.0-8.0 | 400 | 200 | 56 | 2.5 | 75 | 10.5”H x 19”W x 25.25”D |
| GT128-400 | 8.0-12.4 | 400 | 200 | 56 | 4.0 | 110 | 14.0”H x 19”W x 25.25”D |
| GT1812-400 | 12.0-18.0 | 400 | 200 | 56 | 4.0 | 110 | 14.0”H x 19”W x 25.25”D |
| GT188-400 | 7.5-18.0 | 400 | 200 | 56 | 4.0 | 110 | 14.0”H x 19”W x 25.25”D |
| GT186-400 | 6.0-18.0 | 400 | 200 | 56 | 4.0 | 110 | 14.0”H x 19”W x 25.25”D |



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| <u>Standard Features for IFI GT-400 Series TWT Amplifiers</u> | |
|---|--|
| 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 |

| <u>GT-400 Series Specifications:</u> | |
|--------------------------------------|---|
| 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 <u>Other waveguides available by request or specification (see Option 117)</u> |
| 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: | Up to CW |
| PRF Range: | Up to 100 KHz Standard, Higher PRF ranges available consult factory |
| Duty Cycle: | Up to CW (Higher PRF ranges subject to TWT specification) |
| Rise & Fall Time: | 25nsec nominal; 40 nsec 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 |
| Spurious Outputs: | <-60 dBc nominal |

| <u>Standard Prime Powers:</u> | |
|---|--|
| 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 | |

| <u>Some Available Options for IFI GT-400 Series TWT Amplifiers</u> | |
|--|---|
| 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 |
| Option 129E: | External Harmonic Filtering |
| Option 129S: | Internal Switchable Harmonic Filtering |

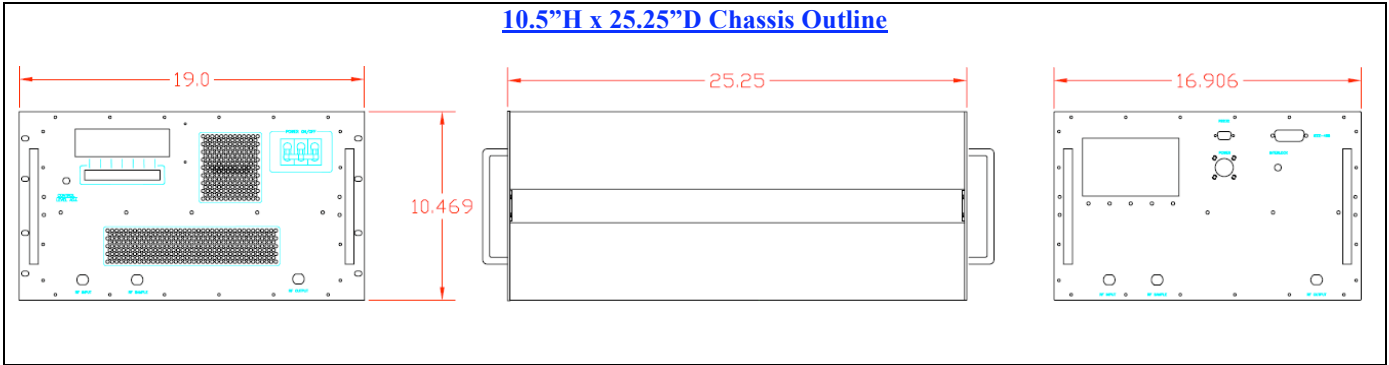


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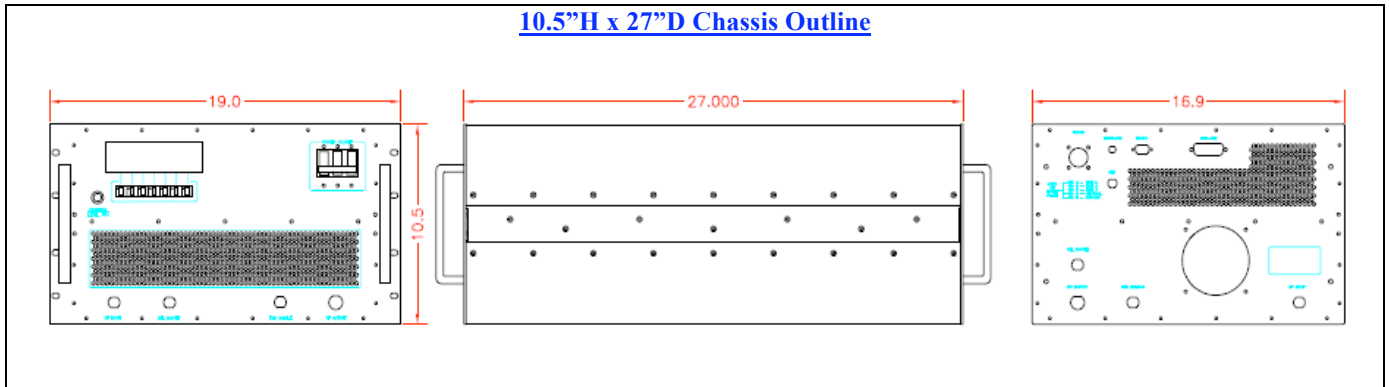
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Outline Configurations:

10.5”H x 25.25”D Chassis Outline



10.5”H x 27”D Chassis Outline



14.0” High Chassis Outline

