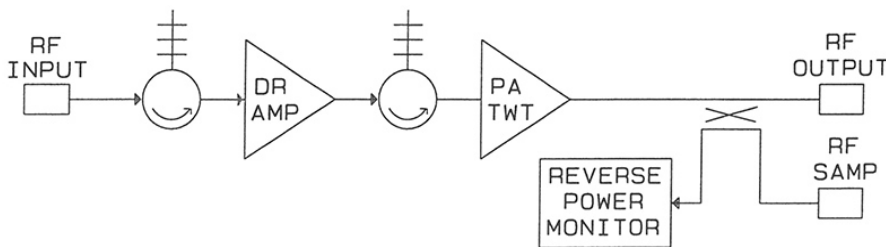


# Model 177 10kW TWT Amplifier 5.0% DUTY



## FEATURES:

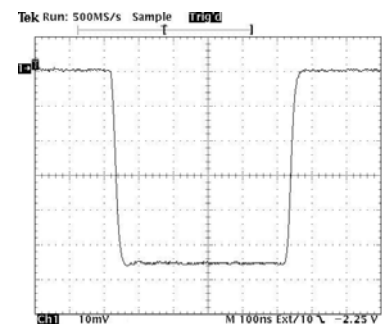
- Frequencies from 1 to 18 GHz  
Octave and Multi-Octaves Available
- Low Spurious Outputs
- Phase and Amplitude Stability
- Complete TWT Protection
  - Pulse Input Protection
  - Helix Overcurrent
  - Cathode HVPS Crowbar
  - Cathode Over/Undervoltage
  - Filament Low Voltage
  - Overtemperature
  - Input Energy Limit
  - Reverse Power Monitor
- Custom Requirements
- Solid State Except for the TWT
- Front Panel Voltage Adjustments
- Front Panel Fault Isolation
- Modular Construction
- DC TWT Filaments
- Four Line Display
  - Operating Mode
  - Cathode Voltage
  - Helix Current
  - Filament and Operate Time
- Front Panel Controls
  - Power On / Off
  - Operate
  - Standby
  - Fault Reset
  - Local / Remote



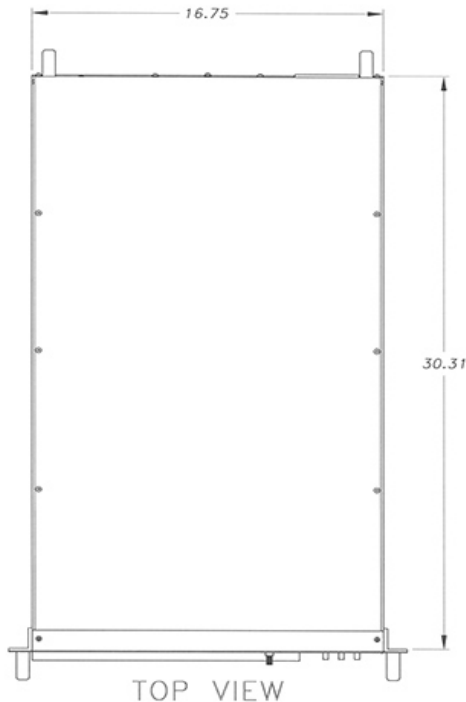
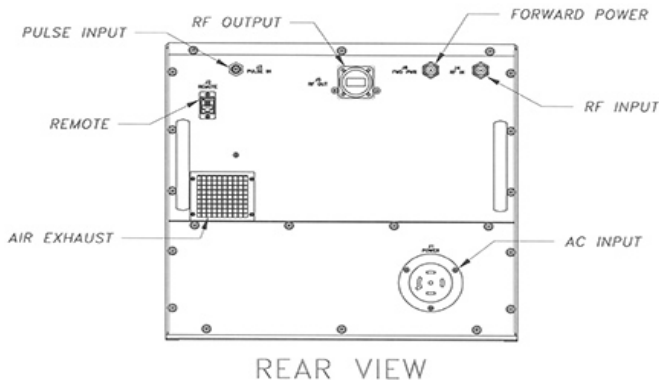
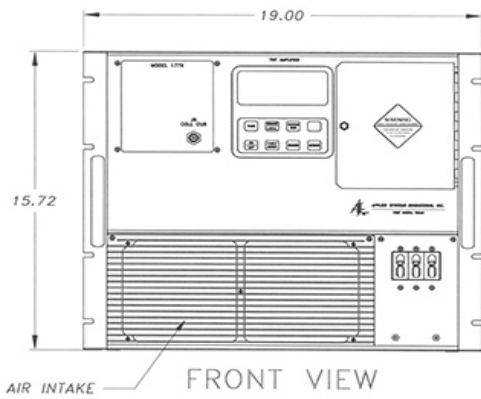
The Model 177 TWT Amplifier has been designed specifically to operate pulsed traveling wave tubes up to 10 kW peak power, 5% duty cycle and at frequencies up to 18 GHz. Particular emphasis has been placed on the generation of the output RF pulse shape without the use of RF switches. Pulse width control is with an external pulse.

The High Voltage Power Supplies are modular DC-DC converter designs. The Power supply design provides superior stability for optimum TWT phase noise and spurious performance.

The modular design of the Model 177 provides convenient accessibility to all elements in the TWT amplifier. Plug-in PC boards are accessible through the front panel. The PC card cover contains a legend for PC card located test points and controls. High voltage modules are encapsulated, plug-in assemblies. There is no exposed high voltage. Most modules are interchangeable between all units regardless of frequency.



Detected RF Output



## Model 177 TWT Amplifier SPECIFICATIONS

Output Power	10 kW, Peak
Duty Cycle	5.0%, Maximum
Pulse Width Range	0.1 to 100 $\mu$ s
PRF Range	0 to 100 kHz
RF Rise / Fall Time	25 ns, Maximum
RF Pulse Droop	0.5 dB/100 $\mu$ s, Maximum
Delay, Input to RF	250 ns, Maximum
Phase Noise	$< \pm 1^\circ$ pk to pk
Amplitude Variation	0.1 dB, Maximum
Spurious Outputs	-50 dBc, Maximum
Input Pulse	5 Volts into 50 ohms
Noise Figure	35 dB, Nominal
RF Connectors	Input - Type N Output - SC or $\frac{7}{8}$ EIA or Waveguide
Primary Power	208 VAC, 3-phase $\pm 10\%$ , 60 Hz
Operating Temperature	-20° to 50°C
Weight	197 lbs, Nominal
Dimensions	15.75 x 19 x 30.5 (in.)

## Standard Equipment

- Filament / Operate Time
- Remote Power On/Off
- Ethernet Remote Control (TCP/IP or UDP/IP)
- RF Input Isolator
- Driver Amplifier
- Reverse Power Monitor
- Forward RF Sample Port

## Options

- Other PRF and Pulse Width Ranges
- Higher Duty Cycle
- Higher Peak Power
- Reverse RF Sample Port
- RS-232/422 or IEEE-488 Remote Control
- Other Primary Power
- Outdoor Enclosure
- Conformal Coated PC Boards

mdl177\_3b.wpd  
07-13-22

