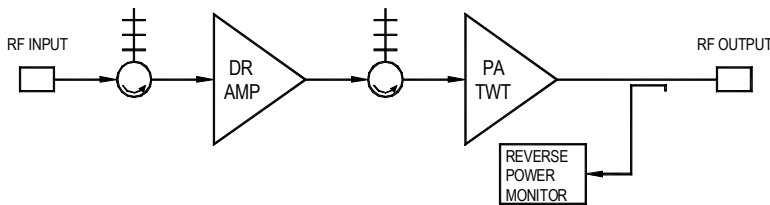


# Model 177 10kW TWT Amplifier 5.0% DUTY



## FEATURES:

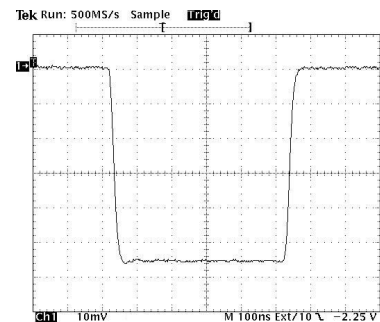
- Low Spurious Outputs
- Phase and Amplitude Stability
- Complete TWT Protection
  - Pulse Input Protection
  - Helix Overcurrent
  - Cathode HVPS Crowbar
  - Cathode Over/Undervoltage
  - Filament Low Voltage
  - Overtemperature
  - Input Energy Limit
  - Reverse Power Monitor
- Custom Requirements
- 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.

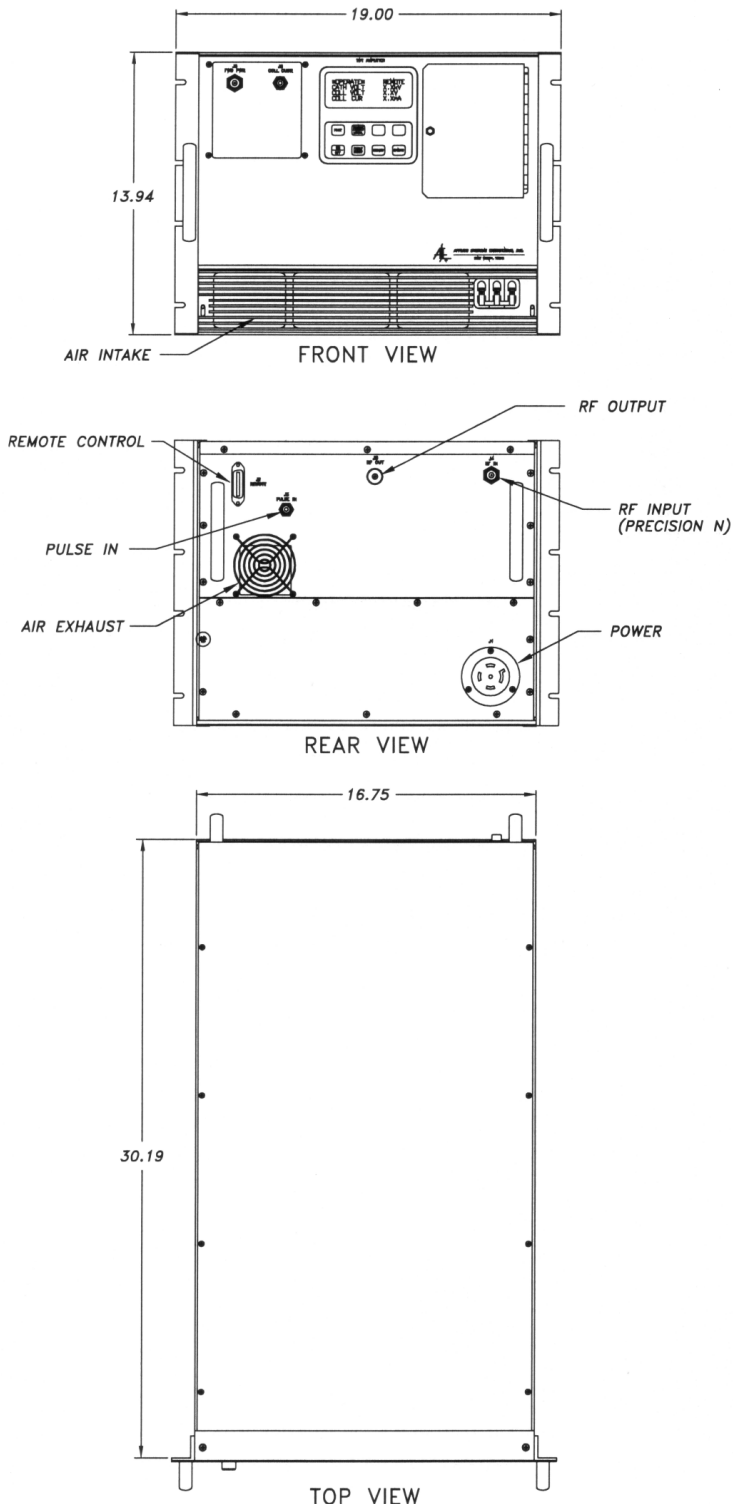
Internal power supplies are DC-DC converter designs with fast loop response times so that output level variations are minimal for any PRF including a non-periodic or burst type PRF. The modular power supplies and grid pulse generator have very low ripple, with attendant low phase noise in the TWT Amplifier.

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	10kW, Peak
Duty Cycle	5.0%, Maximum
Pulse Width Range	0.1 to 100 us
PRF Range	0 to 100 kHz
RF Rise / Fall Time	25 ns, Maximum
RF Pulse Droop	0.5 dB/100 us, 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	0 to 50°C
Weight	270 lbs, Nominal
Dimensions	14 x 19 x 30.5 (in.)

### Standard Equipment

- Driver Amplifier
- Input Isolator
- Filament / Operate Time
- IEEE-488 Remote Interface
- Reverse Power Monitor

### Options

- Other PRF and Pulse Width Ranges
- Higher Duty Cycle
- Higher Peak Power
- RF Sample Ports
- RS-232/422 Remote Interface
- Other Primary Power
- Outdoor Enclosure



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