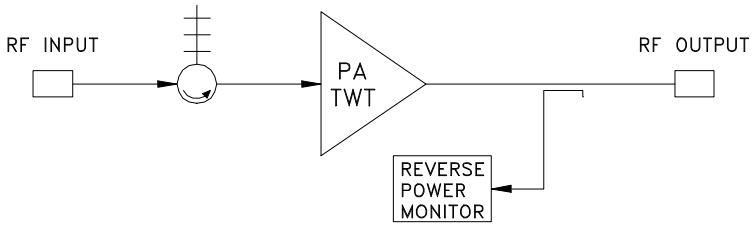
Model 176 1kW TWT Amplifier

6.0% DUTY



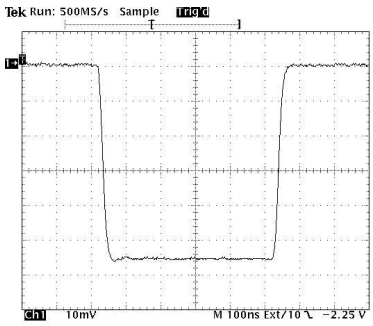
The Model 176 TWT Amplifier has been designed specifically to operate pulsed traveling wave tubes in the 1 to 2 kW peak power range at frequencies up to 18 GHz. Particular emphasis has been placed on the generation of the output RF pulse shape without the use of RF switches. Pulse width control is with 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 176 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.

FEATURES:

- Frequency 1 to 18 GHz
  Octave / Multioctave
- Low Spurious Outputs
- Phase and Amplitude Stability
- Complete TWT Protection
  - Pulse Input Protection
  - Helix Overcurrent
  - Cathode Over/Undervoltage
  - Collector Overvoltage
  - 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
  - Collector Voltage
  - Helix Current
  - Filament and Operate Time
- Front Panel Controls
  - Power On / Off
  - Operate
  - Standby
  - Fault Reset
  - Local / Remote



Detected RF Output

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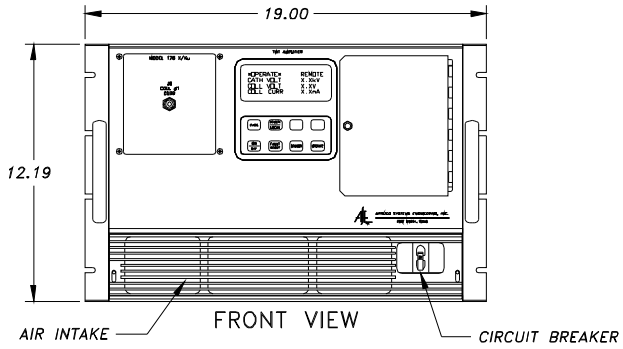
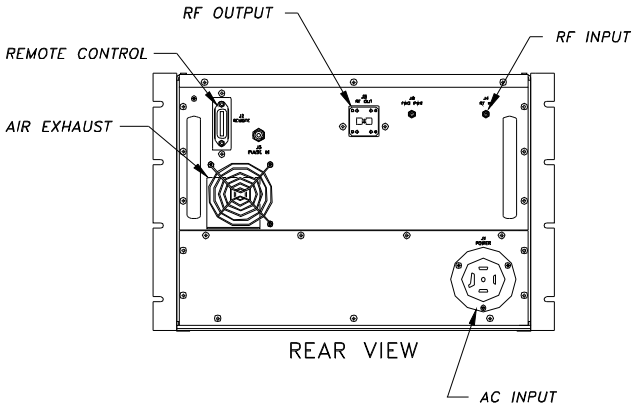
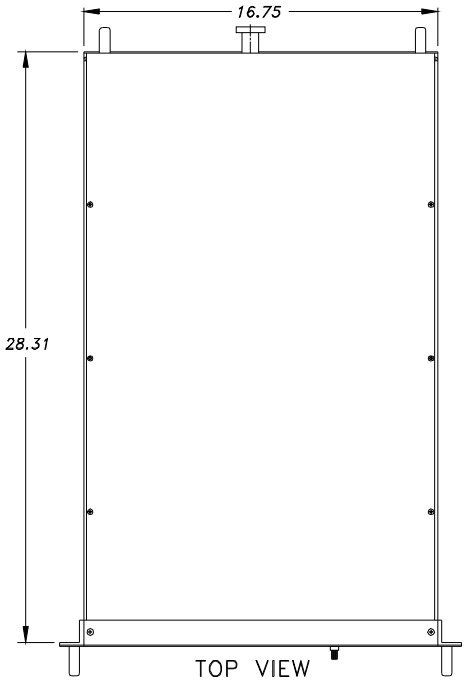
FORT WORTH, TEXAS







Model 176 TWT Amplifier

SPECIFICATIONS

Duty Cycle	6.0%, Maximum
Pulse Width Range	0.07 to 100 us
PRF Range	0 to 400 kHz
RF Rise / Fall Time	15 ns, Maximum
RF Pulse Droop	0.5 dB/100 us, Maximum
Delay, Input to RF	200 ns, Maximum
Phase Noise	< ± 1° 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	Precision Type N or Waveguide
Primary Power	120 VAC ± 10%, 50/60 Hz
Operating Temperature	0 to 50°C
Weight	130 lbs, Nominal
Dimensions	12.25x19x28.5(in.)

Standard Equipment

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

Options

- Driver Amplifier
- Pulse Width up to 125 µsec
- Extended Frequency Coverage
- Higher Peak Power
- RF Sample Ports
- Detected RF Output
- RS-232/422 Remote Interface
- Other Primary Power
- Outdoor Enclosure
- RF Connectors on Front Panel
- Harmonic Filters

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01-26-09

APPLIED SYSTEMS ENGINEERING, INC.
PO BOX 122987 FORT WORTH TEXAS 76121
TELEPHONE (817) 249-4180 FAX (817) 249-3413