Model 477Ka 700W TWT Amplifier

The Model 477Ka provides 700W peak power at duty cycles up to 8% from 33 to 36 GHz. Particular emphasis has been placed on the generation of the output RF pulse shape. The RF output pulse width tracks the input 5 volt video pulse.

Internal power supplies are DC-DC converter designs operating at 50kHz 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.

All high voltage modules are plug-in assemblies packaged in an aluminum oil tank with transformer oil as the dielectric medium. Transformer drivers feature power MOSFET’s in a full wave bridge configuration. Imbedded processor provides control, monitor and interface functions, and multiple pages of monitored functions on the front panel 4-line vacuum fluorescent display.

The modular design of the Model 477Ka 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.

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
  - Over temperature
  - 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

Detected RF Output
Model 477Ka TWT Amplifier

SPECIFICATIONS

Output Power ........... 700 Watts, Peak
Duty Cycle ............. 8%, Maximum
Pulse Width Range ...... 0.05 to 10 μs
PRF Range ............. 0 to 100 kHz
RF Rise / Fall Time .... 15 ns, Maximum
Input Pulse / RF Pulse .... 200 ns, Maximum
Phase Noise ............ ± 1° pk to pk
Amplitude Variation ... 0.1 dB, Maximum
Spurious Outputs ...... -50 dBc, Maximum
Harmonics .............. -30 dBc, Maximum
Input Pulse ............ 5 Volts into 50 ohms
Noise Figure ........... 20 dB, Nominal
RF Input Connector ..... 3.5mm, Female
RF Output Connector ... WR-28 Waveguide
Primary Power .......... 120 VAC, 1-phase ± 10%, 50/60 Hz
Operating Temperature .. -20° to +50°C
Weight .................. 190 lbs, Nominal
Dimensions ............. 17 x 15.75 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
- RF Sample Ports
- Detected RF Output
- RS-232/422 Remote Interface
- Ethernet Interface
- Other Primary Power
- Outdoor Enclosure