

# Model 1727A RF AMPLIFIER

100 KHz to 26.5 GHz



Up to 1 W to 18 GHz

The TEGAM Model 1727A is a general purpose broadband amplifier that operates over 100 kHz to 26.5 GHz frequency range. This amplifier is capable of providing additional power and gain to compensate for system RF path losses and improve system measurement capabilities.

This amplifier provides the capability for automated switching between two generators providing output coverage from 100 KHz to 26.5 GHz at a single output port. A variable gain amplifier is provided in the 100 KHz to 10 MHz frequency range and provides level control when used with low frequency generators having poor or no external means of level control.

Model 1727A Amplifier functions are controlled over IEEE-488 bus or locally using the instrument front panel controls. Bench top and ATE applications will benefit from the Model 1727A's single drop-in system compatibility.

## FEATURES:

- System IIA Compatible.
- Broadband Frequency Coverage:
  - Model 1727A: 100 kHz to 26.5 GHz
  - Model 1727A-01: 100 kHz to 18 GHz
- Dual Generator Input.
- Gain Adjust: 30 dBm in 5 dB steps
- Provides up to 1 W to 18 GHz.
- Increases the maximum power available for most any signal generator or sweeper.

### Weinschel PLANAR CROWN® CONNECTOR System:

The use of Weinschel PLANAR CROWN® connectors as part of the Model 1727A can provide the user with an easy exchange of connector types and eliminates the need for adapters and other devices that would create additional insertion loss. This "Torque Free" type of connector also provides quick replacement of defective connectors. All crowns will mate nondestructively with connectors per MIL-STD-39012 (refer to PLANAR CROWN® data sheet for more details).

**Rack Mounting** - This instrument can be stacked easily with other TEGAM instruments or mounted in any cabinet or rack designed according to MIL-STD-189 or EIA RS-310 using the appropriate rack mounting kit.

## SPECIFICATIONS

### Frequency Range:

Model 1727A: 100 kHz to 26.5 GHz

Model 1727A-01: 100 kHz to 18 GHz

**Maximum Input Level:** +20 dBm

**Nominal Impedance:** 50 ohm

**SWR at Input Connectors:** 2.0:1 maximum

### Output Power:

Frequency Range	Power output Maximum (dBm)	Gain (dB)
100 kHz-18 GHz	≥+28	30 typ
18-26.5 GHz	≥+10	10 typ

*\*Minimum input level +5 dBm*

### ALC INPUT (100 kHz to 10 MHz):

Input Voltage Range: +10 to -10 V

Output Range: >10 dB

### Connectors:

RF output 3.5mm PLANAR CROWN®  
 Low band Type N PLANAR CROWN®  
 High band 3.5 mm PLANAR CROWN®  
 IEEE-488 24 pin Connector per IEEE-488-1975

**Input Power:** 85-265 Vac, 47-63 Hz, 160 W maximum

**Power Consumption:** 130 Watts

**Temperature:** Operating: 0 to +40°C  
 Storage: -40 to +75°C

**Dimensions:** 88.9 mm (3.5 in.) high x 426.7 mm (16.8 in.) wide x 520.7 mm (20.5 in.) deep

**Weight:** Approximately 10 Kg (22 lbs.)

## Applications:

Although this amplifier can be used in many applications requiring additional power and gain over the 100 kHz to 26.5 GHz frequency range, the most common application for the TEGAM Model 1727A Amplifier is an accessory for the TEGAM System IIA Automatic Power Meter Calibration System. In a typical System IIA configuration, the 1727A can be used in conjunction with an RF generator to increase the overall output of the System IIA precision power source subsystem (shown below).

The instrument contains amplifiers that can be switched in automatically providing output levels over the frequency range from 100 KHz to 18 GHz in excess of +20 dBm. This insures adequate power for calibration levels at the Feedthrough Standard of 10 mW when used with the Models 1109 and 1119 and 100 mW when used with the Models 1109H and 1119H. Additional amplification over the 18 to 26.5 GHz range provides a power boost to ensure at least 1 mW when used with the Model 1117A.

The Model 1727A Amplifier's capability for automated switching between two generators can provide the user with broadband coverage from 100 KHz to 26.5 GHz at a single port. The internal variable gain amplifier covering the 100 KHz to 10 MHz frequency range provides level control when used with a TEGAM Model 1805B RF Level Control Unit. This allows the use of low frequency generators having poor or no external means of level control. Figure 2 shows a block diagram of a fully automated System IIA using the Model 1727A to provide calibrations over the 100 kHz to 26.5 GHz frequency range.

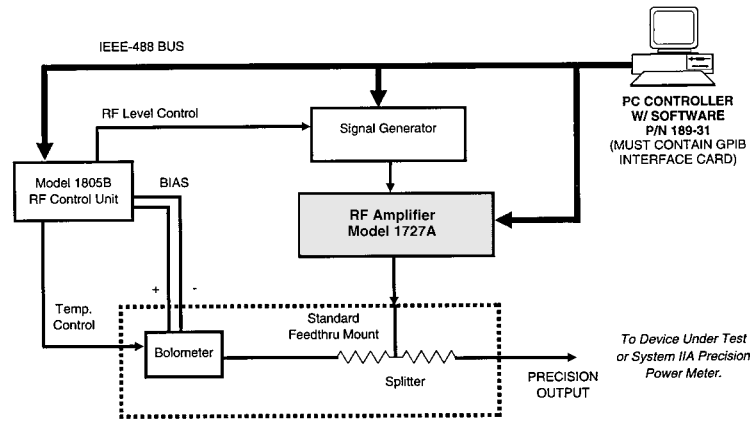


Figure 1. Typical System II Setup Using 1727A

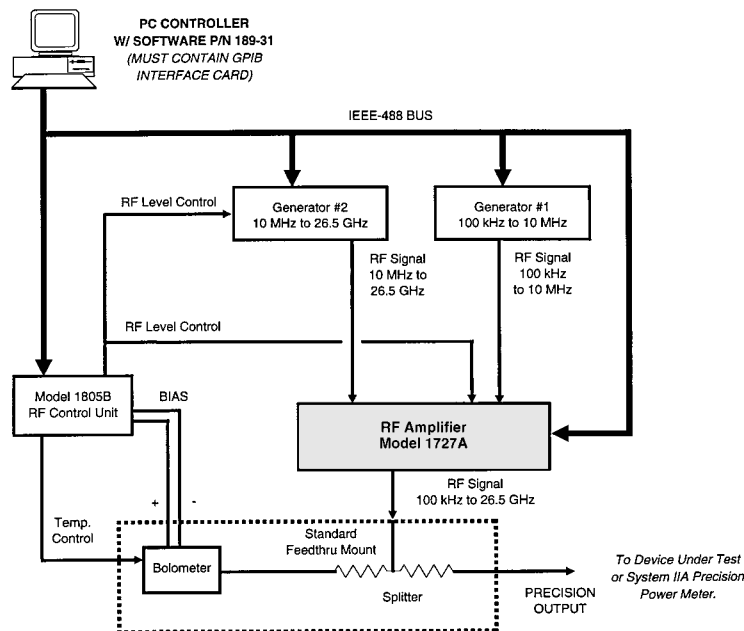


Figure 2. Typical Model 1727A Setup using two Generators