

Model 1827

RF CALIBRATION AND MEASUREMENT PRODUCTS

- Calibrates 100 kHz to 18 GHz RF power sensors from Agilent (HP), Anritsu, Boonton, Giga-tronics, Rohde & Schwarz, TEGAM and others
- The widest frequency range of any commercially available power sensor calibrator
- Less than half the cost of a comparable System IIA
- Two switchable RF inputs
- Ideal for labs with annual calibration workloads of 40 RF power sensors or less
- Can calibrate many popular sensors in 30 minutes or less
- The accuracy and reliability you have come to expect from TEGAM
- No software to learn
- Compact and easy to use
- All connectors are located on the front panel for easy connection
- Rack mount kit available
- Optional A2LA Accredited ISO/IEC 17025:1999 Compliant Calibration

NOTE: Customer must provide an appropriate RF Signal Source, DVM and an RF Power Meter for the UUT.

Economical Wideband RF Power Sensor Calibrator

The Model 1827 RF Power Sensor Calibrator is an accurate, economical, and reliable instrument. The broad frequency range of 100 kHz to 18 GHz makes the Model 1827 an ideal choice for calibrating a wide variety of sensors while keeping annual calibration costs low. Previous calibration systems required two standards to achieve this range, and annual calibration costs were thousands of dollars more. VSWR and accuracy have not been sacrificed to achieve the broad frequency range of this instrument.

The Model 1827 detects the level of RF power being applied to an RF power sensor. Resulting voltage readings are measured by the customer-supplied DVM. Cal factors for the UUT are determined by comparing the readings of the DVM with the readings of the customer-supplied Power Meter. Cal factors are obtained by performing a few simple calculations.

The Model 1827 is a cost effective, non-automated version of the popular TEGAM System IIA. No additional software is supplied or required. The Model 1827 offers the same accuracy and reliability as other TEGAM test instruments. The 1827 is not a microprocessor - controlled instrument, but it is simple to

operate. Since measurements are taken with an external DVM, the 1827 could be integrated into an automated workstation. The Model 1827's built-in Thermistor RF Power Standard is internally temperature controlled, so changes in ambient temperature will not affect power measurements. The Type IV Bridge Circuitry detects RF power by using the DC power substitution method. DC power levels can be measured to within $\pm 0.003\%$.

The Model 1827 has a wider frequency range than any commercially available power sensor calibrator. Because of this wide frequency range, two signal sources may be required. The 1827's two RF Inputs are designed so that the user can change signal sources just by flipping a switch.

This instrument is simple to operate. To calibrate a power sensor, the operator connects the output from the customer-supplied RF signal generator to one of the RF Inputs of the 1827. Then the + and - input of the customer-supplied voltmeter is connected to the red and black binding posts on the 1827. The operator then connects the UUT to a customer-supplied compatible power meter and to the SENSOR port of the 1827. Measurements can now be taken. The DVM and Power Meter readings are then used to calculate the cal factor of the UUT at the selected frequency. These simple calculations can be performed by the user or by entering the readings into the Microsoft Excel spreadsheet provided by TEGAM. This spreadsheet contains the formulas necessary to calculate cal factor and is provided as a convenience for our customers.



Prices and specifications subject to change without notice.

TEGAM®

YOUR GLOBAL SOURCE FOR TEST
AND MEASUREMENT SOLUTIONS

Model 1827

W I D E B A N D P O W E R S E N S O R C A L I B R A T O R

Specifications

Frequency Range	100 kHz to 18 GHz
Power Range	0.01 to 25 mW (-20 to +14 dBm)
Substitution Bridge Accuracy	±0.003 %
Nominal RF Impedance	50 Ohms
VSWR	≤ 1.14
Power Linearity	<0.1 % from 1 to 10 mW
Insertion Loss (RF INPUT)	6 dB nominal, 10 dB max
Individual calibrations traceable to NIST supplied at the following frequencies:	100, 200, 300, 455, 500 kHz 1, 1.25, 3, 5 MHz 10 to 100 MHz in 10 MHz steps 100 MHz to 2 GHz in 50 MHz steps 2 GHz to 4 GHz in 100 MHz steps 4 to 12.4 GHz in 200 MHz steps 12.75 to 18 GHz in 250 MHz steps
Calibration Factor Accuracy	±0.80 % from 0.1 to 10 MHz ±1.00 % from 0.01 to 10 GHz ±1.10 % from 10 to 18 GHz
Calibration Factor Drift	<0.5 % per year
Connectors SENSOR RF IN VOLTMETER	N-type Female SMA Female (X2) Binding Post, standard 0.75 in. spacing for banana plugs
Temperature Operating Storage	+12 °C to +32 °C (+54 °F to +90 °F) -40 °C to +75 °C (-40 °F to +167 °F)
Warm up time	2 hours
Power Requirements	12 Watts, 47 to 420 Hz, 105 to 125 VAC standard or 210 to 250 VAC with a factory installed option
Weight	8.03 kg (17.7 lb)
Physical Dimensions Height Width Depth	88.9 mm (3.5 in) 457.2 mm (18 in) 390.7 mm (15.4 in)
Rack Mounting	The Model 1827 can be mounted in a standard 19" rack, with rack mount kit P/N RM-1825
Additional Equipment Required: Signal Generator DVM RF Power Meter	100 kHz to 18 GHz Frequency Range, Continuous Wave, 6 dBm minimum power output. (Two may be required to cover the entire frequency range.) DC Volts, 6 1/2-digit minimum Compatible with the sensor under test
Included Accessories Operation Manual Power Cord	P/N 1825-901-01CD P/N 068-21
Optional Accessories Padded Carrying Case 3-Foot Test Cable Rack Mount Kit A2LA Accredited ISO/IEC 17025:1999 Compliant Calibration for 1827	P/N 1800 P/N 1585-1000 P/N RM-1825 P/N OPT-A2LA



10 TEGAM WAY • GENEVA, OHIO 44041
440-466-6100 • FAX 440-466-6110
www.tegam.com • e-mail: sales@tegam.com