

## RF Power Meter for Metrology

- Calibrates 50 MHz reference outputs and other signal sources
- Lowest uncertainty
- Compatible with thermistor power sensors from:
  - Agilent (HP)
  - TEGAM
  - Weinschel
  - Hughes
  - General Microwave
  - Millitech
- Supports 100  $\Omega$  and 200  $\Omega$  thermistors
- Four digit calibration factor resolution
- Full function Ethernet and USB Interfaces
- Heater control for ovenized sensors



Thermistor RF power sensors are universally recognized as the most accurate means to measure and transfer RF power. The TEGAM Model 1830A was designed to operate with all types of thermistor RF power sensors while reducing uncertainties. It combines a modern DC substitution bridge with a precision measurement system to provide consistent, calibrated RF power readings manually or automatically.

### Better Measurements

TEGAM used its experience building Type IV bridges and developed a superior DC substitution power meter with advanced analog and digital electronics that provide the lowest uncertainties possible in a portable instrument. The dynamic range extends from -30 to +14 dBm and the frequency range from 100 kHz to 50 GHz. Both of these parameters are dependent on the actual measurement sensor. Special

attention was paid to the Common Mode performance to reject the applied RF signal across the entire measurement band. In addition to more accurate measurements, the TEGAM 1830A is also equipped with convenient features such as calibration factor table storage, as well as both USB and Ethernet communication interfaces.

### Greater Flexibility

There are many thermistor based RF power sensors available. The Model 1830A is designed to bias either 100  $\Omega$  or 200  $\Omega$  mounts and has dual bridges for balancing both RF sense and compensation thermistors such as contained in the Agilent 478A and 8478B. It also works with the Agilent 486A series of waveguide sensors and includes a heater circuit for all TEGAM and Weinschel ovenized thermistor mounts. The model 1830A comes in a compact 2U half rack configuration.

### SUPPORTED SENSORS

#### Agilent

478A, 8478B, S486A, G486A, J486A, H486A, X486A, M486A, P486A, K486A, R486A

#### TEGAM/Weinschel

1107-8, 1807, M1110, M1111, M1118, M1120, M1125, M1130, M1135, F1109, F1116, F1117, F1119, F1125, F1130, F1135, 1505A, 2505A, 1510A, 2510A

**Hughes, Millitech, General Microwave, Mounts compatible with:**  
Agilent 478A



## Preliminary Specifications

Power Range	-30 to +14 dBm (0.001 mW to 30 mW)	
Frequency Range	100 kHz to 50GHz (sensor dependent)	
Meter Uncertainty	±0.05% of reading, ±0.5 μW (0.1% at 1 mW)	
Cal. Factor Resolution	4 digit	
Bridge Resistance	Variable from 50 Ω to 300 Ω (RF termination 12.5 Ω to 75 Ω)	
Heater Circuit	8 VDC @ 200 mA (compatible with all TEGAM and Weinschel thermistor mounts)	
Sensor Connections	Sensor	14-pin quick connect
	Heater	4-pin mini-microphone
Communications	USB, 10/100 BaseT Ethernet	
Operating Temperature	0 °C to +55 °C	
Storage Temperature	-40 °C to +75 °C	
Humidity	0-95 % RH non-condensing	
Power Requirements	100 to 240 VAC, 75 VA Max	
Weight	2.0 kg (4.4 lb)	
Dimensions	2U ½ Rack 8.89 cm x 21.59 cm x 33.02 cm (3.5 in x 8.5 in x 13 in)	
Supported Sensors	<b>Agilent:</b> 478A, 8478B, S486A, G486A, J486A, H486A, X486A, M486A, P486A, K486A, R486A <b>TEGAM/Weinschel:</b> 1107-7, 1107-8, 1807, M1110, M1111, M1118, M1120, M1125, M1130, M1135, F1109, F1116, F1117, F1119, F1125, F1130, F1135 <b>Any thermistor mounts compatible with Agilent 478A</b>	
Software Support	PS-Cal, IVI-compliant LabView driver	
Included Accessories	Power Cord	068-21
	Manual	1830A-901-01
Optional Accessories	Heater Cable, 4 pin mini, 48"	CA-11-48
	Heater Cable, 4 pin large, 48"	CA-10-48
	Sensor Cable, 478A & 8478B, 48"	CA-6-48
	Sensor Cable, TEGAM/Weinschel, 48"	CA-7-48
	Sensor Cable, unterminated, 48"	CA-9-48
	Rack Mount Kit	Contact TEGAM