RF CALIBRATION AND MEASUREMENT INSTRUMENTS

NEW 50 GHz Coaxial RF Power Transfer Standards



- Calibrate RF Power Sensors from 10 MHz to 50 GHz
- PMX & SYSIIB Compatible
- 0.01 to 10 mW typical usable range (-20 to +10 dBm)
- Primary (1510A) and Working (2510A) Transfer Standard configurations
- Rack mount option available
- A2LA Accredited ISO/IEC 17025 Compliant Calibration

TEGAM Temperature Stabilized Coaxial RF Power Transfer Standards enable the precise measurement of microwave power in the 10 MHz to 50 GHz frequency range.

These standards are highly accurate and stable with time and temperature. They are ideal for use as standards for the transfer of calibration factors to other RF standards and power sensors.

The calibration of these standards is traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) or other recognized National Metrology Institutes.

These RF Power Standards work with TEGAM's new 1830A RF Power Meter, as well as our legacy DC Self-Balancing Bridges, 1806 and1806A.

System configurations employing instruments of this accuracy typically achieve calibration factor transfer results normally found only in primary standards laboratories.

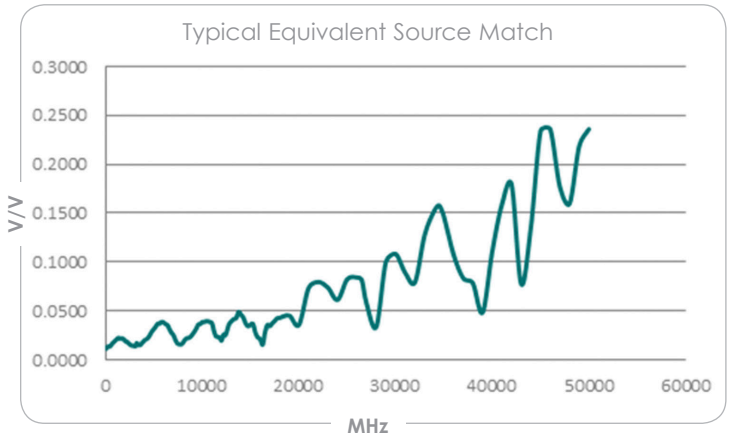
The Model 2510A is a feedthrough Thermistor Standard used for the calibration of bolometer, thermo-couple, and diode terminating power sensors.

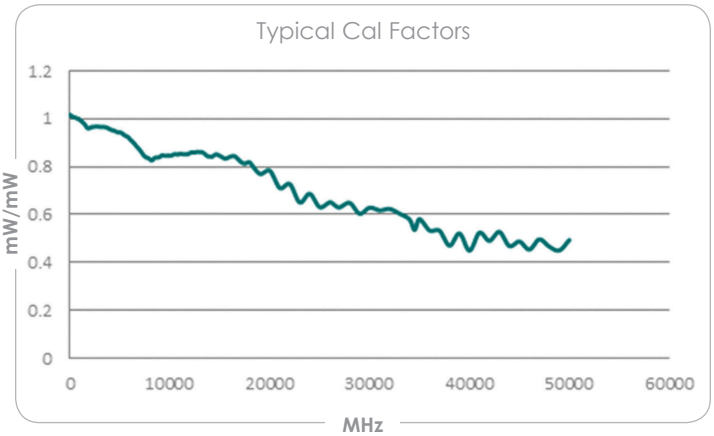
The Model 1510A is a terminating thermistor Primary Transfer Standard. It is designed to be calibrated directly by a national standards agency such as NIST. The 1510A is used for the calibration of feedthrough devices such as bolometer mount-coupler and bolometer mount-splitter RF Standards. It is also useful in other applications requiring direct measurement of RF power.

The Model 2510A features a 2.4 mm female connector, and the 1510A features a compatible 2.4 mm male connector.

Performance Graphs

2510A





Prices and specifications subject to change without notice.
1510A/2510A-909 Rev E

General Specifications		
Frequency Range	10 MHz to 50 GHz	
Max Power	25 mW (+14 dBm)	
RF Impedance	50 Ohms nominal	
Power Linearity	<0.1% from 1 to 10 mW	
Typical Usable Range	-20 dBm to +10 dBm (0.01 to 10 mW) typical *(Depends on noise floor and resolution of DC instruments)*	
Calibration Factor Drift	<0.5% per year	
Individual Calibration factors are supplied standard at the following frequencies. Inquire about additional points.	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	18 to 26 GHz in 1 GHz steps 26.5 GHz 27 to 34 GHz in 1 GHz steps 34.5 GHz 35 to 50 GHz in 1 GHz steps
Thermistor DC Bias Power	40 mW (nominal)	
Thermistor Resistance at Bias	200 Ohms (set by balancer)	
Temperature: Operating **Storage**	+15° to +30° C (+59° to +86° F) -55° to +75° C (-67° to +167° F)	

Individual Model Specifications	Model 2510A	Model 1510A
Frequency Range	10 MHz to 50 GHz	10 MHz to 50 GHz
Typical Equivalent Source Match |Γ|(V/V)	10 MHz to 100 MHz: 0.01 100 MHz to 2 GHz: 0.02 2 GHz to 12.4 GHz: 0.04 12.4 GHz to 18 GHz: 0.06 18 GHz to 26.5 GHz: 0.10 26.5 GHz to 40 GHz: 0.15 40 GHz to 50 GHz: 0.25	10 MHz to 100 MHz: 0.0066 100 MHz to 2 GHz: 0.0267 2 GHz to 12.4 GHz: 0.1356 12.4 GHz to 18 GHz: 0.2249 18 GHz to 26.5 GHz: 0.3200 26.5 GHz to 50 GHz: 0.3389
Loss from Input Port to DUT Port	11 dB (typical)	N/A
Calibration Factor Accuracy (typical)	+/-1.0% from 0.01 to 0.04 GHz +/-1.25% from 0.05 to 4.0 GHz +/-1.5% from 4.20 to 12.0 GHz +/-2.2% from 12.2 to 17.5 GHz +/-2.5% from 17.75 to 26.5 GHz +/-3.0% from 27.0 to 44.0 GHz +/-4.0% from 45.0 to 50.0 GHz	+/-1.2% from 0.01 to 0.04 GHz +/-1.4% from 0.05 to 4.0 GHz +/-1.7% from 4.20 to 12.0 GHz +/-2.3% from 12.2 to 17.5 GHz +/-2.6% from 17.75 to 26.5 GHz +/-3.2% from 27.0 to 44.0 GHz +/-4.2% from 45.0 to 50.0 GHz
Connectors: Type **Pin Depth**	APC 2.4 mm Female 0.207 +0.000/-0.003	APC 2.4 mm Male 0.208 +0.003/-0.000
Weight	2.9 kg (6.3 lb)	544.3 g (1.2 lb)
Physical Dimensions: Height **Width** **Depth**	10.5 cm (4.1 in) 21.7 cm (8.5 in) 33.8 cm (13.3 in)	7.2 cm (2.8 in) 8.2 cm (3.2 in) 13.8 cm (5.4 in)

Accessories	Model	Product Description
Adapters	**1510-911-01** **1510-912-01** **2510-911-01** **2510-912-01** **2510-913-01**	Coax Adapter, 2.4 mm (F) to 2.92 mm (M) with Data Coax Adapter, 2.4 mm (F) to 3.5 mm (M) with Data Coax Adapter, 2.4mm (M) to 2.92 mm (F) with Data Coax Adapter, 2.4mm (M) to 3.5 mm (F) with Data Coax Attenuator, 2.4 mm (M to F) 30db with Data
Cables	**CA-21-15** **CA-21-48** **CA-28-48** **CA-29-48**	Cable, Voltage Bias and Heater, 1830A to 15XX/25XX, 15" Cable, Voltage Bias and Heater, 1830A to 15XX/25XX, 48" Cable, Voltage Bias and Heater, 1806A to 2510/1510, 48" Cable, Voltage Bias and Heater, 1806 to 2510/1510, 48"
Wrench	**2510-910-01**	Torque wrench, 8mm, 8 in-lbs, 3.5 mm, 2.92 mm and 2.4 mm Male to Other Devices
Cases	**1500-910** **2500-910**	Transport Case for 1510A RF Power Standard (Included with 1510A) Transport Case for 1830A, F113X & 2510A
Rack Mounting for Model 2510A		(Single) 1830-910 – (Dual) 1830-911

10 TEGAM Way • Geneva, Ohio 44041 • Phone: 440-466-6100 • Fax: 440-466-6110 • E-mail: sales@tegam.com • www.tegam.com