Model F1130/M1130

RF CALIBRATION AND MEASUREMENT PRODUCTS

- **Used to calibrate RF Power Sensors in the new wider frequency range of 100 kHz to 18 GHz**
- **Standards are directly traceable to NIST**
- **Thermistor elements are temperature controlled**
- **0.01 to 25 mW dynamic range**
- **Primary and Working Transfer Standard configurations**
- **Rack mount kit available**
- **Optional A2LA Accredited calibrations**

Coaxial RF Power Transfer Standards

TEGAM Temperature Stabilized Coaxial RF Power Transfer Standards enable the precise measurement of microwave power, now in the 100 kHz to 18 GHz frequency range. With this wider frequency range, the F1130 and M1130 can be used in applications that previously required two standards.

These units are extremely rugged, 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. Units are supplied with ANSI/NCSL Z540-1-1994 NIST traceable calibration data. A2LA Accredited Calibrations are optional.

These models are designed for use with dc self-balancing bridges such as the TEGAM Model 1806 and 1804, or with controllers such as the TEGAM Model 1805B.

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

The Model F1130 is a feedthrough Thermistor Standard and Power Splitter combination used for the calibration of bolometer, thermocouple, and diode terminating power sensors. The expanded frequency range has been achieved without compromising the VSWR or accuracy specifications.

The Model M1130 is a terminating thermistor Primary Transfer Standard. It is designed to be calibrated directly by a national standards agency such as NIST. The M1130 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 VSWR of this model is better than the two standards it replaces and the accuracy is unchanged.

Both models have a wider frequency band than any other thermistor power standard in this range. This reduces the number of standards needed to calibrate power sensors in the 100 kHz to 18 GHz frequency range and lowers annual calibration costs by up to 50%.

Both Models feature a Type N RF connector. Bias connectors are binding posts with standard 0.75" spacing for banana plugs. The internal heater is connected using cables provided with the Models F1130, 1805B, 1806, and 1820.

Prices and specifications subject to change without notice.

TEGAM®

YOUR GLOBAL SOURCE FOR TEST AND MEASUREMENT SOLUTIONS

Model F1130/M1130

RF CALIBRATION AND MEASUREMENT PRODUCTS

Specifications

	F1130	M1130
Frequency Range	100 kHz to 18 GHz	100 kHz to 18 GHz
Power Range	0.01 to 25 mW (-20 to 14 dBm)	0.01 to 25 mW (-20 to 14 dBm)
Nominal Impedance	50 Ohms	50 Ohms
Max VSWR	1.06 from 100 kHz to 6 GHz 1.10 from 6 to 15 GHz 1.14 from 15 to 18 GHz	1.30 from 100 to 500 kHz 1.10 from 0.5 to 1000 MHz 1.20 from 1 to 4 GHz 1.30 from 4 to 8 GHz 1.40 from 8 to 18 GHz
Power Linearity	<0.1% from 1 to 10 mW	<0.1% from 1 to 10 mW
Insertion Loss	6 dB, 9 dB max	1.5 dB max
Individual calibrations traceable to NIST supplied at the following frequencies:	100, 200, 455 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	100, 200, 455 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	+/-0.80% from 0.1 to 10 MHz +/-1.20% from 0.01 to 10 GHz +/-1.30% from 10 to 18 GHz
Calibration Factor Drift	<0.5% per year	<0.5% per year
Thermistor DC Bias Power	30 +/- 0.7 mW	30 +/- 0.7 mW
Thermistor Resistance at Bias	200 Ohms	200 Ohms
Thermistor Power Sensitivity	Approximately 13 Ohms/mW	Approximately 13 Ohms/mW
Temperature		
Operating	+12° to +40°C (+54° to 104°F)	+12° to +40°C (+54° to 104°F)
Storage	-55° to +75°C (-67° to +167°F)	-55° to +75°C (-67° to +167°F)
Warm up time	2 hours	2 hours
Weight	5.5 lbs (2.5 kg)	3.22 lbs (1.46 kg)
Physical Dimensions		
Height	3.5 in (88.9 mm)	5.25 in (133.35 mm)
Width	8.5 in (215.9 mm)	4.00 in (101.6 mm)
Depth	15.4 in (390.7 mm)	9.25 in (234.95 mm)

This data sheet was current when it was produced. However, products are constantly being updated and improved. Because of this some differences may occur between the descriptions herein and the current product. Prices and specifications may be changed without notice.

ACCREDITED
Certificate no. 2018.01

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