

# TEGAM® MODEL 2818A

9 KHZ TO 18 GHZ RF POWER TRANSFER  
STANDARD



Advanced Energy's TEGAM 2818A RF Power Transfer Standards enable the precise measurement of microwave power in the 9 kHz to 18 GHz frequency range.

These standards are highly accurate and stable with time and temperature. They are ideal for use as standards to calibrate RF power sensors from a variety of manufacturers.

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.

## AT A GLANCE

### Frequency Range

9 kHz to 18 GHz

### Max Power

10 mW (+10 dBm)

### RF Impedance

50 Ohms nominal

## PRODUCT HIGHLIGHTS

- Calibrate RF Power Sensors from 9 kHz to 18 GHz
- Fast reading settling time of < 2s
- 0.01 to 10 mW operating range (-20 to +10 dBm)
- Basic accuracies of  $\leq 1.0\%$
- Rack mount option available



### OVERVIEW

**TRUST** is an essential feature in any measurement tool and TEGAM's 2818A RF Power Transfer Standard is a tool you can **rely on every day** with confidence.

Built upon proven technologies the 2818A offers new features and advantages in a RF Power Transfer Standard. Utilizing TEGAM's transfer standard techniques applied to an internally-referenced thermoelectric sensor, the 2818A **performs faster** while retaining excellent overall performance and accuracy.

With a USB communication port, the 2818A **operates without a power meter**. Utilizing PS-CAL and a PC for data collection and as a digitized power meter, you retain the benefit of making manual measurement when you want them and collecting power readings automatically when a visual power reading is not needed. Eliminating a separate power meter also means less equipment to calibrate and less space needed on the bench or in the rack.

The 2818A is EEPROM based with the **calibration constants stored within sensor**, eliminating the need for separate electronic data media. Connect the 2818A to the PC, apply RF power, and read the corrected power level without applying calibration factors separately.

TEGAM's PS-CAL® software has been updated to work with the 2818A in an automated power sensor calibration system. To accelerate your workload with the 2818A, you can now speed up the power sensor calibration process without sacrificing accuracy by adjusting the dwell time. The 2818A is **over four times as fast** as our current solution at settling on a power reading and transfers the time savings to your power sensor calibration workload.

Assembled in a familiar package, the 2818A will **fit into the same space** as an existing TEGAM RF Transfer Standard, including utilization of the same rack-mount system. This allows the 2818A to drop into current TEGAM system locations without having to reconfigure the space. The 2818A is usable on the bench or in a rack and is ready to work for you.

Turn the 2818A into a **fully automated** power sensor calibration system. TEGAM specializes in Turn-Key RF power sensor calibration systems with decades of experience. We can help you to convert your existing TEGAM power sensor calibration system to utilize the 2818A or we can build one from the ground up. Our systems make it easier to add power sensor calibration capability to your laboratory. Contact us today to learn more.

TEGAM's 30 years of microwave power measurement experience and field-proven instruments provide **measurements you can trust**.

**When the Measurement Matters, Be Certain with TEGAM.**

## PRODUCT SPECIFICATIONS

General Specifications	
Frequency	9 kHz to 18 GHz
Power	Typical usable range: -20 to +10 dBm (0.01 to 10 mW) Calibrated attenuator(s) available to extend the dynamic range
Calibration Factor Accuracy (typical)	9 kHz to <10 MHz    ±0.80% 10 MHz to <10 GHz   ±0.90% 10 GHz to 18 GHz    ±1.0%
Reflection Coefficient/Equivalent Source Match at Test Port (typical)  Γ  (V/V)	9 kHz to <6 GHz    0.03 6 GHz to <15 GHz   0.05 15 GHz to 18 GHz   0.07
Individual Calibration Factors Supplied at the Following Frequencies	9 kHz, 20 kHz to 100 kHz in 10 kHz steps 200 kHz, 300 kHz, 455 kHz, 500 kHz, 1 MHz, 1.25 MHz, 3 MHz, 5 MHz, 10 MHz to 90 MHz in 10 MHz steps 100 MHz to 1950 MHz in 50 MHz steps 2 GHz to 3.9 GHz in 100 MHz steps 4 GHz to 12.4 GHz in 200 MHz steps 12.75 GHz to 18 GHz in 250 MHz steps
RF Impedance	50 Ohms nominal
Calibration Factor Drift	<0.5% per year
Test Port Connector	Type N Female
Zero Drift and Zero Set Accy (typical after warm up)	Drift: ±5.5 nW/hr Set: ±25 nW
RF Input Port	SMA Female
Communication Interface	USB, type A 2.0 connector (rear panel)
Dimensions (W x H x D)	21.7 x 10.5 x 33.8 cm/8.5 x 4.1 x 13.3 in.
Operating Temp/Humidity	+15 to +30°C (+59 to +86°F)/<75%RH non-condensing
Storage Temp/Humidity	-40 to +70°C (-40 to +158°F)/<90%RH non-condensing
Minimum Warm-up Time	2 hours from storage in operating range environment
Weight (approximate)	2.9 kg (6.3 lbs)
Warranty	3-year parts and workmanship
Calibration Interval	1-year
Compatible Software	PS-Cal 4.9 or higher by Advanced Energy/TEGAM





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## ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than four decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE | TRUST

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