

TEGAM® MODEL 2850A

10 MHz TO 50 GHz RF POWER TRANSFER
STANDARD



Advanced Energy's TEGAM 2850A 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 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

10 MHz to 50 GHz

Max Power

10 mW (+10 dBm)

RF Impedance

50 Ohms nominal

PRODUCT HIGHLIGHTS

- Calibrate RF Power Sensors from 10 MHz to 50 GHz
- Fast reading settling time of < 2s
- 0.01 to 10 mW operating range (-20 to +10 dBm)
- Rack mount option available



OVERVIEW

TRUST is an essential feature in any measurement tool and TEGAM's 2850A RF Power Transfer Standard is a tool you can **rely on every day** with confidence.

Built upon proven technologies the 2850A 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 2850A **performs faster** while retaining excellent overall performance and accuracy.

With a USB communication port, the 2850A **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 2850A is EEPROM based with the **calibration constants stored within sensor**, eliminating the need for separate electronic data media. Connect the 2850A 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 2850A in an automated power sensor calibration system. To accelerate your workload with the 2850A, you can now speed up the power sensor calibration process without sacrificing accuracy by adjusting the dwell time. The 2850A 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 2850A will **fit into the same space** as an existing TEGAM RF Transfer Standard, including utilization of the same rack-mount system. This allows the 2850A to drop into current TEGAM system locations without having to reconfigure the space. The 2850A is usable on the bench or in a rack and is ready to work for you.

Turn the 2850A 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 2850A 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	10 MHz to 50 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) 2-Sigma	<table border="0"> <tr> <td>10 MHz to <50 MHz</td> <td>±1.4%</td> </tr> <tr> <td>50 MHz to <4 GHz</td> <td>±1.25%</td> </tr> <tr> <td>4 GHz to <12 GHz</td> <td>±1.5%</td> </tr> <tr> <td>12 GHz to <17.5 GHz</td> <td>±1.9%</td> </tr> <tr> <td>17.5 GHz to <26.5 GHz</td> <td>±2.5%</td> </tr> <tr> <td>26.5 GHz to <44 GHz</td> <td>±3.2%</td> </tr> <tr> <td>44 GHz to 50 GHz</td> <td>±4.2%</td> </tr> </table>	10 MHz to <50 MHz	±1.4%	50 MHz to <4 GHz	±1.25%	4 GHz to <12 GHz	±1.5%	12 GHz to <17.5 GHz	±1.9%	17.5 GHz to <26.5 GHz	±2.5%	26.5 GHz to <44 GHz	±3.2%	44 GHz to 50 GHz	±4.2%
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Reflection Coefficient/Equivalent Source Match at Test Port (typical) $ \Gamma $ (V/V)	<table border="0"> <tr> <td>10 MHz to <100 MHz</td> <td>0.01</td> </tr> <tr> <td>100 MHz to <2 GHz</td> <td>0.02</td> </tr> <tr> <td>2 GHz to <12.4 GHz</td> <td>0.06</td> </tr> <tr> <td>12.4 GHz to <18 GHz</td> <td>0.09</td> </tr> <tr> <td>18 GHz to <26.5 GHz</td> <td>0.12</td> </tr> <tr> <td>26.5 GHz to <40 GHz</td> <td>0.15</td> </tr> <tr> <td>40 GHz to 50 GHz</td> <td>0.25</td> </tr> </table>	10 MHz to <100 MHz	0.01	100 MHz to <2 GHz	0.02	2 GHz to <12.4 GHz	0.06	12.4 GHz to <18 GHz	0.09	18 GHz to <26.5 GHz	0.12	26.5 GHz to <40 GHz	0.15	40 GHz to 50 GHz	0.25
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Individual Calibration Factors Supplied at the Following Frequencies	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 26.5 GHz in 500 MHz steps 27 to 34 GHz in 1 GHz steps 34.5 GHz, 35 to 50 GHz in 1 GHz steps														
RF Impedance	50 Ohms nominal														
Calibration Factor Drift	<0.5% per year														
Loss Factor typical	8.5 dB nominal, up to 11 dB total (splitter and sensor)														
Power Linearity	CF change of <0.5% from 1 to 10 mW; CF change of <0.5% from 0.01 to 1 mW														
Zero Drift and Zero Set Accy (typical after warm up)	Drift: ±5.5 nW/hr; Set: ±25 nW														
Test Port Connector	2.4 mm female														
RF Input Port	2.4 mm 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														





For international contact information,
visit advancedenergy.com.

powersales@aei.com (Sales Support)
productsupport.ep@aei.com (Technical Support)
+1 888 412 7832

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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