



High Power RF Calibration System



Model 2601A

Model 2602A

- Calibrate High Power RF Sensing devices up to 250 W with uncertainty less than 1%
 - Working standards like a TEGAM 2601A
 - Through devices like a Bird Wattmeter
 - High Power RF Power Sensors from Keysite, R&S, and Anritsu
- 60 Hz to 3000 MHz Frequency Range
- National Lab Traceable through an AC Power Standard



The TEGAM High Power Calibration System is the complete automated solution for calibrating through path and terminating RF power measurement devices from multiple manufacturers. It includes the signal generation, amplification and filtering necessary to achieve or exceed the devices original specifications with the most accurate High power measurement system available.

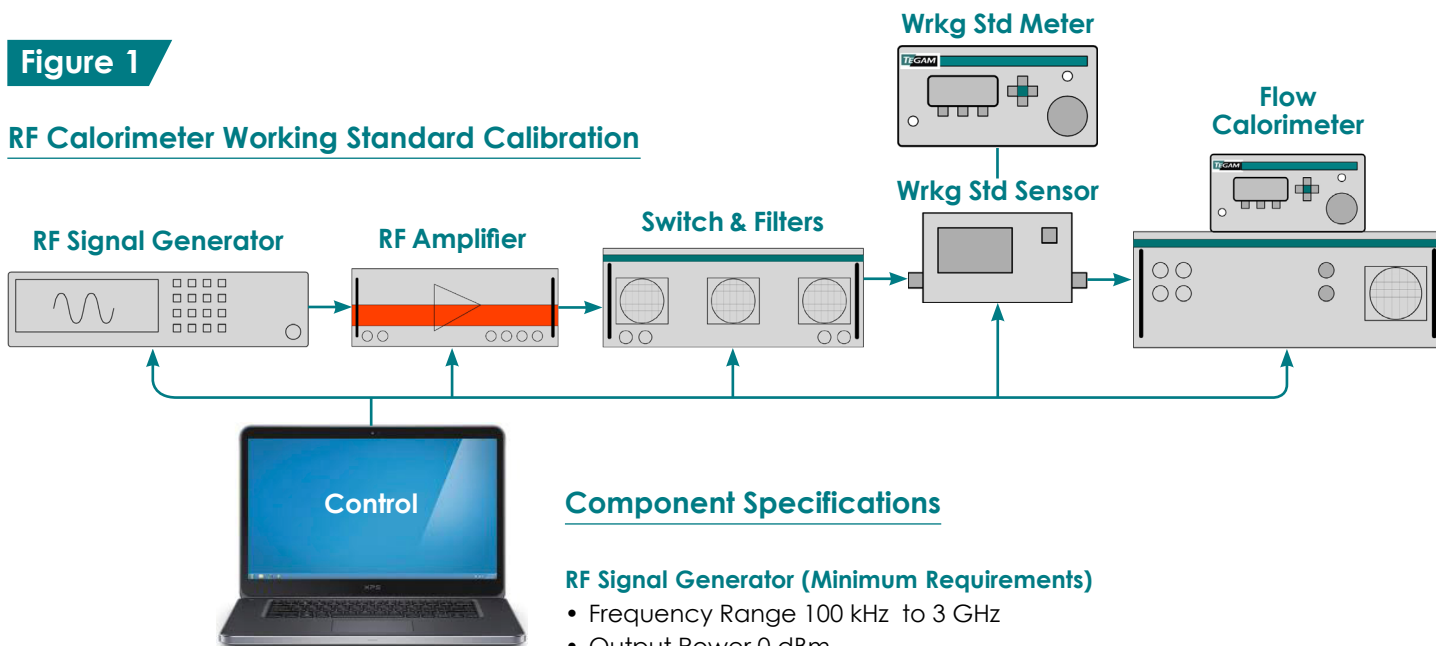
The basis for the High Power Calibration System's unmatched accuracy is an exclusive flow calorimeter designed to provide low uncertainties and convenient traceability. An internationally recognized portable power standard is used to calibrate the entire system in place. The portable standard can be sent to any national metrology institute to provide traceability at the highest level.

High Power RF Calibration System Configurations

The High Power RF Calibration System can be configured differently depending on what you are calibrating. The two most popular configuration are shown below. Figure 1 shows the system set up to calibrate one of TEGAM's standards, either the TEGAM 2601A or 2602A depending on the frequency band required. Figure 2 shows the calibration of a DUT using the 2601A or 2602A as the Standard.

Figure 1

RF Calorimeter Working Standard Calibration



Component Specifications

RF Signal Generator (Minimum Requirements)

- Frequency Range 100 kHz to 3 GHz
- Output Power 0 dBm
- SCPI Compliant

RF Amplifier (Minimum Requirements)

- Rated Output Power 250 watts
- Frequency Range 100 kHz to 3 GHz (System Dependent)
- Harmonic Distortion -20 dBC at 250 watts

Lowpass Filter

- Lowpass filter is designed to attenuate RF amplifier harmonics to < -50 dBC
- Frequency Selective Switch Controller

Working Standard Meter

- TEGAM Model 1830A

Working Standard Sensor

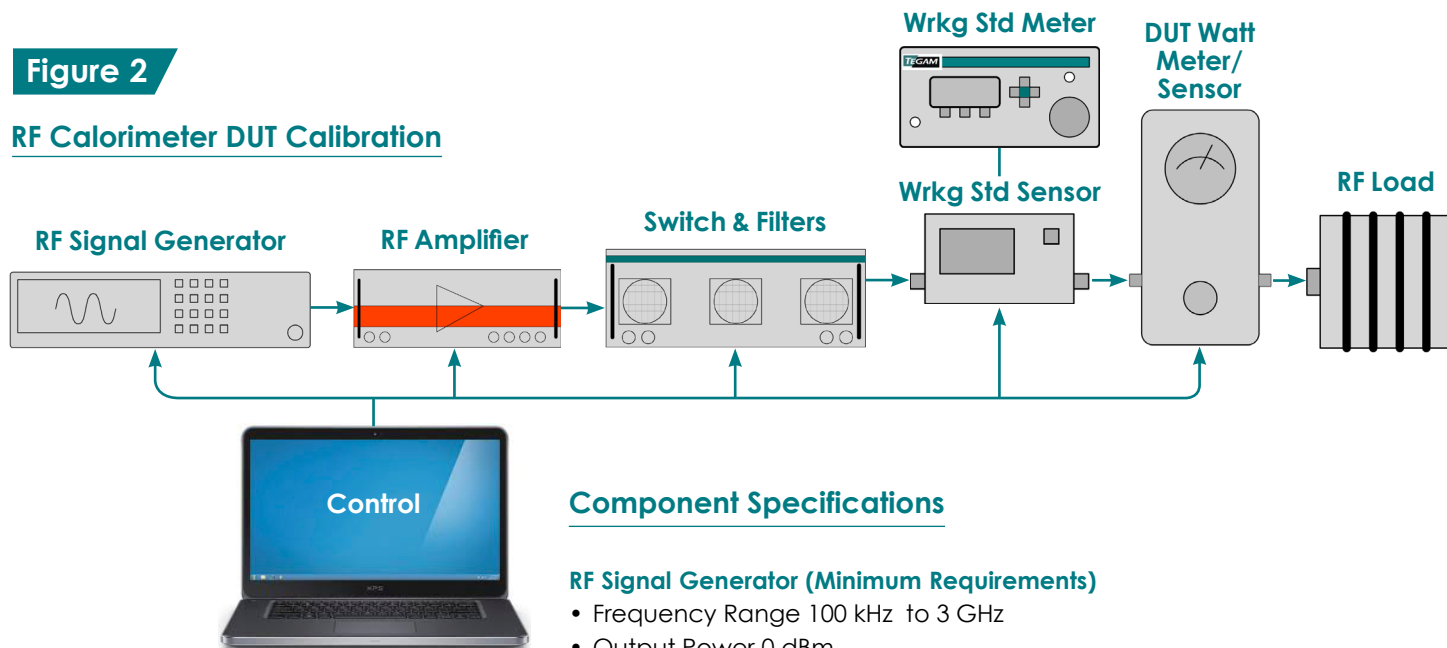
- TEGAM Model 2601A
 - Frequency Range 250 kHz to 1000 MHz
 - Maximum Power +54 dBm (250 W)
- TEGAM Model 2602A
 - Frequency Range 1000 MHz to 3000 MHz
 - Maximum Power +54 dBm (250 W)

Flow Calorimeter

- TEGAM Model 1314
 - Frequency Range 60 Hz to 3000 MHz
 - Maximum Power 250 W (Typical Usage Range +10 to 250 W)

Figure 2

RF Calorimeter DUT Calibration



Component Specifications

RF Signal Generator (Minimum Requirements)

- Frequency Range 100 kHz to 3 GHz
- Output Power 0 dBm
- SCPI Compliant

RF Amplifier (Minimum Requirements)

- Rated Output Power 250 watts
- Frequency Range 100 kHz to 3 GHz (System Dependent)
- Harmonic Distortion -20 dBC at 250 watts

Lowpass Filter

- Lowpass filter is designed to attenuate RF amplifier harmonics to < -50 dBC
- Frequency Selective Switch Controller

Working Standard Meter

- TEGAM Model 1830A

Working Standard Sensor

- TEGAM Model 2601A
 - Frequency Range 250 kHz to 1000 MHz
 - Maximum Power +54 dBm (250 W)
- TEGAM Model 2602A
 - Frequency Range 1000 MHz to 3000 MHz
 - Maximum Power +54 dBm (250 W)

RF Load

- VSWR < 1.05

Power Cal System software controls all hardware providing a fully automated High Power RF Calibration System.

- Control of RF Switch bank to select correct amplifier and filter band.
- Control of RF signal generator to level power at proper frequency.
- Use of statistical analysis to determine if system is settled.
- EEPROM programming capability for Bird 4020 series with proper Bird EEPROM programming Hardware.

Freq. Set	Freq. Read	Power	Cal RF Calibrated Power	Difference	Test Limit	Limit %	Pass / Fail	Burn
32.000	32.002	99.822	100.077	-0.255	1.000	25	Pass	✓
30.000	30.075	100.371	100.082	0.289	1.000	28	Pass	✓
25.000	25.148	100.120	100.067	0.053	1.000	5	Pass	✓
20.000	20.021	99.869	100.085	-0.216	1.000	21	Pass	✓
15.000	15.094	100.417	100.090	0.328	1.000	32	Pass	✓
10.000	10.167	100.166	100.124	0.042	1.000	4	Pass	✓
8.000	8.090	99.785	100.109	-0.324	1.000	32	Pass	✓
6.000	6.023	99.916	100.058	-0.142	1.000	14	Pass	✓
4.000	4.096	100.465	100.116	0.349	1.000	34	Pass	✓
2.000	2.169	100.213	100.060	0.154	1.000	15	Pass	✓
1.800	1.842	99.962	100.118	-0.156	1.000	15	Pass	✓



Accessories (Optional for Calibration of TEGAM Model 1314)

AC Power Standards

- Radian RD-23 Dytronic Single Phase Reference Standard
 - Accuracy + 0.01%
- Yokogawa WT310

Power Sources (Based on Driver Availability)

- Keysite 6811B

Please contact TEGAM with any questions pertaining to specific configuration needs and hardware configuration requirements.