Boonton

Data Sheet

52000 Series
USB Power Meter

Taking performance to a new peak

52000 Series USB Power Meter

The 52000 Series Power Meter is a complete RF power measurement instrument. The sensor contains a CPU that operates the interface and processes the measurement results. All the measurement data and settings can be transmitted via a USB interface to and from a PC. This implementation allows the PC to be the user interface in classic microwave and RF power measurement.

The 52000 Series allows for cost effective, high precision power measurements and is ideal for production and service environments. Multiple sensors can be connected to a single PC saving rack space and reducing cost when compared to conventional RF and microwave power meters. This instrument is lightweight and portable measuring only 1.3 x 1.7 x 4.9 inches (34 x 43 x 125 mm) and can be easily operated from a laptop computer.

The 52000 Series Power Meter is controlled using software loaded on a PC that includes a powerful but easy to use soft front panel interface. This software and software toolkit is supplied with every 52000 Series Power Meter. It includes a DLL (dynamic link library) that runs the user interface on a Windows XP operating system.

Features

- Lightweight and easy to use
- Convenient for production test and field service
- Replacement solution for conventional power meter and sensor combination
- Simple USB connection to laptop or PC
- Use multiple sensors on one laptop or PC
- Robust construction with good reliability
- No reference calibrator required
- Measurement range from -50 dBm to +20 dBm
- Frequency ranges available to 12.4, 18.5, or 26.5 GHz

Specifications

	52012	52018
Frequency	10 MHz to 12.4 GHz	10 MHz to 18.5 GHz
Measurement range	-50 to +20 dBm CW	-50 to +20 dBm CW
Linearity error 25 ± 5 deg C	±0.27 dB; -40 dBm to +10 dBm; greater than or equal to 50 MHz ±0.49 dB; +10 dBm to +20 dBm; greater than or equal to 50 MHz ±0.28 dB; -40 dBm to +10 dBm; less than 50 MHz ±0.95 dB; +10 dBm to +20 dBm; less than 50 MHz	±0.27 dB; -40 dBm to +10 dBm; greater than or equal to 50 MHz ±0.49 dB; +10 dBm to +20 dBm; greater than or equal to 50 MHz ±0.28 dB; -40 dBm to +10 dBm; less than 50 MHz ±0.95 dB; +10 dBm to +20 dBm; less than 50 MHz
Cal factor error 25 ± 5 deg C	±0.24 dB; 10 MHz to 50 MHz ±0.19 dB; 50 MHz to 4.5 GHz ±0.23 dB; 4.5 GHz to 8.5 GHz ±0.32 dB; 8.5 GHz to 12.4 GHz	±0.24 dB; 10 MHz to 50 MHz ±0.19 dB; 50 MHz to 4.5 GHz ±0.23 dB; 4.5 GHz to 8.5 GHz ±0.32 dB; 8.5 GHz to 12.4 GHz ±0.38 dB; 12.4 GHz to 18.5 GHz
Linearity variation 25 ± 25 deg C	±0.29 dB; 50 MHz to 12.4 GHz ±0.47 dB; 10 MHz to 50 MHz	±0.35 dB; 50 MHz to 18.5 GHz ±0.47 dB; 10 MHz to 50 MHz
Cal factor variation 25 ± 25 deg C	±0.29 dB; greater than or equal to 50 MHz ±0.44 dB; less than 50 MHz	±0.32 dB; greater than or equal to 50 MHz ±0.44 dB; less than 50 MHz
Zero set	±1.2 nW	±1.8 nW
Noise	0.12 nW RMS	0.15 nW RMS
Input SWR - max	1.26:1 = 12.4 GHz	1.26:1 = 18.5 GHz
Connector type	SMA (m)	SMA (m)

	52026
Frequency	10 MHz to 26.5 GHz
Measurement range	-50 to +20 dBm CW
Linearity error 25 +/- 5 deg C	±0.27 dB; -35 dBm to +20 dBm; 10 MHz to 26.5 GHz
Cal factor error 25 +/- 5 deg C	
±0.16 dB	10 MHz to 6 GHz
±0.19 dB	6 GHz to 18.5 GHz
±0.21 dB	18.5 GHz to 26.5 GHz
Linearity variation 25 +/- 25 deg C	
±0.2 dB; 10 MHz to 6 GHz	-35 dBm to +20 dBm
±0.25 dB; 6 GHz to 18.5 GHz	-35 dBm to +20 dBm
±0.46 dB; 18.5 GHz to 26.5 GHz	-35 dBm to +20 dBm
Cal factor variation 25 +/- 25 deg C	
±0.2 dB	10 MHz to 6 GHz
±0.3 dB	6 GHz to 18.5 GHz
±0.35 dB	18.5 GHz to 26.5 GHz
Zero set	±1.6 nW
Noise	0.14 nW standard deviation
Input SWR - max	1.25:1 10 MHz to 18 GHz 1.35:1 18 GHz to 26.5 GHz
Connector type	K type (m)

Universal Specifications (52012, 52018, & 52026)

Operating Temperature	0 to 50 deg C
Shock	25 G, 11 ms
Vibration	15 G, 100 to 2000 Hz
Measurement Speed	
-50 to -35 dBm	8 measurements per sec
-35 to -20 dBm	33 measurements per sec
-20 to +20 dBm	50 measurements per sec
Max input power (damage level)	200 mW CW (+23 dBm)
Connectivity	USB 2.0 (cable length up to 5 m)
USB power supply current	Approx. 50 mA
Sensor Cable Length (std)	76″ (193 cm)
Dimensions (max) H x W x L	1.34″ x 1.69″ x 4.92″ (34 mm x 43 mm x 125 mm)
Weight	0.18lb (83 grams)

Specifications include expanded uncertainty of measurement stated as the standard uncertainty of measurement multiplied by the coverage factor k=2 which corresponds to a coverage probability of approximately 95% for abnormal distribution.

Ordering information

52012	10 MHz to 12.4 GHz (Includes 6′ USB sensor cable)
52018	10 MHz to 18.5 GHz (Includes 6′ USB sensor cable)
52026	10 MHz to 26.5 GHz (Includes 6′ USB sensor cable)

Accessories Provided

Getting Started Guide with Operating Manual

User Software on CD and Programming Manual

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Note: Specifications, terms and conditions are subject to change without prior notice.