



RF POWER/ VOLTMETER 5730 SERIES



- Frequency Range: 10 kHz to 110 GHz
- 10 Hz to 2.5 GHz Voltage Measurement
- Power Range: -70 dBm to +44 dBm
- 90 dB Dynamic Range
- 200 μ V to 300 Volts Measurement Range
- 1% Accuracy at full scale
- True RMS response below 30 mV
- Automatic download of sensor calibration data
- Backward compatible with all existing Boonton diode, thermocouple, and waveguide sensors/probes
- Over 200 readings per second in single channel mode
- Single or Dual Channel Capability
- Single-slot, C-size Module
- VXI Bus Message Based Device

Description

The 5730 series is a VXI microprocessor based RF power meter/RF voltmeter that can be configured to meet virtually any RF/Microwave power or voltage measurement requirement. It has the same state-of-the-art characteristics of the popular 4230A and 9230 series along with accuracy, functionality, speed, and flexibility of VXI. The unit is a single-slot, C-size, VXIbus formatted instrument, which means that you will get extreme accuracy, in a mainframe chassis.

The 5730 series is designed for both military and commercial VXIbus ATE systems. Its high-stability and precision are ideal for radar, EW, avionics, automotive, and all facets of telecommunications. They include: ATE Systems, Satellite Communications, Paging, PCS, and Microwave Communications. As well as: manufacturers of components of: attenuators, filters, amplifiers, (TWT and

solid state), detectors, mixers, and antenna systems.

Two Channel Operation

The 5730 series also can be configured with a second channel input that provides a duplicate set of input amplifiers and connectors for a second power sensor. This feature allows the unit to measure and calculate the difference and ratio of the two channels.

Additional Features

- Duty Cycle Setting for Pulse Measurements
- Selectable Filtering
- Automatic or Preset Ranging
- Built-in Calibration Source
- Automatic Calibration
- Automatic Zeroing
- Optional 50-ohm terminated sensor to 2.5 GHz
- Optional low-frequency probe from 10 Hz to 100 MHz

5730 Series VXI Power Meter/ Voltmeter Specifications

Frequency Range(Power):	10 kHz to 100 GHz, sensor dependent
Frequency Range(Voltage):	10 Hz to 2.5 GHz, probe dependent
Power Range:	-70 dBm to +44 dBm, sensor dependent
Voltage Range:	200 μ V to 10 V in eight ranges (300 V to 700 MHz with a 100:1 divider). Indications to 50 μ V.
Voltage Measurement:	1 mV to 300 V fs.
Decibel Range: (Voltage)	>90 dB in eight ranges, 0.01 dB resolution. dBmV (0dB=1mV); dBV (0dB=1V); dBW (0dB=1W); dBm (0dB=1mW) calculated from a voltage drop across a selectable z. reference, 5 to 2000 ohms); dBr (0db= any desired reference level. Reference level can be selected to 0.01 dB resolution if range of +/-99.99 is not exceeded.
Crest Factor(level: crest factor) (Voltage):	Direct: 300 μ V: 140; 1 mV: 42; 3mV: 14; 10 mV: 4.2; 30 mV: 1.4 With Divider: 30 mV: 140; 100 mV: 42; 300 mV: 14; 3 V: 1.4.
Input Capacitance (Voltage):	Less than 1.5 pF.
Max Input Voltage:	AC Input: 10 V at all frequency ranges; DC input: 200 V at all frequency ranges.
Number of Channels:	One / Two
Measurement Speed:	Speed: 1 channel: 200 readings/sec. 2 channel: 100 readings/sec.
Power Sensors:	Accepts sensor data adapter with full-calibration data, including high-frequency calibration factors, stored in non-volatile memory. Compatible with all Boonton CW Power Sensors. *See Sensor Data Sheet.
Dynamic Range:	Up to 90 dB with diode sensors, 50 dB with thermocouple sensors. * See power sensor specifications.
Inputs:	Front panel sensor connectors standard.
Outputs:	Front panel PWR REF connector, 0 dBm, 50 MHz. Front panel RECORDER BNC connector, 0 to 10 V into 1M Ω . Output impedance is 9.09 k Ω . May be operated into 1k Ω for 1V fs.
Basic Uncertainty (Voltage):	Voltage Level(mV): mV 3000 to 10,000: +/-2% of reading, +/- 2 counts; 3 to 3000: +/- 1% of reading, +/- 1 count; 1 to 3: +/- 2% of reading, +/- 2 counts; 0.2 to 1: +/- 3% of reading: +/- 3 counts.
Measurement Units:	Absolute: watts, dBm, dBmV, dBV, and dBW. Relative: %, dBr.
Measurement Accuracy (PWR):	Total accuracy is the sum of the following uncertainties (errors are +/- worst case): 0.002% at full scale.
Instrumentation Accuracy:	0.002% at full scale.
Power Reference Uncertainty:	Output frequency: 50 MHz +/- 1.5%. Output level: 0 dBm level accuracy: +/- 0.7% (25°C) for 90 days. +/- 0.9% RSS, 1.2% worst case (0° to +55°C) for 1 year. Source impedance: 50 +/- 1 Ω . SWR: < 1.05. Harmonic output: < -50 dBc.
Other Uncertainties:	For sensor, noise, high-frequency calibration uncertainty, *See power sensor specifications.
Calibration Factors (Power):	+3 dB to -3 dB in 0.01 dB steps. These calibration factors are stored in non-volatile memory. When a frequency other than that is stored is used, the meter linearity interpolates between the calibration factor above and below the frequency entered to obtain a calibration factor.
Ranging:	Automatic or manual.
Filtering:	Filter times in 0.05-second intervals to 20 seconds.
Zeroing:	Automatic function to calculate, store, and apply zero corrections to each range.
Measurement Offset:	-99.99 to 99.99 in 0.01 dB steps (dBr).
Power Consumption:	+24VDC 52 mA 1.3 Watts -24 VDC 57 mA 1.4 Watts +5 VDC 690 mA 4.7 Watts
Operating Temperature:	0 to +55°C.
Weight:	2.64 lbs. (1.20 kg).
Dimensions:	Single-slot, C-size module.
Accessories Required:	One or more of the available power sensors and a power sensor cable and one sensor data adapter are required.

Ordering Information:

Single Channel	5731
Dual Channel	5732

POWER SENSORS

VOLTAGE PROBES			Diode Sensors			Thermocouple Sensors		
			Model Number	Frequency (MHz-GHz)	Power (dBm)	Model Number	Frequency (MHz-GHz)	Power (dBm)
952063	Standard Probe	10kHz to 1.2 GHz	51011(EMC)	0.01 to 8	-60 to +20	51100	10 to 18	-30 to +20
			51011	0.1 to 12.4	-60 to +20	51101	0.1 to 4.2	-30 to +20
952064	Low-Frequency Probe	10 Hz to 100 MHz	51012*	0.1 to 2	-60 to +20	51102	30 to 26.5	-30 to +20
			51013	0.1 to 18	-60 to +20	51200	10 to 18	-10 to +37
952009	50-Ohm Voltage Divider	100 kHz to 2.5 GHz	51015	0.1 to 18	-50 to +30	51201	0.1 to 4.2	-10 to +37
			51033	0.1 to 18	-40 to +33	51300	10 to 18	0 to +44
			51071	10 to 26.5	-70 to +20	51301	0.1 to 4.2	0 to +44
			51072	30 to 40	-70 to +20			
			51075	0.5 to 18	-70 to +20			
			51077	0.5 to 18	-60 to +30			
			51078	0.1 to 18	-20 to +37			

*75 Ω

Specifications subject to change without notice.

Consult factory for details on K, Ka, Q, U, V, & W waveguide sensors.