

PSP Series Power Sensor-Pulse

- PSP001–PSP005
- 50MHz–40GHz
- PSP102
- 4kHz–6GHz

Features

PSP Series USB pulse power sensors turn your PC or laptop, using a standard USB 2.0 port, into a power analyzer without the need for any other instrument. Power measurements from the PSP Series can be displayed on the PC or can be integrated into a test system with a set of user-defined software functions. A Status LED on the sensor provides indication of the operational state for diagnostic purposes.

Multiple models of PSP power sensors are available to accommodate a wide array of test applications and modulation types. With choices of frequency coverage and pulse capability, the PSP series of sensors provide models to satisfy most any modulation measurement requirement, with no gaps in signal acquisition, and zero measurement latency, far surpassing conventional power meters.



The PSP power sensors incorporate a unique parallel processing methodology that performs the multi-step process of RF power measurement at incredible, unmatched speeds. While conventional power meters and USB sensors perform steps serially, resulting in long re-arm times and missed data, PSP sensors capture, display and measure every pulse, glitch and detail with no gaps in data and zero latency.

Combining these characteristics with pulse profiling, capture and measure of pulsed, CW and modulated signals, multi-channel capabilities and documentation tools, PSP power sensors are the ideal instrument for fast, accurate and reliable RF power measurements.

Processing in real time provides greater power integrity measurements because every pulse is analyzed and none are discarded. Trace acquisition, averaging and envelope times are drastically reduced resulting in simultaneous analysis of average, maximum and minimum Power.

PSP pulse power sensors are supported by both AR's emcware® software and PulsewARe. PulsewARe is a Windows-based software package that provides control and readout of the sensors. They provide both time and statistical domain views of power waveforms with variable peak hold and persistence views. Power measurements are supported using automated pulse and statistical measurements, power level and timing markers. The GUI application is easily configured with dockable or floating windows and measurement tables that can be edited to show only the measurements of interest.

PSP sensors are ideal for manufacturing, design, research, and service in commercial and military applications such as telecommunications, avionics, RADAR, and medical systems. They provide fast, accurate and reliable RF power measurements, suitable for product development, compliance testing, and site monitoring applications.

The export classification for this equipment is EAR99. These commodities, technology or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited

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PSP Series

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General Specifications–PSP001–PSP005

Sampling Techniques: Real-time/Equivalent Time/Statistical Sampling

Continuous sample rate: 100 MHz

Effective sample rate: 10 GHz

Time Resolution: 100 ps

Statistical Analysis: Continuous or gated CCDF

Statistical Speed: 100M points/sec

Trigger Sources: Internal or External TTL

External Trigger in/out: TTL in (slave) or out (master), SMB connector

Minimum Trigger Width: 10 ns

Maximum Trigger Frequency: 50 MHz

Trigger Jitter: 0.1 ns rms

Trace Acquisition Speed: 100K sweeps/second

Measurement Speed:
100K meas/sec (buffered mode)
over USB 800 meas/sec (continuous)

Trigger Modes: Auto, Normal, Single, Free run

Trigger Arming: Continuous, Trigger Holdoff, Frame (gap) Holdoff

Remote Connectivity: USB 2.0, type B connector

Command Protocol: IVI-C and IVI-Com

Maximum Input Power: 200mW avg, 1W for 1us peak

Size (LxWxH): 145 x 43 x 43 mm (5.7 x 1.7 x 1.7 in)

Weight: 363 grams/0.8 lbs.

Power Consumption: 2.5W max (USB high power device)

Operating Temperature: 0 to 55°C

Storage Temperature: -40 to 70°C

Export Classification: EAR99

Included Accessories:
USB Cable: A-B Locking, 1.8m (6 ft)
External Trigger Multi I/O Cable: SMB-BNC
Trigger Sync Cable: SMB-SMB

Model Configurations–PSP001-PSP005

Specifications	PSP001	PSP002	PSP003	PSP004	PSP005
RF Frequency Range	50 MHz to 6 GHz	50 MHz to 18 GHz	50 MHz to 40 GHz	50 MHz to 18 GHz	50 MHz to 40 GHz
Average Dynamic Range	-60 to +20 dBm	-34 to +20 dBm	-34 to +20 dBm	-50 to +20 dBm	-50 to +20 dBm
Pulse Dynamic Range	-50 to +20 dBm	-24 to +20 dBm	-24 to +20 dBm	-40 to +20 dBm	-40 to +20 dBm
Internal Trigger Range	-38 to +20 dBm	-10 to +20 dBm	-10 to +20 dBm	-27 to +20 dBm	-27 to +20 dBm
Risetime (fast/slow)	3 ns/<10 μs	5 ns/<10 μs	5 ns/<10 μs	<100 ns/<10 μs	<100 ns/<10 μs
Video Bandwidth	195 MHz/350 kHz	70 MHz/350kHz	70 MHz/350 kHz	6 MHz/350 kHz	6 MHz/350 kHz
Single-shot Bandwidth	35 MHz	35 MHz	35 MHz	6 MHz	6 MHz
RF Input	Type N, 50 ohm	Type N, 50 ohm	2.92 mm, 50 ohm	Type N, 50 ohm	2.92 mm, 50 ohm
VSWR	1.25 (0.05-6 GHz)	1.15 (.05-2.0 GHz) 1.28 (2.0-16 GHz) 1.34 (16-18 GHz)	1.25 (.05-4.0 GHz) 1.65 (4-38 GHz) 2.00 (38-40 GHz)	1.15 (.5-2.0 GHz) 1.20 (2.0-6.0 GHz) 1.28 (6.0-16 GHz) 1.34 (16-18 GHz)	1.15 (.05-2.0 GHz) 1.65 (4.0-38 GHz) 2.00 (38-40 GHz)

PSP Series

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- PSP102
- 4kHz–6GHz

General Specifications–PSP102

Sampling Techniques: Real-time/Equivalent Time

Continuous sample rate: 25 MSPS

Effective sample rate: 1 GSPS

Time Resolution: 1 ns

Trigger Sources: Internal or External TTL

External Trigger in/out: TTL in (slave) or out (master)

Minimum Trigger Width: 4 μ s

Maximum Trigger Frequency: 120 kHz

Trigger Jitter: 1 ns rms; 20 ns rms (external)

Trace Acquisition Speed: >30k sweeps/second

Measurement Speed:

100K meas/sec (buffered mode)

over USB 1000 meas/sec (continuous)

Trigger Modes: Auto, Normal, Single, Free run

Trigger Arming: Continuous, Trigger Holdoff, Frame (gap) Holdoff

Remote Connectivity: USB 2.0, type B connector

Command Protocol: IVI-C and IVI-Com

Maximum Input Power: 200mW avg, 1W for 1 μ s peak

Size (LxWxH): 145 x 43 x 43 mm (5.6 x 1.7 x 1.7 in)

Weight: 363 grams/0.8 lbs.

Power Consumption: 2.0W max (USB high power device)

Operating Temperature: 0 to 55°C

Storage Temperature: -40 to 70°C

Export Classification: EAR99

Included Accessories:

USB Cable: A-B Locking, 1.8m (6 ft)

External Trigger Multi I/O Cable: SMB-BNC

Trigger Sync Cable: SMB-SMB

Model Configurations–PSP102

Specifications	PSP102
RF Frequency Range	4 kHz to 6 GHz
Average Dynamic Range	-60 to +20 dBm
Pulse Dynamic Range	-45 to +20 dBm
Internal Trigger Range	-40 to +20 dBm
Risetime (fast/standard)	2 μ s/1 ms
Video Bandwidth (high/std)*	175 kHz/350 Hz
RF Input	Type N, 50 Ohm
VSWR	1.15 (0.01-2.0 GHz) 1.20 (2.0-6 GHz)

* In High sensitivity mode, the PSP sensor changes to standard bandwidth mode automatically-video bandwidth changes to 350Hz.
At frequencies <10MHz, the PSP sensor changes to high sensitivity mode automatically.