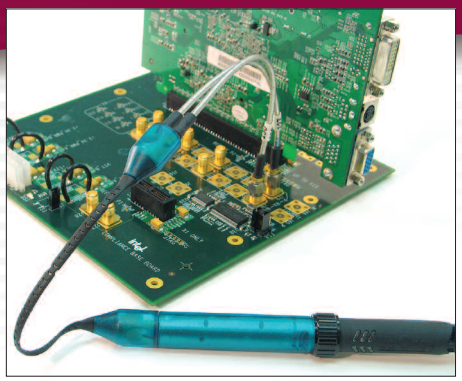
LeCroy

D11000PS
Differential Probe System

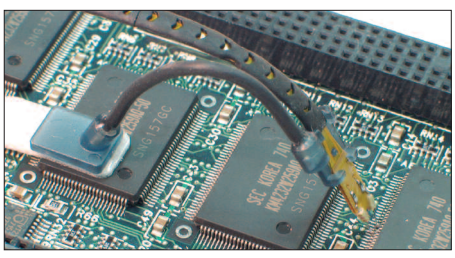


High-Performance Probing Solution for SDA 11000, SDA 9000, and SDA 18000 Serial Data Analyzer

The D11000PS extends the full signal acquisition performance of the SDA 11000 to the probe tips. With 11 GHz system bandwidth, the probe enables direct measurement of high-speed serial data streams up to 6.25 Gb/s. The D11000PS also provides 11 GHz system bandwidth when used with the SDA 18000.

Choice of Interconnect Styles Without Compromising Performance

The D11000PS provides both direct Solder-In and cabled SMA interconnect lead assemblies. Each interconnect lead comes with a dedicated probe amplifier module that has calibration data optimized for the respective lead. This eliminates the performance compromise of using a single calibration for multiple lead types. The Solder-In lead provides the highest possible signal integrity with a high loading impedance. The dual SMA interconnect leads provide a true differential 100 Ω input (50 Ω each input to ground). This is a convenient alternative to direct cabling into the oscilloscope inputs, freeing up the second channel for other signal input, and eliminating the need to set up waveform math and match cable delays.



Unsurpassed Waveform Accuracy

When used to acquire input signal for the SDA 11000, SDA 9000, or SDA 18000, the D11000PS provides unprecedented waveform fidelity, even with signals at higher serial data rates. The D11000PS utilizes third generation response compensation calibration, the most advanced in use today, to provide optimal system response.

Each individual probe is characterized with this system. Information on the probe's frequency and time domain responses are stored in non-volatile memory within the probe amplifier module. This information is uploaded to the higher bandwidth SDAs when the probe is connected. The probe calibration data and the SDA oscilloscope's calibration data combine to generate new equalization filters for the composite system. The resulting compensation system corrects for frequency response deviations, as well as group delay correction and reflection cancellation.

Reproducing accurate serial data eye patterns requires maintaining precise magnitude and phase relationships between the fundamental and the odd harmonics. The advanced calibration system used in the D11000PS assures the best eye pattern fidelity.

Superior Probe Loading Characteristics

Accurate frequency response is not enough to assure good waveform fidelity. Excessive probe loading can cause waveform distortion. The D11000PS continues the legacy of LeCroy high-performance probe design, placing special emphasis on minimizing loading of the circuit under test.

The Solder-In lead and dedicated probe amplifier module have a high input resistance at DC and low frequencies, allowing the probe to be used in circuits which cannot drive the low resistance of a pure transmission line probe. The direct cabled SMA inputs have 50 Ω input impedance with low VSWR.

Ease of Use

Attention to fine details during the D11000PS design process has resulted in several "ease of use" features. A common mode measure feature allows the user to measure the average common mode component with a single click in the probe control menu.

AutoColor ID lights an indicator in the probe body, matching the color of the waveform trace. When multiple channels are used, this feature instantly identifies which waveform corresponds to which probe.

Several connection accessories designed specifically for the D11000PS provide convenient and secure mounting of the probe body and solder-in tip to the test circuit. DC blocking adapters extend the common mode range of the SMA cabled input for use with higher common mode voltages such as Digital Video Interface (DVI). A finger wrench allows tightening of SMA connectors on dense test fixtures.

Compatibility

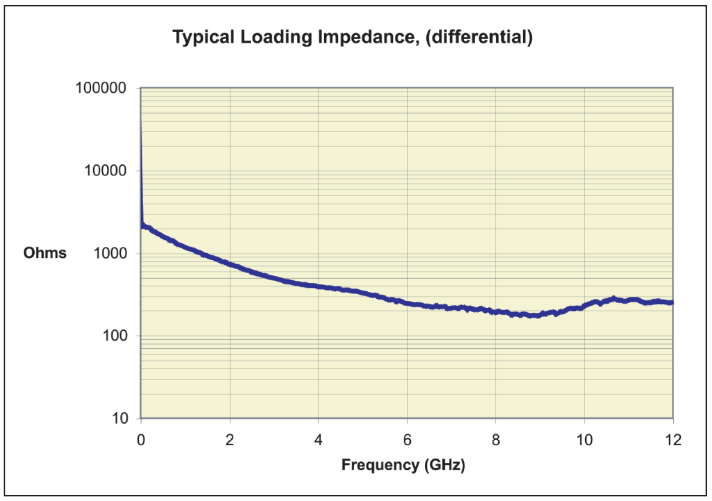
The D11000PS is designed specifically for use with the SDA 11000, SDA 9000, and SDA 18000. However, it does contain additional calibration data for use with all of the lower bandwidth WaveMaster,® SDA, and DDA 5005A Series oscilloscopes and analyzers.

Specifications and Ordering Information

Specifications

Bandwidth, System, -3 dB,	11 GHz (Typical)*
Rise Time, System	< 50 ps (Typical)*
Rise Time, Probe only	< 40 ps
Attenuation, Nominal	÷3
LF Attenuation Accuracy	2% (20–30 ˚C)
Output Zero	< 15 mV referred to input
Noise, System	5 mV_{rms} (Typical)*
Differential Mode Range	±1 V
Common Mode Range	±4 V, Solder-In tip ±2 V, SMA cable input†
Input Resistance at DC, (Solder-In lead)	40 kΩ differential 20 kΩ each side to ground
Minimum Input Impedance, (Solder-In lead, to 11 GHz)	> 175 Ω (Refer to graph)
Input Impedance each input, (SMA cable input)	50 Ω
Input VSWR, (Typical) (SMA cable input, each lead to ground)	< 1.5:1 DC–6 GHz < 2.0:1 6 GHz–11 GHz
CMRR, (Typical)	> 40 dB DC–1 GHz > 30 dB 1 GHz–4 GHz > 20 dB 4 GHz–11 GHz

*Measured as a system with SDA 11000, SDA 9000 or SDA 18000.
†Can be extended by using DC Blocking Adapters.



D11000PS Includes:

Probe amplifier modules (2–1 each for SMA input and Solder-In lead), Solder-In lead assembly (2), SMA interconnect lead, SMA input cables (matched pair), Probe body, SMA DC blocking adapters (2), ground lead and clip, SMA finger wrench (2), tip retaining clip kit for solder-in lead, probe body mounting clamp set, FreeHand probe stand, ESD dissipating wrist strap, SAC-01 soft accessory case with insert, small accessory case, D11000PS Instruction Manual, certificate of traceable calibration.

Ordering Information

Product Description	Product Code
Differential Probe System	D11000PS
Replacement Solder-In Tip Assembly	D11000SI
NIST Traceable Calibration with Test Data (one module)	D11000PS-CCNIST

Customer Service

LeCroy oscilloscopes and probes are designed, built, and tested to ensure high reliability. In the unlikely event you experience difficulties, our digital oscilloscopes are fully warranted for three years, and our probes are warranted for one year.

This warranty includes:

- No charge for return shipping
- Long-term 7-year support
- Upgrade to latest software at no charge

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Local sales offices are located throughout the world.
To find the most convenient one visit www.lecroy.com