

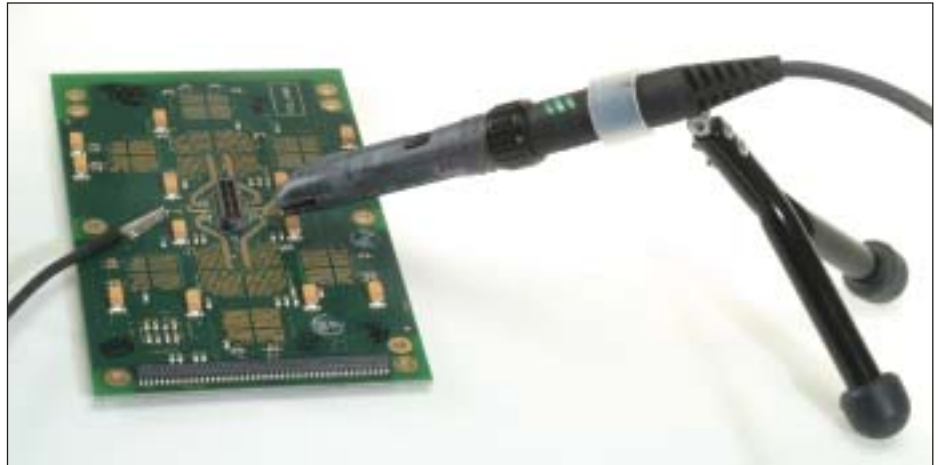
Probing Solutions

WaveLink D600 D300 D200

High Bandwidth
Probes

LEADING FEATURES

- High bandwidth probes
- 7.5 GHz, 4 GHz and 2.5 GHz bandwidths
- Full system bandwidth at the probe tip for LeCroy 6 GHz, 3 GHz, and 2 GHz instruments
- Capture differential or single-ended signals
- Unique adjustable TwinTip technology
- Includes probe-characterization fixture
- AutoColor ID feature matches the probe color to the trace color
- Use "FreeHand" probe holder or 3rd-party positioners



A WaveLink probe with its adjustable TwinTips in a "FreeHand" probe holder.

WaveLink probes provide industry leading technology for connection of wideband signals to test instruments. Tapping into a high frequency signal in a way that causes minimum disturbance to the device under test while at the same time providing a high integrity connection to a test instrument is a difficult job. New WaveLink probes incorporate LeCroy's acclaimed SiGe technology already in use in the front end amplifiers, ADC's and trigger chips of the WaveMaster DSO's and recently launched WavePro 7000 series. Using a combination of transmission line and active technologies, the WaveLink series has no resonances in the passband, which preserves the amplitude of signal details better than previous probe technologies. WaveLink is where signal integrity begins.

WaveLink probes are targeted to provide full system bandwidth when used with those instruments, but they are also compatible with many other LeCroy products. The three new probes can be used for both differential and single-ended signal acquisition. The D600 (7.5 GHz bandwidth), D300 (4 GHz bandwidth) and D200 (2.5 GHz

bandwidth) probes all incorporate unique adjustable TwinTip technology, which allows you to set the spacing of the probe tips in a continuously-variable fashion. The adjustable TwinTips provide user controls of tip spacing from touching (0") to 3 mm (0.12") via thumb wheel adjustment. You can set it and it really stays set. The WaveLink AutoColor ID lights up to match the channel color on your instrument. There is no confusion about which probe is connected to the input channel.

The Adjustable TwinTips

Half of the probing challenge is to have a probe with the electrical characteristics needed to transfer a signal to a test instrument. The other half is to make a sound mechanical connection that meets the needs of the probing geometry. The adjustable TwinTips are formed from "NiTiNOL," a super-elastic nickel-titanium alloy which has 10 times the elasticity of spring-grade steel. Unlike other probe tip materials, this metal will maintain its sharp points and original shape even after extensive deformation. When probing a circuit, this means that the probe tips can make

WaveLink Probes D600, D300 and D200



contact, flex as you continue to apply pressure, and return to their original form repeatedly.

WaveLink probes can be hand-held, or the included “FreeHand” probe holder can be used. For probing of designs that incorporate dual square-pin test points, WaveLink probes include an SP-ATT square-pin adapter. WaveLink probes also fit nicely in third party horizontal/vertical positioners like the E-Z probe, pictured above. Whether hand-held or attaching multiple probes to closely spaced test points, WaveLink probes offer a smart solution.

LeCroy scopes provide power to the probes via the ProLink (for D600) or ProBus (for D300 and D200) connections. WaveLink probes can also be used with a wide variety of other instruments, including the most popular spectrum analyzers, through an optional ProLink (PLPA) or ProBus (PBPA) power adapter.

Capturing Differential and Single-ended Signals

In a certain sense, all probing is done differentially. For single-ended measurements, a probe “sees” the difference between a signal and a ground reference. At high bandwidths, it is important to capture a signal and to see it on an oscilloscope the same way the circuit sees it. This means the engineer should not, in general practice, be referencing a single-ended, high frequency

signal to a ground point that is inches away, or tie his scope ground to the device under test ground, altering its native ground distribution. New LeCroy probes can be used to capture either a differential or single-ended signal.

WaveLink Probes Bring Signal Fidelity to High Frequency Probing

An advantage of the LeCroy combination of high bandwidth SiGe and transmission line design is that the probes present a relatively constant load over the passband, rather than dipping to low values as occurs with probes whose impedance characteristics are dominated by the input capacitance. The short length tips

connect directly to a resistive element, which matches the input to the transmission line. The transmission line carries the signal to the SiGe amplifier without the one-quarter wavelength restriction of high impedance designs—a limitation in other very high bandwidth probes. The differential impedance of 4 kohms at DC provides flat impedance over the passband. Low loading of the signal means minimally invasive probing, ensuring fast signal edges will maintain their integrity.

Probe Characterization

In some cases, engineers want to characterize the precise performance of a probe for a particular bandwidth range and signal amplitude. WaveLink probes include a characterization fixture (PCF-100) standard—which allows you to view the pulse response of the

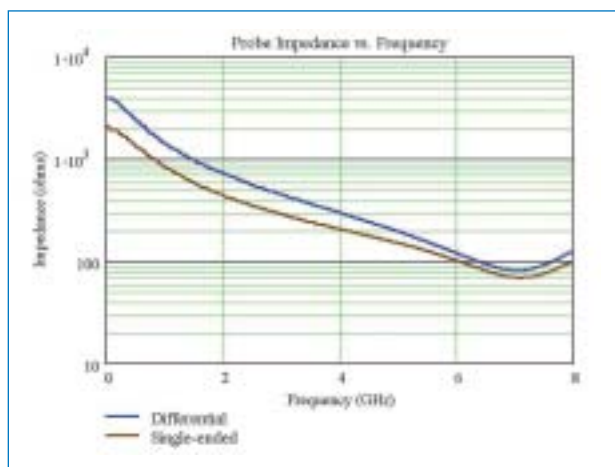


probe and oscilloscope system, and to measure your own s-parameters to model the probe performance. The probes also come with a “FreeHand” probing accessory that holds the probe very stably in a wide variety of geometries.

WaveLink Probes D600, D300 and D200

Specifications

	D600	D300	D200
Connection to Instrument	ProLink	ProBus	ProBus
Bandwidth-Probe Alone	7.5 GHz	4 GHz	2.5 GHz
Rise Time-Probe Alone	< 70 ps	< 112 ps	< 160 ps
Input Dynamic Range	±2 Volts	±2 Volts	±5 Volts
Low Frequency Accuracy	0 ±700 mV 2% ±700 mV ±2V 5%	0 ±700 mV 2% ±700 mV ±2V 5%	0 ±1.75 V 2% ±1.75 ±5 V 5%
Input Resistance	4 kohm ±1% differential 2 kohm ±1% single-ended	4 kohm ±1% differential 2 kohm ±1% single-ended	10 kohm ±1% differential 5 kohm ±1% single-ended
Input Capacitance Differential	0.1 pF	0.1 pF	0.1 pF
DC Attenuation	÷ 2	÷ 2	÷ 5
Adjustable TwinTips Dimensions		tip size 0.076 mm (0.003")	
Tip Adjustment Range		touching to 3 mm (0.12")	
Cable Length		1.3 meters	
External Power Supply (option)	PLPA	PBPA	PBPA



COMMON MODE REJECTION

CMRR	Frequency
> 40 dB	DC – 1 GHz
> 30 dB	1 GHz – 4 GHz
> 20 dB	4 GHz – 7.5 GHz

System Bandwidth with Instrument	D600	D300	D200
WaveMaster 8600A, SDA6000	6 GHz	3 GHz	2 GHz
WaveMaster 8500A, DDA5005	5 GHz	3 GHz	2 GHz
WaveMaster 8300A	3 GHz	3 GHz	2 GHz
WavePro 7300	N/A	3 GHz	2 GHz
WavePro 7100	N/A	1 GHz	1 GHz
WavePro 960, DDA260	N/A	2 GHz	2 GHz

Ordering Information

7.5 GHz Differential Probe and Adjustable TwinTips
4 GHz Differential Probe and Adjustable TwinTips
2.5 GHz Differential Probe and Adjustable TwinTips

* Requires ProLink

Included:

Probe Characterization Fixture
Square-pin Adapter
"FreeHand" Probe Holder
0.8 mm Clip
Short Single Lead
Soft Accessory Case
WaveLink Instruction Manual

Options

ProLink External Power Adapter	PLPA
ProBus® External Power Adapter	PBPA

Product Code

D600 and D600AT*
D300 and D300AT
D200 and D200AT

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