

Signal Integrity Solutions Fact Sheet

Powerful and Complete Portfolio to Overcome Signal Degradation Challenges

There are two kinds of designers— those who have signal integrity problems, and those who will. Signal integrity is about distributing signals from one part of a digital circuit to another in a way that deterministically and dependably delivers the digital information contained therein. Your mission is to minimize these problems from the start, and to correct them when they do appear. To do that, you must investigate both of the fundamental sources of signal degradation: digital issues and analog issues.

Innovative measurement solutions such as digitizing oscilloscopes, logic analyzers, real-time spectrum analyzers, time-domain reflectometers, signal generators, high-fidelity probes and analysis software have emerged to help you deal with problems that affect signal integrity. Using these powerful tools, you can quickly locate and trace faults back to their source.



Signal Integrity Problems

Design Problems Leading to Signal Degradation	Digital Timing Issues	Analog Deviations
<ul style="list-style-type: none">■ Clock distribution■ Signal path design■ Noise margin■ Impedances, loading, and terminations■ Transmission line effects■ Signal path return currents■ Decoupling and power distribution	<ul style="list-style-type: none">■ Bus contention■ Setup and hold violations■ Metastability■ Undefined conditions■ Inter-symbol interference (ISI)	<ul style="list-style-type: none">■ Amplitude problems■ Edge aberrations■ Reflections■ Crosstalk■ Ground bounce■ Jitter

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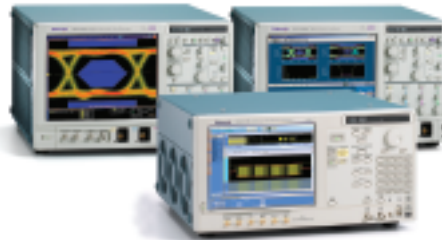
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Digital Validation and Debug

TLA Series Logic Analyzers

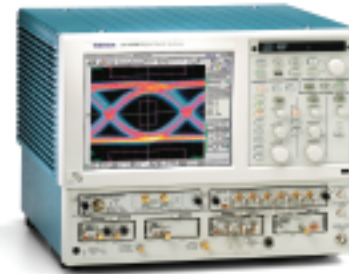
- Find elusive glitches and events with MagniVu™ acquisition's high speed timing resolution of 20 ps
- Eliminate double probing with iCapture™ multiplexing to achieve simultaneous digital and analog acquisition through a single logic analyzer probe
- Gain complete system visibility with digital/analog correlation using iView™ display
- Quickly find signal integrity issues with multi-channel bus analysis using oscilloscope-generated eye diagram in iVerify™ analysis



Analog Debug and Design Validation

DPO/DSA Series Oscilloscopes AWG Series Signal Generators

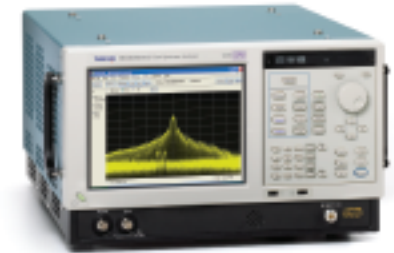
- Pinpoint timing anomalies with full sample rate and record length across all 4 channels
- Quickly find intermittent events with DPX® acquisition technology that displays up to 250,000 wfms/s
- Decompose jitter and isolate random jitter components from deterministic jitter (periodic, clock and data-dependent) with DPOJET analysis software
- Save time by capturing, sharing, and analyzing waveforms later without the DUT connected



Physical Layer Analysis

DSA Series Sampling Oscilloscopes

- Reduce measurement errors resulting from test fixture signal degradation with IConnect® software's integrated TDR and S-Parameter measurements
- Accurately analyze signal paths to predict crosstalk and jitter to ensure reliability with Serial Data Network Analysis (SDNA)
- Determine precise causes of eye closure with jitter, noise, and BER analysis, plus maximize the eye opening at the receiver by quickly evaluating various FFE/DFE equalization setups using Serial Data Link Analysis (SDLA)



Frequency Domain Analysis

RSA Series Spectrum Oscilloscopes

- Discover signal behavior previously unseen with proprietary DPX® spectrum display
- Accelerate troubleshooting by pinpointing the root cause of problems with multi-domain analysis
- Isolate hard to find hardware and software anomalies with cross domain triggering between multiple instruments
- Observe the entire duration of signal events, like frequency hopping, PLL settling times, turn on transients, and multiple pulses by seamlessly capturing data into deep memory