2007 Vol.2
Product Catalog

Test and Measurement Solutions

Tektronix

Enabling Innovation
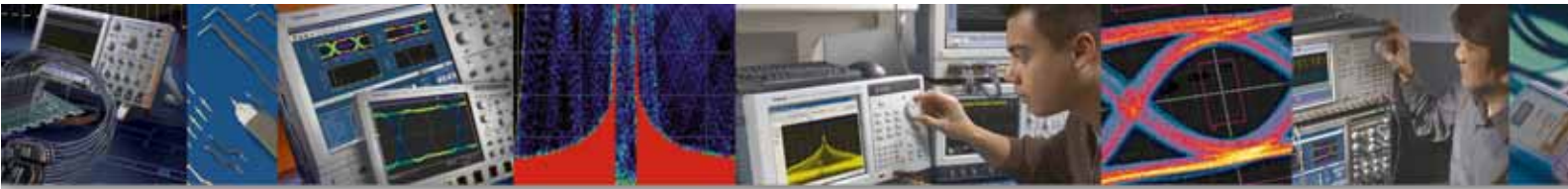
In this catalog...

Products/Services:

This catalog highlights the key products and services from Tektronix with specific URLs to direct you to the web site location.

Selection guides give you a quick glimpse of our product features, key applications, and specifications.

Our **Technology and Application Solutions** section highlights our solutions for your application requirements.

Oscilloscopes

See the rich and detailed signal information you need to detect errors and speed your work competently and efficiently. Our oscilloscopes offer features to ensure you are getting the product to meet your design and test requirements.

Visit: www.tektronix.com/oscilloscopes

Logic Analyzers

Capture and analyze the source of elusive problems that threaten your product development schedules. Our breakthrough digital analysis tools provide the speed and visibility you need with ease of use, featuring the familiar Windows-based desktop and OpenChoice networking and analysis functionality.

Visit: www.tektronix.com/logic_analyzers

Signal Generators

Easily generate real-world signals: analog, digital or mixed signals, ideal or distorted signals. Our signal generators provide superior performance and feature sets that deliver unrivaled usability, functionality and versatility to shorten your development and test cycles.

Visit: www.tektronix.com/signal_generators

Real-Time Spectrum Analyzers

Discover the problem the instant the signal changes, trigger on the change, capture the signal seamlessly, and analyze the effects of the changes in a single time-correlated view. Our spectrum analyzers enable you to see frequency and amplitude change over time to help you define issues and solve problems faster.

Visit: www.tektronix.com/spectrum_analyzers

Probes and Accessories

Ensure your data to your measurement tool is accurate. We offer probing solutions, application specific software, plus a wide range of other accessories for a total solution to your measurement needs.

Visit: www.tektronix.com/accessories

Service

Maximize the lifetime value of your investment. Our flexible Service offerings provide you the level of service you need. Our global capabilities and service commitment ensure the quality level you expect, worldwide.

Technology and Applications Solutions

Your applications require the best tools to ensure your designs meet your cost and performance needs. This section identifies the Tektronix' comprehensive, integrated measurement solution - signal sources, oscilloscopes, logic analyzers, probes and software - capabilities you need.

Contents:

www.tektronix.com

The Tektronix web site is your reliable resource for complete, up-to-date product information, application solutions, selection guides, and more.

Resources:

For the detail you need, please see the following resources on the Tektronix web site: www.tektronix.com

▶ Technical Content
- Application Notes
- Technical Briefs
- Interactive Product Demos
- Selection Guides
- White Papers

Visit: www.tektronix.com/techpapers

▶ Service
- Online look-up Tool
- Calibration

For complete Service information, visit: www.tektronix.com/service

▶ MyTekResources
- Download Manuals
- Access to Software and Drivers
- Check on Order Status
- Review Service Status
- My Product Support
- E-Tutorials

See www.tektronix.com/mytek

Tektronix RSS Feeds

All the latest information when you want it.

With billions of web pages on the Internet, keeping up-to-date with the information you need can be difficult. Wouldn't it be better to have the latest Tektronix updates and educational material available when you want it? Now you can with RSS.

Choose from the very latest news and updates on Tektronix products - as well as information on Applications and more.

For further details visit: www.tektronix.com/rss

▶ Posters/Primers/Technical Information

For a better understanding of the fundamentals of your product, or the latest technology and application information.

See www.tektronix.com/techpapers

▶ Product Demos

Take an product for a ride. Our demos are sprinkled throughout the web site on the product hub pages.

Visit www.tektronix.com

▶ E-learning

To help solve your application problems.

See our e-learning site at: www.tektronix.com/tutorials

Technology and Application Solutions

New and faster technologies and constantly changing standards are creating complex design challenges that can hinder time to market and increase costs. Tektronix delivers complete solutions for serial data, digital RF test and other applications that enable engineers to develop products and ensure conformance to the latest test requirements

For More Information and to access detailed technical content and application information visit:

Serial Data
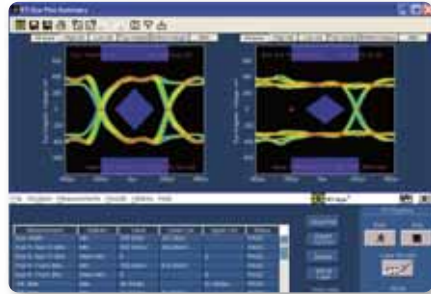www.tektronix.com/serial_data

Digital Test
www.tektronix.com/Measurement/applications/design_analysis_apps.html

RF Test
www.tektronix.com/Measurement/applications/rf/

Other Applications
www.tektronix.com/Measurement/applications

PCI Express

Tough New PCI Express Gen 2 Design Challenges Need Fast, Accurate Answers

Gen 2 doubles the data rate of the popular PCI Express bus, bringing new interoperability and compliance design challenges. You need a comprehensive and integrated tool set for debug, validation, characterization and compliance. Our solution includes high performance real-time oscilloscopes with matching probes, expert automated compliance and analysis measurement software, signal generators and sampling oscilloscopes to track down impedance problems on differential signal paths.

Recommended Products:

Oscilloscopes and Application Software:
- ▶ DSA70000 Series with TDSRTEye Serial Compliance and Analysis software (page 11)
- ▶ TDSJIT3 Jitter Measurement and Analysis software
- ▶ DSA8200 Sampling oscilloscope (page 11)

Probing:
- ▶ P7313 Differential probe (pages 12-13)
- ▶ P7313SMA Differential probe (pages 12-13)
- ▶ P7513/P7516 TriMode™ Differential probes (pages 12-13)
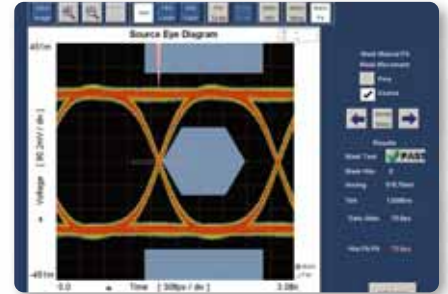
Logic Analyzers:
- ▶ TLA7000 Series (page 15) with TMS817/818 PCI Express bus support

Signal Generators:
- ▶ AWG7000 Series (page 17)
- ▶ DTG5000/DG2000 Series (page 16)

For more information visit:
www.tektronix.com/pci_express

HDMI

Full Compliance Test Support for HDMI 1.3 Specification

As the market for HDMI accelerates, designers need an automated test system to rapidly improve and validate HDMI designs. The complete test solution for HDMI 1.3 includes high-performance real-time oscilloscopes with comprehensive compliance test software, arbitrary waveform and data timimg generators, a sampling oscilloscope for time domain reflectometry (TDR) with IConnect software for serial data network analysis in addition to HDMI specific test fixtures.

Recommended Products:

Oscilloscopes and Application Software:
- ▶ DPO70804 with TDSHT3 Compliance Test software (page 11)
- ▶ DSA8200 Sampling oscilloscope (page 11)
- ▶ IConnect TDR and S-parameter software

Probing:
- ▶ P7313SMA Differential probe (page 12-13)
- ▶ P8018 Single Ended / P80318 Differential TDR probes

Signal Generators:
- ▶ AWG7000 Series (page 17)
- ▶ DTG5334 (page 16)

Test Fixtures:
- ▶ TPA-T and TPA-P

For more information visit:
www.tektronix.com/hdmi

Technology and Applications Solutions

Serial ATA

Powerful Serial ATA Compliance Toolset Saves Time and Effort

The solution for the whole range of SATA measurement needs includes high performance real-time oscilloscopes to accurately handle the fastest SATA rates, matching probes for maximized connectivity and signal fidelity, expert automated compliance and analysis measurement software and signal generators for Rx and out-of-band measurements. In addition, sampling oscilloscopes track down impedance problems on differential signal paths.

Recommended Products:

Oscilloscopes and Application Software:
- DSA70000 Series with TDSRTEye Serial Compliance and Analysis software (page 11)
- TDSJIT3 Jitter Measurement and Analysis software
- DSA8200 Sampling oscilloscope (page 11)

Probing:
- P7313 Differential probe (pages 12-13)
- P7313SMA Differential probe (pages 12-13)
- P7513/P7516 TriMode™ Differential probes (pages 12-13)
- P8018 Single Ended / P80318 Differential TDR probes

Logic Analyzers:
- TLA7000 Series with SATA II third-party support (page 15)

Signal Generators:
- AWG7000 Series (page 17)
- DTG 5000 Series (page 16)

For more information visit:
www.tektronix.com/serial_data

Memory Systems

Better memory designs, in less time, with the right tools.

To keep pace with the more complex and shorter design cycles, designers need to optimize their memory testing. In order to be successful in these challenging circumstances, a wide suite of FB-DIMM and DDR2 test solutions is required. These solutions include real-time with matching probes, sampling oscilloscopes, and logic analyzers (with Nexus Technology LAI interposers and NEXVu FB-DIMMs). The combination of these tools enables a better memory design implementation, in less time.

Recommended Products:

**Logic Analyzers:**
- TLA7000 Series (page 15)

Oscilloscopes:
- DPO/DSA70000 Series (page 11)

Probing & Fixtures:
- P7513/P7516 TriMode™ Differential probes (pages 12-13)
- P7313/P7313SMA Differential probes (pages 12-13)
- P7380A/P7380SMA Differential probes (page 12-13)
- P7360A Differential probe (pages 12-13)
- P8018 Single Ended / P80318 Differential TDR probes
- P6800 / P6900 Series (page 15)
- NEX-TDSFBDP and TDSN4238B

For more information visit:
www.tektronix.com/memory
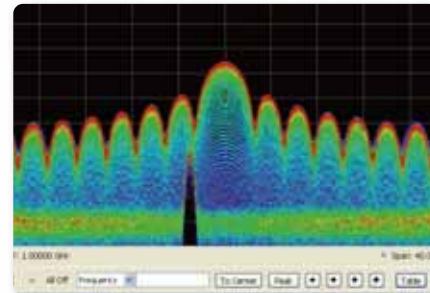
Radar

Testing advanced radars demands exceptional performance from measurement equipment.

With today's rapid advances in radar technology, developing and manufacturing highly specialized and innovative electronic products to detect radar signals takes leading-edge technology and tools. Our innovative test equipment provides tremendous value in the testing of increasingly complex radar waveforms:
- Provides the capabilities you need to manage the requirements of modern radar applications
- Provides real-time visibility of advanced pulse compression systems and the generation and analysis of all digital dynamic signal types that help you create highly reliable, cost-effective system designs for defense and commercial electronic systems
- Offers scalable architectures that grow intelligently and keep costs down

Recommended Products:

Real-Time Spectrum Analyzers:
- RSA3300A Series, RSA3408A, RSA6100A Series (page 18)

Signal Generators:
- AWG5000 Series (page 17)
- AWG7000 Series (page 17)

Probing:
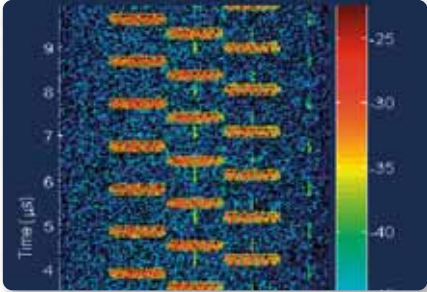- P7313 Differential probe (pages 12-13)
- P7340A Differential probe (pages 12-13)
- P7360A Differential probe (pages 12-13)
- P7380A Differential probe (pages 12-13)
- P7000 Series with RTPA2A for use with the RSA3408A and RSA3300A (page 13)

Oscilloscopes:
- DPO7000 Series (page 10)
- DPO/DSA70000 Series (page 11)

For more information visit:
www.tektronix.com/radar

Ultra Wide Band (UWB)

The high-frequency bandwidth required to test UWB, places it beyond the capabilities of most test and measurement equipment.

While most radio transmitters are high power with narrow bandwidth, UWB transmitters use low power with ultra wide bandwidth. This presents unique challenges to designers who must trigger, acquire and analyze the single-shot coherent waveform. Whether designing or integrating UWB radios, chirp radar, or WiMedia, Tektronix delivers testing and design tools with its fastest oscilloscopes, spectrum analyzers and signal generators, along with UWB application software.

Recommended Products:

Oscilloscopes and Application Software:
▶ DSA70000 Series with Ultra-wideband Analysis software (page 11)

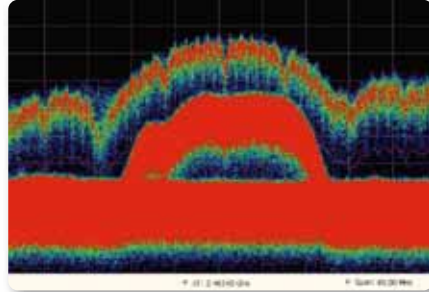**Signal Generators:**
▶ AWG7000 Series (page 17)

Probing:
▶ P6800 / P6900 Series (page 15)
▶ P7513/P7516 TriMode™ Differential probes (pages 12-13)

Logic Analyzers:
▶ TLA7000 Series with iLink toolset (page 15)

For more information visit:
www.tektronix.com/Measurement/ applications/rf/uwb.html

Spectrum Management

Surveillance applications demands a fast means to detect a wider spectrum of signals and then identify them.

Building on our history of supporting mission-critical surveillance programs for the air, land and sea, our real-time analysis tools provide you with complete capture of every event, enjoy deep analysis capabilities and include:

▶ Single-shot capture of events and real-time streaming of data for post-processing
▶ Unique frequency mask triggering capability within the stare bandwidth to enable complete capture and multiple analysis of every event, allowing quick identification and insight into the threats that challenge today's military forces
▶ Industry-leading wideband architecture that provides collection and interception of the most challenging signals and enables mission success
▶ Picture-quality-monitoring capabilities that detect the slightest change in pixel behavior on video streams

Recommended Products:

Real-Time Spectrum Analyzers:
▶ RSA3408A, RSA6100A Series (page 18)

Signal Generators:
▶ AWG7000 Series (page 17)

Oscilloscopes:
▶ DPO7000 Series (page 10)
▶ DPO/DSA70000 Series (page 11)

Probing:
▶ P7313 Differential probe (pages 12-13)
▶ P7340A Differential probe (pages 12-13)
▶ P7360A Differential probe (pages 12-13)
▶ P7380A Differential probe (pages 12-13)
▶ P7000 Series with RTPA2A for use with the RSA3408A and RSA6100A (page 13)

For more information visit:
www.tektronix.com/surveillance

Signal Integrity

There are two kinds of designers — those who have signal integrity problems, and those who will.

Digital 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. Ensuring adequate digital signal integrity requires specific analysis in the design phase and characterization by empirical measurements of prototypes to validate the effectiveness of the design modeling methods.

Recommended Products:

Oscilloscopes and Application Software:
▶ DSA8200 Sampling oscilloscope with 80E10 TDR / 80E09 Electrical Sampling modules (page 11)
▶ IConnect™ and MeasureXtractor™ Signal Integrity TDR and S-parameter software
▶ 80SJNB Jitter, Noise and BER Analysis software

Probing:
▶ P6400 / P6800 / P6900 Series (page 15)
▶ P7313SMA Differential probe with 80A03 (page 12)
▶ P7513/7516 TriMode™ Differential probes with 80A03 (page 12)
▶ P8018 Single Ended / P80318 Differential TDR probes

Logic Analyzers:
▶ TLA5000B and TLA7000 Series with specific processor/bus supports (page 15)

For more information visit:
www.tektronix.com/signal_integrity

Technology and Applications Solutions
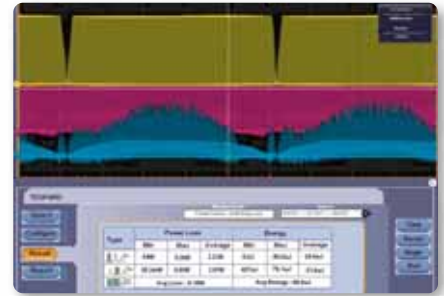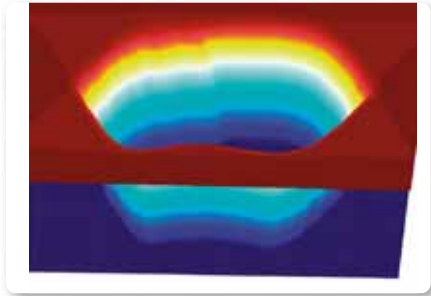
Jitter / Noise Analysis

Solving jitter debug and analysis challenges made easy

Tektronix offers oscilloscope based jitter measurement solutions with the lowest possible intrinsic jitter, for signals ranging from low-speed digital to ultra-high speed serial data, both for electrical and optical signals.

Solving jitter problems on low level and low noise signals or for measuring the very small amounts of jitter often found on clocks there are solutions based on Real-Time Spectrum Analyzers (RTSA).

In addition signal generators, provide jitter generation capability for various applications including receiver jitter tolerance testing.

Recommended Products:

Oscilloscopes and Application Software:
▶ DPO7000, DPO/DSA70000 Series Real-time oscilloscopes with TDSJIT3 Jitter and Timing software (pages 10 and 11)
▶ DSA8200 Sampling oscilloscope with 80SJNB Jitter, Noise and BER Analysis software (page 11)
▶ IConnect® and MeasureXtractor™ Signal Integrity TDR and S-parameter software

Probing:
▶ P7313 Differential probe (page 12-13)
▶ P7313SMA Differential probe (page 12-13)
▶ P7340A Differential probe (page 12-13)
▶ P7360A Differential probe (page 12-13)
▶ P7380A Differential probe (page 12-13)
▶ P7380SMA Differential probe (page 12-13)
▶ P7000 Series with RTPA2A for use with the RSA3408A (page 13)

Signal Generators:
▶ DTG5000 and AWG7000 Series (page 16)

Real-Time Spectrum Analyzers:
▶ RSA3408A, RSA6100A Series (page 18)

For more information visit:
www.tektronix.com/jitter

Time Domain Reflectometry (TDR) and S-parameter Measurements

Impedance characterization and network analysis for serial data applications

TDR is a convenient way to evaluate impedance values and variations along a transmission line such as cables, connectors or a microstrip on a PC board. At speeds of less than 1 Gbps, transmission quality can be analyzed in time domain just as the signal integrity of data signals is often analyzed in time domain.

At speeds of 1 Gbps and beyond the frequency domain performance of the interconnect, using S-parameters also needs to be evaluated.

In addition to impedance and S-parameters measurements, in today's environment, engineers also use modeling tools to design these high-speed circuits. Measurement-based SPICE modeling ensures the accuracy of the model by design, since it is compared to measurements and verified as part of the modeling process. Modification can be done easily to correct any characterization issues.

Recommended Products:

Oscilloscopes and Application Software:
▶ DSA8200 Sampling oscilloscope with 80E10 / 80E08 / 80E04 TDR and 80A02 EOS/ESD Protection module (page 11)
▶ IConnect® and MeasureXtractor™ Signal Integrity TDR and S-parameter software

Probing:
▶ P8018 Single-Ended / P80318 Differential TDR probes
▶ 2020H/V Horizontal/Vertical Signal Integrity manual work station

For more information visit:
www.tektronix.com/tdr

Power Measurement and Analysis Solutions

Quickly and affordably transform your Tektronix oscilloscope into an ideal tool for power measurement and analysis.

Power measurements for switching efficiency, power quality, and regulatory compliance are factors that every switched mode power supply designer must consider. Tektronix Digital Phosphor Oscilloscopes (DPO) with built-in Analysis software and a wide selection of both voltage and current probes makes power loss at the switching device, performing B-H analysis at magnetic components, assessing Safe Operating Area, test pre-compliance to the EN61000-3-2 standard and generating customized test reports easy Specialized oscilloscopes with isolated channels for performing floating power-specific measurements to 600 VRMS CAT II (or 300 VRMS CAT III) are also available.

Recommended Products:

Oscilloscopes and Application Software:
▶ TPS2000 / DPO4000 / DPO7000 and DPO70000 Series (pages 9-10)
▶ DPOPWR or TPSPWR11 Power Measurement and Analysis software

Probing:
▶ TAP1500/2500/3500 Active probes (page 12-13)
▶ TCP0030 AC/DC Current probe (page 12-13)
▶ TCP202 Current probe (page 12-13)
▶ TCPA300 / 400 Current probes and amplifiers (page 12-13)
▶ P5100 Passive High Voltage probes (page 12-13)
▶ TDP1000, TDP0500 High Voltage Differential probes (page 12-13)
▶ P5200/P5205/P5210 with TPA-BNC High Voltage Differential probes (page 12-13)

For more information visit:
www.tektronix.com/power

▶ *TDS2000B Series*

▶ *TPS2000 Series*

▶ *TDS3000B Series*

Oscilloscope Product Series	TDS1000B	TDS2000B	TPS2000	TDS3000B	DPO4000
Channels	2	2, 4	2, 4 (isolated)	2, 4	2, 4
Bandwidth	40 MHz to 100 MHz	60 MHz to 200 MHz	100 MHz to 200 MHz	100 MHz to 500 MHz	350 MHz to 1 GHz
Rise TIme	8.75 ns to 3.5 ns	5.83 ns to 2.1 ns	3.5 ns to 2.1 ns	3.5 ns to 700 ps	1 ns to 350 ps
Sample Rate	1 GS/s	1 GS/s to 2 GS/s	1 GS/s to 2 GS/s	1.25 GS/s to 5 GS/s	2.5 GS/s to 5 GS/s
Oscilloscope Type	DSO	DSO	DSO w/ isolated channels	DPO	DPO
Maximum Record Length	2.5 k points	2.5 k points	2.5 k points	10 k points	10 M
Trigger Types	Edge, Pulse (Width), Video	Edge, Pulse (Width), Video	Edge, Pulse (Width), Video	Edge, Logic (Pattern State), Pulse (Glitch width, Runt, Slew Rate), Video, Comm* *Optional	Edge, Pulse (Width, Runt), Logic, Set-up and Hold, Rise/Fall Time, Video, I^{2}C*, SPI*, CAN*, RS-232* *Optional
Connectivity	USB, PictBridge®, GPIB* *Optional	USB, PictBridge®, GPIB* *Optional	RS-232, Centronics, CompactFlash	RS-232*, GPIB*, Centronics, Floppy Disk, LAN, (10Base-T Ethernet) *Optional	USB, CompactFlash, LAN, (10/100Base-T Ethernet), GPIB* *Optional
Waveform Math and Analysis	Simple Waveform Math, FFT	Simple Waveform Math, FFT	Simple Waveform Math, FFT	Simple Waveform Math, FFT, Arbitrary Expression Math* *Optional	Waveform Math, FFT, Arbitrary Expression Math
Applications	▶ Design and Debug ▶ Education and Training ▶ Manufacturing Test and Quality Control ▶ Service and Repair	▶ Design and Debug ▶ Education and Training ▶ Manufacturing Test and Quality Control ▶ Service and Repair	▶ Industrial Power Design ▶ Troubleshooting ▶ Installation and Maintenance ▶ Automotive Design and Test ▶ Education	▶ Digital Design and Troubleshooting ▶ Video Design and Service ▶ Power Supply Design ▶ Telecomm Mask Testing and Manufacturing	▶ Embedded Design and Debug ▶ Investigation of Transient Phenomena ▶ Power Measurements ▶ Video Design and Debug ▶ Automotive Electronics
	see page 9	**see page 9**	**see page 9**	**see page 9**	**see page 10**

Oscilloscopes Selection

▶ MSO4000 Series

▶ DPO/DSA70000 Series

▶ DSA8200 Series

Oscilloscope Product Series	MSO4000	DPO7000	DPO/DSA70000	DSA8200
Channels	2, 4 analog channels + 16 digital channels	4	4	Up to 8
Bandwidth	350 MHz to 1 GHz	500 MHz to 3.5 GHz	4 to 20 GHz	DC - 70+ GHz
Rise TIme	1 ns to 350 ps	415 ps to 100 ps	65 ps to 17*[1] ps *[1] User Selectable DSP enhanced.	5 ps
Sample Rate	2.5 GS/s to 5 GS/s (analog) 500 MS/s main, or 16.5 GS/s MagniVu™ (digital)	Up to 40 GS/s	50 GS/s	200 kS/s (sequential)
Oscilloscope Type	MSO	DPO	DPO	Sampling
Maximum Record Length	10 M	400 M	200 M	-
Trigger Types	Edge, Pulse (Width, Runt) Logic, Setup and Hold, Rise/Fall, Time, Video, I²C*, SPI*, CAN*, RS-232*, Parallel *Optional	Pinpoint Triggering, Edge, Logic (Pattern State / Setup/Hold), Pulse (Glitch, Width, Runt, Timeout, Transition), Comm*, Serial Pattern*, I²C, SPI, RS-232 CAN* *Optional	Pinpoint Triggering, Edge, Logic (Pattern State / Setup/Hold), Pulse (Glitch, Width, Runt, Timeout, Transition), Comm*, Serial Pattern*/Standard *Optional	Edges, Internal Clock, Clock Recovery
Connectivity	USB, CompactFlash, LAN (10/100 Base-T Ethernet), GPIB* *Optional	RS-232, GPIB, Centronics, Ethernet, Floppy Disk, LAN, Open Access to Windows Platform, USB, PCMCIA, CD-ROM		RS-232, GPIB, Centronics, Ethernet, Floppy Disk, LAN, Open Access to Windows Platform, USB, PCMCIA, CD-ROM, DVD
Waveform Math and Analysis	Waveform Math, FFT, Arbitrary Expression Math	Advanced Waveform Math, FFT or Spectral, Compatability with Windows Analysis and Productivity Software		
Applications	▶ Mixed Signal Design and Debug ▶ Embedded Design and Debug ▶ Investigation of Transient Phenomena ▶ Power Measurements ▶ Video Design and Debug ▶ Automotive Electronics	▶ Signal Integrity, Jitter and Timing Analysis ▶ Verification, Debug and Characterization of Sophisticated Designs ▶ Debugging and Compliance Testing of Serial Data Streams for Telecom and Datacom Industry Standards ▶ Investigation of Transient Phenomena ▶ Power Measurements and Analysis ▶ Spectral Analysis	▶ Signal Integrity, Jitter and Timing Analysis ▶ Verification, Debug and Characterization of Sophisticated Designs ▶ Design, Development and Compliance Testing of Serial Data Streams Up to 4.25 Gb/s Rates ▶ Debug of Telecom, Datacom and Storage Area Network Equipment ▶ Designs and High-Speed Backplanes	▶ Design/Verification of Telecom and Datacom Components and Systems ▶ Manufacturing/Testing for ITU/ANSI/IEEE/ SONET/SDH Conformance ▶ High-Performance True Differential TDR Measurements ▶ Advanced Jitter, Noise, and BER Analysis ▶ Impedance Character-ization and Network Analysis for Serial Data Applications Including S-parameters ▶ Channel & Eye diagram Simulation and Measurement-based SPICE Modeling
	see page 10	**see page 10**	**see page 11**	**see page 11**

TDS1000B/2000B Series

Digital Storage Oscilloscopes

Features and Benefits
- 40 MHz and 200 MHz bandwidths
- Sample rates up to 2 GS/s real-time
- 2 or 4 channels
- Removable data storage via front panel USB port
- Seamless PC connectivity via USB device port, with OpenChoice® and NI SignalExpress™ PC software
- Advanced triggers including pulse width trigger and line-selectable video trigger
- FFT standard on all models
- 11 automatic measurements
- Multiple language user interface and context-sensitive help
- Direct print to all PictBridge® compatible printers via USB device port
- Lifetime Warranty*[1]

Applications
- Design and debug
- Education and training
- Manufacturing test and quality control
- Service and repair

For further details visit:
www.tektronix.com/tds2000b

*[1] Limitations apply. For terms and conditions, visit: www.tektronix.com/lifetimewarranty

TPS2000 Series

Digital Storage Oscilloscopes

Features and Benefits
- 100 MHz and 200 MHz bandwidths
- Sample rates up to 2 GS/s real-time
- 2 or 4 fully isolated and floating channels, plus isolated external trigger
- Up to 8 hours of continuous battery operation with hot swappable batteries
- Optional power application software offers the broadest range of power measurements at its price point
- Quickly document and analyze measurement results with OpenChoice® software
- 11 automatic measurements
- FFT standard
- Advanced triggers to quickly capture the event of interest
- Multi-language user interface
- Adjust the oscilloscope to your operating environment with backlit menu buttons/display

Applications
- Industrial power design, troubleshooting, installation, and maintenance
- Advanced electronics design, troubleshooting, installation, and maintenance
- Automotive design and test
- Education
- General bench test

For further details visit:
www.tektronix.com/tps2000

TDS3000B Series

Digital Phosphor Oscilloscopes

Features and Benefits
- 100 MHz to 500 MHz bandwidths
- Sample rates up to 5 GS/s real-time
- 3,600 wfms/s continuous waveform capture rate
- 2 or 4 channels
- Full VGA color LCD
- 25 automatic measurements
- FFT standard
- Multi-language user interface
- QuickMenu graphical user interface for easy operation
- WaveAlert® automatic waveform anomaly detection
- OpenChoice® solutions simplify instrument control, documentation, and analysis

Applications
- Digital design and debug
- Video installation and service
- Power supply design
- Education and training
- Telecommunications mask testing
- Manufacturing test
- General bench test

For further details visit:
www.tektronix.com/tds3000b

Oscilloscope/Probe Cross Reference: To find the right probe for your oscilloscope quickly and easily, go to www.tek.com/products/accessories/oscilloscopes_probes/ and click on "Oscilloscopes to Probes"

Oscilloscopes

DPO4000 Series
Digital Phosphor Oscilloscopes

Features and Benefits
- 350 MHz to 1 GHz bandwidth
- Sample rates up to 5 GS/s
- 2 or 4 channels
- 10 M record length on all channels
- Wave Inspector® controls provide unprecedented efficiency in viewing and searching waveforms
- I²C, SPI, CAN, and RS-232 serial triggering, analysis, and decode *2
- Large 10.4 in. (264 mm) XGA color display
- Only 5.4 in. (137 mm) deep and 11 lbs. (5 kg) in weight
- USB and CompactFlash on front panel for quick and easy storage
- Built-in Ethernet port
- USB plug-and-play connectivity and analysis software solutions
- USB 2.0 device port for direct PC control using USBTMC
- Suite of advanced triggers

Applications
- Embedded design and debug
- Investigation of transient phenomena
- Power Measurements
- Video Design and Debug
- Automotive Electronics

For further details visit:
www.tektronix.com/dpo4000

*2 Optional.

▶ New

MSO4000 Series
Mixed Signal Oscilloscopes

Features and Benefits
- 350 MHz to 1 GHz bandwidth
- Sample Rates up to 5 GS/s
- 2 or 4 analog channels plus 16 fully-integrated digital channels
- 10 M record length on all analog and digital channels
- Up to 60.6 ps digital timing resolution
- Wave Inspector® controls provide unprecedented efficiency in viewing and searching analog and digital waveforms
- Large 10.4 in. (264 mm) XGA color display – plenty of room to see up to 20 traces on-screen
- Next-generation digital waveform display to easily visualize and manage digital waveform data
- I²C, SPI, CAN and RS-232 serial triggering and analysis *3
- Parallel bus decoding and triggering
- Slim 5.4 in. (137 mm) depth frees up valuable bench-top space
- New digital probe design with color-coded pods simplifies connecting to the device-under-test

Applications
- Mixed Signal Design and Debug
- Embedded Design and Debug
- Investigation of Transient Phenomena
- Power Measurements
- Video Design and Debug
- Automotive Electronics

For further details visit:
www.tektronix.com/mso4000

*3 Optional.
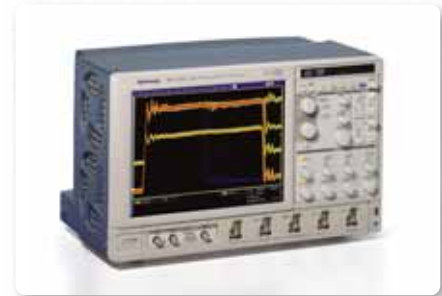
DPO7000 Series
Digital Phosphor Oscilloscopes

Features and Benefits
- 500 MHz, 2.5 GHz, and 3.5 GHz bandwidth
- Real-time sample rates up to 10GS/s on all 4 channels
- Up to 400 MS record length with MultiView Zoom™ feature for quick navigation
- >250,000 wfms/s maximum waveform capture rate
- MyScope® custom windows enhance productivity
- Pinpoint™ triggering to address virtually any triggering situation
- Small footprint and light weight
- 12.1 inch largest XGA touch screen display in the industry
- Clock recovery from serial data streams and NRZ serial pattern trigger for isolation of pattern-dependent effects
- Low-speed serial protocol triggering
- OpenChoice® with Microsoft Windows delivers built-in networking and analysis

Applications
- Signal integrity, jitter and timing analysis
- Debugging and compliance testing of serial data streams for telecom and datacom industry standards
- Low-speed serial bus design (CAN, SPI, I²C, LIN)
- Investigation of transient phenomena
- Power measurements and analysis
- Automotive electronics
- Video applications

For further details visit:
www.tektronix.com/dpo7000

Oscilloscope/Probe Cross Reference: To find the right probe for your oscilloscope quickly and easily, go to www.tek.com/products/accessories/oscilloscopes_probes/ and click on "Oscilloscopes to Probes"

▸ New

DPO/DSA70000 Series

Digital Phosphor Oscilloscopes & Digital Serial Analyzers

Features and Benefits

- ▸ 4, 6, 8, 12, 16, 20 GHz bandwidth models
- ▸ Up to 50 GS/s real-time sample rate on all four channels
- ▸ Up to 200 MS record length with MultiView Zoom™ feature for quick navigation
- ▸ >300,000 wfms/s maximum waveform capture rate
- ▸ Pinpoint® triggering provides the most flexible and highest performance triggering
- ▸ Serial pattern triggering up to 3.125 Gb/s with 8 b/10 b protocol triggering for isolation of pattern-dependent effects
- ▸ Serial data analysis and compliance for PCI Express, SATA, HDMI, DVI, Fibre Channel, 1394b, Ethernet, XAUI, USB, SAS, Rapid I/O
- ▸ Industry's largest 12.1 inch XGA touch screen display
- ▸ MyScope® custom windows and mouse click menus enhanced productivity
- ▸ OpenChoice® software with Microsoft Windows XP OS enables built-in networking and extended analysis

Applications

- ▸ Signal integrity, jitter and timing analysis
- ▸ Verification, debug and characterization of sophisticated designs
- ▸ Debugging and compliance testing of serial data streams for telecom and datacom industry standards
- ▸ Investigation of transient phenomena
- ▸ Power measurements and analysis
- ▸ Spectral analysis

For further details visit:
www.tektronix.com/dpo70000_dsa70000

DSA8200

Digital Serial Analyzer Sampling Oscilloscope

Features and Benefits

- ▸ State of the art communication signal analysis with fully Integrated multi-rate optical modules and electrical modules to 70+ GHz[3] bandwidth
- ▸ Industry's only mainframe to support up to 8 input channels, reducing time and cost
- ▸ Industry-leading timebase accuracy
- ▸ Analysis of high-speed serial data rates from 1 Gb/s to 60 Gb/s provides insight into precise causes of eye closure
- ▸ Separation of both jitter and noise provides highly accurate extrapolation of BER and eye contour
- ▸ True differential remote sampler enabling placement near DUT for superior signal fidelity
- ▸ Highest performance TDR with 15ps reflected rise time and 12ps incident rise time
- ▸ Intuitive, easy and accurate S-Parameter measurements
- ▸ High fidelity differential and single-ended probing
- ▸ Automated standards mask testing
- ▸ Automated measurement system with over 100 NRZ, pulse, and RZ measurements
- ▸ FrameScan® acquisition mode
- ▸ Four color graded variable persistence waveform databases

Applications

- ▸ Design/verification of Telecom and Datacom components and systems
- ▸ Manufacturing/testing for ITU/ANSI/IEEE/SONET/SDH Conformance
- ▸ Advanced jitter, noise, and BER analysis
- ▸ Impedance characterization and network analysis for serial data applications including S-parameters
- ▸ Channel and eye diagram simulation and measurement-based SPICE modeling

For further details visit:
www.tektronix.com/dsa8200

[3] Bandwidth is determined by plug-in modules and may exceed 70 GHz as higher speed modules become available in the future.

Oscilloscope/Probe Cross Reference: To find the right probe for your oscilloscope quickly and easily, go to www.tek.com/products/accessories/oscilloscopes_probes/ and click on "Oscilloscopes to Probes"

Probes and Accessories

Accessory Type	TDS1000B/ TDS2000B	TPS2000B	TDS3000B	DPO4000/ MSO4000 DPO7000	DPO70000/ DSA70000	DSA8200	RSA6100A/ 3408A/ 3300A
Passive Probe (1 Meg ohm termination)	P2220 (1X/10X) P6112 (10X) P6101B (1X)	P2220 (1X/10X)	P6139A (10X) P3010 (10X) P6101B (1X)	P6139A (10X) P6101B (1X)	P6139A (10X)[1] P6101B (1X)[1]		
Passive Probe (50 ohm termination)			P6158 (20X)	P6158 (20X)	P6158 (20X)[2] P6150 (1X/10X)[3]	P80318[3A] P8018[3A] (TDR Apps)	P6150 (1X/10X)[10] P6158 (20X)[10]
Time Domain Reflectometry Probes						P80318[3A] P8018[3A]	
High Voltage Probe (1 Meg termination)	P5100 (100X) P6015A (1000X)	P5120 (20X)	P5100 (100X) P6015A (1000X)	P5100 (100X) P6015A (1000X)	P5100 (100X)[1] P6015A (1000X)[1]		
High Voltage Differential Probe	P5200 P5205[4] P5210[4]	P5205[4] P5210[4]	P5205 P5210	TDP0500 TDP1000 P5205[5] P5210[5]	P5205[1] P5210[1]		
Active Probe (Single-ended)			P6243 P6205	TAP1500 TAP2500[5A] TAP3500[5A]	P7260 P7240 P7225	P7260[6] P7240[6] P7225[6]	
Differential Probe			P6246[4]	TDP0500 TDP1000 P6330[5] P6248[5] P6247[5] P6246[5]	P7516, P7513, P7313, P7313SMA, P7380A, P7380SMA, P7360A, P7350, P7350SMA, P7340A, P7330	P7516[6], P7513[6], P7313[6], P7313SMA[6], P7380A[6], P7380SMA[6], P7360A[6], P7350[6], P7350SMA[6], P7340A[6], P7330[6]	P7313, P7380A[6A], P7380SMA[6A], P7350[6A], P7350SMA[6A], P7330[6A]
Micro-Volt Differential Probe			ADA400A[4]	ADA400A[5]	ADA400A[1]		
Current Probe AC/DC	A622 TCP300[8] TCP400[8]	A622 TCP300[8] TCP400[8]	TCP202[5] A622 TCP300[8] TCP400[8]	TCP0030 TCP202[5] A622 TCP300[7][8] TCP400[7][8]	TCP0030 TCP202[5] A622 TCP300[7] TCP400[7]		
Current Probe AC only	A621, P6021, P6022, CT2	A621	A621, P6021, P6022, CT2	CT6, CT1, A621, P6021 P6022	CT6[2], CT1[2], A621[1], P6021[2], P6022[2]		
Electro-Optical Converter (50 ohm termination)			P6701B P6703B	P6701B[5] P6703B[5]	P6701B[2] P6703B[2]		
Software		WSTRO	WSTRO	DPOPWR[5A][9]			
Carts			K420	K420 (requires 407-5192-00 bracket set)	K4000 w/ brackets 407-5187-00 407-5188-00	K4000	
Case (Soft)	AC2100		AC3000	AC4000[5B]			
Case (Hard)	HCTEK4321		HCTEK4321	HCTEK4321[5B] 016-1942-00[5A] (016-1522-00[5A] w/wheels)	016-1977-00		016-1963-00[11]
Rackmount Kit	RM2000B		RM3000	RM4000[5B] 016-1985-00[5A]	016-1985-00	016-1791-01	016-1962-00[11]

[1] Requires TCA-1MEG Adapter for TDS7000, DPO/DSA70000 Series

[2] Requires TCA-BNC Adapter for TDS7000, DPO/DSA70000 Series

[3A] Use of w/80A02 is suggested to reduce EOS/ESD static discharge damage to sampling equipment.

[3] Requires TCA-292MM or TCA-SMA Adapter for TDS7000, DPO/DSA70000 Series

[4] Requires 1103 Power Supply for DPO7000, DPO4000 or MSO4000 Series

[5] Requires TPA-BNC Adapter for DPO7000, DPO4000 or MSO4000 Series

[5A] DPO7000 Series only

[5B] DPO/MSO4000 Series only

[6] Requires 80A03 Adapter for use with DSA8200

[6A] Requires RTPA2A Adapter for use with the RSA2200A/3300A/3408A, WCA200AA Series.

[7] TCP300 (TCPA300 Amplifier used with TCP305 or TCP312 or TCP303), TCP400 (TCPA400 Amplifier used with TCP404XL).

[8] May be used with TPA-BNC Adapter for proper readout or direct BNC connection without readout.

[9] The DPOPWR for DPO7000 TEKVPI Series oscilloscopes requires purchase of the DPO7XXX OPT PWR or DPO7UP OPT PWR.

[10] Requires N type-to-SMA female adapter or N type-to-BNC.

[11] RSA6100A Series.

Active Probes

Features and Benefits
- True signal reproduction and fidelity
- Low input capacitances: < 1.0 pF
- Small Compact Probe Heads for Probing Small Geometry Circuit Elements
- DUT Attachment Accessories Enable Connection to SMDs As Small As 0.5 mm Pitch
- Service, Durability and Reliability

Applications
- Verification, debug and characterization of high-speed designs
- Component design and characterization
- Design, development and compliance testing
- Signal integrity, jitter, timing analysis
- Manufacturing engineering and test
- Educational research

Differential Probes

Features and Benefits
- New TriMode™ probing provides differential, single-ended or common mode measurements using only one probe (P7500 Series)
- Excellent signal fidelity, with high bandwidth to >16GHz, excellent step response, low loading, and high CMRR
- Versatility to make differential or single-ended measurements
- Tip-Clip™ interchangeable probe tip system to configure your probe with the optimal tip for your application (P7300 Series)
- Differential TDR hand probe for high fidelity impedance measurements of differential transmission lines (P80318)

Applications
- Debug, validation and compliance testing of high speed serial designs
- Communications
- Semiconductor characterization & validation
- Circuit board, package controlled impedance testing (TDR)

Passive Probes

Features and Benefits
- Wide range of performance to meet the demands of many applications
- Lightweight, ergonomic designs to fit your needs
- Wide range of probe tips for easier circuit access
- Modularity to provide lower cost of ownership (P613X)
- Compact size accessories to provide compatibility with existing adapters

Applications
- Mixture of high, medium and low frequency general purpose measurements
- Digital design
- Power device characterization
- Power supply design
- UPS systems, power converters
- Electronic ballast
- Mixed signal
- Service, manufacturing

Current Probes

Features and Benefits
- Easy to use and accurate AC/DC current measurements
- DC to 2 GHz
- Amplitude measurements from 1 mA to 20,000 A
- Split Core and Solid Core construction

Applications
- Switching power supplies
- Motor drives
- Disk drive
- Electronic ballasts
- Inverters
- Silicon characterization
- High-frequency analog design

High Voltage Probes

Features and Benefits
- Wide Range of Voltage Measurements - Up to 40 kV Peak (100 ms Pulse)
- High Voltage Measurement Capabilities
- Single-Ended - Referenced To Earth Ground
- Differential - Non-Ground Referenced and Ground Referenced
- Bandwidths from DC to 1 GHz

Applications
- Power supplies
- Motor drives
- Electronic ballast
- DC to DC power converters
- Power device design and evaluation
- Switch mode control
- UPS systems

Other Accessories

- Low capacitance probes, with low loading to extremely high frequencies
- Optical–to-electrical converters for analysis of optical signals
- TekConnect® Probe Adapters for Tektronix Real-Time Spectrum Analyzers & Tektronix DPO/DSA70000 Series Oscilloscopes
- Attenuators, terminators and adapters for a wide range of applications and accessories
- Articulating arms to guide and position standard handheld probes
- Quality probe Replacement Parts

Applications
- High-speed device characterization
- Circuit board impedance testing (P6150)
- General RF troubleshooting (RTPA2A)
- Research, electronic design, service and manufacture of small geometry circuitry

Logic Analyzers

Logic Analyzer Selection

	TLA520xB	TLA7N4	TLA7NAx	TLA7Axx
Channels	34, 68, 102, 136	136 per module	34, 68, 102, 136 per module	34, 68, 102, 136 per module
Maximum Channels per Timebase (merge)	136	272 in TLA7012, 408 in TLA7016	272 in TLA7012, 680 in TLA7016	272 in TLA7012, 680 in TLA7016
Maximum Channels per Mainframe	136	272 in TLA7012, 816 in TLA7016		
Maximum Channels per System	136	2,176 (with eight TLA7012s and one TLA708EX) 6,528 (with eight TLA7016s and one TLA708EX)		
Maximum Independent Buses per System	1	16 (with eight TLA7012s and one TLA708EX) 48 (with eight TLA7016s and one TLA708EX)		
State Clock Rate	235 MHz	100 MHz std; 200 MHz opt.	295 MHz std; 450 MHz opt.	120 MHz std; 235,450 MHz opt.
Maximum State Clock Rate	235 MHz	200 MHz	450 MHz	800 MHz (half channel mode)
Maximum State Data Rate	470/235 Mb/s (half/full channels)	400/200 Mb/s (half/full channels)	470/235 Mb/s (half/full channels)	1,250/900/450 Mb/s (quarter/half/full channels)
MagniVU™ Timing (all channels, all the time)	125 ps (8 GHz) with 16 Kb depth	500 ps (2 GHz) with 2Kb depth	125 ps (8 GHz) with 16 Kb depth	125 ps (8 GHz) with 16 Kb depth
Simultaneous State and Timing Through Same Probe	Yes	Yes	Yes	Yes
Analog Measurements Through Same Probe	No	No	No	Yes
Timing	500 ps (2 GHz) / 1 ns (1 GHz) / 2 ns (500 MHz) (quarter/half/full channels)	2ns (500 MHz) / 4ns (250 MHz) (half/full channels)	500 ps (2 GHz) / 1 ns (1 GHz) / 2 ns (500 MHz) (quarter/half/full channels)	500 ps (2 GHz) / 1 ns (1 GHz) / 2 ns (500 MHz) (quarter/half/full channels)
Analog Outputs (four per module - analog MUX)	No	No	No	Yes
Record Length	8/4/2 Mb to128/64/32 Mb (quarter/half/full channels with timestamp)	128/64 Kb to8/4 Mb (half/full channels with timestamp)	2 MB/1 Mb/512 Kb to 164/64/32 Mb (quarter/half/full channels with timestamp)	512/256/128 Kb to 256/128/64 Mb (quarter/half/full channels with timestamp)
Source Synchronous Clocking	Yes	No	No	Yes
	see page 15	**see page 15**	**see page 15**	**see page 15**

Probes

No test and measurement solution is complete without addressing probing and considering its impact on your system and your measurement time. You can depend on Tektronix probes to protect the integrity of your signal, whether you need simultaneous digital-analog acquisition, an economical compression probe or a high-fidelity general-purpose probe.

For more information visit:
www.tektronix.com/products/
accessories/logic_analyzers

TLA5000B Series
Logic Analyzers

Features and Benefits

▶ 500 ps (2 GHz) / 32 MB timing record length to capture intermittent events over a wide time window

▶ 125 ps-resolution MagniVu™ acquisition simultaneous with timing or state acquisition to find elusive timing problems quickly, without double probing

▶ Glitch and setup/hold violation triggering and display to find and display elusive hardware problems

▶ 235 MHz state acquisition provides analysis of high-speed synchronous digital circuits

▶ iView™ time-correlated digital-analog view to clearly see how analog anomalies are affecting your digital signals

▶ 34/68/102/136 channel configurations offer flexible solutions to fit any budget

▶ Embedded software integration, debug, and verification

▶ Broad range of FPGA supports

Applications

▶ Digital hardware verification and debug

▶ Monitoring and measurement of digital hardware performance

▶ Single microprocessor or bus debug

For further details visit:
www.tektronix.com/tla5000

TLA7000 Series
Logic Analyzers

Features and Benefits

▶ Modular mainframes provide flexibility and expandability

▶ Utilize TLA Logic Analyzer

▶ Supports up to 6,528 Logic Analyzer channels, 48 independent buses

▶ iView™ capability provides up to 15GHz, 40GS/s and 64Mb analog acquisition with a stand-alone Tektronix TDS Digital Storage Oscilloscope

▶ View data in waveform, listing, source code, histogram (performance analysis) displays to perform cross-domain analysis

▶ Remotely control and monitor the TLA over the network using either hosted mode or via built-in Windows XP remote desktop

▶ Remote Control using Microsoft.NET and COM/DCOM technology supports advanced data analysis

Applications

▶ Hardware debug and verification

▶ Processor/bus debug and verification

▶ Embedded software integration, debug and verification

▶ PCI-Express debug and verification

For further details visit:
www.tektronix.com/tla7000

iLink™ Toolset: Two Powerful Measurement Tools Team Up

Although Logic Analyzers and Oscilloscopes have long been the tools of choice for digital troubleshooting, not every designer has seen the dramatic benefits that come with integrating these two key instruments.

Logic Analyzers speed up debugging and verification by wading through the digital information stream to trigger on circuit faults and capture related events. Oscilloscopes peer behind digital timing diagrams and show the raw analog waveforms, quickly revealing signal integrity problems.

Several Tektronix Logic Analyzer models offer the iLink™ toolset, a Logic Analyzer/Oscilloscope integration package that is unique in the industry. The iLink™ toolset joins the power of Tektronix Logic Analyzers - memory depths to 256, MagniVu™ acquisition with 125 ps resolution and advanced state machine-based triggering.

The **iLink™ Toolset** is a comprehensive package designed to speed problem detection and troubleshooting:

▶ **iCapture™** multiplexing provides simultaneous digital and analog acquisition through a single Logic Analyzer probe

▶ **iView™** display delivers time-correlated, integrated Logic Analyzer and Oscilloscope measurements on the Logic Analyzer display

▶ **iVerify™** analysis offers multi-channel bus analysis and validation testing using Oscilloscope-generated eye diagrams

Signal Generators

Mixed /Analog Signal Generators	AWG5000	AWG7000	AFG3000
Channels (maximum)	4 analog, 28 digital	2 analog	1, 2
Sample Rate (maximum)	1.2 GS/s, Up to 370 MHz	20 GS/s	2.0 GS/s
Memory Depth (maximum)	32M	64M	128 k
Vertical Resolution (bits)	14	10	14
Output Amplitude[1] (maximum)	4.5	2	10
Marker Outputs (maximum)	4	4	1 (trigger out)
Parallel Digital Outputs (maximum)	28[2]	-	-
Integrated Editors	Graphical, Sequence	Graphical, Sequence	Graphical, Text
Built-in Applications	Open Windows-based system supports third-party software		
	see page 17	**see page 17**	**see page 17**

Logic Signal Sources	DTG5334	DTG5274	DTG5078	DG2020A
Channels (maximum)	16	16	96	36
Data Rate (maximum)	3.35 Gb/s	2.7 Gb/s	750 Mb/s	200 Mb/s
Pattern Depth (maximum)	64 M	32 M	8 M	64 k
Timing Resolution / Range	200 fs/600 ns[1]	200 fs/600 ns[1]	1 ps/600 ns[1]	100 ps[4] /20 ns
Output Amplitude / Resolution (max)	Three modules support from 0.03 to 3.5 V_{P-P}/5 mV[2]			9.0 V_{P-P}/100 mV[2]
Rise / Fall Time	Three modules offer from < 540 ps to < 110 ps[3]			< 3 ns
Auxiliary Inputs	External Clock IN, Phase Lock IN, 10 MHz Ref IN, Trigger IN, Event IN, Skew Cal IN			External Clock IN, Trigger IN, Inhibit IN
Auxiliary Outputs	DC Outputs, Clock OUT, 10 MHz Ref OUT, Sync OUT			Clock OUT, Event OUT, Sync OUT
Auxiliary Features	PC/Windows Platform, Jitter Generation, Variable Crossing Points, Duty Cycle, Pulse Generator Mode			Tri-State Output Control
	see below	**see below**	**see below**	**see below**

Get help with your Signal Generator selection - compare by product or application.

See: www.tek.com/ products/signal_generator/ application_selection/ index

Key

[1] Vp-p into 50 Ohm

[2] Based on data rate settings

[3] Variable or fixed, depending on module

[4] Four channel only per pod, delay only

DTG5000/DG2000 Series Logic Signal Sources

Features and Benefits

▶ Data rate up to 3.35 Gb/S

▶ From 1 to 96 data channels (Master/Slave) close to 1,000 through clock synchronization

▶ Class leading delay resolution and range

▶ Versatile platform combines features of data generator, pulse generator, and DC source

▶ Modular architecture helps to protect your investment and allows the instrument to expand with your growing needs

▶ Up to 64 Mbit pattern depth per channel for complex data patterns

Applications

▶ Semiconductor device functional test and characterization

▶ Compliance and interopedability testing to emerging standards (PCI-Express, Serial ATA/2, InfiniBand, XAUI, HDMI/DVI)

▶ Magnetic and optical storage design

▶ Data conversion device design

▶ Imaging sensor device design

▶ Jitter transfer and jitter tolerance testing

For further details visit:
www.tektronix.com/logic_sources

AFG3000 Series
Arbitrary/Function Generators

Features and Benefits
▶ 25 MHz to 240 MHz sine waveforms
▶ 14 bits, 250 MS/s to 2 GS/s arbitrary waveforms
▶ 5.6" color display for full confidence in settings and waveform shape
▶ Multi-language and intuitive operation saves set-up time
▶ Pulse waveform with variable edge times
▶ AM, FM, PM, FSK, PWM
▶ Sweep and burst
▶ Dual channel models save cost and bench space
▶ USB connector on front panel for waveform storage on memory device
▶ USB, GPIB and LAN

Applications
▶ Electronic test and design
▶ Sensor simulation
▶ Functional test
▶ Education and training
▶ General usage across a broad range of applications

For further details visit:
www.tektronix.com/afg3000

▶ New

AWG5000
Arbitrary Waveform Generators

Features and Benefits
▶ 1.2 GS/s (20 GS/s) and 600 MS/s models
▶ 2 or 4 arbitrary waveforms
▶ 14-Bit vertical resolution
▶ Differential/single-ended outputs
▶ 28 digital outputs
▶ 4 or 8 variable level marker outputs
▶ Up to 32 M point record length for longer data streams
▶ Down to 800 ps resolution edge timing shift control
▶ Real-time sequencing creates infinite waveform loops, jumps and conditional branches
▶ Intuitive user interface based on Windows XP
▶ Integrated PC supports network integration and provides a built-in DVD, removable hard drive, LAN and USB Ports

Applications
▶ Digital RF
▶ Digital test
▶ Image device test
▶ IQ calibration
▶ MIMO 802.11n
▶ WiMax 802.16
▶ Radar

For further details visit:
www.tektronix.com/awg5000

AWG7000
Arbitrary Waveform Generators

Features and Benefits
▶ 10 GS/s (20 GS/s) and 5 GS/s models
▶ 1 or 2 arbitrary waveform outputs
▶ Vertical resolution up to 10-Bit available: 10-Bits (no marker output) or 8-Bits (with two marker outputs)
▶ Up to 64 M (64,800,000) point record length provides longer data streams
▶ Down to 100 fs resolution edge timing shift control
▶ Real-time sequencing creates infinite waveform loops, jumps, and conditional branches
▶ Intuitive user interface shortens test time
▶ Integrated PC supports network integration and provides a built-in DVD, removable hard drive, LAN, and USB Ports
▶ Real-world, ideal or distorted signal generation
▶ Enhanced/Corrupted playback of DSO captured signals
▶ Waveform vectors Imported from third-party tools such as Excel and others

Applications
▶ Serial data test
▶ Disk drive (magnetic/optical) read/write
▶ Telecom/data communications
▶ Wireless communications
▶ Mixed signal design and test

For further details visit:
www.tektronix.com/awg7000

Real-Time Spectrum Analyzers

Real-Time Spectrum Analyzers (RTSAs)	RSA3300A	RSA3408A	RSA6100A
Discover	-	-	DPX Spectrum Processing provides live RF display
Trigger	External, Power, IF Level Frequency Domain	External, Power, Frequency Domain	External (2), Power, Frequency Domain
Capture	15 MHz; -74dBc 3rd Order Dynamic Range	36 MHz; -78dBc 3rd Order Dynamic Range	40/110 MHz; -80dBc 3rd Order Dynamic Range
Analyze	Transient/Pulse RF Signals, Analog Modulation, Digital Modulation, RFID, ZigBee	Transient/Pulse RF Signals, Analog Modulation, Digital Modulation, RFID, ZigBee, 3G, WLAN	Transient/Pulse RF Signals, Analog Modulation, Digital Modulation
Frequency	DC - 3 GHz, DC - 8 GHz	DC - 8 GHz	9 kHz - 6.2 GHz, 9 kHz - 14 GHz

RSA6100A Series
Real-Time Spectrum Analyzers
Featuring DPX® Technology

Features and Benefits
▶ Discover
- Revolutionary DPX® displays transients as short as 24 µs with 100% probability of intercept
- DPX spectrum processing provides an Intuitive understanding of time-varying RF signals with color graded displays based on frequency of occurrence

▶ Trigger
- Tektronix exclusive 40 MHz and 110 MHz Frequency Mask Triggers (FMT) offer easy event-based capture of transient RF signals by triggering on any change in the frequency domain
- 2 external triggers provide flexible control of triggering from ATE and other system equipment

For Probes and Accessories, see pages 12-13.

▶ Capture
- All signals in up to 110 MHz spans are captured into memory—events as short as 6.67 nsec in time domain
- Up to 1.7 s acquisition length at 110 MHz bandwidth provides complete analysis over time without making multiple acquisitions
- 6.2 GHz and 14 GHz models available

▶ Analyze
- All functions are easily accessible via the Windows interface. Use the front panel, keyboard, touch screen or mouse
- Advanced measurement suite - pulse measurements including rise time, pulse width and pulse-to-pulse phase provide deep insight into pulse train behavior
- General purpose digital modulation analysis provides vector signal analyzer functionality

Applications
▶ Advanced radar and pulsed RF signal characterization
▶ Find interface and unknown signals in spectrum monitoring and surveillance
▶ Capture vector signal parameters of multi-carrier 3G and 4G systems for offline analysis
▶ Analyze time variant behavior of cognitive radio and software defined radio systems troubleshoot RF components, modules, or systems

For further details visit:
www.tektronix.com/rtsa

RSA3000A Series
Real-Time Spectrum Analyzers

Features and Benefits
▶ Discover
- Gain a unique understanding of time-varying RF signals
- View signal instabilities and transients you never knew existed

▶ Trigger
- Up to 36 MHz frequency mask trigger makes easy event-based capture of transient RF signals

▶ Capture
- All signals in up to 36 MHz spans are seamlessly captured into memory
- Up to 1.28 s record length at 36 MHz span provides complete analysis over time without making multiple acquisitions

▶ Analyze
- Comprehensive pulsed analysis suite
- Spectrum analyzer view for traditional wide band signal analysis
- Time-correlated, simultaneous views of time, frequency, and modulation domains
- Application focused measurement analysis: W-CDMA, cdma2000, 1X EVDO, HSDPA, HSUPA, TD-SCDMA, 802.11 a/b/g/n, WiMAX, RFID, WLAN, and more

Applications
▶ System integration of RF systems
▶ Radar and pulsed RF signal characterization
▶ RFID system development and troubleshooting
▶ Characterization of interfering or unknown signals in spectrum monitoring and surveillance
▶ Troubleshooting RF components, modules, or systems
▶ Getting answers to elusive EMI diagnostic problems

For further details visit:
www.tektronix.com/rsa

The Tektronix Customer Service Advantage

You can trust Tektronix to offer unequalled engineering expertise and a customer-centric approach to ensure the optimal performance of your Tektronix products and maximize the lifetime value of your Tektronix investment. We call it your Customer Service Advantage. This is what you get with the Tektronix Customer Service Advantage:

RSA3000/6100A Series Solutions

Real-Time Spectrum Analysis Technology

Today's RF signals require that time, frequency and modulation domains are all analyzed together in a single time correlated view. As a result, there is a growing requirement for tools whose capabilities mirror the time-varying nature of today's signals. You need real-time instruments that discover the problem the instant the signal changes, trigger on the change, capture the signal seamlessly, and analyze the effects of the changes in all domains. Tektronix RTSAs provide a complete measurement solution.

Digital Phosphor (DPX®) Spectrum Technology Turns a Light on in a Dark Room

Modern RF signals are frequently paired with digital signal processing (DSP) in order to increase the quality of communications, improve the performance of RADAR, enhance electronic intelligence or provide immunity to interference. This advent of "Digital RF" has fundamentally changed the premise of RF work by combining RF with digital electronics and computing power in the designs of communications and RADAR systems as well as inexpensive consumer devices. Detecting, observing and measuring digital RF signals with traditional test equipment can feel like making ones way in a dark room. RF transmissions are done in short bursts. Modulation formats, frequency and power levels change in response to SW controlled protocol events. RF bursts can occur at random times. Digital control of RF components not only requires attention to non-linear behavior but also how that behavior changes over increasingly short time periods. Digital Phosphor (DPX™) spectrum technology turns a light on in that dark room.

For further details visit:
www.tektronix.com/rtsa

▶ **Summary of Basic Service Coverage**

Repair Service Coverage	Calibration Service Coverage	On-site Service
▶ Coverage of equipment, parts, labor and transportation ▶ Applicable software, safety and reliability updates	▶ Accredited calibration ▶ Traceable calibration ▶ Functional verification ▶ Applicable software, safety and reliability updates ▶ Calibration records retention	▶ Functional verification or calibration ▶ Applicable software, safety and reliability modifications ▶ Availability of On-site Service Coverage dependant on geographic location and Tektronix instrument.

▶ **Your challenges solved**
Access to the engineering expertise that designed and built your products to ensure they are in peak performance. Over 20 man years of training per support engineer.

▶ **Comprehensive and thorough treatment**
Software updates, safety and reliability modifications, and cosmetic enhancements are included if applicable. Products are returned to you in a "like new" condition. Worldwide support is available through the Tektronix network.

▶ **Efficiency and convenience**
Team of professionals focused on getting your instruments back to you as soon as possible to keep your downtime to a minimum and your service management easy.

▶ **Flexible repair and calibration service**
Choice of cost effective, flexible options and service packages to meet your needs.

For further details visit:
www.tektronix.com/serviceandsupport

Also check out Tektronix Video Test and Measurement Solutions

VM6000

Automated Video Measurement Set

The VM6000 integrates acquisition hardware, optimized video measurement algorithms, test signal files, and accessories into a cohesive test system solution. Product verification activities that previously took hours or days to complete can now be completed in seconds or minutes.

For further details visit:
www.tektronix.com/vm6000

MTS430

MPEG Test System

The MTS430 MPEG Test System provides the unique CaptureVu™ ability to automatically monitor, analyze and debug live and deferred time video transport streams. The MTS430 also provides the highest performance analysis engine on the market, along with real-time Video over IP monitoring, analysis and recording support for broadband video and Video on Demand applications. The MTS430 provides fast time to problem resolution on video transport streams.

For further details visit:
www.tektronix.com/mts400

Also available:

Video Test and Measurement Catalog

Key product highlights and specifications for the entire suite of Tektronix video and broadcast test solutions.

To download, go to: www.tektronix.com, 2006 Catalogs, click on "Download Now"

For Further Information

Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit **www.tektronix.com/techpapers**

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