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Resources For You

Tektronix E-Design News
Issue 2 - September 2002

New TLA7Axx Modules

Hot Topics:

Featured Article

New Logic Analyzer Modules Offer the Fastest Path to Debug

Hardware developers, embedded software developers and hardware/software integrators now have a new generation of tools to debug, verify, optimize and validate their most challenging projects.

With these new modules, the TLA700 Series are now the worlds fastest logic analyzers with these new modules. These modules offer a range of capabilities unavailable until now. The new modules:

- improve your ability to capture and correlate those elusive hardware and software faults by providing simultaneous state, high-speed timing, and analog analysis through the same probe
- use deep state acquisition to find the cause of complex problems
- real-time, non-intrusive software execution tracing that correlates to source code and to hardware events and non-intrusive connector-less probing

TLA7Axx Module Features:

- Up to 8 GHz (125 ps) Timing Resolution with MagniVuTM Acquisition Technology
- Up to 800 MHz State Acquisition Analysis of Synchronous Digital Circuits
- Simultaneous State, High-speed Timing, and Analog Analysis Through the Same Probe Pinpoints Elusive Faults Without Double Probing
- 2 GHz Deep Timing Analysis with Up to 256 Mb Per Channel
- New Connectorless Single-ended and Differential Probing System With 0.7 pF Capacitive Loading Eliminates Need For On-board Connectors, Minimizes Intrusion on Circuits and is Ideal for Differential Signal Applications

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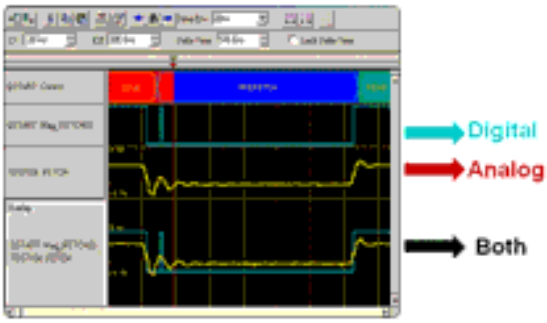

iView™ Selected as a Top 100 Product

Hot Topics:

News & Events

- View our latest NetSeminars™ on ENEN
- EDN Magazine: i-View a top 100 product

Online now - Tektronix NetSeminars™

See the latest solutions on the cutting edge technologies via the web. Register and you'll see live presentations of Tektronix latest solutions to challenges of designing for the latest technologies.

Advanced Connectorless Logic Analyzer Probing
September 12, 2002 / 11:00 AM-12:00 PM (PDT)
Presented by Jim Fenton, Logic Analyzer Hardware Engineering Manager, Tektronix, Inc.

Today's high speed digital buses require very low capacitive loading to allow unobtrusive observation. The new advanced connectorless probing used on the new Tektronix TLA7Axx logic analyzer acquisition modules provide a unique, connectorless interface to enable the capture of these high-speed buses without adversely affecting the bus operation.

This NetSeminar will describe in detail the new connectorless probing system and how it performs in high speed bus capture applications.

Power Measurements and Analysis for Switching Power Supplies
September 17, 2002 / 09:00 AM-10:00 AM (PDT)
Presented by David Fink, Solutions Marketing Manager, Instruments Business Unit, Tektronix, Inc. and Godfree Coelho, Product Marketing Manager, Solutions Marketing Segment, Tektronix, Inc.

In today's power supply design, engineers are faced with challenge of increasing the efficiency while reducing the size of the power supply. The key to successful design lies in detecting, measuring and analyzing power loss in the switching devices and magnetic components. This NetSeminar will focus on quickly making switching loss, B-H analysis and characterizing and documenting performance of

switching power supply using a power measurement and analysis application within a Digital Storage Oscilloscope.

Making RapidIO Systems Real
October 09, 2002 / 09:00 AM-10:00 AM (PDT)
Presented by Mike Juliana, Communications Segment Manager, Tektronix, Inc.

RapidIO is an exciting technology that, like any new architecture, faces the challenge of making interoperability real. This NetSeminar will examine some of the solutions for component-level and system-level designers. We will discuss the RapidIO bus-functional model, how to use the hardware interoperability platform (HIP) to your advantage, and how to get the most out of your test & measurement equipment like logic analyzers and oscilloscopes.

Tektronix NetSeminars™ Archives

If you missed any of our latest seminars over the Internet you can still see them in our NetSeminar Archives.

Signal Integrity Testing for InfiniBand - Eye Pattern and Jitter Measurements Using Real Time Oscilloscopes
You'll gain a better understanding of the critical issues surrounding InfiniBand technology at this seminar covering practical compliance and interoperability test methodologies. The focus will be on new developments in real-time oscilloscopes specifically designed to support multi-gigabit serial data standards. Topics will include interconnect considerations, amplitude measurements, eye pattern testing, and both random and deterministic jitter measurements (Rj/Dj) in a serial data stream.

Tektronix Open Windows Oscilloscopes: Analysis and Connectivity Software
The emphasis at this event will be on ways of getting maximum advantage from existing control and data evaluation tools by combining them with Tektronix Open Windows oscilloscopes. The seminar will highlight the advantages of an Open Windows PC environment in the areas of waveform acquisition, analysis, networking and performance. It will be particularly helpful to those who use high performance oscilloscopes, as well as system administrators and others involved with integrating oscilloscopes, software and other test and measurement devices.

Debugging High-Speed Digital Systems
As digital circuit speeds increase, design engineers face new challenges in debugging their systems. To help solve these digital design challenges, engineers need a new test and measurement tool that allows simultaneous visibility of both the analog and digital world in which they are looking. This NetSeminar will discuss today's high speed design challenges and the new test and measurement tool needed to help engineers solve these challenges.

TDS6604 - The World's Fastest Real-Time Oscilloscope
Tektronix presents a product overview of the World's Fastest Real-Time Oscilloscope, the TDS6604. The TDS6604 offers a full 6 GHz of real-time bandwidth, providing a higher level of signal integrity for

next-generation digital designs. The seminar will cover performance specifications needed for performing precise signal integrity measurements, and a suite of tools that simplify and accelerate the design process.

Tektronix E-Design News

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Question & Answers

Hot Topics:

Is it possible to interface the TDS6404 or TDS7404 to a 75 Ohm environment?

For telecom applications that require a 75 to 50 Ohm adapter to handle high speed serial digital data, Tektronix offers an N-female 75 Ohm to N-male 50 Ohm matching pad for bandwidths to 2.7 GHz. It attaches directly to the N-female adapter of a TDS7404 or TDS6000 series TCA-N TekConnect Adapter. The matching pad is a Rohde & Schwarz "RAM" and is available from Tektronix in the United States, Canada and Mexico. Overseas it can be purchased directly from Rohde & Schwarz.

Can I use my scope to record screen display images for documentation purposes?

Most users are well aware that they can store waveforms to be used in spreadsheet applications. But what they don't often realize is that the screen image display can also be saved in a format that can be used in most documentation software including Word and WordPerfect. To take advantage of this feature, simply use the Hardcopy menu to select an image format such as BMP, PCX or TIFF, select the Port as File, and then when you press the Hardcopy button, an image of your screen will be saved to disk.

Questions? Send them in and we'll answer them in upcoming editions of E-Design News.

Tektronix E-Design News

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Hot Topics:

Support & Service

Now it's possible to check service status online!

Managing the service of your Tektronix products just got even easier.

Want to check the progress of your product being repaired or calibrated at a Tektronix Service Center? Just go to Service Status

The real-time features of Service Status update you on the progress of your instrument being serviced, its completion date, shipping information and even alerts you if you need to contact Tektronix directly.

Service Status provides reliable and timely updates, enabling you to efficiently manage the service of your Tektronix products. It is currently available for calibration and repair jobs being conducted in the following Tektronix Service Centers:

- Canada
- Chelmsford, MA, USA
- Washington, DC, USA
- Dallas, TX, USA
- Albuquerque, NM, USA
- Beaverton, OR, USA

Service Status. It's just one more way in which each of these facilities delivers, in a timely manner, all the meticulous care and attention you and your instruments deserve.

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Tektronix Introduces New Probing Solutions

Hot Topics:

Product Spotlight

New Probes allow Digital and Analog signals to be seen through a single probe

Being able to see both digital and analog signals through a single probe is just the tip of the iceberg. The combination of the new powerful TLA7Axx modules and the new probing technology offers you the shortest time to debug. These new probes are the worlds first to use Silicon Germanium (SiGe) technology. This technology is the same technology that has given Tektronix Oscilloscopes their superior performance over our competitors.

New connectorless, compression probes: See our new probing solutions:

- P6810: general-purpose, single-ended probe
- P6860: high-density, single-ended, connectorless compression probe
- P6880: high-density, differential, connectorless compression probe

Features of the new P68x0 probes include:

- Simultaneous analog and digital through the same logic analyzer probe
- Connectorless, high-density probing (P6860/80)
- Z-axis compression elastomer contact (P6860/80)
- 0.7 pF total capacitive loading
- Single-ended and full differential probing

New 6-GHz TDS6604 is the complete package for high-speed digital design.

A high performance solution for the verification, debug and characterization of sophisticated electronic designs.

Tektronix continues to offer your best line of defense in confronting today's most advanced signal integrity challenges. In fact, with the new TDS6000 product family we've redefined the benchmark for next-generation digital designs.

The family's premier product - the TDS6604 - makes its debut, at 6 GHz, as the world's fastest oscilloscope. It also features a simultaneous 20 GS/s sample rate on two channels (or at 10 GS/s on three or four channels). No other instrument achieves real-time acquisition across multiple channels at these speeds.

This level of performance is the key to solving high-speed signal integrity problems arising from the analog behavior of digital signals. These problems can be especially troublesome in emerging serial bus architectures such as InfiniBand, RapidIO, 3GIO and HyperTransport. But with the TDS6604 and its superior acquisition capabilities, you can see and analyze - in minute detail - the brief transients and fast signal edges that affect digital system performance. There is no better way to decrease risk, eliminate measurement compromises, and accelerate the development of high-speed digital systems.

A suite of tools for outstanding support

Your design process will benefit from Tektronix-pioneered triggering features supporting clock recovery at data rates of up to 2.5 Gb/s and optional serial pattern trigger at up to 1.25 Gbaud. These capabilities simplify essential setup and save measurement steps in a variety of tasks. And they supplement the broad range of conditional triggers you have come to expect from the Tektronix TDS oscilloscope family.

The TDS6604 also supports Tektronix' broad selection of automated measurement packages, including the TDSUSB2 for USB 2.0 compliance testing, TDSJIT2 for jitter and timing analysis, and TDSDDM2 for disk drive measurement. This is also the first DSO to incorporate Tektronix' Open Windows platform, providing easy access to industry-standard peripherals, networking elements, and analysis tools.

Staying ahead of the curve - with Tektronix

The TDS6604 is just the latest example of our commitment to be at the forefront of innovation supporting the computer and communications industries, delivering test and measurement solutions unmatched on today's market. And it's one of the most anticipated product introductions in Tektronix history. "Even before the TDS6604 first shipped in February 2002, advance orders from key customers - including many leaders in the telecommunications industry - totaled over half-a-million dollars," said Colin Shepard, Vice President - Oscilloscope Product Line.

He called the TDS6604 the "crowning jewel" in Tektronix' high performance oscilloscope portfolio - a family of products built on five decades of test and measurement leadership and continual innovation.

Tektronix unleashes a new breed of communications signal analyzer

The first and only tool designed to troubleshoot and conformance-test optical and electrical signals up to

2.5 Gb/s.

Tektronix developed the new CSA7000 Series with considerable input from optical and electrical design engineers. From what we heard it was obvious that world-class banner specifications - while essential - are not enough. You're looking for innovative, communications-focused capabilities specific to your needs.

That's exactly what the new CSA7000 Series and its flagship product - the CSA7404 - provide. With industry leading 4-GHz bandwidth and 20 GS/s sample rate, the CSA7404 is the first and only real-time digital oscilloscope to specifically address the design of high-speed electrical and optical systems with data rates of up to 2.5 GB/s (OC-48). It also introduces a set of first-ever integrated capabilities that provide single-connection convenience and unprecedented versatility. With one tool you can now test designs for compliance to network communications standards as well analyze critical internal parameters such as signal integrity, timing margins and jitter.

Breakthrough features of the CSA7000 Series include:

- **An integrated optical/electrical (O/E) converter and library of optical reference receiver filters** provide the frequency response for compliance testing. This built-in combination eliminates the need to calibrate external O/E accessories. Broad spectral response lets you address both long- and short-wavelength applications without reconfiguration.
- **Built-in clock recovery** is provided as a standard feature for electrical and optical serial data streams from 1.5 Mbaud to 2.5 Gbaud. Clock recovery means you can easily and reliably perform mask testing and parametric analysis with just a single connection. A robust eye pattern for compliance testing enhances convenience and confidence.
- **A 32-bit serial pattern trigger** is another standard feature, providing a powerful new tool for navigating through serial data streams and isolating pattern-dependent effects. The combination of serial trigger and signal averaging reduces random noise and improves acquisition of low power signals.

With so many capabilities never before realized in a communications signal analyzer, the CSA7000 Series is aimed directly at the emerging infrastructure of Metropolitan Area Networks. Compliance mask testing supports optical and electrical standards including ANSI T1.102, ITU-T G.703, SDH/SONET, Fibre Channel, Ethernet, InfiniBand, USB, Serial ATA and IEEE 1394 - all at rates of up to 2.5 Gb/s, without any hardware changes.

An alternative solution for mainstream communications design

If you don't need the blazing performance of the CSA7404, the second member of the new series, the CSA7154, is a cost-effective alternative. It offers 1.5-GHz electrical bandwidth and 20-GS/s sample rate for development and verification at data rates of up to 1.25-Gb/s. And with the same integrated ORR, clock recovery, and serial trigger as the top-line model, the CSA7154 is well equipped to handle many of today's more mainstream communications applications.

Compare the specifications:

	CSA7154	**CSA7404**
Optical Bandwidth	1.3 GHz	2.3 GHz
Electrical Bandwidth	1.5 GHz	4 GHz

Maximum Real-Time Sample Rate	20 GS/s	20 GS/s
Telecom/Datacom Max Bit Rates	1 GS/s	2.5 GB/s
Optical Sensitivity	-19 dBm	-19 dBm
Wavelength Range	700-1650 nm	700-1650 nm

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Singulus G1 - Faster Testing and Debugging

Hot Topics:

Partner Spotlight

Network Test Solution for Gigabit Ethernet Leverages TLA Capabilities

Singulus G1™ delivers faster testing and debugging of Gigabit Ethernet devices

The increased speed and complexity of embedded devices - and the pervasive use of Gigabit Ethernet - have been a source of frustration for embedded engineers. Previous network testing methods are no longer adequate to test and debug high-speed network components, nor are they helpful in meeting time-to-market demands.

Now, Tektronix Tools Partner IneoQuest Technologies comes to the rescue with its new Singulus G1 Test System - an elegant and easy-to-use network stimulus, capture and analysis system. Its integration with the Tektronix Logic Analyzer enables the TLA to be used for network protocol analysis and debugging. Singulus G1 offers the essential elements of more expensive network test products at a much lower cost … and is the only network test product that enables you to leverage the deep memory capture and complex triggering capabilities of the TLA for network protocol analysis and debug.

The key features of Singulus G1 and this approach are:

- Network traffic stimulus and capture at line speed
- Support for 1 Gigabit Copper or fiber media
- Detail control over inter-packet gap, error generation, CRC generation, and payload format
- Ability for the user to define the total content of the packets
- Generation of full utilization and error statistics
- Deep Packet and Error Capture, complex triggering, and support for several export formats (i.e. Pattern Generator file format), utilizing the Tektronix Logic Analyzer
- Easy-to-use software controller supports popular

protocols, user defined protocols, and export to ODBC database

Embedded technology - always a challenge

In a relatively short timeframe, the traditional 16 bit 20MHz embedded system has evolved into today's 32/64 bit 1GHz system with Optical Gigabit Ethernet access. As the semiconductor process continues to advance, silicon vendors find they have the space, power and speed to add new peripherals. Ethernet, specifically Gigabit Ethernet, is right at the top of their list.

At the same time, the latest ASIC, FPGA and network processor technologies have enabled engineering departments to achieve faster processing at the packet level, thus freeing the core processor to handle other tasks. These technologies will enable a host of new, innovative products that have no problem keeping up with the line rate of Gigabit Ethernet.

New technologies require new tools

In designing and developing these more complex embedded systems, the engineer is required to generate network packets in a controlled manner, and stimulate (at up to line rate) the device under test on a known-good physical interface. In addition, there is the need to capture traffic (at up to line rate) to inspect what the device under test is sending out onto the network.

Network stimulus, capture and decode tools have traditionally been geared for the L2/L3 switch, and oriented to the QA engineer who is tasked with testing packet handling, routing algorithms and traffic throughput of multi-port switches. This equipment is often very expensive, complicated to use, and has many features only needed for the QA process.

Until now, the embedded engineer has been forced to buy an expensive unit that is ill tailored to his application, borrow or timeshare a unit with the QA lab, or - more often than not - fashion a homegrown test solution. Each of these approaches costs the engineer time and effort that could be better spent focused on the product itself. But the good news is this: with the advent of cost-effective optical networking, the old testing and debug methodologies are all but obsolete.

First in a series of network development tools from IneoQuest Technologies, Singulus G1 offers embedded engineers a cost-effective, tailored solution. Integrated with the Tektronix Logic Analyzer, it facilitates testing and debugging at all phases of product development - hardware bring-up, firmware development, software integration, regulatory approval, manufacture/test and field deployment.

Now more than ever, it's tough to keep pace with yesterday's tools. Singulus G1 is a feature-balanced network stimulus/analysis system that integrates seamlessly into the embedded engineer's lab to meet today's most stringent network test requirements … and tomorrow's.

Tektronix E-Design News

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Low Cost, High Performance

Limited Time Promotions

TDS5000 Series Option Blowout Promotion

Now, for a limited time only, purchase a new TDS5000 Series oscilloscope and receive a package of 6 options for your new scope ($8,170 USD value) for only $2,995 USD.

Please contact an Account Manager to take advantage of this offer.

FREE iView™ (Integrated View) Interface Promotion

When you're challenged by signal integrity problems arising from the analog behavior of digital signals, there's one solution: the iView External Oscilloscope Interface from Tektronix. For a limited time, you can get the iView External Interface - a potiential $1,750 value - FREE when you purchase a TLA logic analyzer and qualifying TDS oscilloscope together. More.

Microprocessor Support

TMS822: UTOPIA 2 Bus Support for the TLA Family of Logic Analyzers

Tektronix is introducing TMS822, disassembly support for UTOPIA (Universal Test and Operations PHY1 Interface for ATM2) Level 2 bus. The TLA software supports monitor timing and disassembles bus cycles into header and payload information. More.

Tektronix UTOPIA SUPPORT.

Tektronix Micro Supports.

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Hot Topics

- Featured Article
- News & Events
- Q & A
- Support & Service
- Product Spotlight
- Partner Spotlight
- Promotional Offers
- **Literature in This Issue**

Literature In This Issue

Download your copy of the latest Tektronix literature:

Application Notes

- PowerPC Debug: A Real-Time Task

Data Sheets

- TDS6604 Oscilloscope
- TDS7000 - Oscilloscopes
- CSA7000 - Oscilloscopes
- TDS5000 - Oscilloscopes
- TLA7Axx - Logic analyzer modules
- iView - Integrated View
- Connectorless Probes - New Probe Technology

Tektronix E-Design News

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Product Spotlight

Tektronix introduces a new line and updates our most popular model.

Hot Topics:

- TDS3000B Series
- TDS5000 Series
- Differential Signaling
- Don't Miss Your Bus
- TLA Software Upgrade

- TDS3000B Series Oscilloscope
- TDS5000 Series Oscilloscope

New TDS3000B oscilloscopes advance digital phosphor technology, keep it affordable.

Built on a popular, proven design

The TDS3000 Series Digital Phosphor Oscilloscope, introduced in 1999, is one of the most successful products in Tektronix history. By offering powerful DPO capabilities at an affordable price, it quickly became the tool of choice for testing dynamic, complex signals in environments ranging from design labs to TV studios and field sites.

Now comes the encore. Tektronix asked engineers and technicians who use a TDS3000 what else they need to be more productive and do a better job. The result? We developed the new TDS3000B Series with capabilities suggested by real-world users, making troubleshooting simpler and abnormal signal behavior easier to see. With seven application-specific modules to choose from, you'll find just what you need for the challenging, hands-on work of electronic design, production or maintenance.

Enhanced performance and portability

The TDS3000B Series helps you find elusive problems faster with WaveAlert™ waveform anomaly detection. This innovative feature monitors the incoming signals on all channels and will detect and highlight any event that deviates from the normal pattern of waveform activity. Think of the time you'll save being able to program the oscilloscope to sound a beep and stop acquisition, save an anomalous waveform to disk, or print a hardcopy of it. You can run tests over long time periods - even unattended - to find those challenging, very infrequent failures.

The digital phosphor advantage

It's not surprising so many people like what they see in Tektronix DPO technology. DPO oscilloscopes enable three dimensions of signal information - amplitude, time and distribution of amplitude over time - to be displayed, stored and analyzed in real-time. Fast waveform and update rates make it easier to capture and display infrequent wavforms or waveform variations. And the DPO's intensity graded color display provides information about waveform anomalies that can be elusive on traditional digital storage oscilloscopes. Factor in new features like automatic anomaly detection and web-based remote control, plus a choice of application modules, and you have an even more powerful instrument with increased portability at an affordable price.

Tektronix E-Design News

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Product Spotlight

Hot Topics:

- TDS5000 Series
- TDS3000B Series
- Differential Signaling
- Don't Miss Your Bus
- TLA Software Upgrade

- TDS3000B Series Oscilloscope
- TDS5000 Series Oscilloscope

Meet the TDS5000 Series: At less than $16,000 USD, a 1-GHz oscilloscope has never been so affordable.

A price-for-performance benchmark

These days it doesn't take long for the latest innovation to become standard issue in electronic product designs. Within tightly controlled budgets, you're pressured to keep pace with measurement challenges just yesterday being tackled on the "cutting edge". And once again Tektronix delivers what you need to be successful.

Our new TDS5000 Series Digital Phosphor Oscilloscope (DPO) family is designed for cost-sensitive customers in performance-driven applications, from signal integrity validation to video design and debug. Three models - including the 1-GHz, 4-channel TDS5104 for less than $16,000 USD - offer features you'd expect to find only in more costly instruments, including an industry-leading suite of advanced triggers.

Enabled by patented DPX^{TM} acquisition technology, all three oscilloscopes deliver up to 100,000 waveforms per second for superb on-screen detail. You can capture irregularities and trace problems quickly, leveraging the ability of digital phosphor oscilloscopes to display, store and analyze complex signals in real-time using three dimensions of signal information: amplitude, time and distribution of amplitude over time. For critical insight into signal behavior, there's no substitute for a DPO. And their affordability makes these oscilloscopes look even better.

Intuitive user interface

Along with high performance you want an oscilloscope that can fit your operating style and environment, not the other way around. And the TDS5000 Series meets your requirements. Its user interface, migrated from the award-winning TDS7000 Series, provides a choice of controls: analog-style knobs, pull-down menus, optional touch-screen control keyboard and mouse. Voice commands are also possible using

VocalLink™ voice control software - a recommended accessory.

And look at this: the TDS5000 Series measure in at only half the depth of other 1-GHz platforms, without compromising the vivid and bright 10.4-inch display. The display retains a compressed image of the waveform while you are adjusting controls, so a complete view of signal characteristics is always in sight.

Want to connect?

With its integrated Windows®-based PC and operating system, the TDS5000 Series provides a new level of connectivity with computer networks and peripherals for accessing standard analysis and documentation tools, Web browsers and email. In addition, the three models are fully interoperable with Tektronix TLA Series logic analyzers. Via the new iView package, waveform data from a TDS5000 DPO can be transferred directly to a TLA logic analyzer display. Time-correlated views of both digital and analog waveforms enable faster, easier detection of elusive signal integrity problems.

Model	Bandwidth	Channels	Maximum Real-Time Sample Rate	Maximum Record Length	Maximum Waveform Capture Rate
TDS5104	1GHz	4	5 GS/s	Up to 8MB	100,000 wfms/s
TDS5054	500MHz	4	5 GS/s	Up to 8MB	100,000 wfms/s
TDS5052	500MHz	2	5 GS/s	Up to 8MB	100,000 wfms/s

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Differential Signaling

Hot Topics:

- Differential Signaling
- Don't Miss Your Bus
- TLA Software Upgrade
- TDS3000B Series
- TDS5000 Series

Understanding differential signaling

A high-speed advantage

Differential signaling is becoming more and more common as data rates increase - for several reasons. In contrast to "single-ended" signaling, which is more prevalent in digital systems, differential signaling transmits data over two wires that are complementary to each other. The pair of signals is routed together to a receiver, which then subtracts them from each other to recover the original signal -- hence their designation as "differential" signals.

There are two important goals. Differential signaling eliminates common mode noise - the noise signals common to both of the signals in a differential pair. It also reduces the need for a common reference voltage between the transmitter and the receiver against which the signal can be compared to determine its logic level. Other benefits include a reduction in radiated noise and low switching noise generation.

Despite the advantages, most systems are not designed to be entirely differential due to the increased cost, power and circuit density that would result from having two sets of drivers and wires for every signal.

What about measurement?

Differential signals have always been a source of some frustration when it comes to measurement. One might think just one of the two signals could be used for observation. If there were no system noise, this would be the case. But in a real system, the oscilloscope or logic analyzer is likely to yield a misleading measurement because of common mode noise.

Here's what happens. Most noise is picked up when two wires conducting separate signals are closely aligned. Through parasitic capacitance and inductance, significant energy from one signal is coupled to the other. If the noise is large enough and occurs while the clock is "sampling" the signal, the receiving circuit will misinterpret the signal level. The situation is even worse for a clock signal because a noise glitch can cause the entire system to mis-clock. Because the clock must be closely controlled, system are often designed with differential clocks while all the other signals are single-ended.

The higher the edge rate, the greater the need for accurate measurement. Higher edge rates imply more high-frequency content... and high frequencies generally couple easier through parasitic capacitance and inductance.

Low-cost probe solutions

A special probe is needed to view a pair of differential signals as a circuit under test sees it. These special probes simplify the testing of systems with differential signals and support the most common differential standards. Dragonfly Software Development is a Tektronix embedded systems tools partner. Tektronix and Dragonfly are sources for inexpensive digital differential probes for logic analyzers and oscilloscopes.

For more information, contact Dragonfly Software Development at 503-643-3800 or www.dfsw.com

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Don't miss your "Bus"

Hot Topics:

- Don't Miss Your Bus
- TDS5000 Series
- TDS3000B Series
- Differential Signaling
- TLA Software Upgrade

If you haven't visited our TLA family microprocessor and bus support section in awhile now would be a good time. Tektronix and our third party distributors offer support for the newest architectures and latest devices. Check out the latest supports offered www.tektronix.com/processors.

We also suggest visiting our Embedded Systems Tools Partners section as well to see the vast array of companies partnered with Tektronix to be sure to keep you on the cutting edge of design.

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Hot Topics:

- TLA Software Upgrade
- TDS5000 Series
- TDS3000B Series
- Differential Signaling
- Don't Miss Your Bus

TLA Software Upgrade Now Available

Keep your TLA600/700 Series logic analyzer up to speed with the latest upgrades. Visit our software and driver page and see the exciting new features available for the Tektronix Logic Analyzer Family. It's quick and simple, just download the upgrade you want directly from the web.

New in Application Software Version 4.1

- TLA715 and TLA721 Dual Monitor Mainframes
- Controller Upgrades for TLA714 and TLA720 Mainframes
- Greater Controller DRAM for TLA600 Series
- iView Integrated View of Your TDS Data on Your TLA Display
- Automatic DSO Measurements
- LA/DSO Overlay Waveforms
- EasyTrigger
- Setup and Hold Violation Acquisition Storage
- SnagIt Screen Capture Software
- System Trigger dialog
- Individual DSO Channel Skew Adjustment
- Dot mode in Magnitude display
- Save Trigger Dialog
- Locked cursor 1 & cursor 2
- Context Sensitive Most Recently Used List

Find out more about software and driver upgrades on tek.com.

Tektronix E-Design News

Issue 1 - January 2002

Hot Topics

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November 7th, 2002
03:23 PM PST - 23:23 GMT

NetSeminar Overview

" **Advanced Connectorless Logic Analyzer Probing** " **Register | View**

Date / Time	September 12, 2002 / 11:00 AM-12:00 PM (PDT) September 12, 2002 / 06:00 PM-07:00 PM (GMT)
Duration	60 minutes
Presented By	Jim Fenton, Logic Analyzer Hardware Engineering Manager, Tektronix, Inc.
Overview	Today's high speed digital buses require very low capacitive loading to allow unobtrusive observation. The new advanced connectorless probing used on the new Tektronix TLA7Axx logic analyzer acquisition modules provide a unique, connectorless interface to enable the capture of these high-speed buses without adversely affecting the bus operation. This NetSeminar will describe in detail the new connectorless probing system and how it performs in high speed bus capture applications.

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