Agilent flow for High Speed Digital Design

- Channel Analysis & Optimization in Time and Freq. Domains
- Fast, Robust & Accurate Convolution Algorithms.
- Effective PCB Pre-Layout Design
- Full range of EM extraction tool
- Power Delivery Network impedance extraction
- Near field and current visualization at physical level
- Libraries for HSD PHY Compliance
- Impedance Profile Analysis TDR/TDT
- Reflections Optimization
- Time Domain Gated Filter
- Accurate Sparameters Embedding/De-Embedding
- Crosstalk’s impact on EyeDiagram
- Jitter Breakdown TJ/RJ/DJ/BUJ/PJ/ISI
- Seamless integration of De-emphasis and Equalization algorithms
- Hot S11 on Live Transmitting Devices
- Fixturing De-embedding
- Reference Channel Embedding
- HighZ Probes
- Receiver emulation Equalization, CDR
- RootCause Analysis of EyeMask Collapse
- Jitter sources Analysis through Jitter FFT and Breakdown.
- Agilent member of Body standards: PCI Sig, USB Org, SATA IO, HDMI, Displayport, Thunderbolt…
- First Silicon ready TX/RX Compliance
- Accurate RX Jitter Tolerance Caracterisation
- Complete Protocol Validation
- Custom Compliance Test through User Defined App.

Agilent Technologies
Agilent Digital Standards Program

• Our solutions are driven and supported by Agilent experts involved in international standards committees:
  • Mobile Industry Processor Interface (MIPI) Alliance
  • Joint Electronic Devices Engineering Council (JEDEC)
  • PCI Special Interest Group (PCI-SIG®)
  • Video Electronics Standards Association (VESA)
  • Serial ATA International Organization (SATA-IO)
  • USB-Implementers Forum (USB-IF)
  • And many others

• We’re active in standards meetings, workshops, plugfests, and seminars

• We get involved so you benefit with the right solutions when you need them
Agilent Enablement of New Technologies

- Early partnership with key architects and development teams driving new technology
- Draw on world class experts in digital, microwave, RF to define a standard that is practical and verifiable
- Compliance specifications that are complete, accurate, and *automatable*

- Drive industry-level prototyping of debug and compliance test procedures
- Continuous support of industry compliance test events
- Application experts support design teams

- Technology Leaders
- Standards Bodies & Trade Associations
- Early Workshops
- DeFacto Std Test Procedures
- Plugfests
- DevCon’s
- Ind. Std Test Procedures

- Customer
- Test Houses

Pyramid Program Overview
Agilent Confidential
March 13th 2009
USB 3.0 – Total Solution

Transmitter Test
- N8805A USB3.0 Protocol decode & triggering SW
- U7243A USB Compliance Test Software
- DSOX90000A Infiniium real time scope
- DSO91304A Infiniium real time scope
- U7242A USB 3.0 Test Fixture

Interconnect Test
- E5071C Option TDR ENA Network Analyzer
- Bit-USB-CBL-0001 from BitifEye

Receiver Test
- N5990A Automatic SW for USB compliance
- N4903B J-BERT High-Performance Serial BERT
- De-emphasis N4916A or N4916B or N4903B-002
- U7242A USB 3.0 Test Fixture
- USB3ET from USB-IF
Memory DDR3 and LPDDR2/3 – Total Solution

Active Signal Validation
- U7231A DDR 3 Compliance Test Software
- DSO90404A or DSOX90000A Infinium real time scope
- W2635A or W2636A DDR3 BGA Probe
- Tx

Protocol Validation & Function Test
- B4622A DDR 2/3 Protocol analysis & Compliance SW
- U4154A Logic Analyzer
- FS2400 DDR3 Detective from Futureplus
- DDR2/3 BGA Probes
- DDR slot interposers
- Tx/Rx
- Rx/Tx

Signal Conditioning

Probe

DUT

SW

HW

Probe

DUT
PCI Express® 3.0 – Total Solution

### Transmitter Test
- N5393C PCI Compliance Test Software
- DSOX900000A Infiniium real time scope
- PCI-SIG Compliance boards
- CBB2 or CLB2

### Interconnect Test
- E5071C Option TDR ENA Network Analyzer or 86100C DCA-J
- PCI-SIG Compliance boards
- CBB2 or CLB2

### Receiver Test
- N5990A Automatic SW for PCIe compliance
- N4903B J-BERT High-Performance Serial BERT
- PCI-SIG Compliance boards
- CBB2 or CLB2

### Protocol Test (link/transaction layers)
- N4903B J-BERT High-Performance Serial BERT
- N4916B De-emphasis
- N4915A-014 Cal Channel
- PCI-SIG Compliance boards
- CBB2 or CLB2

### Fixtures
- PCIe Interposer Probe
- PCIe mid-bus probe

### Signal Conditioning
- PCIe Compliance boards
- CLB2 or CBB2

### DUT
- Transmitter
- Receiver
- Rx
- Tx

### SW
- N5393C PCI Compliance Test Software

### HW
- DSOX900000A Infiniium real time scope

### Motherboard
- Rx
- Tx

### Add-in Cards
- Rx
- Tx

---

*Agilent Technologies*

*DTD Digital Solution Overview Agilent Confidential*
Agilent flow for High Speed Digital Design

- Channel Analysis & Optimization in Time and Freq. Domains
- Fast, Robust & Accurate Convolution Algorithms.
- Effective PCB Pre-Layout Design
- Full range of EM extraction tool
- Power Delivery Network impedance extraction
- Near field and current visualization at physical level
- Libraries for HSD PHY Compliance
- Impedance Profile Analysis TDR/TDT
- Reflections Optimization
- Time Domain Gated Filter
- Accurate Sparameters Embedding/De-Embedding
- Crosstalk’s impact on EyeDiagram
- Jitter Breakdown TJ/RJ/DJ/BUJ/PJ/ISI
- Seamless integration of De-emphasis and Equalization algorithms
- Hot S11 on Live Transmitting Devices
- Fixturing De-embedding
- Reference Channel Embedding
- HighZ Probes
- Receiver emulation Equalization, CDR
- RootCause Analysis of EyeMask Collapse
- Jitter sources Analysis through Jitter FFT and Breakdown.
- Agilent member of Body standards: PCI Sig, USB Org, SATA IO, HDMI, Displayport, Thunderbolt…
- First Silicon ready TX/RX Compliance
- Accurate RX Jitter Tolerance Caracterisation
- Complete Protocol Validation
- Custom Compliance Test through User Defined App.
Q+A Conclusions
Thank you for attending!