Pushing the Boundaries of Mobile Interface Technology

Barcelona | 27 February – 1 March 2012
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MIPI Alliance: What We Do

• Focus on mobile devices

• Drive interface technology through specifications

• Global, collaborative work
MIPI Interfaces Meet Market Needs

- MIPI Alliance provides interfaces for peripherals as well as chip-to-chip communication
- Diagram is only a representation of a potential system architecture
- MIPI Alliance does not define or recommend a particular architecture

Disclaimer: This diagram shows where MIPI interfaces may be used in a mobile device architecture. MIPI Alliance does not define or recommend a particular architecture.
MIPI Drives Momentum in 2011

Membership Grows at 43% CAGR
Over 50 mobile industry leaders and innovators have joined MIPI Alliance in 2011.

Ground-breaking Specs Released in 2011
From protocols to physical interface, MIPI members will benefit from several new specifications this year.

Market Projects Significant Deployment
700 million integrated circuits with MIPI interfaces were in production in 2010, with projected growth to 6.2 billion units by 2015.

MIPI Alliance Branches Out
Driven by member company initiatives and market needs, new Working Groups address battery and analog control.
Increased Focus on Test and Interoperability

• Inaugural Test Forum Days highlighted procedures, solutions and equipment for testing

• Test Investigation Group chartered to speed specification deployment and time-to-market

• Near term goals - test guidance for D-PHY/M-PHY specifications

• Longer term goal - issue test specifications in conjunction with interface specs

• Numerous interoperability events scheduled for 2012

• Striving for interoperability as standard procedure
Partnerships Enhance Industry Specifications

• JEDEC released Universal Flash Storage UFS v1.0 specification, using MIPI’s M-PHY℠ and UniPro℠ specification

• MIPI Alliance and USB 3.0 Promoter Group announce collaboration to develop Super-Speed Interface Chip specification
New DigRF\textsuperscript{SM} and RFFE Specifications Address Growing System Complexity

- DigRF v4 v1.10 defines the interface between baseband ICs and radio frequency (RF) ICs
- Delivers increased bandwidth for data-intensive HSPA+/LTE architectures
- RFFE v1.10 defines a standardized control architecture for RF front-end devices
- Low-complexity solution for multi-mode, multi-band and multiple antenna configurations
- For more information, go to www.mipi.org/DigRF_RFFE
New Battery Interface Enables Smart, Safe, Performance-Enhanced Batteries

• Single-wire communication interface between mobile device host and battery pack

• Consumers will experience smart batteries with:
  • longer lifetime
  • safe, environmentally-friendly battery chemistry
  • increased safety through temperature monitoring and decreased risk of counterfeit products

• Mobile device ecosystem will benefit – OEMs, chipset suppliers, battery slave IC suppliers and battery pack manufacturers:
  • commonly accepted battery interface
  • saves design and manufacturing complexity
  • reduced chipset space
  • improved cost margins
New Low Latency Interface Specification Eliminates Memory Chip

• Point-to-point interconnect between the application processor and modem

• Enables the modem to access the processor’s dedicated DRAM memory for modem operation - eliminating a modem DRAM chip

• Estimated to reduce $2 USD from BoM and 115 mm² of board space

• Leverages MIPI M-PHY℠ physical layer

• Scalable solution offers multiple transmission modes and “daisy-chained” configurations
Member Companies Highlight MIPI-based Product Demos

• Analogix - SlimPort accessories and devices which allow tablets and smartphones to enjoy uncompromised big screen experience without device battery drain.

• Infineon Technologies AG - ensuring consumer safety in a mobile device battery with its market-leading ORIGATM Authentication solution

• Lattice Semiconductor - TBD

• LeCroy - D-PHY test tools, including compliance testing and decode solutions for CSI-2, DSI, DigRFSM 3G, and DigRFSM v4, as well as M-PHYSM test tools

• TOSHIBA CORPORATION - featuring its mobile peripheral devices

• WiSpry, Inc. - RFFE-enabled antenna tuner
Member Company Presentations
Feature Product Solutions

Analogix

*How to Get the Best Screen Experience with Your Smart Phone or Tablet*

Presenter: Andre Bouwer

Cadence

*The Recipe for High Quality Smartphones*

Presenter: Moshik Rubin

Infineon Technologies AG

*Unifying the Battery Interface and Ensuring Consumer Safety with ORIGA™*

Presenter: Stephan Schacher

LeCroy

*M-PHY℠ Test*

Presenter: David Li

Nujira Ltd.

*Coolteq.L Single Chip Envelope Tracking Modulator*

Presenter: Jeremy Hendy

Quantance, Inc.

*qBoost: Be Powerful in 3G and LTE*

Presenter: Vikas Vinayak

Silicon Line GmbH

*Ultra-Low Power Optical Links in Portable Consumer*

Presenter: Holger Hoeltke

Synopsys

*Building Low Power, Modular Systems with Silicon-Proven IP Solutions*

Presenter: Hezi Saar
BACKUP SLIDES – MAY DELETE FOR BRIEFINGS/PRESENTATION
Our History

- **2003** Founded by ARM, Nokia, ST and TI
- **2004** Intel, Motorola, Samsung and Philips join MIPI Board; Initial Working Groups and Investigation Groups formed
- **2006** Scope of specifications framed for Mobile Terminal
- **2007** First specs released focusing on display, camera, audio, physical layer and protocol stack
- **2008** Membership exceeds 150 companies
- **2009** Interop workshops held; new Working Groups formed; membership grows despite recession
- **2010** Numerous MIPI-based products released to market
Market Forces Create Demand for Faster Processing

• Total WW Smartphone data usage from 2009 to 2011 (estimated) is forecasted to increase 368% per year*

• New WLAN technologies need bandwidth > 1 Gbps

• 4G technology advancements continue

• Board-level real estate becoming more precious

• Power management increasingly more important

• New advanced (4G) radio architectures & new frequency bands

* In-Stat market data
Continued Need for Speed

• March of mobile technology continues
• More consumer electronics go mobile
• Consumers want more data, and they want it faster
• MIPI Alliance will continue to speed up communications – inside the phone