Question: "What's the difference between MIPI D-PHY and MIPI M-PHY?"
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Question:

DigRF v4 is the recently introduced successor of DigRF v3. DigRF v4 uses MIPI M-PHY as physical layer and I would like to know how MIPI M-PHY compares to MIPI D-PHY.

Answer:

DigRF describes a digital interface which is used to connect BBIC and RFIC in a Mobile Handset. While DigRF v3 defines its own physical layer, the successor DigRF v4 uses MIPI M-PHY as a standardized physical layer. Compared to MIPI D-PHY, for which test solutions on V93000 have been discussed in two separate Technical Notes published as part of our go/semi newsletters for December 2008 and September 2009, there are noticeable differences for MIPI M-PHY as outlined in the table below.

	MIPI D-PHY	MIPI M-PHY
Architecture	point-to-point differential interface, modular architecture supporting multiple data lanes in conjunction with a dedicated clock lane	point-to-point differential interface, modular architecture supporting multiple data lanes
Data Transmission Mode(s)	High-Speed mode: differential low-swing signaling for fast data traffic; Low-Power mode: single-ended large-swing signaling for control purposes	High-Speed mode: low-swing differential signaling for fast data traffic
Speed Range (per lane)	80 Mbps to 1 Gbps in High-Speed Mode, up to 10 Mbps in Low-Power mode	up to 5 Gbps
High-Speed Clocking	Source-Synchronous Clock	Embedded Clock
Symbol Coding	None	8B10B
Receiver CDR	No	Yes

The differences of MIPI M-PHY over D-PHY, especially 8B10B encoding and embedded clocking, affect the test approach for transmitter and receiver test on V93000. We will elaborate on that in one of the next go/semi newsletters.