



InfiniBand Trade Association



Status Update

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Date: 3/17/2010

- CIWG Update
 - IBTA Plugfest 16 – October 2009
 - IBTA Mini-Interop Event – February 2010
 - IBTA Plugfest 17 – April 2010
- EWG Update
 - Specification Development
- MWG Update
 - IBTA Roadmap
- TWG Update
 - IBTA Mini-Book
 - RoCEE

- Statistics
 - 18 vendors
 - 17 devices
 - 192 cables tested
- What was new
 - New QDR HCAs and Switches
 - Gateway device for FC and Ethernet
 - 12X CXP Cables
 - 12X CXP to 4x QSFP Cables
- IL list available
 - [Cable IL List](#)
 - [Device IL List](#)

IBTA Vendor Participation

- IBTA Plugfest 16 – October 12-16, 2009
- InfiniBand Devices
 - Bay Microsystems, Flextronics, LSI Logic, Mellanox, Obsidian Research and QLogic
- Cable Vendors
 - Amphenol, Cinch, FCI, Finisar, Hitachi, Intersil, Luxtera, Mellanox, Molex, Tyco, Volex, W.L. Gore and Zarlink

Device IL List

9 HCAs, 3 Switches, 3 Range Extenders, 1 SRP Target, 1 Gateway Device

HCAs (Host Channel Adapter)

(Device Listing indicates Core Compliance)

Manufacturer	Product Description	Model	HW	SW	Core Compliance	Additional Capabilities				
						SM/SA			IPoIB	
						SM/SA	Version	Multicast	Unicast	Multicast
Mellanox	ConnectX®-2 VPI card, 4X QSFP 40Gb/s InfiniBand , SFP+ 10 Gigabit Ethernet	MHZH29-XTR	X1	2.7.0	✓	✓	3.2.5	✓	✓	✓
	ConnectX®-2 VPI card, Dual Port, 4X QSFP 40Gb/s InfiniBand	MHQH29B-XTR	X1	2.7.0	✓	✓	3.2.5	✓	✓	✓
	ConnectX®-2 VPI card, Dual Port, 4X CX4 20Gb/s InfiniBand	MHGH29B-XTR	X2	2.7.0	✓	✓	3.2.5	✓	✓	✓
	ConnectX®-2 VPI card, Dual Port, 4X QSFP 20Gb/s InfiniBand	MHRH29B-XTR	X2	2.7.0	✓	✓	3.2.5	✓	✓	✓
	InfiniHost™ III Ex HCA card, dual-port 20Gb/s, PCIe1.2 x8 host bus, MemFree	MHGA28-XTC (Lion Mini DDR)	A3	5.3.0	✓	✓	3.2.5	✓	✓	✓
	InfiniHost™ III Lx HCA card, single-port 20Gb/s, PCIe1.2 x8 host bus, MemFree	MHGS18-XTC (Cheetah DDR)	A5	1.2.0	✓	✓	3.2.5	✓	✓	✓
	InfiniHost™ III Lx HCA card, single-port 10Gb/s, PCIe1.2 x4 host bus, MemFree	MHES14-XTC (Tiger SDR)	A2	1.2.0	✓	✓	3.2.5	✓	✓	✓
Qlogic	QDR Single Port HCA	QLE-7340	1	OFED 1.5	✓	✓	3.2.5	✓	✓	✓
	QDR Dual Port HCA	QLE-7342	1	OFED 1.5	✓	✓	3.2.5	✓	✓	✓

Integrated Systems

(Device Listing indicates Core Compliance)

Manufacturer	Product Description	Model	HW	SW	Core Compliance	Additional Capabilities				
						SM/SA			IPoIB	
						SM/SA	Version	Multicast	Unicast	Multicast
Mellanox Technologies	BridgeX® InfiniBand to Fibre Channel Gateway	MTB4010B-PC	A1	8.1.0	✓					

Compliance Tests for Devices

Device ILTests	
Communications Management	37
Link & Networking Management	51
Subnet Management	13
Subnet Administration	67
Transport	5
Physical	54
Total IL Tests	238

Physical Layer Tests	
V2c06-007#2	Differential Output Peak-Peak Voltage - 1.6V Max
V2c06-007#5	Rise Time Minimum - 100 ps (mean time)
V2c06-007#5	Fall Time Minimum - 100 ps (mean time)
V2c06-007#14	Total Jitter** (TS1): TP5 - maximum 150 ps
V2c06-016.1.2#5	Jitter Eye Opening: TP5 - minimum 250 ps
V2c06-016.1.2#5	Voltage Eye Height: TP5 - minimum 0.89V



Cable IL List



- 12 Vendors
- 179 QDR Certified Cables
- 45 Passed by Reference
- Homogeneous Interoperability Results

Company	Part Number	Connector Type	4x 12x	Length (m)	AWG	Equalization	Memory Map #1	Memory Map #2	M2M Interop	Q2Q Interop	QDR Certified	Qualification
Cinch Connectors	717-04-00-003	QSFP	4x	3	24	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
Cinch Connectors	717-04-00-006	QSFP	4x	6	24	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
Cinch Connectors	717-04-00-007	QSFP	4x	7	24	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
Cinch Connectors	717-04-00-040	QSFP	4x	0.5	28	Unequalized	Fail	Fail	Pass	Pass	Yes	Tested at PF16
Cinch Connectors	717-04-00-044	QSFP	4x	4	28	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
Cinch Connectors	717-04-00-045	QSFP	4x	5	28	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
Cinch Connectors	717-04-00-060	QSFP	4x	0.5	30	Unequalized	Fail	Fail	Pass	Pass	Yes	Tested at PF16
Cinch Connectors	717-04-00-063	QSFP	4x	3	30	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
Cinch Connectors	717-04-00-064	QSFP	4x	4	30	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
FCI	10093084-4030LF	QSFP	4x	3	26	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
FCI	10093084-4040LF	QSFP	4x	4	26	Unequalized	NT	NT	NT	NT	PBR	Pass by Reference
FCI	10093084-4050LF	QSFP	4x	5	26	Unequalized	NT	NT	NT	NT	PBR	Pass by Reference
FCI	10093084-4060LF	QSFP	4x	6	26	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
FCI	10093084-3010LF	QSFP	4x	1	28	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
FCI	10093084-3020LF	QSFP	4x	2	28	Unequalized	NT	NT	NT	NT	PBR	Pass by Reference
FCI	10093084-3030LF	QSFP	4x	3	28	Unequalized	NT	NT	NT	NT	PBR	Pass by Reference
FCI	10093084-3040LF	QSFP	4x	4	28	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
FCI	10107528-3100LF	QSFP	4x	10	28	Limiting Active - Copper	Pass	Pass	Pass	Pass	Yes	Tested at PF16
FCI	10093084-2005LF	QSFP	4x	0.5	30	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
FCI	10093084-2010LF	QSFP	4x	1	30	Unequalized	NT	NT	NT	NT	PBR	Pass by Reference
FCI	10093084-2020LF	QSFP	4x	2	30	Unequalized	NT	NT	NT	NT	PBR	Pass by Reference
FCI	10093084-2030LF	QSFP	4x	3	30	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
FCI	10093084-1005LF	QSFP	4x	0.5	32	Unequalized	Pass	Pass	Pass	Pass	Yes	Tested at PF16
FCI	10093084-1010LF	QSFP	4x	1	32	Unequalized	NT	NT	NT	NT	PBR	Pass by Reference

Compliance Tests for Cables

SDR	Compliance Testing	DDR	Compliance Testing
7.1.1	Pair Differential Impedance Z-Line Cable Input	7.1.2	Insertion Loss Side A [17dB]
7.1.1	Pair Differential Impedance Z-Line Cable Output		Insertion Loss Side A [11dB]
7.1.2	Insertion Loss Side A	7.1.3	Differential Mode Return Loss, Cable Input
7.1.4	Xtalk Time Domain	7.1.3	Differential Mode Return Loss, Cable Output
7.1.5	Eye Height	7.1.4	Xtalk Time Domain
7.1.6	Eye Jitter	7.1.7	Mellanox Eye Opening
7.1.5	Eye Height (SDR Active)	7.2.2	Eye Height (DDR Active)
7.1.6	Eye Jitter (SDR Active)	7.2.3	Eye Jitter (DDR Active)
7.1.7	Mellanox Eye Opening		
QDR	Compliance Testing		Interoperability Testing
7.1.2	Insertion Loss Side A		HCA Cable Switch HCA
	Insertion Loss Side A [PF16 Informative]		HCA Switch Cable Switch HCA
7.1.3	Differential Mode Return Loss, Cable Input		
7.1.3	Differential Mode Return Loss, Cable Output		Homogeneous
7.1.5	Eye Height (QDR Active)		Heterogeneous
7.1.6	Eye Jitter (QDR Active)		
7.1.7	Mellanox Eye Opening		

IBTA Integrators List Logos

Device Logo



Cable Logos 4X

Cable Logos 12X



IBTA IL Logo Program

- The official logo is the identity for the InfiniBand Trade Association certification program.
- The official certified logos can be used on websites, advertising, marketing, and collateral material for those products that have been officially IBTA certified.
- If the logo is used on collateral material, it must also be used on the product itself or on product packaging.
- All products certified on the October 2009 IL List are eligible.
- IBTA Logo [Guidelines](#)

IBTA IL Logo Grants

Amphenol



FLEXTRONICS

HitachiCable



molex[®]



Tyco Electronics



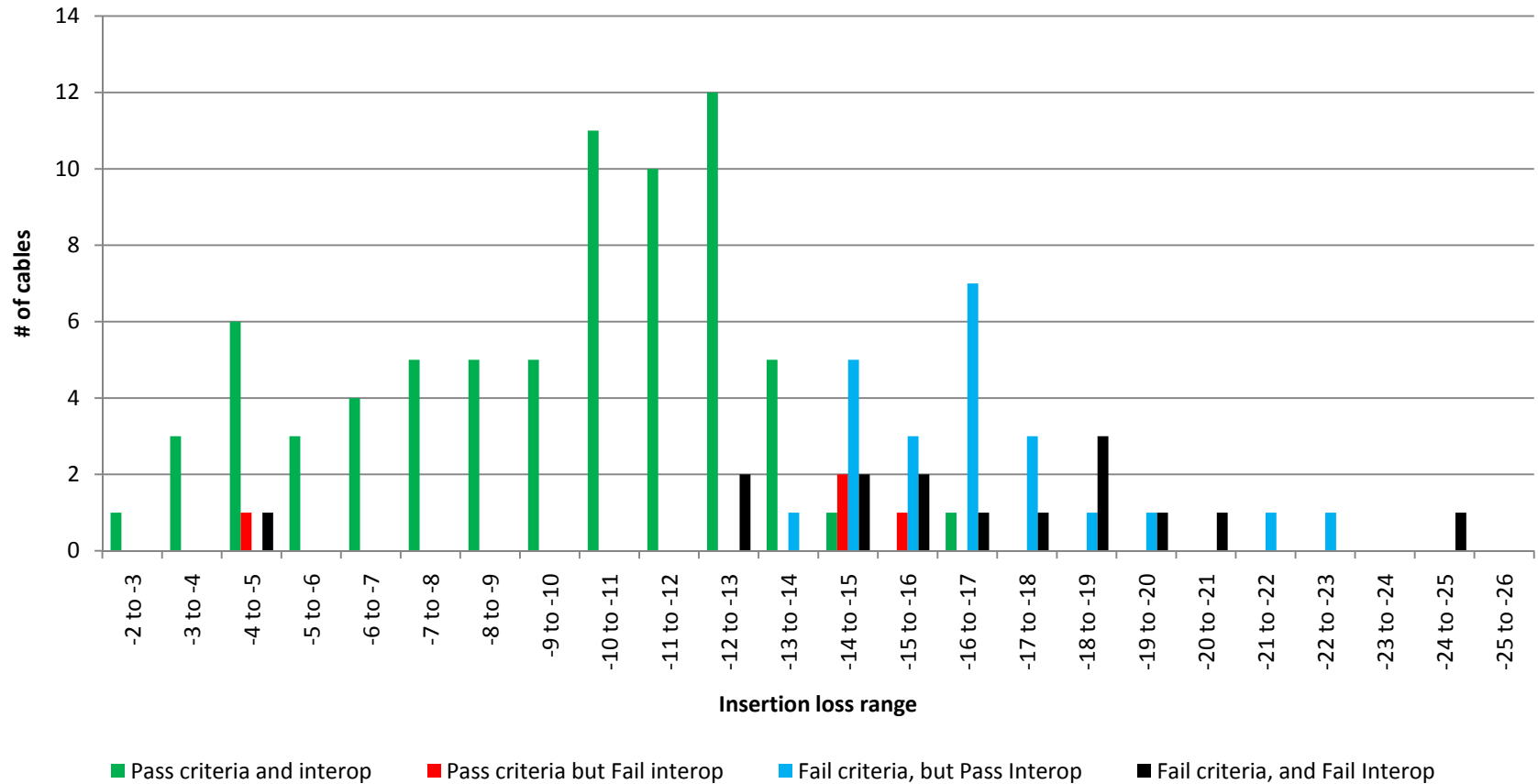
IBTA Mini-Interop Event

- February 15th – 19th 2010
- Participants
 - Mellanox, QLogic and Software Forge
- Purpose
 - Debug PF16 Heterogeneous Cable Interop Failure
- Results
 - Improved attenuation based link training
 - Improved signal integrity
 - Heterogeneous link approaching stability of homogeneous link

WDP Margin vs Measured Insertion Loss



Criteria and Interop vs Insertion Loss Range



- April 26th – April 30th 2010 hosted by UNH-IOL
- What's New
 - Mandatory Memory Map Testing

Byte	Description	Byte	Description
0	Identifier	165-167	Vendor OUI
2	Status, flat or paged memory	168-183	Vendor part number
4	TX fault	184-185	Vendor revision
101	TX Fault mask	186	Attenuation at 2.5GHz (copper)
127	Second loaded upper page of paged memory	187	Attenuation at 5.0GHz (copper)
128	Identifier	190	Max case temp
129	Extended identifier values, power class	191	Check sum
130	Connector	195	Memory page 02 provided
146	Link length supported for copper or active cable	195	Memory page 01 provided
147	Transmitter technology	196-211	Vendor serial number
148-163	Vendor name	212-217	Date code
164	Extended module codes (InfiniBand data rates)	223	Check sum

- Use of MPI in Cable Interoperability testing
- Updated Insertion Loss Specs

- CXP (12x connector) specs
 - Finalized and approved in 2009
- IB Copper Cable Spec – Insertion Loss
 - 10 dB at 2.5 GHz for QDR cables
 - 14 dB at 5 GHz for QDR cables
- FDR & EDR electrical specs
 - In development
- FDR & EDR optical specs
 - Working with the OIF
- QSFP+ (4x connector) specs
 - Defined mandatory fields for IB
- Standardized EEPROM info for QSFP and CXP
 - Attenuation, Cable Type, Vendor etc
 - Allows improved interoperable equalization

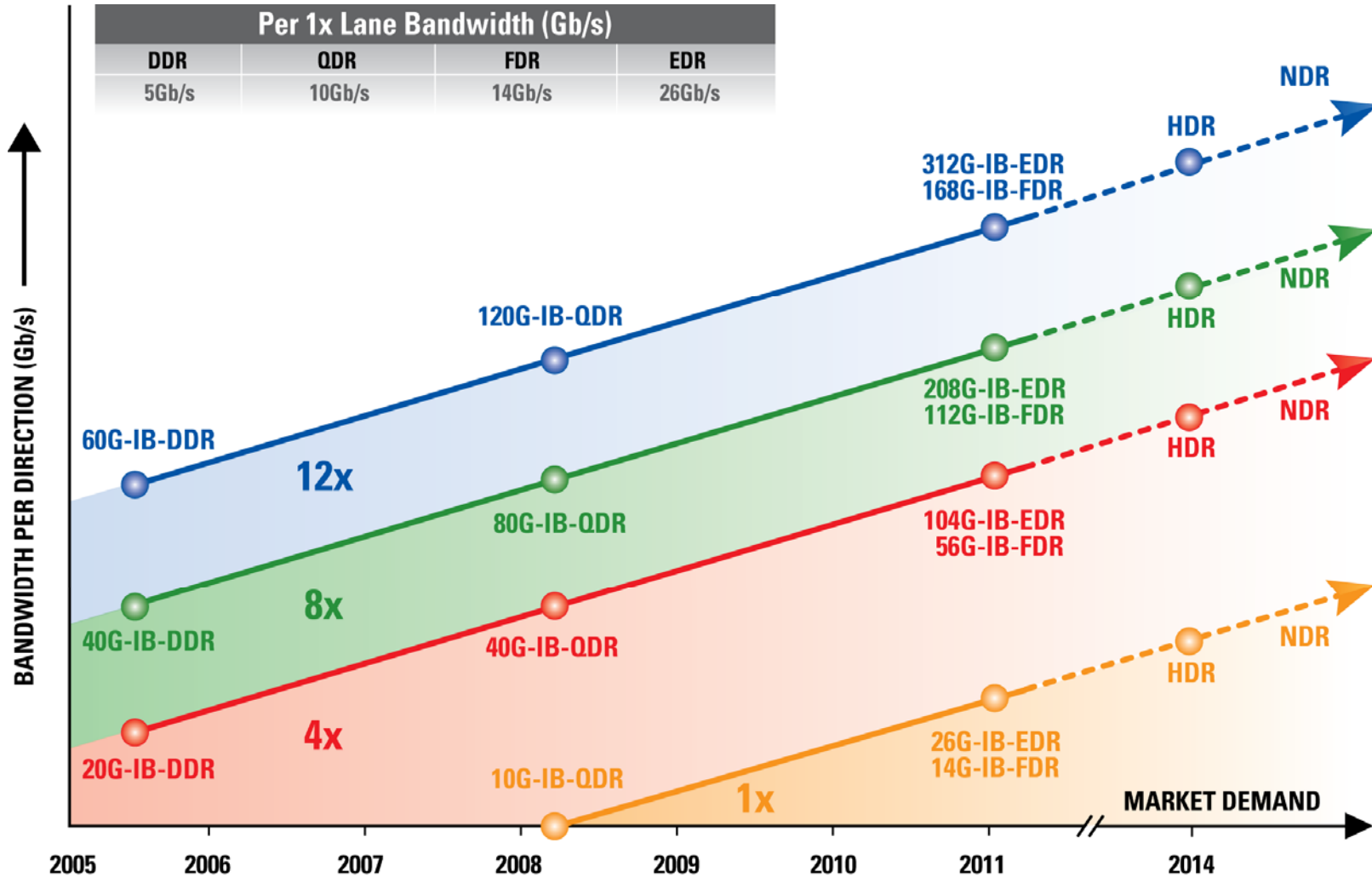


CXP



QSFP

MWG- InfiniBand Roadmap



- IBTA Mini-Book – purposes
 - Describe the value that the InfiniBand Architecture delivers to the Enterprise Data Center and High Performance Computing communities
 - Draw straight-line connections back to the basic concepts behind InfiniBand.
- RoCEE as of 3/16/2010
 - RDMA over Converged Enhanced Ethernet
 - Steering Committee approved initial work by TWG

Thank you

