



IBTA RoCE Interoperability List

October 2015



These Interoperability results represent system tests and include the testing of the entire environment including device transmitters, cable media and device receivers. The Interoperability results include 10, 25, 40 and 100 GbE RoCE devices and SFP and QSFP cables.

While every effort was made to test worst-case conditions, results may vary with alternative port configurations, device and cable manufacturing variation, device firmware and software, traffic density and data patterns, temperature variation, etc. The following documentation identifies the test conditions used to obtain these Interoperability results.

Hardware used to test Interoperability

Interop Legend	Description
OCe14102 to MCX312B	Emulex 10 GbE RNIC to Mellanox 10 GbE RNIC
OCe14401B to MSX1012	Emulex 40 GbE RNIC to Mellanox 40 GbE Switch
OCe14401B to MSX6036G	Emulex 40 GbE RNIC to Mellanox 56 GbE Switch
MCX314A to MSX1012	Mellanox 40 GbE RNIC to Mellanox 40 GbE Switch
MCX354A to MSX6036G	Mellanox 56 GbE RNIC to Mellanox 56 GbE Switch
MCX4121A to MCX4121A	Mellanox 25 GbE RNIC to Mellanox 25 GbE RNIC

Conditions for passing Interop	
Link Width	Link width is @ expected width - i.e. 1x,4x, etc
Link Speed	Link speed is @ expected speed - i.e. FDR
Symbol Errors	There must be no errors during the MPI Run
Link and Poort Errors	There must be no errors during the MPI Run
MPI Test	The MPI test must run to completion without error

Manufacturer	Description of Hardware	Model	Type	HW	FW	SW	Speed
Emulex	RNIC SFP 10Gb/s Ethernet	OCe14102	RNIC				10 GbE
Emulex	RNIC QSFP 40Gb/s Ethernet	OCe14401B	RNIC				40 GbE
Mellanox	ConnectX@-3 Pro 4X SFP 10Gb/s Ethernet	MCX312B-XCCT	RNIC	A3	2.33.5100	3.18-1-RC1	10 GbE
Mellanox	ConnectX-4 Lx EN, 25GbE dual-port SFP28	MCX4121A-ACAT	RNIC		14.12.1100	3.18-1-RC1	25 GbE
Mellanox	ConnectX@-3 Pro 4X QSFP 40Gb/s Ethernet	MCX314A-BCCT	RNIC	A3	2.33.5100	3.18-1-RC1	40 GbE
Mellanox	ConnectX@-3 4X QSFP 56Gb/s	MCX354A-FCBT	RNIC		2.33.5100	3.18-1-RC1	40 GbE
Mellanox	ConnectX@-3 Pro 4X QSFP 56Gb/s	MCX354A-FCBT	RNIC		2.33.5100	3.18-1-RC1	40 GbE
Mellanox	SwitchX@2 40GbE 1U Open Ethernet Switch	MSX1012B-2BFS	Switch		9.2.800	3.3.5006	40 GbE
Mellanox	SwitchX@2 IB to Ethernet gateway, 36 QSFP ports	MSX6036G-2SFS	Switch	A8	9.3.2000	3.4.1110	40 GbE

Software Used to Test Interoperability

Software	Versions
OFED Version	3.18-1-RC1
Open MPI Used	Open MPI 1.8
Open MPI Documentation	https://www.open-mpi.org/doc/
Intel Benchmarks	https://software.intel.com/en-us/imb-user-guide
Test Plan version	OFA-IWG Interoperability Test Plan-v1.51-v5.pdf
Test Duration	3-15 minutes

Open MPI Intel Benchmark Tests	
PingPong	Gather
PingPing	Gatherv
Sendrecv	Scatter
Exchange	Scatterv
Allreduce	Alltoall
Reduce	Alltoallv
Reduce_scatter	Bcast
Allgather	Barrier
Allgatherv	

RDMA over Converged Ethernet (RoCE) Interop Testing

Emulex OCe14102 RNIC to Mellanox MCX312B-XCCT RNIC



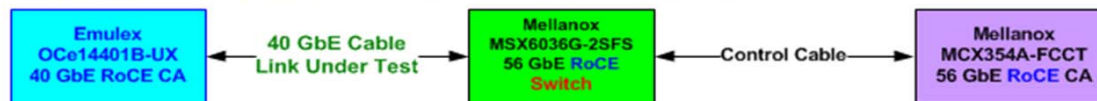
Mellanox MCX4121AB-ACAT RNIC to Mellanox MCX4121AB-ACAT RNIC



Emulex OCe14401B RNIC to Mellanox MSX1012B Switch to Mellanox MCX314A RNIC



Emulex OCe14401B RNIC to Mellanox MSX6036G Switch to Mellanox MCX314A RNIC



Mellanox MCX314A RNIC to Mellanox MSX1012B Switch and Mellanox MCX314A RNIC



Mellanox MCX354A RNIC to Mellanox MSX6036G Switch and Mellanox MCX354A RNIC





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Company Info		Cable Information					10 GbE SFP+	40 GbE QSFP Interop				25 GbE SFP28
Company	Part Number	Width	Len (m)	AWG	Equalization	Type	OcE14102 MCX312B	OcE14401B MSX1012 SW	OcE14401B MSX6036G SW	MCX314A MSX1012 SW	MCX354A MSX6036G SW	MCX4121A MCX4121A
Advanced Photonics, Inc	APFN2-AOC-002	4x	2	N/A	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Advanced Photonics, Inc	APFN2-AOC-010	4x	10	N/A	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Advanced Photonics, Inc	APFN2-AOC-020	4x	20	N/A	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Advanced Photonics, Inc	APFN2-AOC-040	4x	40	N/A	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Advanced Photonics, Inc	APFN2-AOC-050	4x	50	N/A	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Advanced Photonics, Inc	APFN2-AOC-100	4x	100	N/A	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
FCI	10093084-1020LF	4x	2	32	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
FCI	10093084-2005LF	4x	0.5	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
FCI	10093084-2035LF	4x	3.5	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
FCI	10093084-3010LF	4x	1	28	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
FCI	10093084-3040LF	4x	4	28	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
FCI	10093084-4045LF	4x	4.5	26	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
FCI	10093084-4050LF	4x	5	26	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
FCI	10121178-2010LF	4x	1	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
FCI	10121178-2020LF	4x	2	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
FCI	10121178-4030LF	4x	2	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Finisar	FCBN410QB1C01	4x	1	N/A	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Finisar	FCBN410QB1C00	4x	100	N/A	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MC220731V-003	4x	3	NA	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MC220731V-030	4x	30	NA	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MC220731V-050	4x	50	NA	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MC220731V-100	4x	100	NA	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MC2207130-00A	4x	0.5	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MC2207130-001	4x	1	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MC2207130-0A1	4x	1.5	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MC2207130-002	4x	2	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MC2207128-0A2	4x	2.5	28	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MC2207128-003	4x	3	28	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MCP1600-E00A	4x	0.5	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MCP1600-E001	4x	1	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MCP1600-E01A	4x	1.5	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MCP1600-E002	4x	2	28	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MCP1600-E02A	4x	2.5	26	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MCP1600-E003	4x	3	26	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MCP1600-E03A	4x	3.5	24	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Mellanox	MCP2M00-A002	1x	2	30	Unequalized	SFP28	Yes	N/A	N/A	N/A	N/A	Yes
Molex Incorporated	106410-1300	4x	300	NA	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	No	N/A
Molex Incorporated	106411-1001	4x	1	NA	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Molex Incorporated	106411-1300	4x	300	NA	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Molex Incorporated	100297-1015	4x	0.5	32	Unequalized	QSFP	N/A	Yes	No	Yes	Yes	N/A
Molex Incorporated	100297-1101	4x	1	30	Unequalized	QSFP	N/A	Yes	No	Yes	Yes	N/A
Molex Incorporated	100297-3301	4x	3	25	Unequalized	QSFP	N/A	Yes	No	Yes	Yes	N/A
Net Miles	NA56-R102-8QCX	4x	2	NA	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Net Miles	NA56-R110-8QCX	4x	10	NA	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Net Miles	NA56-R130-8QCX	4x	30	NA	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Net Miles	NA56-R1L1-8QCX	4x	100	NA	Active - Fiber	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Voelx	VAHS-30-0554	4x	0.5	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Voelx	VAHS-30-0555	4x	3	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Voelx	VAHS-28-0452	4x	4	28	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Voelx	VAHS-26-0343	4x	5	26	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Voelx	VAHS-30-0556	4x	1	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A
Voelx	VAHS-28-0453	4x	2	28	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A



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Company Info		Cable Information					10 GbE SFP+	40 GbE QSFP Interop					25 GbE SFP28
Company	Part Number	Width	Len (m)	AWG	Equalization	Type	OCe14102 MCX312B	OCe14401B MSX1012 SW	OCe14401B MSX6036G SW	MCX314A MSX1012 SW	MCX354A MSX6036G SW	MCX4121A MCX4121A	
Volex	VAHS-26-0344	4x	3	26	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A	
Volex	VAHS-25-0061	4x	4	25	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A	
Volex	VAHS-30-0557	4x	1	30	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A	
Volex	VAHS-28-0454	4x	2	28	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A	
Volex	VAHS-26-0345	4x	2	26	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A	
Volex	VAHS-24-0310	4x	3	24	Unequalized	QSFP	N/A	Yes	Yes	Yes	Yes	N/A	