InfiniBand Trade Association RoCE Integrators' List

April 2020

IBTA RoCE Integrators' List
PlugFest 37   April 2020

Manufacturer	Description	Model	Type	Speed	FW	SW
Broadcom	NetXtreme®-E BCM57508 Single-Port 200G	BCM957508-P1200G	RNIC	200 GbE	216.0.251.0	216.0.152.0
Broadcom	NetXtreme®-E BCM57508 Dual-Port 100G	BCM957508-P2100G	RNIC	100 GbE	216.0.251.0	216.0.152.0
Broadcom	NetXtreme®-E BCM57414 Dual-Port 25G	BCM957414-P225P	RNIC	25 GbE	214.4.65.0	216.0.152.0
Marvell	FastLinQ Single-Port QSFP28	QL45611HL	RNIC	100 GbE	8.50.72.00	8.42.10.0
Marvell	FastLinQ Dual-Port QSFP+	QL45412HL	RNIC	40 GbE	8.50.72.00	8.42.10.0
Marvell	FastLinQ Dual-Port SFP28	QL45212HL	RNIC	25 GbE	8.50.40.0	8.42.10.0
Marvell	FastLinQ Dual-Port SFP28	QL41212HL	RNIC	25 GbE	8.50.40.0	8.42.10.0
Marvell	FastLinQ Quad-Port SFP28	QL41234HL	RNIC	25 GbE	8.50.40.0	8.42.10.0
NVIDIA	ConnectX®-5 EN Dual-Port QSFP28	MCX516A-CCA	RNIC	100 GbE	16.27.2008	MLNX OFED 5.0-2.1.8.0
NVIDIA	ConnectX®-5 EN Dual-Port QSFP28	MCX516A-CDA	RNIC	100 GbE	16.27.2008	MLNX OFED 5.0-2.1.8.0
NVIDIA	ConnectX®-4 EN Dual-Port QSFP28	MCX4121A-ACA	RNIC	25 GbE	14.27.2008	MLNX OFED 5.0-2.1.8.0
NVIDIA	Spectrum 18 SFP28 ports, 4 QSFP28 ports supports 25 to 100GbE	MSX2010-CB2F	Switch	100 GbE	13.2000.2162	MLNX OS 3.8.2008
NVIDIA	Spectrum 48 SFP28 ports, 8 QSFP28 ports, Supports 10 to 100GbE	MSN2410-CB2F	Switch	100 GbE	13.2000.2162	MLNX OS 3.8.2008

Software	Versions
Operating System	CentOS 7.7-1908
Inbox RDMA Support	CentOS 7.7-1908
NVIDIA OFED	MLNX OFED 5.0-2.1.8.0
Open MPI	Open MPI 3.1.4
Benchmark	Intel MPI Benchmarks
Test Plan	Software Forge RoCE Interoperability MOI
Duration	1-3 minutes

Conditions for Passing Interoperability Testing

Performance	Devices must perform at advertised rates and latencies
Link Status	Link rate and width show expected values - i.e. 100GbE (4x)
Errors	There must be no errors recorded during any test phases
MPI Test	The MPI Benchmark must run to completion

Performance Software

HPC-Performance Monitor		HPC-PM-2.0.80
Perftest (OFED)		4.4-0.9

Benchmarks Performed

PingPong	Gather
PingPing	Gatherv
Sendrecv	Scatter
Exchange	Scatterv
Allreduce	Alltoall
Reduce	Alltoallv
Reduce_scatter	Bcast
Allgather	Barrier
Allgatherv	

IBTA RoCE Compliance
April 2020

Manufacturer	Product Description	Model	FW	SW	Transport	DCB
Broadcom	NetXtreme®-E BCM57508 Dual-Port 100G	BCM957508-P2100G	216.0.251.0	216.0.152.0	✓	✓
	NetXtreme®-E BCM57414 Dual-Port 25GbE	BCM957414-P225P	214.4.65.0	216.0.152.0	✓	✓

Broadcom RoCE RNICs		Model	BCM957508-P2100G	BCM957414-P225P
		Date	5/22/2020	6/4/2020
		Firmware Version	216.0.251.0	214.4.65.0
		Overall Results	**Pass**	**Pass**
Test Class	**Name**	**Number**	**Results**	**Results**
Transport Layer	RC RDMA Send Only after RDMA Read	C09_027_01	Pass	Pass
	RC RDMA Write Only after RDMA Read	C09_027_02	Pass	Pass
	RC RDMARead Only after RDMA Read	C09_027_03	Pass	Pass
	RC Atomic FetchAdd after RDMA Read	C09_027_04	Pass	Pass
	RC Atomic CompSwap after RDMA Read	C09_027_05	Pass	Pass
	RC Atomic CompSwap after Atomic CompSwap	C09_027_06	Pass	Pass
	RC Atomic FetchAdd after Atomic CompSwap	C09_027_07	Pass	Pass
	RC Atomic FetchAdd after Atomic FetchAdd	C09_027_08	Pass	Pass
	RC Atomic CompSwap after Atomic FetchAdd	C09_027_09	Pass	Pass
	RC RDMA Send Only after Atomic CompSwap	C09_027_10	Pass	Pass
	RC RDMA Write Only after Atomic CompSwap	C09_027_11	Pass	Pass
	RC RDMA Send Only after Atomic FetchAdd	C09_027_12	Pass	Pass
	RC RDMA Write Only after Atomic Fetch Add	C09_027_13	Pass	Pass
	Completion Rules - RC RDMA Send Case	C09_060_01	Pass	Pass
	Completion Rules - RC RDMA Send Case (inverted)	C09_060_01_01	Pass	Pass
	Completion Rules - RC RDMA Write Case	C09_060_03	Pass	Pass
	Completion Rules - RC RDMA Write Case (inverted)	C09_060_03_01	Pass	Pass
	Completion Rules - RC RDMA Read Case	C09_060_05	Pass	Pass
	Completion Rules - RC RDMA Read Case (inverted)	C09_060_05_01	Pass	Pass
	Completion Rules - Atomic FetchAdd Case	C09_060_07	Pass	Pass
	Completion Rules - Atomic FetchAdd Case (inverted)	C09_060_07_01	Pass	Pass
	Completion Rules - Atomic CompSwap Case	C09_060_09	Pass	Pass
	Completion Rules - Atomic CompSwap Case (inverted)	C09_060_09_01	Pass	Pass
	Requester/Responder RNR NAK Behavior	C09_130_01	Pass	Pass
	Outstanding Request Timeout	C09_142_01	Pass	Pass
DCB	IEEE 802.1Q	36.2.2#1	Pass	Pass

IBTA RoCE Compliance
April 2020

Manufacturer	Product Description	Model	FW	SW	Transport	DCB
Marvell	Low Profile Single-Port QSFP28 100GbE Ethernet PCIe Adapter	QL45611	8.50.72.00	8.42.10.0	✓	✓
	Low Profile Dual-Port QSFP+ 40GbE Ethernet PCIe Adapter	QL45412	8.50.72.00	8.42.10.0	✓	✓
	Low Profile Dual-Port SFP28 25GbE Ethernet PCIe Adapter	QL45212	8.50.40.00	8.42.10.0	✓	✓
	Low Profile Dual-Port SFP28 25GbE Ethernet PCIe Adapter	QL41212	8.50.40.00	8.42.10.0	✓	✓
	Low Profile Quad-Port SFP28 25GbE Ethernet PCIe Adapter	QL41234	8.50.40.00	8.42.10.0	✓	✓

Marvell RoCE RNICs		Model	QL45611	QL45412	QL45212	QL41212	QL41234
		Date	5/18/2020	5/19/2020	5/18/2020	5/19/2020	5/19/2020
		Firmware Version	8.50.72.00	8.50.72.00	8.50.40.00	8.50.40.00	8.50.40.00
		Overall Results	Pass	Pass	Pass	Pass	Pass
Test Class	Name	Number	Results	Results	Results	Results	Results
Transport Layer	RC RDMA Send Only after RDMA Read	C09_027_01	Pass	Pass	Pass	Pass	Pass
	RC RDMA Write Only after RDMA Read	C09_027_02	Pass	Pass	Pass	Pass	Pass
	RC RDMARead Only after RDMA Read	C09_027_03	Pass	Pass	Pass	Pass	Pass
	RC Atomic FetchAdd after RDMA Read	C09_027_04	Pass	Pass	Pass	Pass	Pass
	RC Atomic CompSwap after RDMA Read	C09_027_05	Pass	Pass	Pass	Pass	Pass
	RC Atomic CompSwap after Atomic CompSwap	C09_027_06	Pass	Pass	Pass	Pass	Pass
	RC Atomic FetchAdd after Atomic CompSwap	C09_027_07	Pass	Pass	Pass	Pass	Pass
	RC Atomic FetchAdd after Atomic FetchAdd	C09_027_08	Pass	Pass	Pass	Pass	Pass
	RC Atomic CompSwap after Atomic FetchAdd	C09_027_09	Pass	Pass	Pass	Pass	Pass
	RC RDMA Send Only after Atomic CompSwap	C09_027_10	Pass	Pass	Pass	Pass	Pass
	RC RDMA Write Only after Atomic CompSwap	C09_027_11	Pass	Pass	Pass	Pass	Pass
	RC RDMA Send Only after Atomic FetchAdd	C09_027_12	Pass	Pass	Pass	Pass	Pass
	RC RDMA Write Only after Atomic Fetch Add	C09_027_13	Pass	Pass	Pass	Pass	Pass
	Completion Rules - RC RDMA Send Case	C09_060_01	Pass	Pass	Pass	Pass	Pass
	Completion Rules - RC RDMA Send Case (inverted)	C09_060_01_01	Pass	Pass	Pass	Pass	Pass
	Completion Rules - RC RDMA Write Case	C09_060_03	Pass	Pass	Pass	Pass	Pass
	Completion Rules - RC RDMA Write Case (inverted)	C09_060_03_01	Pass	Pass	Pass	Pass	Pass
	Completion Rules - RC RDMA Read Case	C09_060_05	Pass	Pass	Pass	Pass	Pass
	Completion Rules - RC RDMA Read Case (inverted)	C09_060_05_01	Pass	Pass	Pass	Pass	Pass
	Completion Rules - Atomic FetchAdd Case	C09_060_07	Pass	Pass	Pass	Pass	Pass
	Completion Rules - Atomic FetchAdd Case (inverted)	C09_060_07_01	Pass	Pass	Pass	Pass	Pass
	Completion Rules - Atomic CompSwap Case	C09_060_09	Pass	Pass	Pass	Pass	Pass
	Completion Rules - Atomic CompSwap Case (inverted)	C09_060_09_01	Pass	Pass	Pass	Pass	Pass
	Requester/Responder RNR NAK Behavior	C09_130_01	Pass	Pass	Pass	Pass	Pass
	Outstanding Request Timeout	C09_142_01	Pass	Pass	Pass	Pass	Pass
DCB	IEEE 802.1Q	36.2.2#1	Pass	Pass	Pass	Pass	Pass

IBTA RoCE Compliance
April 2020

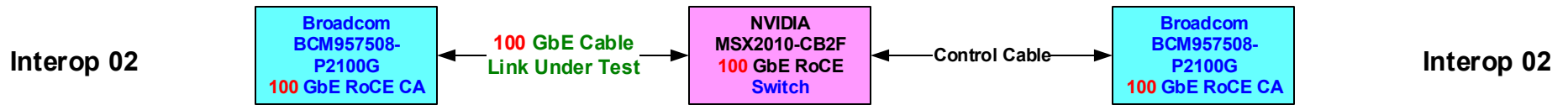| Manufacturer	Product Description	Model	FW	SW	Transport	DCB
NVIDIA	ConnectX®-4 Lx EN Dual-Port SFP28 25GbE Ethernet PCIe Adapter	MCX4121A-ACAT	14.27.2008	MLNX_OFED 5.0-2.1.8.0	✓	✓
	ConnectX®-5 EN Dual-Port QSFP28 100GbE Ethernet PCIe Adapter	MCX516A-CCAT	16.27.2008	MLNX_OFED 5.0-2.1.8.0	✓	✓
	ConnectX®-5 EN Dual-Port QSFP28 100GbE Ethernet PCIe Adapter	MCX516A-CDAT	16.27.2008	MLNX_OFED 5.0-2.1.8.0	✓	✓

		Model	MCX4121A-ACAT	MCX516A-CCAT	MCX516A-CDAT
NVIDIA RoCE RNICs		Date	5/8/2020	5/8/2020	5/1/2020
		Firmware Version	14.27.2008	16.27.2008	16.27.2008
		Overall Results	**Pass**	**Pass**	**Pass**
Test Class	**Name**	**Number**	**Results**	**Results**	**Results**
Transport Layer	RC RDMA Send Only after RDMA Read	C09_027_01	Pass	Pass	Pass
	RC RDMA Write Only after RDMA Read	C09_027_02	Pass	Pass	Pass
	RC RDMARead Only after RDMA Read	C09_027_03	Pass	Pass	Pass
	RC Atomic FetchAdd after RDMA Read	C09_027_04	Pass	Pass	Pass
	RC Atomic CompSwap after RDMA Read	C09_027_05	Pass	Pass	Pass
	RC Atomic CompSwap after Atomic CompSwap	C09_027_06	Pass	Pass	Pass
	RC Atomic FetchAdd after Atomic CompSwap	C09_027_07	Pass	Pass	Pass
	RC Atomic FetchAdd after Atomic FetchAdd	C09_027_08	Pass	Pass	Pass
	RC Atomic CompSwap after Atomic FetchAdd	C09_027_09	Pass	Pass	Pass
	RC RDMA Send Only after Atomic CompSwap	C09_027_10	Pass	Pass	Pass
	RC RDMA Write Only after Atomic CompSwap	C09_027_11	Pass	Pass	Pass
	RC RDMA Send Only after Atomic FetchAdd	C09_027_12	Pass	Pass	Pass
	RC RDMA Write Only after Atomic Fetch Add	C09_027_13	Pass	Pass	Pass
	Completion Rules - RC RDMA Send Case	C09_060_01	Pass	Pass	Pass
	Completion Rules - RC RDMA Send Case (inverted)	C09_060_01_01	Pass	Pass	Pass
	Completion Rules - RC RDMA Write Case	C09_060_03	Pass	Pass	Pass
	Completion Rules - RC RDMA Write Case (inverted)	C09_060_03_01	Pass	Pass	Pass
	Completion Rules - RC RDMA Read Case	C09_060_05	Pass	Pass	Pass
	Completion Rules - RC RDMA Read Case (inverted)	C09_060_05_01	Pass	Pass	Pass
	Completion Rules - Atomic FetchAdd Case	C09_060_07	Pass	Pass	Pass
	Completion Rules - Atomic FetchAdd Case (inverted)	C09_060_07_01	Pass	Pass	Pass
	Completion Rules - Atomic CompSwap Case	C09_060_09	Pass	Pass	Pass
	Completion Rules - Atomic CompSwap Case (inverted)	C09_060_09_01	Pass	Pass	Pass
	Requester/Responder RNR NAK Behavior	C09_130_01	Pass	Pass	Pass
	Outstanding Request Timeout	C09_142_01	Pass	Pass	Pass
DCB	IEEE 802.1Q	36.2.2#1	Pass	Pass	Pass

RDMA over Converged Ethernet (RoCE) Interop Testing
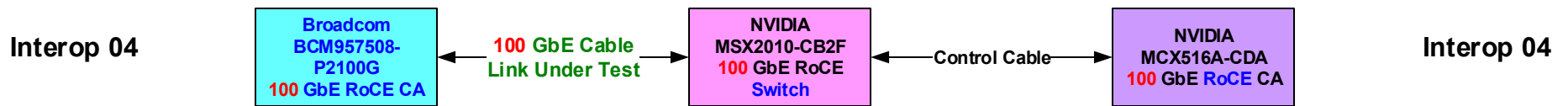
Broadcom BCM957508-P1200G to Broadcom BCM957508-P1200G

Interop 01

| Broadcom BCM957508-P1200G 200 GbE RoCE CA | ←→ 200 GbE Cable Link Under Test | Broadcom BCM957508-P1200G 200 GbE RoCE CA |

Interop 01

Broadcom BCM957508-P2100G to NVIDIA MSN2010 Switch to Broadcom BCM957508-P2100G

Interop 02

| Broadcom BCM957508-P2100G 100 GbE RoCE CA | ←→ 100 GbE Cable Link Under Test | NVIDIA MSX2010-CB2F 100 GbE RoCE Switch | ←→ Control Cable | Broadcom BCM957508-P2100G 100 GbE RoCE CA |

Interop 02

Broadcom BCM957508-P2100G to NVIDIA MSN2010 Switch to Marvell QL45611

Interop 03

| Broadcom BCM957508-P2100G 100 GbE RoCE CA | ←→ 100 GbE Cable Link Under Test | NVIDIA MSX2010-CB2F 100 GbE RoCE Switch | ←→ Control Cable | Marvell QL45611 100 GbE RoCE CA |

Interop 03

Broadcom BCM957508-P2100G to NVIDIA MSN2010 Switch to NVIDIA MCX516A-CDA

Interop 04

| Broadcom BCM957508-P2100G 100 GbE RoCE CA | ←→ 100 GbE Cable Link Under Test | NVIDIA MSX2010-CB2F 100 GbE RoCE Switch | ←→ Control Cable | NVIDIA MCX516A-CDA 100 GbE RoCE CA |

Interop 04

Broadcom BCM957508-P2100G to NVIDIA MSN2010 Switch to NVIDIA MCX516A-CCA

Interop 05

| Broadcom BCM957508-P2100G 100 GbE RoCE CA | ←→ 100 GbE Cable Link Under Test | NVIDIA MSX2010-CB2F 100 GbE RoCE Switch | ←→ Control Cable | NVIDIA MCX516A-CCA 100 GbE RoCE CA |

Interop 05

Marvell QL45611 to NVIDIA MSN2010 Switch to NVIDIA MCX516A-CCA

Interop 06

| Marvell QL45611 100 GbE RoCE CA | ←→ 100 GbE Cable Link Under Test | NVIDIA MSX2010-CB2F 100 GbE RoCE Switch | ←→ Control Cable | NVIDIA MCX516A-CCA 100 GbE RoCE CA |

Interop 06

RDMA over Converged Ethernet (RoCE) Interop Testing

Marvell QL45611 to NVIDIA MSN2410 Switch to Broadcom BCM957508-P2100G

Interop 07

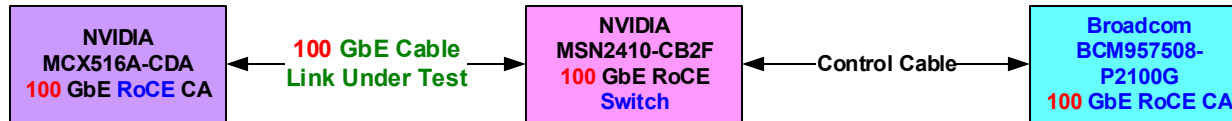| Marvell QL45611 100 GbE RoCE CA | 100 GbE Cable Link Under Test | NVIDIA MSN2410-CB2F 100 GbE RoCE Switch | Control Cable | Broadcom BCM957508-P2100G 100 GbE RoCE CA |
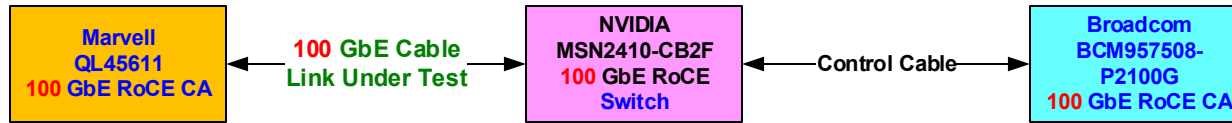
Interop 07

NVIDIA MCX516A-CDA to NVIDIA MSN2410 Switch to Broadcom BCM957508-P2100G

Interop 08

| NVIDIA MCX516A-CDA 100 GbE RoCE CA | 100 GbE Cable Link Under Test | NVIDIA MSN2410-CB2F 100 GbE RoCE Switch | Control Cable | Broadcom BCM957508-P2100G 100 GbE RoCE CA |

Interop 08

NVIDIA MCX516A-CCA to NVIDIA MSN2410 Switch to NVIDIA MCX516A-CDA

Interop 09

| NVIDIA MCX516A-CCA 100 GbE RoCE CA | 100 GbE Cable Link Under Test | NVIDIA MSN2410-CB2F 100 GbE RoCE Switch | Control Cable | NVIDIA MCX516A-CDA 100 GbE RoCE CA |
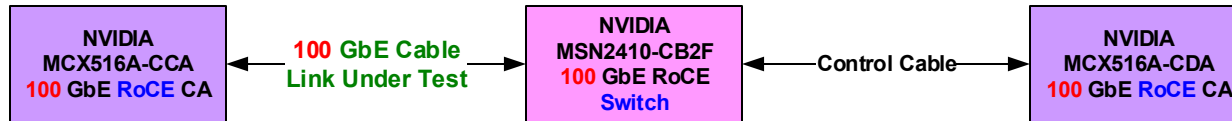
Interop 09

Broadcom BCM957508-P2100G to NVIDIA MCX516A-CCA

Interop 10

| Broadcom BCM957508-P2100G 100 GbE RoCE CA | 100 GbE Cable Link Under Test | NVIDIA MCX516A-CCA 100 GbE RoCE CA |

Interop 10

Marvell QL45611 to Broadcom BCM957508-P2100G

Interop 11

| Marvell QL45611 100 GbE RoCE CA | 100 GbE Cable Link Under Test | Broadcom BCM957508-P2100G 100 GbE RoCE CA |

Interop 11

Marvell QL45412 to NVIDIA MSN2410 Switch to NVIDIA MCX516A-CDA

Interop 12

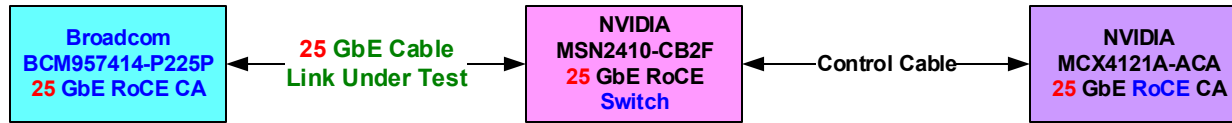| Marvell QL45412 40 GbE RoCE CA | 40 GbE Cable Link Under Test | NVIDIA MSN2410-CB2F 40 GbE RoCE Switch | Control Cable | NVIDIA MCX516A-CDA 40 GbE RoCE CA |
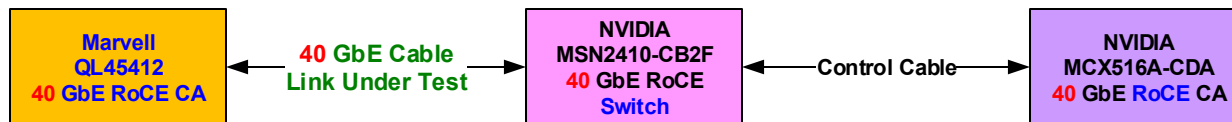
Interop 12

RDMA over Converged Ethernet (RoCE) Interop Testing

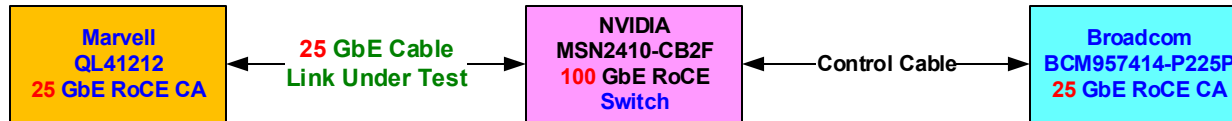## Broadcom BCM957414-P225P to NVIDIA MSN2410 Switch to NVIDIA MCX4121A-ACA

Interop 13

| Broadcom BCM957414-P225P 25 GbE RoCE CA | ←→ 25 GbE Cable Link Under Test | NVIDIA MSN2410-CB2F 25 GbE RoCE Switch | ←→ Control Cable | NVIDIA MCX4121A-ACA 25 GbE RoCE CA |

Interop 13

Marvell QL41212 to NVIDIA MSN2410 Switch to Broadcom BCM957414-P225P

Interop 14

| Marvell QL41212 25 GbE RoCE CA | ←→ 25 GbE Cable Link Under Test | NVIDIA MSN2410-CB2F 100 GbE RoCE Switch | ←→ Control Cable | Broadcom BCM957414-P225P 25 GbE RoCE CA |

Interop 14

Marvell QL45212 to NVIDIA MSN2010 Switch to NVIDIA MCX4121A-ACA

Interop 15

| Marvell QL45212 25 GbE RoCE CA | ←→ 25 GbE Cable Link Under Test | NVIDIA MSX2010-CB2F 25 GbE RoCE Switch | ←→ Control Cable | NVIDIA MCX4121A-ACA 25 GbE RoCE CA |
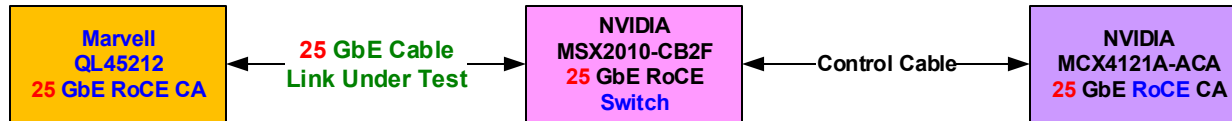
Interop 15

Broadcom BCM957414-P225P to Marvell QL41234

Interop 16

| Broadcom BCM957414-P225P 25 GbE RoCE CA | ←→ 25 GbE Cable Link Under Test | Marvell QL41234 25 GbE RoCE CA |

Interop 16

NVIDIA MCX4121A-ACA to Broadcom BCM957414-P225P

Interop 17

| NVIDIA MCX4121A-ACA 25 GbE RoCE CA | ←→ 25 GbE Cable Link Under Test | Broadcom BCM957414-P225P 25 GbE RoCE CA |

Interop 17

Company	Length Meters	AWG	Equalization	Connector Type	Broadcom RNIC	Cable Under Test	Broadcom RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
CONNPRO,Ind.	2	30	Copper - Unequalized	QSFP56	BCM957508-P1200G	RIHF7TF7T20001	BCM957508-P1200G	200	Pass	Pass	Pass	Pass
CONNPRO,Ind.	4	26	Copper - Unequalized	QSFP56		RIHF7TF7T40003		200	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP56		MCP1650-H001E30		200	Pass	Pass	Pass	Pass
NVIDIA	1.5	30	Copper - Unequalized	QSFP56		MCP1650-H01AE30		200	Pass	Pass	Pass	Pass
NVIDIA	2	26	Copper - Unequalized	QSFP56		MCP1650-H002E26		200	Pass	Pass	Pass	Pass
NVIDIA	2.5	26	Copper - Unequalized	QSFP56		MCP1650-H02AE26		200	Pass	Pass	Pass	Pass
NVIDIA	3	26	Copper - Unequalized	QSFP56		MCP1650-H003E26		200	Pass	Pass	Pass	Pass

Broadcom BCM957508-P1200G to Broadcom BCM957508-P1200G

Broadcom BCM957508-P1200G 200 GbE RoCE CA ← 200 GbE Cable Link Under Test → Broadcom BCM957508-P1200G 200 GbE RoCE CA
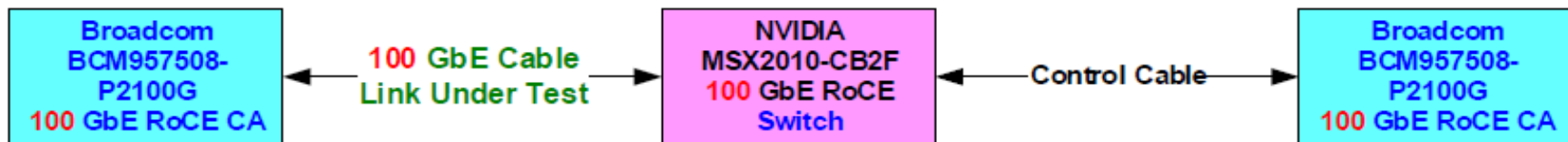
IBTA PF37 RoCE Interoperability
100 Gigabit Ethernet
Scenario 02

Company	Length Meters	AWG	Equalization	Connector Type	Broadcom RNIC	Cable Under Test	NVIDIA Switch	Broadcom RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
CONNPRO,Ind.	3	26	Copper - Unequalized	QSFP28		RIEF4TF4T30003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	30	NA	Fiber - Active	QSFP28		AIEAF7F7L30TXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	100	NA	Fiber - Active	QSFP28		AIECF7F7L10HXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2.5	30	Copper - Unequalized	QSFP28	BCM957508-P2100G	RIEF4TF4T25001	MSN2010-CB2F	BCM957508-P2100G	100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	5.5	26	Copper - Unequalized	QSFP28		RE4F4TF4T55003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2	30	Copper - Unequalized	QSFP56		RIHF7TF7T20001			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	4	26	Copper - Unequalized	QSFP56		RIHF7TF7T40003			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP56		MCP1650-H001E30			100	Pass	Pass	Pass	Pass
NVIDIA	1.5	30	Copper - Unequalized	QSFP56		MCP1650-H01AE30			100	Pass	Pass	Pass	Pass
NVIDIA	2	26	Copper - Unequalized	QSFP56		MCP1650-H002E26			100	Pass	Pass	Pass	Pass
NVIDIA	2.5	26	Copper - Unequalized	QSFP56		MCP1650-H02AE26			100	Pass	Pass	Pass	Pass
NVIDIA	3	26	Copper - Unequalized	QSFP56		MCP1650-H003E26			100	Pass	Pass	Pass	Pass
NVIDIA	50	N/A	Fiber - Active	QSFP56		MFS1S00-H050E			100	Pass	Pass	Pass	Pass
NVIDIA	100	N/A	Fiber - Active	QSFP56		MFS1S00-H100E			100	Pass	Pass	Pass	Pass
NVIDIA	0.5	30	Copper - Unequalized	QSFP28		MCP1600-E00AE30			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP28		MCP1600-E001E30			100	Pass	Pass	Pass	Pass
NVIDIA	4	26	Copper - Unequalized	QSFP28		MCP1600-E004E26			100	Pass	Pass	Pass	Pass

Broadcom BCM957508-P2100G to NVIDIA MSN2010 Switch to Broadcom BCM957508-P2100G

Broadcom BCM957508-P2100G 100 GbE RoCE CA ← 100 GbE Cable Link Under Test → NVIDIA MSX2010-CB2F 100 GbE RoCE Switch ← Control Cable → Broadcom BCM957508-P2100G 100 GbE RoCE CA
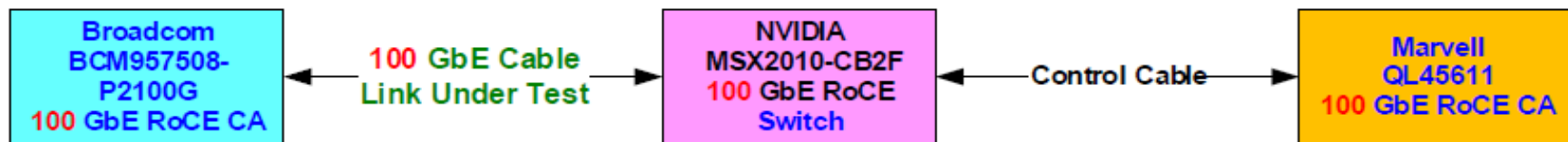
Company	Length Meters	AWG	Equalization	Connector Type	Broadcom RNIC	Cable Under Test	NVIDIA Switch	Marvell RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
CONNPRO,Ind.	3	26	Copper - Unequalized	QSFP28		RIEF4TF4T30003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	30	NA	Fiber - Active	QSFP28		AIEAF7F7L30TXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	100	NA	Fiber - Active	QSFP28		AIECF7F7L10HXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2.5	30	Copper - Unequalized	QSFP28	BCM957508-P2100G	RIEF4TF4T25001	MSN2010-CB2F	QL45611	100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	5.5	26	Copper - Unequalized	QSFP28		RE4F4TF4T55003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2	30	Copper - Unequalized	QSFP56		RIHF7TF7T20001			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	4	26	Copper - Unequalized	QSFP56		RIHF7TF7T40003			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP56		MCP1650-H001E30			100	Pass	Pass	Pass	Pass
NVIDIA	1.5	30	Copper - Unequalized	QSFP56		MCP1650-H01AE30			100	Pass	Pass	Pass	Pass
NVIDIA	2	26	Copper - Unequalized	QSFP56		MCP1650-H002E26			100	Pass	Pass	Pass	Pass
NVIDIA	2.5	26	Copper - Unequalized	QSFP56		MCP1650-H02AE26			100	Pass	Pass	Pass	Pass
NVIDIA	3	26	Copper - Unequalized	QSFP56		MCP1650-H003E26			100	Pass	Pass	Pass	Pass
NVIDIA	50	N/A	Fiber - Active	QSFP56		MFS1S00-H050E			100	Pass	Pass	Pass	Pass
NVIDIA	100	N/A	Fiber - Active	QSFP56		MFS1S00-H100E			100	Pass	Pass	Pass	Pass
NVIDIA	0.5	30	Copper - Unequalized	QSFP28		MCP1600-E00AE30			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP28		MCP1600-E001E30			100	Pass	Pass	Pass	Pass
NVIDIA	4	26	Copper - Unequalized	QSFP28		MCP1600-E004E26			100	Pass	Pass	Pass	Pass

Broadcom BCM957508-P2100G to NVIDIA MSN2010 Switch to Marvell QL45611

Broadcom BCM957508-P2100G 100 GbE RoCE CA → 100 GbE Cable Link Under Test → NVIDIA MSX2010-CB2F 100 GbE RoCE Switch ↔ Control Cable ↔ Marvell QL45611 100 GbE RoCE CA
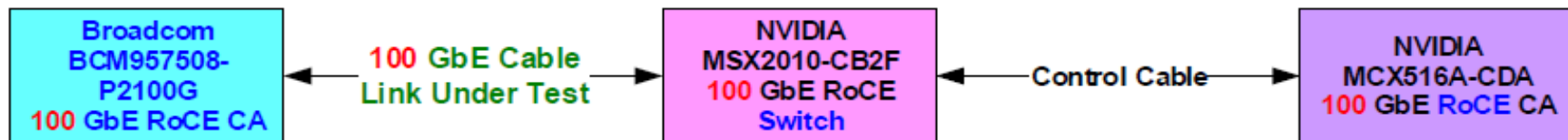
Company	Length Meters	AWG	Equalization	Connector Type	Broadcom RNIC	Cable Under Test	NVIDIA Switch	NVIDIA RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
CONNPRO,Ind.	3	26	Copper - Unequalized	QSFP28		RIEF4TF4T30003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	30	NA	Fiber - Active	QSFP28		AIEAF7F7L30TXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	100	NA	Fiber - Active	QSFP28		AIECF7F7L10HXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2.5	30	Copper - Unequalized	QSFP28	BCM957508-P2100G	RIEF4TF4T25001	MSN2010-CB2F	MCX516A-CDA	100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	5.5	26	Copper - Unequalized	QSFP28		RE4F4TF4T55003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2	30	Copper - Unequalized	QSFP56		RIHF7TF7T20001			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	4	26	Copper - Unequalized	QSFP56		RIHF7TF7T40003			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP56		MCP1650-H001E30			100	Pass	Pass	Pass	Pass
NVIDIA	1.5	30	Copper - Unequalized	QSFP56		MCP1650-H01AE30			100	Pass	Pass	Pass	Pass
NVIDIA	2	26	Copper - Unequalized	QSFP56		MCP1650-H002E26			100	Pass	Pass	Pass	Pass
NVIDIA	2.5	26	Copper - Unequalized	QSFP56		MCP1650-H02AE26			100	Pass	Pass	Pass	Pass
NVIDIA	3	26	Copper - Unequalized	QSFP56		MCP1650-H003E26			100	Pass	Pass	Pass	Pass
NVIDIA	50	N/A	Fiber - Active	QSFP56		MFS1S00-H050E			100	Pass	Pass	Pass	Pass
NVIDIA	100	N/A	Fiber - Active	QSFP56		MFS1S00-H100E			100	Pass	Pass	Pass	Pass
NVIDIA	0.5	30	Copper - Unequalized	QSFP28		MCP1600-E00AE30			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP28		MCP1600-E001E30			100	Pass	Pass	Pass	Pass
NVIDIA	4	26	Copper - Unequalized	QSFP28		MCP1600-E004E26			100	Pass	Pass	Pass	Pass

Broadcom BCM957508-P2100G to NVIDIA MSN2010 Switch to NVIDIA MCX516A-CDA

Broadcom BCM957508-P2100G 100 GbE RoCE CA ← 100 GbE Cable Link Under Test → NVIDIA MSX2010-CB2F 100 GbE RoCE Switch ← Control Cable → NVIDIA MCX516A-CDA 100 GbE RoCE CA
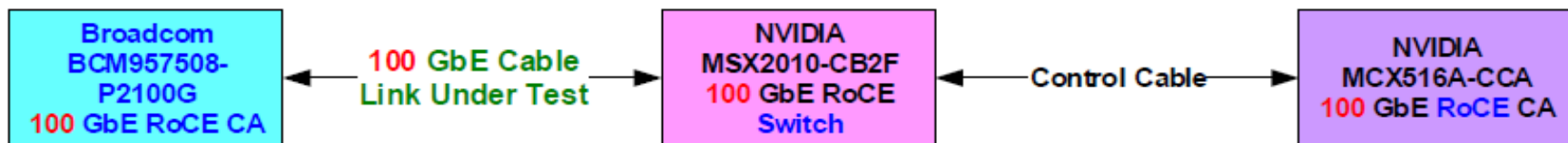
Company	Length Meters	AWG	Equalization	Connector Type	Broadcom RNIC	Cable Under Test	NVIDIA Switch	NVIDIA RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
CONNPRO,Ind.	3	26	Copper - Unequalized	QSFP28		RIEF4TF4T30003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	30	NA	Fiber - Active	QSFP28		AIEAF7F7L30TXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	100	NA	Fiber - Active	QSFP28		AIECF7F7L10HXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2.5	30	Copper - Unequalized	QSFP28	BCM957508-P2100G	RIEF4TF4T25001	MSN2010-CB2F	MCX516A-CCA	100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	5.5	26	Copper - Unequalized	QSFP28		RE4F4TF4T55003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2	30	Copper - Unequalized	QSFP56		RIHF7TF7T20001			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	4	26	Copper - Unequalized	QSFP56		RIHF7TF7T40003			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP56		MCP1650-H001E30			100	Pass	Pass	Pass	Pass
NVIDIA	1.5	30	Copper - Unequalized	QSFP56		MCP1650-H01AE30			100	Pass	Pass	Pass	Pass
NVIDIA	2	26	Copper - Unequalized	QSFP56		MCP1650-H002E26			100	Pass	Pass	Pass	Pass
NVIDIA	2.5	26	Copper - Unequalized	QSFP56		MCP1650-H02AE26			100	Pass	Pass	Pass	Pass
NVIDIA	3	26	Copper - Unequalized	QSFP56		MCP1650-H003E26			100	Pass	Pass	Pass	Pass
NVIDIA	50	N/A	Fiber - Active	QSFP56		MFS1S00-H050E			100	Pass	Pass	Pass	Pass
NVIDIA	100	N/A	Fiber - Active	QSFP56		MFS1S00-H100E			100	Pass	Pass	Pass	Pass
NVIDIA	0.5	30	Copper - Unequalized	QSFP28		MCP1600-E00AE30			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP28		MCP1600-E001E30			100	Pass	Pass	Pass	Pass
NVIDIA	4	26	Copper - Unequalized	QSFP28		MCP1600-E004E26			100	Pass	Pass	Pass	Pass

Broadcom BCM957508-P2100G to NVIDIA MSN2010 Switch to NVIDIA MCX516A-CCA

Broadcom BCM957508-P2100G 100 GbE RoCE CA ←— 100 GbE Cable Link Under Test —→ NVIDIA MSX2010-CB2F 100 GbE RoCE Switch ←— Control Cable —→ NVIDIA MCX516A-CCA 100 GbE RoCE CA
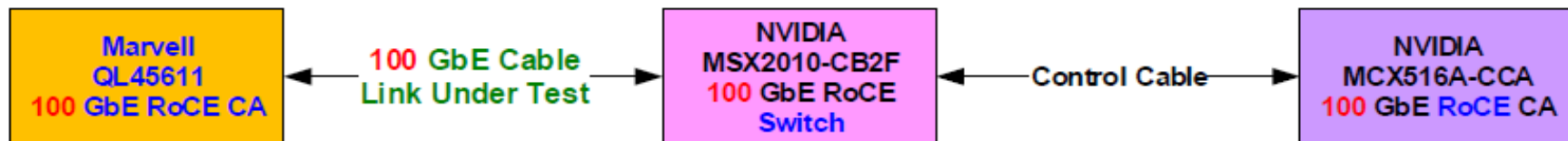
Company	Length Meters	AWG	Equalization	Connector Type	Marvell RNIC	Cable Under Test	NVIDIA Switch	NVIDIA RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
CONNPRO,Ind.	3	26	Copper - Unequalized	QSFP28		RIEF4TF4T30003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	30	NA	Fiber - Active	QSFP28		AIEAF7F7L30TXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	100	NA	Fiber - Active	QSFP28		AIECF7F7L10HXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2.5	30	Copper - Unequalized	QSFP28		RIEF4TF4T25001			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	5.5	26	Copper - Unequalized	QSFP28		RE4F4TF4T55003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2	30	Copper - Unequalized	QSFP56	QL45611	RIHF7TF7T20001	MSN2010-CB2F	MCX516A-CCA	100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	4	26	Copper - Unequalized	QSFP56		RIHF7TF7T40003			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP56		MCP1650-H001E30			100	Pass	Pass	Pass	Pass
NVIDIA	1.5	30	Copper - Unequalized	QSFP56		MCP1650-H01AE30			100	Pass	Pass	Pass	Pass
NVIDIA	2	26	Copper - Unequalized	QSFP56		MCP1650-H002E26			100	Pass	Pass	Pass	Pass
NVIDIA	2.5	26	Copper - Unequalized	QSFP56		MCP1650-H02AE26			100	Pass	Pass	Pass	Pass
NVIDIA	3	26	Copper - Unequalized	QSFP56		MCP1650-H003E26			100	Pass	Pass	Pass	Pass
NVIDIA	50	N/A	Fiber - Active	QSFP56		MFS1S00-H050E			100	Pass	Pass	Pass	Pass
NVIDIA	100	N/A	Fiber - Active	QSFP56		MFS1S00-H100E			100	Pass	Pass	Pass	Pass
NVIDIA	0.5	30	Copper - Unequalized	QSFP28		MCP1600-E00AE30			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP28		MCP1600-E001E30			100	Pass	Pass	Pass	Pass
NVIDIA	4	26	Copper - Unequalized	QSFP28		MCP1600-E004E26			100	Pass	Pass	Pass	Pass

Marvell QL45611 to NVIDIA MSN2010 Switch to NVIDIA MCX516A-CCA

Marvell QL45611 100 GbE RoCE CA ← 100 GbE Cable Link Under Test → NVIDIA MSX2010-CB2F 100 GbE RoCE Switch ← Control Cable → NVIDIA MCX516A-CCA 100 GbE RoCE CA
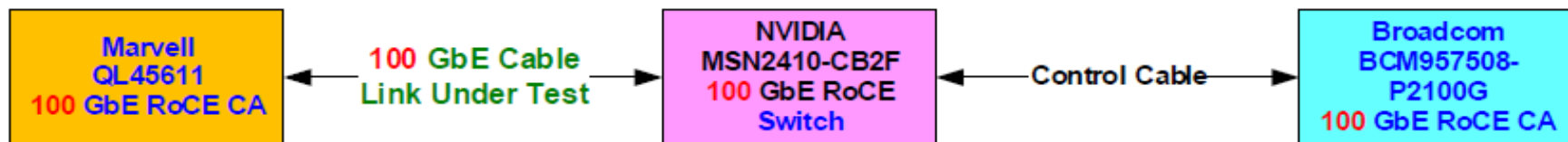
IBTA PF37 RoCE Interoperability
100 Gigabit Ethernet
Scenario 07

Company	Length Meters	AWG	Equalization	Connector Type	Marvell RNIC	Cable Under Test	NVIDIA Switch	Broadcom RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
CONNPRO,Ind.	3	26	Copper - Unequalized	QSFP28		RIEF4TF4T30003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	30	NA	Fiber - Active	QSFP28		AIEAF7F7L30TXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	100	NA	Fiber - Active	QSFP28		AIECF7F7L10HXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2.5	30	Copper - Unequalized	QSFP28	QL45611	RIEF4TF4T25001	MSN2410-CB2F	BCM957508-P2100G	100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	5.5	26	Copper - Unequalized	QSFP28		RE4F4TF4T55003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2	30	Copper - Unequalized	QSFP56		RIHF7TF7T20001			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	4	26	Copper - Unequalized	QSFP56		RIHF7TF7T40003			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP56		MCP1650-H001E30			100	Pass	Pass	Pass	Pass
NVIDIA	1.5	30	Copper - Unequalized	QSFP56		MCP1650-H01AE30			100	Pass	Pass	Pass	Pass
NVIDIA	2	26	Copper - Unequalized	QSFP56		MCP1650-H002E26			100	Pass	Pass	Pass	Pass
NVIDIA	2.5	26	Copper - Unequalized	QSFP56		MCP1650-H02AE26			100	Pass	Pass	Pass	Pass
NVIDIA	3	26	Copper - Unequalized	QSFP56		MCP1650-H003E26			100	Pass	Pass	Pass	Pass
NVIDIA	50	N/A	Fiber - Active	QSFP56		MFS1S00-H050E			100	Pass	Pass	Pass	Pass
NVIDIA	100	N/A	Fiber - Active	QSFP56		MFS1S00-H100E			100	Pass	Pass	Pass	Pass
NVIDIA	0.5	30	Copper - Unequalized	QSFP28		MCP1600-E00AE30			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP28		MCP1600-E001E30			100	Pass	Pass	Pass	Pass
NVIDIA	4	26	Copper - Unequalized	QSFP28		MCP1600-E004E26			100	Pass	Pass	Pass	Pass

Marvell QL45611 to NVIDIA MSN2410 Switch to Broadcom BCM957508-P2100G

Marvell QL45611 100 GbE RoCE CA ← 100 GbE Cable Link Under Test → NVIDIA MSN2410-CB2F 100 GbE RoCE Switch ← Control Cable → Broadcom BCM957508-P2100G 100 GbE RoCE CA
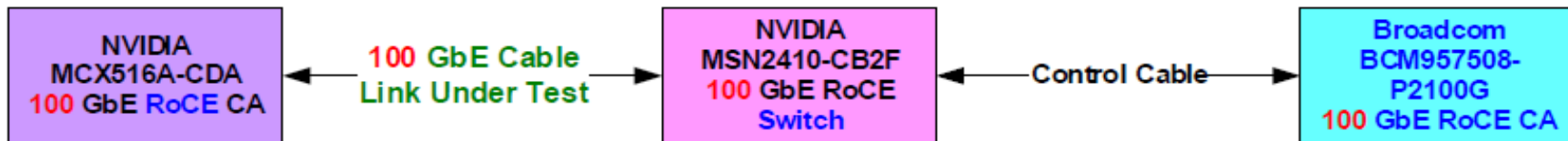
IBTA PF37 RoCE Interoperability
100 Gigabit Ethernet
Scenario 08

Company	Length Meters	AWG	Equalization	Connector Type	NVIDIA RNIC	Cable Under Test	NVIDIA Switch	Broadcom RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
CONNPRO,Ind.	3	26	Copper - Unequalized	QSFP28		RIEF4TF4T30003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	30	NA	Fiber - Active	QSFP28		AIEAF7F7L30TXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	100	NA	Fiber - Active	QSFP28		AIECF7F7L10HXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2.5	30	Copper - Unequalized	QSFP28		RIEF4TF4T25001			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	5.5	26	Copper - Unequalized	QSFP28	MCX516A-CDA	RE4F4TF4T55003	MSN2410-CB2F	BCM957508-P2100G	100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2	30	Copper - Unequalized	QSFP56		RIHF7TF7T20001			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	4	26	Copper - Unequalized	QSFP56		RIHF7TF7T40003			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP56		MCP1650-H001E30			100	Pass	Pass	Pass	Pass
NVIDIA	1.5	30	Copper - Unequalized	QSFP56		MCP1650-H01AE30			100	Pass	Pass	Pass	Pass
NVIDIA	2	26	Copper - Unequalized	QSFP56		MCP1650-H002E26			100	Pass	Pass	Pass	Pass
NVIDIA	2.5	26	Copper - Unequalized	QSFP56		MCP1650-H02AE26			100	Pass	Pass	Pass	Pass
NVIDIA	3	26	Copper - Unequalized	QSFP56		MCP1650-H003E26			100	Pass	Pass	Pass	Pass
NVIDIA	50	N/A	Fiber - Active	QSFP56		MFS1S00-H050E			100	Pass	Pass	Pass	Pass
NVIDIA	100	N/A	Fiber - Active	QSFP56		MFS1S00-H100E			100	Pass	Pass	Pass	Pass
NVIDIA	0.5	30	Copper - Unequalized	QSFP28		MCP1600-E00AE30			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP28		MCP1600-E001E30			100	Pass	Pass	Pass	Pass
NVIDIA	4	26	Copper - Unequalized	QSFP28		MCP1600-E004E26			100	Pass	Pass	Pass	Pass

NVIDIA MCX516A-CDA to NVIDIA MSN2410 Switch to Broadcom BCM957508-P2100G

NVIDIA MCX516A-CDA 100 GbE RoCE CA ← 100 GbE Cable Link Under Test → NVIDIA MSN2410-CB2F 100 GbE RoCE Switch ← Control Cable → Broadcom BCM957508-P2100G 100 GbE RoCE CA
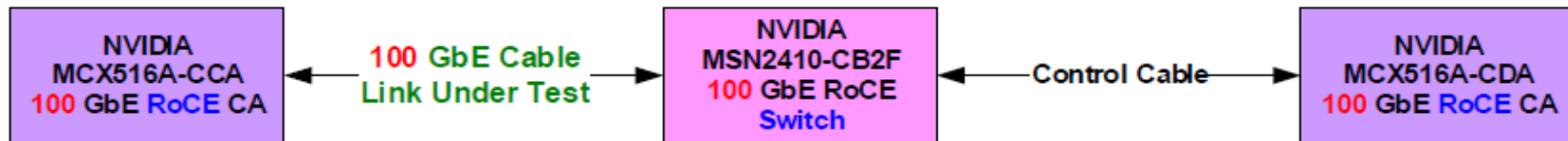
Company	Length Meters	AWG	Equalization	Connector Type	NVIDIA RNIC	Cable Under Test	NVIDIA Switch	NVIDIA RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
CONNPRO,Ind.	3	26	Copper - Unequalized	QSFP28		RIEF4TF4T30003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	30	NA	Fiber - Active	QSFP28		AIEAF7F7L30TXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	100	NA	Fiber - Active	QSFP28		AIECF7F7L10HXX			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2.5	30	Copper - Unequalized	QSFP28		RIEF4TF4T25001			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	5.5	26	Copper - Unequalized	QSFP28		RE4F4TF4T55003			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2	30	Copper - Unequalized	QSFP56		RIHF7TF7T20001			100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	4	26	Copper - Unequalized	QSFP56	MCX516A-CCA	RIHF7TF7T40003	MSN2410-CB2F	MCX516A-CDA	100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP56		MCP1650-H001E30			100	Pass	Pass	Pass	Pass
NVIDIA	1.5	30	Copper - Unequalized	QSFP56		MCP1650-H01AE30			100	Pass	Pass	Pass	Pass
NVIDIA	2	26	Copper - Unequalized	QSFP56		MCP1650-H002E26			100	Pass	Pass	Pass	Pass
NVIDIA	2.5	26	Copper - Unequalized	QSFP56		MCP1650-H02AE26			100	Pass	Pass	Pass	Pass
NVIDIA	3	26	Copper - Unequalized	QSFP56		MCP1650-H003E26			100	Pass	Pass	Pass	Pass
NVIDIA	50	N/A	Fiber - Active	QSFP56		MFS1S00-H050E			100	Pass	Pass	Pass	Pass
NVIDIA	100	N/A	Fiber - Active	QSFP56		MFS1S00-H100E			100	Pass	Pass	Pass	Pass
NVIDIA	0.5	30	Copper - Unequalized	QSFP28		MCP1600-E00AE30			100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP28		MCP1600-E001E30			100	Pass	Pass	Pass	Pass
NVIDIA	4	26	Copper - Unequalized	QSFP28		MCP1600-E004E26			100	Pass	Pass	Pass	Pass

NVIDIA MCX516A-CCA to NVIDIA MSN2410 Switch to NVIDIA MCX516A-CDA

NVIDIA MCX516A-CCA 100 GbE RoCE CA	← 100 GbE Cable Link Under Test →	NVIDIA MSN2410-CB2F 100 GbE RoCE Switch	← Control Cable →	NVIDIA MCX516A-CDA 100 GbE RoCE CA

IBTA PF37 RoCE Interoperability
100 Gigabit Ethernet
Scenario 10

Company	Length Meters	AWG	Equalization	Connector Type	Broadcom RNIC	Cable Under Test	NVIDIA RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
CONNPRO,Ind.	3	26	Copper - Unequalized	QSFP28		RIEF4TF4T30003		100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	30	NA	Fiber - Active	QSFP28		AIEAF7F7L30TXX		100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	100	NA	Fiber - Active	QSFP28		AIECF7F7L10HXX		100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2.5	30	Copper - Unequalized	QSFP28	BCM957508-P2100G	RIEF4TF4T25001	MCX516-CCA	100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	5.5	26	Copper - Unequalized	QSFP28		RE4F4TF4T55003		100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2	30	Copper - Unequalized	QSFP56		RIHF7TF7T20001		100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	4	26	Copper - Unequalized	QSFP56		RIHF7TF7T40003		100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP56		MCP1650-H001E30		100	Pass	Pass	Pass	Pass
NVIDIA	1.5	30	Copper - Unequalized	QSFP56		MCP1650-H01AE30		100	Pass	Pass	Pass	Pass
NVIDIA	2	26	Copper - Unequalized	QSFP56		MCP1650-H002E26		100	Pass	Pass	Pass	Pass
NVIDIA	2.5	26	Copper - Unequalized	QSFP56		MCP1650-H02AE26		100	Pass	Pass	Pass	Pass
NVIDIA	3	26	Copper - Unequalized	QSFP56		MCP1650-H003E26		100	Pass	Pass	Pass	Pass
NVIDIA	50	N/A	Fiber - Active	QSFP56		MFS1S00-H050E		100	Pass	Pass	Pass	Pass
NVIDIA	100	N/A	Fiber - Active	QSFP56		MFS1S00-H100E		100	Pass	Pass	Pass	Pass
NVIDIA	0.5	30	Copper - Unequalized	QSFP28		MCP1600-E00AE30		100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP28		MCP1600-E001E30		100	Pass	Pass	Pass	Pass
NVIDIA	4	26	Copper - Unequalized	QSFP28		MCP1600-E004E26		100	Pass	Pass	Pass	Pass

Broadcom BCM957508-P2100G to NVIDIA MCX516A-CCA

Broadcom BCM957508-P2100G 100 GbE RoCE CA ◄── 100 GbE Cable Link Under Test ──► NVIDIA MCX516A-CCA 100 GbE RoCE CA

IBTA PF37 RoCE Interoperability
100 Gigabit Ethernet
Scenario 11

Company	Length Meters	AWG	Equalization	Connector Type	Marvell RNIC	Cable Under Test	Broadcom RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
CONNPRO,Ind.	3	26	Copper - Unequalized	QSFP28		RIEF4TF4T30003		100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	30	NA	Fiber - Active	QSFP28		AIEAF7F7L30TXX		100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	100	NA	Fiber - Active	QSFP28		AIECF7F7L10HXX		100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2.5	30	Copper - Unequalized	QSFP28		RIEF4TF4T25001		100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	5.5	26	Copper - Unequalized	QSFP28		RE4F4TF4T55003		100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2	30	Copper - Unequalized	QSFP56	QL45611	RIHF7TF7T20001	BCM957508-P2100G	100	Pass	Pass	Pass	Pass
CONNPRO,Ind.	4	26	Copper - Unequalized	QSFP56		RIHF7TF7T40003		100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP56		MCP1650-H001E30		100	Pass	Pass	Pass	Pass
NVIDIA	1.5	30	Copper - Unequalized	QSFP56		MCP1650-H01AE30		100	Pass	Pass	Pass	Pass
NVIDIA	2	26	Copper - Unequalized	QSFP56		MCP1650-H002E26		100	Pass	Pass	Pass	Pass
NVIDIA	2.5	26	Copper - Unequalized	QSFP56		MCP1650-H02AE26		100	Pass	Pass	Pass	Pass
NVIDIA	3	26	Copper - Unequalized	QSFP56		MCP1650-H003E26		100	Pass	Pass	Pass	Pass
NVIDIA	50	N/A	Fiber - Active	QSFP56		MFS1S00-H050E		100	Pass	Pass	Pass	Pass
NVIDIA	100	N/A	Fiber - Active	QSFP56		MFS1S00-H100E		100	Pass	Pass	Pass	Pass
NVIDIA	0.5	30	Copper - Unequalized	QSFP28		MCP1600-E00AE30		100	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP28		MCP1600-E001E30		100	Pass	Pass	Pass	Pass
NVIDIA	4	26	Copper - Unequalized	QSFP28		MCP1600-E004E26		100	Pass	Pass	Pass	Pass

Marvell QL45611 to Broadcom BCM957508-P2100G

Marvell QL45611 100 GbE RoCE CA ←→ 100 GbE Cable Link Under Test ←→ Broadcom BCM957508-P2100G 100 GbE RoCE CA
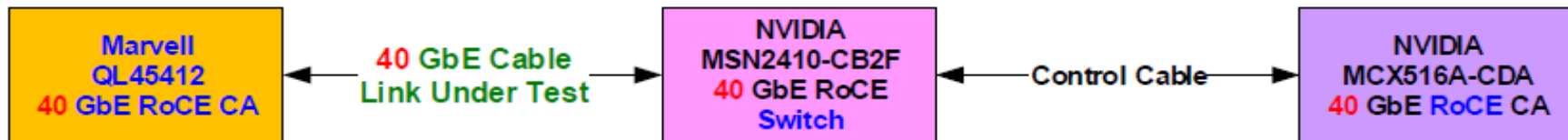
IBTA PF37 RoCE Interoperability
40 Gigabit Ethernet
Scenario 12

Company	Length Meters	AWG	Equalization	Connector Type	Marvell RNIC	Cable Under Test	NVIDIA Switch	NVIDIA RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
CONNPRO,Ind.	3	26	Copper - Unequalized	QSFP28		RIEF4TF4T30003			40	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2.5	30	Copper - Unequalized	QSFP28		RIEF4TF4T25001			40	Pass	Pass	Pass	Pass
CONNPRO,Ind.	5.5	26	Copper - Unequalized	QSFP28		RE4F4TF4T55003			40	Pass	Pass	Pass	Pass
CONNPRO,Ind.	2	30	Copper - Unequalized	QSFP56		RIHF7TF7T20001			40	Pass	Pass	Pass	Pass
CONNPRO,Ind.	4	26	Copper - Unequalized	QSFP56		RIHF7TF7T40003			40	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP56	QL45412	MCP1650-H001E30	MSN2410-CB2F	MCX516A-CDA	40	Pass	Pass	Pass	Pass
NVIDIA	1.5	30	Copper - Unequalized	QSFP56		MCP1650-H01AE30			40	Pass	Pass	Pass	Pass
NVIDIA	2	26	Copper - Unequalized	QSFP56		MCP1650-H002E26			40	Pass	Pass	Pass	Pass
NVIDIA	2.5	26	Copper - Unequalized	QSFP56		MCP1650-H02AE26			40	Pass	Pass	Pass	Pass
NVIDIA	3	26	Copper - Unequalized	QSFP56		MCP1650-H003E26			40	Pass	Pass	Pass	Pass
NVIDIA	50	N/A	Fiber - Active	QSFP56		MFS1S00-H050E			40	Pass	Pass	Pass	Pass
NVIDIA	100	N/A	Fiber - Active	QSFP56		MFS1S00-H100E			40	Pass	Pass	Pass	Pass
NVIDIA	0.5	30	Copper - Unequalized	QSFP28		MCP1600-E00AE30			40	Pass	Pass	Pass	Pass
NVIDIA	1	30	Copper - Unequalized	QSFP28		MCP1600-E001E30			40	Pass	Pass	Pass	Pass
NVIDIA	4	26	Copper - Unequalized	QSFP28		MCP1600-E004E26			40	Pass	Pass	Pass	Pass

Marvell QL45412 to NVIDIA MSN2410 Switch to NVIDIA MCX516A-CDA

Marvell QL45412 40 GbE RoCE CA	← 40 GbE Cable Link Under Test →	NVIDIA MSN2410-CB2F 40 GbE RoCE Switch	← Control Cable →	NVIDIA MCX516A-CDA 40 GbE RoCE CA

Company	Length Meters	AWG	Equalization	Connector Type	Broadcom RNIC	Cable Under Test	NVIDIA Switch	NVIDIA RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
Known Good Cable	1	28	Copper - Unequalized	QSFP28	BCM957414-P225P	KGC-PF37-1	MSN2410-CB2F	MCX4121A-ACA	25	Pass	Pass	Pass	Pass
Known Good Cable	1.5	28	Copper - Unequalized	QSFP28		KGC-PF37-2			25	Pass	Pass	Pass	Pass
Known Good Cable	2	30	Copper - Unequalized	QSFP28		KGC-PF37-3			25	Pass	Pass	Pass	Pass
Known Good Cable	2.5	30	Copper - Unequalized	QSFP28		KGC-PF37-4			25	Pass	Pass	Pass	Pass
Known Good Cable	2.5	30	Copper - Unequalized	QSFP28		KGC-PF37-5			25	Pass	Pass	Pass	Pass

Broadcom BCM957414-P225P to NVIDIA MSN2410 Switch to NVIDIA MCX4121A-ACA

Broadcom BCM957414-P225P 25 GbE RoCE CA ← 25 GbE Cable Link Under Test → NVIDIA MSN2410-CB2F 25 GbE RoCE Switch ← Control Cable → NVIDIA MCX4121A-ACA 25 GbE RoCE CA
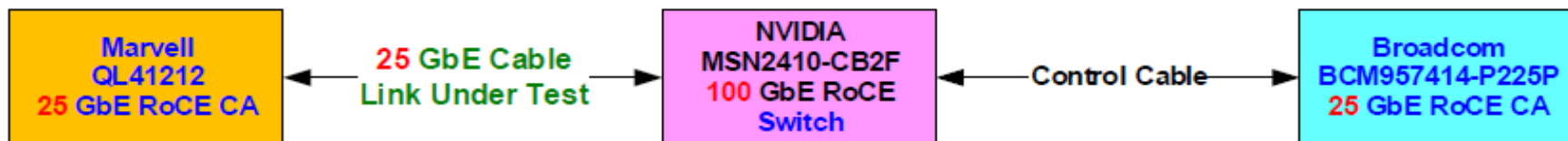
IBTA PF37 RoCE Interoperability
25 Gigabit Ethernet
Scenario 14

Company	Length Meters	AWG	Equalization	Connector Type	Marvell RNIC	Cable Under Test	NVIDIA Switch	Broadcom RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
Known Good Cable	1	28	Copper - Unequalized	QSFP28	QL41212	KGC-PF37-1	MSN2410-CB2F	BCM957414-P225P	25	Pass	Pass	Pass	Pass
Known Good Cable	1.5	28	Copper - Unequalized	QSFP28		KGC-PF37-2			25	Pass	Pass	Pass	Pass
Known Good Cable	2	30	Copper - Unequalized	QSFP28		KGC-PF37-3			25	Pass	Pass	Pass	Pass
Known Good Cable	2.5	30	Copper - Unequalized	QSFP28		KGC-PF37-4			25	Pass	Pass	Pass	Pass
Known Good Cable	2.5	30	Copper - Unequalized	QSFP28		KGC-PF37-5			25	Pass	Pass	Pass	Pass

Marvell QL41212 to NVIDIA MSN2410 Switch to Broadcom BCM957414-P225P

Marvell QL41212 25 GbE RoCE CA ← 25 GbE Cable Link Under Test → NVIDIA MSN2410-CB2F 100 GbE RoCE Switch ← Control Cable → Broadcom BCM957414-P225P 25 GbE RoCE CA

IBTA PF37 RoCE Interoperability
25 Gigabit Ethernet
Scenario 15

Company	Length Meters	AWG	Equalization	Connector Type	Marvell RNIC	Cable Under Test	NVIDIA Switch	NVIDIA RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
Known Good Cable	1	28	Copper - Unequalized	QSFP28		KGC-PF37-1			25	Pass	Pass	Pass	Pass
Known Good Cable	1.5	28	Copper - Unequalized	QSFP28		KGC-PF37-2			25	Pass	Pass	Pass	Pass
Known Good Cable	2	30	Copper - Unequalized	QSFP28	QL45212	KGC-PF37-3	MSN2010-CB2F	MCX4121A-ACA	25	Pass	Pass	Pass	Pass
Known Good Cable	2.5	30	Copper - Unequalized	QSFP28		KGC-PF37-4			25	Pass	Pass	Pass	Pass
Known Good Cable	2.5	30	Copper - Unequalized	QSFP28		KGC-PF37-5			25	Pass	Pass	Pass	Pass

Marvell QL45212 to NVIDIA MSN2010 Switch to NVIDIA MCX4121A-ACA

IBTA PF37 RoCE Interoperability
25 Gigabit Ethernet
Scenario 16

Company	Length Meters	AWG	Equalization	Connector Type	Broadcom RNIC	Cable Under Test	Marvell RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
Known Good Cable	1	28	Copper - Unequalized	QSFP28	BCM957414-P225P	KGC-PF37-1	QL41234	25	Pass	Pass	Pass	Pass
Known Good Cable	1.5	28	Copper - Unequalized	QSFP28		KGC-PF37-2		25	Pass	Pass	Pass	Pass
Known Good Cable	2	30	Copper - Unequalized	QSFP28		KGC-PF37-3		25	Pass	Pass	Pass	Pass
Known Good Cable	2.5	30	Copper - Unequalized	QSFP28		KGC-PF37-4		25	Pass	Pass	Pass	Pass
Known Good Cable	2.5	30	Copper - Unequalized	QSFP28		KGC-PF37-5		25	Pass	Pass	Pass	Pass

Broadcom BCM957414-P225P to Marvell QL41234

Broadcom BCM957414-P225P 25 GbE RoCE CA ← 25 GbE Cable Link Under Test → Marvell QL41234 25 GbE RoCE CA

IBTA PF37 RoCE Interoperability
25 Gigabit Ethernet
Scenario 17

Company	Length Meters	AWG	Equalization	Connector Type	NVIDIA RNIC	Cable Under Test	Broadcom RNIC	Link Speed	Device Link	SFI_Perf Testing	Open MPI + IMB Testing	Overall Result
Known Good Cable	1	28	Copper - Unequalized	QSFP28	MCX4121A-ACA	KGC-PF37-1	BCM957414-P225P	25	Pass	Pass	Pass	Pass
Known Good Cable	1.5	28	Copper - Unequalized	QSFP28		KGC-PF37-2		25	Pass	Pass	Pass	Pass
Known Good Cable	2	30	Copper - Unequalized	QSFP28		KGC-PF37-3		25	Pass	Pass	Pass	Pass
Known Good Cable	2.5	30	Copper - Unequalized	QSFP28		KGC-PF37-4		25	Pass	Pass	Pass	Pass
Known Good Cable	2.5	30	Copper - Unequalized	QSFP28		KGC-PF37-5		25	Pass	Pass	Pass	Pass

NVIDIA MCX4121A-ACA to Broadcom BCM957414-P225P

NVIDIA
MCX4121A-ACA
25 GbE RoCE CA

25 GbE Cable
Link Under Test

Broadcom
BCM957414-P225P
25 GbE RoCE CA