



FTBx-88260 Report

| K-20 Layer-2 Test Results |

FAIL

Report Header:	K-20 Layer-2 Test Results
Report Title:	K-20 Layer-2 Test Results
Report Date:	5/12/2025 3:26:21 PM
Type:	RFC 2544

Job Information

Job ID:	RTASK4158337
Circuit ID:	Lumen: 04/KXGS/816785//PN
Contractor Name:	K-20
Customer Name:	kent-k12
Operator Name:	kithc
Comment:	kent-k12 RFC 2544

Table of contents

SUMMARY	1
TEST RESULTS	9
TEST SETUP	18
FUNCTIONS	18
SYSTEM INFORMATION	23
LOGGER	27

SUMMARY

Results Summary

Test Status	
Throughput	Completed 00d:00:08:11
Back-to-Back	Completed 00d:00:18:01
Frame Loss	Completed 00d:00:10:36
Latency	Completed 00d:00:01:16
Pass/Fail Verdict	FAIL
Start Time	5/12/2025 02:47:31 PM
Test Recovery	0

RFC 2544

Pass/Fail Verdict	
Throughput	FAIL
Back-to-Back	FAIL
Frame Loss	FAIL
Latency	PASS

Throughput				
	(Mbit/s)			(Frame/s)
	Layer			
	All	Ethernet	IP	
64	13749.9	10476.1	7529.7	20461307.5741
128	12874.9	11135.1	9569.2	10874154.8877
256	14499.9	13449.2	12503.6	6567027.7333
512	14999.9	14436.0	13928.5	3524435.4183
1024	14499.9	14222.2	13972.2	1736110.7800
1280	14999.9	14769.2	14561.5	1442307.4173
1518	13874.9	13694.5	13532.1	1127681.8315

Back-to-Back				
	(Mbit/s)			(f/burst)
	Layer			
	All	Ethernet	IP	
64	4.3	3.3	2.3	6513
128	6.1	5.3	4.5	5216
256	6.0	5.6	5.2	2753
512	7.8	7.5	7.2	1838
1024	9.3	9.1	9.0	1120
1280	8.8	8.6	8.5	848
1518	8.6	8.5	8.4	701

	Frame Loss (%, 100.0000% Step)	Latency (ms, Cut Through) Mode
64	85.355	1.31431
128	83.575	1.30220
256	82.222	1.30329
512	82.448	1.30542
1024	82.939	1.33611
1280	82.794	1.30354
1518	82.517	1.30502

RX Power Level		
	Min	Max
Power Range (dBm)	-12.60	4.50
Optical Lane	RX Power Level (dBm)	
	Min	Max
0	0.88	0.95
1	0.66	0.76
2	-0.24	-0.14
3	-0.01	0.08

RX Frequency		
CAUI-4 Lane	Frequency Offset (ppm)	
	Max Negative Offset	Max Positive Offset
0	0.0	0.2
1	0.0	0.2
2	0.0	0.2
3	0.0	0.2

Alarms/Errors

Alarms/Errors List	
Active/Historical Alarms/Errors	None

Interface				
Optical Lane	LOS	CAUI-4 Lane	LOC Lane	Frequency
	Seconds		Seconds	Seconds
0	0	0	0	0
1	0	1	0	0
2	0	2	0	0
3	0	3	0	0

Clock Sync	
Alarm	Seconds
LOC	0

Ethernet	
Alarms	Seconds
Link Down	0
Local Fault Detected	0
Local Fault Received	0
Remote Fault	0
Hi-BER	0

Errors	Seconds	Count	Rate
FCS	0	0	0.00E00
Jabber	0	0	0.00E00
Oversize	Disabled		
Runt	0	0	0.00E00
Undersize	0	0	0.00E00
Total		0	

PCS Lanes	
Alarms	Seconds
LOA	0
Invalid Mapping	0

PCS Lanes			
PCS Lane	LOBL	LOAML	Excessive Skew
Alarms	Seconds	Seconds	Seconds
0	0	0	0
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	0	0	0
18	0	0	0
19	0	0	0
Skew Alarm Threshold (bits)		928	

PCS Lanes						
PCS Lane	Block			Inv. Marker		
Errors	Seconds	Count	Rate	Seconds	Count	Rate
0	0	0	0.00E00	0	0	0.00E00
1	0	0	0.00E00	0	0	0.00E00
2	0	0	0.00E00	0	0	0.00E00
3	0	0	0.00E00	0	0	0.00E00
4	0	0	0.00E00	0	0	0.00E00
5	0	0	0.00E00	0	0	0.00E00
6	0	0	0.00E00	0	0	0.00E00
7	0	0	0.00E00	0	0	0.00E00
8	0	0	0.00E00	0	0	0.00E00
9	0	0	0.00E00	0	0	0.00E00
10	0	0	0.00E00	0	0	0.00E00
11	0	0	0.00E00	0	0	0.00E00
12	0	0	0.00E00	0	0	0.00E00
13	0	0	0.00E00	0	0	0.00E00
14	0	0	0.00E00	0	0	0.00E00
15	0	0	0.00E00	0	0	0.00E00
16	0	0	0.00E00	0	0	0.00E00
17	0	0	0.00E00	0	0	0.00E00
18	0	0	0.00E00	0	0	0.00E00
19	0	0	0.00E00	0	0	0.00E00

PCS Lanes			
PCS Lane	BIP-8		
	Seconds	Count	Rate
0	0	0	0.00E00
1	0	0	0.00E00
2	0	0	0.00E00
3	0	0	0.00E00
4	0	0	0.00E00
5	0	0	0.00E00
6	0	0	0.00E00
7	0	0	0.00E00
8	0	0	0.00E00
9	0	0	0.00E00
10	0	0	0.00E00
11	0	0	0.00E00
12	0	0	0.00E00
13	0	0	0.00E00
14	0	0	0.00E00
15	0	0	0.00E00
16	0	0	0.00E00
17	0	0	0.00E00
18	0	0	0.00E00
19	0	0	0.00E00

IP/UDP			
Errors	Seconds	Count	Rate
IP Checksum	0	0	0.00E00
UDP Checksum	0	0	0.00E00
Total		0	

Setup Summary

Application Type	RFC 2544
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Topology	Single Port
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Interface	Port B1
Interface/Rate	100GE (4 Lanes) [103.125 Gbit/s]
PHY Type	LR4/ER4
Connector	QSFP28

Flow Control	None
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Framing: MAC/IP/UDP

IP Version	IPv4
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	MAC	IP Address	UDP Port
Source	00:03:01:F8:88:FC	10.112.0.1 / 255.255.255.0	49184
Destination	00:03:01:F8:7D:F1	10.112.0.100	7

EtherType	0x0800
Automatic IP (DHCP)	Disabled
TTL	128
TOS	0x00
Default Gateway	Disabled

RFC 2544

Frame Size Distribution (Bytes)				
64	128	256	512	1024
1280	1518			

Enabled Subtests			
Throughput	Max. Rate (%)	Threshold (%)	Accuracy (%)
	100.0000	100.0	1.00
Back-to-Back	Burst Time (MM:SS)	Threshold (%)	Accuracy (Frames)
	00:01	100.0	1
Frame Loss	Max. Rate (%)	Threshold (%)	Granularity (%)
	100.0000	0.1	10
Latency	Max. Rate (%)		Threshold (ms)
	100.0000		125.00000

TEST RESULTS

Ethernet Traffic

Frame Type	TX Count	RX Count
Multicast	0	82
Broadcast	341	0
Unicast	3664208310	1171998458
Non-Unicast	341	82
Total	3664208651	1171998540

Frame Size (Bytes)	RX Count	%
< 64	0	0.0
64	480998467	41.0
65 - 127	0	0.0
128 - 255	325124192	27.7
256 - 511	171437953	14.6
512 - 1023	83510241	7.1
1024 - 1518	110927687	9.4
> 1518	0	0.0
Total	1171998540	

Flow Control Monitoring

Frame Count	
Pause Frames	0
Abort Frames	0
Frames RX	0
Frames TX	0

Pause Time (Quanta)	
Total Pause Time	
Last Pause Time	
Minimum Pause Time	
Maximum Pause Time	

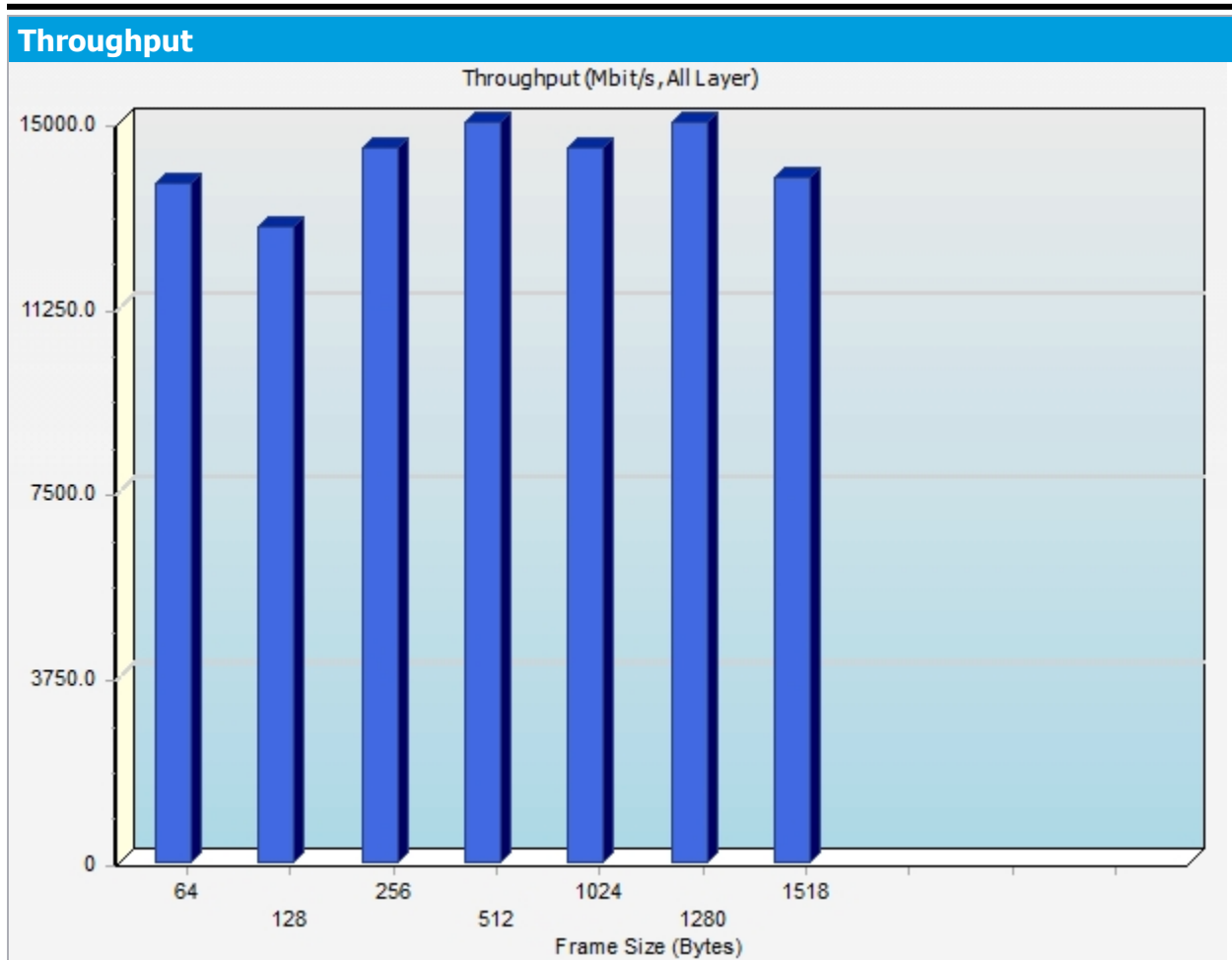
RFC 2544

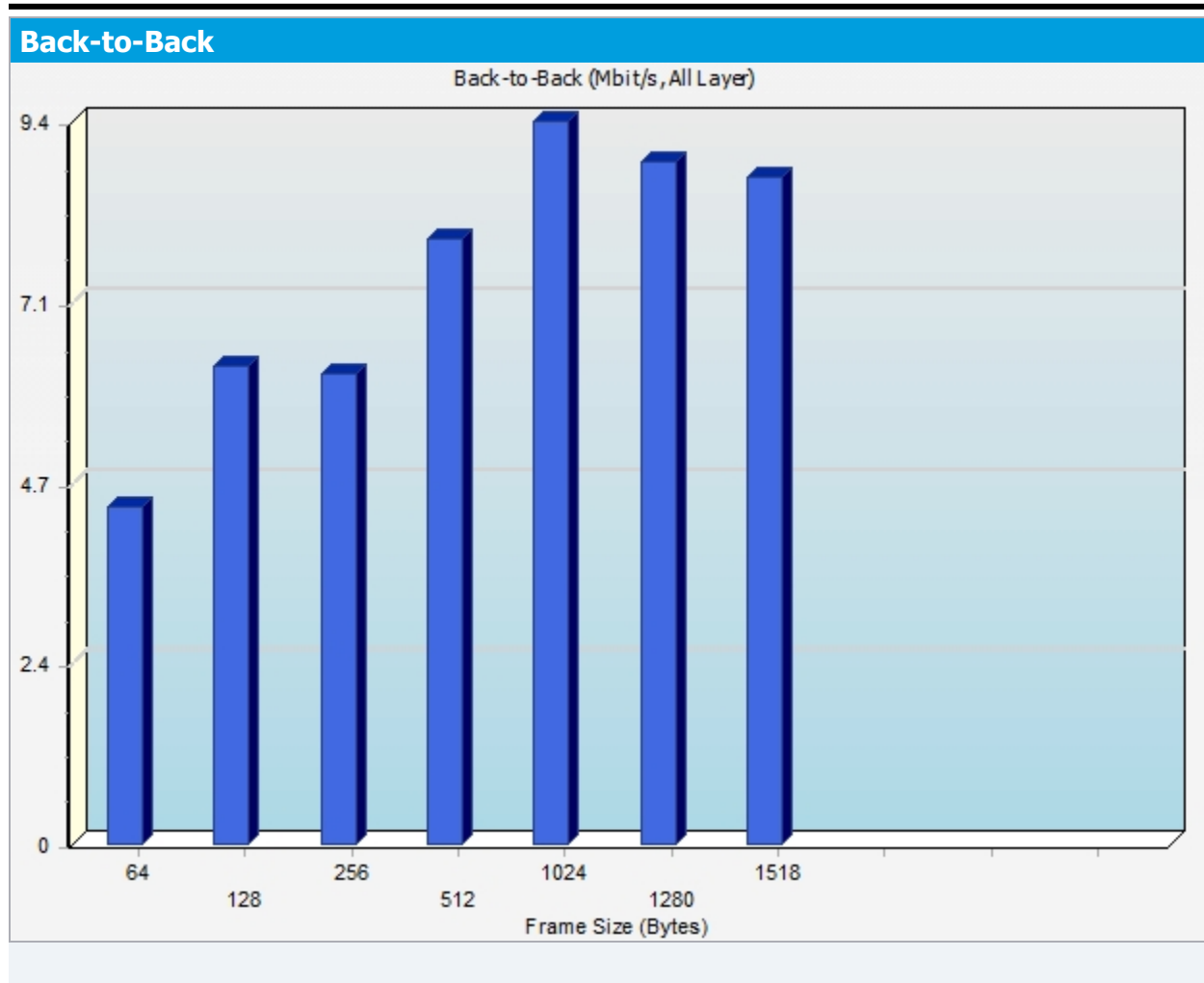
Pass/Fail Verdict	
Throughput	FAIL
Back-to-Back	FAIL
Frame Loss	FAIL
Latency	PASS

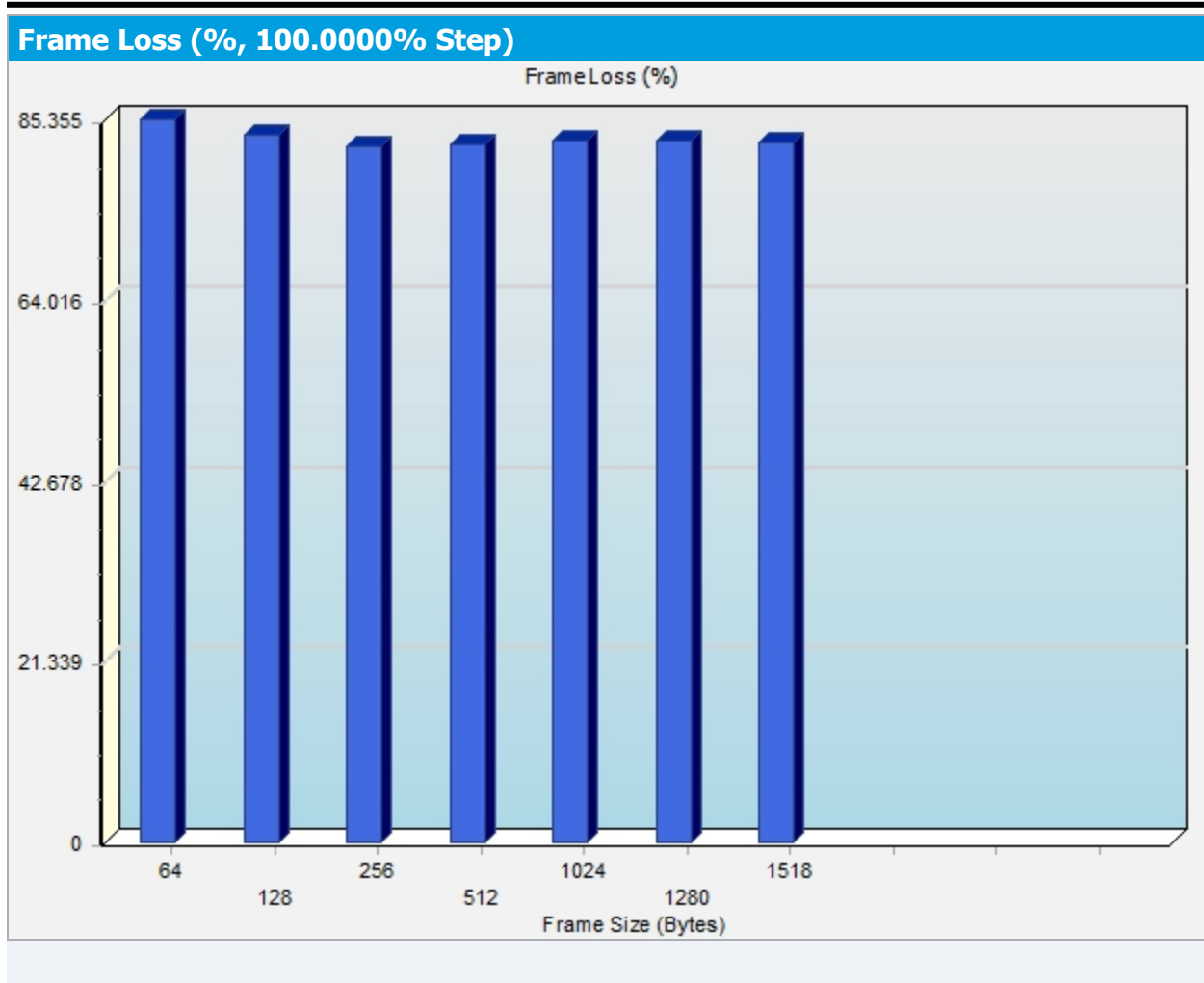
		Throughput			
		(Mbit/s)			(Frame/s)
		Layer			
		All	Ethernet	IP	
64	Min.	13749.9	10476.1	7529.7	20461307.5741
	Max.	13749.9	10476.1	7529.7	20461307.5741
	Avg.	13749.9	10476.1	7529.7	20461307.5741
128	Min.	12874.9	11135.1	9569.2	10874154.8877
	Max.	12874.9	11135.1	9569.2	10874154.8877
	Avg.	12874.9	11135.1	9569.2	10874154.8877
256	Min.	14499.9	13449.2	12503.6	6567027.7333
	Max.	14499.9	13449.2	12503.6	6567027.7333
	Avg.	14499.9	13449.2	12503.6	6567027.7333
512	Min.	14999.9	14436.0	13928.5	3524435.4183
	Max.	14999.9	14436.0	13928.5	3524435.4183
	Avg.	14999.9	14436.0	13928.5	3524435.4183
1024	Min.	14499.9	14222.2	13972.2	1736110.7800
	Max.	14499.9	14222.2	13972.2	1736110.7800
	Avg.	14499.9	14222.2	13972.2	1736110.7800
1280	Min.	14999.9	14769.2	14561.5	1442307.4173
	Max.	14999.9	14769.2	14561.5	1442307.4173
	Avg.	14999.9	14769.2	14561.5	1442307.4173
1518	Min.	13874.9	13694.5	13532.1	1127681.8315
	Max.	13874.9	13694.5	13532.1	1127681.8315
	Avg.	13874.9	13694.5	13532.1	1127681.8315

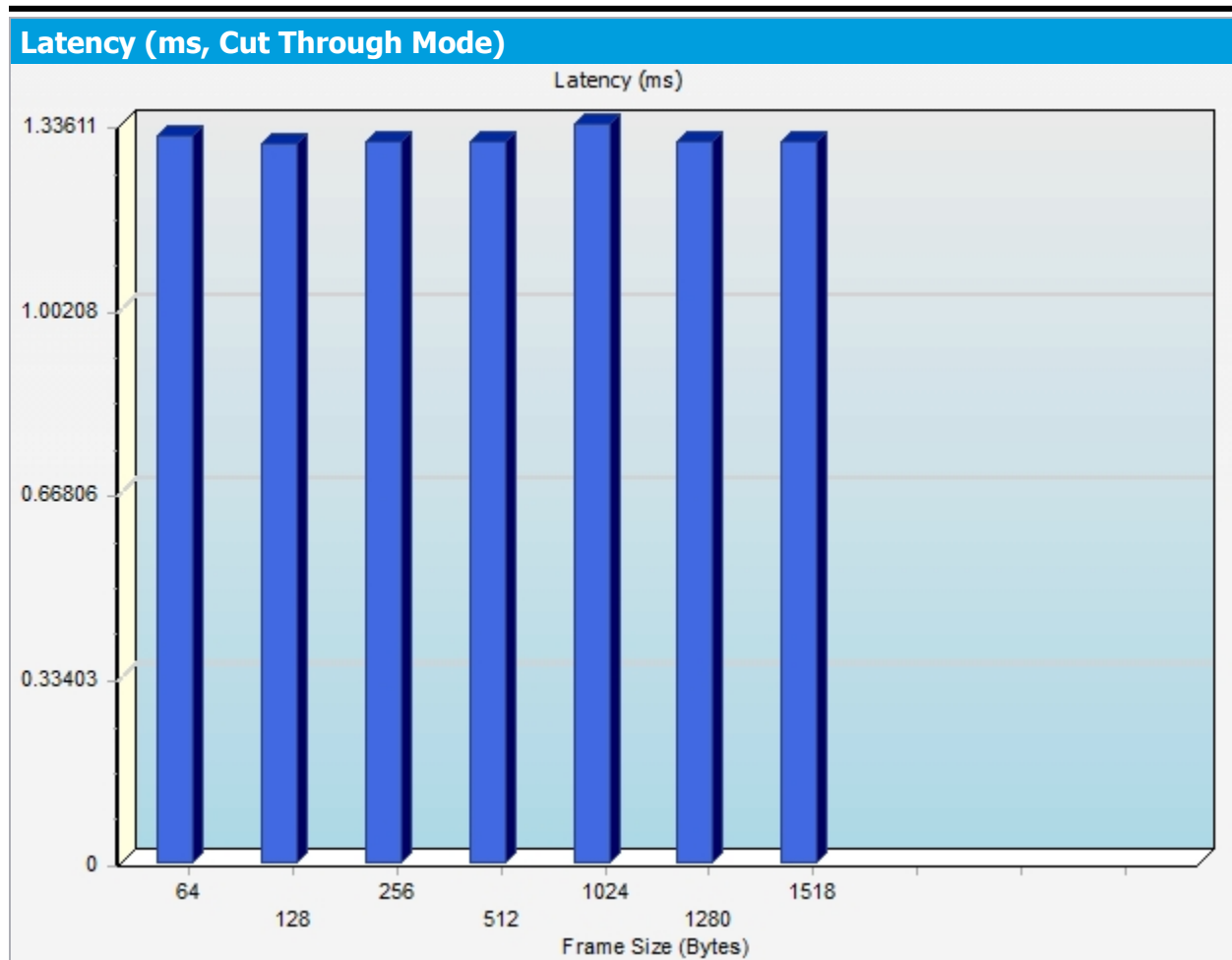
		Back-to-Back			
		(Mbit/s)			(f/burst)
		Layer			
		All	Ethernet	IP	
64	Min.	4.3	3.3	2.3	6513
	Max.	4.3	3.3	2.3	6513
	Avg.	4.3	3.3	2.3	6513
128	Min.	6.1	5.3	4.5	5216
	Max.	6.1	5.3	4.5	5216
	Avg.	6.1	5.3	4.5	5216
256	Min.	6.0	5.6	5.2	2753
	Max.	6.0	5.6	5.2	2753
	Avg.	6.0	5.6	5.2	2753
512	Min.	7.8	7.5	7.2	1838
	Max.	7.8	7.5	7.2	1838
	Avg.	7.8	7.5	7.2	1838
1024	Min.	9.3	9.1	9.0	1120
	Max.	9.3	9.1	9.0	1120
	Avg.	9.3	9.1	9.0	1120
1280	Min.	8.8	8.6	8.5	848
	Max.	8.8	8.6	8.5	848
	Avg.	8.8	8.6	8.5	848
1518	Min.	8.6	8.5	8.4	701
	Max.	8.6	8.5	8.4	701
	Avg.	8.6	8.5	8.4	701

		Frame Loss (%, 100.0000% Step)	Latency (ms, Cut Through) Mode
64	Min.	85.355	1.31431
	Max.	85.355	1.31431
	Avg.	85.355	1.31431
128	Min.	83.575	1.30220
	Max.	83.575	1.30220
	Avg.	83.575	1.30220
256	Min.	82.222	1.30329
	Max.	82.222	1.30329
	Avg.	82.222	1.30329
512	Min.	82.448	1.30542
	Max.	82.448	1.30542
	Avg.	82.448	1.30542
1024	Min.	82.939	1.33611
	Max.	82.939	1.33611
	Avg.	82.939	1.33611
1280	Min.	82.794	1.30354
	Max.	82.794	1.30354
	Avg.	82.794	1.30354
1518	Min.	82.517	1.30502
	Max.	82.517	1.30502
	Avg.	82.517	1.30502









TEST SETUP

Clock Synchronization	
Clock Mode	Internal

RFC 2544

Frame Size Distribution (Bytes)				
64	128	256	512	1024
1280	1518			

Enabled Subtests						
Throughput	Max. Rate (%)	Trial Duration (MM:SS)	Trials	Accuracy (%)	Acceptable Errors	Validations
	100.0000	00:01	1	1.00	0	1
Back-to-Back		Burst Time (MM:SS)	Trials	Accuracy (Frames)	Acceptable Errors	Bursts
		00:01	1	1	0	1
Frame Loss	Max. Rate (%)	Trial Duration (MM:SS)	Trials	Granularity (%)		
	100.0000	00:01	1	10		
Latency	Max. Rate (%)	Trial Duration (MM:SS)	Trials			
	12.8749 - 14.9999 (Frame Size Dependent)	00:01	1			

FUNCTIONS

40/100G Advanced

Lanes Mapping & Skew

TX		CAUI-4 Lane	RX	
PCS Lane	Skew (bits)		Skew (bits)	PCS Lane
0	0	0	12	2
1	0		12	3
2	0		12	4
3	0		11	0
4	0	1	11	1
5	0		2	7
6	0		2	8
7	0		2	9
8	0	2	1	5
9	0		1	6
10	0		1	13
11	0		1	14
12	0	3	0	10
13	0		0	11
14	0		0	12
15	0		5	18
16	0		5	19
17	0		4	15
18	0		4	16
19	0		4	17

PCS Lanes			
PCS Lane	LOBL	LOAML	Excessive Skew
Alarms	Seconds	Seconds	Seconds
0	0	0	0
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	0	0	0
18	0	0	0
19	0	0	0
Skew Alarm Threshold (bits)		928	

PCS Lanes						
PCS Lane	Block			Inv. Marker		
Errors	Seconds	Count	Rate	Seconds	Count	Rate
0	0	0	0.00E00	0	0	0.00E00
1	0	0	0.00E00	0	0	0.00E00
2	0	0	0.00E00	0	0	0.00E00
3	0	0	0.00E00	0	0	0.00E00
4	0	0	0.00E00	0	0	0.00E00
5	0	0	0.00E00	0	0	0.00E00
6	0	0	0.00E00	0	0	0.00E00
7	0	0	0.00E00	0	0	0.00E00
8	0	0	0.00E00	0	0	0.00E00
9	0	0	0.00E00	0	0	0.00E00
10	0	0	0.00E00	0	0	0.00E00
11	0	0	0.00E00	0	0	0.00E00
12	0	0	0.00E00	0	0	0.00E00
13	0	0	0.00E00	0	0	0.00E00
14	0	0	0.00E00	0	0	0.00E00
15	0	0	0.00E00	0	0	0.00E00
16	0	0	0.00E00	0	0	0.00E00
17	0	0	0.00E00	0	0	0.00E00
18	0	0	0.00E00	0	0	0.00E00
19	0	0	0.00E00	0	0	0.00E00

PCS Lanes			
PCS Lane Errors	BIP-8		
	Seconds	Count	Rate
0	0	0	0.00E00
1	0	0	0.00E00
2	0	0	0.00E00
3	0	0	0.00E00
4	0	0	0.00E00
5	0	0	0.00E00
6	0	0	0.00E00
7	0	0	0.00E00
8	0	0	0.00E00
9	0	0	0.00E00
10	0	0	0.00E00
11	0	0	0.00E00
12	0	0	0.00E00
13	0	0	0.00E00
14	0	0	0.00E00
15	0	0	0.00E00
16	0	0	0.00E00
17	0	0	0.00E00
18	0	0	0.00E00
19	0	0	0.00E00

Ping & Trace Route

Network	
Source MAC Address	00:03:01:F8:88:FC
Source IP Address	10.112.0.1 (Stream 1)
Destination IP Address	10.112.0.100

Ping	
Timeout (ms)	4000
Delay (ms)	1000
Data Size (Bytes)	32
TTL	128
Type Of Service (TOS)	0x00

Ping Statistics	
Packets Transmitted	--
Packets Received	--
Percentage Lost (%)	--
Minimum Round Trip Time (ms)	--
Maximum Round Trip Time (ms)	--
Average Round Trip Time (ms)	--

Trace Route	
Timeout (ms)	4000
Max Hop Count	128

SYSTEM INFORMATION

Product Name	Power Blazer Series
Version	Power Blazer Series 1.130
Module ID	FTBx-88260
Slot ID	2
Software Product Version	1.130.0.89
	Power Blazer Series 1.130
Assembly Hardware Revision	D
Serial Number	1886703
Calibration Date	2/25/2025 1:12:00 PM

Transceiver System

Transceiver System Insertion Counter	1
ID	TA-QSFP28
Serial Number	1890335
Revision	C
Battery	Good
Optical Module Insertion Counter	1

Pluggable Module

Module ID	QSFP28 or later
Vendor Name	ADDON
Part Number	JNP-QSFP100G-LR4
Serial Number	ADDEED144840
Hardware Revision	J3
Revision Compliance	8
Connector Type	LC
Speed	25G, 103.125 Gbit/s
Type/Compliance Code	LR, 100GE-LR4-10km, 10.0 km
Mode	SMF
Power Class	Power Class 4 (<= 3.5W)
Temperature (Max)	36.7 °C
CLEI Code	

Software Options

100electrical	Ethernet 100Base-TX (Electrical) Interface	Enabled
100GE	Ethernet 100G	Enabled
100optical	Ethernet 100Base-FX (Optical) Interface	Enabled
10electrical	Ethernet 10Base-T (Electrical) Interface	Enabled
10G_LAN	Ethernet 10G LAN (Optical) and 10GBASE-T (Electrical) interfaces	Enabled
10G_WAN	Ethernet 10G WAN optical interface	Enabled
155M	155 Mbit/s	Disabled
1588PTP	1588 Precision Time Protocol	Disabled
1588PTPGM	1588 Precision Time Protocol Grandmaster Emulation	Disabled
2.5-5GE	Ethernet 2.5GBASE-T and 5GBASE-T (Electrical) interfaces	Disabled
2488M	2.488 Gbit/s	Disabled
25GE	Ethernet 25G	Disabled
40GE	Ethernet 40G	Disabled

50GE	Ethernet 50G	Disabled
52M	52 Mbit/s	Enabled
622M	622 Mbit/s	Disabled
9953M	9.953 Gbit/s	Disabled
CPRI	CPRI 2.4576 Gbit/s and 3.072 Gbit/s	Disabled
CPRI-1.2G	CPRI 1.2288 Gbit/s	Disabled
CPRI-10.1G	CPRI 10.1376 Gbit/s	Disabled
CPRI-24.3G	CPRI 24.33024 Gbit/s	Disabled
CPRI-4.9G	CPRI 4.9152 Gbit/s	Disabled
CPRI-6.1G	CPRI 6.144 Gbit/s	Disabled
CPRI-9.8G	CPRI 9.8304 Gbit/s	Disabled
DCO-100ZR	100ZR	Disabled
DSn	Digital Signal (DS1, DS3)	Disabled
eCPRI-100G	eCPRI over 100G Ethernet	Disabled
eCPRI-10G	eCPRI over 10G Ethernet	Disabled
eCPRI-25G	eCPRI over 25G Ethernet	Disabled
EoE	Ethernet over Ethernet Encapsulation (10GE and less)	Disabled
EoE_40-100GE	Ethernet over Ethernet Encapsulation (40/100GE)	Disabled
EoOTN	Ethernet over Optical Transport Network	Disabled
ETH-OAM	Carrier Ethernet OAM Test Application	Disabled
FC-10X	Fibre Channel 10X	Disabled
FC-16X	Fibre Channel 16X	Disabled
FC-1X	Fibre Channel 1X	Disabled
FC-2X	Fibre Channel 2X	Disabled
FC-32X	Fibre Channel 32X	Disabled
FC-4X	Fibre Channel 4X	Disabled
FC-8X	Fibre Channel 8X	Disabled
FlexE-100G	100G FlexE Group	Disabled
FlexE-200G	200G FlexE Group	Disabled
FlexE-50G	50G FlexE Group	Disabled
FlexE-50G-PHY	FlexE 50G Interface Type	Disabled
FlexE-HiRateClient	FlexE Clients at 150G and above	Disabled
FlexE-LoRateClient	FlexE Clients at 100G and below	Disabled
FlexE-MIX	FlexE Clients at mixed rates	Disabled
G.mtnPathOAM	G.mtn Path OAM	Disabled
GCC-BERT	OTN Overhead BERT and Synchronization Validation	Disabled
GigE_Electrical	Ethernet 1000Base-T (Electrical) Interface	Enabled
GigE_Optical	Ethernet 1000Base-X (Optical) Interface	Enabled
iOptics	Intelligent Pluggable Optic Test Application	Enabled
iSAM	Intelligent Service Activation Methodology	Disabled
L2-Transparency	L2CP Handling Test in EtherSAM	Disabled
LINK-OAM	Link OAM	Disabled
LLDP	LLDP Neighbor Discovery	Disabled
MPLS	MPLS Encapsulation (10GE and less)	Disabled
MPLS_40-100GE	MPLS Encapsulation (40/100GE)	Disabled
OBSAI	OBSAI 3.072 Gbit/s	Disabled

OBSAI-1.5G	OBSAI 1.536 Gbit/s	Disabled
OBSAI-6.1G	OBSAI 6.144 Gbit/s	Disabled
ODU0	OTN ODU0	Disabled
ODUflex	OTN ODUflex	Disabled
ODUMUX	ODU Multiplexing Payload Type 20 and 21	Disabled
OTN-INTR-THRU	OTN Intrusive Through Mode	Disabled
OTU1	Optical Transport Unit-1 (2.7 Gbit/s)	Disabled
OTU2	Optical Transport Unit-2 (10.7 Gbit/s)	Disabled
OTU2-1e-2e	Optical Transport Unit-2 Overclocked (11.049/11.096 Gbit/s)	Disabled
OTU2-1f-2f	Optical Transport Unit-2 Overclocked (11.270/11.317 Gbit/s)	Disabled
OTU3	Optical Transport Unit-3 (43.018 Gbit/s)	Disabled
OTU3-e1-e2	Optical Transport Unit-3 Overclocked (44.571/44.583 Gbit/s)	Disabled
OTU4	Optical Transport Unit-4 (111.81 Gbit/s)	Disabled
Packet-TE	Packet Time Error	Disabled
PBBTE	Provider Backbone Bridge Encapsulation (10GE and less)	Disabled
PBBTE_40-100GE	Provider Backbone Bridge Encapsulation (40/100GE)	Disabled
PDH	Plesiochronous Digital Hierarchy (E1, E3, E4)	Disabled
RFC6349	RFC 6349 Test Application (25GE and less)	Disabled
RFC6349_40-100GE	RFC 6349 Test Application (40/100GE)	Disabled
SDH	Synchronous Digital Hierarchy	Enabled
SONET	Synchronous Optical Network	Enabled
SyncE	Synchronous Ethernet	Disabled
TCM	Tandem Connection Monitoring HO/LO	Disabled
TST-OAM	Test Over Service OAM	Disabled
WANDER	Time Error/Wander Test Application	Disabled

LOGGER

ID	Start Time	Event	Duration	Details
1	05/12 02:47:31 PM	Test Started		2025-05-12
2	05/12 03:25:41 PM	Test Stopped		 FAIL