



FTBx-88260 Report

| K-20 Layer 2 Test

FAIL

Report Header:	EXFO Inc.
Report Title:	K-20 Layer 2 Test
Report Date:	3/7/2025 11:39:36 AM
Type:	EtherSAM (Y.1564)

Job Information

Job ID:	INC4565946
Circuit ID:	Comcast: 61.KFGS.026788..CBCL..
Contractor Name:	K-20 Networks
Customer Name:	ferndale-k12
Operator Name:	kithc
Comment:	

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SUMMARY

Results Summary

Test Status	
Service Configuration Test Status	Completed, Fail
Service Performance Test Status	Completed, Fail
Pass/Fail Verdict	FAIL
Start Time	3/7/2025 11:38:02 AM
Duration	00d:00:01:20
Test Recovery	0

EtherSAM

Services Summary			
	Service Name	Service Configuration Test	Service Performance Test
1	Service 1	FAIL	FAIL

Service Configuration Summary						
	Service Name	Frame Loss Rate	Max Jitter (ms)	Max Latency (ms)	Max Throughput (Mbit/s)	Service Verdict
1	Service 1	1.1E-03	0.05883	3.49192	499.3	FAIL

Service Performance Summary						
	Service Name	Frame Loss Rate	Max Jitter (ms)	Max Latency (ms)	Avg Throughput (Mbit/s)	Service Verdict
1	Service 1	1.0E-03	0.05420	3.48294	499.2	FAIL

VLAN Preservation	No Mismatch Detected
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RX Power Level		
	Min	Max
Power Range (dBm)	-10.60	4.50
Optical Lane	RX Power Level (dBm)	
	Min	Max
0	0.88	0.96
1	0.41	0.49
2	0.98	1.08
3	-0.55	-0.41

RX Frequency		
CAUI-4 Lane	Frequency Offset (ppm)	
	Max Negative Offset	Max Positive Offset
0	0.0	0.8
1	0.0	0.8
2	0.0	0.8
3	0.0	0.8

Alarms/Errors

Alarms/Errors List	
Active/Historical Alarms/Errors	Frame Loss

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

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
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PCS Lanes						
PCS Lane Errors	Block			Inv. Marker		
	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

Clock Sync	
Alarm	Seconds
LOC	0

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

Setup Summary

Application Type	EtherSAM (Y.1564)
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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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EtherSAM

Pass/Fail Verdict	Enabled
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Sub-Tests			
Service Configuration Test		Service Performance Test	
Ramp Test	Enabled	Status	Enabled
Burst selection	Disabled	Duration	00d:00:10:00
Duration	00:00:20		

Ramp	
Step Time (s)	5
Step Values	
1	50 %
2	75 %
3	90 %
4	100 %

Services

Total Committed TX Rate (Mbit/s)	500.0
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Services Summary								
	Service Name	Profile	Frame Size (Bytes)	CIR (Mbit/s)	Max Jitter (ms)	Max Latency (ms)	Frame Loss Rate	CBS (Bytes)
1	Service 1	Data	Random	500.0	2.00000	28.00000	1.0E-04	--

TEST RESULTS

Ethernet Traffic

Frame Type	TX Count	RX Count
Multicast	0	3
Broadcast	2	0
Unicast	4172628	4168041
Non-Unicast	2	3
Total	4172630	4168044

Frame Size (Bytes)	RX Count	%
< 64	0	0.0
64	3070	0.0
65 - 127	178956	4.2
128 - 255	367426	8.8
256 - 511	733089	17.5
512 - 1023	1467300	35.2
1024 - 1518	1418203	34.0
> 1518	0	0.0
Total	4168044	

Detailed EtherSAM Results

Service Configuration Test

Service 1 : Service 1

Committed Steps					
Committed Step	Frame Loss Rate	Max Jitter (ms)	Max Latency (ms)	Verdict	Avg Throughput (Mbit/s)
1-50%CIR	1.1E-03	0.05883	3.49192	FAIL	249.6
2-75%CIR	1.0E-03	0.05239	3.48256	FAIL	374.5
3-90%CIR	1.1E-03	0.05105	3.48331	FAIL	449.3
CIR	1.0E-03	0.05170	3.47686	FAIL	499.3

Service Performance Test

Service 1 : Service 1

	Average	Minimum	Maximum	Estimate
Throughput (Mbit/s)	499.2	499.1	499.4	N/A
Jitter (ms)	0.01312	< 0.00001	0.05420	0.01183
Latency (ms)	3.43903	3.41659	3.48294	N/A
	Seconds	Count	Rate	
Frame Loss	35	2959	1.0E-03	
Out-of-Sequence	0	0	0.0E00	

TEST SETUP

Clock Synchronization	
Clock Mode	Internal

Detailed Services Configuration

S-OAM	Disabled
Layer Mode	Mixed
IP Version	IPv4
Global Pass/Fail Verdict	Enabled
Total Committed TX Rate (Mbit/s)	500.0

Service 1

Service Profile	
Service Name	Service 1
Profile	Data
Frame Size Type	Random

SLA Parameters	
Information Rate	
CIR (Mbit/s)	500.0
Performance Criteria	
Max Jitter (ms)	2.00000
Max Latency (ms)	28.00000
Frame Loss Rate	1.0E-04

Test Parameters

Framing	
Frame Format	Ethernet II
Network Layer	IPv4
Transport Layer	UDP
VLAN	None
MPLS	Disabled

Addressing

	MAC	IP Address	UDP Port
Source	00:03:01:F8:30:CF	10.112.0.1 / 255.255.255.0	49184
Destination	00:03:01:13:C0:3D	10.112.0.100	7

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

FUNCTIONS

40/100G Advanced

Lanes Mapping & Skew

TX		CAUI-4 Lane	RX	
PCS Lane	Skew (bits)		Skew (bits)	PCS Lane
0	0	0	40	3
1	0		40	4
2	0		39	0
3	0		39	1
4	0	1	39	2
5	0		1	9
6	0		0	5
7	0		0	6
8	0	2	0	7
9	0		0	8
10	0		34	12
11	0		34	13
12	0	3	34	14
13	0		33	10
14	0		33	11
15	0		13	18
16	0	3	13	19
17	0		12	15
18	0		12	16
19	0		12	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
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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:F8:30:CF
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 Results		
No.	Status	Reply Details
1	Successful	IP=10.112.0.100, Bytes=32, Time=8 ms, TTL=127

Ping Statistics	
Packets Transmitted	1
Packets Received	1
Percentage Lost (%)	0.0
Minimum Round Trip Time (ms)	8
Maximum Round Trip Time (ms)	8
Average Round Trip Time (ms)	8

Trace Route	
Timeout (ms)	1000
Max Hop Count	128

SYSTEM INFORMATION

Product Name	Power Blazer Series
Version	Power Blazer Series 1.124
Module ID	FTBx-88260
Slot ID	2
Software Product Version	1.124.0.53
	Power Blazer Series 1.124
Assembly Hardware Revision	A
Serial Number	1347374
Calibration Date	4/21/2020 1:22:00 PM

Transceiver System

Transceiver System Insertion Counter	49
ID	TA-QSFP28
Serial Number	1350527
Revision	A
Battery	Good
Optical Module Insertion Counter	34

Pluggable Module

Module ID	QSFP28 or later
Vendor Name	JUNIPER-1W1
Part Number	1W1QAA
Serial Number	1W1CQAA9410SQ
Hardware Revision	01
Revision Compliance	7
Connector Type	LC
Speed	25G, 103.125 Gbit/s
Type/Compliance Code	LR, 100GE-LR4-10km, 10.0 km
Mode	Single-Mode Fiber, SMF
Power Class	Power Class 4 (<= 3.5W)
Temperature (Max)	38.1 °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	Enabled
1588PTP	1588 Precision Time Protocol	Enabled
1588PTPGM	1588 Precision Time Protocol Grandmaster Emulation	Enabled
2.5-5GE	Ethernet 2.5GBASE-T and 5GBASE-T (Electrical) interfaces	Enabled
2488M	2.488 Gbit/s	Enabled
25GE	Ethernet 25G	Enabled
40GE	Ethernet 40G	Enabled

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

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

LOGGER

ID	Start Time	Event	Duration	Details
1	03/07 11:38:02 AM	Test Started		2025-03-07
2	03/07 11:38:06 AM	Service Configuration test started		2025-03-07
3	03/07 11:38:34 AM	Service 1 Fail		1 Service 1
4	03/07 11:38:40 AM	Service Performance test started		2025-03-07
5	03/07 11:38:44 AM	Frame Loss	00:00:39	2959/2959 S(1)
6	03/07 11:39:21 AM	RX Rate < 500.0 Mbit/s	00:00:02	499.2 Mbit/s S(1)
7	03/07 11:39:21 AM	Frame Loss > 1.0E-04	00:00:02	1.0E-03 S(1)
8	03/07 11:39:21 AM	Service 1 Fail		1 Service 1
9	03/07 11:39:22 AM	Test Stopped		 FAIL