



# FTB-880 Report

| RFC2544-1.8km |

Report Header:	EXFO Inc.
Report Title:	RFC2544-1.8km
Report Date:	2/13/2015 11:59:27 AM
Type:	RFC 2544

## Job Information

Job ID:	FSO Artolink 02.2015 testing set
Circuit ID:	M1-10GE
Contractor Name:	CJSC Mostcom
Customer Name:	internal test
Operator Name:	Mostcom R&D department
Comment:	Field testing Artolink M1-10GE at distance 1.8km (Ryazan)

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## SUMMARY

### Setup Summary

<b>Application Type</b>	RFC 2544
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<b>Interface</b>	<b>Port 1</b>
<b>Interface/Rate</b>	10GE LAN
<b>Connector</b>	SFP+

### Framing: MAC/IP/UDP

<b>IP Version</b>	IPv4
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	<b>MAC</b>	<b>IP Address</b>	<b>UDP Port</b>
<b>Source</b>	00:03:01:FD:29:A1	10.10.10.1 / 255.255.255.0	49184
<b>Destination</b>	00:03:01:FE:37:EA	10.10.10.2	7

<b>EtherType</b>	0x0800
<b>Automatic IP (DHCP)</b>	Disabled
<b>TTL</b>	128
<b>TOS</b>	0x00
<b>Default Gateway</b>	Disabled

## RFC 2544

Frame Size Distribution (Bytes)						
1522	2048	4096	5000	7000	8500	9600

Enabled Subtests		
<b>Throughput</b>	Max. Rate (%)	Accuracy (%)
	100.0000	1.00
<b>Back-to-Back</b>	Burst Time (MM:SS)	Accuracy (Frames)
	00:01	1
<b>Frame Loss</b>	Max. Rate (%)	Granularity (%)
	100.0000	10
<b>Latency</b>	Max. Rate (%)	
	100	

## Results Summary

Test Status	
<b>Throughput</b>	Completed 00d:00:02:00
<b>Back-to-Back</b>	Completed 00d:00:01:19
<b>Frame Loss</b>	Completed 00d:00:02:28
<b>Latency</b>	Completed 00d:00:01:20
<b>Pass/Fail Verdict</b>	PASS
<b>Start Time</b>	2/13/2015 11:50:54 AM
<b>Power Recovery</b>	0

## RFC 2544

Pass/Fail Verdict	
<b>Throughput</b>	PASS
<b>Back-to-Back</b>	PASS
<b>Frame Loss</b>	PASS
<b>Latency</b>	PASS

<b>Throughput (Mbit/s)</b>			
<b>Layer</b>			
	<b>All</b>	<b>Ethernet</b>	<b>IP</b>
<b>1522</b>	10000.00	9870.29	9753.56
<b>2048</b>	10000.00	9903.28	9816.24
<b>4096</b>	10000.00	9951.40	9907.67
<b>5000</b>	10000.00	9960.15	9924.30
<b>7000</b>	10000.00	9971.50	9945.86
<b>8500</b>	10000.00	9976.52	9955.39
<b>9600</b>	10000.00	9979.20	9960.49

<b>Back-to-Back (Mbit/s)</b>			
<b>Layer</b>			
	<b>All</b>	<b>Ethernet</b>	<b>IP</b>
<b>1522</b>	10000.00	9870.29	9753.56
<b>2048</b>	10000.00	9903.28	9816.24
<b>4096</b>	10000.00	9951.40	9907.67
<b>5000</b>	10000.00	9960.15	9924.30
<b>7000</b>	10000.00	9971.50	9945.86
<b>8500</b>	10000.00	9976.52	9955.39
<b>9600</b>	10000.00	9979.20	9960.49

	<b>Frame Loss (% ,100.0000 % Step)</b>	<b>Latency (ms, Cut Through) Mode</b>
<b>1522</b>	0.000	0.02732
<b>2048</b>	0.000	0.02902
<b>4096</b>	0.000	0.03606
<b>5000</b>	0.000	0.03910
<b>7000</b>	0.000	0.04574
<b>8500</b>	0.000	0.05093
<b>9600</b>	0.000	0.05479

RX Power Level		
	Min	Max
Power Range (dBm)	-20.00	1.00
RX Power Level (dBm)	-0.20	-0.20

RX Frequency		
	Max Negative Offset	Max Positive Offset
Frequency Offset (ppm)	0.0	18.5

## Alarms/Errors

Alarms/Errors List	
Active/Historical Alarms/Errors	None

Interface	
Alarms	Seconds
LOS	0
Frequency	0

Clock Sync	
Alarms	Seconds
LOC	0

Ethernet	
Alarms	Seconds
Link Down	0
Local Fault Detected	0
Local Fault Received	0
Remote Fault	0

<b>Errors</b>	<b>Seconds</b>	<b>Count</b>	<b>Rate</b>
Block	0	0	0.00E00
FCS	0	0	0.00E00
Jabber	0	0	0.00E00
Oversize	Disabled		
Runt	0	0	0.00E00
Undersize	0	0	0.00E00
Total		0	

<b>IP/UDP/TCP</b>			
<b>Errors</b>	<b>Seconds</b>	<b>Count</b>	<b>Rate</b>
IP Checksum	0	0	0.00E00
UDP Checksum	0	0	0.00E00
Total		0	

## TEST SETUP

### Clock Synchronization

<b>Clock Mode</b>	Internal
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### RFC 2544

### Frame Size Distribution (Bytes)

1522	2048	4096	5000	7000	8500	9600
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### Enabled Subtests

<b>Throughput</b>	Max. Rate (%)	Trial Duration (MM:SS)	Trials	Accuracy (%)	Acceptable Errors	Validations
	100.0000	00:01	1	1.00	0	1
<b>Back-to-Back</b>		Burst Time (MM:SS)	Trials	Accuracy (Frames)	Acceptable Errors	Bursts
		00:01	1	1	0	1
<b>Frame Loss</b>	Max. Rate (%)	Trial Duration (MM:SS)	Trials	Granularity (%)		
	100.0000	00:01	1	10		
<b>Latency</b>	Max. Rate (%)	Trial Duration (MM:SS)	Trials			
	100.0000	00:01	1			

## TEST RESULTS



## Ethernet Traffic

Frame Type	TX Count	RX Count
Multicast	0	0
Broadcast	42	0
Unicast	14292731	14292773
Non-Unicast	42	0
Total	14292773	14292773

Frame Size (Bytes)	RX Count	%
< 64	0	0
64	42	0
65 – 127	0	0
128 – 255	0	0
256 – 511	0	0
512 – 1023	0	0
1024 – 1518	0	0
> 1518	14292731	99
Total	14292773	

## Flow Control Monitoring

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

Pause Time (Quanta)	
Total Pause Time	0
Last Pause Time	0
Minimum Pause Time	0
Maximum Pause Time	0

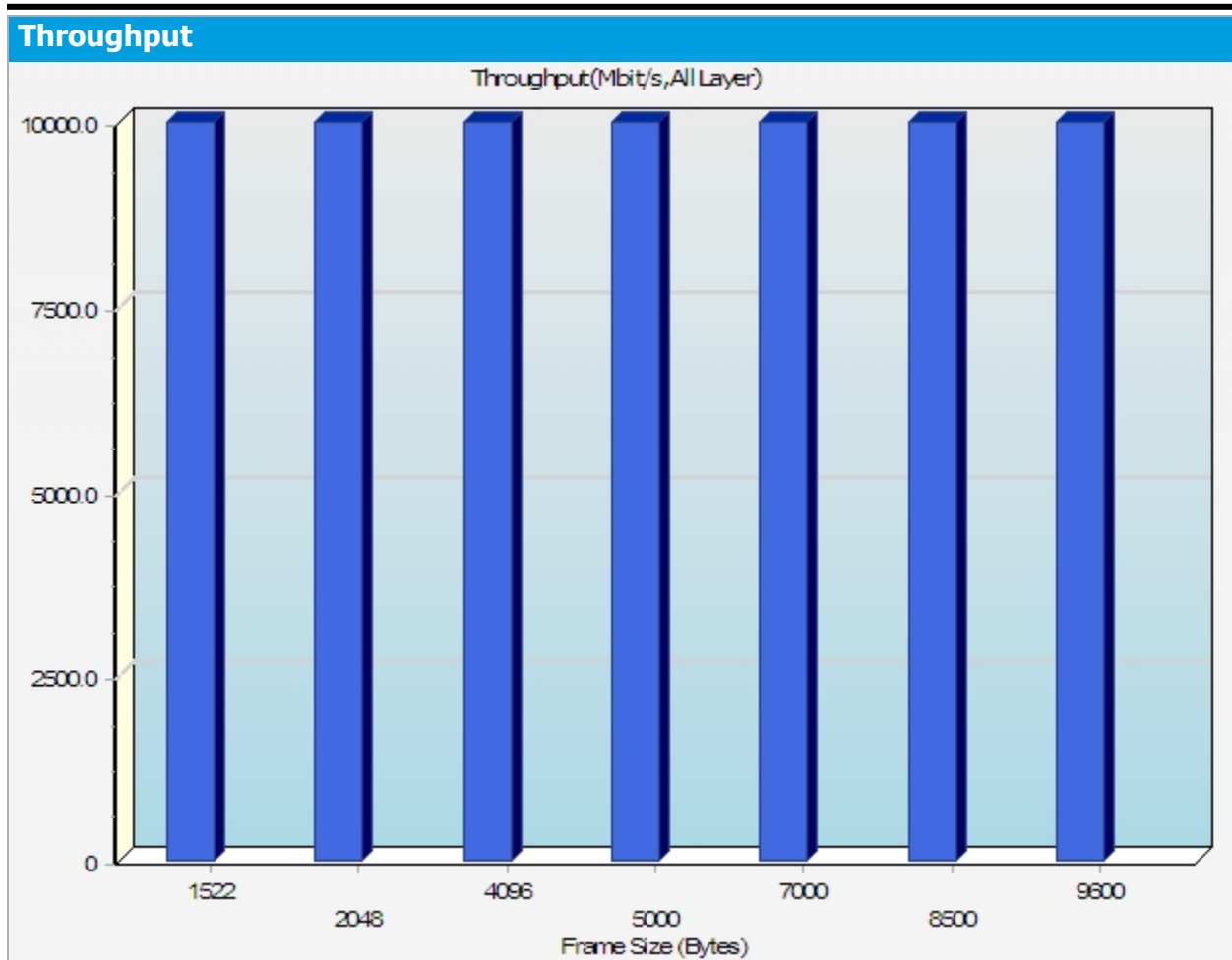
## RFC 2544

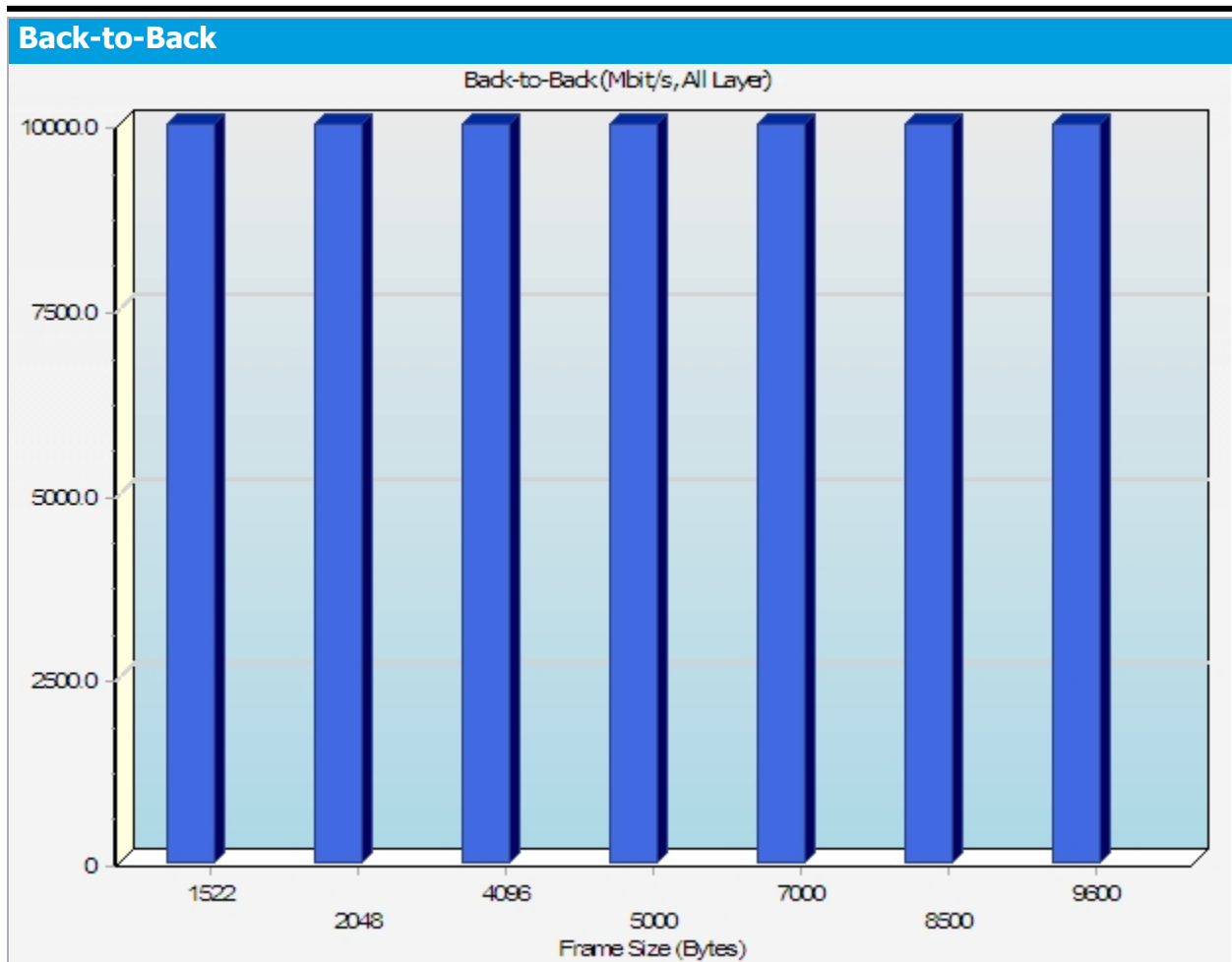
Pass/Fail Verdict	
Throughput	PASS
Back-to-Back	PASS
Frame Loss	PASS
Latency	PASS

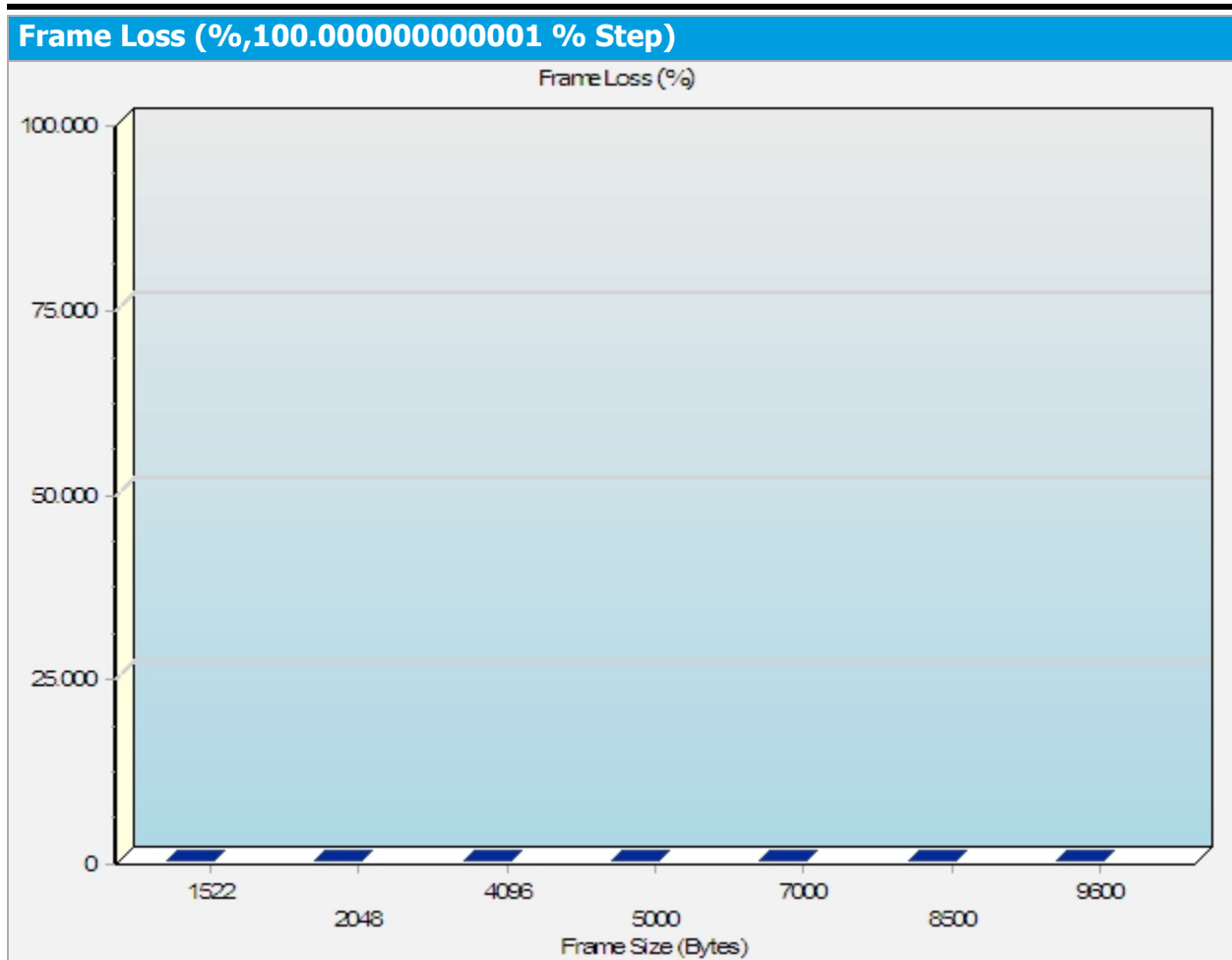
Throughput (Mbit/s)				
		Layer		
		All	Ethernet	IP
1522	Min.	10000.00	9870.29	9753.56
	Max.	10000.00	9870.29	9753.56
	Avg.	10000.00	9870.29	9753.56
2048	Min.	10000.00	9903.28	9816.24
	Max.	10000.00	9903.28	9816.24
	Avg.	10000.00	9903.28	9816.24
4096	Min.	10000.00	9951.40	9907.67
	Max.	10000.00	9951.40	9907.67
	Avg.	10000.00	9951.40	9907.67
5000	Min.	10000.00	9960.15	9924.30
	Max.	10000.00	9960.15	9924.30
	Avg.	10000.00	9960.15	9924.30
7000	Min.	10000.00	9971.50	9945.86
	Max.	10000.00	9971.50	9945.86
	Avg.	10000.00	9971.50	9945.86
8500	Min.	10000.00	9976.52	9955.39
	Max.	10000.00	9976.52	9955.39
	Avg.	10000.00	9976.52	9955.39
9600	Min.	10000.00	9979.20	9960.49
	Max.	10000.00	9979.20	9960.49
	Avg.	10000.00	9979.20	9960.49

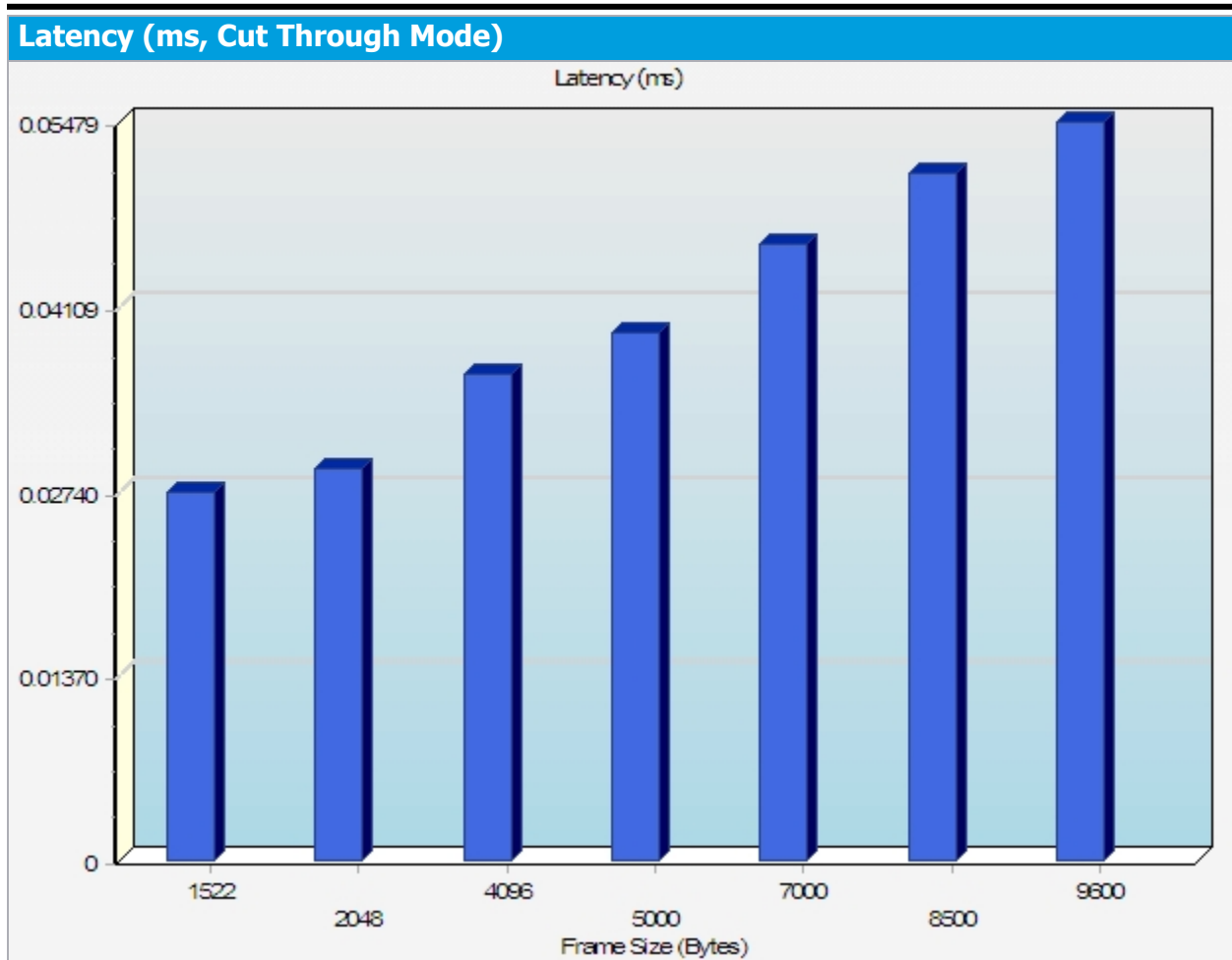
<b>Back-to-Back (Mbit/s)</b>				
<b>Layer</b>				
		<b>All</b>	<b>Ethernet</b>	<b>IP</b>
<b>1522</b>	<b>Min.</b>	10000.00	9870.29	9753.56
	<b>Max.</b>	10000.00	9870.29	9753.56
	<b>Avg.</b>	10000.00	9870.29	9753.56
<b>2048</b>	<b>Min.</b>	10000.00	9903.28	9816.24
	<b>Max.</b>	10000.00	9903.28	9816.24
	<b>Avg.</b>	10000.00	9903.28	9816.24
<b>4096</b>	<b>Min.</b>	10000.00	9951.40	9907.67
	<b>Max.</b>	10000.00	9951.40	9907.67
	<b>Avg.</b>	10000.00	9951.40	9907.67
<b>5000</b>	<b>Min.</b>	10000.00	9960.15	9924.30
	<b>Max.</b>	10000.00	9960.15	9924.30
	<b>Avg.</b>	10000.00	9960.15	9924.30
<b>7000</b>	<b>Min.</b>	10000.00	9971.50	9945.86
	<b>Max.</b>	10000.00	9971.50	9945.86
	<b>Avg.</b>	10000.00	9971.50	9945.86
<b>8500</b>	<b>Min.</b>	10000.00	9976.52	9955.39
	<b>Max.</b>	10000.00	9976.52	9955.39
	<b>Avg.</b>	10000.00	9976.52	9955.39
<b>9600</b>	<b>Min.</b>	10000.00	9979.20	9960.49
	<b>Max.</b>	10000.00	9979.20	9960.49
	<b>Avg.</b>	10000.00	9979.20	9960.49

		Frame Loss (% ,100.0000 % Step)	Latency (ms, Cut Through) Mode
<b>1522</b>	<b>Min.</b>	0.000	0.02732
	<b>Max.</b>	0.000	0.02732
	<b>Avg.</b>	0.000	0.02732
<b>2048</b>	<b>Min.</b>	0.000	0.02902
	<b>Max.</b>	0.000	0.02902
	<b>Avg.</b>	0.000	0.02902
<b>4096</b>	<b>Min.</b>	0.000	0.03606
	<b>Max.</b>	0.000	0.03606
	<b>Avg.</b>	0.000	0.03606
<b>5000</b>	<b>Min.</b>	0.000	0.03910
	<b>Max.</b>	0.000	0.03910
	<b>Avg.</b>	0.000	0.03910
<b>7000</b>	<b>Min.</b>	0.000	0.04574
	<b>Max.</b>	0.000	0.04574
	<b>Avg.</b>	0.000	0.04574
<b>8500</b>	<b>Min.</b>	0.000	0.05093
	<b>Max.</b>	0.000	0.05093
	<b>Avg.</b>	0.000	0.05093
<b>9600</b>	<b>Min.</b>	0.000	0.05479
	<b>Max.</b>	0.000	0.05479
	<b>Avg.</b>	0.000	0.05479











## FUNCTIONS

### Ping & Trace Route

Network	
Source MAC Address	00:03:01:FD:29:A1
Source IP Address	10.10.10.1
Destination IP Address	192.168.0.2

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)	--

## SYSTEM INFORMATION

Product Name	NetBlazer Series
Version	NetBlazer Series 2.4 SP1
Module ID	FTB-880
Slot ID	0
Software Product Version	2.4.1.1
Assembly Hardware Revision	NetBlazer Series 2.4 SP1 A
Serial Number	608625
Calibration Date	9/20/2011 3:57:00 PM

## Pluggable Module


<b>Module ID</b>	SFP+
<b>Vendor Name</b>	OEM
<b>Part Number</b>	M10GBSFPD40MM55
<b>Serial Number</b>	SX21444300001
<b>Hardware Revision</b>	A
<b>Firmware Version</b>	
<b>Connector Type</b>	LC
<b>Speed</b>	FC-10X, 10G
<b>Type</b>	FC: Very Long Distance, 10G: ER
<b>Wavelength</b>	1560 nm
<b>Mode</b>	FC: Single-Mode Fiber, 10G: Single-Mode Fiber

## Software Options

DS1-FDL	DS1/1.5M Facility Data Link	Enabled
DS3-FEAC	DS3/45M Far-End Alarm and Control	Enabled
DS3-G747	ITU-T Recommendation G.747 (E1 in DS3)	Enabled
DSn	Digital Signal (DS1, DS3)	Enabled
PDH	Plesiochronous Digital Hierarchy (E1, E3, E4)	Enabled
DUALRX	Dual RX (DS1, DS3)	Enabled
ISDN-PRI	Primary Rate North American and/or European ISDN	Enabled
NI-CSU	NI/CSU Emulation	Enabled
SDH	Synchronous Digital Hierarchy	Enabled
SONET	Synchronous Optical Network	Enabled
622M	622 Mbit/s	Enabled
155M	155 Mbit/s	Enabled
2488M	2.488 Gbit/s	Enabled
TCM	Tandem Connection Monitoring HO/LO	Enabled
9953M	9.953 Gbit/s	Enabled
52M	52 Mbit/s	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
10G_LAN	Ethernet 10G LAN optical interface	Enabled
10G_WAN	Ethernet 10G WAN optical interface	Enabled
FC-10X	Fibre Channel 10X	Enabled
FC-8X	Fibre Channel 8X	Enabled
100optical	Ethernet 100Base-FX (Optical) Interface	Enabled
GigE_Optical	Ethernet 1000Base-X (Optical) Interface	Enabled
GigE_Electrical	Ethernet 1000Base-T (Electrical) Interface	Enabled
FC-1X	Fibre Channel 1X	Enabled
FC-2X	Fibre Channel 2X	Enabled
TCP-THPUT	Tcp Throughput Test Application	Enabled
FC-4X	Fibre Channel 4X	Enabled
MPLS	MPLS Encapsulation	Enabled
IPV6	Internet Protocol Version 6 (IPv6)	Enabled
ETH-THRU	Through Mode Test Application	Enabled
Cable_Test	Cable Test	Enabled
TRAFFIC_GEN	Traffic Generation and Monitoring Test Application	Enabled
CPRI-1.2G	CPRI 1.2288 Gbit/s	Disabled
CPRI	CPRI 2.4576 Gbit/s and 3.072 Gbit/s	Enabled
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
OBSAI	OBSAI 3.072 Gbit/s	Enabled
1588PTP	1588 Precision Time Protocol	Enabled
SyncE	Synchronous Ethernet	Enabled
ETH-OAM	Carrier Ethernet OAM Test Application	Disabled
ETH-CAPTURE	Ethernet Frame Capture for Advanced Troubleshooting	Disabled
ADV-FILTERS	Advanced Filtering	Disabled

## LOGGER

ID	Time	Event	Duration	Details
1	02/13 11:50:54 AM	Test Started		2015-02-13
2	02/13 11:58:04 AM	Test Stopped		 PASS