



QSFP-100G-PCXXX

**OPTICAL TRANSCEIVER
MODULE**

Scenario Application Test Report (Juniper)

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1. Test Purpose

By building test scenarios and simulating the customer's usage environment, we test whether the module's performance meets the customer's requirements.

2. Test Results Summary

Table 2: Test Results

Items	Test Data	Remarks
Multi-Version	Pass	/
Connectivity	Pass	/
Module Basic Information	Pass	/

3. Test Environment

3.1 Test Equipment Used

Table 3-1: Test Equipment Used

Vendor	Device	Soft Version
Juniper Switch	QFX5220-32CD	23.4R2-S1.7-EVO
NVIDIA Network Interface Card (NIC)	MCX623106AN-CDAT	22.43.1014
Dell Server	PowerEdge R860	/

3.2 Test Sample

Table 3-2: Test Sample

Product ID	P/N	Serial Number
#50490	QSFP-100G-PCxxx	A2401231351-2 A2401230391-2

4. Test Data

Table 4: Scenario Application Testing

Test Topology	
Test Premise	1. Confirm the brand, quantity and placement of the switches to be tested. 2. Prepare control cables, test software and optical fiber patch cords. Power on the switches in advance. 3. Locate the Console port on the switch, which is usually marked as "CON" on the switch, although some switches may display it as "IOIOI" or a computer monitor icon, etc. Use a control cable to connect the switch to the computer.  4. Before connecting the software, it is necessary to confirm the connection port of the control cable. Go to the computer device manager, click on the ports (COM and LPT) to view the ports. After confirming the ports, proceed with the next step.
Test Method	Click to open the SecureCRT Portable software and enter the quick connection interface. ① Protocol selection: Serial ② Port selection: The same as the port you viewed in the previous step ③ Baud rate selection: The same as the baud rate of the port on the target switch ④ Flow control: Do not check this option The remaining configurations can keep the default values.
Test Steps	① Insert the module into the corresponding rate port of the switch, and connect the TX-RX ends with an optical fiber jumper or an MTP self-loop device. Observe whether the module is connected. If not connected, please check the jumper connection or the switch port configuration (login to the switch is required). ② Enter the test interface, input the account and password, log in to the switch and enter privileged mode. ③ According to the switch command configuration table, input the corresponding test command and view the relevant information: port status (connectivity), connection rate, alarm status, module basic information, etc. Determine whether it meets the requirements.

Test Information

1. Read the switch model name and software version, and read the status of all ports on the switch

```
root@qfx5220-32cd> show version
```

```
Hostname: qfx5220-32cd
```

```
Model: qfx5220-32cd
```

```
Junos: 23.4R2-S1.7-EVO
```

```
Yocto: 3.0.2
```

```
Linux Kernel: 5.2.60-yocto-standard-gbbed0c6
```

```
JUNOS-EVO OS 64-bit [junos-evo-install-qfx-ms-x86-64-23.4R2-S1.7-EVO]
```

```
External Software:
```

```
JET app aos      5.0.0-64
```

```
root@qfx5220-32cd>
```

```
root@qfx5220-32cd> show chassis hardware
```

```
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis		XC3621530011		QFX5220-32CD
PSM 0	REV 04	740-085431	1ED7B110306	JPSU-1600W-AC-AFO
PSM 1	REV 04	740-085431	1ED7B110552	JPSU-1600W-AC-AFO
Routing Engine 0	BUILTIN	BUILTIN		RE-QFX5220-32CD
CB 0	REV 12	650-086244	XC3621530011	QFX5220-32CD
FPC 0	BUILTIN	BUILTIN		QFX5220-32CD
PIC 0	BUILTIN	BUILTIN		32X400G-QSFP-DD
Xcvr 5	REV 01	740-061001	A2401231351-2	QSFP28-100G-CU3M-ET
Xcvr 6	REV 01	740-061001	A2401231351-1	QSFP28-100G-CU3M-ET
Fan Tray 0				QFX5220-32CD Fan Tray, Front to Back Airflow - AFO
Fan Tray 1				QFX5220-32CD Fan Tray, Front to Back Airflow - AFO
Fan Tray 2				QFX5220-32CD Fan Tray, Front to Back Airflow - AFO
Fan Tray 3				QFX5220-32CD Fan Tray, Front to Back Airflow - AFO
Fan Tray 4				QFX5220-32CD Fan Tray, Front to Back Airflow - AFO
Fan Tray 5				QFX5220-32CD Fan Tray, Front to Back Airflow - AFO

2. Read the module's basic information from the switch side

```
{master:0}
```

```
root>
```

```
{master:0}
```

```
root>
```

```
root> show interfaces et-0/0/52 detail
```

```
Physical interface: et-0/0/52, Enabled, Physical link is Up
```

```
Interface index: 651, SNMP ifIndex: 704, Generation: 161
```

```
Link-level type: Ethernet, MTU: 1514, LAN-PHY mode, Speed: 100Gbps,
```

```
BPDU Error: None, Loop Detect PDU Error: None, Ethernet-Switching Error: None,
```

```
MAC-REWRITE Error: None, Loopback: Disabled, Source filtering: Disabled,
```

```
Flow control: Disabled, Media type: Copper
```

```
Device flags : Present Running
```

```
Interface flags: SNMP-Traps Internal: 0x4000
```

```
Link flags : None
```

```
CoS queues : 10 supported, 10 maximum usable queues
```

```
Hold-times : Up 0 ms, Down 0 ms
```

```
Current address: 3c:8c:93:5a:f1:45, Hardware address: 3c:8c:93:5a:f1:45
```

```
Last flapped : 2024-11-25 11:19:28 UTC (00:01:56 ago)
```

```
Statistics last cleared: Never
```

```
Traffic statistics:
```

```
Input bytes : 3934 1384 bps
```

```
Output bytes : 3651 0 bps
```

```
Input packets: 12 0 pps
```

```
Output packets: 12 0 pps
```

```
IPv6 transit statistics:
```

```
Input bytes : 0
```

```
Output bytes : 0
```

```
Input packets: 0
```

```
Output packets: 0
```

```
Egress queues: 10 supported, 5 in use
```

Test Information

Queue counters:	Queued packets	Transmitted packets	Dropped packets
0	5	5	0
3	0	0	0
4	0	0	0
7	7	7	0
8	0	0	0

Queue number:	Mapped forwarding classes
0	best-effort
3	fcoe
4	no-loss
7	network-control
8	mcast

Active alarms : None

Active defects : None

Pre-emphasis(reg 236/237)

Register-value 0

Ctle(reg 234/235)

Register-value 0

Differential-amplitude(reg 238/239)

Register-value 0

PCS statistics

Bit errors

Seconds 0

Errored blocks

0

Ethernet FEC Mode : NONE

Ethernet FEC statistics

FEC Corrected Errors

Errors 0

FEC Uncorrected Errors

0

FEC Corrected Errors Rate

0

FEC Uncorrected Errors Rate

0

PRBS Mode : Disabled

Interface transmit statistics: Disabled

MACSec statistics:

Output

Secure Channel Transmitted

Protected Packets : 0

Encrypted Packets : 0

Protected Bytes : 0

Encrypted Bytes : 0

Input

Secure Channel Received

Accepted Packets : 0

Validated Bytes : 0

Decrypted Bytes : 0

3. Read the NIC model and the status of all ports

```
[root@localhost ~]#  
[root@localhost ~]# mlxfwmanager -d mlx5_8  
Querying Mellanox devices firmware ...
```

Device #1:

```
-----  
Device Type:      ConnectX6DX  
Part Number:      MCX623106AN-CDA_AX  
Description:      ConnectX-6 Dx EN adapter card; 100GbE; Dual-port QSFP56; PCIe 4.0/3.0 x16;  
PSID:             MT_0000000359  
PCI Device Name:  mlx5_8  
Base GUID:        e8ebd303009c65e0  
Base MAC:         e8ebd39c65e0  
Versions:         Current      Available  
FW                22.43.1014   N/A  
PXE               3.7.0500     N/A  
UEFI              14.36.0016    N/A  
  
Status:           No matching image found
```

Test Information

```
[root@localhost ~]# mlxlink -d mlx5_8 -c
```

operational Info

```
-----
State                               : Active
Physical state                      : ETH_AN_FSM_ENABLE
Speed                               : 100G
width                               : 4x
FEC                                 : No FEC
Loopback Mode                       : No Loopback
Auto Negotiation                    : ON
```

Supported Info

```
-----
Enabled Link Speed (Ext.)           : 0x00000200 (100G_4x)
Supported Cable Speed (Ext.)        : 0x000002f2 (100G_4x, 50G_2x, 40G, 25G, 10G, 1G)
```

Troubleshooting Info

```
-----
Status opcode                       : 0
Group opcode                        : N/A
Recommendation                      : No issue was observed
```

Tool Information

```
-----
Firmware Version                    : 22.43.1014
amBER Version                       : 3.2
MFT Version                         : mft 4.28.0-92
```

4. Read the module basic information on NIC

Module Info

```
-----
Temperature [C]                     : N/A
Voltage [mV]                        : N/A
Bias Current [mA]                   : N/A
Rx Power Current [dBm]              : N/A
Tx Power Current [dBm]              : N/A
Identifier                          : QSFP28
Compliance                          : 40GBASE-SR4, 100GBASE-CR4, 25GBASE-CR CA-25G-L or 50GBASE-CR2 with RS (Clause91) FEC
Cable Technology                     : Copper cable unequalized
Cable Type                          : Passive copper cable
OUI                                  : Mellanox
Vendor Name                         : FS
Vendor Part Number                   : QSFP-100G-PC02
Vendor Serial Number                 : A2401230391-2
Rev                                  : A1
Wavelength [nm]                     : N/A
Transfer Distance [m]                : 2
Attenuation (5g,7g,12g)[dB]         : 0,11,184
FW Version                          : N/A
Digital Diagnostic Monitoring        : No
Power Class                         : N/A
CDR RX                              : OFF,OFF,OFF,OFF
CDR TX                              : OFF,OFF,OFF,OFF
LOS Alarm                           : N/A
SNR Media Lanes [dB]                : N/A
SNR Host Lanes [dB]                 : N/A
IB Cable Width                      : 1x,2x,4x
Memory Map Revision                  : 8
Linear Direct Drive                  : 0
Cable Breakout                      : Channels implemented [1,2,3,4]/Cable with single far-end with 4 channels implemented, or separable module with a 4-channel connector
SMF Length                          : N/A
MAX Power                           : 0
Cable Rx AMP                        : N/A
Cable Rx Emphasis                    : N/A
Cable Rx Post Emphasis               : N/A
Cable Tx Equalization                : N/A
Wavelength Tolerance                : N/A
Module State                        : N/A
DataPath state [per lane]            : N/A
Rx Output Valid [per lane]           : N/A
Nominal bit rate                     : 8.000Gb/s
Rx Power Type                        : OMA
Manufacturing Date                   : 03_02_24
Active Set Host Compliance Code      : N/A
Active Set Media Compliance Code     : N/A
Error Code Response                  : N/A
Module FW Fault                      : N/A
DataPath FW Fault                   : N/A
Tx Fault [per lane]                  : N/A
Tx LOS [per lane]                    : N/A
Tx CDR LOL [per lane]                : N/A
Rx LOS [per lane]                    : N/A
Rx CDR LOL [per lane]                : N/A
Tx Adaptive EQ Fault [per lane]      : N/A
```

Test Conclusion	After completing the above test content, all the test information should be copied and pasted into a TXT document.
Remarks	/