



QSFP-CWDM4-100G 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	/
BER	Pass	/

3. Test Environment

3.1 Test Equipment Used

Table 3-1: Test Equipment Used

Vendor	Device	Soft Version
Juniper	QFX5200-32C-32Q	20.2R2.11 flex
NVIDIA NICs	MCX515A-CCAT	16.35.3502
FS Server	RS3110	/

3.2 Test Sample

Table 3-2: Test Sample

Product ID	P/N	Serial Number
#65219	QSFP-CWDM4-100G	A2310220507

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, DDM 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

```

|
{master:0}
root> show version
localre:
-----
Model: qfx5200-32c-32q
Junos: 20.2R2.11 flex
JUNOS OS Kernel 64-bit FLEX [20200922.4042921_builder_stable_11]
JUNOS OS libs [20200922.4042921_builder_stable_11]
JUNOS OS runtime [20200922.4042921_builder_stable_11]
JUNOS OS time zone information [20200922.4042921_builder_stable_11]
JUNOS OS libs compat32 [20200922.4042921_builder_stable_11]
JUNOS OS 32-bit compatibility [20200922.4042921_builder_stable_11]
JUNOS py extensions2 [20201028.081005_builder_junos_202_r2]
JUNOS py extensions [20201028.081005_builder_junos_202_r2]
JUNOS py base2 [20201028.081005_builder_junos_202_r2]
JUNOS py base [20201028.081005_builder_junos_202_r2]
JUNOS OS vmguest [20200922.4042921_builder_stable_11]
JUNOS OS crypto [20200922.4042921_builder_stable_11]
JUNOS OS boot-ve files [20200922.4042921_builder_stable_11]
JUNOS network stack and utilities [20201028.081005_builder_junos_202_r2]
JUNOS libs [20201028.081005_builder_junos_202_r2]
JUNOS libs compat32 [20201028.081005_builder_junos_202_r2]
JUNOS runtime [20201028.081005_builder_junos_202_r2]
JUNOS na telemetry [20.2R2.11]
JUNOS Web Management Platform Package [20201028.081005_builder_junos_202_r2]
JUNOS qfx runtime [20201028.081005_builder_junos_202_r2]
JUNOS Routing Protocol Services Daemons [20.2R2.11]
JUNOS common platform support [20201028.081005_builder_junos_202_r2]
JUNOS qfx platform support [20201028.081005_builder_junos_202_r2]
JUNOS Openconfig [20.2R2.11]
JUNOS dcp network modules [20201028.081005_builder_junos_202_r2]
JUNOS modules [20201028.081005_builder_junos_202_r2]
JUNOS qfx modules [20201028.081005_builder_junos_202_r2]
JUNOS qfx Data Plane Crypto Support [20201028.081005_builder_junos_202_r2]
JUNOS daemons [20201028.081005_builder_junos_202_r2]
JUNOS qfx daemons [20201028.081005_builder_junos_202_r2]
JUNOS SDN Software Suite [20201028.081005_builder_junos_202_r2]
JUNOS Extension Toolkit [20201028.081005_builder_junos_202_r2]
JUNOS Packet Forwarding Engine Support (DC-PFE) [20201028.081005_builder_junos_202_r2]
JUNOS Packet Forwarding Engine Support (M/T Common) [20201028.081005_builder_junos_202_r2]
JUNOS Juniper Malware Removal Tool (JMRT) [1.0.0+20201028.081005_builder_junos_202_r2]
JUNOS J-Insight [20201028.081005_builder_junos_202_r2]
JUNOS Jfirmware [20201028.081005_builder_junos_202_r2]
JUNOS Online Documentation [20201028.081005_builder_junos_202_r2]
JUNOS jail runtime [20200922.4042921_builder_stable_11]
JET app chef [11.10.4_3.0]
JUNOS Host Software [3.14.52-rt50-WR7.0.0.9_ovp:3.1.0]
JUNOS Host qfx-5e host-control package [20.2R2.11]
JUNOS Host qfx-5e host-platform package [20.2R2.11]
JUNOS Host qfx-5e control-plane flex package [20.2R2.11]
JUNOS Host qfx-5e platform package [20.2R2.11]
JUNOS Host qfx-5e base package [20.2R2.11]
JUNOS Host qfx-5e data-plane package [20.2R2.11]
Junos for Automation Enhancement

```

Test Information

```
{master:0}
root> show interfaces et-0/0/13 extensive
Physical interface: et-0/0/13, Enabled, Physical link is Up
Interface index: 653, SNMP ifIndex: 517, Generation: 151
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: Fiber
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: b8:f0:15:df:84:c5, Hardware address: b8:f0:15:df:84:c5
Last flapped : 2024-11-05 12:22:38 UTC (00:01:09 ago)
Statistics last cleared: Never
Traffic statistics:
Input bytes :          2964          0 bps
Output bytes :         2964          0 bps
Input packets:          9          0 pps
Output packets:         9          0 pps
IPv6 transit statistics:
Input bytes :          0
Output bytes :          0
Input packets:          0
Output packets:         0
Input errors:
Errors: 0, Drops: 0, Framing errors: 0, Runts: 0, Policed discards: 0,
L3 incompletes: 0, L2 channel errors: 0, L2 mismatch timeouts: 0,
FIFO errors: 0, Resource errors: 0
Output errors:
Carrier transitions: 1, Errors: 0, Drops: 0, Collisions: 0, Aged packets: 0,
FIFO errors: 0, HS link CRC errors: 0, MTU errors: 0, Resource errors: 0
Egress queues: 10 supported, 5 in use
Queue counters:   Queued packets   Transmitted packets   Dropped packets
0                 5                 5                     0
3                 0                 0                     0
4                 0                 0                     0
7                 4                 4                     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    Seconds
Bit errors        0
Errored blocks    0
Ethernet FEC Mode :    NONE
Ethernet FEC statistics    Errors
FEC Corrected Errors    0
FEC Uncorrected Errors    0
```

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

Activate the web console with: `systemctl enable --now cockpit.socket`

Last login: Tue Mar 11 10:03:17 2025 from 10.36.15.177

[root@RS3110 ~]# mlxfwmanager -u
Querying Mellanox devices firmware ...

Device #1:

```
-----
Device Type:      ConnectX5
Part Number:      MCX515A-CCA_Ax_Bx
Description:      ConnectX-5 EN network interface card; 100GbE single-port QSFP28; PCIe3.0 x16; tall bracket; ROHS R6
PSID:             MT_0000000011
PCI Device Name:  0000:01:00.0
Base GUID:        b8cef603000c2e44
Base MAC:         b8cef60c2e44
Versions:         Current      Available
FW                16.35.3502    N/A
PXE               3.6.0902     N/A
UEFI              14.29.0015    N/A
Status:           No matching image found
```

[root@RS3110 ~]# mlxlink -d mlx5_0 -c

Operational Info

```
-----
State                : Active
Physical state       : Linkup
Speed                : 100GbE
Width                : 4x
FEC                  : Standard RS-FEC - RS(528,514)
Loopback Mode        : No Loopback
Auto Negotiation     : ON
```

Supported Info

```
-----
Enabled Link Speed   : 0x00f00000 (100G)
Supported Cable Speed : 0x00800000 (100G)
```

Troubleshooting Info

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

Tool Information

```
-----
Firmware Version     : 16.35.3502
MFT Version          : mft 4.30.0-139
```

3. Read the Module BER

[root@RS3110 ~]# mlxlink -d mlx5_0 -c

Operational Info

```
-----
State                : Active
Physical state       : Linkup
Speed                : 100GbE
Width                : 4x
FEC                  : Standard RS-FEC - RS(528,514)
Loopback Mode        : No Loopback
Auto Negotiation     : ON
```

Supported Info

```
-----
Enabled Link Speed   : 0x00f00000 (100G)
Supported Cable Speed : 0x00800000 (100G)
```

Troubleshooting Info

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

Tool Information

```
-----
Firmware Version     : 16.35.3502
MFT Version          : mft 4.30.0-139
```

Physical Counters and BER Info

```
-----
Time Since Last Clear [Min] : 4.4
Effective Physical Errors    : 0
Raw Physical Errors Per Lane : 0,0,0,0
Effective Physical BER       : 15E-255
Raw Physical BER             : 15E-255
Link Down Counter           : 0
Link Error Recovery Counter  : 0
```

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