QSFP-100G-PCXXX

OPTICAL TRANSCEIVER MODULE

Scenario Application Test Report (ME IB)

CONTENTS

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
NVIDIA Switch	MSB7800	3.10.4500
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
#153622	QSFP-100G-PCxxx	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

```
MSB7800 [standalone: master] #
MSB7800 [standalone: master] # show version
Product name:     MLNX-OS
Product release:  3.10.4500
Build ID:         #1-dev
Build date:       2024-07-01 07:53:19
Target arch:      x86_64
Target hw:        x86_64
Built by:         sw-r2d2-bot@967332bf5cba
Version summary:  X86_64 3.10.4500 2024-07-01 07:53:19 x86_64

Product model:    x86
Host ID:          248A07B63DB2
System serial num: MT1720K06811
System UUID:      33a54534-3c7e-11e7-8000-ec0d9a04bdd0

Uptime:           13d 22h 5m 18.848s
CPU load averages: 0.06 / 0.03 / 0.00
Number of CPUs:   2
System memory:    613 MB used / 3149 MB free / 3762 MB total
Swap:             0 MB used / 0 MB free / 0 MB total
MSB7800 [standalone: master] #
MSB7800 [standalone: master] # show inventory
---------------------------------------------------------------------------
Module       Part Number      Serial Number      Asic Rev.   HW Rev.
---------------------------------------------------------------------------
CHASSIS      MSB7800-ES2F     MT1720K06811       N/A         A6
MGMT         MSB7800-ES2F     MT1720K06811       0           A6
FAN1         N/A              N/A                N/A         N/A
FAN2         MTEF-FANF-A      MT2152J05511       N/A         A6
FAN3         MTEF-FANF-A      MT1720K00983       N/A         A3
FAN4         MTEF-FANF-A      MT2152J05502       N/A         A6
PS1          MTEF-PSF-AC-A    MT1720K01068       N/A         A4
PS2          N/A              N/A                N/A         N/A

MSB7800 [standalone: master] #
MSB7800 [standalone: master] # show interfaces status
% Unknown interface status
MSB7800 [standalone: master] # show interfaces ib status
-----------------------------------------------------------------------------------------------------------------
Interface  Description                IB Subnet          Speed  Current line rate  Logical port state  Physical port state
-----------------------------------------------------------------------------------------------------------------
IB1/1                                 infiniband-default  edr    100.0 Gbps         Active              LinkUp
IB1/2                                 infiniband-default  -      -                  Down                Polling
IB1/3                                 infiniband-default  -      -                  Down                Polling
IB1/4                                 infiniband-default  -      -                  Down                Polling
IB1/5                                 infiniband-default  edr    100.0 Gbps         Active              LinkUp
IB1/6                                 infiniband-default  -      -                  Down                Polling
IB1/7                                 infiniband-default  -      -                  Down                Polling
IB1/8                                 infiniband-default  -      -                  Down                Polling
       -              Down            Polling
IB1/10                                infiniband-default  -      -                  Down                Polling
IB1/11                                infiniband-default  -      -                  Down                Polling
IB1/12                                infiniband-default  -      -                  Down                Polling
IB1/13                                infiniband-default  -      -                  Down                Polling
IB1/14                                infiniband-default  -      -                  Down                Polling
IB1/15                                infiniband-default  -      -                  Down                Polling
IB1/16                                infiniband-default  -      -                  Down                Polling
IB1/17                                infiniband-default  -      -                  Down                Polling
IB1/18                                infiniband-default  -      -                  Down                Polling
IB1/19                                infiniband-default  -      -                  Down                Polling
IB1/20                                infiniband-default  -      -                  Down                Polling
IB1/21                                infiniband-default  -      -                  Down                Polling
IB1/22                                infiniband-default  -      -                  Down                Polling
IB1/23                                infiniband-default  -      -                  Down                Polling
```

Test Information

```
IB1/24                    infiniband-default  -     -          Down      Polling
IB1/25                    infiniband-default  -     -          Down      Polling
IB1/26                    infiniband-default  -     -          Down      Polling
IB1/27                    infiniband-default  -     -          Down      Polling
IB1/28                    infiniband-default  -     -          Down      Polling
IB1/29                    infiniband-default  -     -          Down      Polling
IB1/30                    infiniband-default  -     -          Down      Polling
IB1/31                    infiniband-default  -     -          Down      Polling
        -          Down        Polling
IB1/33                    infiniband-default  -     -          Down      Polling
IB1/34                    infiniband-default  -     -          Down      Polling
IB1/35                    infiniband-default  -     -          Down      Polling
IB1/36                    infiniband-default  edr   100.0 Gbps  Active    LinkUp
```

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

```
MSB7800 [standalone: master] #
MSB7800 [standalone: master] #
MSB7800 [standalone: master] # show interfaces ib 1/1

IB1/1 state:
  Logical port state      : Active
  Physical port state     : LinkUp
  Current line rate       : 100.0 Gbps
  Supported speeds        : edr
  Speed                   : edr
  Supported widths        : 1X, 4X
  Width                   : 4X
  Max supported MTUs      : 4096
  MTU                     : 4096
  VL admin capabilities   : VL0 - VL7
  Operational VLs         : VL0 - VL3
  Description             :
  IB Subnet               : infiniband-default
  Phy-profile             : high-speed-ber
  Width reduction mode    : Not supported
  Telemetry sampling      : Disabled
  Telemetry threshold     : Disabled
  Telemetry record        : Disabled
  Telemetry threshold level: N/A bytes

  RX:
    Bytes           : 42336
    Packets         : 147
    Errors          : 0
    Symbol errors   : 0
    VL15 dropped packets: 0

  TX:
    Bytes           : 42336
    Packets         : 147
    Wait            : 0
    Discarded packets: 454
```

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	/