



QSFP-DR-100G

OPTICAL TRANSCEIVER MODULE

Scenario Application Test Report (Arista)

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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	/
Digital Diagnostic Monitoring	Pass	/

3. Test Environment

3.1 Test Equipment Used

Table 3-1: Test Equipment Used

Vendor	Device	Soft Version
Arista Switch	DCS-7060SX2-48YC6-R	4.30.1F
NVIDIA NICs	MCX623106AN-CDAT	22.43.1014
DELL Server	PowerEdge R860	/



3.2 Test Sample

Table 3-2: Test Sample

Product ID	P/N	Serial Number
#143154	QSFP-DR-100G	A2440004257

4. Test Data

Table 4: Scenario Application Testing

Test Topology	
Test Premise	<ol style="list-style-type: none"> 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.  <ol style="list-style-type: none"> 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	<p>Click to open the SecureCRT Portable software and enter the quick connection interface.</p> <ol style="list-style-type: none"> 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 <p>The remaining configurations can keep the default values.</p>
Test Steps	<ol style="list-style-type: none"> 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.

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

```
DCS-7060SX2-48YC6-R#
DCS-7060SX2-48YC6-R#show version
Arista DCS-7060SX2-48YC6-R
Hardware version: 11.50
Serial number: SSJ18236106
Hardware MAC address: 7483.efd7.78a7
System MAC address: 7483.efd7.78a7
```

```
Software image version: 4.30.1F
Architecture: i686
Internal build version: 4.30.1F-32315456.4301F
Internal build ID: e459ae2a-b8aa-4673-b865-e0936c7b6ebf
Image format version: 3.0
Image optimization: Strata-4GB
```

```
Uptime: 1 day, 4 hours and 21 minutes
Total memory: 8062968 kB
Free memory: 6425356 kB
```

```
DCS-7060SX2-48YC6-R>
DCS-7060SX2-48YC6-R>
DCS-7060SX2-48YC6-R>show interfaces status
```

Port	Name	Status	Vlan	Duplex	Speed	Type	Flags	Encapsulation
Et1		notconnect	1	full	10G	Not Present		
Et2		errdisabled	1	full	25G	Not Present		
Et3		errdisabled	1	full	25G	Not Present		
Et4		errdisabled	1	full	25G	Not Present		
Et5		notconnect	1	full	10G	Not Present		
Et6		errdisabled	1	full	25G	Not Present		
Et7		errdisabled	1	full	25G	Not Present		
Et8		errdisabled	1	full	25G	Not Present		
Et9		notconnect	1	full	25G	Not Present		
Et10		notconnect	1	full	25G	Not Present		
Et11		notconnect	1	full	25G	Not Present		
Et12		notconnect	1	full	25G	Not Present		
Et13		notconnect	1	full	25G	Not Present		
Et14		notconnect	1	full	25G	Not Present		
Et15		notconnect	1	full	25G	Not Present		
Et16		notconnect	1	full	25G	Not Present		
Et17		notconnect	1	full	25G	Not Present		
Et18		notconnect	1	full	25G	Not Present		
Et19		notconnect	1	full	25G	Not Present		
Et20		notconnect	1	full	25G	Not Present		
Et21		notconnect	1	full	25G	Not Present		
Et22		notconnect	1	full	25G	Not Present		
Et23		notconnect	1	full	25G	Not Present		
Et24		notconnect	1	full	25G	Not Present		
Et25		notconnect	1	full	25G	Not Present		
Et26		notconnect	1	full	25G	Not Present		
Et27		notconnect	1	full	25G	Not Present		
Et28		notconnect	1	full	25G	Not Present		
Et29		notconnect	1	full	25G	Not Present		
Et30		notconnect	1	full	25G	Not Present		
Et31		notconnect	1	full	25G	Not Present		
Et32		notconnect	1	full	25G	Not Present		
Et33		notconnect	1	full	1G	Not Present		
Et34		notconnect	1	full	1G	Not Present		
Et35		errdisabled	1	full	25G	Not Present		
Et36		errdisabled	1	full	25G	Not Present		
Et37		notconnect	1	full	25G	Not Present		
Et38		notconnect	1	full	25G	Not Present		
Et39		errdisabled	1	full	10G	Not Present		
Et40		errdisabled	1	full	10G	Not Present		
Et41		notconnect	10	full	10G	Not Present		
Et42		notconnect	10	full	10G	Not Present		
Et43		errdisabled	1	full	25G	Not Present		
Et44		errdisabled	1	full	25G	Not Present		
Et45		notconnect	1	full	25G	Not Present		
Et46		notconnect	1	full	25G	Not Present		
Et47		notconnect	1	full	25G	Not Present		
Et48		notconnect	1	full	25G	Not Present		
Et49/1		connected	1	full	100G	100GBASE-DR		
Et50/1		notconnect	1	full	40G	Not Present		
Et51/1		notconnect	1	full	25G	Not Present		
Et51/2		notconnect	1	full	25G	Not Present		
Et51/3		notconnect	1	full	25G	Not Present		
Et51/4		notconnect	1	full	25G	Not Present		
Et52/1		notconnect	1	full	10G	Not Present		
Et52/2		errdisabled	1	full	25G	Not Present		
Et52/3		errdisabled	1	full	25G	Not Present		
Et52/4		errdisabled	1	full	25G	Not Present		
Et53/1		notconnect	1	full	100G	Not Present		
Et54/1		notconnect	1	full	100G	Not Present		
Ma1		notconnect	routed	auto	auto	10/100/1000		

Test Information

Test Information

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

```
DCS-7060SX2-48YC6-R#show interfaces ethernet 49/1
Ethernet49/1 is up, line protocol is up (connected)
Hardware is Ethernet, address is 7483.efd7.78e4 (bia 7483.efd7.78e4)
Ethernet MTU 9214 bytes, BW 100000000 kbit
Full-duplex, 100Gb/s, auto negotiation: off, uni-link: n/a
Up 1 minute, 2 seconds
Loopback Mode : None
0 link status changes since last clear
Last clearing of "show interface" counters 0:00:35 ago
5 minutes input rate 0 bps (0.0% with framing overhead), 0 packets/sec
5 minutes output rate 14 bps (0.0% with framing overhead), 0 packets/sec
1 packets input, 203 bytes
Received 0 broadcasts, 1 multicast
0 runts, 0 giants
0 input errors, 0 CRC, 0 alignment, 0 symbol, 0 input discards
0 PAUSE input
18 packets output, 2294 bytes
Sent 0 broadcasts, 18 multicast
0 output errors, 0 collisions
0 late collision, 0 deferred, 0 output discards
0 PAUSE output
```

3. Read the DDM information of the module

```
DCS-7060SX2-48YC6-R#show interfaces ethernet 49/1 transceiver detail
mA: milliamperes, dBm: decibels (milliwatts), NA or N/A: not applicable.
A2D readouts (if they differ), are reported in parentheses.
The threshold values are calibrated.
```

Temperature					
High Alarm High Warn Low Alarm Low Warn					
Threshold Threshold Threshold Threshold Threshold					
Port	(Celsius)	(Celsius)	(Celsius)	(Celsius)	(Celsius)
Et49/1	42.89	75.00	70.00	-5.00	0.00
Voltage					
High Alarm High Warn Low Alarm Low Warn					
Threshold Threshold Threshold Threshold Threshold					
Port	(Volts)	(Volts)	(Volts)	(Volts)	(Volts)
Et49/1	3.27	3.63	3.46	2.97	3.13
Current					
High Alarm High Warn Low Alarm Low Warn					
Threshold Threshold Threshold Threshold Threshold					
Port	(mA)	(mA)	(mA)	(mA)	(mA)
Et49/1	88.98	120.00	110.00	20.00	30.00
Tx Power					
High Alarm High Warn Low Alarm Low Warn					
Threshold Threshold Threshold Threshold Threshold					
Port	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
Et49/1	2.22	5.00	4.00	-4.90	-3.90
Rx Power					
High Alarm High Warn Low Alarm Low Warn					
Threshold Threshold Threshold Threshold Threshold					
Port	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
Et49/1	0.52	5.00	4.00	-7.90	-6.90

Test Information

4. 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  
  
[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.) : 0x000007f2 (100G_2X,100G_4X,50G_1X,50G_2X,40G,25G,10G,1G)  
Supported Cable Speed (Ext.) : 0x00000200 (100G_4x)  
  
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  
  
Physical Counters and BER Info  
-----  
Time Since Last Clear [Min] : 3.0  
Effective Physical Errors    : 0  
Effective Physical BER      : 15E-255  
Raw Physical Errors Per Lane : 0,0,0,0  
Raw Physical BER            : 15E-255
```

5. Read the module basic information on NIC

```
Module Info  
-----  
Identifier              : QSFP28  
Compliance              : 100GBASE-DR, with CAUI-4 without FEC  
Cable Technology        : 1310 nm EML  
Cable Type              : Optical Module (separated)  
OUI                     : Other  
Vendor Name             : FS  
Vendor Part Number      : QSFP-DR-100G  
Vendor Serial Number    : A2440004257  
Rev                     : 01  
Wavelength [nm]         : 1310  
Transfer Distance [m]    : 0  
Attenuation (5g,7g,12g) [dB] : N/A  
FW Version              : N/A  
Digital Diagnostic Monitoring : Yes  
Power Class             : 4.5 W max  
CDR RX                  : ON,OFF,OFF,OFF  
CDR TX                  : ON,ON,ON,ON  
LOS Alarm               : N/A  
Temperature [C]         : 33 [-5..75]  
Voltage [mV]            : 3267.8 [2970..3630]  
Bias Current [mA]        : 78.364,0,0,0 [20..120]  
Rx Power Current [dBm]   : 1.752,-40,-40,-40 [-7.905..5]  
Tx Power Current [dBm]   : 2.636,-40,-40,-40 [-4.908..5]  
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]/Far end is unspecified  
SMF Length              : N/A  
MAX Power               : 0  
Cable Rx AMP            : 0
```

```

Cable Rx Emphasis           : 0
Cable Rx Post Emphasis      : 0
Cable Tx Equalization       : 0
Wavelength Tolerance        : 2.2nm
Module State                 : N/A
DataPath state [per lane]   : N/A,N/A,N/A,N/A
Rx Output Valid [per lane]  : 0,0,0,0
Nominal bit rate             : 25.750Gb/s
Rx Power Type                : Average power
Manufacturing Date          : 22_10_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]         : 0,0,0,0
Tx LOS [per lane]           : 0,0,0,0
Tx CDR LOL [per lane]       : 0,0,0,0
Rx LOS [per lane]           : 0,0,0,0
Rx CDR LOL [per lane]       : 0,0,0,0
Tx Adaptive EQ Fault [per lane] : 0,0,0,0
    
```

6. Read the module DDM on NIC

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

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.) : 0x000007f2 (100G_2X,100G_4X,50G_1X,50G_2X,40G,25G,10G,1G)
Supported Cable Speed (Ext.) : 0x00000200 (100G_4X)
    
```

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
    
```

Cable DDM Information

```

-----
Temperature           : 34C
Voltage               : 3.2670V
Channels              : Channel 1      ,Channel 2      ,Channel 3      ,Channel 4
RX Power              : 2.000dBm      ,-40.000dBm     ,-40.000dBm     ,-40.000dBm
TX Power              : 2.000dBm      ,-40.000dBm     ,-40.000dBm     ,-40.000dBm
TX Bias               : 78.486mA      ,0.000mA        ,0.000mA        ,0.000mA
    
```

DDM Flags

```

-----
Temperature Alarm high : 0
Temperature warning high : 0
Temperature warning low : 0
Temperature Alarm low : 0

voltage Alarm high : 0
voltage warning high : 0
voltage warning low : 0
voltage Alarm low : 0
    
```

Test Conclusion

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

Remarks

/