QDD-ZR-400G
TEST REPORT (Cisco)

Content

1. Test Purpose

The test object is the QDD-ZR-400G Transceiver. By testing the corresponding module, it will lay the foundation for subsequent cooperation with customers.

2. Test Results Summary

Table 2: Test Results

1st Items	Test Data	Remarks
Product Software Performance Testing	Pass	
Product Compatibility Testing	Pass	

3. Test Environment

3.1 Test Equipment Used

Table 3- 1: Test Equipment Used

Vendor	Device	Soft Version	Hardware Version
FS	Coding Board		
Cisco	Nexus9000 C9332D-GX2B	10.4(2)	

3.2 Test Sample

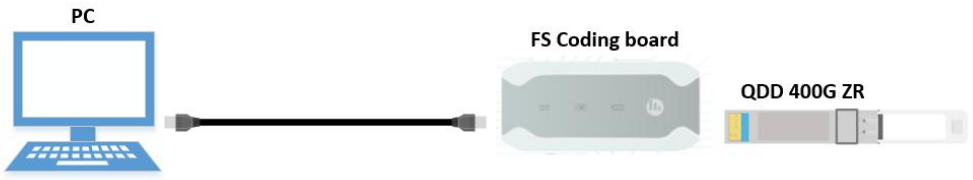
Table 3-2: Test Sample

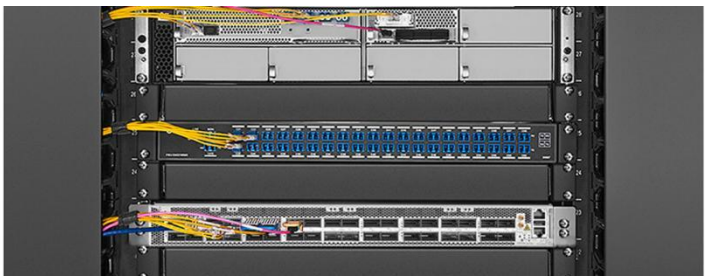
Product ID	P/N	Serial N umber
#193134	QDD-ZR-400G	A2310220131

4. Test Data

4. 1 Product Software Performance Testing

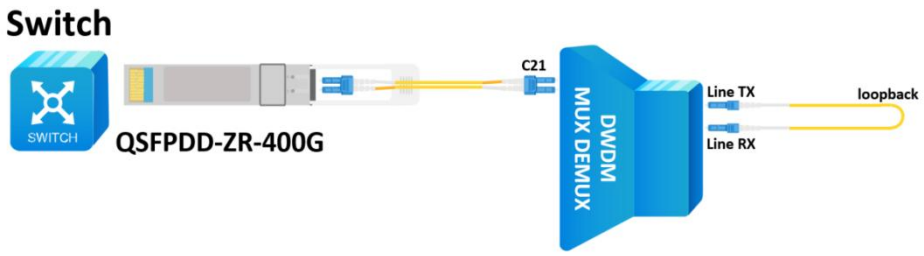
Table 4- 1: Product Software Performance Testing

<table>
<tr><td>Test Topology</td><td colspan="3">Network topology:
 

Test scenario:
  </td></tr>
<tr><td>Test Premise</td><td colspan="3">1. The equipment can be normally powered up and run normally.
2. According to the above networking to build a test environment.</td></tr>
<tr><td rowspan="2">Test Equipment</td><td colspan="2">Device</td><td>Model No.</td></tr>
<tr><td colspan="2">QDD-ZR-400G</td><td>A2310220131</td></tr>
<tr><td rowspan="6">Test Method</td><td colspan="3">1. The P/N, serial number, optic type, vendor name of the transceiver can be read by FS Coding board;
2. Transceiver is successfully coded by FS Coding board;
3. When FS Coding board and PC are powered on, plug and unplug the optics at least five times, then check whether the read information is consistent.</td></tr>
<tr><td>Items</td><td>Content</td><td>The Results</td></tr>
<tr><td rowspan="2">Function</td><td>Accessible Page</td><td>Pass</td></tr>
<tr><td>Coding</td><td>Pass</td></tr>
<tr><td>Upgrade</td><td>Firmware Online Upgrade</td><td>Pass</td></tr>
<tr><td>Stability</td><td>Hot Swap</td><td>Pass</td></tr>
<tr><td>Test Conclusion</td><td colspan="3">After testing, the results of all tested items meet the requirements of the inspection basis.</td></tr>
<tr><td>Remarks</td><td colspan="3"></td></tr>
</table>

4. 2 Product Compatibility Testing

Table 4- 2: Product Compatibility Testing

Test Topology		
Test Equipment	Device	Model No.
	Cisco	Nexus9000 C9332D-GX2B
Test Method	1.Check whether the optics DDM threshold is accurate; 2.Check whether the DDM parameters of optics, basic information of optics, device port information, and device log information are normal.	
Test Information	n# show version Cisco Nexus Operating System (NX-OS) Software TAC support: http://www.cisco.com/tac Copyright (C) 2002-2023, Cisco and/or its affiliates. All rights reserved. The copyrights to certain works contained in this software are owned by other third parties and used and distributed under their own licenses, such as open source. This software is provided "as is," and unless otherwise stated, there is no warranty, express or implied, including but not limited to warranties of merchantability and fitness for a particular purpose. Certain components of this software are licensed under the GNU General Public License (GPL) version 2.0 or GNU General Public License (GPL) version 3.0 or the GNU Lesser General Public License (LGPL) Version 2.1 or Lesser General Public License (LGPL) Version 2.0. A copy of each such license is available at http://www.opensource.org/licenses/gpl-2.0.php and http://opensource.org/licenses/gpl-3.0.html and http://www.opensource.org/licenses/lgpl-2.1.php and http://www.gnu.org/licenses/old-licenses/library.txt. Software BIOS: version 01.11 NXOS: version 10.4(2) [Feature Release] Host NXOS: version 10.4(2) BIOS compile time: 06/30/2023 NXOS image file is: bootflash:///nxos64-cs.10.4.2.F.bin NXOS compile time: 11/30/2023 12:00:00 [12/14/2023 05:25:50] NXOS boot mode: LXC Hardware cisco Nexus9000 C9332D-GX2B Chassis Intel(R) Xeon(R) CPU D-1633N @ 2.50GHz with 32801496 kB of memory. Processor Board ID FDO26450X3Y Device name: n	

```
  bootflash:  115805708 kB

Kernel uptime is 0 day(s), 0 hour(s), 43 minute(s), 48 second(s)

Last reset at 684261 usecs after Thu Mar  6 09:22:25 2025
  Reason: Reset due to upgrade
  System version: 10.4(3)
  Service:

plugin
  Core Plugin, Ethernet Plugin

Active Package(s):
n# show inventory
NAME: "Chassis",  DESCR: "Nexus9000 C9332D-GX2B Chassis"
PID: N9K-C9332D-GX2B    , VID: V01 ,  SN: FDO26450X3Y

NAME: "Slot 1",  DESCR: "32x400G QSFP-DD + 2x10G SFP+ Ethernet Module"
PID: N9K-C9332D-GX2B    , VID: V01 ,  SN: FDO26450X3Y

NAME: "Slot 27",  DESCR: "32x400G QSFP-DD + 2x10G SFP+ Ethernet Module"
PID: N9K-C9332D-GX2B    , VID: V01 ,  SN: FDO26450X3Y

NAME: "Power Supply 1",  DESCR: "Nexus9000 C9332D-GX2B Chassis Power Supply"
PID: NXA-PAC-1500W-PI   , VID: V01 ,  SN: POG2646FTDA

NAME: "Power Supply 2",  DESCR: "Nexus9000 C9332D-GX2B Chassis Power Supply"
PID: NXA-PAC-1500W-PI   , VID: V01 ,  SN: POG2646FT6T

NAME: "Fan 1",  DESCR: "Nexus9000 C9332D-GX2B Chassis Fan Module"
PID: NXA-SFAN-35CFM-PI  , VID: V01 ,  SN: N/A

NAME: "Fan 2",  DESCR: "Nexus9000 C9332D-GX2B Chassis Fan Module"
PID: NXA-SFAN-35CFM-PI  , VID: V01 ,  SN: N/A

NAME: "Fan 3",  DESCR: "Nexus9000 C9332D-GX2B Chassis Fan Module"
PID: NXA-SFAN-35CFM-PI  , VID: V01 ,  SN: N/A

NAME: "Fan 4",  DESCR: "Nexus9000 C9332D-GX2B Chassis Fan Module"
PID: NXA-SFAN-35CFM-PI  , VID: V01 ,  SN: N/A

NAME: "Fan 5",  DESCR: "Nexus9000 C9332D-GX2B Chassis Fan Module"
PID: NXA-SFAN-35CFM-PI  , VID: V01 ,  SN: N/A

NAME: "Fan 6",  DESCR: "Nexus9000 C9332D-GX2B Chassis Fan Module"
PID: NXA-SFAN-35CFM-PI  , VID: V01 ,  SN: N/A

n# show running-config interface ethernet 1/1

!Command: show running-config interface Ethernet1/1
!Running configuration last done at: Thu Mar  6 09:29:51 2025
!Time: Thu Mar  6 10:10:51 2025

version 10.4(2) Bios:version 01.11

interface Ethernet1/1
  zr-optics fec cFEC muxponder 1x400 modulation 16QAM dac-rate 1x1
  zr-optics cd-min -2300 cd-max 2300
  zr-optics transmit-power -70
  zr-optics dwdm-carrier 100MHz-grid frequency 1921000
  no shutdown
n# show interface status

--------------------------------------------------------------------------------
Port       Name           Status    Vlan      Duplex  Speed   Type
--------------------------------------------------------------------------------
mgmt0      --             notconnec routed    auto    auto    --

--------------------------------------------------------------------------------
```

```
Port       Name          Status   Vlan     Duplex  Speed   Type
--------------------------------------------------------------------------------
Eth1/1     --            connected 1       full    400G    QSFP-DD-400
G-ZR-S
Eth1/2     --            xcvrAbsen 1       auto    auto    --
Eth1/3/1   --            xcvrAbsen 1       auto    auto    --
Eth1/3/2   --            xcvrAbsen 1       auto    auto    --
Eth1/3/3   --            xcvrAbsen 1       auto    auto    --
Eth1/3/4   --            xcvrAbsen 1       auto    auto    --
Eth1/4     --            xcvrAbsen 1       auto    auto    --
Eth1/5/1   --            xcvrAbsen 1       auto    auto    --
Eth1/5/2   --            xcvrAbsen 1       auto    auto    --
Eth1/5/3   --            xcvrAbsen 1       auto    auto    --
Eth1/5/4   --            xcvrAbsen 1       auto    auto    --
Eth1/6     --            xcvrAbsen 1       auto    auto    --
Eth1/7/1   --            xcvrAbsen 1       auto    auto    --
Eth1/7/2   --            xcvrAbsen 1       auto    auto    --
Eth1/7/3   --            xcvrAbsen 1       auto    auto    --
Eth1/7/4   --            xcvrAbsen 1       auto    auto    --
Eth1/8     --            xcvrAbsen 1       auto    auto    --
Eth1/9/1   --            xcvrAbsen 1       auto    auto    --
Eth1/9/2   --            xcvrAbsen 1       auto    auto    --
Eth1/9/3   --            xcvrAbsen 1       auto    auto    --
Eth1/9/4   --            xcvrAbsen 1       auto    auto    --
Eth1/10    --            xcvrAbsen 1       auto    auto    --
Eth1/11/1  --            xcvrAbsen 1       auto    auto    --
Eth1/11/2  --            xcvrAbsen 1       auto    auto    --
Eth1/11/3  --            xcvrAbsen 1       auto    auto    --
Eth1/11/4  --            xcvrAbsen 1       auto    auto    --
Eth1/12    --            xcvrAbsen 1       auto    auto    --
Eth1/13    --            xcvrAbsen 1       auto    auto    --
Eth1/14    --            xcvrAbsen 1       auto    auto    --
Eth1/15    --            xcvrAbsen 1       auto    auto    --
Eth1/16    --            xcvrAbsen 1       auto    auto    --
Eth1/17    --            xcvrAbsen 1       auto    auto    --
Eth1/18    --            xcvrAbsen 1       auto    auto    --
Eth1/19    --            xcvrAbsen 1       auto    auto    --
Eth1/20    --            xcvrAbsen 1       auto    100G    --
Eth1/21    --            xcvrAbsen 1       auto    auto    --
Eth1/22    --            xcvrAbsen 1       auto    100G    --
Eth1/23    --            xcvrAbsen 1       auto    auto    --
Eth1/24    --            xcvrAbsen 1       auto    auto    --
Eth1/25    --            xcvrAbsen 1       auto    auto    --
Eth1/26    --            xcvrAbsen 1       auto    auto    --
Eth1/27    --            xcvrAbsen 1       auto    auto    --
Eth1/28    --            xcvrAbsen 1       auto    auto    --
Eth1/29    --            xcvrAbsen 1       auto    auto    --
Eth1/30    --            xcvrAbsen 1       auto    auto    --
Eth1/31    --            xcvrAbsen 1       auto    auto    --
Eth1/32    --            xcvrAbsen 1       auto    auto    --
Eth1/33    --            xcvrAbsen 1       auto    auto    --
Eth1/34    --            xcvrAbsen 1       auto    auto    --

n# show interface ethernet 1/1 transceiver details
Ethernet1/1
   transceiver is present
   type is QSFP-DD-400G-ZR-S
   name is FS
   part number is QDD-ZR-400G
   revision is A
   serial number is A2310220126
   nominal bitrate is 425000 MBit/sec per channel
   cisco id is 24
   cisco extended id number is 21
   firmware version is 2.11
   Link length SMF is 8 km
   Nominal transmitter wavelength is 1547.70 nm
   Wavelength tolerance is 0.015 nm
   host lane count is 8
```

	media lane count is 1 max module temperature is 70 deg C min module temperature is 0 deg C min operational voltage is 3.14 V vendor OUI is 0x7cb25c date code is 240507 clei code is INUIANYEAA power class is 8 (>14 W maximum) max power is 23.75 W near-end lanes used none far-end lane code for 8 lanes Undefined media interface is unknown value 0x10 Advertising code is Optical Interfaces: SMF Host electrical interface code is 400GAUI-8 C2M (Annex 120E) FEC State: FEC cFEC Optics Status Optics Type: QSFP-DD-400G-ZR-S DWDM carrier Info: Frequency: 192.10 THz Alarm Status ---------- DAC Rate: 1x1 THRESHOLD VALUES ---------- Configured Tx Power: 0 dBm Modulation Type: 16QAM Muxponder Type: 1x400 Configured CD-MIN: -1430864206 ps/nm CD-MAX: 530644985 ps/nm Lane Number:1 Network Lane ---------- Current Alarms Warnings Measurement High Low High Low ---------- Temperature 65.62 C 75.00 C -5.00 C 70.00 C 0.00 C Voltage 3.30 V 3.60 V 3.00 V 3.46 V 3.13 V Current N/A N/A N/A N/A N/A Tx Power -7.01 dBm 2.99 dBm -8.01 dBm 1.99 dBm -7.01 dBm Rx Power -11.13 dBm 7.99 dBm -23.01 dBm 7.99 dBm -22.21 dBm Transmit Fault Count = 0 ---------- Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning *** This QSFP support partial diagnostic data! ***
Test Conclusion	The QDD-ZR-400G module was used in this test.After testing, the test results of the tested items (product software performance) meet the requirements of the test basis.
Remarks	

5. Appendix

5. 1 Product Software Performance Standards

Table 5- 1: Product Software Performance Standards

Test Items	Content	Standards
Function	Accessed Normally	The model No., serial number, optics type, vendor name and other information of optics can be read.
	Accessible Page	
Upgrade	Firmware Online Upgrade	Optics can be coded through BOX successfully
Reliability	Hot Swap	When FS BOX and PC are powered on, plug and unplug the optics for at least five times, then check whether the read information are consistent.

5. 2 Product Software Performance Standards

On the basis of threshold value range, the allowable deviation value should be within the standard range that is specified by FS.

Table 5- 2: Product Software Performance Standards

Content	Details	Standards
Basic Information	Model name	The read model No. is consistent with the model of optics. (If there are special requirements, the actual information shall prevail)
	SN Number	The read serial number is consistent with the serial number on label of optics. (If there are special requirements, the actual information shall prevail)
	Vendor Name	The vendor name information read is FS/OEM. (If there are special requirements, the actual information shall prevail)
	Type	The optics type information read by the switch is consistent with the actual optics model. (If there are special requirements, the actual information shall prevail)
DDM Information	Temperature	1. The actual DDM information is within the DDM threshold and there is no alarm; 2. The DDM threshold range meets the product specification requirements.
	Voltage	
	Bias current	
	Tx Power	
	RX Power	
Port Information	Port Rate	The data rate information read on switch port is consistent with the actual rate of the optics
	Port Status	After the product is connected, the port status information is UP
	Switch Indicator Status	After the product is connected, the port indicators at both ends of the product will be green/orange
Switch Log		Except for the official certification warning information, no other warning information