



QSFP-ER4L-100G

**OPTICAL TRANSCEIVER
MODULE**

Scenario Application Test Report (Cisco)

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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
Ciso Switch	C93180YC-EX	07.69



3.2 Test Sample

Table 3-2: Test Sample

Product ID	P/N	Serial Number
#70236	QSFP-ER4L-100G	Y2105206319

4. Test Data

Table 4: Scenario Application Testing

<p>Test Topology</p>	
<p>Test Premise</p>	<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.
<p>Test Method</p>	<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>
<p>Test Steps</p>	<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.

Test Information

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

```
N9K-C93180YC-EX# show version
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
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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 07.69
  NXOS: version 10.2(1) [Feature Release]
  BIOS compile time: 04/07/2021
  NXOS image file is: bootflash://nxos64.10.2.1.F.bin
  NXOS compile time: 8/23/2021 17:00:00 [08/24/2021 03:42:46]
```

```
Hardware
  cisco Nexus9000 C93180YC-EX chassis
  Intel(R) Xeon(R) CPU @ 1.80GHz with 24627908 kB of memory.
  Processor Board ID FDO221418Y5
  Device name: N9K-C93180YC-EX
  bootflash: 7906304 kB
```

```
N9K-C93180YC-EX# show interface status
```

Port	Name	Status	Vlan	Duplex	Speed	Type
Eth1/1	--	xcvrAbsent	routed	auto	auto	--
Eth1/2	--	xcvrAbsent	routed	auto	auto	--
Eth1/3	--	xcvrAbsent	routed	auto	auto	--
Eth1/4	--	xcvrAbsent	routed	auto	auto	--
Eth1/5	--	xcvrAbsent	routed	auto	auto	--
Eth1/6	--	xcvrAbsent	routed	auto	auto	--
Eth1/7	--	xcvrAbsent	routed	auto	auto	--
Eth1/8	--	xcvrAbsent	routed	auto	auto	--
Eth1/9	--	xcvrAbsent	routed	auto	auto	--
Eth1/10	--	xcvrAbsent	routed	auto	100	--
Eth1/11	--	xcvrAbsent	routed	auto	100	--
Eth1/12	--	xcvrAbsent	routed	auto	100	--
Eth1/13	--	xcvrAbsent	routed	auto	100	--
Eth1/14	--	xcvrAbsent	routed	auto	100	--
Eth1/15	--	xcvrAbsent	routed	auto	100	--
Eth1/16	--	xcvrAbsent	routed	auto	auto	--
Eth1/17	--	xcvrAbsent	routed	auto	auto	--

```

Eth1/18  --      xcvrAbsent routed  auto  auto  --
Eth1/19  --      xcvrAbsent routed  auto  auto  --
Eth1/20  --      xcvrAbsent routed  auto  1000  --
Eth1/21  --      xcvrAbsent routed  auto  1000  --
Eth1/22  --      xcvrAbsent routed  auto  1000  --
Eth1/23  --      xcvrAbsent routed  auto  1000  --
Eth1/24  --      xcvrAbsent routed  auto  1000  --
Eth1/25  --      xcvrAbsent routed  auto  1000  --
Eth1/26  --      xcvrAbsent routed  auto  auto  --
Eth1/27  --      xcvrAbsent routed  auto  auto  --
Eth1/28  --      xcvrAbsent routed  auto  auto  --
Eth1/29  --      xcvrAbsent routed  auto  auto  --
Eth1/30  --      xcvrAbsent routed  auto  auto  --
Eth1/31  --      xcvrAbsent routed  auto  auto  --
Eth1/32  --      xcvrAbsent routed  auto  auto  --
Eth1/33  --      xcvrAbsent routed  auto  auto  --
Eth1/34  --      xcvrAbsent routed  auto  auto  --
Eth1/35  --      xcvrAbsent routed  auto  auto  --
Eth1/36  --      xcvrAbsent routed  auto  auto  --
Eth1/37  --      xcvrAbsent routed  auto  auto  --
Eth1/38  --      xcvrAbsent routed  auto  auto  --
Eth1/39  --      xcvrAbsent routed  auto  auto  --
Eth1/40  --      xcvrAbsent routed  auto  auto  --
Eth1/41  --      xcvrAbsent routed  auto  auto  --
Eth1/42  --      xcvrAbsent routed  auto  auto  --
Eth1/43  --      xcvrAbsent routed  auto  auto  --
Eth1/44  --      xcvrAbsent routed  auto  auto  --
Eth1/45  --      xcvrAbsent routed  auto  auto  --
Eth1/46  --      xcvrAbsent routed  auto  auto  --
Eth1/47  --      xcvrAbsent routed  auto  auto  --
Eth1/48  --      xcvrAbsent routed  auto  auto  --
Eth1/49  --      connected routed  full  100G  QSFP-100G-L
R4
Eth1/50  --      connected routed  full  100G  QSFP-100G-L
    
```

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

```

N9K-C93180YC-EX#
N9K-C93180YC-EX#
N9K-C93180YC-EX# show interface ethernet 1/49
Ethernet1/49 is up
admin state is up, Dedicated Interface
Hardware: 1000/10000/25000/40000/50000/100000 Ethernet, address: 700f.6a4d.df3
f (bia 700f.6a4d.df70)
MTU 1500 bytes, BW 1000000000 Kbit, DLY 10 usec
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, medium is broadcast
full-duplex, 100 Gb/s, media type is 100G
Beacon is turned off
Auto-Negotiation is turned on FEC mode is Auto
Input flow-control is off, output flow-control is off
Auto-mdix is turned off
Rate mode is dedicated
Switchport monitor is off
EtherType is 0x8100
EEE (efficient-ethernet) : n/a
admin fec state is auto, oper fec state is Rs-fec
Last link flapped 00:01:39
Last clearing of "show interface" counters never
2 interface resets
    
```

```
Load-Interval #1: 30 seconds
 30 seconds input rate 0 bits/sec, 0 packets/sec
 30 seconds output rate 0 bits/sec, 0 packets/sec
input rate 0 bps, 0 pps; output rate 0 bps, 0 pps
Load-Interval #2: 5 minute (300 seconds)
 300 seconds input rate 24 bits/sec, 0 packets/sec
 300 seconds output rate 24 bits/sec, 0 packets/sec
input rate 24 bps, 0 pps; output rate 24 bps, 0 pps
RX
 0 unicast packets 9 multicast packets 0 broadcast packets
 9 input packets 2385 bytes
 0 jumbo packets 0 storm suppression bytes
 0 runs 0 giants 0 CRC 0 no buffer
 0 input error 0 short frame 0 overrun 0 underrun 0 ignored
 0 watchdog 0 bad etype drop 0 bad proto drop 0 if down drop
 0 input with dribble 0 input discard
 0 Rx pause
 0 Stomped CRC
TX
 0 unicast packets 9 multicast packets 0 broadcast packets
 9 output packets 2385 bytes
 0 jumbo packets
 0 output error 0 collision 0 deferred 0 late collision
 0 lost carrier 0 no carrier 0 babble 0 output discard
 0 Tx pause

N9K-C93180YC-EX#
N9K-C93180YC-EX#
N9K-C93180YC-EX# show interface ethernet 1/50
Ethernet1/50 is up
admin state is up, Dedicated Interface
Hardware: 1000/10000/25000/40000/50000/100000 Ethernet, address: 700f.6a4d.df3
f (bia 700f.6a4d.df74)
MTU 1500 bytes, BW 100000000 Kbit, DLY 10 usec
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, medium is broadcast

full-duplex, 100 Gb/s, media type is 100G
Beacon is turned off
Auto-Negotiation is turned on FEC mode is Auto
Input flow-control is off, output flow-control is off
Auto-mdix is turned off
Rate mode is dedicated
Switchport monitor is off
EtherType is 0x8100
EEE (efficient-ethernet) : n/a
  admin fec state is auto, oper fec state is Rs-fec
Last link flapped 00:01:45
Last clearing of "show interface" counters never
2 interface resets
Load-Interval #1: 30 seconds
 30 seconds input rate 0 bits/sec, 0 packets/sec
 30 seconds output rate 0 bits/sec, 0 packets/sec
input rate 0 bps, 0 pps; output rate 0 bps, 0 pps
Load-Interval #2: 5 minute (300 seconds)
 300 seconds input rate 24 bits/sec, 0 packets/sec
 300 seconds output rate 24 bits/sec, 0 packets/sec
```

```

input rate 24 bps, 0 pps; output rate 24 bps, 0 pps
RX
 0 unicast packets 9 multicast packets 0 broadcast packets
 9 input packets 2385 bytes
 0 jumbo packets 0 storm suppression bytes
 0 runts 0 giants 0 CRC 0 no buffer
 0 input error 0 short frame 0 overrun 0 underrun 0 ignored
 0 watchdog 0 bad etype drop 0 bad proto drop 0 if down drop
 0 input with dribble 0 input discard
 0 Rx pause
 0 Stomped CRC
TX
 0 unicast packets 9 multicast packets 0 broadcast packets
 9 output packets 2385 bytes
 0 jumbo packets
 0 output error 0 collision 0 deferred 0 late collision
 0 lost carrier 0 no carrier 0 babble 0 output discard
 0 Tx pause
    
```

3. Read the DDM information of the module

```

N9K-C93180YC-EX#
N9K-C93180YC-EX#
N9K-C93180YC-EX# show interface ethernet 1/49 transceiver details t
^
% Invalid command at '^' marker.
N9K-C93180YC-EX# show interface ethernet 1/49 transceiver details
Ethernet1/49
  transceiver is present
  type is QSFP-100G-LR4
  name is FS
  part number is QSFP28-ER4-100G
  revision is 04
  serial number is Y2105206431
  nominal bitrate is 25500 MBit/sec
  Link length supported for 9/125um fiber is 40 km
  cisco id is 17
  cisco extended id number is 30
    
```

Lane Number:1 Network Lane
SFP Detail Diagnostics Information (internal calibration)

	Current Measurement	Alarms		Warnings	
		High	Low	High	Low
Temperature	25.08 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.24 V	3.63 V	3.03 V	3.46 V	3.13 V
Current	69.52 mA	100.00 mA	25.00 mA	90.00 mA	35.00 mA
Tx Power	2.02 dBm	7.49 dBm	-5.51 dBm	6.49 dBm	-2.50 dBm
Rx Power	-13.87 dBm	-2.50 dBm	-23.97 dBm	-3.50 dBm	-20.96 dBm
Transmit Fault Count = 0					

Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

Lane Number:2 Network Lane
SFP Detail Diagnostics Information (internal calibration)


```

-----
          Current      Alarms      Warnings
          Measurement  High      Low      High      Low
-----
Temperature 25.08 C    75.00 C  -5.00 C  70.00 C   0.00 C
Voltage     3.24 V      3.63 V  3.03 V   3.46 V   3.13 V
Current     69.52 mA     100.00 mA  25.00 mA  90.00 mA  35.00 mA
Tx Power    2.07 dBm      7.49 dBm  -5.51 dBm  6.49 dBm  -2.50 dBm
Rx Power   -12.92 dBm    -2.50 dBm -23.97 dBm -3.50 dBm -20.96 dBm
Transmit Fault Count = 0
-----

```

Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

Lane Number:3 Network Lane
SFP Detail Diagnostics Information (internal calibration)

```

-----
          Current      Alarms      Warnings
          Measurement  High      Low      High      Low
-----
Temperature 25.08 C    75.00 C  -5.00 C  70.00 C   0.00 C
Voltage     3.24 V      3.63 V  3.03 V   3.46 V   3.13 V
Current     64.56 mA     100.00 mA  25.00 mA  90.00 mA  35.00 mA
Tx Power    2.15 dBm      7.49 dBm  -5.51 dBm  6.49 dBm  -2.50 dBm
Rx Power   -12.83 dBm    -2.50 dBm -23.97 dBm -3.50 dBm -20.96 dBm
Transmit Fault Count = 0
-----

```

Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

Lane Number:4 Network Lane
SFP Detail Diagnostics Information (internal calibration)

```

-----
          Current      Alarms      Warnings
          Measurement  High      Low      High      Low
-----
Temperature 25.08 C    75.00 C  -5.00 C  70.00 C   0.00 C
Voltage     3.24 V      3.63 V  3.03 V   3.46 V   3.13 V
Current     64.56 mA     100.00 mA  25.00 mA  90.00 mA  35.00 mA
Tx Power    1.73 dBm      7.49 dBm  -5.51 dBm  6.49 dBm  -2.50 dBm
Rx Power   -13.46 dBm    -2.50 dBm -23.97 dBm -3.50 dBm -20.96 dBm
Transmit Fault Count = 0
-----

```

Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

N9K-C93180YC-EX#
N9K-C93180YC-EX#
N9K-C93180YC-EX#
N9K-C93180YC-EX# show interface ethernet 1/50 transceiver details

```

Ethernet1/50
  transceiver is present
  type is QSFP-100G-LR4
  name is FS
  part number is QSFP28-ER4-100G
  revision is 04
  serial number is Y2105206319
  nominal bitrate is 25500 MBit/sec
  Link length supported for 9/125um fiber is 40 km
  cisco id is 17
  cisco extended id number is 30

```

Lane Number:1 Network Lane

SFP Detail Diagnostics Information (internal calibration)

	Current Measurement	Alarms		Warnings	
		High	Low	High	Low
Temperature	27.12 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.24 V	3.63 V	3.03 V	3.46 V	3.13 V
Current	69.60 mA	100.00 mA	25.00 mA	90.00 mA	35.00 mA
Tx Power	1.17 dBm	7.49 dBm	-5.51 dBm	6.49 dBm	-2.50 dBm
Rx Power	-13.37 dBm	-2.50 dBm	-23.97 dBm	-3.50 dBm	-20.96 dBm
Transmit Fault Count = 0					

Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

Lane Number:2 Network Lane

SFP Detail Diagnostics Information (internal calibration)

	Current Measurement	Alarms		Warnings	
		High	Low	High	Low
Temperature	27.12 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.24 V	3.63 V	3.03 V	3.46 V	3.13 V
Current	64.62 mA	100.00 mA	25.00 mA	90.00 mA	35.00 mA
Tx Power	2.30 dBm	7.49 dBm	-5.51 dBm	6.49 dBm	-2.50 dBm
Rx Power	-13.09 dBm	-2.50 dBm	-23.97 dBm	-3.50 dBm	-20.96 dBm
Transmit Fault Count = 0					

Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

Lane Number:3 Network Lane

SFP Detail Diagnostics Information (internal calibration)

	Current Measurement	Alarms		Warnings	
		High	Low	High	Low
Temperature	27.12 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.24 V	3.63 V	3.03 V	3.46 V	3.13 V
Current	64.63 mA	100.00 mA	25.00 mA	90.00 mA	35.00 mA
Tx Power	2.68 dBm	7.49 dBm	-5.51 dBm	6.49 dBm	-2.50 dBm
Rx Power	-13.09 dBm	-2.50 dBm	-23.97 dBm	-3.50 dBm	-20.96 dBm
Transmit Fault Count = 0					

Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

Lane Number:4 Network Lane

SFP Detail Diagnostics Information (internal calibration)

	Current Measurement	Alarms		Warnings	
		High	Low	High	Low
Temperature	27.12 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.24 V	3.63 V	3.03 V	3.46 V	3.13 V
Current	64.63 mA	100.00 mA	25.00 mA	90.00 mA	35.00 mA
Tx Power	2.26 dBm	7.49 dBm	-5.51 dBm	6.49 dBm	-2.50 dBm
Rx Power	-13.27 dBm	-2.50 dBm	-23.97 dBm	-3.50 dBm	-20.96 dBm
Transmit Fault Count = 0					

Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning

N9K-C93180YC-EX#

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