



OPTICAL TRANSCEIVER TEST REPORT

Tested by: Jessica.Yang | Date: 2022.06.03

1. Test Purpose

Test objects: QSFP-100G-ER4, Through the corresponding tests, the test parameters conform to the relevant industry standards, and the test transceivers can be used normally in Extreme brand equipment, laying the foundation for the subsequent cooperation with customers.

2. Test items

Test items		Test details
Compatibility Testing	Connectivity testing	The transceiver can connect both ends of the device normally, and the device port status is up.
	Parameter testing	The transceiver PN, VN, SN, and DDM information read by the device is consistent with the module tag description.

3. Test environment

3.1. Test samples

Vendor Name	Part Number	Serial Number	Transceiver Description
NADDOD	QSFP-100G-ER4	ACS22060700250	Cisco Compatible 100GBASE-LR4 QSFP28 100G 1310nm 10km DOM LC SMF Transceiver Module
NADDOD	QSFP-100G-ER4	ACS22060700251	Cisco Compatible 100GBASE-LR4 QSFP28 100G 1310nm 10km DOM LC SMF Transceiver Module

3.2. Test equipment

Equipment Brand	Equipment Model	Software version (running)
Cisco	Cisco Nexus N9K-C93180YC-EX	NX-OS:10.2.1(F)

4. Test data

4.1. Connectivity testing

Test Method	<ol style="list-style-type: none"> check whether the device status is normal.; Check whether the port device port LED is green; (individual brand port LED is yellow or white) check whether the device port is normally linked up;
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4. Check whether the device port rate is up to standard.

Test Data

```
*****Equipment model*****
switch# show inventory
NAME: "Chassis",  DESCR: "Nexus9000 C93180YC-EX chassis"
PID: N9K-C93180YC-EX    ,  VID: V01 ,  SN: FDO21021SZV

NAME: "Slot 1",  DESCR: "48x10/25G + 6x40/100G Ethernet Module"
PID: N9K-C93180YC-EX    ,  VID: V01 ,  SN: FDO21021SZV

NAME: "Power Supply 2",  DESCR: "Nexus9000 C93180YC-EX chassis Power Supply"
PID: NXA-PAC-650W-PE    ,  VID: V01 ,  SN: LIT20140G26

NAME: "Fan 1",  DESCR: "Nexus9000 C93180YC-EX chassis Fan Module"
PID: NXA-FAN-30CFM-F    ,  VID: V01 ,  SN: N/A

NAME: "Fan 2",  DESCR: "Nexus9000 C93180YC-EX chassis Fan Module"
PID: NXA-FAN-30CFM-F    ,  VID: V01 ,  SN: N/A

NAME: "Fan 3",  DESCR: "Nexus9000 C93180YC-EX chassis Fan Module"
PID: NXA-FAN-30CFM-F    ,  VID: V01 ,  SN: N/A

NAME: "Fan 4",  DESCR: "Nexus9000 C93180YC-EX chassis Fan Module"
PID: NXA-FAN-30CFM-F    ,  VID: V01 ,  SN: N/A

*****Port Status*****
switch# sh int stat

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

-----
Port          Name                Status  Vlan    Duplex  Speed  Type
-----
Eth1/52      --                  xcvrAbsen routed   auto    auto   --
Eth1/53      --                  connected routed   full    100G   QSFP-100G-E
R4
Eth1/54      --                  connected routed   full    100G   QSFP-100G-E
R4
Vlan1        --                  down    routed   auto    auto   --
```

Test Situation	Equipment model	Cisco Nexus N9K-C93180YC-EX	
	Port Number	Eth1/53	Eth1/54
	Port Status	connected	connected
	Port Link Rate	100G	100G
Test Conclusion	After testing, the above transceivers are normally connected on Cisco Nexus N9K-C93180YC-EX, the device port LEDs at both ends are always on white, the link is linkup.		
Remarks			

4.2. Parameter Testing

Test Method	<ol style="list-style-type: none"> check whether the basic information such as module manufacturer name, model name and serial number is correct. check whether the module transmission distance, wavelength, type and other key parameters are correct. check whether the module DDM parameters have exceeded the threshold value.
Test Data	<pre>*****transceiver information and DDM information***** switch# sh int eth 1/53 tran det Ethernet1/53 transceiver is present type is QSFP-100G-ER4 name is NADDOD part number is QSFP-100G-ER4 revision is 04 serial number is ACS22060700250 nominal bitrate is 25500 MBit/sec per channel 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 Alarms Warnings Measurement High Low High Low ----- Temperature 37.50 C 75.00 C -5.00 C 70.00 C 0.00 C Voltage 3.32 V 3.63 V 2.97 V 3.46 V 3.13 V Current 34.50 mA 75.00 mA 15.00 mA 70.00 mA 20.00 mA Tx Power 2.58 dBm 7.49 dBm -8.32 dBm 4.49 dBm -4.30 dBm Rx Power 1.98 dBm 7.49 dBm -14.68 dBm 4.49 dBm -10.60 dBm</pre>

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	37.50 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.32 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	37.00 mA	75.00 mA	15.00 mA	70.00 mA	20.00 mA
Tx Power	1.83 dBm	7.49 dBm	-8.32 dBm	4.49 dBm	-4.30 dBm
Rx Power	1.53 dBm	7.49 dBm	-14.68 dBm	4.49 dBm	-10.60 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	37.50 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.32 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	36.00 mA	75.00 mA	15.00 mA	70.00 mA	20.00 mA
Tx Power	2.18 dBm	7.49 dBm	-8.32 dBm	4.49 dBm	-4.30 dBm
Rx Power	1.12 dBm	7.49 dBm	-14.68 dBm	4.49 dBm	-10.60 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	37.50 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.32 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	36.50 mA	75.00 mA	15.00 mA	70.00 mA	20.00 mA
Tx Power	2.12 dBm	7.49 dBm	-8.32 dBm	4.49 dBm	-4.30 dBm
Rx Power	1.24 dBm	7.49 dBm	-14.68 dBm	4.49 dBm	-10.60 dBm

Transmit Fault Count = 0

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

switch# sh int eth 1/54 tran det

Ethernet1/54

transceiver is present
 type is QSFP-100G-ER4
 name is NADDOD
 part number is QSFP-100G-ER4
 revision is 04
 serial number is ACS22060700250
 nominal bitrate is 25500 MBit/sec per channel
 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	Alarms		Warnings	
	Measurement	High	Low	High	Low
Temperature	37.32 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.22 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	35.00 mA	75.00 mA	15.00 mA	70.00 mA	20.00 mA
Tx Power	2.70 dBm	7.49 dBm	-8.32 dBm	4.49 dBm	-4.30 dBm
Rx Power	1.88 dBm	7.49 dBm	-14.68 dBm	4.49 dBm	-10.60 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	37.32 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.22 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	38.00 mA	75.00 mA	15.00 mA	70.00 mA	20.00 mA
Tx Power	1.97 dBm	7.49 dBm	-8.32 dBm	4.49 dBm	-4.30 dBm
Rx Power	1.51 dBm	7.49 dBm	-14.68 dBm	4.49 dBm	-10.60 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	37.32 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.22 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	36.00 mA	75.00 mA	15.00 mA	70.00 mA	20.00 mA
Tx Power	2.20 dBm	7.49 dBm	-8.32 dBm	4.49 dBm	-4.30 dBm
Rx Power	1.09 dBm	7.49 dBm	-14.68 dBm	4.49 dBm	-10.60 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	37.32 C	75.00 C	-5.00 C	70.00 C	0.00 C
Voltage	3.22 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	36.00 mA	75.00 mA	15.00 mA	70.00 mA	20.00 mA
Tx Power	2.22 dBm	7.49 dBm	-8.32 dBm	4.49 dBm	-4.30 dBm
Rx Power	1.34 dBm	7.49 dBm	-14.68 dBm	4.49 dBm	-10.60 dBm

Transmit Fault Count = 0

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

QSFP-100G-ER4

Test situation

Vendor	NADDOD	NADDOD
Part Number	QSFP-100G-ER4	QSFP-100G-ER4
Serial Number	ACS22060700250	ACS22060700251
Wavelength	1310nm	1310nm

Link Length	40 km	40 km
Transceiver Type	QSFP-100G-ER4	QSFP-100G-ER4
DDM Alarm	NO	NO
DDM-Temp	37.50°C	37.32°C
DDM-Voltage	3.32V	3.22V
DDM-Tx Bias Current	34.50mA ,37.00mA ,36.00mA ,36.50mA	35.00mA ,38.00mA ,36.00mA ,36.00mA
DDM-Tx Power	2.58dBm ,1.83dBm ,2.18dBm ,2.12dBm	2.70dBm ,1.97dBm ,2.20dBm ,2.22dBm
DDM-Rx Power	1.98dBm ,1.53dBm ,1.12dBm ,1.24dBm	1.88dBm ,1.51dBm ,1.09dBm ,1.34dBm
Test Conclusion	After testing, the above Transceiver on Cisco Nexus N9K-C93180YC-EX vendor name, part number, serial number, DDM and other information is normally identified, the five DDM parameters do not exceed the level I and II thresholds, and the Transceiver operates normally.	
Remarks		

5. Appendix

5.1 Transceiver compatibility testing standards

On the basis of the threshold range, the allowed deviation value should be within the standard range specified by the industry protocol.

Content	Details	Standard
Basic Information	Part Number	The part number read by the device is the same as the Part Number on the label. (If there are special requirements, the actual information shall prevail)
	Serial Number	The serial number read by the device is the same as the serial number on the label. (If there is special requirement, the actual information shall prevail).
	Vendor	The vendor name information read is NADDOD. (If there are special requirements, the actual information shall prevail).
	Transceiver Type	Transceiver information read by the device is consistent with that specified on the actual optics protocol specification (SFF-8636/SFF-8024).
	Wavelength	Transceiver wavelength information read by the device is consistent with the module description.
	Link Length	Transceiver maximum transmission distance information read by the device is consistent with the module description.
DDM Information	Temp	1. The actual DDM information is within the DDM threshold and there are no

	Voltage	alarms.
	Tx Bias Current	2. The DDM threshold range is in accordance with the module specification.
	Tx Power	
	Rx Power	
Port Information	Port Rate	The data rate information read on the switch port corresponds to the actual rate of the optics.
	Port Status	When the transceiver is connected, the port status information is UP.
	Switch Port LED Status	The port indicators on both ends of the transceiver will be green when the transceiver is connected.
	Port Count	No packet loss, no error code, no CRC, no other ERROR packets.
Device Log		The device does not have any transceiver warning message.

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