



OPTICAL TRANSCEIVER TEST REPORT

Tested by: Doubt.Zheng | Date: 2022.12.24

1. Test Purpose

Test objects: QSFP-40G-LR4, Through the corresponding tests, the test parameters conform to the relevant industry standards, and the test transceivers can be used normally in Cisco 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-40G-LR4	ACS22060700170	Cisco Compatible 40GBASE-LR4 QSFP+ 40G 1310nm 10km DOM LC SMF Transceiver Module
NADDOD	QSFP-40G-LR4	ACS22060700171	Cisco Compatible 40GBASE-LR4 QSFP+ 40G 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	1. check whether the device status is normal.; 2. Check whether the port device port LED is green; (individual brand port LED is yellow or white) 3. 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	<pre> switch# show inventory NAME: "Chassis", DESCR: "Nexus9000 C93180YC-EX chassis" PID: N9K-C93180YC-EX , VID: V01 , SN: FD021021SZV NAME: "Slot 1", DESCR: "48x10/25G + 6x40/100G Ethernet Module" PID: N9K-C93180YC-EX , VID: V01 , SN: FD021021SZV 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 switch# show interface status include connected mgmt0 -- connected routed full 1000 -- Eth1/53 -- connected routed full 40G QSFP-40GE-LR4 Eth1/54 -- connected routed full 40G QSFP-40GE-LR4 </pre>		
Test Situation	QSFP-40G-LR4		
	Port Number	Eth1/53	Eth1/54
	Port Status	connected	connected
	Port Link Rate	40G	40G
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	1. check whether the basic information such as module manufacturer name, model name and serial number is correct. 2. check whether the module transmission distance, wavelength, type and other key parameters are correct. 3. check whether the module DDM parameters have exceeded the threshold value.
Test Data	Ethernet1/53 transceiver is present type is QSFP-40GE-LR4 name is NADDOD part number is QSFP-40G-LR4 revision is A1 serial number is ACS22060700170 nominal bitrate is 10300 MBit/sec per channel Link length supported for 9/125um fiber is 10 km cisco id is 13 cisco extended id number is 192
	Lane Number:1 Network Lane SFP Detail Diagnostics Information (internal calibration) Current Measurements Alarms HighLow Warnings HighLow
	Temperature 41.00 C 80.00 C -10.00 C 70.00 C 0.00 C
	Voltage 3.24 V 3.63 V 2.97 V 3.46 V 3.13 V
	Current 41.25 mA 110.00 mA 1.00 mA 100.00 mA 1.00 mA
	Tx Power 0.00 dBm 5.49 dBm -9.50 dBm 2.49 dBm -6.51 dBm
	Rx Power -0.17 dBm 5.49 dBm -15.52 dBm 2.49 dBm -12.51 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 Measurements Alarms HighLow Warnings HighLow Temperature 41.00 C 80.00 C -10.00 C 70.00 C 0.00 C Voltage 3.24 V 3.63 V 2.97 V 3.46 V 3.13 V Current 41.25 mA 110.00 mA 1.00 mA 100.00 mA 1.00 mA

Tx Power	0.47 dBm	5.49 dBm	-9.50 dBm	2.49 dBm	-6.51 dBm
Rx Power	-0.60 dBm	5.49 dBm	-15.52 dBm	2.49 dBm	-12.51 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	41.00 C	80.00 C	-10.00 C	70.00 C	0.00 C
Voltage	3.24 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	41.25 mA	110.00 mA	1.00 mA	100.00 mA	1.00 mA
Tx Power	0.26 dBm	5.49 dBm	-9.50 dBm	2.49 dBm	-6.51 dBm
Rx Power	1.41 dBm	5.49 dBm	-15.52 dBm	2.49 dBm	-12.51 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	41.00 C	80.00 C	-10.00 C	70.00 C	0.00 C
Voltage	3.24 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	41.25 mA	110.00 mA	1.00 mA	100.00 mA	1.00 mA
Tx Power	1.21 dBm	5.49 dBm	-9.50 dBm	2.49 dBm	-6.51 dBm
Rx Power	1.46 dBm	5.49 dBm	-15.52 dBm	2.49 dBm	-12.51 dBm
Transmit Fault Count = 0					

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

Ethernet1/54

transceiver is present
 type is QSFP-40GE-LR4
 name is NADDOD
 part number is QSFP-40G-LR4
 revision is A1
 serial number is ACS22060700171
 nominal bitrate is 10300 MBit/sec per channel
 Link length supported for 9/125um fiber is 10 km

cisco id is 13

cisco extended id number is 192

Lane Number:1 Network Lane

SFP Detail Diagnostics Information (internal calibration)

	Current	Alarms		Warnings	
	Measurement	High	Low	High	Low
Temperature	42.75 C	80.00 C	-10.00 C	70.00 C	0.00 C
Voltage	3.26 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	42.37 mA	110.00 mA	1.00 mA	100.00 mA	1.00 mA
Tx Power	0.51 dBm	5.49 dBm	-9.50 dBm	2.49 dBm	-6.51 dBm
Rx Power	0.11 dBm	5.49 dBm	-15.52 dBm	2.49 dBm	-12.51 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	42.75 C	80.00 C	-10.00 C	70.00 C	0.00 C
Voltage	3.26 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	42.37 mA	110.00 mA	1.00 mA	100.00 mA	1.00 mA
Tx Power	-0.22 dBm	5.49 dBm	-9.50 dBm	2.49 dBm	-6.51 dBm
Rx Power	-0.48 dBm	5.49 dBm	-15.52 dBm	2.49 dBm	-12.51 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	42.75 C	80.00 C	-10.00 C	70.00 C	0.00 C
Voltage	3.26 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	41.29 mA	110.00 mA	1.00 mA	100.00 mA	1.00 mA
Tx Power	1.37 dBm	5.49 dBm	-9.50 dBm	2.49 dBm	-6.51 dBm
Rx Power	-0.46 dBm	5.49 dBm	-15.52 dBm	2.49 dBm	-12.51 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) ----- <table><thead><tr><th></th><th>Current</th><th colspan="2">Alarms</th><th colspan="2">Warnings</th></tr><tr><th></th><th>Measurement</th><th>High</th><th>Low</th><th>High</th><th>Low</th></tr></thead><tbody><tr><td>Temperature</td><td>42.75 C</td><td>80.00 C</td><td>-10.00 C</td><td>70.00 C</td><td>0.00 C</td></tr><tr><td>Voltage</td><td>3.26 V</td><td>3.63 V</td><td>2.97 V</td><td>3.46 V</td><td>3.13 V</td></tr><tr><td>Current</td><td>42.37 mA</td><td>110.00 mA</td><td>1.00 mA</td><td>100.00 mA</td><td>1.00 mA</td></tr><tr><td>Tx Power</td><td>1.39 dBm</td><td>5.49 dBm</td><td>-9.50 dBm</td><td>2.49 dBm</td><td>-6.51 dBm</td></tr><tr><td>Rx Power</td><td>0.17 dBm</td><td>5.49 dBm</td><td>-15.52 dBm</td><td>2.49 dBm</td><td>-12.51 dBm</td></tr><tr><td colspan="6">Transmit Fault Count = 0</td></tr></tbody></table> ----- Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning						Current	Alarms		Warnings			Measurement	High	Low	High	Low	Temperature	42.75 C	80.00 C	-10.00 C	70.00 C	0.00 C	Voltage	3.26 V	3.63 V	2.97 V	3.46 V	3.13 V	Current	42.37 mA	110.00 mA	1.00 mA	100.00 mA	1.00 mA	Tx Power	1.39 dBm	5.49 dBm	-9.50 dBm	2.49 dBm	-6.51 dBm	Rx Power	0.17 dBm	5.49 dBm	-15.52 dBm	2.49 dBm	-12.51 dBm	Transmit Fault Count = 0					
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Test situation	QSFP-40G-LR4																																																				
	Vendor	NADDOD		NADDOD																																																	
	Part Number	QSFP-40G-LR4		QSFP-40G-LR4																																																	
	Serial Number	ACS22060700170		ACS22060700171																																																	
	Wavelength	/		/																																																	
	Link Length	10 km		10 km																																																	
	Transceiver Type	QSFP-40GE-LR4		QSFP-40GE-LR4																																																	
	DDM Alarm	NO		NO																																																	
	DDM-Temp	41°C		42.75°C																																																	
	DDM-Voltage	3.24V		3.26V																																																	
	DDM-Tx Bias Current	41.25mA ,41.25mA ,41.25mA ,41.25mA		42.37mA ,42.37mA ,41.29mA ,42.37mA																																																	
	DDM-Tx Power	0.00dBm ,0.47dBm ,0.26dBm ,1.21dBm		0.51dBm ,-0.22dBm ,1.37dBm ,1.39dBm																																																	
	DDM-Rx Power	-0.17dBm ,-0.60dBm ,1.41dBm ,1.46dBm		0.11dBm ,-0.48dBm ,-0.46dBm ,0.17dBm																																																	
Test Conclusio	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																																																				

n	and II thresholds, and the Transceiver operates normally.
Remarks	1.Cisco Nexus series devices cannot read optical module bands.

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 alarms. 2. The DDM threshold range is in accordance with the module specification.
	Voltage	
	Tx Bias Current	
	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.

Further Information :

Web www.naddod.com

Email For order requirements: sales@naddod.com

For cooperation: agency@naddod.com

For customer service: support@naddod.com

For other informations: info@naddod.com

For technical support: tech@naddod.com

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