OPTICAL TRANSCEIVER TEST REPORT

Tested by: Doubt.Zheng | Date: 2022.12.24

1. Test Purpose

Test objects: SFP-10G-ER,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	SFP-10G-ER	ACS22060700090	10GBASE-ER SFP+1550nm 40km DOM LC SMF Transceiver Module
NADDOD	SFP-10G-ER	ACS22060700091	10GBASE-ER SFP+1550nm 40km DOM LC SMF Transceiver Module

3.2. Test equipment

Equipment Brand	Equipment Model	Software version (running)
Cisco	Cisco Nexus N9K-C93180YC-EX	NXOS: version 9.2(3)

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; 4. Check whether the device port rate is up to standard.

Test Data	switch# sh ver Cisco Nexus Operating System (NX-OS) Software TAC support: http://www.cisco.com/tac Copyright (C) 2002-2019, 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 07.59 NXOS: version 9.2(3) BIOS compile time: 08/26/2016 NXOS image file is: bootflash:///nxos.9.2.3.bin NXOS compile time: 2/17/2019 5:00:00 [02/17/2019 15:07:27] Hardware cisco Nexus9000 93180YC-EX chassis Intel(R) Xeon(R) CPU @ 1.80GHz with 24632676 kB of memory. Processor Board ID FDO21192HKE Device name: switch bootflash: 53298520 kB Kernel uptime is 0 day(s), 1 hour(s), 17 minute(s), 8 second(s) Last reset at 988620 usecs after Thu Apr 29 01:38:26 2021 Reason: Module PowerCycled System version: Service: HW check by card-client plugin Core Plugin, Ethernet Plugin

<table>
<tr><td></td><td>Active Package(s):

switch# sh inv
NAME: "Chassis", DESCR: "Nexus9000 93180YC-EX chassis"
PID: N9K-C93180YC-EX , VID: V01 , SN: FDO21192HKE

NAME: "Slot 1", DESCR: "48x10/25G + 6x40/100G Ethernet Module"
PID: N9K-C93180YC-EX , VID: V01 , SN: FDO21192HKE

NAME: "Power Supply 1", DESCR: "Nexus9000 93180YC-EX chassis Power Supply"
PID: NXA-PAC-650W-PE , VID: V02 , SN: LIT21182CKL

NAME: "Power Supply 2", DESCR: "Nexus9000 93180YC-EX chassis Power Supply"
PID: NXA-PAC-650W-PE , VID: V02 , SN: LIT21182G55

NAME: "Fan 1", DESCR: "Nexus9000 93180YC-EX chassis Fan Module"
PID: NXA-FAN-30CFM-F , VID: V01 , SN: N/A

NAME: "Fan 2", DESCR: "Nexus9000 93180YC-EX chassis Fan Module"
PID: NXA-FAN-30CFM-F , VID: V01 , SN: N/A

NAME: "Fan 3", DESCR: "Nexus9000 93180YC-EX chassis Fan Module"
PID: NXA-FAN-30CFM-F , VID: V01 , SN: N/A

NAME: "Fan 4", DESCR: "Nexus9000 93180YC-EX chassis Fan Module"
PID: NXA-FAN-30CFM-F , VID: V01 , SN: N/A

switch# sh int eth 1/8-10 stat

Port Name Status Vlan Duplex Speed Type

Eth1/8 -- connected routed full 10G 10Gbase-ER
Eth1/9 -- xcvrAbsen routed auto auto --
Eth1/10 -- connected routed full 10G 10Gbase-ER</td></tr>
<tr><td rowspan="4">Test Situation</td><td colspan="3">SFP-10G-ER</td></tr>
<tr><td>Port Number</td><td>Eth1/8</td><td>Eth1/10</td></tr>
<tr><td>Port Status</td><td>connected</td><td>connected</td></tr>
<tr><td>Port Link Rate</td><td>10G</td><td>10G</td></tr>
<tr><td>Test Conclusion</td><td colspan="3">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.</td></tr>
</table>

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	switch# sh int eth 1/8-10 tran det Ethernet1/8 transceiver is present type is 10Gbase-ER name is NADDOD part number is SFP-10G-ER revision is B serial number is ACS22060700090 nominal bitrate is 10300 MBit/sec Link length supported for 9/125um fiber is 40 km cisco id is 3 cisco extended id number is 4 SFP Detail Diagnostics Information (internal calibration) --- Current Alarms Warnings Measurement High Low High Low --- Temperature 26.22 C 95.00 C -50.00 C 85.00 C -40.00 C Voltage 3.30 V 3.63 V 2.97 V 3.46 V 3.13 V Current 38.42 mA 110.00 mA 1.00 mA 100.00 mA 1.00 mA Tx Power -2.04 dBm 3.49 dBm -10.22 dBm 2.49 dBm -8.21 dBm Rx Power -1.81 dBm 3.49 dBm -16.57 dBm 2.49 dBm -14.43 dBm Transmit Fault Count = 0 --- Note: ++ high-alarm; + high-warning; -- low-alarm; - low-warning Ethernet1/9 transceiver is not present Ethernet1/10 transceiver is present type is 10Gbase-ER name is NADDOD part number is SFP-10G-ER

revision is B
serial number is ACS22060700091
nominal bitrate is 10300 MBit/sec
Link length supported for 9/125um fiber is 40 km
cisco id is 3
cisco extended id number is 4

SFP Detail Diagnostics Information (internal calibration)

	Current	Alarms		Warnings	
	Measurement	High	Low	High	Low
Temperature	25.35 C	95.00 C	-50.00 C	85.00 C	-40.00 C
Voltage	3.26 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	37.45 mA	110.00 mA	1.00 mA	100.00 mA	1.00 mA
Tx Power	-2.17 dBm	3.49 dBm	-10.22 dBm	2.49 dBm	-8.21 dBm
Rx Power	-1.94 dBm	3.49 dBm	-16.57 dBm	2.49 dBm	-14.43 dBm

Transmit Fault Count = 0

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

Test situation

SFP-10G-ER		
Vendor	NADDOD	NADDOD
Part Number	SFP-10G-ER	SFP-10G-ER
Serial Number	ACS22060700090	ACS22060700091
Wavelength	/	/
Link Length	40km	40km
Transceiver Type	10Gbase-ER	10Gbase-ER
DDM Alarm	NO	NO
DDM-Temp	26.22℃	25.35℃
DDM-Voltage	3.30V	3.26V
DDM-Tx Bias Current	38.42mA	37.45mA
DDM-Tx Power	-2.04dBm	-2.17dBm

	DDM-Rx Power	-1.81dBm	-1.94dBm
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	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.

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