OPTICAL TRANSCEIVER TEST REPORT

Tested by: Doubt.Zheng | Date: 2022.12.24

1. Test Purpose

Test objects: SFP-10G-ZR,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-ZR	ACS22060700100	10GBASE-ZR SFP+1550nm 80km DOM LC SMF Transceiver Module
NADDOD	SFP-10G-ZR	ACS22060700101	10GBASE-ZR SFP+1550nm 80km 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
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	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

```
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-ZR
Eth1/9       --              xcvrAbsen routed     auto     auto     --
Eth1/10      --              connected routed     full    10G      10Gbase-ZR
```

	SFP-10G-ZR	
Port Number	Eth1/8	Eth1/10
Port Status	connected	connected
Port Link Rate	10G	10G

Test Situation (row label, leftmost column)

| 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	switch# sh int eth 1/8-10 tran det

```
switch# sh int eth 1/8-10 tran det
Ethernet1/8
        transceiver is present
        type is 10Gbase-ZR
        name is NADDOD
        part number is SFP-10G-ZR
        revision is 0001
        serial number is ACS22060700100
        nominal bitrate is 11100 MBit/sec
        Link length supported for 9/125um fiber is 80 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   24.32 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       41.06 mA     110.00 mA    1.00 mA   100.00 mA      1.00 mA
        Tx Power      -1.37 dBm      3.49 dBm  -10.22 dBm   2.49 dBm     -8.21 dBm
        Rx Power      -0.94 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


Ethernet1/9
        transceiver is not present


Ethernet1/10
        transceiver is present
        type is 10Gbase-ZR
        name is NADDOD
        part number is SFP-10G-ZR
```

revision is 0001

serial number is ACS22060700101

nominal bitrate is 11100 MBit/sec

Link length supported for 9/125um fiber is 80 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	3.28 V	3.63 V	2.97 V	3.46 V	3.13 V
Current	43.11 mA	110.00 mA	1.00 mA	100.00 mA	1.00 mA
Tx Power	-1.57 dBm	3.49 dBm	-10.22 dBm	2.49 dBm	-8.21 dBm
Rx Power	-1.24 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-ZR		
	Vendor	NADDOD	NADDOD
	Part Number	SFP-10G-ZR	SFP-10G-ZR
	Serial Number	ACS22060700100	ACS22060700101
	Wavelength	/	/
	Link Length	80km	80km
	Transceiver Type	10Gbase-ZR	10Gbase-ZR
	DDM Alarm	NO	NO
	DDM-Temp	24.32℃	26.22℃
	DDM-Voltage	3.30V	3.28V
	DDM-Tx Bias Current	41.06mA	43.11mA
	DDM-Tx Power	-1.37dBm	-1.57dBm

	DDM-Rx Power	-0.94dBm	-1.24dBm
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.

	Port Count	No packet loss, no error code, no CRC, no other ERROR packets.

Further Information：

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