

Connection Verification

This chapter describes the tasks to verify connection between the OLT Line Card of NCS 1010 and NCS1K14-CCMD-16-C line card.

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Power Data Reading

Photodiodes (PDs) are optical power monitors available on all input and aggregated output ports to monitor power levels. Tone detection is enabled on some PD monitors.

Table 1: NCS1K-CCMS-16 Calibrated Port References

Photodiode	Port Calibrated	Port Label (Direction)	Minimum Power (dBm)	Maximum Power (dBm)	Dynamic Range (dBm)
PD 21	MPO-16 input ports	(TX)	–50	30	80
PD 22	MPO-16 output ports	(RX)	–50	30	80

Connection Verification

Connection verification checks the connection between the OLT line card and the CCMD-16 line cards to avoid miscabling during the node installation. The dedicated Connection Verification Tunable Laser (CV-TL) available at the OLT card generates a specific probe signal at a given frequency and power. This signal is detected by the CCMD-16 line card that is connected to the OLT line card.

For more information on the connection verification process, see Cisco NCS 1010 Datapath Configuration guide.

CCMD-16 Connection Verification with OLT

The OLT line card generates the tone and connection verification is performed using the OOB channel with CV-TL tuned at 191.175 THz. To univocally identify the optical path under test, the CV-TL is modulated with a low-frequency pattern including the Cable ID of the connection.

For connection verification toward the CCMD-16 card, the CV-TL is routed to the PD21 inside the CCMD-16 card. The out-of-band (OOB) connection is verified at PD21 and the in-band (IB) connection is verified at PD22 on the CCMD-16 line cards.

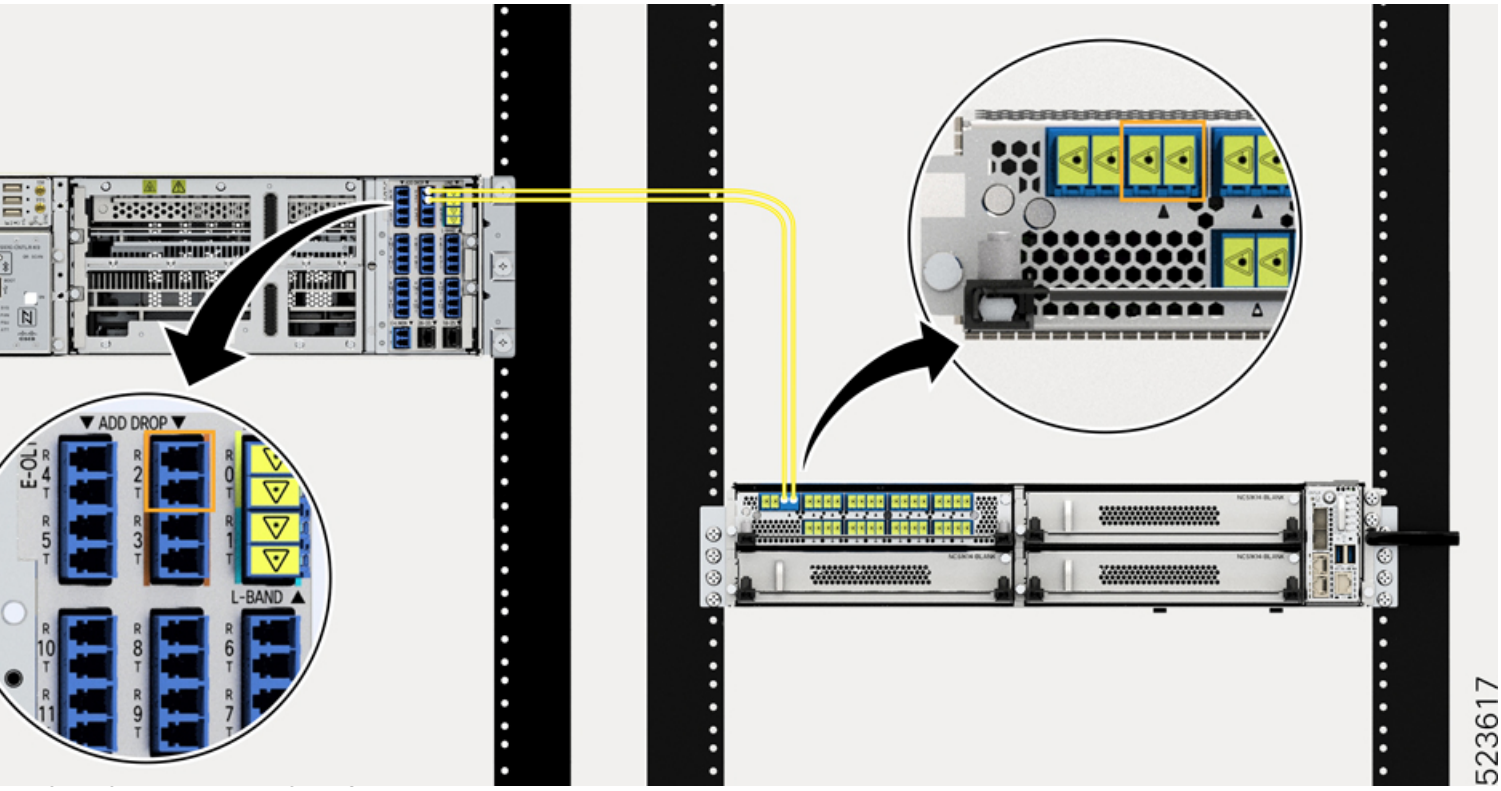
The PD monitors receiving a connection verification signal detect and buffer the Cable-ID pattern encoded in the tone to allow the connection verification process by the node controller.

Verify Connection for CCMD-16 Line Card

The connection verification procedure checks the connection between the OLT line card and CCMD-16 line cards to match the different instances with respect to the OLT LC connectors.

The OLT-C line card and the NCS1K-CCMD-16 line card are connected as shown in the following image:

Figure 1: NCS 1010 and NCS1K-CCMD-16



The OLT-C line card performs connection verification between the OLT-C line card and the NCS1KCCMD-16 line card panels as described in CCMD-16 Connection Verification with OLT, on page 2.

The identification/verification of the NCS1K-CCMD-16 line card is performed by checking the connection verification signal at the monitor present on the OOB and IB loops (PD21 and PD22 for the NCS1K-CCMD-16 line card respectively).

This task describes on how to verify the connection between the NCS 1010 OLT-C line card and NCS1K-CCMD-16 line card.

Before you begin

Configure the OTS controller in NCS 1010 to generate the tone for connection verification. See Cisco NCS 1010 Datapath Configuration Guide.

Procedure

Step 1 Configure the OMS controller to detect the tone for connection verification.

Example:

```
RP/0/RP0/CPU0:(config)#controller oms 0/1/0/0
RP/0/RP0/CPU0:(config-Oms)#tone-rate 2
RP/0/RP0/CPU0:(config-Oms)#tone-pattern-expected aabbccdd
RP/0/RP0/CPU0:(config-Oms)#tone-detect-oob
RP/0/RP0/CPU0:(config-Oms)#commit
```

tone-detect-oob must be configured on the OMS x/x/x/0 for NCS1K-CCMD-16.

Step 2 Use the **tone-pattern-detect** command to start the detection of tone pattern.

Example:

The following is a sample on starting the tone pattern detection on the OMS controller.

```
RP/0/RP0/CPU0:#tone-pattern-detect controller oms 0/1/0/0 start
Tue May 10 11:38:03.775 UTC
Tone pattern detect started
```

Step 3 Use the **tone-info** command to check for successful connection verification.

Example:

The following is a sample to view the Tone Info for successful connection verification on the OMS controller.

```
RP/0/RP0/CPU0:#show controllers oms 0/1/0/0 tone-info
Fri Sep 22 06:04:03.787 UTC
Tone Info:
Tone Rate : 2 bits/second
Tone Pattern Expected(Hex value) : aabbccdd
Tone Pattern Received(Hex value) : aabbccdd
Tone Detected OOB :  Enabled
Detection State: Success
```

Step 4 After successful connection verification, stop **tone-pattern-detect** on the OMS controller.

Example:

```
RP/0/RP0/CPU0:#tone-pattern-detect controller oms 0/1/0/0 stop
Fri Sep 22 06:23:15.165 UTC
Tone pattern detect stopped
```