

Coherent Optics Commands

- ampli-control-mode, on page 2
- controller coherentDSP, on page 3
- controller optics, on page 5
- controller ots (QDD OLS), on page 9
- egress-ampli-gain, on page 10
- egress-ampli-osri, on page 11
- egress-ampli-power, on page 12
- egress-ampli-safety-control-mode, on page 13
- hw-module location, on page 14
- rx-low-threshold, on page 16
- show controllers coherentDSP, on page 17
- show controllers optics, on page 19
- show controllers ots (QDD OLS), on page 22
- tx-low-threshold, on page 24

ampli-control-mode

To configure the mode of operation of the OLS pluggable to either gain control or power control mode, use the **ampli-control-mode** command in the controller ots configuration mode.

ampli-control-mode { **powermode** | **manual** }

Syntax Description

powermode	Configures the OLS pluggable to power control mode.
manual	Configures the OLS pluggable to gain control mode.

Command Default

None.

Command Modes

controller ots

Command History

Release	Modification
Release 25.3.1	This command was introduced.

Usage Guidelines

None.

Task ID

Task ID	Operation
dwdm	read, write

Example

The following example shows how to configure the gain control operational mode and the amplifier gain of the OLS pluggable :

```
Router#config
Router(config)#controller ots 0/0/2/1/0
Router(config-Ots)#ampli-control-mode manual
Router(config-Ots)#egress-ampli-gain +30
Router(config-Ots)#commit
Router(config-Ots)#exit
Router(config)#exit
```

controller coherentDSP

To configure the coherent DSP controller, use the **controller coherentDSP** command in the Coherent DSP controller configuration mode.

controller coherentDSP *R/S/I/P* [**description** *description* | **perf-mon** { **enable** | **disable** } | **pm** { **30-sec** |**15-min** |**24-hour** } { **fec** } { **report** | **threshold** } *value* | **secondary-admin-state** { **maintenance** | **normal** } **loopback** { **internal** | **line** }]

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the coherent DSP controller.
description *description*	Description of the coherent DSP controller.
perf-mon { **enable** | **disable** }	Enables or disables performance monitoring.
pm { **30-sec** |**15-min** |**24-hour** } { **fec** } { **report** | **threshold** } *value*	Configures performance monitoring parameters for 30-second,15-minute, or 24-hour intervals. The **fec** keyword configures FEC PM data in 30-second, 15-minute, or 24-hour intervals. The **report** keyword configures threshold crossing alerts (TCA) reporting status for the PM parameters. The **threshold** keyword configures threshold values for the PM parameters. The PM parameters that can be configured are: • Inst-Q-margin (Instantaneous Q margin) • Q threshold • Q-margin • ec-bits (error corrected bits) • post-FEC BER • pre-FEC BER • uc-words (uncorrected words)
secondary-admin-state	Configures the administrative state of the controller. The states are maintenance or normal.
loopback { **internal** | **line** }	Configures the internal or line loopback mode on the controller.

Command Default

None.

Command Modes

Coherent DSP controller configuration

Command History

Release	Modification
Release 7.3.2	This command was introduced.

Example

The following example shows how to enable line loopback configuration on coherent DSP controllers:

```
Router#config
Router(config)#controller coherentDSP 0/0/0/4
Router(config-CoDSP)#secondary-admin-state maintenance
Router(config-CoDSP)#loopback line
Router(config-CoDSP)#commit
```

controller optics

To configure the optics controller, use the **controller optics** command in the optics controller configuration mode.

controller optics *R/S/I/P* [**DAC-Rate** *rate* | **cd-max** *cd-max* | **cd-min** *cd-min* | **cd-low-threshold** *cd-low* | **cd-high-threshold** *cd-high* | **dgd-high-threshold** *dgd-value* | **dwdm-carrier** *channel-grid* | **lbc-high-threshold** *lbc-value* | **osnr-low-threshold** *osnr-value* **description** *description* | **fec** *fec-mode* | **sec-admin-state {maintenance | normal}** | **shutdown** | **transmit-power** *transmit-power* | **perf-mon** { **enable** | **disable** } | **host** { **auto-squelch** } { **disable** } | **pm** { **30-sec |15-min | 24-hour** } { **optics** } { **report | threshold** } *pm-parameter value*]

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the optics controller.
DAC-Rate *rate*	Sets the DAC (digital to analog conversion) sampling rate for this controller. The sampling rate options available are: • 1x1 • 1x1.25
cd-max *cd-max*	(Only for trunk optics controllers) Maximum chromatic dispersion. For QDD-400G-ZR-S optical module, the range is 0 to +2400. For QDD-400G-ZRP-S optical module, the range is 0 to +80000 ps/nm.
cd-min *cd-min*	(Only for trunk optics controllers) Minimum chromatic dispersion. For QDD-400G-ZR-S optical module, the range is -2400 to 0. For QDD-400G-ZRP-S optical module, the range is -80000 to 0 ps/nm.
cd-low-threshold *cd-low*	(Only for trunk optics controllers) Minimum acceptable chromatic dispersion value. The CD alarm is raised if the chromatic dispersion goes below this value. This is an alarm threshold parameter. For QDD-400G-ZR-S optical module, the range is -2400 to 0. For QDD-400G-ZRP-S optical module, the range is -80000 to 0 ps/nm.
cd-high-threshold *cd-high*	(Only for trunk optics controllers) Maximum acceptable chromatic dispersion value. The CD alarm is raised if the chromatic dispersion exceeds this value. This is an alarm threshold parameter. For QDD-400G-ZR-S optical module, the range is 0 to +2400. For QDD-400G-ZRP-S optical module, the range is 0 to +80000 ps/nm.
dgd-high-threshold *dgd-value*	(Only for trunk optics controllers) Configures the maximum acceptable Differential Group Delay (DGD) value. The DGD alarm is raised if DGD exceeds this value. This is an alarm threshold parameter. The range is 0 to 18000 (in the units of 0.01 ps).
dwdm-carrier *channel-grid*	Configures the DWDM carrier channel. Options are: • 100MHz-grid • 50GHz-grid

lbc-high-threshold *lbc-value*	Configures the high laser bias current threshold. This is an alarm threshold parameter. The range is 0 to 100%
osnr-low-threshold *osnr-value*	(Only for trunk optics controllers) Configures the minimum acceptable Optical Signal-to-Noise ratio (OSNR) value. The OSNR alarm is raised if OSNR goes below this value. This is an alarm threshold parameter. The range is 0 to 4000 (in units of 0.01db).
description *description*	Description of the optics controller.
fec *fec-mode*	Configures Forward Error Correction (FEC) modes.
sec-admin-state	Configures the administrative state of the controller. The values are maintenance or normal.
shutdown	Disables the configuration of the controller.
pm { **30-sec** | **15-min** | **24-hour** } { **optics** } { **report** | **threshold** } *pm-parameter value*	Configures performance monitoring parameters for 30-second, 15-minute, and 24-hour intervals. The **report** keyword configures threshold crossing alerts (TCA) reporting status for the PM parameters. The **threshold** keyword configures threshold values for the PM parameters. The PM parameters that can be configured are: • cd (chromatic dispersion) • dgd (differential group delay) • low-freq-off (low signal frequency offset) • opr (optical power RX) • osnr (optical signal-to-noise ratio) • pcr (polarization change rate) • pdl (polarization dependent loss) • rx-sig (receiving signal power) • snr (signal-to-noise ratio) • sopmd (second order polarization mode dispersion)
transmit-power *transmit-power*	(Only for trunk optics controllers) Configures the transmit power. The range is -190 to 50 dBm (in the units of 0.1 dBm).
host { **auto-squelch** } { **disable** }	Disable squelch for host.
perf-mon { **enable** | **disable** }	Enables or disables performance monitoring.

Command Default

Table 1: Supported Line Cards and Modes

Line Card	Default Port Speed	Supported Front Panel Ports	1x400G Transponder Mode	4x100G Muxponder Mode	3x100G Muxponder Mode	2x100G Muxponder Mode	1x100G Transponder Mode
A9K-20HG-FLEX-SE / A9K-20HG-FLEX-TR	1x100G	0, 7, 8, 12, 19	Yes	Yes	No	No	Yes
A9K-8HG-FLEX-SE / A9K-8HG-FLEX-TR	1x100G	0, 7	Yes	Yes	No	No	Yes
A99-10X400GE-X-SE / A99-10X400GE-X-TR	1x400G	3, 5, 6, 7, 9	Yes	Yes	No	Yes	Yes
A9903-20HG-PEC	1x100G	0, 4, 8, 12, 16	Yes	No	No	No	Yes

Command History

Release	Modification
Release 7.3.2	This command was introduced.
Release 7.10.1	The following keyword was introduced: • **host auto-squelch disable**

Command Modes

Optics controller configuration

Usage Guidelines

The configurations for chromatic dispersion, cd-low-threshold, and cd-high-threshold must be performed only after the **hw-module** configuration. These configurations must be removed before the **no hw-module** configuration. Default values are set to optimize the power consumption by the QDD-400G-ZR-S and QDD-400G-ZRP-S modules.

Example

The following example shows how to configure the optics controller and set the ranges for chromatic dispersion:

```
Router#configure
Router(config)#controller optics 0/0/1/1
Router(config-optics)#cd-max 2000
Router(config-optics)#cd-min -2000
Router(config)#commit
```

The following is a sample in which the performance monitoring parameters of optics controller are configured in 24-hour intervals:

```
Router#configure
Router(config)#controller optics 0/0/1/1
Router(config-optics)#perf-mon enable
```

```
Router(config-optics)#pm 24-hour optics threshold osnr max 345
Router(config)#commit
```

This example shows how to disable laser squelching for host on controller optics:

```
router#config
router(config)#controller 0/0/0/0
router(config-Optics)#host auto-squelch disable
router(config-Optics)#commit
```

controller ots (QDD OLS)

To configure the QDD OLS pluggable (ots controller), use the **controller ots** command in the global configuration mode.

controller ots *R/S/I/P/SuP*

Syntax Description

R/S/I/P/SuP	Rack/Slot/Instance/Port/Sub-Port of the QDD OLS pluggable. *SuP* is the QDD pluggable subport which can be 0 or 1. Com port is represented as 0 and line port is represented as 1.

Command Default

None.

Command Modes

Global Configuration

Command History

Release	Modification
Release 25.3.1	This command was introduced.

Usage Guidelines

None.

Task ID

Task ID	Operation
dwdm	read, write
sonet-sdh	read, write
interface	read, write

Example

This example shows how to configure the ots controller and set the low- power threshold at the transmit and receive side.

```
Router#config
Router(config)#controller ots 0/0/2/1/0
Router(config-Ots)#rx-low-threshold -200
Router(config-Ots)#tx-low-threshold -200
Router(config-Ots)#commit
Router(config-Ots)#exit
Router(config)#exit
```

egress-ampli-gain

To configure the amplifer gain of the OLS pluggable, use the **egress-ampli-gain** command in the controller ots configuration mode.

egress-ampli-gain *gain-value*

Syntax Description

gain-value	Sets the amplifier gain value. The range is <+30, +400> in units of 0.1dB. • For subport 0, the range is from +30 db to + 250 db • For subport 1, the range is from +70 db to +250 db

Command Default

None.

Command Modes

controller ots

Command History

Release	Modification
Release 25.3.1	This command was introduced.

Usage Guidelines

None.

Task ID

Task ID	Operation
dwdm	read, write

Example

The following example shows how to configure the gain control operational mode and the amplifier gain of the OLS pluggable :

```
Router#config
Router(config)#controller ots 0/0/2/1/0
Router(config-Ots)#ampli-control-mode manual
Router(config-Ots)#egress-ampli-gain +30
Router(config-Ots)#commit
Router(config-Ots)#exit
Router(config)#exit
```

egress-ampli-osri

To shutdown the amplifier (QDD OLS pluggable), use the **egress-ampli-osri** command in the controller ots configuration mode.

egress-ampli-osri { **off** | **on** }

Syntax Description

off	Disables the Optical Safety Remote Interlock (OSRI) configuration.
on	Enables the Optical Safety Remote Interlock (OSRI) configuration.

Command Default

None

Command Modes

controller ots

Command History

Release	Modification
Release 25.3.1	This command was introduced.

Usage Guidelines

The OSRI configuration is used during the maintenance of the pluggable, debugging scenarios, and when the OLS pluggable is not in use.

Task ID

Task ID	Operation
dwdm	read, write

Example

The following example shows how to configure the Optical Safety Remote Interlock (OSRI) on the OLS pluggable:

```
Router#config
Router(config)#controller ots 0/0/2/1/0
Router(config-Ots)#egress-ampli-osri on
Router(config-Ots)#commit
Router(config-Ots)#exit
Router(config)#exit
```

egress-ampli-power

To configure the amplifier output power of the OLS pluggable, use the **egress-ampli-power** command in the controller ots configuration mode.

egress-ampli-power *power-value*

Syntax Description

power-value	Sets the amplifier power value. The range is <-30, +250> in units of 0.1dB. • For subport 0, the range is from 10 dB to 170 dB • For subport 1, the range is from 0 dB to 170 dB

Command Default

None.

Command Modes

controller ots

Command History

Release	Modification
Release 25.3.1	This command was introduced.

Usage Guidelines

None.

Task ID

Task ID	Operation
dwdm	read, write

Example

The following example shows how to configure the power control operational mode and the amplifier output power of the OLS pluggable :

```
Router#config
Router(config)#controller ots 0/0/2/1/0
Router(config-Ots)#ampli-control-mode powermode
Router(config-Ots)#egress-ampli-power 30
Router(config-Ots)#commit
Router(config-Ots)#exit
Router(config)#exit
```

egress-ampli-safety-control-mode

To enable the safety control mode in the OLS pluggable, use the **egress-ampli-safety-control-mode** command in the controller ots configuration mode.

egress-ampli-safety-control-mode { **auto** | **disabled** }

Syntax Description

auto	Enables the safety control mode (automatic laser shutdown (ALS)) only on sub-port 1 of the OLS pluggable.
disabled	Disables the safety control mode (automatic laser shutdown (ALS)) on sub-port 1 of the OLS pluggable.

Command Default

None

Command Modes

controller ots

Command History

Release	Modification
Release 25.3.1	This command was introduced.

Usage Guidelines

You can enable safety control mode only on subport 1. With safety-control-mode set as **auto** and if LOS is detected on the line RX, the line TX normalizes the signal output power to 8 dBm and the ALS alarm is raised.

Task ID

Task ID	Operation
dwdm	read, write

Example

The following example shows how to enable the safety control mode on the OLS pluggable (on sub-port 1):

```
Router#config
Router(config)#controller ots 0/0/2/1/1
Router(config-Ots)#egress-ampli-safety-control-mode auto
Router(config-Ots)#commit
Router(config-Ots)#exit
Router(config)#exit
```

hw-module location

To configure breakout, use the **hw-module location** command in the global configuration mode.

hw-module location *node-id* **[bay** *bay-number* **] port** *port-number* **breakout** *muxponder-mode*

Syntax Description

location *node-id*	Specify the node location.
bay *bay-number*	Applicable only for Cisco ASR 9903 router. The *bay-number* is always 1.
port *port-number*	Specify the port number.
breakout *breakout-mode options*	Configures the breakout for this controller. The router displays these breakout mode options: • 1x400GbE • 1x100GbE • 2x100GbE • 4x100GbE • 2x40GbE • 1x40GbE • 4x25GbE • 4x10GbE • 1x10GbE

Command Default

None.

Command Modes

Global Configuration

Command History

Release	Modification
Release 7.3.2	This command was enhanced to support QDD-400G-ZR-S and QDD-400G-ZRP-S optical modules.
Release 24.3.1	This command was enhanced to support the 1x10GbE breakout mode on the Cisco ASR 9903 router and Cisco A9K-20HG-FLEX-SE line cards with SFP-10G-ER, SFP-10G-ZR, and SFP-10G-LR hot-pluggable transceiver modules.

Usage Guidelines

For additional information, see the "Configuring Breakout" section in the "Configuring 400G Digital Coherent Optics" chapter of *Interface and Hardware Component Configuration Guide for Cisco ASR 9000 Series Routers*.

Example

This example shows how to configure the 4x100 muxponder mode using the **hw-module location** command:

```
Router#configure
Router(config)#hw-module port 1 location 0/1/0/3 breakout 4xHundredGigE
Router(config)#commit
```

This example shows how to configure the 1x10GbE breakout mode using the **hw-module location** command:

```
Router#configure
Router(config)#hw-module location 0/0/CPU0 bay 1 port 9 breakout 1xTenGbE
Router(config)#commit
```

rx-low-threshold

To configure the low receive (RX) power threshold on the QDD OLS pluggable, use the **rx-low-threshold** command in the controller ots configuration mode.

rx-low-threshold *rx-low*

Syntax Description

rx-low	Configures the low receive power threshold. The range is -400 to 400 (in the units of 0.1 dBm). • For subport 0, the range is from -300 dBm to 170 dBm • For subport 1, the range is from -300 dBm to 170 dBm

Command Default

None.

Command Modes

controller ots

Command History

Release	Modification
Release 25.3.1	This command was introduced.

Usage Guidelines

None.

Task ID

Task ID	Operation
dwdm	read, write

Example

This example shows how to configure the ots controller and set the low power threshold at the receiving side.

```
Router#config
Router(config)#controller ots 0/0/2/1/0
Router(config-Ots)#rx-low-threshold -200
Router(config-Ots)#commit
Router(config-Ots)#exit
Router(config)#exit
```

show controllers coherentDSP

To display the status and configuration information about the interfaces configured as coherent DSP controllers on a specific node, use the **show controllers coherentDSP** command in XR EXEC mode.

show controller coherentDSP *R/S/I/P* [**pm** { **current | history** } { **30-sec | 15-min | 24-hour** } { **fec** }]

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the coherent DSP controller.
pm	Displays performance monitoring parameters for the controller.
current	Displays the current performance monitoring data in 30-second, 15- minute, and 24-hour intervals.
history	Displays the historical performance monitoring data in 30-second, 15-minute, and 24-hour intervals.
fec	The **fec** keyword displays FEC PM data in 30-second, 15-minute, or 24-hour intervals.

Command Default

No default behavior or values

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.3.2	This command was introduced.

Example

The following is a sample to view the status and configuration information about the coherent DSP controller.

```
Router#show controllers coherentDSP 0/19/0/3

Port                                          : CoherentDSP 0/19/0/3
Controller State                              : Up
Inherited Secondary State                     : Normal
Configured Secondary State                    : Normal
Derived State                                 : In Service
Loopback mode                                 : None
BER Thresholds                                : SF = 1.0E-5  SD = 1.0E-7
Performance Monitoring                        : Enable
Bandwidth                                     : 100.0Gb/s

Alarm Information:
LOS = 0 LOF = 0 LOM = 0
OOF = 0 OOM = 0 AIS = 0
IAE = 0 BIAE = 0        SF_BER = 0
SD_BER = 0      BDI = 0 TIM = 0
FECMISMATCH = 0 FEC-UNC = 0     FLEXO_GIDM = 0
FLEXO-MM = 0    FLEXO-LOM = 0   FLEXO-RDI = 0
FLEXO-LOF = 1
Detected Alarms                               : None

Bit Error Rate Information
```

```
PREFEC  BER                                     : 0.0E+00
POSTFEC BER                                     : 0.0E+00
Q-Factor                                        : 16.50 dB

Q-Margin                                        : 9.90dB

OTU TTI Received

FEC mode                                        : O_FEC
```

The following is a sample to view the current performance monitoring parameters of the coherent DSP controller in 30 second intervals.

```
Router#show controllers coherentDSP 0/0/0/13 pm current 30-sec fec
g709 FEC in the current interval [07:03:00 - 07:03:29 Thu May 27 2021]

FEC current bucket type : Valid
    EC-BITS   : 11885430510             Threshold : 83203400000            TCA(enable)  :
YES
    UC-WORDS  : 0                       Threshold : 5                      TCA(enable)  :
YES

                                       MIN       AVG        MAX      Threshold   TCA
Threshold     TCA
                                                                          (min)    (enable)
  (max)     (enable)
PreFEC BER                     :     8.4E-04   8.6E-04   8.7E-04     0E-15       NO
0E-15        NO
PostFEC BER                    :     0E-15     0E-15     0E-15       0E-15       NO
0E-15        NO
Q[dB]                          :     9.90      9.90      9.90        0.00        NO
 0.00        NO
Q_Margin[dB]                   :     2.70      2.70      2.70        0.00        NO
 0.00        NO

Last clearing of "show controllers OTU" counters never
```

show controllers optics

To display status and configuration information about the interfaces configured as optics controller on a specific node, use the **show controllers optics** command in XR EXEC mode.

show controller optics *R/S/I/P* [**pm** { **current | history** } { **30-sec | 15-min | 24-hour** } { **optics** } { *lane-number* }]

Syntax Description

R/S/I/P	Rack/Slot/Instance/Port of the optics controller.
pm	Displays performance monitoring parameters for the controller.
current	Displays the current performance monitoring data in 30 second, 15 minute, and 24 hour intervals.
history	Displays the historical performance monitoring data in 30 second, 15 minute, and 24 hour intervals.
optics	Displays the PM data for optics controller.
lane-number	Displays the performance monitoring data for the applicable lanes in the optical module. The lane number is always 1.

Command Default

No default behavior or values

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.4.1	This command was introduced.
Release 7.3.2	This command was updated to reflect the QDD-400G-ZR-S and QDD-400G-ZRP-S changes in the output.

Usage Guidelines

To display the firmware version of the optical module, use the **show controllers optics** *R/S/I/P* **| inc Firmware** command.

```
Router#show controllers optics 0/0/0/3  | inc Firmware
         Firmware Version       : 61.20 (Build : 13)
```

Example

The following example displays the output of the **show controllers optics** command:

```
Router#show controllers optics 0/0/0/3
Controller State: Up
Transport Admin State: In Service
Laser State: On
LED State: Green
FEC State: FEC CFEC
 Optics Status
         Optics Type:  400G QSFP-DD ZR
         DWDM carrier Info: C BAND, MSA ITU Channel=61, Frequency=193.10THz,
```

```
        Wavelength=1552.524nm
        Alarm Status:
        -------------
        Detected Alarms: None
        LOS/LOL/Fault Status:
        Laser Bias Current = 52.5 mA
        Actual TX Power = -8.51 dBm
        RX Power = -8.67 dBm
        RX Signal Power = -8.66 dBm
        Frequency Offset = 0 MHz
        Laser Temperature = 62.21 Celsius
        Laser Age = 0 %
        DAC Rate = 1x1

        Performance Monitoring: Enable

        THRESHOLD VALUES
        ----------------

        Parameter                 High Alarm  Low Alarm  High Warning  Low Warning
        ------------------------  ----------  ---------  ------------  -----------
        Rx Power Threshold(dBm)          1.9      -28.2           0.0        -25.0
        Tx Power Threshold(dBm)          0.0      -18.0          -2.0        -16.0
        LBC Threshold(mA)               0.00       0.00          0.00         0.00
        Temp. Threshold(celsius)       80.00      -5.00         75.00        15.00
        Voltage Threshold(volt)         3.46       3.13          3.43         3.16

        LBC High Threshold = 98 %
        Configured Tx Power = -7.00 dBm
        Configured CD High Threshold = 80000 ps/nm
        Configured CD lower Threshold = -80000 ps/nm
        Configured OSNR lower Threshold = 9.00 dB
        Configured DGD Higher Threshold = 180.00 ps
        Baud Rate =  59.8437500000 GBd
        Modulation Type: 16QAM
        Chromatic Dispersion 0 ps/nm
        Configured CD-MIN -2400 ps/nm  CD-MAX 2400 ps/nm
        Second Order Polarization Mode Dispersion = 25.00 ps^2
        Optical Signal to Noise Ratio = 36.40 dB
        Polarization Dependent Loss = 0.07 dB
        Polarization Change Rate = 0.00 rad/s
        Differential Group Delay = 1.00 ps

        Temperature = 59.00 Celsius
        Voltage = 3.31 V

Transceiver Vendor Details

        Form Factor            : QSFP-DD
        Optics type            : QSFP-DD 400G-ZR-S
        Name                   : CISCO-ACACIA
        OUI Number             : 7c.b2.5c
        Part Number            : DP04QSDD-E20-19E
        Rev Number             : 01
        Serial Number          : ACA2504002U
        PID                    : QDD-400G-ZR-S
        VID                    : ES03
        Firmware Version       : 161.20 (Build : 9)
        Date Code(yy/mm/dd)    : 21/02/03
```

The following is a sample to view the current performance monitoring parameters of the optics controller in 30 second intervals.

```
Router#show controllers optics 0/0/0/7 pm current 30-sec optics 1
Optics in the current interval [07:11:30 - 07:11:33 Thu May 27 2021]
Optics current bucket type : Valid
            MIN       AVG       MAX      Operational      Configured      TCA   Operational
      Configured     TCA
                                          Threshold(min)   Threshold(min) (min) Threshold(max)
   Threshold(max) (max)
LBC[% ]      : 0.0       0.0       0.0      0.0              NA              NO   100.0
          NA              NO
OPT[dBm]     : -7.92     -7.92     -7.92    -15.09           NA              NO   0.00
          NA              NO
OPR[dBm]     : -8.20     -8.19     -8.18    -30.00           NA              NO   8.00
          NA              NO
CD[ps/nm]    : -1        -1        0        -80000           NA              NO   80000
          NA              NO
DGD[ps ]     : 4.00      4.00      4.00     0.00             NA              NO   80.00
          NA              NO
SOPMD[ps^2]  : 46.00     48.00     50.00    0.00             NA              NO   2000.00
          NA              NO
OSNR[dB]     : 36.40     36.40     36.40    9.00             NA              NO   40.00
          NA              NO
PDL[dB]      : 0.08      0.09      0.09     0.00             NA              NO   7.00
          NA              NO
PCR[rad/s]   : 0.00      0.00      0.00     0.00             NA              NO   2500000.00
       NA             NO
RX_SIG[dBm]  : -7.40     -7.40     -7.39    -30.00           NA              NO   1.00
          NA              NO
FREQ_OFF[Mhz]: -99       -93       -87      -3600            NA              NO   3600
          NA              NO
SNR[dB]      : 18.40     18.45     18.50    7.00             NA              NO   100.00
          NA              NO

Last clearing of "show controllers OPTICS" counters never
```

show controllers ots (QDD OLS)

To display the configuration details of the OLS pluggable, use the **show controllers ots** command in XR EXEC mode.

show controllers ots *R/S/I/P/SuP*

Syntax Description

R/S/I/P/SuP	Rack/Slot/Instance/Port/Sub-Port of the QDD OLS pluggable. *SuP* is the QDD pluggable sub-port which can be 0 or 1. Com port is represented as 0 and line port is represented as 1.

Command Default

None.

Command Modes

XR EXEC

Command History

Release	Modification
Release 25.3.1	This command was introduced.

Usage Guidelines

None

Task ID

Task ID	Operation
interface	read

Example

The following example displays the configuration details of the OLS pluggable:

```
Router#show controllers ots 0/0/1/1/1
Wed Mar 29 06:59:00.016 UTC

 Controller State: Up

 Transport Admin State: In Service

 LED State: Yellow

         Alarm Status:
         -------------
         Detected Alarms: None


         Alarm Statistics:
         -----------------
         RX-LOS-P = 1
         RX-LOC = 0
         TX-POWER-FAIL-LOW = 0
         INGRESS-AUTO-LASER-SHUT = 0
         INGRESS-AUTO-POW-RED = 0
         INGRESS-AMPLI-GAIN-LOW = 0
         INGRESS-AMPLI-GAIN-HIGH = 0
```

```
        EGRESS-AUTO-LASER-SHUT = 1
        EGRESS-AUTO-POW-RED = 1
        EGRESS-AMPLI-GAIN-LOW = 0
        EGRESS-AMPLI-GAIN-HIGH = 0
        HIGH-TX-BR-PWR = 0
        HIGH-RX-BR-PWR = 0
        SPAN-TOO-SHORT-TX = 0
        SPAN-TOO-SHORT-RX = 0

        Parameter Statistics:
        ---------------------
        Total Tx Power = 7.52 dBm
        Rx Signal Power = -26.77 dBm
        Tx Signal Power = 7.23 dBm
        Egress Ampli Gain = 20.8 dB
        Egress Ampli Safety Control mode = auto
        Egress Ampli OSRI = OFF


        Configured Parameters:
        ----------
        Egress Ampli Gain = 15.0 dB
        Egress Ampli Power = 8.0 dBm
        Egress Ampli Safety Control mode = auto
        Egress Ampli OSRI = OFF
        Ampli Control mode = Manual
        Rx Low Threshold = -30.0 dBm
        Tx Low Threshold = -5.0 dBm


        Temperature = 35.09 Celsius
        Voltage = 3.37 V

Optical Module Details

        Optics type            : QDD DUAL EDFA
        Name                   : CISCO-ACCELINK
        OUI Number             : 00.00.00
        Part Number            : EDFA-211917-QDD
        Rev Number             : 21
        Serial Number          : ACW2651Z003
        PID                    : ONS-QDD-OLS
        VID                    : VES1
        Firmware Version       : 2.01
        Date Code(yy/mm/dd)    : 22/12/28
        Fiber Connector Type   : CS
```

tx-low-threshold

To configure the low transmit (TX) power threshold on the QDD OLS pluggable, use the **tx-low-threshold** command in the controller ots configuration mode.

tx-low-threshold *tx-low*

Syntax Description

tx-low	Configures the low transmit power threshold. The range is -400 to 400 (in the units of 0.1 dBm). • For subport 0, the range is from -50 dBm to 190 dBm • For subport 1, the range is from -50 dBm to 190 dBm

Command Default

None.

Command Modes

controller ots

Command History

Release	Modification
Release 25.3.1	This command was introduced.

Usage Guidelines

None.

Task ID

Task ID	Operation
dwdm	read, write

Example

This example shows how to configure the ots controller and set the low power threshold at the transmit side.

```
Router#config
Router(config)#controller ots 0/0/2/1/0
Router(config-Ots)#tx-low-threshold -200
Router(config-Ots)#commit
Router(config-Ots)#exit
Router(config)#exit
```