



# GPON System Parameters

---

- [About GPON System Parameters, on page 1](#)
- [How to Configure GPON System Parameters, on page 2](#)
- [Configuration Examples for GPON System Parameters, on page 3](#)

## About GPON System Parameters

The PON system parameters allow you to to configure and manage the PON system.

### GPON System Optical Parameter Detection (SFP)

GPON System Optical Parameter Detection provides information about optical parameter diagnosis and the GPON port optical parameter threshold. It is mainly used to query the alarm monitoring of GPON optical module parameters and optical module parameters in real time. When the optical line problem occurs in the GPON system, these functions can be used to confirm whether the GPON optical module works normally.

### GPON Port Optical Threshold Alarm

GPON Port Optical Threshold Alarm allows you to configure the GPON port to receive and send optical parameter alarm thresholds. When the receiving and transmitting optical power of the GPON optical module is not within the threshold, an optical power alarm will be generated.

### GPON Uplink FEC

By configuring the GPON Uplink FEC function, FEC is performed on data frames to increase the reliability of data transmission.

### Optical link protection (not supported yet)

The optical line protection system is an automatic monitoring and protection system that is completely independent of the communication transmission system and is completely established on the physical link of the optical cable. When the working optical fiber loss increases and the communication quality is degraded or the working optical fiber is blocked, the system can automatically switch the optical communication transmission system from the working optical fiber to the standby optical fiber in real time, restore communication, and realize synchronous switching protection of the optical cable line, thereby greatly

improving The availability of fiber optic cable lines enhances the reliability of communication systems and guarantees service quality.

# How to Configure GPON System Parameters

## Configuring GPON Uplink FEC

To configure GPON uplink FEC, perform this procedure.

### Before you begin

Modifying and activating the line profile entry will cause the ONT that is associated with the profile offline and online.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password if prompted.
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>deploy profile line</b> <b>Example:</b> Device(config)# <b>deploy profile line</b>	Enters line profile configuration mode.
<b>Step 4</b>	<b>aim</b> { <i>index_num</i> [ <i>name name</i> ]   <i>name name</i> } <b>Example:</b> Device(deploy-profile-line)# <b>aim 5</b>	Creates the line profile.
<b>Step 5</b>	[no] <b>local fec</b> <b>Example:</b> Device(deploy-profile-line-5)# <b>local fec</b>	Enables the ONT uplink FEC. Use the <b>no local fec</b> command to disable the ONT uplink FEC.
<b>Step 6</b>	<b>active</b> <b>Example:</b> Device(deploy-profile-line-5)# <b>active</b>	Activates the rule.

## Monitoring GPON Port Optical Parameter Diagnosis Information

The commands in the following table can be used to monitor GPON port optical parameter diagnosis information.

**Table 1: GPON Port Optical Parameter Diagnosis Information**

Command	Purpose
<code>show interface sfp [ gpon port_id ]</code>	Displays information about GPON port optical parameter for real-time detection of SFP parameters, such as temperature, VCC, Tx bias Current, and Tx power, Rx power.  <i>port_id</i> : The PON port ID .

## Monitoring GPON System Performance Statistics

The commands in the following table can be used to monitor GPON system performance statistics.

**Table 2: GPON Port System Performance Statistics**

Command	Purpose
<code>show ont statistics ont_id traffic</code>	Displays information about ONT uplink and downlink data frame statistics
<code>show ont statistics ont_id [port port_id]</code>	Displays information about Ethernet port data frame statistics  <i>port_id</i> : The ONT ethernet Port ID. The range is from 1 to 24.  <i>ont_id</i> : The ONT ID.
<code>show ont statistics ont_id [gem {broadcast   multicast   unicast}] GEM port index</code>	Displays information about GEM port data frame statistics

## Configuration Examples for GPON System Parameters

### Example: Viewing the GPON Port Optical Parameter Diagnosis Information

The following example shows how to view the GPON port optical parameter diagnosis information.

```
Device> enable
Device# configure terminal
Device(config)# show interface sfp gpon 0/1
Port g0/1 :
Common information:
  Optical Module status      :Online
```

## Example: Viewing the GPON System Performance Statistics

```

Port state                :On
Transceiver Type         :SFP
Module type               :GPON
Module sub-type          :Class B+
Used type                 :ONT
Connector Type           :SC
WaveLength(nm)           :1490
Transfer Distance(m)     :20000(9um)
Digital Diagnostic Monitoring :YES
VendorName               :WTD
Manufacture information:
Manu. Serial Number      :BP132701660779
Manufacturing Date       :2013-07-09
VendorName               :WTD
Vendor PN                :RTXM167-522
Vendor Revision          :1.0
Diagnostic information:
Temperature( )           :31
Voltage(V)               :3.24
Bias Current(mA)         :5.75
Bias High Threshold(mA)  :70.00
Bias Low Threshold(mA)   :0.00
RX Power(dBm)            :-
RX Power High Threshold(dBm) :-10.0
RX Power Low Threshold(dBm) :-27.9
TX Power(dBm)            :3.81
TX Power High Threshold(dBm) :5.00
TX Power Low Threshold(dBm) :0.999

```

## Example: Viewing the GPON System Performance Statistics

The following example shows the statistics of ONT uplink and downlink data frames.

```

Device> enable
Device# configure terminal
Device(config)# show ont statistics 0/1/1 traffic

Upstream frames          : 0
Upstream bytes           : 0
Downstream frames        : 0
Downstream bytes         : 0
Up traffic (kbps)        : 0
Down traffic (kbps)      : 0

```

The following example shows the Ethernet port data frame statistics.

```

Device> enable
Device# configure terminal
Device(config)# show ont statistics 0/1/1 port 1

Received frames          : 0
Received unicast frames  : 0
Received multicast frames : 0
Received broadcast frames : 0

Received 64-byte frames  : 0
Received 65~127-byte frames : 0
Received 128~255-byte frames : 0
Received 256~511-byte frames : 0

```

```

Received 512~1023-byte frames      : 0
Received 1024~1518-byte frames    : 0
Received undersize frames          : 0
Received oversize frames           : 0
Received fragments                 : 0
Received jabbers                   : 0
Received FCS error frames          : 0
Discard frames                     : 0
Received alignment error frames    : 0
MAC sub-layer received error frames : 0
PPPOE filtered frames              : 0
Buffer overflows on receive        : 0
Received bytes                     : 0

Sent frames                        : 0
Sent unicast frames                : 0
Sent multicast frames              : 0
Sent broadcast frames              : 0

Carrier sense error frames         : 0
SQE test error messages           : 0
Sent single collision frames       : 0
Sent multiple collision frames     : 0
Sent excessive collision frames    : 0
Late collision frames              : 0
MAC sub-layer sent error frames    : 0
Buffer overflows on transmit      : 0
Sent bytes                         : 0

```

The following example shows the GEM Port data frame statistics.

```

Device> enable
Device# configure terminal
Device(config)# show ont statistics 0/1/1 gem unicast 1
Lost of frames      : 0
Received frames    : 0
Received blocks    : 0
Sent frames        : 0
Sent blocks        : 0

```

The following example shows the ONT data frame statistics

```

Device> enable
Device# configure terminal
Device(config)# show ont statistics overall 0/1/1
Received bytes      : 1759
Received Discard frames : 0
Received error frames : 0

Sent bytes          : 0
Sent Discard frames : 0
Sent error frames   : 0
Up rate (pps)       : 0
Down rate (pps)     : 0
Up traffic (kbps)   : 0
Down traffic (kbps) : 0
Up bandwidth throughput : 0%
Down bandwidth throughput : 0%

```

## Example: Configuring the GPON Uplink FEC

The following example shows how to configure the GPON uplink FEC.

```
Device> enable
Device# configure terminal
Device(config)# deploy profile line
Device(deploy-profile-line)# aim 1
Device(deploy-profile-line-1)# local fec
Device(deploy-profile-line-1)# active
```