

DPN301 User Guide

□ CLI manual □

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Chapter 1

1.1 Introduction

The DPN301 series provide the all functions of an 802.3ah Ethernet Passive Optical Network(EPON) Optical Network Unit(ONU), It is targeted at Fiber-to-the-Home (FTTH) solutions and provides 1 fiber port and 1 10/100/1000 BASE-TX Ethernet port.

The front panel:

The front panel LED display equipment used in the current operating state.

LED	Color	Description
POWER □ PWR □	Green/Red	Green ON: System is OK Red ON: Self test fail OFF: Power OFF
PON port Authentication LED (OPT)	Green	Green ON: Authentication OK OFF: Authentication fails or not yet completed
PON port Link LED (ACT)	Green	Green ON: PON port Link up (Physical connection is good) OFF: PON port Link down (Physical connection is poor)
Test LED (TEST)	Amber	Amber ON: Loop-Back test is in executing. OFF: Loop-Back test is done.
LAN port Link LED(LINK)	Green	Green ON: LAN port Link up OFF: PON: LAN port Link down
LAN port Speed LED SPEED	Green /Amber	Green ON: Speed of LAN port is 1000Mbps Amber ON: Speed of LAN port is 100Mbps OFF: Speed of LAN port is 10Mbps or Link down
LAN port Duplex LED DUPLEX	Green	Green ON: Duplex of LAN port is full OFF: Duplex of LAN port is half or link down

After the panel

After the panel to provide external interface devices.

Interface	Function specification
OPTICAL	Fiber ports.
LAN	RJ-45 interface.

POWER

DC in.

Chapter 2

2.1 Ready to install

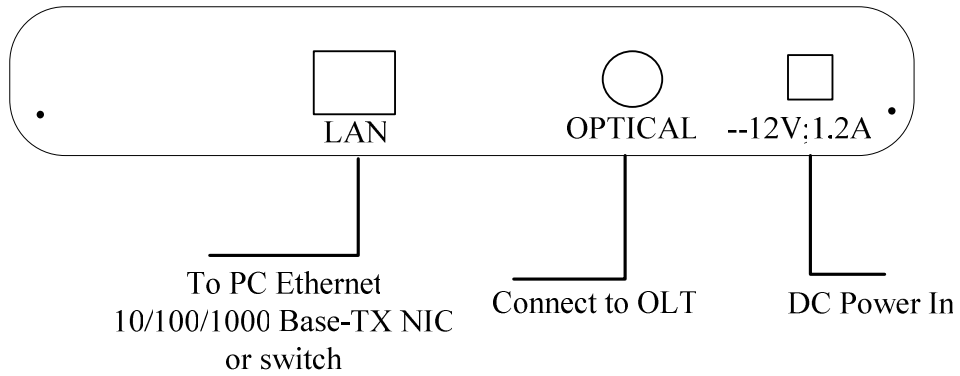


Diagram 2-1

2.2 Technical specifications

Power Supply

Feature	Detailed Description
Power Supply	One AC-AC 12V/1.2A adapter is used to provide DPN301C. The detail specification of the Adapter is attached as below.

Physical & Environmental

#	Feature	Detailed Description
1	Operating Temperature	0 ~ 45°C
2	Storage Temperature	-40 ~ 70°C
3	Operating Humidity	5 ~ 95% non-condensing
4	Storage Humidity	Less than 95%RH, non-condensing
5	Operation Dustproof	Less than 3×10^4 grain/m ³

Chapter 3

3.1 Telnet management

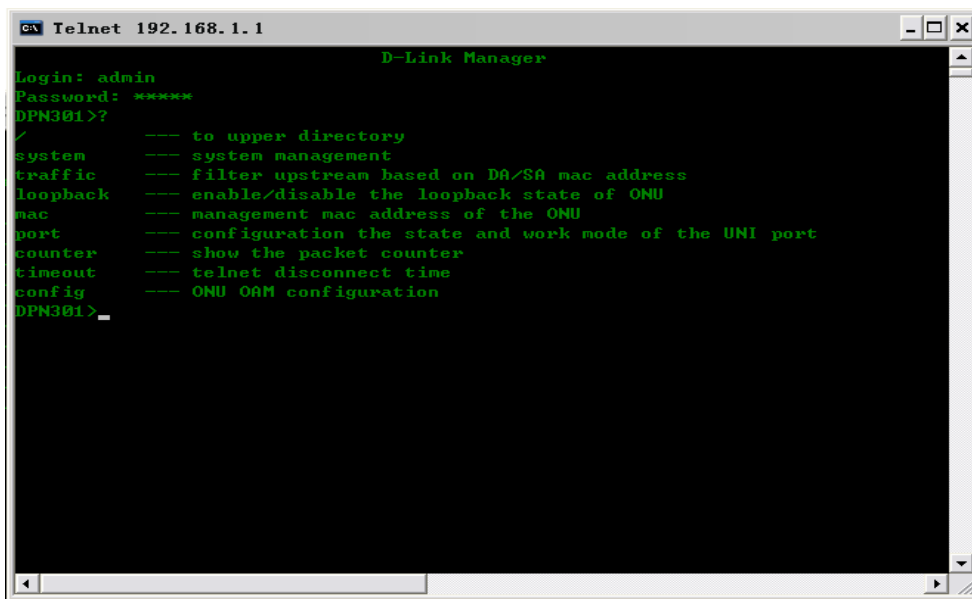
ONU default IP is 192.168.1.1

Users can use UNI port of DPN301 to take local management. There are two ways such as Telnet and Web. This section describes Telnet method.

Username: admin

password: admin.

When you login the system, you can input command “?” to show directory and below is our directory, which include system traffic loopback mac port counter timeout and so on.



```
Telnet 192.168.1.1
D-Link Manager
Login: admin
Password: *****
DPN301>?
/
system      --- to upper directory
            --- system management
traffic     --- filter upstream based on DA/SA mac address
loopback    --- enable/disable the loopback state of ONU
mac         --- management mac address of the ONU
port        --- configuration the state and work mode of the UNI port
counter     --- show the packet counter
timeout     --- telnet disconnect time
config      --- ONU OAM configuration
DPN301>
```

Diagram 5-1 Telnet

Enter “/”, to return to the higher level directory.

```

Telnet 192.168.1.1
D-Link Manager
Login: admin
Password: *****
DPN301>?
/      --- to upper directory
system --- system management
traffic --- filter upstream based on DA/SA mac address
loopback --- enable/disable the loopback state of ONU
mac --- management mac address of the ONU
port --- configuration the state and work mode of the UNI port
counter --- show the packet counter
timeout --- telnet disconnect time
config --- ONU OAM configuration
DPN301>mac
MAC/DPN301>/
DPN301>traffic
Traffic/DPN301>?
/      --- to upper directory
Commands at Traffic level:
DA      <mac_address> enable | disable
SA      <mac_address> enable | disable
show    show traffic information
Traffic/DPN301>/
DPN301>_

```

Diagram 5-2 Return to the higher level directory

3.2 SYSTEM COMMANDS LIST

save
reboot
download <ip_address> <file_name>
version
set_ip <ip_address>
show_ip
account <old name> <old password> <new name> <new password>
exit

3.2.1 save

Purpose

Use to save configuration to FLASH.

Format

save

Description

The save command is used to save configuration to FLASH.

Parameter

None

Restrictions

None.

Example

To save configuration to FLASH:


```
System/DPN301>save
Save success
System/DPN301>
```

3.2.2 reboot

Purpose

Use to restart the ONU.

Format

reboot

Description

The reboot command is used to restart ONU.

Parameter

None

Restrictions

None.

Example

None

3.2.3 download

Purpose

Use to download and install new firmware file from a TFTP server.

Format

download <ip_address> <file_name>

Description

This command is used to download a new firmware file from a TFTP server.

Parameter

Parameters	Description
<ip_address>	The IP address of the TFTP server.
< file_name>	The DOS path and filename of the firmware file on a TFTP server. For example: C:\dnp301.had.

Restrictions

None.

Example

To download a new firmware from the TFTP server:

```
System/DPN301>download 192.168.1.254 d31.had
Now downloading the file,please wait...
System/DPN301>
Download file to Ram .....    OK!
```

```
Confirm the file ..... OK!  
Write file to FlashROM ..... OK!  
System/DPN301>
```

3.2.4 version

Purpose

Use to display the software version of ONU.

Format

version

Description

This command is used to display the version of ONU.

Parameter

None

Restrictions

None.

Example

To display the version:

```
System/DPN301>version  
PDT information : DPN301  
MAC Address : 00-03-00-00-00-11  
Software Version: 1.00B003  
Firmware Version: 1-4-0-3  
Publish date : 2008/04/02  
System/DPN301>
```

3.2.5 set_ip

Purpose

Use to configure the system IP interface of ONU.

Format

set_ip <ip_address>

Description

This command is used to configure system IP interface.

Parameter

Parameters	Description
<ip_address>	The IP address of the IP interface to be configured.

Restrictions

None.

Example

To configure the IP of ONU.

```
System/DPN301>set_ip 192.168.1.1
Success, new ip will take effect after save and reboot.
System/DPN301>
```

3.2.6 show_ip

Purpose

Use to display the system IP interface of ONU.

Format

show_ip

Description

This command is display the system IP interface.

Parameter

None

Restrictions

None.

Example

To display the IP of ONU.

```
System/DPN301>show_ip
ONU ip address:
192.168.1.1
System/DPN301>
```

3.2.7 account

Purpose

Use to configure user accounts.

Format

account <old name> <old password> <new name> <new password>

Description

This command use to configure the user account.

Parameter

Parameters	Description
<old name>	The user names that can be configure.
<old password>	The old account's password.
<new name>	Modify the old user name to new user name.
new password	Modify the old password to the new password.

Restrictions

None.

Example

To set the account of the ONU:

```
System/DPN301>account admin admin admin_2 123456
```

3.2.8 exit

Purpose

Use to log out a user from the Telnet connection.

Format

exit

Description

This command use to log out a user from the Telnet connection.

Parameter

None

Restrictions

None.

Example

None

3.3 TRAFFIC Filter COMMANDS LIST

```
DA <mac_address> enable | disable
```

```
SA <mac_address> enable | disable
```

```
show
```

3.3.1 DA

Purpose

Use to configure service filtering.

Format

DA <mac_address> enable | disable

Description

This command use to configure service filtering.

Parameter

Parameters	Description
<mac_address>	The destination MAC address that can be configure.
enable disable	Enable or disable the service filtering.

Restrictions

None.

Example

To set the service filtering of the ONU:

```
Traffic/DPN301>DA 00-00-01-02-03-04 enable
Success
Traffic/DPN301>
```

3.3.2 SA

Purpose

Use to configure service filtering.

Format

SA <mac_address> enable | disable

Description

This command use to configure service filtering.

Parameter

Parameters	Description
<mac_address>	The source MAC address that can be configure.
enable disable	Enable or disable the service filtering.

Restrictions

None.

Example

To set the service filtering of the ONU:

```
Traffic/DPN301>SA 00-00-01-02-03-05 enable
Success
Traffic/DPN301>
```

3.3.3 show

Purpose

Use to display the configuration of service filtering.

Format

show

Description

This command use to display the configuration of service filtering.

Parameter

None

Restrictions

None.

Example

To display the service filtering of the ONU:

```
Traffic/DPN301>show
DA :
32-12-45-45-45-45
00-00-01-02-03-04

SA :
00-00-01-02-03-05

Traffic/DPN301>
```

3.4 LOOPBACK COMMANDS LIST

test [<portlist> all]
show [<portlist> all]

3.4.1 test

Purpose

Use to test the loop back.

Format

test [<portlist> | all]

Description

This command use to test loop back.

Parameter

Parameters	Description
[<portlist> all]	Specifies a port or range of ports to be configured. The “all” is means to configure all ports on the ONU.

Restrictions

None.

Example

To test the loop back of the ONU:

```
Loopback/DPN301>test all
```

3.4.2 show

Purpose

Use to display the result of loop back.

Format

Show [<portlist> | all]

Description

This command use to display the result of loop back.

Parameter

Parameters	Description
[<portlist> all]	Specifies a port or range of ports to be displayed. The “all” is means to display all ports on the ONU.

Restrictions

None.

Example

To display the result of loop back test.

```
Loopback/DPN301>show all
Port 1 :
Previous LoopbackTest Result : Success
Loopback/DPN301>
```

3.5 MAC COMMANDS LIST

```
MAC Configuration [<portlist> | all]
MAC Add [<portlist> | all] <macaddress>
MAC Delete [<portlist> | all] <macaddress>
MAC max_entry [<portlist> | all] [<0~64> | transparent]
MAC aging_time <0, 15~65535>
MAC Clear [<portlist> | all]
MAC Show [<portlist> | all]
```

3.5.1 MAC Configuration

Purpose

Use to display the MAC configuration.

Format

MAC Configuration [<portlist> | all]

Description

This command use to display the MAC configuration.

Parameter

Parameters	Description
[<portlist> all]	Specifies a port or range of ports to be displayed. The “all” is means to display all ports on the ONU.

Restrictions

None.

Example

To display the MAC configuration of the ONU:

```
MAC/DPN301>mac configuration all

Port 1 :
index  MAC address          type
No entry
max_entry :          16
FDB Aging time :      300
MAC/DPN301>
```

3.5.2 MAC Add

Purpose

Use to add the MAC to FDB.

Format

MAC Add [<portlist> | all] <macaddress>

Description

This command use to add the MAC to FDB.

Parameter

Parameters	Description
[<portlist> all]	The destination MAC address that can be configure.
<macaddress>	The MAC.

Restrictions

None.

Example

To add an MAC to FDB:

```
MAC/DPN301>mac add all 00-00-00-11-11-22  
Success!
```

3.5.3 MAC Delete

Purpose

Use to delete the MAC from FDB.

Format

MAC Delete [<portlist> | all] <macaddress>

Description

This command use to delete the MAC from FDB.

Parameter

Parameters	Description
[<portlist> all]	The destination MAC address that can be configure.
<macaddress>	The MAC.

Restrictions

None.

Example

To delete the MAC from FDB:

```
MAC/DPN301>mac delete all 00-00-00-11-11-22
```

3.5.4 MAC max_entry

Purpose

Use to display and configure the max entry of FED.

Format

MAC max_entry [<portlist> | all] [<0~64> | transparent]

Description

This command use to test loop back.

Parameter

Parameters	Description
[<portlist> all]	The destination MAC address that can be configure.

[<0~64> transparent]	Set ONU in transparent mode or set max entry of FDB.
------------------------	--

Restrictions

None.

Example

To display the max entry of FDB:

```
MAC/DPN301>mac max_entry all
Port 1 :
max_entry : Transparent mode
MAC/DPN301>
```

To display the max entry of FDB:

```
MAC/DPN301>mac max_entry all
Port 1 :
max_entry :      16
MAC/DPN301>
```

To set the max entry of FDB:

```
MAC/DPN301>mac max_entry all 16
```

3.5.5 MAC aging_time

Purpose

Use to set the aging time of FDB.

Format

MAC aging_time <0, 15~65535>

Description

This command use to set the aging time of FDB.

Parameter

Parameters	Description
<0, 15~65535>	The aging time value, 0 or from 15 to 65535.

Restrictions

None.

Example

To set the aging time of FDB:

```
MAC/DPN301>mac aging_time 15
```

3.5.6 MAC Clear

Purpose

Use to clear FDB.

Format

MAC Clear [<portlist> | all]

Description

This command use to clear FDB.

Parameter

Parameters	Description
[<portlist> all]	The destination MAC address that can be configure.

Restrictions

None.

Example

To clear the FDB:

```
MAC/DPN301>mac clear all
```

3.5.7 MAC Show

Purpose

Use to display the FDB entry and max entry of FDB.

Format

MAC Show [<portlist> | all]

Description

This command use to display FDB entry and max entry of FDB.

Parameter

Parameters	Description
[<portlist> all]	The destination MAC address that can be displayed.

Restrictions

None.

Example

To display the FDB:

```
MAC/DPN301>mac show all
```

```
Port 1 :  
index  MAC address      type  
1      00-05-5d-fb-b1-c4    Dynamic
```

```
max_entry :      16
FDB Aging time : 16
MAC/DPN301>
```

3.6 PORT COMMANDS LIST

```
state [<portlist> | all] [enable | disable]
speed [<portlist> | all] [10hdx | 10fdx | 100hdx | 100fdx | 1000fdx | auto ]
flow control [<portlist> | all ] [enable | disable]
show [<portlist> | all]
```

3.6.1 state

Purpose

Use to set the state of UNI port.

Format

```
state [<portlist> | all] [enable | disable]
```

Description

This command use to set the state of UNI port.

Parameter

Parameters	Description
[<portlist> all]	Specifies a port or range of ports to be displayed. The “all” is means to set all ports on the ONU.
[enable disable]	Enable UNI port of disable UNI port.

Restrictions

None.

Example

To enable the UNI port:

```
port/DPN301>state all enable
Success
port/DPN301>
```

3.6.2 speed

Purpose

Use to set the speed of UNI port.

Format

speed [<portlist> | all] [10hdx | 10fdx | 100hdx | 100fdx | 1000fdx | auto]

Description

This command use to set speed of UNI port.

Parameter

Parameters	Description
[<portlist> all]	Specifies a port or range of ports to be displayed. The “all” is means to set all ports on the ONU.
[10hdx 10fdx 100hdx 100fdx 1000fdx auto]	UNI port speed. auto - Enables auto-negotiation of speed a duplex for the specified range of ports. Alternatively the speed and duplex can be fixed by specifying speed in Mbps and duplex for the specified range of ports. Port speed/duplex options are as follows: <ul style="list-style-type: none">• 10hdx (10M/half duplex)• 10fdx (10M/full duplex)• 100hdx (100M/half duplex)• 100fdx (100M/full duplex)• 1000fdx (1000M/full duplex)

Restrictions

None.

Example

To set port speed:

```
port/DPN301>speed all auto
```

3.6.3 flow control

Purpose

Use to enable or disable the flow control.

Format

flow control [<portlist> | all] [enable | disable]

Description

This command use to enable or disable the flow control.

Parameter

Parameters	Description
[<portlist> all]	The destination MAC address that can be configure.
[enable disable]	Enable or disable flow control.

Restrictions

None.

Example

To enable or disable the flow control:

```
port/DPN301>flow control all enable
```

3.6.4 show

Purpose

Use to display the port configuration.

Format

```
show [<portlist> | all]
```

Description

This command use to display the port configuration.

Parameter

Parameters	Description
[<portlist> all]	The destination MAC address that can be displayed.

Restrictions

None.

Example

To display the port configuration:

```
port/DPN301>show all
Port 1 :
Setting Speed/Duplex   :   auto
Connection Speed/Duplex: 100fdx
Flow Control :enable
Port State :enable
port/DPN301>
```

3.7 COUNTER COMMANDS LIST

```
Counter Clear [<portlist> | all]
```

```
Counter Show [<portlist> | all]
```

3.7.1 Counter Clear

Purpose

Use to clear the counter of ONU.

Format

Counter Clear [<portlist> | all]

Description

This command use to clear the counter.

Parameter

Parameters	Description
[<portlist> all]	Specifies a port or range of ports to be displayed. The “all” is means to set all ports on the ONU.

Restrictions

None.

Example

To clear the counter:

```
counter/DPN301>counter clear all
Success
counter/DPN301>
```

3.7.2 Counter Show

Purpose

Use to display the counter.

Format

Counter Show [<portlist> | all]

Description

This command use to display the counter.

Parameter

Parameters	Description
[<portlist> all]	Specifies a port or range of ports to be displayed. The “all” is means to set all ports on the ONU.

Restrictions

None.

Example

To display the counter:

```
counter/DPN301>counter show 1
PON Packet Drop:          :0
```

```
PON FEC Error Packet received :0
PON CRC Error Packet received :0
OAM Packet received :0
OAM Packet transmitted :0
MPCP Packet transmitted :0
MPCP Packet received :0
UNI Packet Drop :0
UNI CRC Error Packet received :0
UNI Packet received :433
UNI Packet transmitted :557
PON Packet transmitted :0
PON Packet received :0
counter/DPN301>
```

3.8 TIMEOUT COMMANDS LIST

```
set <30~600>
show
```

3.8.1 set

Purpose

Use to set the Telnet timeout time.

Format

set <30~600>

Description

This command use to set the Telnet timeout.

Parameter

Parameters	Description
<30~60>	Timeout, from 30 seconds to 60 seconds.

Restrictions

None.

Example

To set Telnet timeout:

```
timeout/DPN301>set 600
timeout/DPN301>
```

3.8.2 show

Purpose

Use to display the Telnet timeout value.

Format

show

Description

This command use to display the Telnet timeout.

Parameter

None

Restrictions

None.

Example

To display the Telnet timeout:

```
timeout/DPN301>show
The time is: 600 seconds
timeout/DPN301>
```