

# XtendLan

**XL-GFC142M** - G.fast Master Modem +

**XL-GFC142SR** - G.fast / VDSL2 / V35b Slave Modem/Router

**USER'S MANUAL**



## Safety Warnings

For your safety, be sure to read and follow all warning notices and instructions before using the device.

- ◆ **DO NOT** open the device or unit. Opening or removing the cover may expose you to dangerous high voltage points or other risks. ONLY qualified service personnel can service the device. Please contact your vendor for further information.
- ◆ **Use ONLY** the dedicated power supply for your device. Connect the power to the right plug type (AC support full range between 100Vac and 240Vac input. 12V DC / 2A or above output).
- ◆ **Place** connecting cables carefully so that no one will step on them or stumble over them. **DO NOT** allow anything to rest on the power cord and do **NOT** locate the product where anyone can work on the power cord.
- ◆ **DO NOT** install nor use your device during a thunderstorm. There may be a remote risk of electric shock from lightning.
- ◆ **DO NOT** expose your device to dampness, dust or corrosive liquids.
- ◆ **DO NOT** use this product near water, for example, in a wet basement or near a swimming pool.
- ◆ **Connect ONLY** suitable accessories to the device.
- ◆ **Make sure** to connect the cables to the correct ports.
- ◆ **DO NOT** obstruct the device ventilation slots, as insufficient air flow may harm your device.
- ◆ **DO NOT** place items on the device.
- ◆ **DO NOT** use the device for outdoor applications directly, and make sure all the connections are indoors or have waterproof protection place.
- ◆ **Be careful** when unplugging the power, because it may produce sparks.
- ◆ **Keep** the device and all its parts and accessories out of the reach of children.
- ◆ **Clean** the device using a soft and dry cloth rather than liquid or atomizers. Power off the equipment before cleaning it.
- ◆ This product is **recyclable**. Dispose of it properly.

# Table of Contents

<b>Chapter 1. Unpacking Information</b> .....	3
<b>Chapter 2. Installing the Modem</b> .....	4
<b>Chapter 3. Hardware Description</b> .....	14
<b>Chapter 4. Configure the modem via Web management menu</b> .....	21
<b>Appendix A: Cable Requirements</b> .....	46
<b>Appendix B: Product Specifications - Key Features &amp; Benefits</b> .....	50
<b>Appendix C: Troubleshooting</b> .....	53



**This is a class A product.** In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

# Chapter 1. Unpacking Information

## 1.1 Check List

Before installing the modem, please verify the contents inside the package.

### Package Contents:



1 x Modem



1 x QR code for user's manual hyperlink.



1. Accessory Kit: 1x Ethernet Cable, 1x Phone wire, 1x DC12V/2A Power Adapter, 1x Power cord.

### Notes:

1. Please inform your dealer immediately for any missing or damaged parts. If possible, retain the carton including the original packing materials. Use them to repack the unit in case there is a need to return for repair.
2. Do not use sub-standard power supply. Before connecting the power supply to the device, be sure to check compliance with the specifications. The modem uses a **DC 12V/2A** or above Switching power supply.

## **Chapter 2. Installing the Modem**

### **2.1 Hardware Installation**

This chapter describes how to install the modem, and establish the network connections. The XL-GFC142SR may be installed on any level surface (e.g. a table or shelf). However, please take note of the following minimum site requirements before you begin.

### **2.2 Pre-installation Requirements**

Before you start the actual hardware installation, make sure you can provide the right operating environment, including power requirements, sufficient physical space, and proximity to other network devices that are to be connected.

Verify the following installation requirements:

- Power requirements: **DC 12 V / 2A or above**
- The modem should be located in a cool dry place, with at least **10cm** of space at the front and back for ventilation.
- Place the modem away from direct sunlight, heat sources, or areas with a high amount of electromagnetic interference.
- Check if the network cables and connectors needed for installation are available.
- **Do not install phone lines strapped together with AC power lines, or telephone office line with voice signal.**
- **Avoid installing this device with radio amplifying stations nearby or transformer stations nearby.**

## 2.3 General Rules

Before making any connections to the modem, please note the following rules:

- **Ethernet Port interface : RJ-45**

All network connections to the modem Ethernet port must be made using Category 5e UTP/STP or above for 1000 Mbps, Category 5 UTP or above for 100Mbps Category 3, 4 UTP or above for 10Mbps. No more than 100 meters of cabling may be use between the MUX or HUB and an end node.

- **G.fast Port interface : RJ-11 & Terminal block combo**

All network connections to the RJ-11/ terminal block(sharing port) must use **24~26** gauge with single **twisted pair** phone wire.

We **do not recommend** the usage of the other gauge phone wire.

The RJ-11 is an 6P4C connector, two of which are wired. The modem uses the center two pins. The pin out assignment for these connectors is presented below.

Please note that the line port is no polarity, therefore user can reverse the two wires of the phone cable when installed.

RJ-11 Pin out Assignments

Pin#	MNEMONIC	FUNCTION
1	NC	Unused
2	2a	Pass through
<b>3</b>	<b>1a</b>	<b>G.fast / xDSL</b>
<b>4</b>	<b>1b</b>	<b>G.fast / xDSL</b>
5	2b	Pass through
6	NC	Unused

## 2.4 Connecting the RJ-11 / RJ-45 Ports

There are two type line: 1 Terminal Block & 1 RJ-11 connector. It is used to connect with DPU Master side over a single pair phone wire to CPE Slave side (point to point application). (Figure 2.1)

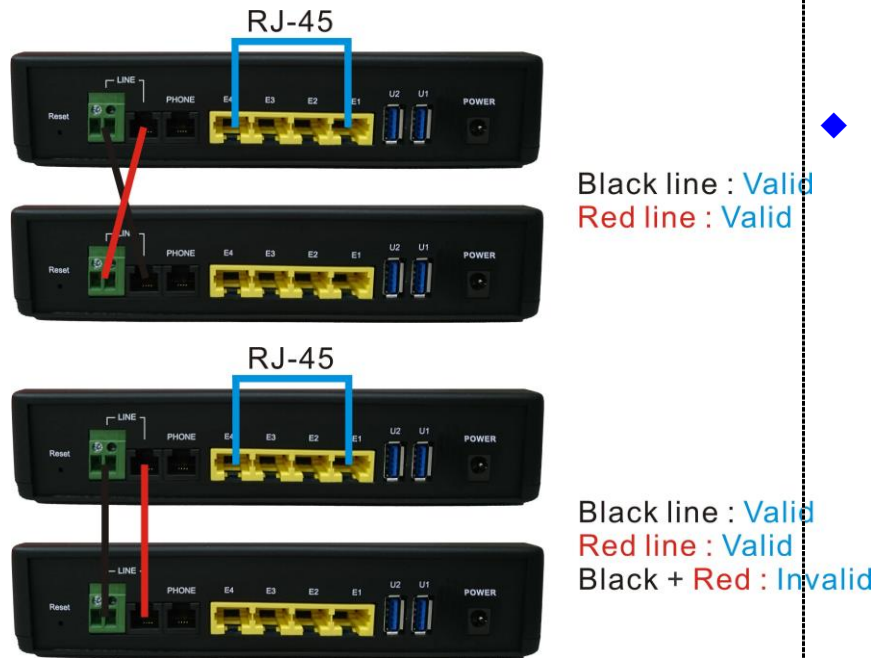


Figure 2.1 line ports straight connection

- ◆ When inserting a RJ-11 plug, make sure the tab on the plug clicks into position to ensure that it is properly seated.
- ◆ **Do not** plug a RJ-11 phone jack connector into the Ethernet port (RJ-45 port). This may damage the modem. Instead, use only twisted-pair cables with RJ-45 connectors that conform to Ethernet standard.

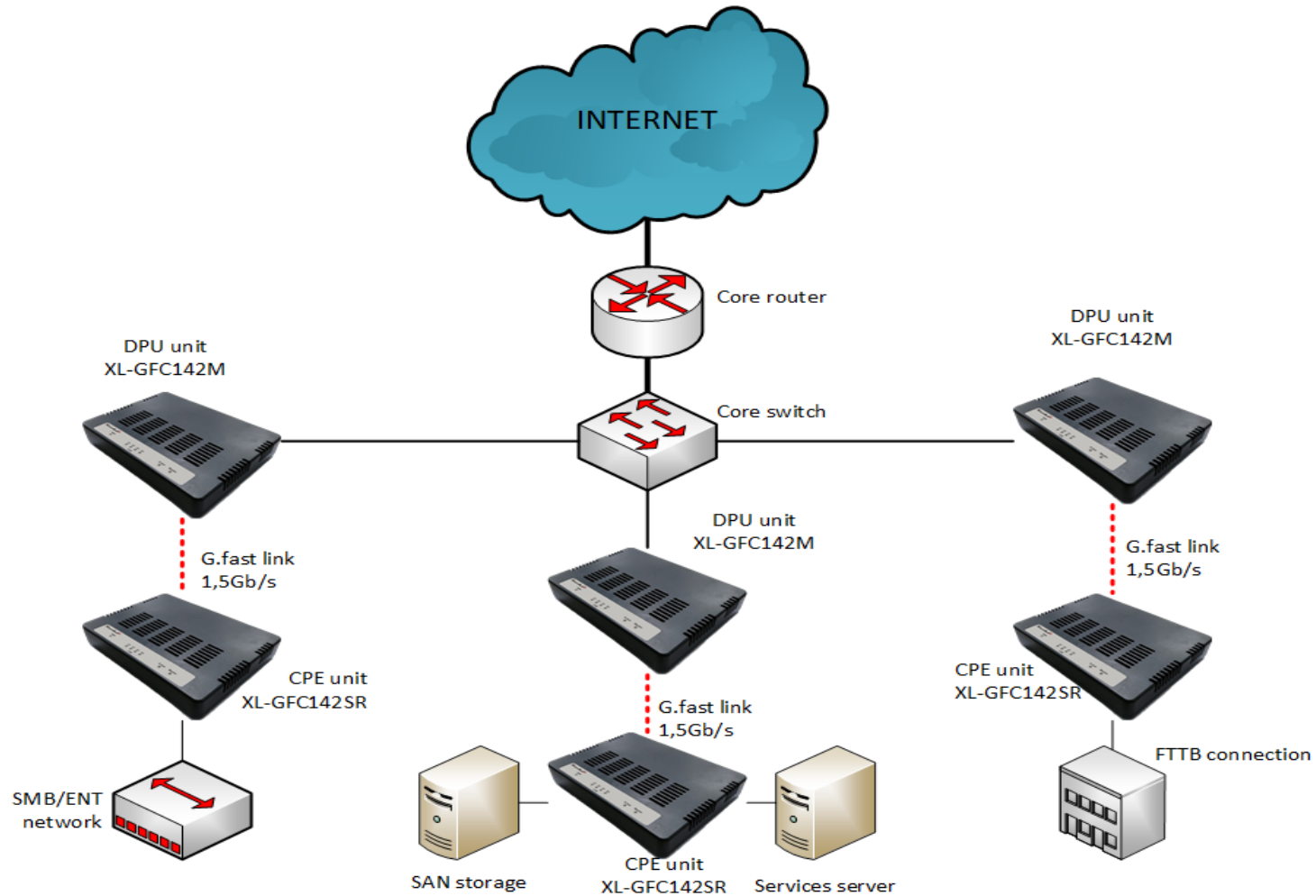
### Notes:

1. Be sure each twisted-pair cable (RJ-45 Ethernet cable) does not exceed 100 meters.
2. We advise using Category 5~7 UTP/STP cables for making Ethernet connections to avoid any confusion or inconvenience in the future when you attach high bandwidth devices.
3. Use 24 ~ 26 gauge twisted pair phone wiring, we do not recommend the usage of the other gauge phone wire.
4. Be sure phone wire has been installed before the modems boot (before their synchronisation)
5. Do not connect Line port with RJ-11 and Terminal block to two Master / Slave device

## 2.5 Point to Point application

First a quick overview on a complete setup of LAN extender Master/Slave LAN extender.

XL-GFC142 is a LAN extender leverages the extraordinary bandwidth promise of G.fast technology (max. 1Gbps) (Figure 2.2)





◆ **2.5.1 Connect the XL-GFC142M (DPU Master) and the XL-GFC142SR (CPE Slave) to the Line**

The objective for LAN extender is to pass high speed data over a twisted pair cable. In the setup, connect DPU Master to CPE Slave through phone wire (24~26 AWG) or line simulator or any other hardware representation of a cable network, with or without noise injection and crosstalk simulations.

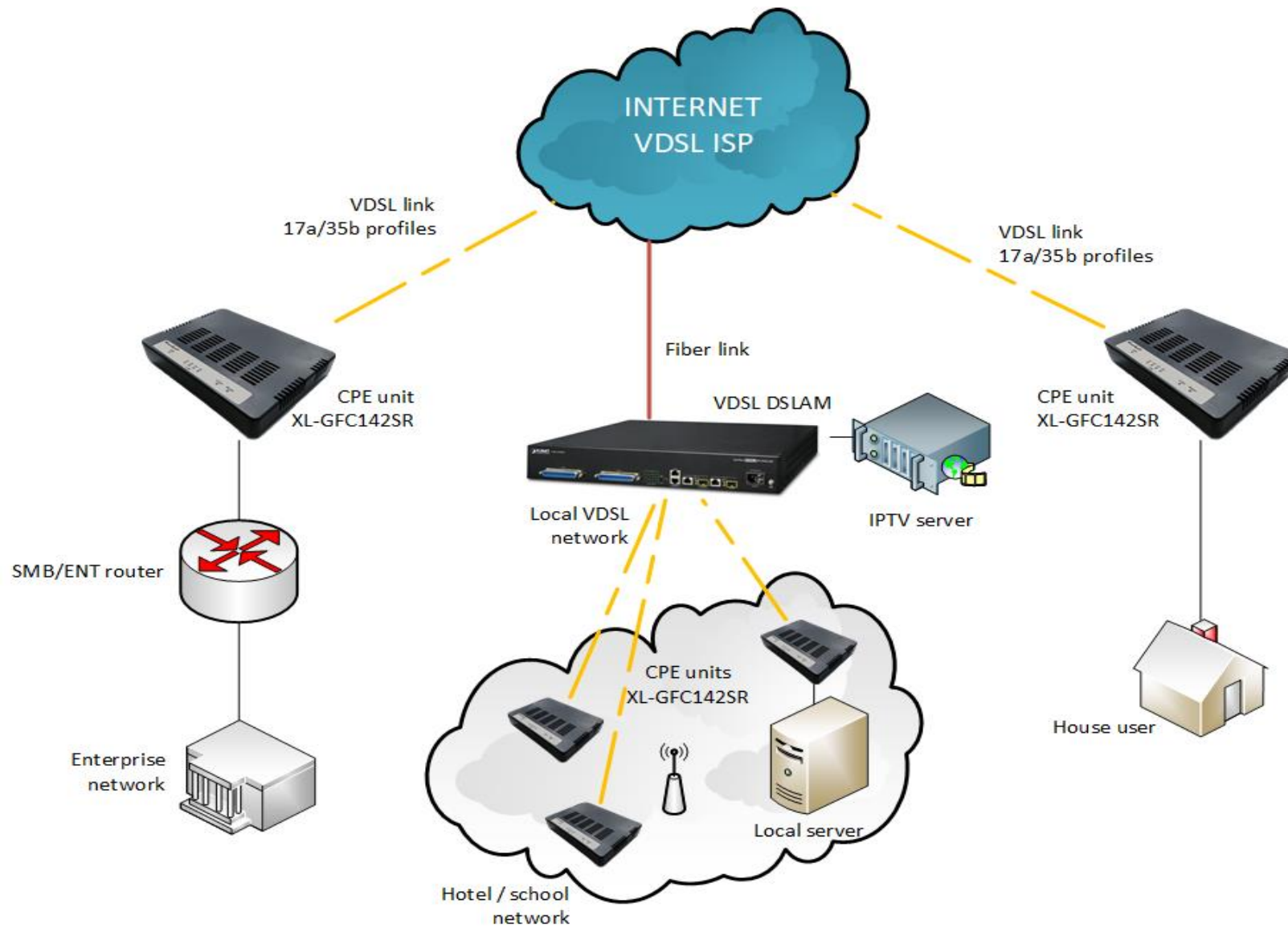
◆ **2.5.2 Connect the XL-GFC142M (DPU Master) and the XL-GFC142SR (CPE Slave) to LAN Devices**

In the setup, usually an Ethernet tester serves as a representation of the LAN side as well as a representation of the WAN(Line) side.

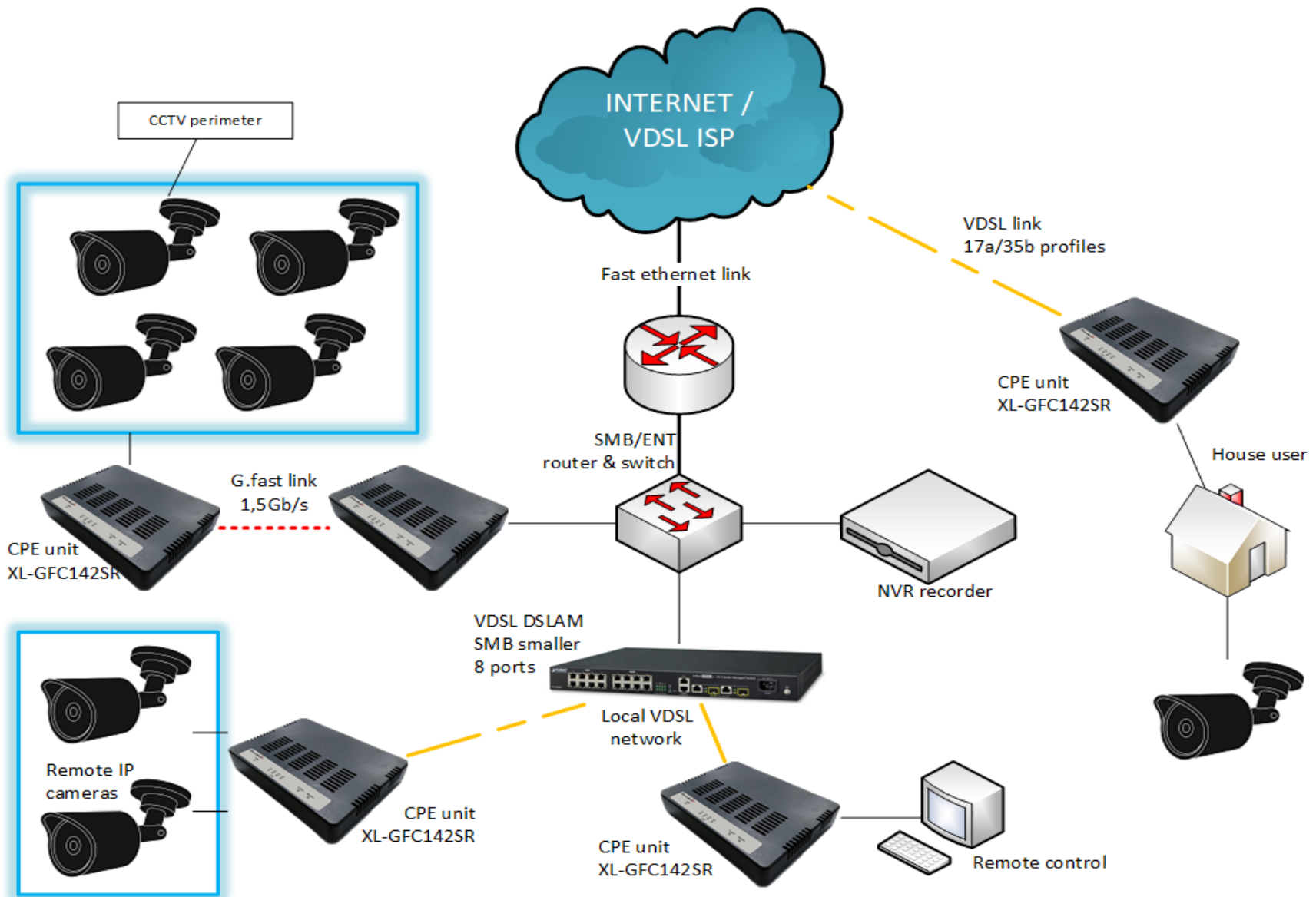
◆ **2.5.3 Run Demos and Tests**

The Ethernet tester may send data downstream as well as upstream. It also receives the data in order to check the integrity of the data transmission. Different data rates can be tested under different line conditions

## 2.6 Internet ISP application

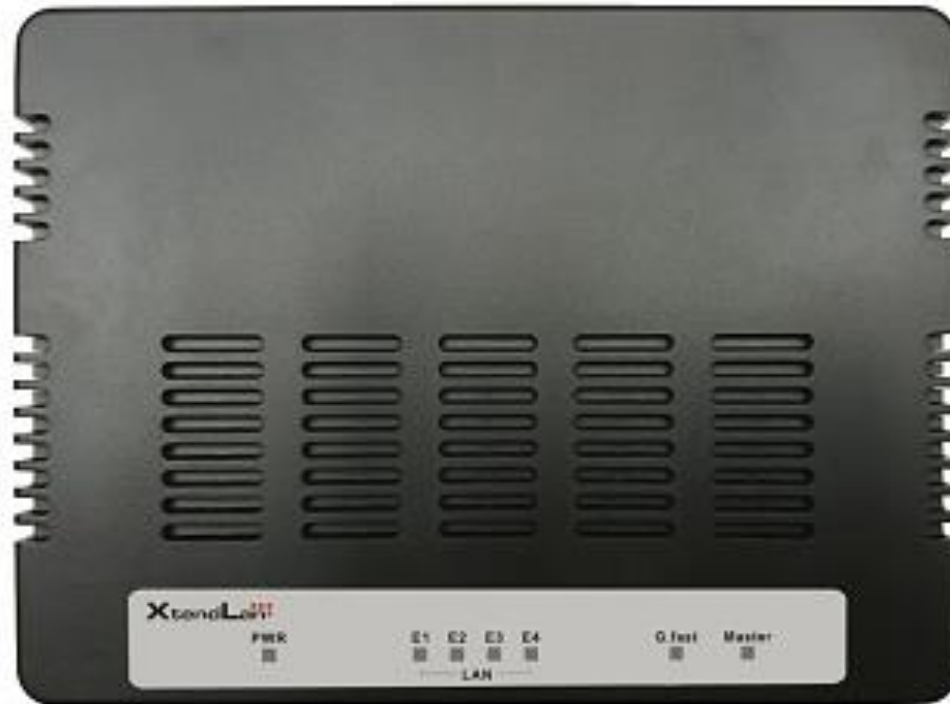


## 2.7 CCTV application



## Chapter 3. Hardware Description

This section describes the important parts, it features the front panel and rear panel:



Physical appearance

## **3.1 Front Panel**

The figure shows the front panel. (Figure 3.1)

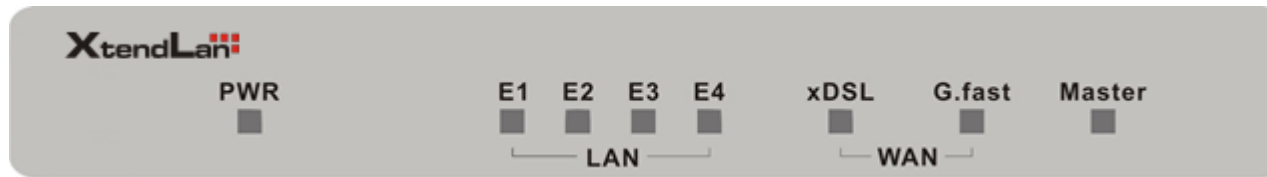


Figure 3.1 Front Panel

### **Note :**

- 1. Identifying DPU (Master) or CPE (Slave) is by Master LED, when this LED On(steady) indicates firmware Model as XL-GFC142M, and LED Off indicates firmware Model as XL-GFC142SR.**
- 2. If want to change DPU to CPE Model, just update firmware to right mode. The reverse is also do the same step. Fireware update menu please refer to administration webpage on page30.**
- 3. Please click default reset menu on administration webpage after model firmware updating.**

## 3.2 Front Indicators

The Modem has **Seven** LED indicators. The following Table shows the description. (Table 3-1)

**Table 3-1** LED Indicators Description and Operation

LED	Color	Status	Descriptions
PWR (Power LED)	Green	On(Steady)	Lights to indicate that modem had power good
		Off	The device is not ready or has malfunctioned.
LED	Color	Status	Descriptions
E1 ~ E4 (Ethernet LED)	Green	On(Steady)	The device has a good Ethernet connection.
		Blinking	The device is sending or receiving data.
		Off	The LAN is not connected or has malfunctioned.
G.fast (G.fast LED)	Green	On(Steady)	The G.fast connection is up.
		Fast Blinking	The Master device has detected a Slave device and ready to connect.
		Off	The Internet or network connection is down.

xDSL LED for XL-GFC142SR only	Green	On(Steady)	The xDSL connection is up.
		Fast Blinking	The Master device has detected a Slave device and ready to connect.
		Off	The Internet or network connection is down.
Master	Green	On (Steady)	Device firmware on XL-GFC142M (DPU Master mode).
		Off	Device firmware on XL-GFC142SR (CPE Slave mode).

### 3.3 Rear Panel

The following figure shows the rear panel. (Figure 3.2)



Figure 3.3 Rear Panel

And the table shows the description. (Table 3-2)

Table 3-2 Description of the modem rear connectors

Type	Connector	Description
Reset	Tact Switch Button	The reset buttons allows users to reboot the device or load the default settings. <b>Press and hold for 1-5 seconds: Reboot device</b> <b>Press over 5 seconds: Load the default settings</b>
Power	DC Jack	External switching Power Adapter: Output: DC 12V/2A.
Line	RJ-11	For connecting to a Master/Slave device.



Type	Connector	Description
phone	RJ-11	For connecting to the POTS equipment or ISDN.
Ethernet (E1-E4)	RJ-45	For connecting to an Ethernet equipped device.
USB3.0 (U1-U2)	USB Type A	For connecting to the USB dongle.

**Before user installed power and device, please read and follow these essentials:**

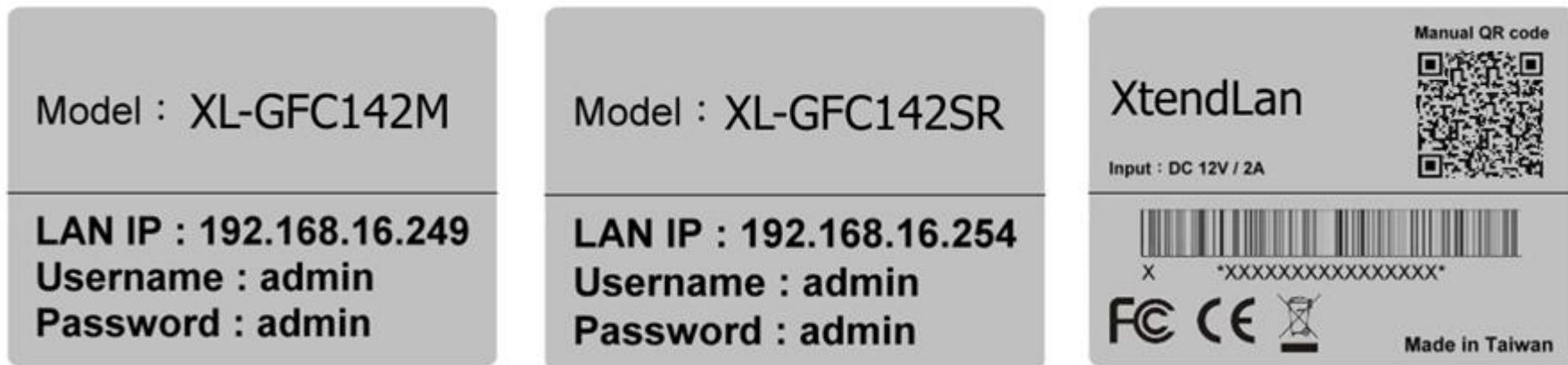
- ◆ Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point.

**Note:**

Do not run signal or communications wiring and power wiring through the same wire conduit. To avoid interference, wires with different signal characteristics should be routed separately.

- ◆ You can use the type of signal transmitted through a wire to determine which wires should be kept separate. The rule of thumb is that wiring sharing similar electrical characteristics can be bundled together.
- ◆ You should separate input wiring from output wiring.
- ◆ We recommend that you mark all equipment in the wiring system.

### **3.4 Back sticker**



Note : 1.Default factory model shown as back sticker including default model name, S/N、 FCC  
CE Mark, Input DC voltage information, User's manual download QR code, made of origin, default LAN IP and  
web management login information.

## Chapter 4. Configure the modem via Web management menu

The XL-GFC142M/SR provides a built-in HTML based management interface that allows configuration of the XL-GFC142SR via Internet Browser. Best viewed using Chrome or Firefox browsers.

In order to use the web browser to configure the device, you may need to allow:

- Web browser pop-up windows from your device. Web pop-up blocking is enabled by default in windows XP SP2 or above.
- Java Scripts. (Enabled by default)
- Java permissions. (Enabled by default)

Launch your web browser and input the default IP address **192.168.16.249** (XL-GFC142M) / **192.168.16.254** (XL-GFC142SR) in the Web page.

Following section user can find default username and password.

## 4.1 BASIC Setup

### 4.1.1 Login Webpage

The default username and password are “admin”.



Sign in  
http://192.168.16.242  
Your connection to this site is not private

Username

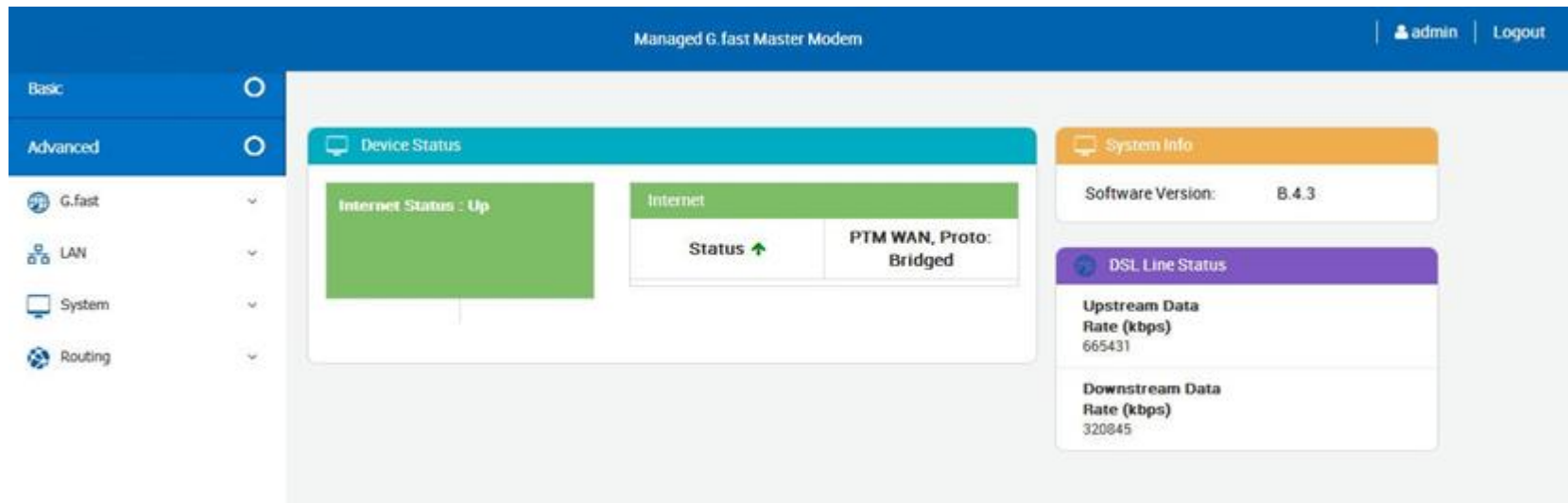
Password

**Figure 4.1.1 Login Webpage**

## 4.1.2 Display status

When the device is running, the status page will display the device informations (Internet Status, Software Version and DSL Line Status etc.), as shown in [Figure 4.1.2](#).

XL-GFC142M



The screenshot displays the web interface for a Managed G.fast Master Modem. The page title is "Managed G.fast Master Modem" and the user is logged in as "admin". The interface is divided into a left sidebar and a main content area. The sidebar has two main sections: "Basic" and "Advanced". Under "Advanced", there are four menu items: "G.fast", "LAN", "System", and "Routing". The main content area is titled "Device Status" and contains three panels: "Internet Status", "System Info", and "DSL Line Status".

Section	Item	Value
Internet Status	Internet Status	Up
	Internet	Status <span style="color: green;">↑</span> PTM WAN, Proto: Bridged
System Info	Software Version	B.4.3
DSL Line Status	Upstream Data Rate (kbps)	665431
	Downstream Data Rate (kbps)	320845

1.

**Figure 4.1.2 Device Info**

# XL-GFC142SR

The screenshot displays the web management interface for the XL-GFC142SR device. On the left, a navigation menu is visible with 'Basic' and 'Advanced' sections. Under 'Advanced', the following options are listed: WAN Internet, DSL, LAN, System, and Routing. The main content area is divided into three panels:

- Device Status:** Shows 'Internet Status : Down' and 'WAN IP :'. Below this is a table for 'Internet' configuration:

Status ↓	PTM WAN, Proto: Bridged
Internet Address	
Default Gateway	
Subnet Mask	
Primary DNS	
Secondary DNS	
- System Info:** Displays 'Software Version: B.4.6'.
- DSL Line Status:** Shows 'Upstream Data Rate (kbps)' and 'Downstream Data Rate (kbps)', both currently at 0.

Figure 4.1.2 Device Info

## 4.2 Select the Menu Basic

There is an easy Setup for end users at the setup of XL-GFC142M with **G.fast, LAN, System, Routing** and XL-GFC142SR with **WAN Internet, DSL, LAN, System, Routing** for more detail configurations.

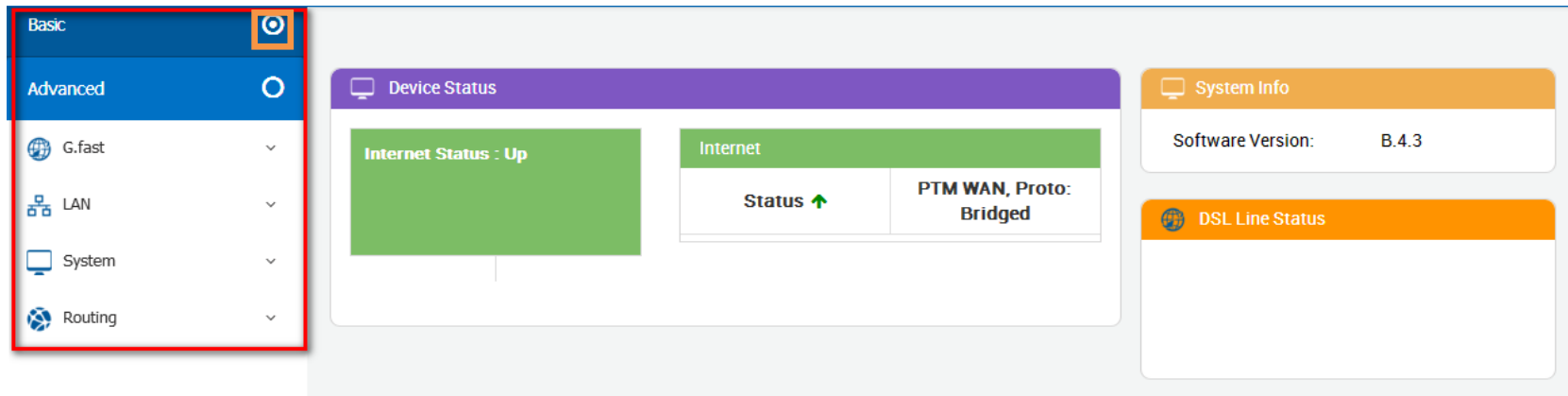


Figure 4.2 Select the Menu Basic

## 4.2.1 WAN Internet

This page allows you to view and configure various Internet connections

The screenshot displays the 'WAN Internet' configuration page. On the left is a sidebar with navigation items: Basic, Advanced, WAN Internet, DSL, LAN, System, and Routing. The main content area is titled 'Internet Connections' and includes a sub-section for 'Internet Status'. Below this, there is a table with the following data:

Description	IP Address	Interface	Status	Default Gateway	Actions
PTM WAN, Proto: Bridged		ptm0_wan3	Down	Not Configured	Connect
LTE WAN, Proto: DHCP		wwan0	Down	Not Configured	Connect

Figure 4.2.1 WAN Internet information



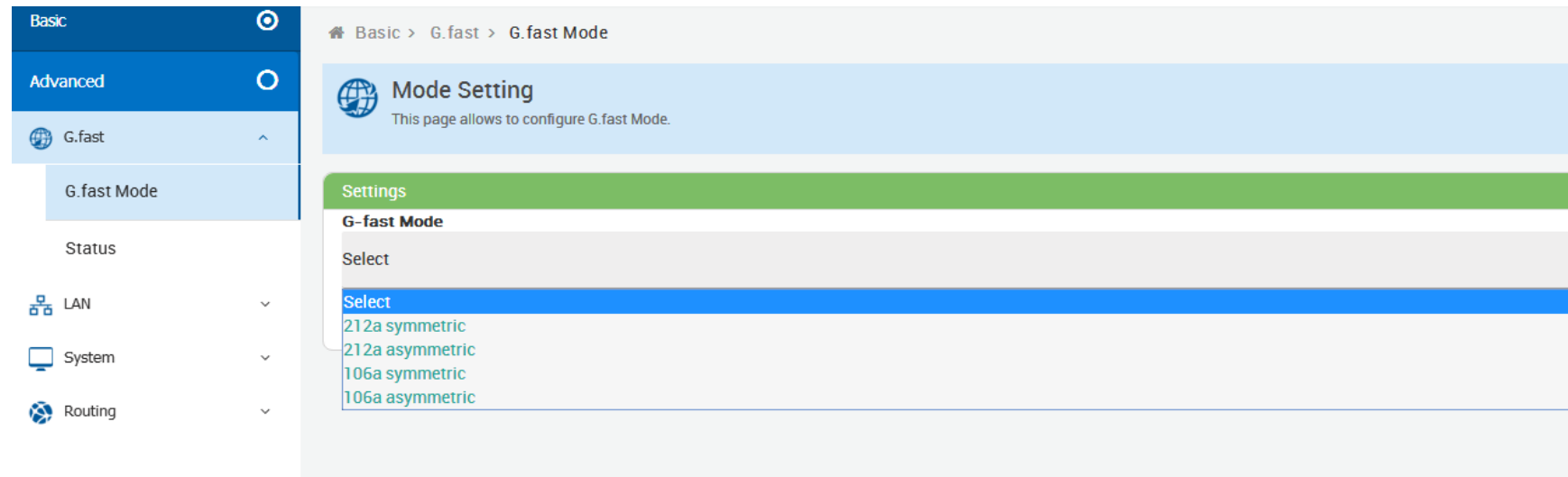
## 4.2.2 G.fast DSL

### 4.2.1.1 Mode Setting

DSL(Digital Subscriber Line) offers WAN DSL Connectivity on various DSL Modes. Provides configuration for xDSL/G.fast modes, and upstream & downstream attributes.

#### **XL-GFC142M:**

DPU provides G.fast mode configuration for customized utilization, which you can simply select profile 106a/212a & mode symmetry/asymmetry from G.fast mode setting.



**Figure 4.2.2.1 G.fast Mode Setting**

### **XL-GFC142SR:**

The XL-GFC142SR is default to connect and auto follow the XL-GFC142SM Master side. Therefore, do not change the mode settings on the XL-GFC142SR when connecting to a XL-GFC142M. The default settings are configured to connect and pass data at the fastest available speeds based on the current line conditions.

When connecting the XL-GFC142SR to a modem or DSLAM from another manufacturer, the following mode settings are available:

- **VDSL US/DS Rate Adaptation:** Using this technique the line is more tolerant of errors caused by noise and signal loss. As the parameters are adjusted, the bandwidth may be markedly decreased if there is a large amount of line noise or signal degradation.
- **VDSL US/DS Retransmission:** This technique is to resend damaged or lost packets. Please select it to activate the function.
- **Vectoring:** Vectoring is a transmission method that employs the coordination of line signals for reduction of crosstalk levels and improvement of performance. To configure vectoring function, please select it from Vectoring drop-down menu.
- **DSL PHY-TC:** To configure DSL mode, please select from DSL PHY-TC drop-down menu.

The default settings for the XL-GFC142SR are as follows:

The screenshot displays the 'Mode Setting' configuration page. On the left is a navigation menu with 'Basic' and 'Advanced' at the top, followed by 'WAN Internet', 'DSL' (expanded to show 'Mode Setting', 'Status', 'LAN', 'System', and 'Routing'), and 'Routing'. The main content area has a header 'Mode Setting' with a description: 'DSL(Digital Subscriber Line) offers WAN DSL Connectivity on various DSL Modes. Provides configuration for xDSL modes, various annex modes and upstream and downstream attributes.' Below this is a green 'Settings' bar. The 'DSL' toggle is turned 'ON'. Under 'DSL PHY - TC', the dropdown is set to 'Auto'. 'VDSL DS Retransmission' and 'VDSL DS Rate Adaptation' are both checked with green checkmarks. 'US Retransmission' and 'VDSL US Rate Adaptation' are also checked. The 'Modes' section shows 'VDSL2' selected with a checkmark. The 'Vectoring' dropdown is set to 'Auto'.

**Figure 4.2.2.1 Mode Setting**

### 4.2.1.2 Status

This page provides the various status and statistics information

The screenshot shows a web-based network management interface. On the left is a navigation sidebar with a tree structure: 'Basic' (selected), 'Advanced', 'WAN Internet', 'DSL' (expanded), 'Mode Setting', 'Status' (selected), 'LAN', 'System', and 'Routing'. The main content area has a breadcrumb 'Basic > DSL > Status' and a title 'Status and Statistics' with a subtitle 'Provides the various status and statistics information'. Below this is a 'DSL' tab. Two information panels are displayed: 'Line Information' (grey header) and 'Channel Information' (red header). The 'Line Information' panel shows 'Modem Status' as 'Down' and 'Power Management Mode' as 'L3'. The 'Channel Information' panel shows 'Mode Selected' as 'G.993.2\_Annex\_K\_PTM', 'Upstream Data Rate (Kbps)' as '0', and 'Downstream Data Rate (Kbps)' as '0'.

Line Information	Channel Information
<b>Modem Status</b> Down	<b>Mode Selected</b> G.993.2_Annex_K_PTM
<b>Power Management Mode</b> L3	<b>Upstream Data Rate (Kbps)</b> 0
	<b>Downstream Data Rate (Kbps)</b> 0

Figure 4.2.2.2 Status

## 4.2.3 LAN

### 4.2.1.3 Configuration

Configuration support to provide IP address to devices connected on the LAN side of the CPE. Applicable for all wired and wireless devices that requests for dynamic IP address.

The screenshot displays the 'LAN Configuration' page in a web interface. On the left is a navigation sidebar with 'LAN' selected. The main content area shows 'Local Network Settings' with a description: 'Configuration support to provide IP address to devices connected on the LAN side of the CPE. Applicable for all wired and wireless devices that requests for dynamic IP address'. Below this are tabs for 'IPv4' and 'IPv6', with 'IPv4' active. The 'Configuration' section includes fields for 'Device IP Address' (192.168.16.242), 'Subnet Mask' (255.255.255.0), and 'DHCP Mode' (Disable). 'Apply' and 'Reset' buttons are at the bottom. To the right is the 'IP Address Reservation' section with a table for MAC and IP addresses and an '+ Add' button.

MAC Address	IP Address

Figure 4.2.3.1 Configuration

### 4.2.1.4 Devices Connected

List of Clients Connected on the LAN Side of the device

Basic > LAN > Devices Connected

#### Devices Connected

List of Clients Connected on the LAN Side of the device

MAC Address	Host Name	IP Address
88:d7:f6:54:fc:f6	Unknown	192.168.16.15
10:c3:7b:46:06:8f	Unknown	192.168.16.3
ac:22:0b:8c:13:73	Unknown	192.168.16.26
00:05:6e:02:07:02	Unknown	fe80::1
30:e1:71:6a:6d:b3	Unknown	fc00::96d

Refresh

**Figure 4.2.3.2 Devices Connected**

## 4.2.4 System

### 4.2.1.5 Administration

This page allows users to take configuration backup, restore to previous configuration or to factory settings, upgrade firmware and reboot device.

The screenshot shows the Administration page in a network device web interface. The left sidebar contains a navigation menu with the following items: Basic, Advanced, WAN Internet, DSL, LAN, System (expanded), Administration (selected), User Management, System Time, Diagnostics, and Routing. The main content area is titled 'Administration' and includes a breadcrumb trail: Basic > System > Administration. Below the title, there is a description: 'This page allows users to take configuration backup, restore to previous configuration or to factory settings, upgrade firmware and reboot device.' The page is divided into four main sections: 1. 'Reboot and Factory Reset' (orange header) with buttons for 'Reboot' and 'Factory Reset'. 2. 'Backup' (orange header) with a 'Backup' button. 3. 'Restore' (green header) with a dashed box for file upload and the text '(or) Select files from your computer'. 4. 'Upgrade Firmware' (green header) showing the current version 'UGW-8.1.1-1001-19Nov19' and a 'SUCCESS' status, with a dashed box for file upload and the text '(or) Select files from your computer'.

Figure 4.2.4.1 Administration

## 4.2.1.6 User Management

Configure new users with add delete and modify options

Basic > System > User Management

### User Management

Configure new users with add delete and modify options

Enable	Username	Role	Web	System, SSH & Telnet	Actions
✓	root	super_admin	✗	✓	
✓	admin	super_admin	✓	✓	

[Add](#)

**Figure 4.2.4.2 User Management**



## 4.2.1.7 System Time

Configuration to enable the device to synchronize the system time with the time servers.

The screenshot shows the 'System Time' configuration page. On the left is a navigation menu with 'System Time' selected. The main content area has a title 'System Time' and a subtitle 'Configuration to enable the device to synchronize the system time with the time servers.' Below this is a green 'Settings' header. The configuration includes an 'Enable' checkbox (checked), a 'Status' dropdown (set to 'Unsynchronized'), and five 'Server' fields with the following values: Server 1: 0.asia.pool.ntp.org, Server 2: 133.243.238.243, Server 3: time.windows.com, Server 4: time-a.nist.gov, and Server 5: time-b.nist.gov. There is also a 'Local Timezone' dropdown set to 'Europe/Berlin' and a blue 'Apply' button at the bottom right.

Field	Value
Enable	<input checked="" type="checkbox"/>
Status	Unsynchronized
Server 1	0.asia.pool.ntp.org
Server 2	133.243.238.243
Server 3	time.windows.com
Server 4	time-a.nist.gov
Server 5	time-b.nist.gov
Local Timezone	Europe/Berlin
Current Local Time	2020-01-10T10:36:44Z

Figure 4.2.4.3 System Time

### 4.2.1.8 Diagnostics

Allows to perform diagnosis on various sub-systems of this device

The screenshot displays the 'Diagnostics' page of a network device's configuration interface. On the left, a sidebar menu lists various system settings, with 'Diagnostics' currently selected. The main content area features a red header bar labeled 'Diagnostics' and a 'Restart' button. Below this, the 'LAN' section shows the status of four Ethernet ports: eth0\_1 is down, eth0\_2 is up at 100 kbps in full mode, eth0\_3 is down, and eth0\_4 is down. The 'Ping Test' section includes a text input field for an IP or host address and a 'Ping Test' button. The 'Traceroute Test' section has a text input field for a URL and a 'Trace Route' button.

Figure 4.2.4.4 Diagnostics

## 4.2.5 Routing

Web Page to Add/Delete Static Route in the System

The screenshot shows a web interface for configuring static routes. On the left is a navigation menu with categories: Basic, Advanced, WAN Internet, DSL, LAN, System, and Routing. Under Routing, 'Static Routing' is selected. The main content area has a breadcrumb 'Basic > Routing > Static Routing' and a title 'Static Routing Configurations' with the subtitle 'Web Page to Add/Delete Static Route in the System'. There are two tables. The first table has columns: Destination IP Address, Destination Subnetmask, Gateway IP Address, and Actions. An 'Add' button is at the bottom right of this table. The second table has columns: Enable, Destination IP Prefix, Next Hop, and Actions. It contains one row with a green checkmark in the 'Enable' column and a trash icon in the 'Actions' column. An 'Add' button is also at the bottom right of this table.

Destination IP Address	Destination Subnetmask	Gateway IP Address	Actions
------------------------	------------------------	--------------------	---------

Add

Enable	Destination IP Prefix	Next Hop	Actions
✓			🗑️

Add

Figure 4.2.5 Static Routing

### 4.3 Select the Menu Advanced

Select “Advanced”. The menu below will be used frequently. XL-GFC142M includes the sub-menus of **UPnP**, **USB/SATA**, **Device Management**. XL-GFC142SR includes the sub-menus of **Multicast**, **Dynamic DNS**, **UPnP**, **QoS**, **Tunneling**, **USB/SATA**, **Device Management**. A screen is displayed as shown in [Figure 4.3](#)

XL-GFC142M

The screenshot displays the web interface for the XL-GFC142M device. On the left, a navigation menu is visible with the following items: 'Basic' (selected), 'Advanced' (selected), 'UPnP', 'USB/SATA', and 'Device Management'. The main content area is titled 'Device Status' and contains three panels: 'Internet Status : Up', 'Internet' (showing 'Status ↑' and 'PTM WAN, Proto: Bridged'), and 'System Info' (showing 'Software Version: B.4.3'). Below the 'System Info' panel is a 'DSL Line Status' panel showing 'Upstream Data Rate (kbps): 662783' and 'Downstream Data Rate (kbps): 343651'.

# XL-GFC142SR

The screenshot displays the Advanced settings page of the XL-GFC142SR. The left sidebar contains navigation options: Basic, Advanced, Multicast, Dynamic DNS, UPnP, QoS, Tunneling, USB, and Device Management. The main content area is divided into three sections:

- Device Status:** Shows 'Internet Status : Down' and 'WAN IP :'. Below this is a table for Internet settings:

Internet	
Status ↓	PTM WAN, Proto: Bridged
Internet Address	
Default Gateway	
Subnet Mask	
Primary DNS	
Secondary DNS	

- System Info:** Shows 'Software Version: B.4.6'.
- DSL Line Status:** Shows 'Upstream Data Rate (kbps): 0' and 'Downstream Data Rate (kbps): 0'.

Figure 4.3 Advanced

### 4.3.1 Multicast

This page allows to configure the Multicast services.

The screenshot shows a web-based configuration interface for Multicast services. On the left is a sidebar menu with options: Basic, Advanced, Multicast, Dynamic DNS, UPnP, QoS, Tunneling, USB, and Device Management. The main content area is titled 'Advanced > Multicast' and 'Multicast Configuration'. Below this is a 'Configuration' section with the following settings:

- IGMP Proxy**:  (indicated by a green checkmark)
- MLD Proxy**:  (indicated by a green checkmark)
- UpStream Interface**:  ptm0\_wan3,  wwan0
- DownStream Interface**:  br-lan (indicated by a green checkmark)

At the bottom right of the configuration area are two buttons: 'Apply' and 'Reset'.

Figure 4.3.1 Multicast

## 4.3.2 Dynamic DNS

Dynamic DNS allows the user to update wan IP address with one or many dynamic DNS services. So anyone can access services on computer using DNS-like address.

The screenshot shows the 'Dynamic DNS' configuration page. On the left is a sidebar with navigation options: Basic, Advanced, Multicast, Dynamic DNS (selected), UPnP, QoS, Tunneling, USB, and Device Management. The main content area is titled 'Advanced > Dynamic DNS'. It features a header section with a wireless icon and the text: 'Dynamic DNS allows the user to update wan IP address with one or many dynamic DNS services. So anyone can access services on computer using DNS-like address.' Below this is a 'Client Settings' section with a table:

Enable	Interface	Server	Actions
<input type="checkbox"/>			

An 'Add' button is located to the right of the Client Settings table. Below that is a 'Supported Servers' section with a table:

Enable	Name	ServiceName	ServerAddress	Actions
<input checked="" type="checkbox"/>	dhs	dhs	dyn.dhs.org	<input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	dyndns	dyndns	dyndns.org	<input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	dyns	dyns	dyns.cx	<input type="checkbox"/> <input type="checkbox"/>

An 'Add' button is located at the bottom right of the Supported Servers section.

Figure 4.3.2 Dynamic DNS

### 4.3.3 UPnP

This page provides UPnP devices & service.

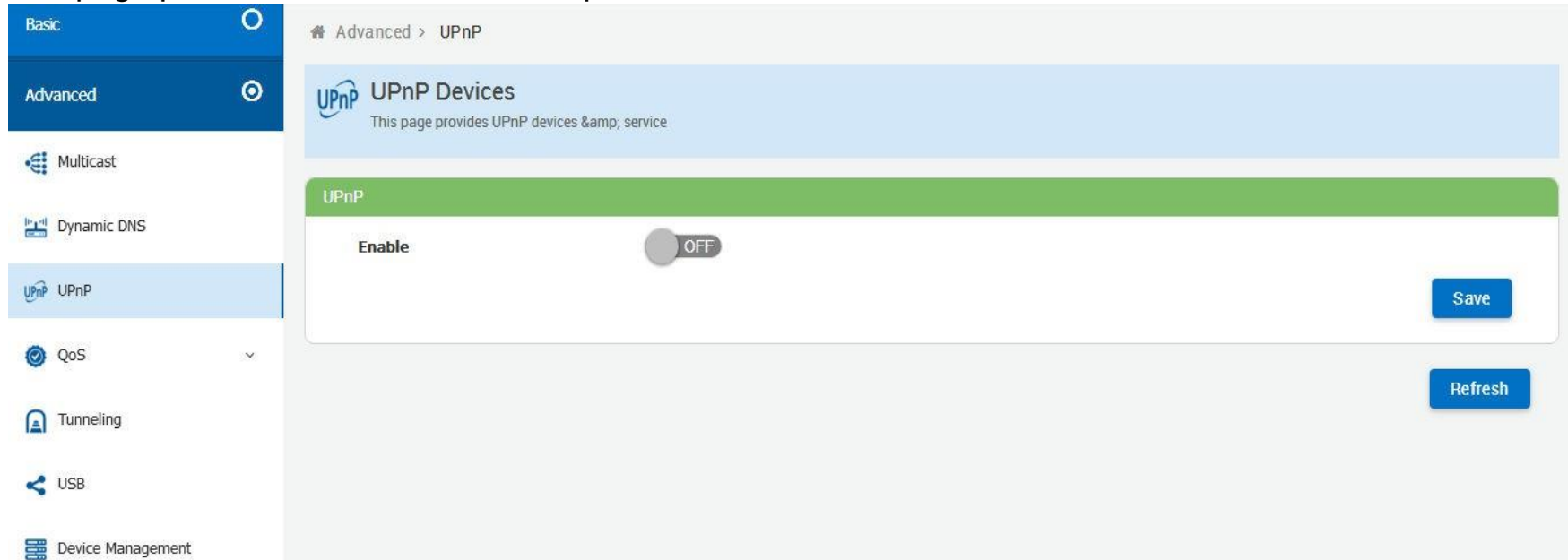


Figure 4.3.3 UPnP



### 4.3.4 QoS

Quality of Service (QoS) settings enables you to manage and optimize the performance of the applications. It shapes the network traffic and prioritizes the devices and services by controlling the bandwidth allocation.


The screenshot displays a network management interface. On the left is a sidebar with a menu containing 'Basic', 'Advanced', 'Multicast', 'Dynamic DNS', 'UPnP', 'QoS', 'Tunneling', 'USB', and 'Device Management'. The 'QoS' option is selected and expanded. The main content area shows a breadcrumb path 'Advanced > QoS > QoS'. Below this is a header for 'QoS' with a sub-description: 'Quality of Service (QoS) settings enables you to manage and optimize the performance of the applications. It shapes the network traffic and prioritizes the devices and services by controlling the bandwidth allocation'. A green bar labeled 'QoS' is positioned below the header. The central part of the interface features a diagram of a router at the top, connected to two network segments: 'LAN' (represented by a tree icon) and 'DSL WAN' (represented by a globe icon).

**Queue** + Add Q + Add CL

✓ ptmwan\_def\_queue More ▾

✓ ptmwan\_mgmt\_q More ▾

**QoS Configuration**

Traffic Class	Default DSCP Mark	Eth Priority Mark	Enable	Actions
0	-1	-1	✓	

**Figure 4.3.4 QoS**

## 4.3.5 Tunneling

6rd is a mechanism to facilitate IPv6 rapid deployment across IPv4 infrastructures of Internet service providers (ISPs). DS Lite is a mechanism to facilitate IPv4 deployment across IPv6 infrastructure.

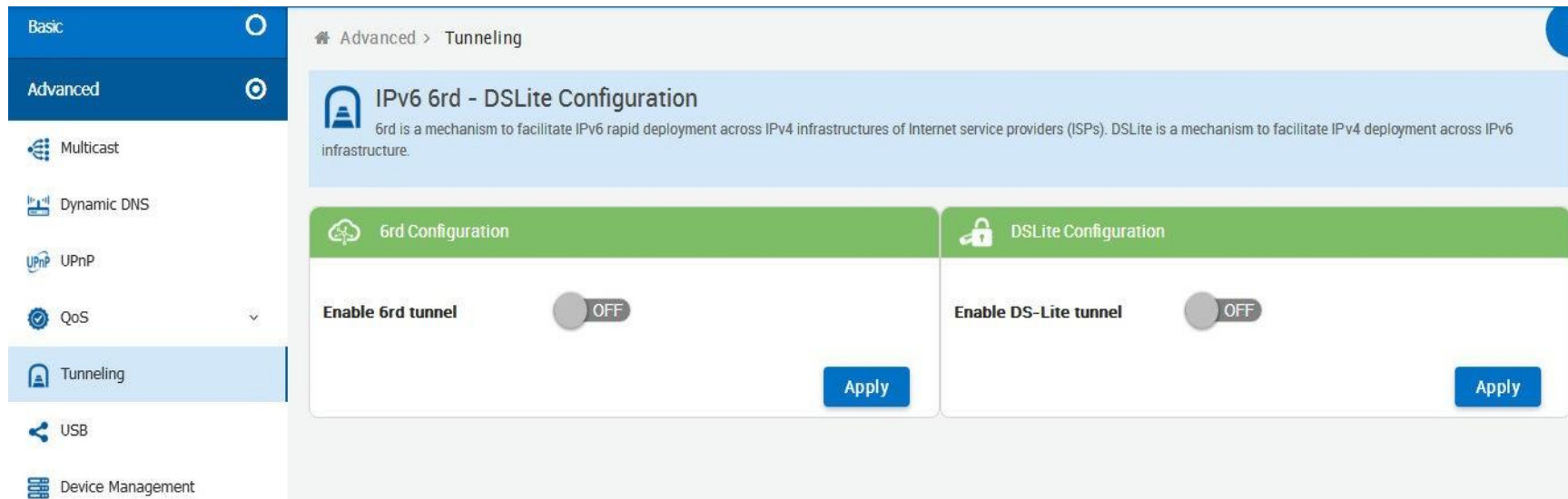


Figure 4.3.5 Tunneling

## 4.3.6 USB/SATA

Always ensure that you click on the Safe Remove button to safely remove respective USB/SATA storage devices.

The screenshot displays a web-based management interface for USB/SATA devices. On the left is a navigation sidebar with options: Basic, Advanced, Multicast, Dynamic DNS, UPnP, QoS, Tunneling, USB (selected), and Device Management. The main content area is titled 'Advanced > USB' and contains a warning message: 'Always ensure that you click on the Safe Remove button to safely remove respective USB storage devices.' Below this are two sections: 'Connected USB Devices' and 'Mounted Devices'. Each section has a table with columns for device details and a 'Refresh' button.

Type	USB Version	Manufacturer	Serial Number	Product Name
------	-------------	--------------	---------------	--------------

Refresh

Mount Path	File System	Total Size	Used Space	Free Space	Percentage Usage	Actions
------------	-------------	------------	------------	------------	------------------	---------

Refresh

Figure 4.3.6 USB/SATA

## 4.3.7 Device Management

Device Management allows to view and configure parameters relating to the device's association with an ACS

The screenshot shows the 'Device Management' configuration page. On the left is a navigation menu with 'Basic' and 'Advanced' tabs, and a list of settings including Multicast, Dynamic DNS, UPnP, QoS, Tunneling, USB, and 'Device Management' (which is selected). The main content area is titled 'Advanced > Device Management' and contains a 'Settings' section. The settings are organized into two columns:

- Left Column:**
  - CWMP Enable:** Checked (green checkmark)
  - ACS Username:** qacafe
  - Connection Request URL:** http://127.0.0.1:8000
  - Connection Request Password:** Masked with dots and a toggle icon.
  - Periodic Inform Interval:** 3600
  - Upgrades Managed:** Unchecked checkbox
  - CWMP Retry Interval Multiplier:** 2000
- Right Column:**
  - ACS URL:** http://6.0.0.1:80/
  - ACS Password:** Masked with dots and a toggle icon.
  - Connection Request Username:** qacafe
  - Periodic Inform Enable:** ON (green toggle)
  - Periodic Inform Time:** 0001-01-01T00:00:00Z
  - CWMP Retry Minimum Wait Interval:** 5

At the bottom right of the settings area are three buttons: 'Modify', 'Reset', and 'Send Inform'.

Figure 4.3.7 Device Management

## Appendix A: Cable Requirements

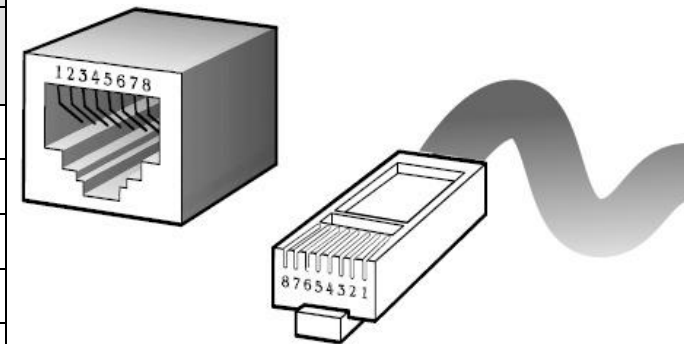
### A.1 Ethernet Cable

A CAT 3~7 UTP (unshielded twisted pair) cable is typically used to connect the Ethernet device to the Modem. A: 10/100TX cable often consists of four pairs of wires, two of which are used for transmission. The connector at the end of the 10/100TX cable is referred to as a RJ-45 connector and it consists of eight pins. The Ethernet standard uses pins 1, 2, 3 and 6 for data transmission purposes. (Table A-1 10/100TX)

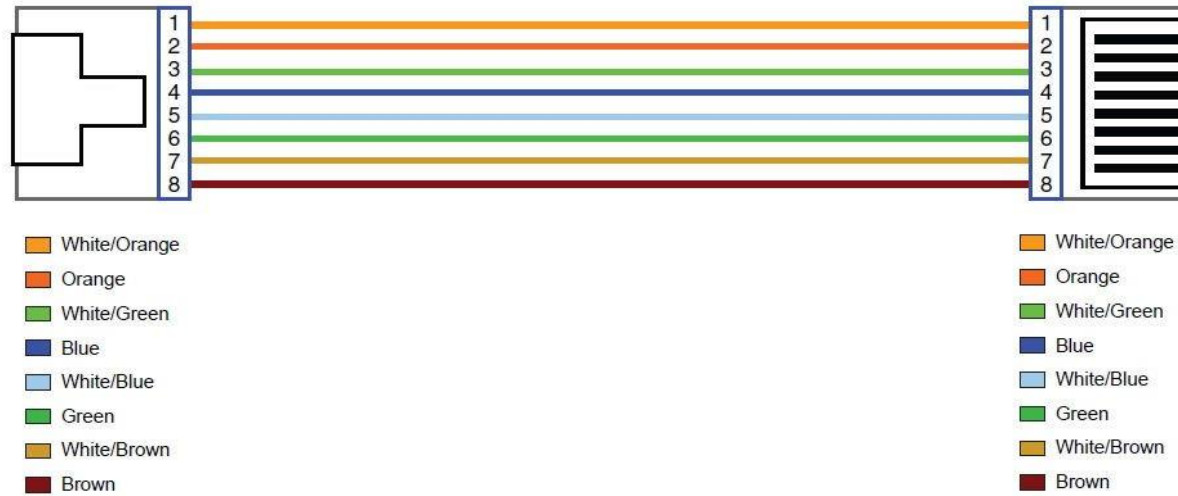
B: 1000TX cable often consists of four pairs of wires, all of which are used for transmission. The connector at the end of the 1000TX cable is referred to as a RJ-45 connector and it consists of eight pins. The Ethernet standard uses pins 1, 2, 3, 4, 5 and 6 for data transmission purposes. (Table A-1 1000TX)

**Table A-1** RJ-45 Ethernet Connector Pin Assignments

PIN #	10/100TX		1000TX	
	Signal	Media Dependant interface	Signal	Media Dependant interface-cross
1	TX+	Transmit Data+	BI_DA+	Bi-directional pair A+
2	TX-	Transmit Data-	BI_DA-	Bi-directional pair A-
3	RX+	Receive Data+	BI_DB+	Bi-directional pair B+
4	NC	Unused	BI_DC+	Bi-directional pair C+
5	NC	Unused-	BI_DC-	Bi-directional pair C-
6	RX-	Receive Data-	BI_DB-	Bi-directional pair B-
7	NC	Unused	BI_DD+	Bi-directional pair D+
8	NC	Unused	BI_DD-	Bi-directional pair D-



**Figure A-1** Standard RJ-45 repectacle/connector



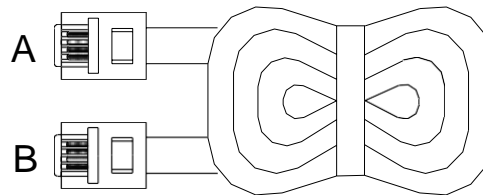
**Figure A-2 Pin Assignments and Wiring for an RJ-45 Straight-Through Cable**



**Figure A-3 Pin Assignments and Wiring for an RJ-45 Crossover Cable**

## **A.2 Telephone wire**

Standard telephone wire of any gauge or type-flat, twisted or quad is used to connect the Modem to the telephone network. A telephone cable typically consists of three pairs of wires, one of which is used for transmission. The connector at the end of the telephone cable is called an RJ-11 connector and it consists of six pins. POTS (plain old telephone services) use pins 3 and 4 for voice transmission. A telephone cable is shown below. (Figure A-4)



**Figure A-4 Telephone cable**

The A and B connectors on the rear of the Modem are RJ-11 connectors. These connectors are wired identically. The RJ-11 connectors have six positions, two of which are wired. The Modem uses the center two pins. The pin out assignment for these connectors is presented below. (Table A-2)

**Table A-2 RJ-11 Pin out Assignments**

Pin#	MNEMONIC	FUNCTION
1	NC	Unused
2	NC	Unused
3	<b>TIP</b>	<b>POTS</b>
4	<b>RING</b>	<b>POTS</b>
5	NC	Unused
6	NC	Unused



## Appendix B: Product Specifications - Key Features & Benefits

- Compliant with IEEE 802.3 / 802.3u / 802.3ab Ethernet Standard
- Compliant with ITU-T G993.2 VDSL2 standard (XL-GFC142SR only)
- Compliant with ITU-T G998.4 G.INP standard (XL-GFC142SR only)
- Compliant with ITU-T G.9700/G.9701 G.fast standard
- Backward compatible VDSL2/V35b (XL-GFC142SR only)
- Support 106a/b & 212a/b dual G.fast band profile
- Support super Vectoring for V35b / G.fast(XL-GFC142SR only)
- Support Vectoring for VDSL2(XL-GFC142SR only)
- Support High Bandwidth up to 1Gbps
- Support USB 3.0 for connecting USB Dongle
- Support static routing for IPv4 and IPv6 forwarding(XL-GFC142SR only)
- Support 8 queue MFC/DSCP both type QoS
- Support HTTP/HTTPS web management
- Support SSL security
- Support remote management and monitor
- Support configuration backup and restore
- On board surge protection for Line port
- Support bridge(switch) / Router mode (XL-GFC142M bridge mode only)
- Support Dual Firmware Image Backup
- Support NTP Time Server.
- Support TR-0693.
- Support RJ-11 / Terminal block combo line port
- On board POTS/ISDN splitter
- Support Jumbo frame(MTU) up to 1600 bytes

### Note:

1. Features and specifications in this manual are subject to change without prior notice.
2. (\*) Firmware upgradeable for future enhancement.

## Product Specification

<b>Standard:</b>	IEEE802.3/802.3u/802.3ab standards ITU-T G9700/G9701 standards ITU-T G993.2/G998.4 standards (XL-GFC142SR only)
<b>Regulatory Compliance:</b>	FCC CE RoHS Compliance
<b>Physical Interface:</b>	4 x RJ-45 10/100/1000 Mbps Ethernet port 1 x RJ-11 / Terminal block combo for line port 1 x RJ-11 connector for POTS/ISDN phone device 1 x Reset Button for resetting to factory default 2 x USB3.0 for connecting USB dongle
<b>LED Indicators:</b>	1 x Power LED 4 x Link/Active Status for Ethernet port 1 x Link LED for G.fast mode 1 x Link LED for xDSL mode (XL-GFC142SR only) 1 x Master (DPU/CO) LED (XL-GFC142M only)
<b>Switch method:</b>	Store and forward
<b>Flow control:</b>	Full duplex: IEEE 802.3x Half duplex: Back pressure
<b>Typical Power Consumption:</b>	Master: 7.92W (Full load, without USB port) 17.92W(Full load, with 2 x USB port)

	Slave: 8.16W(Full load, without USB port) 18.16W(Full load, with 2 x USB port)
<b>Power Supply:</b>	Input Voltage: 12V DC
<b>Operating Temperature:</b>	0°C ~ 50°C
<b>Storage Temperature:</b>	0°C ~ 50°C
<b>Humidity:</b>	10% to 90% (non-condensing)
<b>Dimensions:</b>	196 x 146 x 40 mm
<b>Weight:</b>	~ 0,4 kg
<b>EMC Certification:</b>	EMI Compliant: FCC EMS Compliant: CE mark

## Appendix C: Troubleshooting

The modem can be easily monitored through its comprehensive panel indicators. These indicators assist the network manager in identifying problems the hub may encounter. This section describes common problems you may encounter and possible solutions.

<b>1. Symptom:</b>	POWER indicator does not light up (green) after power on.
<b>Cause:</b>	Defective External power supply
<b>Solution:</b>	Check the power plug by plugging in another that is functioning properly. Check the power cord with another device. Check the terminal block make sure to fasten the power cord. If these measures fail to resolve the problem, have the unit power supply replaced by a qualified distributor.
<b>2. Symptom:</b>	Devices can't handshaking after making a connection.
<b>Cause:</b>	Network interface (ex. a network adapter card on the attached device), network cable, or switch port is defective.
<b>Solution:</b>	<ol style="list-style-type: none"><li>2.1 Verify that the switch and attached device are power on.</li><li>2.2 Be sure the cable is plugged into both the switch and corresponding device.</li><li>2.3 Verify that the proper cable type is used and its length does not exceed specified limits.</li><li>2.4 Check the modem on the attached device and cable connections for possible defects.</li><li>2.5 Make sure that the phone wire must be connecting XL-GFC142SR first, when powered on.</li><li>2.6 Replace the defective modem or cable if necessary.</li><li>2.7 Checking Phone wire length if exceed 600m</li></ol>

<b>3. Symptom:</b>	Line Link cannot be established.
<b>Cause:</b>	Setting failure or phone cable length is over the specification limit <600m.
<b>Solution:</b>	<p>3.1 Please make sure that the phone wire must be connected between DPU Master side and CPE Slave side when both are power on. DPU Master side will do link speed function depending on phone wire length, therefore if DPU Master side can't detect Slave Side over phone wire while both power on, this will cause the Link to fail.</p> <p>3.2 Please check phone wire, we recommend use 24-26 gauge with twisted pair and without rust.</p> <p>3.3 Please reinsert power when change cable length or link time over 3minutes.</p> <p>3.4 If CPE connect to IP-DSLAM and link failure, please try to change band profile as 17a for getting long reach.</p>
<b>Note:</b>	Phone wire must meet CAT. 3 or above twisted pair, otherwise will cause more crosstalk and return loss issue hence to reduce Line power driving.

<b>4. Question:</b>	I just bought a pair of XL-GFC142M/SR to replace my Quest DSL modem for my home. I was told any G.fast modem would replace and give me higher communication speeds. It doesn't get me internet when hooked up. All lights come on but no Link light. Is this the complete wrong application for this unit?
<b>Answer:</b>	Please note XL-GFC142SR is a CPE Slave, it must be connected to the XL-GFC142M Master (DPU side) or IP-DSLAM to get link.

<b>5. Question:</b>	We need to set up a default gateway on a XL-GFC142M/SR pair which are in Bridge mode, as they want to manage the units from a different network.
<b>Answer:</b>	<p>When the application is used within the LAN, the switch(bridged) mode is not necessary to set up a gateway .However, if the application crosses various network segments (LAN to WAN(Line) or WAN(Line) to LAN), you must set up a gateway to connect different network segment.</p> <p>Regarding how to configure a default gateway at switch(bridged) mode for crossing various network segments .</p> <p>Configuration gateway example from <b>Static Routing</b>:</p> <p>Destination LAN IP: <b>0.0.0.0</b></p> <p>Subnet Mask: <b>0.0.0.0</b></p> <p>Gateway: <b>192.168.16.1</b></p> <p><b>Note:</b> Static Routing functionality is used to define the connected Gateway between the LAN and WAN.</p>
<b>6. Question:</b>	What can I do if I forgot my password.
<b>Answer:</b>	<p>If you forgot your password, you must reset your modem. Unfortunately this process will change all your settings back to the factory defaults. To reset the modem, locate the reset on the rear panel of the unit. With the modem powered on, use a paperclip to hold the button down for over 5 seconds. Release the button and the modem will go through its reboot process. XL-GFC142M default ip is <b>192.168.16.249</b>. XL-GFC142SR default ip is <b>192.168.16.254</b>.When logging in, the default username and password both are <b>“admin”</b>.</p>

