EchoLife HG850 GPON Terminal

Service Manual

HUAWEI TECHNOLOGIES CO., LTD.

EchoLife HG850 GPON Terminal
V100R001

Service Manual

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Contents

Figures

Tables

About This Document

Purpose

EchoLife HG850 (hereinafter referred to as the HG850) is an optical network terminal (ONT). It is designed for families and small office and home office (SOHO) users.

This document describes the appearance, function characteristics and technical specifications of the HG850, and provides guides for installing, configuring and using the HG850, which enables you to get familiar with the HG850 as soon as possible.

Related Versions

Table 1-1 The following table lists the product versions related to this document.

Product Name	Version
EchoLife HG850	V100R001

Intended Audience

This document is intended for:

- Technical support engineer
- Maintenance engineer

Organization

This document consists of six chapters and is organized as follows.

Chapter	Description
1 System Overview	This chapter describes the basic information, functions and features, the front panel, and the rear panel of the HG850.
2 Installation Guide	This chapter describes the installation method of the HG850, the procedures for the HG850 connecting with other devices, and the software loading method.
3 Service Configuration	This chapter describes commands of the HG850, and service configuration methods of MGCP and SIP services of the HG850.

Chapter	Description
4 Use Guide	This chapter describes the method of using the HG850 after it is connected with a telephone or an STB or a PC respectively.
5 Troubleshooting	This chapter describes some common faults of the HG850 and the corresponding solutions.
6 Technical Specifications	This chapter describes physical specifications, and the protocols and standards that the HG850 uses.
A MGCP Service Configuration	This appendix describes configuration methods and procedures of the voice service and the data service of MGCP.
B SIP Service Configuration	This appendix describes configuration methods and procedures of the voice service and the data service of SIP.
C Fiber Installation	This appendix describes how to install the fiber.
D Acronyms and Abbreviations	This appendix lists acronyms and abbreviations in the manual.

Conventions

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
 DANGER	Indicates a hazard with a high level of risk that, if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazard with a medium or low level of risk which, if not avoided, could result in minor or moderate injury.
 CAUTION	Indicates a potentially hazardous situation that, if not avoided, could cause equipment damage, data loss, and performance degradation, or unexpected results.
 TIP	Indicates a tip that may help you solve a problem or save time.
 NOTE	Provides additional information to emphasize or supplement important points of the main text.

General Conventions

Convention	Description
Times New Roman	Normal paragraphs are in Times New Roman.
Boldface	Names of files, directories, folders, and users are in **boldface**. For example, log in as user **root**.
Italic	Book titles are in *italics*.
`Courier New`	Terminal display is in `Courier New`.

Command Conventions

Convention	Description
Boldface	The keywords of a command line are in **boldface**.
Italic	Command arguments are in *italics*.
[ ]	Items (keywords or arguments) in square brackets [ ] are optional.
{ x | y | ... }	Alternative items are grouped in braces and separated by vertical bars. One is selected.
[x | y | ...]	Optional alternative items are grouped in square brackets and separated by vertical bars. One or none is selected.
{ x | y | ... } *	Alternative items are grouped in braces and separated by vertical bars. A minimum of one or a maximum of all can be selected.

GUI Conventions

Convention	Description
Boldface	Buttons, menus, parameters, tabs, windows, and dialog titles are in **boldface**. For example, click **OK**.
>	Multi-level menus are in **boldface** and separated by the ">" signs. For example, choose **File** > **Create** > **Folder**.

Keyboard Operation

Format	Description
Key	Press the key. For example, press **Enter** and press **Tab**.
Key 1+Key 2	Press the keys concurrently. For example, pressing **Ctrl+Alt+A** means the three keys should be pressed concurrently.
Key 1, **Key 2**	Press the keys in turn. For example, pressing **Alt**, **A** means the two keys should be pressed in turn.

Mouse Operation

Action	Description
Click	Select and release the primary mouse button without moving the pointer.
Double-click	Press the primary mouse button twice continuously and quickly without moving the pointer.
Drag	Press and hold the primary mouse button and move the pointer to a certain position.

Update History

Updates between document versions are cumulative. Therefore, the latest document version contains all updates made to previous versions.

Updates in Issue 02 (2007-05-30)

Second release.

Updates in Issue 01 (2007-03-10)

First release.

Safety Precautions

General Requirements:

- Before you install and use the device, read these safety precautions carefully and observe them during operation.
- During storage, transportation and operation of the device, keep the device dry.
- During storage, transportation and operation of the device, avoid collision and crash of the device.
- Never attempt to dismantle the device by yourself. In case of any fault, contact the appointed maintenance center for repair.
- Without prior written consent, no organization or individual is permitted to make any change to the structure or safety design of the device. Huawei Technologies Co., Ltd. is not liable to any consequences or legal issues due to such changes.
- While using the device, observe all applicable laws, directives and regulations, and respect the legal rights of other people.

Environment Requirements:

- Place the device at a well-ventilated place. Do not expose the device to direct sunlight.
- Keep the device clean and free of dusts.
- Do not place any object on top of the device. Otherwise, the device may be too hot during operation. It can even be deformed or damaged by the heavy load.
- Keep at least 10 cm between the device and the closest object for heat dissipation.
- Do not place the device on or near any object that can easily catch fire, such as something made of rubber.
- Keep the device far away from any heat source or bare fire, such as a candle or an electric heater.
- Keep the device far away from any household appliance with strong magnetic field or electromagnetic field, such as a microwave oven or a refrigerator or a mobile phone.

Operating Requirement:

- Do no let a child operate the device without guidance.
- Do not let a child play with the device or any accessory. Swallowing the accessories may lead to peril.
- Use the accessories provided or authorized by the manufacturer only.

- The power supply of the device shall meet the requirements of the input voltage of the device.
- Before plugging or unplugging any cable, shut down the device and disconnect it from the power supply.
- While plugging or unplugging any cable, make sure that your hands are completely dry.
- Do not tread on, pull or over-bend any cable. Otherwise, the cable may be damaged, leading to malfunction of the device.
- Do not use an old or a damaged power cable.
- Do not look directly into the optical interface on the device. Otherwise, your eyes may be injured.
- In any of the following cases, stop using the device, disconnect it from the power supply and unplug the power plug immediately: there is smoke emitted from the device, or there is some abnormal noise or smell. Contact the specified maintenance center for repair.
- Avoid any object (such as metal shavings) from entering the device from the heat dissipation intakes.
- Do not scratch or abrade the shell of the device. This may lead to malfunctions of the device. The shed painting material may also lead to skin allergy.

Cleaning Requirements:

- Before cleaning the device, stop using it and disconnect it from the power supply.
- Use a piece of soft cloth to clean the device.
- Keep the power plug clean and dry. Using a dirty or wet power plug may lead to electric shock or other perils.

Battery Usage Requirements:

- If a battery cannot be fit in the device, do not press it with force. Otherwise, the battery may leak or explode.
- If any battery leaks, emits smoke, or gives off abnormal smell, stop using it immediately.

1 System Overview

About This Chapter

The following table lists the contents of this chapter.

Title	Description
1.1 Product Introduction	Describes the basic information, functions, and features of the HG850.
1.2 Front Panel and Rear Panel	Describes the front panel, the rear panel, and indicators of the HG850.

1.1 Product Introduction

The HG850 is an optical network terminal (ONT) designed for home users and small office home office (SOHO) users. It is deployed at the access layer of a gigabit-capable passive optical network (GPON).

Using the GPON technology, the HG850 enables users to access the Internet through its upstream optical interface.

The HG850 provides abundant interfaces at the local area network (LAN) side, providing diversified networking possibilities. In addition, the HG850 offers high-quality and cost-effective voice over IP (VoIP) and fax over IP (FoIP), bringing superb voice and video services as well as high-speed data services.

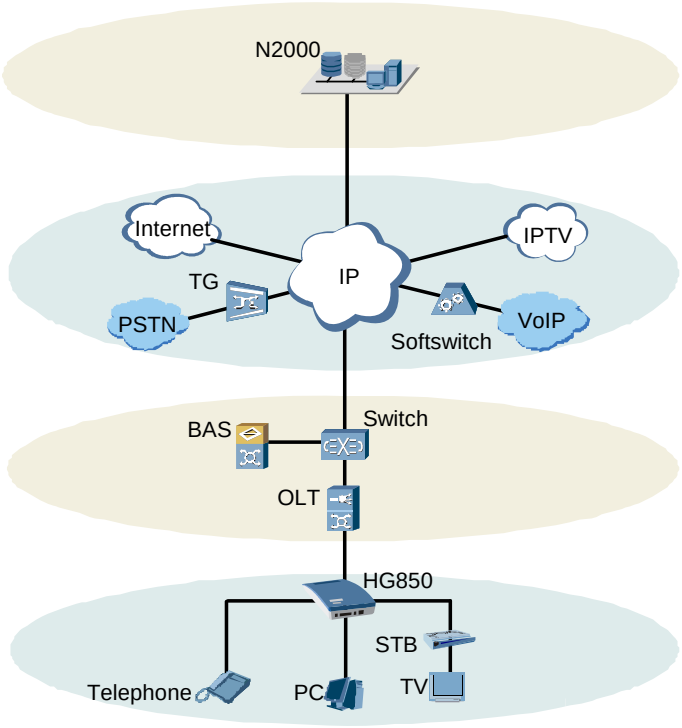
Using the ONT management and control interface (OMCI) technology, the HG850 is particularly convenient for remote service configuration, management, and maintenance.

Figure 1-1 shows the appearance of the HG850.

Figure 1-1 Appearance of the HG850

Figure 1-2 shows the networking diagram of the HG850.

Figure 1-2 Networking diagram of the HG850



Abbreviations	Full Name
BAS	Broadband Access Server
N2000	Huawei N2000 Network Management System
OLT	Optical Line Terminal
PC	Personal Computer
PSTN	Public Switched Telephone Network
STB	Set-Top Box
TG	Trunk Gateway
TV	Television

The functions of the HG850 are as follows:

- Connects with the OLT devices through the passive optical network (PON) interface (the **Optical** interface on the rear panel) to provide comprehensive access services in the upstream.
- Connects with a PC, an STB, and other devices through the Ethernet interfaces to realize the access of data and video services in the downstream. It realizes access of the VoIP or FoIP service by connecting with a telephone or a fax machine through the plain old telephone service (POTS) interface (the **Tel** interface on the rear panel).

The features of the HG850 are as follows:

- Serves as a GPON terminal to realize bandwidth connection.
- Provides downstream rate up to 2.488 Gbit/s and upstream rate up to 1.244 Gbit/s.
- Provides four 100 Base-TX full duplex Ethernet interfaces, enabling all computers in the LAN to access the network efficiently.
- Provides two POTS interfaces. These interfaces enable the device to provide the VoIP service.
- Supports the remote Telnet software management, the remote File Transfer Protocol (FTP) loading upgrade, and online OMCI software upgrade.

1.2 Front Panel and Rear Panel

1.2.1 Front Panel

Figure 1-3 shows the front panel of the HG850.

Figure 1-3 Front panel of the HG850

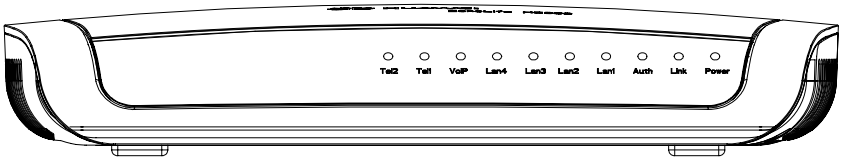


Table 1-1 describes the indicators of the HG850.

Table 1-1 Indicators of the HG850

Indicator	Name	Status	Description
Power	Power indicator	On	The HG850 is powered on.
		Off	The HG850 is powered off.
Link	Connectivity indicator	Refer to Table 1-2	Refer to Table 1-2.

Indicator	Name	Status	Description
Auth	Authentication indicator	Refer to Table 1-2	Refer to Table 1-2.
Lan1–Lan4	Ethernet interface indicators	On	The HG850 is connected to the Ethernet.
		Off	The HG850 is not connected to the Ethernet.
		Blinking	Data is being transmitted through the Ethernet interface.
VoIP	VoIP indicator	On	The VoIP function is enabled.
		Off	The VoIP function is disabled.
Tel1–Tel2	Telephone interface indicators	On	The telephone interface is in the call status.
		Off	The telephone interface is idle.

Table 1-2 describes status of the Link indicator and the Auth indicator.

Table 1-2 Status of the Link indicator and the Auth indicator

Number	Status		Description
	Link	Auth	
1	Off	Off	Initial-state
2	Slow blinking	Off	Standby-state
3	Fast blinking	Slow blinking	Serial-Number-state
4	Fast blinking	On	Ranging-state
5	On	On	Operation-state (normal working state)
6	Fast blinking	Off	POPUP-state
7	On	Off	Emergency-Stop-state

NOTE

- **Link** and **Auth** indicate the states of the GPON interface of the HG850 while it is connecting to an OLT.
- The frequency of fast blinking is 3 Hz, while the frequency of slow blinking is 1 Hz.

1.2.2 Rear Panel

Figure 1-4 shows the rear panel of the HG850.

Figure 1-4 Rear panel of the HG850

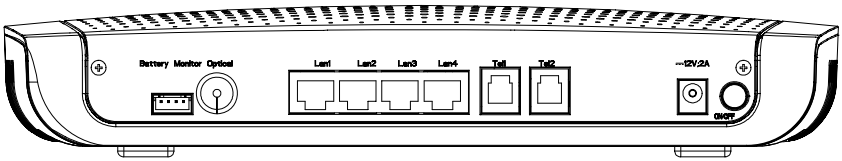


Table 1-3 describes the external interfaces of the HG850.

Table 1-3 External interfaces of the HG850

Interface	Function
Battery Monitor	External standby battery monitoring interface.
Optical	GPON interface. It is used to connect the HG850 with the upper-layer device of the optical network.
Lan1–Lan4	Ethernet interfaces. They are used to connect the network devices (such as a computer, an STB, and a switch). You can establish four Ethernet connections at the same time.
Tel1–Tel2	VoIP telephone interfaces. They are used to connect the common telephone or the fax machine to provide the VoIP or FoIP service.
12V;2A	Power interface. It is used to connect the power adapter.
ON/OFF	It is used to power on or off the HG850.

NOTE

The front panel and the rear panel in the guide are only for your reference.

2 Installation Guide

About This Chapter

The following table lists the contents of this chapter.

Title	Description
2.1 Installation	Describes the installation method of the HG850.
2.2 Getting Started with the HG850	Describes the cable connection method of the HG850.
2.3 Software Loading	Describes the software loading upgrade method and the procedure of the HG850.

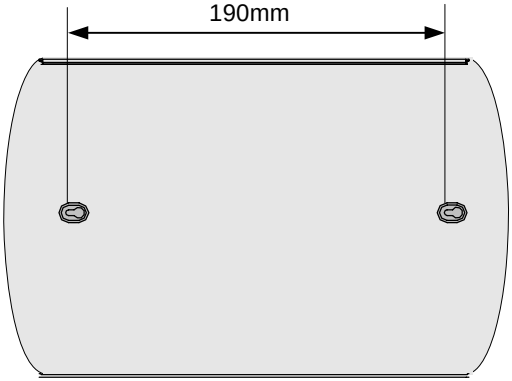
2.1 Installation

You can place the HG850 on a desktop directly or mount it on the wall.

This section mainly provides information about how to mount the HG850 on the wall.

There are two mounting holes at the bottom of the HG850. Figure 2-1 shows the dimensions of the mounting holes at the bottom.

Figure 2-1 Dimensions of the mounting holes at the bottom (unit: mm)



NOTE

Ensure that the positioning screws on the wall are installed solidly.

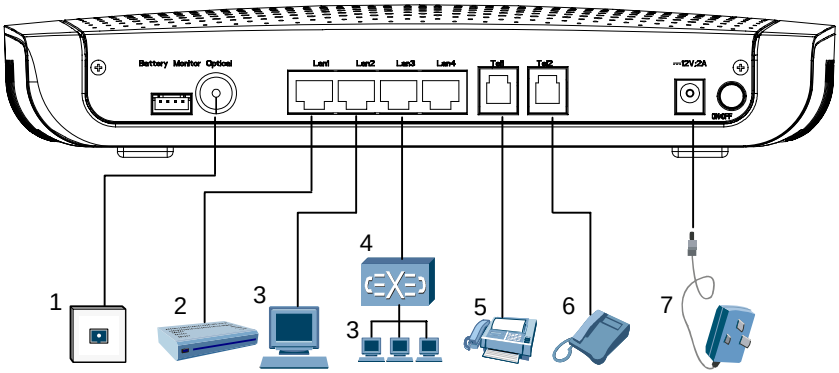
2.2 Getting Started with the HG850

CAUTION

Before connecting the HG850, turn off the power supply of devices such as your computer, STB, and switch.

Figure 2-2 shows the connection of the HG850 with devices.

Figure 2-2 Connection of the HG850 with devices



(1) Optical interface on the wall (2) STB (3) PC
(4) Switch (5) Fax machine (6) Telephone
(7) Power adapter

Refer to the figure above, and do the following to connect the HG850:

Step 1 Install the fiber.

To install the fiber, do as follows:

1. Remove the screws from the cover.
2. Open the cover.
3. Insert one end of the fiber to the fiber adapter.
4. Wind the fiber around the fiber spool, and reserve proper length of the fiber for leading it out from the cover hole (that is the optical interface on the rear panel).
5. Fix the cover properly.
6. Install the rubber plug.
7. Install the screws of the cover.

NOTE

For details of installing the fiber, see Chapter C "Fiber Installation."

Step 2 Connect the fiber led from the optical interface of the cover to the optical interface on the wall.

Step 3 Connect the **Tel1** or **Tel 2** interfaces of the HG850 and the telephone by using a telephone line.

Step 4 Connect the **Lan** interface with the downstream interface of the switch by using the Ethernet cable.

Step 5 Plug the AC output connector (100–240 V) to the power interface (that is labeled **12V; 2A**) of the HG850.

----End

CAUTION

- With a lightning protection mechanism, the HG850 stops running automatically if the voltage of lightning exceeds the nominal value.
- It is recommended to disconnect the power supply from the HG850 in a lighting weather.

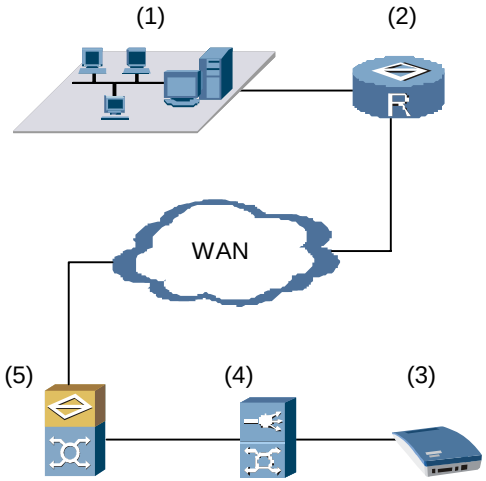
2.3 Software Loading

2.3.1 Setting Up Configuration Environment

Remote Maintenance

The HG850 supports the remote Telnet maintenance. Figure 2-3 shows the networking for the remote Telnet maintenance through WAN.

Figure 2-3 Networking for the remote Telnet maintenance through WAN



(1) Remote maintenance terminal (2) Router (3) HG850
(4) OLT (5) BAS

The following table describes the procedure for setting up the configuration environment. Take the Windows 2000 operating system as an example.

Step	Operation
1	Ensure that the maintenance terminal and the HG850 are correctly connected.
2	Select **start** > **Run** to display the **Run** text box.
3	Enter the Telnet command and the IP address of the public network of the HG850 in the **Run** text box, for example, **telnet 11.11.11.1**.
4	Click **OK** to display the Telnet running dialog box. After the connection with the HG850, the related information of the Telnet is displayed on the dialog box.
5	Enter the correct user name and password. Then you can enter the configuration environment. (The preset user name of the terminal is **root** and the password is **admin**.)

NOTE

- Ping the public network address of the HG850 (such as **ping 11.11.11.1**). If the address can be pinged through, it indicates that the connection between the maintenance and the HG850 is established.
- The IP address of the maintenance terminal may be not the same as that of the HG850. Ensure that the two IP addresses can be pinged through by each other.
- When you are configuring the HG850 through the Telnet, do not randomly change the IP address of the HG850. If it is necessary to change the IP address, after the change, the Telnet connection will be disconnected and you need log on again with the new IP address to set up the connection.

Local Maintenance

The HG850 supports the local maintenance through the **Lan** interfaces.

The HG850 provides the maintenance IP address as **192.168.100.1**. You can set the IP address of the client in the same network segment of the maintenance IP address. You can log on to the HG850 through Telnet.

NOTE

Use the Ethernet cable to connect the maintenance terminal with the HG850. If the network port indicators on the maintenance terminal and the HG850 are both on, it indicates that the network connection is established.

2.3.2 Configuring File Transfer Server

The HG850 supports file transfer through FTP. To configure the FTP server, install the client software of the FTP server.

2.3.3 Loading File Through FTP

The procedure for installing a protocol is as follows.

Step	Operation
1	Configure the FTP server.
2	Run the FTP server on the remote maintenance terminal.
3	Execute **load hg850** in the maintenance terminal to load the compressed file.
4	Execute **reboot** to reboot the system to enable the new program.

Example

The IP address of the FTP Server is **172.21.50.91**; the user name is **admin**; the authentication password is **admin**; the loading path is the default value; the loading file name is **upgrade.bin**.

The procedure is as follows.

Step	Operation
1	Log in to the HG850 through the Telnet mode.
2	Enter the privilege mode: `TERMINAL#enable`
3	Execute the **load** command: `TERMINAL#load hg850 ftp 172.21.50.91 admin admin upgrade.bin`

4	Restart the system to validate the configuration:
	`TERMINAL#reboot`
	`Are you sure to reset system? Caution:Unsaved data will be lost![Y|N]:Y`

CAUTION

After executing the **load** command, the upgrade process is displayed. After the loading completes, the prompt that the upgrade is successful is displayed. During the upgrade, do not restart the system or power off the supply.

3 Service Configuration

About This Chapter

The following table lists the contents of this chapter.

Title	Description
3.1 Configuration Description	Describes the software configuration of the HG850.
3.2 Basic Command	Describes the method and the procedure for setting up the environment of the HG850.
3.3 MGCP Service Configuration	Describes the configuration method and procedure for the HG850 MGCP service.
3.4 SIP Service Configuration	Describes the configuration method and procedure for the HG850 SIP service.

3.1 Configuration Description

The HG850 supports the VoIP service. When the network is normally connected, the voice call can be realized after the HG850 successfully registers to the media gateway controller (MGC) server, for example, the switch.

The HG850 supports the data service. It enables PCs to access the network through the **Lan** interfaces.

The HG850 has two software versions: Media Gateway Control Protocol (MGCP) and Session Initiation Protocol (SIP). Both the two software versions support VoIP services and data services.

NOTE

In this chapter, the HG850 serves as a media gateway (MG) and the softswitch device serves as a MGC.

3.2 Basic Command

Before configuration, make sure that you master the usage of command lines, which is a means to configure the device.

3.2.1 Command Structure

The command prompt consists of two parts: fixed character string and command mode identifier.

- The command mode identifier indicates the mode in which the current command is. For example, > indicates the user mode, and # indicates the privilege mode.
- In the privilege mode, you can use the hostname method to configure the fixed character string. By default, the fixed character string of the system is **TERMINAL**.

Example:

Modify the default hostname of the system to **HG850**.

```
TERMINAL#hostname HG850
HG850#
```

This command is executed successfully, and the hostname has been changed into HG850.

3.2.2 Command Modes

Command modes of the HG850 consist of: user mode, privilege mode, general configuration mode, advanced configuration mode, and GPON mode.

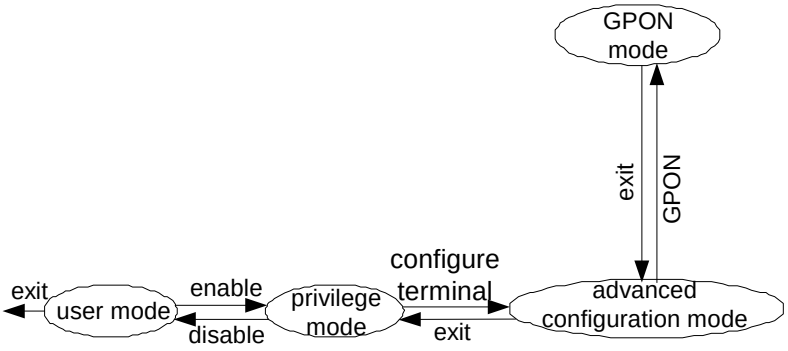
The privilege mode and the general configuration mode are compatible with the lower authority modes.

- In the privilege mode, you can run all commands in the user mode.

- In the general configuration mode, you can run all commands in the user mode and the privilege mode.

Figure 3-1 shows the relationships between the command modes. An ellipse represents a command mode. An arrow indicates the switching from one mode to another mode. Commands are listed above the arrows.

Figure 3-1 Relationships between the command modes



To switch from the privilege mode to the general configuration mode, execute **configure terminal**.

To exit from the general configuration mode and enter the privilege mode, execute **exit**.

3.2.3 Online Help of Command Line

The interface of command provides the following online helps.

Complete Help

Enter **?** in any view, and then you can get all the commands usable under the view and the concise descriptions of the commands.

Partial Help

- Enter **?** after a command separated by a space. If that position is a keyword, all keywords and their concise descriptions will be listed.
- Enter **?** after a command separated by a space. If that position is a parameter, the descriptions of all related parameters will be listed.
- Enter **?** after a character string. All the commands beginning with the character string will be listed.
- Add a space after a command. If that position is a keyword, the keywords of the command will be completed.

3.2.4 Common Commands

Table 3-1 describes the common commands in the HG850.

Table 3-1 Common commands

To…	Execute…
Access the privilege mode	TERMINAL>**enable**
Access the general configuration mode	TERMINAL#**configure terminal**
Exit the current mode and access the user mode	**disable** (any mode)
Exit the current mode and access the upper-lever mode or exit the configuration environment	**exit** (any mode)
Save the settings	TERMINAL#**write**
Set the hostname	TERMINAL#**hostname**
Query the version	TERMINAL>**display version**
Change the password	TERMINAL(config)#**terminal user**
Set the system time	TERMINAL#**time**
Set the region information	TERMINAL(config)#**region { CN | HK | BR | EG | GB | CL | SG | US }**
Set the timeout interval	TERMINAL#**terminal timeout** timeout length value(Min.)

CAUTION

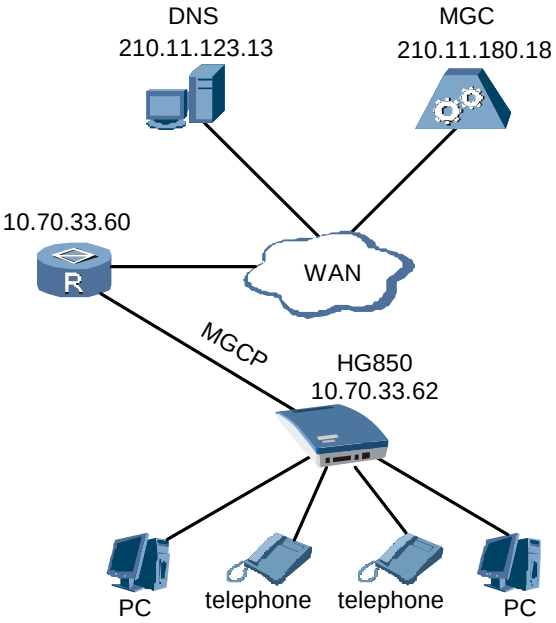
To avoid data loss due to exceptional system reset or power-off, save settings in time by executing the command **write**.

3.3 MGCP Service Configuration

3.3.1 MGCP Networking Method

Figure 3-2 shows the service networking of the HG850.

Figure 3-2 Service networking of the HG850



Abbreviations	Full Name
DNS	Domain Name Server
WAN	Wide Area Network

Table 3-2 lists the IP addresses to be planned.

Table 3-2 IP addresses to be planned

Item	Parameter
The IP address of the HG850	10.70.33.62
The IP address of the default upstream gateway of the HG850	10.70.33.60
The IP address of the MGC	210.11.180.18
The IP address of the DNS	210.11.123.13
The domain name of the HG850	huawei.com

3.3.2 Planning Data

Before configuring data, you shall plan the data of the HG850, such as IP addresses of the HG850 and related servers. When the HG850 interconnects with the MGC, you shall plan the data for the interconnection between them. Table 3-3 lists IP addresses to be planned.

Table 3-3 IP addresses to be planned

Item	Remarks
The IP address of the HG850	It can be the static mode, the DHCP mode or the PPPoE mode.
The IP address of the default upstream gateway of the HG850	The address of the HG850 is static. The default gateway is commonly the third-layer switch and low-end router. When the HG850 obtains the IP address through the DHCP mode or the PPPoE mode, the IP address of the default gateway is automatically obtained.
The IP address of MGC	In this guide, the SoftSwitch is taken as an example of the MGC.
The IP address of DNS	DNS is the domain name server.
The IP address of SNTP	SNTP indicates the Simple Network Time Protocol server.
The IP address of Loghost	Loghost is the host used for generating and storing logs.
NOTE DHCP = Dynamic Host Configuration Protocol PPPoE = PPP over Ethernet	

NOTE

In Table 3-3, IP addresses of DNS, SNTP, and Loghost are optional. If a server is not configured on the HG850, the corresponding IP address is unnecessary.

When the HG850 interconnects with the MGC, the parameters for the HG850 and the MGC are needed to be configured as the same at both sides. The parameters for the HG850 and the MGC are listed as follows:

- The IP address of the HG850
- The IP address or domain name of the MGC
- The domain name of the HG850
- The interface name (name of the local terminal) of the HG850

3.3.3 Configuring MGCP Data

Configuring IP Address of the HG850

In the general configuration mode, configure the IP address of the HG850. The configuration commands are as follows.

Operation	Command
Configure the IP address of the HG850	Configure the HG850 to obtain a fixed IP address: **ipaddress static** ip-address net-mask gateway-ip
	Configure the HG850 to automatically obtain an IP address: **ipaddress dhcp**
	Configuring the HG850 to obtain an IP address by the PPPoE dialing: • **pppoe username** *username* **password** *password* • **ipaddress pppoe** { disable | enable }

The IP address of the HG850 must be configured. After being configured, the IP address can take effect at once without rebooting.

The IP address of the HG850 can be obtained in three ways:

- Configuring a fixed IP address
- Dynamically obtained from the DHCP server
- Obtained through the PPPoE dialing mode

NOTE

- The HG850 can only configure one mode for the IP address.
- When you are dynamically obtaining the IP address, such as through the DHCP and PPPoE modes, you need not configure the DNS server information.

Configuring Domain Name of MG for Registration

In the general configuration mode, configure the domain name of the HG850. The configuration command is as follows.

Command	Remarks
TERMINAL(config)#**mgcp mg-domain-name** *name*	*Name*: The domain name of the HG850, containing 1–60 characters. The domain name should be consistent with that configured on the MGC server.

Example:

Configure the domain name of the HG850 as **huawei.com**.

Step	Operation
1	Configure the domain name of the MG for registration: `TERMINAL(config)#mgcp mg-domain-name huawei.com`

2	Query the configuration result:
	`TERMINAL(config)#display mgcp attribute`
	`==========================================`
	`MGIP MG-PORT MG-DOMAIN-NAME`
	`10.70.33.62 2427 huawei.com`
	`==========================================`
	`MGC-IP1 MGC-PORT1 MGC-DOMAIN-NAME1`
	`0.0.0.0 2727 -`
	`==========================================`
	`MGC-IP2 MGC-PORT2 MGC-DOMAIN-NAME2`
	`0.0.0.0 2727 -`
	`==========================================`
	`MG-STATE REGISTERED-MGC`
	`Fault 1`
	`==========================================`
	`AUTH-MODE KEY`
	`Huawei mode -`

Configuring MGC Information

In the general configuration mode, configure the IP address or domain name of the HG850. The configuration command is as follows.

Command	Remarks
TERMINAL(config)#**mgcp mgc** *index* **address** *str*	*Index*: The index of the SoftSwitch to which the gateway can register, ranging from 1 to 2. *Str*: It contains 1–256 characters. It can be a domain name or an IP address. Configure it as a domain name or an IP address.

Example:

Configure the IP address of the server for registration as **210.11.180.18**. The signaling port number is **2727** by default.

Step	Operation
1	Configure the IP address: TERMINAL(config)#**mgcp mgc 1 address 210.11.180.18** { <cr>|port<K> }: Command: mgcp mgc 1 address 210.11.180.18
2	Query the configuration result: TERMINAL(config)#**display mgcp attribute** ========== MGIP MG-PORT MG-DOMAIN-NAME 10.70.33.62 2427 huawei.com ========== MGC-IP1 MGC-PORT1 MGC-DOMAIN-NAME1 210.11.180.18 2727 - ========== MGC-IP2 MGC-PORT2 MGC-DOMAIN-NAME2 0.0.0.0 2727 - ========== MG-STATE REGISTERED-MGC Fault 1 ========== AUTH-MODE KEY Huawei mode -

Configuring MG Authentication Information

To prevent the illegal MG from registering to the MGC, start registration authentication on the MG. The commands are as follows.

Operation	Command
Configure the authentication mode to GB.	TERMINAL(config)# **mgcp authentication gb-mode** {mgiD | mgkI }
Configure the authentication mode to HW.	TERMINAL(config)# **mgcp authentication hw-mode key** *keyword*

NOTE

- HW authentication mode is a private authentication procedure of Huawei. GB authentication mode is defined by Ministry of Information Industry.
- When the encryption algorithm of the SoftX3000 is MD5, you need to configure the authentication mode of the interconnected HG850 to the HW mode. When the encryption algorithm of the SoftX3000 is DH, you need to configure the authentication mode of the interconnected HG850 to the GB mode.

Example:

Configure the HG850 to register to the call server in the HW mode. The registration key configured on the server is HG850register.

Step	Operation

1	Configure the authentication mode to HW as well as the authentication key:
	`TERMINAL(config)#`**`mgcp authentication hw-mode key`**
	`Please input your keyword<1~16 characters>:*************`
	`Please input again:*************`

2	Query the configuration result:
	`TERMINAL(config)#`**`display mgcp attribute`**
	`==============================================`
	`MGIP  MG-PORT  MG-DOMAIN-NAME`
	`191.168.208.13  2427  -`
	`==============================================`
	`MGC-IP1  MGC-PORT1  MGC-DOMAIN-NAME1`
	`0.0.0.0  2727  -`
	`==============================================`
	`MGC-IP2  MGC-PORT2  MGC-DOMAIN-NAME2`
	`0.0.0.0  2727  -`
	`==============================================`
	`MG-STATE  REGISTERED-MGC`
	`Fault  1`
	`==============================================`
	`AUTH-MODE  KEY`
	`Huawei mode  *******`

Configuring Signaling Port Number of MG

By default, the protocol port number of the transport layer of the MG device is **2427**. To change it, execute the following command.

Command	Remarks
TERMINAL(config)#**mgcp mg-port** *port*	*Port*: Port number. By default, it is **2427**.

The default port number is recommended.

Configuring Signaling Port Number of MGC

By default, the protocol port number of the transport layer of the MGC server is **2727**. To change it, execute the following command.

Command	Remarks
TERMINAL(config)#**mgcp mgc** *index* **port** *port*	*Index*: index of the MGC server *Port*: protocol port number of the transport layer

The default port number is recommended.

Configuring DNS

After enabling the DNS client, the HG850 can access other network devices by the domain name. The relevant commands are as follows.

Operation	Command
Set the domain name of the DNS.	TERMINAL(config)#**dns domain-name** *name*
Set the IP address of the DNS server.	TERMINAL(config)#**dns server** *first* { *second* | *third* }

Example:

Start the DNS client on the HG850.

Configure the domain name of the DNS domain as **tele.com** and the IP address of the DNS server as **210.11.123.13**.

Step	Operation
1	Set the domain name of the DNS: `TERMINAL(config)#dns domain-name tele.com`

2	Set the IP address of the DNS server:
	`TERMINAL(config)#dns server 210.11.123.13`
	`{ <cr>|<I> }:`
	
	`Command:`
	`dns server 210.11.123.13`

Step	Operation

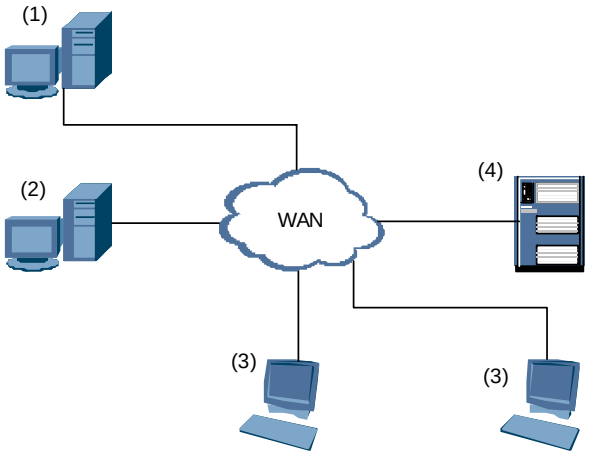
3	Query the configuration result:
	`TERMINAL(config)#display dns`
	`----------------------------------------------`
	`DNS suffix:tele.com`
	`Server address:`
	`Main DNS Server.....: 210.11.123.13`
	`----------------------------------------------`

3.4 SIP Service Configuration

3.4.1 SIP Networking Method

Figure 3-3 shows the SIP networking.

Figure 3-3 SIP networking



(1) Proxy server (2) Redirect server
(3) SIP client (user agent) (4) Location/Register server

Figure 3-3 describes functions of the devices in the networking of the HG850.

Name	Description
Proxy server	Forwards the requests or responses of clients.
Redirect server	Maps the addresses in users' call requests into new addresses and returns the new addresses to users.

Name	Description
User agent	Initiates requests or calls. For example, SIP telephone and SoftPhone.
Register server	Receives registration requests. For example, SoftSwitch devices.

3.4.2 Configuring Commands

Configure commands as follows.

Operation	Command
Configure SIP server.	TERMINAL(config)#**sip server *index*** { **address** *address* | **domain** *name* | **port** *port* | **expire-time** *expire-time* }
Configure SIP user information.	TERMINAL(config)#**sip user *user-sn*** { id *id* | **password** *password* | **name** *name* }
Log out the SIP user.	TERMINAL(config)#**(undo) sip shutdown** { *user-sn* | **all** }
Configure the SIP user digitmap.	TERMINAL(config)#**sip digitmap** *digitmap*
Configure the SIP local port number.	TERMINAL(config)#**sip local-port** *localport*
Display the SIP user attribute.	TERMINAL(config)#**display sip attribute**
Display the SIP digitmap.	TERMINAL(config)#**display sip digitmap**
Display the SIP send-capability.	TERMINAL(config)#**display sip send-capability**
Display the SIP server information.	TERMINAL(config)#**display sip server**
Display SIP software parameters.	TERMINAL(config)#**display sip soft-parameter**

3.4.3 Configuring SIP Data

Configuring the IP Address of the HG850

In the general configuration mode, configure the IP address of the HG850. The configuration commands are listed as follows.

Operation	Command
Configure the IP address of the HG850	Configure the HG850 to obtain a static IP address: **ipaddress static** ip-address net-mask gateway-ip
	Configure the HG850 to obtain an IP address automatically: **ipaddress dhcp**
	Configure the HG850 to obtain an IP address by the PPPoE dialing: • **pppoe username** *username* **password** *password* • **ipaddress pppoe** { disable | enable }

The IP address of the HG850 must be configured. After being configured, the IP address can take effect at once without rebooting.

The IP address of the HG850 can be obtained in three ways:

- By Configuring a fixed IP address
- From DHCP server
- Through the PPPoE dialing mode

For the SIP HG850, DHCP is the default method of obtaining the IP address.

Configuring SIP Server

In the general configuration mode, configure the information of the call server which SIP HG850 registers to. The configuration command is listed as follows.

Command	Remarks
TERMINAL(config)# **sip server** *index* { **address** *address* | **domain** *name* | **port** *port* | **expire-time** *expire-time* }	*Index*: Index of server, ranging from 0 to 2. *address*: The IP address of the server. *name*: The user domain name. The length should not exceed 31 characters. *port*: The port number of the server. The default is **5060**. *expire-time*: Registration validity period. The range is 5–3600 × 24 × 365. The default is **3600s**.

Example

Configure the IP address of the server 2 as **191.168.3.3** and the port number as **5061**.

Step	Operation

1	Configure the information of the SIP server:
	`TERMINAL(config)#`**`sip server 2 address 191.168.3.3 port 5061`**
	`{ <cr>|domain<K>|expire-time<K> }:`
	`Comman`
	`sip server 2 address 191.168.3.3 port 5061`
	`Execution of command succeeded`

2	Query the configuration result:
	`TERMINAL(config)#`**`display sip server`**
	`{ <U><0,2>|all<K> }:2`
	
	`Command:`
	`display sip server 2`
	`Sip Server Information`
	`----------`
	`index : 2`
	`domain name :`
	`IP address : 191.168.3.3`
	`port : 5061`
	`expire time : 3600`
	`----------`

Configuring SIP User

This command is used to configure the information of the SIP user, including user telephone number, call authentication password and user alias.

In the general configuration mode, the command is listed as follows.

Command	Remarks
TERMINAL(config)#**sip user** *user-sn* { **id** *id* | **password** *password* | **name** *name* }	*user-sn*: The port number of the connected HG850. Its range varies according to the actual port quantity of the devices in use. For example, the HG850 has two ports. The port number ranges from 0 to 2. *id*: User SIP ID. It is used to identify the user and the length should not exceed 31 characters. The number is allocated by the service provider and has been configured on the SIP server. *Password*: User authentication password. The length should not exceed 31 characters. The service provider decides whether to configure the parameter. *Name*: User alias. The length should not exceed 63 characters.

CAUTION

The ID and the password must be configured on the registration server firstly and then the user can succeed in registering.

Example:

Configure *user-sn* as **0**, *id* as **88889999**, *password* as **abcxyz**, and *name* as **Jack**.

Step	Operation

1	Configure the SIP user:
	`TERMINAL(config)#sip user 0 id 88889999 password abcxyz name Jack`
	`This operation will affect the user's current services. Continue? [Y/N]:y`
	`Execution of command succeeded.`
	
	`TERMINAL(config)#`

2	Query the configuration result:
	`TERMINAL(config)#display sip attribute 0`
	`Sip User Information`
	`----------`
	`user-sn : 0`
	`id : 88889999`
	`password : ********`
	`name : jack`
	`local address : 172.21.100.29`
	`local-port : 5060`
	`registration state : registered`
	`previous server : 0.0.0.0 : 5060`
	`current server : 191.168.100.8 : 5060`
	`----------`

In the general configuration mode, execute **undo sip user** to delete the SIP user; execute **sip shutdown** to enable the user to log out.

Configuring SIP User Digitmap

This command is used to configure the restriction rules when the user dials a number.

The default rule of the SIP HG850 is that the user is permitted to enter any character or number when the user is dialing a number. This rule may be modified according to the actual requirement.

Command	Remarks
TERMINAL(config)#**sip digitmap** *digitmap*	*Digitmap*: The digitmap string to be added. The length is 1–31. The valid characters that may be contained in the string: 0–9, a, b, c, d, x. **x** is wildcard and can represent any number. The default digitmap of the SIP HG850 is **[xABCD*#].t**.

NOTE

- Execute **undo sip digitmap** to cancel user digitmap.
- Execute **display sip digitmap** to view user digitmap information.

Example

Delete the default digitmap, the configured digitmap string is **0755xxxxxxxx**. Only the number starting with **0755** is permitted to be dialed.

Step	Operation

1	Delete the default SIP digitmap:
	`ERMINAL(config)#`**`display sip digitmap`**
	`Sip digitmap`
	`----------`
	`index digitmap`
	`----- ----------`
	`0 [XABCD*#].T`
	`----------`
	`TERMINAL(config)#`**`undo sip digitmap 0`**
	`{ <cr>|<U><0,15> }:`
	
	`Command:`
	`undo sip digitmap 0`
	`[XABCD*#].T is deleted`
	`Execution of command succeeded`

2	Configure SIP user digitmap:
	`TERMINAL(config)#`**`sip digitmap 0755xxxxxxxx`**
	`Execution of command succeeded.`
	`TERMINAL(config)#`

Step	Operation

3	Query the configuration result:
	`TERMINAL(config)#`**`display sip digitmap`**
	`Sip digitmap`
	`----------`
	`index digitmap`
	`----- ----------`
	`0755xxxxxxxx`
	`----------`

Configuring Signaling Port Number of SIP

The command is used to configure the local port number, which is used by HG850 to send the SIP signaling.

The default SIP signaling port number is **5060**. It can be modified through the following command.

Command	Remarks
TERMINAL(config)#**sip local-port** *port*	*local-port*: Local port number. The value cannot be the same with other port numbers. The default is **5060**.

Example:

Configure the local port number as **5061**.

Step	Operation
1	Configure the local port number: `TERMINAL(config)#`**`sip local-port 5061`** `Execution of command succeeded`

Step	Operation

2	Query the configuration result:
	`TERMINAL(config)#display sip attribute all`
	`Sip User Information`
	`----------`
	`user-sn : 0`
	`id : 88889999`
	`password : ********`
	`name : jack`
	`local address : 172.21.100.29`
	`local-port : 5061`
	`registration state : registering`
	`expire-time : 0 sec`
	`previous server : 0.0.0.0 : 5060`
	`current server : 191.168.3.3:`
	`5061----------`
	`TERMINAL(config)#`

NOTE

After the MGCP or SIP configuration completes, connect the HG850 with a telephone according to "Getting Started with the HG850" and then pick up the telephone. If you hear a beep, the configuration is successful.

4 Use Guide

About This Chapter

The following table lists the contents of this chapter.

Title	Description
4.1 Using a Telephone	Describes the use method after the HG850 is connected with a telephone.
4.2 Using an STB	Describes the use method after the HG850 is connected with an STB.
4.3 Using a PC	Describes the use method after the HG850 is connected with a PC.

CAUTION

When you use the HG850, keep at least 10 cm between the HG850 and the closest object for heat dissipation.

4.1 Using a Telephone

Step 1 Connect the HG850.

Refer to section 2.2 "Getting Started with the HG850" to connect a telephone. Ensure that the telephone and the HG850 are correctly connected.

Step 2 Power on the HG850.

Step 3 Configure the VoIP service of the HG850.

You can configure it to the MGCP or the SIP mode. For details, refer to section 3 "Service Configuration."

Step 4 Enjoy the high-speed voice service.

Pick up the telephone. Enter the number that you want to dial. Wait for an answer.

----End

4.2 Using an STB

Step 1 Connect the HG850

Refer to section 2.2 "Getting Started with the HG850" to connect an STB. Ensure that the STB and the HG850 are correctly connected.

Step 2 Power on the HG850, the TV and the STB.

Three modes are available:

- Preset a fixed IP address.
- Obtain an IP address from a DHCP server.
- Obtain an IP address through the PPPoE dialing mode.

Contact your service provider for which mode to use.

Step 3 Enjoy the high-speed video service.

Watch or listen to programs according to the prompt on the TV screen.

----End

4.3 Using a PC

Step 1 Connect the HG850.

Refer to section 2.2 "Getting Started with the HG850" to connect a PC. Ensure that the PC and the HG850 are correctly connected.

Step 2 Power on the PC and the HG850.

Step 3 Set the IP addresses of the PC.

Three modes are available:

- Preset a fixed IP address
- Obtain an IP address from a DHCP server
- Obtain an IP address through the PPPoE dialing mode

Contact your service provider for which mode to use.

Step 4 Enjoy the high-speed data service.

Enable the Internet Explorer to surf on the Internet.

----End

NOTE

- The PC must have an Ethernet card.
- The operating parameters of the HG850 are remotely configured by the service provider. You can power on and use it.

5 Troubleshooting

Failure	Solution
The **Power** indicator is off.	• Check whether the power adapter matches the HG850. • Check whether the power connection is correct. • Check whether the **ON**/**OFF** button on the rear panel is pressed.
The **Link** indicator is off.	• Check whether fiber is properly connected. • Check whether there is feculence on the optical connector.
The **Auth** indicator is off, but the **Link** indicator is on.	Maybe the HG850 does not receive the downstream optical signal sent by the service provider. Contact service provider for help.
The **Tel** indicator is off.	• Check whether the telephone cable provided with the device is used. • Check whether the connection of the telephone cable is correct. • Check whether the telephone is hung up.
The **Lan** indicator is on.	• Check whether the provided Ethernet cable is used. • Check whether the Ethernet cable is connected correctly. • Check whether the indicator of the network card is on. • Check whether the network card works normally. Check whether there are devices with the **?** or **!** mark under **Network adapters**. If there are such devices, uninstall and then re-install them, or insert the network card into another slot. If the problem remains, change a network card.

6 Technical Specifications

Physical Interfaces

- One **Battery Monitor** interface
- One **Optical** interface
- Four auto-sensing 10/100 Base-T Ethernet interfaces (RJ-45)
- Two VoIP telephone interfaces (RJ-11)
- One **Power** interface

Protocols and Standards

- GPON: ITU-T G.983.3 and ITU-T G.984.x
- FE: IEEE802.1p, IEEE 802.3u, and IEEE802.1q
- VoIP: G.711A/u, and T38 (standard)
  MGCP, RTP/RTCP, SIP (protocol)

Physical Specifications

- Dimensions (L × W × H): 275 mm × 205 mm × 46 mm
- Weight: 765 g
- Power adapter input: 100–240 V AC, 50–60 Hz
- Whole-device power supply: 12 V DC, 2 A
- Standard power consumption: < 12 W
- Operating environment temperature: 0℃ to +50℃
- Operating environment humidity: 5%–95% (non-condensing)

A MGCP Service Configuration

A.1 Voice Service Configuration

A.1.1 Configuring IP Address

Configure the following parameters of the HG850:

- Fixed IP address: **10.70.33.62**
- Subnet mask: **255.255.0.0**
- Default gateway: **10.70.33.60**

```
TERMINAL(config)#ipaddress static 10.70.33.62 255.255.0.0
10.70.33.60
  Changing net parameter may affect current service, continue?[Y|N]:y
-------------------------------------------------
  DNS Domain Name..............: my.domain
  Physical Address.............: 00-e0-fc-15-64-18
  IP Address Get Method.........: Static IP config
  esw (unit number 3):
    Flags: (0x68243) UP BROADCAST MULTICAST ARP RUNNING
    IP Address..................: 10.70.33.62
    Subnet Mask.................: 255.255.0.0
    Default Gateway.............: 10.70.33.60

  esw (unit number 4):
    Flags: (0x68243) UP BROADCAST MULTICAST ARP RUNNING
    IP Address..................: 192.168.100.1
    Subnet Mask.................: 255.255.255.0
-------------------------------------------------
```

A.1.2 Configuring Domain Name of the HG850

Configure the domain name of the HG850 as **huawei.com**, and MG port number as **aaln**. Use the default signaling port number.

```
TERMINAL(config)#mgcp mg-domain-name huawei.com
```

A.1.3 Configuring IP address of MGC

Configure the MGC IP address: **210.11.180.18**. Use the default protocol port number.

```
TERMINAL(config)#mgcp mgc 1 address 210.11.180.18
```

```
{ <cr>|port<K> }:

Command:
      mgcp mgc 1 address 210.11.180.18
```

Configure the address of the MGC server as **mgc.com**.

```
TERMINAL(config)#mgcp mgc 1 address mgc.com
```

Query the configuration result.

```
TERMINAL(config)#display mgcp attribute
=====================================================
MGIP              MG-PORT          MG-DOMAIN-NAME
172.21.100.24      2427             huawei.com
=====================================================
MGC-IP1           MGC-PORT1         MGC-DOMAIN-NAME1
210.11.180.18      2727             -
=====================================================
MGC-IP2           MGC-PORT2         MGC-DOMAIN-NAME2
0.0.0.0           2727             -
=====================================================
MG-STATE          REGISTERED-MGC
Fault             1
AUTH-MODE         KEY
Huawei mode        -
```

NOTE

The HG850 supports dual homing. You can configure two MGC servers for the HG850. When the HG850 fails to register to the first MGC, it registers to the second MGC. **1** indicates the first IP address of the MGC; while **2** indicates the second IP address of the MGC.

A.1.4 Configuring System Time

Configure the system time as **11:55:00**, **2006-10-20**.

```
TERMINAL(config)#time 11:55:00 2006-10-20
```

A.1.5 Starting DNS Client

Start the DNS client on the HG850.

Configure the following parameters of the DNS:

- Domain name: **tele.com**
- IP address: **210.11.123.13**

```
TERMINAL(config)#dns domain-name tele.com
TERMINAL(config)#dns server 210.11.123.13
{ <cr>|<I> }:

Command:
      dns server 210.11.123.13
```

```
TERMINAL(config)#display dns
------------------------------------------------------
user config:
DNS suffix:tele.com
   Main DNS Server.............: 210.11.123.13
   Secondary DNS Server........:
 config protocol get:
DNS suffix:my.domain
   Main DNS Server.............: 192.168.0.6
   Secondary DNS Server........:
```

A.1.6 Adding HG850 Network Management

Configure the IP address of the HG850 network management as **210.11.123.33**.

```
TERMINAL(config)#nms primary 210.11.123.33
{ <cr>|secondary<K> }:
Command:
       nms primary 210.11.123.33
  primary IP 210.11.123.33
 config succeed
```

Configure the HG850 to register to the HG850 network management when the HG850 is started.

```
TERMINAL(config)#nms access on
 config succeed
```

A.1.7 Saving Configuration Data

After the data configuration, use the **write** command to save data.

```
TERMINAL#write
  Command executing, please wait...
System starts to save configuration data, please wait a moment......
The configuration data backup percent is: 100%
HG8502000(config)#
```

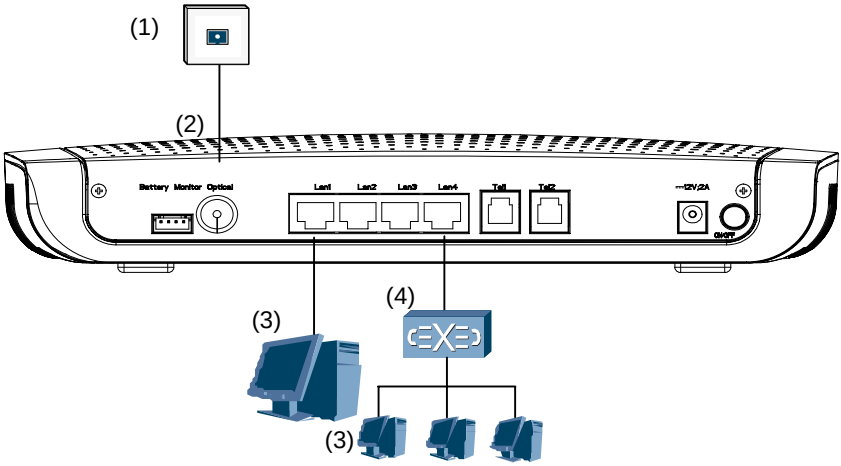
A.2 Data Service Configuration

A.2.1 Online Service

The HG850 supports the online service. Connect the cables; configure the IP address of your PC, and power on your PC. Then you can enjoy the online service.

Figure A-1 shows the connection for the online service.

Figure A-1 Connection for the online service



(1) Optical interface on the wall (2) HG850
(3) PC (4) Switch

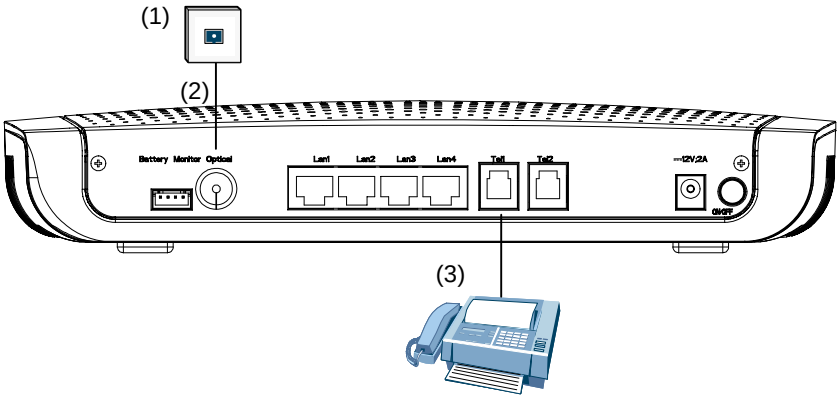
A.2.2 Fax Service

By default, the HG850 supports the fax service. You need to select the fax mode.

In the general configuration mode, use **display mgcp soft-parameter to check** the fax mode. It is **t38** by default.

Figure A-2 shows the connection for the fax service.

Figure A-2 Connection for the fax service



(1) Optical interface on the wall (2) HG850 (3) Fax machine

NOTE

If you want to change the fax mode, contact the service provider for help.

B SIP Service Configuration

B.1 Voice Service Configuration

B.1.1 Configuring IP Address

The HG850 obtains the IP address through DHCP by default. When the DHCP server is configured, and the HG850 is connected to the network and powered on, the HG850 obtains the IP address from the DHCP server automatically.

Query the IP address information.

```
TERMINAL(config)#display ipaddress
```

The information is displayed as follows.

```
-------------------------------------------------
  DNS Domain Name..............: abc.com
  Physical Address.............: 00-e0-fc-92-8a-2a
  IP Address Get Method.........: DHCP
  esw (unit number 3):
    Flags: (0x68243) UP BROADCAST MULTICAST ARP RUNNING
    IP Address..................: 191.168.100.2
    Subnet Mask.................: 255.255.0.0
    Default Gateway.............: 191.168.10.10
  DHCP Server Address...........: 191.168.210.17
  DHCP Expired Time Length .....: 60 S

  esw (unit number 4):
    Flags: (0x68243) UP BROADCAST MULTICAST ARP RUNNING
    IP Address..................: 192.168.100.1
    Subnet Mask.................: 255.255.255.0
-------------------------------------------------
```

B.1.2 Configuring SIP Server

Configure the IP address of the SIP server as **192.168.10.10**.

```
TERMINAL(config)#sip server 0 address 191.168.10.10
{ <cr>|domain<K>|port<K>|expire-time<K> }:
Command:
       sip server 0 address 191.168.10.10
Execution of command succeeded
```

Configure the address of the SIP server as **sipserver.com**.

```
TERMINAL(config)#sip server 0 domain sipserver.com
{ <cr>|address<K>|port<K>|expire-time<K> }:

Command:
       sip server 0 domain sipserver.com
Execution of command succeeded"
```

NOTE

- You can configure three SIP servers for the HG850. If the HG850 fails to register to the first SIP server, then it registers to the second SIP server. If it fails to register to the second SIP server, it registers to the third SIP server. The SIP servers here can be configured from 0 to 2.
- It is recommended to configure the address of Server 0 as that of the main server and the IP address of Server 2 as that of the standby server. This can shorten the register time.

B.1.3 Configuring SIP User Information

Configure the following parameters for the SIP user:

- Port number: 0
- ID: 88880008
- Authentication password: 88880008

```
TERMINAL(config)#sip user 0 id 88880008 password 88880008
{ <cr>|name<K> }:

Command:
       sip user 0 id 88880008 password 88880008
This operation will affect the user's current services. Continue?
[Y/N]:y
TERMINAL(config)#
Execution of command succeeded
```

NOTE

The HG850 can configure two SIP users, which range from 0 to 1.

B.1.4 Querying Configuration Result

Query the configuration result.

```
TERMINAL(config)#display sip attribute 0
             Sip User Information
-----------------------------------------------------
user-sn          : 0
id              : 88880008
password         : ********
name            :
local address     : 191.168.100.2
local-port       : 5060
registration state : registered
```

```
expire-time       : 300 sec
previous server   :
current server    : 191.168.10.10 : 5060
```

NOTE

The HG850 can configure two users. When you check the users, you can select **0**,**1** and **all** to check the information of the SIP user(s).

B.1.5 Saving Configuration Data

After the data configuration, use the write command to save data.

```
TERMINAL#write
  Command executing, please wait...
System starts to save configuration data, please wait a moment......
The configuration data backup percent is: 100%
TERMINAL(config)#
```

NOTE

Currently, the SIP HG850 only supports the basic voice service. For added-valued services, for example, three-party service, conference call, video conference, call transfer, caller identification display and advice of charge at the end of conversation are not supported.

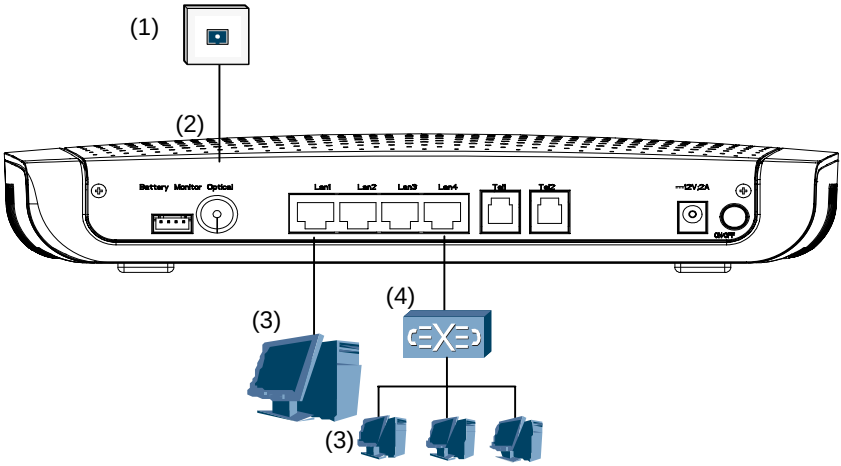
B.2 Data Service Configuration

B.2.1 Online Service

The HG850 supports the online service. Connect the cables; configure the IP address of your PC, and power on your PC. Then you can enjoy the online service.

Figure B-1 shows the connection for the online service.

Figure B-1 Connection for the online service



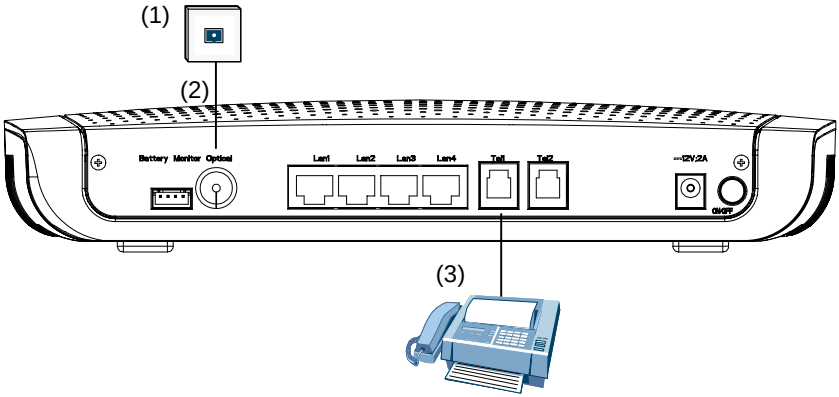
(1) Optical interface on the wall (2) HG850
(3) PC (4) Modem

B.2.2 Fax Service

By default, the HG850 supports the fax service.

Figure B-2 shows the connection for the fax service.

Figure B-2 Connection for the fax service



(1) Optical interface on the wall (2) HG850 (3) Fax machine

NOTE

If you want to change the fax mode, contact your service provider for help.

C Fiber Installation

The installation steps are shown as follows:

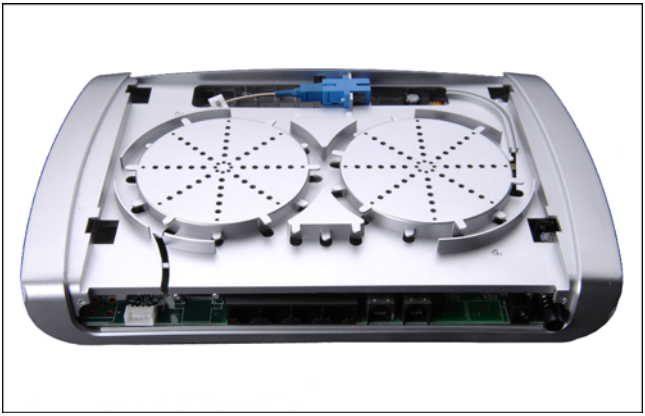
Step 1 Remove the two screws form the cover with a cross screwdriver.

Step 2 Open the cover.

CAUTION

To avoid damaging the cover, carefully perform the operation with both hands.

After opening the cover, you can see two layers of feet around the fiber spool, as shown in the following figure.

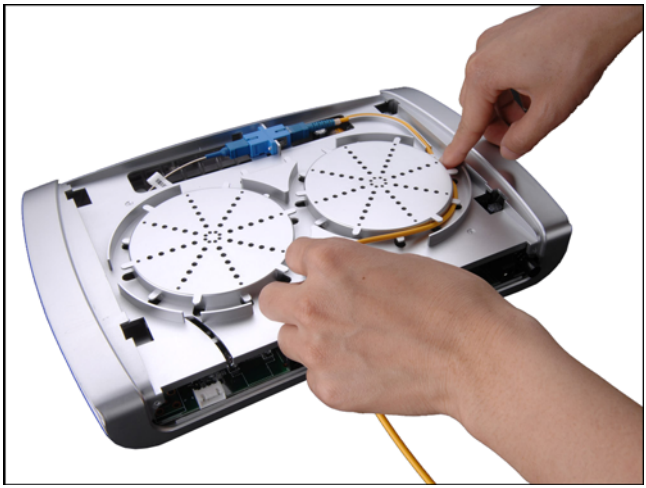


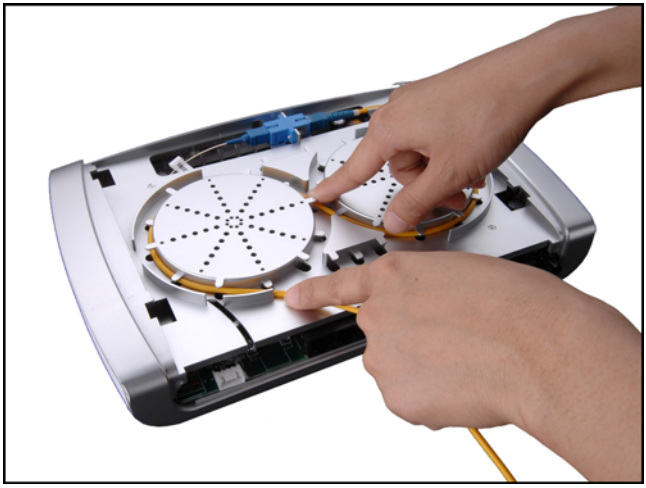
Step 3 Insert one end of the fiber to the fiber adapter.

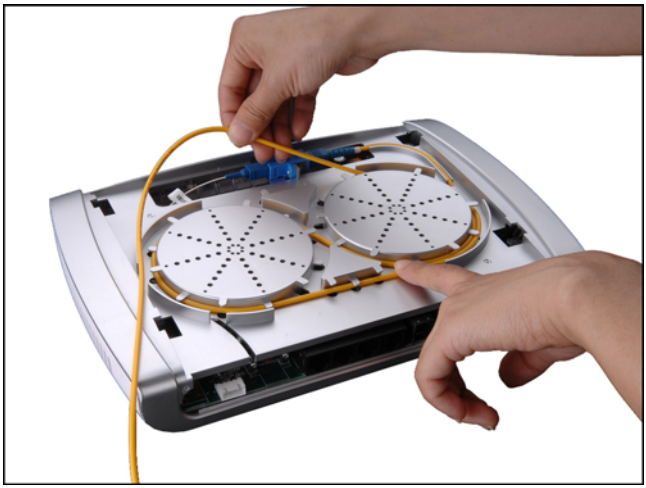
Step 4 Wind the fiber around the fiber spool.

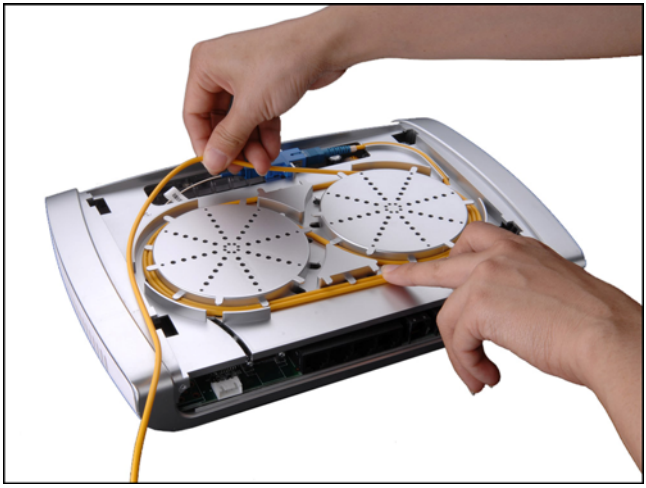
When winding, do not bend the fiber excessively. Refer the following winding principles:

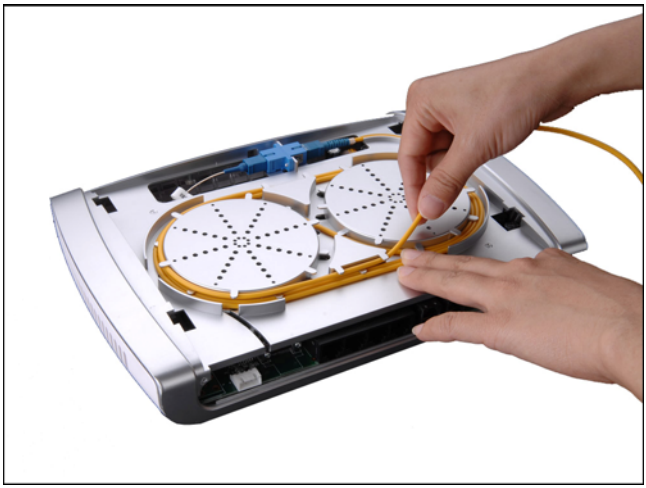
- The number of the winding circles is subject to the length of the fiber you use. The longer the used fiber is, the more the winding circles are.
- Except the first circle is wound as the shape "∽", wind the other circles as the shape "⬭".
- The first and second circles are wound at the bottom layer.
- The third and fourth circles are wound between the two layers of the feet.





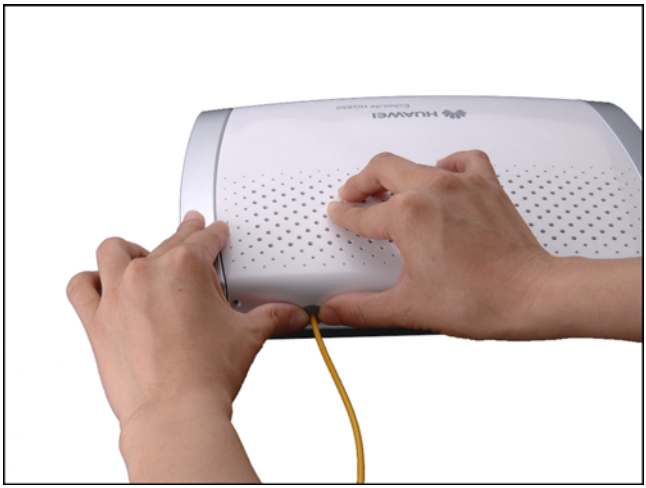






Step 5 Reserve proper length of the fiber for leading it out from the hole on the cover (which is the optical interface on the rear panel).

Step 6 Fix the cover properly and install the rubber plug.



Step 7 Install the screws of the cover.

----End

After the fiber is installed, refer the following figure.

D Acronyms and Abbreviations

B

BAS Broadband Access Server

D

DHCP Dynamic Host Configuration Protocol

DNS Domain Name Server

F

FoIP Fax over IP

FTP File Transfer Protocol

G

GPON Gigabit-Capable Passive Optical Network

I

IP Internet Protocol

IPTV Internet Protocol Television

L

LAN Local Area Network

M

MG Media Gateway

MGC Media Gateway Controller

MGCP Media Gateway Control Protocol

N

NAT Network Address Translation

O

OLT	Optical Line Terminal
OMCI	ONT Management and Control Interface
ONT	Optical Network Terminal

P

PC	Personal Computer
PON	Passive Optical Network
POTS	Plain Old Telephone Service
PSTN	Public Switched Telephone Network
PPPoE	Point-to-Point Protocol over Ethernet

S

SIP	Session Initiation Protocol
SOHO	Small Office and Home Office
STB	Set-Top Box

T

TG	Trunk Gateway
TV	Television

U

UA	User Agent

V

VoIP	Voice over IP

W

WAN	Wide Area Network

Index

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