# EchoLife HG520 Home Gateway

User Manual

# HUAWEI

EchoLife HG520 Home Gateway User Manual

V100R001

EchoLife HG520 Home Gateway

User Manual

Manual Version T2-20050627-V1.10

Product Version V100R001

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#### Huawei Technologies Co., Ltd.

Address: Administration Building, Huawei Technologies Co., Ltd.,

Bantian, Longgang District, Shenzhen, P. R. China

Postal Code: 518129

Website: http://www.huawei.com

Email: support@huawei.com

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#### About This Manual

#### **Release Notes**

This manual applies to HG520 V100R001.

#### **Related Manuals**

The related manuals are listed in the following table.

Manual	Content	
EchoLife HG520 Home Gateway User Manual	It is used for assisting you in data configurations and typical applications.	
EchoLife HG520 Home Gateway Quick Quide	It will guide you to install HG520 quickly.	

#### Organization

The manual introduces the system structure, hardware description, configuration guide of the HG510.

There are four chapters in the manual.

**Chapter 1 System Overview** profiles the system characteristics, main functions, system structure, external interfaces and networking applications of the HG520.

**Chapter 2 Hardware Description** focuses on the hardware modules of the HG520. It discusses in detail the structure and configuration of the hardware system of the equipment. This chapter covers the front panel, real panel and the HG520 connection.

#### **Chapter 3 Preparing Configuration**

**Chapter 4 Quick Setup** presents the quick setup configuration of the HG520 step by step.

**Chapter 5 Advanced Setup** presents the advanced setup configuration of the HG520 step by step.

**Chapter 6 Wireless Setup** presents the wireless setup configuration of the HG520 step by step.

**Chapter 7 Diagnostics** presents the diagnostics service of the HG520.

**Chapter 8 Management** presents the management service of the HG520.

Chapter 9 Device Info presents the device info of the HG520 .

**Chapter 10 Technical Specifications** presents the technical specification of the HG520.

**Chapter 11 Appendix** includes the abbreviations and acronyms used in this manual.

#### Intended Audience

The manual is intended for the following readers:

- Technical marketing specialists
- Installation engineers and technicians
- Operation and maintenance personnel

#### Conventions

The manual uses the following conventions:

#### I. General conventions

Convention	Description
Arial	Normal paragraphs are in Arial.
Boldface	Headings are in <b>Boldface</b> .

#### II. GUI conventions

Convention	Description
<>	Button names are inside angle brackets. For example, click the <ok> button.</ok>
[]	Window names, menu items, data table and field names are inside square brackets. For example, pop up the [New User] window.
1	Multi-level menus are separated by forward slashes. For example, [File/Create/Folder].

#### III. Symbols

Eye-catching symbols are also used in this manual to highlight the points worthy of special attention during the operation. They are defined as follows:

Caution, Warning, Danger: Means reader be extremely careful during the operation.

Note, Comment, Tip, Knowhow, Thought: Means a complementary description.

#### **IV. Environmental Protection**

This product has been designed to comply with the requirements on environmental protection. For the proper storage, use and disposal of this product, national laws and regulations must be observed.

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## Chapter 1 System Overview

Welcome to purchase the EchoLife HG520 ADSL AP router. With the HG520, you can access the Internet.

This User Manual will show you how to install and set up the HG520.



## **1.1 System Features**

- Built-in ADSL modem for high speed Internet access
- Network Address Translation (NAT) and IP filtering functions to provide network sharing and firewall protection for your computers
- 4-port switch to build your own local network
- Easy configuration through a web browser
- IEEE 802.11g 54Mbit/s Access Point

## **1.2 System Requirements**

In order to use the HG520 ADSL AP router, you need to have the following:

- ADSL service up and running on your telephone line, with at least one public Internet address for your LAN.
- One or more computers each containing an Ethernet 10Base-T/100Base-T network interface card (NIC) or wireless network adapter.
- For system configuration, use the supplied web-based program: a web browser such as Internet Explorer V5.0 or later, or Netscape V4.7 or later .

# **Chapter 2 Hardware Description**

In addition to this manual, the HG510 shall arrive with the following:

Item	Quantity
HG520 ADSL AP router	1
Power adapter	1
Ethernet cable	1
Phone cable	1
Splitter	1
Product certificate, Qualitication Card	1
HUAWEI EchoLife HG520 Quick Start	1
CD	1

## 2.1 Front Panel

The front panel provides LEDs that indicate the status of the HG520.

#### Table 2-1 lists the LED indicators

Label	Color	Function
PWR	Green	On: The device is powered on Off: The device is powered off
LAN1-4	Green	On: The LAN link established and active Off: No LAN link
		Flashes during data transfer
	Groop	Flashes during the ADSL training mode
DSL Gleen		On: ADSL link established and active
		On: The device is active
Tx/Rx Green		Flashes during data transfer through ADSL line
WLAN	Green	On: The WLAN enabled Off: The WLAN disabled
		Flashes during data transfer

### 2.2 Rear Panel

The rear panel provides ports for the HG520 to receive/send data and get power supply.



Figure 2-1 Rear Panel of HG520

#### Table 2-2 lists ports function

Interface	Function
Power Button	Switches the device on and off
Power Jack	Connects to the power adapter cable
	Press the reset button for 2 seconds and the HG520 will be restarted (rebooted).
Reset	To reset to default settings, turn off the device first. Hold the Reset button and then turn on the device; wait for 5-8 seconds and then release the button. Reset device's configuration to factory default.
LAN1-4	RJ-45 connector: connects the device to your computer's Ethernet port, or to the uplink port on your LAN's hub, using the cable provided.
ADSL	RJ-11 connector: connects the device to a telephone jack using the supplied cable

## 2.3 Connecting the Hardware

You need to connect the HG520 to the phone jack, the power outlet, and your computer or network devices.

# Caution:

Before cable connection, turn off your computer(s), LAN hub/switch (if applicable), and the HG520.

#### I. Connect the ADSL cable

Connect one end of the phone cable to the RJ-11 connector on the rear panel of HG520. Connect the other end to the ADSL outlet provided by your service provider (normally MODEM port of the attached splitter).

#### II. Connect the Ethernet cable

Connect one end of the Ethernet cable to the one of the four RJ-45 connectors on the rear panel of HG520, connect the other end to your computer's network adaptor (NIC). If you are connecting a LAN to HG520, attach one end of the Ethernet cable to a regular hub port and the other end to the LAN port on HG520.

#### III. Attach the power connector

Connect the AC power adapter to the power connector on HG520 and plug in the adapter to a wall outlet or power extension.

# IV. Turn on the HG520 and power up computers and LAN devices

Press the Power switch on the rear panel of the device .

Turn on and boot your computer(s) and any LAN devices such as hubs or switches.

#### V. Configure HG520 through the WEB interface

The detailed steps are described in Chapter 4 Quick Setup. It will help you configure the HG520 .Quick Setup

#### VI. Save the configurations and Reboot

To make the settings you made on the HG520 take effect, save the configurations and reboot.

# **Chapter 3 Preparing Configuration**

## 3.1 Setup

- Connect HG520 and computer with cross-over/ straight-through Ethernet cable.
- Power on HG520.
- The default IP address of HG520 is 192.168.1.1.

## **3.2 Establishing the Connection**

Enter the IP address (default: 192.168.1.1) of HG520 in the address line of Web Browser

1) The dialog box displayed, as shown in "Figure 3-1".

Enter Nets	work Passwo	rd	? ×	
<b>@</b>	Please type y	our user name and password.		
8	Site:	192.168.1.1		
	Realm	HG520 DSL Router		
	User Name	admin	]	
	Password	*****	1	
	🔲 Save this	password in your password list	-	
		ОК С	ancel	

Figure 3-1 Authentication

- 1) Please enter the management username/password into the fields (the default username/password is **admin/admin**).
- 2) Click on the <OK> button.
- If the authentication is valid, the home page "Device Info -Summary" will be displayed on the screen. Refer to "Figure 3-2".

#### Chapter 3 Preparing Configuration

Device Info	Device Info			
immary AN	Board ID:	96348GW-H0520-4		
tistics	Software Version:	EchoLifeHG520V100R001801D010.A2p8018b2.d15h_build 4		
ite	Bootloader (CFE) Version:	2 1.0.37-0.6		
RP	Wineless Driver Version:	3.91.23.0		
less nostics	Line Rate - Upstream (Kbps): Line Rate - Downstream (Kbps):		100 1712	
anagement	LAN IP Address:		192.168.1.1	
	Default Gateway:			
	Primary DNS Server:			
mo - o -	Secondary DNS Server:			

Figure 3-2 HG520 Home Page

## Chapter 4 Quick Setup

The system administrator can configure HG520 remotely or locally through a Web Browser. Network configuration needs to be planned and decided before the configuration procedure is started.

Quick Setup allows system administrator to select the appropriate operation mode and configure the corresponding settings step by step to create a connection. The following five operation modes are supported:

- PPP over Ethernet (PPPoE)
- IP over ATM (IPoA)
- Bridging
- MAC Encapsulation Routing (MER)
- PPP over ATM (PPPoA)

## 4.1 Configuring PPPoE

Click on <Quick Setup> in the left frame, and follow the steps below to create a PPPoE connection.

#### I. ATM PVC Configuration

🎆 ни	AWEI
Device Info Qolck Setup Advanced Setup Wireless Diagnostics Management	Quick Setup         In Quick Setup will guide you through the steps necessary to configure your CSL Router.         ATM PVC Configuration         Disk Auto-connect         In Virtual Push latentifier (VFI) and Virtual Channel Identifier (VCI) are needed for setting up the ATM PVC. Do not change VFI and Channels User Steps views.         Virtual Push latentifier (VFI) and Virtual Channel Identifier (VCI) are needed for setting up the ATM PVC. Do not change VFI and Channels User Steps views.         Virtual Push latentifier (VFI)         Virtual Push latentifier (VFI)         Disk Auto-connect         Disk Option         Disk Option

Figure 4-1 Quick Setup – ATM PVC Configuration

- 1) Enter the VPI/VCI values. The actual parameter is provided by your ISPs, and you can contact them to get the detailed information.
- 2) Disable "DSL Auto-connect" .
- 3) Check to enable QoS.
- 4) Click on <Next> to go to next step.

#### II. Connection Type and Encapsulation Mode Configuration

Device Info	Connection Type
juick Setup Advanced Setup	Select the type of network protocol and encapsulation mode over the ATM PVC that your ISP has instructed you to use.
Wireless Variantics	C PPP over ATM (PPPoA)
lanagement	🕫 PPP over Ethernet (PPPoE)
	C MuC Encapsulation Routing (MER)
	C IP over ATM (IPpa)
	C Bridging
	Encapsulation Mode
	Back Next

**Figure 4-2** Quick Setup – Connection Type and Encapsulation Mode

- Select "PPP over Ethernet (PPPoE)", and the "Encapsulation Mode". The actual parameter is provided by your ISPs, and you can contact them to get the detailed information.
- 2) Click on <Next> to go to next step.

#### III. PPP Username and Password Configuration

Device Info	PPP Username and Password
Quick Setup Advanced Setup Wireless Diagnostics Management	FED usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.
	PPP Usemame: HG520
	PPP Password:
	PPPoE Service Name:
	Authentication Method: AUTO
	Dial on domand (with idle timeout timer)
	Inactivity Timecut (minutes) [1-4320]: 0
	PPP IP extension
	Back Next

Figure 4-3 Quick Setup – PPP Username and Password

- Enter "PPP Username", "PPP Password", and select "Authentication Method" (AUTO/PAP/CHAP). The actual parameter is provided by your ISPs, and you can contact them to get the detailed information.
- 2) The "Dial on demand" function, if checked, will tear down the PPP link automatically when there is no outgoing packet for the programmed period of time that is set below.
- The "PPP IP extension" is a special feature provided by some ISPs. Unless your service provider specifically requires this setup, do not select it.
- 4) Click on <Next> to go to next step.

#### Dote:

- HG520 activates PPPoE connection automatically when user wants to access Internet and there is no active PPPoE connection.
- The users are able to assign some specific ATM PVC(s) to run PPPoE, if HG520 has multiple ATM PVC connections.

🧼 ни	AWEI				
Device Info Quick Sotup Advanced Setup Wireless Diagnostics Management	Enable IGNP Multicast Enable 3240 Multicast Enable WAN Service Service Name	, and WAN Service	Back Next		

#### IV. IGMP Multicast, WAN service configuration

Figure 4-4 Quick Setup - IGMP Multicast, WAN service

- 1) Check to Disable/Enable IGMP Multicast, and WAN Service.
- 2) Click on <Next> to go to next step.

#### V. Device Setup Configuration

🧼 ни	AWEI
Device Info Quick Setup Advanced Setup Wireless Diagnostics Management	Device Setup         Configure the DSI, Router IP Address and Subnet Mask for LAN interface.         IP Address:       102.168.1.1         Subnet Mask:       0         Chable DHCP Server         Start IP Address:       102.168.1.2         IP Address:       102.168.1.2         End IP Address:       102.168.1.2         Start IF Address:       102.168.1.2         End IP Address:       102.168.1.2         Subnet Mask:       102.169.1.2         Subnet Mask:       102.169.1.2

Figure 4-5 Quick Setup – Device Setup

- 1) Enter IP (LAN IP) and Subnet Mask.
- Select to Disable/Enable DHCP Server, use DHCP Server Relay, and configure related settings for that mode.
- HG520 will assign IP address, subnet mask, Default gateway IP address and DNS server IP address to host computers which connect to its LAN.
- Select "Configure the second IP Address and Subnet Mask for LAN interface" and configure if the second IP Address is used.

#### Discrete Note:

Network Address Translation (NAT) function is default enabled and is not showing on the page to prevent it from being disabled.

- 5) Click on <Next> to go to next step.
- **VI. Wireless Configuration**

MU/	AWEI		
Device Info Qakk Setup Advanced Setup Wireless Diagnostics Management	Wireless — Setup Bhable Wireless P Enter the wireless network name (also known as SSID). SSID: Ingrid	Bad Next	

Figure 4-6 Quick Setup - Wireless Setup

 Check "Enable Wireless" to enable wireless radio or uncheck to disable.

- Configure SSID, "SSID" is the network name shared among all devices in a wireless network. It is case-sensitive and must not exceed 32 alphanumeric characters.
- 3) Click on <Next> to go to next step.

evice Info uick Setup dvanced Setup	WAN Setup - Summ Make sure that the set	a <b>ry</b> ttings below ma
freless	VPI / VCE	1/32
postics	Connection Type:	MER
ingement.	Service Name:	mer_1_32
	Service Category:	UBR
	IP Address:	172.24.10.28
	Service State:	Enabled
	NAT:	Enabled
	Firewall:	Disabled
	IGMP Multicast:	Disabled
	Quality Of Service:	Enabled

#### VII. WAN Setup – Summary

Figure 4-7 Quick Setup – WAN Setup – Summary

The last page displays a summary of previous settings. Make sure that the configurations match the settings provided by ISP, and then click on <Save/Reboot> button to complete the configuration procedure.

## 4.2 Configuring IPoA

Click on <Quick Setup> in the left frame, and follow the steps below to create an IPoA (Routed) connection.

#### I. ATM PVC Configuration

🧼 ни	AWEI
Device Info Quick Setup Advanced Setup Wireless Diagnostics Management	Qakk Setup         This Quick Setup will guide you through the steps recessary to configure your DSL Router.         AMPVC Configuration         Setup 4 advach to to below to enable DSL Auto-connect process.

Figure 4-8 Quick Setup – ATM PVC Configuration

- Enter the VPI/VCI values. The actual parameter is provided by your ISPs, and you can contact them to get the detailed information.
- 2) Click on <Next> to go to next step.

#### II. Connection Type Configuration

Device Info	Connection Type
Quick Setup Advanced Setup	Select the type of network protocol and encapsulation mode over the ATM PVC that your ISP has instructed you to use.
Wireless	C PPP over ATM (PPPoA)
Management	C PPP over Ethernet (PPPoE)
	C MAC Encapsulation Routing (MER)
	C IP over ATM (IPoA)
	C andging
	Encapsulation Made
	Back Fant
	Bast Faurt

**Figure 4-9** Quick Setup – Connection Type and Encapsulation Mode

- Select "IP over ATM (IPoA)", and the "Encapsulation Mode" (Please contact you ISP for the information).
- 2) Click on <Next> to go to next step.

#### **III. WAN IP Settings Configuration**

🎆 ни	AWEI
Devke Info Quick Setup Advanced Setup Wirelens Diagnostics Management	WAN IP Settings         Enter information provided to you by your ISP to configure the WAN IP settings.         Note: CHCP in not supported in IPGa mode. Charging the default gateway or the CMS effects the whole system. Configuring them with static values will disable the automatic assignment from other WAN connection.         WAN IP Address:       122.24.10.28         WAN Submit Multi:       225.255.0.0         Image: Want Submit Multiple default gateway:       122.24.1.1         Use the following GMS server:       172.24.1.2         Use the following CMS server:       172.24.1.2         Secondary DMS server:       172.24.1.2

Figure 4-10 Quick Setup- WAN IP Settings

- Set WAN IP/Subnet Mask, default gateway, and DNS server settings. The actual parameter is provided by your ISPs, and you can contact them to get the detailed information.
- 2) Click on <Next> to go to next step.

#### IV. NAT, IGMP Multicast, and WAN Service Configuration

HU.	
evice Info vick Setup idvanced Sotup viceloss isignostics tanagement	Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).         Enable NAT       IP         Enable NAT       IP         Enable FRAMP Multicast, and WAN Service       Inable NAM Service         Enable NAM Service       IP         Service Name:       Ipoa_1_32         IBM       Ipart

**Figure 4-11** Quick Setup – IPoA – NAT, IGMP Multicast, and WAN service.

- 1) Check to Enable/Disable NAT and Firewall functions.
- 2) Check to Enable/Disable IGMP Multicast, and WAN Service.
- 3) Click on <Next> to go to next step.

#### V. Device Setup

Device Info Quick Setup Advanced Setup Wireless Diagnostics Management	Device Setup         Configure the DDL Router IP Address and Subnet Mask for LAW Interface.         P Address:       192.160.1.1         Worker DAPP Server         Or Device DAPP Server         Setup IP Address:       192.160.1.254         Lessed Time (hour): [24    Configure the second IP Address and Subnet Mask for LAN Interface          Back       Next

Figure 4-12 Quick Setup – Device Setup

- 1) Enter IP (LAN IP) Address and Subnet Mask to HG520.
- Select to Disable/Enable DHCP Server, use DHCP Server Relay, and configure related settings for that mode.
- Select "Configure the second IP Address and Subnet Mask for LAN interface" and configure if the second IP Address is used.
- 4) Click on <Next> to go to next step.

#### VI. Wireless Setup

🍈 ни	AWEI
Device Info Duick Setup Advanced Setup Wireless Diagnostics Management	Wireless Setup Bruble Wireless P Erter the wireless network name (also known as SSID). SSID: ngrd

Figure 4-13 Quick Setup – Wireless Setup

- 1) Check "Enable Wireless" to enable wireless radio or uncheck to disable.
- Configure SSID, "SSID" is the network name shared among all devices in a wireless network. It is case-sensitive and must not exceed 32 alphanumeric characters.
- 3) Click on <Next> to go to next step.

VII. WAN Setup – Summary

evice Info uick Setup dvanced Setup	WAN Setup - Summ Make sure that the set	tup - Summary e that the settings below match the settings provided
reless	VPI / VCI:	1/32
Diagnostics Management	Connection Type:	IPoA
	Service Name:	poa_1_32
	Service Category:	UBR
	IP Address:	172.24.10.28
	Service State:	Enabled
	NAT:	Enabled
	Firewall:	Disabled
	IGMP Multicast:	IGMP Multicast: Disabled
	Quality Of Service:	Enabled

Figure 4-14 Quick Setup - WAN Setup - Summary

The last page gives a summary of previous steps. Make sure that the settings match the settings provided by ISP, and then click on "Save/Reboot" button to complete the configuration procedure.

## 4.3 Configuring Bridge

Click on <Quick Setup> in the left frame, and follow the steps below to create a Bridging connection.
#### I. ATM PVC Configuration

evice Info	Quick Setup
lick Setup Ivanced Setup	This Quick Setup will guide you through the steps necessary to configure your DSL Router.
reless	ATM PVC Configuration
ngnostics inagement	Select the check box below to enable DSL Auto-connect process.
	DGL Auto-connect
	The Virbal Path Identifier (VPI) and Virbal Channel Identifier (VCI) are needed for setting up the ATM PVC. Do not change VPI and VCI numbers unless you EIP instructs you otherwise.
	Visit (se could performed)     Enable Quality Of Service     Enable Quality Of Service     Enabling QoS for a PVC improves performance for selected classes of applications. However, since QoS also consumes system     resources, the number of PVCs will be reduced consequently. Use Advanced Setup/Quality of Service to assign priorities for     the aveilations.
	Enable Quality Of Service P
	hust

Figure 4-15 Quick Setup – ATM PVC Configuration

- 1) Enter the VPI/VCI values. Please contact you ISPs for the information.
- 2) Click on <Next> to go to next step.

#### II. Connection Type Configuration

Device Info Duick Setup	Connection Type
Advanced Setup	Select the type of network protocol and encapsulation mode over the ATM PVC that your ISP has instructed you to use.
Wireless Normontice	C PPP over ATM (PPPcA)
Management	C PPP over Ethernet (PPPoE)
	C MAC Encapsulation Routing (MER)
i o fector	C IP over ATM (IPoA)
	@ Brdgng
	Encapsulation Mode
	LLCSINAP-BRIDGING
1.2.2.1	Buck Teent

**Figure 4-16** Quick Setup – Connection Type and Encapsulation Mode

- Select "Bridging", and the "Encapsulation Mode". The actual parameter is provided by your ISPs, and you can contact them to get the detailed information.
- 2) Click on <Next> to go to next step.

#### **III. WAN Service Configuration**

🧼 ни	AWEI
Device Info Quick Setup Advanced Setup Wireless Diagnostics Management	Unselect the check box below to disable this WAN service Enable Bridge Service : Service Name:

Figure 4-17 Quick Setup - WAN Service

- Give a service name and check the box to enable this WAN service.
- 2) Click on <Next> to go to next step.

#### IV. Device Setup

M HU	AWEI
Device Info Quick Sotup Advanced Sotup Wireless Diagnostics Management	Device Setup Configure the DSL Router IP Address and Subnet Mask for your Local Area Network (LAN). IP Address: 192.108.1.1 Subnet Mask: 295.295.295.0 Book Nett

Figure 4-18 Quick Setup - Device Setup

- 1) Enter LAN IP Address and Subnet Mask.
- 2) Click on <Next> to go to next step.

#### V. Wireless Setup

🍈 ни	AWEI	
Device Info Quick Setup Advanced Getup Wireless Diagnostics Management	Wireless Setup Enable Wireless D Enter the wreless network name (also known as SSID). SSID: nyrkt	

Figure 4-19 Quick Setup – Wireless Setup

- 1) Check "Enable Wireless" to enable wireless radio or uncheck to disable.
- Configure SSID, "SSID" is the network name shared among all devices in a wireless network. It is case-sensitive and must not exceed 32 alphanumeric characters.
- 3) Click on <Next> to go to next step.

VI. WAN Setup – Summary

Device Info Quick Setup Advanced Setup Wireless	WAN Setup - Summ Make sure that the set	a <b>ry</b> ttings below mat
	VPI / VCI:	1/32
ostics	Connection Type:	Bridge
end ogenom a	Service Name:	br_1_32
	Service Category:	UBR
	IP Address:	Not Applicable
	Service State:	Enabled
	NAT:	Disabled
	Firewall:	Disabled
	IGMP Multicast:	Not Applicable
	Quality Of Service:	Enabled

Figure 4-20 Quick Setup – WAN Setup – Summary

The last page gives a summary of previous steps. Make sure that the settings match the settings provided by ISP, and then click on <Save/Reboot> button to complete the configuration procedure.

# 4.4 Configuring MER

Device Info	Connection Type
Juick Setup	Select the type of network protocol and encapsulation mode over the ATM PVC that your ISP has instructed you to use.
Advanced Setup Mireless Diagnostics	C PPP over ATM (PPPoA)
Aanagement	C PPP over Ethernet (PPPoE)
21 × 21/1	MAC Encapsulation Routing (MER)
	♥ P over ATM (POA)
	C Bridging
	Encapsulation Mode
	LLCSNAF-BRIDODIO -
	Back Next
	Each Faurt

**Figure 4-21** Quick Setup – Connection Type and Encapsulation Mode

Configuration of MER is similar to IPoA. Select "MAC Encapsulation Routing (MER)" in "Connection Type". For other configuration, please refer to IPoA settings "4.2 Configuring IPoA".

### 4.5 Configuring PPPoA

Configuration of PPPoA is similar to PPPoE. Select "PPP over ATM (PPPoA)" in "Connection Type". For other configuration, please refer to "4.1 Configuring PPPoE ".

Device Info	Connection Type
Quick Setup Advanced Setup	Select the type of network protocol and encapsulation mode over the ATM PVC that your ISP has instructed you to use.
Wireless Diagnostics	PFP over ATM (PPPIDA)
Management	C PPP over Ethernet (PPPoE)
	C Mild Encapsulation Routing (MER)
	O IP over ATM (IPoA)
	C Bridging
	Encapsulation Mode
	Badi: Next

**Figure 4-22** Quick Setup – Connection Type and Encapsulation Mode

# Chapter 5 Advanced Setup

Advanced Setup allows system administrator to configure the following topics:

- WAN
- LAN
- NAT
- Security
- Quality of Service
- Routing
- DNS
- DSL
- Port Mapping

# 5.1 Configuring WAN

Advanced Setup WAN LAN	Wide Area Network (WAN) Setup Choose Add, Edit, or Remove to configure WAN Interfaces. Choose Save/Reboot to apply the changes and reboot the system.										
NAT	VPI/VCI	Con. ID	Category	Service	Interface	Protocol	Igmp	Qo5	State	Remove	Edit
Parental Control Quality of Service	1/32	1	UBR	mer_1_32	nas_1_32	MER	Disabled	Enabled	Enabled		Edit
Verceless Diagnostics Management											

Figure 5-1 Advanced Setup – WAN

This page shows the current existing WAN interfaces in the system. User can choose <Add>, <Edit> or <Remove> to configure WAN interfaces. For details about Add and Edit procedure, please refer to "Chapter 4 Quick Setup".

### 5.2 Configuring LAN

Please refer to "4.1 V. Device Setup".

## 5.3 Configuring NAT

Three functions are supported in NAT: Virtual Servers,Port Triggering, and DMZ Host.

### 5.3.1 Virtual Servers Configuration

Device Info Advanced Setup WAN LAN NAT Virtual Servers Port Triggering	NAT — Virt Virtual Serv with private port number	tual Servers Setup er allows you to dire IP address on the L/ r used by the server	ct incoming traffic f VN side. The Intern on the LAN side. A	rom WAN sk al port is req maximum 33 Add	de (identified by Pi uired only if the ei 2 entries can be co Retriove	rotocol and Externa demal port needs t infigured.	l port) to the Inte to be converted to	mal server o a different
DM2 Host Parental Control Quality of Service Routing DNS DSL Port Mapping Wireless Diagnostics Management	Sorver Name	External Port Start	External Port End	Protocol	Internal Port Start	Internal Port End	Server IP Address	Remove

Figure 5-2 Advanced Setup - NAT

Virtual Server allows you to direct incoming traffic from WAN side (identified by Protocol and External port) to the Internal server with private IP address on the LAN side. The Internal port is required only if the external port needs to be converted to a different port number used by the server on the LAN side. Up to 32 entries can be configured.

- Click on <Add> to enter configuration page to add your own rule(s). Some commonly used servers (Web, FTP, Mail, and so on) are pre-defined in HG520. User can simply select the desired server from the pull-down menu and assign the IP address of the local PC.
- To delete the configured rule(s), check the "Remove" box of the specific rule(s) and click on <Remove>.

MUA	WEI									
Device Info Advanced Setup WAN LAN NAT Virtual Servers Port Triggering	NAT Virtual Servers Setup Virtual Server allows you to direct incoming traffic from WAN side (in with private IP address on the LAN side. The Internal port is required port number used by the server on the LAN side. A maximum 32 ent Add Re									
DMZ Host Parental Control Quality of Service Routing DNS DSL Port Mapping Wireless Diagnostics Management	Server Name	External Port Start	External Port End	Protocol	Int Sta					

Figure 5-3 Advanced Setup – NAT – Virtual Servers

### 5.3.2 Port Triggering Configuration

Some applications require that specific ports in the Router's firewall be opened for access by the remote parties.

Port Trigger dynamically opens the "Open Ports" in the firewall when an application on the LAN initiates a TCP/UDP connection to a remote party using the "Triggering Ports".

The Router allows the remote party from the WAN side to establish new connections back to the application on the LAN side using the "Open Ports".

evice Info dvanced Setup WAN LAN NAT Virtual Servers Port Triggering	NAT Port Triggering Some applications requir dynamically opens up the party using the "Trigger application on the LAN si	Setup e that specific por I 'Open Ports' in t Ig Ports'. The Rou de using the 'Ope	rts in the Ri he firewall der allows n Ports'. A	outer's I when a the rem maximu Ad	frewall n apple ote par m 32 e d Re	be opened ation on th ty from the nitries can b move	l for aco e LAN in WAN s be config	uss by itilates ide to e gured.	the remote p a TCP/JDP o establish nev	parties. Port Trigger connection to a remo v connections back to
DM2 Host Recented Control		Application	Īr	loor		0	loeo		Remove	
Quality of Service		Name	Protocol	Port Ranne		Protocol	Port 9 anon			
outing				Start	End		Start	End		
NS					- and and		Castle's			
GL.										
ore mapping release										
mostics										
agement										
nagement										

Up to 32 entries can be configured.

Figure 5-4 Advanced Setup – NAT – Port Triggering

 Click on <Add> to enter configuration page to add your own rule(s),show as Figure 5-4. Some applications such as

games, video conferencing, remote access applications and others require that specific ports in the Router's firewall be opened for access by the applications. You can configure the port settings from this screen by selecting an existing application or creating your own (Custom application) and click <Save/Apply> to add it.

 To delete the configured rule(s), check the "Remove" box of the specific rule(s) and click on <Remove>.

Int Trippering Instance such as gener, where confer st. You Can configure the port setting growther of entries that can be o interes: ed an sophesion: dam application:	rencing, remote acces gs from this screen by coalligured:30	ts applications and off y takecting an existing	ters require that spe application or creati
Aret Start Trigger Part End Trigg TGS TGS TGS TGS TGS TGS TGS TGS TGS TGS	per Protecol Dopen P P V V V V V V V V V V V V V	Serv/Ag	tod Open Prets TCP TCP TCP TCP TCP TCP TCP TCP TCP
		TCP         W           TCP         W	ICP         W           TCP         W

Figure 5-5 Advanced Setup – NAT – Add Port Triggering

### 5.3.3 DMZ Host Configuration

The DSL router will forward IP packets from the WAN that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.

Enter the computer's IP address and click <Apply> to activate the DMZ host.

Clear the IP address field and click <Apply> to inactivate the DMZ host.

Device Info	NAT DM2 Host
Advanced Setup WAN	The DSI, router will forward IP packets from the WMV that do not belong to any of the applications configured in the Virtual Servers table to the DM2 host computer.
LAN	Some the cover dark 10 soldeness and she's Angle? In activate the PAPP locat
Virtual Servers Port Triggering	Clear the IP address field and click "Apply" to deactivate the DM2 host.
DM2 Host Parental Control	EMIZ Host IP Address:
Quality of Service Routing	Save/Apply
DNS	
DSL	
Port Mapping	
Wireless	
Diagnostics	
Management	

Figure 5-6 Advanced Setup - NAT - DMZ Host

## 5.4 Configuring Security

Two functions are supported in Security: Outgoing IP Filtering and MAC Filtering.

### 5.4.1 Outgoing IP Filtering Configuration

By default, all outgoing IP traffic from LAN is allowed, but some IP traffic can be blocked by setting up filters.

The screen allows you to create a filter rule to identify outgoing IP traffic by specifying a new filter name and at least one of the conditions below.

All of the specified conditions in this filter rule must be satisfied for the rule to take effect.

wice Info Ivanced Setup WAN AN	By default, all out; Choose Add or Re	oing IP trai move to co	e Mc from LAN is allowed, but som nfigure outgoing IP filters.	e IP traffic can	be <b>BLOCKED</b> by setting up	filters.	
ecurity	Filter Name	Protocol	Source Address / Mask	Source Port	Dest. Address / Mask	Dest. Port	Remove
IP filtering	filter_www	TCP	192.168.1.100 / 295.255.255.0			60	
DNS DSL Port Mapping ireless agnostics anagement							



- Click <Add> to configure outgoing IP filters, up to 32 entries can be configured.
- 2) To remove, check the item and click <Remove>.
- 3) Click <Save/Apply> to save and activate the filter.

Figure 5-8 shows the configuration that prevents a local computer (IP address: 192.168.1.100) from surfing the Internet.

he screen allows you to creat elow. All of the specified cond	te a filter rule to identify outgoing IP traffic by specifying a new filter name and at least one condition litions in this filter rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and
elow. All of the specified cond	ations in this filter rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and
C LIVIEDE STME TITLET .	
and the second sec	
ilter Name:	filter_www
notacol:	TOP
ource IP address:	192.168.100.1
ource Subnet Mask:	255.255.255.0
iource Port (port or port:port)	11
estination IP address:	
estination Subnet Mask:	
estination Port (port or portip	(froc
10 - 21 - 31	Characteristics and the second s
	itter Name: rotocol: ource IP address: ource Subnet Mask: ource Fort (port or portsport) estination IP address: estination Subnet Mask: estination Port (port or ports;

Figure 5-8 . Advanced Setup – Firewall – Add new Outgoing IP Filter

### 5.4.2 Incoming IP Filtering Configuration

By default, all incoming IP traffic from the WAN is blocked when the firewall is enabled. However, some IP traffic can be accepted by setting up filters.

The screen allows you to create a filter rule to identify incoming IP traffic by specifying a new filter name and at least one of the conditions below.

All of the specified conditions in this filter rule must be satisfied for the rule to take effect.

Security JP Filtering		ure incoming	g 3Þ filler1.	d when the firewall is enabled	I. However, son	te IP traffic can be ACCEP	TED by setting	g up Mers.
3P Filtering	Filter Name	VPI/VCI	Protocol	Source Address / Masle	Ssurre Port	Desl. Address / Mask	Dest. Part	Remave
Outpains	\$23	ALL	TCP		122			
Wordsar Diagnostics Management								

Figure 5-9 Advanced Setup – Security – Outgoing IP Filter

- Click <Add> to configure outgoing IP filters, up to 32 entries can be configured.
- 2) To remove, check the item and click <Remove>.
- 3) Click <Save/Apply> to save and activate the filter.

Figure 5-10 shows the configuration that allows a remote PC (IP address: 10.0.12.254) to access the local FTP server.

Device Info Advanced Setup WAN LAN PAT Partitions Devices Devi	Add 10 Filter - Taxaning The cover allow you to cover all for rule to identify recovery gift outlies by puerfying a new filter name and at least one condition below. All of the peofed conditions in this filter rule as best added for the call is take effect. Class 2 would pull by the toxy and detrain the filter. Filter Freesi Protocol: Source 10 Beldrem: Source Toxy (or of portionic). Endmarkers. En
Part Nagaing Wireless Diagnostics Management	Gebruich for for (Son Grouper) WWA Later (and Candigue and B. Karding and all forwall enabled only) Sales of last one or multiple WMI tarfacts displayed balance to goly that use. ∑ Sales All 20 mar_JJ2/mar_JJ2 Sales All 20 mar_JJ2/mar_JJ2

Figure 5-10 Advanced Setup – Security – Add new outgoing IP Filter

### 5.4.3 Parental Control Configuration

Parental Control allows user to create time of day restriction to a special LAN device connected to the Router.

Click <Add> to configure restriction rules. To remove, check the item and click <Remove>.

Up to 16 entries can be configured and used.

- articles of the top												
WAN	Username	MAC	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start	Stop	Remove
NAT	John	00:0c:6a:55:0e:52	Χ.		x		x			01:00	10:00	
Security	torn	00:0c:5e:be:55:52		х	×	R.	x			01:00	16:00	D
DNS DSL Port Mapping Wireless Diagnostics Management												

Figure 5-11 Advanced Setup – Firewall – Parental Control

- The MAC Address of the "Browser" automatically displays the MAC address of the LAN device, click the <Other MAC Address> button and enter the MAC address of the other LAN device.
- 2) To find out the MAC address of a Windows-based computer, go to command window and type "ipconfig/all".
- 3) Click <Save/Apply> to save and activate the restriction rule.

Device Info	Time of Day Restriction							
WAN LAN NAT Security	This page adds time of day re displays the MAC address of it Address" button and enter the command window and type "t	striction to a sp ne LAN device v MAC address o pconfig /all*.	ecial LAN de ihere the br if the other i	vice connec owser is rur LAN device.	ted to the Ri ning. To res To find out I	uler. The B trict other L/ he MAC add	owser's MAC N device, click ess of a Wind	Address' automa the "Other MAC ows based PC, g
IP Filtering Parental Control	User Name	Mary						
Quality of Service Routing DNS DSL	Browser's MAC Address     Other MAC Address     (procococococo)	00:80:C8:8E	85:58					
Port Mapping	Days of the week	MonTueWe	dThuFri S	rt Sun				
/ireless	Click to select							
Aagnostics Nanagement	Start Blocking Time (th:mm) End Blocking Time (th:mm)	00:00 17:50		Save/Ap	ply			

**Figure 5-12** Advanced Setup – Firewall – Add new Parental Control

## 5.5 Configuring Quality of Service

Quality of Service (QoS) (including IP Precedence, IP TOS and IEEE 802.1P) refers to a combination of mechanisms that jointly provide a specific quality level to application traffic crossing a network or multiple, disparate networks.

evice Info Advanced Setup WAN	Quality of	of Service dd ar Ren	Setup	e network t	raffic clas	505-					
LAN NAT Security	Class Name	Priority	IP Precedence	IP Type of Service	802.1P	Protocol	Source Address / Mask	Source Port	Dest. Address / Mask	Dest. Port	Remove
Quality of Service	class_a	LOW				TCP/UDP				80	
DNS	class_b	Medium				тср				21	
DSL Port Mapping	class_c	High	7	Minimize Delay		тср	192.168.1.100 / 255.255.255.0			20:200	п
lagnostics lanagement						Add Ry	emove				

Figure 5-13 Advanced Setup – Quality of Service

 Click on <Add> to create a class to identify the IP traffic by specifying at least one condition below.

Device Info Advanced Setup	Assign Priority and/or IP Precedence and/or If non-blank value is selected for 'IP Precedence' an upstream packet will be overwritten by the selected	Type Of Service for the class d/or 1P Type Of Service", the corresponding TOS byte in the IP header of the value.
WAN LAN NAT Security Quality of Service Routing DNS DSL DSL Port Mapping Wireless Siaonastics	Pronty: IP Precedence: IP Type Of Service: Specify In affic Conditions for the class Enter the following conditions either for IP layer or Protocol: Source IP Address: Source Subnet Mark:	Mabun • • • • • • • • • • • • • • • • • • •
lanagement	Secone Port (port or portport): Destination IP Address: Destination Schreit Maddress: Destination Port (port or port;port): 8002.1p Phontty:	20.221.170.29 205.205.205 205.205.205

Figure 5-14 Advanced Setup – Add new QoS rule

- 2) If multiple conditions are specified, all of them take effect.
- 3) Click <Save/Apply> button to save it.

## 5.6 Configuring Routing

There are three routing information related settings.

### 5.6.1 Default Gateway Configuration

rvice Info	Routing Detault Gateway
dvanced Setup	If Enable Automatic Assigned Default Gateway checkbox is selected, this router will accept the first received default gateway
WAN	assignment from one of the PFPoA, PFPoE or MER/DHCP enabled PVC(s). If the checkbox is not selected, enter the static default
LAN	gateway AND/OR a WAN interface. Click 'Save/Apply' button to save it.
NAT	NOTE: If changing the Astronatic Assigned Refault Cateway from unselected to selected. You must report the couter to get the
security	automatic assigned default gateway.
Quality of Service	
Routing	🗖 Enable Automatic Assigned Default Gateway
Default Gateway	
Static Route	
RIP	Use Default Gateway IP Address 172.24.1.1
DNS DOL	T the foto-form
DSL.	C OBS FIGHAGE
Purt mapping	
lamostics	Save/Apply
topoport	
anagement	
10 0. 0100 5	

Figure 5-15 Advanced Setup – Routing – Default Gateway

- If "Enable Automatic Assigned Default Gateway" checkbox is selected, HG520 will accept the first received default gateway assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s).
- If the checkbox is not selected, enter the static default gateway AND/OR a WAN interface.
- 3) Click <Apply> button to save it.

#### Dote:

If changing the "Enable Automatic Assigned Default Gateway" from unselected to selected, you must reboot HG520 to activate the automatic assigned default gateway.

### 5.6.2 Static Route Configuration

 Click on <Add> to create a new Static Route, up to 32 entries can be configured.

uranceu aetup			on inigen een j		
WAN	Destination	Subnet Mask	Gateway	Interface	Remove
LAN	172.24.29.0	255.255.255.0		br0	Г
Quality of Service Routing Default Gateway Static Routo RIP DNS DSG DSG Port Mapping fireless anagement					

Figure 5-16 Advanced Setup - Routing - Static Route

 Enter the destination network address, subnet mask, gateway AND/OR available WAN interface, and then click <Apply> to add the entry to the routing table.

Device Info	Routing — Static Route Ad	d				
Advanced Setup WAN LAN	Enter the destination network entry to the routing table.	address, subnet mask, g	atoway AND/OR avail	able WAN Interface	then click "Save/Apply" to	add the
NAT	Destination Network Address	214.4.23.0				
Quality of Service	Subnet Mask:	255.255.255.0	-			
Routing						
Default Gateway	C Use Gateway IP Address					
Static Route	Use Interface	LANA0 ·				
DNS						
DSL			Save/Apply			
Port Mapping						
Vireless						
Diagnostics						
lanagement						

Figure 5-17 Advanced Setup - Routing - Add new Static Route

### 5.6.3 RIP Configuration

The Routing Information Protocol (RIP) is designed for exchanging routing information within a small to medium-size network.

vevice Info vdvanced Setup vdvanced Setup vdvanced VAN LAN Security Quality of Service Routing Default Gateway Static Route RIP DNS DSL DSL DSL DPort Mapping Vireless Jiangarostics	Routing RIP Configuration         To actuate RIP for the device, select the 'Enabled' radio button for Global RIP Mode. To configure an individual interface, select the desred RIP version and operation, failowed by placing a check in the Enabled' checkbox for the interface. Click the 'Save/Apply' button to save the configuration, and to start or stop RIP based on the Global RIP mode selected.         Global RIP Mode       C Enabled         Interface.VPI/VCI Version       Operation: Enabled         Interface.VPI/VCI Version       Operation: Enabled         Interface.ltdl       Pacifie         <
--	---

Figure 5-18 Advanced Setup – Routing – RIP

To configure an individual interface, select the desired RIP version and operation:

- **RIP Version 1**: Class-based IP network.
- **RIP Version 2**: Classless IP network.
- **Operation Active**: Broadcast and listen to other RIP enabled devices.
- Operation Passive: Listen only.
- 1) Placing a check in the "Enabled" checkbox for the interface to complete the configuration.
- 2) Click the <Apply> button to save the configuration.
- To start/stop RIP for HG520, select the "Enabled/Disabled" radio button for Global RIP Mode.

## 5.7 Configuring DNS

### 5.7.1 DNS Server Configuration

🧼 ни	AWEI
Device Info Advanced Setup WAN NAT Socurity Quality of Service Routing DNS Server Dynamic DNS DSL Dot Mapping Wireless Diagnostics Management	DXS Gerver Configuration  If Trable Automatic Assigned DND' checkbox is selected, this router will accept the first received DAG assignment from one of the propu, PSPBG or MED_KHAD enabled PAC(c) of aring the connection establishment. If the checkbox is not selected, enter the primary and optional secondary DME server IP addresses. Click 'Save' button to save the new configuration. You must relocot the router to mise the new configuration detection.  C Enable Automatic Assigned DNE  Primary DNS server: 172_24.1.2  Secondary DNS server: 172_24.1.8  Secondary DNS server: 172_24.1

Figure 5-19 Advanced Setup – DNS Server

- If "Enable Automatic Assigned DNS" checkbox is selected, HG520 will accept the first received DNS assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment.
- 2) If the checkbox is not selected, enter the primary and optional secondary DNS server IP addresses.
- 3) Click <Apply> button to save it.

#### Discrete Note:

If changing from unselected "Enable Automatic Assigned DNS" to selected, you must reboot HG520 to get the automatic assigned DNS addresses.

### 5.7.2 Dynamic DNS Configuration

The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname in any of the domains. This function allows your HG520 to be more easily accessible from various locations of the Internet.

Before you proceed, please visit one of these two website to apply your own Dynamic DNS service: <u>www.dnadns.org</u> or <u>www.tzo.com</u>.

- 1) Click<Add> to configure Dynamic DNS.
- 2) To remove, check the item and click <Remove>.

Device Info Advanced Setup WAN LAN NAT	Dynamic DNS The Dynamic DNS service a DSL router to be more eas Choose Add or Remove to	sllows you to alias a dy ly accessed from vario configure Dynamic DNS	namic IP add us locations ( i.	iress to a i on the Inte	static hostna imot	me in any of	the many domain	ns, allowing your
Security Duality of Service		Hostname	Username	Service	Interface	Remove		
Routing		ADSL	router	dyndras	nas 1 32			
DNS				all the a				
DNS Server Dynamic DNS DSL Port Manning			Add	Remov	U			
fireless								
Vireless								
Vireless Diagnostics Management								

Figure 5-20 Advanced Setup – DNS – Dynamic DNS

- 3) Select your Dynamic DNS service provider from 'D-DNS provider', and enter your registration information.
- 4) Click <Save/Apply> to save the configuration.

WAN         This page allows you to add a Dynamic DNE address from DynDNE org or T20.           LAN         Dr.ChS provider         DynDNE org •           Security	d a Dynamic DNE address from DynDNE.org or T2D. DynDNE org • ADS: mor_1_32he_1_52 • router	Advanced Setup	Hur uynamic Doris	
NAT         D-CNS provider         DynLNS or mail           Security         Quality of Service         Hostmann           Routing         Interface         mmr32bu32 *           DVS         DynLNAS settlings	DynkNE og • ADG. men_1_32heu_1_52 •	WAN	This page allows you to	add a Dynamic DNS address from DynDNS.org or TZO.
Security Quality of Service Routing Interface me22hes32 DNS Server Dyn0X4S Settlings	NOS. mm_1_32km_1_32 •	NAT	D-DNS provider	DynDNS ong
Quality of Service     Hotmanne     ADSL       Routing     Interface     mm1_j22ha_j_32       DNS     DVSS	NORL VIEW J. 77 y	Security		
Routing Interface mc_j_32bs_j_32 • DNS Server DymDNS Settings	net_J_Zhao_J_22 •	Quality of Service	Hostname	ADSI.
DNS DNS Server DynDNS Settings	router	Routing	Interface	mtr_1_32/nav_1_32 •
DNS Server DynDAS Settings	router	DNS	101000000000000000000000000000000000000	
	router	DNS Server	DynDNS Settings	
Dynamic DNS Osername router		Dynamic DNS	Osername	router
DSL Password *****		DSL	Password	*****
Port Mapping		Port Mapping		
Vireless		Vireless		
biagnostics		Nagnostics		
Management		lanagement		in a second s
-ter tergetuert.				Save/Apply
reless		reless		
iagnostics		iagnostics		
In any second		lananomont		
		ione genera		Save/Apply

Figure 5-21 Advanced Setup - DNS - Add Dynamic DNS

## 5.8 Configuring DSL

This page allows you configure DSL related settings including Modulations, Phone Line Pair, and Capability. Due to the characteristics of DSL, any change to default settings is not recommended. Please consult your service provider for advice only if configuration is mandatory.

🎆 ни	AWEI	
Device Info Advanced Setup WAN LAN NAT Security Quality of Service Routing DNS DDS DDS DDS DDS DDS DDS DDS DDS DDS	DS. Setting: Select file modulator below. @ G.Dmt Enabled @ G.Dmt Enabled @ G.Z. Enabled @ Annext. Enabled @ Annext. Enabled @ Annext. Enabled @ Annext. Enabled @ Annext. Enabled @ Annext. Enabled @ Couldre par @ Date par Capability @ Enama Enable Date parls Capability @ Enama Enable Date parls Capability @ Enama Enable Date parls Date parls	

Figure 5-22 Advanced Setup – DSL

## 5.9 Configuring Port Mapping

Port Mapping supports multiple ports to PVC and bridging groups. Each group will perform as an independent network.

To support this feature, you must create mapping groups with appropriate LAN and WAN interfaces using the <Add> button.

The <Remove> button will remove the grouping and add the ungrouped interfaces to the Default group.

Up to 16 entries can be configured.

Device Info Advanced Setup WAN LAN NAT Security	Port Mapping Port Mapping s this feature, yo will remove the	A maximum upports multiple u must create m grouping and a	port to PV apping gro dd the ung	es can C and I ups w rouped
Quality of Service Routing	Group Name	Interfaces	Remove	Edit
DNS	Default	eth0, Wireless		
Port Mapping Wreiess Magnostics danagement	Add Remov	8		

Figure 5-23 Advanced Setup – Port Mapping

To create a new mapping group:

- Enter the Group name and select interfaces from the available interface list and add it to the grouped interface list using the arrow buttons to create the required mapping of the ports. The group name must be unique.
- Click <Save/Apply> button to make the changes take effect immediately.

#### D Note:

The selected interfaces will be removed from their existing groups and added to the new group.

HUA	AVVEI	
Device Info Advanced Setup WAN LAN NAT Security Quality of Service Routing DNS DSL DOSL DOSL DOSL DOSL DOSL DOSL DOSL	Port Mapping Configuration         To create a new mapping group:         3. Enter the Group name and select interfaces from the available interface list and add it to the grouped interface list using the arrow buttoms to create the required mapping of the ports. The group name must be unique.         2. Click Save/Apply buttom to make the changes effective immediately         Note that the selected interfaces will be removed from their existing groups and added to the new group.         Group Name:       One         Group of Interfaces       Available Interfaces         Windes       One         Interfaces       Interfaces	

Figure 5-24 Advanced Setup - Configuration

# Chapter 6 Wireless Setup

### 6.1 Configuring Basic Features

This page allows you to configure basic features of the wireless LAN interface.

Device Info Advanced Setup Wireless Basic Security MAC Sitter Wireless Bridge Advanced Station Info Diagnostics	Wineless         - Baaic           This page allows you to configure basic features of the wineless LAN interface. You can enable or disable the wineless LAN interface, hide the network from active scans, set the wineless network name (also known as SSID) and restrict the channel set based on country requirements.           Click "Apply" to configure the basic wineless options.           ID         Enable Wineless           Hide Access Point           SSID:         Ingrid
Management	BSBD: 00.03CUAI.Ad.21

Figure 6-1 Wireless Setup – Basic

 You can enable or disable the wireless LAN interface, hide the network from active scans (no broadcasting of your network name), set the wireless network name (also known as SSID, default: ingrid), and restrict the channels based on nation's requirements.

2) Click <Save/Apply> to save the configurations.

## 6.2 Configuring Security

Four types of wireless security are provided:

- Shared (WEP)
- 802.1X
- WPA/WPA2
- WPA/WPA2-PSK

### 6.2.1 WEP Configuration

Wired Equivalent Privacy (WEP) provides security by encrypting data over radio waves when data is transmitted from one end point to another. WEP is the weakest security method but the easiest one to configure.
Device Info Advanced Setup Mireless Basic	This page allows you to configure security features of the wireless LAN interface. You can sets the network authentication method, selecting data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength. Click: "Apply" to configure the wireless security options.				
Security MAC Filter Wireless Bridge Advanced Station Info iagnostics Ianagement	Nativork Authentication;	[Shared Y			
	WEP Encryption:	Exabled •			

Figure 6-2 Wireless Setup - Security - WEP

To enable WEP, select the following items step by step:

- Network Authentication: Shared
- Data Encryption: Enabled
- Encryption Strength: 128-bit (recommended for better security) or 64-bit

Click <Set Encryption Key> to enter your WEP keys.

Four keys for both encryption strengths can be stored here.

Wireless Bridge   Network Koy 3:     Advanced   Station Info     Station Info   Network Koy 4:     Diagnostics   Current Network Koy:	Device Info Advanced Setup Wireless Basic Security MAC Filter	Wireless Settings Enter 13 ASCII char Network Key 1: Network Key 2:	Encryption Keys acters or 26 hexadecimal digits for ajdks/2856djf/92-8 sjafi/30j492q304.rf jiedsj	128-bit encryption keys,	
Elene/Acply	Wireless Bridge Advanced Station Info Diagnostics Management	Network Key 3: Network Key 4: Current Network Ke	а: [] <u>-</u>	Sare/Apply	

Figure 6-3 Wireless Setup – Security – WEP

- Enter 13 ASCII characters or 26 hexadecimal digits for 128-bit encryption keys.
- Enter 5 ASCII characters or 10 hexadecimal digits for 64-bit encryption keys.
- 3) Select which key (1 4) to use from "Current Network Key".
- 4) Click <Save/Apply> to save the configuration.

### 6.2.2 802.1X Configuration

802.1X addresses the WEP weakness by adding user authentication, through RADIUS server. So you need to have your RADIUS server up and running before using 802.1X.

Security N MAC Filter Wireless Bridge Advanced Station Info	letwork Authentication:	802.1%
biomostics		
lanagement R R	ADIUS Server IP Address: ADIUS Port: ADIUS Key:	192.166.101.123
	VEP Encryption:	Enabled •

Figure 6-4 Wireless Setup – Security – 802.1X

- 1) To enable 802.1X, select "802.1X" in "Network Authentication".
- Enter your RADIUS server IP address, port number (default: 1812), and key.
- 3) Follow "6.2.1 WEP" to configure your WEP key
- 4) Click<Save/Apply> to save your configuration.

## 6.2.3 WPA/WPA2 Configuration

WPA (Wi-Fi Protected Access) is the strongest wireless security provided by HG520. Like 802.1X, WPA must co-work with RADIUS server as well. To enable WPA, select the following items step by step:

• Network Authentication: WPA/WPA2

- WPA Group Rekey Interval: in seconds. Default: 0 (no • re-keying).
- RADIUS Server IP Address/Port/Key: must match your • RADIUS server.
- WPA Encryption:TKIP(select AES or TKIP+AES for • WPA2).

Check your wireless network adapter security capability before vou decide which one to use.

Device Info Advanced Setup Wireless Basic Security MAC Filter Wireless Bridge Advanced	This page allows you to confi selecting data encryption, spe encryption strength. Click "Apply" to configure the Network Authentication:	gure security features of the waveless LNI interface. You can sets the network authentication method, ofly whether a network key is required to authenticate to this wireless network and specify the wireless security options.
Advanced Station Info Diagnostics Management	WPA Group Rekey Interval: RADIUS Sorver IP Address: RADIUS Port: RADIUS Key: WPA Encryption:	0 192-168-101-123 1912 TKIP e
	WEP Encryption:	Disabled •

Figure 6-5 Wireless Setup – Security – WPA

## 6.2.4 WPA/WPA2-PSK Configuration

WPA-PSK lets you take advantage of WPA without the trouble of setting up your own RADIUS server.

Device Info Advanced Setup Wireless	This page allows you to confi solocting data encryption, sp encryption strength. Click "Apply" to configure the	gure security features of the wireless LAN interface. You can sets the network authentication method, sofy whether a network key is required to authenticate to this wireless network and specify the wireless security options.
Security MAC Filter Wireless Bridge	Network Authentication:	WPA4SK -
Advanced Station Info Diagnostics Management	WPA Pre-Shared Key: WPA Group Rokey Interval:	1000
	WPA Encryption:	TKP
	WEP Encryption:	Desklad -
		Save/Apply

Figure 6-6 Wireless Setup – Security – WPA-PSK

- 1) To enable WPA-PSK, select "WPA-PSK" in "Network Authentication".
- Enter 8 to 63 ASCII codes or 64 hexadecimal (0-9, A-F) digits in "WPA Pre-Shared Key".
- 3) Click <Save/Apply> to save the configuration.

# 6.3 Configuring MAC Filter

Wireless MAC filter allows you to implement access control based on device's MAC address.

🧼 ни	AWEI
Device Info Advanced Setup Wireless Basic Security MAC Fitter Wireless Bridge Advanced Station Info Diagnostics Management	Wireless MAC filter MAC Retrict Mode: © Disabled © Allow © Deny MAC Address Remove Add Parnove

Figure 6-7 Wireless Setup - MAC Filter

- When you select "Allow" in "MAC Restrict Mode", only data from devices with matching MAC addresses in filter table can access HG520.
- If you select "Deny" in "MAC Restrict Mode", every device can access HG520 except those which have matching MAC addresses in the filter table.
- 3) To add filter entry, click on "Add" and enter the MAC address of HG520.
- Click <Save/Apply> to save the configuration. To <delete> the entry, select the entry and click <Remove>.

## 6.4 Configuring Wireless Bridge

Wireless Bridge (also known as Wireless Distribution System) can bridge data between two APs, which is particularly useful while wired cabling is not available.

#### Dote:

Only APs in same channel can be bridged.

Device Info Advanced Setup Wireless Basic Security MAC Fitter Wireless Bridge Advanced Station Info Diagnostics Management	Winders - Bridge     This page allow you to configure workers bridge flattures of the workers LAN Preface. You can select Winkers Bridge (allow invoice a Winkers Budney for System) to disables access point functionality. Selecting Access Point enables access point functionality. Selecting Access Point enables access point functionality. Winkers bridge flatters is the Access Point enables access point functionality. Selecting Access Point enables access point functionality. Selecting Access Point enables access point functionality will be granted access. Belefing for or Enabled/Econ enables were being bridge selected in Remote Bridges will be granted access. Click 'Selecting' for or Enabled/Econ enables were were bridges of the were seconds to update.     Click 'Selection' to update the remote bridges bridge option.     AP Mode:     Bridge Restrict:						
	Remote Bridges MAC Address:		SSID	BSSID			
		0	H0520_100	02:10:18:01:00:02			
		C	RT-WW	00:03:C9:A1:E5:44			

Figure 6-8 Wireless Setup – Wireless Bridge

**AP Mode**: Wireless Bridge- listens and answers other APs onlyAccess Point- Wireless Bridge also with AP functionality.

**Bridge Restrict**: Disabled- any AP will be granted access; Enabled- only selected APs (Max. 4) with specified MAC address will be granted access; Enabled (Scan)- as above, but HG520 will scan available AP for you to select.

Refresh: Re-scan the available AP.

Save/Apply: Save the configuration.

## 6.5 Configuring Advanced Setting

In most cases, HG520 work well with wireless default settings. Modification is not recommended unless you are very familiar with these parameters.

- **Channel**: Select the appropriate channel from the provided list to correspond with your network settings. All devices in your wireless network must use the same channel in order to function correctly. Default is **7**.
- Rate: The range is from 1 to 54Mbit/s. The data transmission rate should be set according to the speed of your wireless network. You can set one transmission speed, or keep the default setting "Auto" to have the router automatically detect the fastest possible data rate.
- Basic Rate Set: Select the basic rate that wireless clients must support.
- Fragmentation: This value should remain at its default setting of **2346**. The range is 256-2346 bytes. This value

specifies the maximum packet size before data is fragmented into multiple packets. If you experience a high packet error rate, you may slightly lower the Fragmentation value. Setting the Fragmentation too low may result in poor network performance. Only slight adjustment of this value is recommended.

- **RTS Threshold:** This value should remain at its default setting of **2347.** The range is 0-2347 bytes. If you encounter inconsistent data flow, only slight adjustment of this value is recommended. If a network packet is smaller than the preset RTS threshold size, the RTS/CTS mechanism will not be enabled. HG520 sends Request to Send (RTS) frames to a particular receiving station and negotiates the transmission of a data frame. After receiving an RTS, the wireless station responds with a Clear to Send (CTS) frame to acknowledge the right to begin transmission.
- **DTIM Interval:** This value, between 1 and 255 milliseconds, indicates the interval of the Delivery Traffic Indication Message (DTIM). A DTIM interval is a countdown field which is used to inform clients about the next window for listening to broadcast and multicast messages. When HG520 has buffered broadcast or multicast for associated clients, it sends the next DTIM with a DTIM Interval value. Its clients hear the beacons and awaken to receive the broadcast and multicast message. Default: **3**.
- **Beacon Interval:** Enter a value between 1 and 65535 milliseconds. The Beacon Interval indicates the frequency

interval of the beacon. A beacon is a packet broadcast by HG520 to synchronize the wireless network. Default: **100**.

- 54g Mode: There are 3 selections. Select 54g Auto for the widest compatibility. Select 54g Performance for the fastest performance. Select 54g LRS if you are experiencing difficulty with legacy 802.11b equipment.
- 54g protection: In Auto mode, HG520 will use RTS/CTS to improve 802.11g performance in mixed 802.11g/802.11b network. Turn off protection to maximize 802.11g throughput under most conditions.

evice Info dvanced Setup	preambles are used. Click "Apply" to configure the	ane node, sectier bedatimenter of size access point, sectioness indee and sectimester. Short or only advanced wireless options:
lireless	AP Isolation:	Off -
Basic	Band:	2.4GHz- 802.11g -
Security	Channel:	11 -
MAC Filter	Rate:	Anto •
Wireless Bridge	Multicast Plate :	Anto •
Advanced	Basic Rate:	Definit •
Station Info	Fragmentation Threshold:	2346
lagnostics	RTS Threshold:	2347
anagement	DTIM Interval:	1
1 2 2	Beacon Interval:	100
	VDress IM Terhooloov	Deabled -
and the set of	54om Mode:	54z Auto
	54g Protection:	Auto -
	WMM(WI-FI Multimedia):	Disabled -

Figure 6-9 Wireless Setup – Advanced

# 6.6 Viewing Station Info

This page shows authenticated wireless stations and their status.

🧼 ни	AWEI
Device Info Advanced Setop Wireless Basic Security MAC Filter Wireless Dridge Advanced Station Info Diagnostics Management	Wireless — Authenticated Stations This page shows authenticated wreless stations and their status. BISSID Associated Authorized Biofreds

Figure 6-10 Wireless Setup - Station Info

# Chapter 7 Diagnostics

This page allows users to test the Ethernet port connection, DSL port connection, and connection to the Internet Service Provider.

If a test displays a fail status, click <Return Diagnostic Tests> at the bottom of the page to make sure the fail status is consistent.

If the test continues to show fail, click <Help> to go to the troubleshooting procedures.



Figure 7-1 Diagnostics

# **Chapter 8 Management**

## 8.1 Settings

System Administrator can do the HG520 settings backup, update, and restore default here.

The settings can be saved from HG520 to computer. The saved setting file can also be loaded from computer to HG520.

These 2 functions can help the system administrator to manage large amount of HG520 efficiently. Restore Default will set the HG520 with the factory default configuration.

Backup the current configurations, click on <Backup Settings>, and a File Download window will pop up.

Figure 8-1 Management – Settings – Backup Settings

Click on <Save> and select the destination of the backup file (backupsettings.cfg) in your local computer. Click on <Save> again to save your backup file.

File Down	nload	×
?	Some files can harm your computer. If the file information bell looks suspicious, or you do not fully trust the source, do not o save this file.	ow open or
	File name: backupsettings.conf	
	File type:	
	From: 192.168.1.1	
	Would you like to open the file or save it to your computer?	
	<u>Open</u> <u>Save</u> Cancel <u>More</u>	e Info
	✓ Always ask before opening this type of file	

Figure 8-2 Management – Settings – File Download

To update the configuration, click on <Browse> and a Choose-File-window will pop up. Locate the saved file and click on <Update Settings>. HG520 will modify its settings based on the update file.

Device Info Quick Setup Advanced Setup Wireless Diagnostics Management Settings Backup Backup Update Restore Default System Log SNIP Agent Internet Time Access Control Update Software	Tools — Update Settings Update DSL router settings. You may update your router settings using your saved files. Settings File Name: Browse Update Settings
Auto Update Save/Reboot	

Figure 8-3 Management – Settings – Update

To restore the router to its factory default settings, click on <Restore Default Settings>.

🥠 ни	AWEI
Device Info Advanced Setup Wineless Diagnostics Management Settings Backup Update Restore Default System Log StNPA Agent Internet Time Access Control Update Software Auto Update Save/Reboot	Tools Restore Default Settings Restore DGL router settings to the factory defaults. Restore Default Settings

Figure 8-4 Management - Settings - Restore Default

# 8.2 Viewing System Log

This allows System Administrator to view the System Log and configure the System Log options.

Device Info	System Log
dvanced Setup	The System Log dialog allows you to view the System Log and configure the System Log options.
ignostics	Click "View System Log" to view the System Log.
anagement Settings	Click "Configure System Log" to configure the System Log options.
System Log	
Internet Time	View System Log Configure System Log
Access Control	
Update Software	
a line of the second	
Auto Update	
Auto Update Save/Reboot	

Figure 8-5 Management – System Log

Click on <Configure System Log to configure the log options.

There are 8 events of "Log Level" and "Display Level": **Emergency**, **Alert**, **Critical**, **Error**, **Warning**, **Notice**, **Informational**, and **Debugging**.

If the log mode is enabled, the system will begin to log all the selected events.

For the Log Level, all events above or equal to the selected level will be logged.

For the Display Level, all logged events above or equal to the selected level will be displayed.

If the selected mode is "Remote" or "Both", events will be sent to the specified IP address and UDP port of the remote syslog server.

If the selected mode is "Local" or "Both", events will be recorded in the local memory.

HUAWEI Device Info System Log -- Configuration Advanced Setup If the log mode is enabled, the system will begin to log all the selected events. For the Log Level, all events above or equal to the Wineless selected level will be logged. For the Doplay Level, all logged events above or equal to the selected level will be displayed. If the selected mode is 'Remote' or 'Both,' events will be sent to the specified IP address and UDP port of the remote syslog server. If the Diagnostics Management selected mode is 'Local' or 'Both,' events will be recorded in the local memory. Settings Select the desired values and click 'Save/Apply' to configure the system log options. System Log SNMP Agent C Disable @ Enable Log: Internet Time Log Level: Debugging • Error • Local • Access Control Display Level: Undate Software Auto Update Mode: Save/Reboot Save/Apply

Click on <Save/Apply> to save the configuration.

Figure 8-6 Management – System Log Configuration

Click on <View System Log> to see the router log based on your configuration.

## 8.3 Configuring SNMP Agent

System Administrator could enable or disable the embedded SNMP Agent here. SNMP Agent will allow a management application to retrieve HG520 statistics and status.

Advanced Setup Wireless	Simple Network Man	increment Destared /CEM				
Diagnostics	agent in this device.	ingenierieri enseen (pres	P) allows a managemer	nt application to retriev	e statistics and status f	from the SNMP
danagement	Select the desired va	alues and click "Apply" to	o configure the SNMP or	ptions.		
Settings System Log	SNMP Agent 🕐 Dis	iable C Enable				
SNMP Agent	Read Community:	public				
Internet Time	Set Community:	private	_			
Update Software	System Name:	Broadcom				
Auto Update	System Location:	unknown				
Save/Reboot	System Contact:	unknown				
	Trap Manager IP:	0.0.0.0				

Figure 8-7 Management - SNMP Agent

# 8.4 Configuring Internet Time

HG520 can synchronize its internal time with Internet time server when available.

🧼 ни	WEI
Device Info Advanced Setup Wireless Diagnostics Management Settings System Log SWP Agent Internet Time Access Control Update Software Auto Update Suve/Reboot	Time settings   The page allows you to the modern's time configuration.   If Automatically synchronize with Informet time servers   First NTP time server:   Second NTP time server:   Second NTP time server:   Read   Time zone offset:   FORT-12:00 Interviewal Due Line West   Servet/Aceptr

Figure 8-8 Management – Internet Time

- 1) Check "Automatically synchronize with Internet time servers", to enable this function.
- Select First and Second NTP time server from the pull down menu. Or select "Other" and define your preferred NTP server.
- 3) Choose the time zone from "Time zone offset".
- 4) Click on <Save/Apply> to save the configuration.

# 8.5 Configuring Access Control

HG520 browser management tool is protected by three categories: Services, IP addresses, and Passwords. All three must be matched, if configured, to gain access to the management tool.

All services are enabled from LAN side and disabled from WAN side by default.

Device Info Advanced Setup Wireless Diagnostics	Access Control Services	enables or disables services	from being u	sed.
Settings		Services	LAN	WAN
System Log		FTP	P Enable	Enable
SVMP Agent Internet Time		HTTP	Enable	Enable
Access Control		ICMP	Enable	P Enable
Services		SMAP	Enable	Enable
Passwords		SSH	🗹 Enable	E Enable
Update Software		TELNET	P Enable	E Enable
Auto Update Save/Reboot		qtat	Enable	E Enable
			Savo/Apply	

Figure 8-9 Management – Access Control - Service

If the IP Address Access Control mode is enabled, permits access to local management services from IP addresses contained in the Access Control List.

If the Access Control mode is disabled, the system will not validate IP addresses for incoming packets. The services are the system applications listed in the Service Control List.

Click <Add> to add an IP address to the Access Control List. To remove, mark the Remove option of the specified IP address, and then click <Remove> to remove the IP address from the Access Control List.

Up to 16 hosts can be configured here.

🍈 ни	AWEI
Device Info Advanced Setup Wireless Diagnostics Management Settings System Log SNMP Agent Internet Time Access Control Services IP Addresses Passwords Update Software Auto Update	Access Control — IP Address The IP Address Access Control mode, if enabled, parmite access to local management services from IP addresses contained in the Access Control List. If the Access Control mode is disabled, the system will not validate IP addresses for incoming padiets. The services are the system applications listed in the Service Control List Access Control Mode:

Figure 8-10 Management – Access Control – IP Addresses

Access to your router is controlled through three user accounts: **admin**, **support**, and **user**.

**admin**: has unrestricted access to change and view HG520 configuration.

**support**: is used to allow an ISP technician to access HG520 for maintenance and to run diagnostics.

**user**: can access HG520 to view configuration settings and statistics, as well as update HG520 software. Use the fields below to enter up to 16 characters and click <Save/Apply> to change or create passwords.

Device Info	Access Control Passwords
Advanced Setup Vireless	Access to your DGL router is controlled through three user accounts: admin, support, and user.
agnostics	The user name "admin" has unrestricted access to change and view configuration of your DSL Router.
lanagement Settings	The user name "support" is used to allow an ISP technician to access your DSL Router for maintenance and to run diagnostics.
System Log SNMP Agent	The user name "user" can access the DSL Router, view configuration settings and statistics, as well as, update the router's software.
Internet Time	
Access Control Services	Use the fields below to enter up to 16 characters and click "Apply" to change or create passwords. Note: Password cannot contain a space.
IP Addresses	Username: admin
Passwords	Old Password: *****
Update Software	New Dasswerd
Auto Update	Confirm Decements
Save/Reboot	Constrain Published B.
	Save/Apply
oure, neodor	Save/Apply

Figure 8-11 Management – Access Control – Passwords

# 8.6 Updating Software

The new software can be updated from the Local computer connected to HG520 through Ethernet cable.

- Click on <Browse> to locate the new software image file in the computer.
- Click on <Update Software> to implement the software update.

#### Dote:

The update process takes about 2 minutes to complete, and your HG520 will reboot automatically.

Device Info Quick Setup Advanced Setup Wirdless Diagnostics Management Settings System Log System Log System Log System Log System Log System Control Internet Time Access Control Update Software Auto Update Save/Reboot	Tools Update Software   Step 1: Obtain an updated software image file from your ISP.   Step 2: Enter the path to the image file location in the box below or click the "srowse" button to locate the image file.   Step 3: Click the "Update Software" button once to uplead the new image file.   NOTE: The update process takes about 2 iminutes to complete, and your DSL Router will reboot.   Software File Name: Browse.   Update Software Update Software

Figure 8-12 Management – Update Software

## 8.7 Auto Update

HG520 can auto update by check the auto update server with version description file name.

Auto Update Server IP Address or Domain Name: the IP address or domain of server, get it from Huawei web site or use the default.

**Update Time Interval (Second):** 0 to disable, other number indicates the period time of HG520 checking the update server.

Version Description File Name: the version description file name indicates the file name on the server and the default is "Huawei.HG520.Firmare".

Click on <Save/Apply> to enable the setting.

#### D Note:

Please make sure the wan setting to keep the connection of Internet. When HG520 finds new software it will automatically update and reboot.

Management	Time Interval set 0 means disable auto upda the new configuration effective.	s or Domain Name, Update Time Interval and Version Description File Name. Update ite function. Save/Apply button saves the auto update configuration data and makes
Settings System Log SNMP Agent Internet Time Access Control Update Software Auto Update Save/Reboot	Anto Lyodolla Sorver IP Address or Domain Name: Udulate Time Interval (Second): Varsion Description File Name 1	D PuswellkGS20,Frmare Save/Apply

Figure 8-13 Management – Auto Update

## 8.8 Save/Reboot

Click <Reboot Router> to reboot HG520. HG520 will automatically save the configuration before reboot, so that modified settings will take effect after reboot.



Figure 8-14 Management – Save and Reboot

# Chapter 9 Device Info

# 9.1 Summary

This page displays HG520's hardware/software information and DSL connection status.

vice Info	Device Info				
ry	Board ID:	96340GV	V-HG520-4		
	Software Version:	EchoLifeHq520V100R001801D010,A2p6010b2.d15h_build 4			
	Bootloader (CFE) Version:	n: 1.0.37-0.6			
1.12	Wireless Driver Version:	3.91.23.0	)		
l Setup	Line Rate - Upstream (Kbp	is): B	00		
nent	Line Rate - Downstream (K	Kopsj: a	92.168.1.1		
	Default Gateway:	-	PR. 1000-111		
	Primary DNS Server:		_		
	Secondary DNS Server:				

Figure 9-1 Device Info – Summary

## 9.2 WAN

This page displays HG520's WAN interface information and connection status.

MAUH 🎆	VEI
Device Info Summary	WAN Info
WAN Statistics Route ABP DHCP Qokk Setup Advanced Setup Wireless Dilaprostics Management	VPJ/VCI Con. ID Category Service Interface Protocol Ignp QaG State Status IP Address:

Figure 9-2 Device Info - WAN

# 9.3 Statistics

## 9.3.1 LAN/WAN

This page displays packets transmitted and received status of HG520's LAN/WAN interfaces.

Huawei Technologies Proprietary

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Device Info	Statistics WAN		
was	Service VPI/VCI Protocol Interface	Received	Transmitted
tatistics	B	ytes Pkts Errs Drop	s Bytes Pkts Errs Drops
LAN			
WAN	Reset Statistics		
ATM			
ADSL			
Route			
ARP			
DHCP			
Juick Setup			
Alizalass			
Diagnostics			
Management			
2.18.1			
AND A DECEMPTOR OF A DECEMPTOR OF A DECEMPTOR AND A			

Figure 9-3 Device Info - Statistics - WAN

## 9.3.2 ATM

This page displays the statistics of HG520's ATM interface (including AAL5).

ice Info immary	Statistic ATM Int	erface s	d tatistic									
AN atistics LAN	In Octets	Out Octets	In Errors	In Unknown	In Hec Errors	In Invalid Vpl Vcl Errors	In Port Not Enable Errors	In PII Errors	In Idle Cells	In Circuit Type Errors	In DAM RM CRC Errors	In GFC Errors
MAN	0	336	0	0	0	0	0	0	0	0	0	0
CP : Setup	AALS VI	CC Statis	tics ors 5AR	Timeouts	Oversize	d SDUs Shart	Packet Error	sLength	Errors			
ite p	0	33	6	0	0	0	0	0		0		
Setup	VPI/VC	ICRC Err	ors SAR	Timeouts	Oversize	d SDUs Short	Packet Error	sLength	Errors			
nced Setup less												
nostics	Rese	t Statistic	8									
igement												

Figure 9-4 Device Info - Statistics - ATM

### 9.3.3 ADSL

This page displays HG520's ADSL connection information and status, such as rate, SNR, ES (Error Second) and so on.

#### Chapter 9 Device Info

HUAWEI Statistics - ADSL Device Info Summary Mode: G.lite WAN Type: Line Coding: Fast Trellis Off Statistics LAN No Defect Status: WAN Link Power State: AIM ADSL mUpstream Downstrea SNR Margin (dB): Route Attenuation (dB): ARP Output Power (dBm): Attainable Rate (Kbps): DHCP Quick Setup Rate (Kbps): 800 Advanced Setup Kate (Kops): 5 K (number of bytes in DMT frame): 1 R (number of check bytes in R5 code word): 5 S (RS code word size in DMT frame): 1 Wireless Diagnostics Management D (interleaver depth): Super Frames: 24169 Super Frame Errors: 596 1643664 RS Words: 1643492 RS Correctable Errors: 6647 682 RS Uncorrectable Errors: 2409 N/A

	Rate (Kbps):	3456	800
evice Info	K (number of bytes in DMT frame):	109	26
Summary	R (number of check bytes in RS code word):	ő	2
WAN	S (RS code word size in DMT frame):	1	1
Statistics	D (interleaver depth):	1	1
LAN			
Dev	Super Frames:	27347	27345
WAN	Super Frame Errors:	1150	666
AIM	RS Words:	1859620	1859460
ADSL	RS Correctable Errors:	7464	766
Route	RS Uncorrectable Errors:	2810	N/A
ARP			
DHCP	HEC Errors:	803	0
Quick Setup	DCD Errors:	2	D
Advanced Setup	LCD Errors:	0	0
Wienloss	Total Cells:	3792647	p
Disgonetice	Data Cells:	27581	p
Magnosucs	Bit Errors:	0	0
Management			
	Total ES:	364	p
	Total SES:	0	D
	Total UAS:	20	D

Figure 9-5 Device Info - Statistics - ADSL

## 9.4 Route

This page displays HG520's routing table.

Device Info Summary WAN Statistics	Device Info Route Flags: U - up, I - reject, G - gateway, H - host, R - remulate D - dynamic (redrect), M - modified (redrect).									
Route	Destination	Gateway	Subnet Mask	Flag	Metric	Service	Interface			
ARP	192.168.1.0	0.0.0.0	255.255.255.0	U	0		br0			
wireless Diagnostics Management										

Figure 9-6 Device Info - Route

## 9.5 ARP

This page displays HG520's ARP table.

M HU	AWEI								
Device Info	Device Info ARP								
wan	IP address	Flags	HW Address	Device					
Statistics	192.168.1.28	Compilete	00:00:C0:0E:85:58	br0					
ARP									
DHCP									
Quick Setup									
Advanced Setup Wireless									
Diagnostics									
Management									
16 H. H. H. K. K.									
2 2 2									
Section States									

Figure 9-7 Device Info – ARP

# **Chapter 10 Technical Specifications**

### I. Bridging Protocols

- Ethernet to ADSL self-learning Transparent Bridging (IEEE802.1d)
- Support up to 128 MAC learning addresses

### II. Security

- Stateful Packet Inspection Firewall
- Access Control List
- IP/Port/MAC Filtering
- Supports PAP and CHAP with PPP (RFC 1334)

### III. WAN Protocols

- Multiple protocol over AAL5: LLC and VC-Mux (RFC 1483/2684)
- PPP over AAL5 (RFC2364)
- Classical IP (RFC 1577)
- PPPoA (RFC 2364)
- PPPoE (RFC 2516)

### IV. ATM

- Support ATM Forum UNI 3.1/4.0
- Up to 8 ATM VCCs (Virtual Circuit Connection) working concurrently

- Per-PVC packet level QoS
- Support UBR, VBR and CBR traffic shaping
- OAM F4/F5 loopback support (I.610)

### V. Network Management

- Web-Based configuration and status monitoring
- Remote/Local firmware upgrade through HTTP, FTP and TFTP
- System log
- Safe against mis-upgrade
- Configuration backup and restore

### VI. Radio

- Media Access Control: CSMA/CA with ACK
- Modulation: 802.11b: DSSS
  - 802.11g: OFDM
- Frequency Range (depending on countries):
  - USA FCC 2412 MHz 2462MHz
  - Canada IC 2412 MHz 2462MHz
  - Europe ETSI 2412 MHz 2472MHz
  - Japan STD-T66/STD-33m 2412 MHz 2484MHz
- Operating Channels:
  - 11 channels (US, Canada)
  - 13 channels (ETSI)
  - 14 channels (Japan)
- Output Power(max): 15dBm (11g), 18dBm (11b)
- Sensitivity (typical): -85 dBm/11Mbps; -68 dBm/54Mbit/s
Data Rate: 802.11b: 1 Mbit/s, 2 Mbit/s, 5.5 Mbit/s, 6 Mbit/s, 9 Mbit/s, 11 Mbit/s, 12 Mbit/s, 18 Mbit/s, 24 Mbit/s, 36 Mbit/s, 48 Mbit/s, 54 Mbit/s with auto-fallback

## VII. Environment

- Operating temperature range: 0 °C 40 °C (32 °F-104 °F)
- Operating humidity range: 10% 95% non-condensing

### VIII. Physical Interfaces

- One ADSL port (RJ-11)
- Four 10/100BaseT Ethernet ports (RJ-45) with Auto-detection

### IX. Power

- External power supply
- Power consumption ≤10W

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# Chapter 11 Abbreviations

Α ADSI Asymmetric Digital Subscriber Line ATM Asynchronous Transfer Mode D **Dynamic Host Configuration Protocol** DHCP DNS Domain Name Server **Digital Subscriber Line Access Multiplex** DSLAM н HTMI Hypertext Markup Language Т IP Internet Protocols IPoA Internet Protocols Over ATM ISP Internet Service Provider L LAN Local Area Network М MAC Media Access Control Ν NIC Network Interface Card

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## Ρ

PPP	Point to Point Protocol
PPPoA	PPP over ATM
PPPoE	PPP over Ethernet
PVC	Permanent Virtual Connection
R	
RIP	Routing Information Protocol
S	
SNMP	Simple Network Management Protocol
т	
ТСР	Transfer Control Protocol
v	
VCI	Virtual Channel Identifier
VPI	Virtual Path Identifier
w	
WAN	Wide Area Network

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#### Huawei Technologies Co., Ltd.

Administration Building, Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, P. R. China Postal Code: 518129 Website: <u>http://www.huawei.com</u>