



H7921 3G Router

User Manual

Hongdian Corporation
F5~6, Building 14, Shangsha Science & Tech Park, Binhe Blvd., Shenzhen, China
Tel: +86-755-88864288 Fax: +86-755-83404677 Postal Code: 518048
www.hongdian.com www.mdtu.com

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Release 1.0.2

Manual Declaration

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Chapter 1 About This Manual

This chapter briefly describes the function and role the this user manual has had, and gives the readers the information on how to read this user manual as the best guideline while Hongdian[®] H7921 series products are installed and operated.

1. Purpose
2. Applicable scope
3. version information
4. Convention
5. Technical support
6. Acronyms and terms

1.1 Purpose

This user manual is developed mainly on the basis of H7921 V1.0, and is used as the guideline while Hongdian[®] H7921 series products are installed and tested.

1.2 Applicable scope

This user manual is applicable to those who have certain knowledge and skills on the computer communication network, electronic technology, and network device management and other relevant personnel that need to use Hongdian[®] H7921 Router.

Applicable product version: H7921 V1.0 version

1.3 Version information

Hongdian[®] H7921 Router may be adjusted functionally and updated technically from time to time according to the needs of the market and users. Meanwhile, the developers may not find out the incorrect content in this user manual in time due to various reasons. The above cases may cause change of the version of this user manual. The table below records the version information and revision reason of this user manual in different periods for the reader's reference.





Table -1.1: Revision History

Version	Revised by	Involved dept.	Revised on	Description
V1.0.0	Caradoc Liu		2010-2-23	Beta
V1.0.1	Caradoc Liu		2010-3-17	Release
V1.0.2	Bobby		2012-7-10	Beta

1.4 Convention

For reading and using this user manual fast and conveniently, the following conventions are reached for some abbreviations, icons, notes, security warnings and tips that appear in this user manual:

Table -1.2: Convention Table

Item	Description	Note
H7921	Means Hongdian [®] H7921 3G Router series products	Appears in the process after Chapter 2
H7000	Means Hongdian [®] Wireless DDN Communication System series products	Appears in the process after Chapter 2
	Means tips or experiences that can save time in the installation and testing process	Appears in the installation and testing process in this user manual
	Prompts the users or relevant readers to remember some important information or parameters descriptions	Appears in the use and operation process in the this user manual
	Warning: e.g. improper temperature, unstable voltage etc.	Generally appears in the product introduction and installation description process in this user manual
	Caution: informs the users of the invalid or improper operation in the operation and testing process.	Appears in the description process beyond Chapter 1 in user manual

1.5 Technical support

To help the users fast resolve the problem occurring in their operation process and obtain the correct solution of the problems on the hardware, operating system, installation and testing, we are available anytime in the following manner:



Call service:

Tel (sales)	+86-755-88864288
Technical support:	+86-755-88864298
24Hours hotline	+86-13316996093
	+86-13672886484
Fax	+86-755-83404677
Post code	518048



E-mail service:

Technical support:
Service

support@hongdian.com
service@hongdian.com



Website and BBS service:

Website:
BBS:

www.hongdian.com
<http://www.mdtu.com/forum/default.asp>

1.6 Acronym and term

In this user manual, the following acronyms and terms are used:

APN	Access Point Name
APP	Application
ATM	Asynchronous Transfer Mode
ATM	Auto Table Machine
AuC	Authentication Centre
BG	Border Gateway
BGP	Border Gateway Protocol
BSC	Base Station Controller
BSCC	Base Station Control Connection
BSS	Base Station System
BSSGP	BSS GPRS Protocol
BTS	Base Transceiver System
CDMA	Code Division Multiple Access
CDR	Call Detail Record
CGF	Charging Gateway Function
CSD	Circuit Switch Data
DDN	Digital Data Network
DDP	DTU DSC Protocol
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
DSC	Data Service Center
DTU	Data Terminal Unit
EGP	External/Exterior Gateway Protocol
EIGRP	External/Exterior Internet Group Routing Protocol
EMC	Electro Magnetic Compatibility
ESP	Electro Static Precautions

ETSI	European Telecommunications Standards Institute
GGSN	Gateway GPRS Support Node
GMSC	Gateway MSC
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communications
GSN	GPRS Support Node
GTP	GPRS Tunneling Protocol
GTP-id	GTP Identity
HLR	Home Location Register
HSCSD	High Speed Circuit Switch Data
IGMP	Internet Group Management Protocol
IGRP	Internet Gateway Routing Protocol
IN	Intelligent Network
IP	Internet Protocol
IPv4	IP version 4
IPv6	IP version 6
IPSEC	IP Secure Protocol
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
L2TP	Layer 2 Tunneling Protocol
LA	Location Area
LLC	Logical Link Control
MAP	Mobile Application Part
MDNS	Mobile Domain Name System
MDTU	Mobile Data Terminal Unit
MIB	Management Information Base
MS	Mobile Station
MSC	Mobile Switching Center
MT	Mobile Terminal
MTBF	Mean Time Between Failure
MTTR	Mean Time To Recovery
N/A	Not Applicable
NAS	Network Access Server
NAT	Network Address Translation
NTP	Network Time Protocol
O&M	Operations & Maintenance
PAP	Password Authentication Protocol

PCF	Packet Control Function
PDP	Packet Data Protocol
PDN	Packet Data Network
PDSN	Packet Data Service Node
PLMN	Public Land Mobile Network
POS	Point of Sales
PTM-G	Point-to-Multipoint Group Call
PTM-M	Point-to-Multipoint Multicast
QoS	Quality of Service
RA	Routing Area
RADIUS	Remote Authentication Dial In User Service
RIP	Routing Information Protocol
RSC	Register Service Center
RTOS	Real Time Operating System
RTP	Real-time Transport Protocol
RTU	Remote Terminal Unit
RSVP	Resource reSerVation Protocol
SCADA	Supervisory Control and Data Acquisition
SGSN	Serving GPRS Support Node
SIM	Subscriber Identify Module
SMS	Short Message Service
SMSC	Short Message Service Center
SNMP	Simple Network Management Protocol
STK	SIM Tool Kits
TCP	Transmission Control Protocol
TDMA	Time Division Multiple Access
TMN	Telecommunication Managed Network
UDP	User Datagram Protocol
UIM	User Identify Module
UMTS	Universal Mobile Telecommunication System
USSD	Unstructured Supplementary Service Data
UTK	UIM Tool Kits
VLR	Visitor Location Register
WAN	Wide Area Network
WAP	Wireless Application Protocol
WDDN	Wireless Digital Data Network

CHAPTER 2 Product Introduction

2.1 Galaxy 3G overview

Combining with the third generation of mobile communication technology and WLAN technology, Galaxy 3G mobile network data communication terminal product is designed as a high-tech 3G product upon the needs of users. It can provide data communication service for these users at any time and in any place.

Galaxy H7921 3G Router is characterized with excellent transmission reliability and a wide range of applicability. It is the ideal choice for various sectors as a special data communication system.

2.1.1 Product appearance

The appearance, installation position and dimension of the router are shown below. In consideration of different application sites, the installation accessories are provided on both sides. You can put it on table directly without using these accessories; while in industry, finance, public utilities and other related application sites, it is generally required to fix it with the installation accessories to comply with the industrial application requirements.



Fig. 2.1.1-1: Front Panel

The indicators on the front panel are described as the table below:

Indicator	State Description
LAN:	It lights shows there is a LAN connect, flash shows it has data communication.
NET:	Indicate the status of module.

SYSTEM:	It lights when router works normally.
---------	---------------------------------------

Back panel interface

Galaxy H7921 3G Router's all interfaces are designed on the back panel as shown below:



Fig. 2.1.1-2: Back Panel

The interfaces on the back panel are described as below:

ANT: Antenna (SMA negative terminal) interface, which is able to match with standard short antenna, vehicular antenna or directional antenna;

RESET: Reset button used for restoring the default parameters.

DC: DC power supply interface. (Be sure to check if the voltage of power supply is consistent with the label on the router)

RJ45: 10/100BaseT self-adapting Ethernet interface;

COM: Serial interface (RS-232) used for receiving and dispatching the data of serial interfaces of terminal equipment or setting the console. Its application is dependent on the working modes. For instance, under the CONSOLE mode, press the Spacebar of PC connected with the serial interface to display the configuration state when the system is powered up. Otherwise, the system will start the communication state normally.

2.1.2 Other Accessories

For safe transportation purpose, Galaxy H7921 3G Router should be packaged properly. Please keep the packaging materials well after the package is opened for future use in case of re-transportation.

Standard fittings

- Galaxy H7921 3G device 1 (packaged upon the order conditions)
- 3G antenna 1
- +12V power adapter 1
- User manual 1 (CD-ROM)
- Certificate of conformity and warranty card 1
- Mounting and securing fittings 1 pair

Optional accessories

- 1.5m RJ45 cable 1

Check the amount of articles after open-package. For the specific amount, please refer to the user order contact.

2.1.3 Device installation

Note: Please don't install Galaxy H7921 3G Router while it is powered.

2.1.3.1 Environment requirements

The system can be used under the following conditions:

- Voltage : +5VDC~26VDC
- Power Consumption:
- Peak working Current: 240mA@+12VDC
- In time of idling: 40mA@+12VDC
- Operating Ambient Temperature: -20~+60°C
- Storage Temperature: -30~+70°C
- Relative Humidity: <95% (no condensation)

Galaxy H7921 3G Router can be placed in office, on wall or installed or fixed in any places, without special wiring and heat radiating requirements.

To ensure the long-term and stable operation of system, grounding measures and dust-proof measures should be taken on power supply, keep ventilation and a proper room temperature.

Caution:

1. This system cannot be used under severe condition, such as acid/alkali environment, strong magnetic field etc. In such environments, the normal operation of this system cannot be ensured. Any physical damage will not be included in the quality guarantee;
2. This product is a Class-A information product, which may cause radio interference in living environment when being used. In this case, the users are required to take some proper measures.

2.1.3.2 Wiring

RJ-45 - Ethernet interface

Standard 10/100BaseT Ethernet switch port, self-adaptive

DC - power supply interface, Galaxy H7921 3G router's power supply is generally +12VDC

ANT - antenna interface

The standard 50Ω/SMA RF connector (female) is applied. In the environment of some industrial applications, the lightning protection measures should be taken. You can install the lightning protection device between this connector and antenna.

Note:

1. Keep this product away from any heating source;
2. Don't place this product in dusty or humid environment;
3. Keep it away from some possible interference sources such as metal wall, microwave oven etc;
4. To ensure that Wi-Fi network signal is received well, please pay attention to the position and the angle of antenna. Don't place antenna inside the shielded metal case.

2.2 Function and features

Galaxy series 3G mobile data communication terminal product features platform and modularization design. Upon the different demand from the users, the platform extension, modem combination and clipping are carried out to comply with various application demands of different clients. Combination of Broadcom hardware platform with Linux-based GOS (Galaxy Operation System) software platform is its core advantage.

The features of full-function Galaxy 3G mobile data communication terminal product include:

2.2.1 Hardware function

- SYSTEM, NET, LAN indicators
- Factory default configuration restoration button
- Antenna interface: 50Ω/SMA negative end
- Serial data interface (DB9): RS-232(DCE)
- Serial data interface rate: 300 to 230,400 bits/s
- Ethernet interface: one 10/100BaseT/RJ45 self-adapting
- Configuration interface: WEB/Telnet or RS-232

2.2.2 Software function

- Supporting HSUPA/HSDPA/EDGE/GPRS or EVDO/CDMA 1x
- Built-in DHCP Service
- Supporting DMZ host computer
- Supporting DDNS
- Supporting static routing list
- Supporting IP address and port filtration
- Supporting monitor mobile network traffic quality.
- WEB/Telnet Management
- Local Firmware Upgrading/ Configuration Backup
- System Log Server

2.3 System application

Multiple application modes for H7921 3G Router are described as follows:

● **Application Mode One: Application in video monitoring**

The center-to-multipoint network generally needs to be adopted for the application mode of video monitoring. Please connect and install the router and network camera according to the following schematic diagram. Furthermore, other Ethernet interface equipment can be also connected at the video monitoring site for built-in Ethernet exchangers:

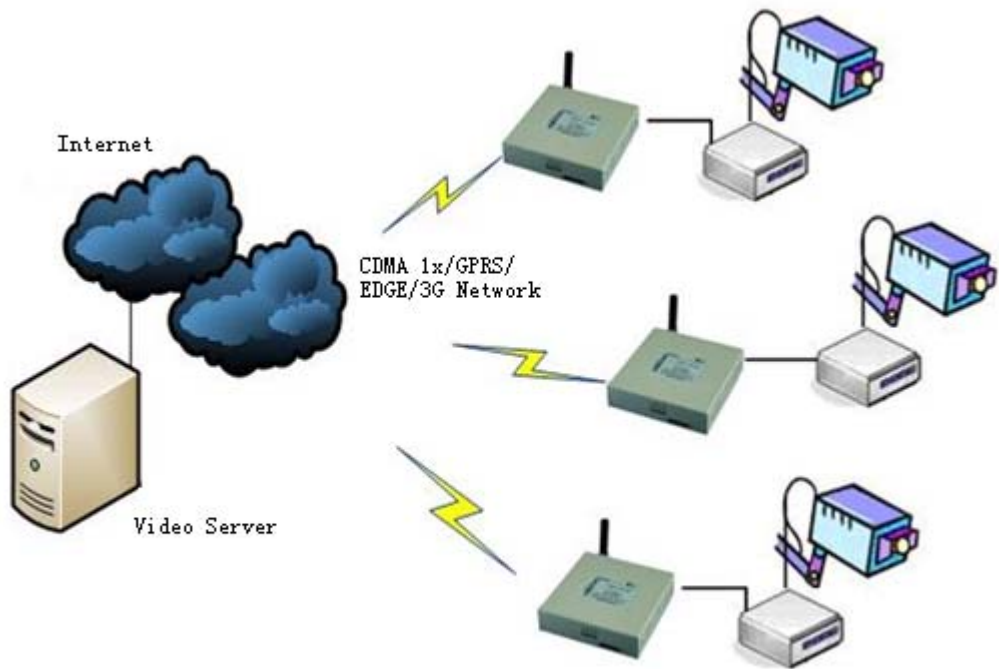


Diagram 2.3-1: Schematic diagram for video application

- **Application Mode Two: Application in SoHo**

There is one built-in 10M/100M self-adapting fast Ethernet port within H7921 3G Router, which greatly facilitates SoHo user getting access to the internet.

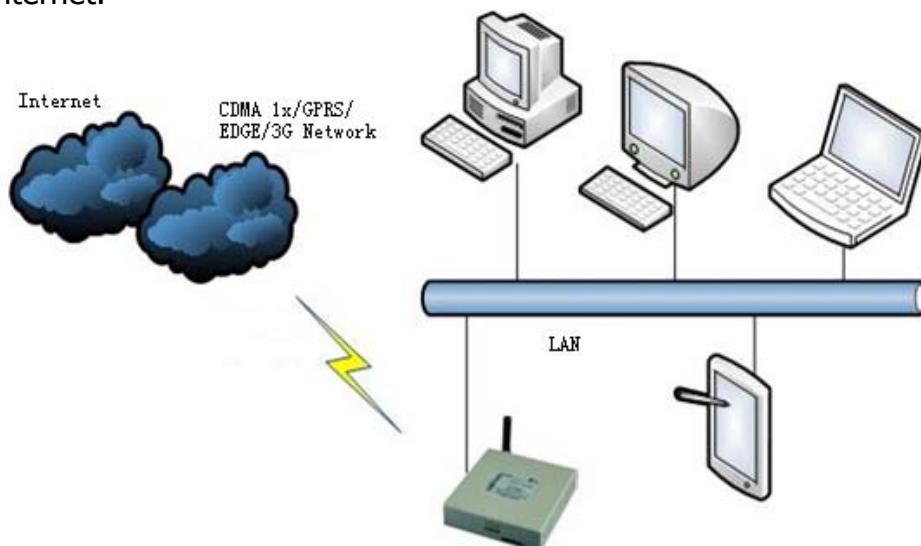


Diagram 2.3-2: schematic diagram for application in SOHO

- **Application Mode Three: Application in banking business**

H7921 3G Router is able to be connected to the target machine and other network devices at the same time. Take ATM network in the banking business for example. ATM machine needs to be connected to the host computer of bank, and at the same time, it is also connected to the video camera, and thereby monitoring the conditions around ATM machine.

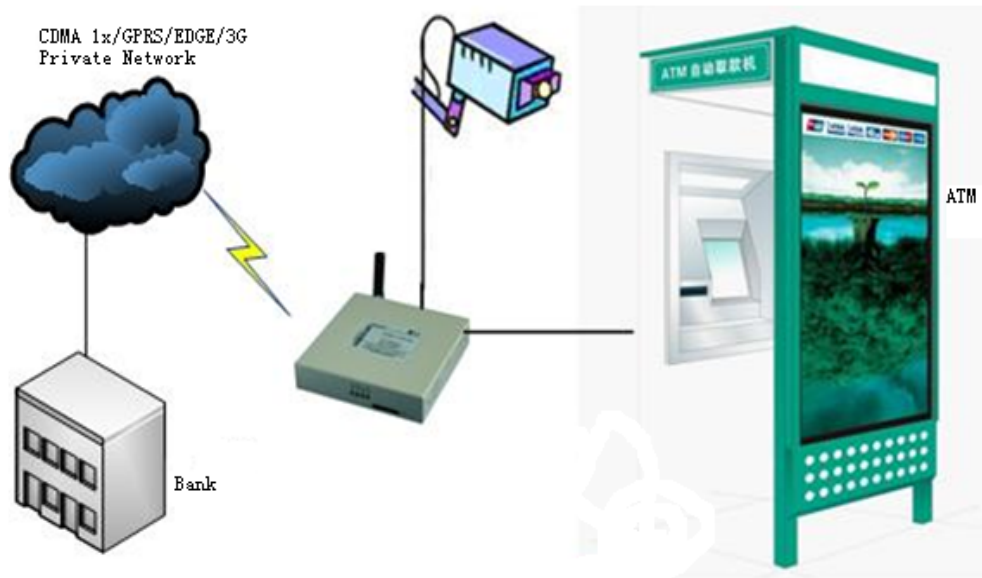


Diagram 2.3-3: Schematic diagram for application in banking business

Chapter 3 Router Configuration

3.1 Overview

Galaxy H7921 3G Router features built-in WEB interface configuration, management and debugging tools. Before using Galaxy H7921 3G Router, users should configure relate parameters; during using, you can freely change related parameters and perform software upgrde and simple test etc.

When you enter Galaxy H7921 3G Router built-in WEB configuration interface, you can set and manage its parameters as described below.

3.2 Connection settings

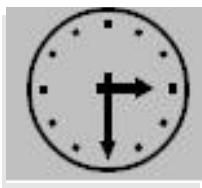
3.2.1 Environment requirements

When you want to use Galaxy H7921 3G Router, a computer and a UIM/SIM card should be prepared according to the following requirements:

- Computer with Ethernet card and TCP/IP protocol
 1. IE6.0 or higher
 2. Support 1024x768 resolution display

3.2.2 Connection method

For your convenient use, we recommend you plug your SIM/UIM card into H7921's card slot before your configuration. Then power on H7921 and begin your configuration. Upon the actual conditions, connect and configure Galaxy H7921 3G Router by the following two methods:



Note:

You can configure H7921 without any card, but you may not connect to the internet until you insert a SIM/UIM card.



Warning:

Never pull or plug your SIM/UIM card when H7921 is power on. Your card may be damaged.



Warning:

The metal casing of H7921 3G Router has to be well connected to the ground so as to ensure the router a safe, stable and reliable operation.

3.2.2.1 Ethernet direct connection method

Using Ethernet cable with RJ-45 connector, directly connect the computer to one of LAN ports on Galaxy H7921 3G Router as shown in the figure below:

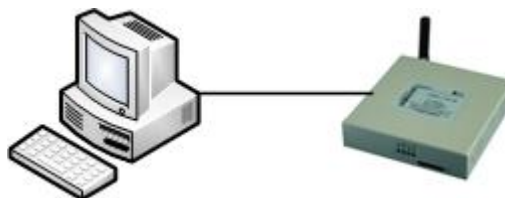


Fig. 3.2.2.1: Wiring Method 1

Note: Galaxy H7921 3G Router's LAN port is designed with self-adaptive cross connect technology, so the straight-through cable or cross cable can be both applied to connect devices for communication.

3.2.2.2 LAN connection method

When it is required to connect Galaxy H7921 3G Router to local network through HUB or switch, connect the hub or switch out-link port with any one of its switch ports as shown in the figure below.

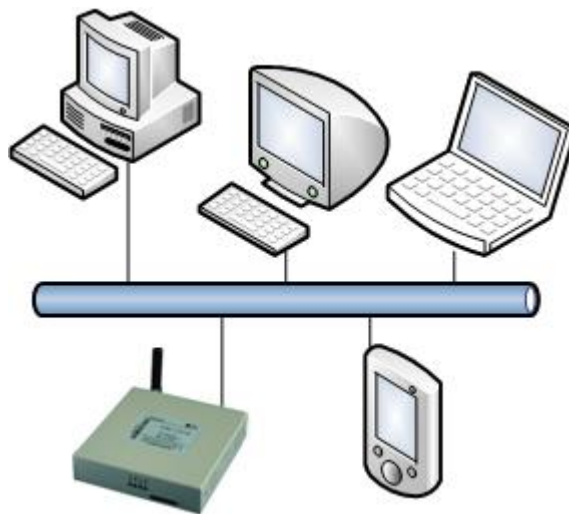


Fig. 3.2.2.2: Wiring Method 2

3.2.2.3 Serial port connect

▪ COM – serial interface

COM serial communication interface is a standard RS-232(DCE) interface with DB9 terminal (negative terminal). It can be used for the configured console (CONSOLE) or normal communication interface.

The cables of RS-232(DCE) interface are defined as follows:

DB-9 connector (DCE-negative terminal)				
PIN	Name	Description	Direction of signal	Remarks
1	CD	Carrier Detect	--→	
2	RXD	Received Data	←--	
3	TXD	Transmitted Data	--→	
4	DTR	Data Terminal Ready	←--	
5	GND	Signal Ground		
6	DSR	Data Set Ready	--→	
7	RTS	Request To Send	←--	
8	CTS	Clear To Send	--→	
9	RI	Ring Indicator	--→	

▪ RJ-45 – Ethernet Interface

Self-adapting (Version 2.0 or above) standard 10/100BaseT Ethernet switching interface

▪ **ANT – antenna interface**

The standard 50Ω/SMA radio-frequency connector (negative terminal) is adopted for use. In addition, the lightning-proof measures need to be adopted for some operating conditions, so you may place a lightning protection device between the connector and the antenna.



Attention:

1. The products shall be far away from any heating device;
2. Don't place the products in the dusty or wet environment;
3. The products shall be far away from some potential interference sources, like the metal wall, and micro-wave oven, etc;
4. Pay attention to the position and angle of antenna to ensure it works well. Don't place the antenna in the shielding metal box.

3.2.3 Network configuration

After the configuration environment is connected well as one of the connection methods, the local configuration computer IP address and other parameters should be set. Take the LAN connection method as an example to describe the network configuration procedure shown as below.

1. Configuration computer setting

First, enter the computer control panel of the selected computer, find "Network Connections" icon and double click it to enter, select "Local Area Connection" corresponding to the network card on this page. Refer to the figure below.

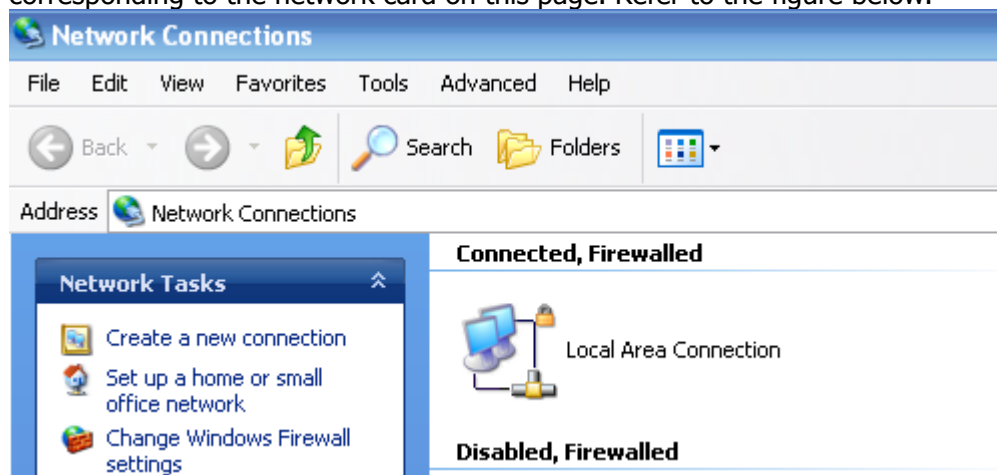


Fig. 3.2.3-1: Computer Local Connection Configuration

Enter (double click or right click) the "Local Area Connection"→"Property (R)" and enter the interface shown in the figure below:

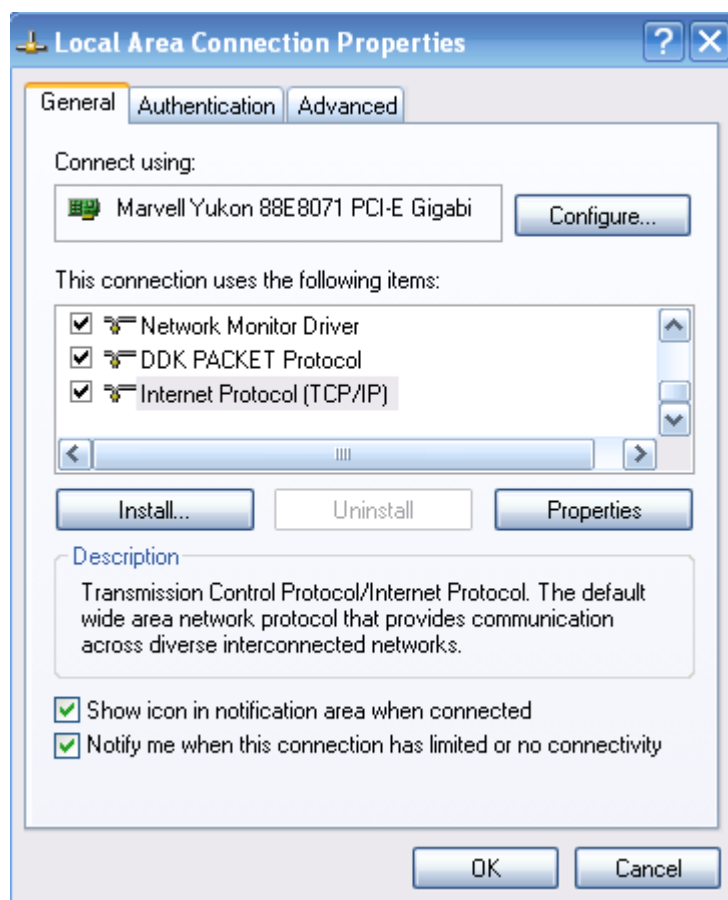


Fig. 3.2.3-2: Computer Local Connection Configuration

Select the "Internet Protocol (TCP/IP)", click the "Properties", and enter the interface as below:

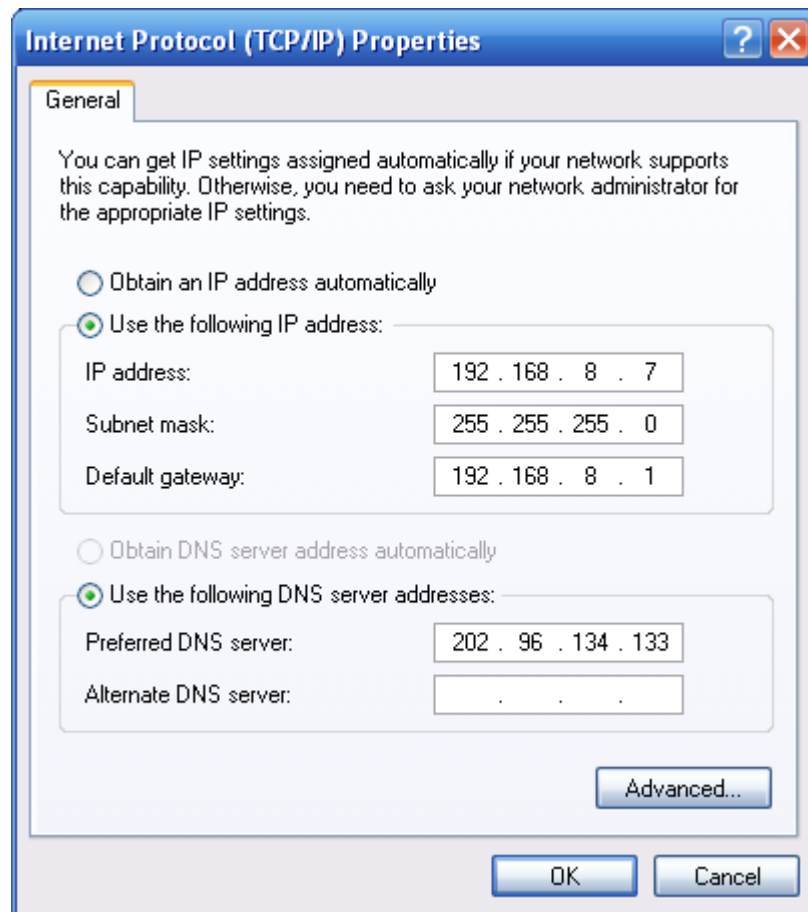


Fig. 3.2.3-3: TCP/IP Properties Configuration

Method 1: general configuration

This method will temporarily interrupts the communication between the computer under configuration and LAN, and the specific parameter configuration is shown as below:

IP address: 192.168.8.* (*indicates any integral between 2 to 254)
 Subnet mask: 255.255.255.0
 Default gateway: 192.168.8.1

Remember:

Galaxy H7921 3G Router LAN port factory default parameter:

IP address: 192.168.8.1;

Subnet mask: 255.255.255.0

Galaxy H7921 3G Router factory default login parameter:

Management interface login IP address: 192.168.8.1

Login name: admin

Login password: admin

Method 2: advanced configuration

If you don't want to interrupt local PC LAN communication and configure Galaxy H7921 3G Router when the former network configuration exists, it is required add route (IP).

The configuration operation is shown as below:

Click the "Advanced (V)..."button in Fig. 3.2-5 to enter the interface as below:

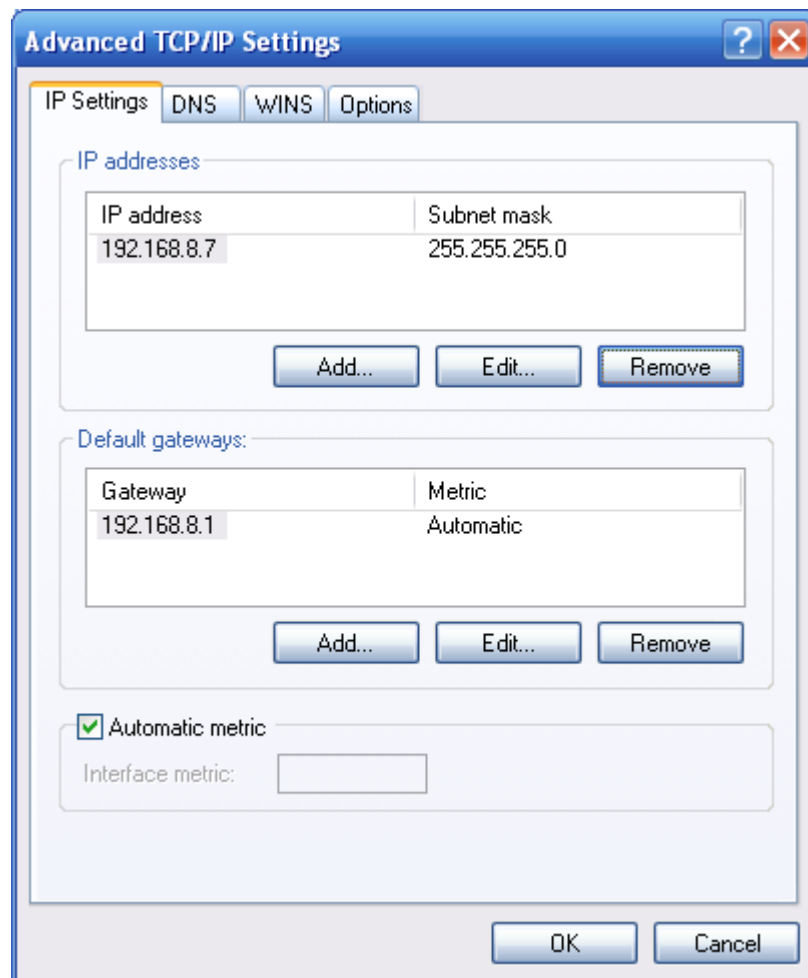


Fig. 3.2.3-4: Advanced TCP/IP Properties Configuration

Click the "Add (A)"button under the "IP address (R)", and fill in the IP address that you want to add:

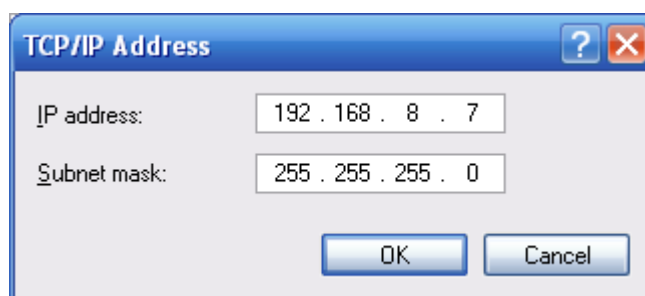


Fig. 3.2.3-5: Add TCP/IP Address

After the configuration is completed, click the "Add". By now the computer has a route to Galaxy H7921.

Note:

As shown in Fig. 3.2-3, "Default gateway" depends on whether the configuration computer connects with Internet through original local network configuration. If Internet is accessed through original local network, the default gateway setting does not need to be modified; if Galaxy H7921 3G Router + is used, you need to modify the default gateway and configure it as Galaxy H7921 3G Router's default LAN IP address 192.168.8.1.

2. Network check

■ Step 1: IP configuration check

Use the command of ipconfig to check whether the IP address is correctly set or added. You can enter DOS mode and key-in command: ipconfig, for instance:

```
C:\>ipconfig
```

Windows IP Configuration

Ethernet adapter local connection:

```
Connection-specific DNS Suffix. :  
Auto configuration IP Address . . . : 192.168.8.7  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . : 192.168.8.1
```

■ Step 2: connectivity check

After the configuration is completed, you can check the connectivity between it and Galaxy H7921 3G Router by ping command. Key-in ping command in system command line:

```
Ping 192.168.8.1
```

If the following information appears:

```
Pinging 192.168.8.1 with 32 bytes of data:  
Reply from 192.168.8.1: bytes=32 time=2ms TTL=64  
Reply from 192.168.8.1: bytes=32 time=2ms TTL=64
```

By now, it means that the configuration computer has been connected to the router. You can carry out configuration operation on it.

3.2.4 System login

Open the IE browser, and input http://192.168.8.1/ in address bar, as shown below:



Fig. 3.2.4-1: Web Login

And then you can enter user login identity authentication interface as shown below:



Fig. 3.2.4-2: User Login Verification

User should use default user name and password when log in for the first time:

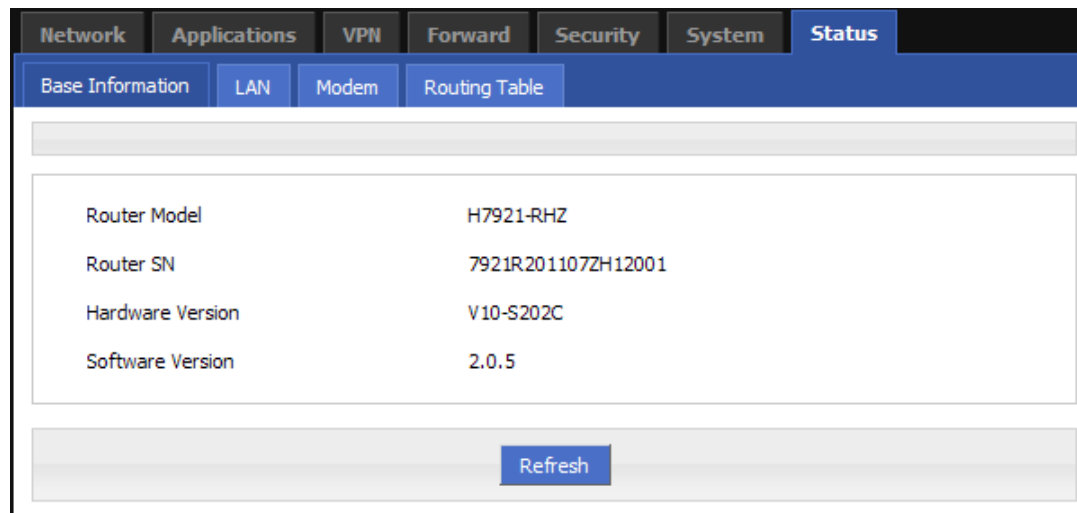
- User name: admin
- Password: admin

Input correct user name and password, and enter the WEB configuration interface.

3.3 WEB-based configuration

Galaxy H7921 3G Routers can be configured in WEB mode. The WEB-based operation features visualization and simplicity, so it is recommended to perform parameter configuration and operation in WEB mode. Connect the PC and Galaxy router according to the description in the previous section. Start up IE (6.0 or higher) browser on your PC to carry out the configuration.

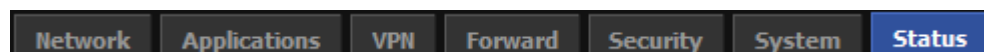
3.3.1 General



Drawing 3.3.1-1: System Configuration Window

You can select the function and display the configuration window for the function after clicking on the related option on the top left corner of configuration window. Please see the following drawing:

Menu Descriptions



Drawing 3.3.1-2: Main Option Bar

The options on the main option bar are as follows:

- Network
- Applications
- VPN
- Forward
- Security
- System
- Status

Move the mouse pointer onto any option, and click on it to display the related sub-options or configuration window. The functions about each sub-option and configuration window will be in detail described in the following sections.

The functions of the most common buttons are as follow:

- **【Save】** : used to save the current configuration;
- **【Cancel】** : used for canceling the current configuration without saving;
- **【Refresh】** : used for refreshing the messages on the window;
- **【Return】** : used for returning to last window;

3.3.2 Network

When you click the "Internet" tab, the following sub-tabs appear on the page:

- LAN
- Modem
- Parameter Select
- Connection Type
- DHCP Server

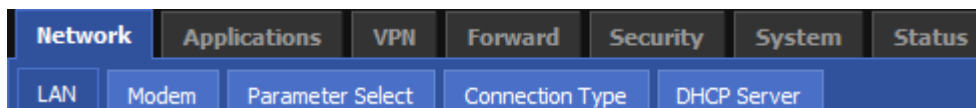


Fig. 3.3.2: Internet Configuration Tab

3.3.2.1 LAN

In the "Local Network" main tab, click the "LAN" sub-tab to set the LAN port and enter the following configuration interface:

Fig. 3.3.3.1: LAN Configuration

In this interface, you can set the host name, local IP address and its subnet mask:

【Host Name】 : Set the router's host name.

【Local IP Address/Subnet Mask】 : Set the local IP address and subnet mask. The LAN port supports to configure four LAN IP address.

3.3.2.2 Modem

In the "Internet" main tab, click the "Mobile Network (Embedded Modem)" sub-tab to set the modem parameters and go to the following configuration interface:

Interface Name	APN	Service Code	Username	Simcard	Operation			
0	----	----	card	SIM1	Mod	Del	En	Dis

Fig. 3.3.2.1-1: Modem

【Mod】 : Modify the current settings.

【Del】 : Delete current settings.

【En】 : Enable/disable the current settings.

【Add】 : Add SIM ID.

LAN	Modem	Parameter Select	Connection Type	DHCP Server
<p>Auto-Dialup <input type="button" value="Enable"/> <input type="button" value="Disable"/></p>				
<p>Basic Settings</p> <p>Interface Name <input type="text" value="0"/> * Max length is 12</p> <p>APN <input type="text"/> Max length is 64</p> <p>Service Code <input type="text"/> Max length is 64</p> <p>Username <input type="text" value="card"/> Max length is 64</p> <p>Password <input type="password" value="...."/> Max length is 64</p> <p>Network Type <input type="text" value="auto"/> ▼</p> <p>Advanced Settings <input type="button" value="Display"/></p>				
<p style="text-align: right;"> <input type="button" value="Save"/> <input type="button" value="Return"/> </p>				

【Auto-Dialup】 : Set the account number of 3G network service provided by ISP.

【Interface Name】 : Set the SIM card name.

【APN】 : Set the APN of the internet access service provided by ISP.

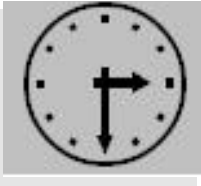
【Service Code】 : Set the name of 3G network service provided by ISP.

【User Name】 : Set the account number of 3G network service provided by ISP.

【Password】 : Set the password of account number of 3G network service provided by ISP.

【Network Type】 : DEFAULT means router will obey default option to choose network; AUTO means router will choose available network automatically; Other options mean router will use certain network only.

【Advanced setting】 : Configure advanced parameter by dialing protocol.



Note:

This feature is special. It's used to match with Parameter Select feature together. For example, if need to communicate with two different data servers via VPN tunnel. There is a priority for two VPN tunnel. So each tunnel need to bind one SIM ID.

In the "Advanced setting" tab, it contains "PPP Advanced Settings" & "Internet Connection Type Settings", the interface of "PPP Advanced Settings" is as below:

Authentication

CHAP	<input checked="" type="radio"/> Negotiation <input type="radio"/> Disable
PAP	<input checked="" type="radio"/> Negotiation <input type="radio"/> Disable
MS-CHAP	<input checked="" type="radio"/> Negotiation <input type="radio"/> Disable
MS2-CHAP	<input checked="" type="radio"/> Negotiation <input type="radio"/> Disable
EAP	<input checked="" type="radio"/> Negotiation <input type="radio"/> Disable

Compress

Compression Control Protocol	<input type="radio"/> Require <input checked="" type="radio"/> Disable
Address/Control Compression	<input type="radio"/> Require <input checked="" type="radio"/> Disable
Protocol Field Compression	<input type="radio"/> Require <input checked="" type="radio"/> Disable
VJ TCP/IP Header Compress	<input type="radio"/> Require <input checked="" type="radio"/> Disable
Connection-ID Compression	<input type="radio"/> Require <input checked="" type="radio"/> Disable

More

Debug	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Peer's DNS	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
LCP Interval	<input type="text" value="30"/> 1-512 s
LCP Retry	<input type="text" value="5"/> 1-512
MTU	<input type="text"/> 128-16384
MRU	<input type="text"/> 128-16384
Local IP	<input type="text"/> eg. 192.168.8.1
Remote IP	<input type="text"/> eg. 192.168.8.254

Fig. 3.3.2.1-2: PPP Advanced Settings

Considering the difference of mobile network authorization, the Point to Point Protocol connection should be compatible with different network. Advanced setting is used for the PPP special setting. Click "PPP Advanced Setting" button to start settings.



Normally, it is not required to change the setting for most of networks and applications. If it is necessary, you need to be cautious in setting PPP Advanced based on the network environment. For detailed configuration, consult the local mobile operator and carry out multiple trials to achieve the best suitability.

【CHAP, PAP, MS-CHAP, MS-CHAPv2】 are negotiation protocol types while PPP dialing.
 【Compression Control Protocol negotiation】 : Set whether disable Compression Control Protocol negotiation. 0: disable; 1: enable.

【Address/Control compression】 : Set whether disable Address /Control compression.

【Protocol field compression negotiation】 : Set whether disable protocol field compression negotiation

【VJ style TCP/IP header compress】 : Set whether disable Van Jacobson style TCP/IP header compress.

【Connection-ID compression】 : Set whether disable the connection-ID compression option in VJ.

【Debug】 : Set whether enable the debug log function.

【Use Peer's DNS】 : Set whether disable Use Peer's DNS.

【LCP Echo Interval】 : Set LCP's maximum interval time, in second.

【LCP Echo Failure】 : Set LCP's maximum request times.

【MTU】 : Set the number of bytes of the maximum transfer unit.

【MRU】 : Set the number of bytes of the maximum receive unit.

【local IP】 : Set the local IP address.

【Remote IP】 : Set the remote terminal's IP address.

【Other Options】 : Users can define their own options here.

3.3.2.3 Parameter Select

The interface shows a navigation bar with tabs: LAN, Modem, Parameter Select, Connection Type, and DHCP Server. Below the tabs is a table with the following columns: Rule Name, Interval, Retry Times, Running Timeout, and Operation. At the bottom right of the table area are two buttons: Add and Refresh.

Fig. 3.3.2.3: Parameter Select Interface

The interface shows a navigation bar with tabs: LAN, Modem, Parameter Select, Connection Type, and DHCP Server. Below the tabs is a table with the following columns: Rule Name, Name, Check Method, and Operation. Below the table is a section labeled 'Status' with two buttons: Enable and Disable. Below the Status section is a section labeled 'Basic Settings' with four input fields: Rule Name (with a red asterisk and '0-9'), Interval (with a red asterisk and '1-512 s'), Retry Times (with a red asterisk and '1-512'), and Running Timeout (with '1-65535 s'). Below the input fields is a Save button. Below the Basic Settings section is a section labeled 'select an interface to check' with two dropdown menus: Interface Name (set to 'modem0') and Check Method (set to 'state'). Below the dropdown menus is an Add button. At the bottom right of the interface are two buttons: Refresh and Return.

Fig. 3.3.2.3-1: Parameter Select Interface

【Status】 Enable/disable the parameter select feature.

【Rule Name】 Set the rule ID from 0 to 9. 0 is the preference.

【Interval】 : Set the check interval.

【Retry Times】 : Set the check times.

【Running Timeout】 : Set the active time for current rule. Once the time is over, it will switch to the next rule.

【Interface Name】 : Select the interface name for check.

【Check method】 : Select the check mode for state or ICMP. State mode means router will automatically check the specified interface as the interval and retry times. Once the status is failed, router will automatically switch rule from current rule.

ICMP mode means router will automatically check the specified destination IP as the interval and retry times. Once the ICMP is failed, router will automatically switch rule from current rule.

3.3.2.4 Connection Type

In the "Internet" main tab, click the "Internet Connection Type" sub-tab to set the internet connection type. Select the internet connection type from the "Connection Type" drop-down menu: "Modem" and "Custom". Below, we will describe the configuration in different modes:

The screenshot shows a web-based configuration interface for a 3G router. At the top, there are five tabs: "LAN", "Modem", "Parameter Select", "Connection Type", and "DHCP Server". The "Connection Type" tab is currently selected and highlighted. Below the tabs, there is a configuration area with four rows of settings, each with a label and a dropdown menu:

- Work Mode:** The dropdown menu is set to "gateway".
- Default Route:** The dropdown menu is set to "modem".
- DNS Type:** The dropdown menu is set to "Interface".
- Interface Name:** The dropdown menu is set to "modem".

At the bottom of the configuration area, there are two buttons: "Save" and "Refresh".

Fig. 3.3.2.4: Modem configuration Interface

【Work Mode】 : Default mode for gateway. It also supports route mode.

【Default Route】 : Select interface name as the default route.

【DNS Type】 : Specify interface or customize DNS.

【Interface Name】 : If specify interface for DNS type, need to select interface name.

3.3.2.5 DHCP server

In the "Local Network" main tab, click the "DHCP Server" sub-tab to set the DHCP server parameters and go to the following configuration interface:

LAN Modem Parameter Select Connection Type DHCP Server

DHCP Server Enable Disable

Basic Settings

IP Pool br0

Gateway Type default

DNS Type default

Lease Time 3600 * 120-86400 s

IP * eg. 192.168.8.1

MAC * eg. 00:1A:4D:34:B1:8E

Add

IP	MAC	Operation
----	-----	-----------

Save Refresh

Fig. 3.3.2.5: DHCP Configuration Interface

The configuration parameters include:

- 【DHCP Server】 : Set whether enable the DHCP server function: Enable/Disable.
- 【IP Pool】 : Set the range of the DHCP dynamic address pool as the default br0 interface or customize the IP address range.
- 【Gateway Type】: Set the gateway to client assigned by DHCP: Default, Static, as same as router's gateway.
- 【DNS Type】 : Specify interface or customize DNS.
- 【Lease Time】 : Set the lease time, namely the time that the client uses the assigned IP
- 【Add】 : Map the DHCP client's MAC address with IP.

3.3.3 Applications

When you click the "Applications" tab, the following sub-tabs appear on the page:

- DDNS
- Timing Operation
- Trigger On-line Data
- ICMP Check
- DTU
- Interface Check

Network Applications VPN Forward Security System Status

ICMP Check Interface Check DDNS DTU SNMP M2M Timing Wake Up

Fig. 3.3.3: Applications Configuration Tab

3.3.3.1 ICMP Check

In the “Applications” main tab, click the “ICMP Check” sub-tab to set the ICMP Check parameters and go to the following configuration interface:

Fig. 3.3.3.1: ICMP Check Interface

Trigger On-line Data parameters include:

【Destination IP or Domain】 : Set whether enable the ICMP Check Service IP and domain name.

【Retry Times】 : Set how many times ICMP pack will be send.

【Normal Interval】 : Set the interval of ICMP packs.

【Source Type】 : Set ICMP package’s source IP address.

【Failed Interval】 : Set how many seconds ICMP check will fail if no response.

3.3.3.2 Interface Check

In the “Applications” main tab, click the “Interface Check” sub-tab to set the interface parameters and go to the following configuration interface:

ICMP Check	Interface Check	DDNS	DTU	SNMP	M2M	Timing	Wake Up
<div>Interface Check Enable Disable</div>							
Basic Settings <div> Interface Name br0 ▼ Flow Direction receive ▼ Check Interval <input type="text"/> * 1-65535 s Retry Times <input type="text"/> * 1-65535 </div>							
<div> Save Refresh </div>							

Fig. 3.3.3.2: Interface Check

【Interface Name】 : Set which interface will be check.

【Flow Direction】 : the way to check data flow.

【Check Interval】 : Set the interval of check.

【Retry Times】 : Set the check times.

3.3.3.3 DDNS

The router is designed with DDNS (Dynamic Domain System) function which can make others to search the dynamic IP address by internet domain.

In the "Application" main tab, click the "DDNS" sub-tab to set DDNS parameters and go to the following configuration interface:

ICMP Check	Interface Check	DDNS	DTU	SNMP	M2M	Timing	Wake Up
<div>DDNS Service Enable Disable</div>							
Basic Settings <div> Service Provider 88ip ▼ Server Port <input type="text"/> 1-65535 Username <input type="text"/> * Max length is 64 Password <input type="text"/> * Max length is 64 User Domain <input type="text"/> * Max length is 64 Update Interval <input type="text"/> * 120-86400 s </div>							
<div> Save Refresh </div>							

Fig. 3.3.3.3: DDNS Configuration Interface

DDNS configuration parameters include:

【DDNS Server】 : Set whether enable DDNS service function: Enable/Disable.

【Service Provider】 : Select the DDNS service provider that router currently supports. Domestic DDNS service provider: 88IP (www.88ip.net), 3322 (www.3322.org); oversea DDNS service provider: DNSEXIT (www.dnsexit.com), ZONEEDIT (www.zoneedit.com), CHANGEIP (www.changeip.com), DynDNS (members.dyndns.org); you can also select "custom" and choose your own DDNS service provider if it is not listed above.

【Server Port】 : Set the port number of the DDNS server provided by the service provider. The default port number is 80.

【User Name】 : Set the legal user name of the DDNS service registered in the service provider.

【Password】 : Set the password of the legal user name of the DDNS service registered in the service provider.

【User Domain】 : Set the domain of the DDNS service provided by the service provider.

【Update Interval】 : Set the interval of the DDNS client obtains new IP, in second.

3.3.3.4 DTU

In the "Applications" main tab, click the "RTU" sub-tab to set the DTU parameters and go to the following configuration interface:

ICMP Check	Interface Check	DDNS	DTU	SNMP	M2M	Timing	Wake Up
<div>DTU Service Enable Disable</div>							
Basic Settings <div> Work Mode Server Local Port <input type="text"/> * 1-65535 Protocol <input type="radio"/> TCP <input checked="" type="radio"/> UDP Received Packet Max Length <input type="text"/> 1-65535 Received Timeout <input type="text"/> * 1-65535 ms RS232 Data Timeout <input type="text"/> * 1-65535 ms </div>							
Rs232 Setting <div> Rate 115200 Parity none Databits 8 Stopbits 1 Flow control none </div>							
<div> Save Refresh </div>							

Fig. 3.3.3.4: DTU Interface

DTU parameters include:

- 【DTU Service】 : Set whether enable the DTU Service.
- 【Work Mode】 : Work as a Server or a Client. Client will register to server automatically.
- 【Local Port】 : Set the receive port if work mode is server.
- 【Protocol:】 : Select the protocol used to transmit.
- 【Received Packet Max Length】 : Set the max length of received packet, this value must smaller than 1024.
- 【Received Timeout】 : Set the timeout for receiving data.
- 【RS232 Data Timeout】 : Set the timeout for RS232 data.
- 【Rs232 Setting】 : Set parameters of Rs232 port, please set these according to your device's Rs232 port parameters.

3.3.3.5 SNMP

In the "Applications" main tab, click the "SNMP" sub-tab to set the Timing Operation parameters and go to the following configuration interface:

ICMP Check	Interface Check	DDNS	DTU	SNMP	M2M	Timing	Wake Up
<div>SNMP Service Enable Disable</div>							
Basic Settings							
Port		<input type="text"/>		* 1-65535			
Community		<input type="text"/>		* Max length is 32			
				Save		Refresh	

Fig. 3.3.3.5 SNMP

【SNMP Service】 : Set whether enable the DTU Service.

【Port】 : Set the SNMP port.

【Community】 : Set the SNMP community.

3.3.3.6 M2M

In the “Applications” main tab, click the “M2M” sub-tab to set the Timing Operation parameters and go to the following configuration interface:

ICMP Check	Interface Check	DDNS	DTU	SNMP	M2M	Timing	Wake Up
<div>M2M Service Enable Disable</div>							
Basic Settings							
Server IP or Domain		<input type="text"/>		* Max length is 64			
Server Port		<input type="text"/>		* 1-65535			
Login Times		<input type="text"/>		* 1-5			
Heartbeat Interval		<input type="text"/>		* 1-65535 s			
Retry Times		<input type="text"/>		* 1-5			
Task Failure Time		<input type="text"/>		* 1-65535 s			
				Save		Refresh	

Fig. 3.3.3.6 M2M

- 【M2M Service】 : Set whether enable the M2M Service.
- 【Server IP or Domain】 : Set the server IP or domain.
- 【Server Port】 : Set the server port.
- 【Login Times】 : Set login max times.
- 【Heartbeat Interval】 : Set the heartbeat interval for M2M connection.
- 【Retry Times】 : Set the SNMP community.
- 【Task Failure Time】 : Set the SNMP community.

3.3.3.7 Timing

In the “Applications” main tab, click the “Timing” sub-tab to set the Timing Operation parameters and go to the following configuration interface:

Fig. 3.3.3.7: Time Interface

The configuration parameters include:

- 【Add】 : Add the Timing Operation operated at certain time.
- 【Status】 : Set whether enable the Timing Operation.
- 【Task Name】 :Set the task name for timing operation.
- 【Task Type】 : Select the task type like reboot, dialup and dialdown.
- 【Set Time】 : We have five types of time: Clock, day, and week. All you need processing the time is to fill each type with valid value. When setting, for each type of time, you need to split the different value with ",", and you can use "xx-xx" to represent a period of time.

3.3.3.8 Wake Up

In the “Applications” main tab, click the “Wake Up” sub-tab to set the Trigger On-line Data parameters and go to the following configuration interface:

ICMP Check Interface Check DDNS DTU SNMP M2M Timing **Wake Up**

Wake Up Service **Enable** **Disable**

Basic Settings

Wake Up Method phone&data ▼

Offline Method timeout ▼

Online Time * 120-86400 s

Add Phone Number

Phone Number * Max length is 32

Task Type dialup ▼

ADD

Phone Number	Task Type	Operation
--------------	-----------	-----------

Save **Refresh**

Fig. 3.3.3.8: Wake Up Interface

Wake Up parameters include:

- 【Wake Up Service】 : Set whether enable the Wake Up.
- 【Wake Up Method】 : Set wake up method via phone&data or phone.
- 【Offline Method】 : Set the offline method for timeout or idle.
- 【Online Time】 : Set the online time.
- 【Phone Number】 : Set the phone number of wakeup.
- 【Task Type】 : Set wakeup task type for dialup, dialdown or reboot.

3.3.4 VPN

When you click the “VPN” tab, the following sub-tabs appear on the page:

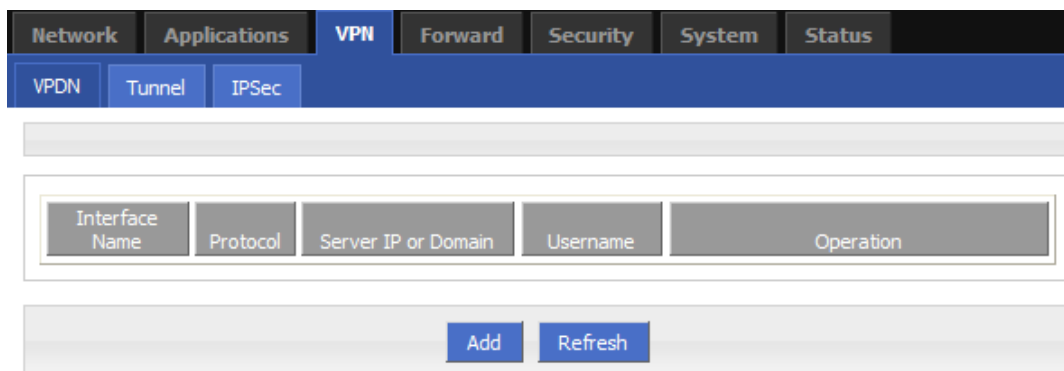


Fig. 3.3.4: VPN Interface

When you click the “VPN” tab, the following sub-tabs appear on the page:

- VPDN
- Tunnel
- IPSec

3.3.4.1 VPDN

Click the “Add” tab; the following sub-tabs appear on the page:

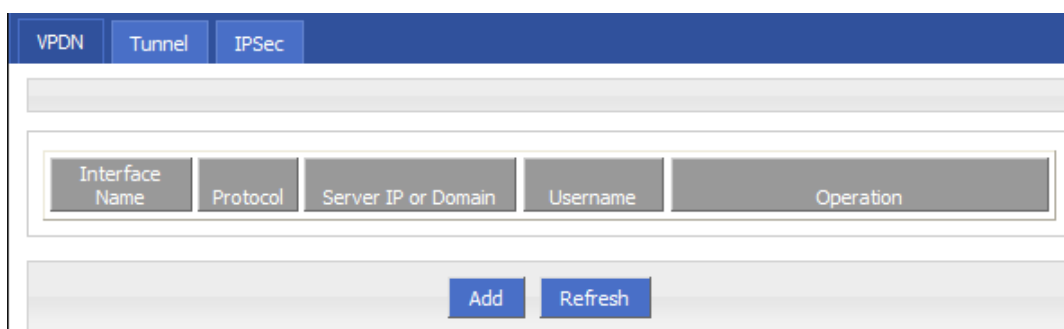


Fig. 3.3.4.1-1: VPDN Interface

Fig. 3.3.4.1-2: VPDN Interface

【VPDN Service】 : Enable/disable the VPDN Service.

【Interface Name】 : Set the VPDN name.

【Protocol】 : Select the VPN protocol for PPTP or L2TP.

【Server IP or Domain】 : Set the VPN server IP or domain name.

【Username】 : Set the username.

【Password】 : Set the password.

【Advanced Settings】 : Set the advanced setting like CCP and so on.

3.3.4.2 Tunnel

Click the "Add" tab; the following sub-tabs appear on the page:

Fig. 3.3.4.2-1: Tunnel Interface

VPDN Tunnel IPsec

IP Tunnel Service Enable Disable

Basic Settings

Tunnel Name * Max length is 8

Tunnel Mode gre ▼

Local Virtual IP * eg. 10.1.1.1/24

Interface Type Interface ▼

Local Extern Interface modem ▼

Peer Extern IP * eg. 192.168.0.1

Save Return

Fig. 3.3.4.2-2: Tunnel Interface

【IP Tunnel Service】 : Enable/disable the tunnel service.

【Tunnel Name】 : Set the tunnel name.

【Tunnel Mode】 : Select tunnel mode for ipip or GRE

【Local Virtual IP】 : Set the local virtual IP of tunnel.

【Interface Type】 : Select interface type of tunnel for interface or static IP.

【Local Extern Interface】 : Select the local extern interface.

【Peer Extern IP】 : Set the peer extern IP.

3.3.4.3 IPsec

VPDN Tunnel IPsec

Phase1

Policy Name	Encrypt	Hash	Authentication	Operation
-------------	---------	------	----------------	-----------

Phase2

Policy Name	Encrypt	Hash	Remote Subnet	Operation
-------------	---------	------	---------------	-----------

IPsec Interface

Interface Name	Encrypt Interface	Destination IP or Domain	Operation
----------------	-------------------	--------------------------	-----------

Add Refresh

Fig. 3.3.4.3-1: IPsec Interface

Click the "Add" tab; the following sub-tabs appear on the page:

VPDN **Tunnel** **IPsec**

Basic Settings

Select ☒ Phase1 ☐ Phase2 ☐ Ipsec

Policy Name * Max length is 12

Initiate Mode

Encrypt

Hash

Authentication

Pre Share Key * Max length is 24

Self Identify Max length is 64

Match identify Max length is 64

IKE Lifetime * 120-86400 s

Group Name

DPD Service ☐ Enable ☒ Disable

DPD Delay 1-512 s

DPD Timeout 1-512 s

Save **Return**

Fig. 3.3.4.3-2: IPsec Interface

【Select】 : Select the IPsec phase 1.

【Policy Name】 : Set the policy name in IPsec phase 1.

【Initial Mode】 : Select IPsec mode for main mode or aggressive mode.

【Encrypt】 : Select IPsec encryption arithmetic.

【Hash】 : Select IPsec Hash arithmetic.

【Authentication】 : Select IPsec authentication mode for pre-share key.

【Pre Share Key】 : Set the pre-share key.

【Match Identify】 : Set the match Identify.

【IKE Lifetime】 : Set the IKE lifetime.

【Group Name】 : Select the group for group 1024 or group 1536.

【DPD Service】 : Enable/disable DPD service.

【DPD Delay】 : Set the DPD delay time.

【DPD Timeout】 :Set the DPD timeout.

The screenshot shows the 'IPSec' configuration interface. At the top, there are three tabs: 'VPDN', 'Tunnel', and 'IPSec'. Below the tabs is a 'Basic Settings' section. It contains the following fields:

- Select:** Three radio buttons: 'Phase1' (unselected), 'Phase2' (selected), and 'Ipsec' (unselected).
- Policy Name:** A text input field with a red asterisk and the note '* Max length is 12'.
- Encryption Protocol:** A dropdown menu showing 'esp'.
- Encrypt:** A dropdown menu showing '3des'.
- Hash:** A dropdown menu showing 'md5'.
- PFS:** A dropdown menu showing 'open'.
- Lifetime:** A text input field containing '3600' with a red asterisk and the note '* 120-86400 s'.
- Transport Mode:** A dropdown menu showing 'auto'.
- Local Subnet:** A text input field with a red asterisk and the note '* eg. 192.168.8.0/24'.
- Remote Subnet:** A text input field with a red asterisk and the note '* eg. 192.168.88.0/24'.

At the bottom of the form are two buttons: 'Save' and 'Return'.

Fig. 3.3.4.3-3: IPsec Interface

【Select】 : Select the IPsec phase 2.

【Policy Name】 : Set the policy name in IPsec phase 1.

【Encryption Protocol】 : Select

【Encrypt】 : Select IPsec encryption arithmetic.

【Hash】 : Select IPsec Hash arithmetic.

【PFS】 : Enable/disable PFS.

【Lifetime】 : Set the lifetime in phase 2.

【Transport Mode】 : Select transport mode for transport mode, tunnel mode or auto negotiation.

【Local Subnet】 : Set the local subnet.

【Remote Subnet】 : Set the remote subnet.

Fig. 3.3.4.3-4: IPsec Interface

【Select】 : Select the IPsec setting.

【Interface Name】 : Set the IPsec name.

【Match Phase 1】 : Select IPsec policy name for phase 1.

【Match Phase 2】 : Select IPsec policy name for phase 1.

【Destination IP or Domain】 : Set the peer IP or domain name.

【Encrypt Interface】 : Select the encryption interface.

3.3.5 Forward

When you click the "Forward" tab, the following sub-tabs appear on the page:

- NAT & DMZ
- Static Route

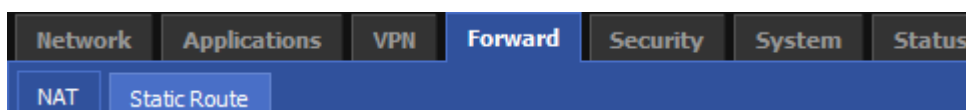


Fig. 3.3.5: Forward Tab

3.3.5.1 Nat

In the "Forward" main tab, click the "NAT" sub-tab to set the route mode, NAT and DMZ functions and go to the following configuration interface:

The screenshot shows the NAT configuration interface. At the top, there are two tabs: "NAT" and "Static Route". Below the tabs, there is a section titled "MASQ" which contains a table with two columns: "Interface" and "Operation". The "Interface" column has the value "modem", and the "Operation" column has a "Delete" button. Below this, there is a section titled "NAT/NAPT Rules" which contains a table with columns: "chain", "Protocol", "Outside Address", "source Port", "Replace Address", "Replace Port", and "Operation". At the bottom of the interface, there are two buttons: "Add" and "Refresh".

Fig. 3.3.5.1-1: NAT Interface

Select the "NAT" option to go to the following configuration interface:

The screenshot shows the NAT configuration interface. At the top, there are two tabs: "NAT" and "Static Route". Below the tabs, there is a section titled "Basic Settings" which contains the following fields: "Select" with radio buttons for "NAT" (selected) and "MASQ"; "chain" with a dropdown menu showing "dstnat"; "Protocol" with a dropdown menu showing "all"; "source address" with a text input field and a hint "* eg. 192.168.8.1"; and "Replace Address" with a text input field and a hint "* eg. 192.168.0.1". At the bottom of the interface, there are two buttons: "Save" and "Return".

Fig. 3.3.5.1-2: NAT Interface

【Select】 : Select NAT or MASQ.

【Chain】 : Select the NAT mode.

【Protocol】 : Select the protocol for NAT mode.

【Source Address】 : Set the source IP address.

【Replace Address】 : Set the replace IP address.

3.3.5.2 Static Route

In the "Forward" main tab, click the "Static Route" sub-tab to set the static route parameters and go to the following configuration interface:

The interface shows a tabbed menu with 'NAT' and 'Static Route'. The 'Static Route' tab is active. Below the tabs is a table with three columns: 'IP Address/Mask', 'Gateway', and 'Operation'. The first row contains the values '0.0.0.0/0', 'modem', and a 'Delete' button. At the bottom of the interface are two buttons: 'Add' and 'Refresh'.

IP Address/Mask	Gateway	Operation
0.0.0.0/0	modem	Delete

Add Refresh

Fig. 3.3.5.2-1: Static Route Configuration Interface

To add the static route, click the “Add” button and go to the following configuration interface:

The interface shows a tabbed menu with 'NAT' and 'Static Route'. The 'Static Route' tab is active. Below the tabs is a section titled 'Basic Settings' with three fields: 'IP Address/Mask' (text input with a hint '* eg. 192.168.8.0/24'), 'Gateway Type' (dropdown menu with 'Interface' selected), and 'Gateway' (dropdown menu with 'br0' selected). At the bottom are two buttons: 'Save' and 'Return'.

Basic Settings

IP Address/Mask * eg. 192.168.8.0/24

Gateway Type

Gateway

Save Return

Fig. 3.3.5.2-2: Static Route Configuration Interface

【IP Address/Mask】 : Configure the destination network address and mask of this static route.

【Gateway Type】 : Select gateway name for interface or static IP address.

【Gateway】 : Select gateway interface or set the gateway static IP address

3.3.6 Security

When you click the “Security” tab, the following sub-tabs appear on the page:

The interface shows a row of tabs: 'Network', 'Applications', 'VPN', 'Forward', 'Security', 'System', and 'Status'. The 'Security' tab is active. Below it are three sub-tabs: 'IP Filter', 'Domain Filter', and 'MAC Filter'.

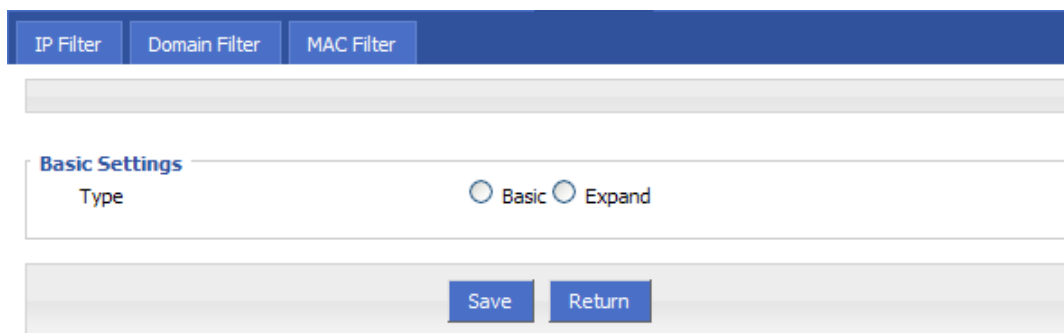
Network Applications VPN Forward Security System Status

IP Filter Domain Filter MAC Filter

- IP Filter
- Domain Filter
- MAC Filter

3.3.6.1 IP Filter

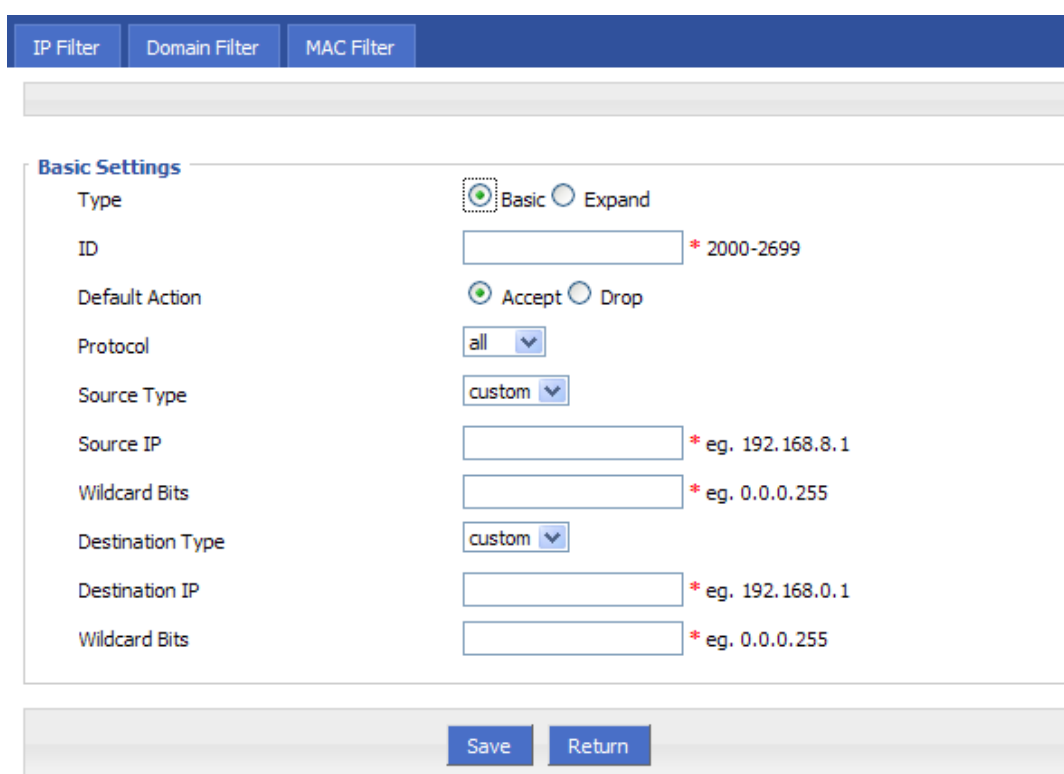
Click the “Add” to go to the following configuration interface:



The interface shows a top navigation bar with 'IP Filter', 'Domain Filter', and 'MAC Filter' tabs. Below is a 'Basic Settings' section with a 'Type' field containing two radio buttons: 'Basic' (selected) and 'Expand'. At the bottom are 'Save' and 'Return' buttons.

Fig. 3.3.6.1-1: IP Filter Interface

You can choose filter type here: IP filter rules for Basic or Expand
Select the "Basic" to go to the following configuration interface:



This expanded configuration interface includes the following fields and options:

- Type:** Radio buttons for 'Basic' (selected) and 'Expand'.
- ID:** Text input field with a red asterisk and range '2000-2699'.
- Default Action:** Radio buttons for 'Accept' (selected) and 'Drop'.
- Protocol:** Dropdown menu with 'all' selected.
- Source Type:** Dropdown menu with 'custom' selected.
- Source IP:** Text input field with a red asterisk and example 'eg. 192.168.8.1'.
- Wildcard Bits:** Text input field with a red asterisk and example 'eg. 0.0.0.255'.
- Destination Type:** Dropdown menu with 'custom' selected.
- Destination IP:** Text input field with a red asterisk and example 'eg. 192.168.0.1'.
- Wildcard Bits:** Text input field with a red asterisk and example 'eg. 0.0.0.255'.

'Save' and 'Return' buttons are at the bottom.

Fig. 3.3.6.1-2: IP Filter Interface

The configuration parameters include:

【Type】 : Basic type is based on IP address filter. Expand type is based on IP address and port filter.

【ID】 : Set the identification of the filter rule, the ID is available from 2000 to 2699.

【Default Action】 : Accept means permit the added IP address and port. Drop means deny the added IP address and port. Generally, we need to add the rule for deny at first.

【Protocol】 : Select the protocol for filter rule.

【Source Type】 : Custom means you might specify the source IP or IP segment for permit or deny. Any means all IP addresses are permitted or denied as you configured. Host means the only IP address is permitted or denied.

【Source IP】 : Set the source IP address of the filter rule, may be defined IP address or one IP segment. Specially, you must configure the initial IP of IP segment.

【Wildcard Bits】 : Configure the wildcard for source IP address or IP segments.

【Destination IP】 : Set the source IP address of the filter rule, may be defined IP address or one IP segment. Specially, you must configure the initial IP of IP segment.

【Wildcard Bits】 : Configure the wildcard for source IP address or IP segments.

3.3.6.2 Domain Filter

The screenshot shows the 'Domain Filter' configuration page. At the top, there are three tabs: 'IP Filter', 'Domain Filter', and 'MAC Filter'. The 'Domain Filter' tab is selected. Below the tabs, there is a 'Basic Settings' section. It contains a text input field labeled 'Domain Keyword' and a note that says '* eg. baidu Max length is 64'. At the bottom of the page, there are two buttons: 'Save' and 'Return'.

Fig. 3.3.6.2: Domain Filter Interface

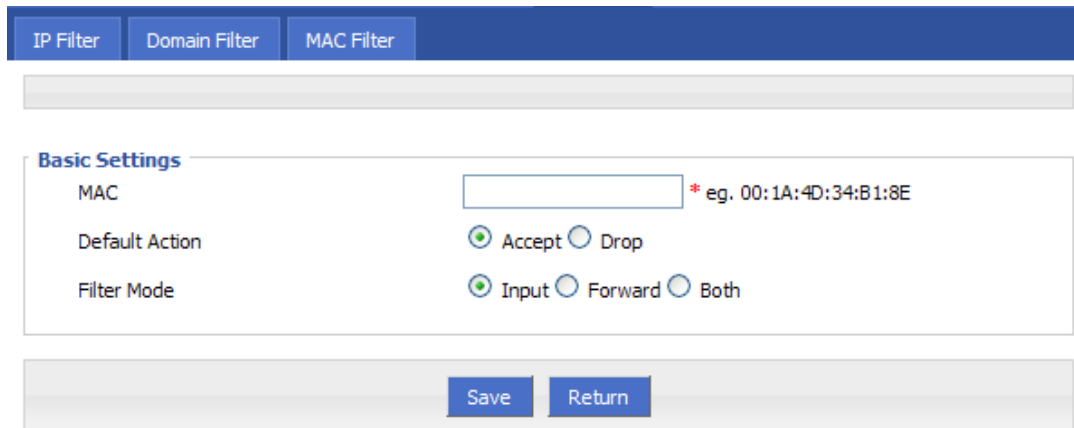
【Domain Keyword】 : Set the domain keyword, e.g. www.google.com.

3.3.6.3 MAC Filter

The screenshot shows the 'MAC Filter' configuration page. At the top, there are three tabs: 'IP Filter', 'Domain Filter', and 'MAC Filter'. The 'MAC Filter' tab is selected. Below the tabs, there are two main configuration sections: 'MAC INPUT Configure' and 'MAC FORWARD Configure'. Each section has an 'Action' dropdown menu with 'Black List' and 'White List' options. Below each dropdown is a table with three columns: 'MAC Address', 'Action', and 'Operation'. At the bottom of the page, there are two buttons: 'Add' and 'Refresh'.

Fig. 3.3.6.3: MAC Filter Interface

Click the "Add" to go to the following configuration interface:



The screenshot shows the MAC Filter configuration interface. At the top, there are three tabs: 'IP Filter', 'Domain Filter', and 'MAC Filter', with 'MAC Filter' being the active tab. Below the tabs is a 'Basic Settings' section. It contains three fields: 'MAC' with a text input box and a red asterisk followed by the example 'eg. 00:1A:4D:34:B1:8E'; 'Default Action' with two radio buttons, 'Accept' (selected) and 'Drop'; and 'Filter Mode' with three radio buttons, 'Input' (selected), 'Forward', and 'Both'. At the bottom right of the settings section are two buttons: 'Save' and 'Return'.

Fig. 3.3.6.3-1: MAC Filter Interface

【MAC】 : Set the the MAC address.

【Default Action】 : Select the action mode for accept or drop.

【Filter Mode】 : Select the filter mode for input, forward or both.

3.3.7 System

When you click the "System Tools" tab, the following sub-tabs appear on the page:

- Local Log
- Remote Log
- Clock
- Account
- Network Test
- Files

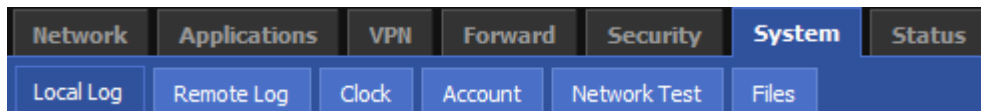


Fig. 3.3.7: System Tab

3.3.7.1 Local Log

In the "System Tools" main tab, click the "Local Log" sub-tab to view the log information and go to the following configuration interface:

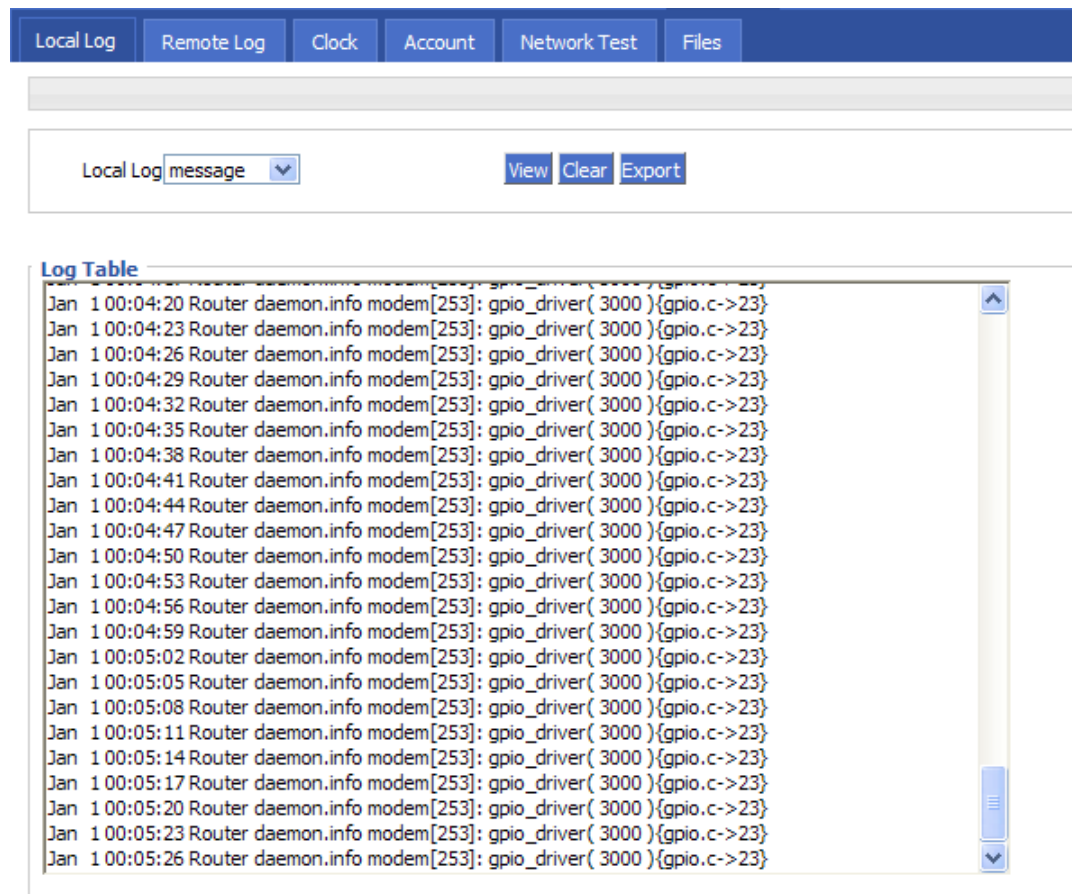


Fig. 3.3.7.1: Log View Interface

Log view settings include:

【Local Log】: Set the type of log to be displayed.

After selecting the log type, you can make the following operations:

【View】: Display log in the Log Table.

【Clear】: Clear the log in the Log Table.

【Export】: Export the logs file.

Log display:

【Log Table】: Display the system log information in the table.

3.3.7.2 Remote Log

In the "System" main tab, click the "Remote Log" sub-tab to set the log function and go to the following configuration interface:

Local Log	Remote Log	Clock	Account	Network Test	Files
Log Status <input type="button" value="Enable"/> <input type="button" value="Disable"/>					
Remote IP or Domain		<input type="text" value="192.168.8.123"/>		* eg. 192.168.8.1	
Remote Port		<input type="text" value="514"/>		* 1-65535	
<input type="button" value="Save"/> <input type="button" value="Refresh"/>					

Fig. 3.3.7.2: System Log Management Interface

The system log configuration parameters include:

【Local Log Status】 : Set whether enable local log function: Enable/Disable.

【Remote IP or Domain】 : Set the IP address/domain name of the remote server, generally the IP address of the PC that receives the log information.

【Remote Port】 : Set the port number of the remote server.



Note:

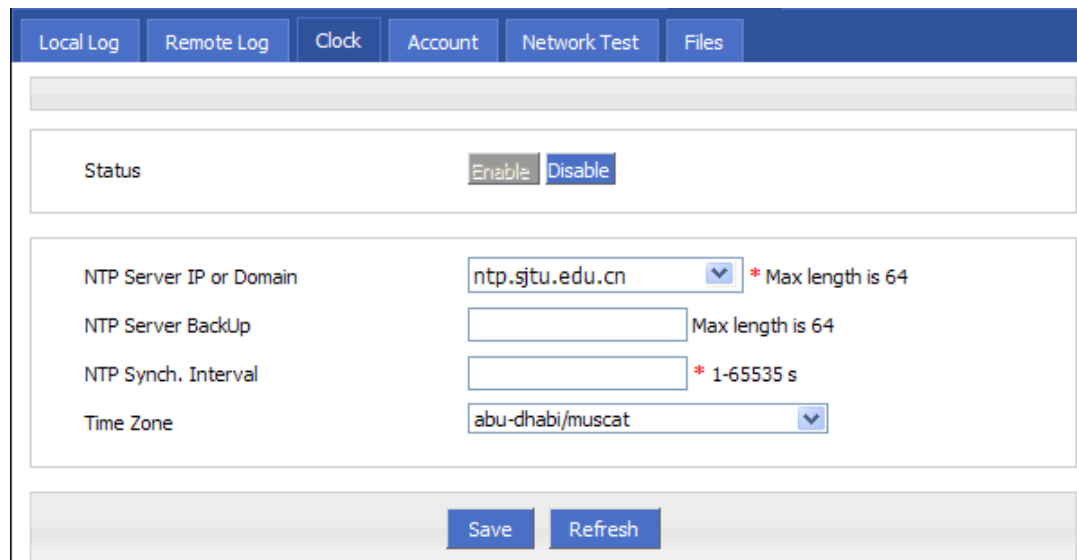
For the success of remote log receive, the remote log server must be started.

3.3.8.3 System clock

In the "System Tools" main tab, click the "Clock" sub-tab to set the system's clock function. Time Synch. Type option is the method to synchronize the system time: NTP and Manual.

Select the Manual to set the time manually.

Select the NTP to go to the following configuration interface:



The interface shows a top navigation bar with tabs: Local Log, Remote Log, Clock, Account, Network Test, and Files. The 'Clock' tab is active. Below the tabs, there is a 'Status' section with 'Enable' and 'Disable' buttons. The 'Enable' button is highlighted. Below this, there are four configuration fields: 'NTP Server IP or Domain' (a dropdown menu showing 'ntp.sjtu.edu.cn' with a note '* Max length is 64'), 'NTP Server Backup' (a text input field with a note 'Max length is 64'), 'NTP Synch. Interval' (a text input field with a note '* 1-65535 s'), and 'Time Zone' (a dropdown menu showing 'abu-dhabi/muscat'). At the bottom, there are 'Save' and 'Refresh' buttons.

Fig. 3.3.8.3: Clock Configuration Interface

The system clock configuration parameters include:

【Status】: Enable/disable the Clock service

【NTP Server IP or Domain】: Set the domain or IP address of the NTP server.

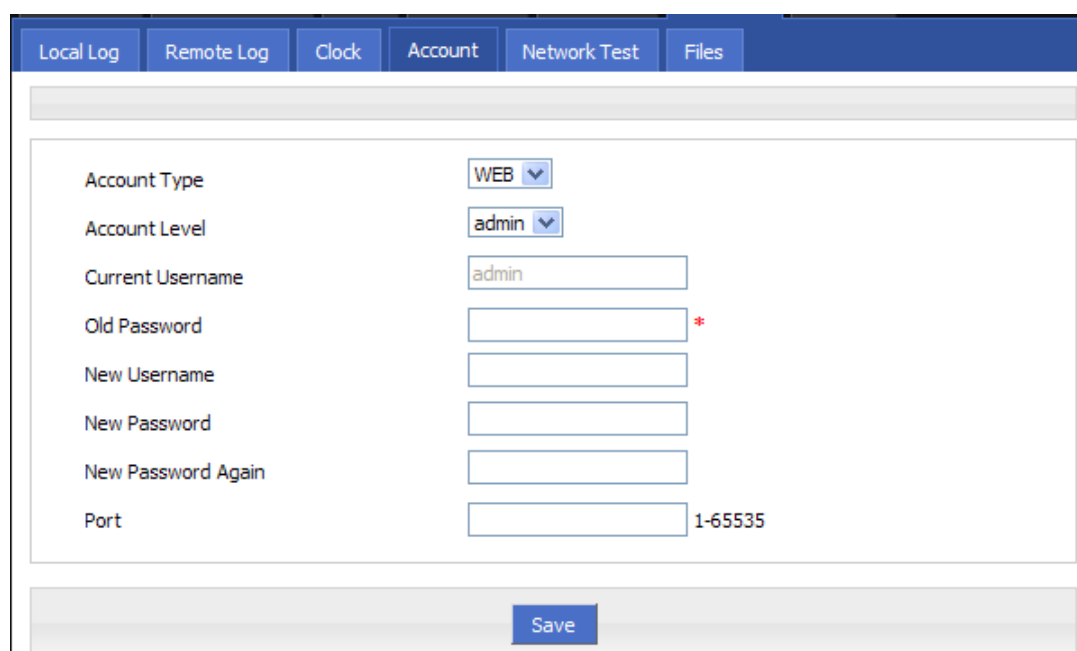
【NTP Server Backup】: Set the backup NTP server IP address/domain.

【NTP Synch. Interval】: Set the interval of the router making NTP synchronization in successive two times.

【Time Zone】: Set the time zone.

3.3.8.4 Account

The router provides the user with the power to modify the password, In the "System" main tab, click the "Account" sub-tab to set the account management function and go to the following configuration interface:



The interface shows a top navigation bar with tabs: Local Log, Remote Log, Clock, Account, Network Test, and Files. The 'Account' tab is active. Below the tabs, there are several configuration fields: 'Account Type' (a dropdown menu showing 'WEB'), 'Account Level' (a dropdown menu showing 'admin'), 'Current Username' (a text input field showing 'admin'), 'Old Password' (a text input field with a red asterisk '*'), 'New Username' (a text input field), 'New Password' (a text input field), 'New Password Again' (a text input field), and 'Port' (a text input field with a note '1-65535'). At the bottom, there is a 'Save' button.

Fig. 3.3.7.4: Account Interface

The system clock configuration parameters include:

【Account Type】 : Set the account based on Web.

【Account Level】 :Set the account authority. Admin authority can configure all features. Guest authority just can view all feature.

3.3.7.5 Network Test

In the "System" main tab, click the "Network Test" sub-tab.

The screenshot displays the 'Network Test' sub-tab interface. At the top, there is a navigation bar with tabs: 'Local Log', 'Remote Log', 'Clock', 'Account', 'Network Test' (selected), and 'Files'. Below the tabs, there is a section for 'Destination' with an input field and a red asterisk. To the right of the input field are two buttons: 'Ping' and 'Trace'. Below this is a large 'Result' area with a scrollable content box. At the bottom of the interface is a 'Refresh' button.

Fig. 3.3.7.4: Account Interface

【Destination】 : Set the destination IP address for ping or trace testing.

【Ping】 :Select the ping testing for the destination IP address.

【Trace】 : Select the trace testing for the destination IP address.

3.3.7.5 File

In the "System" main tab, click the "File" sub-tab to upgrade and backup function.

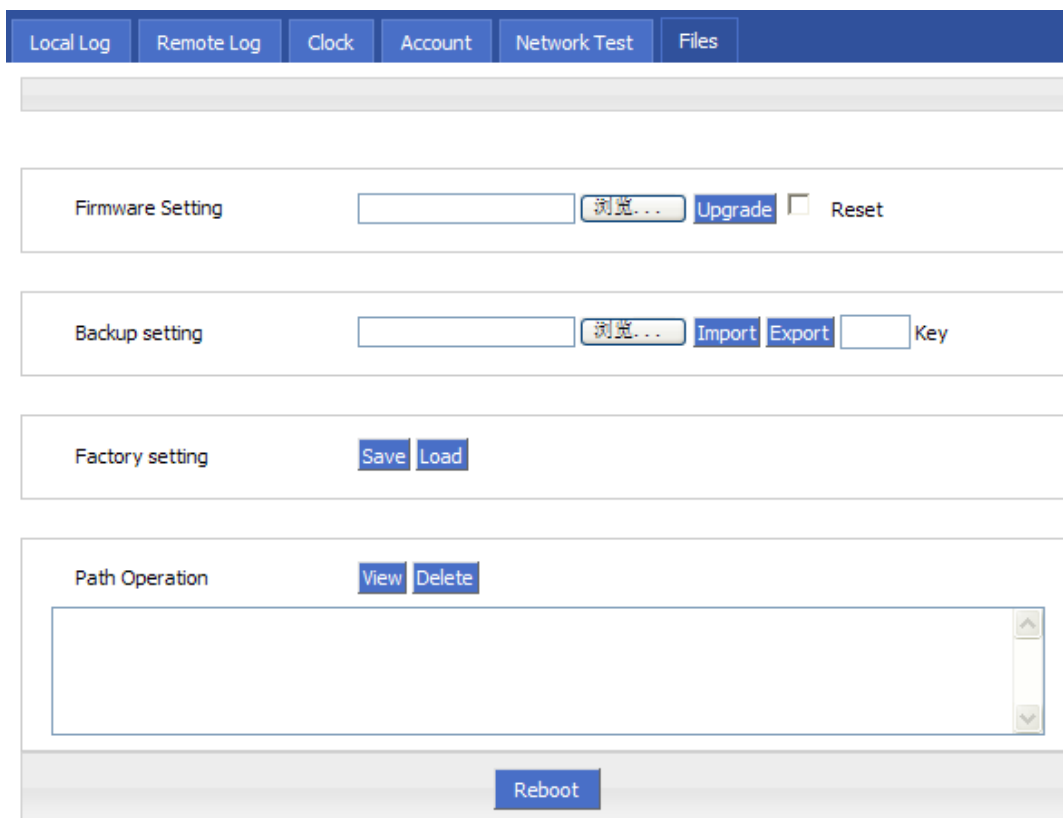


Fig. 3.3.7.5: System Reboot Interface

- 【Firmware Setting】: Upgrade firmware/patch .
 【Backup Setting】: Import/export the configuration.
 【Save】: Save the current configuration as default.
 【Load】: Default the current configuration to default.
 【View】: Check the current patch name in the router.
 【Delete】: Delete the selected patch.

3.3.8 Status

When you click the "Status" tab, the following sub-tabs appear on the page:

- Base Information
- LAN
- Modem
- Routing Table

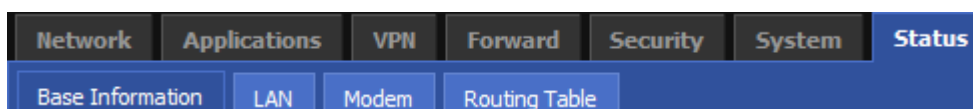


Fig. 3.3.8: Status Tab

Tab description:

- 【Base Information】: Display the system information.

【LAN】 : Display LAN port's running information.

【Embedded Modem】 : Display USB wireless network's running information.

【Route Table】 : Display the route table information.

【DHCP Client】 : Display the DHCP Client information.

Chapter 4 Frequently Asked Questions (FAQ)

4.1 Fault analysis

Fault 1: All indicators are off.

Check whether the cables are connected correctly. Meanwhile, check whether the power supply complies with the requirements. Galaxy H7921 3G Router's label indicates the detailed requirements regarding the power supply voltage. Check whether the power supply voltage is identical with that specified in the label.

If the input voltage is correct, but all indicators are off, maybe the device fails. Please contact your sales representative.

Fault 2: Unstable phenomenon appears after working for a long time.

Check whether the device is overheated. If it is overheated, put the device in a ventilated place.

Fault 3: The device doesn't execute self-checking.

Make sure the power supply is correct.

Fault 4: How to resolve the problem if the following information appears when you ping the router?

Pinging 192.168.8.1 with 32 bytes of data:
Request timed out.

Such information indicates that error occurs in the installation process. You must check the followings in sequence:

- ✓ Whether PC is connected with Galaxy H7921 3G Router correctly by Ethernet cable?
(Note: H7921 Router's LINK indicator and PC's Link indicator must be on).
- ✓ Whether PC's TCP/IP environment is configured correctly?
(Note: If H7921 Router's IP address is 192.168.8.1, PC's IP address must be 192.168.8.xxx).

For more check, click the relevant menu and enter the DOS interface. Type the command: ipconfig, and press the Enter key, for example:

C:\>ipconfig

Windows IP Configuration

Ethernet adapter local connection:

```
Connection-specific DNS Suffix. . . . :  
IP Address . . . . . : 192.168.8.48  
Subnet Mask . . . . . : 255.255.255.0  
IP Address . . . . . : 192.168.0.48  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . : 192.168.0.254
```

(Type the command: ipconfig? to get more operation help regarding ipconfig command).

Appendix: Software Upgrade Description

Upgrade tool description and operating instructions

Galaxy H7921 3G Router is designed with the platform technology, whose software can be upgraded with the development of the communication and network technology.

WEB upgrade:

Galaxy H7921 3G Router supports the function of upgrading the firmware directly by importing the upgrade file via the WEB configuration interface. Log in the WEB configuration page by means of entering the router's IP address (LAN port or WAN port) in the browser's address bar. Click System Tools -> Firmware Upgrade, to go to the Web firmware upgrade interface. Click the Browse key to find the corresponding upgrade file. Click the Save button to upgrade the firmware.

In the process of upgrade, don't make any other operation to the Web configuration page. Otherwise, the upgrade may fail, which may make the router fails. After the upgrade, this Web page will prompt that the upgrade succeeds or fails. If upgrade fails, you can repeat the above operations again to upgrade the firmware.

Note:

1. In the software upgrade process never cut off the power supply or disconnect the communication between the PC and the router.