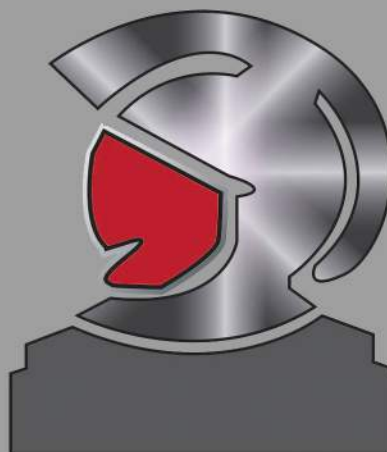


Quick Use Manual

---3G/4G Mobile Router



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1.1 Product overview

industrial Router series use industrial grade design, high-powered 32bit MIPS network processor, embedded industrial grade, high powered, multi-band frequency mobile 3G+ communication module, support WCDMA, HSPA+、TD/FDD-LTE、EVDO (CDMA 2000) etc., high-speed mobile, wide band, provide quick, convenient internet access or private network transmission to customer, optional built-in WI-FI module or multi-LAN port, provide wire-line network or wireless WLAN share high speed wide band access, meanwhile, customized high grade VPN (OpenVPN、IPSec、SSL), to construct safe channel, widely used in financial, electric power, environment, oil, transportation, security, etc..

industrial router series provide configuration interface based on Web, optional CLI configuration interface, customer can configure only by IE explore or Telnet/SSH, various configuration method, concise and friendly interface make configuring and managing of all router terminal easier ,meanwhile, HOMTECS M2M Tech. provide M2M terminal management platform to manage all router terminal with remote management. User can monitor all terminals which connected to platform successfully by this platform, provide long-distance control, parameter configuration, and long-distance upgrade service.

1.2 Model intro

industrial grade router series have single module / single SIM card, single module / double SIM card, double module / double SIM card design, support multi-band frequency WCDMA, HSPA+, TD/FDD-LTE, EVDO (CDMA 2000) etc., mobile wide-band, downward compatibility to GPRS、EDGE、CDMA 1x, etc., mobile narrow-band, optional built-in Wi-Fi module to build WLAN network, optional GPS module Expansion positioning function, to suit different requirement and different network environment of different operator, our Router series have many model for option, below is the product model indications in detail:

Table 1-1 Router series table:

H20 Serials				
Model	3G Cellular Network	Wi-Fi	Serial	Network I/F
H20-W1{2/G}T	HSDPA DL: 3.6Mbps UL: Max 384Kbps		DTU/GPS	1*LAN 1*WAN (multiplex)
H20-W1{2/G}T-W	HSDPA DL: 3.6Mbps UL: Max 384Kbps	Wi-Fi 802.11n/150Mbps	DTU	1*LAN 1*WAN (multiplex)
H20-Wa{2/G}T	HSDPA DL: 7.2Mbps UL: Max 5.76Mbps		DTU/GPS	1*LAN 1*WAN (multiplex)
H20-Wa{2/G}T-W	HSDPA DL: 7.2Mbps UL: Max 5.76Mbps	Wi-Fi 802.11n/150Mbps	DTU	1*LAN 1*WAN (multiplex)
H20-WA{2/G}T	HSPA+ DL: 21.6Mbps UL: Max 17.28 Mbps		DTU/GPS	1*LAN 1*WAN (multiplex)
H20-WA{2/G}T-W	HSPA+ DL: 21.6Mbps UL: Max 17.28 Mbps	Wi-Fi 802.11n/150Mbps	DTU	1*LAN 1*WAN (multiplex)
H20-E1{2/G}T	EV-DO DL: 3.1Mbps UL: Max 1.8Mbps		DTU/GPS	1*LAN 1*WAN (multiplex)
H20-E1{2/G}T-W	EV-DO DL: 3.1Mbps UL: Max 1.8Mbps	Wi-Fi 802.11n/150Mbps	DTU	1*LAN 1*WAN (multiplex)
H20-E2{2/G}T	EV-DO DL: 3.1Mbps UL: Max 1.8Mbps		DTU/GPS	1*LAN 1*WAN (multiplex)
H20-E2{2/G}T-W	EV-DO DL: 3.1Mbps UL: Max 1.8Mbps	Wi-Fi 802.11n/150Mbps	DTU	1*LAN 1*WAN (multiplex)
H50 Serials				
Model	3G Cellular Network	Wi-Fi	Serial	Network I/F
H50-W1{2/G}T	HSDPA DL: 3.6Mbps UL: Max 384Kbps		DTU/GPS	4*LAN 1*WAN
H50-W1{2/G}T-W	HSDPA DL: 3.6Mbps UL: Max 384Kbps	Wi-Fi 802.11n/150Mbps	DTU	4*LAN 1*WAN
H50-Wa{2/G}T	HSDPA DL: 7.2Mbps UL: Max 5.76Mbps		DTU/GPS	4*LAN 1*WAN
H50-Wa{2/G}T-W	HSDPA DL: 7.2Mbps UL: Max 5.76Mbps	Wi-Fi 802.11n/150Mbps	DTU	4*LAN 1*WAN
H50-WA{2/G}T	HSPA+ DL: 21.6Mbps UL: Max 17.28 Mbps		DTU/GPS	4*LAN 1*WAN
H50-WA{2/G}T-W	HSPA+ DL: 21.6Mbps UL: Max 17.28 Mbps	Wi-Fi 802.11n/150Mbps	DTU	4*LAN 1*WAN
H50-E1{2/G}T	EV-DO DL: 3.1Mbps UL: Max 1.8Mbps		DTU/GPS	4*LAN 1*WAN
H50-E1{2/G}T-W	EV-DO DL: 3.1Mbps UL: Max 1.8Mbps	Wi-Fi 802.11n/150Mbps	DTU	4*LAN 1*WAN
H50-E2{2/G}T	EV-DO DL: 3.1Mbps UL: Max 1.8Mbps		DTU/GPS	4*LAN 1*WAN
H50-E2{2/G}T-W	EV-DO DL: 3.1Mbps UL: Max 1.8Mbps	Wi-Fi 802.11n/150Mbps	DTU	4*LAN 1*WAN
H50-Wa2T-D	HSUPA 2 * USIM		DTU/GPS	4*LAN 1*WAN
H50-WaE12T-D	1 * HSUPA 1 * EV-DO		DTU/GPS	4*LAN 1*WAN

1.3 Product appearance

Table 1-2 Router series product appearance

Series	H20	H20—W (G)	H50—W (G)	H50—D
Appearance				
Ports	1*LAN	1*LAN + GPS or WLAN(11n 1T1R)	1*WAN + 4*LAN + GPS or WLAN(11n 1T1R)	1*WAN + 4*LAN + single module/double SIM, double module/double SIM
Product category	Single port router	Single port Wi-Fi (GPS) router	Multi-port Wi-Fi router	multi-port double-link router

1.4 Operation principle

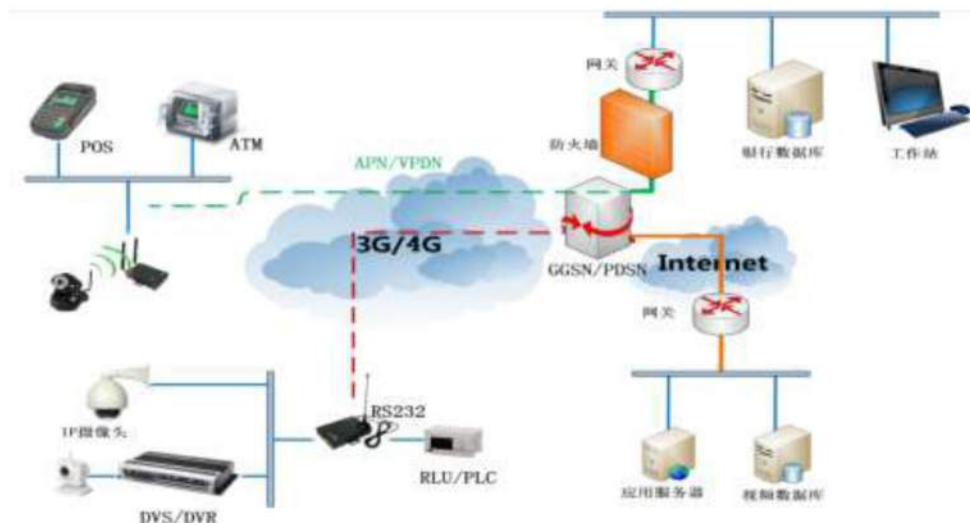


Figure 1-1 networking

The industrial router series is based on mobile wireless public network or private network, build wireless data channel in mature network, to lower down the cost of wireless data transmission and technique.

1.5 Function characteristic

- Support multi-band frequency TD-SCDMA/WCDMA/EDVO of 3G network, compatibility to GPRS/EDGE/CDMA 1x, extended support to 4G LTE network
- Support IEEE802.11b/g/n Wi-Fi AP function, extended support to Wi-Fi terminal, WDS bridging, support WEP, WPA/WPA2 Personal/Enterprise, TKIP/AES, etc., Authenticated encryption mode
- Support virtual data and private network (APN/VPDN)
- Optional support rs-232/rs-485 interface data transparent transmission and protocol conversion
- Support on-demand dialing, include timing on/off-line, voice or SMS control on/off-line, data trigger online or link idle offline
- Support TCP/IP protocol stack, support Telnet, HTTP, SNMP, PPP, PPPoE, etc., network protocol
- Support VPN Client (PPTP, L2TP), optional support OpenVPN, IPSec, HTTPs, SSH, etc. advanced VPN function
- Provide friendly user interface, use normal web internet explorer to easily configure and manage, long-distance configure Telnet/SSH + CLI
- Optional IPv6 protocol stack
- Optional support M2M terminal management platform
- WDT watchdog design, keep system stable Customization as customer's demand

2 Hardware installation

This section is mainly for description of line connection, relevant port and indicator light, perhaps there is some difference between this sketch map and real object. But these difference don't have influence to products function.

2.1 Faceplate:

Table 2-1 H20 faceplate

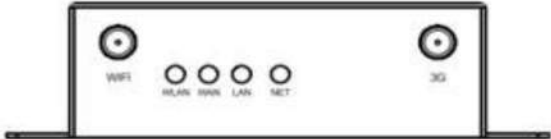
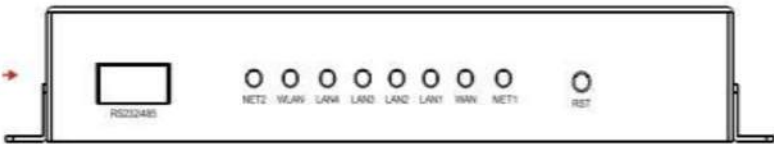
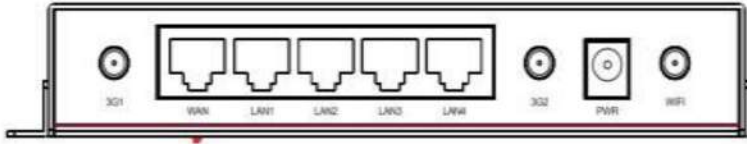
Detran Tech.	H20 series
Front faceplate	
Back faceplate	

Table 2-2 H50 faceplate

Detran Tech.	H50 series
Front faceplate	
Back faceplate	

NOTE:

Antenna interface and indicator light of extending Wi-Fi , GPS function and single module/double SIM, double module/double SIM have some difference.

Table 2-3 Router port description

port	description	Notice
USIM	inserting SIM neck, support 1.8/3V/5V automatic detection	
3G	3G antenna, SMA joint, 50Ω	
WiFi	Wi-Fi antenna, SMA joint, 50Ω	Optional
GPS	GPS antenna, SMA joint, 50Ω	Optional
LAN	Ethernet downlink service interface, 10/100Base-TX, MDI/MDIX self-adaption, connect Ethernet port of computer or switchboard, concentrator	H20: 1*LAN H50: 4*LAN
WAN	Ethernet uplink service interface, 10/100Base-TX, MDI/MDIX self-adaption, connect switchboard or router	H20 serial port and WAN port multiplex
RST	Reset button, (press on button 5 seconds)	
PWR	Power source interface	5 ~ 26V DC
WAN/CON	Four pin serial port, suitable for collection device with RS-232 or RS-485 interface, for wireless data transmission, CON is debugging port.	H20 serial port and WAN port multiplex

2.2 Indicator light

Table 2-4 Router indicator light

silk-screen	color	status	meaning
NET	green	flicker	Signal is strong, it's effective when module and SIM is normal
	yellow	flicker	Signal is middle class, it's effective when module and SIM is normal
	red	flicker	Signal is weak, it's effective when module and SIM is normal
		slow flicker	Already login network or dialing online
		quick flicker	Login in 3G network or is logging in network
WLAN	green	keeping on	WLAN port is open, but no data is in transmission.
	green	quick flicker	Data is in transmission
	green	extinguish	WLAN port isn't opened

silk-screen	color	status	meaning
LAN	green	keeping on	Already link to Ethernet device, but no data is in transmission.
	green	quick flicker	Data is in transmission
	green	extinguish	Haven't link to Ethernet device
WAN	green	keeping on	Already link to Ethernet device, but no data is in transmission
	green	quick flicker	Data is in transmission
	green	extinguish	Haven't link to Ethernet device

NOTE:

Extended Wi-Fi, GPS function and single module/double SIM, double module/double SIM series product's indicator light have some difference.

2.3 Dimension

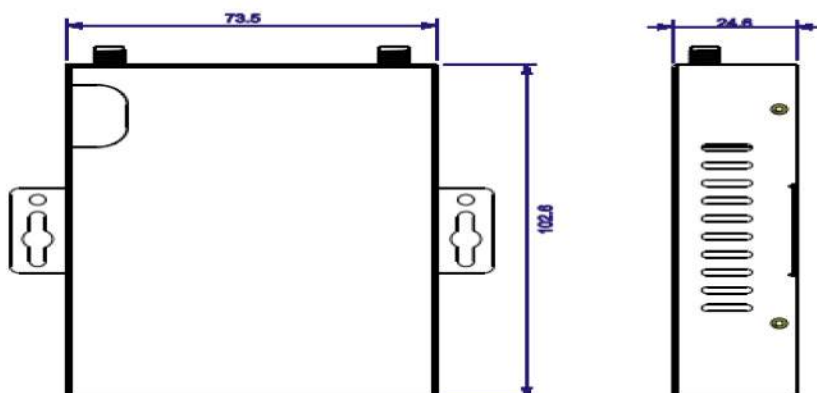


Figure 2-1 H20 router dimension figure

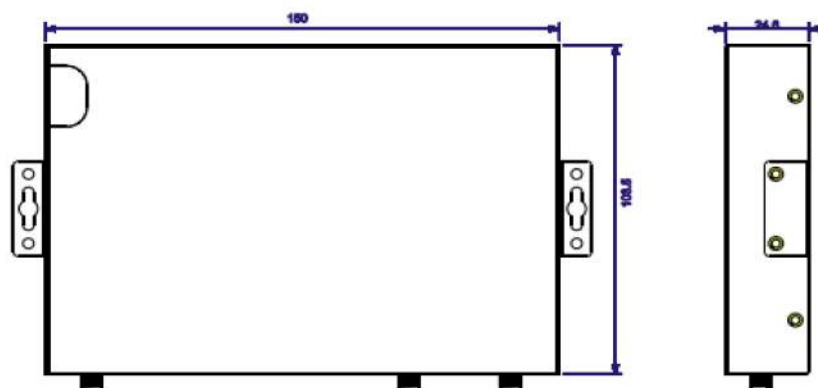


Figure 2-2 H50 router dimension figure

2.4 Cable connection

After fix equipment, please follow below steps to connect router series.

NOTE:

Before connection, please disconnect power source of router

- Step 1 Connecting 3G antenna to 3G port of router. And connecting Wi-Fi antenna to WIFI port of router, and adjust the antenna to best position and direction.
- Step 2 Use LAN port of ethernet link router(LAN or LAN1--LAN4 port) to connect computer's network card or switchboard's uplink port or terminal device's uplink port,the connection mode of WAN port is same as LAN port.
- Step 3 Use power adapter to connect PWR port of router,12V/1A DC
- Step 4 Press on power button

----end

3 Configuration intro

This section introduce the parameter configuration process of router, router can configure by web internet explorer, or Firefox, chrome. We take windows 7 system and Internet Explorer 9.0 as sample.

3.1 Build web configuration environment

Router support configuration by local Ethernet port, the default IP address is 192.168.1.1, subnet mask is 255.255.255.0,pls see followings:

- Step 1 Use the ethernet LAN port which is for connecting router to connect ethernet port of computer,computer can get IP automatically,or set up IP address,192.168.1.xxx(XXX can be any number between2~254)
- Step 2 Open internet explorer,input "http://192.168.1.1", in address bar, carriage return. Input user name and code in login dialog box, default user name and code is admin/admin.



Figure 3-1 Configuration management user authentication interface

----end

3.2 Basic configuration

NOTE:

Different software version have different web configuration interface, below interface is cut out from R20_2.6.0.1 device.

After enter into web configuration interface, you can check the current status of Router, or modify router's configuration by web configuration interface, below is the introduction to part of configuration in common use.

The screenshot displays the Router Status web interface. On the left is a dark sidebar with a menu containing: Status, Overview, LAN, Device List, Basic Network, WLAN, Advanced Network, VPN Tunneling, Administration, Debugging, and Logout. The main content area is titled 'Router' and is divided into two sections: 'System Status' and 'Internet Status'.

System Status

Router Name	Router
Hardware Verion	C11-D12
Firmware Version	Router-1.0.1-130409-024108
Time	Tue, 09 Apr 2013 19:15:42 +0800 Clock Sync.
Uptime	0 days, 00:00:55
CPU Load (1 / 5 / 15 mins)	1.49 / 0.41 / 0.14
Total / Free Memory	28.11 MB / 17.87 MB (63.58%)

Internet Status

Connection Type	3G-C5300:CDMA 1x/CDMA 2000
IMEI	80259A5D
Modem Status	Ready
USIM Status	Ready
CSQ	31
IP Address	14.16.137.194
Subnet Mask	255.255.255.255
Gateway	113.115.0.1
DNS	202.96.128.86:53, 202.96.134.133:53
MTU	1492
Status	Connected
Connection Uptime	0 days, 00:00:26

At the bottom right of the interface, there is a red circular refresh icon, a dropdown menu showing '3 seconds', and a 'Stop' button.

Figure 3-2 Router State screenshot

3.2.2 Mobile network configuration

- Step 1 In navigation bar, please choose "basic configuration>mobile network". In opened page, you can modify relevant parameter of configuring mobile network.



Figure 3-3 mobile network configuration screenshot

Table 3-1 "mobile network" configuration parameter description

parameter	description
ICMP link detection	Control message protocol, check if host computer is reachable
User-defined dialing option	Self-defined dialing mode number
Dialing mode	Dialing mode to link to network
MTU	Maximum transmission unit is a maximum size of data packet which is allowed to pass in a layer of a communication protocol
PIN code	Set up SIM 's private identification code
Center number	Operator's network access number
APN access point	Relevant service parameter provided by operator
User name	
code	

- Step 2 After configuration, please click "save" to make configuration effective.

----end

3.2.3 LAN network configuration

Step 1 In navigation bar, choose "basic configuration>LAN", in opened page, you can modify relevant parameter of configuring LAN.



Figure 3-4 LAN configuration screenshot

Table 3-2 LAN configuration parameter description

parameter	description
Router IP address	Router IP address, default IP is 192.168.1.1
Subnet mask	router subnet mask, default mask is 255.255.255.0
DHCP	Dynamic allocation IP service, after pitch on DHCP service, below will show IP address range and options of lease
IP address range	IP address range within LAN
Lease	valid time which DHCP allocating IP automatically

Step 2 After configuration, click "save", equipment will restart to make configuration effective.

----end

3.2.4 Dynamic domain name configuration

Step 1 In navigation bar, please choose “basic configuration> dynamic domain name”, in opened page, you can modify relevant parameter of configuring dynamic domain name.

The screenshot shows the 'Dynamic DNS' configuration page. The left sidebar lists various system settings, with 'Basic Network' currently selected. The main panel is divided into three sections for configuring dynamic DNS services. The top section, 'Dynamic DNS', allows setting the IP address (with a dropdown for 'Use WAN IP Address 24, 26, 137, 194 (recommended)') and the auto refresh interval (set to 28 days). Below this are two identical sections for 'Dynamic DNS 1' and 'Dynamic DNS 2', each with a 'Service' dropdown menu currently set to 'None'. 'Save' and 'Cancel' buttons are located at the bottom right of the configuration area.

Figure 3-5 Dynamic domain name screenshot

Table 3-3 "LAN" configuration parameter description

parameter	Description
IP address	Dynamic DNS service can make a dynamic IP address to be a statically host name of domains, make it visited easier by different position from internet, usually, use default IP 0.0.0.0
Auto refresh time	Set up the detection to update time of dynamic IP
Service provider	Set up dynamic domain name service provider, acquiescent in no configuration.it depend on user relevant DNS provider, if there is no relevant option in table, user can choose" user-defined" option.

Step 2 After configuration, click “Save:” to make configuration effective.

----end

3.3 WLAN configuration

It's mainly for router series which support Wi-Fi, you can modify and configure WLAN

attribute by Web, below is the introduction to common use configuration part of WIFI function.

3.3.1 Basic parameter configuration

Step 1 In navigation bar, please choose "WLAN configuration>basic parameter configuration" in opened page, you can modify and configure WIFI basic parameter.



Figure 3-6 Wi-Fi basic parameter configuration screenshot

Table 3-4 Basic parameter configuration description

parameter	description
Start wireless	Only after Start wireless mode, relevant WIFI parameter can be configured.
Wireless mode	Choose networking mode of wireless network'. Acquiesce in support AP work mode, and AP+WDS, client-side, network bridge, and pure WDS mode.
wireless network protocol	Router support IEEE 11b/g/n, etc.. protocol
SSID	Default is router.
channel	The channel of wireless network, using default
bandwidth	Bandwidth of wireless network, support 20MHZ and 40MHZ.
safety option	Way of encryption of wireless network, support various mode.

Step 2 After configuration, please click "SAVE", to make it effective.

----end

3.3.2 Client filter configuration

- Step 1 In navigation bar, choose "WLAN configuration> client filter configuration", in opened page you can modify relevant parameter.



Figure 3-7 Wireless client filter configuration screenshot

Client filter function can allow or prohibit specific computer to connect router in wireless mode. But for wired connection, it don't have limit.

Table 3-5 "wireless client filter" configuration parameter description

parameter	description
Prohibit filter function	Don't start filter function, default is prohibit.
only allow listed client	Only allow listed MAC address to connect to router in wireless mode
prevent listed client	Prevent listed MAC address to connect to router in wireless mode

- Step 2 After configuration, click "save" to make it effective.

----end

3.4 System management

3.4.1 System identification

- Step 1 In navigation bar, please choose "system management> system identification", in opened page, you can modify relevant parameter.

Identify router, host name and domain located, if there is too many network device in

LAN, you can set up name of router to separate from our equipment.

The screenshot shows a web-based configuration interface for a router. On the left is a dark sidebar with a menu. The 'Identification' option is highlighted. The main content area has a title 'Router Identification' in red. Below the title are three text input fields. The first field is labeled 'Router Name' and contains the text 'Router'. The second field is labeled 'Hostname' and contains the text 'router'. The third field is labeled 'Domain Name' and is currently empty. At the bottom right of the main area are two buttons: 'Save' and 'Cancel'.

Figure 3-8 System identification screenshot

Table 3-6 “system identification” parameter description

parameter	description
Router name	Default is router, maximum 32 English character, after setup, show in system status page and telnet is in.
Host name	Default is router, maximum 32 English character, after setup, show up user-defined name in windows LAN
Domain name	Default is empty, maximum 32 English character, the domain name is domain of WAN port, and user don't need to set up.

Step 2 After configuration,click"save" to make effective

---end

3.4.2 Time configuration

Step 1 In navigation bar, choose "system management > time setup" in opened page, you can modify relevant parameter.

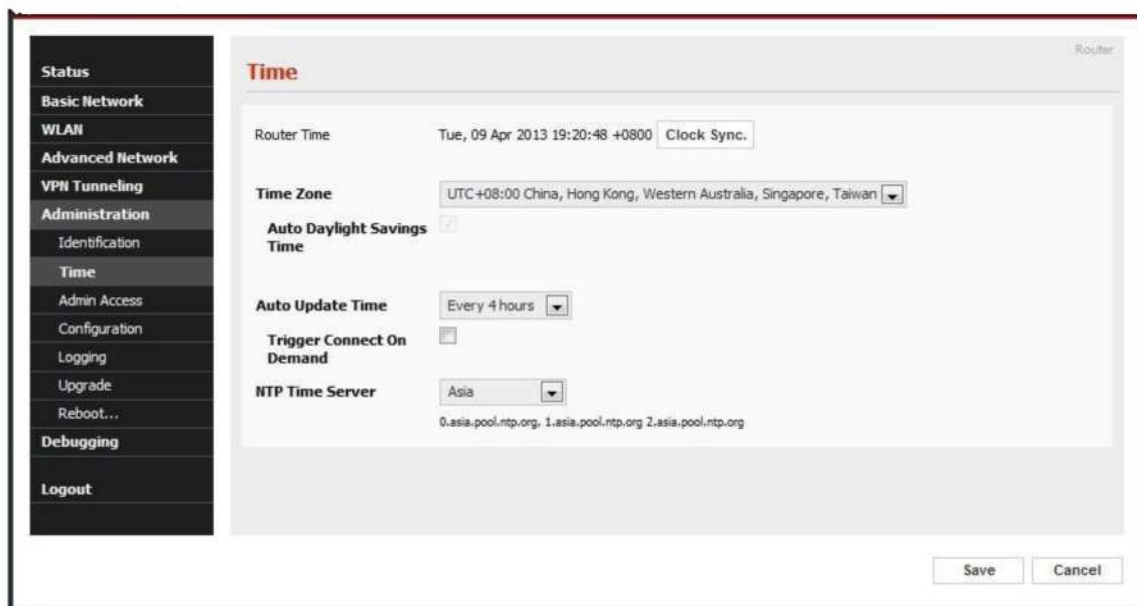


Figure 3-9 System configuration screenshot

NOTE

If it can be online, but time update is failed, please try other NTP time server.

Step 2 After configuration, pls click "save: to make effective

----end

3.4.3 Configuration management

Step 1 In navigation bar, pls choose "system management > configuration management" in opened page, you can modify relevant parameter.

In this page, you can configure some basic web access settings, make it more convenient for use, code setup option is the admin code of modifying system account.

The screenshot displays the 'Web Admin' configuration interface. On the left is a dark sidebar with a navigation menu. The main area is light gray and titled 'Web Admin'. It contains two main sections: 'Web Admin' and 'Password'. The 'Web Admin' section includes settings for 'Local Access' (HTTP), 'HTTP Port' (80), 'Remote Access' (Disabled), and 'Allow Wireless Access' (checked). Below these are 'Open Menus' with checkboxes for Status, Basic, WLAN, Advanced, Administration, and Debug. The 'Password' section has two password input fields, one labeled 'Password' and the other '(re-enter to confirm)'. At the bottom right are 'Save' and 'Cancel' buttons.

Figure 3-10 Manage system management configuration screenshot

Step 2 After configuration, click "save", to make it effective

----end

3.4.4 Backup and recovery

Step 1 In navigation bar, please choose "system management> backup and recovery" in opened page,you can modify relevant parameter.

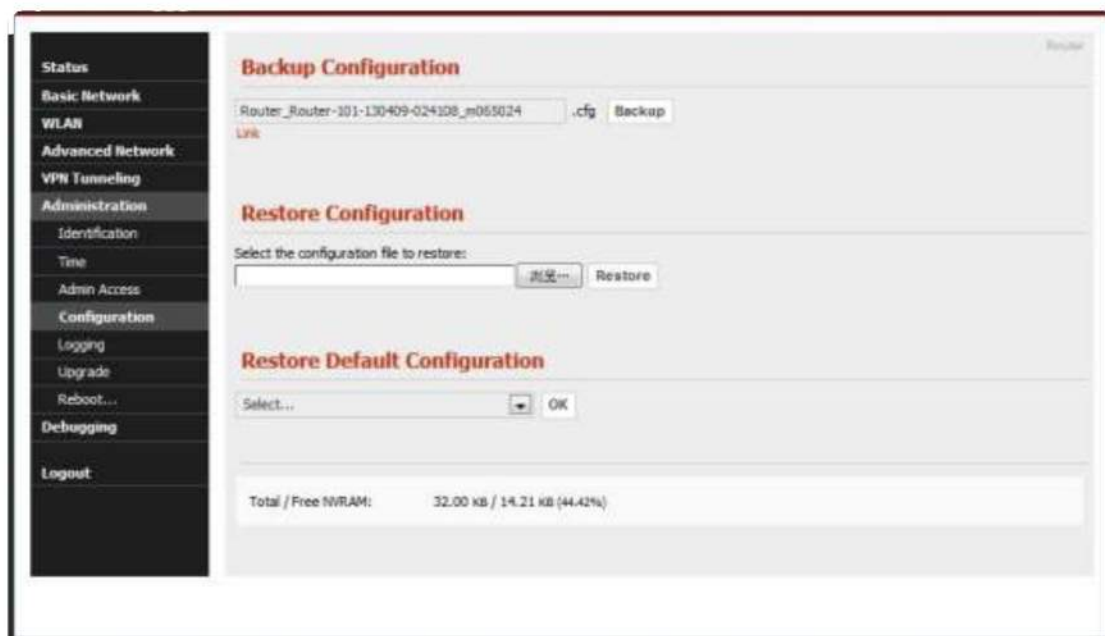


Figure 3-11 Backup and recovery configuration screenshot

Note

Restore factory sets will lose all configuration information, please be careful.

Step 2 For "recover system configuration" and "restore factory sets" after configuration, click "save". System will restart automatically, to make effective.

----end

3.4.5 Log configuration

- Step 1 In navigation bar, choose “system management>log configuration”,in opened page, you can modify relevant parameter.
- Step 2 In the log configuration interface, can choose”save the path”(local or far-end server),or the time of log begin.

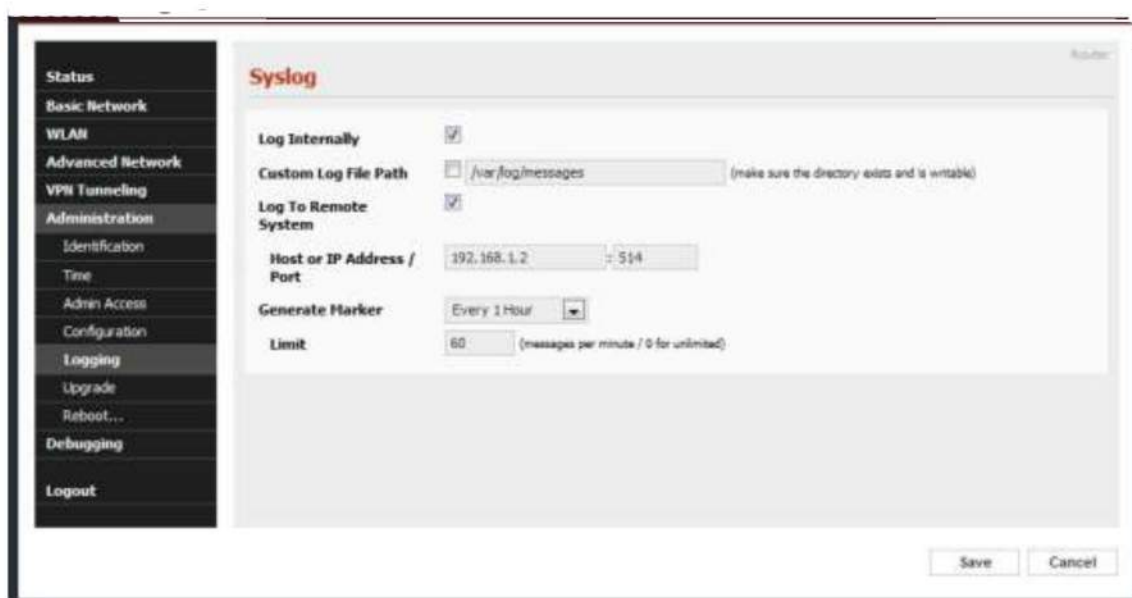


Figure 3-12 System log configuration screenshot

- Step 3 After configuration, click "Save" to make effective

----end

3.4.6 Firmware upgrade

- Step 1 In navigation bar, choose "system management >firmware upgrade", in opened page, you can modify relevant parameter.

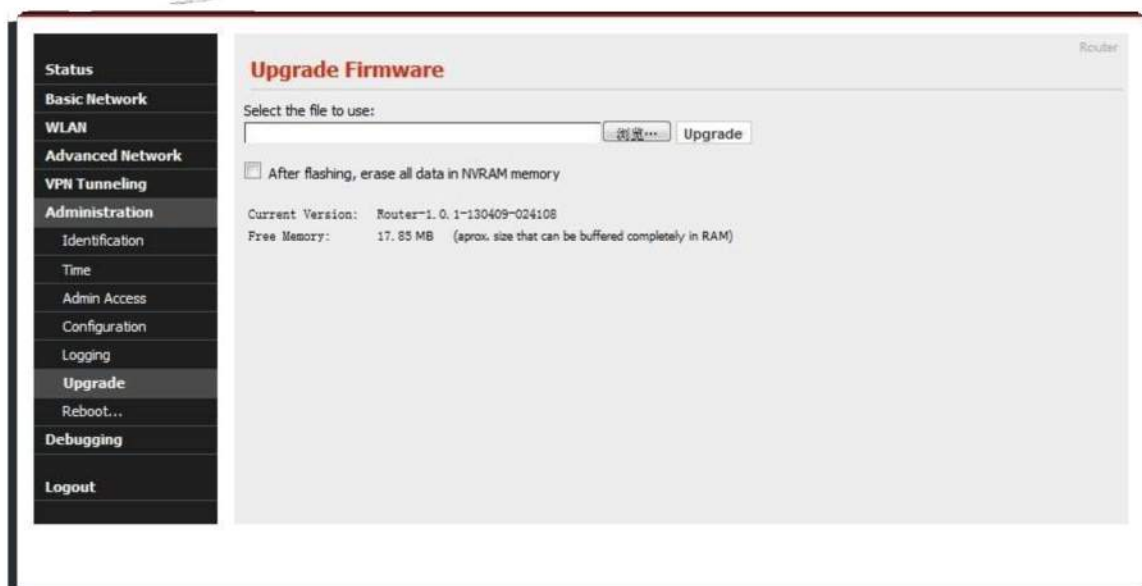


Figure 3-13 firmware upgrade configuration screenshot

Note:

When upgrading, don't cut off power of router.

3.4.7 System restart

- Step 1 In navigation bar, please choose "system management >system restart". System will popup dialog box of "yes" and "NO", choose as needs.
- Step 2 If choose "yes" system will restart, all relevant previous update configuration will be effective after restrat.

----end

3.5 “RST” button for restore factory sets

If you forget address because LAN port address is modified before, and you can't log in Web for configuration, you can press on RST button to restore factory setting.

Beside Ethernet port, you can press it with nib for 8 seconds, till net light stop flicker, then, factory setting is restored, and system will restart automatically.

If you can't enter web interface because of other reasons, you also can use this way.

Table 3-7 System default configuration

parameter	Default setting
LAN port IP address	192.168.1.1
LAN port subnet mask	255.255.255.0
DHCP server function	Start using
user name for logging in web interface	admin
code for logging in web interface	admin

NOTE:

After this operation, all configuration will be deleted and back to factory settings.
