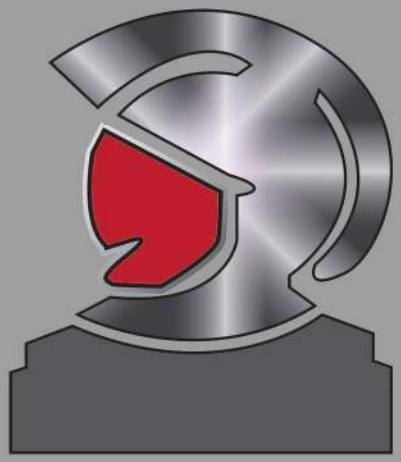
# Quick Use Manual

---3G/4G Mobile Router



# Contents

# 1 Product intro

## 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 +<br>GPS or WLAN(11n 1T1R) | 1*WAN + 4*LAN +<br>GPS or WLAN(11n 1T1R) | 1*WAN + 4*LAN +<br>single module/doulbe SIM,<br>double module/double SIM |
| Product category | Single port router | Single portWi-Fi（GPS）router | Multi-portWi-Fi router | multi-port double-link router |

## 1.4 Operation principle

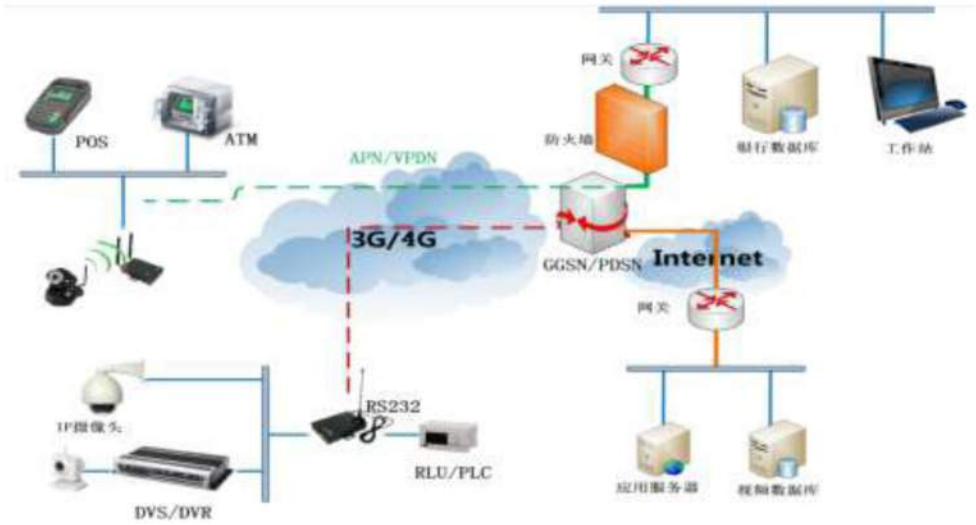



Figure 1-1 networking

. 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

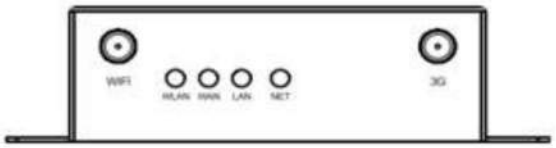
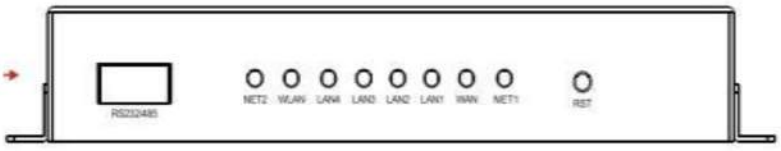
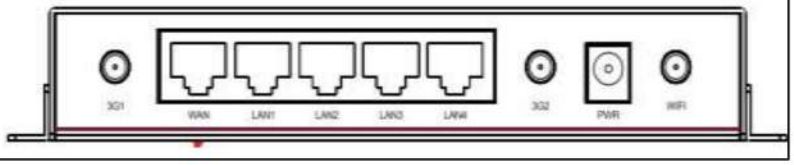
| Detran Tech. | H20 series |
|---|---|
| Front faceplate |  |
| Back faceplate |  |

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<br>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 Indictor light

Table 2-4 Router indictor 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**

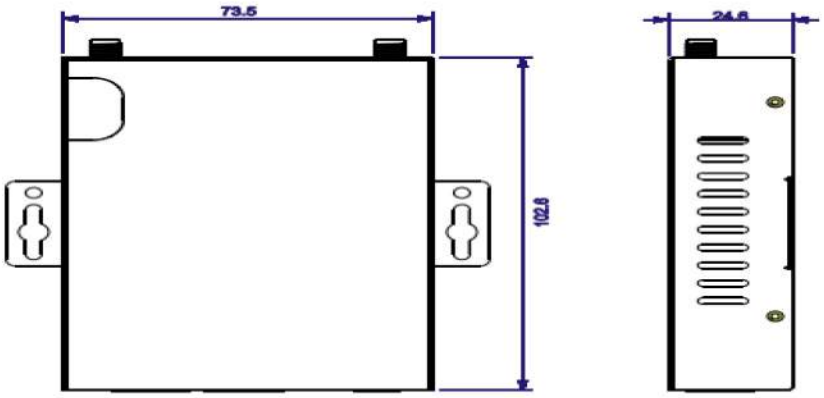



Figure 2-1 H20 router dimension figure

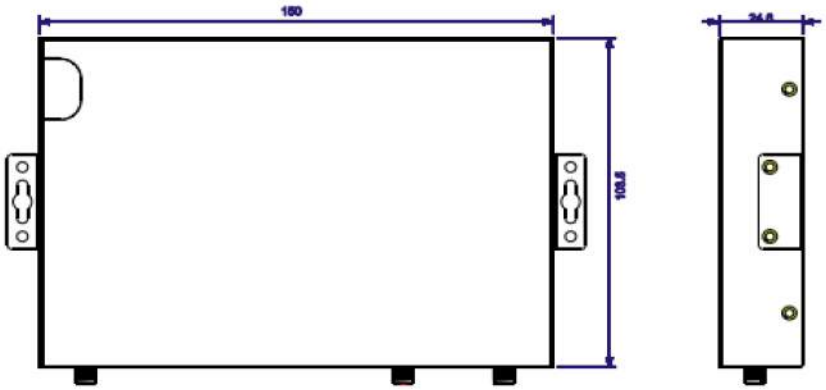



Figure 2-2 H50 router dimension figure

## 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。

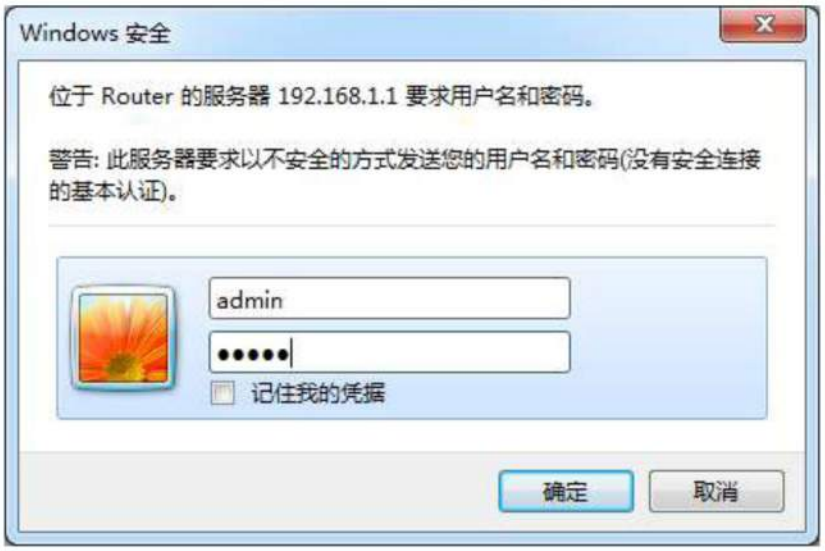



Figure 3-1 Configuration management user authentication interface

**----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.

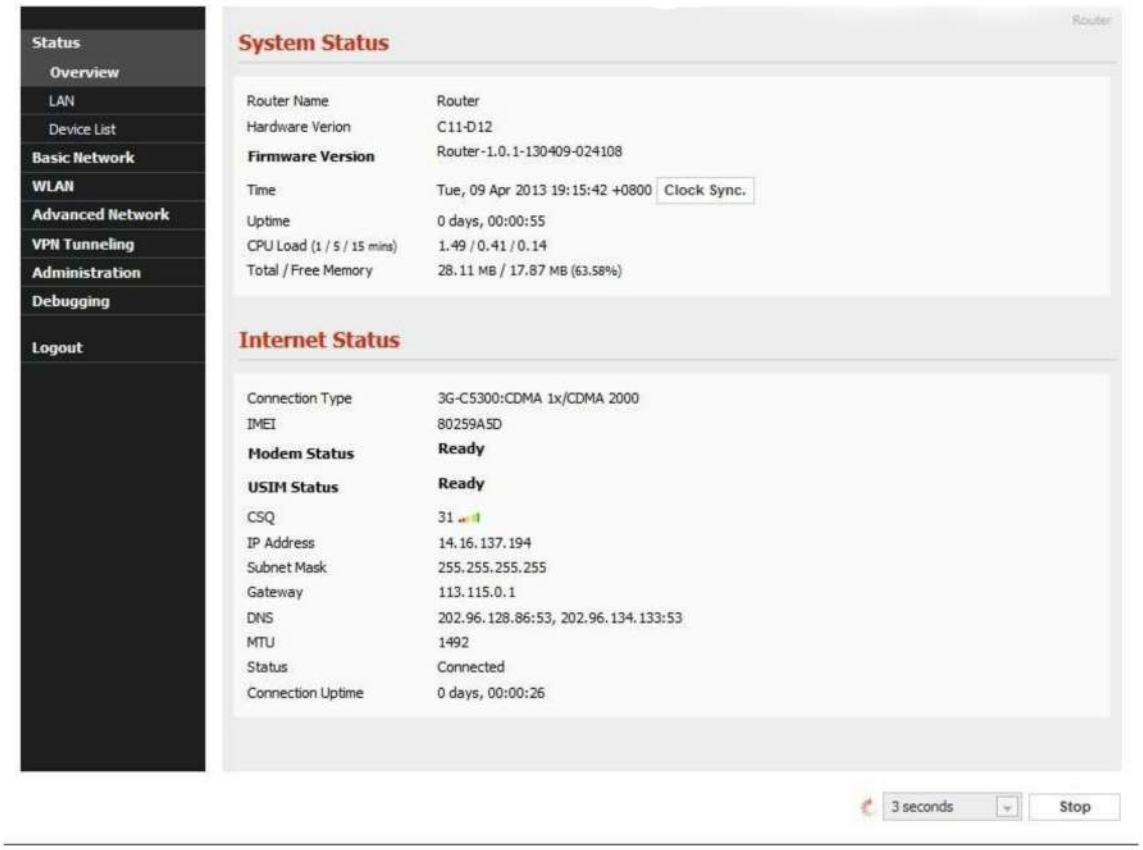



Figure 3-2 Router State screenshot

## 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 configurating 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 configurating 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 configurating dynamic domain name.

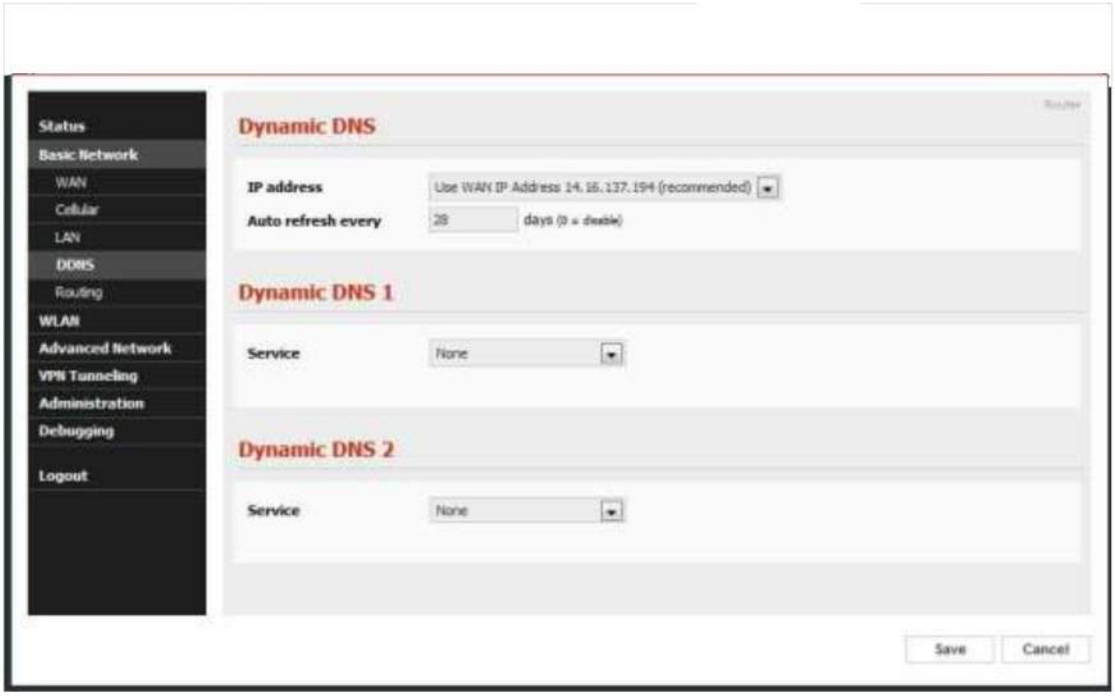



Figure 3-5 Dynamic domain name screenshot

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 configurate 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.


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.

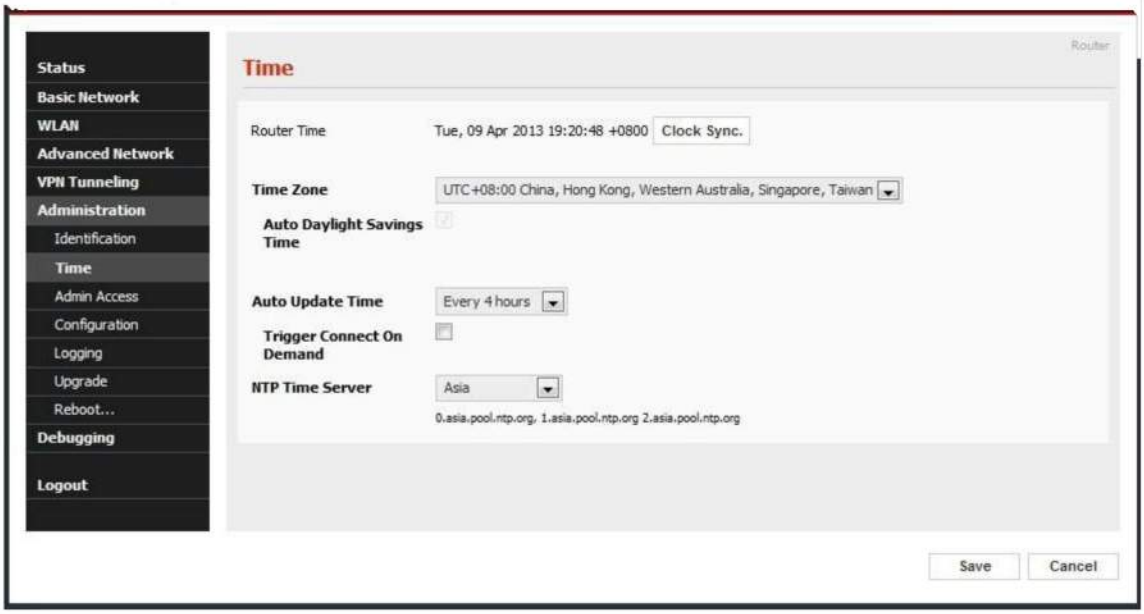



Figure 3-9 System configuration screenshot

**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.

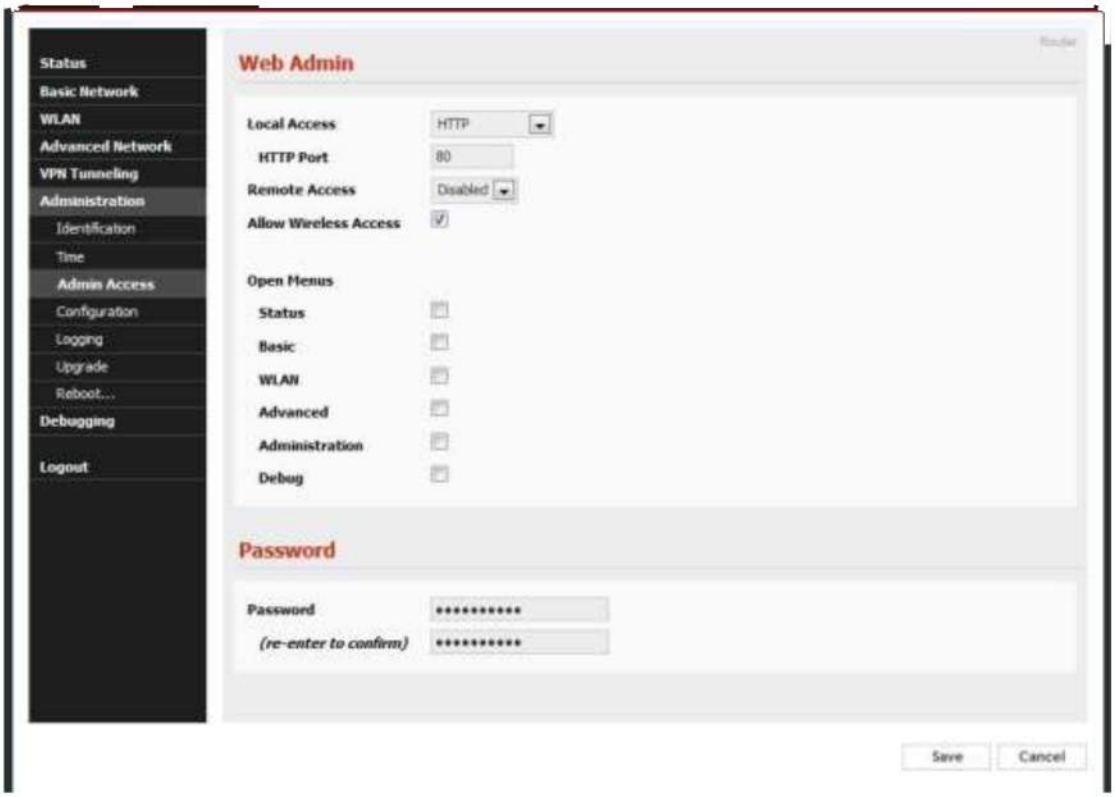



Figure 3-10 Manage system management configuration screenshot

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

**----end**

## 3.4.4 **Backup and recovery**

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

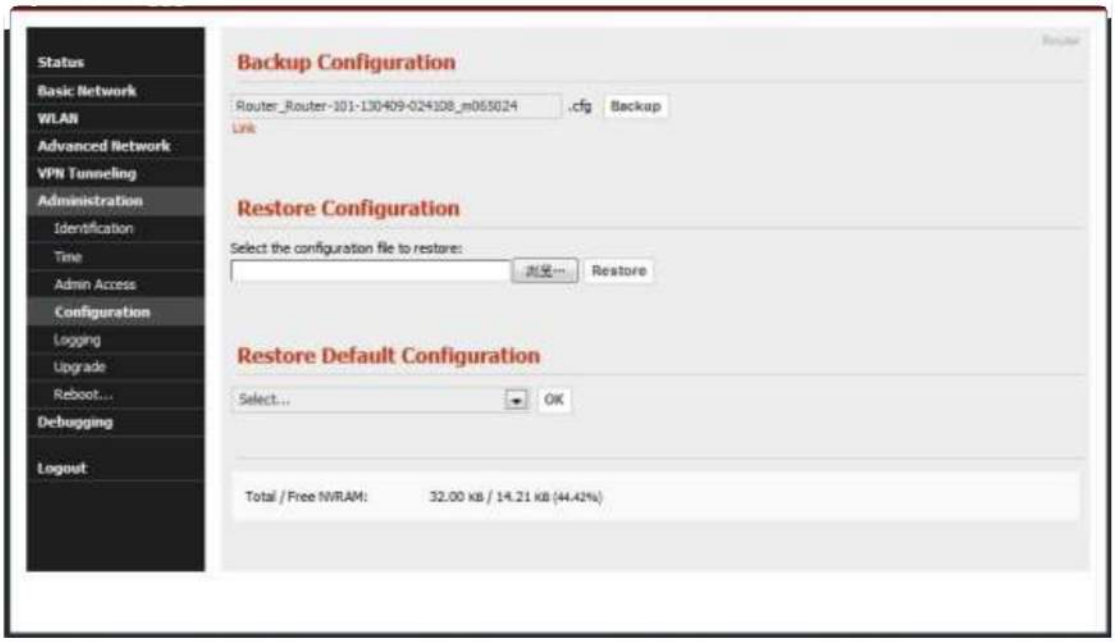



Figure 3-11 Backup and recovery configuration screenshot

**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.

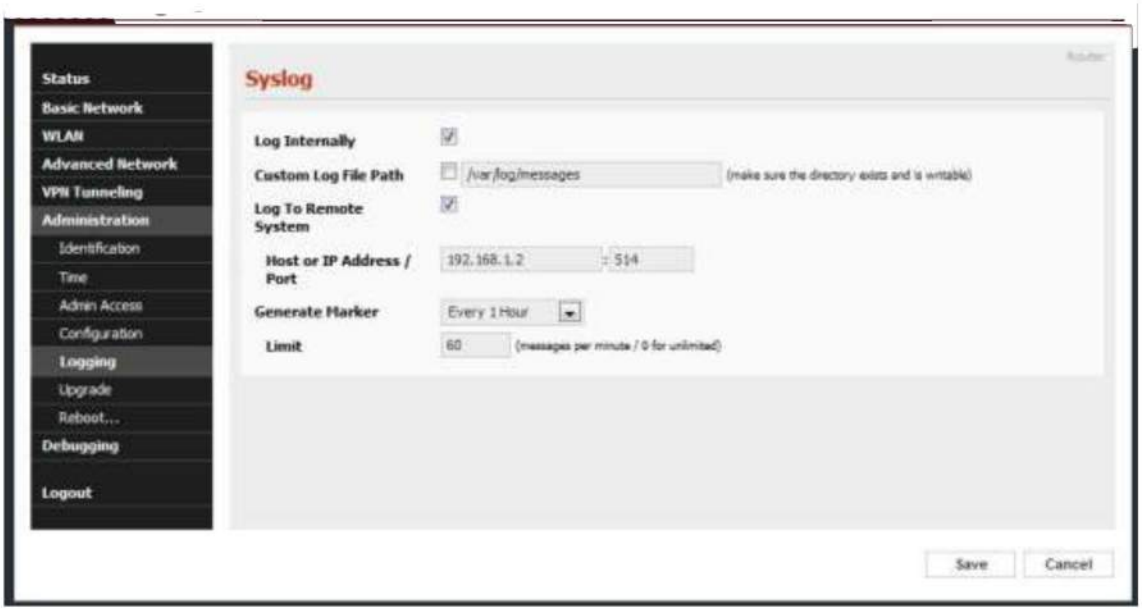



Figure 3-12 System log configuration screenshot

Step 3 After configure ration, 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.

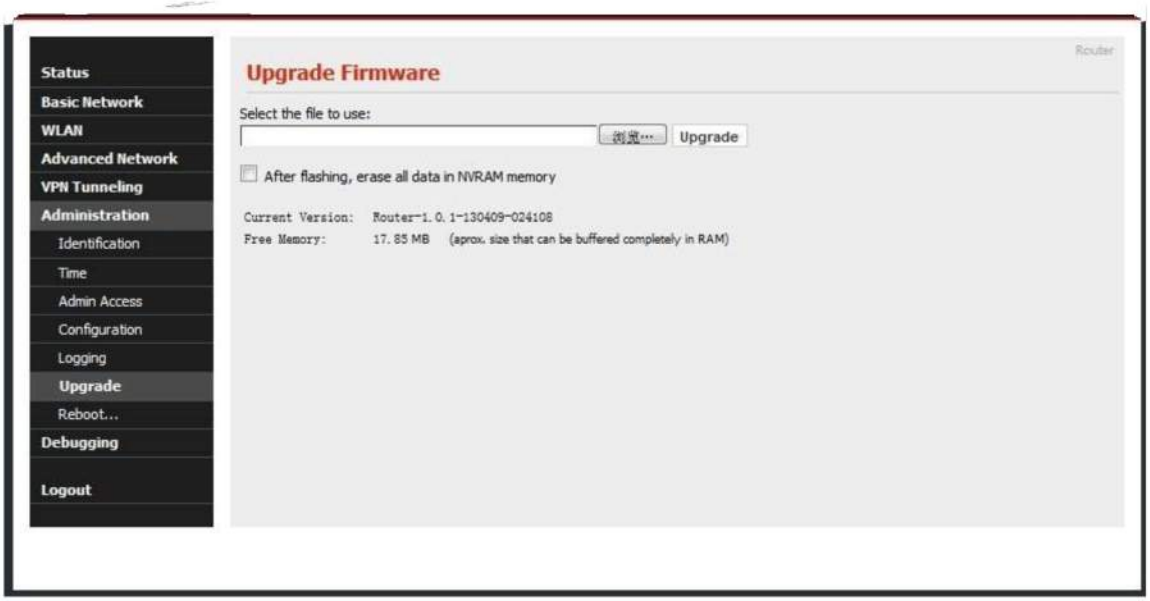



Figure 3-13 firmware upgrade configuration screenshot

**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 previouse 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.