

Super 3G Router 431R+

Instruction Manual

V1.0.0

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Chapter I Product Profile

1.1 Product Specifications

Supports PSTN Phone

Supports IEEE802.11b/g/n, speed rate up to 300Mbps.

NAT & NATP with VPN pass-through Virtual Server.

Automatic receipt of IP address with DHCP Server.

Supports the high-speed gateway and multi-users.

Security through WEP, WPA and built-in firewall.

1.2 Packing List

- | | |
|----------------------|------------------------|
| 3G Router x1 | car charger (option) |
| Power Adapter x1 | RJ45 cable |
| Quick Start Guide x1 | |

1.3 The Front Panel



The Router's LEDs are located on the front panel(View from left to right).

LED Explanation:

| Name | Description |
|------|---------------------------------------|
| PWR | ● Lights Red when the power is ready. |

| | |
|----------|--|
| | <ul style="list-style-type: none"> ● Lights off means power off. |
| 3G | <ul style="list-style-type: none"> ● Lights when 3G service is ready. |
| WIFI | <ul style="list-style-type: none"> ● Lights Green when the wireless connection is established. |
| WAN(LAN) | <ul style="list-style-type: none"> ● Lights off means there is no device linked to the corresponding port ● Lights Green when connected to a device through to the corresponding port. ● Flashes when sending/receiving data. |

1.3 The Back Panel



The following parts are located on the rear panel(view from left to right).

- **WIFI:** Used for WIFI 's wireless operation and data transmit(The antenna length is 196MM)
- **LAN:** Through this port, you can connect the Router to your PCs and the other Ethernet network device.
- **WAN:** RJ45 WAN port for connecting the router to a cable/DSL Modem, or Ethernet.
- **DC:** The Power plug is where you will connect the power adapter
- **RESET:** After the router is powered on, press this reset button using the end of paper clip or other small pointed object to reset the router and to restore it to factory

default settings.

- **3G:** Used for 3G wireless network signal reception(The antenna length is 157MM).

Chapter II Installation

2.1 Hardware Installation

Please make the correct connection as per the following steps before setting up a router. Please place the router in the central part of the coverage area to maximize its wireless performance.

Step 1 : Insert the SIM card

Warning *Before inserting or removing the SIM card, you must disconnect the device from the power adapter.*

If you are required to enter the PIN code,enter the correct one. If you fail to enter the correct PIN or PUK code, the network-related functions are unavailable.The SIM card is supplied by the service provider. For details, contact your service provider.



Insert the card into the slot completely, as shown in the following figure.

To remove the card, press the card gently. Now the card will pop up automatically.

Step 2: Connect to a PC

If the indicator of the Ethernet interface connecting with a network cable is on, the connection is successful. The Ethernet cable cannot be longer than 100 meters (328 feet). To achieve better effect, use the shielded cable.



Step 3: Connect to a telephone set (Option)

The communication quality of the telephone set can be interfered by the wireless signal. Place the telephone set one meter away from the device.



Step 4: Connect the external antenna (optional)

Connect the external antenna cable with the antenna jack on the main unit. Screw the cable to make sure that the antenna is tightly connected with the antenna jack.

Step 5: Connect to the power adapter

Use a power adapter that is compatible with the device; otherwise, the device may be damaged.

Chapter III How to Log into the Router

This chapter mainly introduces how to log onto the router set-up page. Please set up your router by reference to the following steps after your router is connected to the device with the cable (refer to Chapter II for the connection steps).

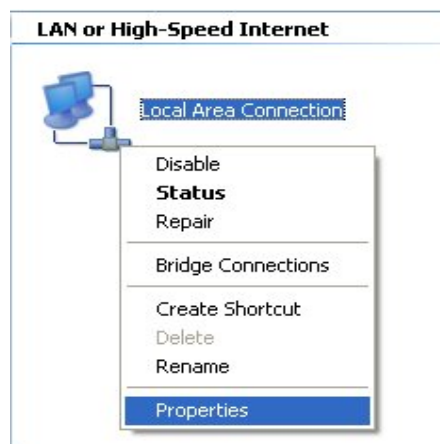
3.1 How to correctly set up your computer network configurations

Step1: On the desktop, right-click on “My Network Places”, select “Properties”.

(Figure 6)



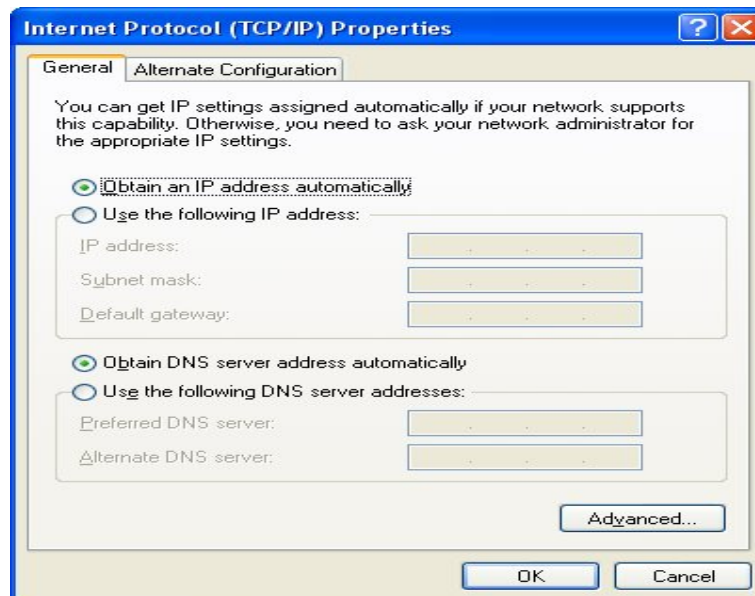
Step2: In the following pop-up window, right-click on “Local Area Connection” and select “Properties”. (Figure 7)



Step3: In the following window, select “Internet Protocol (TCP/IP)” option, then click “Properties”. (Figure 8)



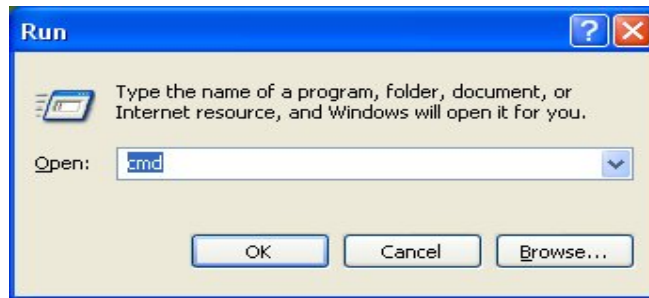
Step4: In the following pop-up window, select “Obtain an IP address automatically” and “Obtain DNS server address automatically”. Then click “OK”. (Figure 9)



Step5: If you selected LAN connection. Please double check if the Gateway is really connected to your computer, when “Local Connection” is showing already connected. Then click “Start” menu and open “Run” program, input “CMD” as figure 10.

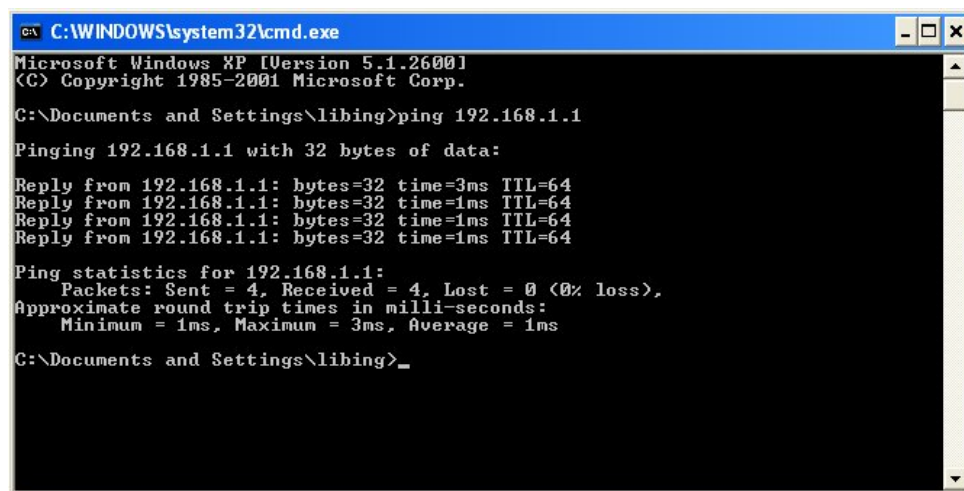
【 If you selected WIFI connection, Before step5, please click on “Wireless Network Connection” icon in the lower right of desktop, check the wireless network status and select your wireless network. Then connect

to it.】



Step6: Input order “ ping 192.168.1.1 ” and click “ Enter ”, it will get the following result which is showing the above configuration is successful.

(Figure 11)



3.2 Configure 3G Router

Step 1、 Open Web Management

Open Web browser, input 192.168.1.1 at Address bar, then press “ Enter ” .



Step 2、 input User name and Password

the following pop-up window, both input “ admin ” at “ User name ” bar and “ Password ” bar, then press “OK”. (Figure 13)



Chapter IV Quick Start Guide

Step 1、 Intelligent Guide

Click “Quick Setup Guide” as displayed on the major interface and make use of the intelligent guide functions of the router. It enables the one-time configuration of the router’s time, administrator information, internal and external network ports.



Step 2、 Administrator Information Configuration

Account: an account (user name) to log into the management interface. The default system account is admin.

Password: a password to log on the management interface. The default system password is admin.

| Administrator Settings | |
|------------------------|--|
| Account | <input type="text" value="admin"/> |
| Password | <input type="password" value="•••••"/> |

Click “Next” to Configure the System Time

Step 3、 Configure the System Time

| NTP Settings | |
|----------------------------|--|
| Current Time | <input type="text" value="Sat Jan 1 00:10:21 UTC 2000"/> <input type="button" value="Sync with host"/> |
| Time Zone: | <input type="text" value="(GMT+08:00) China Coast, Hong Kong"/> <input type="button" value="v"/> |
| NTP Server | <input type="text"/> ex: time.nist.gov ntp0.broad.mit.edu time.stdtime.gov.tw |
| NTP synchronization(hours) | <input type="text"/> |

Current time: display the system time of the router.

Sync with host: make sure that the router’s time settings are consistent with those of the PC.

NTP Server: set up an Internet-based time server. Every once in a while, the router

sets up its time and makes sure that its time is consistent with that of the server.

NTP synchronization(hours): intervals for the router to obtain data from the time server.

Click “Next” to Configure 3G Mode

Step 4、Configure 3G Mode

WAN Connection Type: 3G ▾

| 3G Mode | |
|-------------|--|
| Run Type | Keep Alive ▾ Auto Mode: Redial Period(senconds) <input type="text" value="10"/> On demand Mode : Idle Time(minutes) <input type="text"/> |
| PIN Setting | <input type="radio"/> Use Pin <input checked="" type="radio"/> Unused Pin <input type="text"/> |
| APN | <input checked="" type="radio"/> Auto APN <input type="radio"/> Manual APN <input type="text"/> |
| Dial Number | <input type="text"/> |
| User | <input type="text"/> |
| PassWord | <input type="text"/> |
| DNS Type | Auto DNS ▾ |
| DNS1 | <input type="text"/> |
| DNS2 | <input type="text"/> |

Back Next Apply Cancel

(图 10)

Run Type: under the “ Keep Alive ” mode, the router will dial up automatically and get connected to the Internet when 3G equipment is plugged in. Under the “ Manual ” mode, the access internet through dial-up will not be launched until the user clicks “Connection” on the status page. Under the “ On-Demand ” mode, the system will be connected to the network automatically in case of WAN access requests. If there are no network access requests within the specific period (idle

time), the system will disconnect to the network automatically. This connection mode could effectively save network access fees for users that select to make payment by the time actually consumed.

PIN settings: If your 3G Internet access equipment has a PIN code, you shall select “Use PIN” and fill in the PIN code in the following Input Box. Otherwise, you shall select “Unused PIN”.

APN: If you select “Auto APN”, then information such as “APN Information”, “Dial Number”, “User” and “Password” shall be filled by the router automatically. If you select “Manual APN”, then you have to fill in such Internet access information by yourself.

DNS type: If you select “Automatic DNS”, the router will use the DNS obtained by 3G dial-up. If the “Manual DNS” is selected, the router will use the DNS information entered by the user.

Click “Next” to Configure LAN Information

Step 5、 Configure LAN Information

| LAN Setup | |
|----------------------|---|
| IP Address | 192.168.1.1 |
| Subnet Mask | 255.255.255.0 |
| MAC Address | 00:0C:43:30:52:77 |
| DHCP Type | Server <input type="button" value="v"/> |
| Start IP Address | 192.168.1.2 |
| End IP Address | 192.168.1.254 |
| Subnet Mask | 255.255.255.0 |
| Primary DNS Server | 192.168.1.1 |
| Secondary DNS Server | 192.168.1.1 |
| Default Gateway | 192.168.1.1 |

Click “Next” to Configure WLAN Information

Intranet ports and DHCP settings

IP address: set up IP address for Intranet ports.

Subnet mask: set up masks for the Intranet.

MAC address: display the physical address of Intranet ports.

DHCP type: Select “Server” to open DHCP services and then the host in the Intranet could obtain IP dynamically.

Start IP address-End IP address: IP obtained by the host in the Intranet via DHCP mode are included in this range.

Default gateway: set up the gateway for the host in the Intranet.

DNS server: set up DNS server for the host in the Intranet.

Step 6、 Configure WLAN Information

| Wireless Network | | | |
|-----------------------------------|---|----------------------|--------------------------------------|
| Radio On/Off | Enable <input type="button" value="v"/> | | |
| Network Mode | 11b/g/n mixed mode <input type="button" value="v"/> | | |
| Network Name(SSID) | 436Rjiang | | |
| Security Policy -- | | | |
| Security Mode | OPEN <input type="button" value="v"/> | | |
| Wire Equivalence Protection (WEP) | | | |
| Default Key | Key 1 <input type="button" value="v"/> | | |
| WEP Keys | WEP Key 1 : | <input type="text"/> | Hex <input type="button" value="v"/> |
| | WEP Key 2 : | <input type="text"/> | Hex <input type="button" value="v"/> |
| | WEP Key 3 : | <input type="text"/> | Hex <input type="button" value="v"/> |
| | WEP Key 4 : | <input type="text"/> | Hex <input type="button" value="v"/> |

Radio On/Off: switch on or Off wireless networks. If Intranet clients do not select “Enable”, they could not get Wi-Fi connectivity to the Intranet of the router.

Network mode: select standards used by wireless networks. Options are 802.11b, 802.11g and 802.11n, or mix standards 802.11b/g,802.11b/g/n.

Network Name (SSID): Enter a name for your wireless local area network (WLAN).

Security Mode : If “Disable” is selected, Intranet clients could have Wi-Fi connection to the router’s Intranet without entering key information.


If “OPEN”, “SHARED” or “WEPAUTO” is selected, there is a need to set up the key information. Wireless clients in the Intranet cannot gain access to the router’s Intranet until correct key information is entered.

You can fill in four (ASCII or Hex, with a length of 10 to 26 characters) keys for

this router at the most. One of the four groups of pre-set keys can be selected as the current effective key (default key).

Chapter V System Status

5.1 Status (current work conditions of the router)

| System Info | |
|------------------------------|---|
| SDK Version | V1.1.0 (Mar 17 2010 22:56:56) |
| System Up Time | 7 mins, 56 secs |
| System Platform | 433R+V1.0 |
| Internet Configurations | |
| Connected Type | <input type="button" value="Connect"/> <input type="button" value="Disconnect"/> |
| SIGNAL |  |
| NetType | HSPA |
| WAN IP Address | |
| Subnet Mask | |
| Default Gateway | |
| Primary Domain Name Server | 202.106.195.68 |
| Secondary Domain Name Server | 202.106.46.151 |
| MAC Address | 00:0C:43:30:58:16 |
| Local Network | |
| Local IP Address | 192.168.1.1 |
| Local Netmask | 255.255.255.0 |
| MAC Address | 00:0C:43:30:58:17 |

SDK Version: indicates the router's current software versions and the release date.

System Up Time: indicates the system operation time after the router is loaded with a power supply. Such time will be cleared to zero after the power supply is unloaded.

System Platform: indicated the router's current model and hardware versions.

Internet configurations:

Connected Type: the router's online modes , two buttons, namely "Disconnect" and "Connect" will be displayed on the interface to disconnect and

connect the 3G network.

Signal: signal intensity of the 3G network.

NetType: current 3G network that is connected (such as WCDMA, TD or EVDO).

WAN IP address: current WAN IP address of the router. If the router's connection type is dynamic IP.

Subnet mask: Router's WAN subnet mask.

Default gateway: Router's WAN default gateway.

Domain server: Address of the DNS server that is currently used by the router.

MAC address: MAC address of the router's Extranet ports.

Local IP address: IP address of the router's Intranet ports.

Local net mask: subnet mask of the router's Intranet.

MAC address: Physical address of the router's Intranet ports.

5.2 Statistical Information

(Data packets and bytes that are received and transmitted by each port and the status of memory use)

| Memory | |
|-----------------|----------|
| Memory total: | 13556 KB |
| Memory left: | 1068 KB |
| WAN/LAN | |
| WAN Rx packets: | 0 |
| WAN Rx bytes: | 0 |
| WAN Tx packets: | 0 |
| WAN Tx bytes: | 0 |
| LAN Rx packets: | 1071 |
| LAN Rx bytes: | 112062 |
| LAN Tx packets: | 758 |
| LAN Tx bytes: | 319428 |

Chapter VI Network Settings

6.1 WAN Settings

Please refer to the Extranet configurations of the “Intelligent Guide” for the online configurations.

MAC replication: If MAC address replication is initiated, the MAC address of the Intranet’s Internet access data packet shall be changed to the MAC address of the router while accessing the Internet via the router.

6.2 LAN Settings

| LAN Setup | |
|----------------------|---|
| IP Address | <input type="text" value="192.168.1.1"/> |
| Subnet Mask | <input type="text" value="255.255.255.0"/> |
| LAN 2 | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| LAN2 IP Address | <input type="text"/> |
| LAN2 Subnet Mask | <input type="text"/> |
| MAC Address | 00:0C:43:30:58:17 |
| DHCP Type | Server <input type="button" value="v"/> |
| Start IP Address | <input type="text" value="192.168.1.2"/> |
| End IP Address | <input type="text" value="192.168.1.254"/> |
| Subnet Mask | <input type="text" value="255.255.255.0"/> |
| Primary DNS Server | <input type="text" value="192.168.1.1"/> |
| Secondary DNS Server | <input type="text" value="192.168.1.1"/> |
| Default Gateway | <input type="text" value="192.168.1.1"/> |
| Lease Time | <input type="text" value="86400"/> |
| Statically Assigned | MAC: <input type="text" value="00:1D:72:22:C6:20"/> IP: <input type="text" value="192.168.1.200"/> |

IP address: set up IP addresses for Intranet ports.

Subnet mask: set up masks for the Intranet.

LAN 2 : Add an IP to the Intranet ports. This way, LAN clients could get connected to the router through LAN.

MAC address: indicated physical addresses of the Intranet ports.

DHCP type: Select “Server” to open DHCP services and then the host in the Intranet could obtain IPs dynamically.

Start IP address-End IP address: IPs obtained by the host in the Intranet via DHCP mode are included in this range.

Default gateway: set up the gateway for the host in the Intranet.

DNS server: set up DNS servers obtained by the host in the Intranet via DHCP (If DNS Proxy is enabled, we recommend here to describe it as the IP of the Intranet ports. This way, we needn't reset this item when the router's DNS undergoes any changes).

Release time: effective period for the host in the Intranet to obtain IP addresses.

Static designation: Hosts located in specific physical address obtain specific IPs via DHCP.

Introduction of Relevant Intranet Programs

| | |
|----------------------|-----------|
| 802.1d Spanning Tree | Disable ▾ |
| LLTD | Disable ▾ |
| IGMP Proxy | Disable ▾ |
| UPNP | Disable ▾ |
| Router Advertisement | Disable ▾ |
| PPPOE Relay | Disable ▾ |
| DNS Proxy | Enable ▾ |

802.1d Spanning Tree : Support spanning tree protocols, avoid network loopbacks in the LAN and address broadcast storm issues relating to the looped Ethernet network.

LLTD: Identify whether LLTD (Link-Layer Topology Discovery Responder) protocol is supported. This network protocol could intelligently identify which network equipment or computers are connected in the LAN network.

IGMP Proxy: Confirm whether the router supports the IGMP protocol. This protocol operates between the host and the multicast router that is directly connected to the host. It is a protocol for IP hosts to report the identity of multicast group members.

UPNP: Identify whether UPNP protocols are supported.

Router Advertisement: Identify whether the router supports IPV6.

DNS Proxy: Transmit DNS requests of the Intranet. If this function is enabled, you can configure DNS of the host in the Intranet to IPs of the router's Intranet ports. This way, hosts in the Intranet can diagnose web pages. There is no need to reset the Intranet's DNS after the Internet access method has been changed.

6.3 DHCP client list

(Display information relevant to the hosts that are connected to the router's Intranet via DHCP)

| DHCP Clients | | | |
|-----------------|-------------------|-------------|-----------------|
| Hostname | MAC Address | IP Address | Expires in |
| www-59e926c8637 | 00:1F:E1:66:51:2E | 192.168.1.2 | 1 days 00:00:00 |

DHCP client list enables you to check the status of online users such as MAC address, IP address and lease periods of the IP address.

6.4 Advanced Routing Configurations

This function may be used when it is required to add a specific routing for a certain host. The proper use of static routing could reduce routing issues, alleviate the overload of routing data flows and enhance the transmission speed for the data packets. A routing item may be identified by setting targeted IP address, subnet mask and gateway address, among which the targeted IP address and the subnet mask are used to identify a target network/host. Afterwards, the router transmits the data packets to the designated target network/host via the gateway.

| Add a routing rule | |
|--------------------|---|
| Destination | <input type="text"/> |
| Range | Host <input type="button" value="v"/> |
| Gateway | <input type="text"/> |
| Interface | LAN <input type="button" value="v"/> <input type="text"/> |
| Comment | <input type="text"/> |

Destination: Identify target addresses or networks that are hopefully to be visited.

Host/network: The selection of a host means to designate a certain IP for the host. The network defines a specific network segment by defining a subnet mask.

Gateway: IP address of the router or the host where the data packets are sent.

Interface: Indicate connector information.

Comment: Fill in necessary notes.

Current router table: Display all kinds of information relating to all current router tables that are defined by the user.

Chapter VII Wireless Network Configurations

7.1 Basic Settings

| Wireless Network | |
|-------------------------------|--|
| Radio On/Off | <input type="button" value="RADIO OFF"/> |
| Network Mode | 11b/g/n mixed mode <input type="button" value="v"/> |
| Network Name(SSID) | 3GRouter_jiang Hidden <input type="checkbox"/> Isolated <input type="checkbox"/> |
| Multiple SSID1 | <input type="text"/> Hidden <input type="checkbox"/> Isolated <input type="checkbox"/> |
| Multiple SSID2 | <input type="text"/> Hidden <input type="checkbox"/> Isolated <input type="checkbox"/> |
| Multiple SSID3 | <input type="text"/> Hidden <input type="checkbox"/> Isolated <input type="checkbox"/> |
| Multiple SSID4 | <input type="text"/> Hidden <input type="checkbox"/> Isolated <input type="checkbox"/> |
| Multiple SSID5 | <input type="text"/> Hidden <input type="checkbox"/> Isolated <input type="checkbox"/> |
| Multiple SSID6 | <input type="text"/> Hidden <input type="checkbox"/> Isolated <input type="checkbox"/> |
| Multiple SSID7 | <input type="text"/> Hidden <input type="checkbox"/> Isolated <input type="checkbox"/> |
| Broadcast Network Name (SSID) | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| AP Isolation | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| MBSSID AP Isolation | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| BSSID | 00:0C:43:30:58:18 |
| Frequency (Channel) | 2437MHz (Channel 6) <input type="button" value="v"/> |

Radio On/Off: Switch on/off wireless functions of the router.

Network mode: Wireless application standards for the router. The router supports 802.11b, 802.11g, 802.11n or mix modes.

Multiple SSID: Network name of the wireless signals. This router supports multiple wireless networks. If you select “Hiden the Wireless Client”, you cannot

scan the router's SSID. If you select "Isolated", you can prevent this network from communicating with other networks.

Broadcast network Name: You can select "Disable" to forbid the router to broadcast SSID. After that, the wireless clients cannot scan the router's SSID. The clients cannot communicate with the router if they fail to know the router's SSID. The broadcast network identifier is defaulted as "Enable".

AP Isolation: Isolated at the AP level. After it is enabled, clients at the AP level cannot visit each other, which could prevent the virus from spreading.

MBSSID AP Isolation: Isolated from areas outside this AP. Other clients not belonging to this AP shall not visit clients under this AP.

Basic service set identifier: Business group identifier of the wireless network. In terms of IEEE 802.11, the BSSID is the MAC address of the wireless AP.

Frequency (channel): Channels currently used by the router. Other effective work channels could be selected from the following list and options are 1 to 14.

Operation Mode:

Mix mode: Under this mode, previous wireless network cards are identifiable and connectable to Pre-N AP, but the throughput will be affected to some degree.

Green Field: Be able to reach high throughputs. But it affects the backward compatibility and the system's safety.

Channel bandwidth: Please select "Default Settings". It is divided into two types, namely 20MHz and 20/40MHz.

Protection interval: Defaults as "Automatic". An appropriate protection

interval shall be provided to reach good BER performance.

Channel bandwidth: Please select the channel bandwidth to enhance the wireless performance.

MCS: Vertices control signals with the value ranging from zero to thirty-two. The default setting is “Automatic”.

Reverse direction authority: You can choose to “Enable” or “Prohibit” this authority.

Extension channel: Be able to extend specified channel segments.

Aggregation MAC Service Data Unit (A-MSDU): Aggregate multiple Ethernet messages into a comparatively bigger load by taking specific measures.

Automatic confirmation of single blocks: The realization of aggregate exchange sequences could enhance the transmission rate.

Decline requests to confirm single blocks: The default setting is “Prohibit”, which could enhance the transmission rate.

7.2 Advanced Settings

BG protection mode: You can select “switch-on”, “Switch-off” or “Automatic” to identify the status of BG protection modes.

Beacon interval: Intervals to transmit wireless beacon frames. During this time range, a beacon frame will be transmitted to receive the access information of the peripheral wireless networks.

Data beacon proportion (DTIM): Intervals to transmit specific indication messages. It is a countdown work that notifies the next client window to receive broadcast and multicast.

Fragment Threshold: Specific fragment thresholds of the data packets. When the length of the data packet exceeds such threshold, multiple data packets will be created automatically.

RTS threshold: A RTS (Request to Send) threshold specified by the data packets. When the length of the data packets exceeds this threshold, the router will send RTS to the target sites for negotiation. After the wireless site receives RTS frames, it will respond to the router by sending a CTS (Clear to Send) frame, indicating that the wireless communication is possible.

TX power: Define the correlation between current wireless AP and the SSID's transmission power. The size of the model is in direct proportion with the intensity of the transmission power.

Short preamble: The default status is "Prohibit". The router applies long preambles by the default settings. After it is enabled, the system will no longer be compatible with the operation speed (1Mbps or 2Mbps) of the traditional IEEE802.11.

Short slot: The default setting is "Enable" and you can switch it off. The "Enable" could enhance the transmission rate of the wireless communication.

Tx Burst: It belongs to features at the MAC address level, which could enhance TCP transmission fairness for the wireless network.

Pkt_Aggregate: A mechanism to strengthen the LAN and make sure that the data packet could arrive at the destination.

| Advanced Wireless | |
|-------------------------|---|
| BG Protection Mode | Auto <input type="button" value="v"/> |
| Beacon Interval | 100 <input type="text"/> ms (range 20 - 999, default 100) |
| Data Beacon Rate (DTIM) | 1 <input type="text"/> ms (range 1 - 255, default 1) |
| Fragment Threshold | 2346 <input type="text"/> (range 256 - 2346, default 2346) |
| RTS Threshold | 2347 <input type="text"/> (range 1 - 2347, default 2347) |
| TX Power | 100 <input type="text"/> (range 1 - 100, default 100) |
| Short Preamble | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| Short Slot | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Tx Burst | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Pkt_Aggregate | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| IEEE 802.11H Support | <input type="radio"/> Enable <input checked="" type="radio"/> Disable(only in A band) |
| Country Code | None <input type="button" value="v"/> |

| Wi-Fi Multimedia | |
|------------------|---|
| WMM Capable | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| APSD Capable | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| WMM Parameters | <input type="button" value="WMM Configuration"/> |

| Multicast-to-Unicast Converter | |
|--------------------------------|---|
| Multicast-to-Unicast | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |

WI-FI Multimedia

It provides configurations for the wireless multimedia parameters. WMM enables the wireless communications to define a priority range according to the data types. Time-sensitive data such as video/audio data have higher priority than that of the normal data. Wireless clients shall support WMM to maintain WMM functions. The client may select “Apply” or “Cancel” based on requirements.

| WMM Parameters of Access Point | | | | | | |
|--------------------------------|-------|-------|-------|------|--------------------------|--------------------------|
| | Aifsn | CWMin | CWMax | Txop | ACM | AckPolicy |
| AC_BE | 3 | 15 | 63 | 0 | <input type="checkbox"/> | <input type="checkbox"/> |
| AC_BK | 7 | 15 | 1023 | 0 | <input type="checkbox"/> | <input type="checkbox"/> |
| AC_VI | 1 | 7 | 15 | 94 | <input type="checkbox"/> | <input type="checkbox"/> |
| AC_VO | 1 | 3 | 7 | 47 | <input type="checkbox"/> | <input type="checkbox"/> |

| WMM Parameters of Station | | | | | |
|---------------------------|-------|-------|-------|------|--------------------------|
| | Aifsn | CWMin | CWMax | Txop | ACM |
| AC_BE | 3 | 15 | 1023 | 0 | <input type="checkbox"/> |
| AC_BK | 7 | 15 | 1023 | 0 | <input type="checkbox"/> |
| AC_VI | 2 | 7 | 15 | 94 | <input type="checkbox"/> |
| AC_VO | 2 | 3 | 7 | 47 | <input type="checkbox"/> |

Wi-Fi multimedia capabilities: Enable WMM functions. WMM function will not take effect until the WIFI is enabled.

Direct online capabilities: The enablement will weaken the wireless performance, but could save the energy and electricity.

7.3 Safety Settings

The router supports the safety modes (DisableOpen,SHARED:WEPAUTO,WPA-KEY:(WPA-Personal), WPS2-KEY:(WPA-Personal), WPA and WPA2).

For specific configurations, refer to relevant configurations for the “Intelligent Guide”.

The router selects different encryption and authentication methods for different SSID. Please select a SSID to configure its safety strategy.

“Allow” means that only clients of specific MAC addresses are allowed to gain access. “Reject” means that only clients of specific MAC addresses are

forbidden to gain access. “Disable” means that all clients could gain access.

| Access Policy | |
|--|----------------------|
| Policy | Disable ▾ |
| Add a station Mac: | <input type="text"/> |
| <div style="text-align: center;">Apply Cancel</div> | |

7.4 WDS Configurations

Wireless Distribution System (WDS) is used to expand current wireless network coverage. The router supports three modes, namely Lazy Mode, Bridge Mode and Repeater Mode.

| Wireless Distribution System(WDS) | |
|--|---|
| WDS Mode | Lazy Mode ▾ |
| Phy Mode | <div style="border: 1px solid black; padding: 2px;">Disable Lazy Mode Bridge Mode Repeater Mode</div> |
| EncrypType | <input type="text"/> |
| Encryp Key | <input type="text"/> |
| EncrypType | NONE ▾ |
| Encryp Key | <input type="text"/> |
| EncrypType | NONE ▾ |
| Encryp Key | <input type="text"/> |
| EncrypType | NONE ▾ |
| Encryp Key | <input type="text"/> |
| <div style="text-align: center;">Apply Cancel</div> | |

Lazy Mode: Under this mode, wireless equipment on the opposite side could be applicable to the Bridge Mode or Repeater Mode. Wireless connection is available if you enter the router’s BSSID to the wireless equipment on the opposite side.

Bridge Mode: Under this mode, you can manually add MAC on the opposite side to corresponding AP MAC address lists or do this through “Scan Options”.

Then, you click “Save as” to realize the wireless connection for two wire networks.

Repeater Mode: Under this mode, you can manually add MAC on the opposite side to corresponding AP MAC address lists or do this through “Scan Options”. This way, you can immediately strengthen and extend signals of the wireless networks.

Encryption type: Three encryption modes are supported, namely WEP, TKIP and AES.

Encrypt Key: Enter the encrypt keys between the wireless equipment.

AP MAC Address: Please enter MAC address of the wireless equipment on the opposite side.

7.5 WPS Configurations

Wi-Fi Protection Settings (WPS) can easily and quickly establish an encrypted connection among clients of the wireless network. You have no need to select the encryption mode or configure a key. You just need to enter correct PIN code or select PBC (or press “WLAN/WPS” button indicated on the back panel) to easily configure WPS.

Wi-Fi Protection Settings: Used to disable or enable WPS functions. The default status is “Disable”.

WPS Mode: Support two kinds of simple WPS settings, namely PBC (Push-Button Configuration) and PIN code.

| WPS Progress | |
|--------------------------------------|--|
| WPS mode | <input checked="" type="radio"/> PIN <input type="radio"/> PBC |
| PIN | <input type="text"/> |
| <input type="button" value="Apply"/> | |

PBC: select PBC and click "Save as" or press WLAN / WPS button on the back panel for about one second while activating WPS / PBC to connect in the client port.

Operation Process: after clicking the WLAN / WPS button for one second, WPS light will blink about 2 minutes, indicating that the function is activated. In this time range, the wireless client ports can activate the WPS / PBC for authentication and consultation. After the connection is successfully connected, WPS indication light will be off and access process of wireless client is completed. If users want to access multiple wireless client ports, users need to repeat the process. It could support up to 32 wireless client ports to access.

PIN: If users want to use the PIN, users must know the PIN code of wireless client ports. Users could just add to the input box and then save while using the same PIN code to make connection in the client ports.

| WPS Summary | |
|--|--|
| WPS Current Status: | Idle |
| WPS Configured: | Yes |
| WPS SSID: | 3 |
| WPS Auth Mode: | Open |
| WPS Encryp Type: | None |
| WPS Default Key Index: | 1 |
| WPS Key(ASCII) | |
| AP PIN: | 31682800 <input type="button" value="Generate"/> |
| <input type="button" value="Reset OOB"/> | |

WPS Overview: Display relevant information including current WPS status, authentication modes and encryption types applied, and default private key indexing.

WPS Current Status: “Idle” means the idle status. “Start MSC Process” means that the process is enabled and the access is on the way. “Success” means that the server and the client have reached an agreement during the negotiation.

WPS Configured: “Yes” means taking effect and “Not Used” means not taking effect. Generally, if the AP-Safety Configuration takes effect, this place will be displayed as “Not Used”.

WPS SSID: Display master SSID numbers of the WPS. WPS is only valid for the master SSID.

WPS Auth Mode: The authentication mode used by WPS. WPA/WPA2-Personal mode is commonly seen.

WPS Encryp Type: It means the data encryption type. AES/TKIP encryption type is commonly seen.

WPS Key: Effective keys automatically generated by AP.

APN PIN: Default PIN code.

Reset OOB: When you press this button, the WPS service terminal is indicated as Idle and the WPS indication light turns off. AP will not respond to connection requests from WPS clients and the safety are configured as WPA mode.

Chapter VIII Firewall

8.1 MAC/IP/Port Filtering

This function is aimed at restricting and managing the client ports of the router. If you need to limit Internet use of the machine of the router, you could use this function. To use this function, you should first activate it and then select a default strategy (accept or reject), which means the data packets that do not comply with the rules to be accepted or rejected. And then fill out the corresponding filter rules. Pay attention that it is not required you to fill out all the items but to fill the appropriate selection according your own requirements. For example, to ban the IP of 192.168.1.146 to use Internet (others can use Internet), you just need to adopt the default strategy as acceptance strategy and fill 192.168.1.146 in the column of the source IP address. To use this function could enhance users' security and manageability of LAN.

| MAC/IP/Port Filter Settings | |
|-----------------------------|---|
| MAC address | <input type="text"/> |
| Dest IP Address | <input type="text"/> |
| Source IP Address | <input type="text"/> |
| Protocol | None <input type="button" value="v"/> |
| Dest Port Range | <input type="text"/> - <input type="text"/> |
| Source Port Range | <input type="text"/> - <input type="text"/> |
| Action | Accept <input type="button" value="v"/> |
| Comment | <input type="text"/> |

Mac/IP/Port Filtering: This function takes no effect if “Prohibit” is selected.

After you click “Enable”, this function will take effect.

Default Strategy: Select “Abandon” or “Accept”. This strategy shall be implemented if rules are not matched as what is defined below.

MAC Address: Fill in MAC addresses that you plan to define rules.

Source IP Address: Enter local IP address that needs filtering. You shall fill in rules that correspond to this IP.

Dest IP Address: Enter destination IP address that needs filtering. You shall fill in rules that correspond to this IP.

Port range: Ranges for ports that need to be abandoned or accepted.

Protocol: Select protocols that are used by controllable data packets.

Action: Identify whether the defined rules are “Abandon” or “Accept”. It is in the opposite side of the default strategy.

Comment: Indicate the rules defined by you to differentiate such rules.

| Current MAC/IP/Port filtering rules in system: | | | | | | | | | |
|--|-------------------------------------|-----------------|-------------------|----------|-----------------|-------------------|--------|---------|---------|
| No. | MAC address | Dest IP Address | Source IP Address | Protocol | Dest Port Range | Source Port Range | Action | Comment | Pkt Cnt |
| 1 | <input checked="" type="checkbox"/> | - | 192.168.1.100 | - | - | - | Accept | | - |
| Others would be dropped | | | | | | | | | - |

8.2 Port Transmission (Virtual Host)

The virtual host enables remote users who gain access to web or FTP services via public network IP addresses to automatically shift to local servers of the LAN. The virtual server can define a service port. All service requests to such port from the Extranet shall be transmitted to LAN servers specified by the router (based on IP address). This way, the user could successfully access LAN servers without any

influences on the internal network safety of the LAN.

| Virtual Server Settings | |
|-------------------------|---|
| Virtual Server Settings | Disable ▾ |
| IP Address | <input type="text"/> |
| Port Range | <input type="text"/> - <input type="text"/> |
| Protocol | TCP&UDP ▾ |
| Comment | <input type="text"/> |

(The maximum rule count is 32.)

Virtual Server Settings: Enable or disable functions of the virtual servers.

IP Address: It is used to input necessary IP addresses, such as 192.168.1.103.

Port Range: It is used to input necessary port ranges, such as 80-80.

Protocol: Select protocols that are used by controllable data packets.

Comment: Fill in necessary notes. In terms of the configurations described above, all data will be transmitted to a computer with the IP address of 192.168.1.103 within the LAN if some program accesses the 80 port of the router.

List of current virtual hosts: Indicate the list of current virtual servers.

8.3 DMZ Settings

(transfer all data received by the router's Extranet ports to "DMZ IP Address")

| DMZ Settings | |
|----------------|----------------------|
| DMZ Settings | Disable ▾ |
| DMZ IP Address | <input type="text"/> |

8.4 System Safety Settings

| Remote management | |
|-----------------------------|--------|
| Remote management (via WAN) | Deny ▼ |

| Ping form WAN Filter | |
|----------------------|-----------|
| Ping form WAN Filter | Disable ▼ |

| Stateful Packet Inspection (SPI) | |
|----------------------------------|-----------|
| SPI Firewall | Disable ▼ |

Remote management: Identify whether it is permitted to access WEB management pages via Extranet ports.

Ping form WAN Filter: Identify whether it is permitted to PING the router via Extranet port

SPI firewall: Identify whether to enable the SPI firewall.

8.5 Content Filtering

Webpage content filtering: Filter the part “Proxy Java ActiveX” of the web pages.

| Webs Content Filter | |
|---------------------|---|
| Filters: | <input type="checkbox"/> Proxy <input type="checkbox"/> Java <input type="checkbox"/> ActiveX |

URL filtering: Filter out the entire content of the webpage of URL

| Add a URL filter: | |
|-------------------|----------------------|
| URL: | <input type="text"/> |

Web host filtering: URL webpages including keywords are filtered.

| Current Website Host Filters: | |
|-------------------------------|---------------|
| No | Host(Keyword) |

Chapter IX System Management

9.1 Management

9.1.1 Domain Server

DDNS has another name of dynamic DNS whose main function is to achieve parse between the fixed domain name and dynamic IP. For users who use dynamic IP addresses, the dynamic name software installed in the host would send the IP address to the dynamic parse server provided by DDNS servers every time when getting a new IP from Internet and database of dynamic name parse. When other users in the Internet need to access the domain name, dynamic name parse server would go back to the correct IP address. Thus the majority of users that do not use fixed IP can also build network via fixed domain name.

| DDNS Settings | |
|----------------------|-----------------------------------|
| Dynamic DNS Provider | <input type="text" value="None"/> |
| Account | <input type="text"/> |
| Password | <input type="text"/> |
| DDNS | <input type="text"/> |

DDNS Status: display the status of your DDNS.

Activate DDNS Service: activate the Dynamic Domain Name Service.

Dynamic DNS Providers: select websites that provide dynamic domain name service.

Account: the login name you register in the websites that provide dynamic

domain name service.

Password: the password you register in the websites that provide dynamic domain name service.

DDNS: the domain name you register in the websites that provide dynamic domain name service

Note: before using Dynamic Domain Name function, please register the dynamic DNS address services in the website listed in drop-down box of service providers and ensure that this account is effective.

9.2 System Upgrade

The image shows two web forms for system upgrades. The top form is titled 'Update Firmware' and the bottom one is 'Update Bootloader'. Both forms have a 'Location:' label, a text input field, a 'Browse...' button, and an 'Apply' button.

If you want to upgrade the software for the router, the first step is to obtain our upgrade files and save them in the computer. Then click “Browse” in the “Upgrade Firmware” to select upgrade files, then click “Apply” and keep waiting until the upgrade is done (generally within one minute).

The “Updates Bootloader” is used to upgrade the system booting programs. it is unnecessary for the user to apply this function.

9.3 Equipment Management

Export system configurations: Save system configuration files in the computer for further recoveries.

Import system configurations: Introduce local configuration files to the

router. The configuration of the router will be update to the setting which been imported

Reset: All the configurations will reset to the factory original settings