

---Apply to WL-R210 Series Industrial 4G/3G Router



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1

Product Introduction

1.1 Product overview

WLINK industrial Router is based on industrial grade design, built-in high-powered 32bit MIPS processor, and multi-band 4G/3G communication module, support WCDMA,HSPA+, 4G FDD/TDD etc., provide quick and convenient internet access or private network transmission to customer, provide wire-line network or wireless WLAN share high speed access, meanwhile, customized high security VPN (Open VPN、IPSec、SSL), to construct safe channel, widely used in financial, electric power, environment, oil, transportation, security, etc..

WLINK industrial series router provide GUI, optional CLI configuration interface, customer can configure by IE explore or Telnet/SSH, various configuration method, concise and friendly interface make configuring and managing of all router terminal easier ,meanwhile, WLINK 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 introduction

WLINK 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+, 4G FDD/TDD etc., and downward compatibility to GPRS、EDGE、CDMA 1x, etc., optional GPS module Expansion positioning function, to suit different requirement and different network environment of different operators. Our Router series have many model for option, below is the product model indications in detail, for more optional models, please consult local distributors /resellers.



Table 1-1 Router partial model table

Model	LTE	3G	Interface	Dual SIM	WiFi	GPS	DL	UL
WL-R210L-d	FDD LTE 2600/2100/1800/900/800MHz	UMTS 800/850/900/1900/2100MHz	2x LAN 1x RS232 3x I/O	4	J		100M	50M
WL-R210L-g	FDD LTE 2600/2100/1800/900/800MHz	UMTS 800/850/900/1900/2100MHz	2x LAN 1x R5232 3x I/O	¥	4	4	100M	50M
WL-R210LH-d	FDD LTE 800/850/900/1800 /1900/2100/2600MHz	UMTS 2100/1900/850/900MHz	2x LAN 1x RS232 3x I/O	1	J		100M	50M
WL-R210LH-g	FDD LTE 800/850/900/1800 /1900/2100/2600MHz	UMTS 2100/1900/850/900MHz	2x LAN 1x RS232 3x I/O	Į.	J	J	100M	50M
WL-R210H-d		HSPA+ 2100/1900/850MHz	2x LAN 1x RS232 3x I/O	1	4		21M	5.76M
WL-R210H-g		HSPA+ 2100/1900/850MHz	2x LAN 1x RS232 3x I/O	J	J	4	21M	5.76M
WL-R210H1-d		HSPA+ 2100/1900/900/850MHz	2x LAN 1x RS232 3x I/O	7	√		21M	5.76M
WL-R210H1-g		HSPA+ 2100/1900/900/850MHz	2x LAN 1x RS232 3x I/O	4	1	4	21M	5.76M
WL-R210H2-d		HSPA 2100/1900/900/850MHz	2x LAN 1x RS232 3x I/O	J	J		14M	5.76M
WL-R210H2-g		HSPA 2100/1900/900/850MHz	2x LAN 1x R5232 3x I/O	4	4	4	14M	5.76M
WL-R210D-d		HSDPA 900/2100 or 850/1900MHz	2x LAN 1x R5232 3x I/O	,	4		7.2M	5.76M
WL-R210D-g		HSDPA 900/2100 or 850/1900MHz	2x LAN 1x RS232 3x I/O	Į.	4	٦	7.2M	5.76M
WL-R210E-d		EVDO 800MHz	2x LAN 1x RS232 3x I/O	1	4		3.1M	1.8M
WL-R210E-g		EVDO 800MHz	2x LAN 1x RS232 3x I/O		J	4	3.1M	1.8M



1.3 Product Appearance

Table 1-2 WLINK Router Appearance

Series	R100	R200	R210	R520
Appearance			W	
Ports	1*LAN 1*RS232	2*LAN/ 1*LAN+ 1*WAN GPS or WLAN(11n 1T1R)	2*LAN(Default) +Dual SIM GPS, WLAN Optional	1*WAN + 4*LAN + single module/dual SIM, dual module/dual SIM
Product category	Single port router	Dual port Wi-Fi router	Multi-port Wi-Fi router	Multi-functional Wi-Fi router

1.4 Typical Application Diagram

WLINK 4G/3G Router are widely used in Telecom, economic, advertisement, traffic, environment protection business area.

For example, in economic area, WL-R210 Series Router connect server by IPSec & GRE to ensure data security, tiny design makes it easily installed into ATM machine. All these technology ensure safe and reliable data transmission, and minimize the probability of network disconnection, and maximize the usability of economic business like ATM, POS .etc.

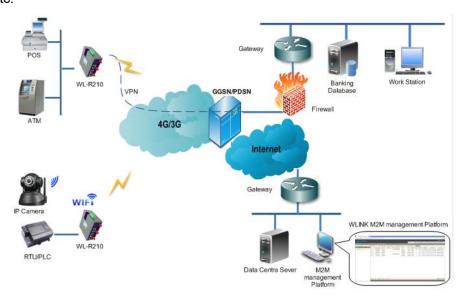




Figure 1-1 Network Topology

1.5 Features

- Various cellular module optional, LTE/HSPA+/EVDO/CDMA2000 optional
- 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 Open VPN, 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 per customer's demand

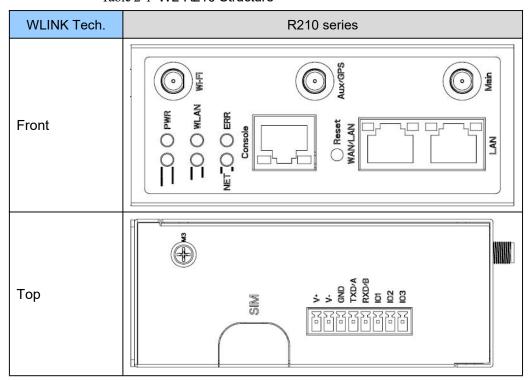


2 Hardware Installation

This chapter is mainly for installation introduction, there would be some difference between the scheme and real object. But the difference won't have any influence to products performance.

2.1 Panel

Table 2-1 WL-R210 Structure





There are some difference on Antenna interface and indicator light for the device with extended Wi-Fi, GPS features.



Table 2-2 Router Interface

Port	Instruction	Remark
USIM	Plug type SIM Slot, support 1.8/3V/5V automatic detection.	
Main	3G/LTE antenna, SMA connector, 50Ω.	
Aux/GPS	Optional for LTE MIMO antenna or GPS antenna ,SMA connector, 50Ω .	Optional
Wi-Fi	Wi-Fi antenna, SMA connector,	Optional
LAN	10/100Base-TX,MDI/MDIX self-adaption.	
WAN/LAN	10/100Base-TX, MDI/MDIX self-adaption. Default as L	
Reset	Reset button,(press on button at least 5 seconds)	
PWR	Power connector	$5\sim 26 V DC$
I/O	1/O 1 and 2 is digital input, and I/O 3 is digital output.	
Console	RJ45-DB9 cable for CLI configuration.	

2.2 LED Status

Table 2-3 Router LED indictor Status

silk-screen	status		Indication
Signal	Signal	Solid Light	LED1 indicates signal is weak(CSQ0~10). LED2 indicates signal is good(CSQ11~19. LED3 indicates signal is strong (CSQ20~31)
	Signal 1	Blink	dialing
	Signal I	Solid Light	online
PWR	Solid Light		System power operation.
	Solid light		WLAN enable, but no data communication.
WLAN	Blinking quickly		Data in transmitting
	Dark		WLAN disable
EDD	Dark		System operation and LTE/3G online.
Solid Light(Red)		(Red)	System fail indicator. It indicates SIM card/ module fail.
LAN	Green	Solid light	Connected



silk-screen	status		Indication
	Green	Blinking	Data in transmitting.
	Green	Dark	Disconnection.



There are some difference in the LED indicator of the router with expanded Wi-Fi, GPS function and single module/double SIM.

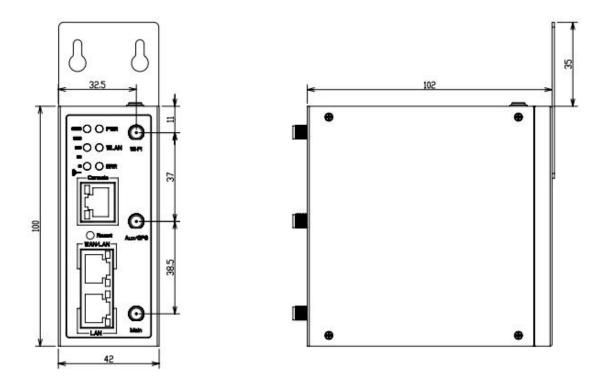


Figure 2-2 R210 Series Router Dimension

2.3 How to Install

2.4.1 SIM/UIM card install

If use dual SIM/UIM card router, you need insert dual SIM before configure it. After inserting, please follow below steps to connect the router.



Before connecting, please disconnect any power resource of router



2.4.2 Ethernet Cable Connection

Use an Ethernet cable to connect the cellular Router with computer directly, or transit by a switch.

2.4.3 Serial Port Connection

If you want to connect the router via serial port to laptop or other devices, you should prepare a serial port or RJ45 cable, this cable is optional available from WLINK. One end connect to computer serial port, the other end connects to the console port of the router



Before connecting, please disconnect any power resource.

2.4.4 Power Supply

In order to get high reliability, WLINK Series Router power adapt supports wide voltage input range from +5V to +36VDC, support hot plug and complex application environment.

2.4.5 Review

After insert the SIM/UIM card and connect Ethernet cable and antenna, connect power supply adaptor or power cable.



Please connect the antenna before power on, otherwise the signal maybe poor because of impedance mismatching.

Notice:

- Step 1 Check the antenna connection.
- Step 2 Check SIM/UIM card, confirm SIM/UIM card is available.
- Step 3 Power on the industrial Router

----END



3 Router Configuration

This Chapter introduces the parameter configuration of the router, the router can be configured via web internet explorer, Firefox, or chrome. Here we take GUIs 7 system and Internet Explorer 9.0 as sample.

3.1 Local Configure

The router supports to be configured by local Ethernet port, you could specify a static IP or DHCP get IP for your computer. The default IP address is 192.168.1.1, subnet mask is 255.255.255.0, please refer to followings:

Step 1 Click "start > control panel", 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.



Figure 3-3 Network Connection

- Step 2 Obtain a IP address automatically or set up IP address,192.168.1.xxx(XXX can be any number between 2~254)
- Step 3 Run an Internet Explorer and visit "http://192.168.1.1/", to enter identify page.



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



Figure 3-4 User Identify Interface

----END

3.2 Basic Configuration



Different software version have different web configuration interface, here take R210 2.6.0.1 version as example.

After visit the WEB interface, you can check the current status of Router, or modify router configuration via web interface, below is the introduction for the common setting.



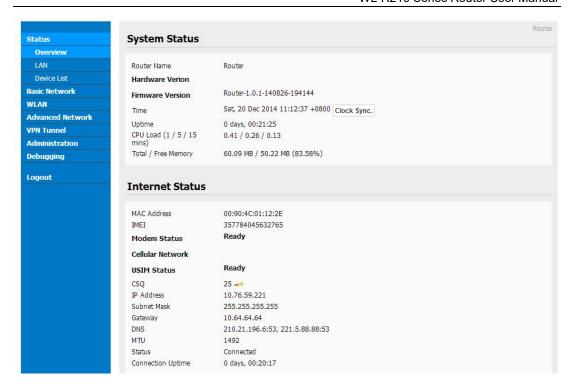


Figure 3-5 Router Status GUI

3.2.1 WAN Setting

Step 1 Single Click "Basic Network>WAN" to enter below interface



Figure 3-1 WAN Setting GUI

Table 3-1 WAN Setting Instruction

Parameter	Instruction
Туре	Support 3G/4G, PPPoE, DHCP, Static IP



Parameter	Instruction
Dial Mode	ECM/PPP optional. Suggest ECM for 4G router
Bridge WAN to LAN	Configure WAN port as LAN port

Step 2 After setting, please click "save" to finish, the device will reboot.

3.2.2 Cellular Network Configure

Step 1 Single Click Basic Network-> Cellular, you can modify relevant parameter according to the application.

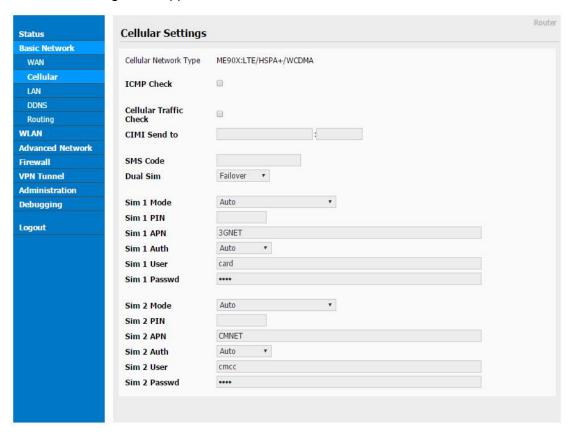


Figure 3-2 Dual SIM GUI

Table 3-2 Cellular Setting Parameter Instruction

Parameter	Instruction
ICMP check	To enable or disable ICMP check rules. Enable the ICMP check and setup a reachable IP address as destination IP. Once ICMP check failed, router will reconnect/reboot system as optional.
Cellular Traffic Check	There is Rx/Tx as options. Once no Rx/Tx data, router will router will reconnect/reboot system as options.



Parameter	Instruction
CIMI Send	Send CIMI to defined IP and port by TCP protocol.
SMS Code	Remotely control router by SMS. Router just identify the correct SMS code as configured.
Pin Code	Some SIM cards are locked with a Personal Identification Number (PIN) code to prevent misuse if they are lost or stolen.
Operator Lock	Lock router for a specified operator via MCC/MNC code.
Connect Mode	Auto.Router will automatically connect 3G/4G network and keep 4G in prior.
	LTE. Router will connect 4G only.
	3G. Router will connect 3G only.
APN	APN, provided by local ISP, usually CDMA/EVDO network do not need this parameter.
User	SIM card user name is provided by ISP
Password	SIM card password is provided by ISP
Auth Type	Support PAP/Chap/MS-Chap/MS-Chapv2

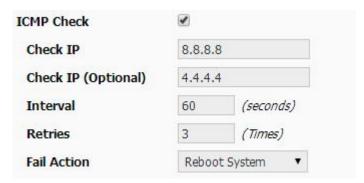


NOTE ICMC Check and Cellular Traffic Check are alternative.

【ICMP Check】

Enable ICMP, Router will automatically check whether the defined IP address is reachable per 60s. If the IP address is unreachable and ICMP check is timeout at the first time, it will check 2 times every 3 seconds. If the third time is still failed, the router will redial.

The ICMP Check IP is a public IP or company server IP address.

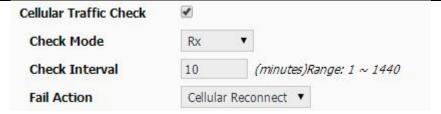


【Cellular Traffic Check】

【Check Mode】 there are Rx(Receive), Tx(Transmission) and Rx/Tx check modes.

[Rx]Router will check the 3G/LTE cellular receiver traffic. If no receiver traffic within the defined check interval, the router will implement the specified action reconnect or reboot.





Step 2 After Setting, please click "save" icon.

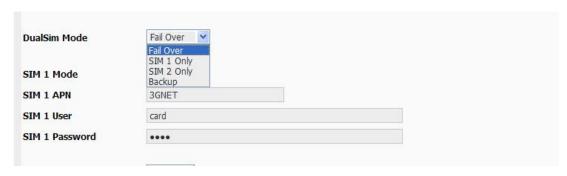
[SIM Mode]

【Fail Over】SIM card mutual backup. Once SIM card is failed, it will switch to the SIM2 and work on SIM2. Once SIM2 is failed, it will switch back to SIM1.

[SIM1 Only] Just SIM1 is available.

[SIM2 Only] Just SIM2 is available.

【Backup】 SIM1 is the primary SIM. Once SIM1 is failed, it will switch to SIM2 and work on SIM2 within the defined time. Once the time is over, it will switch back to SIM1.



Step 3 After Setting, please click "save" icon.

----End

3.2.3 LAN Setting

Step 1 Single Click "Basic Network>LAN" to enter below interface

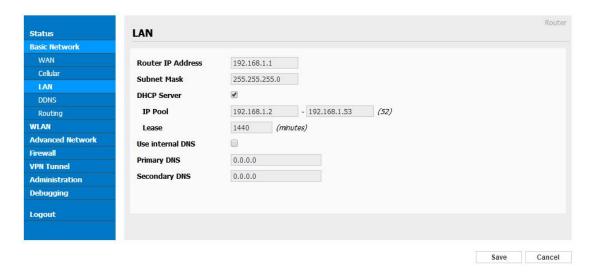




Figure 3-3 LAN Setting GUI

Table 3-3 LAN Setting Instruction

Parameter	Instruction
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 enable, it will show the IP address range and options of lease
IP Address Range	IP address range within LAN
Lease	The valid time
Use Internal DNS	If click this option, router will use 3G/4G network DNS which is assigned by 3G/4G network. If not click this option, router will use custom DNS
Primary DNS	Available as customer configured
Secondary DNS	Available as customer configured

Step 2 After setting, please click "save" to finish, the device will reboot.

3.2.4 Dynamic DNS Setting

Step 1 Single click "Basic Network->DDNS to enter the DDNS setting page.

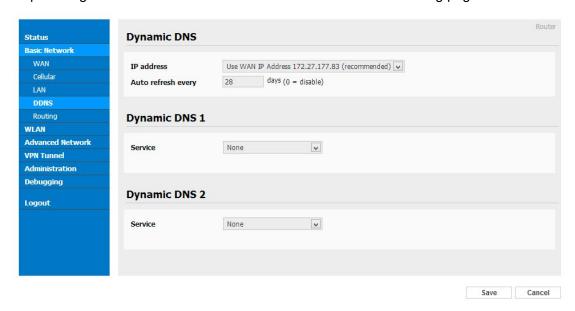




Figure 3-4 Dynamic DNS Setting

Table 3-4 DDNS Setting Instruction

parameter	Instruction
IP address	Default is standard DDNS protocol, for customized protocol, please contact Wlink engineer. Usually, use default IP 0.0.0.0
Auto refresh time	Set the interval of the DDNS client obtains new IP, suggest 240s or above
Service provider	Select the DDNS service provider that listed.

Step 2 Please Click "Save" to finish.

----End

3.2.5 Routing Setting

Step 1 Single click "Basic Network->Routing to enter the DDNS setting GUI.

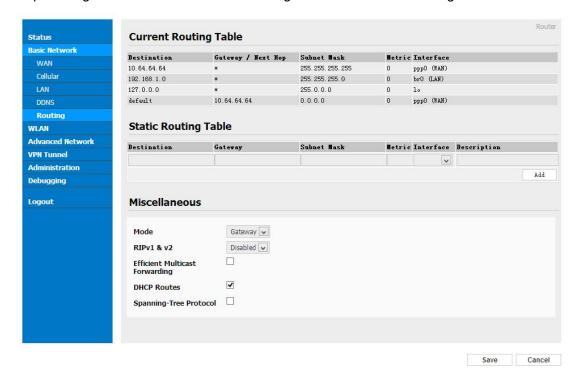


Figure 3-5 Routing Setting

Table 3-5 Routing Setting Instruction

Parameter	Instruction
Destination	Router can reach the destination IP address.
Gateway	Next hop IP address which the router will reach
Subnet Mask	Subnet mask for destination IP address



Parameter	Instruction
Metric	Metrics are used to determine whether one particular route should be chosen over another.
Interface	Interface from router to gateway.
Description	Describe this routing name.

Step 2 Please Click "Save "to finish.

3.3 WLAN Setting

It's mainly for router which support Wi-Fi, you can modify and configure WLAN parameter through Web GUI, below is the common setting

3.3.1 Basic Setting

Step 1 Click "WLAN->Basic Setting" to configure relative parameter

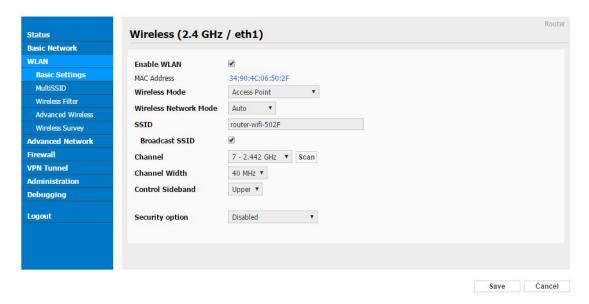


Figure 3-6 WLAN Basic Settings GUI

Table 3-6 Basic Setting Instruction

Parameter	Instruction
Enable wireless	Enable or Disable the Wireless
Wireless mode	Support AP, AP+WDS, Bridge, Client, WDS
Wireless Network protocol	Support Auto, IEEE 11b/g/n optional
SSID	The default is router, can be modified as per application.
Channel	The channel of wireless network, suggest keep the default

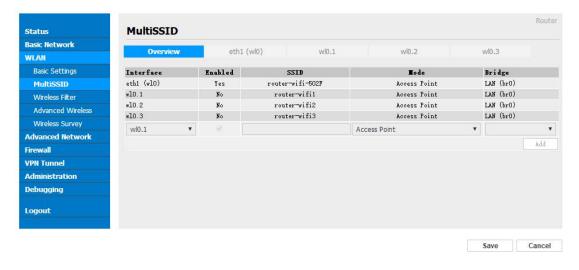


Parameter	Instruction
Channel Width	20MHZ and 40MHZ alternative
Security	Support various encryption method

Step 2 Please click "Save" to finish.

3.3.2 Wireless Filter Setting

Step 1 Single click "WLAN > MultiSSID".



3.3.3 Wireless Filter Setting

Step 1 Single click "WLAN > Wireless Filter".



Figure 3-7 Wireless Client Filter Setting GUI

The Wireless Filter enable to set the permitted client or prohibit the specific client to



connect the WiFi, However, this feature is invalid for wired connection application.

Table 3-7 "Wireless Client Filter" Setting Instruction

Parameter	Instruction
Disable Filter	Choose to disable
Permit on the following client	Only allow the listed MAC address to connect to router by wireless
Block the follow Client	Prevent the listed MAC address to connect to router by wireless

Step 2 Please click "save" to finish

----End

3.3.4 Advanced Wireless Setting

Step 1 Please click "WLAN> Advanced Wireless" to check or modify the relevant parameter.

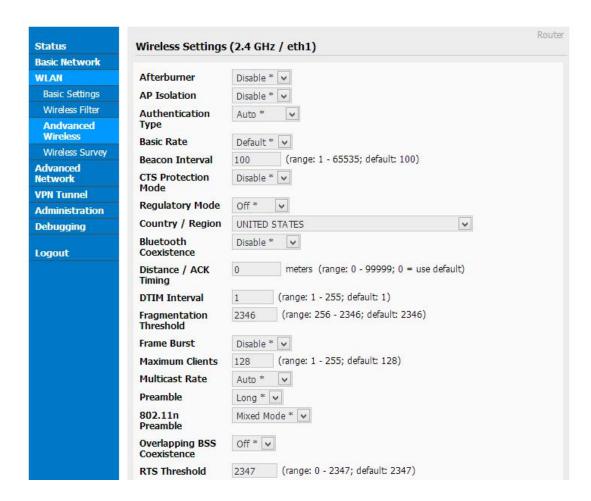


Figure 3-8 Advanced Wireless Setting GUI



Step 2 Please click "save" to finish.

----End

3.3.5 Wireless Survey

Step 1 Please click "WLAN> Wireless Survey" to check survey.

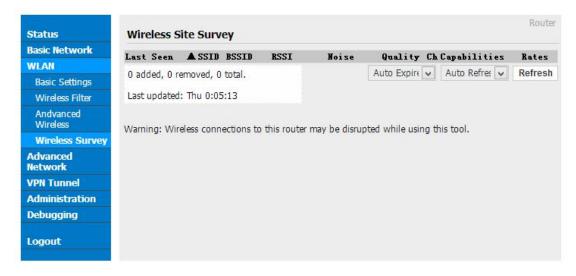


Figure 3-9 Wireless Survey Setting GUI

----End

3.4 Advanced Network Setting

3.4.1 Port Forwarding

Step 1 Please click "Advanced Network > Port Forwarding" to enter the GUI, you may modify the router name, Host name and Domain name according to the application requirement.



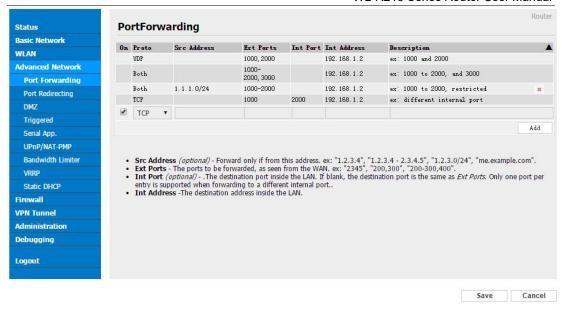


Figure 3-10 Port Forwarding GUI

Table 3-8 "Port Forwarding" Instruction

Parameter	Instruction
Protocol	Support UDP, TCP, both UDP and TCP
Src. Address	Source IP address. Forward only if from this address.
Ext. Ports	External ports. The ports to be forwarded, as seen from the WAN.
Int. Port	Internal port. The destination port inside the LAN. If blank, the destination port is the same as Ext Ports. Only one port per entry is supported when forwarding to a different internal port.
Int. Address	Internal Address. The destination address inside the LAN.
Description	Remark the rule

Step 2 Please click "save" to finish

3.4.2 Port Redirecting

Step 1 Please click "Advanced Network > Port Redirecting" to enter the GUI, you may modify the router name, Host name and Domain name according to the application requirement.





Figure 3-11 Port Forwarding GUI

Table 3-9 "Port Redirecting" Instruction

Parameter	Instruction
Protocol	Support UDP, TCP, both UDP and TCP
Int Port	Internal port.
Dst. Address	The redirecting IP address.
Ext. Ports	External port for redirection.
Description	Remark the rule

Step 2 Please click "save" to finish

3.4.3 **DMZ Setting**

Step 1 Please click "Advanced Network> DMZ" to check or modify the relevant parameter.





Figure 3-12 DMZ GUI

Table 3-10 "DMZ" Instruction

parameter	Instruction
Destination Address	The destination address inside the LAN.
Source Address Restriction	If no IP address inside, it will allow all IP address to access. If define IP address, it will just allow the defined IP address to access.
Leave Remote Access	

Step 2 Please click "save" to finish

3.4.4 IP Passthrough Setting

Step 1 Please click "Advanced Network> IP Passthrough" to check or modify the relevant parameter.



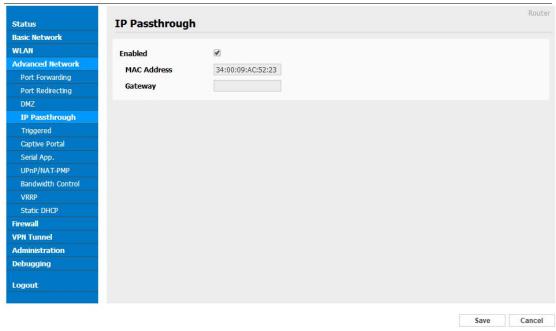


Figure 3-13 IP Passthrough GUI

Table 3-11 "IP Passthrough" Instruction

parameter	Instruction
Enable	Enable IP Passthrough
MAC Address	Enable DHCP of device. Configure device Mac. Device will be assigned SIM IP.
Gateway	If WL-R520 connect to multiple device, input other device gateway. The device might access to router GUI.

Step 2 Please click "save" to finish

3.4.5 Triggered Setting

Step 1 Please click "Advanced Network> Triggered" to check or modify the relevant parameter.



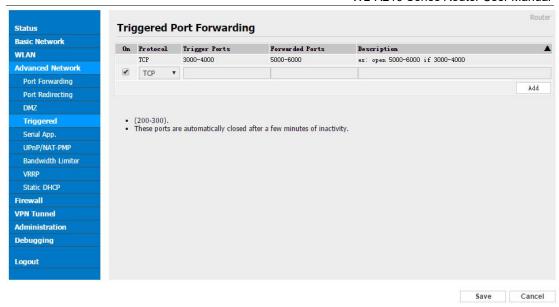


Figure 3-14 Triggered GUI

Table 3-12 "Triggered" Instruction

parameter	Instruction
Protocol	Support UDP, TCP, both UDP and TCP
Triggered Ports	Trigger Ports are the initial LAN to WAN "trigger".
Transferred Ports	Forwarded Ports are the WAN to LAN ports that are opened if the "trigger" is activated.
Note	Port triggering opens an incoming port when your computer is using a specified outgoing port for specific traffic.

Step 2 Please click "save" to finish.

----End

3.4.6 Serial App. Setting

Step 1 Please click "Advanced Network> Serial App" to check or modify the relevant parameter.



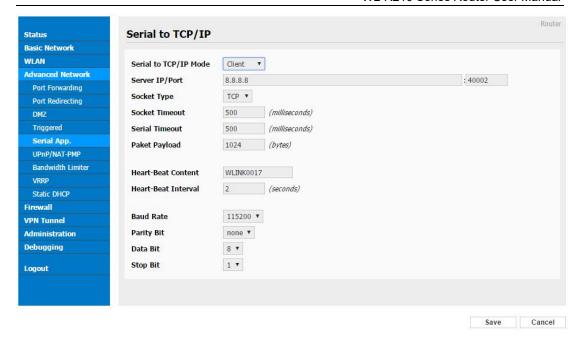


Figure 3-15 Serial App Setting GUI

Table 3-13 "Serial App" Instruction

Parameter	Instruction
Serial to TC/IP mode	Support Disable, Server and Client mode. Such as Client.
Server IP/Port	IP address and domain name are acceptable for Server IP
Socket Type	Support TCP/UDP protocol
Socket Timeout	Router will wait the setting time to transmit data to serial port.
Serial Timeout	Serial Timeout is the waiting time for transmitting the data package that is less the Packet payload. If the last package equals to the Packet payload, Serial port will transmit it immediately. The default setting is 500ms.
Packet payload	Packet payload is the maximum transmission length for serial port data packet. The default setting is 1024bytes.
Heart-beat Content	Send heart beat to the defined server to keep router online. Meantime, it's convenient to monitor router from server.
Heart beat Interval	Heart beat interval time
Baud Rate	115200 as default
Parity Bit	None as default
Data Bit	8bit as default
Stop Bit	1bit as default





Serial port connection

PINs	DB9(male)
V+	
V-	
GND	 5
RX	 3
TX	 2
DI-1	
DI-2	
DI-3	

Step 2 Please click "save" to finish.

----End

3.4.7 UPnp/NAT-PMP Setting

Step 1 Please click "Advanced Network> Upnp/NAT-PMP" to check or modify the relevant parameter.

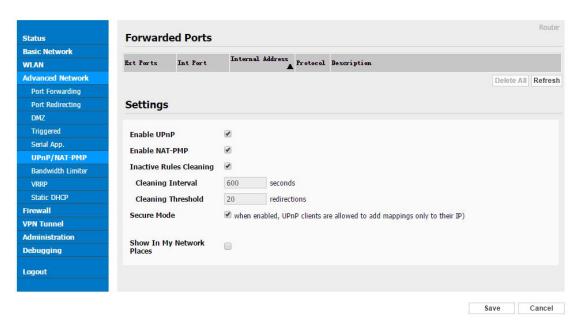


Figure 3-16 UPnp/NAT-PMP Setting GUI

Step 2 Please click "save" to finish.

3.4.8 Bandwidth Control Setting

Step 1 Please click "Advanced Network> Bandwidth Control" to check or modify the



relevant parameter.

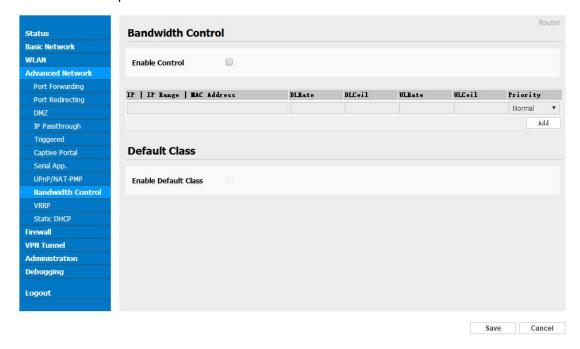


Figure 3-17 Bandwidth Control Setting GUI

Step 2 Please click "save" to finish.

----End

3.4.9 VRRP Setting

Step 1 Please click "Advanced Network> Static DHCP" to check or modify the relevant parameter.

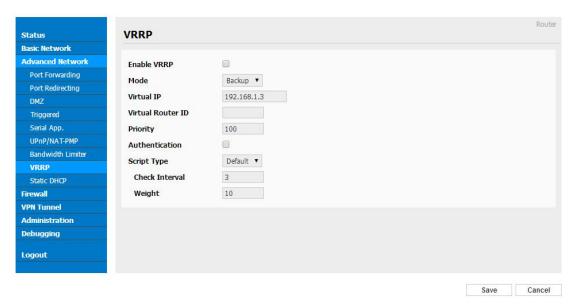




Figure 3-18 VRRP Setting GUI

Step 2 Please click "save" to finish.

----End

3.4.10 Static DHCP Setting

Step 1 Please click "Advanced Network> Static DHCP" to check or modify the relevant parameter.

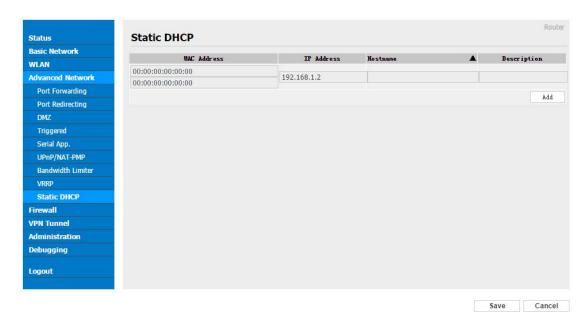


Figure 3-19 Static DHCP Setting GUI

Step 2 Please click "save" to finish.

----End

3.5 Firewall

3.5.1 IP/URL Filtering

Step 1 Please click "Firewall> IP/URL Filtering" to check or modify the relevant parameter.



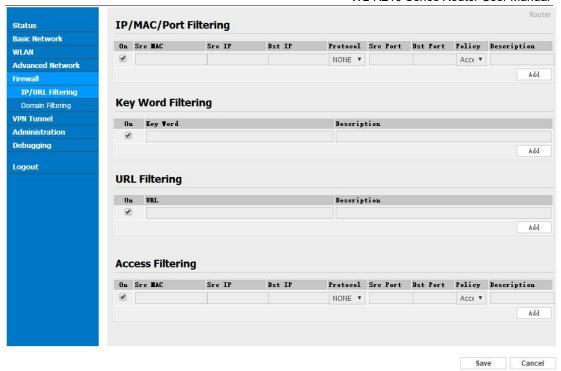


Table 3-14 "IP/URL Filtering" Instruction

Parameter	Instruction
IP/MAC/Port Filtering	Support IP address, MAC address and port filter. Accept/Drop options for filter policy.
Key Word Filtering	Support key word filter.
URL Filtering	Support URL filter.
Access Filtering	Support Access Filter.

Step 2 Please click "save" to finish.

3.5.2 **Domain Filtering**

Step 1 Please click "Firewall> Domain Filtering" to check or modify the relevant parameter.





Figure 3-20 Domain Filtering Setting GUI

Table 3-15 "GRE" Instruction

Parameter	Instruction
Default Policy	Support black list and white list
Local IP Address	Local IP address for LAN.
Domain	Support Domain filter.

Step 2 Please click "save" to finish.

3.6 VPN Tunnel

3.6.1 GRE Setting

Step 1 Please click "VPN Tunnel> GRE" to check or modify the relevant parameter.





Figure 3-21 GRE Setting GUI

Table 3-16 "GRE" Instruction

Parameter	Instruction
IDE	GRE tunnel number
Tunnel Address	GRE Tunnel local IP address which is a virtual IP address.
Tunnel Source	Router's 3G/WAN IP address.
Tunnel Destination	GRE Remote IP address. Usually a public IP address
Keep alive	GRE tunnel keep alive to keep GRE tunnel connection.
Interval	Keep alive interval time.
Retries	Keep alive retry times. After retry times, GRE tunnel will be re-established.
Description	

Step 2 Please click "save" to finish.

----End

3.6.2 OpenVPN Client Setting

Step 1 Please click "VPN Tunnel> OpenVPN Client" to check or modify the relevant parameter.

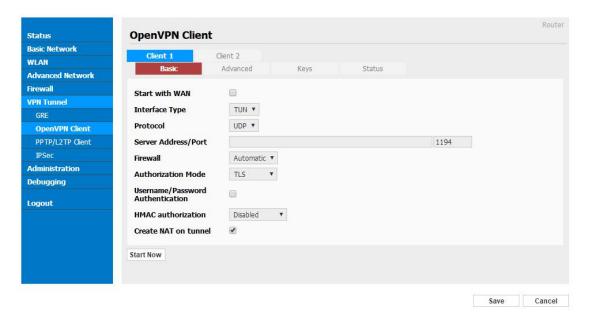
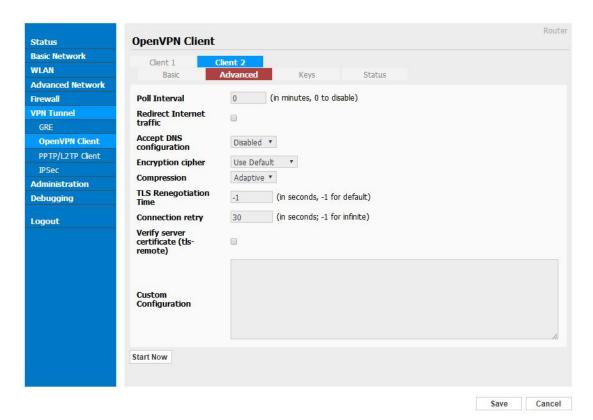


Figure 3-22 OpenVPN Setting GUI

Table 3-17 "OpenVPN" Instruction



Parameter	Instruction
Start with WAN	Enable the Openvpn feature for 4G/3G/WAN port.
Interface Type	Tap and Tun type are optional.
	Tap is for bridge mode and Tunnel is for routing mode.
Protocol	UDP and TCP optional.
Server Address	The Openvpn server public IP address and port.
Firewall	Auto, External only and Custom are optional
Authorization Mode	TLS, Static key and Custom are optional.
User name/Password Authentication	As the configuration requested.
HMAC authorization	As the configuration requested.
Create NAT on tunnel	Configure NAT in Openvpn tunnel.



Parameter	Instruction
Poll Interval	Openvpn client check router's status as interval time.
Redirect Internet Traffic	Configure Openvpn as default routing.



Parameter	Instruction
Access DNS	As the configuration requested.
Encryption	As the configuration requested.
Compression	As the configuration requested.
TLS Renegotiation Time	TLS negotiation time1 as default for 60s.
Connection Retry Time	Openvpn retry to connection interval.
Verify server certificate	As the configuration requested.
Custom Configuration	As the configuration requested.



Parameter	Instruction
Certificate Authority	Keep certificate as the same as server
Client Certificate	Keep client certificate as the same as server
Client Key	Keep client key as the same as server





Parameter	Instruction
Status	Check Openvpn status and data statistics.

Step 2 Please click "save" to finish.

----End

3.6.3 VPN Client Setting

Step 1 Please click "VPN Tunnel> VPN Client" to check or modify the relevant parameter.

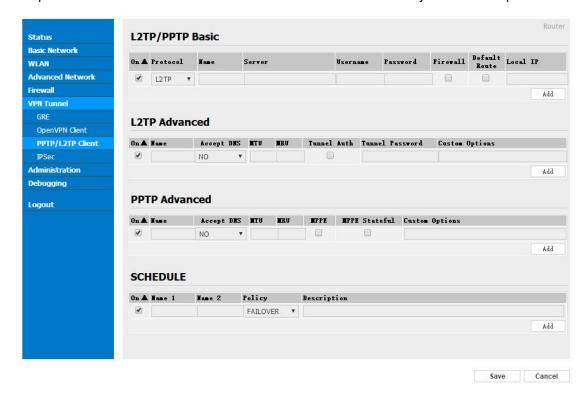




Table 3-18 "PPTP/L2TP Basic" Instruction

parameter	Instruction
On	VPN enable
Protocol	VPN Mode for PPTP and L2TP
Name	VPN Tunnel name
Server Address	VPN Server IP address.
User name	As the configuration requested.
Password	As the configuration requested.
Firewall	Firewall For VPN Tunnel
Local IP	Defined Local IP address for tunnel

Table 3-19 "L2TP Advanced" Instruction

On	L2TP Advanced enable
Name	L2TP Tunnel name
Accept DNS	As the configuration requested.
MTU	MTU is 1450bytes as default
MRU	MRU is 1450bytes as default
Tunnel Auth	L2TP authentication Optional as the configuration requested.
Tunnel Password	As the configuration requested.
Custom Options	As the configuration requested.

Table 3-20 "PPTP Advanced" Instruction

On	PPTP Advanced enable
Name	PPTP Tunnel name
Accept DNS	As the configuration requested.
MTU	MTU is 1450bytes as default
MRU	MRU is 1450bytes as default
MPPE	As the configuration requested
MPPE Stateful	As the configuration requested
Customs	As the configuration requested



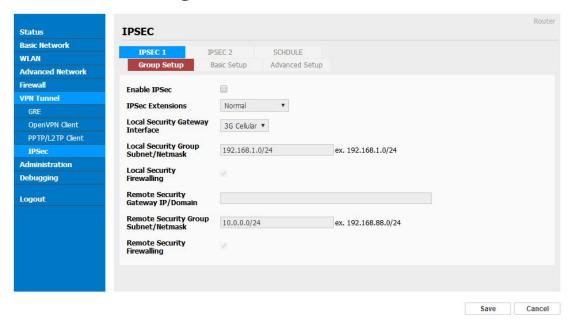
Table 3-21 "SCHEDULE" Instruction

On	VPN SCHEDULE feature enable
Name1	VPN tunnel name
Name2	VPN tunnel name
Policy	Support VPN tunnel backup and failover modes optional
Description	As the configuration requested

Step 2 Please click "save" to finish.

---End

3.6.4 IPSec Setting



3.5.3.1 IPSec Group Setup

Step 1 Please click "IPSec> Group Setup" to check or modify the relevant parameter.



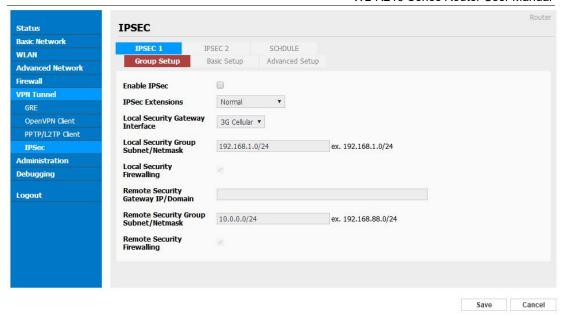


Table 3-22 "IPSec Group Setup" Instruction

parameter	Instruction
IPSec Extensions	Support Standard IPSec, GRE over IPSec, L2TP over IPSec
Local Security Interface	Defined the IPSec security interface
Local Subnet/Mask	IPSec local subnet and mask.
Local Firewall	Forwarding-firewalling for Local subnet
Remote IP/Domain	IPsec peer IP address/domain name.
Remote Subnet/Mask	IPSec remote subnet and mask.
Remote Firewall	Forwarding-firewalling for Remote subnet

Step 2 Please click "save" to finish.

3.5.3.2 IPSec Basic Setup

Step 1 Please click "IPSec >Basic Setup " to check or modify the relevant parameter.



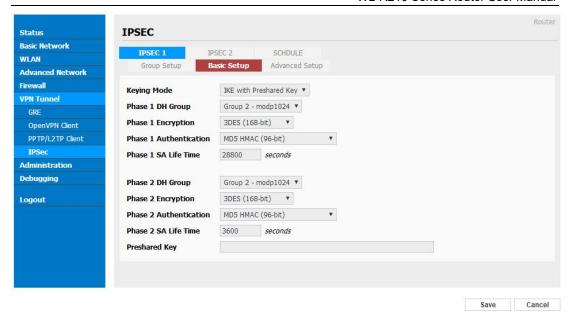


Table 3-23 "IPSec Basic Setup" Instruction

parameter	Instruction
Keying Mode	IKE preshared key
Phase 1 DH Group	Select Group1, Group2, Group5 from list. It must be matched to remote IPSec setting.
Phase 1 Encryption	Support 3DES, AES-128, AES-192, AES-256
Phase 1 Authentication	Support HASH MD5 and SHA
Phase 1 SA Life Time	IPSec Phase 1 SA lifetime
Phase 2 DH Group	Select Group1, Group2, Group5 from list. It must be matched to remote IPSec setting.
Phase 2 Encryption	Support 3DES, AES-128, AES-192, AES-256
Phase 2 Authentication	Support HASH MD5 and SHA
Phase 2 SA Life Time	IPSec Phase 2 SA lifetime
Preshared Key	Preshared Key

Step 2 Please click "save" to finish.

3.5.3.3 IPSec Advanced Setup

Step 1 Please click "IPSec >Advanced Setup" to check or modify the relevant parameter.



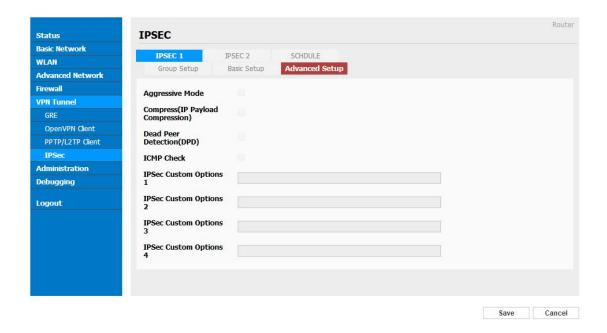


Table 3-24 " IPSec Advanced Setup" Instruction

parameter	Instruction
Aggressive Mode	Default for main mode
ID Payload Compress	Enable ID Payload compress
DPD	To enable DPD service
ICMP	ICMP Check for IPSec tunnel
IPSec Custom Options	IPSec advanced setting such as left/right ID.

Step 2 Please click "save" to finish.

----End

3.7 Administration

3.7.1 Identification Setting

Step 1 Please click "Administrator> Identification" to enter the GUI, you may modify the router name, Host name and Domain name according to self-requirement.



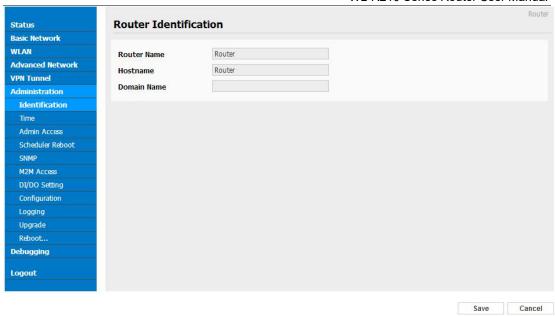


Figure 3-23 Router Identification GUI

Table 3-25 "Router Identification" Instruction

Parameter	Instruction
Router name	Default is router, can be set maximum 32 character
Host name	Default is router, can be set maximum 32 character
Domain name	Default is empty, support maximum up to 32 character, it is the domain of WAN, no need to configure for most application.

Step 2 Please click "save" to finish



3.7.2 Time Setting

Step 1 Please click "Administrator> time" to check or modify the relevant parameter.

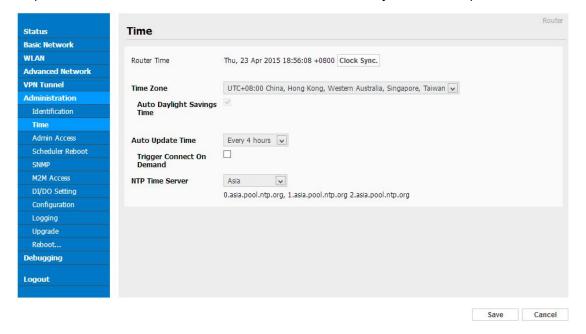


Figure 3-24 System Configuration GUI



If the device is online but time update is fail, please try other NTP Time Server.

Step 2 Please click "save to finish.



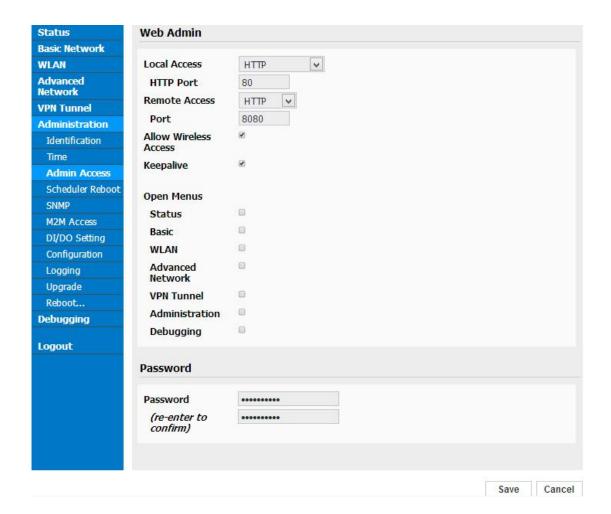
3.7.3 Admin Access Setting

Step 1 Please click "Administrator>Admin" to check and modify relevant parameter.

In this page, you can configure the basic web parameter, make it more convenient for usage. Please note the "password" is the router system account password.

Figure 3-25 Admin Setting GUI

Step 2 Please click save iron to finish the setting





3.7.4 Schedule Reboot Setting

Step 1 Please click "Administrator>Schedule Reboot" to check and modify relevant parameter.

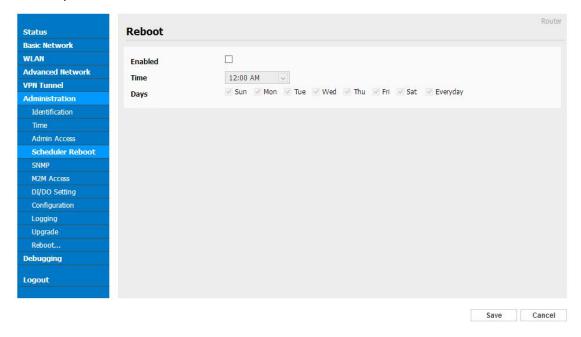


Figure 3-26 Scheduler Reboot Setting GUI

Step 2 Please click save iron to finish the setting

----End

3.7.5 SNMP Setting

Step 1 Please click "Administrator>SNMP" to check and modify relevant parameter.



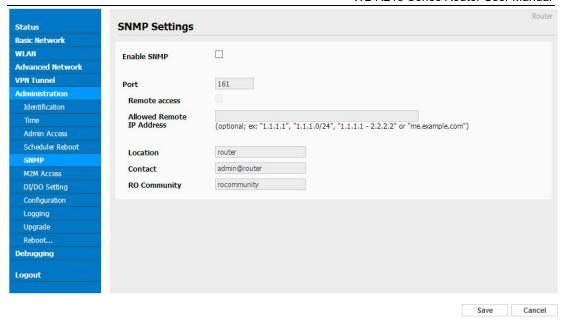


Figure 3-27 SNMP Setting GUI

Step 2 Please click save iron to finish the setting

----End

3.7.6 **M2M Access Setting** (Apply to M2M Management Platform installation application only)

Step 1 Please click "Administrator>M2M Access" to check and modify relevant parameter.

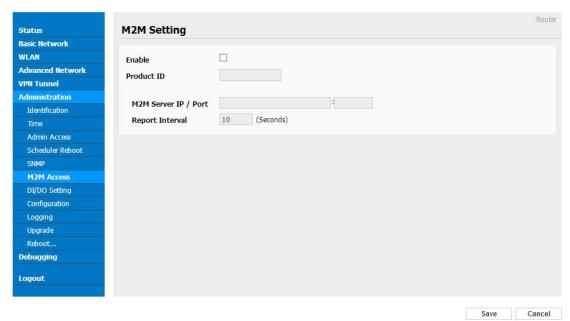




Figure 3-28 M2M Access Setting GUI

Step 2 Please click save iron to finish the setting

----End

3.7.7 DI/DO Setting

Step 1 Please click "Administrator>DI/DO Setting" to check and modify relevant parameter.

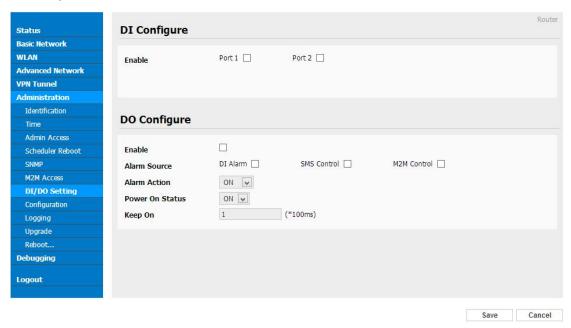


Figure 3-29 DI/DO Setting GUI

3.6.7.1 DI Configure





Table 3-26 "DI" Instruction

Parameter	Instruction
Enable	Enable DI. Port1 is for I/O1 and Port2 is I/O2. Both I/O1 and I/O2 are DI ports
Mode	Selected from OFF, ON and EVENT_COUNTER modes. OFF Mode: When I/O connects to GND, it will trigger alarm. ON Mode: When I/O does not connect to GND, it will trigger alarm. EVENT_COUNTER Model: Enter EVENT_COUNTER mode.
Filter	Software filtering is used to control switch bounces. Input (1~100)*100ms. Under OFF and ON modes, WL-R210 detects pulse signal and compares with first pulse shape and last pulse shape. If both are the same level, WL-R210 will trigger alarm. Under EVENT_COUNTER mode, if first pulse shape and last pulse shape are not the same level, WL-R210 will trigger alarm according to Counter Action setting.
Counter Trigger	Available when DI under Event Counter mode Input from 0 to 100. (0=will not trigger alarm) It will trigger alarm when counter reaches this value. After triggering alarm, DI will keep counting but no trigger alarm again.
Counter Period	It's a reachable IP address. Once the ICMP check is failed, GRE will be established again.
Counter Recover	it will re-count after counter trigger alarm. The value is 0~30000(*100ms). 0 means no counter.
Counter Action	HI_TO_LO and LO_TO_HI is available when DI under Event Counter mode. In Event Counter mode, the channel accepts limit or proximity



Parameter	Instruction		
	switches and counts events according to the ON/OFF status. When LO_TO_HI is selected, the counter value increase when the attached switch is pushed. When HI_TO_LO is selected, the counter value increases when the switch is pushed and released.		
Counter Start	Available when DI under EVENT_COUNTER mode. Start counting when enable this feature.		
SMS Alarm	The alarm SMS will send to specified phone group.		
	Each phone group include up to 2 phone numbers.		
SMS Content	70 ASCII Char Max		
Number 1	SMS receiver phone number.		
Number 2	SMS receiver phone number.		

Step 2 Please click "save" to finish.

3.6.7.1 DO Configure



Table 3-27 "DO" Instruction

Parameter	Instruction
Enable	1 DO as selected
Alarm Source	Digital output initiates according to different alarm source. Select from DI Alarm, SMS Control and M2M Control. Selections can be one or more.
	DI Alarm: Digital Output triggers the related action when there is alarm from Digital Input.
	SMS Control: Digital Output triggers the related action when



	WL-R210 Series Router Oser Manual			
Parameter	Instruction			
	receiving SMS from the number in phone book.			
	M2M Control: it's not ready.			
Alarm Action	Digital Output initiates when there is an alarm.			
	Selected from "OFF", "ON", "Pulse".			
	OFF: Open from GND when triggered.			
	ON: Short contact with GND when triggered.			
	Pulse: Generates a square wave as specified in the pulse mode parameters when triggered.			
Power on	Specify the digital Output status when power on.			
Status	Selected from OFF and ON.			
	OFF: Open from GND.			
	ON: Short contact with GND.			
Keep On	Available when digital output Alarm On Action/Alarm Off Action status is ON, input the Digital Output keep on status time.			
	Input from 0 to 255 seconds. (0=keep on until the next action)			
Delay	Available when enable Pulse in Alarm On Action/Alarm Off Action.			
	The first pulse will be generated after a "Delay".			
	Input from 0 to 30000ms. (0=generate pulse without delay)			
Low	Available when enable Pulse in Alarm On Action/Alarm Off Action.			
	In Pulse Output mode, the selected digital output channel will generate a square wave as specified in the pulse mode parameters. The low level widths are specified here.			
	Input from 1 to 30000 ms.			
	Available when enable Pulse in Alarm On Action/Alarm Off Action.			
High	In Pulse Output mode, the selected digital output channel will generate a square wave as specified in the pulse mode parameters. The high level widths are specified here. Input from 1 to 30000 ms.			
Output				
Output	Available when enable Pulse in Alarm On Action/Alarm Off Action. The number of pulses, input from 0 to 30000. (0 for continuous pulse			
	output)			
SMS Trigger	Available when enable SMS Control in Alarm Source.			
Content	Input the SMS content to enable "Alarm On Action" by SMS (70 ASIC II char max).			
SMS Reply Content	Input the SMS content, which will be sent after DO was triggered. (70 ASIC II char max).			
Number 1	SMS receiver phone number.			
Number 2	SMS receiver phone number.			
L				

Step 3 Please click "save" to finish.



3.7.8 Configuration Setting

Step 1 Please click "Administrator> Configuration" to do the backup setting

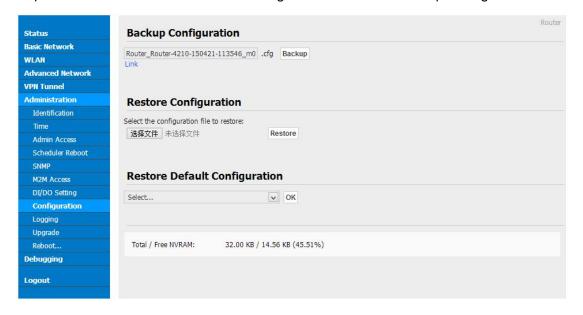


Figure 3-30 Backup and Restore Configuration GUI



Restore Default would lose all configuration information, please be careful.

Step 2 After setting the backup and restore configuration. The system will reboot automatically.



3.7.9 System Log Setting

Step 1 Please click "Administrator> Logging" to start the configuration, you can set the file path to save the log (Local or remote sever).

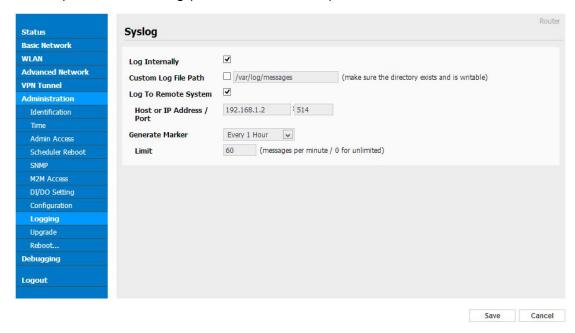


Figure 3-31 System log Setting GUI

Step 2 After configure, please click "Save" to finish.



3.7.10 Firmware upgrade

Step 1 Please click "Administrator>firmware upgrade" to open upgrade firmware tab.



Figure 3-32 Firmware Upgrade GUI



When upgrading, please don't cut off the power.

3.7.11 System Reboot

- Step 1 Please click "Administrator>Reboot" to restart the router. System will popup dialog to remind "Yes" or "NO" before the next step.
- Step 2 If choose "yes", the system will restart, all relevant update configuration will be effective after reboot.

----End

3.8 Debugging Setting

3.8.1 Logs Setting

Step 1 Please click "Debugging>Logs" to check and modify relevant parameter.





Figure 3-33 Logs GUI

----End

3.8.2 Ping Setting

Step 1 Please click "Debugging>Ping" to check and modify relevant parameter.



Figure 3-34 Ping GUI

----End

3.8.3 Trace Setting

Step 1 Please click "Debugging>Trace" to check and modify relevant parameter.

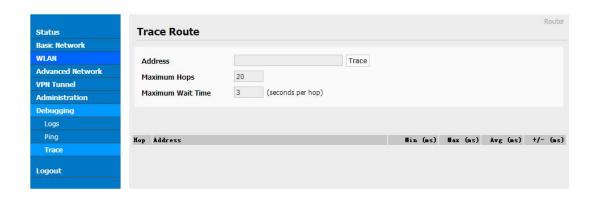




Figure 3-35 Trace GUI



3.9 "Reset" Button for Restore Factory Setting

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

"Reset" button is near to Console port in WL-R210 panel, This button can be used when the router is in use or when the router is turned on.

Press the "RST" button and keep more than 8 seconds till the NET light stopping blink. The system will be reverted to factory.

Table 3-28 System Default Instruction

Parameter	Default setting
LAN IP	192.168.1.1
LAN Subnet Mask	255.255.255.0
DHCP server	Enable
User Name	admin
Password	admin



After reboot, the previous configuration would be deleted and restore to factory settings.



3.10 Appendix (For advanced optional features only)

3.10.1 **GPS Setting**

Step 1 Please click "Advanced Network> GPS" to view or modify the relevant parameter.

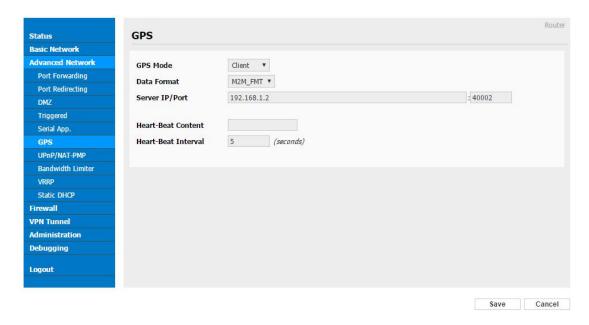


Figure 3-36 GPS Setting GUI

Table 3-29 "GPS" Instruction

parameter	Instruction
GPS Mode	Enable/Diable
GPS Format	NMEA and M2M_FMT(WLINK)
Server IP/Port	GPS server IP and port
Heart-Beat	If choose M2M_FMT format, heart-beat ID will be packed itnto GPS data.
Interval	GPS data transmit as the interval time.

Step 2 Please click "save" to finish



M2M_FMT Format as below.

1. GPS data structure.

Router ID, gps_date, gps_time, gps_use, gps_latitude, gps_NS, gps_longitude, gps_EW, gps_speed, gps_degrees, gps_FS, gps_HDOP, gps_MSL



2. Example

0001_R081850ac,150904,043215.0,06,2234.248130,N,11356.626179,E,0.0,91.5,1,1.2,9 7.5

3. GPS data description

Field	Name	Format	Example	Description
No.				
1	Router ID	String	0001_R081850	0001 customizable product
			ac	ID.
				_R router indicator.
				081850ac Last 8digits of
				routers MAC address.
2	gps_date	yymmdd	150904	Date in year,month,day
3	gps_time	hhmmss.ss	043215.0	UTC Time, Time of position fix.
		s		
4	gps_use	numeric	06	Satellites Used, Range 0 to 12.
5	gps_latitude	ddmm.mm	2234.248130	Latitude, Degrees + minutes.
		mm		
6	gps_NS	character	N	N/S Indicator,N=north or
				S=south.
7	gps_longitude	ddmm.mm	11356.626179	Longitude, Degrees + minutes.
		mm		
8	gps_EW	character	E	E/W indicator, E=east or
				W=west.
9	gps_speed	numeric	0.0	Speed over ground, units is
				km/h.
10	gps_degrees	numeric	91.5	Course over ground, unit is
				degree.
11	gps_FS	digit	1	Position Fix Status Indicator,
12	gps_HDOP	numeric	1.2	HDOP, Horizontal Dilution of
				Precision
13	gps_MSL	numeric	97.5	MSL Altitude, units is meter.

3.10.2 Captive Portal Setting

Step 1 Please click "Advanced Network> Captive Portal" to check or modify the relevant parameter.



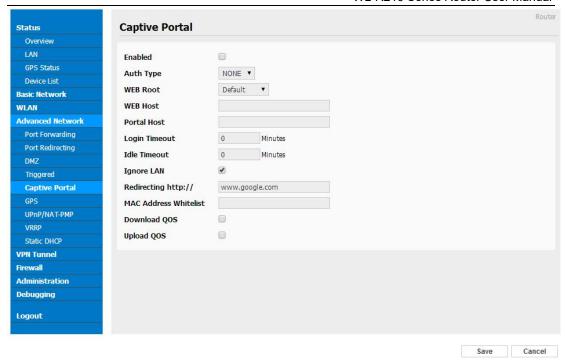


Figure 3-37 Captive Portal Setting GUI

Table 3-30 "Serial App" Instruction

Parameter	Instruction
Enable	Enable Captive portal feature.
Auth Type	Reserved.
Web Root	Choose captive portal file storage path.
	Default: Captive portal file is in the firmware as default.
	In-storage: Captive portal file is in router's Flash.
	Ex-storage: Captive portal file is in extended storage such as SD card.
Web Host	Configure domain name for the captive portal access. For example,
	Configure as wlink.tech.com, we might directly access to captive portal page in the website as wlink.tech.com
Portal Host	Reserved.
Logged Timeout	Maximum time user has connectivity. User need to re-login Captive Portal page after defined time.
Idle Timeout	Maximum time user has connectivity if no network activity from Wi-Fi User.If User need to re-login Captive page to surf internet.
Ignore LAN	If enabled, LAN devices will bypass the Captive Portal page.
Redirecting	Router will redirect to the defined link after accepting the terms and conditions on the Captive Portal page.



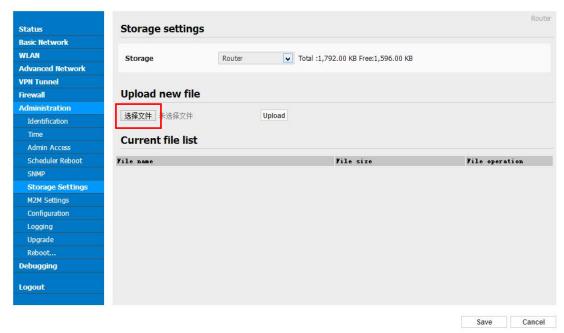
Parameter	Instruction
MAC Whitelist	No captive portal page for Wi-Fi device.
Download QoS	Enable to apply the Download and Upload per user limits.
Upload Qos	Maximum download speed available to each user.



1) Upload Portal file and Splash.html by local

Upload portal images and splash.html in router for the Slider (0001_portal.png, 0002_portal.png, and 0003_portal.png) to the Router under the "Administration / Storage Settings" menu.

Furthermore, also might upload splash with images together.

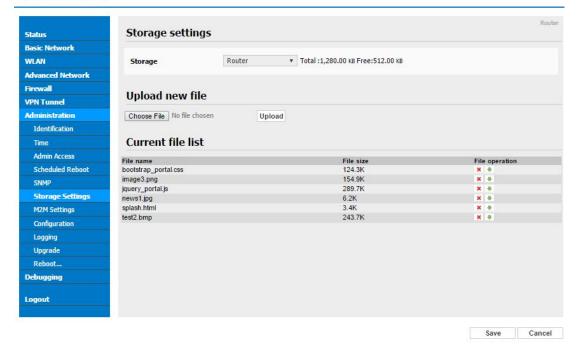


Each Ad file just supports 3 Ad portal images. Picture format is acceptable for png/jpg and image size is less than 100Kbytes and resolution is 800*600. Picture name is 0001_portal.png, 0002_portal.png and 0003_portal.png. Furthermore, please keep image names the same between portal file and splash.html.





Cellular Router

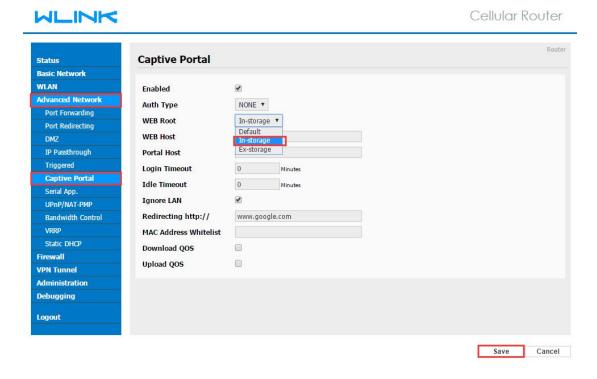


```
<!-- <hr>> -->
<div id="myCarousel" class="carousel slide marketing">
   data-target="#myCarousel" data-slide-to="0" class="active">
      data-target="#myCarousel" data-slide-to="1">
      data-target="#myCarousel" data-slide-to="2">
   </01>
   <div class="carousel-inner">
      <div class="item active">
          <img src="0001_portal.png" alt="">
       </div>
      <div class="item">
          <img src="0002 portal.png" alt="">
       </div>
       <div class="item">
          <img sro="0003 portal.png" alt="">
   </div>
   <a class="left carousel-control" href="#myCarousel" data-slide="prev">&lsaquo;</a>
   <a class="right carousel-control" href="#myCarousel" data-slide="next">&rsaquo;</a>
</div>
<!-- <hr>> -->
```



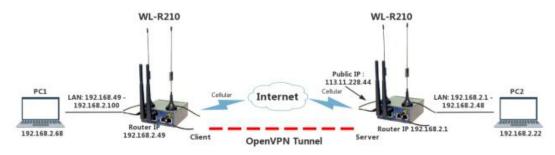
2) Modify portal file storage path

Modify portal file storage for In-storage as below.



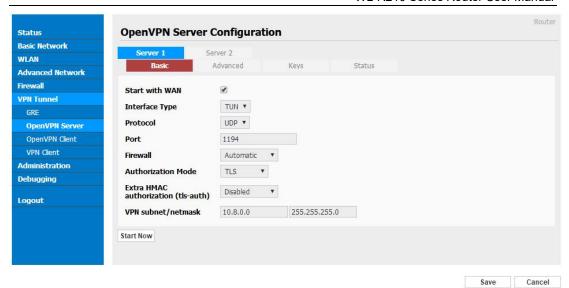
3.10.3 OpenVPN Demo (TAP Mode)

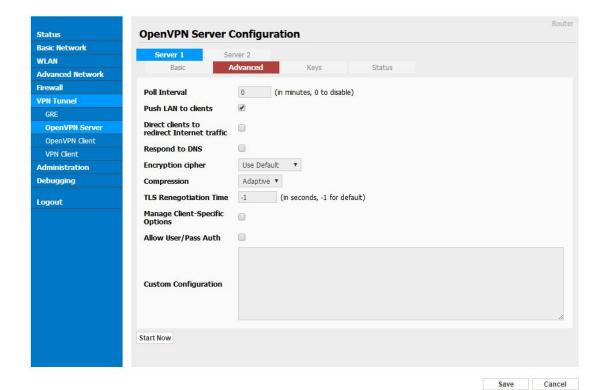
1) Network topology



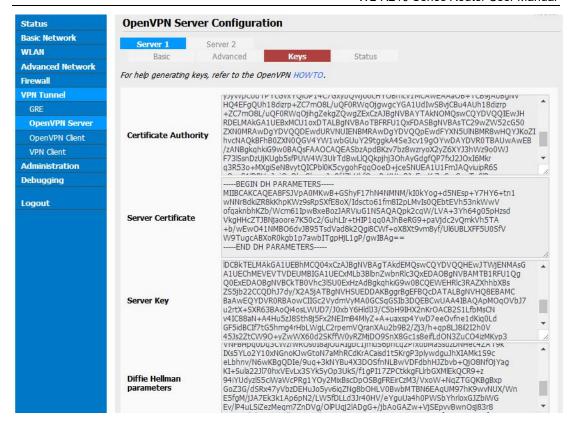
2) OpenVPN Server Config Demo











3) OpenVPN Client Config Demo

