# User manual



INDUSTRIAL ROUTERS SPACETRONIK

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Spacetronik SIR952 series mobile wide-band router is a kind of internet of things wireless communication router, using 2/3/4G network to provide convenient and high speed network transmission function.

This series of products use high performance industrial 32 bit communication processor, real-time operation system as software supporting platform, provide safe, high speed, stable 3G/4G to surf the Internet, which also provides 1LAN,1WAN,485/232 serial port.

It can be used in finance, postal, smart power grids, smart transportation, environment monitor, fire protection monitor, security, water conservancy, public safety, advertising release, industrial control, earth quake monitor, meteorological watch, instrument monitor, etc.

The following contents will specifically introduce how to use and handle the wireless router.

# 1. How to login to the router

## 1.1 To power on the router

To use and configure the wireless router, firstly you need to power on the router by using the standard adapter DC 12V / 1.5A(wide voltage 7.5v-32v supported) provided by our company.

## **1.2** To connect the router to the computer

Use a RJ45 network cable to connect the LAN port of the router to your computer. Then what you have to be aware of is you need to either set the PC's network card for automatic acquisition or set the computer address and router address to the same network segment so that you can login to the router correctly later.

## 1.3 To login to the router

By entering the default gateway address 192.168.1.1 in any browser ,such as Google Chrome,360 browser,firefox browser,etc, and then type in the default username /password as admin/admin ,lastly click 'Login' button to login. The

configuration picture are as follows.



#### M2M wireless terminal

#### **Cellular Router**

System Status →					₩	Tab operation -
Basic Network >	Status					
Advanced Network >						
VPN Configuration >	System					
	Router Name	M2M	Product Name			
System Management	Router Model		Product ID			
System Diagnostics	Firmware Version	QSDK Premium Wireless Router V1.0.6.0518	Hardware Class	Single Model Sing	le Card	
oystem blagnostios	Kernel Version	3.3.8	Hardware Version	v1.2		
Logout	Local Time	Sat May 19 21:21:33 2018	MAC Address	34:0a:68:24:24:24		
	Uptime	0h 56m 24s	WAN Mode	3G/4G and Wired		
	Load Average	0.00, 0.01, 0.05	Vendor	OEM		

# 2. Function menu bar introduction

After logining to the router, please allow me to introduce the commonly used functions of our router.

## 2.1 System status

#### 2.1.1 Overview

For this part we mainly introduce from four aspects, which are section A, B, C and

D.

#### M2M wireless terminal

#### **Cellular Router**

System Status V	*	Overview #					₩	Tab operation
Overview	Α	Router Name	M2M	В	Product Name			
		Router Model			Product ID			
Firewaii		Firmware Version	QSDK Premium Wireless Router V1.0.6.0518		Hardware Class	Single Model Single Card		
Routes		Kernel Version	3.3.8		Hardware Version	v1.2		
Processes		Local Time	Sat May 19 22:41:00 2018		MAC Address	34:0a:68:24:24:24		
Realtime Grants		Uptime	2h 15m 51s		WAN Mode	3G/4G and Wired		
reconstruct conspirate		Load Average	0.57, 0.16, 0.21		Vendor	OEM		
Advanced Network >		Network						
Advanced Network >		No.						
		Network					_	
PN Configuration >		3G/4G WAN Status	C Addres	s: 10.23	249.206			
PN Configuration > ystem Management		3G/4G WAN Status	C Addres Gatewi DNS 1:	s: 10.238 ay: 10.23 211.136	249.206 3.249.205 17.107			
/PN Configuration >		3G/4G WAN Status	C Addres Gatew DNS 1: DNS 2: Moden	s: 10.238 ay: 10.23 211.136 211.136 Type: F	249.206 3.249.205 17.107 20.203 DD-LTE/TDD-LTE/WCDM	///TD-SCDMA/EVD0/CDMA/GSM		
/PN Configuration > iystem Management iystem Diagnostic <del>s</del>		3G/4G WAN Status	C Addres Gatew DNS 1: DNS 2: Moden	ay: 10.238 ay: 10.23 211.136 211.136 Type: F Model:	249.206 3.249.205 17.107 20.203 DD-LTE/TDD-LTE/WCDM FORGE SLM730B	MA/TD-SCDMA/EVD0/CDMA/GSM		
/PN Configuration > iystem Management iystem Diagnostics ogout		Network 3G/4G WAN Status	C Addres Gatew, DNS 2: Moden Bgwani Moden	s: 10.23 ay: 10.23 211.136 211.136 a Type: F a Model: a IMEI: 80 a IMSI: 40	1249.206 1249.205 17.107 20.203 DD-LTE/TDD-LTE/WCDM FORGE SLM730B 18621025613344 10042240700071	MA/TD-SCDMA/EVDO/CDMA/GSM		
/PN Configuration > System Management System Diagnostics .ogout		3G/4G WAN Status	C Addres Gatew DNS 1: DNS 2: Moden 3gwan1 Moden Sgwan1 Moden	s: 10.233 ay: 10.23 211.136 211.136 Type: F Model: Model: 80 MINEI: 80 MINEI: 80 MINEI: 40 MINEI: 40 MINEI	1.249.206 1.249.205 17.107 20.203 DD-LTE/TDD-LTE/WCDM FORGE SLM730B (8621025613344 i0042240700071 or China Mobile (Stondard TDD LTE	MA/TD-SCDMA/EVDO/CDMA/GSM		
/PN Configuration > System Management System Diagnostics Logout		Network	C Addree Gatew DNS 1: DNS 2: Moden 3gwan1 Moden Sgwan1 Moden UsiM	s: 10.23 ay: 10.23 211.136 211.136 a Type: F a Model: a IMSI: 4 k Operat t Network Status: si	249.206 3249.205 17.107 20.203 Do-TEr/TDO-LTE/WCDM FORGE SLM730B 88621025613344 00042240700071 or. China Mobile Standard: TDD LTE mready	MA/TD-SCDMA/EVDO/CDMA/GSM		
VPN Configuration > System Management System Diagnostics Logout		Network	C Addres Gatew DNS 1: DNS 2: Moden 3gwan1 Moden 3gwan1 Moden USIM 5 Come	s: 10.23 ay: 10.23 211.136 211.136 a Type: F a Model: a IMSI: 40 ch IMSI: 40 ch IMSI: 40 ch IMSI: 40 ch IMSI: 50 ch Status: sict Status: sict Status: sict	1.249.206 3.249.205 3.17.107 20.203 DD-LTE/TDD-LTE/WCDI ORGE SLM730B 48621025613344 40042240700071 or. China Mobile <b>Standard:</b> TDD LTE mready connected	MA/TD-SCDMA/EVDO/CDMA/GSM		
VPN Configuration > System Management System Diagnostics Logout		Network	C Addres Gatew DNS 1: DNS 2: Moden 3gwan1 Moden 3gwan1 Moden USIM 5 Come	s: 10.23 ay: 10.23 211.136 211.136 a Type: F a Model: a IMSI: 40 ch IMSI: 40 ch IMSI: 40 ch IMSI: 40 ch IMSI: 50 ch Status: sict Status: sict Status: sict	1.249.206 3.249.205 3.17.107 20.203 DD-LTE/TDD-LTE/WCDI ORGE SLM730B 48621025613344 40042240700071 or. China Mobile <b>Standard:</b> TDD LTE mready connected	MA/TD-SCDMA/EVDO/CDMA/GSM		

From section A, we can know these stuffs including the router name, model, firmware version, the local system time, uptime (power duration), and how load average is.

From section B, we can get the product name and id number, hardware class ,hardware version , mac address ,the default wan mode(including all ,wired and wireless) and vendor name.

From section C, we can clearly know if we have an access to the internet and if the router can work well by checking the inserting sim card's network status.

The sim card normal dialing status is described in detail as follows:

Address: the address acquired from the carrier

Gateway: gateway address assigned from carrier

DNS1/2:the address for sim card to resolve domain names and have an access to the internet

Modem type: Indicates the type of network the router can support, it can be all network formats or not , such as

FDD-LTE(China Telecom&Unicom 4G)/TDD-LTE(4G)/WCDMA(China

Unicom3G)/TD-SCDMA(ChinaMobile3G)/EVDO(ChinaTelecom

3G)/CDMA(China Telecom 2G)/GSM(China Mobile &Unicom)

Modem Model: vendor name of Communication module Modem IMEI: IMEI numbers of Communication module Modem IMSI:IMSI numbers of the inserting sim card

Network Operator: the specific carrier name, such as China Mobile, China Unicom, Vodafone, etc

Current Network Standard: The current network mode of the device

USIM Status:SIM card detection status, including simready, fail, unknown

ConnectStatus:Indicates the network connection status,including initializing,connecting,connected

Memory			
Total Available		91752 kB / 12595	2 kB (72%)
Free		64316 kB / 12595	2 kB (51%)
Cached	-	20792 kB / 12595	2 kB (16%)
Buffered	_	6644 kB / 12595	2 kB (5%)
DHCP Leases			
Hostname	IPv4-Address	MAC-Address	Leasetime remaining
myzlwl	192.168.1.134	ec:0c:43:10:31:4c	10h 57m 41s
Wireless			
Generic 802.11bgn Wireless Co	ntroller (wifi0) 	SSID: Mode: Unknown Channel: 0 (0.000 GHz) 9 Bitrate: ? Mbit/s Wireless idisabled or not associated	

Connected:Network connection duration

From section D, we can also know the current memory usage of the device, how many Lan hosts there are in the Dhcp leases and the current wifi status (turn on or off).

#### 2.1.2 Firewall

• For this part, you can view the current device specific IPV4 (Only pay attention for now)/IPV6 firewall status including all incoming and outgoing control rules for all rule tables and chains by setting which you can allow or disallow access to specific target networks .Besides, you can also do some actions to reset counters and restart firewall.

System Status 🛛 🗸	41	Firewall X											*
Overview Firewall Routes		Firewall S	tatus all	IPv6 Firewall									
Processes Realtime Graphs		Actions Reset Cou	unters										
Basic Network >		Restart Fi	rewall										
Advanced Network >		Table: Fil	ter										
VPN Configuration >		Chain INF	YUT (Policy	ACCEPT, Packet	ts: 0, Traffic: 0.00 B)								
System Management		Rule #	Pkts.	Traffic	Target	Prot.	Flags	In	Out	Source	Destination	Options	
System Diagnostics		1	156055	23.42 MB	ACCEPT	all				0.0.0.0/0	0.0.0/0	ctstate RELATED, ESTABL	ISHED
system Diagnosites		2	490	29.69 KB	ACCEPT	all	-	lo		0.0.0/0	0.0.0/0	<b>7</b> 3	
Logout		3	29499	1.46 MB	syn_flood	tcp		•		0.0.0.0/0	0.0.0/0	tcp flags:0x17/0x02	1
		4	61946	3.95 MB	input_rule	all			•	0.0.0/0	0.0.0/0	2	
		5	61946	3.95 MB	input	all		•		0.0.0/0	0.0.0.0/0	÷;	

#### 2.1.3 Routes

For this part,we can check the currently active IPV4/IPV6 network routes,dynamic and static routing tables included ,on this router system. The ARP tables will be also displayed.

System Status 🛛 👻	Roules 2			94:
Overview	Routes			
Firewall	The following rules are currently active on	this system.		
Routes	ARP			
Processes	IPv4-Address	I	MAC-Address	Interface
Realtime Graphs	192.168.1.13	1	ec:0c:43:10:31:4c	br-lan
Basic Network				
Advanced Network >	Active IPv4-Routes			
VDN Configuration	Network	Target	IPv4-Gateway	Metric
VPH Configuration -	3gwan1	0.0.0/0	10.238.249.205	20
System Management	3gwan1	10.238.249.204/30	0.0.0.0	20
	alias	172.16.0.0/24	0.0.0.0	0
System Diagnostics	alias	192.168.1.0/24	0.0.0.0	0
Logout				
	Active IPv6-Routes			
	Network	Target	IPv6-Gateway	Metric
	loopback	0.0.0.0.0.0.0.0/0	0.0.0.0.0.0.0/0	FFFFFFF
	loopback	0.0.0.0.0.0.0/0	0.0.0.0.0.0.0/0	FFFFFFF
	loonback	0.0.0.0.0.0.0/0	0-0-0-0-0-0/0	FFFFFFF

#### 2.1.4 Processes

For this part, it gives an overview over currently running system processes and about their status. You'll have the abilities to hangup,terminate or kill all of the system processes as you want .

But sometimes be also careful of your handling some processes, such as the command 'init', by terminating or killing it, the router system may abnormal or crash.

System Status 🗸	44 Roi	utes 🛪	Processes #						₩ Tab op
Overview FirewsII	Proo This	cesses list give	s an overview ove	r currently running system process	es and their status.				
Processes		PID	Owner	Command	CPU usage (%)	Memory usage (%)	Hang Up	Terminate	Kill
Realtime Graphs		1	admin	init	0%	1%	HANG UP	TERMINATE	KILL
Basic Network >		2	admin	[kthreadd]	0%	0%	HANG UP	TERMINATE	KILL
Advanced Network >		3	admin	[ksoftirqd/0]	0%	0%	HANG UP	TERMINATE	KILL
VPN Configuration >		5	admin	[kworker/u:0]	0%	0%	HANG UP	TERMINATE	KILL
System Management		6	admin	[khelper]	0%	0%	HANG UP	TERMINATE	KILL
System Diagnostic#		19	admin	[irq/10-ath79-gp]	0%	0%	HANG UP	TERMINATE	KILL

#### 2.1.5 Realtime Graphs

For this part ,you all clearly and directly see the current system load flow,traffic,wireless and connections and know the overall situation of the  $1^{st}$ ,  $5^{th}$ ,  $15^{th}$ , minute by observing the dynamic chart.

System Status 🛛 👻	Routes # Wired Network # Peak	illime Graphs x	
Overview			
Firewall	Load Traffic Wireless Conne	rections	
Routes	Realtime Load		
Processes	3m	2m Im	
Realtime Graphs	0.17		
Basic Network			
Advanced Network >	0.12		
VPN Configuration >			
System Management	0.06		
System Diagnostics		( <u> </u>	
Logout			
	1 Minute Load:	; 0.04 Average: 0.	04
	5 Minute Load:	0.08 Average: 0.	08
	15 Minute Load:	0.17 Average: 0	17

## 2.2 Basic network

#### 2.2.1 Switch

The network ports on this device can be combined to several VLANs in which computers can communicate directly with each other. VLANs are often used to

separate different network segments.Specific configuration omitted.

System Status >	Routes # Wired Network # Switch #	H Tab operation *
Basic Network 🛛 👻	Switch	
Switch Hostnames	The network ports on this device can be combined to several <u>VLAN</u> s in which computers can communicate directly with each other. <u>VLAN</u> s are often different network segments. Often there is by default one Uplink port for a connection to the next greater network like the internet and other ports for	used to separate a local network.
Static Routes	Switch "eth1" (QCA AR8327 AR8337)	
Wired Network	Enable VLAN functionality 🕑	
Mobile Network		
Wireless Network		
Dynamic DNS	VLANs on "eth1" (QCA AR8327 AR8337)	
Static address	VLAN ID CPU Port 1 Port 2 Port 3 Port 4 Port 5 Port 6	
Advanced Network >	1 untagged V untagged V untagged V untagged V off V off V	DELETE

#### 2.2.2 Hostnames

For this part, you can rename the host with the specified ip address. Here is an example.

System Status			Routes ¥	Wired Network ¥	Hostnames 🗙		₩	Tab operation 👻
Basic Network			Hostname	s				
Switch								
Hostnames			Host entr	ies				
Static Routes					Hostname	IP address		
Wired Network				_		This section contains no values yet		
Mobile Network			ADD					
Wireless Network								
Dynamic DNS							SAVE & APPLY	RESET
Static address								
System Status	>	*	Routes ¥	Wired Network X	Hostnames 🗶		₩	Tab operation *
System Status Basic Network	> •	*	Routes X Hostname	Wired Network #	Hostnames X		₩	Tab operation *
System Status Basic Network Switch	> •	**	Routes ¥ Hostname	Wired Network ¥	Hostnames X		*	Tab operation *
System Status Basic Network Switch Hostnames	> ~	*1	Routes X Hostname Host entr	Wired Network ¥ IS	Hostnames ¥		⇒	Tab operation *
System Status Basic Network Switch Hostnames Static Routes	> •	**	Routes ¥ Hostname Host entr	Wired Network X IS ies Hostna	Hostnames ¥	IP address	•	Tab operation ~
System Status Basic Network Switch Hostnames Static Routes Wired Network	> •	*1	Routes ¥ Hostname Host entr	Wired Network X IS ies Hostne mypc	Hostnames ×	IP address 192.168.1.134 (ec:0c:43:10:31:4c)	* Delet	Tab operation +
System Status Basic Network Switch Hostnames Static Routes Wired Network Mobile Network	>	**	Routes X Hostname Host entr	Wired Network X IS ies Hostna mypc	Hostnames ¥	IP address 192.168.1.134 (ec.0c:43:10:31:4c)	DELE	Tab operation *
System Status Basic Network Switch Hostnames Static Routes Wred Network Mobile Network Wreless Network	× •	**	Routes X Hostname Host entr	Wired Network X Is ies Hostna mypc	Hostnames ¥	IP address 192,168.1.134 (ec:0c:43:10:31:4c) •	DELET	Tab operation *
System Status Basic Network Switch Hostnames Static Routes Wired Network Wireless Network Utreless Network	>	**	Routes X Hostname Host entr	Wired Network X is ies Hostna mypc	Hostnames ¥	IP address 192.168.1.134 (ec:0c:43:10:31:4c) V	DELE SAVE & APPLY	Tab operation *

#### 2.2.3 Static Routes

For this part, you can freely add network IPV4/IPV6 static routing table by following the below format according to actual situation. Commonly, a complete routing table looks like this: it should includes the interface, the target network, the

netmask, IPV4 gateway, metric and MTU.

System Status 🔷	4 Routes X	Wired Network X	State Routes ¥					₩	Tab operatio
Basic Network ~	Routes								
Switch	Routes specify	over which interfac	e and gateway a	certain host or network car	be reached.				
Hostnames	Static IPv4	Routes							
Static Routes	Interfac	e T	arget	<u>IPv4</u> -Netmask	<u>IPv4</u> -Ga	teway	Metric		MTU
Wired Network		Host- <u>IP</u>	or Network	if target is a network					2 C
Mobile Network	pptp1	192.168.10	.0	255.255.255.0	172.16.10.3	0		1500	
Wireless Network	ADD								
Dynamic DNS									
Static address	4								*
Advanced Network ?	Static IPv6	Routes							
VPN Configuration >	Inter	face		Target		IPv6-Gateway	Metric	MTU	
gatation			IPv6-A	ddress or Network (CIDR)					
System Management				This section	contains no values yet				
System Diagnostics	ADD								

#### 2.2.4 Wired Network

For this section, you can do some useful parameter settings about wired network.

You can firstly set different and commonly used wan port access modes such as DHCP client (default setting ),Static address,PPPoE and so on.

#### 2.2.4.1 Dhcp client configuration

'Dhcp client' settings for wan mode seems like below. You only need to connect the LAN port cable of the upper-level router to the WAN port of our router. Then our router can automatically obtain the IP address of the same network segment of the upper-level router and can access the network.

However, what you need to pay attention to is that the gateways of these two routers must not be the same, otherwise they may cause network conflicts and cause our router fail to access the Internet.



#### 2.2.4.2 Static address configuration

'Static address' settings for wan mode seems like below. You can set the IP addresses of the same network segment of our routers to the upper-level router, then set the gateway same to the upper-level router, finally set the DNS address selectively. Then our router can access the network. You can also check static address status for wan mode by clicking 'System status'---'overview'. All about this are as follows.

System Status	•	Wined Network #			₩	Tab operation *
Basic Network		network interfaces separated by spaces. You can	also use <u>VLAN</u> notatio	n INTERFACE.VLANNR ( <u>e.g.</u> ethø.1).		đ
Switch		The second say name				
Hostnames		General Setup Advanced Settings				
Static Routes		Status	Uptime: 0h 0	m 0s s: 34:04:68:24:24:25 (72.8)4c		
Wired Network			TX: 478.00 B	(5 Pkts.)		
Mobile Network		Protocol	Static address	×		
Wireless Network		IPv4 address	192.168.1.10			
Dynamic DNS		IPv4 netmask	255.255.255.0	•		
Static address		IPv4 gateway	192.168.1.1			
Advanced Netwo	vrik ?	IPv4 broadcast				
VPN Configuratio	on Y			*2		
System Manager	nent	Use custom DNS servers	114.114.114.114			
System Diagnost	tics)					
Logout						
Landra Contractori						
System Status		Wired Network # Overview #				Tab operation
Overview						_
Firewall		Network				
Routes		3G/4G WAN Status		Address: 10 238 249 205		
Processos				Gateway: 10.238 249 205 DNS 1: 211 136 17 107		
Basting Courts				DNS 2: 211 136 20:203 Modem Type: EDD-LTE/TDD-LTE/WCDMA/TD-SCDMA/EVD0/CE	MA/GSM	
reasone orapie	•		<i>D</i>	Modern Model: FORGE SLM730B Modern IMEI: 868621025613344		
Basic Network			3gwan	Modem IMSI: 460042240700071 Network Operator: China Mobile		
Switch				Current Network Standard: TDD LTE USIM Status: simready		
Hostnames				ConnectStatus: connected RSSI: 26 and (-61 dBm / 83%)		
Static Routes				Connected: 15h 16m 23s		
Wired Network		Wired WAN Status		Type: static Address: 192,168.1.10		
Mobile Network			eth0	Netmask: 255.255.255.0 Gateway: 192.168.1.1		
Wireless Networ	rik			DNS 1: 114.114.114.114 Connected: 0h 1m 13s		
Dynamic DNS		Active Connections		276 / 16384 (1%)		
Static address						

### 2.2.4.3 PPPoE configuration

'PPPoE' settings for wan mode seems like below.You need to fill in the correct broadband account username and password and save the configuration.All about this are as follows.

System Status > 🛛 📢	Wred Network #	Overview X			₩ Te	ab operatio
Basic Network Y	WAN LAN					
Switch	Interfaces - WAN					
Hostnames	On this page you can several network inter	configure the network interfaces separated by spaces. Yo	ces. You can bridge sev ou can also use VI AN n	veral interfaces by ticking the "bri	dge interfaces" field and enter the	names o
Static Routes						
Wired Network	General Setup	Advanced Settings				
Mobile Network		Status	🎫 RX: 0.00 B (0 P)	kts.)		
Wireless Network			wan <b>TX</b> : 0.00 B (0 Pk	kts.)		
Dynamic DNS		Protocol	PPPoE	T		
Static address		PAP/CHAP username	806			
Advanced Network		PAP/CHAP password	•••	ø		
VPN Configuration		Access Concentrator	auto			
System >			• Leave empty to auto	odetect		
Providence (C)		Service Name	auto			
System 7			O Leave empty to auto	idetect		
System Status 🖂 📢	Wired Network #	Overview X System X	System Log 🗙		₩ T	'ab operati
System Status ~ ••	Wired Network # General Setup	Overview X System X	System Log 🗶		₩ T	ab operati
System Status ~ · · · · · · · · · · · · · · · · · ·	Wired Network # General Setup Enable I	Overview X System X Advanced Settings Pv6 negotiation on the PPP link	System Log ¥			ab operati
System Status ~ * * Overview Firewall Routes	Wired Network # General Setup Enable I	Overview X System X Advanced Settings Pv6 negotiation on the PPP link Use default nateway	System Log X		→ T	ab operati
System Status × (4) Overview Finewell Routes Processes	Wined Network: X General Setup Enable I	Overview X System X Advanced Settings Pv6 negotiation on the PPP link Use default gateway	System Log X	fault route is configured.	→ T	ab operati
System Status × ** Overview Firewall Routes Processes Realtime Graphs	Wired Network: X General Setup Enable I	Overview X System X Advanced Settings Pv6 negotiation on the PPP link Use default gateway Use gateway metric	System Log ¥	fault route is configured	→ T	'ab operati
System Status × (4) Overview Finewall Routes Processes Realtime Graphs Basic Network >	Utired Network: 12 General Setup Enable I	Overview X System X Advanced Settings Pv6 negotiation on the PPP link Use default gateway Use gateway metric	System Log ¥	fault route is configured	ЪР- Т	ĩab operati
System Status × () Overview Firewall Routes Processes Realtime Graphs Basic Network > Advanced Network >	Utired Network: X General Setup Enable I	Overview X System X Advanced Settings Pv6 negotiation on the PPP link Use default gateway Use gateway metric DNS servers advertised by peer	System Log X	fault route is configured	re ignored	ĩab operati
System Status × (( Overview Firewall Routes Processes Realtime Graphs Basic Network > Advanced Network >	Utired Network: x	Overview X System X Advanced Settings Pv6 negotiation on the PPP link Use default gateway Use gateway metric DNS servers advertised by peer	System Log X	fault route is configured	re ignored	'ab operati
System Status × (( Overview, Finewall Routes Processes Reattime Graphs Basic Network × Advanced Network × VPN Configuration ×	Utired Network: 12 General Setup Enable II Use	Overview X System X Advanced Settings Pv6 negotiation on the PPP link Use default gateway Use gateway metric DNS servers advertised by peer LCP echo failure threshold	System Log X e If unchecked, no def 10 e If unchecked, the ad 0 e Presume peer to be	fault route is configured iverbsed DNS server addresses a dead after given amount of LCP	re ignored echo failurés, use 0 to ignore failu	īab operatī
System Status	Veried Network: x	Overview ×     System ×       Advanced Settings       Pv6 negotiation on the PPP link       Use default gateway       Use gateway metric       DNS servers advertised by peer       LCP echo failure threshold       LCP echo interval	System Log X	fault route is configured ivertised DNS server addresses a dead after given amount of LCP i	re ignored echo failures, use 0 to ignore failu	'ab operati
System Status	Utired Network: 12 General Setup Enable II Use	Overview x     System x       Advanced Settings       Pv6 negotiation on the PPP link       Use default gateway       Use gateway metric       DNS servers advertised by peer       LCP echo failure threshold       LCP echo interval	System Log X  Sy	fault route is configured Ivertised DNS server addresses a dead after given amount of LCP i	re ignored echo failures, use 0 to ignore failu nds, only effective in conjunction	'ab operati
System Status	Vitired Network: x	Overview ×     System ×       Advanced Settings       Pv6 negotiation on the PPP link       Use default gateway       Use gateway metric       DNS servers advertised by peer       LCP echo failure threshold       LCP echo interval       Inactivity timeout	System Log X	fault route is configured Ivertised ONS server addresses a dead after given amount of LCP i isets at the given interval in seco	re ignored echo failurés, use 0 to ignore failu	ab operation of the second secon
System Status	Utired Network: x	Overview xx     System xx       Advanced Settings       Pv6 negotiation on the PPP link       Use default gateway       Use gateway metric       DNS servers advertised by peer       LCP echo failure threshold       LCP echo interval       Inactivity timeout	System Log X	fault route is configured wertised DNS server addresses a dead after given amount of LCP lests at the given interval in seco	re ignored echo failures, use 0 to ignore failu nds, only effective in conjunction seconds, use 0 to persist connect	ab operation of the second sec
System Status	Utired Network: x	Overview ×     System ×       Advanced Settings       Pv6 negotiation on the PPP link       Use default gateway       Use gateway metric       DNS servers advertised by peer       LCP echo failure threshold       LCP echo interval       Inactivity timeout       Override MTU	System Log X  Sy	fault route is configured Ivertised DNS server addresses a dead after given amount of LCP leasts at the given interval in seco	re ignored echo failures, use 0 to ignore failu nds, only effective in conjunction seconds. use 0 to persist connect	eb operation of the second sec

Then you can check the PPPOE configuration for wan mode by clicking 'System status'---'overview' as below.

System Status 🗸 🗸	*	Wired Network 🛪	Overview X	System 🛪	System Log	x	₩	Tab operation
Overview Firewall Routes Processes Reatime Graphs Basic Network		3G/4G WAN Stat	us		ی 3gwan1	Address: 10 238 249 206 Gateway: 10.238 249 205 DNS 1: 211.136.17.107 DNS 2: 211.136.20.203 Modern Model: FORGE SLM730B Modern Model: FORGE SLM730B Modern IMSI: 46042240700071 Network Operator: China Mobile Current Network Standard: TDD LTE USIM Status: simiready ConnectStatus: connected RSSI: 26	DMA/GSI	м
VPN Configuration > System Management System Diagnostic#		Wired WAN Statu	IS		pppoe- wan	Connected: 151 2511 2511 255 Stype: pppoe Address: 10.0.0.4 Vetmask: 255 255 255 255 Sateway: 10.0.0.1 DNS 1: 10.0.1 DNS 2: 114.114.114.114 Connected: 0h 1m 59s		
Logout		Active Connectio	ns		-L	241 / 16384 (1%)		

#### 2.2.4.4 Default gateway modification

Sometimes you need to modify the router's default gateway address 192.168.1.1 to prevent others from easily logging into your router or when bridging other routers to avoid conflicts with other networks. You can modify the default gateway like below.

← → C ③ Not secure	192.168.5.1/	gi-bin/luci/;stok=e6	5c774799bf411d8	3614310b745a6abe9	Q 🕶 🕁
🔢 Apps 🦲 study	<u>ب</u>				🛛 🦲 🛛 Other bookm
M2M wireless t	erminal				Cellular Route
System Status 🔹 📢	Wined Network X	Overview # System #	System Log ¥		>>> Tab operat
Basic Network 👻	WAN LAN				
Switch	Interfaces - LAN				
Hostnames	On this page you car	n configure the network inter	faces. You can bridge s	everal interfaces by ticking the "bridge in	terfaces" field and enter the names
Static Routes	several network line	naces separated by spaces.	Tou can also use <u>VLAN</u>	HOTATION INTERFACE. VLANNK (E.G. STNB. 1	
Wired Network	General Setup	Advanced Settings			
Mobile Network		State	us Uptime: Oh	14m 42s	
Wireless Network			br-lan RX: 48.23 M	ss: 34:0A:68:24:24:24 AB (400984 Pkts.)	
Dynamic DNS			IPv4: 172.1	6.0.1/24, 192.168.5.1/24	
Static address		Protoc	Static address	*	
Advanced Network >		IPv4 addres	st 192.168.5.1		
VPN Configuration >		IPv4 netma	\$ 255.255.255.0		
System Management		IPv4 gatewa	ay		
System Diagnostic#		IPv4 broadca	st		
Logout		Use custom DNS serve	rs	1	

#### 2.2.4.5 Dhcp sever configuration

For this part ,you can choose to set the router to turn on or off the dhcp server, at the same time to set the LAN host start ip address and range.

When you turn on the dhcp server function, the LAN hosts only need to keep its

network adapters automatically acquired and then there is an access to the internet.

When you turn off the dhcp server function, the LAN hosts which has been set its network adapters automatically acquired will fail to get local ip address and can't surf the internet. If you encounter this situation, you need to manually set the ip address for the LAN host to the same network segment as the router and set the dns server manually.

System Status 🔷	 Wred Network 8	Overview X	System ¥	System Log 🗙	🕨 Tab operati					
Basic Network 👻	Curve loop of									
Switch	General Setup									
Hostnames			Ignore interfaci	: 🛛						
Static Routes				• Disable <u>DHCP</u> for this	interface.					
			Star	t 100						
Wired Network				o Lowest leased address	s as offset from the network address.					
Mobile Network			Limi	t 150						
Wireless Network				• Maximum number of le	eased addresses.					
Dynamic DNS			Leasetime	12h						
Static address				• Expiry time of leased a	iddresses, minimum is 2 Minutes (2m)					
Advanced Network >			DHCP-Option	<sup>s</sup> 114.114.114.114	1					
VPN Configuration >				Define additional DHCP options, for example "114.114.114" which advertises different DNS servers to clients.						

## 2.2.5 Mobile Network

#### 2.2.5.1 Dhcp client mode for 3/4G

The router system is set to dhcp client mode for 3/4G by default, which means the router device itself will automatically dial to connect to the carrier network when inserted a SIM card and it always takes about 1-2mins. After that you can surf the internet by using wired or wireless methods to connect to the router.

The dhcp client mode for 3/4G is suitable for most operators SIM card scenarios, such as ordinary mobile phone traffic SIM card, Internet of things terminal special network SIM card, VPDN private SIM card. An example is as follows.

System Status 🔹 😽	Wired Network 36	Overview X System X	Mobile Network #					Þ	Tab o
Basic Network 👻	3GWAN1								
Switch	Interfaces - 3GWA	INA							
Hostnames	On this page you can several network interf	configure the network interfac	es. You can bridge	several inter	faces by tic	king the "bridge interface:	s" field a	nd ente	er the na
Static Routes				<u></u>					
Wired Network	General Setup	Advanced Settings							
Mobile Network		Status	Uptime: 16	h 17m 29s					
Wireless Network			eth2 MAC-Addre	AB (112773 Pk	B8:B5:4A ds.)				
Dynamic DNS			IPv4: 10.23	/B (149077 Pk 8.249.206/30	ds.)				
Slatic address		Protocol	DHCP client						
Advanced Network >	Hostname	to send when requesting DHCP	M2M	-					
VPN Configuration 2		Network Type	Auto	•					
System Management		APN	cmnet						
System management		DIN							
System Diagnostics		Fin							
Logout		PAP/CHAP username							
		PAP/CHAP password		-	8				
System Status 🖂 🔫	Wired Network # 0	System X Mob	ile Network X				₩	Tab	operation =
Overview	Router Model	ZR2000 Reference Board		Product ID	0	1120ZR21805080001			
Firewall	Firmware Version	OSDK Premium Wireless Rou	iter V1.0.6.0518	Hardware	Class	Single Model Single Card			
Routes	Kernel Version	3.3.8		Hardware	Version	v1.2	v1.2		
	Local Time	Sun May 20 13:04:27 2018		MAC Addr	ess	34:0a:68:24:24:24			
Processes	Uptime	16h 39m 18s		WAN Mod	e	3G/4G and Wired			
Realtime Graphs	Load Average	0.01, 0.59, 1.20		Vendor		OEM			
Basic Network									_
Advanced Network ?	Network								
	3G/4G WAN Status		Address: 10	238.249.206					
VPN Configuration >			Gateway: 10 DNS 1: 211.1	.238.249.205 136.17.107	,				
System Management			DNS 2: 211.1 Modem Type	136.20.203 # FDD-LTE/TE	DD-LTE/WO	DMA/TD-SCDMA/EVDO/CE	MA/GSI	N	
System Diagnostics			Modem Mod Modem IMEI gwani Modem IMSI	el: FORGE SL 1: 8686210256 1: 460042240	M7308 613344 700071				
Logout			Network Ope Current Netw USIM Status ConnectStat RSSI: 25 and Connected;	erator: China I vork Standard :: simready us: connecter (-63 dBm / 16h 36m 24s	Mobile # TDD LTE d 80% )				
	Wired WAN Status		? Not connected	d					

#### 2.2.5.2 PPP mode for 3/4G

The ppp mode for 3/4G is sometimes suitable for these operators SIM cards scenarios when you insert a SIM card (Internet of things terminal special network SIM card or VPDN private SIM card)to the router, it can not be connected to carrier network by using dhcp client mode. Here is an example.

ystem Status >	-44	Wired Network 36	Overview 36	System ¥	Mobile Network a		
asic Network 🗸 🗸			*C	14 H		-	
Switch		General Setup	Advanced	l Settings			
Hostnames				Status	RX: 0.00	B (0 Pkts.)	
Static Routes					3gwan1 TX: 0.00	B (U PKts.)	
Wired Network				Protoco	PPP	•	
Mobile Network				Network Type	Auto		
Mireless Network				APN			
Dynamic DNS				PIN			
latic address			DID	0040			
vanced Network>			PAP/	CHAP usemame			
N Configuration >			PAP/	CHAP password	1	2	
				Service Type		1A/GPRS ·	
rstem Management				Distance			
stem Diagnostics				Diar Number	*99#		
mout			Aut	hentication Type	Auto	•	
Allour.				Local IP Address			

System Status 👻 🚸	Wired Network ¥	Oversion 🗶 System 🗙	Mobile Network #			H	Tab operation
Overview	Firmware Version	QSDK Premium Wirel	ess Router V1.0.6.0518	Hardware Class	Single Model Single Card		
Frawall	Kernel Version	3.3.8		Hardware Version	v1.2		
	Local Time	Sun May 20 13:13:02	2018	MAC Address	34:0a:68:24:24:24		
Routes	Uptime	16h 47m 53s		WAN Mode	3G/4G and Wired		
Processes	Load Average	0.11, 0.34, 0.82		Vendor	OEM		
Realtime Graphs							
Basic Network	Network						
Advanced Network ?	3G/4G WAN Status		Address: 10 Gateway: 10 DNS 1: 211	0.112.33.164 0.64.64.64 .136.17.107			
VPN Configuration >			DNS 2: 211 Modem Typ	136.20.203 pe: FDD-LTE/TDD-LTE/W	CDMA,TD-SCDMA/EVDO/CD	MA/GSN	4
System Management			Modem Mo	del: FORGE SLM730B El: 868621025613344			
System Diagnostics			3gwan1 Modem IMS Network Op Current Net	SI: 460042240700071 perator: China Mobile twork Standard: TDD LTE			
Logout			USIM Statu ConnectSta RSSI: 25	us: simready atus: connected atus: (-63 dBm / 80%) : 0b Jm 17c			
			Connected:	. 00 100 135			

#### 2.2.5.3 VPDN / APN SIM cards configuration

Sometimes the sim cards inserted to the router cannot be used for successful dial-up unless you fill in the correct APN username and password, especially when you use an IoT terminal SIM cards or VPDN private SIM cards. Sometimes if you even have no ideas about whether your SIM cards have that APN information, just ask your carrier/ISP(Internet Service Provider) for much help. For above, you should better configure your router like this below.

System Status →	-44	Wired Network X	Overview X	System 🗙	Mobile Network #		Þ
Basic Network 👻	li O	nterfaces - 3GW	AN1	network interf:	aces. You can bridge se	weral interfa	cee by ticking the "bridge interfaces" field and enter th
Switch	s	everal network inte	rfaces separat	ed by spaces. Y	ou can also use <u>VLAN</u>	notation INT	ERFACE.VLANNR ( <u>e.g.</u> : eth0.1).
Hostnames							
Static Routes		General Setup	Advanced	l Settings			
Wired Network				Status	Uptime: 0h 10	m 17s	185.44
Mobile Network					eth2 RX: 195.19 KE TX: 171.70 KE IPv4: 10.123.1	8 (733 Pkts.) 8 (1885 Pkts.) 103.211/29	
Wireless Network				Protocol	DUCD -liter	-	
Dynamic DNS					Dirice client	•	
Static address		Hostname	e to send when r	equesting DHCP	M2M		
Advanced Network >				Network Type	Auto	•	
VPN Configuration >				APN	ctvpdn		
System Management				PIN			
System Diagnostics			PAP/	CHAP username	ddjis@124159		
Logout			PAP/	CHAP password		8	2

#### 2.2.5.4 How to enforce 4/3/2G

By default, our router sets up an automatic network mode, which means that it can automatically adapt itself to 2, 3, and 4G networks based on the signal quality of the surrounding base stations.

If you want to check whether your router can effectively support 4/3/2G network mode or not ,there is also a way for you to do that, namely to enforce 4/3/2G network. Here i will take China Telecom SIM card whose 4/3/2G network modes are equal to FDD-LTE/EVDO(HDR)/CDMA modes in turn as an example.

When you try to enforce the router to 4G/FDD-LTE network mode(sometimes if it doesn't work well,just reboot your router ),you can configure and check it like this:

System Status >	System Diagnostics X Overview X Mobile Metwork X
Basic Network ~	3GWAN1
Switch	Interfaces - 3GWAN1
Hostnames	On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and several network interfaces separated by spaces. You can also use <u>VLAN</u> notation INTERFACE.VLAWR (e.g. ethe.1).
Static Routes	
Wired Network	General Setup Advanced Settings
Mobile Network	Status Uptime: 0h 0m 49s
Wireless Network	eth2 TX: 40.12 KB (444 Pkts.)
Dynamic DNS	IPv4: 100.89.138.241/30
Static address	Protocol DHCP client
Advanced Network	Hostname to send when requesting DHCP M2M
VPN Configuration	Network Type 4G
System >	APN ctnet
System 🛩	PIN
System Log	PAP/CHAP username card
Kernel Log	PAP/CHAP password ···· #

System Status 🗸 🗸		System Diagnostics X	Overview # Mobile	Network ×				₩	Tab operation
Overview		Router Name	M2M			Product Name			
Firewall		Router Model	ZR2000 Reference Bo	ard		Product ID			
Routes		Firmware Version	QSDK Premium Wirele	ess Router V1	0.6.0518	Hardware Class	Single Model Single Card		
		Kernel Version	3.3.8			Hardware Version	v1.2		
Processes		Local Time	Sun May 20 13:48:34	2018		MAC Address	34:0a:68:24:24:24		
Realtime Graphs		Uptime	0h 17m 56s			WAN Mode	3G/4G and Wired		
Basic Network >		Load Average	0.03, 0.11, 0.20			Vendor	OEM		
Advanced Network >		Network							
Advanced Network >									
Sustam Managament		30/40 WAIN Status			Gateway: 100	89.138.241 89.138.242			
system management	9				DNS 1: 202.96	5.128.86 5.134. <u>1</u> 33			
System Diagnostics					Modern Type: Modern Mode	FDD-LTE/TDD-LTE/W EFORGE SLM730B	CDMA/TD-SCDMA/EVDO/CDN	IA/GSM	
Logout				3gwan	Modem IMEI: Modem IMSI: Network Oper Current Network USIM Status: ConnectStatu RSSI: 19 Connected: 0	868621025613344 460030910858829 ator: China Telecom ork Standord: FDD LTE simready s: connected (-75 dBm / 61%) n 1m 25s			
		Wired WAN Status		2	Not connected				

When you try to enforce the router to 3G/EVDO(HDR) network mode(sometimes if it doesn't work well,just reboot your router ),you can configure and check it like this:

System Status	<b>&gt;</b>	-44	Overview X	Mablie Natwork X				
Basic Network	•		3GWAN1					
Switch			Interfaces -	3GWAN1				
Hostnames			On this page yo several network	u can configure the ne interfaces separated	twork interfact by spaces. You	es. You can bridge si I can also use <u>VLAN</u>	everal interfaces by ticking th notation INTERFACE, VLANNR (	e "bridge interfaces" field <u>e.g.</u> : ethø.1).
Static Routes								
Wired Network			General S	etup Advanced Se	ettings			
Mobile Network					Status	Uptime: 0h 0	m 35s	
Wireless Network						eth2 RX: 0.00 B (0 TX: 8.38 KB (	Pkts.) 121 Pkts.)	
Dynamic DNS						IPv4: 10.98.9	9.189/30	
Static address					Protocol	DHCP client		
Advanced Network			Host	tname to send when requ	uesting DHCP	M2M		
VPN Configuration	?			1	Network Type	3G	•	
System Manageme	int				APN	ctnet		
System Diagnostic					PIN			
Logout				PAP/CH	AP username	card		
				PAP/CH	AP password		3	

System Status 🗸 🔫	Overview # Mobile	Network #			. )+
Overview	Router Model		Product ID		
Firewall	Firmware Version	OSDK Premium Wireless Router V1.0.6.0518	Hardware Class	Single Model Single Card	
Routes	Kernel Version	3.3.8	Hardware Version	v1.2	
	Local Time	Sun May 20 14:02:45 2018	MAC Address	34.0a.68:24:24:24	
Processes	Uptime	0h 5m 5s	WAN Mode	3G/4G and Wired	
Realtime Graphs	Load Average	0.08, 0.27, 0.15	Vendor	OEM	
Advanced Network >	Network				
Advanced Network >	Network		10 00 00 100		
VPN Configuration >		Gateway: DNS 1: 1 DNS 2: 1	10.98.99.190 5.168.254.1 5.168.254.2		
System Management		Modem T	ype: FDD-LTE/TDD-LTE/W	CDMA/TD-SCDMA/EVDO/CD	MA/GSM
System Diagnostics		Modem N Modem II 3gwan1 Modem II	AEI: 868621025613344 ASI: 460030910858829		
Logout		Network Current N USIM Sta Connects RSSI: 31 Connecte	Deperator: China Telecom etwork Standard: EVDO tus: simready tatus: connected and (-51 dBm / 100%) d: 0h 1m 53s		
	Wired WAN Status	2 Not conne	cted		

When you try to enforce the router to 2G/CDMA network mode(sometimes if it doesn't work well,just reboot your router ),you can configure and check it like this:

System Status	•	Mobile Network #			5
Basic Network	*				
Switch		Interfaces - 3GW On this page you can	AN1 configure the network interfact	es. You can bridge several inte	rfaces by ticking the "bridge interfaces" field and en
Hostnames		several network inter	faces separated by spaces. You	u can also use <u>VLAN</u> notation 1	INTERFACE.VLANNR (e.g. eth0.1).
Static Routes					
Wired Network		General Setup	Advanced Settings		
Mobile Network			Status	Uptime: 0h 4m 24s MAC-Address: 8A:57:52	90.1D.7A
Wireless Network				eth2 RX: 46.21 KB (166 Pkts.) TX: 28.06 KB (325 Pkts.) IPv4: 10.160.97.151/28	
Dynamic DNS			Protocol	DHCR client	
Static address				Drion client	
Advanced Network	•	Hostname	to send when requesting DHCP	M2M	
VPN Configuration	•		Network Type	2G 🔹	
System Managemen	nt		APN	ctnet	
System Diagnostics			PIN		
Logout			PAP/CHAP username	card	
			PAP/CHAP password		8

System Status 🗸 💘	Mobile Network 14	Dverview M			*	Tat
Overview	Router Name	M2M	Product Name			
Firewall	Router Model		Product ID			
12 - X -	Firmware Version	QSDK Premium Wireless Router V1.0.6.0518	Hardware Class	Single Model Single Card		
Routes	Kernel Version	3.3.8	Hardware Version	v1.2		
Processes	Local Time	Sun May 20 14:15:49 2018	MAC Address	34:0a:68:24:24:24		
Realize Graphs	Uptime	0h 6m 34s	WAN Mode	3G/4G and Wired		
Reduine Gapita	Load Average	0.12, 0.21, 0.13	Vendor	OEM		
Basic Network						
Advanced Network >	Network					
VPN Configuration >	3G/4G WAN Status	Addres: Gatewa DNS 1:	s: 10.160.97.151 y: 10.160.97.152 115.168.254.1			
System Management		DNS 2: Modern	115.168.254.2 Type: FDD-ITE/TDD-ITE/W	CDMA/TD-SCDMA/EVDO/CD	MA/GSM	0
System Diagnostics		Modem	Model: FORGE SLM730B			
Logout		3gwan1 Modem	IMSI: 460030910858829			
rogour		Networ	k Operator: China Telecom Network Standard: CDMA			
		USIMIS	tatus: sinneady	-		
		Connec BSSI: 2	tStatus: connected			
		Connec	ted: Oh 5m 4s			
	Wired WAN Status	2 Not con	nected			

#### 2.2.6 Wireless Network

#### 2.2.6.1 AP hotspot /Master mode

For this part, you can do some WiFi ap hotspot mode settings. You need to turn on WiFi first, and then your phone, Ipad and the computer connected to the router can access the Internet.

System Status >	44 Overview x Backup / Flash Firmware x Wireless Network x	₩	Tab operat
Basic Network 🗸			
Switch	wifit: Unknown "		
Hostnames	Wireless Overview		
Static Routes			
Wired Network	🥮 Generic Atheros 802.11bgn (wifi0)	SCAN	ADD
Mobile Network	SID: 424   Mode: Unknown	DIT R	EMOVE
Wireless Network			
Sector Streets			

You can also do some more specific configuration, such as modifying the hotspot SSID name, wireless password, encryption type, etc. All about this will show as below.

System Status >	Overview x Backup / Flash Firmware x Wireless Network x
Basic Network ~	wifth Master 77
Switch	
Hostnames	Wireless Network: Master "Z h0)
Static Routes	hardware is multi-SSID capable). Per network settings like encryption or operation mode are grouped in the Interface C
Wired Network	Device Configuration
Mobile Network	General Setup Advanced Settings
Wireless Network	Statue Mode: Master   SSID: Z
Dynamic DNS	BSID: 34:0A:68:24:24:26   Encryption: None Channel: 6 (2.437 GHz)   Tx-Power. 19 dBm
Static address	Signal: -64 dBm   Noise: -95 dBm Bitrate: 144,4 Mbit/s
Advanced Network	Wireless network is enabled DISABLE
VPN Configuration	Channel auto 🔻
System >	Transmit Power 19 dBm (79 mW) 🔻
System Status →	Overview × Backup / Flash Firmware × Windess Network ×
Basic Network ~	Interface Configuration
Switch	General Setun Wireless Security Advanced Settions
Hostnames	Witeless secondy Advanced Settings
Static Routes	ESSID Z
Wired Network	Mode Access Point
Mobile Network	Network 📄 3gwan1: 🌌
Wireless Network	🗹 🛛 lan: 🛃 👳
Dynamic DNS	🗇 n2n: 🖉
Static address	💷 💮 wan: 🔊
VPN Configuration	create:
or w configuration	Choose the network(s) you want to attach
system >	Hide ESSID

System Status >	H Overview # Back	up / Flash Firmware 🗙 🛛 🦷	eless Network ×	
Basic Network ~			30% Signal: -66 dBm   Bitrate: 144.4 Mbi	<b>Noise:</b> -95 dBm t/s
Switch		Wireless network is enabled	DISABLE	
Hostnames		Channel	auto	•
Static Routes			auto	
Wired Network		Transmit Power	19 dBm (79 mW)	•
Mobile Network			⊌ dBm	
Wireless Network				
Dynamic DNS	Interface Configura	ition		
Static address	General Setup	Wireless Security A	dvanced Settings	
Advanced Network				
		Encryption	No Encryption	•
VPN Configuration			No Encryption	
System >			WEP Open System WEP Shared Key WPA-PSK	
System >	BACK TO OVERVIE	N	WPA2-PSK WPA-PSK/WPA2-PSK	Mixed Moce

When your terminal device is connected to the router through a WiFi hotspot, the web page should look like this.

System Status >	44 C	Overview X	Backup / Flash Firmware 🛪	Wireless Network #						₩	Tab opera
Basic Network 🐱											
Switch		wifi0: Master '	72								
Hostnames	W	ireless Ove	erview								
Static Routes											
Wired Network		2	Generic Atheros 802.11bgn (wifi0)     Channel: 6 (2.437 GHz)  Birate: 144.4 Moi:Us								
Mobile Network			41 SSID: 2 411 43% BSSID: 34:0A:68:24:24:26	Mode: Master					DISABLE	EDIT	REMOVE
Wireless Network											
Dynamic DNS	As	sociated	Stations								
Static address											
Advanced Network			SSID	МА	C-Address	IPv4-Address	Signal	Noise	RX Rate	TX	Rate
VPN Configuration		al .	Z	A8:00	:63:A8:C8:F2	192.168.1.166	-54 dBm	-95 dBm	59.1 Mbit/s	70.1	Mbit/s

#### 2.2.6.2 Wifi-client mode

For this part, you can set your router to wireless client mode, which means when you have no other available network, you can make your router accessible to the network by connecting it to other wireless network hotspots around you. And then your phone, Ipad and the computer connected to the router can also access the Internet.

Firstly, you need to turn on the wifi hotspot by clicking the ENABLE button, which is off by default.



Secondly, you can search for other available wireless hotspots around you, and then enter its wireless password to join the network. And you can configure it according to the following operation figures.



		- A.		
System Status >	Windess Network x		₩	Tab oper
Basic Network ~	Join Network: Wireless Scan			
Switch				
Hostnames	ZLWL-HUAWEI	JOIN	NETWO	RK
Static Routes	USE Channel: 11 Mode: Mighter ( BSSID: 88/CEFA 07/92/SC) Encryption: mixed WPA/WPA2 - PSK	IOIN		
Wired Network	11% Channel: 1   Mode: Master   BSSID: 98.E7.F5.E5.6B:0B   Encryption: <u>WPA2 - PSK</u>	JUIN	NETWO	RK
Mobile Network	HomeCloud_9D3C45 <u>70%</u> Channet: 1   Mode: Master   BSSID: 02.0A:EB:9D.3C:44   Encryption: <u>WPA2 - PSK</u>	JOIN	NETWO	RK
Wireless Network	X23 <u>67%</u> Channel: 2   Mode: Master   BSSID: 02.0CE7.87.89 / 9   Encryption: <u>WPA2 - PSK</u>	JOIN	NETWO	RK
Dynamic DNS	70% Channet: 31 Mode: Master ( BSSID: 08-42 AC:CS F7.70   Encryption: mixed WPA/WPA2 - PSK	JOIN	NETWO	RK
Static address	4	JOIN	NETWO	RK
Advanced Network	50 w channel: 5   Mode: Master   BSSID: 60 BB 00:1F:5A:8E   Encryption: mixed WPA/WPA2 - PSK	300114	MET NO	
VPN Configuration	ZLWL-HUAWEI2 <u>62%</u> Channet: 11   Mode: Master   BSSID: 3C DFBD:07:87:4C   Encryption: <u>WPA2 - PSK</u>	JOIN	NETWO	RK
System >	SYX301 <u>67%</u> Channel: 6   Mode: Master   BSSID: 08.0.3.43.19.39.84   Encryption: mixed WPA/WPA2 - PSK	JOIN	NETWO	RK
	al 11n	IOIN	NETWO	RK

Suntary Status	
system status >	1 ANTRESS LIGHTER V
Basic Network 🗸	Join Network: Settings
Switch	
Hostnames	Replace wireless configuration 🧭
Static Routes	An additional network will be created if you leave this unchecked.
Wired Network	WPA passphras
Mobile Network	Specify the secret encryption key here.
Wireless Network	Name of the new networ: wwwan
Dynamic DNS	€ The allo wed characters are: A-Z, a-z, e-9 and_
Static address	Create / Assign firewall-zon?
Advanced Network	💿 wan: 🔐 🛛 3gwan1: 🔮 🛛 n2n: 🖉 gre1: 🛅 pptp1: 🛍 12tp1: 📬
VPN Configuration	
System >	unspecified -or- create:

Finally, you need to check again to confirm these wireless configuration parameters, and then save it.

eneral Setup	Wireless Security Ad	fvanced	Settings										
	ESSID	ZLV	VL-HUAWEI										
	Mode	Clie	nt										
	Network		3gwan1: 🌌										
			lan: 🚈										
			n2n: 💒										
			wan: 🗾										
		2	wwan: 🙅										
			create:										
		e Cho	ose the network(	s) you want to a	tach to	this wire	less interf	face or fill	out the cr	eate field	to define a	new networi	k.

Interface Configuration													
General Setup	Wireless Security	Adv	vanced Settings	iced Settings									
Encryption			WPA2-PSK		•								
Cipher auto			auto	•									
		Key		2									

#### Interface Configuration

General Setup	Wireless Security	dvanced Settings
	802.11	
	UAPSD Enabl	
	Multicast Rat	
	Fragmentation Threshol	
	RTS/CTS Threshol	
	WMM Mod	

When the wireless client mode is in effect, the wireless information status should be like below. After that, your computer or other network devices can access the network by connecting to the router through a wired connection.

System Status >	Wireless Network # Overview #					>> Tab operation •
Basic Network ~						
Switch	wifi0: Client "ZLWL-HUAWEI"					
Hostnames	Wireless Overview					
Static Routes						
Wired Network	Generic Atheros 802.11b	gn (wifi0) w 130 Mbit/s				SCAN ADD
Mobile Network	SSID: ZLWL-HUAWEI IN	lode: Client			DISABLE	EDIT REMOVE
Wireless Network	100% BSSID: 88:CE:FA:07:92:5	SC   Encryption: -				
Dynamic DNS	Associated Stations					
Static address	Associated Stations					
Advanced Network	ssip	MAC-Address	Pv4-Address Sign	al Noise	RX Rate	TX Bate
VPN Configuration	5010	INAU AUTESS		11032	in here	TA Have
System Status ~ Overview Firewall Routes Processes Realtime Graphs	Wireless Network 2     Overview     DHCP Leases     Hostname     myzłwi     netw007	IPv4-Address 192 168.1.134	мм осоз	0500 ND / 1. <b>IC-Address</b> 243-10:31 Mc	(J S) (J S)	Leasetime remaining 11h 17m 16s
	ZIWIUU7	192.168.1.148	00:81	J:4c:21:19:a0		9h 38m 4s
Advanced Network >	Wireless					
VPN Configuration >	Generic 802.11bgn Wireless Cont	troller (wifi0)	SSID: ZLWL-HUAWEI Mode: Client Channel: 1 (2.412 GHz)			
System Management		10	0% Bitrate: 130 Mbit/s			
System Diagnostics			Encryption: -			

#### 2.2.7 Dynamic Dns

Dynamic DNS allows that your router can be reached with a fixed hostname while having a dynamically changing Public IP address.

That is to say, the precondition for using this function is that the IP address of WAN port of the router device must be a dynamically changing public IP address. If so,you can make a DDNS configuration as follows.

System Status >	-44	Mobile Network X Overview X Oynemic DNS	36.).	1
Basic Network 🛛 👻		MYDDNS		
Switch		Enable	2	
Hostnames		Event interface	3gwan1	
Static Routes			On which interface up shou	id start the ddns script process.
Wired Network		Service	3322.org	5
Mobile Network		Hostname	chma.f3322.net	
Wireless Network		Username	mydn3322	
Dynamic DNS		Password		
Static address				
Advanced Network >		Source of IP address	URL	
VPN Configuration >		URL	http://www.3322.net/dyndne	
System Management		Check for changed IP every	10	
System Diagnostics		Check-time unit	min	
Logout		Force update every	72	
		Force-time unit	h 🔹	

#### 2.2.8 Static Address

For this part, static leases are used to assign fixed IP addresses and symbolic hostnames to DHCP clients.You can just configure the router like below.

System Status > 😽	Mobile Network # Overview	X Static address X			🕨 Tab op
Basic Network ~	Static address				
Switch					
Hostnames	Static Leases				
Static Routes	Static leases are used to as configurations where only h	sign fixed IP addresses and symb osts with a corresponding lease a	blic hostnames to DHCP clients. T re served.	hey are also required for non-dyna	mic interface
Wired Network	Use the Add Button to add a Hostname is assigned as sy	i new lease entry. The MAC-Addre mbolic name to the requesting ho	ss indentifies the host, the IPv4-A st.	ddress specifies to the fixed addres	is to use and the
Mobile Network	Hostname		MAC-Address	IPv4-Address	
Wireless Network	pc001	ec:0c:43:10:	31:4c (192.168.5.134) 🔻	192.168.5.134 🔻	DELETE
Dynamic DNS	pc002	ec:32:33:10	2a:3c 🔹	192.168.5.100 🔻	DELETE
Static address	ADD				
Advanced Network >					
VPN Configuration >	Active DHCP Leases				
System Management	Hostname	IPv4-Address	MAC-Address	Leasetime remain	ing
1990 15 1990 1991	myziwi	192 168 5 134	ec-0c-43-10-31-4c	11b 52m 51s	

## 2.3 Advanced network

### 2.3.1 Firewall

#### 2.3.1.1 General Settings

In this section, you can view and check the default firewall policies of the router system. Obviously we can see that the system's default entry and exit and forward rules are all allowed, so you only need to keep the default configuration unless you want to do some other different configuration policies. Here is the default configurations for general settings and zone settings as below.

System Status >	K Firewall S	⊃ort Forwards ж								
Basic Network >										
Advanced Network	General Setting	s Traffic Rules	Custom Rule	25						
Firewall	Firewall - Zon The firewall crea	e Settings tes zones over your	network inter	faces to c	ontrol netw	ork traffic fl	ow.			
Port Forwards										
DMZ	General Setti	ngs								
QoS		Enable SYN-f	lood protectior							
UDP Relay		Drop	invalid packets	6						
Serial Utility			Inpu	accep	t	•				
M2M Platform			Outpu	accep	t	•				
Location										
UPNP			Forward	accep	t	•				
Network Monitor										
Zones										
	Zone ⇒ Forwardings			Input	Output	Forward	Masquerading	MSS clamping		
	lan: Lan: ﷺ ⇒ war			accept V	accept V	accept V		10	EDIT	DELETE
wan: wan: 🚨 📔 3gwan1: 🚨	n2n: 🚨 🛛 gre1: 🕮 🔤 pr	tp1: 59 [2tp1: 59]	⇒ ACCEPT	accept 🔻	accept 🔻	accept 🔻	×	2	EDIT	DELETE
ADD							1			

### 2.3.1.2 Traffic Rules

In this section, you are free to do some traffic restrictions rule in incoming and outgoing directions of the router by clicking Add New Forward Rule. For example, you can do some restrictions based on the network port, ip address or mac address, etc. At the same time, you can also do some more advanced SNAT configuration to achieve your control purpose. It seems like below.

		5 30						N Tab
Induced States						_		1801
letwork >	General Settings Traffic	Rules Custom Rules						
ed Network	Circurell Traffic Dulas							
	Traffic rules define policies fo	or packets traveling between differ	ent zones, for example to reject traffic between certain h	osts or to open WAN ports on the router.				
onwards	1000000							
	Traffic Hules		Match	Antina	Fushia	Part		
			IPv4-UDP	Action	chabie	JUIL		Concession of the local division of the loca
y .	Allow-DHCP-Renew	To any	From any host in wan outer IP at port 68 on this device	Accept input	8	~ ×	EDIT	DELETE
v	Allow Ding	IPv4	ICMP with type echo-request	Accord insul			FOIT	DELETE
m.	Allow-Filing	То	any router IP on this device	Ассергира			LLD11	DELETE
	Allow-DHCPv6	From IP range FE80	IPv6-UDP 0.0.0.0.0.0/10 in wan with source port 547	Accept input	æ	× ×	EDIT	DELETE
		To IP range FE80	0.0.0.0.0.0/10 at port 546 on this device	113217-142-04203-1				and the second s
nitor	Allow 1024/Def. Invest	time-exceeded, bad-header,	est, ecno-repiy, destination-unreachable, packet-too-big unknown-header-type, router-solicitation, neighbour-	A second local distance formulae and second			FOR	DELETE
guration	Allow-ICMPV6-Input	solicitation, route	-advertisement, neighbour-advertisement From any host in wan any couter IP on this device	Accept Input and limit to Yuuv pxts, per second		~ ~	EDIT	DELETE
		IPv6-ICMP with types echo-requ	est, echo-reply, destination-unreachable, packet-too-big	1999 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - 2000 - Za				
		time-averaged	A Read Read and the second second second second second				-	
<b>→</b>	Allow-ICMPv6-Forward	Interexceed	w, oaan neadet, unknown-neader-type From any host in wan To any host in any zone	Accept forward and limit to 1000 pkts, per second	×	~ ~	EDIT	DELETE
forward rule:	Allow-ICMPv6-Forward	une ex eeu	a, adar-adador, unknown-neadar-type Tomi any hoat in wan To any hoat in any zone	Accept forward and limit to 1000 pkts, per second	8	×v	EDIT	DELETE
rward rule: Name	Allow-ICMPv6-Forward	une-exceed	o, ado-nador, unknown-nador-type Trom any hoat in wan To any hoat in any zone	Accept forward and limit to 1000 pkts, per second	×	~ ~	EDIT	DELETE
forward rule: Name rule 1	Allow-ICMPv6-Forward	Destination zone wan Y ADD ANI	o, ado-nador, uninowin-nador-type Trom any host in any zone	Accept forward and limit to 1000 pkts, per second	×	* *	EDIT	DELETE
forward rule: Name w rule 1 : NAT e NAT is a specific	Alow-IDMPx6-Torward	Destination zone wan  ADD ANG	or ado-nador, unknown-nador-type Trom any host in any zone	Accept forward and limit to 7000 pkts, per second	⊮ ernal sub	nets.	EDIT	DELETE
v forward rule: Name w rule 1 ce NAT ce NAT is a specific Name	Alow-IDMPx6-Torward	Destination zone wan  ADD ANG h allows fine grained control of Match	is add-adde, unknown-ended-type Trom any host in wan To any host in any zone DEDIT Wer the source IP used for outgoing traffic, for ex Action	Accept forward and limit to 1000 pkts, per second ample to map multiple WAN addresses to inth <b>Enable</b>	ernal sub Sort	nets.	Ерл	DELETE
v forward rule: Name w rule 1 ce NAT ce NAT is a specific Name	Allow-IDMPx6-Torward	Destination zone wan T ADD ANG th allows fine grained control of Match	is addreader, standart-reger Trom any host in wan To any host in any zone EDIT VEDIT Wer the source IP used for outgoing traffic, for ex Action	Accept forward and limit to 1000 pits, per second ample to map multiple WAN addresses to into Enable	ernal sub Sort	nets.	EDIT	DELETE
y forward rule: Name www.rule 1 ee NAT ce NAT is a specific Name	Alow-IDMPx6-Torward	Destination zone wan Y ADD ANI ch allows fine grained control o Match	In advandace, unknown-header-type Trom any host in way To any host in any zone DEDIT Ver the source IP used for outgoing traffic, for ex Action This section contains no values yet	Accept forward and limit to 7000 pkts, per second ample to map multiple WAN addresses to intr Enable	ernal sub Sort	nets.	EDIT	DELETE
forward rule: Name v rule 1 :NAT e NAT is a specific Name source NAT: Name Sour	Alow-IDMPx6-Torward	Destination zone wan  ADD ANI ch allows fine grained control of Match To source IP	In advandace, unknown-header-type Trom any host in wan To any host in any zone DEDIT VEDIT Ver the source IP used for outgoing traffic, for ex Action This section contains no values yet To source port	Accept forward and limit to 7000 pkts, per second ample to map multiple WAN addresses to intr Enable	ernal sub Sort	nets.	EDIT	DELETE

#### 2.3.1.3 Custom Rules

For this section, you can do some other firewall rule configurations by writing a script if you are not a newbie. But if you don't have any ideas with this, please just keep it unchanged to avoid unnecessary troubles.

System Status >	Firewel X     Port Forwards X
Basic Network	
Advanced Network	General Settings Traffic Rules Custom Rules
Firewall	Firewall - Custom Rules Custom rules allow you to execute arbritary intables commands which are not otherwise covered by the firewall framewor
Port Forwards	loaded.
DMZ	
QoS	# This file is interpreted as shell script. # Put your custom iptables rules here, they will # be executed with each firewall (re-)start.
UDP Relay	iptables -A forwarding rule -s 12 12 12 0/24 -i ACCEPT ## luci-app-optod
Serial Utility	iptables -A input_rule -i ppp+ -p tcp -m tcpdport 1723 -j ACCEPT ## luci-app-pptpd iptables -A input_rule -i ppp+ -p gre -j ACCEPT ## luci-app-pptpd
M2M Platform	
Location	

#### 2.3.2 Port Farwards

For this section ,you can freely add some port forwarding rules as you want. Port forwarding allows remote computers on the Internet to connect to a specific computer or service within the private LAN.

System Status >	H Port Forwards 🗶	Overview ¥							
Basic Network >	Firewall - Port F	orwards							
Advanced Network	Port forwarding allo	ws remote computer	s o <mark>n</mark> the Internet I	to connect to a sp	ecific computer o	or service within the private LAN.			
Firewall	Port Forwards								
Port Forwards	Na	me	Match		For	ward to	Ena	ble	Sort
DMZ				т	nis section conta	ins no values yet			
QoS	T set states								
UDP Relay	Name	Protocol	External zone	External port	Internal zone	Internal IP address		Internal port	
Serial Utility	New Rule	TCP+UDP •	wan 🔻	Any	lan 🔻	192.168.1.134 (myziwi)	۲	Any	ADD

Of course, you can do some more detailed configuration when you add the forwarding rule and select the EDIT button. Here is an example for users.

System Status >	44	Port Forwards X	Overview X								÷	r∳ Ta
Basic Network →		Firowall Port P	Conwordo									
Advanced Network		Port forwarding all	ows remote computer	rs on the Internet	to connect to a s	pecific computer or	service within the	private LAN.				
Firewall		Port Forwards										
Port Forwards		Name		Match		Forward to		Enable	Sort	10	_	
DMZ		New Rule	IPv From	4-TCP, UDP any host in wan		IP 192.168.1.134i	n <i>lan</i>	2	~ ~	EDI	T DELET	E
QoS			Via	any router IP								
UDP Relay		Name	Protocol	External zone	External port	Internai zone	Internal	IP address	Interna	l port		
Serial Utility		New port for	W: TCP+UDP V	wan 🔻	Any	lan 🔻			▼ Any	AD	D	
M2M Platform												
	1											
System Status >	Ŀ	Hoit Forwa	Overview	v ×								
Basic Network →	L	Firewall -	Port Forwards	- New Rule								
Advanced Network	L	This page a	llows you to chang	e advanced pro	perties of the p	ort forwarding er	ntry. In most cas	es there is no	o need to modify t	those setting:	B	
Firewall					_							
Port Forwards	L			Rule is ena	bled DISAB	LE						
DMZ	L			N	lame New R	ule						
QoS	L			Pro	tocol TCP+L	IDP	•					
UDP Relay	L			Source	zone							
Serial Utility	L				o an:	ian 💒 🦉						
M2M Platform	L				• war	n wan: 🗾	3gwan1:	n2n: 🔝	gre1: 👘	pptp1: 10	12tp1: 🛅	
Location	L			Source MAC add	Iress			1				
UPNP	L				o Only m	atch incoming tra	ffic from these I	MACs.				
Network Monitor	ł			Source IP add	Iress any							
VPN Configuration					o Only m	atch incoming tra	ffic from this IP	or range.				
Sustam >				Source	port any							

Ian: Ian: Ian: Ian: Ian: Ian: Ian: I
192.168.1.134 (myzlwl) ▼ © Redirect matched incoming treffic to the specified internal host
any Redirect matched incoming traffic to the given port on the internal host
8

### 2.3.3 DMZ

For this section, you can do some DMZ configuration. The DMZ host feature allows one local host to be exposed to the Internet for a special-purpose service.

System Status →	Port Forwards X DMZ X
Basic Network $\rightarrow$	Firewall - DMZ
Advanced Network	The DMZ host feature allows one local host to be exposed to the Internet for a special-purpose service.
Firewall	Enable =
Port Forwards	
DMZ	Internal IP address 192.168.1.134 (myzlwl)
QoS	
UDP Relay	
Serial Utility	

#### 2.3.4 QoS

With QoS you can prioritize network traffic selected by addresses, ports or services. For this section, you still can do some host interface download/upload speed limit rules and other more stringent classification rules.

System Status	<b>6</b> 3		44	QuS M	Ove	rview 🗙									
Basic Network Advanced Netw	> NOFK		1	Quality o With <u>GoS</u> y	of Ser	vice n prioritiz	e netwo	ork tra	affic selecte	d <mark>by</mark> add	lresse	s, ports or	services	à	
Firewall Port Forwards		1		Inte <mark>r</mark> fac	ces										
DMZ				WAN											
QoS									Enable						
UDP Relay							C	lassific	cation group	defa	ult		•		
Serial Utility							6	alcula	te overhead						
M2M Platform								Juroune	ine or enneue	ľ					
Location									Half-duplex	۵					
UPNP							Down	load sp	oeed (kbit/s)	1024	() - I				
Network Monitor							Upl	load sp	oeed (kbit/s)	128					
System Status →	*	QoS ×	Overvie	w w											Þ
Basic Network →															
Advanced Network					ADD										
Firewall						'									
Port Forwards		Classifi	cation Ru	iles											
DMZ		Ta	rget	Source h	ost	Destinatio	n host		Service	Protoc	ol		Ports		Number of bytes
QoS		prior	ity 🔻	all	•	all	•	all	•	all	•	22,	53 •		
UDP Relay		norn	nal 🔻	all	•	all	•	all	•	TCP	•	20,21,25,80	,110,443,99	3,995 🔻	
Serial Utility		expr	ess 🔻	all	•	all	•	all	•	all	•	51	90 🔻		
M2M Platform		ADD													

### 2.3.5 UDP Relay

This function will allow you to forward udp package to other target network. You can do that like this.

System Status >	Overview × UDP Relay ×
Basic Network >	UDP Belay
Advanced Network	Allow you to forward udp package to others
Firewall	Configuration
Port Forwards	Enabled 🝘
DMZ	Port Recy 10000
QoS	Sendto 102 189 1 11
UDP Relay	132,108,1.11
Serial Utility	Port Send 10000
M2M Platform	

### 2.3.6 Serial Utility

For this part, you can do some serial-based application configuration, so that you can conveniently transmit some collected data from the 232/485 serial devices connected to the router by a 232/485 serial cable to the remote central data server

in real time. This is a transparent transmission function which is similar to DTU.

For serial utility, there are three data transmission modes for you to choose. The serial mode is a most commonly used by using transparent transmission. The second transmission mode--Modbus, is a transmission control protocol based on modbus devices. If you happen to have such an equipment, you can try to use this method.

Lastly, the ZLWL protocol is our company's custom protocol transmission, it contains some specific data formats. If you want to use this method to ensure that your data transmission is more private and secure, you also need to use this protocol data format to modify and improve your data server so that it can correctly identify and resolve the data.

System Status >	44 Overview ×	Serial Utility 🗙		
Basic Network >	Serial Utility			
Advanced Network				
Firewall	Server Settir	ng		
Port Forwards		Enable		
DMZ		Communication Protocol	Serial	-
QoS		Net Mode	Serial Modbus ZLWL	
UDP Relay		Socket Type	TCP	
Serial Utility		Serial Timeout(ds)	50	
M2M Platform				
Location		MIO	1024	
UPNP		Heart-Beat		
Network Monitor		Device-ID	•	
VPN Configuration		Server IP.Port		-

Now i'll give you a configuration example for serial protocol for 232/485 serial devices. First of all, you need to select the TCP/UDP transmission type and configure the IP address of center data server or configure some heartbeat packets which can effectively detect whether the serial client and data server are connected properly in real time. Here are the configurations as follows.

System Status →	Overview x Serial Littlity x	
Basic Network →	Server Setting	
Advanced Network	Enable 🥪	
Firewall	Communication Protocol St	erial
Port Forwards	Net Mode C	lient 🔹
DMZ	Socket Type Tr	CP 🔹
QoS	Serial Timeout(ds) 5(	0
UDP Relay	MTU 11	124
Serial Utility		
M2M Platform	Heart-Beat 🥑	
Location	Heart-Beat Content he	ello
UPNP	Heart-Beat Interval(s) 1(	2
Network Monitor	Device-ID 📄	
VPN Configuration	Server IPPort 15	92.168.1.134:8000

tem Status	s > _ •	Overview 🗙	Serial Utility x			
sic Networl	k St	Serial Utility	y.			
anced Net	twork					
ewall		Serial Utilit	ty			
t Forwards				Enable	2	
Z				Baud Rate	115200	•
s				SSN		
P Relay				Stop Bit	1	
ial Utility				Data Bit	8	•
M Platform						
ation				Parity Bit	NO	•
NP						
Setting						
nable	SSN	Baud Rate	Stop Bit	Data Bit	Parity Bit	
		115200	1	8	NO	EDIT DEI

#### 2.3.7 M2M Platform - optionally

For this section, you can turn on the platform management function to put the router device on the M2M platform server. In this way, you can remotely view some network operating status of the your router and do some basic configurations remotely in real time in any place where there is a network through a mobile phone, ipad or computer.

System Status →	M2M Platform ×				
Basic Network >	M2M Server Center				
Advanced Network					
Firewall	CENTERSERVER				
Port Forwards	Start M2M Platform Control	2			
DMZ	Start M2M Server 🔠				
QoS	Device ID	hello			
UDP Relay					
Serial Utility	Heartbeat Interval(s)	10			
M2M Platform	Heartbeat timeout times	30			
Location	M2M Server Domain	optionally			
UPNP	M2M Server Port	8000			

#### 2.3.8 Location

Here we provide LBS-based location service function. You can not only view the current location information of the router device, but also can transfer it to the remote LBS server in real time by correctly configuring the server address and port number.

It should be noted that at present, we have only adapted our LBS positioning services for some specific communication modules, such as series module of SLM 730. As for GPS function, it is not yet completed. We will add and improve this function later. For LBS feature, it can be configured like below.

System Status →	e Location 38				
Basic Network >					
Advanced Network	Status Settings				
Firewall	Location information				
Port Forwards	Active LBS				
DMZ	Device	Network Type	MCC	MNC	Location information
QoS	3gwan1	GSM/WCDMA/TD-SCDMA/LTE	460	11	LAC: 0x774a CID: 0x168
UDP Relay					
Serial Utility					
M2M Platform					
Location					

System Status →	44 Location at:
Basic Network >	
Advanced Network	Status Settings
Firewall	Location Upload
Port Forwards	Foobled
DMZ	
QoS	Server 192.168.1.5
UDP Relay	Port 8001
Serial Utility	Socket Type TCP T
M2M Platform	Positioning Type I DS
Location	
LIPNP	Interval 5
Network Monitor	@ second

#### 2.3.9 UPNP

As we know, UPnP allows clients in the local network to automatically configure the router. As this feature is not commonly used, so just keep the default configuration.

System Status →	H Location X UPNP X					
Basic Network →	Universal Plug & Pla	v				
Advanced Network	UPnP allows clients in the	, e local network to automatica	ally configure the router.			
Firewall	Active UPnP Redirect	s				
Port Forwards	Protoco	4	External Port		Client Address	Client Port
DMZ				There are no active redired	ts.	
QoS						
UDP Relay	MiniUPnP settings					
Serial Utility	General Settings	Advanced Settings				
M2M Platform	Start L	IPnP and NAT-PMP service 📄				
Location						
UPNP		Enable UPnP functionality				
Network Monitor	Ena	able NAT-PMP functionality				
VPN Configuration		Enable secure mode 🕑				

#### 2.3.10 Network Monitor

For this section, we'll talk about the network monitoring feature that has two detection methods. One way is that it allows the router to periodically ping and check the destination ip address whether its network is normal or not. When reaching the specified ping period and the error occurs, the device will reboot.

System Status >	44	Location ×	Network Monitor #				
Basic Network >							
Advanced Network				Enabled	0		
Firewall			.0	perating mode	Reboot on internet conn	ection lost	
Port Forwards			Force	ed reboot delay	0		
DMZ			5.20		When rehooting the system the watchcat will trigger a soft rehoot. Entering a por		
QoS					will trigger a delayed hard reboot if the soft reboot fails. Enter a number of seconds disable		
UDP Relay			Period		10m		
Serial Utility					In periodic mode, it defines the reboot period. In internet mode, it defines the long		
M2M Platform					without internet access be for minutes, 'h' for hours o	rfore a reboot is engaged. Default unit is seconds, you car r 'd' for days.	
Location				Ping host	114.114.114.114	2	
UPNP					• Host address to ping		
Network Monitor				Ping period	60		

Another way is that the router device will periodically reboot according to your specific configuration.

System Status >	4 Location ×	Network Monitor 🛪		
Basic Network →				
Advanced Network		Enabled		
Firewall		Operating mode	Periodic reboot	•
Port Forwards		Forced reboot delay	0	
DMZ			• When rebooting the sy	stem the watchcat will trigger a
QoS			will trigger a delayed han disable	d reboot if the soft reboot fails. E
UDP Relay		Period	10m	
Serial Utility			• In periodic mode, it def	ines the reboot period. In interne
M2M Platform			for minutes, 'h' for hours	pefore a reboot is engaged Defai or 'd' for days
Location				
UPNP	ADD			
Network Monitor				

## 2.4 VPN configuration

In this section, we will continue to discuss some of the common VPN scenario configurations used on the router device, such as GRE,PPTP/L2TP VPN/IPSEC/N2N /OPEN VPN.

#### 2.4.1 GRE

For this part, you can do some configuration by clicking the EDIT button , it

#### sometimes like this figures below.

System Status >	44	Location ¥	GRE X							₩	Tab c
Basic Network		GRE VPN									
Advanced Network >											
VPN Configuration ~		Configurat	ion								
GRE			Netv	rork al	Stat			_	Actions	-	
РРТР			gn	9]	TX 0	.00 B (0 Pkts.)		CC	ONNECT STOP EDIT	DELETE	
L2TP		ADD									
IPSec											
N2N VPN											
оранти											
System Sta	atus	•	44	Lo	ocation ×	CRE X					
Basic Netw Advanced	vork Neti	> work >		Int On	erfaces - this page y	GRE1	onfigure the network interfac	es. You can bridg a.1)	e several interfaces	by ticki	ng t
VPN Config	gura	ntion ~				-					
GRE					General	Setup	Advanced Settings				
РРТР							Status	<b>RX</b> : 0.00 E gre1 <b>TX</b> : 0.00 E	(0 Pkts.) (0 Pkts.)		
L21P							Protocol	GRE	•		
IPSec											
N2N VPN							Remote IP	10.0.0.5			
Open∨PN							Local IP	10.0.0.6			
System Ma	inag	ement					Tunnel IP	192.168.5.3			

#### 2.4.2 PPTP

For this part, if you want to use the PPTP VPN feature, you must first have a remote server with a public IP address and have already set up the routing and remote access role. The server system can be windows sever or it can be based on linux. Secondly, you need to create some user accounts for connecting to the server later.

And now you can do some detailed configurations by clicking the EDIT button. And the configurations should include VPN sever, PAP/CHAP Username, PAP/CHAP Password. After saving them, you'll soon see the router itself successfully connect to the remote VPN Server.

System Status >	Overview X		→ Tal
Basic Network >			
Advanced Network >	PPTP Client PPTP Server		
VPN Configuration ~	Configuration		
GRE	Network	Status	Actions
РРТР	PPTP1	RX: 0.00 B (0 Pkts.)	CONNECT STOP EDIT DELETE
L2TP	pptp1	<b>1x</b> . 0.00 B (0 P Rd.)	
IPSec	ADD		
N2N VPN			
		Page 37	

Sett of Sectors		
System Status >	4 PPTP X Overview X	
Basic Network		
Advanced Network >	PPTP Client PPTP Server	
	Interfaces - PPTP1	
VPN Configuration ~	On this page you can configure the network interfa	aces. You can bridge several interfaces by ticking the "bridge interfa
GRE	also use <u>VLAN</u> notation INTERFACE.VLANNR (e.g.: et	the.1).
PPTP		
L2TP	General Setup Advanced Settings	
IPSec	Status	PAX: 0.00 B (0 Pkts.) pptp1 TX: 0.00 B (0 Pkts.)
N2N VPN	Protocol	PPTP T
OpenVPN	VPN Server	60.205.217.221
System Management	PAP/CHAP username	mclink
System Diagnostics		
	PAP/CHAP password	Ø
System Status	Overview × PETE ×	
Basic Notwork		
Dasic Hetwork	PPTP Client PPTP Server	
Advanced Network >		
VDN C		
VPN Configuration ~	Configuration	
GRE	Network	Status
PPTP	20101	Uptime: 0h 0m 51s
		TX: 9.70 KB (137 Pkts.)
L2TP	pptp1	Address: 172.16.10.59
IPSec		Jacondy, 112.10.10.1
NONINZONI	ADD	
INCOME VIEN		

#### 2.4.3 L2TP

For this part, if you want to use the L2TP VPN feature, you also must first have a remote server with a public IP address and have already set up the routing and remote access role. The server system can be windows sever or it can be based on linux. Secondly, you need to create some user accounts for connecting to the server later.

And now you can do some detailed configurations by clicking the EDIT button. And the configurations should include VPN sever, PAP/CHAP Username, PAP/CHAP Password. After saving them, you'll soon see the router itself successfully connect to the remote VPN Server.

System Status →	Overview x L2TP x		÷ 1
Basic Network	Connector is		
Advanced Network >	L2TP Client		
VPN Configuration ~	Configuration		
GRE	Network	Status	Actions
РРТР	L2TP1	RX: 0.00 B (0 Pkts.) TX: 0.00 B (0 Pkts.)	CONNECT STOP EDIT DELETE
IPSec	ADD		
OpenVPN			

System Status >	Overview x L2TP x	
Basic Network		
Advanced Network >	L2TP Client	
VPN Configuration ~	Interfaces - L2TP1 On this page you can configure the network interfaces.	You can bridge several interfaces by ticking the "bridge inte
GRE	also use <u>VLAN</u> notation INTERFACE.VLANNR (e.g.: eth0.1	1).
РРТР	General Setup Advanced Settings	
IPSec	. Status	RX: 0.00 B (0 Pkts.) 12tp1 TX: 0.00 B (0 Pkts.)
N2N VPN	Protocol	2TP •
Open∨PN	L2TP Server 6	0 205 217 221
System Management	PAP/CHAP username	
System Diagnostics	PAP/CHAP password	
System Status >	et exite a	
Basic Network		
	L2TP Client	
Advanced Network >		
VPN Configuration ~	Configuration	
GRE	Network	Status

#### 2.4.4 IPSEC

PPTP

**IPSec** 

N2N VPN

For this part, if you want to use the IPsec VPN feature, you must first have a remote server with a public IP address. And then you need to do two aspects of configuration ensure that it corresponds to the server.

L2TP

l2tp1

ADD

Uptime: 0h 1m 8s

RX: 642.00 B (8 Pkts.)

Address: 172.16.10.11 Gateway: 172.16.10.1

TX: 19.50 KB (253 Pkts.)

First of all, you should make the General settings including the Local /Remote gateway ip address, Local/Remote subnet.

System Status >	Overview X System Diagnostics X IPSec X
Basic Network	IKEVI PSK
Advanced Network >	General Settings
VPN Configuration ~	Enable IPSec Server 📋
GRE	IPSec extend Normal V
PPTP	Local Gateway 🔻
L2TP	Local Subnet 192.168.1.0/24
IPSec	€ 192.168.1.0/24
N2N VPN	Local Security Firewall
OpenVPN	Remote Gateway 116.30.193.82
System Management	Remote Subnet 10.10.1.0/24
System Diagnostics	€ 10.10.1.0/24
Logout	Remote Security Firewall 📄
	Debug Log 📋

Secondly, You need to configure the phase 1, phase 2 protocol authentication parameters and do some custom parameters if necessary. All this will then allow you to quickly and correctly connect to a remote server.

System Status	Overview X System Diagnostics X IPSe: X
Basic Network >	
Advanced Network>	Proposal
VPN Configuration ~	Phase 1 Phase 2 Custom
GRE	Aggressive Mode 📷
рртр	Encapsulation Mode TUNNEL
L2TP	Pre-shared Key 🔐
IPSec	Proposal md5-des-dh1
N2N VPN	IKELifetime 86400
OpenVPN	€ s(60-604800)Please enter a value less than the other side
System Management	DPD

System Status →	Overview      System Diagnostics      IPSec									
Basic Network	Remote Security Firewall									
Advanced Network >	Debug Log									
VPN Configuration ~										
GRE										
рртр	Proposal									
L2TP	Phase 1 Phase 2 Custom									
IPSec	Proposal md5-des v									
N2N VPN	PFS - V									
OpenVPN	ESPI ifetime									
System Management	© s(120-604800)Please enter a value less than the other side									
System Status >	Overview      System Diagnostics      PSec									
D N										
Dasic Network 3	Remote Subnet 10.10.1.0/24									
Advanced Network >	€ 10.10.1.0/24									
VPN Configuration ~	Remote Security Firewall									
GRE	Debug Log 🖂									
РРТР										
L2TP										
IPSec	Proposal									
N2N VPN	Phase 1 Phase 2 Custom									
OpenVPN	Custom									
System Management	o laftid-222									
	016100-222									
System Status >	Overview X     System Diagnostics X     IPSec X									
Basic Network >	IPSec SA IPSec Policy									
Advanced Network >	List of IPSec SA									
VPN Configuration ~										
GRE	Active Connection									
PPTP	rvo. iunnei Data Flow									
L2TP	IPSec Service is not running No entries									
N2N VPN										
Open//PN										

#### 2.4.5 N2N VPN

For this part, if you want to use the N2N VPN feature, you must first have a remote server called supernode with a public IP address and have opened the corresponding service port. Secondly, you need to create some user accounts for connecting to the server later. What will be configured like below.

System Status >	*1	N2N VPN 🗙	Overvie	w 30						•	
Pasia Naturak											
Dasic Network 7		n2n vpn									
Advanced Network >		A Layer Two P	eer-to-Pee	r VPN. ProtocolV1							
VPN Configuration ~		Configuration									
GRE			Network	Status					Actions		
рртр			N2N	MAC-Address: RX: 0.00 B (0 P)	00:00:00:00:00:00 kts.)			CONNECT	STOP	EDIT	
L2TP			edge0	TX: 0.00 B (0 P)	kts.)						
IPSec											
N2N VPN											
System Statu	S	*	44	N2N VPN X	Overview 34						
Basic Networ	k	*									
	-			N2N VPN							
Advanced Ne	two	опк >		A layer two pee	r-to-peer vpn						
VPN Configu	rati	on ~		Edge							
GRE						Enabled					
PPTP											
						Bring up on boot					
12119						Supernode	1.1.1.1				
IPSec						Port	10000				
N2N VPN						. or c	10000				
Open∀PN						Community	test				
System Mana	igei	ment				Key		8			
System Diag	nos	tics				lpaddr-	10.0.0.5/24				
Logout						Route					

#### 2.4.6 Open VPN

For this part, if you want to use the Open VPN feature, you also must first have a remote server with a public IP address and have opened the corresponding service port. Secondly, you need to create some client certificates such as cert certificates, key certificates, and CA certificates for users account to connect to the server later.

System Status >	 OpenVPN X							)	Tab		
Basic Network	OpenVPN										
Advanced Network >											
VPN Configuration ~	Below is a list of configured OpenVPN instances and their current state										
	Config Name	Mode	Enabled	Port	Protocol	Started	Start/Stop				
GRE	opv1	client_tun_ptp	no	1194	udp	no	START	E	DIT		
РРТР											
L2TP											
IPSec											
N2N VPN											
OpenVPN											
			Page	42							

System Status	OpenVPN ax:
Basic Network >	
Advanced Network >	Contiguration
VPN Configuration ~	• Enabled
GRE	verb 3 T
РРТР	
L2TP	tun_ipv6 📋
IPSec	Make tun device IPv6 capable
N2N VPN	nobind 🥪
OpenVPN	Do not bind to local address and port
System Management	comp_lzo 🖉
Contract Discounting	Use fast LZO compression
System Diagnostics	client 📖
Logout	Configure client mode
	vpnserver.example.org

# 2.5 System management

#### 2.5.1.1 General settings

For this part, you can do some general system configuration including router host name, world time zone, system language(Chinese or English), wan mode configuration, etc. The following are as follows.

System Status >	Overview x System x
Basic Network >	System
Advanced Network >	Here you can configure the basic aspects of your device like its hostname or the timezone.
VPN Configuration >	System Properties
System Management	General Settings Logging
System	Local Time Sun May 20 20:17:01 2018 SYNC WITH BROWSER
Administration	Hostname M2M
Software	Timezone Asia/Shanghai 🔻
Startup	Language English
Scheduled Tasks	WAN Mode 3G/4G and Wired
Backup / Flash Firmware	Please refresh page manually(F5) when the wan mode has
System Diagnostics	Priority WAN

#### 2.5.1.2 Wired and 3G /4G for wan mode

When talking about this part, we know that device system is configured with a 3G/4G and wired mode by default. Namely it supports both wired and 3G/4G dial-up modes, but there is a priority setting:WAN primary or 3GWAN1 primary.

When the router is connected to both wired and 3G/4G network, if you also choose the WAN primary, then all incoming and outgoing traffic to the device will first go through the WAN interface until the wired cable network fails. Afterwards all incoming and outgoing traffic will automatically switch to the 3G/4G interface.

When you choose the 3GWAN1 primary, then all incoming and outgoing traffic to the device will first go through the 3GWAN1 interface until the 3GWAN1 network fails. Afterwards all incoming and outgoing traffic will automatically switch to the WAN interface. For above, you can configure and check the router status like below.

System Status	 Overview 🛪	System #					**	Tab operatio
Basic Network →	General S	Settings	Logging					
Advanced Network>				Local Time	Sun May 20 20:26:35 2018	SYNC WITH BROWSER		
VPN Configuration >				Hostname	M2M		-	
System Management				Timezone	Asia/Shanohai			
System				Language	English			
Administration				WAN Mode	20/40 and Wired			
Software					9 Please refresh page ma	• mually(F5) when the wan mo	de has been cl	nanged.
Scheduled Tasks				Priority	WAN	•		
Backup / Flash Firmware								



#### 2.5.1.3 3G/4G for wan mode

For this part , you can also set only 3G/4G for wan mode and meanwhile enable WAN to LAN by choosing it. After saving the configuration, you should refresh the whole page to make it works and the router will have two LAN ports for you to use. It's worth explaining that at this time your router can only get a 3G/4G network even if you have put a wired cable network to the WAN port of the router .The example is as follows.

System Status >	4 Overview x	System #		
Basic Network →	General Se	ttings Logging		
Advanced Network >		Local Time	2 0 May 20 20 50 17 2010	
VPN Configuration >		Loodi IIII	- Sun May 20 20:50:17 2018	NG WITH BROWSER
		Hostname	e M2M	
System Management		Timezone	Asia/Shanghai	•
System				
Administration		Language	e English 🔹	
Software		WAN Mode	only 3G/4G	
Startun			• Please refresh page manual	ly(F5) when the wan mode has b
		Enable WAN to LAN	V 💌	
Scheduled lasks			Switch WAN port to LAN	
Backup / Flash Firmware				
System Status 🗸 📢	G.			M Tab operati
Overview	Local Time	Sun May 20 20:58:19 2018	MAC Address	34:0a:68:24:24:24
Overview	Local Time Uptime	Sun May 20 20:58:19 2018 6h 49m 4s	MAC Address WAN Mode	34:0a:68:24:24:24 only 3G/4G
Overview Firewall Routes	Local Time Uptime Load Average	Sun May 20 20:58:19 2018 6h 49m 4s 0.78, 0.93, 0.60	MAC Address WAN Mode Vendor	34:0a:68:24:24:24 only 3G/4G OEM
Overview Firewall Routes Processes	Local Time Uptime Load Average	Sun May 20 20:58:19 2018 6h 49m 4s 0.78, 0.93, 0.60	MAC Address WAN Mode Vendor	34:0a:68:24:24:24 only 3G/4G OEM
Overview Firewall Routes Processes Realtime Graphs	Local Time Uptime Load Average Network	Sun May 20 20:58:19 2018 6h 49m 4s 0.78, 0.93, 0.60	MAC Address WAN Mode Vendor	34/0a/68/24/24/24 only 3G/4G OEM
Overview Firewall Routes Processes Realtime Graphs Basic Network	Local Time Uptime Load Average Network 3G/4G WAN Status	Sun May 20 20:58:19 2018 6h 49m 4s 0.78, 0.93, 0.60	Address: 10.9.240.208 Gateway: 10.9.240.208	34/0a/68/24/24/24 only 3G/4G OEM
Cverview Firewall Routes Processes Realtime Graphs Basic Network  Advanced Network >	Local Time Uptime Load Average Network 3G/4G WAN Status	Sun May 20 20:58:19 2018 6h 49m 4s 0.78, 0.93, 0.60	MAC Address WAN Mode Vendor Address: 10.9.240.208 Gateway: 10.9.240.209 DNS 1: 202.96.128.86 DNS 2: 202.96.134.133	34:0a:68:24:24:24 only 3G/4G OEM
Overview Firewall Routes Processes Realtime Graphs Basic Network Advanced Network	Local Time Uptime Load Average Network 3G/4G WAN Status	Sun May 20 20:58:19 2018 6h 49m 4s 0.78, 0.93, 0.60	MAC Address WAN Mode Vendor Address: 10.9.240.208 Gateway: 10.9.240.209 DNS 1: 202.96.128.86 DNS 2: 202.96.134.133 Modem Type: FDD-LTE/ Modem Model: FORGE SLM730B	34:0a:68:24:24:24 only 3G/4G OEM WCDMA/TD-SCDMA/EVDO/CDMA/G
Cverview Firewall Routes Processes Realtime Graphs Basic Network > Advanced Network > VPN Configuration >	Local Time Uptime Load Average Network 36/46 WAN Status	Sun May 20 20:58:19 2018 6h 49m 4s 0.78, 0.93, 0.60	MAC Address           WAN Mode           Wan Mode           Vendor           Address:           10.9.240.208           Gateway:           0.9.240.209           DNS 1:           202.96.134.133           Modem Type:           FORGE SLM730B           Modem IMSI:           Modem IMSI:           Modem IMSI:	34/0a/68/24/24/24 only 3G/4G OEM WCDMA/TD-SCDMA/EVDO/CDMA/G
Cverview Firewall Routes Processes Realtime Graphs Basic Network Advanced Network VPN Configuration System Management	Local Time Uptime Load Average Network 3G/4G WAN Status	Sun May 20 20:58:19 2018 6h 49m 4s 0.78, 0.93, 0.60	MAC Address WAN Mode Vendor Address: 10.9.240.208 Gateway: 10.9.240.209 DNS 1: 202.96.134.133 Modem Type: FDD-LTE/TDD-LTE/ Modem Model: FORGE SLM730B Modem IMSI: 450030910858829 Network Operator. China Telecom Current Network Standard: FDD LT	34/0a/68/24/24/24 only 3G/4G OEM WCDMA/TD-SCDMA/EVDO/CDMA/G
Overview         Firewall         Routes         Processes         Realtime Graphs         Basic Network         Advanced Network >         VPN Configuration >         System Management         System Diagnostics	Local Time Uptime Load Average Network 3G/4G WAN Status	Sun May 20 20:58:19 2018 6h 49m 4s 0.78, 0.93, 0.60	MAC Address WAN Mode Vendor Vendor Address: 10.9.240.208 Gateway: 10.9.240.209 DNS 1: 202.96.134.133 Modem Type: FDD-LTE/TDD-LTE/ Modem Model: FORGE SLM730B Modem MOdel: FORGE SLM730B Modem MSI: 46030910858829 Network Operator: China Telecom Current Network Standard: FDD LT USIM Status: simready ConneciStatus: connected Operhead is 6.62 des cl.0089	34/0a/68/24/24/24 only 36/46 OEM WCDMA/TD-SCDMA/EVDO/CDMA/G
Cverview Firewall Roules Processes Realtime Graphs Basic Network  Advanced Network  VPN Configuration  System Management System Diagnostics Logout	Local Time Uptime Load Average Network 3G/4G WAN Status	Sun May 20 20:58:19 2018 6h 49m 4s 0.78, 0.93, 0.60	MAC Address WAN Mode Wendor Vendor Address: 10.9.240.208 Gateway: 10.9.240.209 DNS 1: 202.96.128.86 DNS 2: 202.96.134.133 Modem Model: FORGE SLM730B Modem Model: FORGE SLM730B Modem MBI: 0x801B876B Modem MBI: 0x801B876B	34/0a/68/24/24/24 only 36/46 OEM WCDMA/TD-SCDMA/EVDO/CDMA/G

#### 2.5.1.4 Wired for wan mode

For this part, you can just set only wired for wan mode. After saving the configuration ,please refresh the whole page to make it works. It's worth explaining that at this time your router can only get a wired network even if you have insert a SIM card to the router. The example is as follows.

System Status	44	System X C	Overview 🗙						н
Basic Network >	S H	ystem ere you can cor	nfigure the b	pasic aspects of your d	evice like i	ts hostname or 1	the timezone		
VPN Configuration >		System Prope	erties						
System Management		General Set	ttings	Logging					
System				Local Time	Sun May 2	0 21:03:15 2018	SYNC WIT	H BROWSER	
Administration				Hostname	M2M				
Software				Timezone	Asia/Sh	anghai		T	
Startup Scheduled Tasks				Language	English		×		
Backup / Flash Firmware				WAN Mode	only Wi	red	•		
Device Reboot					• Please	refresh page ma	inually(F5) w	hen the wan mode	e has been
System Status 🗸 🗸 🗸 🗸 🗸 🗸 V	44	Overview X							
Overview		- Load Average	2	1.44.1.38.0.90			Vendor	OEN	A
Firewall									
Routes		Manual							
Processes		Wired WAN St	atus			Times dhan			
Realtime Graphs	h.	fined first of			2	Address: 192. Netmask: 255.	168.20.80 255.255.0		
Basic Network >					eth0	Gateway: 192. DNS 1: 202.96 Connected: 0h	168.20.1 .134.133 .6m 59s		
Advanced Network >		Active Connec	ctions		E			243 / 16384	(1%)

#### 2.5.1.5 LOG information settings

For this part, you can do some commonly used configurations of the log information including the log buffer size, external log server, log output level and cron log level . And for these configurations, keeping the default settings will be OK.

iystem Status >	4 System *	Overview ¥		
asic Network >	System			
dvanced Network >	Here you can	configure the basic aspects of your de	evice like its hostname or the	e timezo
PN Configuration >	System P	roperties		
ystem Management	Genera	I Settings Logging		
System		System log buffer size	1024	
Administration			€ kiB	
Software		External system log server	0.0.0.0	
Startup		External system log server port	514	
Scheduled Tasks		Log output level	Debug	•
Backup / Flash Firmware		Creat and south		
Davice Rehoot		Cron Log Level	Normal	

#### 2.5.1.6 NTP settings

For this part, you can check some default configurations about the NTP service by setting which the router will synchronize its own system time to keep it consistent with network time after successfully dialing-up. There are four default NTP servers in the table and you can also change them to other NTP servers.



#### 2.5.2 Administration

#### 2.5.2.1 Router password setting

For this part, you can freely change the default password(username will be admin remain and can not be changed) for web login to the router. After saving the configuration, you'd better refresh the whole page and login to the router by using the changed password. All above is as follows.

System Status >	📢 System 🗙	Administration ×			
Basic Network	Router Pas	ssword			
Advanced Network >	Changes the	administrator passv	vord for accessing	the device	
VPN Configuration >			Password	admin122	20
System Management			0	admin 125	P
System			Confirmation	admin123	P2
Administration					
System Status > 😽	System x	dministration 🗙			
Basic Network					
Advanced Network >	Password succ	essfully changed!			
VPN Configuration >	Enter new web				
System Management	Router Passw	ord			
System	Changes the adm	ninistrator password	or accessing the d	evice	
Administration					
Software			Password		1
Startup			Confirmation		2

#### 2.5.2.2 Web access setting

For this part, you can freely change the default web access port 80 to any other port unoccupied. After saving the configuration, you'd better refresh the whole page and login to the router by using the changed port. All above is as follows.



System Status →	Overview X System X Administration X
Basic Network →	
Advanced Network >	Enter new web panel manually after 5s 192.168.5.1:8001
VPN Configuration >	Router Password
System Management	Changes the administrator password for accessing the device
System	Applying changes
Administration	/etc/config/uhttpd

#### 2.5.2.3 SSH access setting

For this part, you can freely change the default SSH access port 22 to any other port unoccupied. After saving the configuration, you'd better refresh the whole page and make a new SSH access to the router by using the changed port. All above is as follows.



## 2.5.3 Software

For this part, You can not only view the available memory space of the router, but also view the installed or available installation packages inside the router system. Besides, you can also do some extra configurations by using some shell scripts.

System Status >	Overview X Software X	
Basic Network >	Software	
Advanced Network >	Actions Configuration	
VPN Configuration >	No nackane lists available	275
System Management	Free space: 92% (4.27 MB)	
System		
Administration	Download and install package	ок
Software	Eilter	
Startup	T III.	FIND PACKAGE
Scheduled Tasks	2 Martine 2	
Backup / Flash Firmware	Installed nackages Augilable nackages	
Device Reboot	instalieu packages Available packages	
System Diagnostics	Package name	Version
	Remove base-files	117-r41027
Logout	Remove bridge	1.5-1
	Remove busybox	1.19.4-6
	Remove chat	2.4.5-8
	Remove comgt	0.32-21
System Status	Overview X Startup X Solitions X	
Basic Network 🔷	OPKG-Configuration	
Advanced Network?	Actions Configuration	
VPN Configuration >		
System Management	src/gz premium_wireless_router http://downlo dest root / dest room /tmp	pads.openwrt.org/attitude_adjustment/12.09-rc1/ar71xx/generic/p
System	lists_dir ext /var/opkg-lists option overlay_root /overlay	
Administration		
Software		

### 2.5.4 Startup

For this part, you can enable or disable installed init scripts here. Changes will applied after a device reboot.

There are some important Warnings like this: If you disable essential init scripts like "network", your device might become inaccesable!

System Status →	( Overview )	Startup N					₩
Basic Network	Initscripts	5					
Advanced Network >	You can ena Warning: If y	ible or disable insta ou disable essenti	alled init scripts here. Changes will applied after a dev ial init scripts like "network", your device might becom	ice reboot. e inaccesable!			
VPN Configuration >							
System Management		Start priority	Initscript	Enable/Disable	Start	Restart	Stop
System		1	modem	ENABLED	START	RESTART	STOP
Administration		5	defconfig	ENABLED	START	RESTART	STOP
Software		5	luci_fixtime	ENABLED	START	RESTART	STOP
Startup		10	boot	ENABLED	START	RESTART	STOP
Scheduled Tasks		11	ubus	ENABLED	START	RESTART	STOP
Backup / Flash Firmware		15	qca-hostapd	ENABLED	START	RESTART	STOP
Device Reboot					_		_
System Diagnostics		15	qca-wpa-supplicant	ENABLED	START	RESTART	STOP
Logout		20	network	ENABLED	START	RESTART	STOP

### 2.5.5 Scheduled Tasks

For this part ,this is the system crontab in which scheduled tasks can be defined by users.

System Status >	Overview X Scheduled Tasks X				
Basic Network >	Scheduled Tasks				
Advanced Network >	This is the system crontab in which scheduled tasks can be defined.				
VPN Configuration >					
System Management					
System					
Administration					
Software					
Startup					
Scheduled Tasks					
Backup / Flash Firmware					
Device Reboot					

### 2.5.6 Backup/Flush Firmware

#### 2.5.6.1 Generate Archive

For this part, you can download some of the current configurations by clicking the 'Generate Archive ' button of the router for backup so that you can use it for the next time. You can handle it like below.

System Status >	Backup / Flash Firmware x
Basic Network >	Flash operations
Advanced Network	Actions Configuration
VPN Configuration	Backup / Restore
System ~	Click "Generate archive" to download a tar archive of the current configuration fi (only possible with squashfs images).
System	
Administration	Semeral Security
Software	Reset to defaults: PERFORM RESET
Startup	To restore configuration files, you can upload a previously generated backup arc
Scheduled Tasks	Restore backup: Choose File No file chosen
Backup / Flash Firmware	
Device Reboot	Flash new firmware image
backup-M2Mtar.gz	

#### 2.5.6.2 Upload Archive

For this part, you can upload the backup configurations file by clicking the 'Upload Archive ' button of the router so that you have no need to configure it again manual ly. It takes about 2-3 mins, so just be patient .You can handle it like below.



#### 2.5.6.3 Perform Reset

For this part, you can restore the router to the factory by clicking the 'Perform Restore' button when there are some problems with the router. It often takes about 2-3 mins ,so just be patient. And when it is finished ,just relogin to the router by using the default ip address 192.168.1.1:80 and username/password as admin/admin. All above is as follows.

In addition, you can also restore the factory configuration by pressing the black reset button on the front of the router for more than 10 seconds and then releasing it.

System Status	Overview X Backup / Flash Firmware X
Basic Network	Flash operations
Advanced Network >	Actions Configuration
VPN Configuration >	Backup / Restore
System Management	Click "Generate archive" to download a tar archive of the current configuration files. To reset the firmware to its initial state, (only possible with squashfs images).
System	Download backup: GENERATE ARCHIVE
Administration	Reset to defaults: PERFORM RESET
Software	To exchange and formation films are unlocated a neuronal sector of the days where
Startup	To restore configuration files, you can upload a previously generated backup archive here.
Scheduled Tasks	Restore backup: Choose File No file chosen UPLOAD ARCHIVE
Backup / Flash Firmware	Flash new firmware image
Device Reboot	Upload a sysupgrade-compatible image here to replace the running firmware. Check "Keep settings" to retain the current co OpenWrt compatible firmware image)
Advanced Network	
VPN Configuration	System Frasing
System ~	System - Erasing
System	The system is erasing the configuration partition now and will reboot itself when finished.
Administration	Waiting for changes to be applied
Software	
Startup	
Scheduled Tasks	
Backup / Flash Firmwar	

#### 2.5.6.4 Flash Image

For this part, you can upgrade the router device if you need to do that by clicking the 'Flash Image 'button. It often takes about 2min30s, so just be more patient. And



when it's done, it will automatically jump to the login web page.

#### 2.5.7 Device Reboot

#### 2.5.7.1 Reboot now

For this part , you can always restart your router device immediately as you want by clicking the EXECUTE button.

System Status	• System x	Device Reboot #		
Basic Network >	Device Re Reboot righ	boot t now or set a reboot timer		
VPN Configuration >	Reboot	now		
System Management		Reboot now	EXECUTE	
System				
Administration	Reboot	Timer		
Software		Enabled	8	
Startup				
Scheduled Tasks		Hour	0	•
Backup / Flash Firmware		Minutes	0	•
Device Reboot		Local Time	Sun May 20 22:46:40 2018	YNC WITH BROWSER
System Diagnostics		Period	Sunday	

#### 2.5.7.2 Reboot timer

For this part ,you can set the router device to restart at any time you want by doing some specific configurations.

System Status >	System X Device Reboot X
Basic Network →	
Advanced Network >	Enabled an
VPN Configuration >	Hour 12
System Management	Ministee 4
System	
Administration	Sun May 20 22/47/34 2018 SYNC WITH BROWSER
Software	V Monday
Scheduled Tasks	Tuesday
Backup / Flash Firmware	Wedesday
Device Reboot	Thursday     Friday
System Diagnostics	Saturday

# 2.6 System diagnostics

#### 2.6.1 System Log

Through this page, you can view and analyze some system logs of the router. By checking these logs, you can basically know if some certain functions of the device are working normally. In addition, you can also place these logs in a notepad file by pressing Ctrl+A and Ctrl+C and then send it to after-sales technical personnel to analyze and solve some device issues.

System Status >	W Overview X Syntem Log X	🕨 Tab open
Basic Network >	Nay 20 13:55:25 M2H authpriv.info dropbear[2075]: Running in background Nay 20 13:55:27 M2H user.info syslog: watchfox[124] 3ginfo.cr767(wff set_sim_status): update 3gwan1 sim_status:unknon Nay 20 13:55:27 M2H user.info syslog: watchfox[124] 3ginfo.cr76/wff set_sim_status): uci set 3gwan1.dmodem[0].sim_st	n to simready atus='simready':
Advanced Network>	Hay 20 13:58:27 M2M user.err syslog: watchfox[1241] worker.c:1853(wtf_worker_start): modem[1] sim is ready Hay 20 13:58:27 M2M user.err syslog: watchfox[1241] 3ginfo.c:91(wtf_check_at_cmd_result): AT cmd execute error, output Hay 20 13:58:27 M2M user.err syslog: watchfox[1241] 3ginfo.c:91(wtf_check_at_cmd_result): AT cmd execute error, output	: AT+CNUMMMM ERR : AT+CNUMMMM ERR
VPN Configuration >	Hay 20 13:58:27 M2M user.notice dnsmaq; DMG rebinding protection is active, will discard upstream RFC1918 responses! May 20 13:58:27 M2M user.notice dnsmaq; Allowing 127.0.0.0/8 responses May 20 13:58:28 M2M user.err syslog: watchfox[1241] 3ginfo.c:01(wtf.check_at_cmd_result): AT cmd execute error, output	: AT+CNUM^M^M ERR
System Management	May 20 13:55:28 M2M user-err syslog; watchfox[1241] 3ginfo.c:91(wf_check_st_cnd_result): AT cnd execute error, output May 20 13:55:28 M2M user-err syslog; watchfox[1241] 3ginfo.c:97(wf_execute_at_cnd): ttyu581 AT cndM execute f May 20 13:58:28 M2M user-err syslog; watchfox[1241] 3ginfo.c:1117(wtf_get_mode_cnum): nu command AT+CNUM failed	: AT+CNUM^M^M ERR ailed, try exceed
System Diagnostic <del>s</del> -	May 20 13:55:29 M2H user.info syslog: watchfox[1241] 3ginfo.ci1969(wtf_get_mode_iccid): Af cmd output: Af+ICCDPMWh IC May 20 13:55:29 M2H user.info syslog: watchfox[1241] 3ginfo.ci1969(wtf_get_mode_iccid): uci set 3gwanl.@moden[0].iccid May 20 13:55:30 M2H user.err syslog: watchfox[1241] 3ginfo.ci1379(wtf_set_config_netmode): net mode change from to CC	CID: 898603177475 ='986031774755358 MA
System Log	Nay 20 JSISSI II/UP General III damaga JL22 / Startes, Version 2/2 Extremise Iso Nay 20 JSISSI II/UP deenon.info damsaq 2222 / complet time options: IPV6 6NU-getopt no-DBus no-IBN no-IDN DHCP DHCP. Nay 20 JSISSI JM2N deenon.info damsaq-dhcp[2227]: OHCP, IP range 192.186.5.186 - 192.186.5.249, less time 12h Nay 20 JSISSI JM2N damaga info damsaq-dhcp[2227]: OHCP, IP range 192.186.5.186 - 192.186.5.249, less time 12h	6 no-Lua TFTP no-
Kernel Log	Hay 20 35:55:11 may demonstrate dramadization in a factor accesses only for domain interval Hay 20 35:55:11 May demonstrate dramadization for a factor found in / Hay / resolv.conf.auto, will retry Hay 20 35:55:11 May demonstrate dramadization (2021): no act / etc/hosts - 1 addresses Hay 20 35:55:11 May demonstrate dramadization (2021): read / etc/hosts - 1 addresses	
System Diagnostics	Nay 20 13:56:31 m2h demonstration disact-oncylizari i read recylecters = 6 addresses Nay 20 13:56:31 M2h user-info sysinit: sh bad number Nay 20 13:56:31 M2h user-info sysinit: Update firewall Nay 20 13:56:31 M2h user-info sysinit Update firewall	
Logout	May 20 13:58:11 M2M user.info sysinit: Update NAT rule May 20 13:58:11 M2M user.info sysinit: Update input rule May 20 13:58:11 M2M deenon.info pptp[2145]: MGR! Maximum of 100 connections reduced to 99, not enough IP addresses gi May 20 13:58:13 M2M deenon.info pptp[2149]: MGR! Maximum of 90 connections available May 20 13:58:13 M2M deenon.info pptp[2149]: MGR! Maximum of 90 connections available May 20 13:58:13 M2M deenon.info pptp[2129]: setSockopt revervef[30]: Protocol not available May 20 13:58:13 M2M deenon.info x12tpd[2253]: setSockopt revervef[30]: Protocol not available May 20 13:58:13 M2M deenon.info x12tpd[2253]: X12tpd version x12tpd-1.3.6 started on M2M PID:2253 May 20 13:58:13 M2M deenon.info x12tpd[2253]: K12tpd version x12tpd-1.3.6 started on M2M PID:2253 May 20 13:58:13 M2M deenon.info x12tpd[2253]: Forked by Soct Balmos and David Stipp, (C) 2001 May 20 13:58:13 M2M deenon.info x12tpd[2253]: Forked by Soct Balmos and David Stipp, (C) 2001 May 20 13:58:13 M2M deenon.info x12tpd[2253]: Forked by Jeff Mcddams, (C) 2002 May 20 13:58:13 M2M deenon.info x12tpd[2253]: Forked by Jeff Mcddams, (C) 2001 May 20 13:58:13 M2M deenon.info x12tpd[2253]: Forked avail by Valerance.com, (C) 2006-2016 May 20 13:58:13 M2M deenon.info x12tpd[2253]: Forked avail by Valerance.com, (C) 2006-2016 May 20 13:58:13 M2M deenon.info x12tpd[2253]: Forked avail by Valerance.com, (C) 2006-2016 May 20 13:58:13 M2M deenon.info x12tpd[2253]: Information Dystart avail by Adverse.com, (C) 2006-2016 May 20 13:58:13 M2M deenon.info x12tpd[2253]: Listof manne Common May 20 13:58:13 M2M deenon.info x12tpd[2253]: May M2M deenon.info x12tpd[253]: M3M deenon.info M2M deen	ven
	Nay 20 13:58:31 M2H user notice admin: UOP Relay was disabled in config	

#### 2.6.2 Kernel Log

Through this page, you can view and analyze some current running status information of the router. In addition, you can also place this information in a notepad file by pressing Ctrl+A and Ctrl+C and then send it to after-sales technical personnel to analyze and solve some device issues.

System Status >	Kemel Log X	₩	Tab operation
Basic Network >	Kernel Log		
Advanced Network?	[ 0.000000] Linux version 3.3.8 (gitlab@compiler) (gcc version 4.6.3 20120201 (prerelea	se) (Linaro GCC 4.6-2012.02) ) #1 P	Fri May 18 1
VPN Configuration >	8.000000 Soc: Qualcomm Athenos QCA0531 nev 2 [ 0.0000000   Clocks: CPU:050.000HHz DOR:400.000HHz, AHB:200.000HHz, Ref:25.000HHz [ 0.0000000 Determined physics1 ARH may:		
System Management	<ul> <li>0.000000] memory: 02000000 @ 0000000 (usable)</li> <li>0.0000000] Tinfo not found or empty - disabling initrd</li> <li>0.000000] Zone PFN ranges:</li> </ul>		
System Diagnostic <del>s</del>	e.eeeeee Normal Exceedeeeee -> exceedeeeee 0.eeeeeee -> exceedeeeeee 0.eeeeeeee 0.eeeeeee 0.eeeeeeeeee		
System Log	<pre>[ 0.000000] 0: 0x000000000 -&gt; 0x00000000 [ 0.000000] On node 0 totalpages: 32765 [ 0.000000] free_area_init_node: node 0, pgdat 803a5280, node_mem_map 81000000</pre>		
Kernel Log	0.000000] Normal zone: 256 pages used for memmap 0.000000] Normal zone: 0 pages reserved 0.0000000] Normal zone: 32512 pages, LTPO batch:7		
System Diagnostics	<ul> <li>0.0000000] pcpu-alloc: 50 P0 d32768 u32768 alloc=1*32768</li> <li>0.0000000] pcpu-alloc: [0] 0</li> <li>0.0000000 Built 1 conelists in Zone order, mobility grouping on. Total pages: 32512</li> </ul>		
Logout	<ul> <li>e.000000 isernal command line: board=2200er rootfstps=squeshts;ffs2 noinited crash</li> <li>e.000000 PC hash table entries: 512 (order: 1, 2084 bytes)</li> <li>e.000000 PC hash table entries: 512 (order: 1, 3558 bytes)</li> <li>e.000000 PC hash table entries: 512 (order: 3, 32768 bytes)</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, linesize 32 bytes.</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, linesize 32 bytes.</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, linesize 32 bytes.</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, linesize 32 bytes.</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, linesize 32 bytes.</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, linesize 32 bytes.</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, linesize 32 bytes.</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, linesize 32 bytes.</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, linesize 32 bytes.</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, NEPT, 4-way, linesize 32 bytes.</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, VEPT, 4-way, linesize 32 bytes.</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, VEPT, 4-way, linesize 32 bytes.</li> <li>e.000000 Primary instruction cache 64k6, VEPT, 4-way, VEPT, 4-way, Primary 11376 karinable (associated associated associa</li></ul>	kernel=100∰220M oops≕panic data, 188k init, 0k highmem)	

#### 2.6.3 System Diagnostics

For this part, you can quickly and efficiently determine whether the router device can access the network normally by using the PING tool. If you can easily ping a public network address successfully, it indicates that the router network is good. If you fail to ping some public network addresses, it indicates that there are some network problems that need to be solved.

You can also track the routes of the target network by using the TRACEROUTE tool. Besides, you also can resolve some domain names by using the NSLOOKUP tool.

System Status	Overview X System Log X System Diagnostics X	₩	Ті						
Basic Network →	Diagnostics								
Advanced Network >									
VPN Configuration >	Network Utilities								
System Management	www.yahoo.com www.yahoo.com www.yahoo.com	m							
System Diagnostics	IPv4 V PING TRACEROUTE NSLOOKUP								
System Log	Install iputils-traceroute6 for IPv6 traceroute								
Kernel Log									
System Diagnostics	Collecting data								
Logout	PING www.yahoo.com (124.108.103.103): 56 data bytes 64 bytes from 124.108.103.103: seq=0 ttl=43 time=532.002 ms 64 bytes from 124.108.103.103: seq=1 ttl=43 time=558.051 ms 64 bytes from 124.108.103.103: seq=2 ttl=43 time=497.807 ms 64 bytes from 124.108.103.103: seq=3 ttl=43 time=530.846 ms								

# 2.7 Logout

If you want to log out of the router, you can click the Logout button and then it will return to the relogin web page.

System Status >	-44	Firewall X	Wired Network #	Overview 8		3 <del>)</del> :				
Basic Network ~	3G/4G WAN Status				Address: 10.160.97.151					
Switch					Gateway: 10.160.97.152 DNS 1: 115.168.254.1					
Hostnames					DNS 2: 115.168.254.2 Modem Type: FDD-LTE/TDD-LTE/WCDMA/TD-SCDMA/EVDO/C	DMA/GSM				
Static Routes					Modern Model: FORGE SLM / 306 Modern IMEE: 0x8018B76B 3gwan1 Modern IMSI: 460030910858829					
Wired Network					Network Operator: China Telecom Current Network Standard: CDMA					
Mobile Network					USIM Status: simready ConnectStatus: connected					
Wireless Network					RSSI: 26					
Dynamic DNS		Wired WA	N Status		2 Not connected					
Static address		Active Co	nnections		226 / 16384 (1%)					
Advanced Network >		parente de								
VPN Configuration >		Memory								
System Management		Total Available			94308 kB / 125952 kB (74%)					
System Diagnostics		Free			68300 kB / 125952 kB (54%)					
		Cached			19744 kB / 125952 kB (15%)					
Logout		Buffered			6264 kB / 125952 kB (4%)					

# 3. Troubleshooting of common problems

## 3.1 Fail to login to the router

1) Check whether the RJ45 cable connection between the router and the computer is normal and not loosen.

2) Confirm whether the RJ45 network cable is normal and not been damaged or the crystal head is not ok.

3) Confirm whether your computer's network card is set to automatically obtain and has gotten the IP address of the same network segment as the router instead of obtaining an invalid IP address such as 169.254.x.x.

4) Your computer has been set up with a manual ip address but not on the same network segment as the router, so you need to change it to the same network segment.

5) The router's default gateway IP address 192.168.1.1 or access port 80 has been modified, so you can now restore it to factory configuration and relogin.

## 3.2 How to restore factory configuration

1) You can restore the factory configuration operation by logging in to the router and then choose 'System Management'--'Backup/flash firmware'--'Perform Reset' to make a soft reboot.

2) You can restore the factory configuration by pressing and holding the RST reset button of the router for about 10 seconds and releasing it when the router is powered on.

# 3.3 Have not an access to the internet for PC

1) Confirm whether the SIM card inserted to the router is normally available and ensure that there is no arrears or downtime.

2) Confirm whether the router makes a successful dial-up when inserting a SIM card.

3) Confirm whether your computer's network card is set to automatically obtain and has gotten the IP address of the same network segment as the router instead of obtaining an invalid IP address such as 169.254.x.x.