



## DOCSIS3.0 Residential Gateway *RTCD905\_H6W4*

# User Manual



To our distinguished customers:

Congratulations on your purchase of the Radiotech Cable Modem Gateway. The RTCD905\_H6W4 is designed keeping in mind a Service Providers need to deploy cost effective and reliable high speed wireless data and voice services. The RTCD905\_H6W4 provides superior RF performance over DOCSIS 3.0 specifications to operate on challenging RF networks besides offering enhanced wireless coverage.

This user manual contains all the information you need to install and configure your new RTCD905\_H6W4 Cable Modem Gateway. Please read it carefully first before using .

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## Key features

- DOCSIS 3.0 compliant design
- Up to 24 downstream channels and 8 upstream channels
- 3T3R 2.4GHz 11n + 4T4R 5GHz 11ac dual band concurrent with 400Mbps+1300Mbps PHY data rate
- Multicast, concatenation, fragmentation, BPI, BPI+ support
- Remote management via SNMP, telnet and Web support
- Maximum 64 users support

## Safety and Warnings



- 1 Do not put the device on unstable desktop.
- 2 Keep the device in a dry and clean place.
- 3 Keep the device away from liquid, dust, magnetic and excessive heat .
- 4 Keep the device work under the specified voltage supply
- 5 Do not put any stuff 、 liquid into the holes on device.
- 6 Do not put heavy stuff on the device
- 7 Do keep the device in the ventilation environment , do not cover it with cloth when working.
- 8 Make sure that the device is working under the specified voltage supply
- 9 Do not clean the surface of the device with chemicals
- 10 Do not disassembly the device by your own

## **Unpacking Package Contents**

Unpack the items in your Cable Modem Gateway contents and confirm that no items are missing or damaged. Your package should include:

- ◆ One RTCD905\_H6W4 Cable Modem Gateway
- ◆ One Power adapter (12V/2.3A)
- ◆ One Category 5 Ethernet cable
- ◆ One phone cable
- ◆ One User Manual

If any items are missing or damaged, please contact your place of purchase. Keep the carton, including the original packing material, in case you need to store the product or return it.

# Interface Description:



LED Instruction

Item	color	action	Description
Power	Green	On/Off	Power status on / off
DS	Green/Blue	Green Blink	Searching for downstream
		Green ON	Downstream channel locked
US	Green/Blue	Green Blink	Searching for upstream
		Green ON	Upstream Channel locked
ONLINE	Green	Blink	Registering to Front-End
		ON	Modem is online
WPS	Green	Blink	The WPS function is activated.(1)
		Off	The 2.4G band WIFI RF is OFF
2.4G	Green	On	The 2.4G band WIFI RF is ON

		Blink	The 2.4G band WIFI RF is transporting
5G	Green	Off	The 5G band WIFI RF is OFF
		On	The 5G band WIFI RF is ON
		Blink	The 5G band WIFI RF is transporting

Interface Instructions

<b>Item</b>	<b>Description</b>
<b>1—LAN1/LAN2/LAN3/LAN4</b>	<b>RJ-45 Ethernet port1/port2/port3/port4</b>
<b>2—RESET</b>	<b>RESET to default the Router</b>
<b>3—RF-IN</b>	<b>RF input</b>
<b>4—POWER</b>	<b>Power adapter DC Jack</b>

### **Restoring Factory Defaults**

Using the Reset button on the Rear panel, you can power cycle the Gateway and return it to its original factory default settings .As a result, any changes you made to the Gateway's default settings will be removed.(Generally when you forget the name&password)

- 1 Leave power plugged into the Gateway.
- 2 Find the Reset button on the back panel, then press and hold it for at least 10 seconds
- 3 Release the Reset button

# Cable Modem Specification

Section	Parameter	Specification				
Interface	Input	F-Type RF connector				
	Ethernet	4 * 10/100/1000 BASE-T				
Flash		128M Bytes				
RAM		256M Bytes DDR3				
Down stream	Frequency Range	NA	108 MHz to 1002 MHz			
		Euro	108 MHz to 1002MHz			
	Modulation	64QAM/256QAM				
	Input signal level	-17dBmV to +13dBmV (64QAM) -13dBmV to +17dBmV (256QAM)				
	Data Rate	NA	24 Maximum downstream channel 9600Mbps			
		Euro	24 Maximum downstream channel 1200Mbps			
	Bandwidth	NA	6MHz(ALpha=0.18 for 64QAM)			
			6MHz(ALpha=0.12 for 256QAM)			
	Euro	8MHz(ALpha=0.15 for 64QAM &256QAM)				
	Caputure Bandwidth	Maximum support 8 channel bonding				
Input Impedance	75 ohms	Input Return Loss	>8dB			
Up stream	Frequency Range	NA	5 MHz to 82MHz			
		Euro	5 MHz to 85MHz			
	Output signal level	Modulation	Minimum power		Single-channel maximum power	Four-channel maximum power
			1280Ksym/s	5120Ksym/s	TDMA/S-CDMA A	TDMA/S-CDMA
		QPSK	17 dBmV	23dBmV	61/56dBmV	55/53dBmV
		8QAM	17 dBmV	23 dBmV	58/56 dBmV	52/53 dBmV
		16QAM	17 dBmV	23 dBmV	58/56 dBmV	52/53 dBmV
		32QAM	17 dBmV	23 dBmV	57/56 dBmV	51/53 dBmV
		64QAM	17 dBmV	23 dBmV	57/56 dBmV	51/53 dBmV
		128QAM(S-CDMA)	17 dBmV	23 dBmV	-/56 dBmV	-/53 dBmV
	Modulation Rate	160Ksym/s,320Ksym/s.640 Ksym/s,1280 Ksym/s ,2560Ksym/s,5120Ksym/s				
Data Rate	8 Maximum upstream channel 240Mbps					
Output Impedance	75 ohms	Output Return Loss		>8dB		



# WiFi Router Specification

<b>Hardware Features</b>	
Antennas	Internal 5 antennas
<b>Wireless Features</b>	
WIRELESS STANDARDS	IEEE 802.11a/b/g/n/ac
FREQUENCY	2.4G /5G dualband
PHY RATE	Dual band concurrent Up to 1700Mbps PHY data rate
SIGNAL RATE	2.4G 11n: Up to 400Mbps@256QAM (dynamic)
	11g: Up to 54Mbps(dynamic)
	11b: Up to 11Mbps(dynamic)
	11ac: Up to 1300Mbps(dynamic)
Modulation	11n: BPSK, QPSK, 16QAM, 64QAM with OFDM
	11g: BPSK, QPSK, 16QAM, 64QAM, OFDM
	11b: DQPSK, DBPSK, DSSS, CCK
WIRELESS TRANSMIT POWER	18dBm
RECEIVE SENSITIVITY	270M: -68dBm@10% PER
	130M: -68dBm@10% PER
	108M: -68dBm@10% PER
	54M: -68dBm@10% PER
	11M: -85dBm@8% PER
	6M: -88dBm@10% PER
	1M: -90dBm@8% PER
WIRELESS FUNCTIONS	Enable/Disable Wireless Radio, Transmit Power Control, Wireless Statistics
WIRELESS	WPA-PSK / WPA2-PSK
<b>Software Features</b>	
WAN TYPE	DHCP/Static IP/PPPoE
PORT FORWARDING	Virtual Server,Port Triggering, UPnP, DMZ
VPN PASS-THROUGH	PPTP, L2TP, IPSec
FIREWALL SECURITY	IP Address Filter/MAC Address Filter/URL Filter
ACCESS CONTROL	Device Black list
IPV6	supported
TR069	Supported

# EMTA Specification

	Signaling: MGCP \ SIP
	Codecs: G.711a,G.711u,G.723,G.726,G.729ab
VOIP Features	Advanced Services: Call waiting Caller Identification Call forwarding Call transferring CLIP (Calling Line Identification Presentation) CLIR (Calling Line Identification Restriction) 3-way conference Functionality: T.38, Echo cancellation G.168, VAD, Silence Suppression, Jitter Buffer, CNG Interop with main market softswitches

## General Specification

Section	Specification
Dimesions	222mm (W) x160mm (H) x52mm (D)
Power Supply	Input :100~240V,50/60Hz:
	Output: 12V 5% 2.5A(2A for ECV3040M/ECV3040S)
Working Enviroment	Operating free-air temperature range 0°C to +40 °C
	Storage -20°C to +85 °C

## Quick Hardware Setup

- 1) First connect RF Coaxial Cable of your service provider to your Cable Modem's RF-In.
- 2) Power on the Cable Modem after connecting the 12V DC power adaptor which is supplied with the modem to the Cable Modem's power input and switch On the power outlet.
- 3) If you would like to connect your PC/Laptop wired to Modem, connect the supplied CAT5 Cable to ethernet port of your PC/Laptop and LAN port of Cable Modem.

# Router Setup Wizard

## 1.Login in the setup GUI.

Open any of the web browsers (Internet Explorer, Mozilla Firefox, Google Chrome, etc.) in your system.

Type the IP address “192.168.20.1” in the address space of your browser as shown below and press Enter. The Log In page appears.

Since this is a first time login, type `MSO` in “technician” fields and click on `Log In`. Do note 'admin' is a default password.



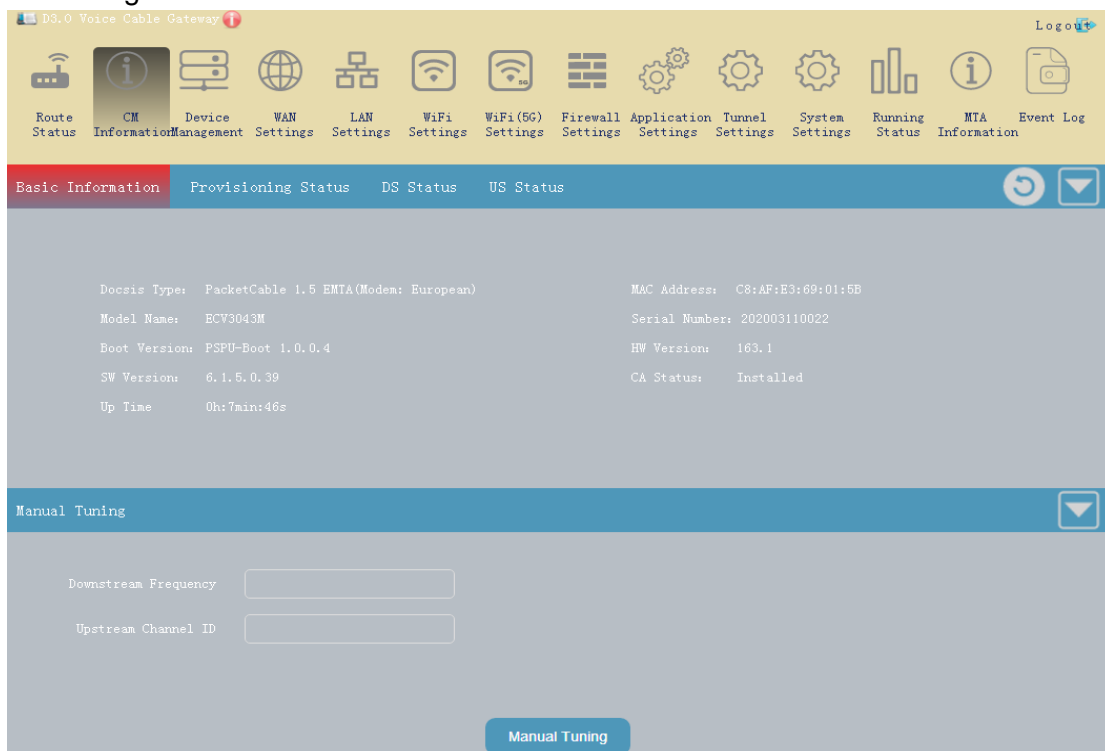
## 2.Router Status

Once you are logged in,you can access to the Router Status Gui.You can check the interface working status.



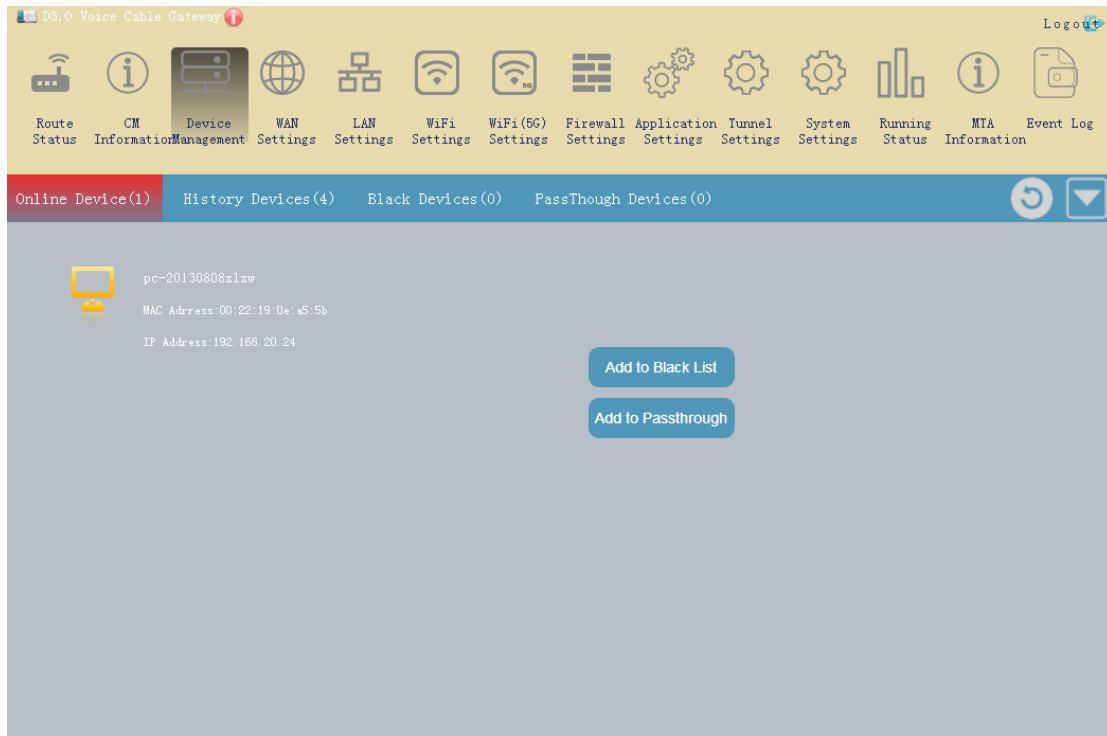
### 3.CM Information

You can get the CM information on this manu.



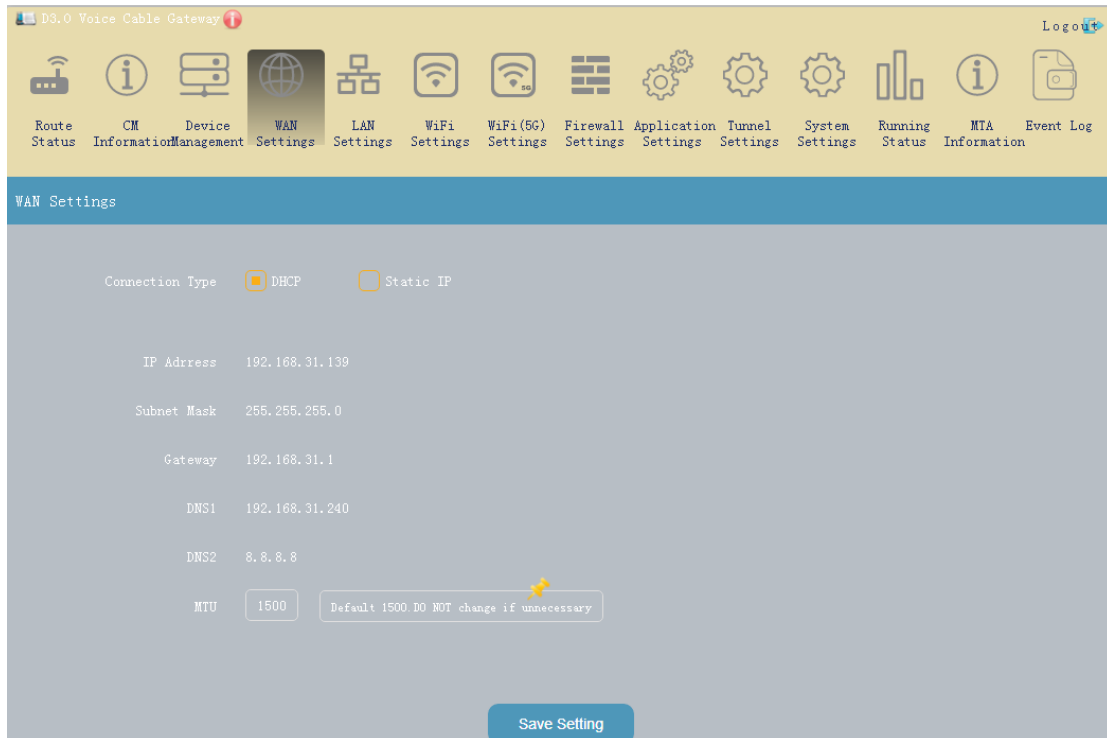
### 4.Device Management

You can manage the end devices on this manu.



## 5.WAN Settings

You can set the WAN function on this manu.



## 6.LAN settings

You can setting the lan IP on this menu.

The screenshot shows the 'LAN Setup' configuration page. The top navigation bar includes 'D3.0 Voice Cable Gateway' and a 'Logout' button. The main menu contains icons for Route Status, CM InformationManagement, Device Settings, WAN Settings, LAN Settings (highlighted), WiFi Settings, WiFi(5G) Settings, Firewall Settings, Application Settings, Tunnel Settings, System Settings, Running Status, MTA Information, and Event Log. The LAN Setup page has a blue header and contains the following fields:

- GateWay IP: 192 . 168 . 20 . 1
- Subnet Mask: 255 . 255 . 255 . 0
- IP Start: 192.168.20. 20
- IP End: 192.168.20. 254
- DHCP Server: on

A 'Save Setting' button is located at the bottom center of the page.

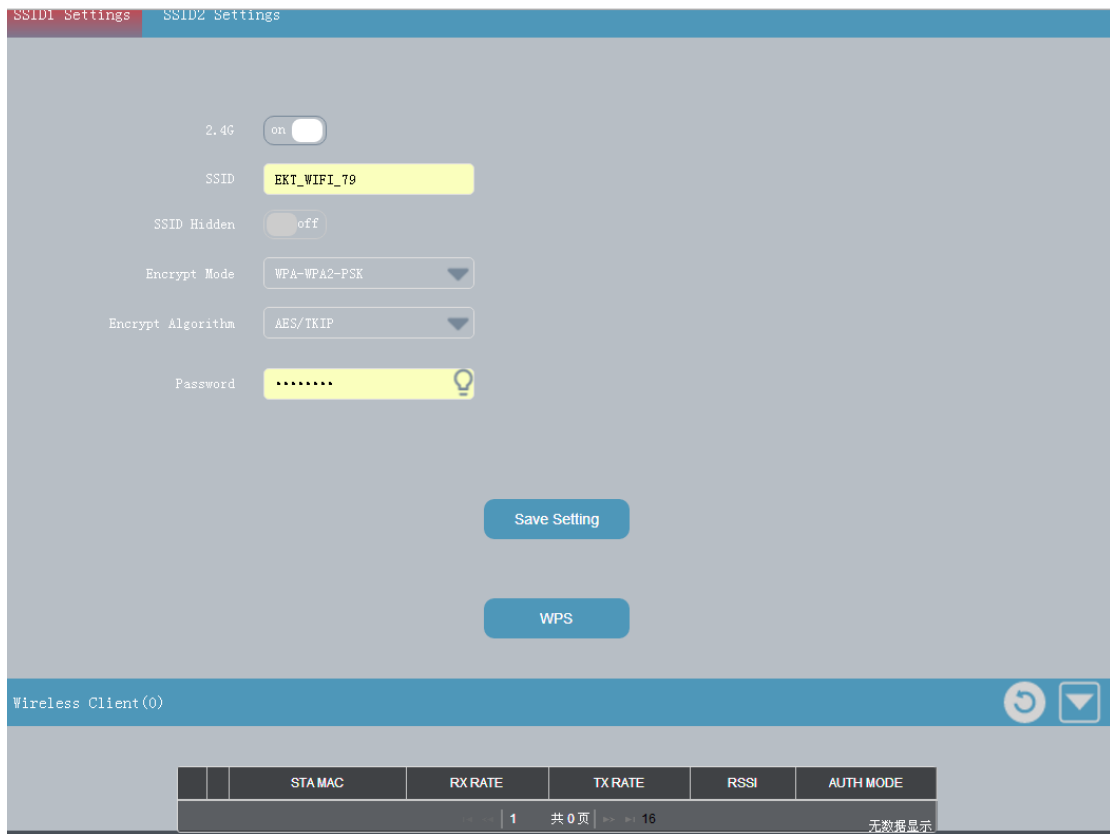
## 7.WiFi/WiFi(5G) settings

You can set the wifi parametres on these menus

The screenshot shows the 'WiFi Settings' configuration page. The top navigation bar is identical to the LAN settings page. The main menu highlights 'WiFi Settings'. The WiFi Settings page has a blue header and contains the following fields:

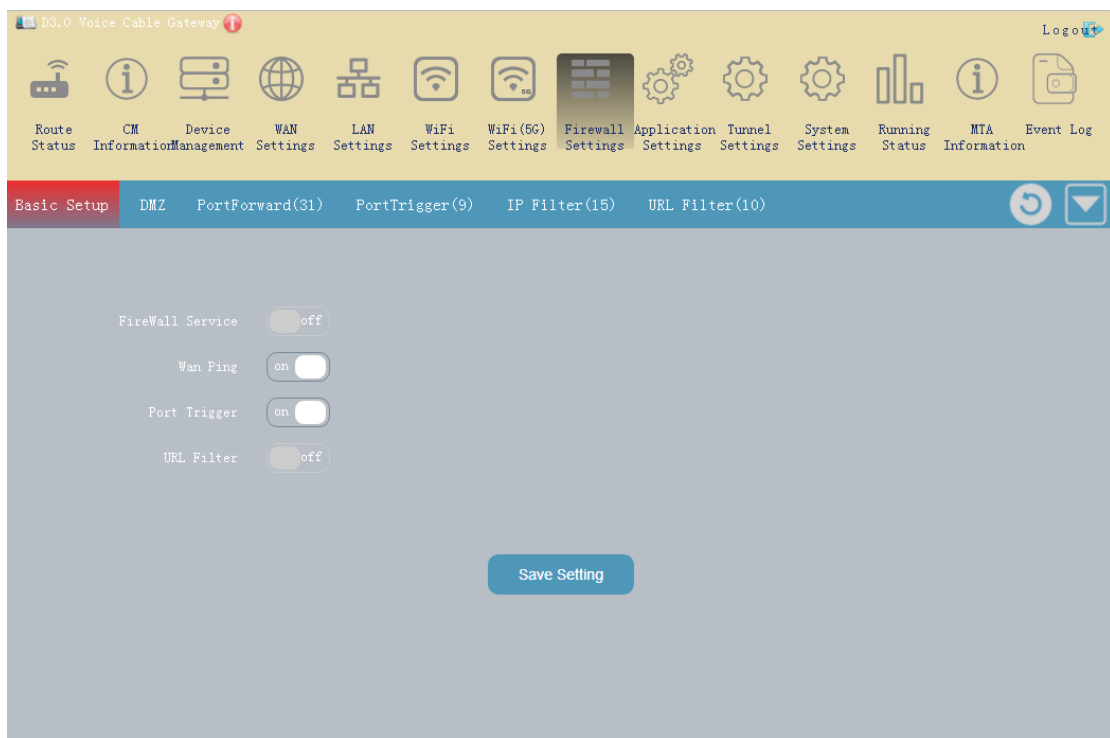
- Transmit Power: Wall Through Mode
- DO NOT Change The Settings If Not Necessary
- WiFi Mode: 11B/G/N default
- Charneel: Auto
- ChannelBandWidth: 20/40Mhz

A 'Save Setting' button is located at the bottom center of the page.



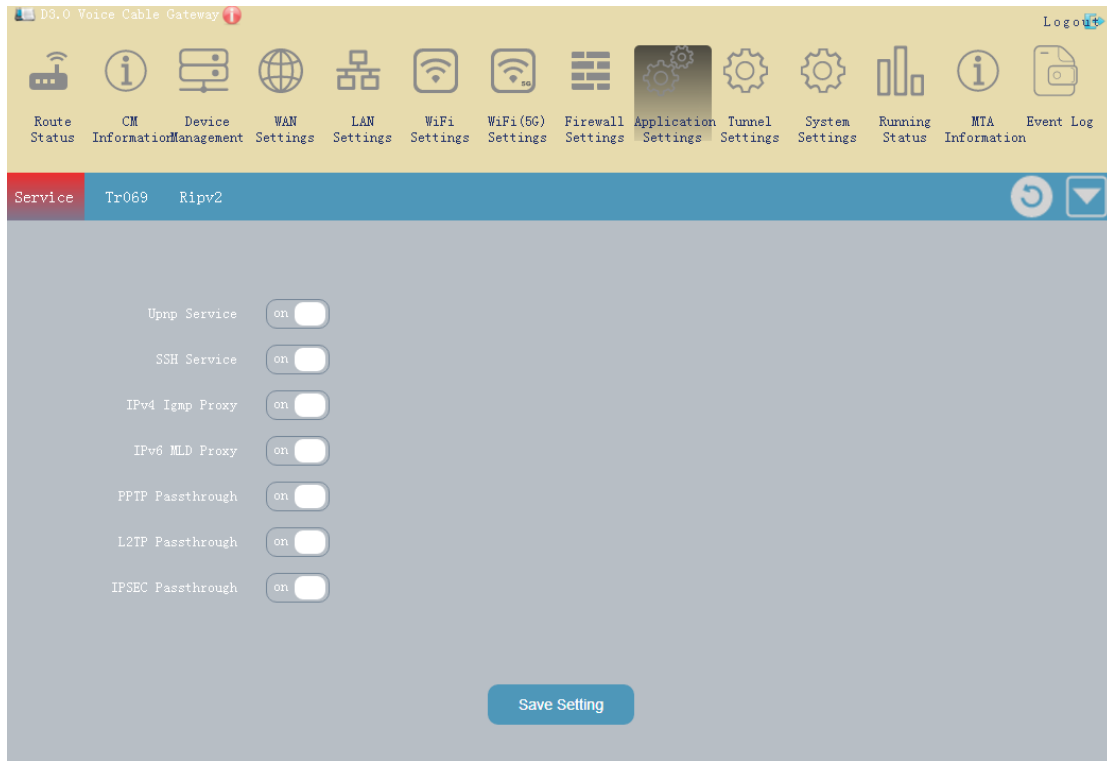
## 8.Firewall Settings

You can access firewall settings at this menu.



## 9.Application Settings

You can set some particular functions on the menu.



## 10.Tunnel Settings

You can access DS-LITE functions on this menu.





# 11. System Settings

You can some system changes on this menu.

D3.0 Voice Cable Gateway ! Logout

Route Status CM Information Management Device Management WAN Settings LAN Settings WiFi Settings WiFi (5G) Settings Firewall Settings Application Settings Tunnel Settings **System Settings** Running Status MTA Information Event Log

**Reset Password** ▼

Original Password

New Password

New Password Again

[Save Setting](#)

**Restore the factory Settings** ▼

[Factory Default](#)

**Language Select** ▼

**Restore the factory Settings** ▼

[Factory Default](#)

**Language Select** ▼

Language

[Save Setting](#)

**Operation Mode Select** ▼

Operation Mode

[Save Setting](#)

## 12. Running Status

This Page shows the running status information.

The screenshot shows the 'Running Status' page of the RTCD905\_H6W4 device. The top navigation bar includes: DS.0 Voice Cable Gateway, Route Status, CM Information, Device Management, WAN Settings, LAN Settings, WiFi Settings, WiFi(5G) Settings, Firewall Settings, Application Settings, Tunnel Settings, System Settings, Running Status (selected), MTA Information, and Event Log. A 'Logout' button is in the top right.

The main content area is divided into four sections, each with a refresh icon and a dropdown menu:

- Internet Status:**
  - IP Address: 192.168.31.139
  - Subnet Mask: 255.255.255.0
  - Gateway: 192.168.31.1
  - Wan Type: dhcp
  - DNS1 Server: 1
  - DNS2 Server: 9
  - MTU: 1500
  - MAC Address: C8:AF:E3:89:01:5B
- Lan Status:**
  - Gateway IP: 192.168.20.1
  - Subnet Mask: 255.255.255.0
  - Lease time: 864000(Second)
  - DHCP: enable
- WiFi Status:**
  - 2.4G: enable
  - Need Password: enable
  - Channel: Auto
  - BandWidth: 20/40Mhz
  - SSID: EKI\_WIFI\_79
  - Signal Strength: Wall Through Mode
  - Mode: 11B/G/N
  - BSSID: 14:82:5B:FE:6E:79
- WiFi 5G Status:**
  - 5G: enable
  - Need Password: enable
  - Channel: Auto
  - BandWidth: 80Mhz
  - SSID: EKI\_WIFI\_5G\_79
  - Signal Strength: Wall Through Mode
  - Mode: 11A/N/AC
  - BSSID: 14:82:5B:FE:6E:7B

## 13.MTA Information

This page shows the MTA running status information.

The screenshot displays a web interface for MTA information. At the top, there is a navigation bar with icons and labels for various settings: Route Status, CM Information Management, Device Management, WAN Settings, LAN Settings, WiFi Settings, WiFi(5G) Settings, Firewall Settings, Application Settings, Tunnel Settings, System Settings, Running Status, MTA Information (highlighted), and Event Log. Below the navigation bar is a sub-header 'Online Status' with a refresh icon and a dropdown arrow. The main content area shows the following information:

Provisioning Status:FAILED (MTA-24)	MTA IP Address:192.168.31.134
Gateway: 192.168.31.1	DHCP: 255.255.255.255
DNS: 192.168.31.240	Log Server: 192.168.31.240
Provisioning Server: 192.168.31.240	Tftp Server: 192.168.31.240
Config File: kevin_ema_na.BIN	Provisioning Flow:Basic
CMS Register: Not registered	Line1 State: offline
Line2 State: offline	

# 14.Event Log

This page shows the Event Log record.

Route Status
 CM Information
 Device Management
 WAN Settings
 LAN Settings
 WiFi Settings
 WiFi (5G) Settings
 Firewall Settings
 Application Settings
 Tunnel Settings
 System Settings
 Running Status
 MTA Information
 Event Log

Event Log(32)
↺

	Start	End	Priority	Content
1	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
2	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
3	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
4	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
5	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
6	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
7	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
8	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
9	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
10	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
11	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
12	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
13	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
14	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
15	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
16	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
17	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
18	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
19	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
20	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
21	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
22	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
23	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
24	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
25	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
26	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
27	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
28	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
29	Time Not Established	Time Not Established	Error (4)	ToD request sent- No Response received;CM-M
30	Time Not Established	Time Not Established	Error (4)	DHCP RENEW WARNING - Field invalid in respo
31	Time Not Established	Time Not Established	Critical (3)	SYNC Timing Synchronization failure - Loss of S
32	Thu Mar 12 05:48:20 202	Thu Mar 12 05:48:20 202	Warning (5)	MIMO Event MIMO: Stored MIMO--1 post cfg file M

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## Useful Q & A

### **Q: Why is Power LED off ?**

- Check your power supply
- Plug and unplug your power supply t

### **Q: Why is Ethernet LED off?**

- Check your CAT-5 wire.
- Check the connection of your RJ-45 to CAT-5 wire
- Check your net-card in your computer

### **Q: Why is Online LED off?**

- Check the connection of your RF-cable to the device
- Check the cable-network function is available

### **Q:Should I turn off the device when I am off of Internet?**

- The device has been specially designed to operate for several years. It does not need to turn off the power. However, if you do not use,it is recommended to turn off the power to extend the life of the device. DO NOT unplug the cable directly, you should turn off the related electrical outlet, then unplug the cable.

### **Q:How to find what causes the device not boot?**

- The LEDS Status of the device indicator can reflect on whether the device boot normally. If the status indicator is not displayed correctly, refer to the following steps :
- Make sure that the Cable Modem and CATV coaxial cable connections are secure, and there is no damage, loose joints, etc. .
- Check cable TV reception is normal, if the effect of television programs significantly worse than the program or simply watch, call your cable customer service center.
- Check Power adapter is connected correctly to 220V AC and to the device
- Turn off the power, restart the device

### **Q: Can multiple computers use one device?**

- At most 16 equipment can connect to the device, but also the MSO setup determine the capacity

#### FCC Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.