



GSM/UMTS gateway 16/64

User

Manual

V1.6



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About

▪ Intro

Discovery Telecom, Ltd. is a manufacturer of VoIP Gateways, GSM VoIP gateways, with well-equipped testing equipment and strong technical force. With a wide range, good quality, reasonable prices and stylish designs, our products are extensively used in communication industry and other industries. Our products are widely recognized and trusted by users and can meet continuously developing economic and social needs.

We welcome new and old customers from all walks of life to contact us for future business relationships and achieving mutual success!

And we set up a new team for voice wholesale business two years ago. Currently there are five departments with professional teammates for voice business--Carriers Relations Dep, NOC Dep, Rate Dep, Billing & Finance Dep, customer Care Dep.

We are carrying more than Twenty Million minutes international outbound and inbound traffic monthly and owning 200+ interconnections with Tier1 and Tier2 carriers. We mainly focus on Asia and Africa destinations and have more than 20 direct routes such as Pakistan, Vietnam ect.

We treat every partner as our best friend because we insist on sincerity, trust and open-minded will be the key to the success for both parties. We sincerely welcome all VOIP interconnection.

Madcom Gateway is a multi-functional and high performance product, which is designed with advanced embedded technology. Madcom is able to process traditional voice call service and internet data service. It adapt new hardware and software structure, which supports up to 16 concurrent calls and perfectly support G729a/b/e, G723.1, G.711 A/U law and iLBC codecs at the same time.

▪ TECHNICAL PARAMETER

Features: Relay Encryption Solution(Fix IP Blocking)/Bandwidth Optimization/SIM Rotating Automatically(Fix SIM Blocking)/Base Station Switch/SIM Hot

Plugging/Remote Control(Manage Device Anywhere)/Muti-Codec Support)/SMS
Receive & Send

Human Behavior

Channels: 16

SIP V2.0 RFC3261

RTP/RTCP RFC3551

Echo/Silence control

Caller Anonymous

Codecs: G729 a/b/e, G723, G711 A/U law, iLBC

SIP account: Management with Authentication

VOL control

PIN Code Management

AT, SMS, USSD

GSM PARAMETERS

GSM channels: 32 Channels

Network types: 850 / 900 / 1800 / 1900 MHz (quad-band)

Transmitter power: +33dBm (2W) 850/900MHz, +30dBm (1W) 1800/1900M

SIM card: 1 SIM per channel, Small plug-in, 3V

Antenna connector: SMA (female), Impedance 50 Ω

INTERFACES

Channel: 1 SIM per Channel

WAN: RJ-45

USB: Serial Port, Baud rate: 115200, 8, n, 1, n

ADMINISTRATION

User Management program via USB interface

Includes version update capabilities for firmware or management Software

Remote Control

Telnet, Console Echo

WCDMA PARAMETERS

Channels: 64 Channels

Network types: 850/1900 & 900/2100MHz

Antenna connector: SMA (female), Impedance 50 Ω

CDMA PARAMETERS

CDMA channels: 64 Channels

Network types: 450/800/1900MHz

Antenna connector: SMA (female), Impedance 50 Ω

MAIN POWER

Power Input: 100-240V~50-60Hz 1.2A MAX

Power Output: 12V/5A

Internet

DHCP, DNS, PPPoE

IPv4, TCP, UDP

HTTP, FTP, TFTP, ARP, NTP

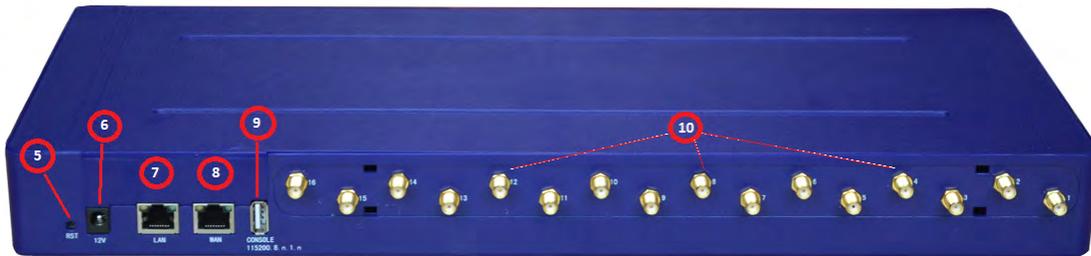
OTHER

Working Temperature: 0~+50°C

Working Moisture: 10 ~ 90 % RH

16 Channel 64 SIM cards/16 Channel 16 SIM cards

▪ **View**



1, SIM slots: The 16/64 Madcom device can read 64 SIMs totally. It means the gateway can support 16 calls concurrently (16 channels), and each channel can read 4 SIMs named *A,B,C,D* (This SIMs will rotate to avoid blocking).

2, Channel number.

3, Channel LED: One channel include 4 LEDs for ABCD SIMs.

| ACT | LED Status |
|-------------------------------|------------|
| Startup(Rebooting) | All ON |
| Fail mobile connection | Blink |
| Calling | ON |
| Idle or No SIM | Off |

4, Power LED.

5, RESET: Restore the factory default (Press the button and hold on for more than 5s).

6, Power connector.

Input power: 100-240V ~ 50-60Hz 1.2A MAX

Output power: 12V/5A

7, LAN: Ethernet port.

100M/10M Adaptive

8, WAN: Ethernet port.

100M/10M Adaptive

The default WAN IP is 192.168.1.10 .

9, CONSOLE: USB serial port.

Baud rate: 115200, 8.n.1.n

10, Antenna connector.

11, Cooling fans: Support 2 mode – ON & Automatic (When Control center detect the CPU too hot, fans will be ON, otherwise it will OFF).

Working Temperature: 0 ~ +50 °C

Working Moisture: 10 ~ 90 % RH

Quick Start

- **Insert SIM cards**



A/C: The chip side towards up.

B/D: The chip side towards down.

- **Connect Device**

Connect the power adapter to keep power on, connect a RJ45 network cable from Madcom WAN port to a router^① LAN port (The router should be connected to internet).

^① router: A device used for visiting internet, such as TP-Link, Tenda, D-Link

- **Check Device IP**

The Madcom WAN default IP is 192.168.1.10.

1, If the router LAN IP is 192.168.1.1, the Madcom default IP will be OK.

2, If the router LAN IP is not 192.168.1.1, for example 192.168.0.1, the Madcom default IP should be corrected. [How to change it?](#)

▪ Log Into The Management Web

After retrieving the IP address, open browser (IE, Chrome, FireFox, Opera ...), input the IP address and the login web will return. The username & password will be needed to log into. **Default Account is root, password is root.**



When login successfully, the "Initial Setting" guide page will be help to make gateway working more easily.

Actually, only IP address and SIP info are needed then the Madcom gateway can start to transfer VOIP calls.

▪ Connect To Network

A screenshot of the 'WAN Settings' configuration page. The page has a blue header with the title 'WAN Settings'. Below the header, there are two radio button options: 'Dynamic IP' (unselected) and 'Static IP' (selected). Under 'Static IP', there are four input fields: 'WAN IP' with the value '192.168.2.188', 'IP Mask' with '255.255.255.0', 'Default Gateway' with '192.168.2.1', and 'DNS Server' with '192.168.1.1'. Below these, there are three more radio button options: 'PPPoE' (unselected), 'User Name' (empty), 'Password' (empty), 'MTU' with '1492', and 'Service Name' (empty). At the bottom right of the form, there are 'Submit' and 'Reset' buttons.

Dynamic IP: DHCP^② mode, get an IP address from the network router automatically.

② DHCP: Dynamic host configuration protocol.

Static IP: set IP address manually.

1, The WAN IP should be in the segment of the router.

2, The WAN IP should be unique or it will conflict with other network devices.

3, Check the IP Mask and Default Gateway in your router configuration.

The WAN IP segment will be same with the router which gateway connect to. For example, the router LAN IP is 192.168.10.1, and the gateway WAN IP should be 192.168.10.xxx.

PPPoE^③: User account and password are needed from your ISP^④.

③ PPPoE: Point-to-Point Protocol over Ethernet.

④ ISP: Internet Service Provider.

For VoIP to work correctly, you must have a strong and consistent Internet connection.

The quality of VoIP calls depends on the speed of your internet connection. The faster your Internet connection is, the better your calls will sound.

▪ **Connect To SIP Server**

| | |
|------------------|---------------|
| Protocol Mode: | Registration |
| Phone Number: | |
| Account: | TEST |
| Password: | •••••• |
| SIP Server: | 110.34.227.60 |
| SIP Server Port: | 5060 |

Submit Reset

Phone Number: (same with SIP id or keep it empty)

Account: (The SIP id created in the SIP server)

Password: (The SIP password created in the SIP server)

SIP Server: (The SIP server IP address or domain name)

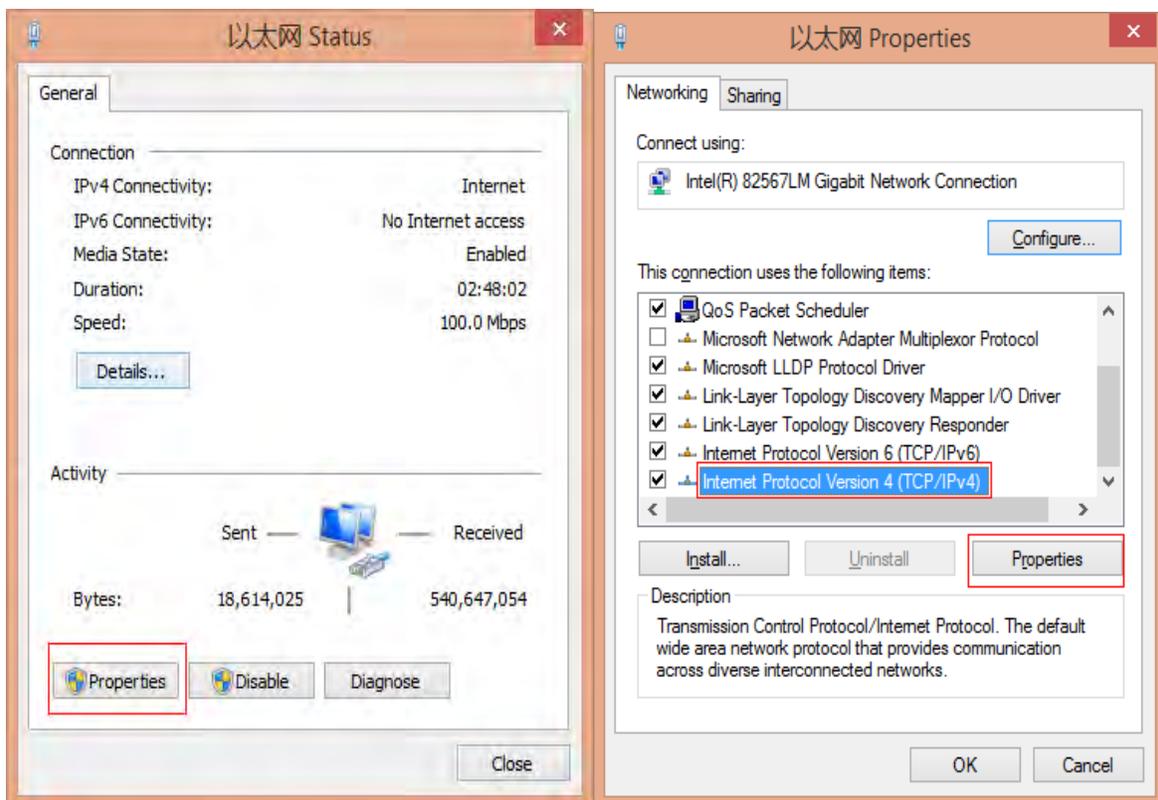
SIP Sever Port: (The SIP server SIP port, default port is 5060)

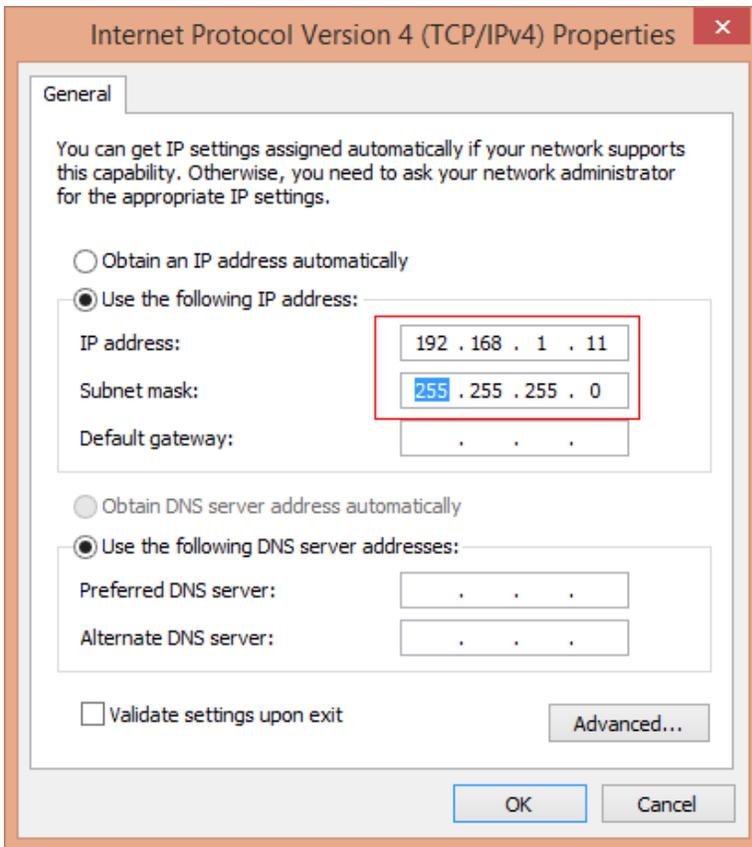
How To

▪ How to change Madcom WAN default IP?

If the router's LAN IP segment is not same with Madcom WAN segment (192.168.1.10), need modify Madcom default IP.

First, connect a computer to the same router with Madcom, add the Madcom IP segment in the computer.





Save it, then input "192.168.1.10" in the browser, log into the page and change the WAN IP to be compatible with the router. [How to change WAN IP?](#)

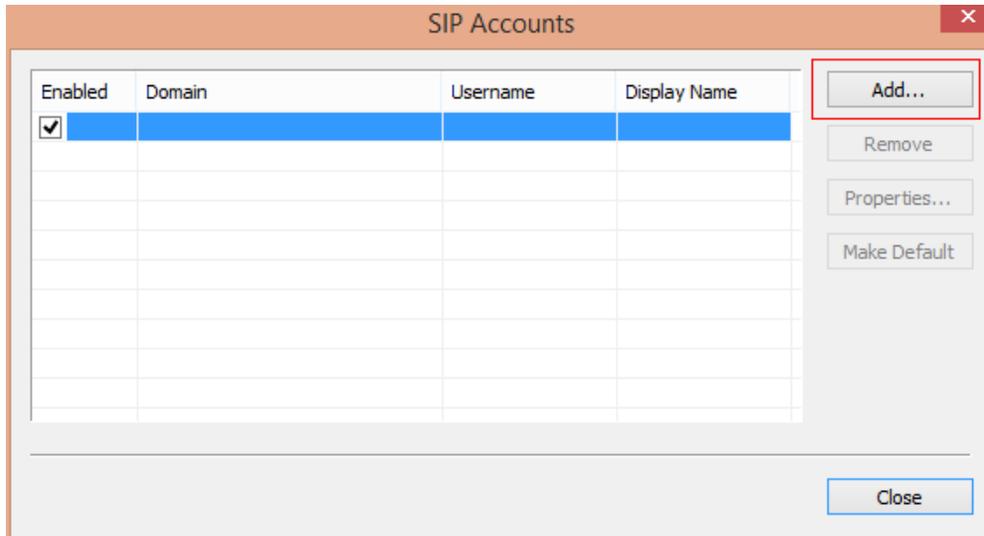
- **How to Insert SIM cards?**

Refer to "[Insert SIM cards](#)".

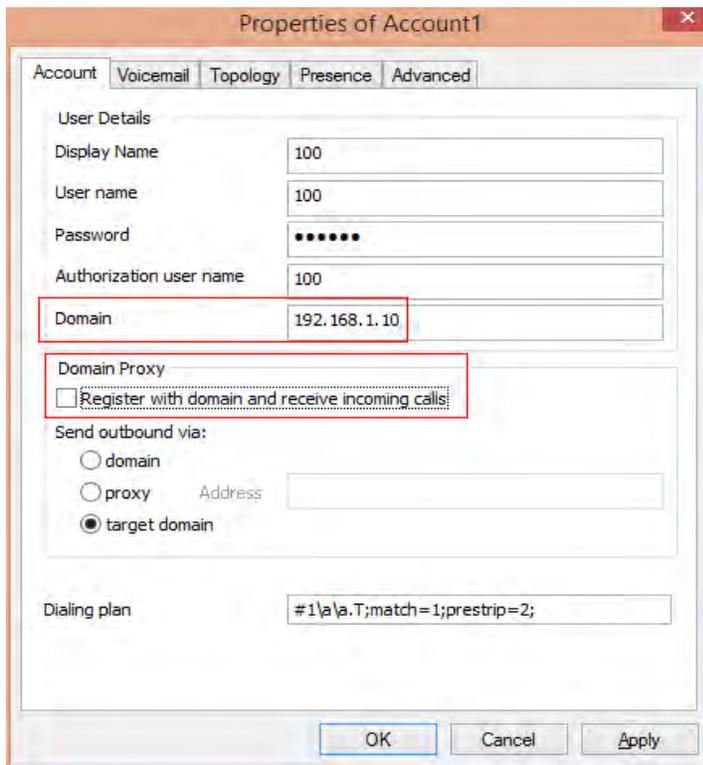
- **How to make test VOIP calls?**

After Preparation Work is done, insert cards & network connected, a test call is necessary.

1, Download a softphone, like x-lite, install and run it.



2, Connect this softphone with Madcom peer to peer.



Display Name, User name, Password can be anything.

Domain: Input Madcom WAN IP.

Unchecking the "Register with domain and receive incoming calls".

3, Dial a phone number and test.



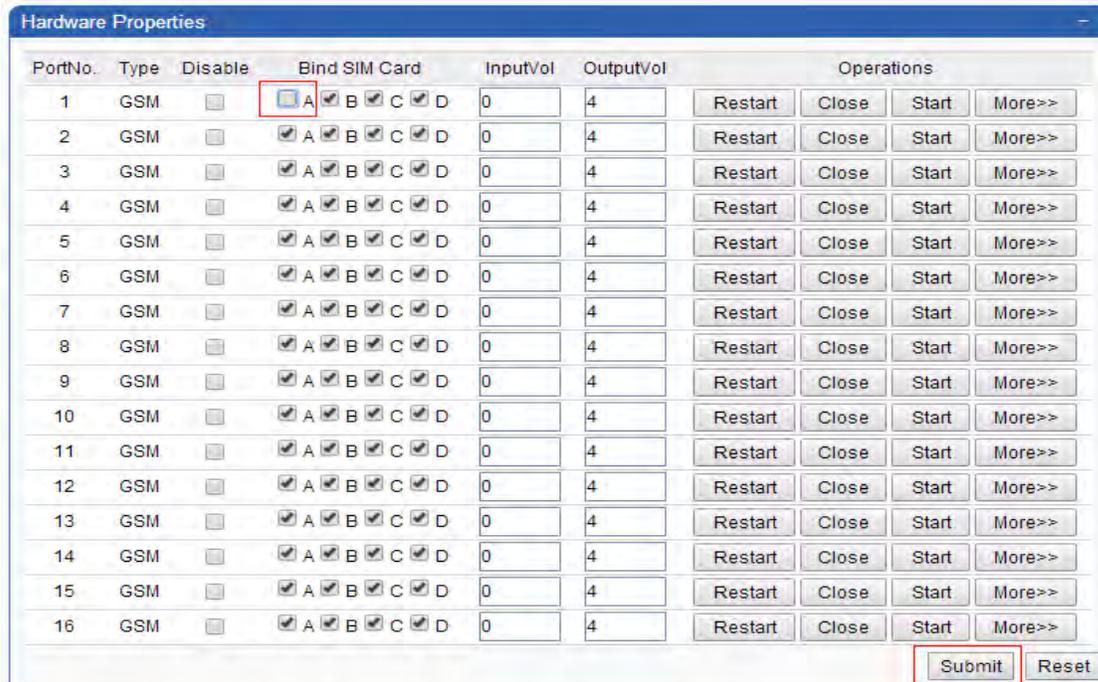
| Port | Call Status | Duration | Balance | SIM Led | Provider | Signal Intensity | ASR | ACD | IMEI |
|------|--------------------|----------|---------|---------|----------|------------------|-----|----------|----------------|
| 1D | CONNECTED 10010 | 00:00:09 | 0.00 | | 46001 | | 66% | 00:00:40 | 11111111111812 |

How to activate the SIMs locked?

When the SIMs are locked temporarily, SIM status will be . There are 3 ways to unlock them.

- 1, Reload them. Take out the SIMs and reinsert.
- 2, Or reboot the gateway device.
- 3, Reboot the PORTS. Path: Gateway Settings->Port Setting.

Un-checking the corresponding SIM slots and save, then check them and save.



| PortNo. | Type | Disable | Bind SIM Card | InputVol | OutputVol | Operations |
|---------|------|--------------------------|---|----------|-----------|----------------------------|
| 1 | GSM | <input type="checkbox"/> | <input type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 2 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 3 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 4 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 5 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 6 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 7 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 8 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 9 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 10 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 11 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 12 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 13 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 14 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 15 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |
| 16 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart Close Start More>> |

Submit Reset

Madcom Details

❖ Status

Show the device status.

▪ **System status**

Network status: WAN and LAN port.

WAN is used to connect to network, LAN is used to connect to computer if necessary.

| WAN Status | | | |
|------------------|---------------|--------------------|-------------------|
| Connection Mode: | Static | Connection Status: | Connected |
| IP: | 192.168.2.188 | Default Gateway: | 192.168.2.1 |
| DNS Server IP: | 192.168.1.1 | MAC Address: | 00-30-f1-00-01-b7 |

| LAN Status | |
|---------------------|---------------|
| IP: | 10.10.10.1 |
| IP Mask: | 255.255.255.0 |
| DHCP Server Status: | Enabled |

System status

| Other Status | | | |
|------------------|---------------------------|----------------|---------------------|
| Current Time: | 2014-05-05 14:48:14 UTC+8 | Running Time: | 3 Hr 51 Min 13 Sec |
| Current Version: | 516-451-768-041-100-000 | Released Time: | May 2 2014 13:08:00 |

Current Time: (The device will proofread time with NTP server)

Set the Time Zone in "System Settings->User & Device" page.

Running Time: (Show the gateway uptime)

Current Version: (The current firmware version)

Released Time: (The current firmware version release time)

Call Statistics

| Call Statistics | | | | | | Clear Data |
|-----------------|-------|---------|-----------|-------------------|-------------|------------|
| PortNo. | Calls | Alerted | Connected | Consecutive Fails | No Carriers | PDD |
| 1A | 0 | 0 | 0 | 0 | 0/0 | |
| 1B | 0 | 0 | 0 | 0 | 0/0 | |
| 1C | 0 | 0 | 0 | 0 | 0/0 | |
| 1D | 0 | 0 | 0 | 0 | 0/0 | |
| 2A | 0 | 0 | 0 | 0 | 0/0 | |
| 2B | 0 | 0 | 0 | 0 | 0/0 | |
| 2C | 0 | 0 | 0 | 0 | 0/0 | |

Show the call data.

PortNo.: SIM No..

Calls: Received calls need to be sent out.

Alerted: Sent out calls number.

Connected: Calls connected successfully.

Consecutive Fails: Calls sent out with aborted consecutively.

No Carriers: Calls disconnected with No Carriers.

PDD: Delay time of returning calls info.

This Call Statistics data is temporary, disappear after rebooting. Of course, the user can clear it manually with clicking the "clear Data" button.

▪ SIP status

| SIP Status | | |
|------------|---------------------|---------------|
| PortNo. | Registration Status | Module Status |
| 1 | | Yes |
| 2 | | Yes |
| 3 | | Yes |
| 4 | | Yes |
| 5 | | Yes |
| 6 | | Yes |

Show the SIP status.

PortNo.: The channel No.

Registration Status: The status of connecting to SIP server.

Module Status: ON/OFF.

▪ Call status

| Port | Call Status | Duration | Balance | SIM Led | Provider | Signal Intensity | ASR | ACD | IMEI |
|------|-------------|----------|---------|---------|----------|------------------|-----|-----|-----------------|
| 1D | IDLE | | 0.00 | | 46001 | | | | 864244020794003 |
| 2C | IDLE | | 0.00 | | | | | | 864244021024855 |
| 3D | IDLE | | 0.00 | | 46001 | | | | 864244020784210 |
| 4D | IDLE | | 0.00 | | | | | | 864244020784046 |

Port: The current SIM port.

Call Status: IDLE/INVITE/Alerting/Connected/DSC.

SIM Led: SIM mobile network status.

Registering:
 Registered:
 Calling:
 Locked:
 Register fail:
 Invalid SIM:
 Sleep SIM:

Provider: The SIM MCC+MNC^⑤ or Mobile operator name.

⑤MCC: Mobile Country Code.

MNC: Mobile Network Code.

ASR: average success ratio.

ACD: average call ratio.

IMEI: International Mobile Equipment Identity with 15 digits.

▪ InterCall Statistics

| Port No. | Status | Duration | Inbound Calls | Outbound Calls | Description |
|----------|--------|----------|---------------|----------------|-------------|
| 1D | IDLE | | 0 | 0 | |
| 2C | IDLE | | 0 | 0 | |
| 3D | IDLE | | 0 | 0 | |
| 4D | IDLE | | 0 | 0 | |

[What's Inter Call?](#)



Setting

▪ Network Setting

Refer to "[Connect To Network](#)".

If the IP parameters changed, need to reboot to make it active.

▪ SIP Setting

SIP Running Parameters

| | | |
|----------------------|---|--|
| Protocol Mode: | Registration | ▼ |
| Encryption Method: | NONE | ▼ |
| Phone Number: | | |
| Account: | TEST | |
| Password: | •••• | |
| SIP Server: | 110.34.227.50 | |
| SIP Server Port: | 5060 | |
| Primary Proxy IP: | 118.193.48.150 | |
| Proxy Port: | 21080 | |
| Secondary Proxy IP: | | |
| Proxy Port: | 5060 | |
| Expiration Period: | 180 | |
| Local Port: | 5060 | |
| Use Phone Number: | <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled | * If the username is not the same with userid, enable it. |
| Receive All Call: | <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled | * If enabled, all call will be accepted. |
| Drop Account Prefix: | <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled | * Remove the account prefix presented in callee number. |
| Auto Resp 183: | <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled | * Send 183-Session-Progress immediately for a incoming INVITE. |

Encryption Method: NONE/Security/VOS2000

NONE: No Encryption

Security: Transfer calls with proxy server in a security way.

SIP parameters: Refer to "[Connect to SIP Server](#)".

Primary Proxy IP: The security relay proxy server IP address.

Proxy Port: Relay proxy port.

Contact the Discovery Telecom tech support to install proxy server software.

STUN

STUN Support: Disabled Enabled * If enabled, support the media traversal for non-symmetric NAT.

Submit Reset

Proxy Encryption

Proxy Encryption: Disabled Enabled * If enabled, system will automatically disable common encryption.

Submit Reset

Advanced Setting

Caller ID Display: Enable

Silence Suppression: Enable

Adaptive Jitter Buffer: Enable

IP TOS: Enable

Don't send # to PSTN: Enable

Append # to PSTN: Enable

Carry PSTN Caller ID: Enable

Forbid GSM Call: Enable * Excluding white list numbers.

White Number List:

* Separated by comma

DTMF Pre-Act Time:

DTMF Activity Time:

Max Alerting Time: * Secs

Max Ringback Time: * Secs

Max Call Duration: * Secs. 0 means no limit

RTP Inactivity Time: * Secs

Auto Alerting Time: * Secs

GSM AutoAnswer: Enable

AutoAnswer Time:

VoIP AutoAnswer: Enable

AutoAnswer Time: * Secs

DTMF Mode: ▼

2833 Payload Type:

RTP Ptime: ▼

RTP Start Port:

No Line Code: ▼ * Response this SIP code when no available line.

Submit Reset

We suggest that keep this advanced setting default, any problems, please contact Discovery Telecom tech support online.

▪ **Port Setting**

Basic Config

Frequency Band: 850-900-1800-1900 MHz

Lock The Operator: Enable

Unnormal SIM Supp: Enable

Submit Reset

The SIM cards mobile network jump among different frequency to search base station. Some SIMs only support one frequency or dual band, to save the mobile registration time, select the correct **Frequency Band** and **Lock The Operator**.

Hardware Properties

| PortNo. | Type | Disable | Bind SIM Card | InputVol | OutputVol | Operations | | | |
|---------|------|--------------------------|---|----------|-----------|------------|-------|-------|--------|
| 1 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart | Close | Start | More>> |
| 2 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart | Close | Start | More>> |
| 3 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart | Close | Start | More>> |
| 4 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart | Close | Start | More>> |
| 5 | GSM | <input type="checkbox"/> | <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D | 0 | 4 | Restart | Close | Start | More>> |

USSD Operations

Please Select Port: All 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16

AT Command: Send ...

USSD Command: Query .. Query All Query All After Hanup

Time Interval(min): 0 Save

Manually Call: Start ...

Refresh

The gateway hardware modules are controlled by "AT Command", and the SIM can get extend service by sending USSD Command from SIM operator. Checking frequency is supported to limit in "Time Interval". And calls can happen directly in "Manually Call" to callee number typed, it's easy to check SIMs inside if they are working, no need to take out SIM and insert it to mobile phone anymore.

- **Base Station**

Basic Settings

Max Channels:

Lowest Valid Signal: dbm

Switch Period: Minutes

Base Balancing: Disable Enable

Base Stations Settings/Operations

| Port No | Base Selection | Base Station | White List | Black List | Operations |
|---------|---------------------------------------|--------------|----------------------|----------------------|--|
| 1 | Poll <input type="button" value="v"/> | 115 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 2 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 3 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 4 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 5 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 6 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 7 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 8 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 9 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 10 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 11 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 12 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 13 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 14 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 15 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |
| 16 | Auto <input type="button" value="v"/> | 0 | <input type="text"/> | <input type="text"/> | <input type="button" value="Refresh"/> |

User can limit the base station numbers and time allowed to connect, then the SIMs won't jump among them too frequent to get poor calling quality. Surely, the optimization and binding are both supported in "Base Station Setting/Operations" panel.

Max channels[Ⓢ]: The max base station numbers detected allowed.

Ⓢ The top x base station with best signal included.

Lowest valid signal: A reference digit.

The signal is more and more weak when the dbm is lower than -90.

Switch Period: The time allow SIMs how long to switch base station.

Base Balancing: This will take active in Auto mode. When its enable, SIM cards in this gateway will connect to base stations allowed evenly, or there may be offline problem.

Auto: SIMs register to the base station with best signal.

Poll: SIMs register to the base station in the list in turn.

And user can select a specific station code to bind it, then SIM won't jump and keep working without switch to re-register.

If some base stations are unsatisfactory, add them to black list;

If some base stations are stable and good, add them to white list.

Refresh: Update the current station status.

▪ IMEI Setting

Some mobile operators detect SIM cards working with unconventional use, not only block SIM cards but also device IMEI, if IMEI can't be modified, Madcom gateways active one-time.

Manually Modify IMEI Auto Modify IMEI

Port IMEI

| Port No. | IMEI A | IMEI B | IMEI C | IMEI D |
|----------|--------|--------|--------|--------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |

Submit Reset

Input IMEI number for each ports Manually.

Manually Modify IMEI
 Auto Modify IMEI

Dynamic IMEI List

Data Detail

Data Status:

IMEI Start:

IMEI Size:

Data List

| | IMEI Start | IMEI Size | Operation |
|--------------------------|-----------------|-----------|-----------------|
| <input type="checkbox"/> | 111111111111119 | 100 | [Delete] [Edit] |

Input a Start IMEI number with 15 digits;
 Input the IMEI database capacity around size.

A new IMEI number will be active after rebooting or changing SIMs.

▪ **Rule**

Prefix

Outbound Prefix Detail

Data Status:
 Port:
 Original Prefix:
 Translated Prefix:

Outbound Prefix List

| | Ports | Original Prefix | Translated Prefix | Operation |
|---------|-------|-----------------|-------------------|-----------|
| No Data | | | | |

Inbound Prefix List

| | Callee Prefix | Digits Stripped | Digits Added | Operation |
|---------|---------------|-----------------|--------------|-----------|
| No Data | | | | |

CallerId Hidden

CallerId Hidden:

Dial Prefix:

Outbound Prefix: The rule take effect when Madcom is used for terminal.

Original Prefix: The called number prefix reach Madcom from SIP server.

Translated Prefix: Another number which Madcom rewrite the Original prefix to.

Callerid Hidden: Hide the SIMs number in Madcom when Callee 's phone receive the VOIP calls.

This option take effect only when the SIM support it.

Black List

Black List Add New Delete

| <input type="checkbox"/> | Callee Prefix | Callee Length | Operation |
|--------------------------|---------------|---------------|-----------|
| No Data | | | |

White List Add New Delete

| <input type="checkbox"/> | Callee Prefix | Callee Length | Operation |
|--------------------------|---------------|---------------|-----------|
| No Data | | | |

▪ Mobile

PIN Setting

PIN Unblock: Disabled Enabled

Port:

PIN:

When SIMs inside need PIN code to unlock, user can type those code in this ABCD option in advanced.

▪ SMS

SMS Inbox

| Port | Sender | Time | Content | Operations |
|------|--------|-------------|----------------------------|---|
| 1D | 10010 | 05-05 20:06 | 你好，我是广东联通在线客服机器人沃宝，很高兴认识你。 | <input type="button" value="Details(1)"/> |
| 2A | | | | <input type="button" value="Details(0)"/> |
| 3A | | | | <input type="button" value="Details(0)"/> |
| 4D | | | | <input type="button" value="Details(0)"/> |
| 5A | | | | <input type="button" value="Details(0)"/> |

Operations: Click "Details" button to jump to "SMS Details" page.

SMS Details Collapse

Please Select Port:
 Please Select SIM:

Data List

| <input type="checkbox"/> | Port | Sender | Time | Content | Operations |
|--------------------------|------|--------|-------------|----------------------------|--|
| <input type="checkbox"/> | 1D | 10010 | 05-05 20:06 | 你好，我是广东联通在线客服机器人沃宝，很高兴认识你。 | <input type="button" value="Reply"/> <input type="button" value="Delete"/> |

Total: 1 1/1 Pages

Choose different port and different SIM to check SMS received.

Settings of Sending SMS

SMS Format: PDU TXT
 Forward Protocol:
 SIP
 HTTP

Send SMS

请选择端口: 全部 01 02 03 04 05 06 07 08
 09 10 11 12 13 14 15 16

Receiver List:

SMS Content:

Successful SMS:
 Failed SMS:

* Semi-colon can be used to separate multiple receivers.

Select a single port or ALL ports to send single/bulk SMS.

- **Automation**

This section is being designed to be personate to avoid SIM blocking automatically. Even so, more information about local mobile operator, such as SIM blocking rule or law, then a safe schedule setting will be helpful and effective.

Port Inter-Calling

Port Inter-Calling Disabled Enabled

* If enabled, device will enable the feature by following conditions.

Min Call Duration: * seconds

Max Call Duration: * seconds

Conditions Settings

By Device Online Time: Enable

Min Interval: seconds

Max Interval: seconds

Consecutive Failed Calls: Enable

Failed Calls:

By Consecutive Calls: Enable

Consecutive Calls:

Total Call Durations: Enable

Call Durations: seconds

This panel allow SIMs in the gateway to call each other randomly. Consider that SIMs inside only call out all the time, so it's easy to be judged as an illegal use. When enable "Port Inter-Calling", every SIM can receive income call in period which is custom option in "Conditions Settings".

Scheduled Sending

Periodic Sending: Disable Enable

Minimum Period: * minutes

Maximum Period: * minutes

Recipients: * Semi-colon can be used to separate multiple receivers.

Content:

SMS Warning:

SMS Receiver for Warning:

Some mobile operators detect SIM cards used only in calling without sending SMS, SIM's blocked.

SMS Warning: A SMS warn the gateway manager to check the SIMs when they are locked⑥.

⑥ locked: Not mobile operator blocking, it's the politic schedule to limit the SIM use time, use frequency to avoid blocking. *It doesn't mean this SIM can't be used anymore, just sleep temporarily.* [How to lock?](#)

Conditions for Locking Card

Accumulated Call Duration Checking

Enable or Not: Enable

Reset When Switching: Enable

Accumulated Duration:

Locking Duration:

* Reset the condition when switching to next SIM card.
* Seconds
* Seconds, 0 means no lock while -1 means permanent lock.

Accumulated Connected Calls Checking

Enable or Not: Enable

Accumulated Calls Checking

Enable or Not: Enable

Consecutive Failed Calls Checking

Enable or Not: Enable

Consecutive No-Alert Calls Checking

Enable or Not: Enable

Consecutive No-Answer Calls Checking

Enable or Not: Enable

Consecutive No Carrier Calls Checking

Enable or Not: Enable

Consecutive Short-Duration Calls Checking

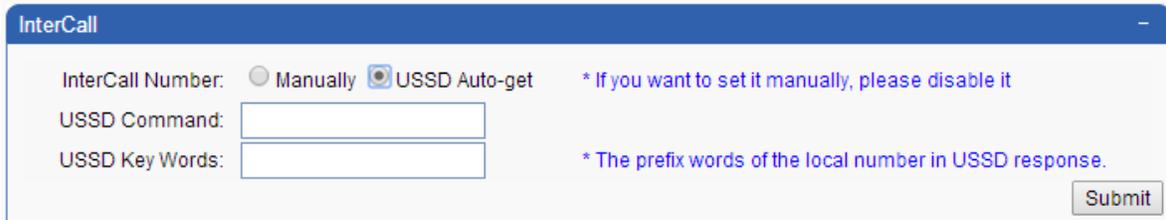
Enable or Not: Enable

User can limit each SIM total call duration, OK calls amount, failed calls, no carrier calls, no ring calls, no answer calls and short duration calls. This option will help to improve the ASR, ACD.

Every condition takes effective, the current SIM will be locked, the next one in this channel is working.

⑦ There are 4 SIMs **ABCD** in each channel. A locked, B works; B locked, C works; C locked, D works; D locked, A works and so on.

▪ InterCall Setting



InterCall

InterCall Number: Manually USSD Auto-get * If you want to set it manually, please disable it

USSD Command:

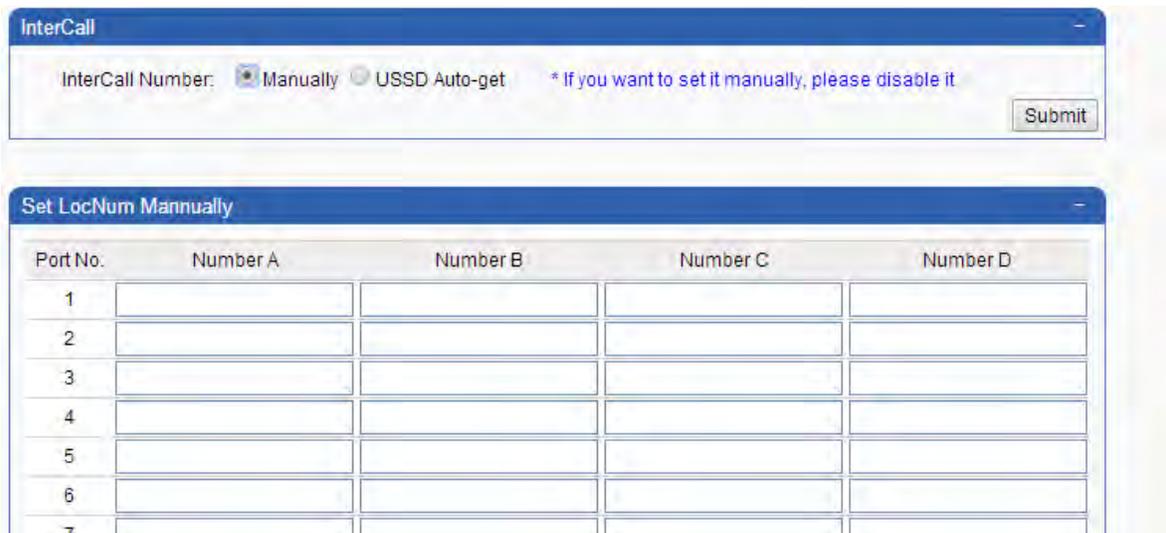
USSD Key Words: * The prefix words of the local number in USSD response.

Submit

SIM phone numbers are needed when they are used to call or send SMS to each other.

1, Send USSD to get the SIM number automatically.

2, Input SIM numbers for each channel manually.



InterCall

InterCall Number: Manually USSD Auto-get * If you want to set it manually, please disable it

Submit

Set LocNum Mannually

| Port No. | Number A | Number B | Number C | Number D |
|----------|----------------------|----------------------|----------------------|----------------------|
| 1 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 2 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 3 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 4 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 5 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 6 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| 7 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |



▪ Codec

Voice Settings

Voice Codec Priority:

G729
 G.723
 iLBC
 AMR
 PCMA
 PCMU

* Choose one coding, click "Up" or "Down" to adjust priority. The highest codec has the first priority.

G729, G.723, G.711, iLBC and AMR are supported.

Voice Settings

Voice Volume:

Input Volume: Output Volume:

DTMF Volume:

Dial Tone

High Frequency: Low Frequency:

On Duration: Off Duration:

Ringback Tone

High Frequency: Low Frequency:

On Duration: Off Duration:

Busy Tone

High Frequency: Low Frequency:

On Duration: Off Duration:

Option about voice include volume, ring type. We suggest users to keep them default when this parameters are not understood well.

- **Network Debug**

Start Ping on device up

Auto Ping: Disabled Enabled

Ping Manually

IP:

Package Size:

Package Count:

* 56 bytes by default.

* 4 by default. 0 means pinging all the time.

Result:

```

PING 110.34.227.60 (110.34.227.60): 56 data bytes
64 bytes from 110.34.227.60: seq=0 ttl=115 time=186.931 ms
64 bytes from 110.34.227.60: seq=1 ttl=115 time=186.621 ms
64 bytes from 110.34.227.60: seq=2 ttl=115 time=187.699 ms

```

A ping tool is easy to check the gateway network status. Especially when calls can't connect but every SIP parameters are correct, this tool will be helpful to find out problems.

- **File Management**

File List

| Seq. | Filename | Modification Time | Type | Size | Operations |
|------|-------------------------|---------------------|------|------|---|
| 1 | /tffs/var/0513-1145.gdb | 2014-05-13 11:45:28 | gdb | 2598 | <input type="button" value="Delete"/> <input type="button" value="Export"/> |

Administrator can export the system info to debug device.

- **User & Device**

User List

Data Detail

Data Status: Add Account: test Password: Privilege: User Submit

Data List Add New Delete

| <input type="checkbox"/> | Account | Privilege | Operation |
|--------------------------|---------|-----------|-----------|
| | root | Admin | [Edit] |

Support different Account level to log into this gateway management web page.

Device Settings

Device Alias: []

Time Zone: +8

Auto Reboot: 0 * After running specified times(hours)

Scheduled Reboot: 01:00 Submit Reset

Device Alisa: Give this gateway a new name.

Time Zone: Set device time to different location.

Auto reboot at specified time is supported. Set the reboot in option "Scheduled Reboot".

Remote Management

Enable ERM: disabled enabled

ERM Server IP: www.tyhtech.net

ERM Server Port: 50000

Account: [] No account? Register now!

Password: []

Status: [] Submit Reset

Most of the time, Madcom gateways don't have public static IP, so can't be logged into in other network. But if there is a server, ERM remote software installed in, remote access will be possible. **Contact Discovery Telecom tech support to install this ERM remote software in your server.**

▪ Update & Restore

The screenshot shows three distinct sections of a web interface, each with a blue header bar and a white content area. The first section, titled "Import File", contains a "File Type:" dropdown menu set to "Firmware", a "File Name:" text input field, a "Browse..." button, and "Submit" and "Cancel" buttons. The second section, titled "Export Configuration", contains the text "Click 'Export' button to export the configuration." and an "Export" button. The third section, titled "Restore To Factory", contains the text "Click 'Restore' button will restore system to factory settings." and a "Restore" button.

Import upgrade firmware, configuration files in "Import File".

Save your configuration setting and export it, then restore in "Import File" option.

Restore to factory will remove all your current settings and set to factory default.

This reset won't remove IP parameters, after this action, user can log into the web page with input the old IP. [How to reset IP with restore to factory default?](#)

▪ **Save & Reboot**

The screenshot shows a section titled "Operations" with a blue header bar. Below the header, there is a "Select Operation:" label followed by two buttons: "Save" and "Reboot".

Save settings and reboot.

▪ **Initialization**

Initial Setting page is used to be easy starting for gateway user at the first time. When SIP info are empty, this welcome page show in the browser when user log into it, otherwise, "System Status" is the default page. [How to set this page?](#)