

# ATA 100 SIP Gateway User Manual

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## 1. Welcome

Congratulations on becoming an owner of ATA 100 IP telephone adapter! You made an excellent choice and we hope you will enjoy all its capabilities.

ATA 100 offers a rich set of functionality and superb sound quality at ultra affordable price. It is fully compatible with SIP industry standard and can interoperate with many other SIP compliant devices and software on the market.

## 2. Installation

Please make sure you have the following items in the product package you received,

- 1 Analog Telephone Adapter Box
- 2 5V power supply

In addition, you need,

- 1 Analog telephone set or fax machine
- 2 Cat-5 Ethernet cable
- 3 An Ethernet port connecting to IP networks

Please follow the instruction below for ATA setup:

- 1 Insert Cat-5 Ethernet cable to “LAN” port on the back of ATA.
- 2 Insert 5V power supply cable into the power plug of ATA.
- 3 Insert RJ-11 telephone wire to the “Phone” port on the back of ATA.
- 4 Insert the other end of RJ-11 telephone wire to either the phone set or fax machine.

**Note: please don't connect RJ-11 phone wire to the phone jack on the wall or connect RJ-11 phone wire to the PBX .**

Now you can power on the 5V power supply.

## 3. Key Features

ATA-100 has following key features.

- 1 Support SIP 2.0, TCP/UDP/IP, RTP/RTCP, HTTP, ICMP, ARP, DHCP, NTP/SNTP, TETP protocols.

- 2 Support STUN and symmetric RTP for NAT.
- 3 Interoperable with various 3<sup>rd</sup> party SIP end user device, Proxy/Registrar/Server, and gateway products.
- 4 Advanced 32bit embed MCU + DSP technology to ensure superior audio quality.
- 5 Advanced adaptive jitter buffer control, packet delay and loss concealment technology.
- 6 Support popular vocoders including G.723, G.729A/B, G.711(a-law and u-law), G.726(40K/32K/24K/16K).
- 7 Support standard voice feature such as Caller ID Display, Call Waiting, Hold, Transfer, in-band and out-of-band DTMF.
- 8 Support Silence Suppression, VAD(Voice Activity Detection), CNG(Comfort Noise Generation), Line Echo Cancellation(G.168), and AGC(Automatic Gain Control)

## 4. Setup Guide

It is possible that this product has been pre-setup by either a service provider or network manager. Then user's own configurable settings can be very limited. However, if end-user is allowed to make changes to the system and service settings, the following are the instructions for your device setup.

End-user needs to get the following information from his/her service provider or network manager,

- IP address if it is static, subnet and network gateway IP address, or user DHCP.
- SIP proxy server IP address and any registration information.
- User information such as user ID and password.

### 4.1 Setup with Keypad

Connecting telephone to ATA 100's "Phone" port, press "\*\*\*00" to enter into ATA 100 setup menu. The following table lists the commands for your reference.

Option Code User Input Notes

Option	Code	User Input	Notes
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Enter configuration menu	**00	None	After "Setup menu", enter option and end by "#"
Check DHCP	10	None	Announce DHCP Status on or off
Set DHCP	11	1 to enable Press "#" 0 to disable to confirm the input	
Check IP Address	20	None	
Set static IP Address	21	Enter value using End input numbers on the by '#' telephone pad. Use '*' when enter a decimal point.	
Check Subnet Mask	30	None	
Set Subnet Mask	31	Enter value using End input numbers on the by '#' phone pad. Use '*' for decimal point.	
Check Gateway	40	None	

Set Gateway 41 Enter value using End input number on the by '#'. phone pad. Using '\*' for decimal point

Check primary DNS 50 None Server setting

Set Primary DNS Server 51 Enter value using End input number on the by '#'. phone pad. Using '\*' for decimal point

Manual Reboot 9999 None ATA will Automatically reboot After "hang up"

Manufacture Reboot 79898 Enter "1" to confirm ATA will reboot and Enter "\*" to cancelall the datas will return to the original form

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## 4.2 Setup with Web Browser

Connecting ATA 100's "LAN" port to a router. The procedure in 4.2.1 shows you how to setup your ATA and the menu in 4.2.2 for your reference.

### 4.2.1 Use Web Browser for system setup

- 1 After you have got your ATA's IP address, you can use web browser for system setup within the same subnet.
- 2 Enter `http://<ATA IP address>/`, where <ATA IP Address> is the said IP address of your ATA.
- 3 Web browser will show the webpage interface of the system setup menu. Choose "Admin Login" to enter administrator setup,
- 4 We use Free-World-Dialup(FWD) IP phone service as an example to setup network and service.

If your ATA is in a LAN and your LAN connect to Internet through a firewall (with NAT), your ATA's IP address will be private. Your system settings should include the follows,

#### 1.Choose outbound proxy server for NAT traversal

##### Under User Account Setup

Set "User ID" to the number provided by your service provider. If you use FWD, here you can put your FWD number e.g. 180000. As for how to get free FWD number, please check details of <http://www.fwd.pulver.com>.

Set "Password" to the password provided by your service provider.

##### Under Proxy Server Setup

Set "Proxy" to the SIP proxy server IP address or domain name. In FWD case, it is "fwd.pulver.com".

Set "Use Outbound Proxy" to "yes".

Set "Outbound Proxy" to be the outbound proxy server IP address or domain name. In FWD case, it is <http://fwdnat.pulver.com:5082>.

At bottom of the pager:

- Click "Save Changes" to apply the changes.

## 2. Choose STUN server for NAT traversal

### Under User Account Setup:

Set "User ID" to the number provided by your service provider. If you use FWD, here you can put your FWD number e.g. 180000.

Set "Password" to the password provided by your service provider.

### Under Proxy Server Setup:

Set "Proxy" to the SIP proxy server IP address or domain name. In FWD case, it is "fwd.pulver.com".

Set "Use Outbound Proxy" to "no".

### Under NAT Support:

Set "NAT Mapping Enable" to "yes".

Set "NAT Keep Alive Enable" to "yes".

Set "Substitute VIA addr" to "yes".

Set "Stun Enable" to "yes".

Set "STUN server" to be one of the public STUN server IP address or domain name.

For an example, <http://stun01.sipphone.com>.

Click "Save Changes" button to apply all the changes.

At bottom of the pager:

If your ATA is connected to the Internet directly, your ATA's IP address will most likely be public IP address. Your setting should be, Under User Account Setup:

- Set "User ID" to the number provided by your service provider. If you use FWD, here you can put your FWD number e.g. 180000.
- Set "Password" to the password provided by your service provider. Under

### Proxy Server Setup:

- Set "Proxy" to the SIP proxy server IP address or domain name. In FWD case, it is "fwd.pulver.com".

At bottom of the pager:

- Click "Save Changes" button to apply all the changes.

## 4.2.2 Setup Menu

### Network Information

Under this tab, the current network information of ATA is presented.

### Product Information

Under this tab, the current product information of ATA is presented.

**System Status**

Under this tab, The states and statistics information, which are collected by ATA during normal operation, are presented. Line maintains up to 2 calls: Call 1 and 2.

Hook State State of the hook switch  
 Registration State Registration state of the line  
 State State of the call  
 Tone Tone playing for this call  
 RTP Packets Sent Total number of RTP packets sent  
 RTP Bytes Sent Total number of RTP bytes sent  
 RTP Packets Recv Total number of RTP packets received  
 RTP Bytes Recv Total number of RTP bytes received  
 SIP Messages Sent Total number of SIP messages sent  
 SIP Bytes Sent Total number of SIP bytes sent  
 SIP Messages Recv Total number of SIP messages received  
 SIP Bytes Recv Total number of SIP bytes received

**Password Setup**

Parameter Name	Function	Default
Admen Password	The password for administrator	The
User Password	password for User	

**Note: the above password is only for getting in “Setup Menu”**

**Network Setup**

Parameter Name	Function	Default
DHCP	Enable or Disable DHCP	yes
Static IP	Static IP address of ATA, which will take effect if DHCP is disabled	0.0.0.0
HostName	Host Name of ATA	
Domain	The network domain of ATA	
NetMask	The NetMask used by ATA when DHCP is disabled	255.255.255.0
Gateway	The default gateway used by ATA when DHCP is disable	0.0.0.0
Primary DNS	DNS server used by ATA in addition to DHCP supplied DNS servers if DHCP is enable; when DHCP is disable, this will be the primary DNS server	
Secondary DNS	DNS server used by ATA in addition to DHCP supplied DNS servers if DHCP is enable; when DHCP is disable, this will be the secondary DNS server	

**SIP and RTP**

Parameter Name	Function	Default
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 ===== SIP port SIP message listening port and  
 transmission 5060 port

Ext SIP Port External port to substitute for the actual SIP port of the unite in all outgoing SIP Messages. If “0” is specified, no SIP port substitution is performed.

RTP Port MinMinimum port number for RTP 16580 transmission and reception  
 RTP Port MaxMaximum port number for RTP

transmission and reception RTP Packet Size Packet size  
in sec. Value must be multiple 0.020 of 0.01s(0.01 to  
0.16)

### NAT Support

Parameter Name Function Default

Parameter Name	Function	Default
NAT Mapping Enable	Enable the use of externally mapped of IP address and SIP/RTP ports in SIP message.	yes
NAT Keep Alive Enable	If it is sent to “yes”, “NAT Keep Alive Msg” is sent periodically.	yes
Handle_VIA_reveived	If set to “yes”, the ATA will process the “received” parameter in the VIA header inserted by the server in a response to any one of its request. Else the parameter is ignored	no
Handle_VIA_rport	If set to “yes”, the ATA will process the “rport” parameter in the VIA header inserted by the server in a response to any one of its request. Else the parameter is ignored.	no
Insert VIA reveived	Insert received parameter in VIA header in SIP responses if received from IP and VIA sent-by IP differ	no
Insert VIA rport	Insert rport parameter in VIA header in SIP responses if received-from port and VIA sent-by port differ	no
Substitute VIA addr	Use nat-mapped IP: port value in VIA header	no
Send Resp To Src Port	Send response to the request source port instead of the VIA sent-by port	no
STUN Enable	Enable the use of STUN to discover NAT mapping	no
STUN Sever	STUN server to contact for NAT mapping discovery	
Ext IP	External IP address to substitute for the actual IP address of the unit in all outgoing SIP Messages. If “0.0.0.0” is specified, no IP Address substitution is performed.	
Ext RTP Port MinExternal	port mapping of “RTP Port Min”. If value is non-zero, the RTP port number in all outgoing SIP messages is substituted by the corresponding port value in the external RTP port range	

### Proxy Server Setup

Parameter Name Function Default

Proxy	SIP Proxy Server for all outbound requests
Use Outbound Proxy	Enable the use of “Outbound Proxy”
Outbound Proxy	SIP Outbound Proxy Sever
Register	Enable periodic registration with the yes “Proxy”
Make Call Without Reg	Allow making outbound calls without no successful registration by the unit. If it set to “no”, dial tone will not play unless registration is successful
Register Expires	Expires value in second in a “REGISTER” 3600 request.
Ans Call Without Reg	Allow answering inbound calls without no successful registration by the unit

### User Account Setup

Parameter Name	Function Default
Display Name	Subscriber’s display name to appear in caller-id
User ID	Subscriber’s user-id
Password	Subscriber’s password
Auth ID	Subscriber’s authentication ID
Use Auth ID	If it is set to “yes”, the pair “Auth ID> and no “Password” are used for SIP authentication. Else the pair “User ID” and “Password” are used

### Audio Setup

Parameter Name	Function Default
Preferred Codec	Preferred codec for all calls. However, the G729a Actual codec used in a call still depends on The outcome of the codec negotiation Protocol.
DTMF Tx Method	Method to transmit DTMF signals to the auto Far end Use Pref Codec Only Only use the preferred codec for all calls. no Silence Supp Enable Enable silence suppression, if it set to no “yes”, silent audio frames are not transmitted
Echo Canc	Enable If it set to “yes”, the use of echo canceller yes is enabled. Echo Canc Adap Enable If it set to “yes”, echo canceller to adapter yes is enabled

## 5. Product Use Environment

ATA 100 is recommended to work as in-door equipment.