

TECHNICAL Practice

TELECOM SOLUTIONS FOR THE 21ST CENTURY

ATA-100

**Analog Telephone
Adapter**

March 10, 2008

Provide an IP Network Connection for Analog Telephone Devices



The **ATA-100** is an analog telephone adapter that connects an analog telephone device to an IP network, enabling SIP-supported VoIP communication in applications where connecting to an existing FXS port is not possible or practical. In addition, the **ATA-100** has an RJ-11 port for switching to the PSTN analog phone network via touch tone commands.

Device programming is handled by a built-in web browser. IP address assignment can be accomplished either by DHCP or by manually assigning a static IP address. The **ATA-100** can be used with or without SIP registration. If unregistered, the **ATA-100** can perform basic tasks like sending voice data to an IP-PBX or to another device on a LAN. SIP registration opens up an impressive list of calling features and also enables internet telephone calling.

**For Technical Support: Please contact
Cortelco at (800) 288-3132 Ext. 298**

Features

- Supports SIP 2.0(RFC 3261), TCP/UDP/IP, RTP/RTCP, HTTP, ICMP, ARP, DNS, DHCP, NTP, PPPoE, STUN, TFTP, etc.
- Powerful digital signal processing (DSP) to ensure superb audio quality.
- Supports various codecs including G.711 (a-law and u-law), G.723.1 (5.3K/6.3K), and G.729A/B
- Supports out-of-band DTMF via RTP (RFC2833) or SIP INFO.
- Supports Caller ID/Name display.
- Supports Call Hold, Call Waiting/Flash, Call Transfer, and Call Forward.
- Supports automated NAT traversal without manual manipulation of firewall/NAT
- Supports QoS
- Supports device configuration via built-in IVR or Web browser
- Supports firmware upgrade via FTP

Applications

- Link between an analog phone or doorbox and an IP-PBX
- Voice communication on analog phones between two networked locations (requires two **ATA-100's**)
- VoIP internet calling
- Internet enabled kiosks

Specifications

Power: 100-240V AC, 50-60 Hz 0.3A, power cord supplied
WAN Interface: 1xRJ45 100Base-T
LAN Interface: 1xRJ45 100Base-T
FXS Telephone Port: 1xRJ11
PSTN Port: 1xRJ11
LED: VoIP/PSTN, POWER (The POWER LED is green. The VoIP/PSTN LED is bicolor yellow/green.)
Dimensions: 118mm (W) x 74mm (D) x 28mm (H)
Shipping Weight: 0.45 kg (1 lb)
Temperature: 0°C to 40°C
Humidity: 10% to 95% (noncondensing)

**IF YOU HAVE A PROBLEM WITH THIS PRODUCT, PLEASE CONTACT:
CORTELCO TECHNICAL SUPPORT AT (800) 288-3132 EXTENSION 298**

FCC PART 14

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

Note: 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 or not 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 a 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 taking one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to 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.

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

Model: Analog Telephone Adaptor - 821121-ATA-PAK

The responsible party: Cortelco 1703 Sawyer Road, Corinth, MS 38834 Tel: (662) 287 5281

Glossary

- **ATA:** Analog Telephone Adapter. A device that acts as a bridge between an analog telephone and a network, making VoIP possible. ATA's have an RJ-11 jack for connection to the telephone or other analog device and an RJ-45 jack for connection to the network.
- **DHCP:** Dynamic Host Configuration Protocol. This is the set of rules by which a network server automatically assigns an IP Address to a Host. Additional details of the configuration, including Subnet Mask and Default Gateway are relayed to the host as well.
- **DNS Server:** A DNS (Domain Name System) server uses DHCP to automatically assign an IP Address to a Host.
- **Default Gateway:** A device that routes network traffic between different Subnets or networks. This is one of the pieces of information needed to manually set an IP Address.
- **Dynamic IP address:** An address supplied by a DNS Server using DHCP protocol. This type of address is assigned a Lease which can expire if the address is not used within the period of lease.
- **Ethernet:** Ethernet is the most commonly used LAN technology. An ethernet Local Area Network typically uses coaxial cable or twisted pair wires to achieve transmission speeds up to 10Mbps, 100Mbps or 1000Mbps.
- **FXO:** An FXO port acts like an analog trunk port. It receives talk battery and ring voltage, and provides on hook / off hook indication. It could have an analog phone line plugged into it, or a Viking product that is designed to be connected to a spare analog trunk port.
- **FXS:** An FXS port is like a station port on an analog phone system. It provides talk battery, dial tone and ring voltage. Analog telephone equipment like phones and fax machines can be plugged into an FXS port.
- **Hardware Address:** See MAC Address.
- **Host:** A computer or device connected to a network.
- **Internet:** A worldwide system of computer networks running on IP protocol which can be accessed by individual computers or networks.
- **IP:** Internet Protocol is the set of communications conventions that govern the way computers communicate on the networks and on the Internet.
- **IP Address:** This is the address that uniquely identifies a Host (computer or device) on a network.
- **LAN:** Local Area Network. A LAN is a network connecting computers and other devices within an office or building.

- **Lease:** The amount of time a DNS Server reserves an address it has assigned. If the address isn't used by the Host for a period of time, the lease can expire and the address can be assigned to another host.
- **MAC Address:** MAC stands for Media Access Control. A MAC address, also called a Hardware Address or Physical Address, is a unique address assigned to a device at the factory. It resides in the device's memory and is often printed on the outside of the device. It is used by Routers to send network traffic to the correct IP Address. Example 00-0B-82-12-0C-48
- **Network Administrator:** The person responsible for setting up and maintaining a network. The network administrator's job includes making sure that space is available on the file server, that the file server is backed up regularly, that new employees can access the network, troubleshooting network problems and other tasks.
- **Physical Address:** See MAC Address.
- **Router:** A device that forwards data from one network to another. In order to send information to the right location, routers look at IP Address, MAC Address and Subnet Mask.
- **SIP:** SIP (Session Initiation Protocol) is an IP telephony signaling protocol primarily used for VoIP calls but which can also be used for video or any media type. SIP establishes sessions using these technologies and deploys them over IP networks, enabling service providers to integrate basic IP telephony services with internet, email and chat services. SIP servers also support traditional telephony features like call forwarding.
- **Static IP Address:** A static IP Address has been assigned manually and is permanent until it is manually removed. It is not subject to the Lease limitations of a Dynamic IP Address assigned by the DNS Server.
- **Subnet Mask:** A type of address filter used by Routers to send data to the correct location. This is one of the pieces of information needed to manually set an IP Address.
- **VoIP Gateway:** This is a generic term that covers a variety of devices, all of which at some point act as digital-to-analog converters. The essential function of a VoIP gateway is to convert an analog voice signal to digital information so it can be sent out on a network, making VoIP possible. This conversion function is often built into other devices like routers or cable/DSL modems. If the gateway's only function is to convert digital to analog and vice versa, it is called an ATA.
- **WAN:** Wide Area Network. A WAN is a network comprising a large geographical area like a state or country. The largest WAN is the Internet.

Installation

1. Let your network administrator know that you would like to install the **ATA-100** and ask him to supply you with a static IP address. If this is not a possibility, the **ATA-100** can still be installed with a dynamic IP address, but a static address is preferred.
2. The **ATA-100** is manufactured by Cortelco with the model number 8211. Download the Cortelco 8211 manual, which is available at www.cortelco.com. Follow the instructions provided in the Cortelco 8211 manual. The information that follows expands on Cortelco's installation instructions.
3. If using a static IP address:
 - The Cortelco leaves the factory with a default static IP address of 192.168.1.100, and it is likely that this address is not in the same subnet as the static IP address you got from your network administrator. If this is the case, when you open your web browser to the default address, you will not reach the programming page. To work around this, follow the instructions to use DHCP to get a dynamic IP address, and write down the address as it is spoken in the handset of the phone by the Cortelco. Open your browser to this address, and add ":9999/" (the instructions show an example). When the login page appears, you will need to enter a user name and password (the default settings are in the instructions). When the programming page appears, mouse over "Network" on the left, about halfway down the page, then click on "Network Settings". At the top of the Network Settings page, by "IP Type" click on "Fixed IP". On the next line, in the box labeled "IP" enter the static IP address you got from your network administrator. Click on the "Submit" button at the bottom of the page. Then near the bottom on the left click on "Save Change" and when the "Save" button appears, click on it. The Cortelco reboots automatically; give it a minute or so. You have successfully assigned a static IP address to the Cortelco.
 - You can change any of the settings on the programming page by opening your browser to the IP address you just set. Just remember to save changes and wait for reboot.

4. If using DHCP to get a dynamic IP address:

- Follow the instructions to use DHCP to get a dynamic IP address and write down the address as it is spoken in the handset of the phone by the Cortelco. Should it ever become necessary to make programming changes or additions, this can be done by accessing the the unit via a web browser. Just type in the dynamic IP address (the instructions show an example). When the login page appears, you will need to enter a user name and password (the default settings are in the instructions). When finished, remember to save changes and wait for reboot.

5. See the Cortelco 8211 manual for a more complete description of the features and programming options available.

SIP Registration

If you are using the **ATA-100** in a VoIP application that involves calling numbers that are outside your LAN, or if you will be calling extensions on a server that is running SIP protocol, you will need to register the **ATA-100** as a SIP client. This involves setting up an account with a VoIP service provider and following the registration instructions they provide.

www.freeworlddialup.com (FWD) provides SIP registration at no charge. You can place free internet calls to other FWD users, or by dialing prefix numbers, to other users in cooperating networks. Connection to the PSTN (public switched telephone network) is available for a monthly fee.

Compatible Viking Products

Model	DOD#	Model	DOD#	Model	DOD#
ACA-1A	005	FAXJ-1000	261	LSD-2	262
ACD-10	085	K-1200/K-1205	182/183	LSR-1	230
AES-2000	202	K-1500-6A	352	PA-2A*	485
AES-2005	204	K-1500-E	220	PA-30*	489
C-1000B	168	K-1500-EHFA	220	PB-100	232
C-4000	164	K-1500P-D/ASH	355	PF-6A (6)	680
CPA-7B	455	K-1500P-W/ASH	355	PI-1*	490
CPC-1	442	K-1700-3/K-1705-3	157/159	RAD-1A	410
DNA-510	492	K-1900 SERIES	360	RAD-AMP	415
DVA-1003B (3)	125	K-1900-3	312	RC-2A	160
DVA-3003 (3)	127	K-202-DVA	305	RC-3	165
DVA-500A	115	K-2000-DVA	303	RG-10A	420
DVA-LPA	128	K-600D	475	SR-1	477
DVA-TNT	129	LC-8	225	TBB-1A	630
E-10A, 20B	210	LDB-1	406	TMS-2 (2)	062
1600A Series	215	LDB-2	408	TMS-6X (6)	065
E-30/E-35	212/178	LDB-3	409	TMS-12A (12)	070
E-40 Series	187	LLA-1	615	TR-1	705
E-50 Series	191	LLA-4	620	VR-1A	695
EV-1	135	LS-4X4	270	ZPI-4	499

* **Note:** Loud ring only- paging requires a **RAD-1A**.

(#) **Note:** # of required ports.

Product Support Line...715.386.8666

Fax Back Line...715.386.4345

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