audiotrix phone ADAPTER II

- Affordable
- Easy to use
- High quality voice communication
- Powerful open-ended applications development platform

Description

The Audiotrix® Phone Adapter II is a telecommunications device that connects a conventional telephone to a Local Area Network with access to an Intranet or the Internet to permit high quality full duplex network audio communications over an Intranet or the Internet.

Functionality

The APA II performs all required IP telephony tasks in one small standalone enclosure. The APA II digitizes the audio coming from the telephone and then compresses, packetizes and manages the flows of digital audio information to permit high quality full duplex audio communications over any TCP/IP network.

Multiple Calling Configurations

Although the most popular use of the Audiotrix® Phone Adapter II is in making calls from one APA to another over an IP connection, other calling configurations are also possible using the Internet and a conventional telephone line:

APA – APA - an APA calls another APA over IP

APA – PSTN - an APA makes a local call over the PSTN telephone network

APA – Gateway (APA) – PSTN - an APA calls up a distant gateway over IP and makes a local call over the PSTN

PSTN – Gateway (APA) – APA - a telephone on the PSTN calls up a local gateway which calls another APA

PSTN – Gateway (APA) – Gateway (APA) – PSTN - a telephone on the PSTN calls up a local gateway which calls a distant gateway over IP which makes a local call over the PSTN

PSTN Gateway

When a call originates from an APA II and the party to be contacted is not equipped with an APA II or a compatible IP telephony device, the call is automatically redirected to an Internet Telephony Gateway. The gateway allows the call to be terminated on a conventional telephone network (e.g. PSTN, ISDN, GSM, etc.).

Open Hardware Design

With its open hardware design, which includes both a powerful Digital Signal Processor and a 32-bit embedded x86 CPU, the APA II can accommodate just about any industry standard and audio compression algorithm. With its on-board flash memory, the APA II can be loaded with new software, even from the network, which ensures that it will be easy to upgrade. Future upgrades from Mediatrix will include support for the results of the initiatives to develop standards for IP telephony by the International Telecommunications Union (H.323/RTP) and by the Internet Engineering Task Force (SIP/RTP).

Future Expansion

The APA II has been designed to work with many future applications. It can be used as a:
- one-line Internet Telephony Gateway,
- digital Radio,
- small PBX,
- client for On-Demand & Push audio streaming (toll quality, wideband quality or hi-fidelity quality),
- multipoint audio conferencing client.
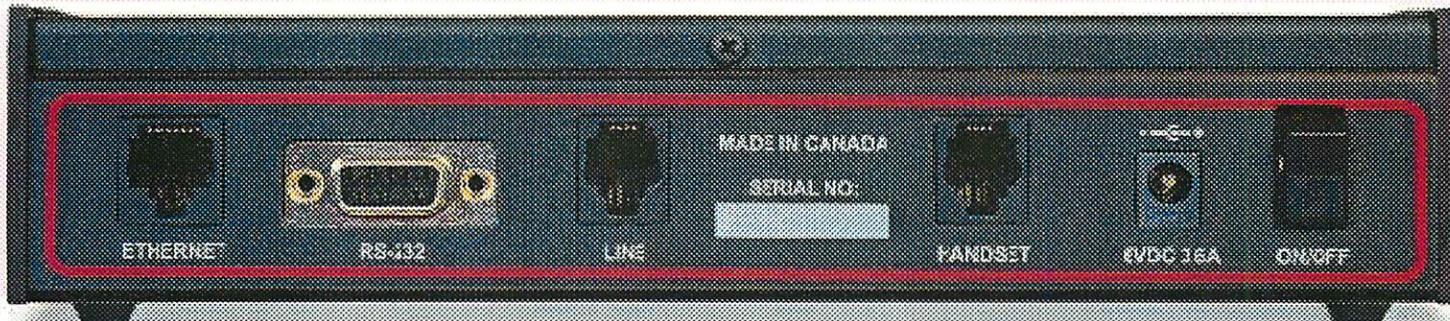
Back of the APA II

Display

- 2 lines / 20 characters per line backlit LCD for status information
- 3 status LEDs for indication of power, handset mode and off-hook status

Connectors

- One phone line connector
- One telephone connector with built-in ring generation for up to 5 telephones
- One 10-base-T Ethernet RJ-45 connector for LAN access
- One serial port for a VT100 display or software download via xmodem software or connecting a conventional modem for PPP dialup access to a TCP/IP network
- On/Off Power Switch

Power

- 6-volt DC supplied by electrical outlet power pack or by the network

Internal Architecture Details

- CPU: National Semiconductor ns486
- DSP: Texas Instruments TMS320C50
- RAM: 2 MBytes
- FLASH: 512 KBytes
- DSP RAM: 64 K x 16 bits
- CPU-DSP ASIC designed by Mediatrix
- NIC: Crystal 8920

Dimensions

- 8 3/8" x 8" x 1 3/4"
- 21 cm x 20 cm x 4 cm
- 2.4 lbs.
- 1.170 kg

Software Architecture Details

- DSP-based toll quality voice compression at 8 kilobits using Siprolab/UdeS ACELP 3.0 compression algorithm
- DSP-based DTMF detection & synthesis
- DSP-based echo cancellation
- Embedded Operating System with 32-bit Real-Time Multitasking Kernel
- IPv4 TCP/IP Stack
- IP information assigned via DHCP
- Standards-based Internet Telephony client application compiled with Visual C++ 5.0 and retargeted as a 32-bit x86 embedded application
- H.323v2 support in Q2/98
- Support for ITU-T G.723.1 and G.729/a compression algorithms available by Q2/98
- Immediate support of the SIP and RTP Internet Drafts including RTP DTMF and RTP FEC payload format
- Support for the following Internet standards: SNMP, Syslog, FTP, Telnet, HTTP by Q3/98

Future Enhancements

- Video conferencing
- USB interface
- Battery operation for lifeline support

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