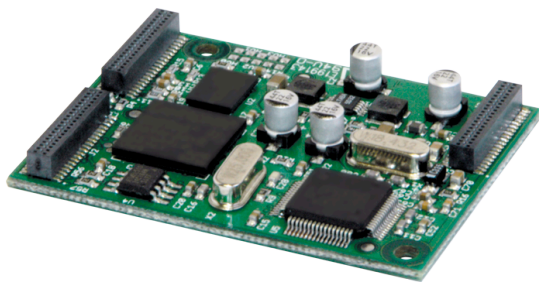




IP AUDIO MODULE

100

Universal audio module with network and serial interfaces



- **IP streaming and control functionality for OEM products**
- **Supports standards such as TCP/IP, RTP, SIP, Multicast**
- **Encodes and decodes MP3, PCM, G.711 audio**
- **2 Serial Interfaces with high speeds, 8 GPIOs**
- **Flash memory & USB interface for data storage**
- **User programmable application firmware**
- **Conformal coated, industrial version available**

The Barix IP AUDIO MODULE 100 is a versatile network audio module that encodes and decodes MP3, G.711 and PCM audio and allows manufacturers of traditional audio devices to add network capabilities to their products.

The module is a complete system consisting of CPU, DSP, memory and supporting circuits, providing network and high speed serial interfaces, general purpose IOs, analog and digital audio interfaces.

For OEM hardware integration a development specification with schematic, pin-out and layout guidelines is available. An IPAM Evaluation Kit, containing a carrier PCB and the IP audio module, is available.

Various software packages for standard applications are available for download from the Barix website, optimized for encoding, audio distribution, paging and intercom, including a full featured SIP client.

Custom software can easily be written, based on existing packages from Barix written in the ABCL language.

For low cost applications the Barix IP AUDIO MODULE 300 with reduced set of interfaces and AAC+ decoding capabilities is available.

Applications

- **Interfacing of digital or analog audio signals to TCP/IP, web and Internet**
- **Intercom / Paging / Alarm systems**
- **Broadcast equipment**
- **Audio monitoring / distribution / recording (Live audio transmission)**
- **IP subsystem for integration in paging systems, broadcast equipment, audio monitoring and distribution, alarm systems and digital message repeaters**

Technical Specifications

Electrical

5VDC (-20% / +10%), 1.6 Watt max.
3 x 40pin, high density, 0.8mm spacing, SMT connectors

Ethernet

Dual 10/100Mbps (auto) Ethernet (1x built-in PHY, 1x MII)
outputs for dual color Link/Activity LEDs

Audio Interfaces

Mic input 0.3 V_{PP} max (with Bias power),
Stereo input 3.2 V_{PP} max, both adjustable in sensitivity
Frequency response 20Hz ..20kHz (-3dB)*
Dynamic range 71 dB, SNR -71 dB, THD <0.05% (-3dBFS)*
Stereo output 3 V_{PP} max, volume, bass and treble adjustable
Frequency response 20Hz ..20kHz (-3dB)*
Dynamic range 91 dB, SNR -91 dB, THD <0.005%(-3dBFS)*
I²S bus (Inter-IC Sound), SIP DIF input and output

Audio formats

MP3, encoding/decoding up to 192/320kbps
PCM 16bit and 8bit (uLaw, aLaw / G.711) @ 8, 16, 22.05,
24, 32, 44.1, 48 kHz

Misc. Interfaces

Dual TTL Level UART 300..230'400 Baud asynchronous
Outputs for 2 dual color Ethernet status LEDs,
8 General Purpose I/Os, 1 input for reset button, 1-wire bus,
2 status LED outputs, USB1.1 interface for memory

CPU / Memory

Integrated CPU / MAC / IO controller with on-chip 256 KB
RAM, 2 KB EEprom for configuration, 2 MB Flash memory for
system, application, data and web server content

Operating System

Embedded, robust OS, IP stack with support for TCP/IP, UDP,
RTP, SIP, DHCP, Multicast/IGMP

User / Application Interfaces

Integrated web server (control/configuration),
browser based, serial or Ethernet control interface,
programmable software environment

Mechanical

Weight 14g, 2 mounting holes 2.7mm (for 2.5mm screws)

Dimensions (W x D x H)

53 x 39 x 8 mm (2.1 x 1.5 x 0.31 inch)

* depends on used codec, best results @48kHz PCM

** 0 - 70% relative humidity, non-condensing

Barix AG

Seefeldstrasse 303, CH-8008 Zürich, Switzerland
Phone +41 43 433 22 11 Fax +41 44 274 2849
info@barix.com

www.barix.com

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Environmental / Reliability

Operating Environment **

IPAM 100	IPAM 100 industrial
0 to +55°C / 32 to 131°F	-40 to +85°C / -40 to 185°F

Storage Conditions **

IPAM 100	IPAM 100 industrial
0 to +70°C / 32 to 158°F	-40 to +85°C / -40 to 185°F

MTBF calculation acc. to MIL217F at 40°C Operating temp.

IPAM 100	IPAM 100 industrial
Min. 304'000 h	Min. 720'000 h

Certifications/compliant with

RoHS compliant (lead free)

Ordering Information

IPAM 100 **2005.0038**
IPAM 100 industrial **2010.0074**
sold in 10, 200, 1000 quantities

IPAM Evaluation Kit **2005.9050**

Barix Products based on IPAM 100

Extreamer 500, 1000

Instreamer 100

Annunicom 100,155, 200, PS16

Annunicom 1000

For further information, product manual, application notes, available
software, related products etc, please visit <http://www.barix.com>

Barix Technology Inc.

533 Hayward Ave N, Suite 240, Oakdale, MN 55128, USA
Phone +1 866 815 0866 Espanol: +1 425 998 2574

