

# BARIX

## IP Audio Module 302

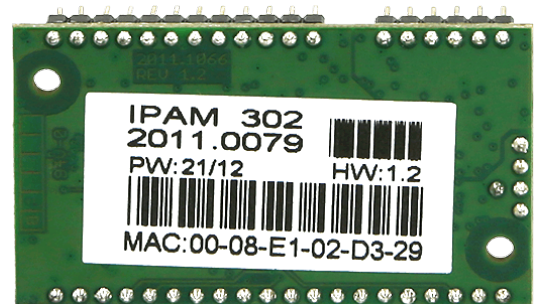
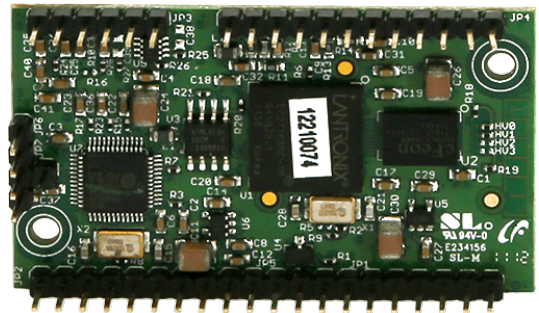
Audio encoding / decoding, one serial port, 4 digital I/O, 3.3V supply.

The IPAM 302 is a versatile network audio module which can be easily embedded into OEM products. The module encodes and decodes IP Audio streams from/to analog sources (stereo). Supporting a large range of protocols and codecs the module can be used for both VoIP and IP paging as well as high quality music distribution and IP music streaming applications. Control I/O (one serial port, four digital inputs/outputs) allow the use with UI and control interfaces.

Various software packages for standard applications are available for download from the Barix website, optimized for encoding, audio distribution, paging and intercom, including a rich featured SIP client. Custom software can easily be written, based on existing packages from Barix written in the ABCL language.

For hardware integration a development specification with schematic, pinout and suggestions for the layout of a custom carrier PCB is available. Barix Annunicom60 and Instreamer are based on this module.

The IPAM302 is pin compatible with the Barix IP AUDIO MODULE 300 (decoder only), adding the full duplex capability on the same form factor and power supply.



### Applications

- Commercial Audio Streaming Applications
- Digital Annunciator, Message Player, Message Repeater
- Generic, bidirectional full-duplex VoIP module for Paging and Intercom applications
- Source Encoder for IP Audio Distribution Applications
- Background Music and Music-on-Hold encoder for VoIP Applications
- Low latency IP Audio Encoder for multichannel applications

### Features

- G.711, G.722, PCM, MP3 Encoding
- AACplus, MP3, Ogg Vorbis, G.711, G.722, PCM linear Decoding
- Shoutcast/Icecast Source capability
- Audio Level Supervision with SNMP Trap generation
- IP Streaming via TCP, UDP, RTP, Multicast
- Microphone Input
- Line Level Input (Stereo)
- Line Level Output (Stereo)
- General Purpose I/O (4)
- one Serial Port (TTL Level)
- Supply Voltage (3.3V)
- USB Flash Memory Interface

# Technical Specifications

## Audio Interfaces

Mic input 115 mVpp max (with Bias power)  
Stereo input 2.2 Vpp max, both adjustable in sensitivity

- Frequency response 20 Hz ..20 kHz (-3 dB)\*
- Dynamic range 90 dB, SNR -88 dB, THD <0.03% (-3dBFS)\*
- Stereo output 2.39 Vpp max, impedance 16 Ohm, volume, bass and treble adjustable
- Frequency response 20 Hz ..21 kHz (-3dB)\*
- Dynamic range 94 dB, SNR -94 dB, THD <0.05% (-3 dBFS)\*
- I2S output (Inter-IC Sound)

## Audio Formats

- G.711 and G.722
- PCM 16 bit and 8 bit (uLaw, aLaw) @ 8..48Khz
- MP3 encoding/decoding up to 192/320 kbps
- OggVorbis
- AAC+ (decode only)

Note: AAC+ requires separate licensing by OEM

## Network Interface

- 10/100 Mbit Ethernet (Auto), TCP/IP, UDP, RTP, HTTP, DHCP, SNMP, AutoIP, SonicIP, IPzator

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

## Misc. Interfaces

- One TTL Level UART 300..230'400 Baud asynchronous
- Outputs for 2 dualcolor Ethernet status LEDs,
- 4 General Purpose I/Os, 1 input for reset button,
- 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 (application and web server content)

## Operating System

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

## Power requirements

- Single 3.3 VDC (+/- 5%), 1.6 Watt max.

## Weight, dimensions

- 15 g approx.
- 2.2" x 1.3" x 0.45" (56,1 mm x 33 mm x 11,44 mm)

---

## Environmental

### Operating Environment

0 to +60°C / 32 to 140°F

at 0 - 70% relative humidity, non-condensing

### Storage Conditions

0 to +85°C / 32 to 158°F

at 0 - 70% relative humidity, non-condensing

## Certifications

CE, RoHS, others in examination

## Ordering

### Information

2012.9129 IPAM 302

Sold in quantities of 10, 200 and 1000



For commercial related questions (distributors contacts, price list, business opportunities) please contact: [sales@barix.com](mailto:sales@barix.com)



For technical inquiries (problem reports, request for documentation, etc.) please contact: [support@barix.com](mailto:support@barix.com)

---

## Barix AG

Limmatstrasse 21, 8005 Zürich, Switzerland  
Phone: +41 434 33 22 11  
[www.barix.com](http://www.barix.com)



Direct Link