# BARIX
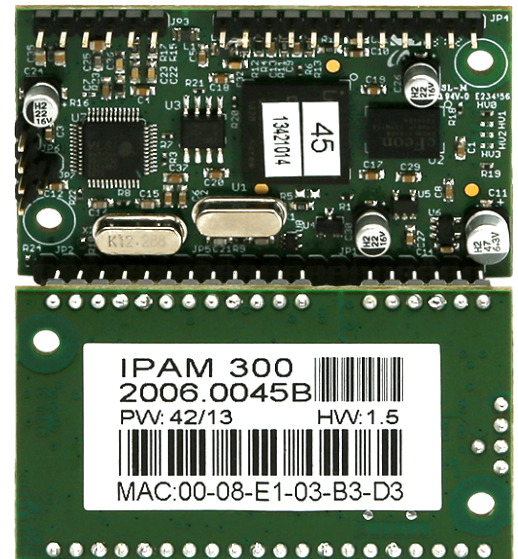
# IP Audio Module 300

Low-cost version with limited feature set, one serial port, digital I/O, decoding only, 3.3V supply.



The Barix IP AUDIO MODULE 300 is a versatile network audio decoder module that plays AAC+, MP3, Ogg Vorbis, WMA, G.711 and PCM audio. It is easily incorporated into applications to play files and playlists from USB memory, PC or web server (http), or to stream from sources like Shoutcast, Icecast (Internet radio) or RTP servers.

### Installation and configuration

Installing a device containing the IP AUDIO MODULE 300 is fast and simple: After power-up the module will either get an IP address automatically (BootP or DHCP), or will find one using the IPzator feature. The unique SonicIP feature then announces the IP address over the audio outputs! The module is easily configured and controlled by a standard web browser.

### Firmware options

A) Exstreamer Streaming Client firmware for commercial streaming applications with AAC+, WMA, Ogg Vorbis and MP3 support, automatic failover (up to 3 URL's / playing from USB memory) and monitoring capabilities. B) ABCL development kit: a simple to use, powerful Basic dialect allows for custom application development (please see the ABCL programmer's manual & technical doc.).

### Application development and integration

The IP AUDIO MODULE 300 supports various control and communication modes, it can easily be controlled by using one of the openly documented Ethernet-API (CGI, TCP, UDP) or serial interfaces. Software developers can write own audio applications with customized functionality, many programming examples available.

### Hardware integration and evaluation

For hardware integration a development specification with schematic, pinout and suggestions for the layout of a custom carrier PCB is available. For evaluation purposes, Barix recommends any Barix Exstreamer 1xx family device.

### Other modules

While the Barix IP AUDIO MODULE 300 decodes only, the Barix IP AUDIO MODULE 102 can decode as well as encode, providing analog as well as digital audio interfaces.

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### Applications

- Playing audio from PC, jukebox applications, flash memory
- Multiroom or multizone distributed audio systems
- Commercial audio streaming applications (airports, hotels, etc.)
- Realtime audio bridging over IP (when used with the Instreamer)
- Paging and announcement applications
- Instore audio distribution (realtime) for retail, restaurants, franchises

### Features

- Decodes AAC+, MP3, Ogg Vorbis, G.711 and PCM formats from network, local flash memory or local USB memory
- 10/100 Mbit Ethernet connection
- 4 GPIOs and serial TTL interface
- Controllable by web browser and API
- Fully programmable ABCL (Basic dialect) firmware versions and Standard FW available (OEM versions on request)

# Technical Specifications

### Audio Interfaces and Formats

- I2S bus (Inter-IC Sound),
- Analog Stereo out 1.5 Vpp, impedance 16 Ohm, volume, bass and treble adjustable
- Frequency response 20 Hz ..21 kHz (-3dB)* , SNR -94 dB, THD 0.07% (-3 dBFS)
- AAC+ (HE-AAC V2 incl SBR and PS, needs licensing by OEM)
- MP3 up to 320 kBit fixed & variable bit rates,
- Ogg Vorbis (floor 1), WMA, G.711 (uLaw / aLaw @ 8 to 48 kHz), PCM (16 bit @ 8 to 48 kHz)

### Network Interface

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

### Misc. Interfaces

- TTL Level UART 300..230'400 Baud
- 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

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

### CPU / Memory

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

### Operating System

- Embedded, robust OS, IP stack with Multicast support

### User / Application Interfaces

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

### Power requirements

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

### Weight, dimensions

- 14 g approx.
- 2.2" x 1.3" x 0.39" (56.1 mm x 33 mm x 10 mm)

### MTBF

- Min. 950 000h acc. to MIL217F at 40°C

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# Environmental

**Operating Environment**
0 to +60°C / 32 to 140°F

**Storage Conditions**
0 to +85°C / 32 to 158°F
both 0 - 70% relative humidity, non-condensing

# Certifications

CE, RoHS, others in examination

# Ordering Information

2012.9122 IPAM 300
Sold in quantities of 10, 200 and 1000

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

For technical inquiries (problem reports, request for documentation, etc.)
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