

Digital Audio Solutions

Microchip Offers a Wide Range of Audio Solutions

PIC32 enables high quality digital audio solutions through its best in class performance, peripherals and software libraries. Bringing audio to your application enhances its ability to meet the needs of your customers. Microchip provides dedicated development platforms and free audio software source code for streaming USB audio, MP3 decoding, and more to help you bring a cost effective design to market in the shortest time possible.

PIC32MX1/MX2 MCU for Audio



- 83 DMIPS of performance, MP3 decoding, SRC
- High-quality I²S digital stereo audio
- Fractional clock output for audio CODEC interface
- CTMU for improved Human Interfaces with capacitive buttons or slider control
- Tiny 5 × 5 mm 36-pin and 6 × 6 mm 44-pin devices with 0.5 mm pin pitch

Streaming Audio Solutions

PIC32 Bluetooth® Audio Development Kit (DV320032)



This kit delivers the hardware and software needed to develop digital audio docking applications with USB or Bluetooth connectivity. Preloaded demo code enables audio streaming via USB or Bluetooth.

Key features include:

- On board PIC32MX450F256L and PIM headers for future device compatibility
- Bluetooth HCI daughter board
- 192 kHz 24-bit AKM DAC daughter board
- USB Type A and Mini B interfaces
- High Quality 2" Color LCD
- Pre-loaded BT-A2DP audio demo
- Available Apple® iAP support



PIC32 Digital Audio Accessory Development Options for Apple Portable Devices



Digital Audio dock platforms for development of 16 or 24-bit audio playback, recording, and mixing. Free Demo code to manage USB digital audio flow, buffering, and clock-out via SPI or I²S Codec interface.

PIC32 USB Digital Audio Board (DM320014)



Showcases a 16/24-bit quality digital stereo audio development platform using the PIC32 microcontroller (MCU). It can be used for 16/24-bit stereo audio playback and recording with a sample rate of up to 48 kHz.

Powered via USB Host and includes Line-in, Line-out, headphone-out connections.

Audio Development Board for PIC32 (DM320011)



This board provides developers a flexible platform for 24-bit audio record and playback, USB Digital Audio, MP3 Decode and Sample Rate Conversion.

Key features include:

- On-board PIC32MX795F512
- 24-bit Wolfson CODEC
- USB Type A Host interface
- On-board Microphone
- Headphone out and Line in
- High quality 2" Color LCD
- Pre-loaded demo code
- PICtail™ Plus interface



MICROCHIP

Compressed Audio Decoding

MP3 Decode Library (SW320012)

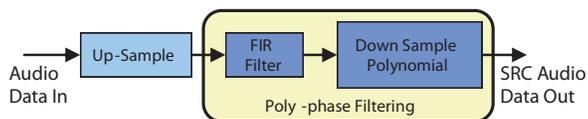
Complete PIC32 MP3 decoder solution. Available in object or C source code format.

Key features:

- Low Memory footprint and MIPS requirements:
 - 46 KB Flash & 29 KB RAM
 - 27 MIPS (at 128 kbps and 44.1 kHz)
- Support for Standard Bitrates including VBR
Sample Rates supported:
 - 32 kHz, 44.1 kHz, and 48 kHz

Sample Rate Conversion (SRC) Library

The library provides the ability to up convert the sampling rate of real-time 16-bit stereo audio data. At run-time, the input sampling rate can be selected between 32 kHz or 44.1 kHz, with a fixed output sample rate of 48 kHz.



For more information go to: www.microchip.com/SRC.

Target Applications



- Analog/digital audio docks
- Smart phone accessories
- USB & Bluetooth headset
- USB & Bluetooth speakers
- Karaoke
- Automotive
- Kiosks
- Apps for visually impaired
- Educational toys

PIC32 Audio Solutions Resources

Audio Functions	Resource Type	Title
MP3 Playback	App. Note & Source Code	AN1367:Porting the Helix MP3 Decoder onto Microchip's PIC32MX 32-bit MCUs
MP3 Playback	Library	Helix MP3 Decoder Library for PIC32
MP3 Playback	Binary Code	Compact MP3 decode - Binary - Source code also available
Record & Playback	App. Note	AN1422 - High-Quality Audio Applications Using the PIC32
Record & Playback	Source Code	PIC32 USB Digital Audio Accessory Board Demos
Record & Playback	App. Note & Source Code	AN643-Adaptive Differential Pulse Code Modulation
Record & Playback	Library	Audio Library for PIC32MX - supports ADPCM and WAV formats
Playback	App. Note & Source Code	AN 538: Using PWM to generate Analog Output
Playback	Library	Sample Rate Conversion for PIC32
Playback	Binary Code	PIC32 ADB MP3 Decoder Demo
Record	Source code	PIC32 ADB Record Playback Demo
Apple Docking	Binary Code	Apple Made for iPod Library supporting iAP and iAP2
Android™ Accessory	Library	Microchip's Accessory Framework for Android

For more information go to: www.microchip.com/audio or www.microchip.com/smartphone.



MICROCHIP

www.microchip.com/PIC32

Visit our web site for additional product information and to locate your local sales office.

Microchip Technology Inc. • 2355 W. Chandler Blvd. • Chandler, AZ 85224-6199

Microcontrollers • Digital Signal Controllers • Analog • Memory • Wireless