PIC32 Bluetooth® Solutions

Wireless Solutions for Data Transfer and Audio

Summary

PIC32 microcontrollers enable Bluetooth solutions ranging from simple wire replacement to customizable, high-performance audio applications. They offer best-in-class performance and a smart mix of peripherals to suit the varied needs of our customers. Microchip provides dedicated development platforms and software libraries to help you bring a cost-effective design to market in the shortest time possible.

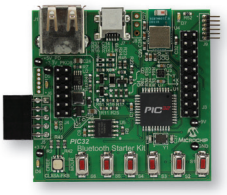
Broad Portfolio

The PIC32 family of microcontrollers offers a wide range of performance and peripherals to match your design challenges. Whether you are adding Bluetooth to a high-performance audio solution or to a graphics application, PIC32 microcontrollers provide a scalable solution to fit your needs.

- Up to 200 MHz/330 DMIPS, M-Class core with DSP instructions
- Up to 120 MHz/150 DMIPS, MIPS M4K core
- Fast interrupts and context switch
- SPI/I²S™ interfaces for audio processing and playback
- Connectivity peripherals including USB, Ethernet and CAN
- Dual-panel Flash with live update options
- 16 KB to 2 MB Flash
- 4 KB to 512 KB RAM for data and program execution
- Temperature range: –40 to 85°C; –40 to 105°C
- Pin counts from 28 to 144 with Peripheral Pin Select (PPS) for pin remapping of most digital I/O

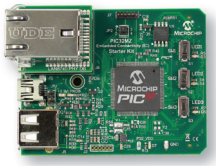
Solutions for Data Transfer

PIC32 Bluetooth Starter Kit (DM320018)



The easiest way to get started with Bluetooth, this board features an accelerometer for motion tracking, temperature sensor, LED and GPIO buttons for developing simple Serial Port Profile (SPP) applications. It is also expandable via a 20-pin header to accept audio codec daughter cards for simple streaming audio applications. This board, which is based on the low-cost PIC32MX270, is complete with USB and a PICkit™ On Board programmer.

PIC32MZ Embedded Connectivity Starter Kit (DM320006/7) and Multimedia Expansion Board II (DM320005-2)



When combined, the PIC32MZ Embedded Connectivity Starter Kit and the Multimedia Expansion Board II (MEBII) allow you to add Bluetooth support to your high-performance applications.

This platform features the 200 MHz, 2 MB Flash-based PIC32MZ processor and offers USB, Ethernet, Wi-Fi®, SDIO and Bluetooth support. It also includes a 4.3" WQVGA touch screen, an audio codec and a VGA camera.

Software Downloads for Bluetooth Serial Port Profile Applications

Microchip offers free downloads of the basic Bluetooth 2.1 EDR stack and Serial Port Profile (SPP) for PIC32MX and PIC32MZ devices. SPP multi-master mode with up to seven masters is now available.

For more information on the stack or to download a copy of the software, please visit www.microchip.com/pic32btspp.

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PIC32 MCUs: Enabling Differentiation in Audio Designs

With a robust library of both peripheral features and software, PIC32 microcontrollers give you the ability to differentiate your audio playback system from your competition's products. In addition to basic Bluetooth audio streaming, PIC32 microcontrollers offer:

- "Party mode" capability allowing up to seven phones to connect
- Support for Apple®, Android™ and Samsung® devices
- MP3, WMA and AAC decoder libraries
- Ability to support USB playback
- Additional functional libraries
  - Graphical EQ
  - Voice prompts
  - Display functions

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 PIC32MX450/470 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

The following Plug-In Modules (PIMs) are compatible with the PIC32 Bluetooth Audio Development Kit:

- PIC32MZ2048EF 144-pin PIM (MA320018)
- PIC32MZ Audio 144-pin PIM (MA320016)
- PIC32MX270F256 PIM (MA320013)
- PIC32MX270F512L PIM (MA320017)

The following daughter cards are compatible with the PIC32 Bluetooth Starter Kit and the PIC32 Bluetooth Audio Development Kit:

- PIC32 Audio Codec Daughter Card (AC320100)
- PIC32 Audio DAC Daughter Board (AC320032-2)

For more information on Microchip's PIC32 Bluetooth audio libraries, please visit www.microchip.com/pic32btsuites.

PIC32 Bluetooth Audio Libraries

Description	Apple®	Android™	Samsung®	Cost (USD)
Bluetooth® Serial Port Profile 2.1	Base Stack			FREE
Bluetooth Audio with SBC Decoder	✓	✓	✓	$299
Bluetooth Audio with AAC Decoder	✓	✓	✓	$499
Bluetooth Audio with SBC and USB Android/Samsung Audio	–	✓	✓	$299
Bluetooth Audio with SBC and USB Android/Samsung/Apple Audio with iAP MFi	✓	✓	✓	$299
Bluetooth Break-In Mode: Software Suite 3	✓	✓	✓	Contact Microchip Representative
MP3 Decode Library	✓	✓	✓	$199
WMA Decode Library	✓	✓	✓	$199

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www.microchip.com/pic32

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

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DS30010075B