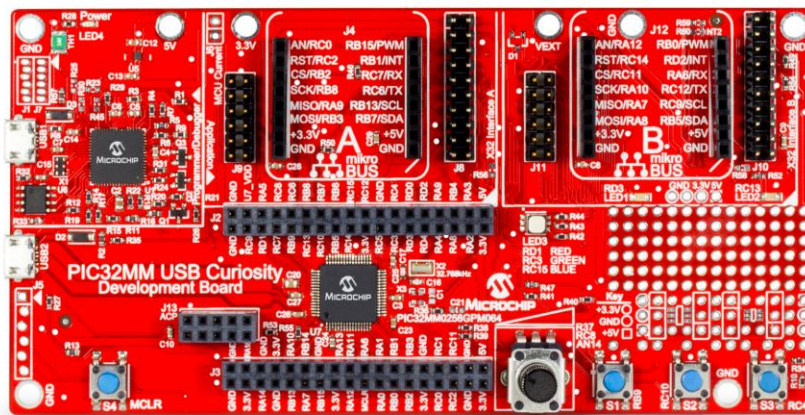# PIC32MM USB Curiosity Development Board

Part Number: DM320107

Overview:
The PIC32MM USB Curiosity Development Board features the new eXtreme Low Power (XLP), PIC32MM "GPM" family (PIC32MM0256GPM064) of low cost microcontrollers. This board is a simple and easy to use platform that facilitates quick PIC32MM GPM evaluation, experimentation and application prototyping. The board also includes an integrated programmer/debugger and offers seamless integration with Microchip's MPLAB® Code Configurator, MPLAB® Xpress Cloud-based IDE and MPLAB® X IDE for easy set-up and development.





**PIC32MM USB Curiosity Development Board**
(Part # DM320107)

Benefits:
The PIC32MM USB Curiosity Development Board features 2 MikroElektronika mikroBUS™ expansion interfaces that gives the user access to over 300+ add-on click boards™, USB micro B connector and two X32 Interfaces that facilitates access to the PIC32 Audio Codec Daughter Card making this an ideal evaluation board for Audio noise cancellation, USB headphones, Hi-Resolution audio, Bluetooth audio and other general purpose applications.

**Out of Box Demo: RGB color mixing**
To get started quickly, the PIC32MM Curiosity Development Board is pre-programmed with a RGB color mixing application. In the demo, the potentiometer can be used to adjust each color channel intensity, independently, while the push buttons are used to select the channel to be adjusted. Additionally, when connected to a Windows® system-based host computer via USB2, the board enumerates as a custom/vendor class USB device, which can interface with a custom demo application. For additional USB demos, please visit Microchip Libraries for Applications

USB Audio Headset Demo:
For customers who want to develop USB audio applications with the PIC32MM GPM family, the USB audio headset demo is a perfect starting point that leverages the X32 headers populated on the PIC32MM USB Curiosity Development Board.

Demo Highlights:

- Implements USB isochronous digital audio streaming to I2S conversion
- Works with the AC320100 audio codec daughter board to implement:

  o Full stereo 48kHz digital audio playback
  o Simultaneous microphone sampling and I2S streaming input capability
- Implements fine resolution fractional clock division for eliminating audio playback rate mismatch with the host
- Implements an HID audio control interface for digitally adjusting volume/pause/play, etc.
- The demo supports:
  o Apple*
  o Windows
  o Google/Android AOA Audio

**\*For Apple USB Authenticated applications contact applesupport@microchip.com**

**Key Features:**

  o Features the eXtreme low power PIC32MM0256GPM064 general purpose, 32-bit microcontroller

    ▪ Low Voltage Sleep Mode with RAM retention < 650nA
    ▪ Integrated crystal-less USB capability for increased connectivity
    ▪ 4-Channel Hardware DMA and a CRC Engine designed to offload the CPU and increase efficiency
  o Integrated PICkit™ On-Board (PKOB) circuit that enables programming/debugging capability
  o Functionality expansion support with 2 X MikroElektronika mikroBUS™ interfaces for click boards™

- Two X32 headers for audio I/O applications

  - Compatible with the PIC32 Audio Codec Daughter Card - AK4642EN (AC320100)
- Various user interface options

  - MCLR reset button + three general purpose push buttons
  - Red/Green/Blue (RGB) LED + two general purpose indicator LEDs
  - Analog potentiometer
- Female headers for access to microcontroller I/O pins
- Small prototyping area for the user to add custom components
- Full compatibility with MPLAB® Code Configurator, MPLAB® Xpress Cloud-based IDE and MPLAB®X IDE