

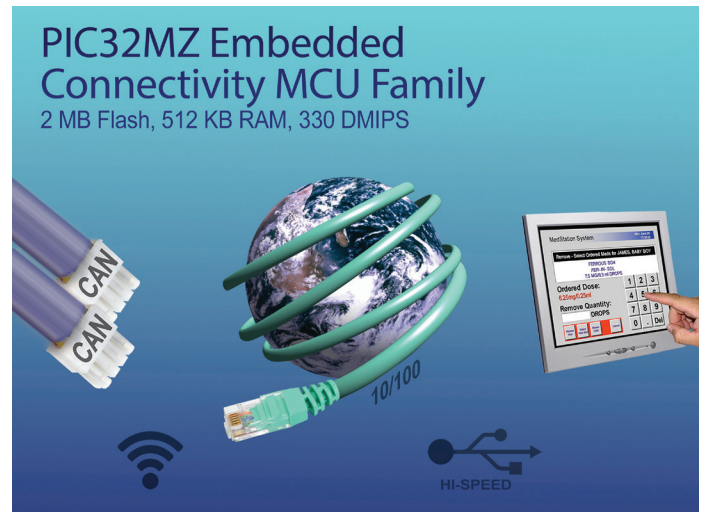
PIC32 Embedded Connectivity Solutions

Class-Leading Wide-Range Solutions for 32-bit Designs

Summary

PIC32 microcontrollers offer a combination of best-in-class performance, larger memory configuration and connectivity peripherals to meet the growing needs of the embedded connectivity markets. These MCUs provide up to 200 MHz or 330 DMIPs, up to 2 MB Flash/512 KB RAM and connectivity peripherals including Hi-Speed USB, Ethernet and CAN bus. For wireless applications, a PIC32 MCU can be paired up with our broad portfolio of wireless connectivity solutions such as Bluetooth®, Embedded Wi-Fi® and embedded wireless which includes the MiWi™ wireless networking protocol, ZigBee®, IEEE 802.15.4™ and Sub-GHz technologies.

Microchip's PIC32MX5/6/7 and PIC32MZ product families offer 10/100 Mbps Ethernet MAC with industry-standard MII and RMII PHY interface, full-speed and Hi-Speed USB Device/Host/OTG and CAN 2.0b with dedicated DMA for direct access to the entire system RAM. These solutions enable easy network connectivity for cost-sensitive embedded designs by providing free and robust TCP/IP, Bluetooth SPP and USB stacks optimized for PIC32 MCUs.

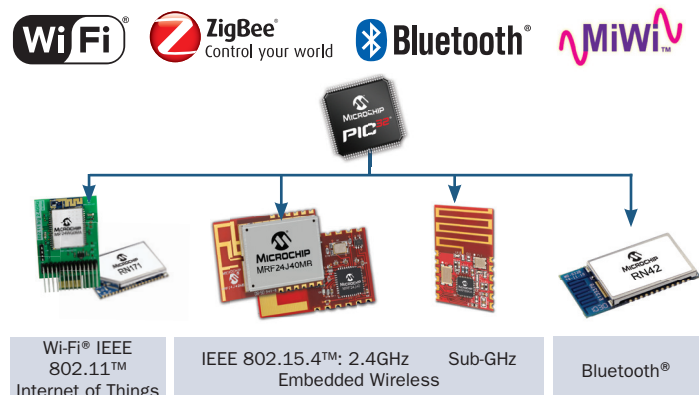


PIC32 Embedded Connectivity MCUs with USB, Ethernet and CAN

PIC32MX5/6/7 Family	PIC32MZ Family
- Up to 80 MHz or 105 DMIPs, MIPS® M4K® Core - Up to 512 KB Flash, up to 128 KB RAM - Full-speed USB Device, Host and OTG modes with dedicated DMA channels 10/100 Ethernet MAC with MII/RMII interface and up to two CAN 2.0b ports - Up to six UARTs, five I²C™, four SPI ports, two I²S™ and capacitive touch interface - Up to eight general purpose DMA channels and six channels of dedicated DMA	200 MHz or 330 DMIPs, MIPS32 M-Class Core - Up to 2 MB Flash, Up to 512 KB RAM - Floating Point Unit (FPU) for fast single- and double-precision math - High-speed USB 2.0 Device, Host and OTG modes with dedicated DMA channels 10/100 Ethernet MAC with MII/RMII interface and up to two CAN 2.0b ports - Up to six UARTs, five I²C, six SPI/I²S ports - Up to eight general purpose DMA channels and up to 18 channels of dedicated DMA - External Bus Interface (EBI), Serial Quad Interface (SQI) and Crypto Engine

PIC32 and Embedded Wireless Solutions

Wireless communication technologies have been commonplace in homes and industry for many years. Recent trends in applications supporting cloud computing, the Internet of Things (IoT) and Smart Grid initiatives have created a renewed demand for standardized, low-power wireless technology in metering, consumer, home, business and industrial automation markets. As a result, Microchip offers many Bluetooth, Wi-Fi, IEEE 802.11™, IEEE 802.15.4 and ZigBee standard solutions, along with our proprietary MiWi wireless networking protocol for both 2.4 GHz and Sub-GHz, that can be paired up with the PIC32 to enable quick, flexible and cost-effective solutions.



Embedded Connectivity Development Tools

Part Number	Development Tool
Ethernet	
DM320004-2	PIC32 Ethernet Starter Kit II
DM320006	PIC32MZ Embedded Connectivity Starter Kit
DM320007	PIC32MZ with FPU Embedded Connectivity Starter Kit
DM320006-C	PIC32MZ Embedded Connectivity Starter Kit with Crypto Engine
DM320007-C	PIC32MZ with FPU Embedded Connectivity Starter Kit with Crypto Engine
AC320004-3	PIC32 LAN8720A PHY Daughter Board
USB	
DM320003-2	PIC32 USB Starter Kit II
DM320003-3	PIC32 USB Starter Kit III
CAN	
DM320100	PIC32MX1/2/5 Starter Kit
MA320015/03 AC164130-2	PIC32 CAN/USB Plug-In Module and CAN/LIN PICtail™ Plus Daughter Board

Wireless Development Tools

Part Number	Development Tool
Bluetooth®	
DM320018	PIC32 Bluetooth Starter Kit
DV320032	PIC32 Bluetooth Audio Development Kit
DM320007 DM320005-2	PIC32MZ with FPU Embedded Connectivity Starter Kit and Multimedia Expansion Board II
RN-42-EK	RN42 Bluetooth Evaluation Kit
RN-4020-EK	RN4020 Bluetooth Low Energy Evaluation Kit
Internet of Things (IoT)	
RN-171-EK	RN171 Wi-Fi® Evaluation Kit
DV102412	MRF24WG0MA Wi-Fi Demonstration Board
DM182020	WCM Development Kit 1
AC320011	Machine-to-Machine (M2M) PICtail™ Daughter Board

Embedded Connectivity Software Stacks and Libraries

Stack/Library	Description
Free USB Stack/Library	Microchip provides free source code for USB software stacks and class drivers to shorten development time for USB applications, including thumb drive bootloaders and printer support. Supported classes include audio, CDC, HID, MSD, printer and custom.
Free TCP/IP Stack	Microchip offers a free full TCP/IP software stack optimized for the PIC32 family of MCUs which operates seamlessly with the ENC28J60/ENC624J600 stand-alone Ethernet controllers, the MRF24WG0M and MRF24WB0M Wi-Fi® modules, as well as built-in MAC modules. It supports both IPv4 and/or IPv6 with multiple interfaces (eg . Ethernet and Wi-Fi) in the MPLAB® Harmony environment for the 32-bit device family. Microchip's MPLAB Harmony TCP/IP stack supports the PIC32MX6/7 and PIC32MZ 32-bit MCU family for both Ethernet and Wi-Fi.
Free CAN Driver and CAN Peripheral Library	The CAN Static Driver provides a high-level interface to manage the CAN module on the Microchip family of 32-bit MCUs. It features API to initialize the CAN module and baud rate in addition to simple transmit and receive functionality. The CAN Peripheral Library provides a low-level abstraction of the CAN module on Microchip 32-bit MCUs with a convenient C language interface.
Free PIC32 Bluetooth® Serial Port Profile (SPP) Stack	The PIC32 Bluetooth Stack Library is provided in binary form and consists of a large number of routines that enable the interface of a PIC32 MCU-based system to a Bluetooth radio via a Hardware Communication Interface (HCI) controller and a UART port. The communication is enabled by a simple secured pairing and data is transmitted through the Bluetooth Serial Port Profile.

For more information, visit www.microchip.com/harmony.

IEEE 802.15.4/Sub-GHz Supported Protocol

Protocol	Description
MiWi™ Development Environment	Designed to provide a smaller-footprint, lower-cost, communication protocol stack for peer-to-peer and mesh wireless networks, the MiWi Development Environment is for closed or private wireless networks at either 2.4 GHz or Sub-GHz operation frequency. For more information go to www.microchip.com/miwi .
ZigBee®	Microchip offers ZigBee-certified platforms for ZigBee PRO and ZigBee RF4CE protocol stacks ensuring interoperability and reliable communication. For more information go to www.microchip.com/zigbee .



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

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