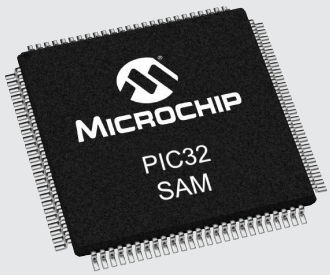
Industry Leading 32-bit Embedded Connectivity MCUs

Summary

PIC32 and SAM 32-bit microcontrollers offer a combination of best-in-class connectivity peripherals, performance and large memory configuration to meet the growing needs of the embedded connectivity markets. These MCUs provide up to 300 MHz/600 DMIPS performance, up to 2 MB live update Flash and 640 KB SRAM with integrated 32 MB or 128 MB externally addressable DDR2 memory options. The connectivity peripherals include Hi-Speed USB, Ethernet MAC supporting IEEE 1588 Standard, dual CAN-FD and MediaLB® bus. They also come with integrated hardware security and Arm® TrustZone® Technology to tackle security vulnerabilities.



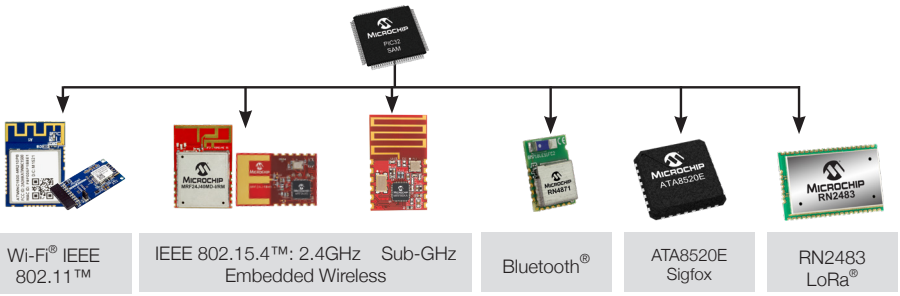
Featured 32-bit Embedded Connectivity MCU Families

Family	Performance (DMIPS)	FPU	Flash (KB)	RAM (KB)	USB	10/100 Ethernet MAC	CAN	MediaLB	Crypto	Arm® TrustZone®	Pin Options
SAM C	45		up to 256	up to 32			Dual CAN 2.0A/B and CAN-FD				32–100
SAM D	45		up to 256	up to 32	FS D and H						14–64
SAM L	45		up to 256	up to 40	FS D and H				Yes	✓	24–100
PIC32MX5/6/7	105		Up to 512	up to 128	FS D and H	Yes	Dual CAN 2.0B				64–124
PIC32MX2	116		up to 512	up to 64	FS D and H						28–100
SAM 4E	150	Yes	up to 1024	up to 128	FS D	Yes (IEEE 1588)	Dual CAN 2.0A/B				100–144
SAM G	150	Yes	up to 512	up to 176	FS D and H						49–64
PIC32MX4	150		up to 512	up to 128	FS D and H						64–124
SAM D5/E5	180	Yes	up to 1024	up to 256	FS D and H	Yes (IEEE 1588)	Dual CAN 2.0A/B and CAN-FD		Yes		64–128
PIC32MK	198	Yes	up to 1024	up to 256	Dual FS D and H		Four CAN 2.0B				64–100
PIC32MZ DA	330		up to 2048	up to 640*	HS D and H	Yes	Dual CAN 2.0B		Yes		64–144
PIC32MZ EF	415	Yes	up to 2048	up to 512	HS D and H	Yes	Dual CAN 2.0B		Yes		64–144
SAMS70/E70	600	Yes	up to 2048	up to 384	HS D and H	Yes (IEEE 1588)	Dual CAN-FD		Yes		64–144
SAMV7x	600	Yes	up to 2048	up to 384	HS D and H	Yes (IEEE 1588)	Dual CAN-FD	Yes	Yes		64–144

* PIC32MZ DA MCUs provide integrated 32 MB or 128 MB externally addressable DDR2 Memory options

32-bit MCUs and Embedded Wireless Solutions

Wireless communication technologies have been commonplace in homes and industry for many years. Recent trends in wireless applications 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 LoRa, Sigfox, Bluetooth®, embedded Wi-Fi® and embedded wireless which includes IEEE 802.15.4 standard solutions that can be paired up with the 32-bit MCUs to enable quick, flexible and cost-effective solutions.



Embedded Connectivity Development Tools

Part Number	Development Tool
Ethernet	
DM320004-2	PIC32 Ethernet Starter Kit II
DM320007-C	PIC32MZ with FPU Embedded Connectivity Starter Kit with Crypto Engine
ATSAME70-XPLD	SAME70 Xplained Evaluation Kit
DM320010	PIC32MZ Embedded Graphics with Stacked DRAM (DA) Starter Kit
DM320008-C	PIC32MZ Embedded Graphics with External DRAM (DA) Starter Kit (Crypto)
ATSAME54-XPRO	SAME54 Xplained Pro Evaluation Kit
ATSAMV71-XULT	SAMV71 Xplained Ultra Evaluation Kit
	SAMV71 Ethernet Audio Video Bridge (AVB) Demo*
USB	
DM320003-3	PIC32 USB Starter Kit III
DM320103	Curiosity PIC32MX Development Board
ATSAML21-XPRO-B	SAML21 Xplained Pro Evaluation Kit
ATSAMG55-XPRO	SAMG55 Xplained Pro Evaluation Kit
ATSAMD21-XPRO	SAMD21 Xplained Pro Evaluation Kit
ATSAML22-XPRO-B	SAML22 Xplained Pro Evaluation Kit
CAN	
DM320100	PIC32MX1/2/5 Starter Kit
DM320106	PIC32MK GP Development Kit
ATSAMC21N-XPRO	SAMC21N Xplained Pro Evaluation Kit
	SAMC21 CAN and Touch Demo*

Note: *For availability and/or getting started information, please contact your local Microchip sales office

Wireless Development Tools

Part Number	Development Tool
Bluetooth®, Wi-Fi® and IoT	
BM-70-PICTAIL	Evaluation Kit for the BM70 Bluetooth 4.2 Low Energy Module
DM320104	Curiosity PIC32MZ Development Board
DM320105	PIC32MX274 XLP Starter Kit
DM320104-BNDL	Amazon FreeRTOS Curiosity PIC32MZ EF Bundle
ATWINC1500-XSTK	WINC1500 XPro Starter Kit
ATWILC1000-SD	ATWILC1000-SD Evaluation Kit
RN-2483-PICTAIL	RN2483 LoRa Technology PICtail™/PICtail Plus Daughter Board
ATA8520-EK6-E	Sigfox Extension Board (EU 868 MHz)
ATULPC-Demo	SAML21 Ultra-Low-Power (ULP) Connected Demo
	SAML22 Secure IoT Node Thermostat Demo*
	SAMV71 Wi-Fi Camera Demo*
	SAML11 Secure LoRa IoT Node Demo*
	SAML22 Connected Wearable ECG Demo*
AT88CKECC-AWS-XSTK-B	Zero Touch Provisioning kit for AWS IoT
RN-2903-PICTAIL	RN2903 LoRa® Technology PICtail™/ PICtail Plus Daughter Board

32-bit MCU Embedded Connectivity Software Support

USB	USB Host, Device, with class drivers (Audio, CDC, HID, MSD, Hub, Vendor)
CAN	CAN 2.0 and CAN FD drivers
Ethernet and Wi-Fi®	TCP/IP Stack with SSL; Wi-Fi Software Library with WINC1500 and WILC1000, WILC3000 and WINC3400 and MRF24WN support
Bluetooth®	Bluetooth SPP Stack ; PIC32 XLP and RN4871 Bluetooth Low Energy Demo; BTLC1000 Bluetooth Low Energy Stack and Demo
IoT, Security and Cloud	CryptoAuthentication™ library; LoRaWAN™; Sigfox; PolarSSL/mbed TLS; wolfSSL/TLS Library; wolfMQTT; Proximetry Cloud; AWS SDK; Trustonic Kinibi-M; SEGGER emCrypt Crypto library
IEEE 802.15.4	Lightweight mesh software stack (lwMesh); MiWi™ Protocol support 6LoWPAN

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