

World-Class 32-bit Microcontrollers

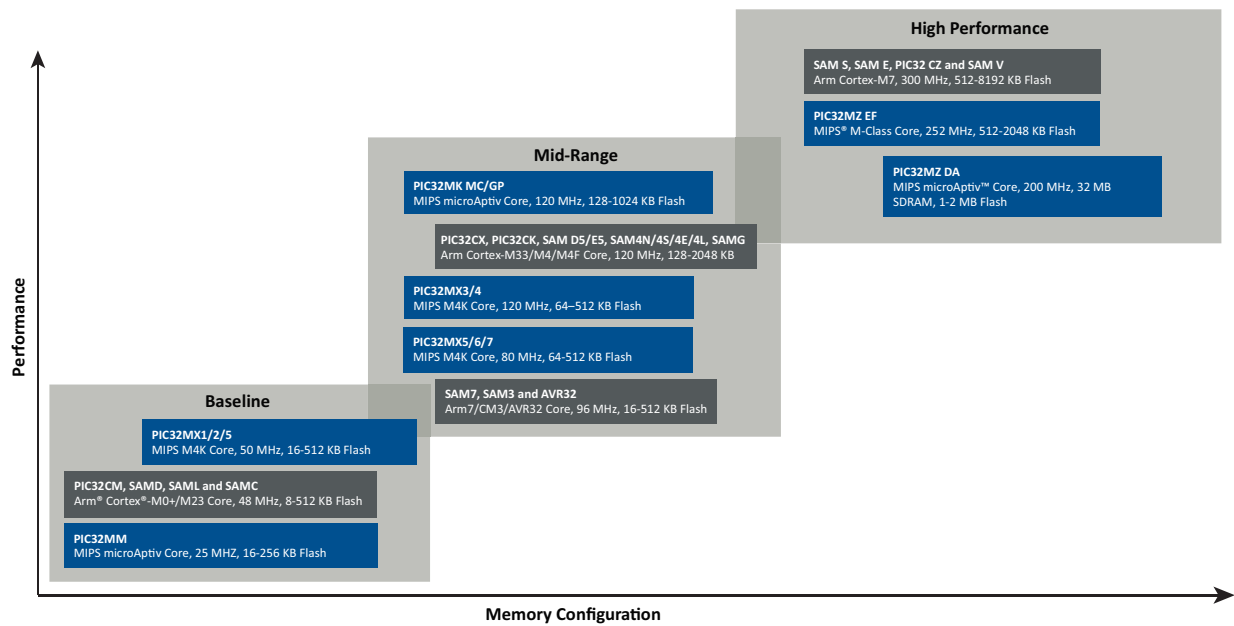
Broad Portfolio With Smart Peripheral Mix
and Multiple Performance Options





Building on our heritage of world-leading 8-bit and 16-bit microcontrollers (MCUs), devices in our 32-bit MCU portfolio provide ultra-low power consumption, high performance and functional capabilities to meet the requirements of a vast array of embedded designs. They are excellent choices for secure Internet of Things (IoT), 5G, data center, sustainability, E-Mobility and Advanced Driver Assistance Systems (ADAS) applications.

Accelerate your development with our comprehensive and easy-to-use ecosystem of hardware and software tools which include the MPLAB® X Integrated Development Environment (IDE) and MPLAB Harmony embedded software development framework.





Most Comprehensive 32-bit MCU Solutions for a Wide Range of Applications

Device Family	Digital Audio/ Bluetooth®	Graphics/ Segmented Display	Connectivity	Functional Safety	Touch	IoT Nodes/ Gateways	Wearables/ Sensor Hubs	Appliances	Industrial Automation	Automotive	Motor Control	Metering	Connected Lighting
PIC32CM			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAM D			✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
SAM L		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
SAM C			✓	✓	✓			✓	✓	✓	✓	✓	
PIC32CX			✓	✓	✓	✓	✓	✓	✓	✓	✓		
SAM D5/E5			✓		✓	✓	✓	✓	✓	✓	✓		
SAM 4S			✓			✓	✓		✓			✓	
SAM 4L		✓	✓		✓	✓	✓	✓				✓	
SAM 4N			✓						✓			✓	
SAM 4E			✓			✓			✓			✓	
SAM G			✓			✓	✓		✓				
SAM S70/E70			✓			✓			✓		✓		
SAM V7x			✓						✓	✓	✓		
PIC32MM			✓			✓	✓	✓	✓		✓		
PIC32MX1/2/5	✓	✓	✓	✓		✓	✓	✓	✓	✓			
PIC32MX3/4	✓	✓	✓	✓				✓	✓	✓			
PIC32MX5/6/7		✓	✓	✓		✓		✓	✓	✓			✓
PIC32MK	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	
PIC32MZEF	✓	✓	✓	✓		✓		✓	✓	✓		✓	✓
PIC32CZ CA	✓		✓	✓	✓	✓		✓	✓	✓		✓	
PIC32CK SG	✓		✓	✓	✓	✓	✓			✓	✓		
PIC32MZDA	✓	✓	✓	✓				✓		✓			



Features and Solutions

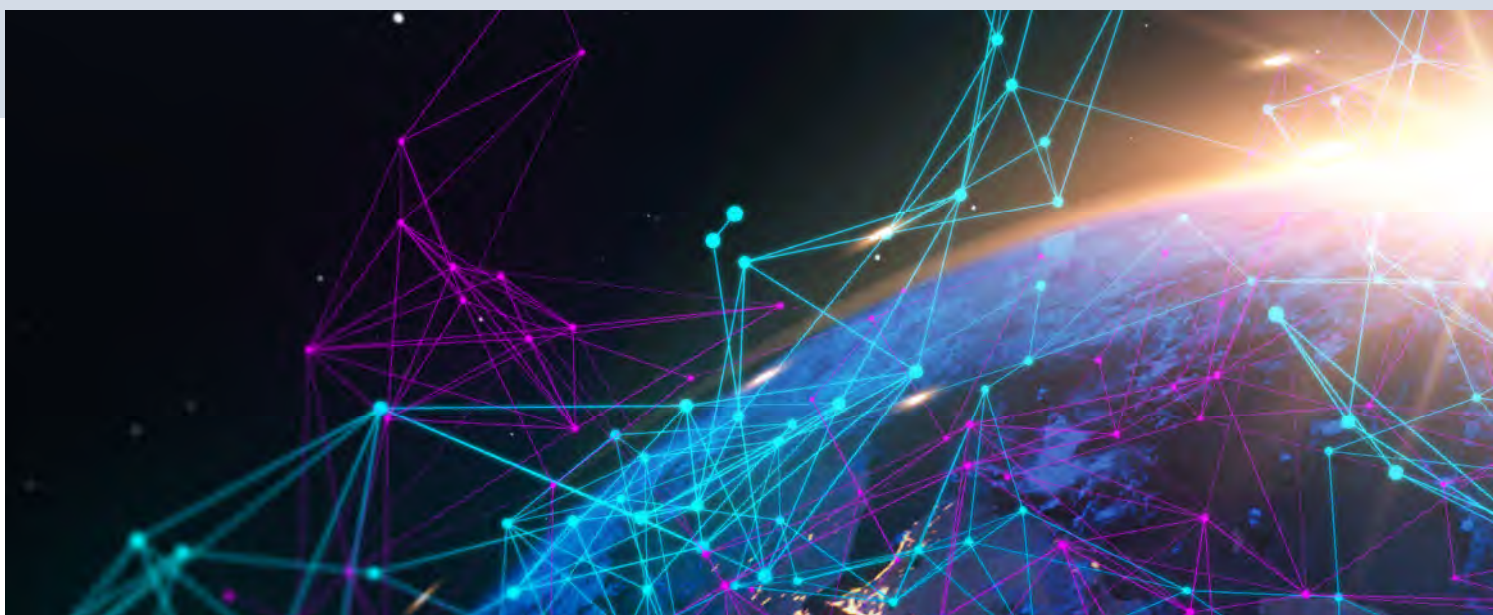
- Ultra-low power of < 25 μ A/MHz in active mode and 100 nA in sleep mode
- High performance of up to 600 DMIPS with double-precision hardware floating point and up to 8 MB dual-panel Flash and 1 MB of SRAM
- Enhanced Peripheral Touch Controller (PTC), a dedicated hardware peripheral with parallel acquisition and superior water tolerance and noise immunity that enables the creation of robust capacitive touch solutions
- Functional safety portfolio supporting IEC 60730 (Class B), IEC 61508 (SIL) and ISO 26262 (ASIL) safety standards
- Error Correction Code (ECC) support with fault injection for Flash, data Flash and SRAM
- Memory Built-In Self-Test (MBIST) testing of SRAM
- Chip-level security and Arm® TrustZone® technology
- System-in-Package (SiP) options with secure elements
- SleepWalking allows peripherals to perform a desired task while the Central Processing Unit (CPU) is asleep
- Event system enables inter-peripheral communication and efficiently offloads the CPU
- 2D Graphics Processing Unit (GPU) and three-layer graphics controller with up to 24-bit color
- picoPower® and eXtreme Low Power (XLP) technologies
- Low-Cost Controllerless Graphics (LCCG) solutions
- Integrated Advanced Encryption Standard (AES) and Public Key Cryptography Controller (PUKCC)
- Security: Secure Boot, Public Key and Private Key Cryptographic Acceleration, Secure Key Storage, and embedded Hardware Security Module (HSM)
- Motor control Pulse-Width Modulation (PWM) and motor encoder interface
- Dual-panel Flash options for live updates
- High-performance Analog-to-Digital Converter (ADC) with up to 25.45 Msps in 12-bit mode or 33.79 Msps in 8-bit mode



Baseline MCUs: PIC32CM, SAM D, SAM L and SAM C Series

Key Features:

- Arm Cortex®-M0+ or M23 core
- Enhanced security
 - Arm TrustZone technology
 - TRNG, AES, SHA and CRC
 - User tamper detection
 - Secure boot option
- Event system
- Sleepwalking peripherals
- SERCOM
- 10-bit/12-bit DAC
- Enhanced PTC
- Analog comparator
- Supports crystal-less USB operation
- CCL
- Nested vector interrupt
- I²S, ISO 7816, CAN FD USB
- WDT, POR, BOR, RTC, PAC and CFD
- AEC-Q100 Automotive qualified
- 5V operation
- Functional safety support



Feature	PIC32CM LX	PIC32CM JH	PIC32CM MC	SAM D	SAM L	SAM C20/21
Frequency	48 MHz	48 MHz	48 MHz	48 MHz	48/32 MHz	48 MHz
Flash Memory	256–512 KB Flash	128–512 KB Flash with ECC	64–128 KB Flash	8–256 KB Flash	16–256 KB Flash	32–256 KB Flash
SRAM	32–64 KB SRAM	16–64 KB SRAM with ECC	8–16 KB SRAM	2–32 KB SRAM	4–32 KB SRAM	4–32 KB SRAM
Pin Count	48, 64, 100 pins	32, 48, 64, 100 pins	32, 48 pins	14, 20, 24, 32, 48, 64 pins	24, 32, 48, 64, 100 pins	32, 48, 64, 100 pins
System Flexibility	16-channel DMA, CCL, intelligent low-power peripheral event system	12-channel DMA, CCL, intelligent low-power peripheral event system, 5V operation	Up to 12-channel DMA, CCL, intelligent low-power peripheral event system, 5V operation	Up to 12-channel DMA intelligent low-power peripheral event system	Up to 16-channel DMA, CCL, intelligent low-power peripheral event system	Up to 12 channel DMA, CCL, intelligent low-power peripheral event system, 5V operation
Timing and Measurements	3 × TC for control	3 × TC for control, PDEC, DIVAS	5 × TC for control, PDEC	4 × TC for control	3 × TC for control	3 × TC for control, DIVAS
Integrated Analog	12-bit ADC, 1 Msps, 3 × op amps	12-bit ADC, 1 Msps DIVAS	16-bit SDADC and two 12-bit ADCs, 1 Msps	12-bit ADC, 350 ksps	12-bit ADC, 1 Msps 3 × op amps	16-bit SDADC and two 12-bit ADCs, 1 Msps DIVAS
Communication	Full-Speed USB host and device, UART, I2C, SPI, I ² S™	CAN FD, UART, I ² C, SPI	UART, I ² C, SPI	Full-Speed USB host and device, UART, I2C, SPI, I ² C	Full-Speed USB host and device, UART, I ² C, SPI	CAN FD, UART, I ² C, SPI
User Interface	PTC	PTC with Driven Shield		PTC	PTC, SLCD controller	PTC
Security and Automotive	Joint Interpretation Library (JIL) high-rated Trust Platform ATECC608 secure element with Arm® TrustZone® technology, AES, SHA, TRNG, secure boot, tamper detection	Automotive qualified, secure boot	Automotive qualified	Automotive qualified	Chip-level security, Arm TrustZone technology, securely pre-provisioned, Kinibi-M™ support	



- **PIC32CM Lx:** This family of MCUs provides robust security, ultra-low power consumption, enhanced touch and smart analog. These easy-to-use MCUs run at 48 MHz and are available with large memory options and peripherals that include an enhanced PTC, Full Speed (FS) USB, op amps, one ADC and two DACs.
- **PIC32CM JH:** These 5V MCUs are excellent options for appliance, ASIL-B and industrial applications. This family features 12-bit ADCs, hardware DIVAS, a PTC with Driven Shield and high-end timers/counters.
- **PIC32CM MC:** These devices combine the performance and energy efficiency of an Arm Cortex-M0+ based MCU with an optimized architecture and powerful peripherals. They are an excellent choice for motor control, home appliance, industrial control and other 5V applications.
- **SAM D:** This series of flexible and easy-to-use MCUs offers large memory options, low power consumption and peripherals that include a PTC. They also include Full-Speed USB, DMA and a timer/counter for control.
- **SAM L:** This ultra-low-power MCU family includes an enhanced PTC, SLCD controller, 12-bit ADC, 12-bit DAC, op amps, Full-Speed USB and security features. These MCUs run at up to 48 MHz and come in 24-, 32-, 48-, 64- and 100-pin packages.
- **SAM C20/21:** This family of 5V MCUs targets appliance and industrial applications. They feature 12-bit ADCs, hardware DIVAS, a PTC and high-end timers/counters. The SAM C21 also includes a 16-bit Delta-Sigma ADC, CAN FD and CAN 2.0A/B.



Mid-Range MCUs: PIC32CX, PIC32CK, SAM D5/E5, SAM 4, SAM G and SAM3 Series

Key Features:

- Arm Cortex®-M4/M4F and M33 core
- Arm Cortex-M3 SAM3 core
- Enhanced security
 - Arm TrustZone technology
 - TRNG, PUKCC, ICM (SHA,) AES and ECC
 - User tamper detection
 - Secure boot option
 - Hardware Security Module (HSM)
- DSP instructions and Floating Point Unit (FPU)
- Event system
- SleepWalking peripherals
- High I/O pin count
- 10-/12-bit DACs
- Analog comparators
- Communication (USB, CAN, Ethernet)
- EBI with memory controller
- Automotive qualified



Feature	PIC32CX	PIC32CK	SAM D5/E5	SAM 4S/4N/4E	SAM 4L	SAM G	SAM 3
Frequency	120 MHz CM4F	120 MHz CM33	120 MHz CM4F	100-120 MHz CM4	48 MHz CM4	48-120 MHz CM4F	48-96 MHz CM3
Flash Memory	1 MB Flash with ECC	512 KB-2 MB Flash with ECC	256 KB-1 MB Flash	128 KB-2 MB Flash	128-512 KB Flash	256-512 KB Flash	16 KB-512 KB Flash
SRAM	128 KB-256 KB SRAM with ECC	128 KB-512 KB SRAM	128 KB-256 KB SRAM	64-160 KB SRAM	32-64 KB SRAM	64-176 KB SRAM	4-96 KB SRAM
Pin Count	100, 128 pins	64, 100, 144 pins	48, 64, 100, 120, 128 pins	48, 64, 100 pins	48, 64, 100 pins	49, 64, 100 pins	48, 64, 100, 144 pins
System Flexibility	DMA, CCL, intelligent low-power peripheral event system	DMA, CCL, intelligent low-power peripheral event system	DMA, CCL, intelligent low-power peripheral event system	DMA, intelligent low-power peripheral event system	DMA, intelligent low-power peripheral event system	DMA, intelligent low-power peripheral event system	DMA
Communication	Full-Speed USB host and device, 2 × CAN FD, 1 × Ethernet, 1 × QSPI, SDHC	2 × SDHC, 1 × Ethernet, Full-Speed USB host and device, 2 × CAN FD	Full-Speed USB host and device, 2 × CAN FD, 1 × Ethernet, 1 × QSPI, SDHC	Full-Speed USB device 2 × CAN, 1 × Ethernet	Full-Speed USB host and device	Full-Speed USB host and device, I ² S™	USB 2.0 device 5 × UARTs, 4 × SPI, 2 × I ² C and I ² S, 1 × Ethernet, 2 × CAN
User Interface	PTC, PCC	PCC, PTC	PCC	SLCD controller			
Integrated Analog	2 × 16-bit ADCs, 2 × 12-bit DACs	2 × 12-bit ADCs, temperature sensor	2 × 12-bit ADCs, 2 × 12-bit DACs	2 × 16-bit ADCs, 2 × 10-12-bit DACs	12-bit 300 ksp/s ADC, 12-bit DAC	12-bit 500 ksp/s ADC, 12-bit DAC	12-bit 1 Msps ADC, 12-bit 1 Msps DAC
Security	PUKCC, ICM, AES, ECC TRNG, GCM	HSM, AES, HASH, ECC TRNG, GCM, Secure Boot	PUKCC, ICM, AES	CRC, AES	AES, TRNG	Tamper detection	



- **PIC32CX:** This family of MCUs combines connectivity, performance and industry-leading integrated security options to power industrial, IoT, automotive and other applications. It features a JIL High-certified Hardware Security Module (HSM), secure boot, secure debug and code protection from chip erase.
- **PIC32CK:** These MCUs combine connectivity, performance and industry-leading integrated security options to power industrial, IoT, automotive and other applications. They include an HSM, Arm TrustZone technology and integrated security features.
- **SAM D5/E5:** Targeting connectivity and security applications, these MCUs run at 120 MHz and consume under 65 $\mu\text{A}/\text{MHz}$ in active mode. They feature a PTC, PCC for image sensing, PUKCC and ICM based on SHAs.
- **SAM 4S:** This family of MCUs features a multi-layer bus matrix, multi-channel DMA and distributed memory to support high-data-rate communication.
- **SAM 4N:** These MCUs have features for use in a variety of industrial automation, consumer, appliance and energy metering applications. The SAM 4N is pin compatible with the SAM 3S, SAM 3N and SAM 7S families of MCUs.
- **SAM 4E:** This family offers a rich set of connectivity peripherals including 10/100 Mbps Ethernet MAC supporting IEEE® 1588, dual CAN 2.0B and single-precision FPU.
- **SAM 4L:** These MCUs are excellent options for power-sensitive designs. They feature power consumption as low as 90 $\mu\text{A}/\text{MHz}$ in active mode and sleep modes with full RAM retention down to 1.5 μA and a fast wake-up time of 1.5 μs .
- **SAM G:** Optimized for ultra-low power and high performance, these small-form-factor MCUs are bundled with a FPU, DMA and good SRAM-to-Flash ratio in a very tiny $2.8 \times 2.8 \text{ mm}$ WLCSP.
- **SAM 3N:** This family of MCUs, which is available in 48-, 64- and 100-pin options, offers up to 64 KB Flash, 8 KB SRAM, 48 MHz performance, touch support, USART, SPI, I²C, 10-bit ADC and 10-bit DAC.
- **SAM 3S:** These MCUs, which are available in 48-, 64- and 100-pin options, offer up to 512 KB dual-bank Flash, 64 KB SRAM, 64 MHz performance, SDIO/SD/MMC interface, touch support, I2S, SPI, I²C, UARTs, 12-bit ADC and 12-bit DAC.
- **SAM 3U:** This family of devices comes in 100- and 144-pin options and offers up to 256 KB dual-bank Flash, 48 KB SRAM, 96 MHz performance, static memory controller, SDIO/SD/MMC interface, touch, HS USB, SPI, I²C, I2S, UARTs and 10-/12-bit ADCs.
- **SAM 3X/A:** These devices, which are available in 100- and 144-pin options, offer up to 512 KB dual-bank Flash with safety and security features, 96 KB SRAM, 84 MHz performance, NAND Flash controller, touch, dual CAN, Ethernet MAC, HS USB, SDIO/SD/MMC interface, SPI, I²C, I2S, UARTs, 12-bit ADC and 12-bit DAC.



High-Performance MCUs: PIC32CZ and SAM S70/E70/V7x Series

Key Features:

- High performance
 - Arm Cortex-M7 core: 300 MHz, 1500 CoreMarks®
 - Single- and double-precision hardware FPU
 - 16 KB of I-Cache and 16 KB of D-Cache with ECC
 - Execution in place from on-chip Flash NVM connected to QSPI and EBI
 - Multi-port SRAM minimizes latency
 - User-configurable SRAM and TCM size
- Advanced Analog Front End (AFE)
 - Dual sample and hold, 12-bit ADC and 16-bit hardware averaging
 - Differential input, programmable gain
 - Automatic gain and offset error correction
 - DMA support, hardware and software trigger
- Hi-Speed USB host/device with integrated PHY
- Embedded Hardware Security Module (HSM)
- Memory integrity check monitor
- CMOS camera interface
- Ethernet and dual CAN on SAM E70 and SAM V71
- Sleepwalking on UART and I²C
- Event system
- Temperature options
 - -40°C to +105°C
 - AEC-Q100, -40°C to +105°C (Grade 2)



Feature	PIC32CZ	SAM S70	SAM E70	SAM V70	SAM V71
Frequency	300 MHz				
Flash	2 MB, 4 MB, 8 MB Flash with ECC	512 KB, 1 MB, 2 MB Flash with ECC	512 KB, 1 MB, 2 MB Flash with ECC	512 KB, 1 MB Flash with ECC	512 KB, 1 MB, 2 MB Flash with ECC
SRAM	512 KB, 1 MB SRAM with ECC	256 KB, 384 KB	256 KB, 384 KB	256 KB, 384 KB	256 KB, 384 KB
Backup SRAM	1 KB				
External Bus Interface	16-bit (SDRAM, SRAM)				
Ethernet IEEE® 1588 (MAC)	10/100/1000 Mbps	–	10/100 Mbps	–	10/100 Mbps
CAN FD	6	–	2		
MediaLB® Bus	Yes	–		Yes	
Hi-Speed USB	2	1			
Automotive Qualified	Yes	–		Yes	
Camera Interface		1			
QSPI	-	1			
HSMCI/SDIO/ eMMC	10 TCC, 2 × SD	1 × HS			
USART or SPI/ UART	10 USART	5/3			
SPI/I²C/SSC (I²S™/ TDM)	1/2	2/3/1			
12-bit ADC	36-channel, 4 Msps	2 × 12-channel, 2 Msps			
12-bit DAC		2-channel, 2 Msps			
Timers/PWM	10/10	12/8			
Security	HSM	TRNG, AES 256, SHA 1/256 Crypto Acceleration			
Pin Count	100–208	64–144			
Package	TQFP, TFBGA	QFN, QFP, BGA			



Baseline MCUs: PIC32MX1/2/5 and PIC32MM Series

Key Features:

- MIPS® core
- UART
- SPI
- I²C
- PPS
- 32-bit CRC
- RTCC
- WDT, BOR, POR
- Timer/compare/capture
- eXtreme Low Power (XLP) technology
- Functional safety

Feature	PIC32MX1	PIC32MX2	PIC32MX5	PIC32MM
Frequency	40, 50, 72 MHz			25 MHz
Flash	16–512 KB Flash		64–512 KB Flash	16–256 KB Flash
SRAM	4–64 KB SRAM		8–64 KB SRAM	4–32 KB SRAM
Pin Count	28, 36, 44, 64, 100 pins		64, 100 pins	20, 28, 36, 40, 48, 64 pins
Communication	Full-Speed USB and OTG, PMP, SPI, UART	Full-Speed USB and OTG, PMP, SPI, UART	Full-Speed USB and OTG, PMP, SPI, UART, CAN	Full-Speed USB host, device and OTG
Intelligent Analog	10-bit 1 Msps ADCs, analog comparators	10-bit 1 Msps ADCs, analog comparators	10-bit 1 Msps ADCs, analog comparators	12-bit 300 ksps ADCs, analog comparators



- **PIC32MX1:** This family of MCUs is optimized for cost and performance with additional features such as DMA and PMP and more serial interfaces, comparators and ADC channels than the PIC32MM family. It is a good choice for general-purpose embedded control and graphics applications. Select variants feature XLP options.
- **PIC32MX2:** This family of MCUs is an upgrade to the PIC32MX1 family and includes Full-Speed USB. It targets cost-sensitive digital audio, graphics and USB applications. Select variants feature XLP options.
- **PIC32MX5:** This family of MCUs extends the capabilities of the PIC32MX2 family with the addition of CAN 2.0B. It is a good choice for industrial, digital audio, graphics, USB and CAN applications.
- **PIC32MM:** The PIC32MM family is the lowest-power and smallest member of the PIC32 family, offering sleep modes down to 500 nA and packages as small as 4 × 4 mm. These features make this family suitable for low-power and space-constrained applications.

Mid-Range MCUs: PIC32MK, PIC32MX3/4 and PIC32MX5/6/7 Series

Key Features:

- | | | | |
|-------------|--------------------|-------------------------|-----------------------------|
| • MIPS core | • I ² C | • RTCC | • ECC |
| • UART | • PPS | • WDT, BOR, POR | • Functional safety support |
| • SPI | • 32-bit CRC | • Timer/compare/capture | |



Feature	PIC32MK	PIC32MX3	PIC32MX4	PIC32MX5	PIC32MX6	PIC32MX7
Frequency	120 MHz	Up to 120 MHz		80 MHz		
Flash	256–1024 KB dual bank	64–512 KB Flash				
SRAM	64–256 KB RAM	16–128 KB SRAM				
Pin Count	48, 64, 100 pins	64, 100, 124 pins		64, 100, 121, 124 pins		
	2 × Full-Speed USB device, host and OTG, 4 × CAN 2.0B and CAN FD	Full-Speed USB device, host and OTG, I ² S™		Full-Speed USB device, host, OTG, CAN 2.0B, 10/100 Ethernet MAC		
Timing and Measurements System Flexibility	MC, PWM and QEI					
	DMA and PMP	DMA and PMP				
Intelligent Analog	25.45 Msps 12-bit mode or 33.79 Msps 8-bit mode, op amp, 12-bit CDAC and analog compare	10-bit 1 Msps ADC, analog comparators				



- **PIC32MX3:** These general-purpose MCUs offer up to 120 MHz performance for complex embedded applications that require larger code and data size.
- **PIC32MX4:** This family expands the capabilities of the PIC32MX3 family to include Full-Speed USB and targets USB, Bluetooth®, high-end digital audio and graphics applications.
- **PIC32MX5:** Offering large RAM, Full-Speed USB and CAN 2.0B, this mid-range MCU family with embedded connectivity is a good choice for industrial, automotive cabin and infotainment, USB and graphics applications.
- **PIC32MX6:** These MCUs feature large RAM and embedded connectivity options that include Full-Speed USB and a 10/100 Ethernet MAC. They are excellent options for IoT, gateways, industrial, USB and graphics applications.
- **PIC32MX7:** As an upgrade to the PIC32MX5 and PIC32MX6 families, this family offers a rich set of connectivity peripherals including dual CAN 2.0B, Full-Speed USB and a 10/100 Ethernet MAC for designing a broad range of embedded connectivity applications.
- **PIC32MK:** This motor control and general-purpose family of MCUs offers up to 1 MB dual-panel Flash with live update as well as a motor control PWM, QEI, four CAN modules and advanced analog. It also features a high-performance ADC supporting up to 25.45 Msps in 12-bit mode or 33.79 Msps in 8-bit mode.



High Performance MCUs: PIC32MZ Series

Key Features:

- High Performance
 - MIPS M-Class core: 252 MHz, 415 DMIPS
 - MIPS microAptiv™ core: 200 MHz, 330 DMIPS
 - Seven-stage FPU for 32-bit and 64-bit floating-point math
 - microMIPS mode for up to 35% smaller code size
 - 32 KB I-cache, 32 KB D-cache
 - DSP-enhanced core
 - High-performance graphics
 - Three-layer graphics controller with up to 24-bit color support
 - High-performance 2D GPU
 - Advanced analog
 - 12-bit ADC, 18 Msps, 6 sample and hold, 48 channels
 - Six digital comparators and filters
 - Sleep and idle mode operation
 - Two analog comparators with 32 programmable voltage references
 - Temperature sensor with $\pm 2^{\circ}\text{C}$ accuracy
- Dual-panel Flash for live updates
- Memory management unit for optimum embedded OS execution
- Hi-Speed USB device/host/OTG with PHY
- 10/100 Ethernet MAC with MII and RMII interfaces
- Dual CAN 2.0B with DeviceNet addressing support
- SPI/I2S for audio
- Crypto engine with TRNG
- Peripheral Pin Select (PPS) for function remapping
- Temperature options
 - -40°C to $+85^{\circ}\text{C}$
 - -40°C to $+105^{\circ}\text{C}$
 - -40°C to $+125^{\circ}\text{C}$ (AEC-Q100 Grade 1)



Feature	PIC32MZ EF	PIC32MZ DA
Speed	252 MHz	200 MHz
FPU	Yes	–
2D GPU	–	Yes
Three-Layer Graphics Controller	–	Yes
DDR2 SDRAM	–	32 MB
Flash	512 KB, 1 MB, 2 MB	1, 2 MB
SRAM	128, 256, 512 KB	256, 640 KB
Boot Flash	160 KB	
DMA	26 channels	
Ethernet	10/100 Ethernet MAC	
USB	Hi-Speed device, host and OTG	
CAN	Dual CAN 2.0B	
ADC	12-bit, 18 Msps, 48 channels	12-bit, 18 Msps, 45 channels
Analog Compare	Two ACs with 32 programmable voltage references	
TRNG	Yes	
Crypto Engine Acceleration	AES 256, DES/TDES, SHA1/256, MD-5, AES-GCM	
Timers/Compare/Capture	9/9/9	
AEC-Q100	Grade 1	Grade 2
RTCC	Yes	
PMP	Yes	
SQI	Yes	
SD/SDIO/eMMC Bus Interface	–	Yes
DDR2 SDRAM Interface	–	Yes
EBI	Yes	
SPI/I ² S™	6	
I ² C	5	
UART	6	
Pin Count	64, 100, 124, 144	169, 176, 288
Packages	QFN, TQFP, VTLA, LQFP, TFBGA	LFBGA, LQFP