

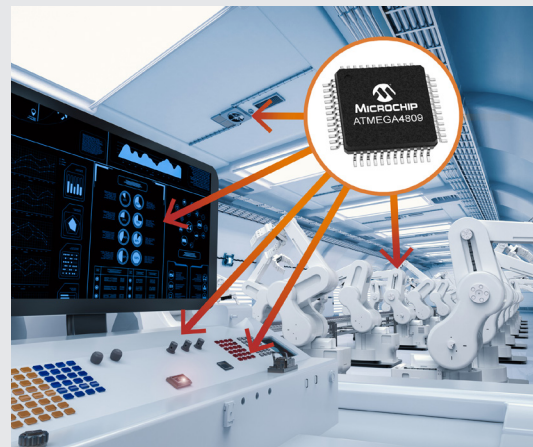
megaAVR[®] Microcontrollers

ATmega4809 Family

Summary

Microchip's new megaAVR[®] MCUs extend the capability of real-time control systems by combining intelligent hardware peripherals with the low-power performance of the AVR[®] core. The products offer a high-speed Analog-to-Digital Converter (ADC) and easy-to-configure Core Independent Peripherals (CIPs) for deterministic response in systems where analog data acquisition and processing is mission critical. These features make the new megaAVR series of MCUs an ideal companion in complex microprocessor-based systems, or an excellent standalone processor in command-and-control system designs.

The new megaAVR MCUs utilize the same robust architecture as the latest tinyAVR[®] 0- and 1-series devices, while offering increased memory and I/O options. With Flash memory ranging from 8 KB to 48 KB in 28-, 32- and 48-pin packages, these devices suit a wide variety of application needs.



Engineered for Real-time Control

Modern control applications utilize MCUs to increase their performance, while making them more efficient and reliable. The new megaAVR devices take the concept further with a peripheral set designed to decrease system response time and increase reliability, while at the same time reducing overall code footprint, validation time and system development cost.

High Speed ADC – True 10-bit resolution and conversion speeds of 115,000 samples per second ensure accurate and timely analog signal acquisition. Triggering and notifications can be transmitted to other peripherals without CPU intervention, enabling real-time response to system events.

Peripheral Event System – A hardware-based connectivity matrix allows the peripherals on the new megaAVR MCU series to communicate with one another without involving the core CPU. This functionality can be used to save energy, increase determinism in control loops, or both. More importantly, the event system is easily configured with our free software tools, helping decrease system validation time.

Configurable Custom Logic (CCL) – the CCL is a highly configurable on-chip module that can be used for a variety of system tasks, ranging from simple digital signal inversion to complex event sequencing.

Key Features

- 8-bit AVR CPU core with hardware multiplier
- Internal 20 MHz oscillator
- Up to 48 KB of Flash memory
- Up to 16-channel, high-speed 10-bit ADC
- Analog comparator with scalable reference input
- Configurable, internally generated reference voltage
- Automated memory scan with cyclic redundancy check
- 16-bit real-time clock
- UART/SPI/dual-mode I²C communications
- Configurable custom logic peripheral
- 6-channel peripheral event system
- Up to 41 I/O
- 1.8V–5.5V operating voltage range
- –40° to +125°C operating temperature range

Get Started Now

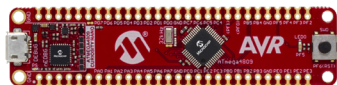
Getting started with AVR microcontrollers has never been easier! All AVR MCU families are fully supported by our comprehensive development ecosystem, which includes MPLAB X IDE and Atmel Studio—our free Integrated Development Environment (IDE) with built-in GCC compiler, and our powerful Atmel START configuration tool.

Atmel START

START

Significantly reduce your development time with Atmel START—our intuitive, web-based graphical configuration tool for embedded projects. While you navigate through the easy-to-use interface, Atmel START generates factory-validated C-code to help you get your design started correctly. Get started today at www.start.atmel.com

ATmega4809 Curiosity Nano Development Board (DM320115)



The ATmega4809 Curiosity Nano Development Board is everything you need to begin your design. The kit includes on-board debugger and programmer for use with both MPLAB X IDE and Atmel Studio. Documentation will be shown in IDE when connected. This development board gives you powerful features including drag-and-drop programming, full access to all pins along the board edges, and variable power supply from 1.8V to 5.0V.

New megaAVR MCUs

Part Number	Program Flash (KB)	EEPROM (B)	Data SRAM (KB)	I/O Pins	10-bit ADC (ch)	5-bit DAC	Comps	8-bit/16-bit Timers	Window Watchdog Timer	8-bit/16-bit PWM	Int RCO	CCL	Temp Sensor and Low Power	USART/I ² C/SPI	Packages
ATMEGA4809	48	256	6	41	16	–	1	–/6	Y	4/3	32 KHz–20 MHz	1	Y	4/1/1	UQFN, TQFP
ATMEGA4808	48	256	6	27	12	–	1	–/5	Y	4/3	32 KHz–20 MHz	1	Y	3/1/1	VQFN, TQFP
ATMEGA4808	48	256	6	23	8	–	1	–/5	Y	4/3	32 KHz–20 MHz	1	Y	3/1/1	SSOP
ATMEGA3209	32	256	4	41	16	–	1	–/6	Y	4/3	32 KHz–20 MHz	1	Y	4/1/1	UQFN, TQFP
ATMEGA3208	32	256	4	27	12	–	1	–/5	Y	4/3	32 KHz–20 MHz	1	Y	3/1/1	VQFN, TQFP
ATMEGA3208	32	256	4	23	8	–	1	–/5	Y	4/3	32 KHz–20 MHz	1	Y	3/1/1	SSOP
ATMEGA1609	16	256	2	41	16	–	1	–/6	Y	4/3	32 KHz–20 MHz	1	Y	4/1/1	UQFN, TQFP
ATMEGA1608	16	256	2	27	12	–	1	–/5	Y	4/3	32 KHz–20 MHz	1	Y	3/1/1	VQFN, TQFP
ATMEGA1608	16	256	2	23	8	–	1	–/5	Y	4/3	32 KHz–20 MHz	1	Y	3/1/1	SSOP
ATMEGA809	8	256	1	41	16	–	1	–/6	Y	4/3	32 KHz–20 MHz	1	Y	4/1/1	UQFN, TQFP
ATMEGA808	8	256	1	27	12	–	1	–/5	Y	4/3	32 KHz–20 MHz	1	Y	3/1/1	VQFN, TQFP
ATMEGA808	8	256	1	23	8	–	1	–/5	Y	4/3	32 KHz–20 MHz	1	Y	3/1/1	SSOP

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