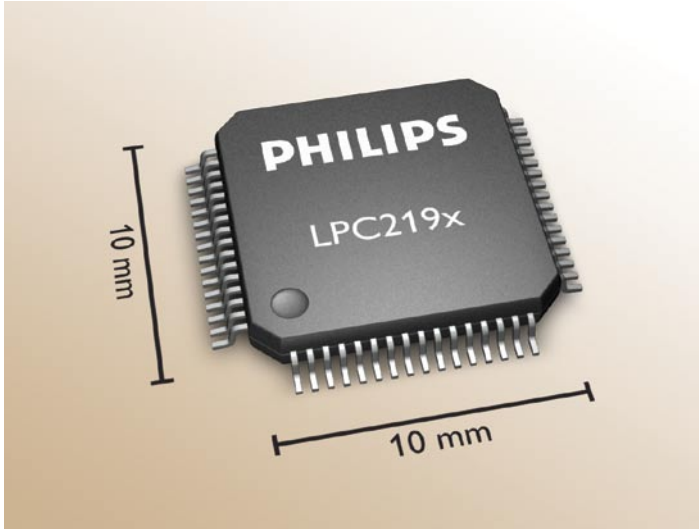


LPC219x family

Tiny 16/32-bit ARM7TDMI-S™ processors with 10-bit ADC and 4x CAN

These tiny ARM-based microcontrollers, with multiple CAN interfaces and an extended temperature operating range, improve performance in automotive and industrial applications, as well as medical, communication, and general-purpose applications. Integrating 256 KB of on-chip Flash, 16 KB of on-chip RAM, a 10-bit ADC, they measure only 10 mm x 10 mm.



Key features

- 60-MHz operation from single-chip 16/32-bit ARM7TDMI-S processor
 - LPC2194 with 256 KB Flash, 16 KB RAM, 10-bit ADC, 4x CAN
- Extended temperature range of -40 °C to +105 °C
- Optional 16-bit Thumb Mode for code-size critical applications
- Very fast Flash programming via on-chip boot-loader software
- Two 32-bit timers, PWM unit, real-time clock, watchdog timer
- Multiple serial interfaces: two UARTs, Fast I²C-bus, two SPI
- Tiny LQFP64 package (only 10 mm x 10 mm)

Applications

- Automotive (CAN gateways, CAN bridges, multi-CAN interfaces)
- Industrial control, medical systems, access control, point-of-sale
- Communication gateways, protocol converters, embedded soft modems
- General-purpose applications

Semiconductors

These 16/32-bit ARM7TDMI-S microcontrollers, housed in tiny LQFP or HVQFN packages, use a 128-bit-wide memory interface and a unique accelerator architecture to enable 32-bit code execution at a maximum clock rate of 60 MHz. For code-size critical applications, they use an alternative 16-bit Thumb Mode that reduces code by more than 30% with minimal performance penalty.

The initial part in the family is the LPC2194. Offering four interconnected CAN interfaces with advanced acceptance filters and an extended temperature range of -40 °C to +105 °C, it is especially useful in automotive and industrial applications that use the CAN bus. It has 256 KB of on-chip Flash and 16 KB of on-chip RAM.

In-System (ISP) and In-Application (IAP) software minimize programming time — each 512-byte line takes only 1 ms to program, while single selector or full-chip erases take only 400 ms.

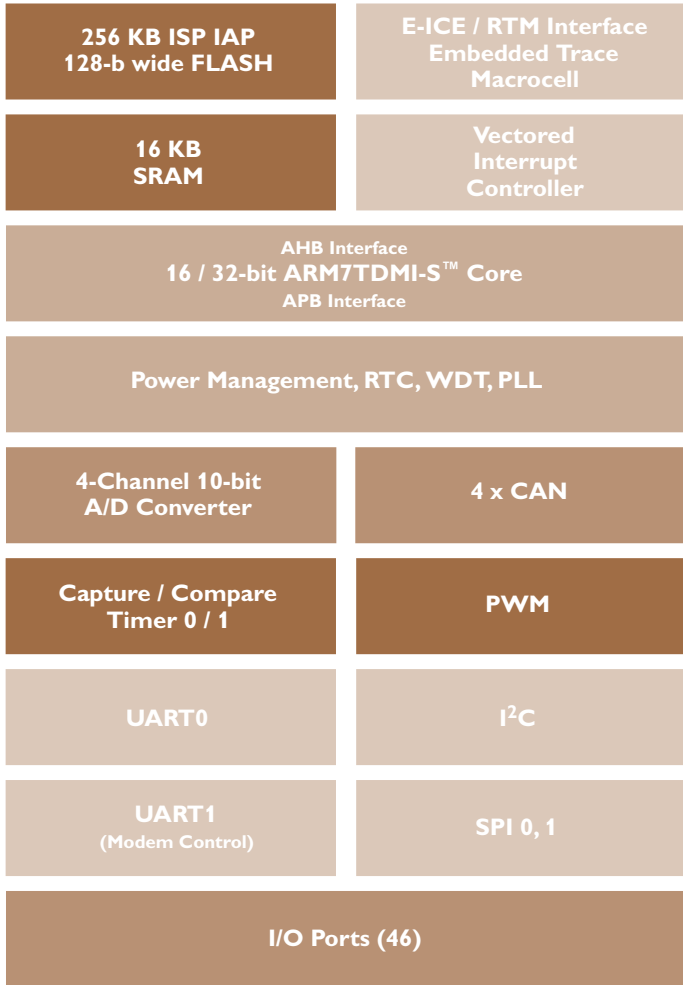
It has a Vectored Interrupt Controller (VIC), and uses Embedded ICE-RT and ETM (Embedded Trace Macrocell) to provide extensive, real-time debug capabilities.

There are two 32-bit timers (with four capture and four compare channels each), a PWM unit (with 6 outputs), a real-time clock, and a watchdog timer. Multiple serial interfaces, including two UARTs (16C550), two Fast I²C (400 kbps) and two SPI serial interfaces (one with buffering and variable data-length capabilities), increase design flexibility.

PHILIPS

LPC219x family

Tiny 16/32-bit ARM7TDMI-S processors with 10-bit ADC and 4x CAN



LPC219x block diagram



Third-party development tools

Through third-party suppliers, Philips offers an extensive portfolio of development tools for these microcontrollers. For the most current listing, please visit www.semiconductors.philips.com/markets/mms/products/microcontrollers/support/development_tools/ for the most current list of available tools.

Development tool support selection

Tool Name	Vendor	Tool Name	Vendor
Emulators		Integrated Development Environment	
Multi-ICE	ARM	ADS	ARM
MultiTrace	ARM	RealView	ARM
RealView ICE	ARM	AsIDE ARM	Ashling
Genia	Ashling	MULTI	Green Hills
Opella	Ashling	Embedded Workbench	IAR Systems
Vitra	Ashling	µVision3	Keil
Tanto	Hitex	CrossWorks	Rowley
j-link	IAR Systems	Monitors/Debuggers/Simulators	
ULINK	Keil	PathFinder-2100	Ashling
TRACE32-ICD	Lauterbach	C-SPY	IAR Systems
TRACE32-PowerTrace	Lauterbach	µVision3	Keil
EMUL-ARM-PC	Nohau	'Seehau'	Nohau
JTAGjet	Signum	Universal Debug Engine	PLS
Development & Evaluation Boards		Chameleon	Signum Systems
FA-EVBA-64	Ashling	Real-Time Operating Systems	
MCB2100	Keil	ChronOS	Interniche
TinyARM DIP50	Pasat	µC/OSII	Micrium
In-Systems Programming Software		TCP/IP Stacks	
Flash ISP Utility	Philips	NicheStack	Interniche

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