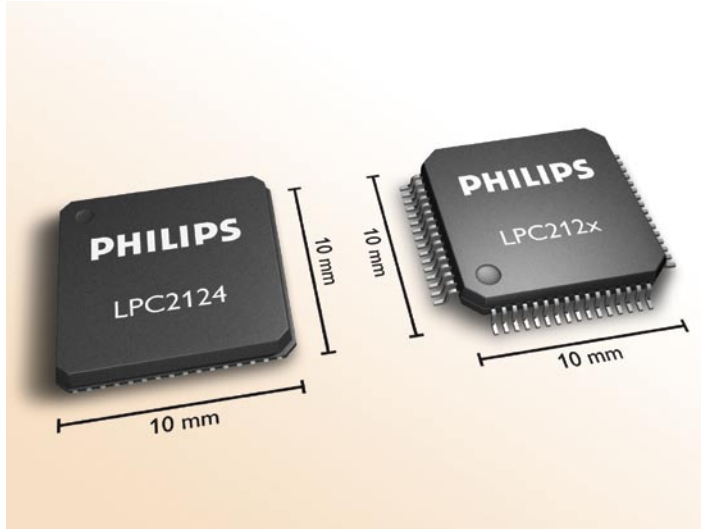


LPC212x family

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

These tiny ARM-based microcontrollers improve performance in a variety of industrial, medical, communication, and general-purpose applications. Integrating 256 KB of on-chip Flash, 16 KB of on-chip RAM, a 10-bit ADC, and optional CAN bus interfaces, they measure only 10 mm x 10 mm.



Key features

- 60-MHz operation from single-chip 16/32-bit ARM7TDMI-S processor
 - LPC2124 with 256 KB Flash, 16 KB RAM, 10-bit ADC
 - LPC2129 with 256 KB Flash, 16 KB RAM, 10-bit ADC, 2x CAN
- 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
- Temperature range: -40 °C to +85 °C
- Tiny 64-pin package (only 10 mm x 10 mm)

Applications

- 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 and 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.

Equipped with 256 KB of on-chip Flash, the microcontrollers use In-System (ISP) and In-Application (IAP) software to minimize programming time — each 512-byte line takes only 1 ms to program, while single-selector or full-chip erases take only 400 ms.

Each microcontroller has a 4-channel, 10-bit A/D converter (ADC) that offers conversion times as low as 2.44 μs and offers up to forty-six 5V-tolerant GPIO. Each has a Vectored Interrupt Controller (VIC), and uses Embedded ICE-RT and ETM (Embedded Trace Macrocell) to provide extensive, real-time debug capabilities.

Each has two 32-bit timers (with four capture and four compare channels each), a PWM unit (with 6 channels), 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. A CPU clock, operating at a maximum of 60 MHz, is available from the on-chip phase-locked loop (PLL).

• LPC2124:

256 KB of on-chip Flash, 16 KB on-chip RAM, and 10-bit ADC. Available in LQFP64 or HVQFN64 package (10 mm x 10 mm).

• LPC2129:

128 KB of on-chip Flash, 16 KB on-chip RAM, and 10-bit ADC, plus two interconnected CAN interfaces with advanced acceptance filters. Available in LQFP64 package (10 mm x 10 mm).

PHILIPS

LPC212x family

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



LPC212x block diagram



Purchase of Philips I²C components conveys a license under the Philips' patent to use the components in the I²C system provided the system conforms to the I²C specification defined by Philips.



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
j-link	IAR Systems	CrossWorks	Rowley
ULINK	Keil	Monitors/Debuggers/Simulators	
Tanto	Hitex	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-EVBA7-64	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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