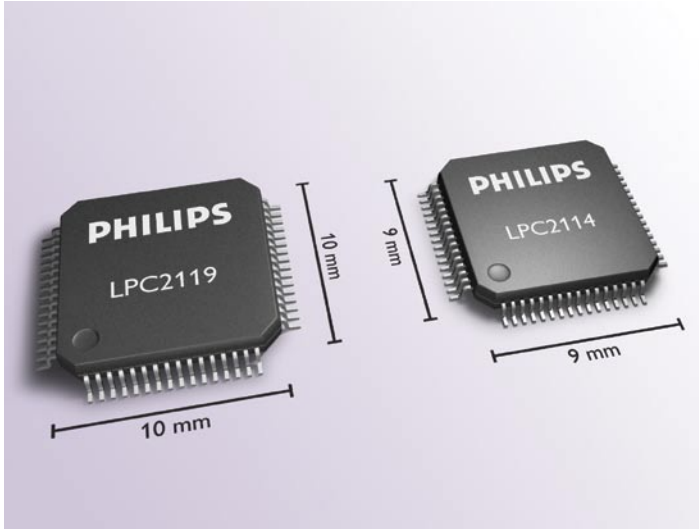


LPC211x family

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 128 KB of on-chip Flash, 16 KB of on-chip RAM, a 10-bit ADC, and optional CAN bus interfaces, they measure only 9 mm x 9 mm or 10 mm x 10 mm.



Key features

- 60-MHz operation from single-chip 16/32-bit ARM7TDMI-S processor
 - LPC2114 with 128 KB Flash, 16 KB RAM, 10-bit ADC
 - LPC2119 with 128 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 9 mm x 9 mm or 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 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 128 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 46 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).

• LPC2114:

128 KB of on-chip Flash, 16 KB on-chip RAM, and 10-bit ADC. Available in LQFP64 package (9 mm x 9 mm).

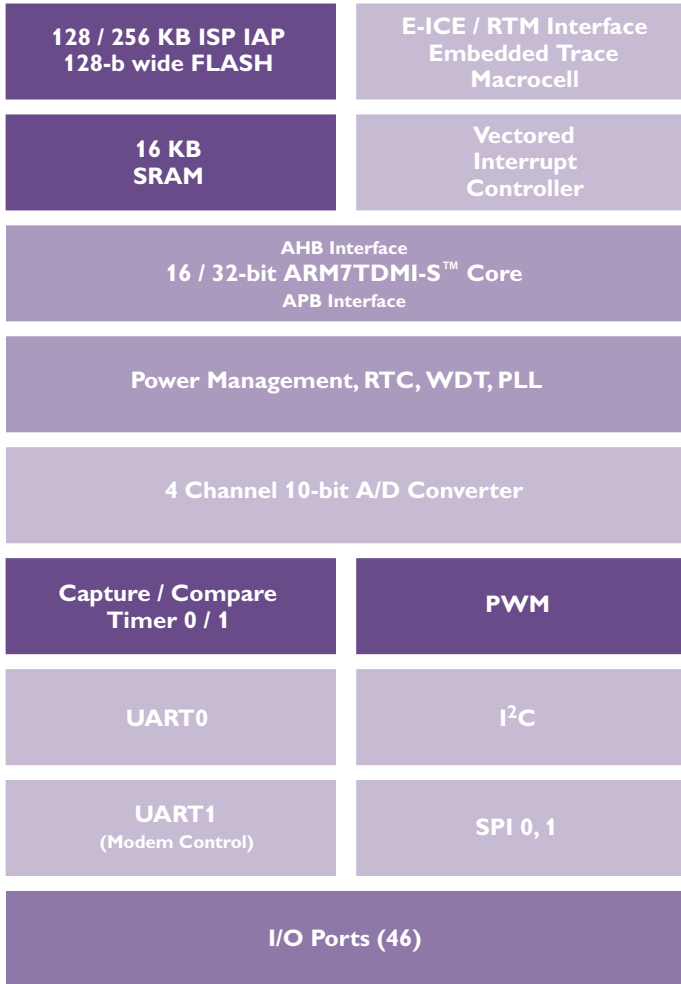
• LPC2119:

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

LPC211x family

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



LPC211x 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
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-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

Philips Semiconductors

Philips Semiconductors is a worldwide company with over 100 sales offices in more than 50 countries. For a complete up-to-date list of our sales offices please e-mail sales.addresses@www.semiconductors.philips.com. A complete list will be sent to you automatically. You can also visit our website <http://www.semiconductors.philips.com/sales>.

© Koninklijke Philips Electronics N.V. 2004

SCL 76

All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent or other industrial or intellectual property rights.

Date of release: October 2004
document order number: 9397-750-13974

Published in USA