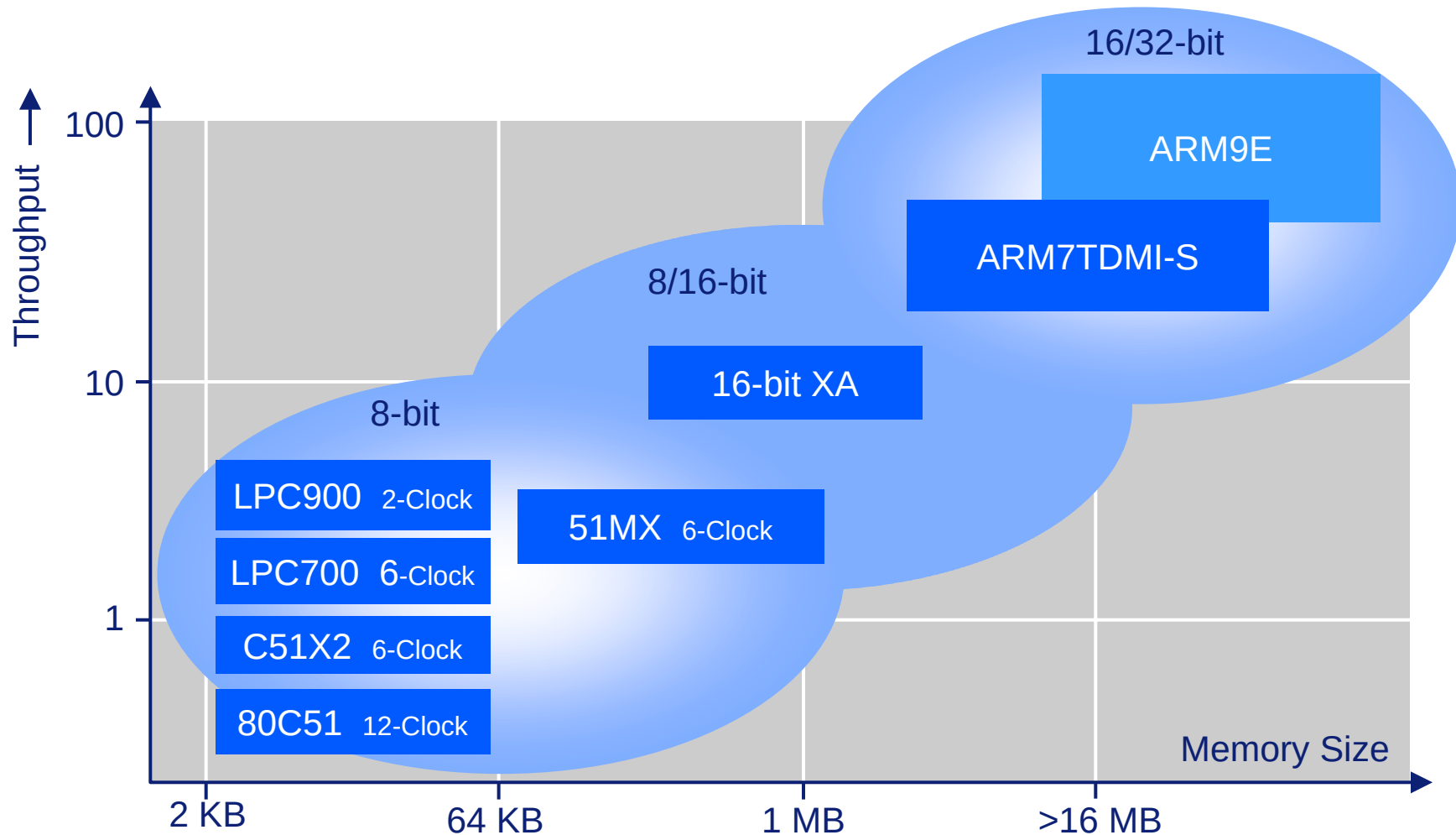


PHILIPS

LPC2000 Series
16/32-bit ARM7TDMI-S

PL Microcontrollers
MultiMarket Semiconductors

Philips Microcontroller Cores



LPC2000 Series Introduction

Philips approach for ARM microcontrollers

- “Real” microcontroller, no external memories required, no cache required
- General purpose microcontrollers
- Address customers using large (64KB+) memory 8 / 16-bit devices today and help them upgrade to a device open for the future
- Low cost 32-bit solutions (<\$10)

Philips 0.18 μ embedded Flash architecture

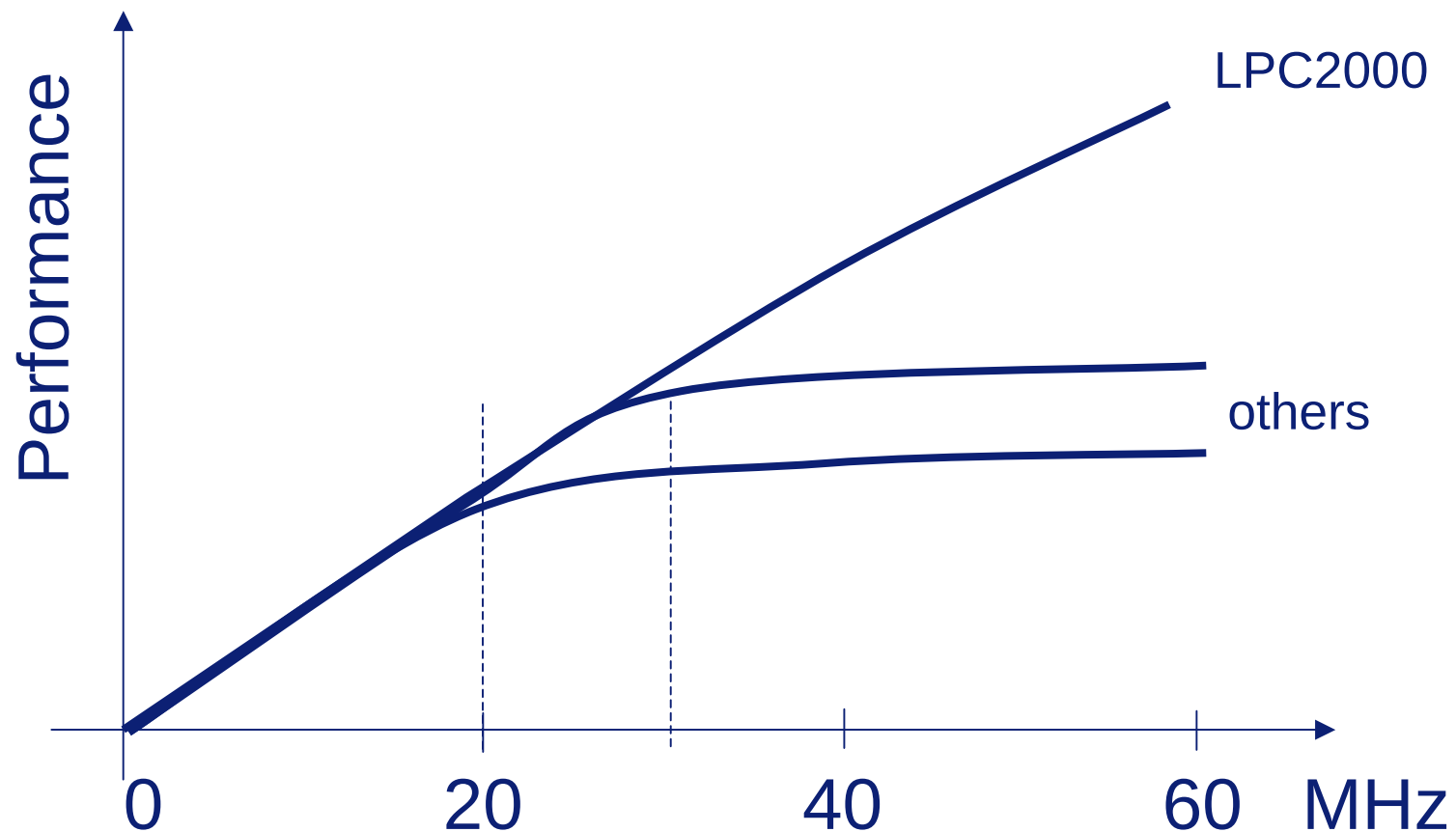
Key differentiators from our competition

Philips advanced 0.18 μ process benefits

- Low Power Operation (0.5mA – 1mA / MHz)
- High-bandwidth, **zero-wait state Flash** with operation to 60MHz
- Large on-chip Flash up to 512KB / SRAM up to 64KB ... at low cost
- Comprehensive on-chip debug & embedded trace options

Complete range of development tool partners with
new low price point options for existing 8-bit migration

LPC2000 Flash Performance (executing code from internal Flash)



16/32-bit ARM7 LPC2000 Series

Production Dates

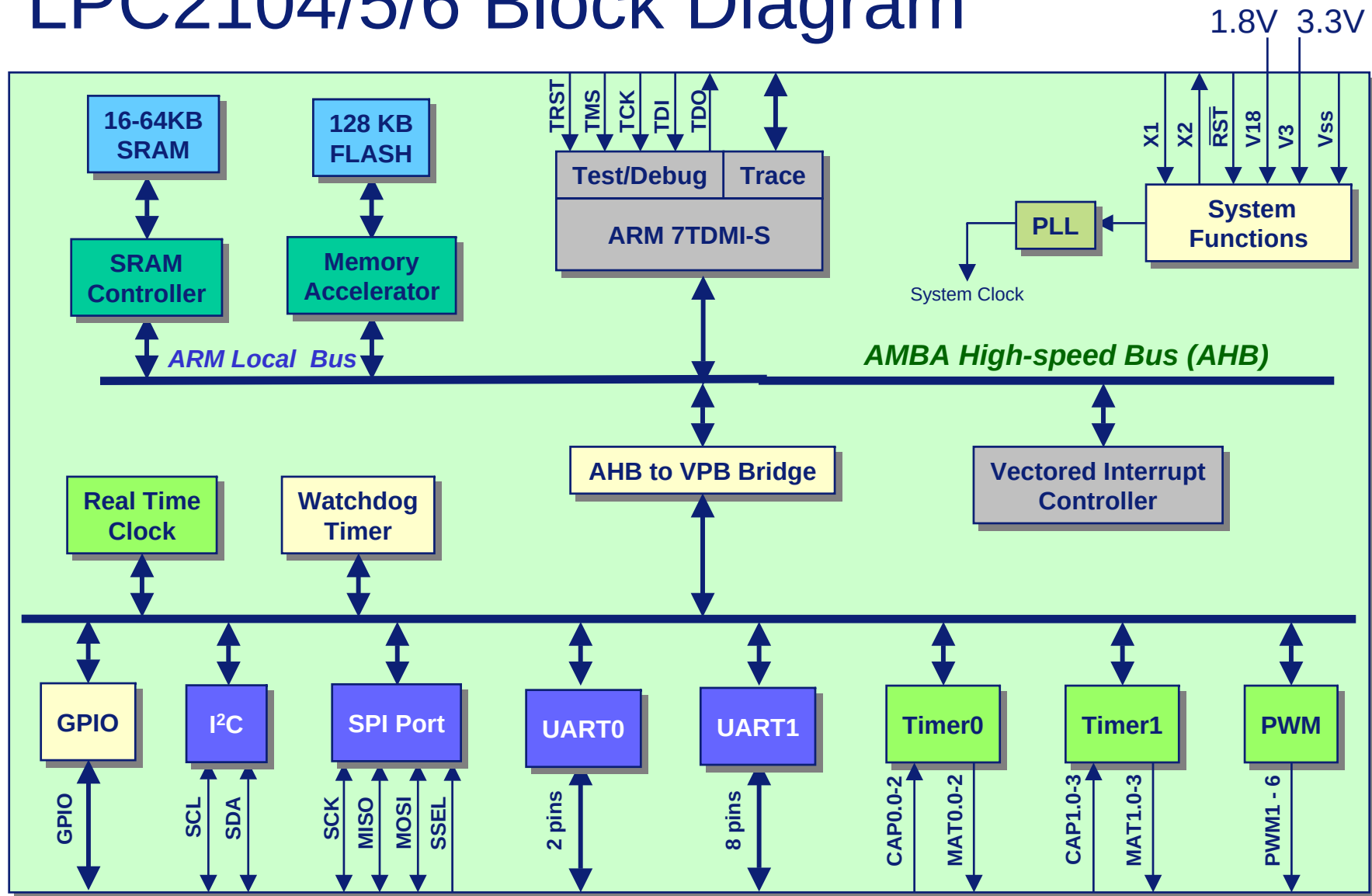
• Released

• Q2 '05

• Q3 '05

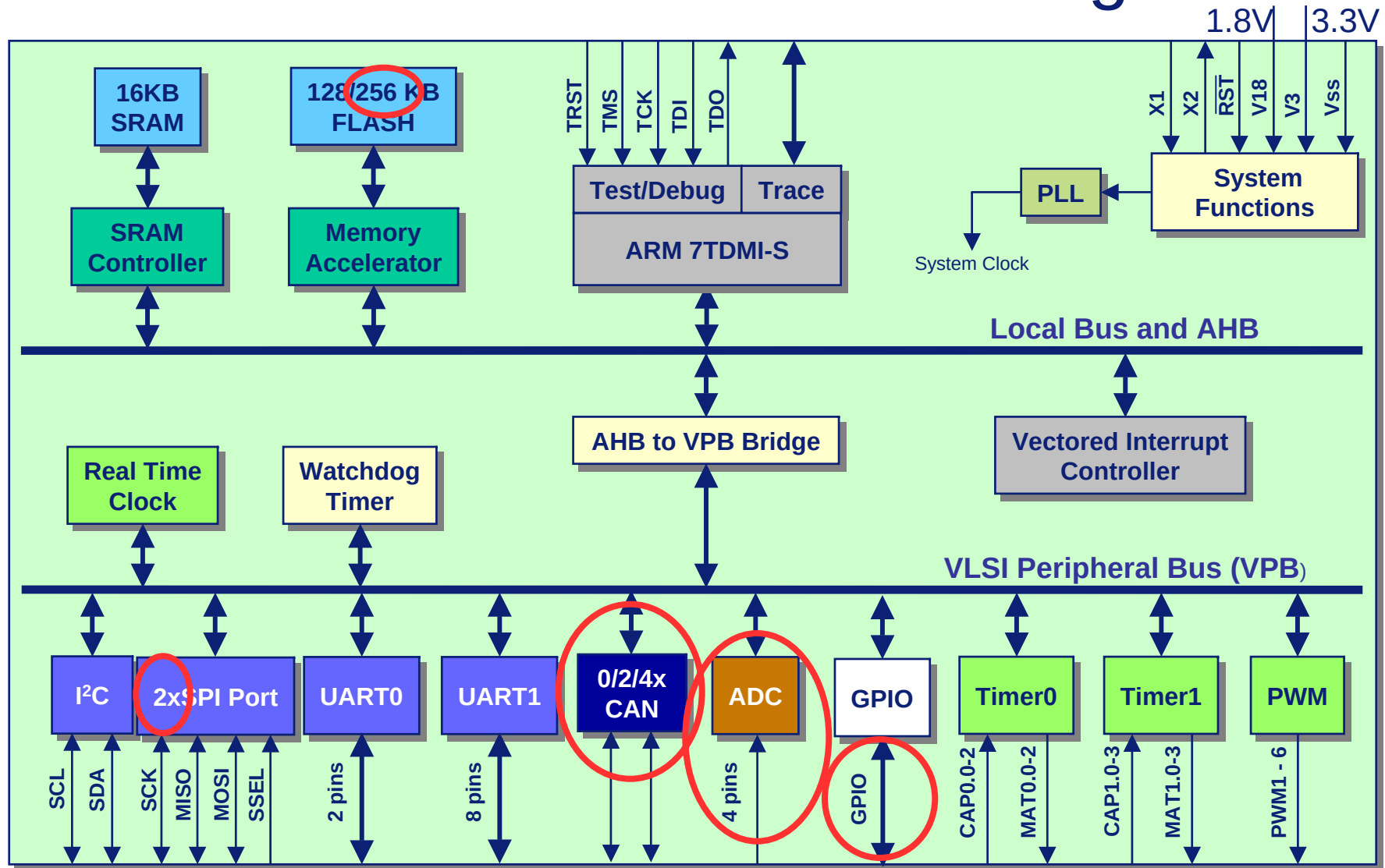
UART(2), I2C SPI, RTC * Only in 0°C ... 70°C	UART(2), I2C SPI(2), RTC ADC, CAN	UART(2), I2C SPI(2), LV RTC ADC(1-2), DAC 3V regulated	UART(2), I2C SPI(2), RTC ADC	UART(2), I2C SPI(2), RTC ADC, CAN(2/4)
LPC2106 128K/64K	LPC2194 256K/16K CAN (4)	•LPC214x •213x+ •USB	LPC2214 256K/16K ADC	LPC2294 256K/16K CAN (4)
LPC2105* 128K/32K	LPC2129 256K/16K CAN (2)	LPC2138 512K/32K	LPC2212 128K/16K ADC	LPC2292 256K/16K CAN (2)
LPC2104* 128K/16K	LPC2124 256K/16K ADC	LPC2136 256K/32K	•LPC2220 •0K/64K •ADC	•LPC229x •0K/64K •CAN (2)
	LPC2119 128K/16K CAN (2)	LPC2134 128K/16K	LPC2210 0K/16K ADC	LPC2290 0K/16K CAN (2)
	LPC2114 128K/16K ADC	LPC2132 64K/16K		
		LPC2131 32K/8K		
LPC210x 48pins	LPC21x9 LPC21x4	LPC213x LPC214x	LPC2200 144pins	
	64pins			

LPC2104/5/6 Block Diagram



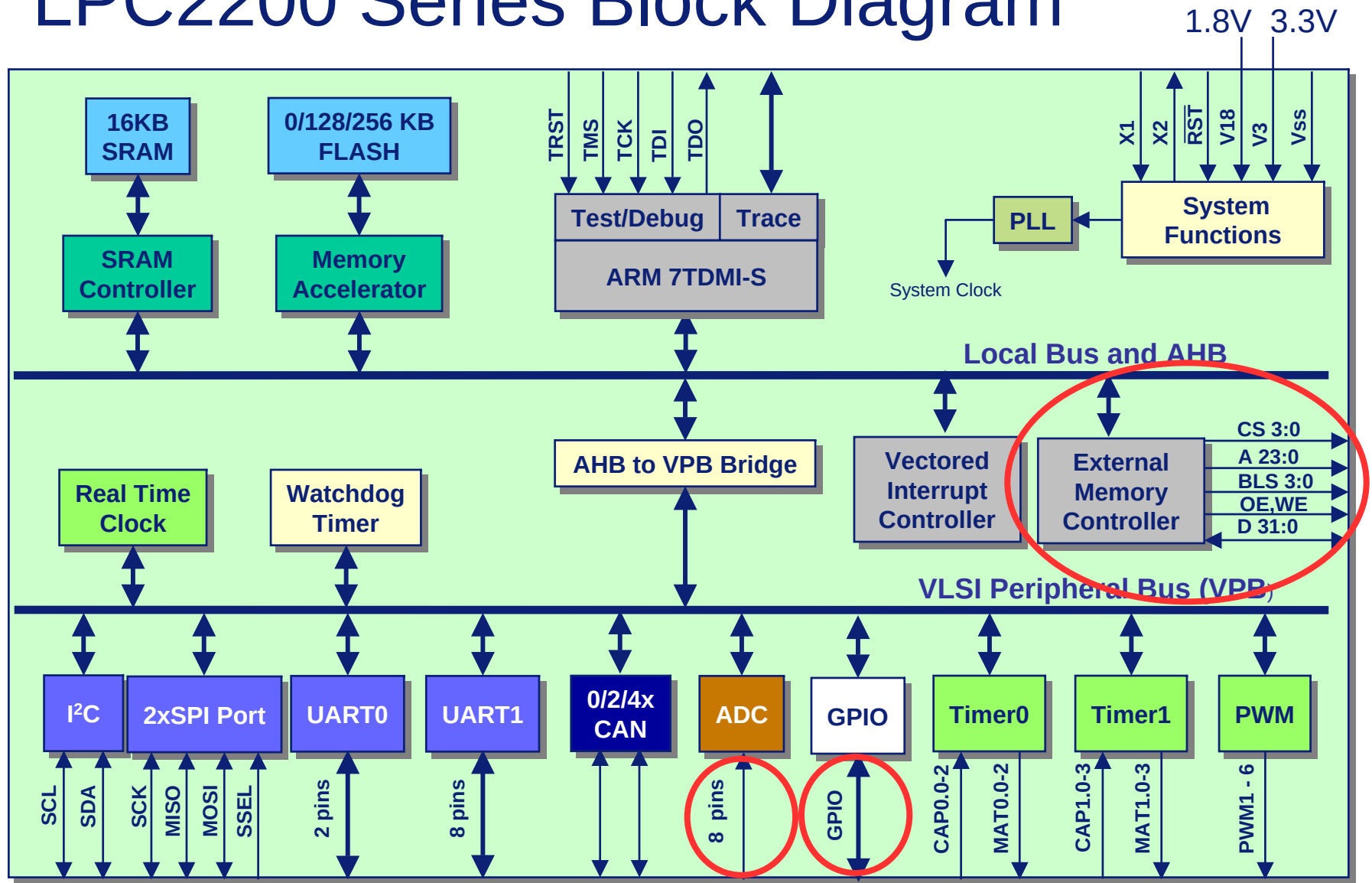
Package: LQFP48/HVQFN48

LPC211x/212x Series Block Diagram



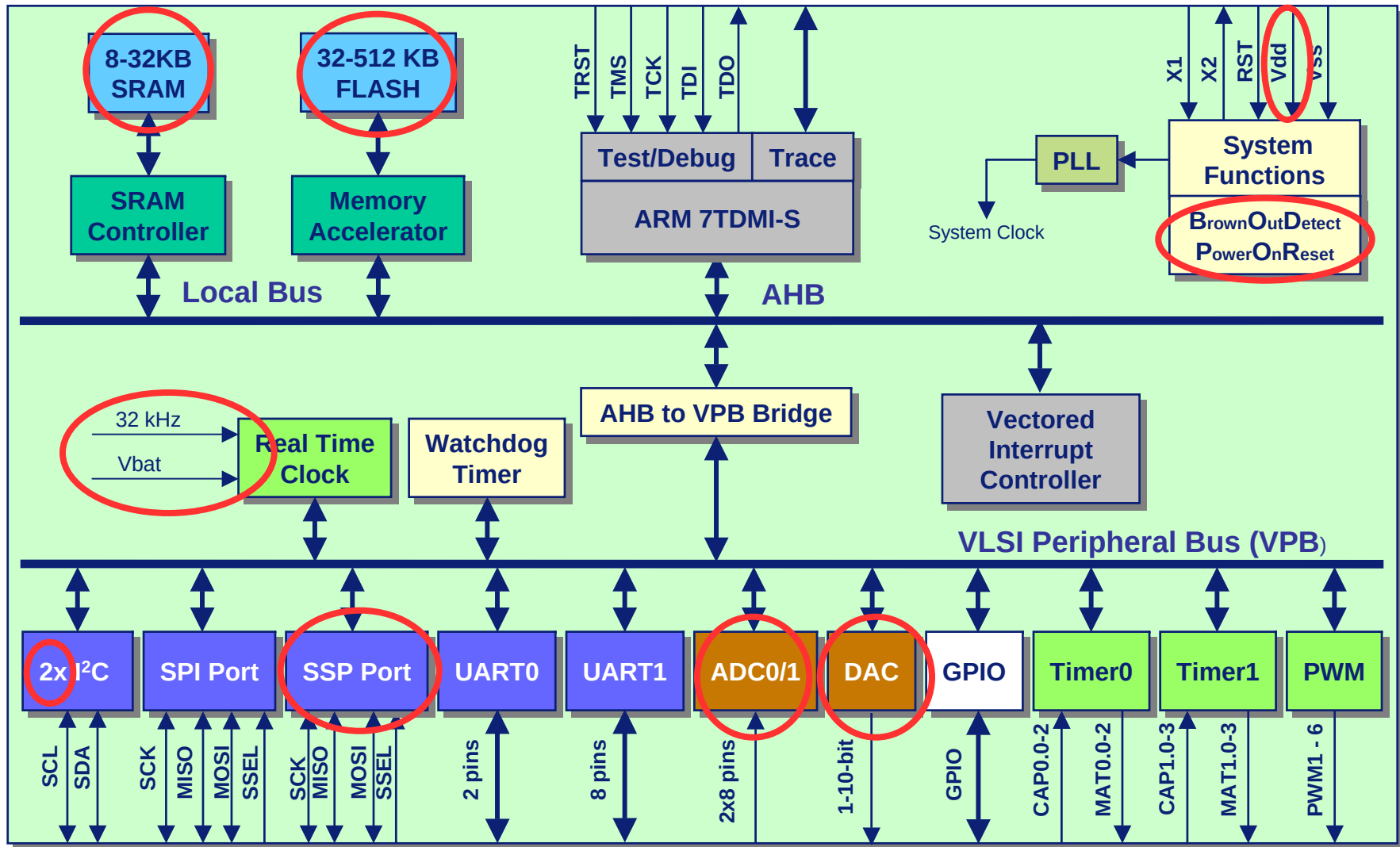
Package: LQFP64/HVQFN64

LPC2200 Series Block Diagram



Package: LQFP144

LPC213x Block Diagram (avail NOW)



New Features of LPC213x family

- Internal Regulator
 - 3.3V input only (no 1.8V necessary)
- 10-bit DAC
- 8 or 16-channels of ADC
 - 4-ch in LPC2114/LPC2124
- Real Time Clock enhancements
 - Vbat input to keep RTC alive during power down
 - 32 KHz crystal input
- Flash options from 32 KB up to 512 KB (still zero wait state)
- SRAM from 8 KB up to 32 KB
- Second I²C
- One Buffered SPI interface (SSP)
- Brown Out Detect & Power On Reset

LPC2000 Typical Applications

- Point of Sale (POS) Terminals
- Utility Metering
- Set Top Box (STB)
- Security Systems
- Serial Protocol Converters
- Vending Machines
- Remote Diagnostics
- Medical Systems
- Embedded Applications
- Automotive



Resources for more information on
the LPC2000 series



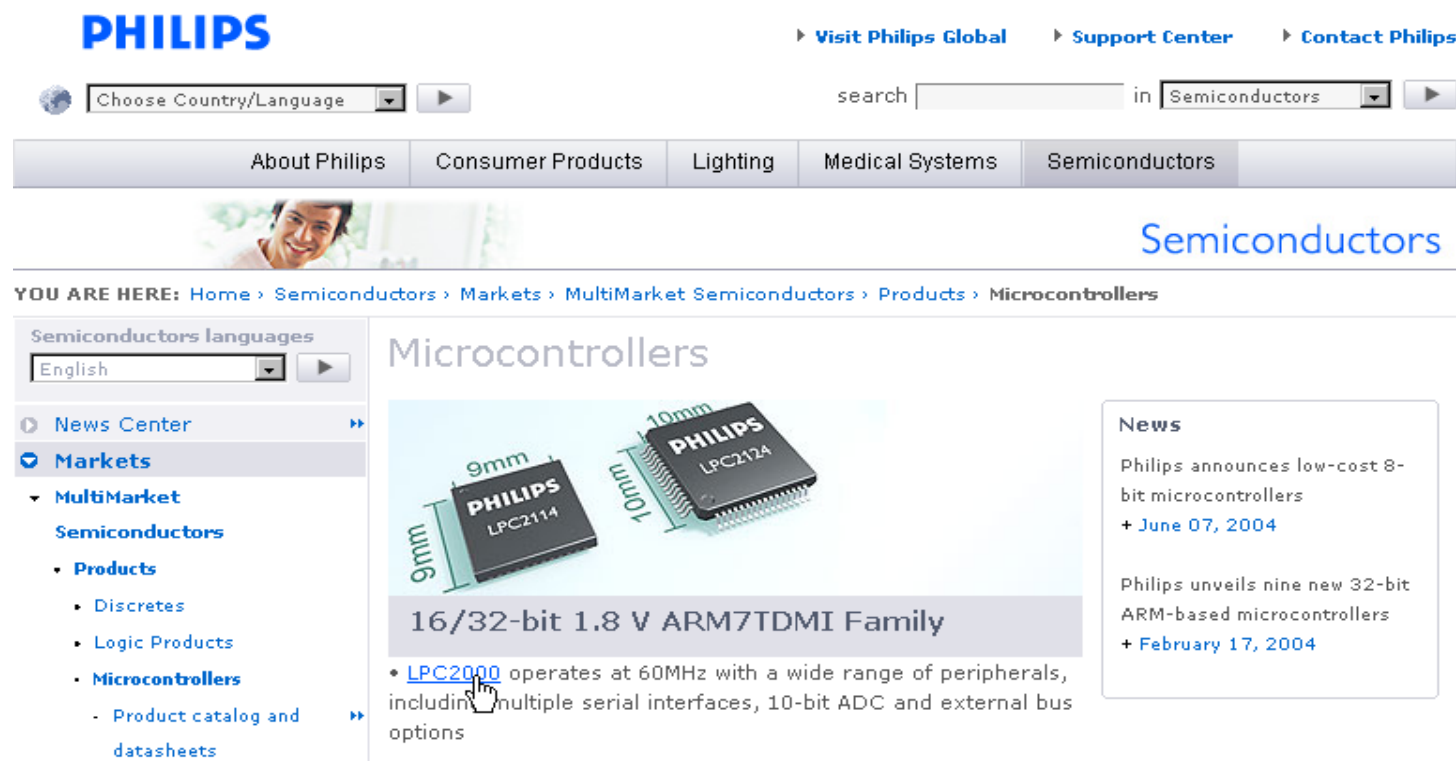
LPC2000 forum

- Started by Leon Heller, an engineering consultant from England: "The Philips LPC2100 family of ARM MCUs is sufficiently different from other ARM variants that I decided that a forum dedicated to it would be useful."
- Direct URL <http://groups.yahoo.com/group/lpc2000/>
- Founded Nov 17, 2003
- Already about 950 members!

lpc2000 - LPC Group		Group Member [Edit My Membership]
Home Messages Post Chat Files Photos Links Database Polls Members Calendar Promote ★ = Owner ☆ = Moderator 😊 = Online	Description The Philips LPC2000 family of ARM MCUs is sufficiently different from other ARM variants that I decided that a forum dedicated to it would be useful. Leon Heller Moderator What's New New within the last seven days: Members: 31 Messages: 77 Files: 1 Recent Messages View all Messages (3312) RSS Get messages in RSS Add to My Yahoo! Sep 17 Re: LPC2114 - basic questions - keremor1 The web page also have the user manual available. You would probably find most Sep 17 Raven JTAG interface with RTCK feature - larry_amontec Hi Chameleon POD user, We have updated our Raven JTAG interface with RTCK featu Sep 17 Re: Using External AD Converters - leightonsrowe Thanks ... this ... input ... reference ... <leightonsrowe@y...> ... because ... Sep 17 Re: Using External AD Converters - ebland_us It sounds like your inputs aren't truly differential. You've referenced the V- Sep 17 LPC2114 - basic questions - dsl15746 Hi all I have some basic questions concerning the LPC2114: 1. If I want to be a	Membership You are a member of this group [Edit My Membership] [Leave Group] Group Info Members: 791 Founded: Nov 17, 2003 Language: English Group Settings - Listed in directory - Open membership - Unmoderated - All members may post - Public archives - Email attachments are not permitted

Philips Web Site

- <http://www.philips.com/microcontrollers>



The screenshot shows the Philips Semiconductors website. At the top, there is a blue header with the Philips logo. Below it, a navigation bar includes links for "Visit Philips Global", "Support Center", and "Contact Philips". A search bar is also present. The main navigation menu includes "About Philips", "Consumer Products", "Lighting", "Medical Systems", and "Semiconductors". The "Semiconductors" section is active, displaying a "Semiconductors languages" dropdown set to "English". A sidebar on the left shows a "News Center" and "Markets" section, with "MultiMarket Semiconductors" expanded to show "Products" and "Microcontrollers". The main content area is titled "Microcontrollers" and features an image of two microcontrollers: the 9mm LPC2114 and the 10mm LPC2124. Below the image, the text "16/32-bit 1.8 V ARM7TDMI Family" is displayed. A bullet point indicates that the "LPC2000" operates at 60MHz with a wide range of peripherals, including multiple serial interfaces, 10-bit ADC and external bus options. A "News" section on the right lists two announcements: "Philips announces low-cost 8-bit microcontrollers" dated June 07, 2004, and "Philips unveils nine new 32-bit ARM-based microcontrollers" dated February 17, 2004.

PHILIPS

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Semiconductors

YOU ARE HERE: Home > Semiconductors > Markets > MultiMarket Semiconductors > Products > Microcontrollers

Semiconductors languages
English

► News Center ►

▼ Markets

▼ MultiMarket

Semiconductors

▼ Products

- Discretes
- Logic Products
- Microcontrollers
 - Product catalog and datasheets

Microcontrollers

9mm 10mm
PHILIPS LPC2114 PHILIPS LPC2124

16/32-bit 1.8 V ARM7TDMI Family

- [LPC2000](#) operates at 60MHz with a wide range of peripherals, including multiple serial interfaces, 10-bit ADC and external bus options

News

Philips announces low-cost 8-bit microcontrollers
+ June 07, 2004

Philips unveils nine new 32-bit ARM-based microcontrollers
+ February 17, 2004

LPC2000 information on Tool Partner Web sites

- Keil Software
 - <http://www.keil.com>
 - Comprehensive Device Database
- LPC Tools
 - <http://www.lpctools.com>
 - LPC2000 series Overview / Jump table

The screenshot shows the 'Device Database™' page for the Philips LPC2129. The page includes a navigation bar with links to Home, Products, Training, Support, Search, Index, and Company Information. The main content area features a detailed description of the LPC2129, highlighting its ARM7TDMI-S core, 32-bit RISC architecture, and various peripherals like 256KB on-chip Flash ROM, 16KB RAM, and multiple UARTs and SPI interfaces. Links for 'Chip Vendor' and 'Distributors' are provided. A sidebar on the left offers additional search options like 'List of Supported Chips' and 'Parametric Chip Search'. At the bottom, there are sections for 'Evaluation Software' (ARM7 Evaluation Software) and 'Compilers' (ARM Compiler).

LPC2000 Series Overview

The LPC2100 family is based on the ARM7TDMI-S core and offers 1.8V high-speed low-power zero-waitstate Flash, 60MHz operation, up to 4 CAN channels, up to four 10-bit ADC channels, on-chip Real-Time Monitor and Trace. The LPC2200 family is based on the ARM7TDMI-S core as well and offers an external bus interface with 4 Chip Selects, a bigger 144-pin package, up to 4 CAN channels as well as eight 10-bit ADC channels.

Part Number	Flash	RAM	ext. Bus	Pins	Key Feat.	Subfamily Table	Data Sheet	User's Manual	Errata Sheet	Fact Sheet	Product Page
LPC2294	256K	16K	Y	144	ADC, 2xUART, I2C, 2xSPI, 4xCAN, PWM		DS V1	UM V2	ES V1.2	FS	PP
LPC2292	256K	16K	Y	144	ADC, 2xUART, I2C, 2xSPI, 2xCAN, PWM				ES V1.2		
LPC2290	-	16K	Y	144	ADC, 2xUART, I2C, 2xSPI, 2xCAN, PWM		DS V1	not yet av.	ES V1.2	FS	PP
					ADC,	LPC2200					

