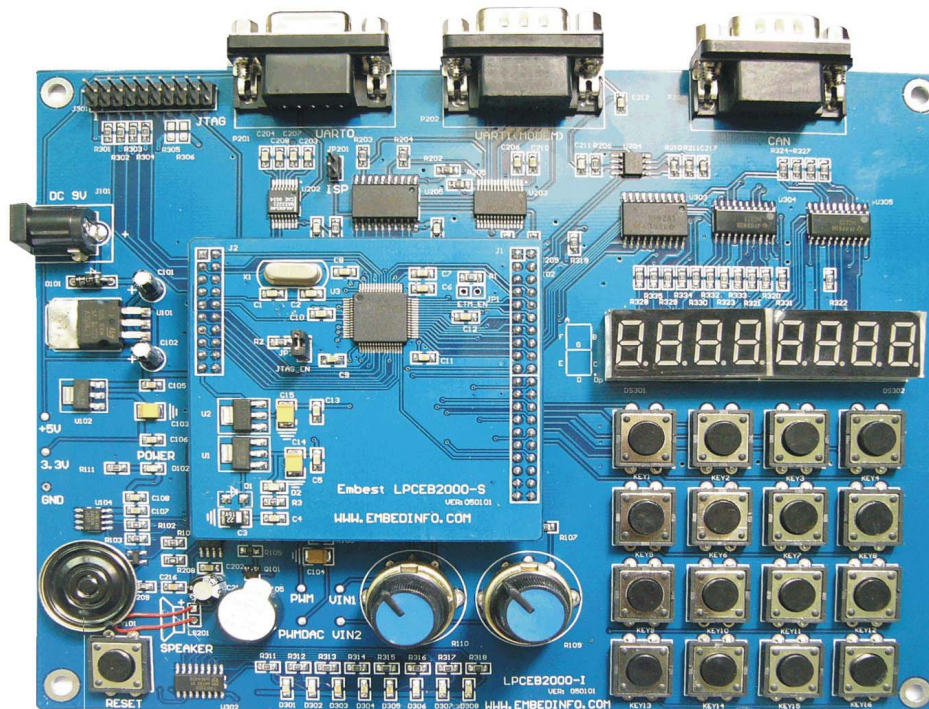


## Embest LPCEB2000 Evaluation Board

- A Complete Evaluation Kits for Philips LPC2000 ARM7TDMI-S Core Microcontrollers
- Enable to Evaluate LPC2114/19, 2124/29, 2194, 2131/32/38, 2210/12/14, 2290/92/94
- Plenty of software examples, all in source code



Embest LPCEB2000 Evaluation Board(installed LPCEB2000-S module board)

The 16/32-bit LPC2000 family is based on a 1.8V ARM7TDMI-S core operating at up to 60 MHz together with a wide range of peripherals including multiple serial interfaces, 10-bit ADC and external bus options. These controllers are designed for use in a range of applications including industrial control, automotive, medical, connectivity and any other general purpose embedded application requiring high performance and low power consumption in a cost-effective package.

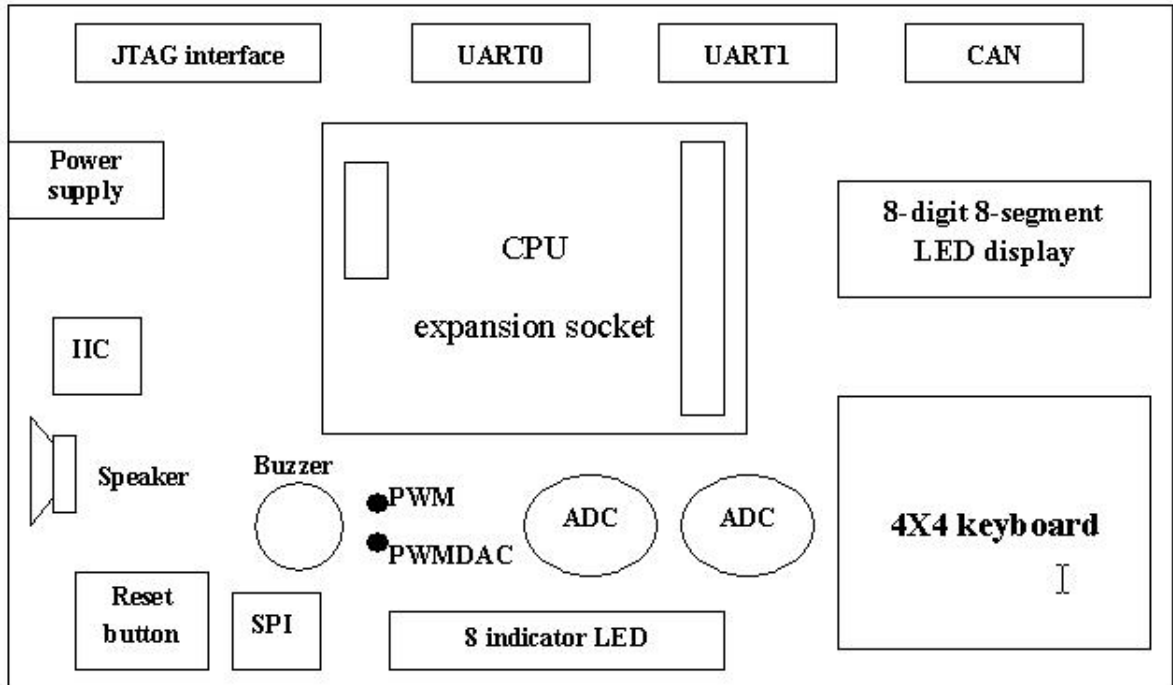
Embest LPCEB2000™ Evaluation Board Kit is a complete evaluation environment. It contains a development board, a JTAG debugger interface, and a suite of software tools for embedded development. Design, develop, implement and test your applications on LPC2000 from Philips using a single integrated toolkit.

### Hardware Specification

The Embest LPCEB2000 Evaluation Board is comprised a CPU module board and an expansion board. The expansion board named **LPCEB2000-I**, include:

- Dimensions: 182 x 139 mm, Temperature: -45 to +85 Celsius
- Power input: +9V
- 2 serial ports
- 1 CAN port

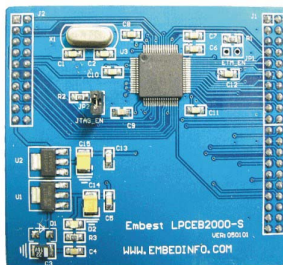
- 1 reset button, 4x4 keyboard
- 8 indicator lights
- 2-channel AD sampling input
- 2-channel PWM output, one is output to a buzzer, the other is to PWMDAC
- I2C bus
- 8-digit 8-segment LED display
- Analog signal output to a speaker
- 20 PIN standard JTAG port
- Sockets for CPU module board expansion: one 10x2, one 20x2



LPCEB2000-I Layout

The CPU module board is a LPC2000 core board, three types LPC2000 CPU module board exist now:

- **LPCEB2000-S** CPU module board, solder LPC2129 as default, can be replaced with LPC2114/2119/2124/2194 directly

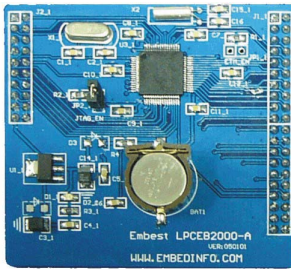


**LPCEB2000-S** include:

- ◇ LPC2129(can be replaced with LPC2114/2119/ 2124/2194) CPU
- ◇ A 10MHz Crystal for CPU
- ◇ J1 and J2 Connector, both use 0.1 spacing, 0.025 square inch staight pin headers. J1 is 10x2 Pins, J2 is 20x2 Pins.
- ◇ Powered with a regulated 5V using the on-board 1.8V and 3.3V regulators.
- ◇ Power status indicator LED
- ◇ A Jtag enable/disable jumper
- ◇ Dimensions: 65 x 61 mm, Temperature: -45 to +85 Celsius

- **LPCEB2000-A** CPU module board, solder LPC2132 as default, can be replaced with LPC2131/2138

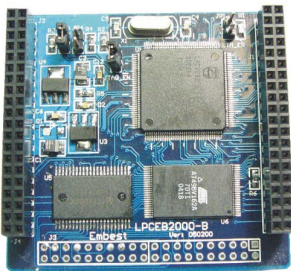
directly



**LPCEB2000-A** include:

- ✧ LPC2132(can be replaced with LPC2131/2138) CPU
- ✧ A 10MHz Crystal for CPU and a 32KHz Crystal for on-chip RTC
- ✧ On-board battery
- ✧ J1 and J2 Connector, both use 0.1 spacing, 0.025 square inch straight pin headers. J1 is 10 x 2 Pins, J2 is 20 x 2 Pins.
- ✧ Powered with a regulated 5V using the on-board 3.3V regulator.
- ✧ Power status indicator LED
- ✧ A Jtag enable/disable jumper
- ✧ Dimensions: 65x61 mm, Temperature: -45 to +85 Celsius

- **LPCEB2000-B** CPU module board, solder LPC2292 as default, can be replaced with LPC2210/2212/2214/2290/2294 directly

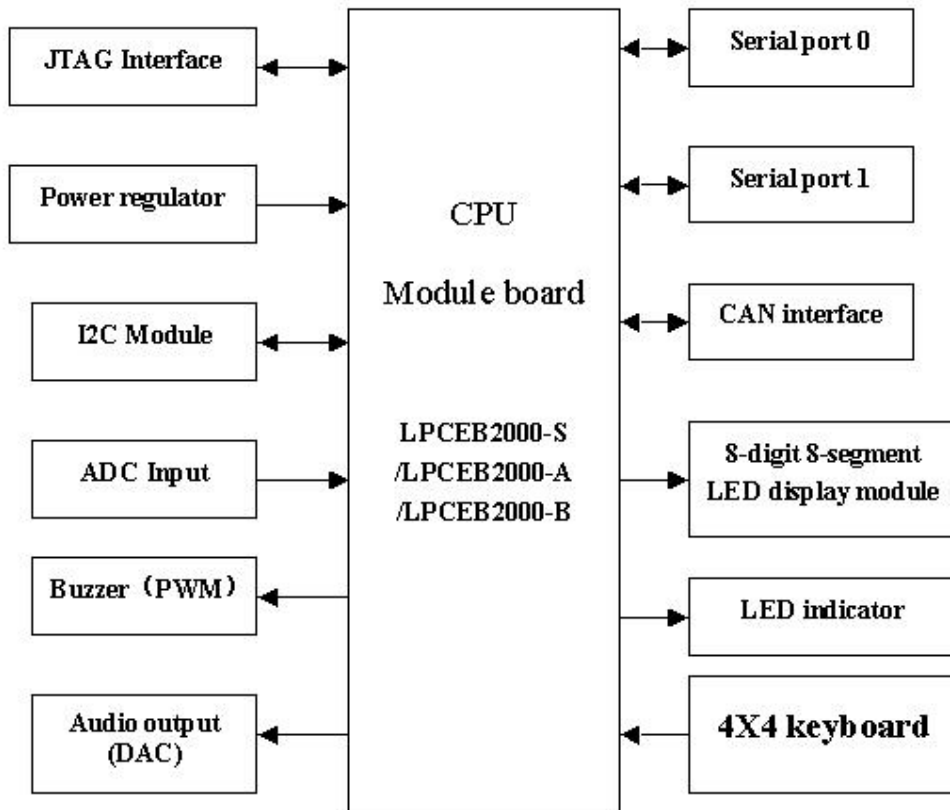


**LPCEB2000-B** include:

- ✧ LPC2292(can be replaced with LPC2210/2212/ 2214/2290/2294) CPU
- ✧ A 10MHz Crystal
- ✧ External Flash and SRAM: 1M x 16Bit Flash (AT49BV162A), 256K x 16Bit SRAM (IS61LV25616) or 512K x 16Bit SRAM
- ✧ J1, J2, J3, J4 Connnetor for external bus interface: use 0.1 spacing, 0.025 square inch straight pin headers. J2 and J4 is 10x2 Pins, J1 and J2 is 20x2 Pins.
- ✧ Powered with a regulated 5V using the on-board 3.3V and 1.8V regulator.
- ✧ Power status indicator LED
- ✧ A Jtag enable/disable jumper
- ✧ A Trace enable/disable jumper
- ✧ Boot set jumper: can boot from internal flash or external flash by jumper set.
- ✧ Dimensions: 65x61 mm, Temperature: -45 to +85 Celsius

The CPU module board mount directly on top of the LPC2000-I expansion board via high quality goldplated pins and sockets. All the 3 types of CPU module board(LPCEB2000-S, LPCEB2000-A, LPCEB2000-B) can be installed on LPC2000-I. By this mode, customers can phototype LPC2114/19, 2124/29, 2194, 2131/32/38, 2210/12/14, 2290/92/94 on a same expansion baord with different CPU module board. You should select the type of CPU module board which you would like to install when you place an order.

## Functional Block Diagram



## Software Examples

Embest Provide plenty of software examples for this LPCEB2000 evaluation board, all in source code:

- LPC\_source initialize and start up software
- beep\_test Buzzer test application, driven by GPIO
- 8LED\_test 8 segment LED display application
- ADC\_test AD0 and AD1 test, show the value(mV) on 8 segment LED
- SPI\_test Control 595 chip via SPI, light the 8 indicator lights
- Time\_test Timer test application
- Dog\_test Watch dog test software
- I2C\_test I2C test software
- EINT\_test external interrupt test application
- key\_test Key board test
- PWM\_test PWM test software
- PWMDAC\_test PWMDAC example software
- RTC\_test RTC application example
- UART\_test UART drive example
- DA\_test DAC test software, only for installed with LPCEB2000-A CPU module board

## Order Information

Embest LPCEB2000™ Evaluation Board Kit contains a LPCEB2000 target board, complete development tools and examples software in a low price:

Order No.	IW1	IW2	IW3
Item	Embest LPCEB2000 EVB Kit for LPC211X/212X	Embest LPCEB2000 EVB Kit for LPC213X	Embest LPCEB2000 EVB Kit for LPC22XX
CPU module board	LPCEB2000-S board	LPCEB2000-A board	LPCEB2000-B board
Expansion board	LPCEB2000-I board		
CD-ROM	<ul style="list-style-type: none"> <li>● software examples</li> <li>● user manual</li> <li>● circuit schematic drawing</li> <li>● BOM lists</li> </ul>		
Development Tools	<ul style="list-style-type: none"> <li>● Embest IDE for ARM (IDE, editor, GNU ARM Compiler and Linker, debugger), unregistered evaluation version</li> <li>● EasyICE (a Jtag cable connect evaluation board to host PC via parallel port)</li> <li>● LPC2xxx Flash ISP Utility (the Philips ISP Utility for Flash Programming via a standard COM port)</li> </ul>		
Others	<ul style="list-style-type: none"> <li>● Serial cable</li> <li>● Parallel cable</li> <li>● 9.0V DC Power supply</li> </ul>		
Option Tools	<a href="#">Embest IDE for ARM</a> Development Tools Suite I or II, III, include: <ul style="list-style-type: none"> <li>● IDE, editor, GNU ARM Compiler and Linker, debugger, full registered version</li> <li>● <a href="#">Embest PowerICE</a> or <a href="#">Embest Emulator</a>, <a href="#">Embest UnetICE</a></li> <li>● <a href="#">Embest Flash Programmer</a>(Programs LPC2000 on-chip Flash code memory using JTAG port)</li> </ul>		



### Embest Info&Tech Co.,LTD.

Room 509, Luohu Science&Technology Building,  
 #85 Taining Rd., Shenzhen, Guangdong, China 518020  
 Tel: +86-755-25635656/25636285  
 Fax: +86-755-25616057  
 Email: [market@embedinfo.com](mailto:market@embedinfo.com)  
<http://www.embedinfo.com>