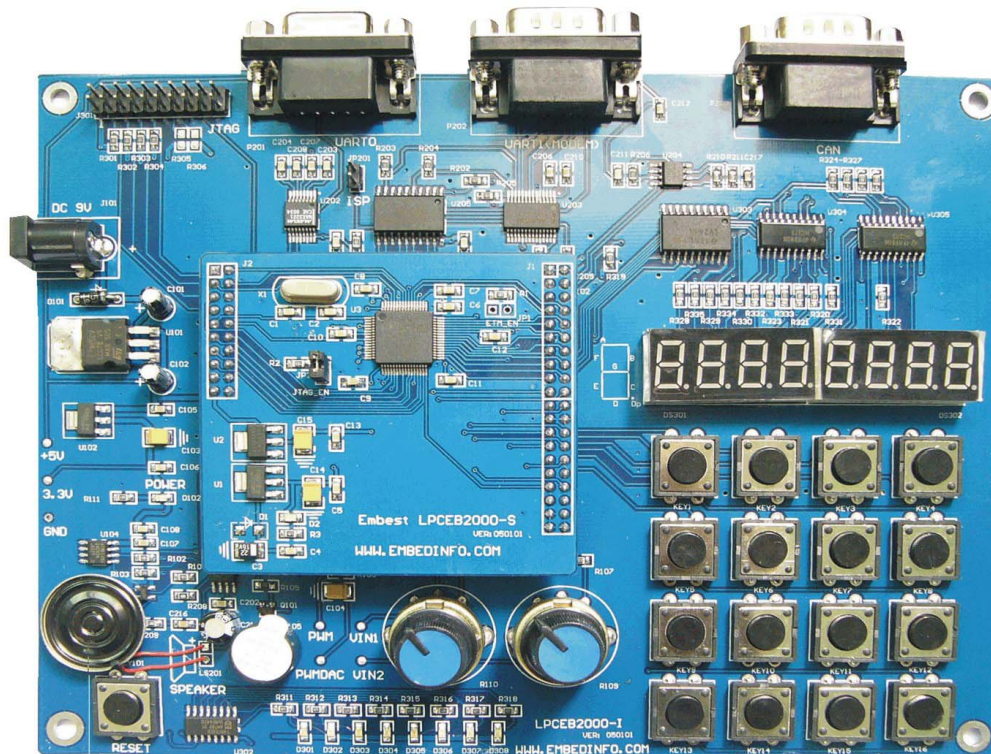


Embest LPCEB2000 Evaluation Board

- 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.

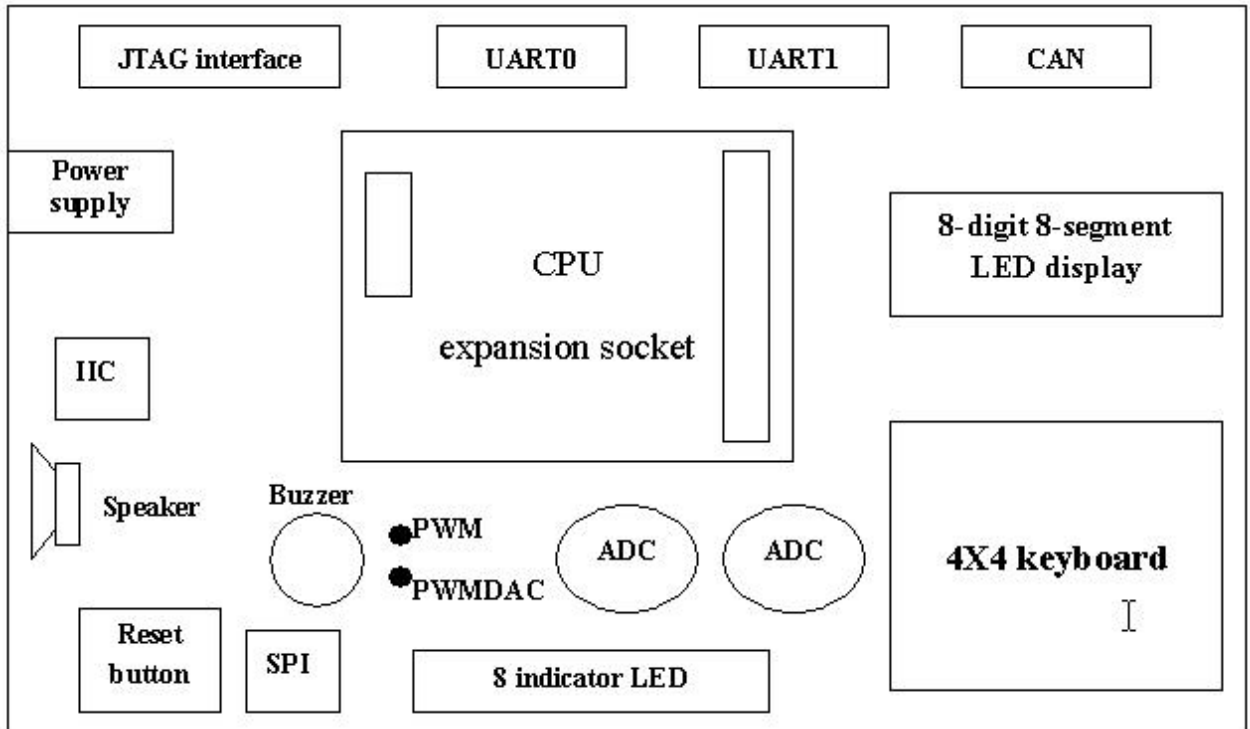
Embest LPCEB2000™ Evaluation Board Kit is a complete evaluation environment. It contains a development board, a JTAG debugger interface, and a suite of software tools for embedded development. Design, develop, implement and test your applications on LPC2000 from Philips using a single integrated toolkit.

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

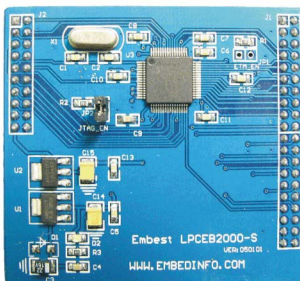
- 1 reset button, 4x4 keyboard
- 8 indicator lights
- 2-channel AD sampling input
- 2-channel PWM output, one is output to a buzzer, the other is to PWMDAC
- I2C bus
- 8-digit 8-segment LED display
- Analog signal output to a speaker
- 20 PIN standard JTAG port
- Sockets for CPU module board expansion: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

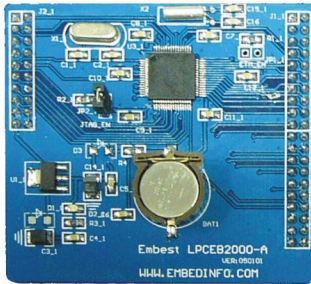


LPCEB2000-S include:

- ◇ 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

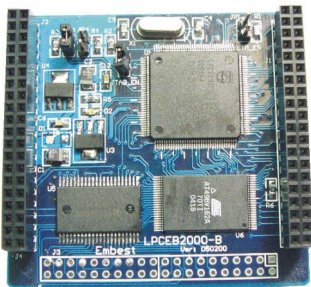
directly



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

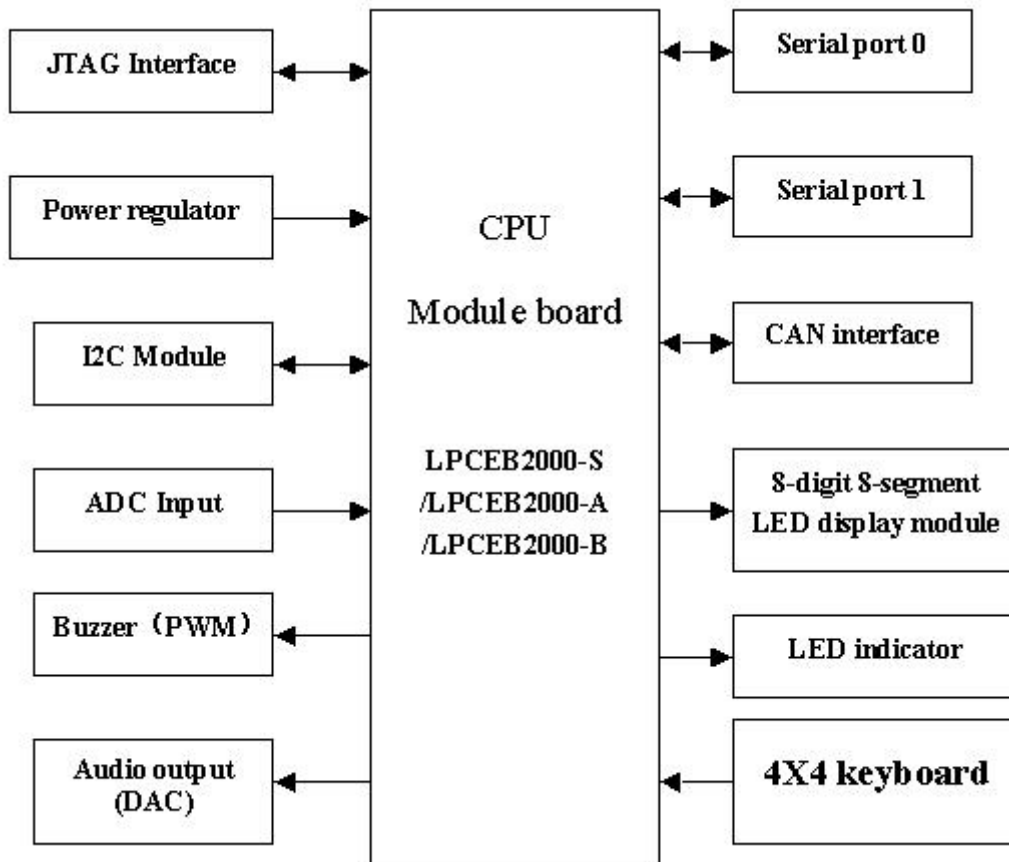


LPCEB2000-B include:

- ✧ 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 board 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"> ● software examples ● user manual ● circuit schematic drawing ● BOM lists 		
Development Tools	<ul style="list-style-type: none"> ● Embest IDE for ARM (IDE, editor, GNU ARM Compiler and Linker, debugger), unregistered evaluation version ● EasyICE (a Jtag cable connect evaluation board to host PC via parallel port) ● LPC2xxx Flash ISP Utility (the Philips ISP Utility for Flash Programming via a standard COM port) 		
Others	<ul style="list-style-type: none"> ● Serial cable ● Parallel cable ● 9.0V DC Power supply 		
Option Tools	Embest IDE for ARM Development Tools Suite I or II, III, include: <ul style="list-style-type: none"> ● IDE, editor, GNU ARM Compiler and Linker, debugger, full registered version ● Embest PowerICE or Embest Emulator, Embest UnetICE ● Embest Flash Programmer(Programs LPC2000 on-chip Flash code memory using JTAG port) 		



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