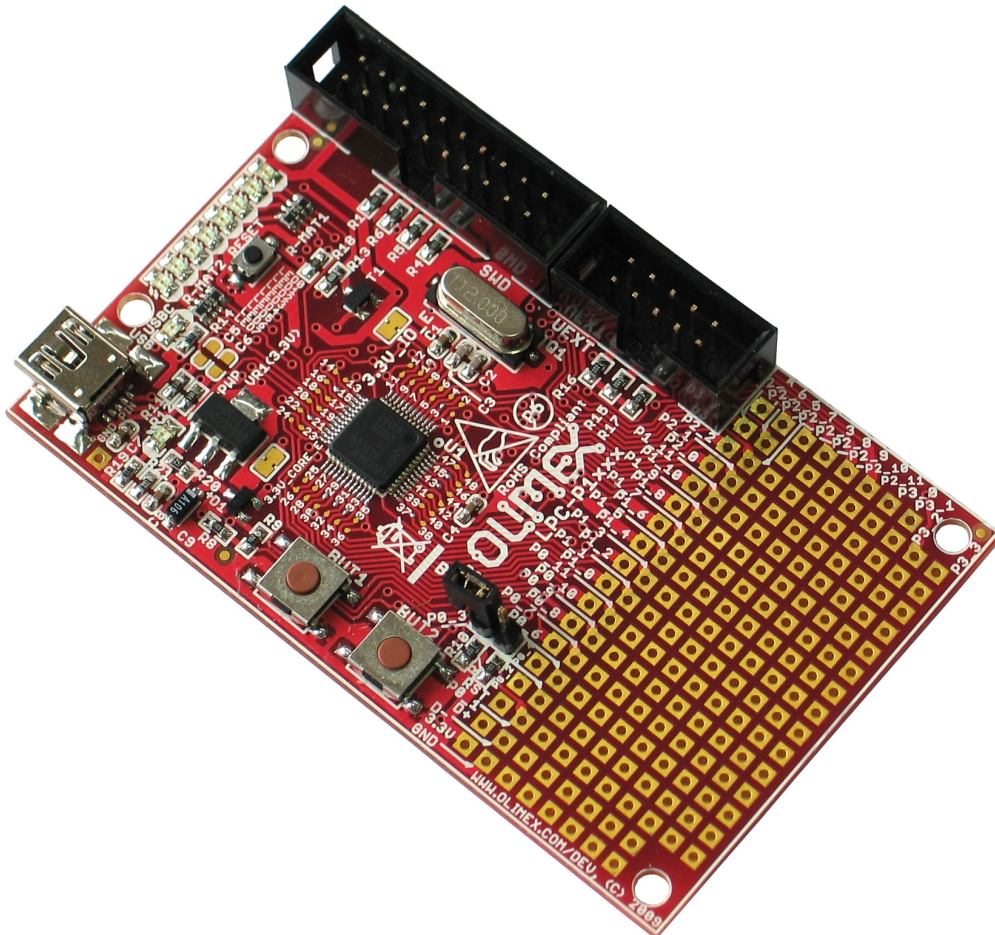




LPC-P1343 development board

Users Manual



All boards produced by Olimex are ROHS compliant

Revision A, November 2011

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INTRODUCTION

LPC-P1343 is development board with LPC1343 ARM Cortex-M3 based microcontrollers for embedded applications from NXP. LPC-P1343 featuring a high level of integration and low power consumption. This microcontroller supports various interfaces such as one Fast-mode Plus I²C-bus interface, USB, UART, SSP interfaces, four general purpose timers, a 10-bit ADC. On the board are available UEXT, Debug Interface, user buttons, USB device and user leds. All this allows you to build a diversity of powerful applications to be used in a wide range of applications.

BOARD FEATURES

- MCU: **LPC1343** Cortex-M3, up to 70 Mhz, 32 kB Flash, 8kB SRAM, UART RS-485, USB, SSP, I²C/Fast+, ADC
- Power supply circuit
- Power-on led
- USB connector and functionality
- USBC led
- Debug interface – SWD (Serial Wire Debug)
- UEXT connector
- Eight user leds
- Two user buttons
- Reset button
- Prototype area
- FR-4, 1.5 mm, soldermask, component print
- Dimensions:80x50mm (3.15 x 1.97")

ELECTROSTATIC WARNING

The **LPC-P1343** board is shipped in protective anti-static packaging. The board must not be subject to high electrostatic potentials. General practice for working with static sensitive devices should be applied when working with this board.

BOARD USE REQUIREMENTS

Cables: The cable you will need depends on the programmer/debugger you use. You will also need USA A-B cable for connecting the programmers to the PC.

Hardware: Programmer/Debugger [ARM-JTAG-EW](#) which works with IAR for ARM up to version 6.20; [ARM-USB-OCD](#), [ARM-USB-OCD-H](#), [ARM-USB-TINY](#) and [ARM-USB-TIBY-H](#) which works only with [ARM-JTAG-SWD](#) adapter and with Rowley CrossWorks.

Software: IAR for ARM up to version 6.20 and Rowley CrossWorks.

PROCESSOR FEATURES

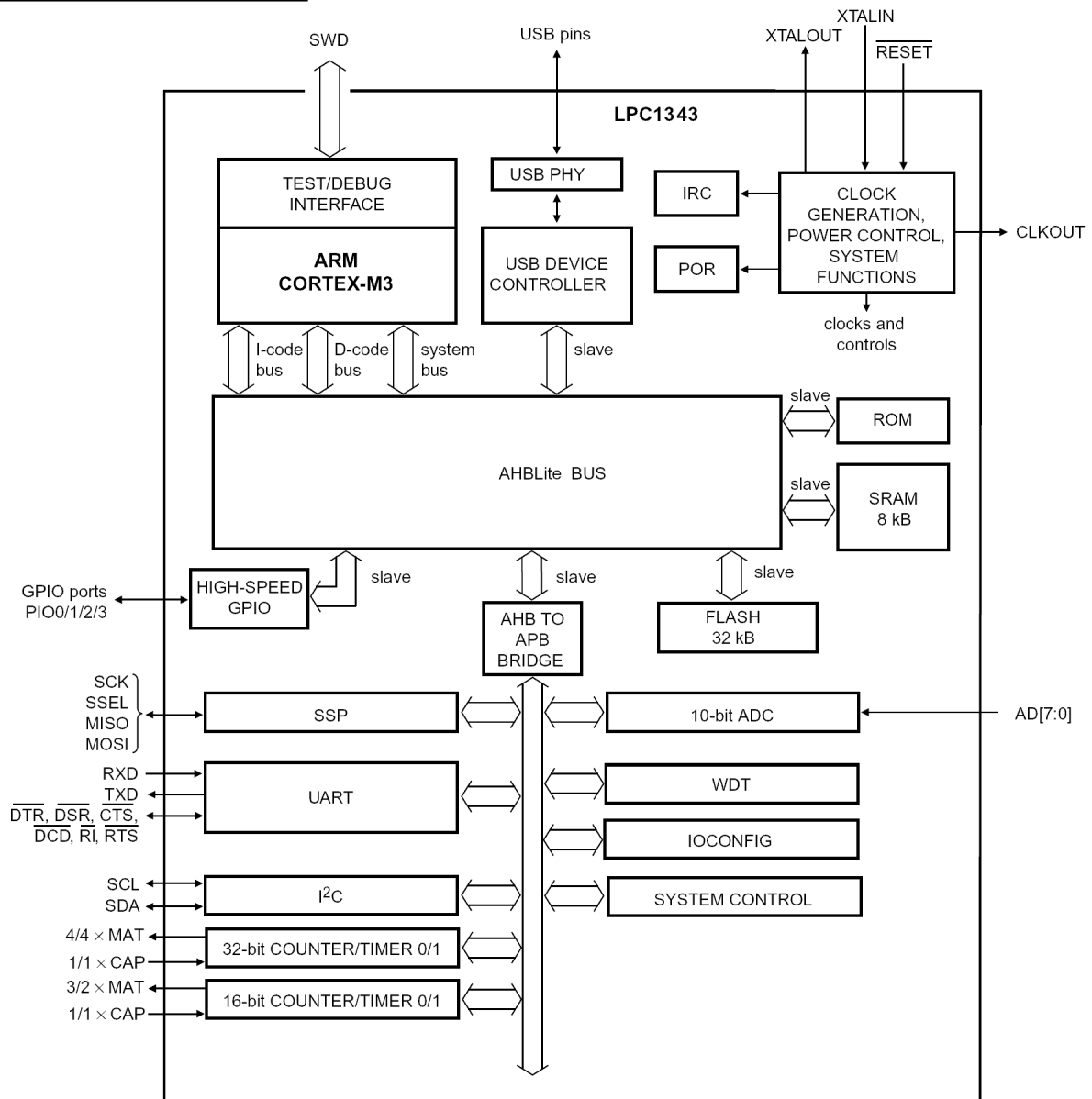
LPC-P1343 board use ARM Cortex™-M3 microcontroller **LPC1343FBD48/301** from NXP Semiconductors with these features:

- ARM Cortex-M3 processor, running at frequencies of up to 72 MHz
- ARM Cortex-M3 built-in Nested Vectored Interrupt Controller (NVIC).
- 32kB on-chip flash programming memory. Enhanced flash memory accelerator enables high-speed 72 MHz operation with zero wait states
- In-System Programming (ISP) and In-Application Programming (IAP) via on-chip bootloader software.
- Serial interfaces:
 - USB 2.0 full-speed device controller with on-chip PHY for device
 - UART with fractional baud rate generation, modem, internal FIFO and RS-485/EIA-485 support.
 - SSP controller with FIFO and multi-protocol capabilities.
 - I²C-bus interface supporting full I²C-bus specification and Fast-mode Plus with a data rate of 1 Mbit/s with multiple address recognition and monitor mode.
- Other peripherals:
 - 42 General Purpose I/O (GPIO) pins with configurable pull-up/down resistors and a new, configurable open-drain operating mode.
 - Four general purpose timers/counters, with a total of four capture inputs and 13 match outputs.
 - Programmable WatchDog Timer (WDT).

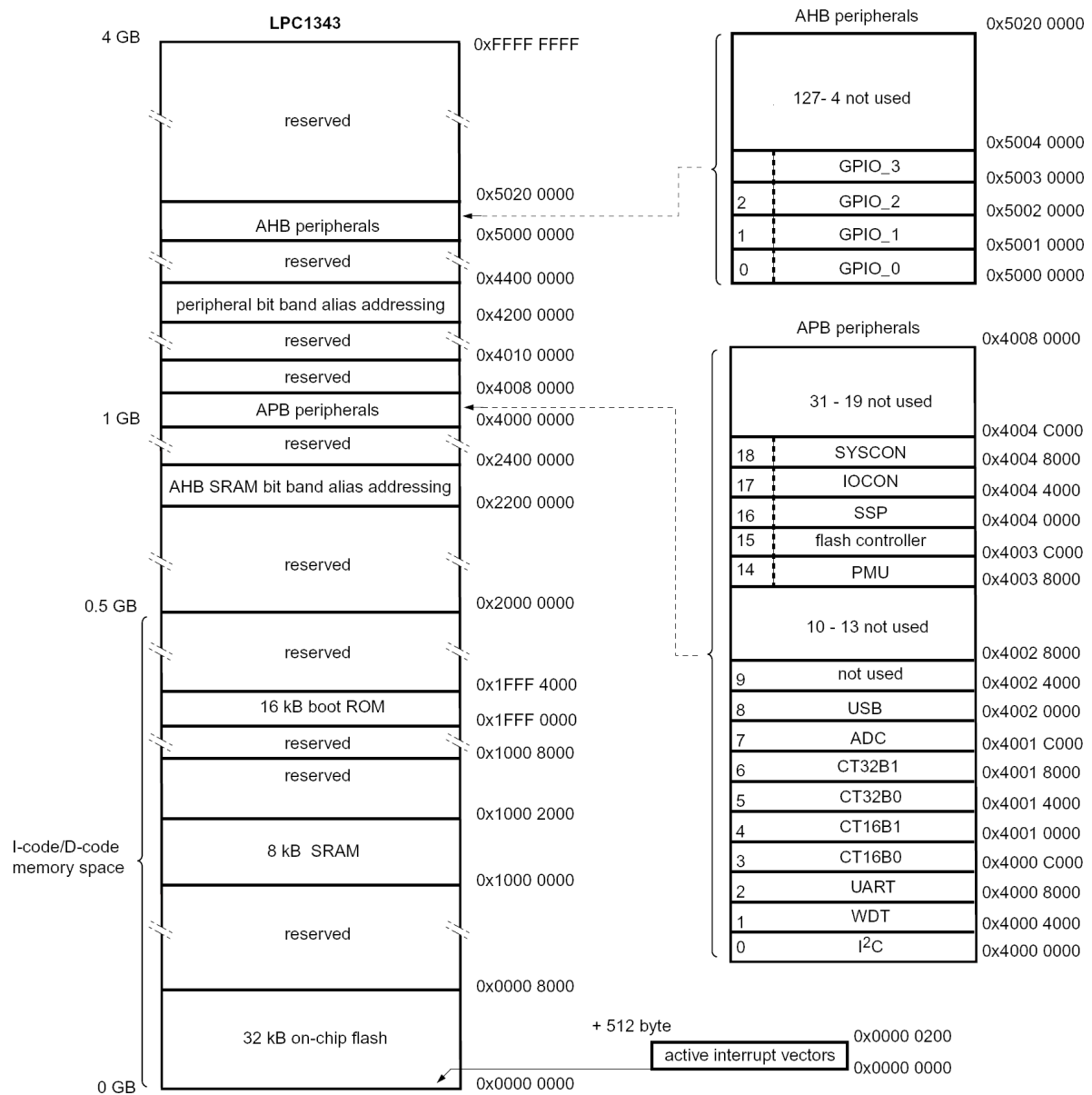
- System tick timer.

- Serial Wire Debug and Serial Wire Trace Port.
- High-current output driver (20 mA) on one pin.
- High-current sink drivers (20 mA) on two I2C-bus pins in Fast-mode Plus.
- Integrated PMU (Power Management Unit) to minimize power consumption during Sleep, Deep-sleep, and Deep power-down modes.
- Three reduced power modes: Sleep, Deep-sleep, and Deep power-down.
- Single 3.3 V power supply (2.0 V to 3.6 V).
- 10-bit ADC with input multiplexing among 8 pins.
- 40 GPIO pins can be used as edge and level sensitive interrupt sources.
- Clock output function with divider that can reflect the main oscillator clock, IRC clock, CPU clock, Watchdog clock, and the USB clock.
- Processor wake-up from Deep-sleep mode via GPIO interrupts.
- Brownout detect with four separate thresholds for interrupt and one threshold for forced reset.
- Power-On Reset (POR).
- Crystal oscillator with an operating range of 1 MHz to 25 MHz.
- 12 MHz internal RC oscillator trimmed to 1 % accuracy that can optionally be used as a system clock.
- PLL allows CPU operation up to the maximum CPU rate without the need for a high-frequency crystal. May be run from the main oscillator, the internal RC oscillator, or the Watchdog oscillator.
- Code Read Protection (CRP) with different security levels.

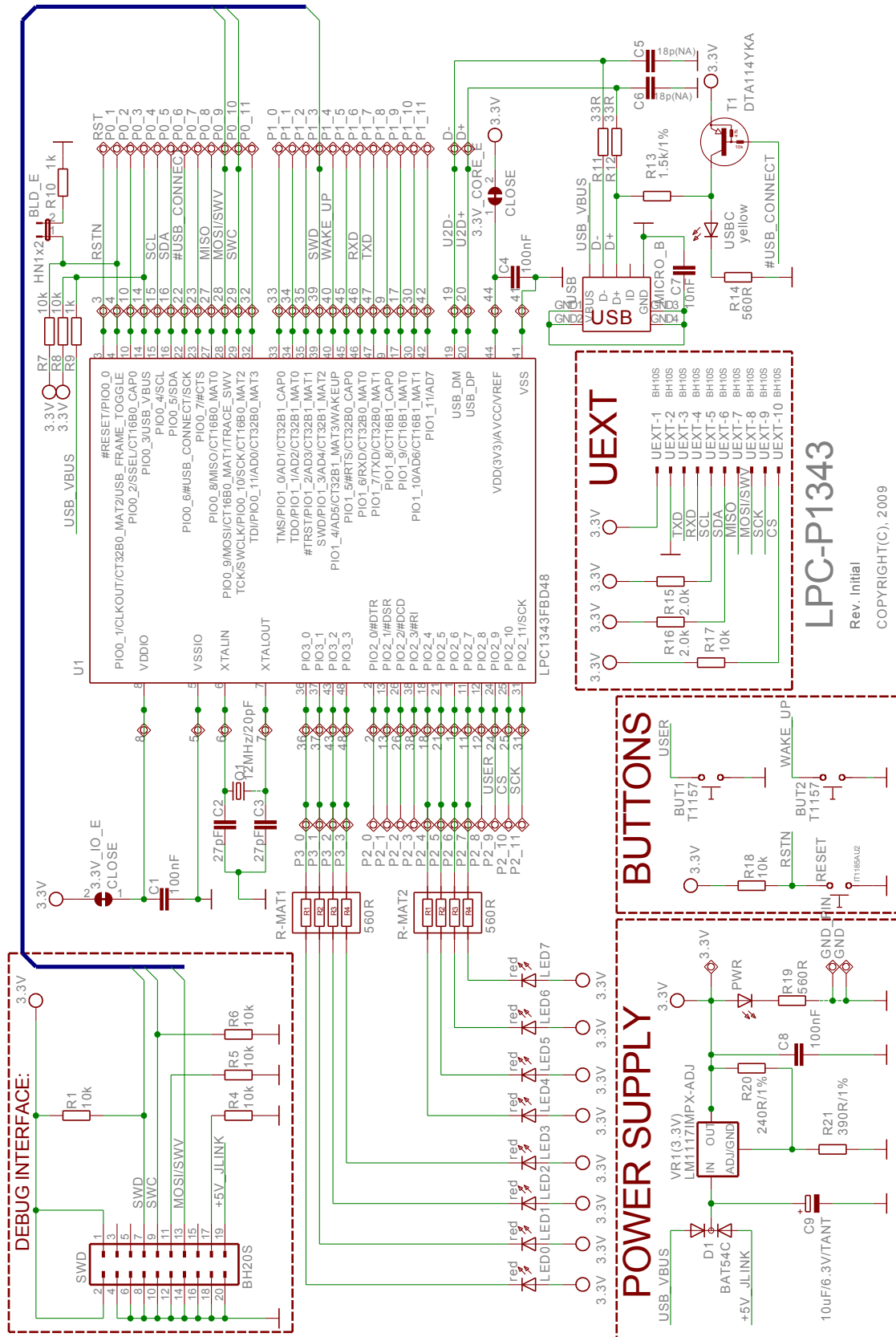
BLOCK DIAGRAM



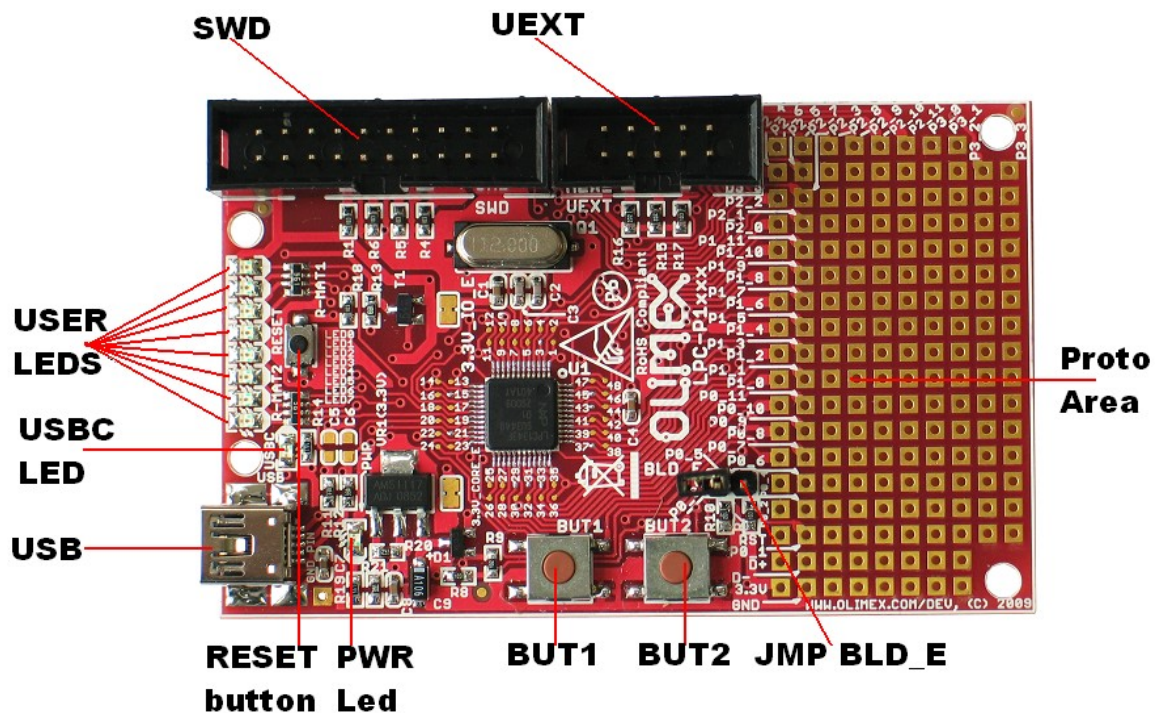
MEMORY MAP



SCHEMATIC



BOARD LAYOUT



POWER SUPPLY CIRCUIT

LPC-P1343 is power supplied +5V via USB, or via JTAG.

RESET CIRCUIT

LPC-P1343 reset circuit includes LPC1343 pin 3 (#RESET/PIO0_0), R18 (10k) and RESET button.

CLOCK CIRCUIT

Quartz crystal 12 MHz is connected to LPC1343 pin 6 (XTALIN) and pin 7 (XTALOUT).

JUMPER DESCRIPTION

3.3V_CORE_E



This jumper, when closed, enables microcontroller 3.3V power supply.
Default state is closed.

3.3V(I/O)_E



This jumper, when closed, supplies 3.3 V voltage to LPC1343 pin 8 (VDDIO).
Default state is closed.

BLD_E



If BLD_E is closed during Reset and USB is connected to computer, then removable disk will be appeared in My computer. The user can create via IAR "*.bin" file, which can be placed into the removable disk. After this when jumper BLD_E is opened during reset the microcontroller will execute program stored in "*.bin" file.

Default state is open.

INPUT/OUTPUT

LED0 (red) connected via R-MAT1 to LPC1343 pin 36 (PIO3_0).

LED1 (red) connected via R-MAT1 to LPC1343 pin 37 (PIO3_1).

LED2 (red) connected via R-MAT1 to LPC1343 pin 43 (PIO3_2).

LED3 (red) connected via R-MAT1 to LPC1343 pin 48 (PIO3_3).

LED4 (red) connected via R-MAT2 to LPC1343 pin 18 (PIO3_4).

LED5 (red) connected via R-MAT2 to LPC1343 pin 21 (PIO3_5).

LED6 (red) connected via R-MAT2 to LPC1343 pin 1 (PIO2_6).

LED7 (red) connected via R-MAT2 to LPC1343 pin 11 (PIO2_7).

USBC (yellow) shows that USB is connected.

Power-on LED (red) – this LED shows that +3.3V is applied to the board.

User button with name **BUT1** (USER) connected to **LPC1343** pin 24 (PIO2_9).

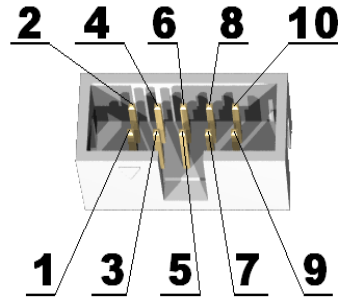
User button with name **BUT2** connected to **LPC1343** pin 40 (WAKEUP).

Reset button with name **RESET** connected to LPC1343 pin 3 (#RESET/PIO0_0).

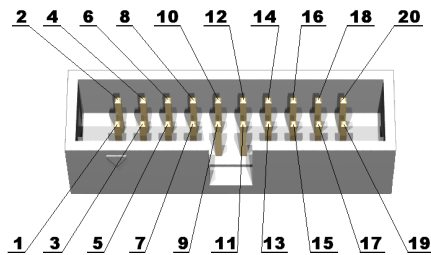
EXTERNAL CONNECTORS DESCRIPTION

UEXT

Pin #	Signal Name
1	3.3V
2	GND
3	TXD
4	RXD
5	SCL
6	SDA
7	MISO
8	MOSI/SWV
9	SCK
10	CS



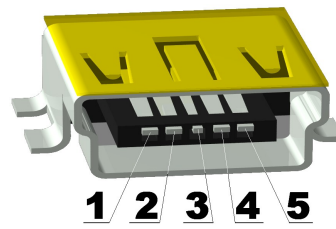
SWD



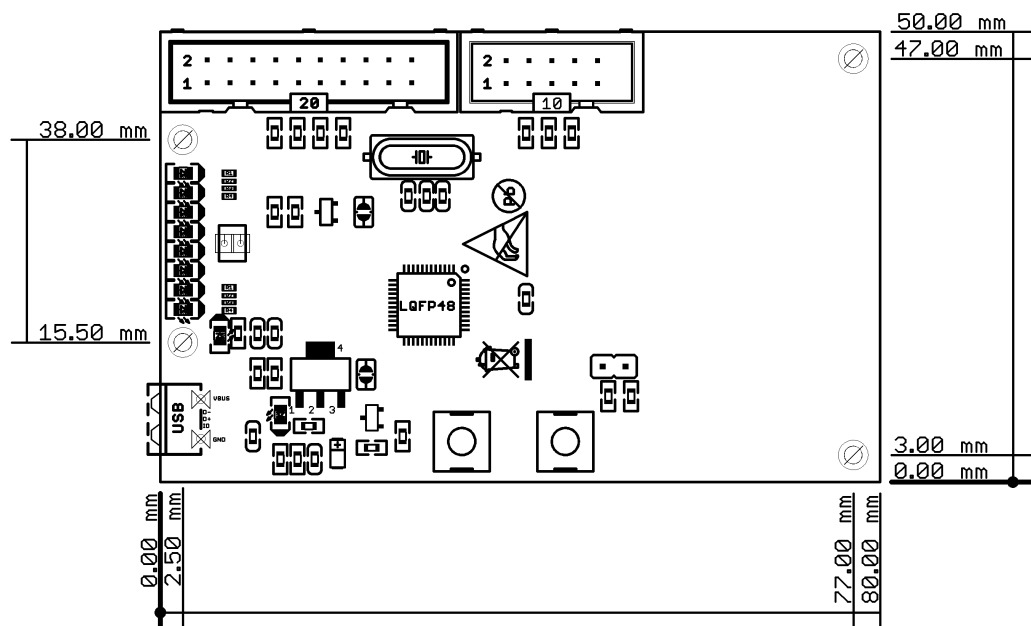
Pin #	Signal Name	Pin #	Signal Name
1	3.3V	2	3.3V
3	NC	4	GND
5	NC	6	GND
7	SWD	8	GND
9	SWC	10	GND
11	pull-down	12	GND
13	MOSI/SWV	14	GND
15	NC	16	GND
17	pull-down	18	GND
19	+5V_JLINK	20	GND

USB

Pin #	Signal Name
1	USB_VBUS
2	U2D-
3	U2D+
4	NC
5	GND



MECHANICAL DIMENSIONS



AVAILABLE DEMO SOFTWARE

- [LPC1343 demo examples](#) project for EW-ARM.

ORDER CODE

LPC-P1343 - assembled and tested board

How to order?

You can order to us directly or by any of our distributors.
Check our web www.olimex.com/dev for more info.

Revision history

Board's Revision:	Rev. Initial, December 2009
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Manual's Revision:	Rev. A, November 2011
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- Added Programmers and Software in "BOARD
USE REQUIREMENTS" and added AVAILABLE
DEMO SOFTWARE.

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