

## 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 I<sup>2</sup>C-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, I<sup>2</sup>C/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.

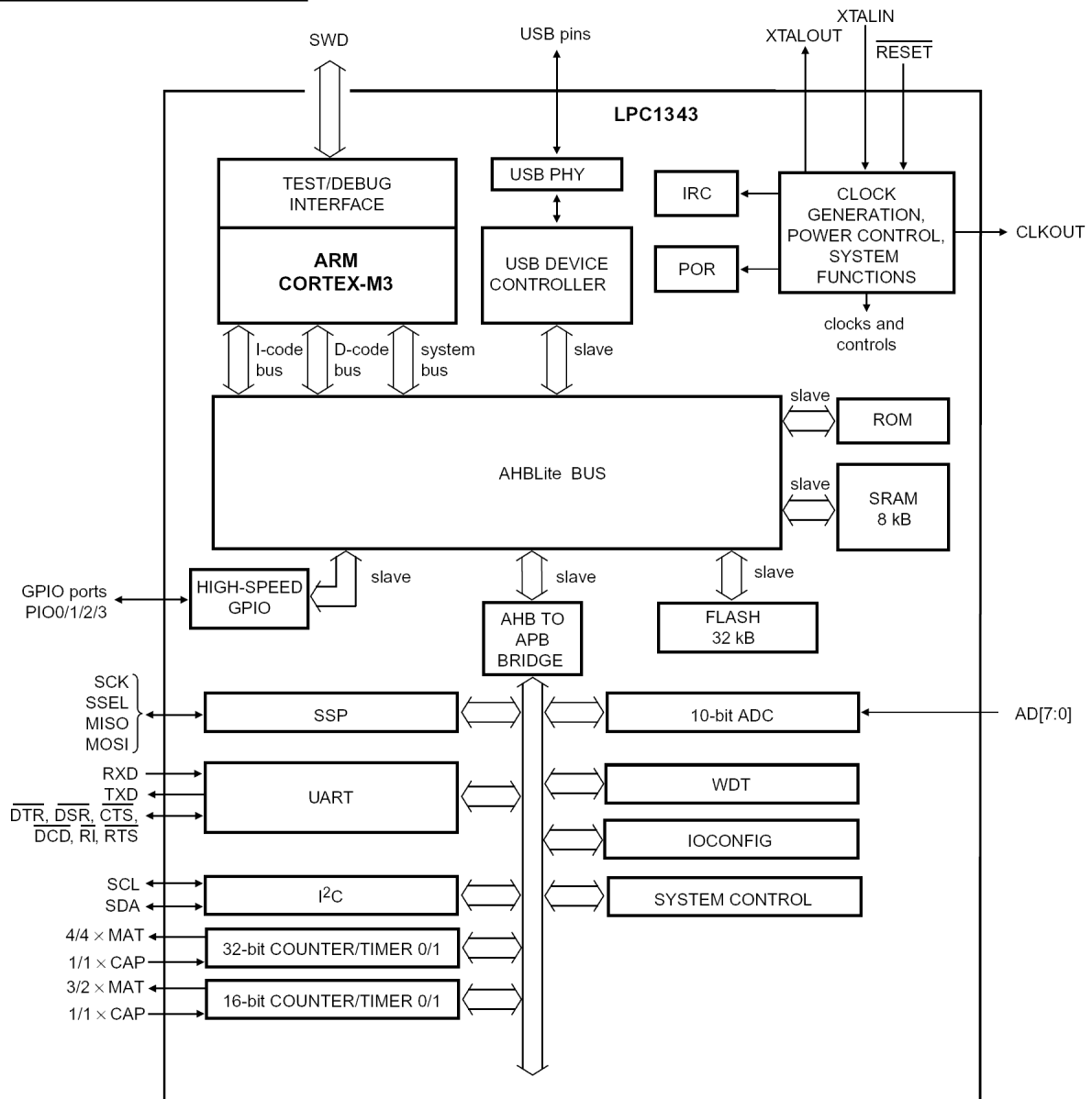
## PROCESSOR FEATURES

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

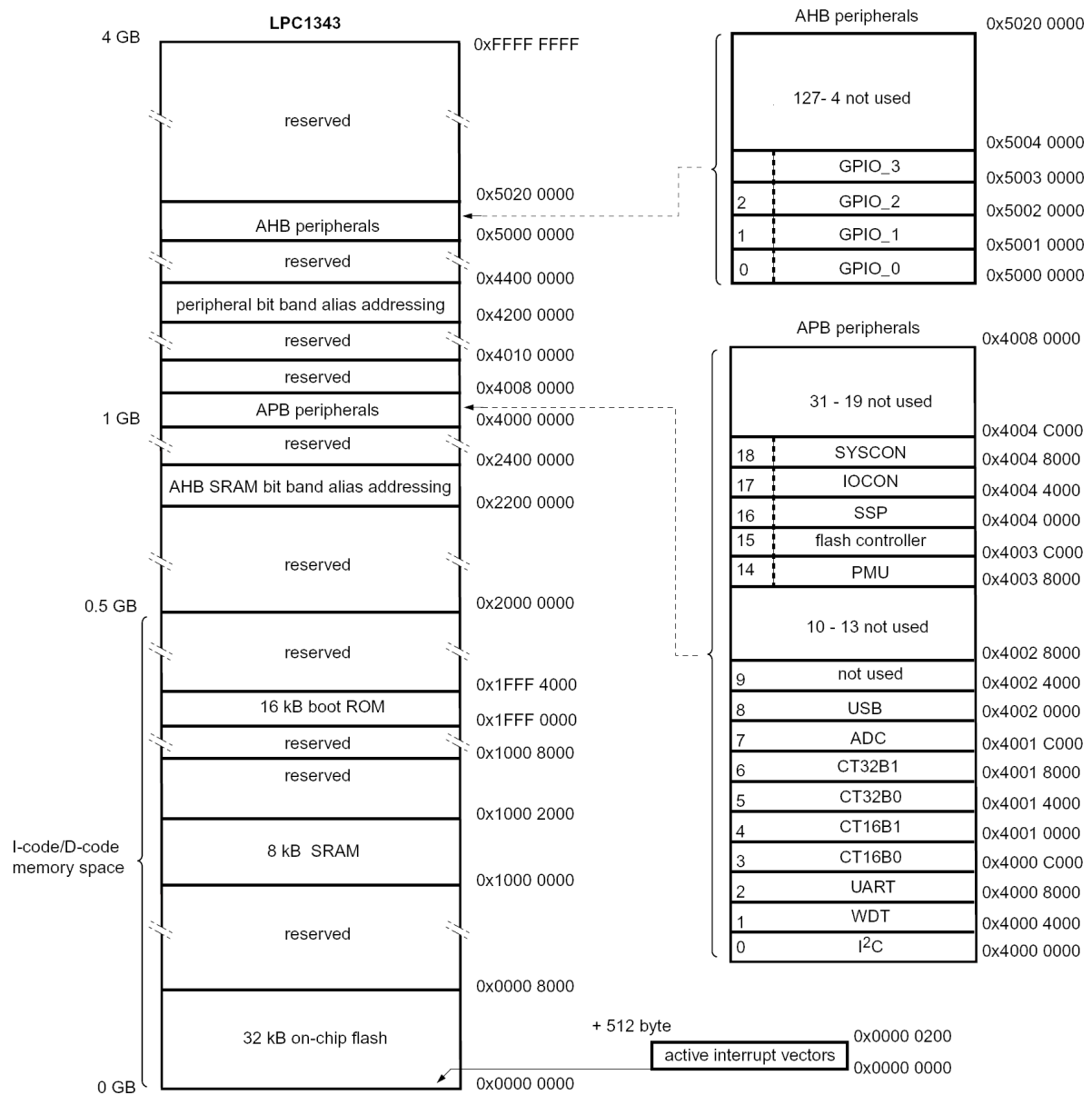
- ARM Cortex-M3 processor, running at frequencies of up to 72 MHz
- ARM Cortex-M3 built-in Nested Vectored Interrupt Controller (NVIC).
- 32kB on-chip flash programming memory. Enhanced flash memory accelerator enables high-speed 72 MHz operation with zero wait states
- In-System Programming (ISP) and 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.
  - I<sup>2</sup>C-bus interface supporting full I<sup>2</sup>C-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.

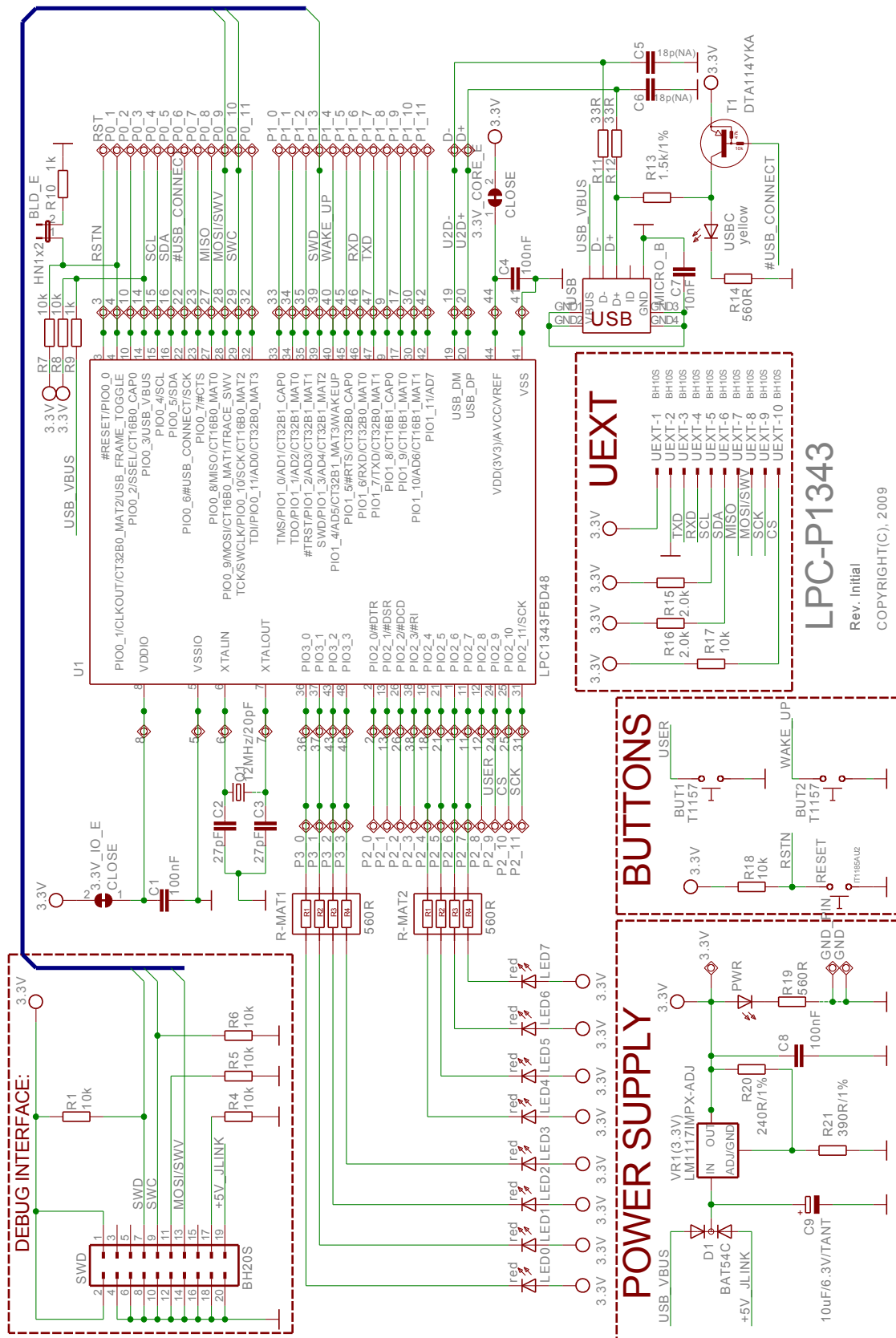
## BLOCK DIAGRAM



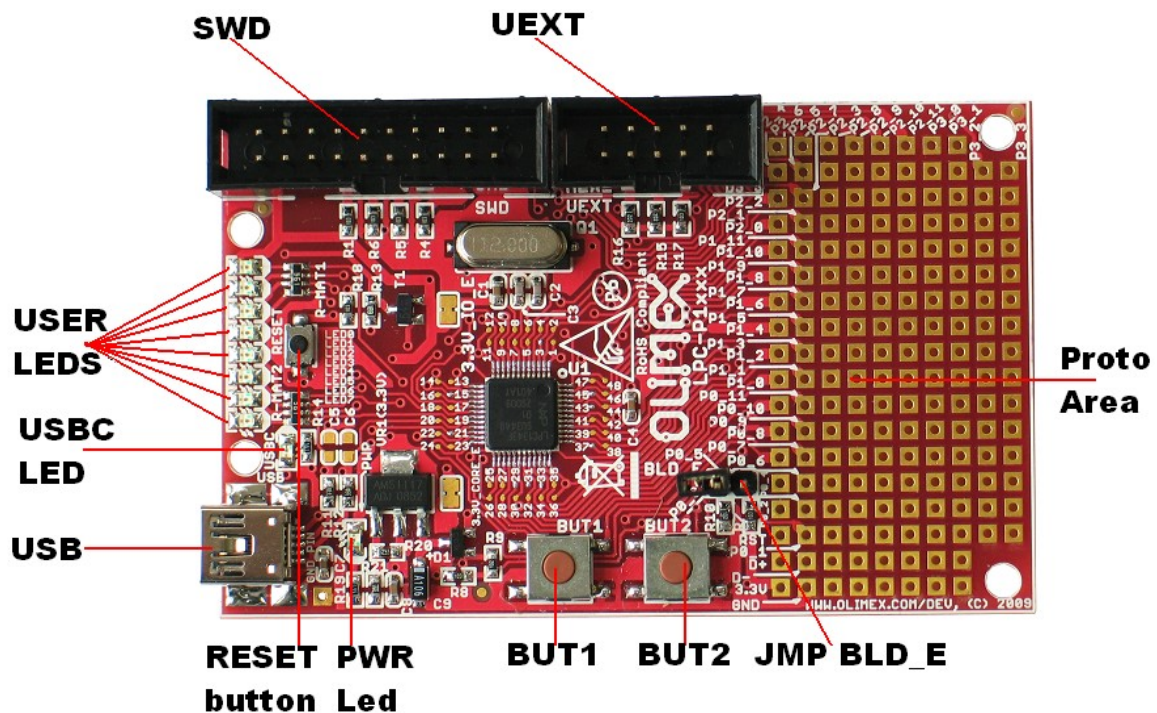
# MEMORY MAP



# 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).

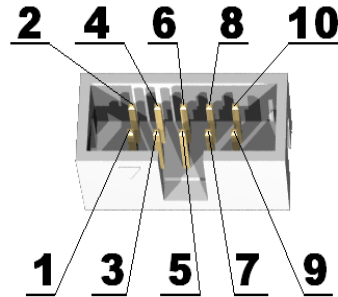
**User button** with name **BUT2** connected to **LPC1343** pin 40 (WAKEUP).

**Reset button** with name **RESET** connected to LPC1343 pin 3 (#RESET/PIO0\_0).

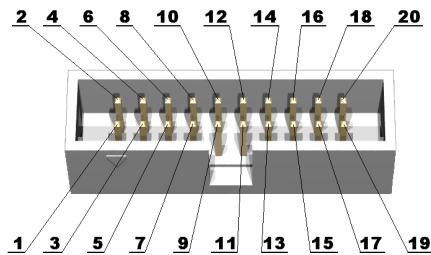
## EXTERNAL CONNECTORS DESCRIPTION

### 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



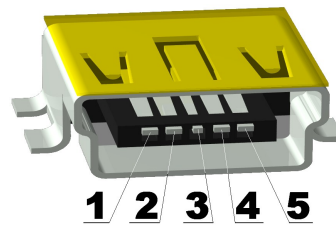
### SWD



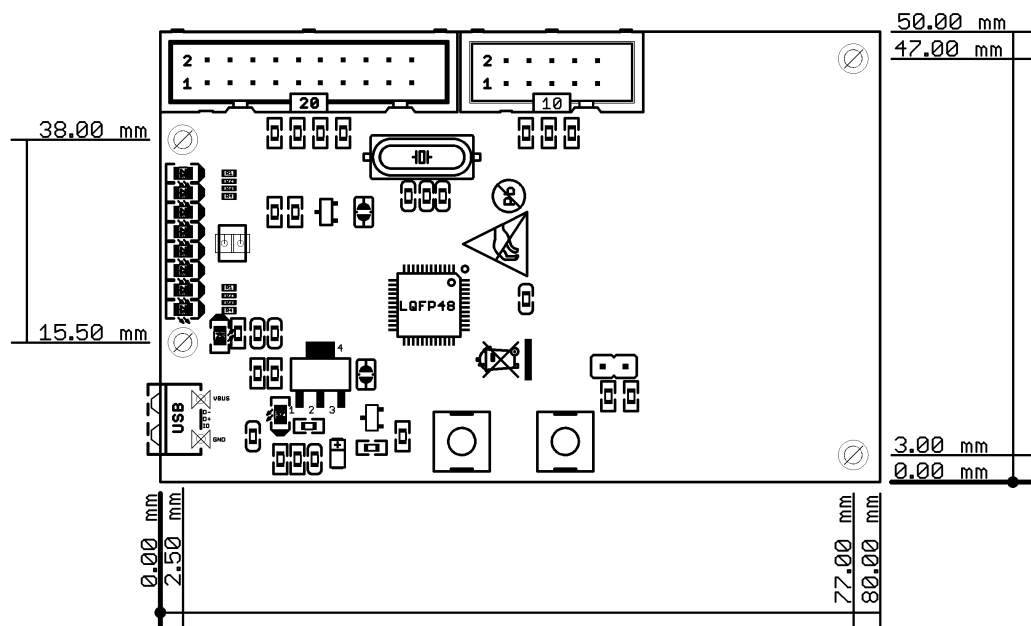
Pin #	Signal Name	Pin #	Signal Name
1	3.3V	2	3.3V
3	NC	4	GND
5	NC	6	GND
7	SWD	8	GND
9	SWC	10	GND
11	pull-down	12	GND
13	MOSI/SWV	14	GND
15	NC	16	GND
17	pull-down	18	GND
19	+5V_JLINK	20	GND

## 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](http://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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