LPC2148 Pro Development Board is a powerful development platform based on LPC2148 ARM7TDMI microcontroller with 512K on-chip memory. This board is powered by USB port and does not need external power supply.   It is ideal for developing embedded applications involving high speed wireless communication (Zigbee / Bluetooth / WiFi), USB based data logging,   real time data monitoring and control, interactive control panels etc. The on-chip USB controller provides direct high speed interface to a PC/laptop with speeds up to 12Mb/s.   The UART boot loader eliminates need of an additional programmer and allows you to program using serial port.   The on board peripherals include SD/MMC card interface, USB2.0 interface, 4Kbit I2C EEPROM, Xbee / Bluetooth / WiFi wireless module interface,   ULN2003 500mA current sinking driver, L293D DC motor controller, 16X2 character LCD and many more. The on-chip peripherals and the external   hardware on the development board are interconnected using pin headers and jumpers. The I/O pins on the microcontroller can be accessed from a 50 pin male header.   This direct access to I/O pins enables you to connect your own devices very easily to the processor. The board is made from double sided PTH PCB board to provide extra strength to the connector joints for increased reliability.

Note:

1. Xbee / Bluetooth/ WiFi wireless module and SD/MMC card are not included with the board and it can be bought separately from Nex Robotics website.

 Technical Specifications

  - Microcontroller: LPC2148 with 512K on chip memory
  - Crystal for LPC2148: 12Mhz
  - Crystal for RTC: 32.768KHz
  - 50 pin Berg header for external interfacing
  - Wireless module adapter for 2.4GHz ZigBee (Xbee) / Bluetooth / WiFi connectivity
  - On board 512 bytes of I2C external EEPROM
  - USB Type B Connector
  - SD / MMC card holder with SPI interface
  - **No separate programmer required (Program with Flash Magic using on-chip boot**

loader)

- **No Separate power adapter required (USB port as power source)**
- 10pin(2X5) FRC JTAG connector for Programming and debugging
- 50 Pin Expansion header for easy access to I/O pins
- On board Two Line LCD Display (2x16) (with jumper select option to disable LCD)
- L293D 600mA Dual DC motor Driver
- ULN2003 500mA driver
- Two RS-232 Interfaces (For direct connection to PC's Serial port)
- Real-Time Clock with Battery Holder
- 2 Analog Potentiometers connected to ADC
- TSOP1738 IR receiver
- 4 USER Switches
- 4 USER LEDs
- Reset and Boot loader switches
- 3V button cell for on chip RTC
- ON/OFF switch
- On Board Buzzer Interface
- Schematics and Application examples in KEIL provided in the documentation CD
- Can be used as main board for developing applications

Kit Contains

- 1 x LPC2148 Pro Development Board
- 1 x DB9 Serial Cable
- 1 x USB Cable
- 10 x Jumper wires
- Documentation CD:
- Schematic
- Programming Software
- Sample Hex Code
- Example Codes

LPC2148 Features:

- 16-bit/32-bit ARM7TDMI-S microcontroller in a tiny LQFP64 package.
- 40 kB of on-chip static RAM and 512 kB of on-chip flash memory.
- In-System Programming/In-Application Programming (ISP/IAP) via on-chip boot loader software.
- Embedded ICE RT and Embedded Trace interfaces offer real-time debugging with the on-chip Real Monitor software and high-speed tracing of instruction execution.
- USB 2.0 Full-speed compliant device controller with 2 kB of endpoint RAM.
- Two 10-bit ADCs provide a total of 14 analog inputs
- Single 10-bit DAC provides variable analog output
- Two 32-bit timers/external event counters (with four capture and four compare channels each), PWM unit (six outputs) and watchdog.
- Low power Real-Time Clock (RTC) with independent power and 32 kHz clock input.
- Multiple serial interfaces including two UARTs, two Fast I²C-bus (400 kbit/s), SPI and SSP with buffering and variable data length capabilities.
- Vectored Interrupt Controller (VIC) with configurable priorities and vector addresses.
- Up to 45 of 5 V tolerant fast general purpose I/O pins in a tiny LQFP64 package.
- 60 MHz maximum CPU clock available from programmable on-chip PLL with settling time of 100 us.
- On-chip integrated oscillator operates with an external crystal from 1 MHz to 25 MHz
- Power saving modes include Idle and Power-down.
- Individual enable/disable of peripheral functions as well as peripheral clock scaling for additional power optimization.
- Processor wake-up from Power-down mode via external interrupt or BOD.
- Single power supply chip with POR and BOD circuit
- CPU operating voltage range of 3.0 V to 3.6 V (3.3 V +- 10 pct) with 5 V tolerant I/O pads.

IDEs supported

- Keil uVision 4 (Using Real View Compiler) - Evaluation version included in the Documentation CD
- Rowly Crossworks
- Eclipse (using YAGARTO tool chain)

Sample Codes

- I/O interfacing
- UART
- I2C EEPROM
- SD/MMC card
- ADC
- 16 x 2 LCD
- RTC
- DC Motor Control using L293D
- Stepper Motor Control using ULN2003
- XBEE wireless interface
- USB Bootloader
- USB Virtual Com Port
- [Interfacing LSM303DLHC 3Axis Digital Accelerometer with LPC2148 ARM7 microcontroller over I2C port](#)
- [Interfacing L3G4200D 3Axis Digital Gyroscope with LPC2148 ARM7 microcontroller over I2C port](#)
- [Interfacing MMA8451Q 3Axis Digital Accelerometer with LPC2148 ARM7 microcontroller over I2C port](#)

Downloads

- [AN801 USB Virtual Com port](#)
- [AN802 USING USB ISP BOOTLOADER](#)
- [AN803 Eclipse Tutorial](#)