



Art. EA-XPR-300

[High Resolution Photos]

## LPC800 / LPC812 MAX BOARD

The **LPC800 / LPC812 MAX Board** (both names are used for this board - it is the same board) combines the features of the **LPCXpresso**, **mbed**, and **Arduino™** environments. The board is designed in partnership with mbed and developed by Embedded Artists.

The board is an easy to use ARM Cortex-M0+ rapid prototyping board that bring together the best of three platforms:

- **LPCXpresso Support**  
The LPCXpresso IDE support programming and debugging the board using the on-board CMSIS-DAP interface, no LPC-Link is needed. The LPCXpresso connector on the board is compatible with existing baseboards.
- **mbed Support**  
When connected to a PC, the board will show up as a mass-storage device. Firmware images placed on it will be written to the LPC812 after a power cycle, same as todays mbed boards. The board will also show up as a CMSIS-DAP compatible device allowing users to develop and debug code using any compatible "off-line" toolchain, such as the ARM-MDK. The mbed SDK has been ported to the board, and it is supported by the on-line compiler.
- **Arduino Support**  
Arduino is a popular hobbyist platform, with a standardised set of expansion connectors. The Arduino connectors on the LPC812 MAX board are compatible with the "Arduino UNO" platform. Several compatible expansion cards (shields) can be bought from various vendors.

## Introduction Video

To be uploaded...

## mbed

The **LPC800 / LPC812 MAX Board** is **mbed Enabled** - meaning that the board take full advantage of the mbed platform!



What is mbed?

- The **mbed Software Development Kit (SDK)**, which is an open source C/C++ microcontroller software platform designed for a suitable level of hardware abstraction to simplify microcontroller programming.
- The **mbed Compiler** is a powerful online IDE that is tightly integrated with the mbed SDK and Developer's Website (**mbed.org**, see below).
- The **mbed Hardware Development Kit (HDK)**, which is an interface design that provides simple USB drag-n-drop programming and CMSIS-DAP debug interface for the LPC812 microcontroller.
- The **mbed.org** community, with extensive documentation in the form of handbooks, cookbooks, project pages, **User Forums** for getting help and advice from other mbed users,

etc.

Some mbed information:

- **mbed.org** website - this is the official mbed community website. It contains a lot of documentation with many different topics and angles on the information.
- **Explore mbed** - a four segment presentation of the mbed platform: Explore - Getting Started - Prototype - Production.
- **mbed platforms** - a list of mbed supported platforms.
- **mbed Developers website** - an introduction to the mbed Developers website.
- **Handbook** - gives an overview of the platform with all features.
- **Cookbook** - a wiki for publishing user-contributed libraries and resources.

## SPECIFICATION

### LPC800 / LPC812 MAX Board

<i>Processor</i>	NXP's Cortex-M0+ LPC812 microcontroller in TSSOP20 package
<i>Flash Memory</i>	16 kB
<i>Data Memory</i>	4 kB
<i>Clock Crystal</i>	12.000 MHz crystal for CPU
<i>Dimensions</i>	54 x 78 mm
<i>Power</i>	3.3V external powering, or 5.0V external powering, or 5.0V from USB via mbed HDK debug interface
<i>Connectors</i>	<ul style="list-style-type: none"> <li>• All relevant LPC812 pins available on LPCXpresso compatible expansion connector (2x27 pin rows, 100 mil pitch, 900 mil between rows)</li> <li>• Arduino compatible expansion connectors (Arduino shields can be mounted)</li> <li>• <b>Serial Expansion Connector</b>, 14-pos connector with UART/I2C/SPI/GPIO pins</li> </ul>
<i>Other</i>	<ul style="list-style-type: none"> <li>• RGB-LED</li> <li>• User push-button</li> <li>• Supported by the <b>LPCXpresso IDE</b> environment</li> <li>• Complete on-board mbed HDK <ul style="list-style-type: none"> <li>- USB drag-n-drop programming</li> <li>- CMSIS-DAP interface for Cortex debug interface</li> <li>- USB virtual serial port (functional after modifying soldered jumpers on the board)</li> </ul> </li> <li>• Supported by the mbed SDK and online tools</li> </ul>

## DOCUMENTATION AND RESOURCES

### Further Information

- [General board information at LPCware.com](#)
- [General board information at mbed.org](#)
- [Handbook at mbed.org](#)
- [Getting Started at mbed.org](#)

### Documents

- [Board Schematics](#)
- [Embedded Artists' general RoHS 2 declaration](#)

### Software

- [Pre-loaded Demo Application](#) (just import project into the mbed compiler)

## RELATED PRODUCTS

**Jumper Wires F/M 50 Pack**

Order number: EA-ACC-016

**Jumper Wires M/M 50 Pack**

Order number: EA-ACC-017

**14-pos IDC Ribbon Cable 50 mil**

Order number: EA-ACC-019

**RF Adapter Board**

Order number: EA-ACC-021

**14-pos Adapter 50 mil to 100 mil**

Order number: EA-ACC-024

**1.35 inch Memory LCD 96x96 px**

Order number: EA-LCD-007

**1.5 inch RGB OLED 128x128 px**

Order number: EA-LCD-008

**2.7 inch E-paper Display**

Order number: EA-LCD-009

**LPC812 MAX Experiment Kit**

Order number: EA-XPR-301

## FAQ

- **How do I get the schematic?**
- **Are your boards RoHS 2 compatible?**
- **What chip revision are your boards using?**
- **Is the design files available (schematic, layout, BOM and Gerber files)?**
- **What is the warranty for your boards?**
- **Where is the serial number?**
- **Do you have high resolution photos of your products?**
- **Do you have a long-term commitment to production and availability of your boards?**
- **I cannot download the manuals or files in general. What to do?**
- **How to erase flash on devices when JTAG/SWD interface accidentally disabled or PLL programmed wrongly by application program that is already in flash?**
- **Which free graphical libraries exist for NXP's processors?**
- **How do I create an LPC-LINK? ...so that I can use the LPCXpresso IDE in full when developing for my own design.**

## USEFUL INFORMATION

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