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Find the *ARM / Keil ULINK2* at our website: ***Click HERE***

MCB2300

Quick Start Guide

Getting Started and Blinky Example

This **Quick Start Guide** introduces the MCB2300 boards for the **LPC2360** and **LPC2370** devices from NXP. It shows how to install the ARM software development tools and run a variety of example projects.

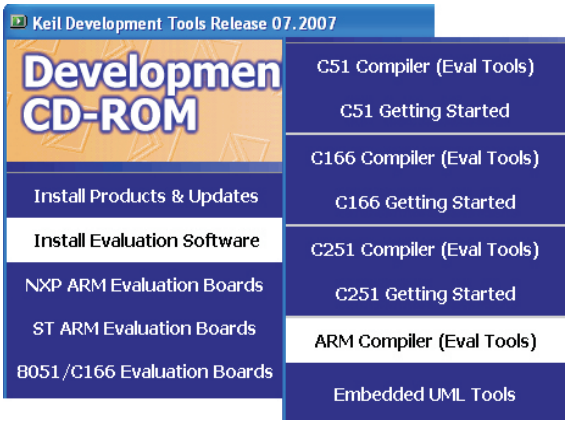
Installing the Software

To install the evaluation version of the ARM RealView Microcontroller Development Kit (MDK)

- Insert the CD-ROM into your PC.

If the opening screen does not appear, run SETUP from the CD root directory

- Click Install Evaluation Software, then ARM Compiler (Eval Tools)
- Follow the setup program instructions



The SETUP program installs Keil µVision and the ARM RealView compilation tools.

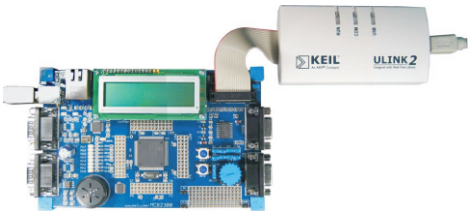
Connecting to your Target

The target is powered via your PC, through its USB port. The Keil ULINK family of adapters connect the USB port of your PC to the JTAG port of your target board allowing you to download and debug embedded programs running on your target hardware.

ULINK2 and ULINK-ME support standard JTAG and Real-Time Agent for on-the-fly target debugging.

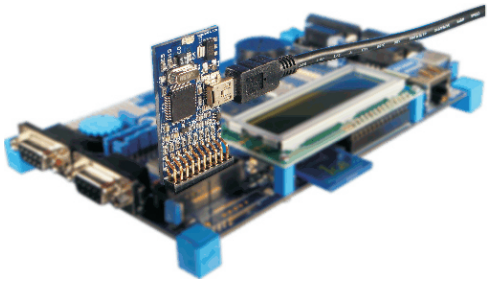
Using ULINK2

The ULINK2 Adapter connects to the MCB2300 using the 20-pin ribbon cable.



Using ULINK-ME

The ULINK-ME Adapter connects directly to the MCB2300 20-pin JTAG connector.



Blinky Example

This example demonstrates the ease of downloading and debugging an application on a target board.

It can be found at:

C:\Keil\ARM\Boards\Keil\MCB2300\Blinky

To use this example

- Start µVision
- Open the Blinky.uv2 project file
  Project - Open
- Compile and link the Blinky application
  Project - Build
- Program the application into on-chip Flash ROM
  Flash - Download
- The LEDs on the target are controlled by the potentiometer setting. As the setting increases, more LEDs are switched on.
- Start debug mode

Using the debugger commands, you may:

- Single step through code
- Set breakpoints
- Run the application
- Review variables in the watch window
- Reset the device to re-run the application
- Use the yellow arrow (program counter) to view the current assembler or C statement

RTOS & Real-Time Library Examples

HTTP with Ethernet

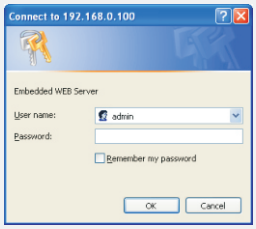
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This example demonstrates easy networking and control of hardware across a TCP/IP network. It configures the LAN network parameters for the evaluation board automatically if a DHCP server is available in your LAN. Otherwise, configure your PC for fixed IP address as detailed in the example.

It can be downloaded from:
www.keil.com/download/docs/328.asp

To use this example:
- Start µVision
- Open the Http_demo.uv2 project file and download to Flash
  Project - Open
  Flash - Download
- Open your web browser and enter the address http://mcb2300
- Log in with the following details:

Username	admin
Password	leave blank



The web pages allow you to control and monitor various functions of the board including LEDs and LCD panel.

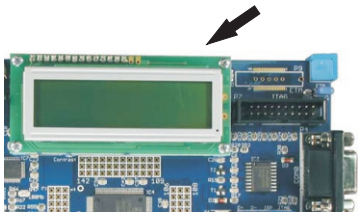
Flash File System

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This example enables you to create, read, copy and delete files from an SD/MMC flash memory card on the evaluation board.

It can be downloaded from:
www.keil.com/download/docs/338.asp

To use this example:
- Connect the MCB2300 board's COM1 port to the COM1 port on your PC via a serial cable and start a hyperterminal session configured for 115200 baud, 8 bits, no parity, 1 stop bit, XON/XOFF.
- Start µVision
- Install an SD/MMC flash memory card and power up the board



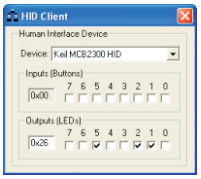
- Open the SD_File.uv2 project file and download to Flash
  Project - Open
  Flash - Download
- The SD/MMC card can now be read or edited from the Debug window using a HyperTerminal via a serial cable from your PC to the evaluation board.

USB - HID Demo

This USB example project implements a Human Interface Device (HID), and connects directly to your PC via the USB. No special USB drivers are required, since the HID support is already built into Windows 2000 and Windows XP.

It can be found at:
C:\Keil\ARM\Boards\Keil\MCB2300\USBHID

To use this example:
- Start µVision
- Open the HID.uv2 project file and download to Flash
  Project - Open
  Flash - Download
- Cycle power on the target so that your PC recognizes it as an HID device
  - Install the USB Client application which can be found at:
    C:\Keil\ARM\Utilities\HID_client\Release
- Select the evaluation board from the drop-down menu



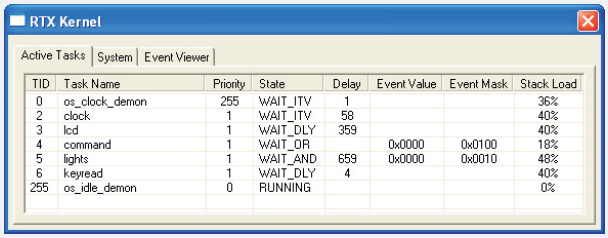
- Checking or unchecking the boxes in the Output (LEDs) group turns the MCB2300 Board's LEDs on and off.
- Inputs (Buttons) show the status of the on-board buttons

Traffic Light example with RTX

This example uses interrupts to control a traffic light system running on the RTX real-time operating system.

It can be found at:
C:\Keil\ARM\Boards\Keil\MCB2300\RTX_Traffic

To use this example:
- Start µVision
- Open the RTX_Traffic.uv2 project file
  Project - Open
- Compile and link the application, then program it into on-chip Flash ROM
  Project - Build Target
  Flash - Download
- The LEDs will begin to flash in a controlled manner
- The tasks running in the application may be viewed from the debugger window
  Peripherals - RTX Kernel



TID	Task Name	Priority	State	Delay	Event Value	Event Mask	Stack Load
0	os_clock_demon	255	WAIT_ITV	1			36%
2	clock	1	WAIT_ITV	58			40%
3	lcd	1	WAIT_DLY	359			40%
4	command	1	WAIT_OR		0x0000	0x0100	18%
5	lights	1	WAIT_AND	659	0x0000	0x0010	48%
6	keyread	1	WAIT_DLY	4			40%
255	os_idle_demon	0	RUNNING				0%

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