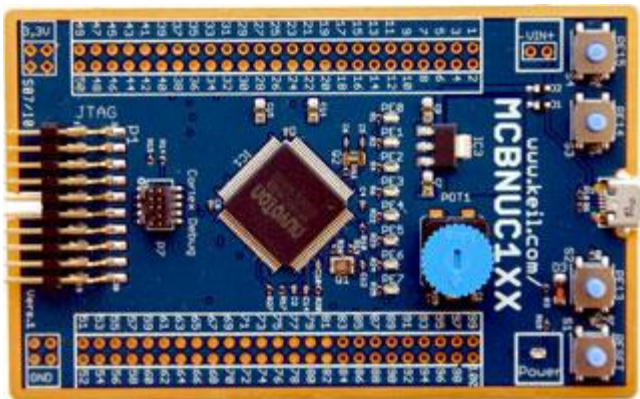# MCBNUC1xx Evaluation Board

The Keil MCBNUC1xx Evaluation Board enables you to create and test working programs based on the Nuvoton NUC1xx family of ARM Cortex™-M0 processor-based devices.

Evaluation Software

The MCBNUC1xx Evaluation Board and Starter Kit include the MDK-ARM Evaluation Tools. These tools help you get started writing programs and testing the microcontroller and its capabilities. Sample applications that run on the MCBNUC1xx and a Quickstart guide are included.

Ordering Information

The MCBNUC1xx is available as a stand alone evaluation board or as a starter kit which includes the ULINK-ME debug adapter.

- MCBNUC1xx: MCBNUC1xx evaluation board
- MCBNUC1xxUME: MCBNUC1xx starter kit (includes ULINK-ME)

Introduction

You may use the Cortex-M0 based MCBNUC1xx Evaluation Board to generate and test application programs for the Nuvoton NUC1xx microcontroller family. With this hands-on process, you can determine the hardware and software requirements for current and future product development.

The MCBNUC1xx Evaluation Board ships with the NUC140EV3AN device that is a superset of several other device variants of the NUC1xx microcontroller series. The MCBNUC1xx Board contains all the hardware components required in a single-chip NUC1xx system.

Features

- **USB Port**
  A standard USB Type B connector for USB communications applications.
- **Analog Voltage Control for ADC Input**
  An adjustable analog voltage source for testing the Analog to Digital converter built into the NUC140EV3AN device.
- **JTAG and Cortex Download and Debug**
  The MCBNUC1xx board incorporates both a JTAG interface and a Cortex Debug interface. When coupled with the ULINK2 USB-JTAG adapter, the Serial Wire JTAG interface allows flash programming and debugging and event trace capabilities.

Hardware Requirements

To use the MCBNUC1xx Evaluation Kit, you need:

- The MCBNUC1xx Evaluation Board.
- A PC with:
    - One USB port for downloading and debugging.
    - Another USB port to provide power to the board.

To download and debug, one of the following:

- A Keil ULINK2 USB-JTAG Adapter.
- A Keil ULINK-ME USB-JTAG Adapter.

Plus:

- 1 USB A to Micro B cable to power the board.

Software Requirements

You must install the following required software to use the MCBNUC1xx Evaluation Board:

Windows Operating System

The Keil µVision tool chain runs in these Windows Operating Systems:

- Microsoft Windows XP
- Microsoft Windows Vista
- Microsoft Windows 7

Tools and Examples

To compile, link and run applications on the MCBNUC1xx Evaluation Board, you must install the Keil MDK-ARM which includes the µVision Debugger and provides several example programs for the MCBNUC1xx Board.

Optional

- The RL-ARM Real-Time Library which includes the RTX Real-Time Kernel, TCP/IP Protocol Suite, Flash File system, CAN Driver, and USB Driver. You may use this package to implement USB applications.

Block Diagram

The hardware block diagram displays the input, configuration, power system, and User I/O on the board. This visual presentation helps you to understand the MCBNUC1xx board components.
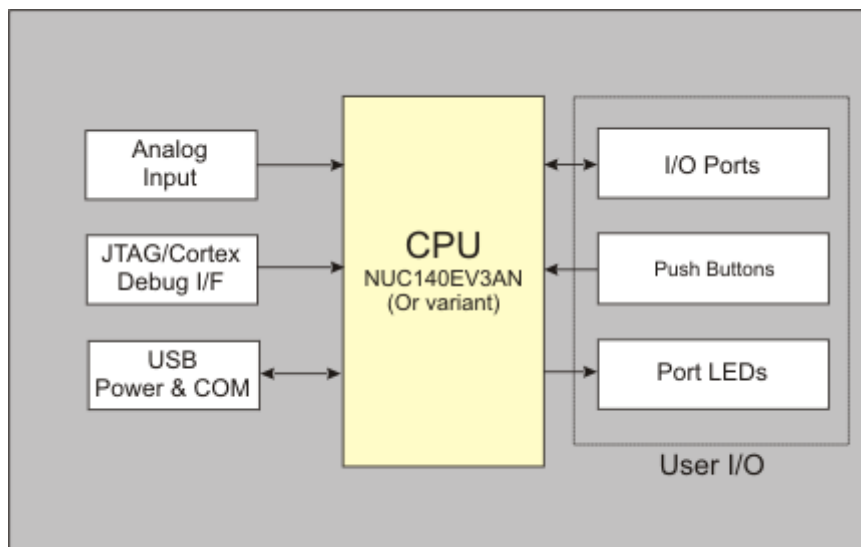
Technical Data

Parameter	Description
Supply Voltage	5 Volts DC (provided by the USB bus of a PC)
Supply Current	15mA typical, 20mA maximum
XTAL Frequency	12 MHz
Microcontroller	Nuvoton NUC140EV3AN
Peripherals	1 × USB Interface, 1 × JTAG Interface, 1 × Cortex/Debug Interface, 4 × Push buttons (Reset, 3 User), 1 × Analog Input (connected to potentiometer)
Board Size	100mm x 70mm (4.0" x 2.75").