



MOD5213 Quick Start Guide

NetBurner, Inc

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1 Introduction

1.1 Quick Start Guide Overview

The NetBurner Network Development Kit (NNDK) is designed as a complete development platform for NetBurner's hardware devices. This quick-start guide will help with the installation of the NetBurner software, hardware setup and accessing the factory application running on the device.

1.2 Software Licensing

The Software included in your NetBurner Network Development Kit is licensed to run only on NetBurner provided hardware. Please read the license.txt file located (by default) in your \Nburn\docs directory.

If your application involves manufacturing your own hardware, please contact sales@netburner.com for details on a royalty-free software license.

1.3 Kit Contents

- Quick start guide
 - MOD5213 Device
 - MOD-DEV-40 development board with RS-232 level shifter
 - Serial Cable
 - Mini USB Cable for power and/or serial communication
 - Red card with NNDK software and tools registration number and download link
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1.4 MOD5213 Module

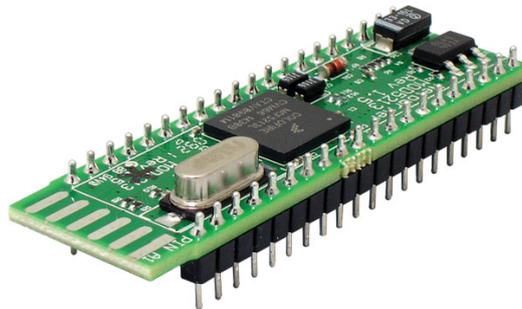


Figure 1: MOD5213

1.5 Features

- Module Header for connection to NetBurner Module
 - 2 DB9 Connectors
 - USB port
 - Switching Power Supply
 - 4 I/O LEDs
 - Reset Button
 - Prototype Area
 - RS-232 Level Translator
 - USB connector (for serial data and power)
 - Power via barrel connector
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1.6 MOD-DEV-40 Carrier Board

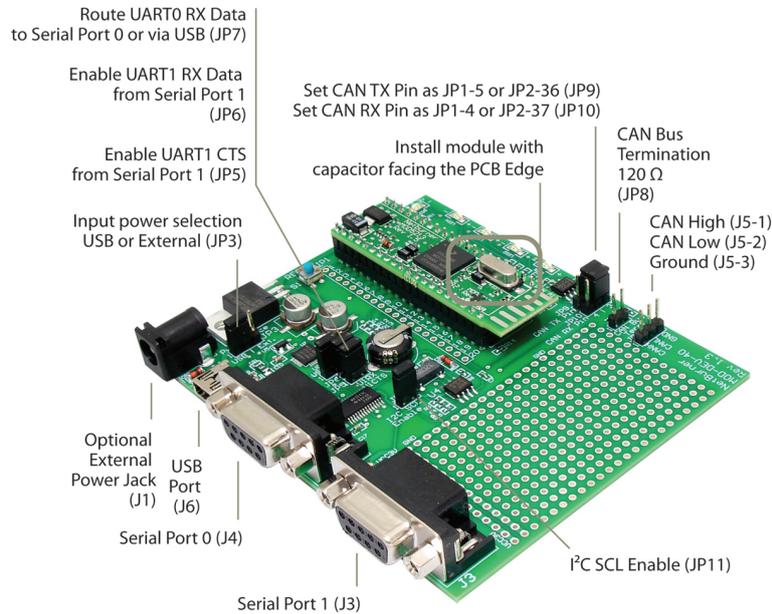


Figure 2: MOD-DEV-40 Carrier Board

The hardware features on the carrier board help you evaluate your peripheral connectivity and to configure the core module. DB9 connectors use the onboard RS-232 level shifter, allowing devices to connect via the serial ports. Extension headers make it easy to connect to a daughterboard or wrapping board for your specific application. The USB port can be used to monitor UART0 and/or power the board.

2 Software Installation

The NetBurner Network Development Kit includes all the software and documentation you need to develop an application for NetBurner hardware. To begin development, the first step is to install all software, drivers and documentation required to write an application and learn about the hardware.

2.1 Download the NNDK

All software used in this development kit must be downloaded from the NetBurner website. NNDK software download instructions are available at: <http://www.netburner.com/support/get-tools>

Note

Java Runtime Environment (JRE) (32-bit) 1.6 or later is required to run the NetBurner NBEclipse IDE. This software is not included with our installation. Please ensure that your OS Java tools are up to date before running the NetBurner NBEclipse IDE. The JRE can be downloaded at <http://java.com/en/download/>

2.2 Installing the Tools

After downloading the NNDK Software, run the setup application and follow the on screen directions to install the NNDK. During the installation, you must provide a valid serial number for each NetBurner platform type you wish to install. For example, if you have a MOD5441X and a MOD5270, you should include both a valid MOD5441X and a valid MOD5270 serial number in the serial number validation page.

Note

The serial number for your installation can be found on the red card that is included with your NNDK kit.

2.3 Tools Provided

The following software utilities are installed on your computer once the NNDK setup process is complete:

Tool	Function
NBEclipse	IDE used to develop, download and debug applications
AutoUpdate, TCPUpdate, SerialLoad	Download new applications to the module (SerialLoad for MOD5213)
IPSetup	Identify NetBurner modules on local Network
MTTTY	PC to NetBurner Serial communication
Application Wizard	Auto-generate basic applications
TaskScan	Monitor applications currently running on modules
TFTP Server	Host a TFTP Server
UDPTerminal	Send and receive UDP packets
WinAddr2Line	Decipher trap messages to get source location of program faults

2.4 Documentation

The following documentation, schematics, and guides are available in the /nburn/docs folder.

Tool	Function
NBEclipse Getting Started Guide	How to start using NBEclipse. This is required reading before using the integrated development environment (IDE)
NetBurner Runtime Libraries & uC/OS RTOS Library	Reference guides which list the function libraries available in the NNDK, as well as for the uC/OS real-time operating system
Freescale Manual	Detailed reference manual for the Freescale ColdFire microprocessor
GNU Manuals	Manuals for GNU C/C++ libraries, compiler and linker. This includes the C/C++ language API functions
NetBurner PC Tools Reference Guide	Reference manual for NetBurner tools that run on the PC, such as IPSetup, AutoUpdate, and MTTY
Platform Reference and Hardware Schematic	NetBurner hardware manuals that include memory map and design guides

3 Running the Factory Application

3.1 Plug in the Module

After installing the NNDK software, it's a good idea to plug in your module and connect to it to verify that the USB driver are properly configured.

To proceed, carefully insert the NetBurner module in to the non powered development board that is included with your kit. The MOD5213 module is plugs in the board with the BDM connector facing the prototype area of the development board.

Most development boards include two serial ports. UART0 serial is routed to the USB port and to the DB9 connector labeled UART0. UART1 is routed only to the DB9 connector labeled UART1. The default mode for UART0 serial is through the USB port. To change the default mode, set the specified jumpers below to the desired position.

Development Board	Jumpers	Description	Configuration
MOD-DEV-40	JP7	USB	[1 2] 3
	JP7	UART0	1 [2 3]

Serial Data Routing Options

3.2 Power the Development Board

All NetBurner development boards are designed to be powered by a standard micro USB cable or a 7.5V DC power supply. The development board is shipped in a state designed to be powered by USB. To change the power mode, set the specified jumper below to the desired position.

Development Board	Jumper	Description	Configuration
MOD-DEV-40	JP3	USB	[1 2] 3
	JP3	Power Jack	1 [2 3]

Power Supply Routing Options

The factory application that is included with the NetBurner MOD5213 module includes a demonstration of the LEDs and the ability to read and write selected pins.

3.3 Accessing your Device

If you have not already done so, connect your Core Module to the carrier board.

1. Power the carrier board by either connecting the USB port to a computer USB port or inserting the P5 male connector on the power supply cord into the P5 female connector on the carrier board assembly. If using a power supply instead of USB power, plug it into a working electrical outlet.

Note

If you would prefer using a power supply (optional) instead of USB power, they are available at the NetBurner Online Store: http://www.netburnerstore.com/product_p/nbpwr-090u-cr.htm

2. Start the MTTTY program (From Windows: Start -> Programs -> Netburner NNDK -> Mttty Serial Terminal). Select the communication port you connected the cable to on your host computer (usually COM1), set the Baud to 115200, the Parity to None, the Data Bits to 8, the Stop Bits to 1
3. Click the Flow Control button. A Flow Control Settings window will appear. Check both XON/XOFF Output Control and XON/XOFF Input Control in the Software Control Settings section as shown below. Click the OK button when you are finished to save your settings and dismiss this window.
4. Next, click the Connect button. (Note: The button name will change to "Disconnect" after you click it.) Reset your NetBurner hardware by removing and reapplying power (i.e. a hard reset). You will see the message "Waiting 2 sec to start 'A' to abort" in the MTTTY window.
5. The MOD5213 Factory application is now running.

3.4 Develop your own Application

Now that the NetBurner tools are installed, the hardware is set up and you have verified this by accessing the device's web server. You have now graduated beyond this quick start guide.

To begin writing an application, we recommend reading through the NBEclipse Getting Started guide and the NetBurner Programmers Guide. In the NBEclipse guide, you will find information on writing NetBurner applications, sending new applications to the module and debugging with the graphical debugger. The Programmers guide will teach you more about the NetBurner libraries, operating system, and writing of applications in a multitask environment. Both of these documents can be found in the \nburn\docs folder of your NNDK software installation.

4 Hardware Errata

For the most up to date pin references and schematics, visit the product page for your device at <http://www.netburner.com>

5 Disclaimers

5.1 Life Support Disclaimer

NetBurner's products both hardware and software (including tools) are not authorized for use as critical components in life support s or systems, without the express written approval of NetBurner, Inc. prior to use. As used herein: (1) Life support s or systems are s or systems that (a) are intended for surgical implant into the body or (b) support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user. (2) A critical component is any component of a life support or system whose failure to perform can be reasonably expected to cause the failure of the life support or system, or to affect its safety or effectiveness.

5.2 Anti-Piracy Policy

NetBurner, Inc. vigorously protects its copyrights, trademarks, patents and other intellectual property rights.

In the United States and many other countries, copyright law provides for severe civil and criminal penalties for the unauthorized reproduction or distribution of copyrighted material. Copyrighted material includes, but is not limited to: computer programs and accompanying sounds, images and text.

Under U.S. law, infringement may result in civil damages of up to \$150,000, and/or criminal penalties of up to five years imprisonment, and/or a \$250,000 fine. In addition, NetBurner, Inc. may seek to recover its attorneys' fees.
