FriendlyARM

Downloader Instructions

www.FriendlyARM.net

1 Downloader Instructions

Follow the instructions carefully until you become more familiar with downloading programs to your mini2440 and pay special attention to the items highlighted in red.

First ensure that your mini2440 is powered off and is not placed on any conductive surface.

Before starting to download files or images to your mini2440 you will need to have a serial & a USB cable connected between your PC and the mini2440.

If you have not yet installed the USB drivers required for the mini2440 then you will need to install these first on your PC before you will be able to download any files to the mini2440, you find the driver in the download section.

Connect the serial cable between your mini2440 serial port and the serial port of your PC. The required serial port connection settings on your PC are:

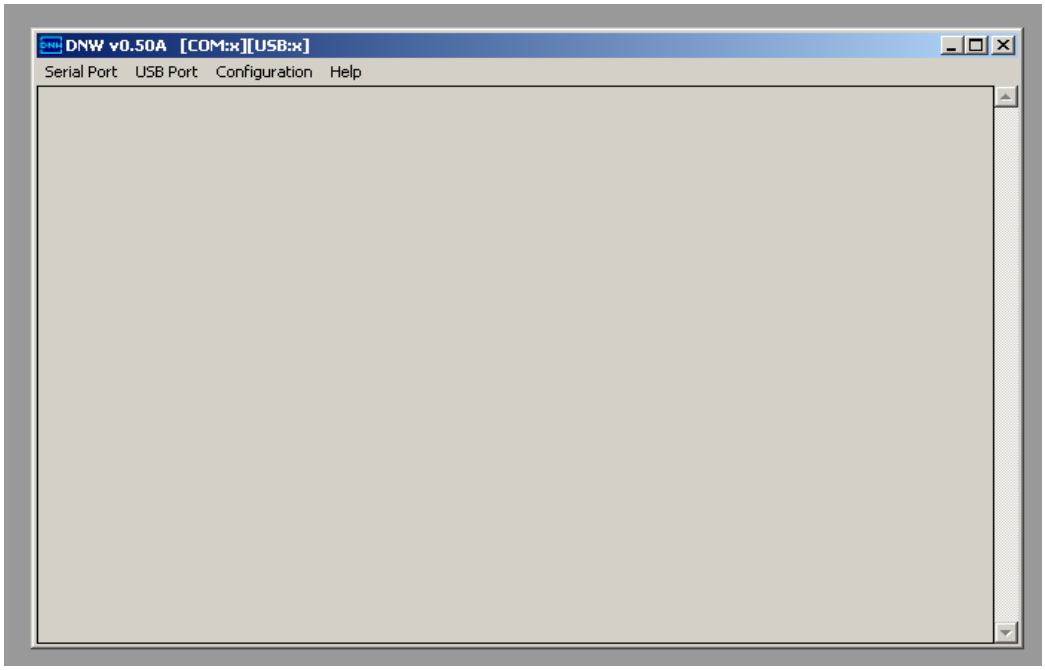
- Bits per second = 115200
- Data bits = 8
- Parity = None
- Stop bits = 1
- Flow control = None

Connect a USB cable between your PC and the mini2440.

To download images to the mini2440 first set your mini2440 to NOR by moving the slide switch to the NOR position. The mini2440 NOR flash is used by the bootloader program and contains a program inside the NOR memory that interfaces with your PC via the serial and USB ports. When the slide switch is set to the NOR position the mini2440 will run the bootloader program contained in the NOR flash boot area, when the board is powered up or the reset button is pressed.

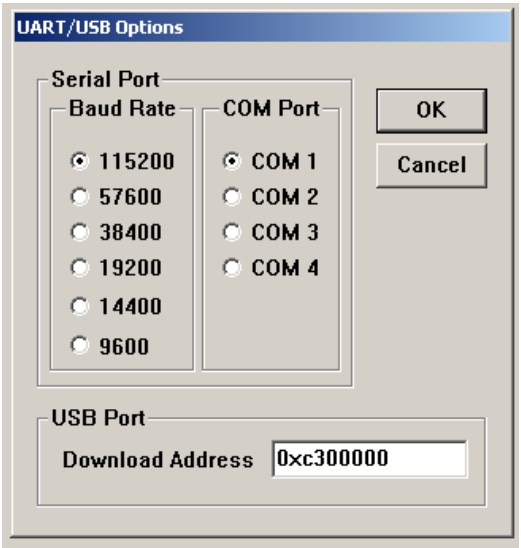
1.1 Using DNW (dnw.exe)

Run the program called “dnw.exe” (You can find it on the download section of the FriendlyARM homepage.) on your PC, the screen will show:



Click on the “Configuration” tab and select “Options”, set the baud rate to 115200 and select the com port number you are using for the download, ie. if your serial cable is plugged into the COM 1 port on your PC then select COM 1.

In the instructions below we will refer to all serial connections as ”COM 1”. Set the USB Port download address to 0x30000000. Your PC screen will now be as below:

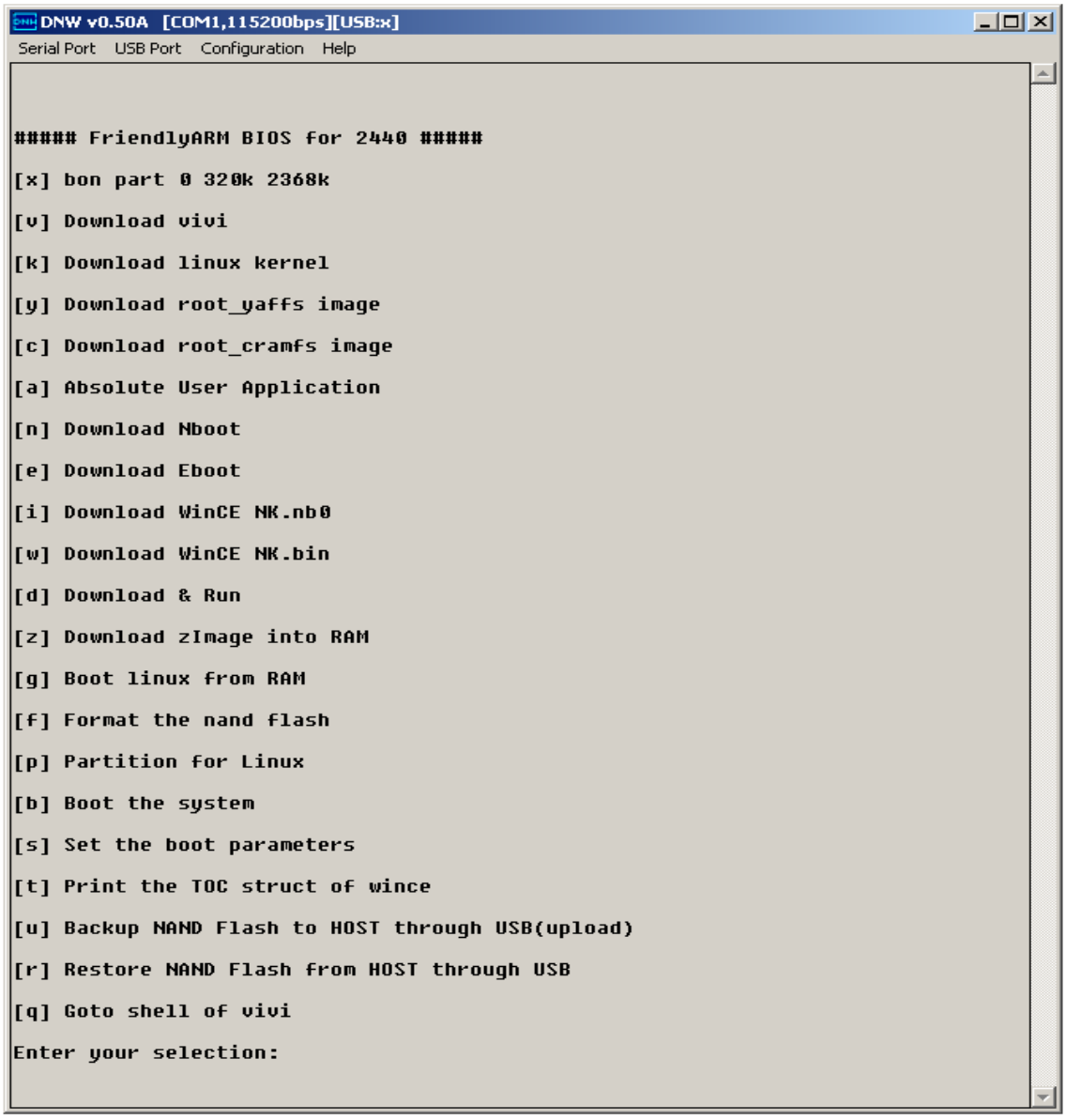


Then click “OK”.

Click the “Serial Port” tab on the top left and select “Connect”, the screen will now show that DNW is connected to your serial port with [COM1,115200bps] by displaying this information in the top titlebar. If you do not have this message you will need to recheck your serial settings and/or serial cable connections.,If your USB connection is correct you will also have the message [USB:x] displayed, if not you will need to check the USB is properly configured.

You are now ready to begin the downloading procedure.

Power up the mini2440 ensure the power LED is lit, because we are using the NOR flash bootloader your mini2440 LCD will not display any information. However your PC will now be displaying the following message:



The bootloader program in your mini2440 is now communicating with your PC via the serial connection. If you do not see the above screen then there is a problem with the serial connection.

You can instruct the bootloader program with commands inside the mini2440 via the PC keyboard and see the results on the screen of the PC. Maximise the DNW screen so that you can see all the bootloader command options available.

Press the “x” key and then return/enter on the PC, the screen will show:

```
Enter your selection: x
doing partition
size = 0
size = 327680
size = 2424832
check bad block
part = 0 end = 327680
part = 1 end = 2424832
part = 2 end = 67108864
part0:
        offset = 0
        size = 327680
        bad_block = 0
part1:
        offset = 327680
        size = 2097152
        bad_block = 0
part2:
        offset = 2424832
        size = 64667648
        bad_block = 0
```

What you have done is tell the mini2440 to partition the NAND flash memory.

Press the “v” key and then return on the PC, the screen will display “*USB host is connected. Waiting a download.*” The mini2440 is now ready to receive a file via the USB. Click the USB Port from the menu in the top of the window and select the Transmit/Restore option. The screen will now ask you to select a file to transmit, Select the “supervivi_mini2440” file (if the file is not displayed ensure that you have the “all files *.*” option selected). Then click OPEN.

The file will be sent to the mini2440, what you have done is load the mini2440 NAND boot with the supervivi file loader program. The PC screen will revert back to the main boot page.

You now need to install the Linux kernel, press the “k” key and then return on the PC, the screen will display “USB host is connected. Waiting a download”. Click the USB Port from the menu a and select the Transmit/Restore option. The screen will now ask you to select a file to transmit, Select the “zImage_a35” if you have a 3.5” LCD, or “zImage_a70” if you have a 7” LCD or “zImage_1024x768” if you are using the VGA adapter. Each Linux kernel is different depending upon which LCD you are using. Then click OPEN.

The file will now be downloaded via the USB to the mini2440, after it has been downloaded and configured the PC screen will revert back to the bootloader menu.

You now need to install yaffs, press the “y” key and then return on the PC, the screen will display “*USB host is connected. Waiting a download*”. Click the USB Port from the menu and select the Transmit/Restore option. The screen will now ask you to select a file to transmit. Choose the “root_qtopia.img” file. Then click OPEN.

The file will now be downloaded into your mini2440, it will take some time so just wait until it is completed and the PC screen reverts back to the bootloader screen.

Now to boot the Linux system, first power off the mini2440. Then move the flash select slide switch to NAND Boot. Power up the mini2440 and Linux will boot up, if you leave the cables to the PC attached you will see the LINUX debug messages while the Linux system on the mini2440 is booting.