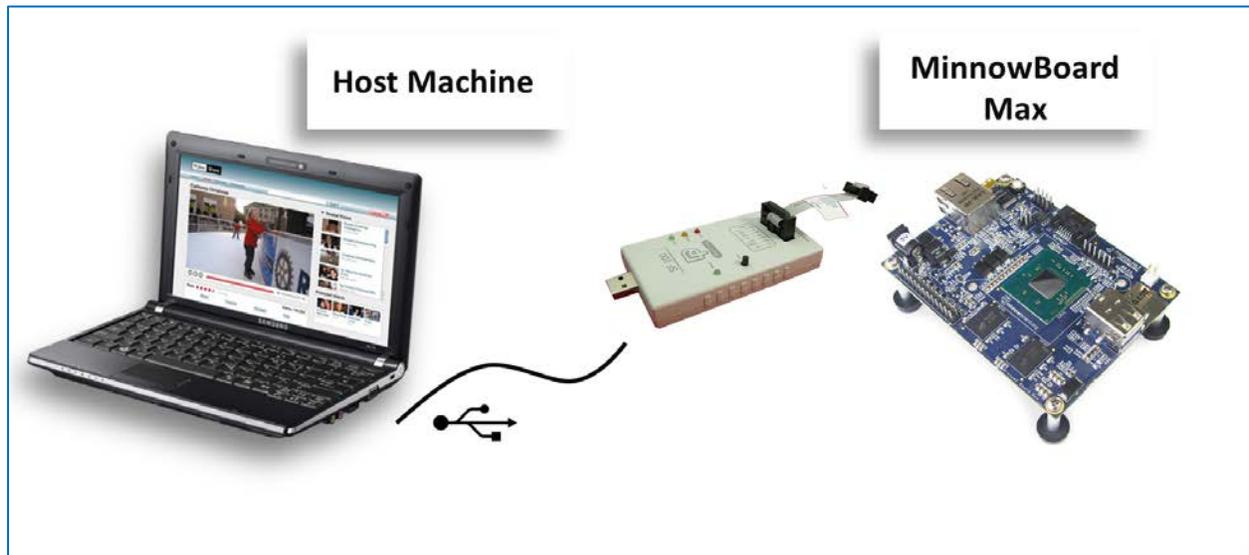


# Flashing MinnowBoard Max with Dediprog SF-100 in Linux

This tutorial explains how to flash your MinnowBoard Max with a Dediprog SF-100 SPI programmer using a host computer running an Ubuntu Linux operating system. The MinnowBoard Max can be flashed with other programmer tools in other Linux environments, but this tutorial focuses on the SF-100 and Ubuntu. In this tutorial, Flashrom is the application used to program the MinnowBoard Max in Linux.

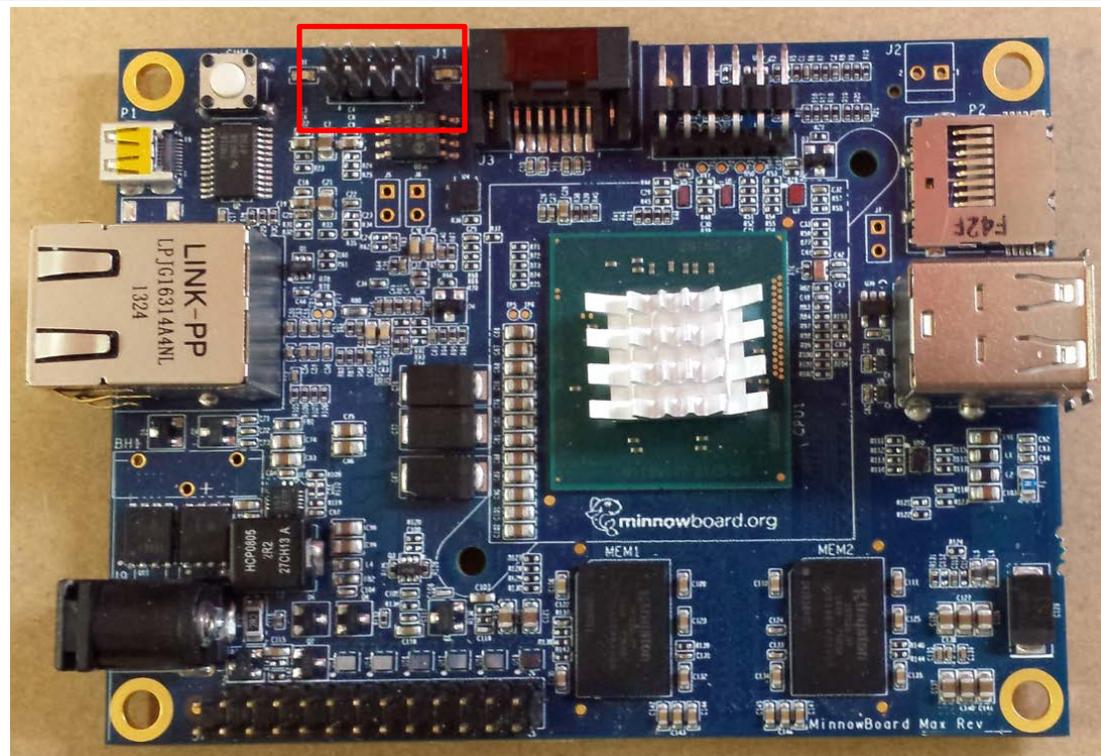


1. Disconnect the power supply from the MinnowBoard Max.

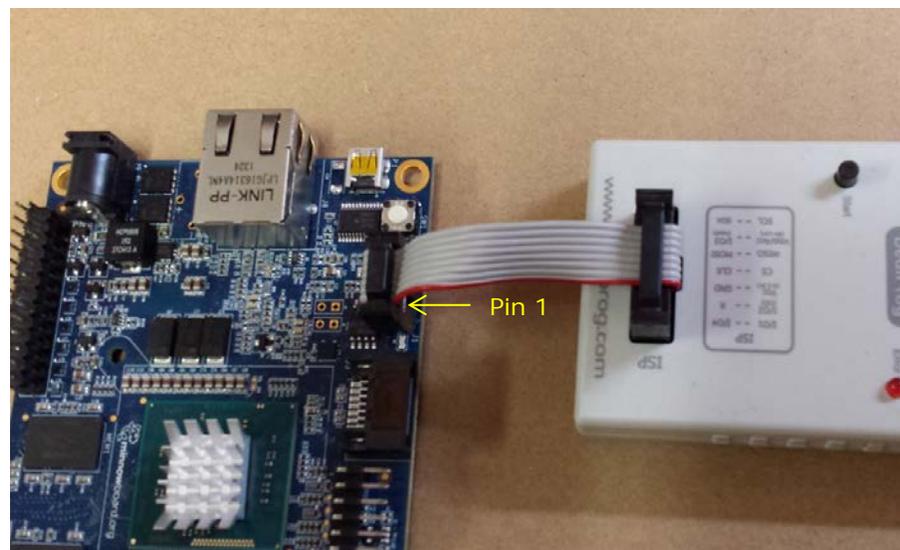
The DediProg (SF-100) is unable to flash while the MinnowBoard Max power supply is connected.

**CAUTION: CAUTION:** There is the possibility of damaging the SF-100 if it and the MinnowBoard Max power supply are connected simultaneously.

2. **Locate the grouping of headers just beside the SATA connector and the Power Switch**, on the top of the MinnowBoard Max (the side with the processor). The 2x4 grouping of pins labeled (J1) is where the SF-100 will connect.



3. **Connect the DediProg cable to the 2x4 PROG header** so that the red wire of the cable is on the pin 1 side of the header that is furthest from the power switch. Pin 1 is next to the SATA connector



4. Download the latest version of Flashrom from <http://flashrom.org/Downloads>

5. From the downloaded archive, unpack the flashrom directory to the location of your preference, then open a terminal and navigate into that directory.

**Note:** You will probably need to install the pciutils-dev and libusb-dev packages to build flashrom. You can install them with apt-get: `$ sudo apt-get install pciutils-dev libusb-dev`

6. Enter the command: `sudo CONFIG_DEDIPROG=yes make`

```
$sudo CONFIG_DEDIPROG=yes make
```

7. After the make process has finished building flashrom, install flashrom as an executable command. Do this by using root user permissions and typing `sudo make install`.

```
$sudo make install
Checking for a C compiler... found.
Target arch is x86
Target OS is Linux
Checking for FTDI support... not found.
Checking if Linux SPI headers are present... yes.
Checking for utsname support... found.
mkdir -p /usr/local/sbin
mkdir -p /usr/local/share/man/man8
install -m 0755 flashrom /usr/local/sbin
install -m 0644 flashrom.8 /usr/local/share/man/man8
$
```

8. Type flashrom to get a list of programmers that includes the option dediprog.

```
$flashrom
flashrom v0.9.6.1-r1564 on Linux 3.8.0-19-generic (i686)
flashrom is free software, get the source code at http://www.flashrom.org

Please select a programmer with the --programmer parameter.
Valid choices are:
internal, dummy, nic3com, nicrealtek, gfxnvidia, drkaiser, satasii, serprog,
buspirate_spi, dediprog, rayer_spi, pony_spi, nicintel, nicintel_spi, ogp_spi,
satanv, linux_spi
$
```

9. Navigate to the location of the MinnowBoard Max firmware image that you would like to install.

10. With root user permissions execute the command

```
sudo flashrom -p dediprog -w <firmware image name here>.
```

```
$sudo flashrom -p dediprog -w HW2_IFWI_X64_.Bin
flashrom v0.9.6.1-r1564 on Linux 3.8.0-19-generic (i686)
flashrom is free software, get the source code at http://www.flashrom.org

Calibrating delay loop... OK.
Found [.....] flash chip "104000" ( 128 kB, SPI) on dediprog.
Reading old flash chip contents... done.
Erasing and writing flash chip... Erase/write done.
Verifying flash... VERIFIED.
$
```

11. Wait until the flashing process has completed and the flash part is VERIFIED.

12. **Disconnect the programmer.**

13. **Reconnect the power supply to boot the MinnowBoard Max.**

Two Blue LED lights will turn on indicating that the MinnowBoard Max is powered on and in its boot-up sequence.