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:** 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](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`:

```bash
$ sudo apt-get install pciutils-dev libusb-dev
```

6. Enter the command:  

```
$ 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`.

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

```
flashrom v0.9.6.1-r1564 on Linux 3.8.0-19-generic (x86)
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, nicacom, nicrealtek, gfxnvidia, drkaiser, satasti, serprog,
  buspirate_spl, dediprog, rayer_spl, pony_spl, nictel, nictel_spl, ogp_spl,
  satavb, linux_spl
```

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>
```
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.