NovTech User Guide

Meerkat™

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Contact Information:

Home Page:
www.novtech.com

E-mail:
sales@novtech.com

Address:
7401 Wiles Road, Suite 229
Coral Springs, FL 33067
United States
+1-(954) 341-3320

Support:
support@novtech.com

Revision History

Revision Number	Date	Changes Notes
1.0	08/2017	Initial Release

Table 1- Provides a revision history for this user guide.

1 Registering Meerkat™

Please register your Meerkat™ at http://www.novtech.com/registration
Provide the serial # from the back side of the Meerkat™ board.
Provide the requested information and select “Meerkat” from the version drop down.

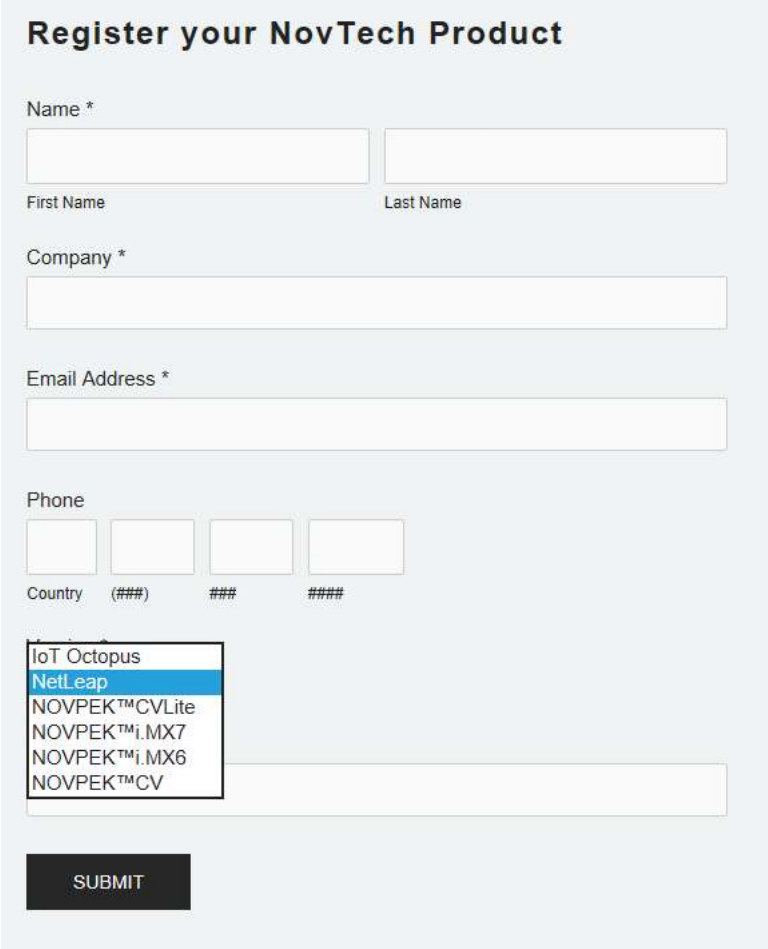

Figure 1 - Product Registration

2 Download support files

Support files can be downloaded from: http://bit.ly/i.MX7-96B

This location contains documents, schematics, installable tools and a Virtual Machine pre-configured with tools to speed application development.

Note that there are two distributions provided for the Meerkat:

- A graphical system with xfce and enlightenment based on Angstrom. Full source code, recipes and pre-compiled images are provided.
- A simple system with a command console. Full source code, a configured build-root and pre-compiled images are provided.

Available from the Portal is a User Manual (001-013-02-04-05) which details the contents and usage of the Virtual Machine.

3 Meerkat™ overview

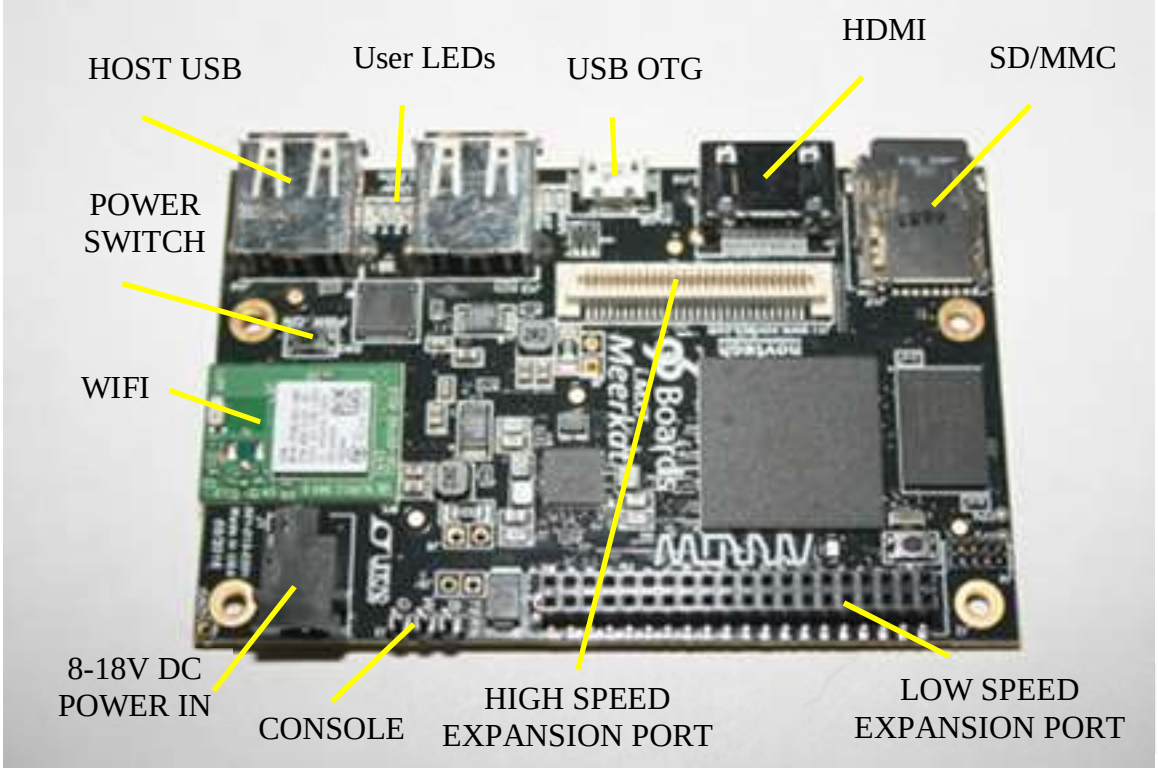

Figure 2 – Meerkat™ Top

Figure 3 – Meerkat™ bottom

4 Serial Connections

The supplied cable connects to the Meerkat™ as follows:

Figure 4 - Connecting supplied cable

5 Booting Meerkat™

5.1 Hardware Setup

To setup the Meerkat™ board for booting, follow these steps:

1. Plug in the supplied USB cable to the UART port on the board and connect to PC. Verify the USB serial driver is found.

2. Insert the SD card into the SD slot.

5.2 Serial Console Setup

Open a Serial Terminal like Hyper-Terminal, putty or UConn, with settings of 115200, 8, N, 1.

For convenience, putty and a preconfigured settings file are provided in the supplied Virtual Machine (available from the download link as indicated in section 2).

The VM provides a preinstalled environment with tools to speed development.

A link to putty can be found on the desktop

Configure putty to use an 8n1 UART at 115200 bps.

For convenience, a preconfigured setting called “USB to TTL UART” is also provided in the virtual machine.

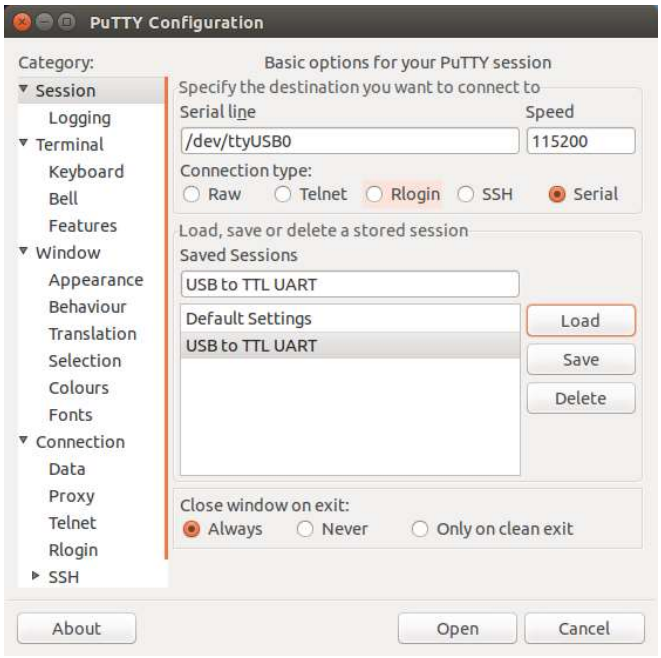

Figure 5 - Configuring Putty

5.3 Power the board

Using the provided power adaptor apply +8 to 18V power to the NovTech Meerkat™ Monitoring the serial terminal, you can stop at u-boot or boot all the way into Linux.

Note that for the graphical image, a terminal console is not available and all system control must be done through the graphical interface.

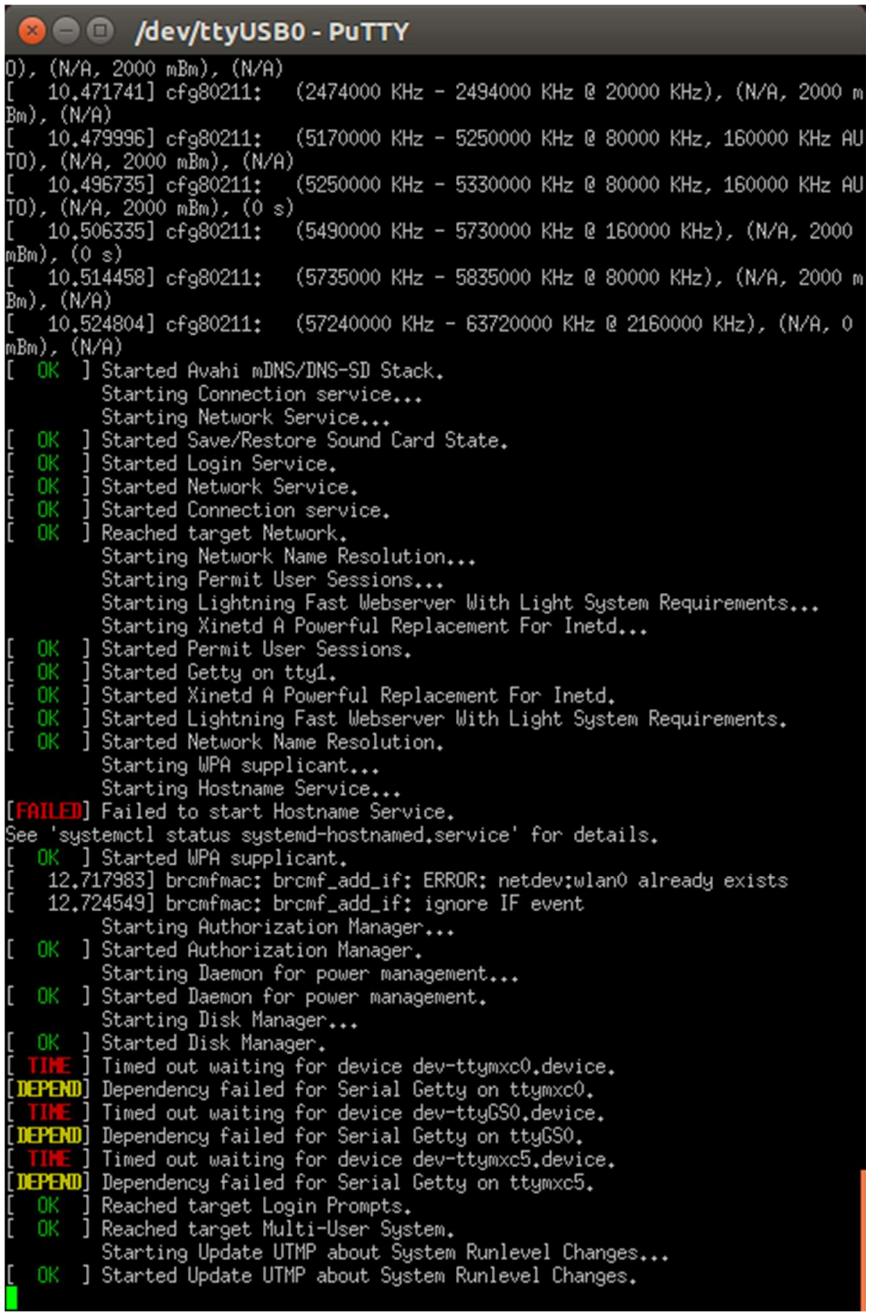

Figure 6 - Initial Boot of Meerkat™

6 Initial network configuration

The Meerkat will need to be configured for your specific wireless network. Once configured, the network will start automatically when the board is powered up.

6.1 Graphical image networking

The SD card delivered with your meerkat has a graphical desktop based on xfce. This desktop will require a mouse and keyboard to navigate. Those can be connected to the USB ports on the Meerkat.

The networking on this image is managed by connman, but is not enabled by default. If you want wireless networking on your Meerkat, the connman applet will need to be enabled to start at boot, and configured for your network.

After booting the Meerkat image per the instructions above, select "Applications" from the upper left corner of the screen.

Click on:
Applications->Settings->Settings Manager

Then select:
System->Session and Startup->Application Autostart->Connection Manager.

There should now be a black checkmark next to "Connection Manager".

Select "Close" (close all open settings manager windows).

Power cycle or reset your meerkat, the connman applet should be running and visible on the upper right of your screen on your next power up.

When the board comes back up, click on the Applet in the upper and select "Preferences", then select your wireless network and click “Connect” on the right-hand side of the menu. Note that “Connect” does not look like a button, but text.

If you network requires additional configuration for security, the applet will prompt you for your authentication information.

6.2 Console image networking

The console image ships with a network configuration that automatically connects to open (unsecure) networks that it finds. If successful, you will see the board retrieve an IP address via DHCP and will be able to ping to an IP address from the command line.

If your network requires additional configuration for security, you will need to provide the credentials for your network. This is accomplished from the meerkat console with the "`wpa_passphrase`" tool as follows:

```
wpa_passphrase YOURNET yourpassphrase  >> /etc/wpa_supplicant.conf
```

which will append an entry similar to the following to your /etc/wpa_supplicant.conf file:

```
network={
        ssid="YOURNET"
        #psk="yourpassphrase"
        psk=0d0992b62e7ce466b47aef8ea26fcd77421f6498f225419b40364c1b4441d08d
}
```

Remember to replace *YOURNET* and *yourpassphrase* with the information specific to your network.