

# Install the Minicom Terminal Emulator for Use with Callisto-Lx

Whitham D. Reeve

## 1. Introduction

Minicom is an ASCII text-based, menu-driven serial communication program for Linux that is used to allow serial communications between the RPi console and the Callisto instrument. Minicom is not required by the Callisto Linux software but it provides a convenient, easy-to-use method to test the serial interface and manually control the Callisto.

## 2. Installation

Before installing Minicom, the RPi needs to be setup according to the Callisto-Lx: Setup and Operation Guide {[C-LXSOG](#)}. If using Raspbian *Jessie* or *Jessie Lite* check that the hardware UART is enabled. From the PuTTY command prompt

```
sudo nano /boot/config.txt
```

Near the end of the file find the text `uart=x`, where x is 0 or 1. If necessary change to `uart=1`. Note that in versions prior to Raspbian Jessie, the UART is enabled by default and this edit may not be necessary.

Save the change and exit the nano editor (CTRL-X, Y, Enter).

Next, install Minicom. From the PuTTY command prompt, enter

```
sudo apt-get install minicom
```

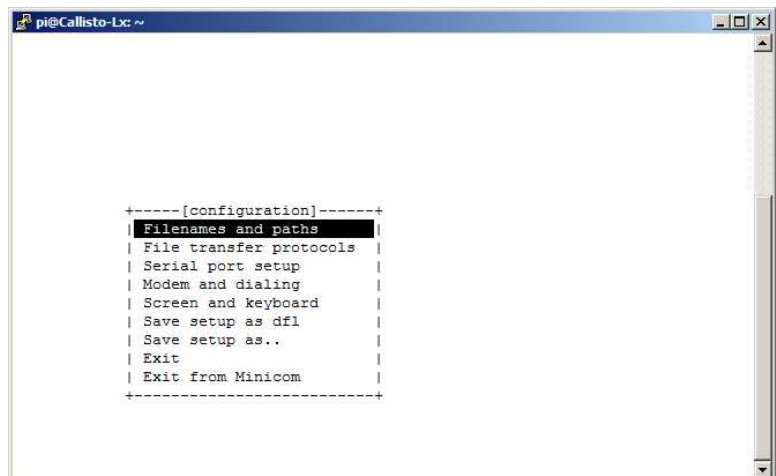
When installation is finished, enter

```
sudo reboot
```

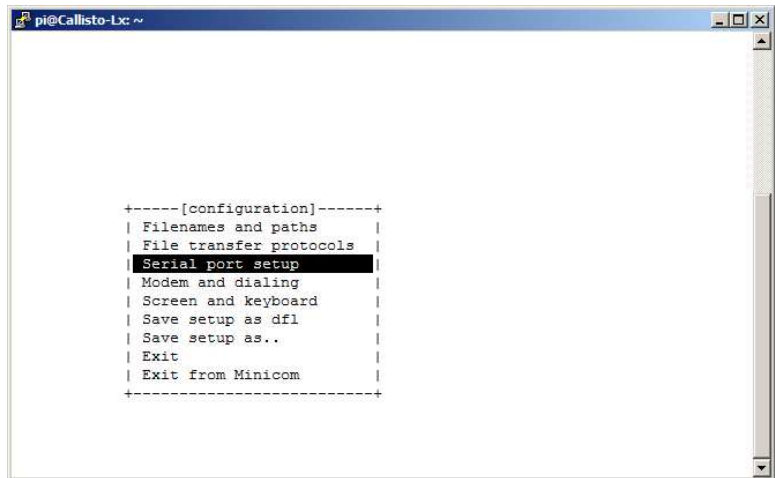
At the PuTTY prompt login and then enter

```
sudo minicom -s
```

The `-s` option loads the configuration setup window as shown right.

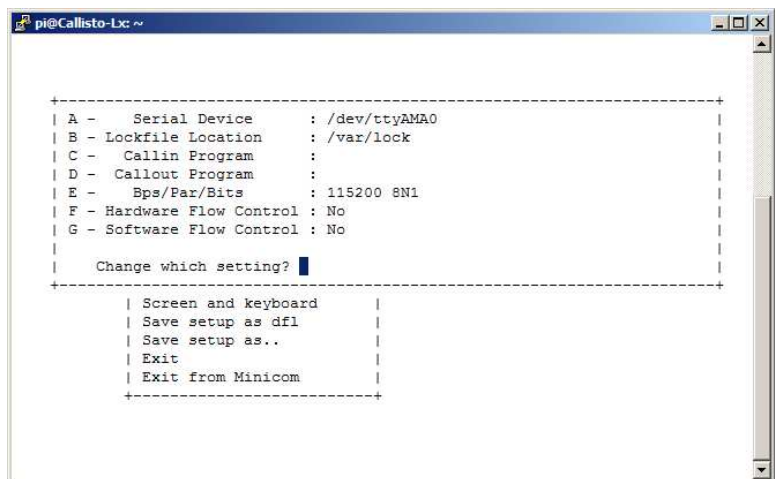


Using the keyboard arrow keys, scroll down to **Serial port setup** and press Enter.

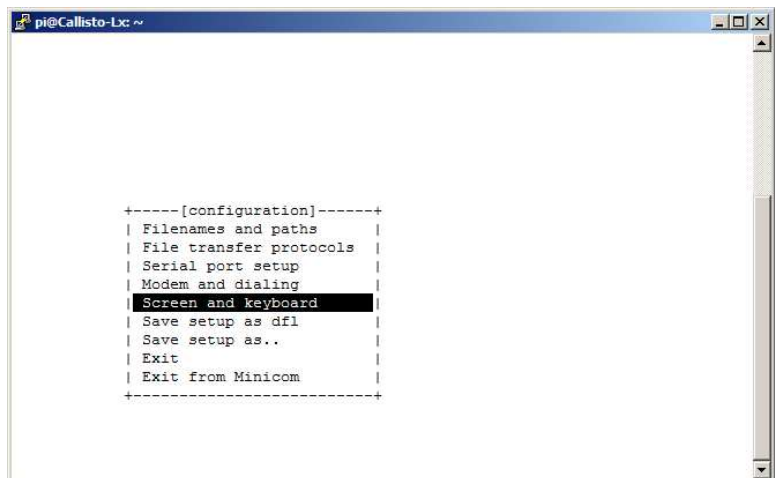


Configure the serial port as follows. After each change press Enter:

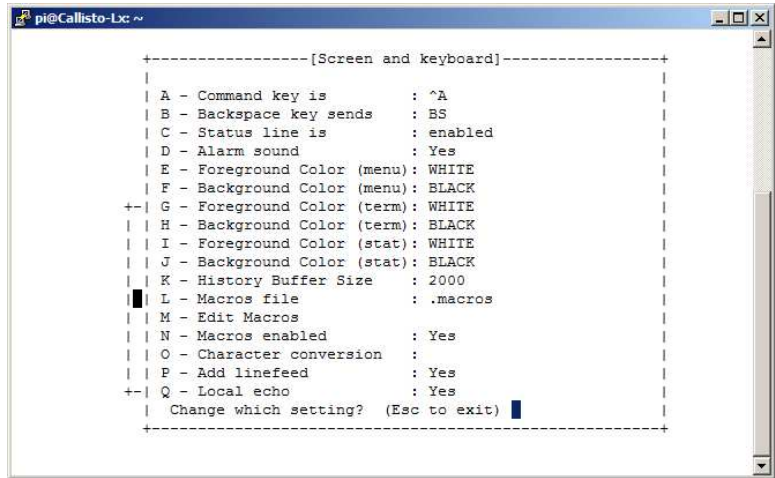
- ⚙ Press A and change the Serial Device to **/dev/ttyAMA0**
- ⚙ Press E and, if necessary, change to **115200 8N1**
- ⚙ Press F to toggle Hardware Flow Control to **No**
- ⚙ Press G to toggle Software Flow Control to **No**
- ⚙ When done, press ESC key



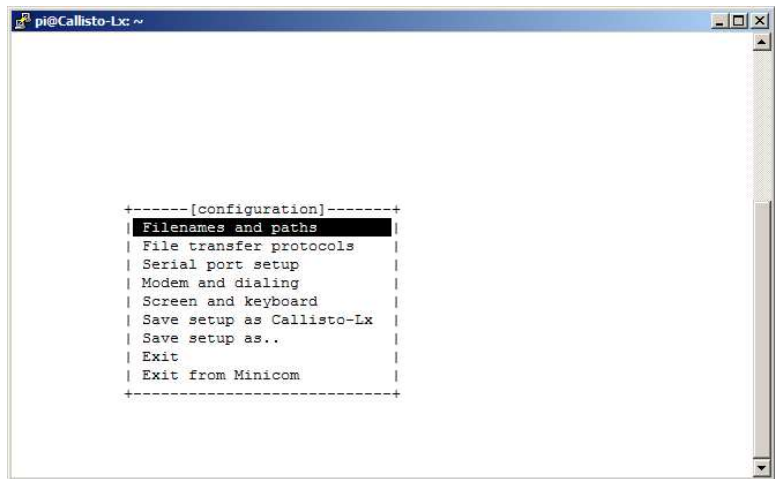
Back at the Configuration screen, scroll down to **Screen and keyboard** and press Enter.



The default settings should be as shown right except P and Q. Press the necessary key to change the settings as shown. In particular, change P (**Add linefeed**) and Q (**Local echo**) to **Yes**. When finished press ESC key.



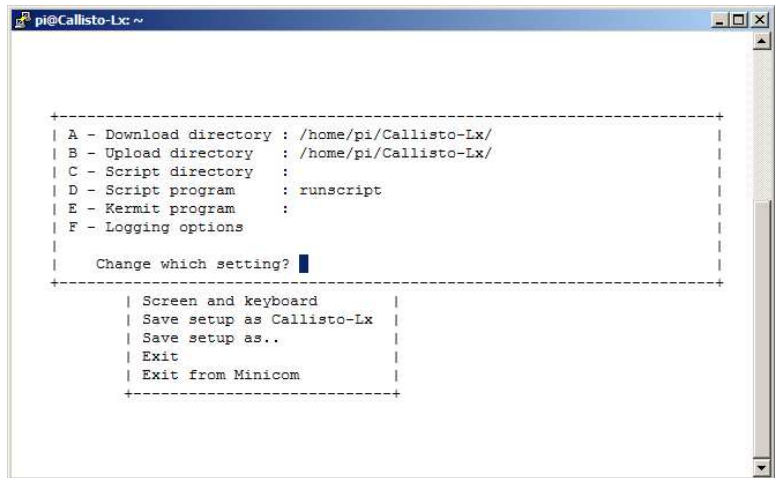
Once again, back at the Configuration screen, scroll to **Filename and paths** and press Enter.



Enter the paths in items A and B as shown.

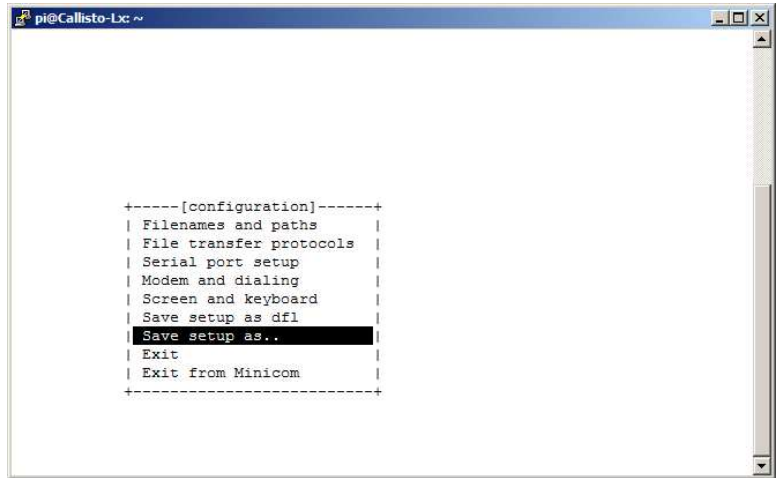
The Callisto-Lx directory already should have been made on the RPi.

When done, press ESC to return to the setup screen.

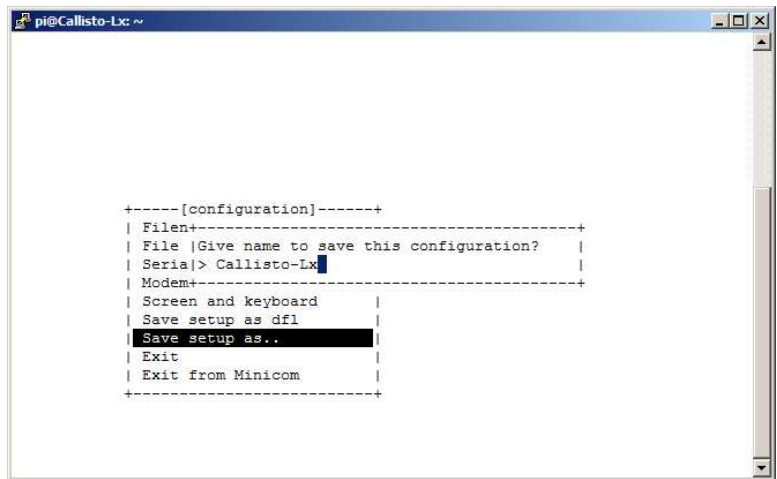


The setup can be saved as default or with a specific name (or both). To save as Default, scroll to **Save setup as dfl** and press Enter. Another small window will briefly pop up that says “**Configuration saved**”.

To save with a specific name, scroll down to **Save setup as..** and press Enter.

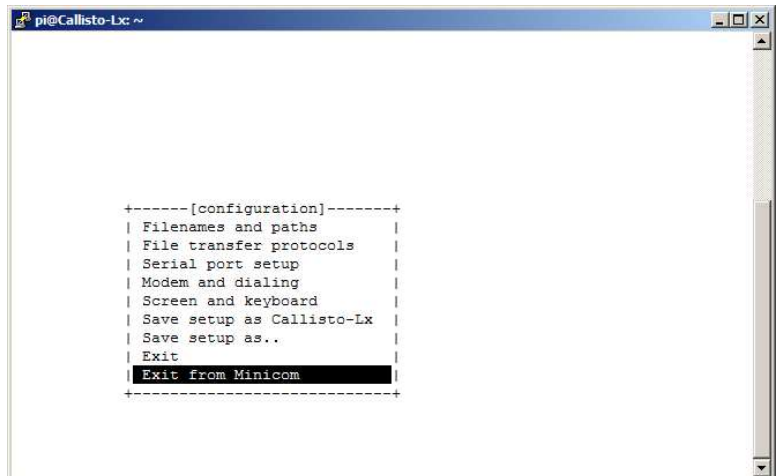


A small window will appear. Enter **Callisto-Lx** and press Enter. Another small window will briefly pop up that says “**Configuration saved**”.



Later, when Minicom setup is run again, the saved Callisto-Lx configuration will be available. In this way, several different configurations can be saved, one for each specific purpose. Only one configuration is needed for the Callisto-Lx.

After saving the configuration file, scroll to **Exit from Minicom** and press Enter.

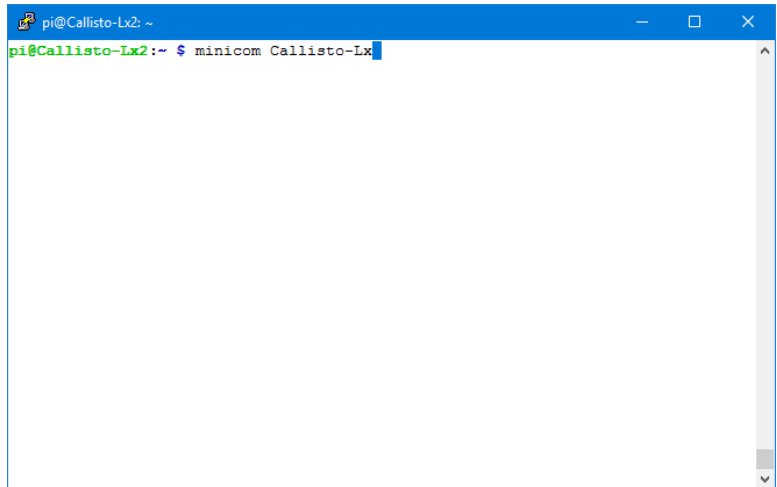


Now, when Minicom is run, the new settings are loaded as part of the command line by entering

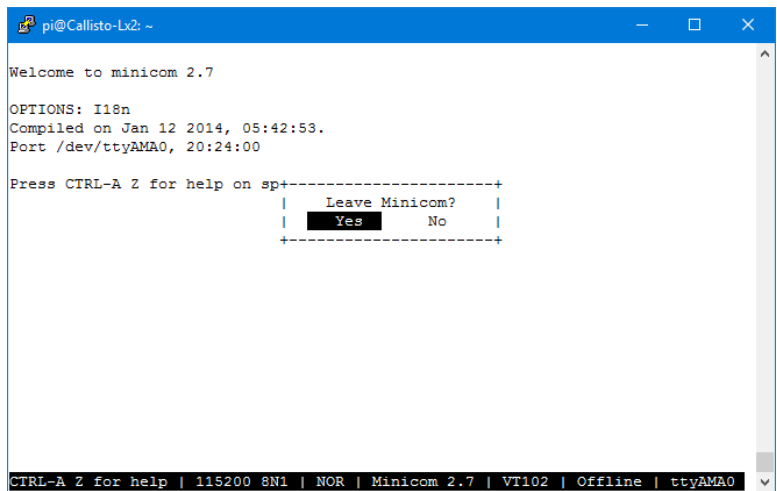
```
minicom Callisto-Lx
```

If the configuration was saved as default, it is only necessary to enter

```
minicom
```



To exit minicom press CTRL-A and then X and Enter. A small window will pop up for confirmation as shown right.

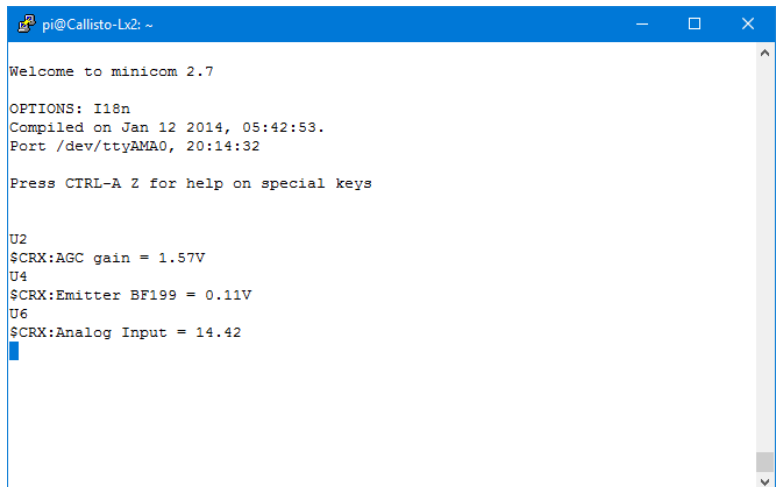


### 3. Test the Serial Interface:

Connect the Callisto EIA-232 interface to the RPi through an EIA-232/CMOS 3.3 V level converter and DB-9F to DB-9M straight-through cable.

Open minicom. Toggle the Callisto power switch Off and then On to observe its start-up message, and enter various commands such as U2, U4 and U6 and look for a response similar to those shown right.

To exit minicom press CTRL-A and then X and Enter.



To capture data and save it to the file Callistotest.txt, start minicom with the -C option switch

```
minicom Callisto-Lx -C ~/Callisto-Lx/Callistotest.txt
```

Note: Minicom cannot be used to access the serial port when Callisto-Lx is in operation. If an attempt is made when Callisto-Lx is using the serial port the following message will appear in the Minicom window:

```
pi@Callisto-Lx:~ $ minicom
minicom: cannot open /dev/ttyAMA0: Device or resource busy
pi@Callisto-Lx:~ $
```

When finished testing the serial interface, return to the Callisto-Lx: Operation and Setup Guide.

#### Links and References:

{C-LXSOG} [http://www.reeve.com/Documents/Articles%20Papers/Reeve\\_Callisto-Lx\\_Setup.pdf](http://www.reeve.com/Documents/Articles%20Papers/Reeve_Callisto-Lx_Setup.pdf)

**Document information**

Author: Whitham D. Reeve

Copyright: © 2017 W. Reeve

Revision: 0.0 (Original draft started, 11 Feb 2017)  
0.1 (Updated with minor edits, 19 Feb 2017)  
1.0 (Released, 01 Mar 2017)  
1.1 (Added link to setup guide, 13 Jun 2017)