How to Guide
ELS31 and Linux

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Connecting ELS31

- To connect your ELS31 to your computer, please see:
  - Getting started guide "**`els31_startup_guide_v02.pdf`**"

- This tutorial will use the ELS31 USB cable and default settings
  - See USB guide "**`els31_an39_usb_interface_v01.pdf`**"
  - 1x Linux Ethernet Network adapters with appear, only 1 used
  - 5x Linux ttyACM ports will also be created

- Linux will allocate ports starting at the lowest available
  - For example assigning the ELS31 typically ttyACM0
  - If ACM0 is already taken, ELS31 will take ttyACM1

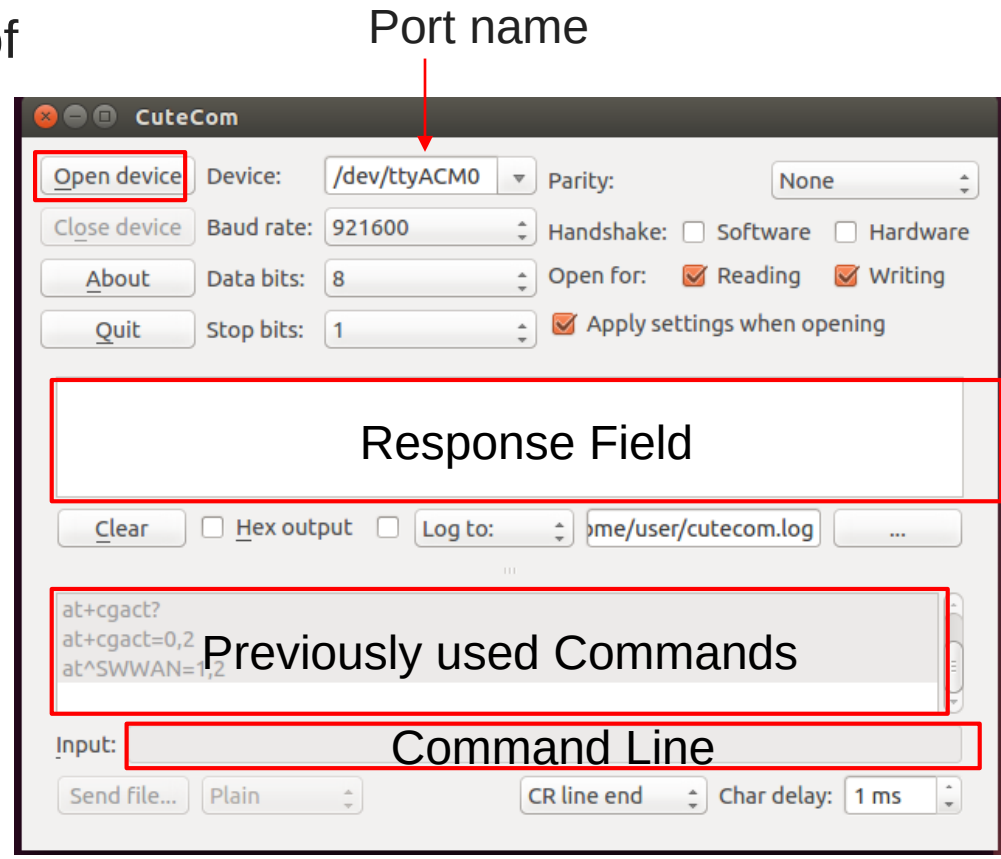
- Port usage is as follows:
  - 1x AT command port over ttyACM (Typically ACM0)
  - 1x USB Modem port over CDC ECM

Linux Configuration

- All commands will issued on the Linux command line
- You can check the interface allocations from the terminal using:
  - `ls /dev/ttyACM*`
- You can configure the interfaces for cellular coms using one of the following terminals:
  - Minicom `sudo apt-get install minicom`
  - Cutecom `sudo apt-get install cutecom`
  - Microcom `sudo apt-get install microcom`

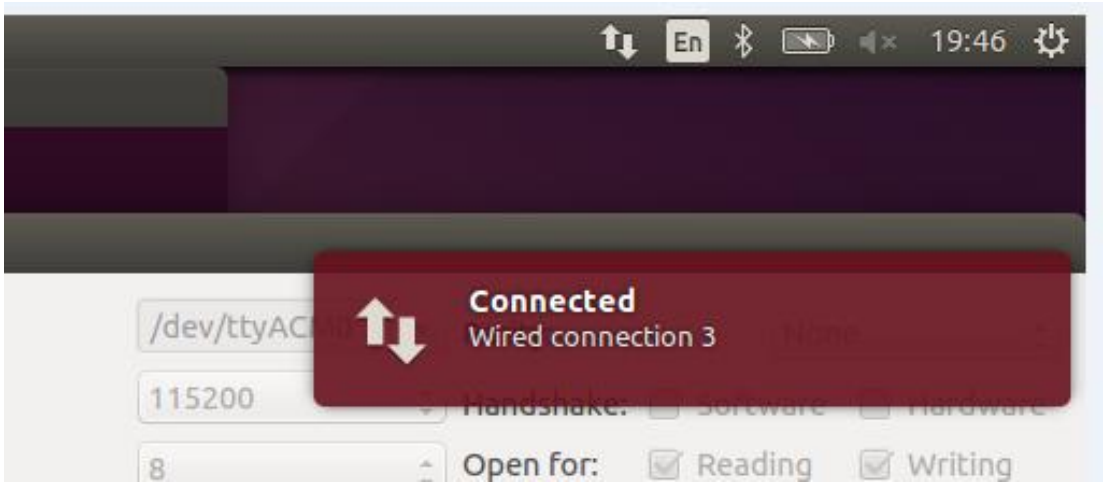
Terminal Communication

- You can use any of the above terminal programs, but most of us use Cutecom
- Intialize your terminal
  - $ **cutecom**
- Select the AT Communication port
  - /dev/ttyACM0 in this example
- Click “Open device”



Module Configuration

- ALL you need to do now is set the APNs and off you go!
- Set your module to use the SIM card's APN
  - AT+CGDCONT=3,"IP","VZWINTERNET"
    - This value should be the default value
    - Other APNs can be used as well
- Start the internet connection
  - AT+CGACT=1,3



Common Errors

- Is the device in full functionality mode:
  - Check *AT+CFUN?*
  - Response should begin with “1”
- Has the device registered to the network:
  - Check *AT+CEREG?*
  - Response should be “x,1” if on home network or “x,5” if roaming
  - Other responses indicate the unit is not registered
- Is the SIM communicating?
  - Check *AT+CPIN?* and then AT+CIMI
  - Response should be “Ready”
  - Check *AT+COPS?*
  - Response should begin with “0”
  - Errors indicate SIM communication issue
- Is the SIM active
  - Confirm SIM status with network operator

```
AT+CFUN?
+CFUN: 1,0

OK

AT+CEREG?
+CEREG: 0,1

OK

AT+CIMI
xxxxxxxxxxxxxxx

OK

AT+CPIN?
+CPIN: READY

OK

AT+COPS?
+COPS: 0,0,"Verizon",7

OK
```