

How to Guide ELS61 and Linux



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Connecting ELS61

- ✘ To connect your ELS61 to your computer, please see:
 - ✘ Getting started guide “[els61_startup_guide_v01.pdf](#)”
- ✘ This tutorial will use the ELS61 USB cable and default settings
 - ✘ See USB guide “[wm01_an39_usb_interface_v01.pdf](#)”
 - ✘ 2x Linux Ethernet Network adapters will 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 ELS61 typically ttyACM0 -> ttyACM4
 - ✘ If ACM0 is already taken, ELS61 will take ttyACM1 through ACM5
 - ✘ With two ELS61 modules are attached, ttyACM0 – tty ACM9 used
- ✘ Port usage is as follows:
 - ✘ 3x AT command ports on initial 3x ttyACM ports (Typically ACM0 -> ACM2)
 - ✘ 1x Debug port
 - ✘ 1x USB Modem port

Linux Configuration

- ✧ All commands will be issued on the Linux command line
- ✧ You can check the interface allocations from the terminal using:
 - ✧ `ls /dev/ttyACM*`
 - ✧ `ip link`
- ✧ 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 Cputecom

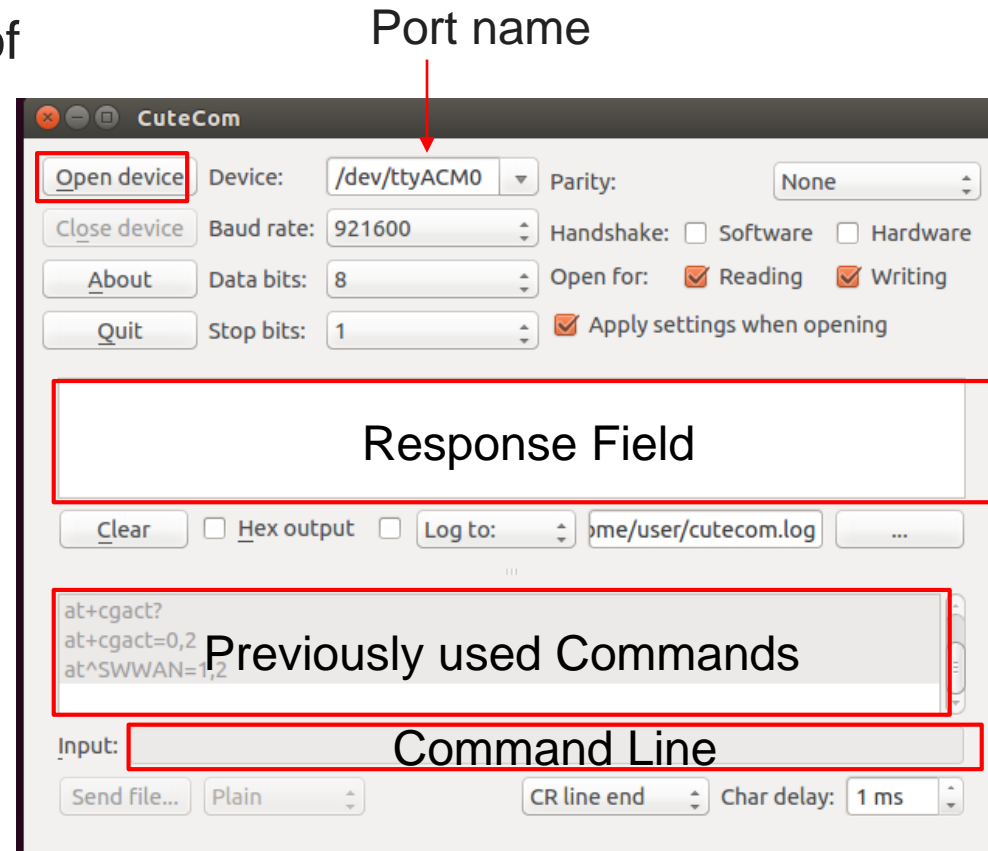
✦ Intialize your terminal

✦ \$ `cutecom`

✦ Select the AT com port

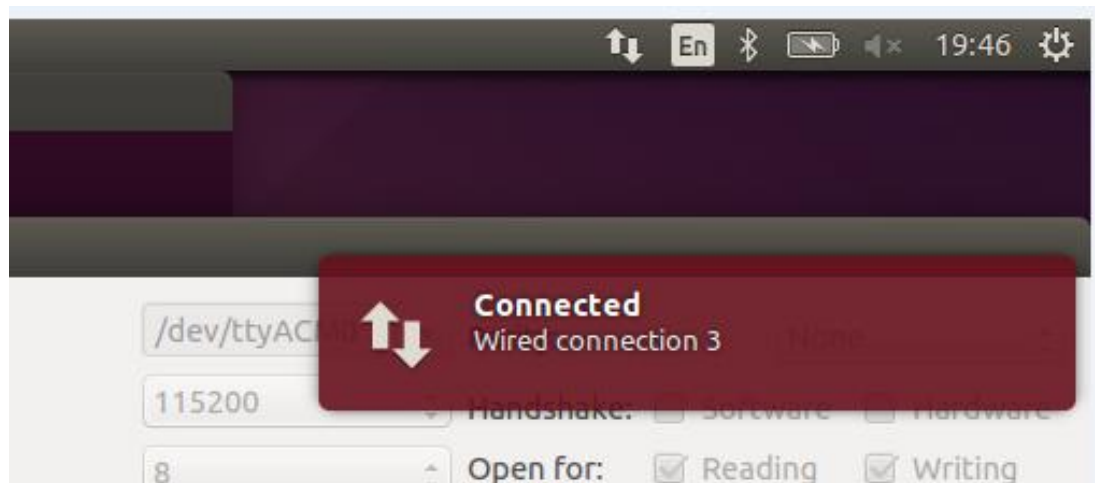
✦ `/dev/ttyACM0` in this example

✦ 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","Broadband"
 - ✦ Other APNs ("Broadband" in the above example) can be used as well
 - ✦ Phone is commonly used, but check with your SIM provider
- ✦ Start the internet connection
 - ✦ AT^SWWAN=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+CREG?* and *AT+CREG?*
 - ✘ 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+CREG?  
+CREG: 0,1
```

```
OK
```

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

```
OK
```

```
AT+CIMI  
xxxxxxxxxxxxxxxxxxxx
```

```
OK
```

```
AT+CPIN?  
+CPIN: READY
```

```
OK
```

```
AT+COPS?  
+COPS: 0,0,"AT&T",7
```

```
OK
```