

Parts Required:

- A Raspberry Pi, all models including the new B+ should work.
- A US Robotics USB model, Model USR5637 *
- An Andy-pi LCD screen
- Network Cable (if using a model A a Wi-Fi dongle, Wi-Fi set up not covered in this tutorial, there are many tutorials online to show you how to set this up)
- Power Supply
- SD Card flashed with Raspbian(I have used NOOBS in my set up).
- A HDMI monitor/TV (only used in initial set-up)
- A BT to RJ11 cable or you can use an RJ11 to RJ11 cable if you use an old ADSL splitter for on your phone line.

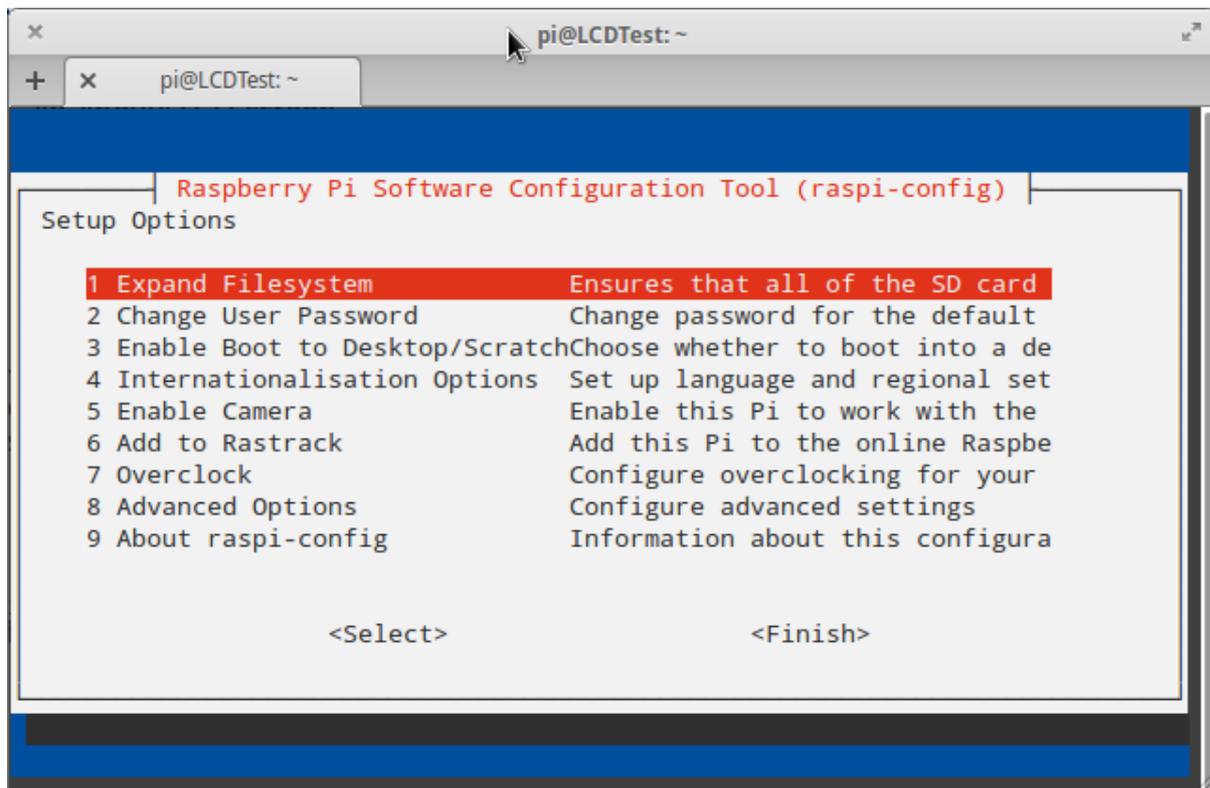
*for the modem with the UK I would only recommend this model as I have tested others and after an amount of time the caller ID fails. After much searching this is due to the way the UK phone caller ID works, so I use this modem only as it works out of the box and has been working for a solid six months in my home set up.

I would connect your Andy-pi screen at this point before powering up as it will save time later on. If it is connected the back-light might not show so don't worry as long as there are a row of blocks on the top row when the Pi is powered on it is connected correctly. You should also add the USB modem too so that it is set to go when you power on, make sure the phone cable is connected to the modem too.

Starting from a fresh install of Raspbian, boot up and set up a few things in the raspi-config, I have used the latest Noobs image in my set up.

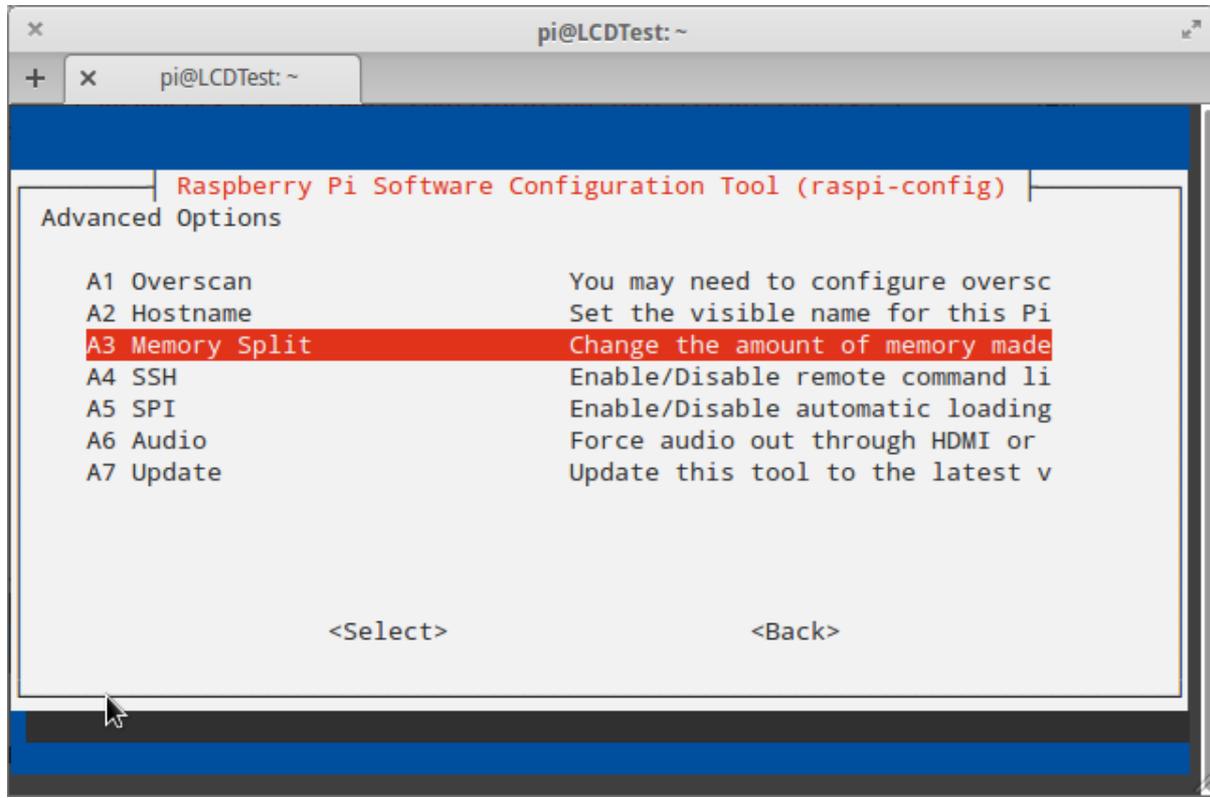
Run the command:

```
sudo raspi-config
```



I would recommend changing your user password on option 2.

Then with the advanced option 8:



Change the memory split (A3) to 16 for the GPU as this set-up is headless and does not need the memory for the GPU.

Also enable SSH (A4) so you can manage your set up remotely. Once you have done you will be prompted to reboot.

Once rebooted you will have a screen that asked you to login, on this screen the IP address is listed. Take a note of the IP address for the Pi.

I recommend setting a static IP address for your set up, I have let DHCP select the IP address of my set-up and then reserved the IP address on my router as it was quicker than setting it on the Pi.

Again there are many tutorials online that tell you how to set a static IP address on the Pi so if you cant set this on your router search the web for a how to.

Now you can SSH into the Pi to continue the set-up.

To SSH you either need to use terminal in on Mac or Linux PC, or install Putty to use a terminal client on a Windows PC. <http://mirrors.xifos.net/putty/download.html>

I am using Elementary OS in my tutorial:

Enter the command:

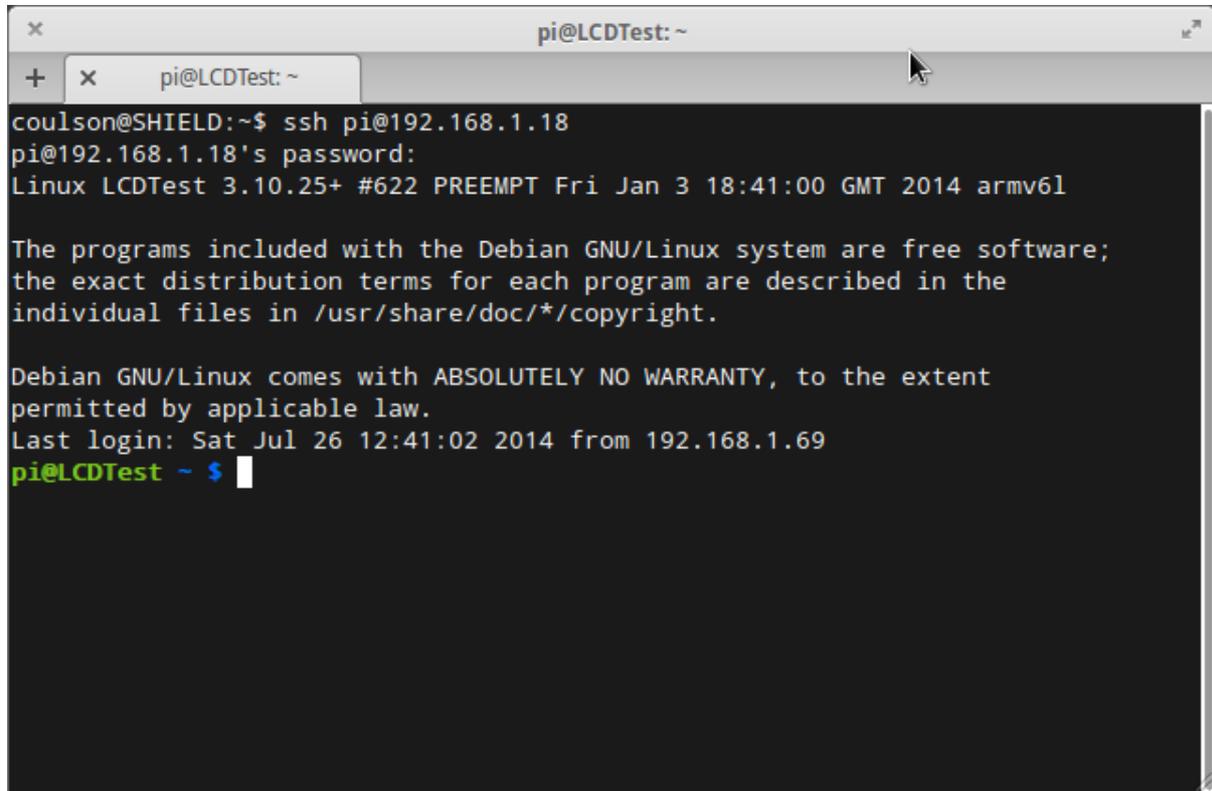
```
ssh pi@ipaddress
```

(this assumes you haven't changed the user from Pi, if you have replace pi with your username, and replace IP address with your actual IP address i.e. 192.168.1.18 in my screen-shot.

Enter your password and you will end up with a line like:

```
pi@LCDTest ~ $
```

I have changed the host name in the Advanced options on raspi-config to LCDTest, the default host name is raspberrypi, I changed mine as its is easier to identify which Pi you are on if you have more than one, you can change it or leave it as the default its completely up to you.

A terminal window titled 'pi@LCDTest: ~' showing an SSH session. The user 'coulson@SHIELD' connects to 'pi@192.168.1.18'. The terminal displays the system information: 'Linux LCDTest 3.10.25+ #622 PREEMPT Fri Jan 3 18:41:00 GMT 2014 armv6l'. It also shows the Debian GNU/Linux license text: 'The programs included with the Debian GNU/Linux system are free software; the exact distribution terms for each program are described in the individual files in /usr/share/doc/*/copyright. Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law. Last login: Sat Jul 26 12:41:02 2014 from 192.168.1.69'. The prompt is 'pi@LCDTest ~ \$'.

Next run:

```
sudo apt-get update
```

let it do its thing and then run

```
sudo apt-get upgrade
```

this is just to make sure everything is up to date at the time of set up. Select Y when asked to use additional space.

Helpful hint, you can use the Ctrl+C to copy the text in this guide and then use Ctrl+Shift+V to paste it in, saves all the right clicking in terminal.

Now that is done we can install, NCID Server..

To Install NCID run these commands:

```
sudo apt-get install gdebi
```

Type Y when required.

```
pi@LCDTest: ~  
pi@LCDTest ~ $ sudo apt-get install gdebi  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following extra packages will be installed:  
  gdebi-core gir1.2-atk-1.0 gir1.2-freedesktop gir1.2-gdkpixbuf-2.0  
  gir1.2-gtk-3.0 gir1.2-pango-1.0 gir1.2-vte-2.90 libcairo-perl libglib-perl  
  libgtk2-perl libpango-perl libvte-2.90-9 libvte-2.90-common lsb-release  
  python-apt python-apt-common python-chardet python-debian  
Suggested packages:  
  libfont-freetype-perl libgtk2-perl-doc lsb python-apt-dbg python-gtk2  
  python-vte python-apt-doc  
The following NEW packages will be installed:  
  gdebi gdebi-core gir1.2-atk-1.0 gir1.2-freedesktop gir1.2-gdkpixbuf-2.0  
  gir1.2-gtk-3.0 gir1.2-pango-1.0 gir1.2-vte-2.90 libcairo-perl libglib-perl  
  libgtk2-perl libpango-perl libvte-2.90-9 libvte-2.90-common lsb-release  
  python-apt python-apt-common python-chardet python-debian  
0 upgraded, 19 newly installed, 0 to remove and 1 not upgraded.  
Need to get 4,555 kB of archives.  
After this operation, 13.2 MB of additional disk space will be used.  
Do you want to continue [Y/n]?
```

Once gdebi is installed use this command:

```
wget http://sourceforge.net/projects/ncid/files/ncid/0.89/ncid_0.89-1_armhf.deb
```

(this is the current version file, just update URL if a newer version is released, replace 0.89 with the new releases number.)

once this has downloaded you will see something like this line in your terminal:

```
2014-07-26 13:22:12 (124 KB/s) - `ncid_0.89-1_armhf.deb' saved  
[211806/211806]
```

this means the file has downloaded NCID_0.89-1_armhf.deb
now install the file:

```
sudo gdebi ncid_0.89-1_armhf.deb
```

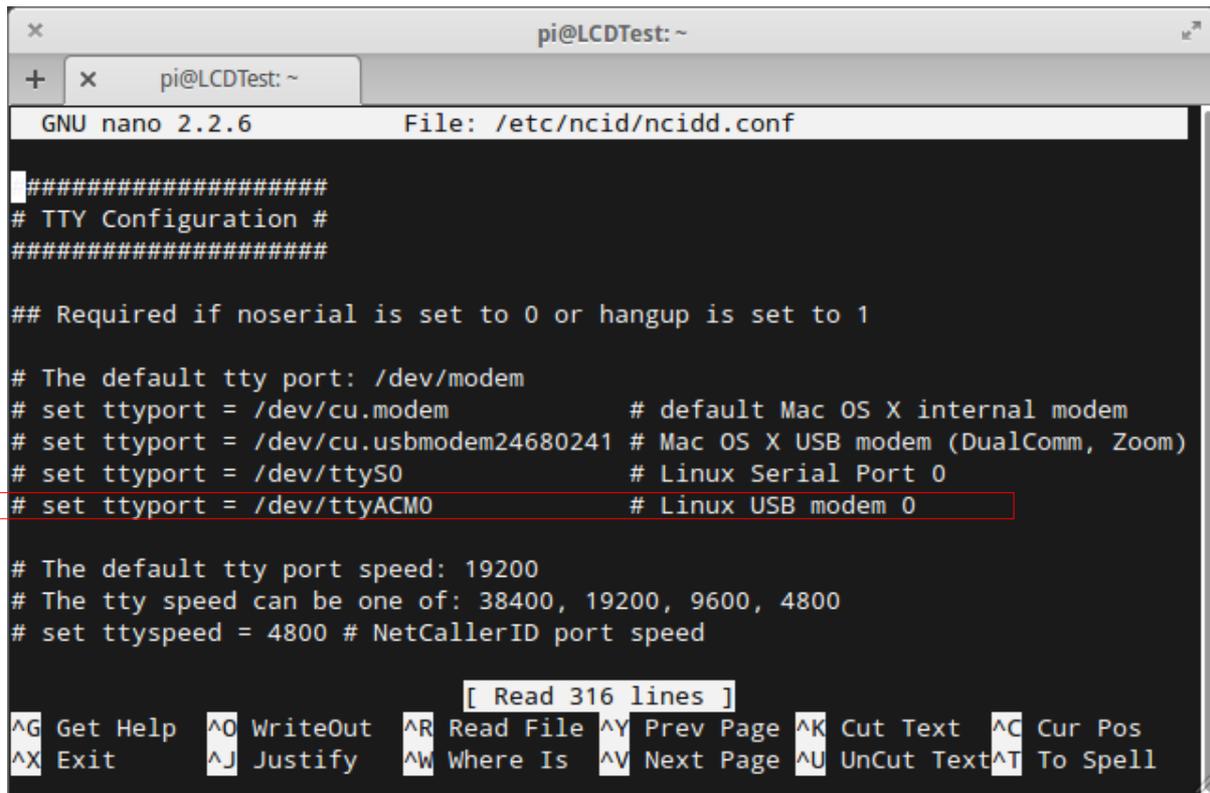
Type Y when requested again to authorise the install.

Once it's installed you will need to configure the set up and this will depend on your hardware.

This is what I did for mine:
run the command:

```
sudo nano /etc/ncid/ncidd.conf
```

Scroll or use the where is function to get to the TTY section



```
pi@LCDTest: ~
GNU nano 2.2.6 File: /etc/ncid/ncidd.conf
#####
# TTY Configuration #
#####

## Required if noserial is set to 0 or hangup is set to 1

# The default tty port: /dev/modem
# set ttyport = /dev/cu.modem # default Mac OS X internal modem
# set ttyport = /dev/cu.usbmodem24680241 # Mac OS X USB modem (DualComm, Zoom)
# set ttyport = /dev/ttyS0 # Linux Serial Port 0
# set ttyport = /dev/ttyACM0 # Linux USB modem 0

# The default tty port speed: 19200
# The tty speed can be one of: 38400, 19200, 9600, 4800
# set ttyspeed = 4800 # NetCalleeID port speed

[ Read 316 lines ]
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Remove the # on the line:

```
# set ttyport = /dev/ttyACM0 # Linux USB modem 0
```

this will set the USB modem as active in the set-up.

That is the only change required in this file, so now:

Ctrl+X

and type Y and press enter to save the file.

Now to install NCID Client.

Run the command:

```
wget http://sourceforge.net/projects/ncid/files/ncid/0.89/ncid-
client_0.89-1_all.deb
```

to download the file, then

```
sudo gdebi ncid-client_0.89-1_all.deb
```

to install the file, again typing Y to install

Now to configure the Client, run:

```
sudo nano /etc/ncid/ncid.conf
```

```
pi@LCDTest: ~
GNU nano 2.2.6 File: /etc/ncid/ncid.conf
Default: "/usr/share/ncid"
# it is best left as the default
set ProgDir "/usr/share/ncid"

# a output module (program) to be used instead of GUI
# the module can be a script located in $ProgDir
# set ProgName ncid-page
# or a program like /var/hack/out2osd
# set ProgName /var/hack/out2osd
# $ProgDir is ignored for: set ProgName <path><module name>
# but it is best left as the default
# Default: ""
set ProgName ""

# Set Host to the NCID server address
# Default 127.0.0.1
[ Read 191 lines ]
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

As I have the server and client on the same Pi, I am leaving the Server address as 127.0.0.1, if you run a client on a separate Pi, you will need to change this to the IP address of the server. It DOES NOT need to be changed in my set up.

```
pi@LCDTest: ~
GNU nano 2.2.6 File: /etc/ncid/ncid.conf
# "word" Will wrap long lines at word boundaries
# "none" Will not wrap, long lines will be truncated in display
# Default: "word"
set WrapLines "word"

# Country is used to display the number in a format for a particular country
# or no format at all if set to "NONE"
# Country must be either "US", "UK", "SE", "DE", "HR" or "NONE"
# http://www.iso.org/iso/english_country_names_and_code_elements
# Default: "US"
set Country "US"

# if Country = "US" then NoOne is used for the number display format
# NoOne requires that the "ignore1" server option be set
# if NoOne = 0, number display format is 1-xxx-xxx-xxxx
# if NoOne = 1, number display format is xxx-xxx-xxxx

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Change the set country to UK

```
pi@LCDTest: ~
+ x pi@LCDTest: ~
GNU nano 2.2.6 File: /etc/ncid/ncid.conf Modified
# Default: 0
set WakeUp 0

# The displayed date can be shown in a alternate format
# Assuming the date separator is a "/"
# if AltDate = 0, the date is displayed as mm/dd/yyyy
# if AltDate = 1, the date is displayed as dd/mm/yyyy
# Default: 0
set AltDate 0

# The displayed date separator can be one of three
# DateSepar must be either slash "/", hyphen "-" or period "."
# Assuming the alternate date format is not used
# if DateSepar is "-", the date is displayed as mm-dd-yyyy
# Default: "/"
set DateSepar "/"

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Set Altdate to 1 for UK format dates

That's all the changes I made. Now to test everything works:

Run these commands:

```
ncidd
```

which starts the NCID Server, then in terminal run:

```
ncid -no-gui
```

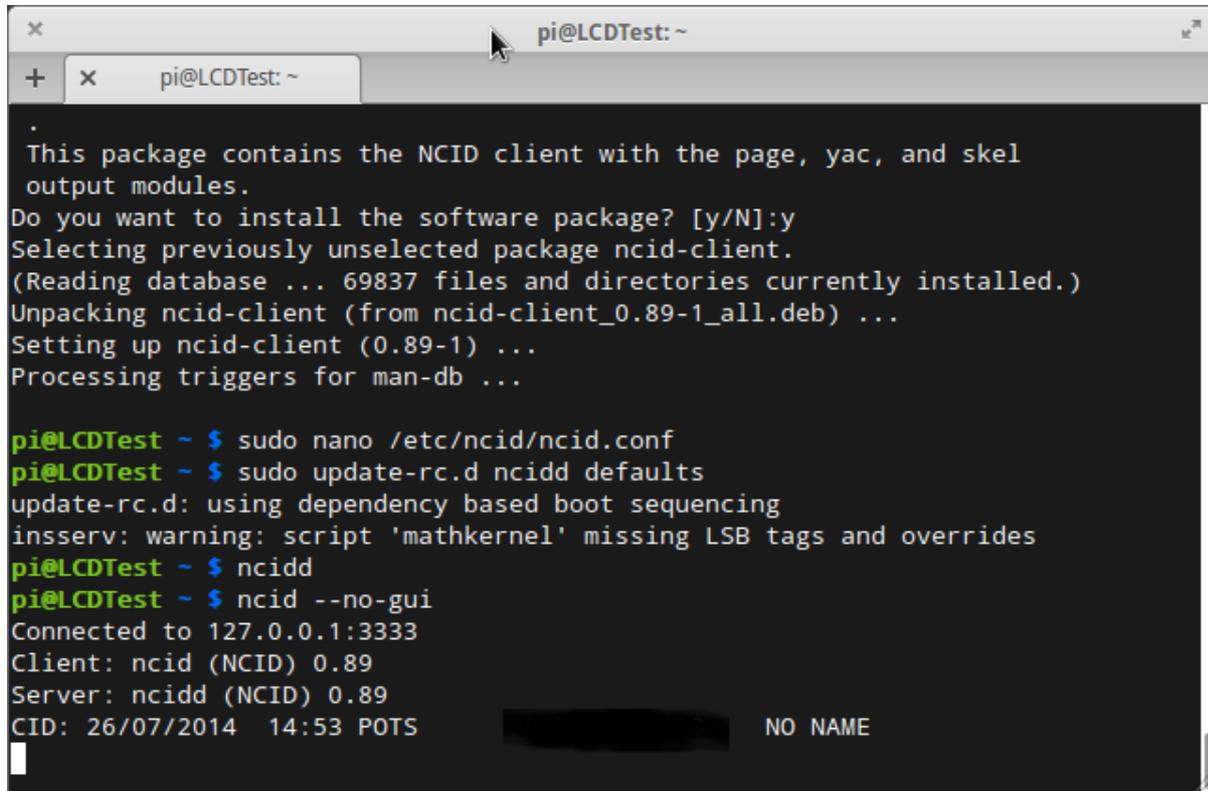
This starts the NCID client within terminal, you will get this screen:

```
pi@LCDTest: ~
+ x pi@LCDTest: ~
to another program.
.
This package contains the NCID client with the page, yac, and skel
output modules.
Do you want to install the software package? [y/N]:y
Selecting previously unselected package ncid-client.
(Reading database ... 69837 files and directories currently installed.)
Unpacking ncid-client (from ncid-client_0.89-1_all.deb) ...
Setting up ncid-client (0.89-1) ...
Processing triggers for man-db ...

pi@LCDTest ~ $ sudo nano /etc/ncid/ncid.conf
pi@LCDTest ~ $ sudo update-rc.d ncidd defaults
update-rc.d: using dependency based boot sequencing
insserv: warning: script 'mathkernel' missing LSB tags and overrides
pi@LCDTest ~ $ ncidd
pi@LCDTest ~ $ ncid --no-gui
Connected to 127.0.0.1:3333
Client: ncid (NCID) 0.89
Server: ncidd (NCID) 0.89
```

Now call your land-line from a mobile phone.

You should see the mobile number and NO NAME appear on the screen, I have blanked out the number in the screen shot.



```
pi@LCDTest: ~  
+ x pi@LCDTest: ~  
.  
This package contains the NCID client with the page, yac, and skel  
output modules.  
Do you want to install the software package? [y/N]:y  
Selecting previously unselected package ncid-client.  
(Reading database ... 69837 files and directories currently installed.)  
Unpacking ncid-client (from ncid-client_0.89-1_all.deb) ...  
Setting up ncid-client (0.89-1) ...  
Processing triggers for man-db ...  
  
pi@LCDTest ~ $ sudo nano /etc/ncid/ncid.conf  
pi@LCDTest ~ $ sudo update-rc.d ncidd defaults  
update-rc.d: using dependency based boot sequencing  
insserv: warning: script 'mathkernel' missing LSB tags and overrides  
pi@LCDTest ~ $ ncidd  
pi@LCDTest ~ $ ncid --no-gui  
Connected to 127.0.0.1:3333  
Client: ncid (NCID) 0.89  
Server: ncidd (NCID) 0.89  
CID: 26/07/2014 14:53 POTS [REDACTED] NO NAME  
|
```

If it all works then good, press Ctrl+C to get back to the terminal window.

If it didn't work, check the two configuration files we changed earlier were saved correctly.

To set the NCID server to auto start at boot use this command:

```
sudo update-rc.d ncidd defaults
```

You can find more on how to install on the [NCID](#) home page.

Next step, install LCDproc, using the Andy-pi instructions :

- `sudo apt-get install lcdproc`

Typing Y again to install.

- `cd /home/pi`
- `mkdir /home/pi/lcdproc`
- `cd lcdproc`
- `wget -O /home/pi/lcdproc/raspidrivers.tar.gz http://andypi.co.uk/downloads/raspidrivers.tar.gz`
- `tar xzvf raspidrivers.tar.gz`
- `cd`
- `sudo cp /etc/LCDD.conf /etc/LCDD.old`
- `sudo rm /etc/LCDD.conf`

- `sudo wget -O /etc/LCDD.conf http://andypi.co.uk/downloads/LCDD.conf`
- `sudo update-rc.d LCDD defaults`

Now install LcdNCID:

- `wget http://sourceforge.net/projects/ncid/files/lcdncid/0.10/lcdncid_0.10-1_all.deb`
- `sudo gdebi lcdncid_0.10-1_all.deb`

Type Y to install when prompted

- `sudo nano /etc/ncid/lcdncid.conf`

Change country to UK

```

x                               pi@LCDTest: /etc/ncid
+ x pi@LCDTest: /etc/ncid
GNU nano 2.2.6                  File: /etc/ncid/lcdncid.conf          Modified

# that have the priority in the info range. This is the default.
#
# Set priority to 32 so the display will never rotate.
#
# Default: 65
# Alternate: 32
priority = 65

# Country is used to display the number in a format for a particular country
# or no format at all if set to "NONE"
# Country must be either "US", or "NONE"
# http://www.iso.org/iso/english_country_names_and_code_elements
# Default: "US"
Country = "UK"

# if Country = "US" then NoOne is used for the number display format

^G Get Help   ^O WriteOut  ^R Read File ^Y Prev Page ^K Cut Text   ^C Cur Pos
^X Exit       ^J Justify   ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell

```

Ctrl+X and Y then press enter to save.

Now to make NCID and LcdNCID start at boot:

- `sudo update-rc.d ncidd defaults`
- `sudo update-rc.d lcdncid defaults`

Reboot

- `sudo reboot`

On reboot the LCD should work and you will get something that looks like this:



As long as LCD config we set earlier is changed to UK the calling number will come up without any dashes and fits nicely on the screen like this:



This is my actual Andy-pi screen and I have edited out the number but can confirm no dashes are present and full number fits on the screen. The second line will display the name of the caller if entered in your NCID.alias file, here is how to add alias:
SSH to the pi and use the command, below, this will open up the alias file in the terminal.

```
sudo nano /etc/ncid/ncidd.alias
```

```
pi@LCDTest: ~
GNU nano 2.2.6 File: /etc/ncid/ncidd.alias

# alias LINE 1122 = -
#
# Change any line label to VOIP. Be careful to place this after
# a POTS line label if a POTS line is also present:
# alias LINE * = VOIP

#####
# Add Aliases here #
#####

[ Read 66 lines ]
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Add a line at the end for each number you want, for example:
alias NAME * = "Joe Bloggs" if 01234578901

```
pi@LCDTest: ~
GNU nano 2.2.6 File: /etc/ncid/ncidd.alias Modified

# alias LINE 1122 = -
#
# Change any line label to VOIP. Be careful to place this after
# a POTS line label if a POTS line is also present:
# alias LINE * = VOIP

#####
# Add Aliases here #
#####

alias NAME * = "Joe Bloggs" if 01234578901

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

changing the name Joe Bloggs and number to fit your needs. The name does need the "" marks but the number does not.

The Ctrl+X then Y and press enter to save. The alias' take affect on the next call, they will not change past calls. On the safe side if I update the alias file I reboot the Pi.

Hopefully this will help out anyone attempting to do the same, or a similar project.