Making an OsmocomBB compatible cable for Sony Ericsson J100i

The J100i phone doesn't have the same 2.5mm headphone socket that the Motorola phones have. All interfacing is done using a socket like this:

The cable shown below left is a genuine Sony Ericsson DCU-60 USB cable which you can buy for £1 on eBay UK - while you can connect the phone to a PC using this cable, it doesn't talk to the PC using RS232, which is what the Osmocon loader software expects. The cable on the bottom right is a Nokia CA-42 cable (£2 on eBay) which has a USB connector with a USB/Serial converter chip built into the USB header (notice how the USB plug is longer) – however, the phone connector doesn't fit the J100i. The solution is to splice the two cables together.

Making a working cable needn't involve any soldering. You just need wire-strippers, a multimeter & electrical tape.

It's a good idea to plug the CA-42 cable into your linux PC & test it works correctly before we begin - open a terminal as root and type in **dmesg**. The last couple of messages should say '*pl2303 converter detected*' & '*pl2303 converter now attached to ttyUSB0*'. Now disconnect the CA-42 lead from your PC ... before we cut the cable.

When you cut & strip the CA-42 lead you should have 3 wires exposed - like the picture below.
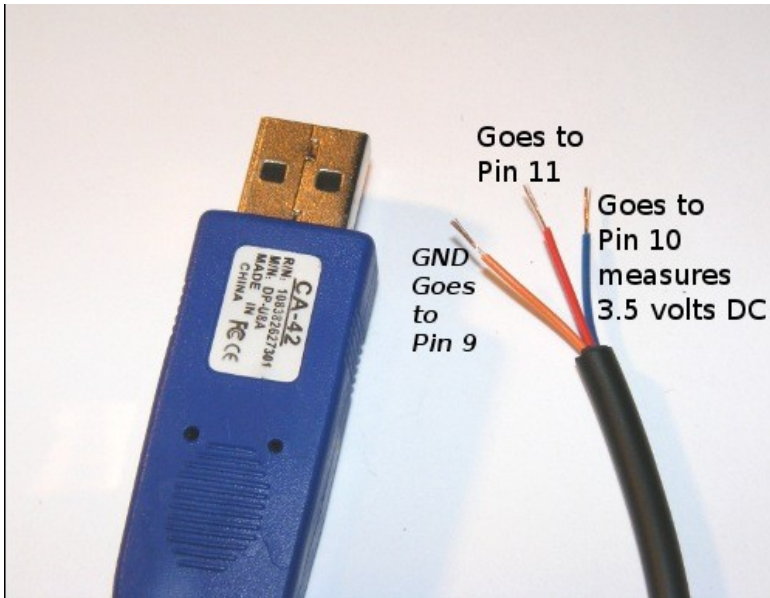
Even if the colours on your CA-42 match ours, you should still measure them anyway – set your multimeter to measure DC volts and look for a 3.5 volt reading (USB end is plugged into PC at this point). Then, just note which wire your black probe lead was connected to and that's your GND which goes to pin 9 on the DCU-60 lead. The 3.5V signal wire goes to Pin 10 on the DCU-60. The remaining wire goes to Pin 11 on the DCU-60.

On the DCU-60 lead – set your multimeter to measure resistance and touch the probes together to test. Now figure out which wire goes to pin 1 & cut it. Then check which are 9,10 & 11.
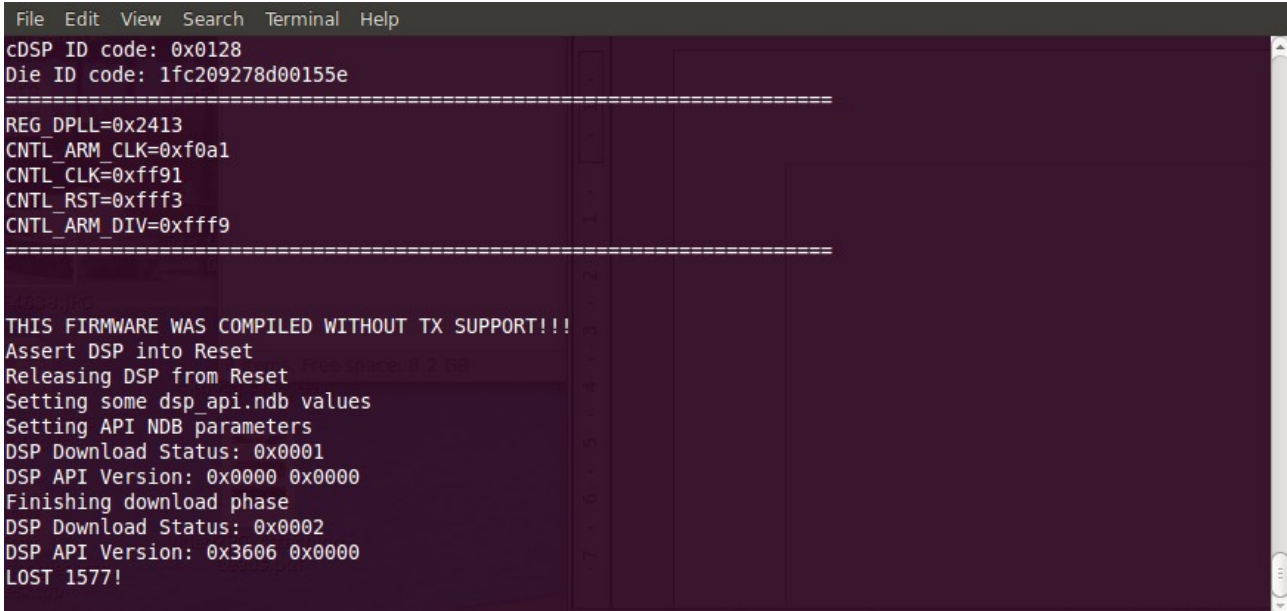
The CA-42 adapters I bought from eBay were really cheap, but I went through three before I found one that worked correctly with Osmocon loader & my J100i. If you already own a T191 lead for the Motorola phones you can just make an adapter using the DCU-60 cable and an in-line 2.5mm stereo socket – pin 10 to tip (green), pin 9 to ground (black), pin 11 to middle pole (white).

Pin	Signal
9	GND
10	Rx (serial)
11	Tx (serial)
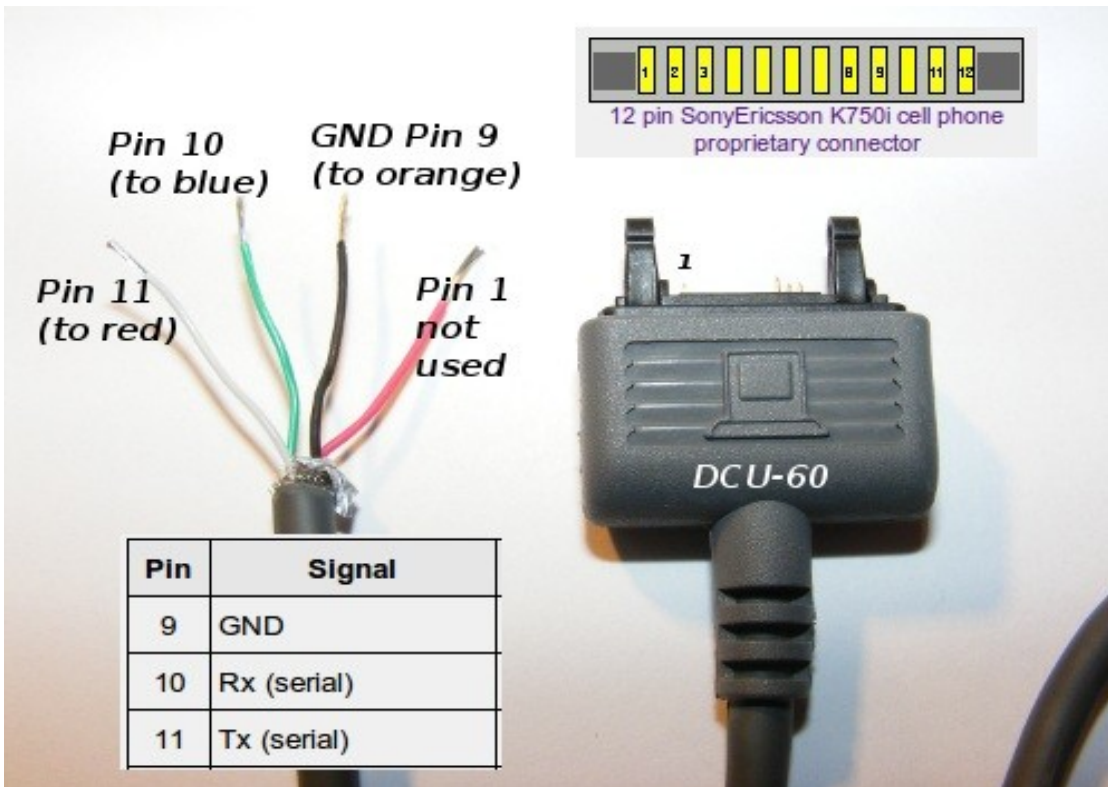
Open a Terminal window and issue the following command to load layer1.bin up to the J100i:

```
./osmocon -p /dev/ttyUSB0 -m c140xor -c
../../target/firmware/board/compal_e99/layer1.highram.bin
../../target/firmware/board/compal_e99/chainload.compalram.bin
```

If the cable works correctly the last thing you see should look something like this:

Notice I had to substitute c140 in the command line with c140xor, for the upload to work correctly.
The backlight on the J100i display should come on when layer1.bin starts running on the phone.

The Sony Ericsson J100i wiki page is here:

http://bb.osmocom.org/trac/wiki/SonyEricssonJ100i

Information about installing OsmocomBB is here:

http://bb.osmocom.org/trac/wiki/GettingStarted