

XDR LCD kit

Some days ago, the XDR LCD kit created by Ced arrived. It was well-packaged, and a suitable connection cable with resistors was attached. Ced answered quickly by email some questions I had. I started by downloading the Arduino software and installed the USB drivers on my PC, as described in the installation instruction. The Arduino board is powered via USB, and I could see the “blue” light for the first time.

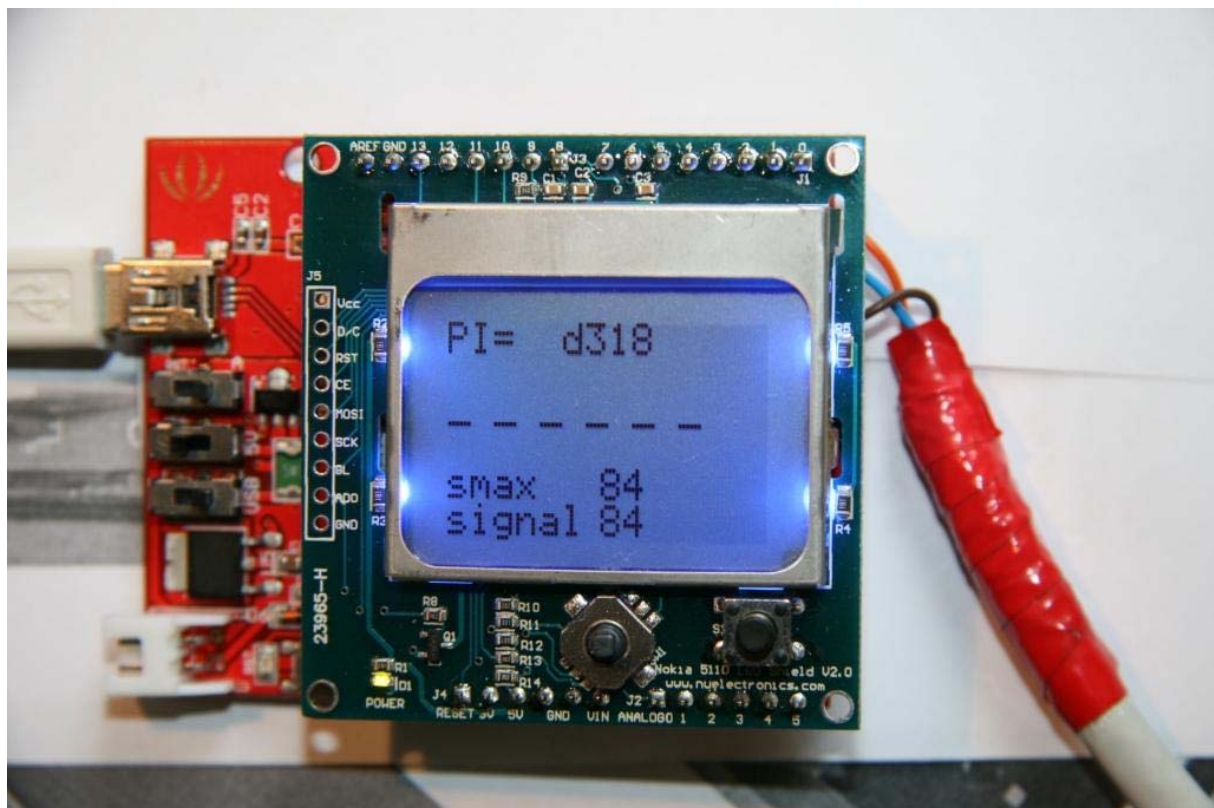
Next: Connect to my XDR. I believe I am not very good at soldering, but I have survived some experiments and so I went for it.

Opening the XDR is simple, 5 screws at the bottom, and then the cover comes off. **Please unplug the radio from mains before you open it!**

I had printed the document prepared by Julian: <http://ukradio.info/GT-XDR/>

It has a photo of the points to attach (the last photo on the page). The attachment points are not on the main board, but on the display board. To get access, you need to take off the small “buttons” board on top of the display board (3 screws) and then there are two screws that hold the display board. Take it out and flip it to a convenient position. The access points are close to the big chip which is also visible on the above mentioned photo. The array of connectors will help to identify the location. The points are labelled.

So I connected 2 lines to SDA and SCL, and a third line to a ground point. After re-attaching the display and buttons board, I connected the lines to the Arduino board according to Ced’s description, and connected to USB. The radio can be operated without the cover (**Attention, there is 110 V!!!**) – and voilà, my first PI code!



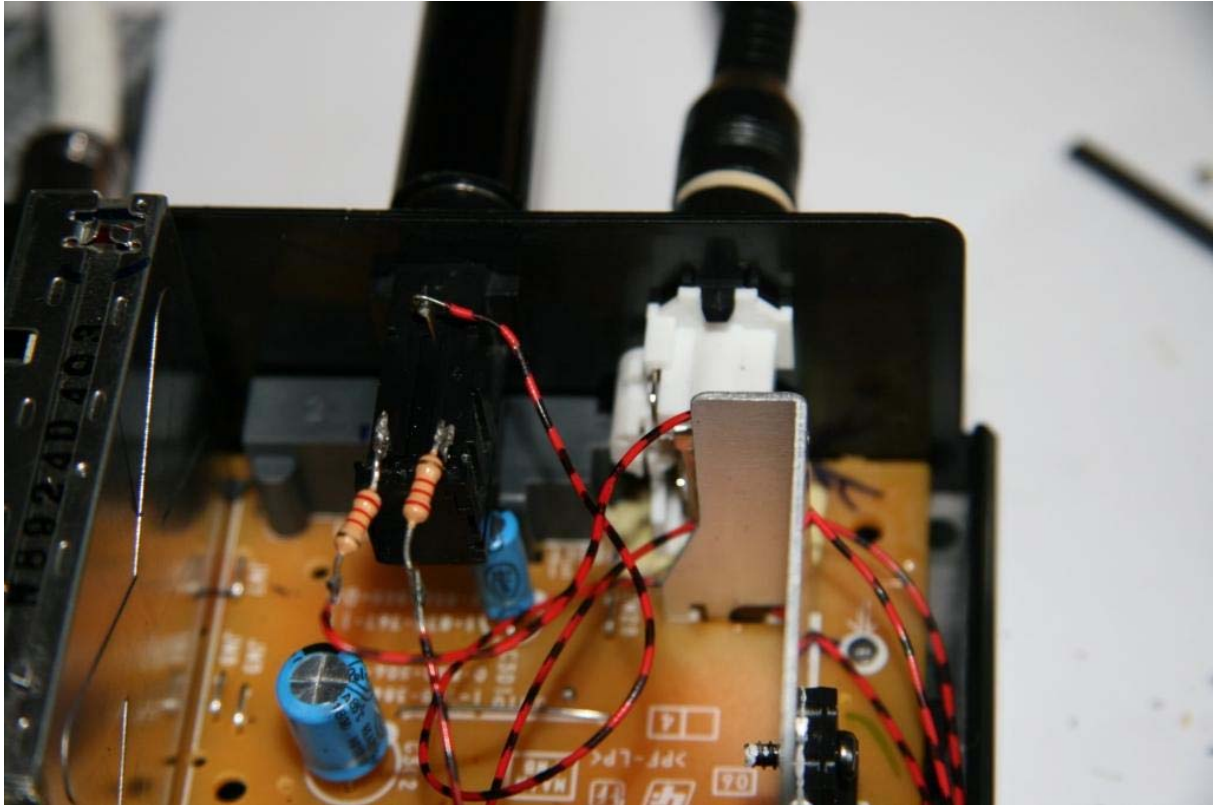
I also documented the XDR display for this historic event:



If you watch above photo carefully, you will not a “SLEEP” element on the display. But my SONY never sleeps! No, I don’t usually listen to Antenne Bayern. I simply don’t like their program.

Ok, it works! Now let us go for the practical matters. How will the three lines leave a closed XDR? I checked my box of unused “anything and everything” and found a 6.3 mm headphone jack and plug. So I decided to use this stereo jack/plug. But how do you get a 11 mm hole into the Sony back panel? Do it the dirty way. Use the soldering iron to create the initial hole (close your nose, open the window, and keep your XYL calm). Then, use a sharp scissor (not a pair of, just a single element), and carve the whole bigger and bigger. It works amazingly well ...

I decided to put the resistors inside the XDR. This is how it looks like “internally”:



And this is the outer view:



Ok, before I closed the XDR, I added a 3.6 V Lion battery (560 Ohm resistor) to maintain the clock and memory (and thanked the Sony financial controller that had decided to cut this \$1 item out of the product), and a PC fan connected to 5 V to cool the mains transformer. I think

I will replace the power supply board, someday, and run the XDR on 12 V. It is not so difficult as the PSB is a separate board, providing 5 V and 10.5 V to the main board.

Ok, one thing left. The Arduino board is a nice and beautiful piece of electronics. But I could see the danger of me damaging some electronic component if the board was swinging around. So I took the paperbox approach and found it housing. The XYL liked the clear design.

So, here are two more photos. The first is a local power house transmitter:





Watching the signal figures, I am pretty sure these are db, as they are almost identical to the values shown by my Sony SA3ES display. I use a 16 db preamp and if I switch it off, the number is reduced by 16. So, one more reason to like the XDR!

One minor issue, however, after several hours of usage: The “blue” light of the XDR LCD kit is nice, but I have difficulties to read the numbers on the display. Perhaps they are too small, but I would like to experiment with some other colours, or bigger character size.

After some initial reception tests, I can say the PI code display is instantaneous on stronger signals. I am sure it is as good as my external PI decoder that I use on my Sony SA3ES (side-by-side tests are currently not possible, as the SA3ES is in my summer house). It can't do miracles, so in order to have a reliable PI code, you still need a decent and undistorted signal. I am using the right button of the kit to reset it if I want the decoding to restart, but I am not sure if this is necessary. Anyhow it clears the display. Curious to see how it handles MS and what can be done with Ced's software.

Thank you Ced, this kit multiplies the value of my XDR! Finally, we have PI, and we have db!

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