DIY Cellphone

Making the Enclosure

You can make a simple but functional enclosure from laser-cut plywood and veneer, along with some small screws (see materials above):

1. Before cutting the case, check that the case files match the circuit board. In particular, I've made a lot of tweaks to the size and location of the screw holes, so check that they're in the same place on the PCB and the case. (Note that the holes in the bottom veneer file should be bigger than the others, this is to accommodate the nut, recessing it slightly.)
2. If you soldered pins onto the ISP header, you'll need to cutout a space for them in the top piece of plywood. Edit DIY-Cellphone-Top accordingly.
3. Laser-cut the plywood (1/4″ / 6mm) using the DIY-Cellphone-Top and DIY-Cellphone-Bottom files in the Case/ folder of the damellis/cellphone2hw repository on GitHub. The SVG files were created in Inkscape, then exported to hpgl for importing to CorelDraw.
4. Laser-cut the veneer using the DIY-Cellphone-Top-Veneer and DIY-Cellphone-Bottom-Veneer files. Cut the veneer with the wood front facing up (adhesive back face down).
5. Remove the adhesive backing from the top veneer piece and stick it to the outer face of the top plywood piece. Repeat with the back, again attaching the veneer to the outer face of the plywood.
6. There's a bit of empty space between the top of each button and the veneer. You might need to stick small spacers to the back of the top piece of veneer, one for each button (in the middle of each rectangular flexure cutout in the veneer). That way, you don't have to depress the veneer as much to press the button.
7. Slip the top and bottom pieces of the case over the circuit board. You'll have to fit the battery's wire in between the GSM module and the battery connector, folding it in half. The plywood pieces should rest flat against the circuit board.
8. Insert the six screws and thread them onto the nuts.

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