



SIM Card Reader/Writer Kit

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Parts relevant to this project

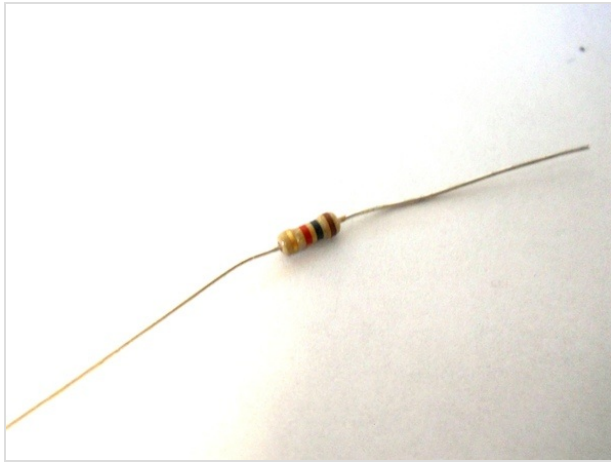
- [Printed Circuit Board](#) (1)
- [SIM Card Holder](#) (1)
- [3.579545 MHz \("colorburst"\) crystal](#) (1)
- [DB-9 female connector w/solder cup](#) (1)
- [CMOS Hex inverter](#) (1)
- [7805 \(TO-220 package\) or 78L05 \(TO-92\) 5V regulator](#) (1)
- [NPN transistor, EBC pinout](#) (1)
- [0.1uF ceramic capacitor](#) (1)
- [18-22pF ceramic capacitor](#) (2)
- [100uF/6.3V capacitor](#) (1)
- [Green or Red 3mm LED](#) (1)
- [Power diode](#) (1)
- [5.1V Zener diode](#) (2)
- [1/4W 5% 1Meg resistor](#) (1)
- [1/4W 5% 1.0K resistor](#) (3)
- [1/4W 5% 10K resistor](#) (4)
- [9V battery clip](#) (1)
- [6 pin header](#) (1)

With this SIM Card Reader and Writer kit, you are free to experiment with your SIM cards and the information that is stored on them! You can back up stored SIM card data, recover deleted SMS's and phone contacts, and even examine the last 10 phone numbers dialed!



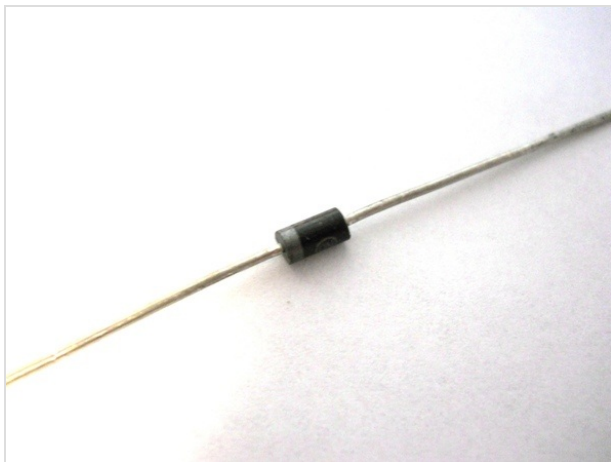
Step 1 — Gather your Materials

- Check to make sure you have all of the necessary parts to build the SIM card reader. You can find the list of parts under the extra guide data.



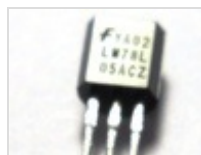
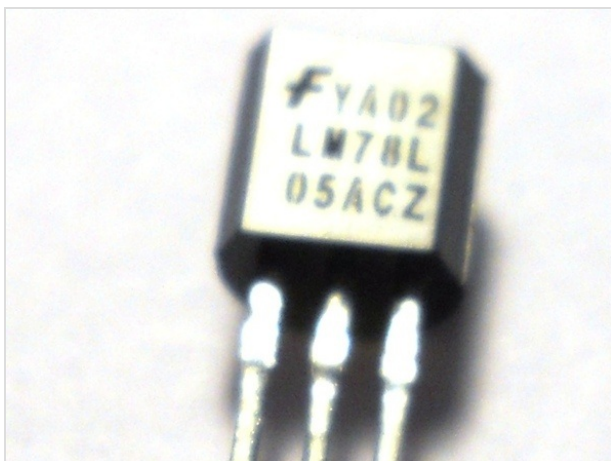
Step 2 — Insert the 1.0K Resistor

- In the **R8** location, insert the resistor with color code brown, black, and red.
- Bend the leads of the resistor to make it easier to solder it in when you turn the circuit board over.
- Solder the resistor in, and then clip the leads.



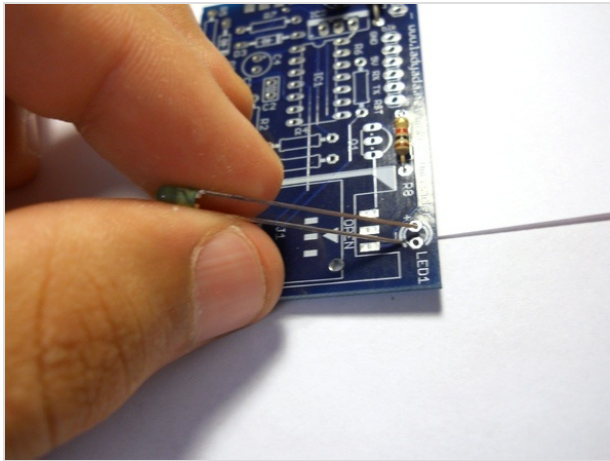
Step 3 — Insert the Protection Diode

- In the location **D1**, insert the **1N4001** protection diode. Make sure that the end with the band is matched up with the band on the silkscreen image.
- Just like the resistor, insert the diode and then bend the leads. This will make it easier to solder it in.
- Turn the circuit board over, solder in the diode, and then clip the leads.



Step 4 — Insert the 5V Regulator

- In location **IC2**, insert the **7805** 5V regulator.
- The regulator transforms the voltage from the battery's 9V to the proper 5V that can be used by the reader.
- Make sure that the flat side of the regulator is matched up with the flat side of the silkscreen image.
- Place the leads in, solder it, and then clip the leads.



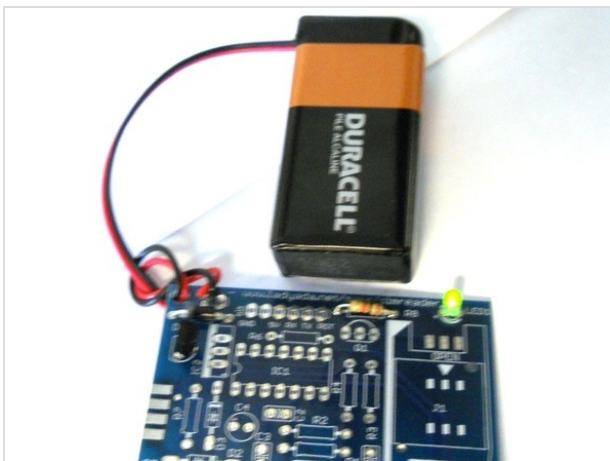
Step 5 — Insert the LED

- In the location **LED1**, insert the LED. The shorter lead of the LED is the negative lead, and the longer lead is the positive.
- Match the leads up with the (+) or the (-) on the silkscreened board.
- Solder it in, and then clip the leads.



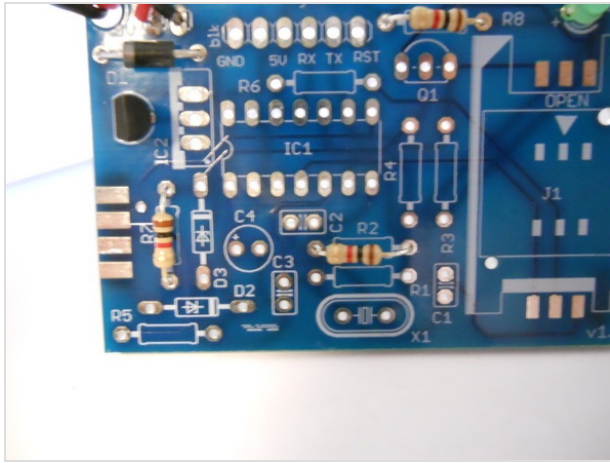
Step 6 — The 9V Battery Holder

- Begin by threading the two battery holder wires through the hole in the corner and tie them in a knot. This helps to keep the wires from being pulled out.
- The red wire is soldered into the (+) hole, while the black wire is soldered into the (-) hole.
- Turn the PCB over and solder in the two power wires.



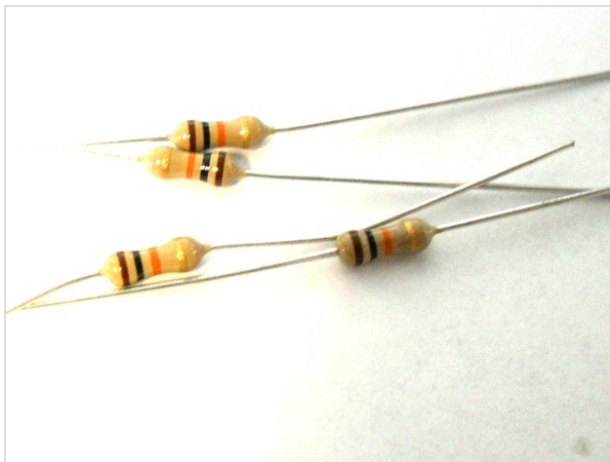
Step 7 — Test the Battery

- Connect a 9V battery to the battery holder.
- Your green LED should light up, which means that the 5V power supply is working well.
- If it does not light up, check to make sure all of your solder joints are clean and secure. If they are, then test your battery with a multimeter and make sure that it is not lower than ~6V.
- Once you have verified the power connection, disconnect the battery before completing the rest of the assembly.



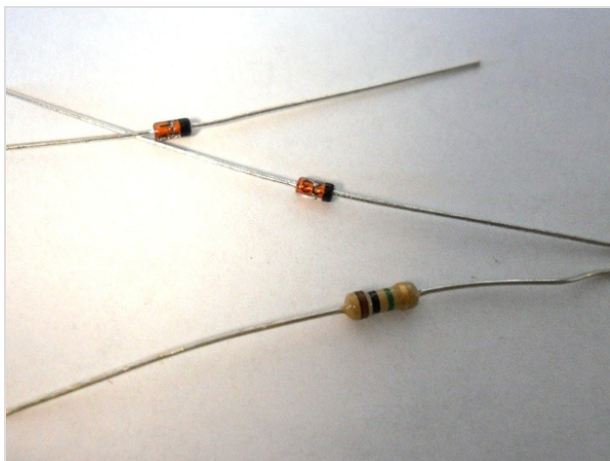
Step 8 — Insert the Remaining 1.0K Resistors

- In locations **R2** and **R7**, insert the resistors with color code brown, black, red into their spots.
- Remember, resistors are not polarized, so it does not matter which direction you place them in.
- Solder the leads in, and clip them too.



Step 9 — Insert the Four 10K Resistors

- Insert the resistors with color code brown, black, orange into locations **R3**, **R4**, **R5**, and **R6**.
- Turn the circuit board over, solder the resistors in, and then clip the leads.



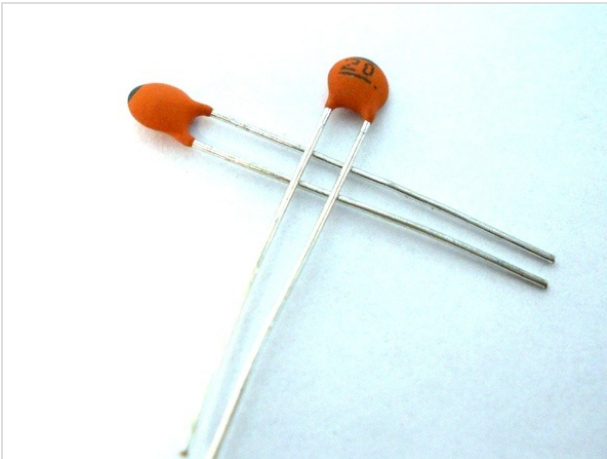
Step 10 — Insert the 1Meg Resistor and the zener diodes

- The resistor with color code brown, black, green should be placed in location **R1**.
- Solder this resistor in, and then clip the leads.
- The zener diodes should be inserted into **D2** and **D3**. Make sure the black stripe on the diode matches with the stripe on the silkscreened circuit board.



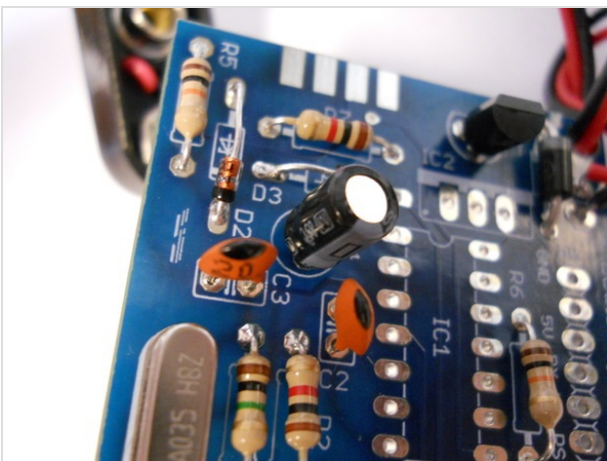
Step 11 — Insert the Crystal

- In location **X1**, insert the 3.57 MHz crystal.
- It does not matter which direction you insert the crystal. Solder it in, and clip the leads if necessary.



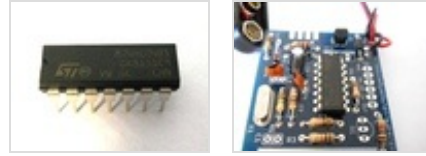
Step 12 — Insert the 18pF Ceramic Capacitors

- In locations **C2** and **C3**, insert the ceramic capacitors.
- The direction that you insert these into the circuit board does not matter.



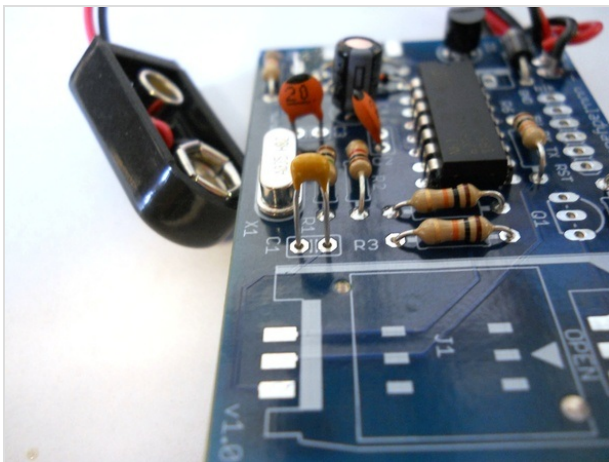
Step 13 — Insert the Electrolytic Capacitor

- In location **C4**, insert the electrolytic capacitor. These are polarized, so make sure the long lead goes into the hole marked with a (+).
- You can bend it over, just to keep it from protruding out so much.



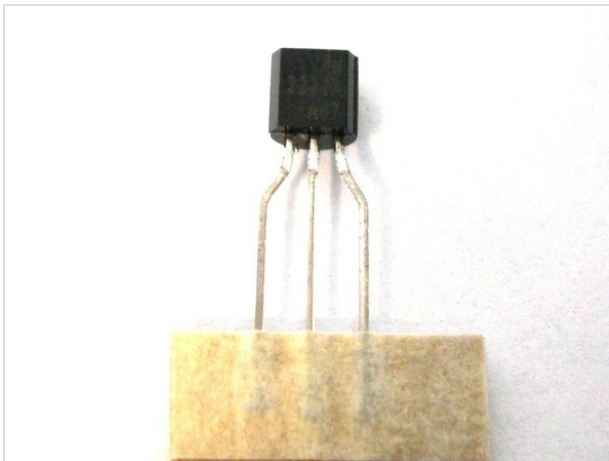
Step 14 — Insert the 74HC04 Hex Inverter

- In location **IC1**, insert the 74HC04 hex inverter chip.
- You will need to bend the leads of the chip in slightly to make them fit into the circuit board.
- Now, safely, slide the chip in so that the notch in the chip matches the notch in the silkscreen.
- Push it in, and then solder the chip in.



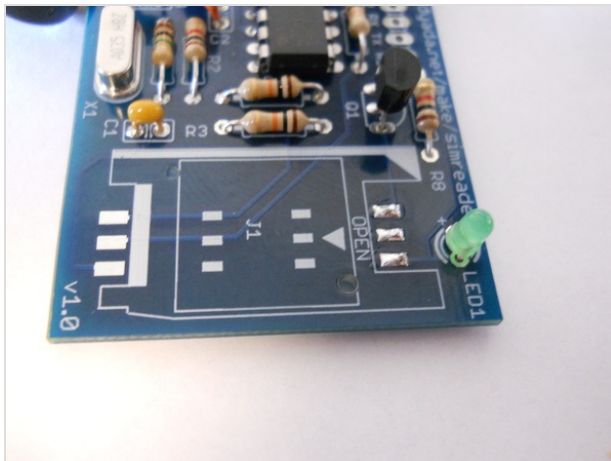
Step 15 — Insert the other Ceramic Capacitor

- In the location **C1**, insert the small yellow capacitor.
- It does not matter which direction you insert the capacitor.



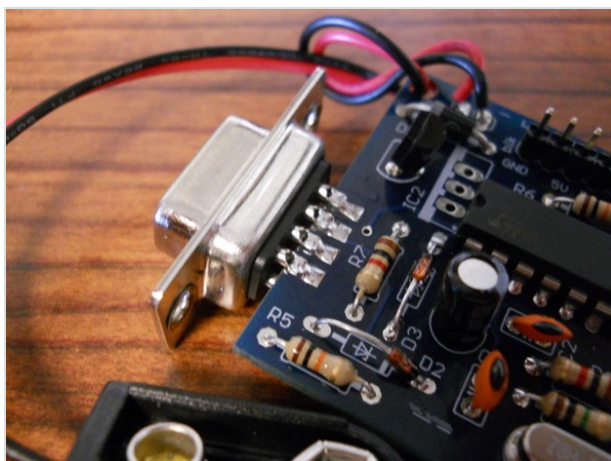
Step 16 — Insert the NPN Transistor

- In location **Q1**, insert the PN2222 or 2N3904 transistor.
- Make sure the flat side of the transistor matches up with the flat side of the silkscreened image.
- Solder it in, and then clip the leads.



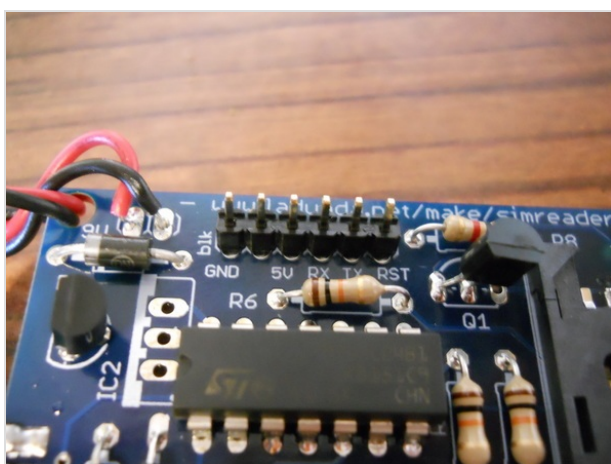
Step 17 — Inserting the SIM Card Holder

- Begin by heating up one of the SIM holder's pins and melting a tiny bit of solder onto it.
- Now hold the SIM card holder in place while reheating the pin with the solder.
- Slide the holder so that the pins align with the pads.
- Remove the soldering iron to secure this connection. Now just solder the rest of the pins for the holder.



Step 18 — Attaching the DB-9 Connector

- Sandwich the pins of the DB-9 Connector with the circuit board. Make sure you pay attention to which side has 5 pins and which has 4 pins.
- Solder the leads securely to the board.



Step 19 — Finishing up!

- Now you are finished. If you plan on utilizing an FTDI cable to connect to the board, solder in the 6-pin male header.
- Begin by disconnecting the 9V battery. Slide the holder away from the green LED (refer to the OPEN lettering), and the holder will pop open.
- Slide the SIM card in so that the contacts face up and the notched corner is on the bottom. Now connect the battery, and connect the DB-9 connector to the serial port.
- Now you are connected to the computer!

This document was last generated on Feb 24, 2012.