Changing the Default SW on the Geiger Kit

These instructions should help those who are new to Arduino to upgrade the default sketch on their Geiger Kit. It starts from installing the IDE, to getting the new sketch, to uploading it to the Geiger Kit. There is also a (old) video at the bottom of the Software page that may help.

Note: You need an USB to TTL Serial converter to connect the Geiger Kit to your computer. It's common to get a 5V FTDI device or one that can be switched between 3.3V and 5V. One of the nicest is this one. However, if you're willing to do a little connector wiring, and want a low cost cable, you can find them on eBay. A word of caution, most of the low priced listings for converters that use the "FTDI" brand chip have counterfeit chips that may not work with the newest drivers. Serial converters based on the CP2102 chip do not have this problem. Be sure the USB to Serial converter you get splits out the **DTR** signal.
Since the USB to Serial converter also supplies power to the board, you should disconnect the power that normally runs the Geiger kit.

As of this writing, IDE versions 1.6.5r2, and 1.6.12 have been tested.

Steps: *(If you already have the IDE installed, start at step 5.)*

1. Go to this page - http://arduino.cc/en/Main/Software . Click link for "Previous Releases" (here) .
2. Pick the version of the IDE that you want to download for your OS. **IDE v1.6.5r2 is widely considered the most stable version.**
3. On that page under "Next steps", click the "Getting Started" link. Pick the instructions for your OS. They will guide you in installing the IDE and the drivers for the FTDI cable. In Windows the FTDO or CP2012 drivers will install when they are plugged into USB.
4. Once you have the IDE up and running and the drivers installed, plug your cable into USB – you don't need to plug the other end into the counter yet.
5. Go to **Tools / Board** and select the "***Arduino Uno***" board type.
6. You may already have the right serial port selected – but check it in **Tools / Serial Port**
7. Now that the IDE is set up, close it.
8. Get the sketch that you want to load from the Software page.
9. Unzip the file, and put the folder in your "sketchbook". You can find the location of your sketchbook by starting the IDE and going to **File / Preferences**. If you make a new sketchbook somewhere else, make sure you set its location in Preferences.
10. The Geiger Kit also requires additional libraries. You will find a library package on the Software page.
11. There is a lot of info on the web about how to add libraries to the Arduino IDE, but here are the basic steps . . .
    a. Unzip the library package to a temporary folder.
    b. Go to your **Sketchbook**. Look for a "libraries" folder in it. If it's not there make one.
    c. Copy the folders created from the unzipped package under your libraries folder.
    d. The structure should look something like the following:

```
"Sketchbook"
    GeigerKit_v11 (or latest) <<<<<< sketch folder
        GeigerKit.h <<<<< files for the sketch makes tabs in the IDE
        GeigerKit_v11.ino
        IR.h
        IR.ino
        Menu.ino
    (other sketch folders)
    libraries    <<<< same level as sketches make this folder if not present)
        PinChangeInt(these are all library folders with files in them)
        MeetAndroid
        + others depending on the version you are using
    (any other sketch folders)
```

12. Open the IDE.
13. Hit the Open button - UP arrow.
14. You should see the name of sketch you loaded in the list - select it and you will see its listing.
15. Do a test compile by hitting the verify button - Right arrow in round circle.
16. It will take a bit - look at the bottom of the screen.
17. You should see it complete. If you see red compile errors, you have likely either loaded the libraries wrong or you are missing one. If a library is missing let me know, or search for it on the web.
18. Now you can upload the sketch to the Geiger Kit.
    (If you are loading the Geiger Shield sketch, temporarily disconnect the GPS, if connected, before downloading.)
19. Connect your USB to Serial cable to the 6 pin connector on the Geiger Kit
20. Hit the Upload button
21. The program will compile again, but this time it will also upload after it compiles.
    You will see the LEDs flashing on the USB to Serial converter and then a notice that it uploaded successfully.
22. For the basic Geiger sketch - without changing anything, click the Serial Monitor button - at the bottom of this screen, set the baud rate for 9600. You should see the serial output from the Geiger. You can view this any time by just connecting the cable and using the Serial Monitor button.

If you are having problems getting a good compile I can send you a zip of an example sketchbook that includes the sketch and libs. Just ask.

Please understand that in some cases I can spend hours and hours helping with this. If you have problems, please grab the bull by the horns and find your solution. There is a lot of information on the web about Arduino. There is also a great Arduino Forum with people willing to help. If you're really stuck, I will give advice, however.

Now that you have been thrown into the pool, enjoy the water! -- John