The Snappyscript code we have supplied under the Arduino UNO and Freeduino is set up to be used with Arduino1 software and won't work with Arduino-0022. Unitl it is released on the arduino.cc website you can download Arduino1 here.
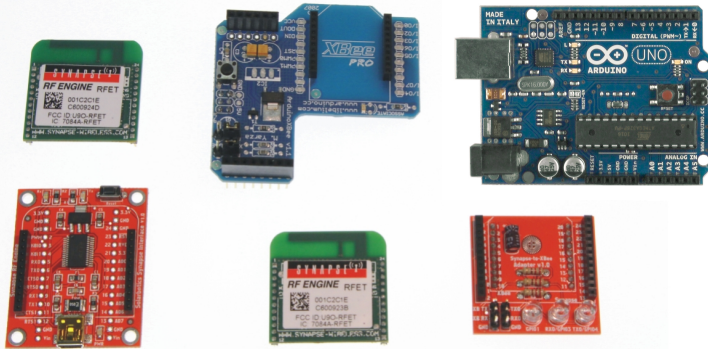
Software from the Synapse wireless customer forum http://forums.synapse-wireless.com/index.php and browse to "Software releases" then "Sticky: Latest Releases". You will need to register for the forums to get access to the Portal software downloads for Windows, Linux, and Mac.

• Assemble a Solarbotics Synapse-to-FTDI adapter kit, or grab a Synapse USB SNAP stick, and install an RF100 node on it.

• Open the Portal software and connect to the COM port your adapter board or SNAP stick is on it should automatically select the correct one for you. Remember this COM port number.

• The first thing you should do is upgrade your firmware to the latest version, or you may get spurious results. Go up to the Options menu and select "Firmware Upgrade", you will be prompted to disconnect from the COM port select "Yes". When the SNAP Node Flash Upgrader window pops up select the COM port number (that you were supposed to remember earlier) under the COM Port drop down. For the Firmware Image, click open and browse to your Program Files folder → Portal → firmware → then choose the correct firmware for your node type, in this case select "RF100_SanpV2.4.9.sfi". Now click the Upgrade button and you will then be asked to reset the node. If you are using the Solarbotics Synapse-to-FTDI adapter all you have to do is click the reset button but with the USB snap stick you will have to use a jumper wire or unfolded paper clip to short the RF100
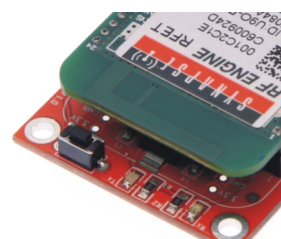
reset pin (23) to ground. You will only have to upgrade your firmware once until the next latest firmware is released.

• Now that you have upgraded your firmware on your first node, you will be prompted to upgrade another node. Now before you hit "No" pop the first node off the board and place in your second node in and select "Yes". This will save you having to this entire process again on the second node.

• Now that your firmware is up-to-date

now click on the "connect" icon 🖇 and reconnect to your node to the Portal software. Your new firmware version number should show up in the status bar at the bottom of the Portal software once you have been connected for a few seconds.
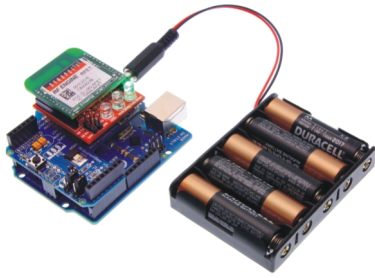
•It's now time to program! Your first step will be to setup the hardware. Place your first node into a Solarbotics Synapse-Xbee adapter then into an Xbee shield (set both jumpers to "XBEE" side), and place that

www.solarbotics.com   1-866-276-2687

onto an Arduino. Now, supply power to your Arduino.

•Now adjust your program to include the opposite node's MAC address (the last 6 hexadecimal characters) and then in the Node Views window double click the node you want to upload to. You will want to upload to the Arduino side node first, otherwise you will loose node communication within Portal right away and have to erase the PC side node again. After you have double clicked your node it should bring up the Node Info window, now just

click the upload icon to upload the code into the node. Rhymes....what rhymes? We are doing a tutorial here, this is serious business.

•Repeat the process and get your PC side code loaded into PC side node.

•You will now have to remove power from the synapse module at the PC side (unplug USB) to be able to establish the transparent serial link, as we found that if your Arduino side node is ever powered down and back up, it loses the link and produces a continuous square wave on GPIO 9 which in turn keeps the Arduino in a constant state of Reset. So it's VERY IMPORTANT that you reboot the PC node every time you reboot power on the Arduino side. The reason this happens is that when the Synapse module is reset it pulses the RTS and CTS lines and in turn this keeps the Arduino in a constant state of reset. This happens until the PC

module is reset and reestablishes the connection.

•You are now ready to program your Arduino wirelessly, just program it like you usually do.

•If you eventually have to re-program your nodes (which I'm guessing you eventually will) you will have to Erase the Node on the PC side, but the nice thing is you'll never have to touch the node on the Arduino side. Synapse Wireless has thought ahead and given you the feature to program nodes over the air even if they are configured for transparent serial, using your erased node at the PC/Laptop you can connect.

•Erasing nodes is much like upgrading firmware: go to the Options menu again then select "Erase SNAPpy Image"

•You will then get 2 drop menus: one to select which COM port you are using, and another to choose your Platform which should match the series of Synapse module you are erasing. In our case it is RF100 because we have Synapse RF Engine RF100P86.

•Hit "Erase" to start and then you will be

prompted to Reset the board, and again you will have to Reset your node. After the node is erased, hit the reconnect button and you'll now be ready to upload code to your node again.