SDR Cube Transceiver
Online Assembly Guide

Detailed construction notes for building and testing each of the SDR Cube kit modules

Home Bill of Materials I/O Board Controls Board DSP Board Softrock SR-Base Softrock TX/PA
RXAMP X-LPF Internal Cable Set External Cable Set Main Enclosure Accessory Enclosure
Digital Subassembly Test Final Assembly RF Functional Test

Digital Sub-assembly Test *... (Section version 1.0a)*

By now you should have the DSP, Controls and I/O boards complete. Also, you need to at least have Cable #1 made from the Internal Cable Kit. (Cable 1 enables you to connect the DSP and I/O boards.)

Connect the boards as shown in the photos below, and attach a 12V power source - ideally a battery as shown, or a current limited at 200 ma.

Apply power and turn on the power switch on the I/O board (flip it "down" toward the I/O pc board). **NOTE:** Be careful that the mounting tabs of the voltage regulator hanging off the I/O board don't touch the bottom of the DSP board!

You should now see the LCD illuminated with a blue light. Using a pointed object such as the end of an Exacto blade, carefully move the R71 "Contrast" trimmer pot (located on the Controls board just below the LCD) until you see the characters and graphics appear in a bright, clear manner.

If you have a way of measuring the power supply current being supplied to the SDR Cube board set, it should be about 130 ma. Anything significantly more or less than this indicates problems and you should go down to the Troubleshooting section of this page.

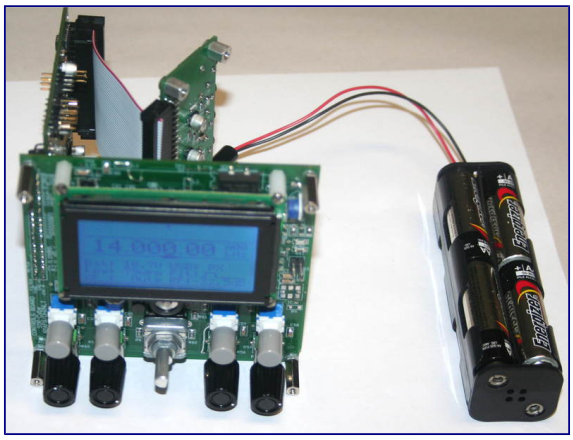
Rudimentary tests ... You should be able to ...

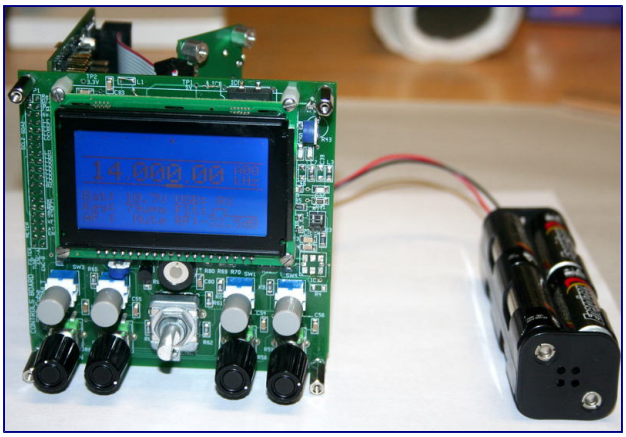
- turn the RF Atten pot on the Controls board and see the RF Level numbers change in the display
- turn the AF Gain pot on the Controls board and see the AF Gain numbers change in the display
- turn the Filter pot on the Controls board and see the filter graphic correspondingly move
- turn the Frequency dial and see the displayed frequency change
- press the Menu buttion and see the User menu appear. (Press again to get back to the operational display.)
- press the Rate button repeatedly and see the underscore cursor move among the frequency digits

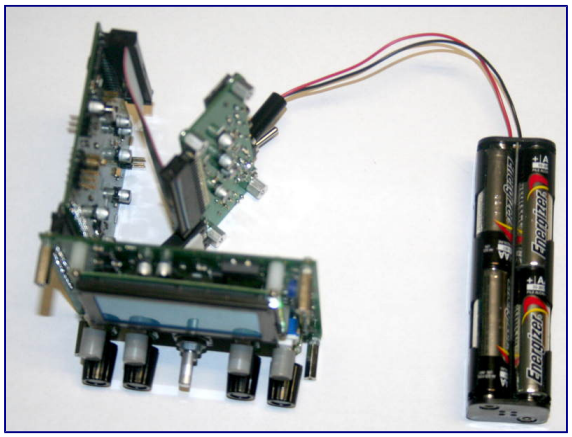
- press the Mode button repeatedly and see the Mode status indication on the display cycle from CW to USB to LSB
- press the VFO button and see the A/B VFO indicator on the display change

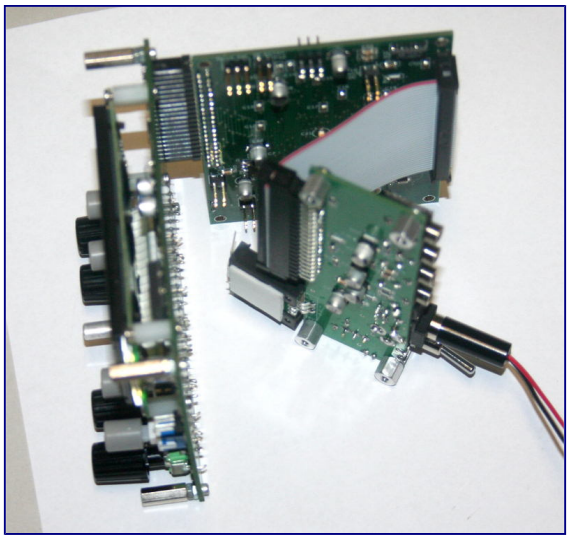
That's it for now ... you have a minimally operational SDR Cube! In the next installment of this Assembly Guide, we'll go through a more deliberate and exacting set of operational checks, including audio, paddle input, Morse output, etc. Also a detailed Troubleshooting section to assist in finding/correcting problems.

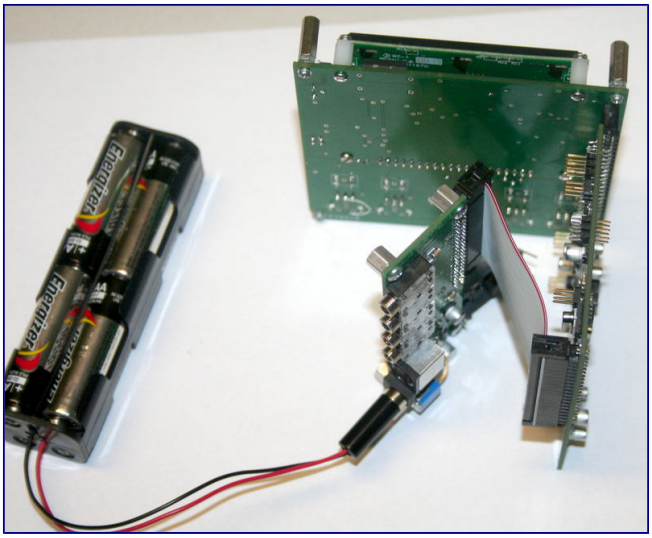
Click on any of the photos below to see a larger view ...

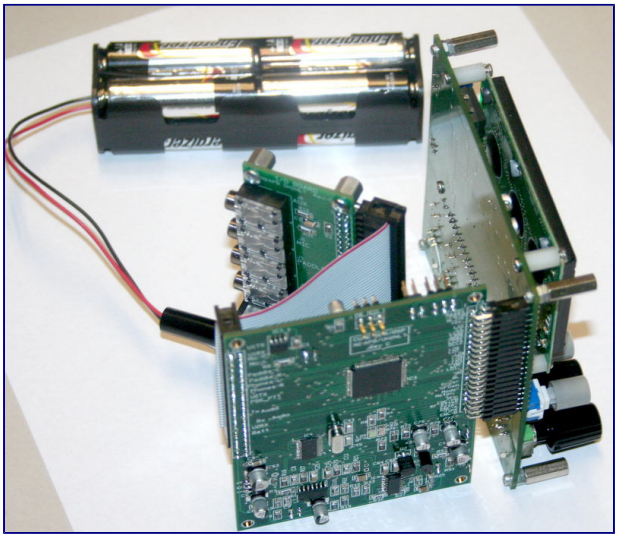


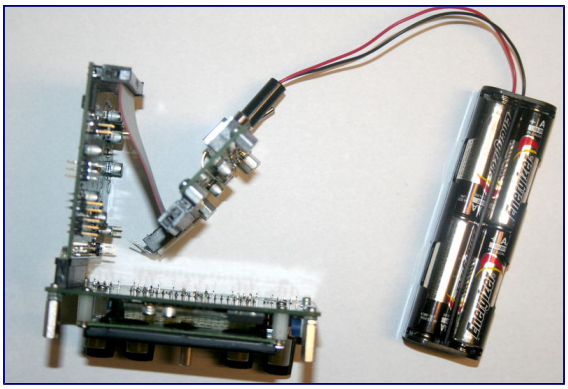












The Cube board set is complete and (hopefully) operational now! Set it aside and next move on to building the SR-base.

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Pagemaster: n2apb@midnightdesignsolutions.com
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