



# *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](#)  
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## Building the External Cable Harness *wiring diagram*

... (Section version 1.0b: Larger pin numbers in

### What Is It?

The External Cable Set is comprised of the 40-wire flat cable that connect the DSP and I/O boards ("Cable 1"), and the 5 smaller ribbon cables that interconnect the DSP board with the 15-pin D-style "External Softrock" connector that gets mounted on the rear panel of the Enclosure.

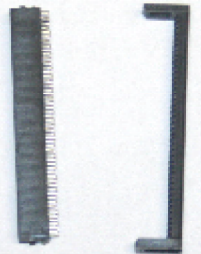
### CONSTRUCTION STEPS

#### **STEP 1: Inventory the supplied parts**

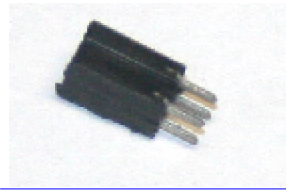
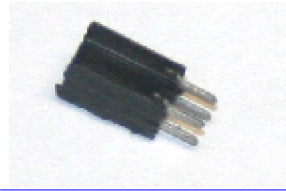
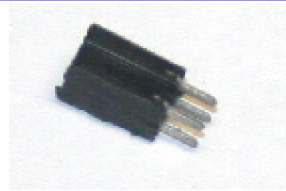
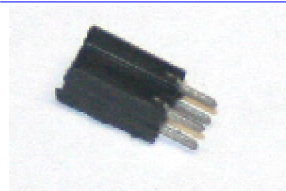
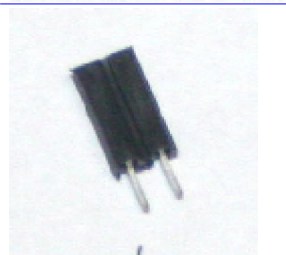
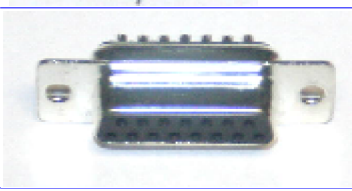

Check to make sure you received the CABLE-Kit-Ext bag and all the components that are pictured below. (Click on any photo to see a larger image.)

## Assembling the SDR Cube Transceiver



Cable-1 (wire)	1	DSP-to-I/O Cable	
J101, J102	2	CONN 40POS IDC SOCKET 10GOLD	

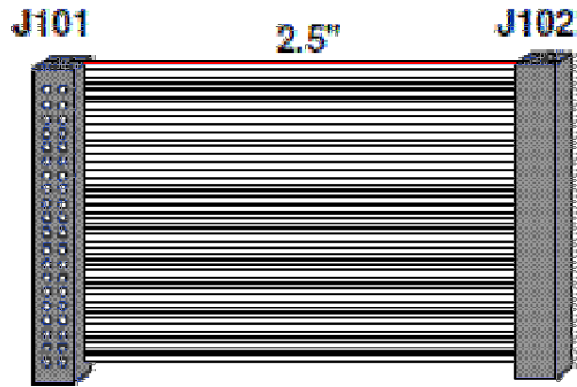
## Assembling the SDR Cube Transceiver

J103	1	Receptacle, 2x4, 0.1", cut from 20P 2ROW STRT SOCKET	
J105	1	Receptacle, 2x4, 0.1", cut from 20P 2ROW STRT SOCKET	
J107	1	Receptacle, 2x4, 0.1", cut from 20P 2ROW STRT SOCKET	
J109	1	Receptacle, 2x4, 0.1", cut from 20P 2ROW STRT SOCKET	
J111	1	Receptacle, 1x2, 0.1", cut from 36P 1ROW STRT SOCKET	
J115	1	D-style, 15p, female, panel mount	
P117	1	D-style, 15p, male, cable mount	
	1	D-style backshell, 15p	

**STEP 2:** First build **Cable1**, the 40-position flat cable that connects the DSP and I/O boards ...

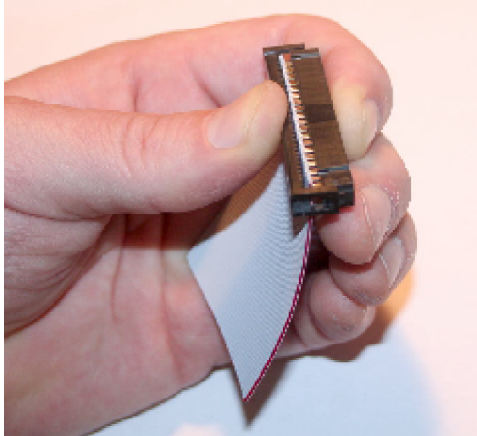
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## Assembling the SDR Cube Transceiver



**Cable 1: DSP-to-I/O Board**

**This is the goal ...** create a 40-wire flat ribbon cable on either end, pointing in opposite directions



**Hold the pieces in place ...** Start by holding the two thinner clamp) in place with the ribbon cable in betw to the end of the outside of the connector (i.e., don't sticks out the other side of the IDC.) The connecto center the ribbon cable in the right position when you with your fingers. (Hence the name of this IDC conn Connector.)

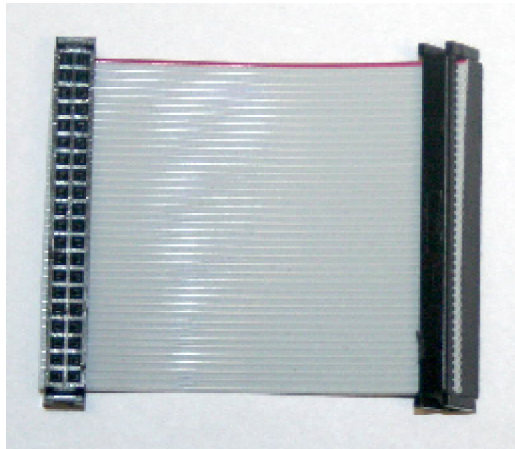


**Pressing Method #1 ...** Using wide hand clamp (e.g the ribbon cable stays in position, press the two half connector pins "bite" through the wires and the ends the end knobs of the connector.

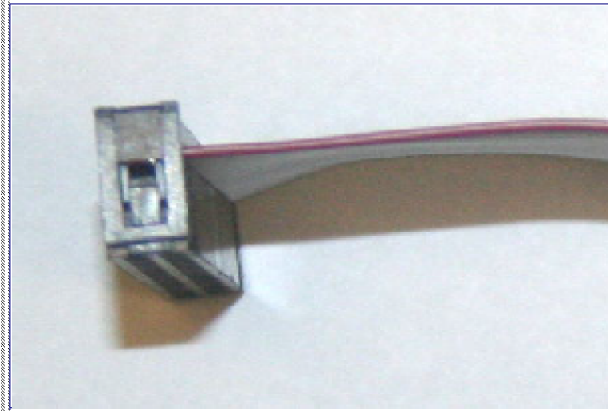


**Pressing Method #2 ...** Using a bench vise (**prefer** cable stays in position, press the two halves togeth pins "bite" through the wires and the ends of the thir knobs of the connector.  
(Harbor Freight ... <http://www.harborfreight.com/4-in-30999.html>)  
(harbor Freight ... <http://www.harborfreight.com/2-1-2>)

## Assembling the SDR Cube Transceiver



The completed Cable #1



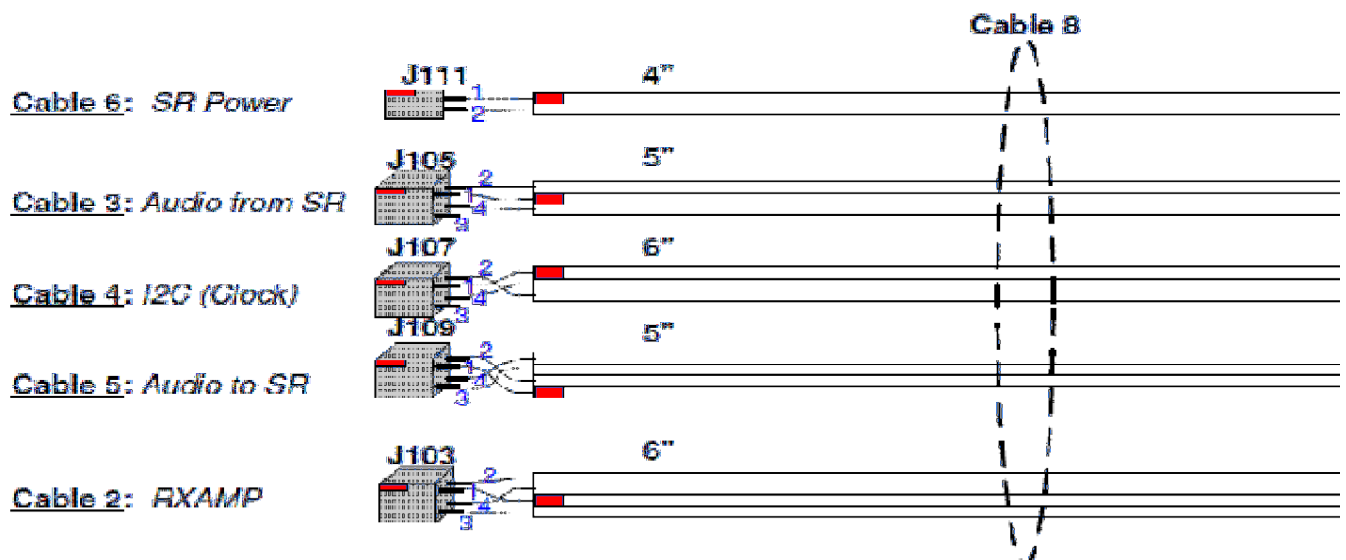
The completed Cable #

### NEXT ... The Internal Cable Set Construction! ...

**NOTE:** Before you start, be aware that Cable 6 (SR Power) really needs to be about 6" long, not 3" as supplied with the initial run of kits. We're now shipping a 6" cable, and we're sending a 6" replacement ribbon cable in the Service Pack ... But if you want to make progress right now, just grab two 6" lengths of hookup wire or ribbon cable and use it instead of the 3" ribbon cable provided. The cable just supplies 12V power (~300ma) to the SR-base - no special precautions are necessary.

## EXTERNAL CABLE CONSTRUCTION

Unless otherwise indicated, all cables #26 ribbon cable, twisted at ap  
Connections made to standard single- and dual-inline 0.1" heads  
All connections to connector pins protected with heatshrink tub



**STEP 3:** Separate the wires at each end of each cable such that about 1" of each wire in the ribbon

**cable is free and separate.**

**STEP 4:** Strip off about 1/8" of the insulation for each wire on each end of the cables, and tin the exposed wire

**STEP 5:** Organize the supplied ribbon cables according to the diagram above for the right length of cable, the right connector for each end, and the red and blue shrink tubing.

5a) One way of organizing things is to get a piece of paper and put down 5 lengths of double-sticky tape. This will hold the cables in position.

5b) Label each one so you know which cable is which: Cable 2 through Cable 6. Go in the order of the diagram above - it will be a big help!

5c) Press each cable down along its respective "row of tape" on the paper.

5d) Cut the length of **RED** heat shrink tubing into **5 pieces**. Each one should be no longer than 1/4" .. actually a tad less than this will make it easier for you. The purpose of the red shrink is to denote "pin 1" on each connector, and to protect the bare wire connection you will make to those pins.

5e) Cut the length of **BLUE** heat shrink tubing into **11 pieces**. Each one should be no longer than 1/4" .. actually a tad less than this will make it easier for you. The purpose of the blue shrink is to denote "the other pins" on each connector, and to protect the bare wire connection you will make to those pins.

5f) Your sheet of paper should look like the photo below at this point ...

[more coming]

