



SDR Cube Transceiver **Online Assembly Guide**

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

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Installing the Cube & Softrock Boards into the Enclosure

... (Section version 1.0a)

What Is It?

The Enclosure is a 3-part aluminum housing (and related hardware) designed to contain the SDR Cube board set and the mating internal Softrock option. The enclosure is dimensioned approximately 4" x 4" x 4", and comes pre-milled to accommodate the Cube electronics. It has a durable black powder-coated finish with white silkscreened labels on the front and rear panels.

ASSEMBLY STEPS

STEP 1: Inventory the supplied parts

Check to make sure you received the Enclosure and its related hardware bag pictured below. (Click on any photo to see a larger image.)



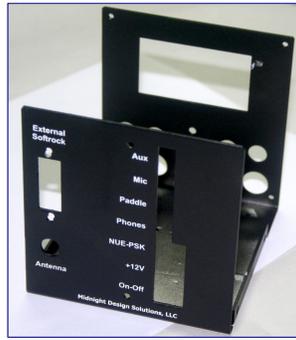


Designator	QTY	Description	
ENC	1	Enclosure (Chassis, Sub-Chassis and Cover)	(See photo above)
FEET-Front	2	Rubber feet, 0.937" x 0.625"	
FEET-rear	2	Rubber feet, 0.5" dia x 0.14"	
	2	Screw, sheet metal, #4, 1/2" (FEET)	
	2	Washer, #2, flat (FEET)	
	2	Machine screw, pan phillips, #4-40x3/16", (SUB-CHASSIS-REAR)	
	2	Nut, #4 (SUB-CHASSIS-REAR)	
	2	Screw, sheet metal, #4, black, 1/4" (SUB-CHASSIS-BOTTOM)	
	4	Machine screw, flat head, phillips, #4-40x3/16", black (cover)	
J114	1	BNC, panel mount	

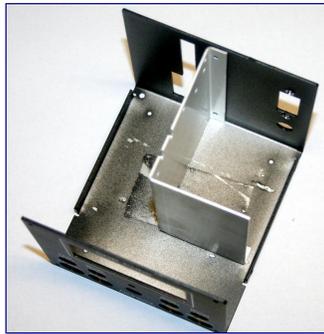
STEP 2: Looking over the main chassis and sub-chassis

Several people have written to ask about the reworked mounting holes for the DB-15 connector position on the rear panel of the Enclosure ... Those modified holes are on all Cube enclosures going out the door. The dimensions were a little off (too far apart) for the DB-15 connector mounting on the rear panel, so we needed to rework them to "bring them closer together". We did the initial re-work using a router bit in a drill press, which produces a not-so-elegant result.

(Turns out that it is pretty hard to neatly elongate holes in aluminum like this.) However when mounting the connector with its tabs on the outside of the enclosure, this hole elongation is hidden. But a couple days into the kit shipping process, Jason KE4NYV suggested that I try using a Harbor Freight hand punch ... and it works great, as you can see in the photo below.



This is how the sub-chassis will be positioned in the main chassis when we get further into the assembly process below ...



[] **STEP 3:** Install the DB-15S connector on the rear panel using the longer two #4 machine screws and nuts. (See next photo below.)

You won't be attaching anything to the connector if you use an internal Softrock ... we just supply it to plug the hole in the back of the enclosure. But it can serve as a nice extra connector in the event that you want to interface with something custom.

[] **STEP 4:** In preparation for installing the BNC connector, scrape away the inside of the enclosure paint around the hole. Do same around the four mounting holes on the lip of the chassis, and the corresponding four holes on the inside of the top cover.

It's good to get a good electrical connection for the BNC and the cover-to-chassis physical connections. A Dremmel grinding tool works great for this.

Attach the BNC connector using the star washer against the inside of the chassis, then put the ground lug, and then the BNC nut. Position-and-hold the ground lug such that it is pointing straight up toward the DB-15S connector. Carefully hold the BNC on the outside using a set of gas pliers (don't squeeze, just prevent it from turning) while you tighten the nut on the inside. Once tight, bend the ground lug up at a 90-degree angle for eventual connection to the X-LPF board. See the second photo below and click for a close-up of the BNC.



[] **STEP 5:** Install the bare aluminum sub-chassis in the main chassis using the shorter #4 machine screw and nuts for the connection to the rear panel, and using the #4 sheet metal screws for the connection to the bottom of the chassis. See the two photos below.

The shorter machine screws are indeed just long enough, and not too much, because the SR-Base will ultimately need to connect very close to this and we need the space.

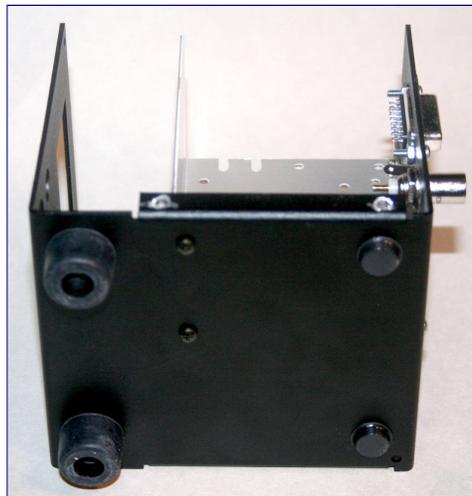
When screwing in the sheet metal screws from the bottom side, they will turn hard at first as they bite into the sub-chassis holes, but it will become easier once the holes are "cut" on the way to snugging them up.



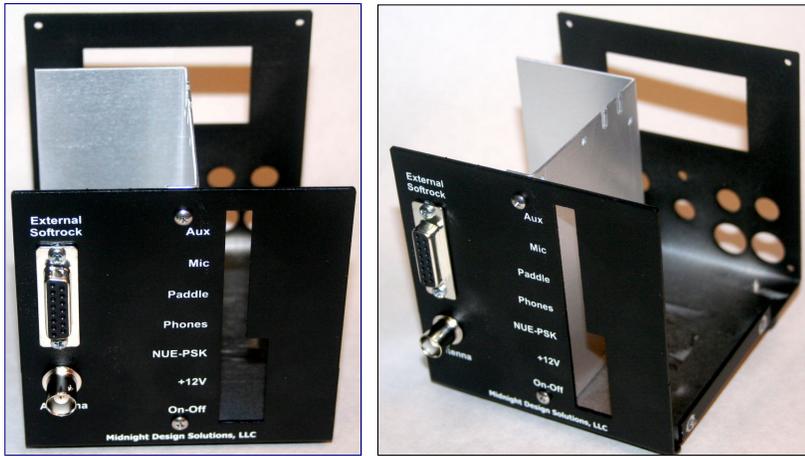
[] **STEP 6:** Attach the smaller rubber feet in the rear, and the larger rubber feet in the front of the chassis bottom. This arrangement will allow the SDR Cube enclosure to tip up from the table surface for the operator to more easily use the controls and see the LCD.

Rear feet -- Peel the feet away from the carrier strip and then press them into position over the small holes provided for location purposes.

Front Feet -- Thread the two longer #4 sheet metal screws through the #2 washer (yes it is a tight fit, but it works), and then feed the screw-and-washer assembly into the recessed side of each taller rubber foot. Screw each rubber foot into the smaller hole in the front/bottom of the main chassis ... again, the screw will be hard to turn at first until the threads are established. Then the screw will turn easily until the foot is snug against the bottom of the chassis.



And this is how the chassis will look when complete!



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