Installing DCC-SOUND in an Atlas/Kato RS1 with Scale Sound Systems Drop-in Speaker Systems

by jt burke
www.ScaleSoundSystems.com

This guide covers performing a DCC-Sound installation in an HO Atlas Classic (by Kato) RS1.

You have a couple decisions to make prior to beginning;

1. Do you want one or two speakers? One speaker located at the end of long hood will provide excellent sound while keeping the prime-mover sound localized well. Two speakers, one at the end of each hood, will centralize all of the sounds and permit louder volumes if that's important to you. You will not gain more "bass" by adding a second speaker; just more volume and centralized sound.

2. Do you want a stay-alive? If you choose a single speaker installation, the stay-alive can be located in the short-hood. If you choose dual-speakers, things get a little tighter.

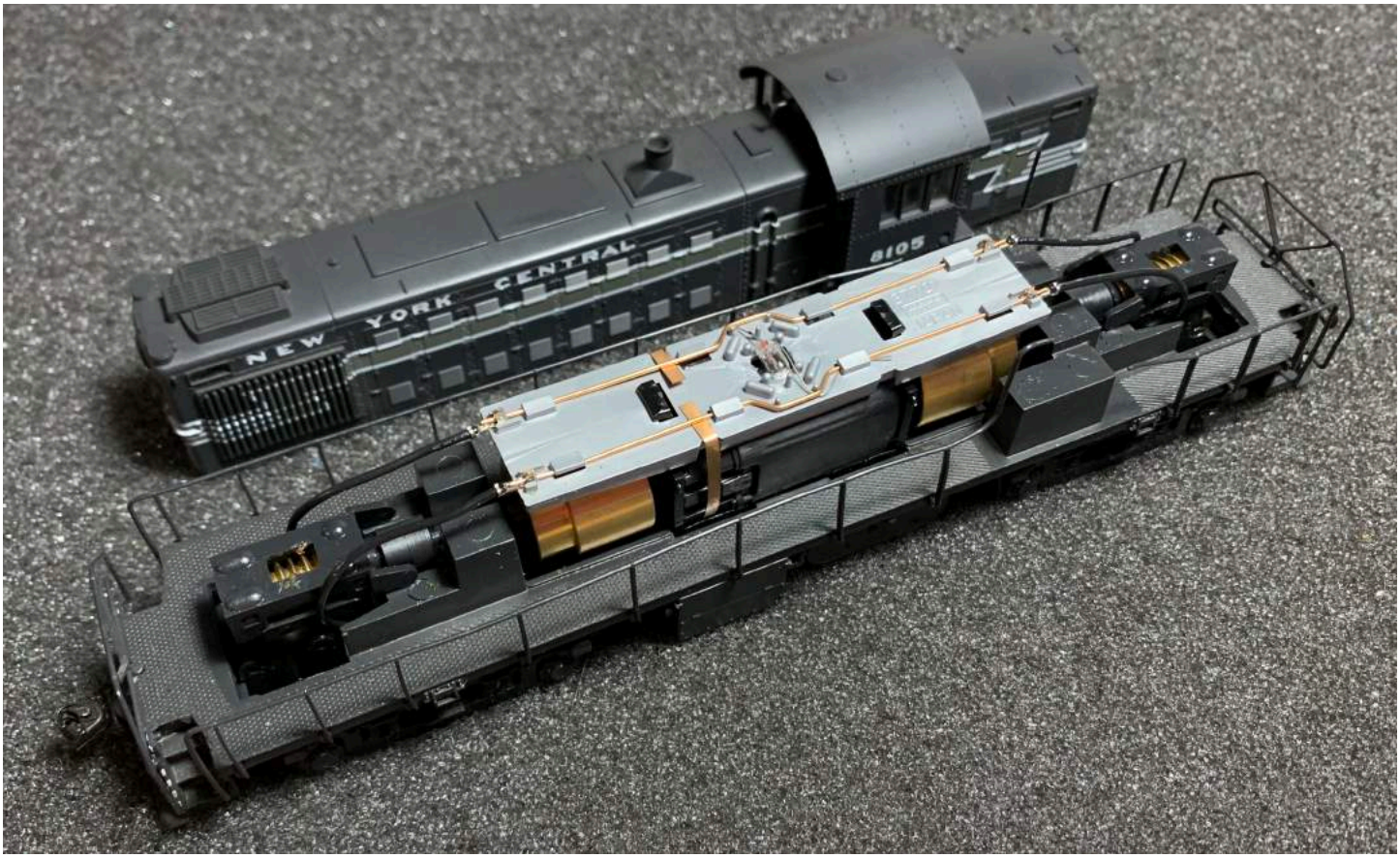
This installation makes use of a TCS AK-MB1 motherboard and 21-pin decoder to permit a dual-speaker install with stay-alive. A Loksound 21-pin decoder will just barely fit due to the low vertical hood-clearance; a TCS WOW-121 decoder will fit comfortably; a Tsunami2 21PNEM *will not fit* due to it's increased vertical height. Also, the Nix Trainz Decoder Buddy V5 is also too tall due to its longer header pins. A V4 Decoder Buddy might work, though I cannot confirm this.

For other options using two speakers and a stay-alive, you may be able to use a Loksound Direct or Tsunami2 PNP and nestle a TCS KA1 KeepAlive® on top, but I've not confirmed this either. A hardwire install of a Loksound Micro or a TSU-1100 with a TCS KA1® will work.

With one speaker+stay-alive, you can use either a Loksound Direct or TSU-PNP or hardwire one of the small decoders and place a KA2® in the short-hood.

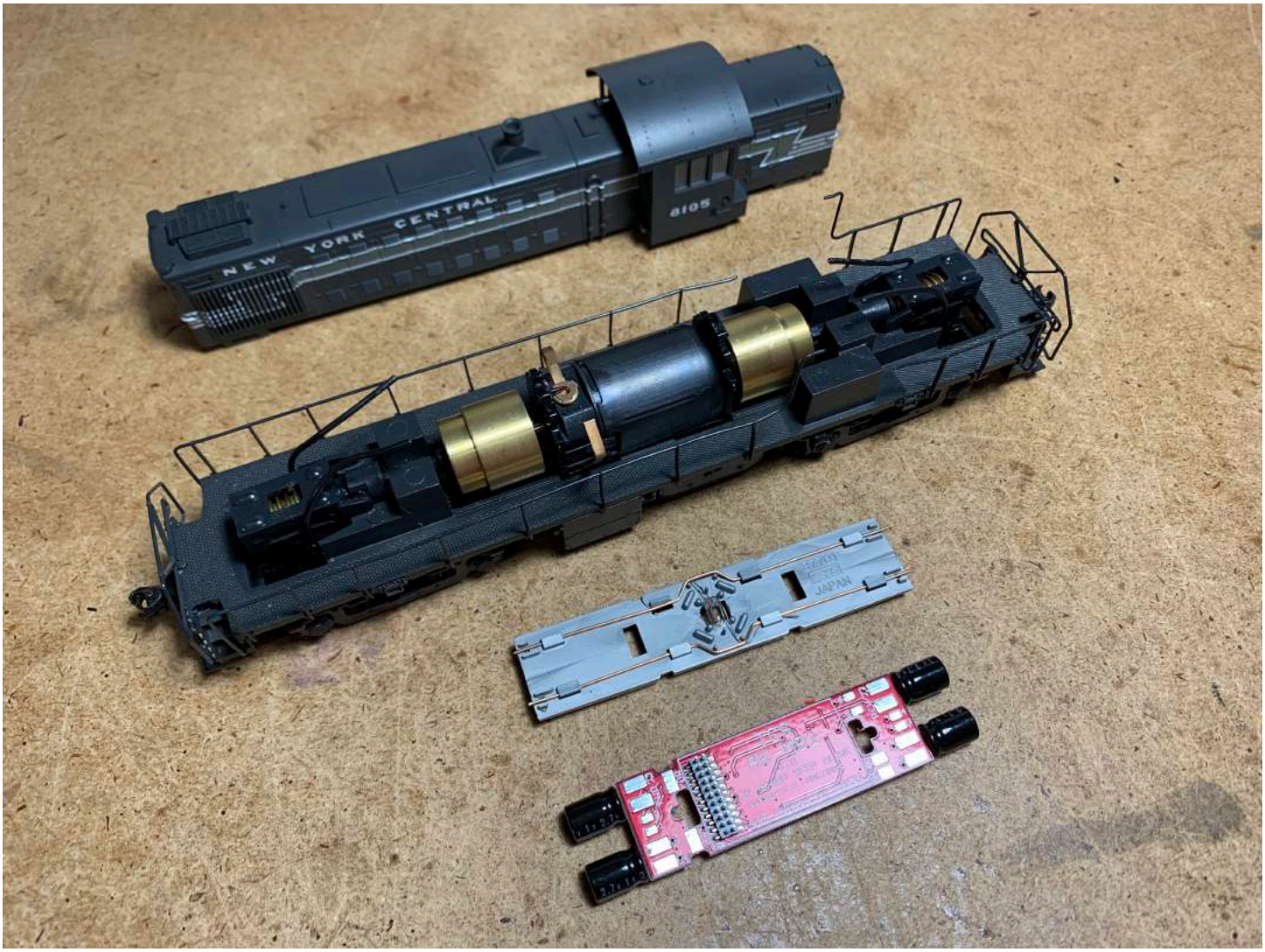
If you do not want a stay-alive, a Loksound Direct or TSU-PNP with one or two speakers is the fast and easy answer.

Let's begin with a look at the stock locomotive as it comes out of the box.

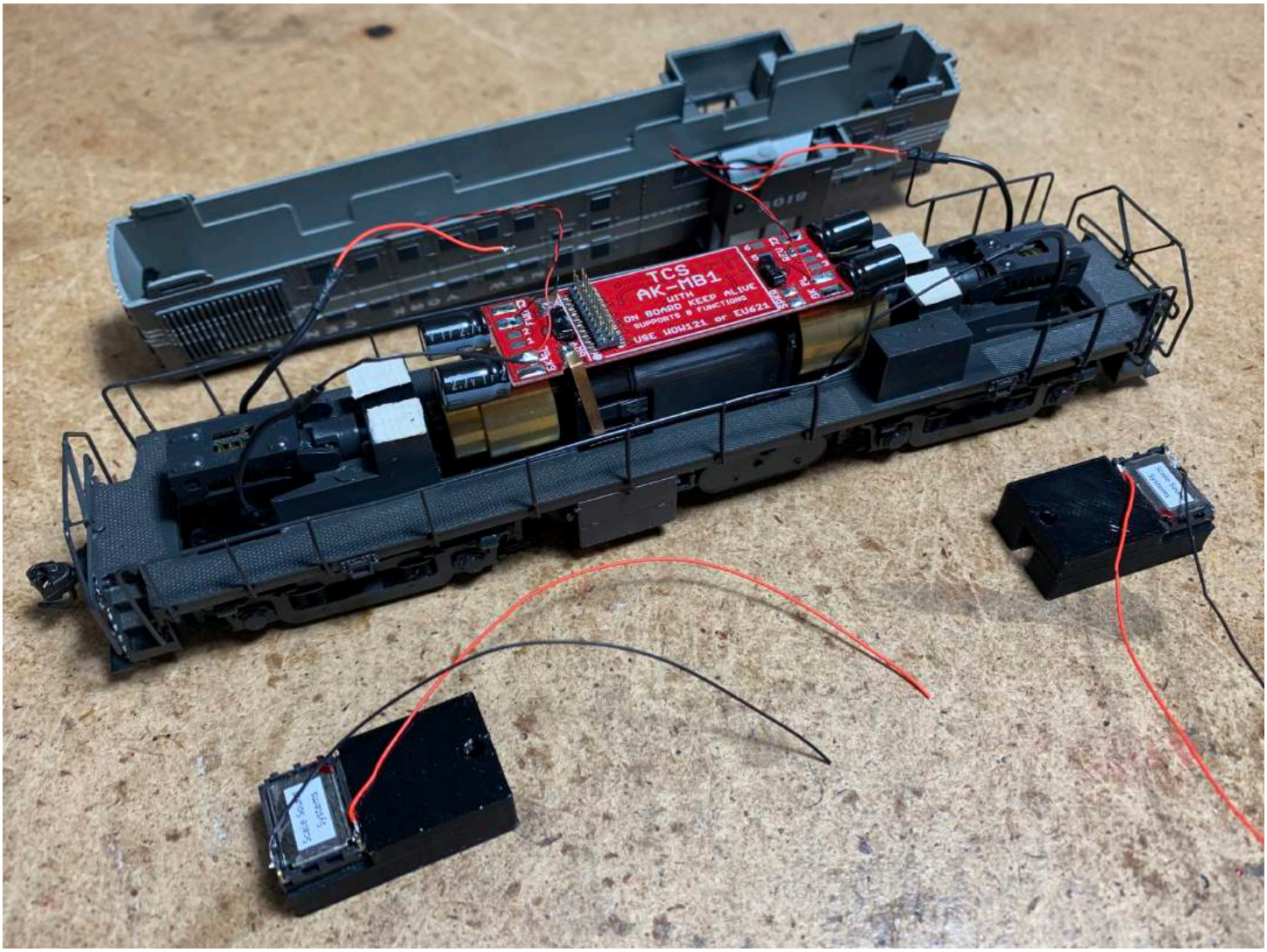


Trim the four truck-wires from the factory “board” and release the two copper motor-strips. Discard the factory “board”.

Remove the two light pipes from the shell. Keep these, as we will modify and use them later.



Here we're ready to install the TCS AK-MB1. Strip & tin the four truck-wires and solder short lengths of wire to all four, extending the length an inch or two. Heat-shrink the joints.



Here we see the four truck-wires extended with their joints sealed in heat-shrink. The motor's copper strips were close enough to the TCS motherboard pads that I simply bent them to comfortably lay over the pads and soldered them directly to the board. Be sure you bend the strips to comfortably line-up; you don't want these stressed. Alternatively, trim the brass strips short and solder wires to them and the motherboard.

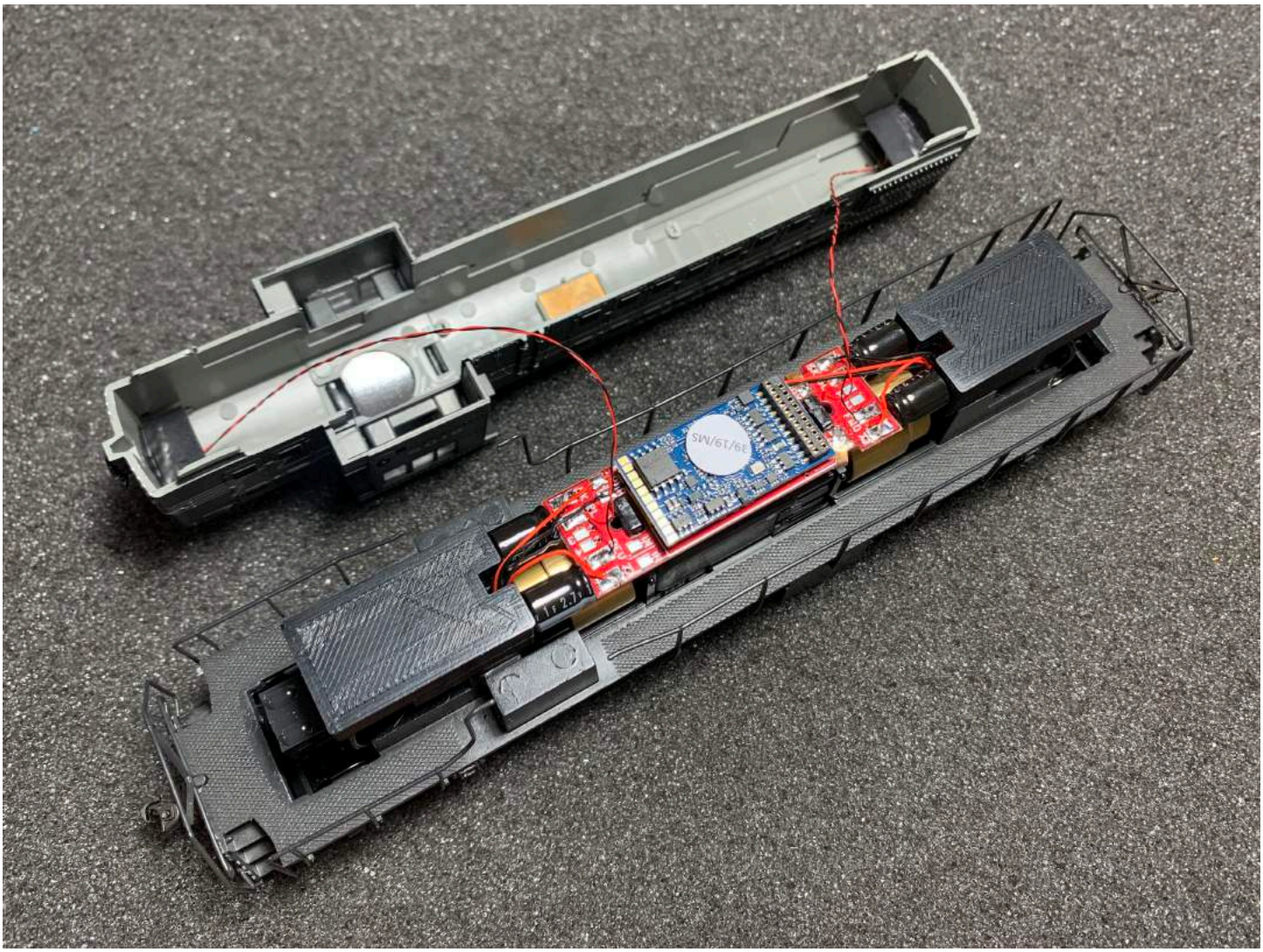
I've prepped the speakers by soldering 4" lengths of wire to each. Note color coding to ensure proper speaker polarity. I've soldered the wires leading *in* to the speakers, as opposed to tailing-off the end like "normal". The speakers mount to the chassis with squares of double-sided carpet tape.

Note the holes located at the ends of the speaker enclosures. Both the truck and speaker wires will be routed through these holes to keep the wires off the drive-shafts and fly-wheels.

Now we work on the headlights. Here are the two stock lightpipes we will trim.

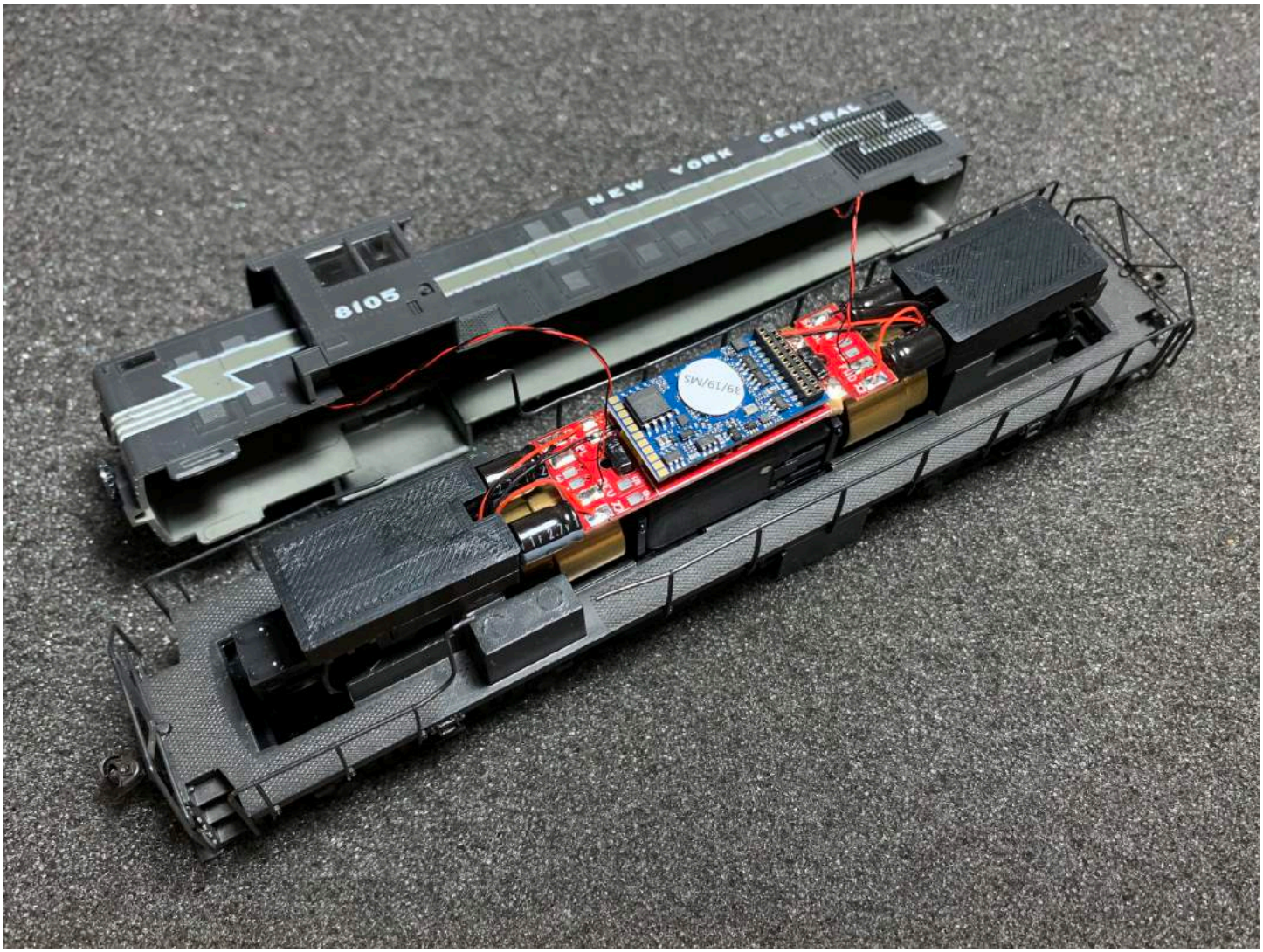
I used a thin Exacto saw to cut the lightpipe into the pieces shown. The only thing I am using here is the headlight lens that fits into the shell. The way I did the lighting, the headlight and number boards all light up together. If you want separate number board lighting, you can install 0402 or 0603 LEDs behind each board in the shell.

Taking the lenses I trimmed from the stock lightpipes, I glued on 1206 warm-white LEDs.



I installed the lenses into the hoods with a touch of glue. I then trimmed and glued in 0.010” black styrene light-blocks under the headlights to prevent light from shining down through the trucks onto the track. This customer was not concerned with independent number board lighting, so this method effectively lit the headlights and number boards together without casting excess light in unwanted places.

You can see how the truck and speaker wires route through the speaker enclosure holes and solder to the motherboard. The speakers push right up against the motherboard’s caps. If you’re using a Loksound Direct or TSU-PNP, the speakers should be against those boards as well. This leaves plenty of room for lighting.



This installation is relatively easy and provides a clean install that sounds great.