

## XM XpressRC – Mini Cooper Installation

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The following describes my experiences and results of installing an XpressRC XM receiver in a 2009 Mini Cooper S Clubman (R55). The net result is shown in the following picture, allowing easy access and viewing of the radio, while keeping it reasonably out of sight of gadget thieves (i.e. off the top of the dash) and out of the way of dash buttons and displays.



I'm partial to the XpressRC, which I had in a previous car, over most OEM satellite receivers; the XpressRC color display is great, shows full length text for artist/title, supports pause/replay, shows split screens with what's playing on multiple channels, displays stock tickers and sports scores, and I'm more familiar with the XM channels than with Sirius, the native selection for the Mini Cooper OEM radio.

Originally I had the radio just flopping around in the console area with the small XM aftermarket car antenna on the top. After reading forums on the Mini Cooper North American Motoring ("NAM") sites (<http://www.northamericanmotoring.com/forums>), I realized there's a much better way to install the radio. Though I'm a novice at such things, I enjoyed the project and am happy with the results.

Nothing here is really new... it's all from the great advice of posters on threads such as:

<http://www.northamericanmotoring.com/forums/navigation-and-audio/122686-smb-satellite-antenna-cable.html>

<http://www.northamericanmotoring.com/forums/navigation-and-audio/149750-using-the-r55-r56-satellite-antenna.html>

<http://www.northamericanmotoring.com/forums/electrical/105832-hot-or-not-fuses-2.html>

<http://www.northamericanmotoring.com/forums/navigation-and-audio/111280-my-nuvi-660-gps-kuda-mounted-and-hardwired.html>

All I've done is put this all in one place in case someone else wants to try the same thing. A huge thank you to the posters in these threads!

- Drivin09

## Parts

In addition to the XpressRC and car kit, I purchased the following extra components, mostly based on NAM posters' recommendations.



## **Antenna Extension Cable**

An SB9SBJ-174-5 purchased from CD International, to connect from the OEM antenna cable to the XpressRC antenna input:

<http://www.cdint.com/catalog/model/SB9SBJ-174-5>

## **Add-A-Circuit**

The following from Parts Express allows you to add an additional fused circuit for the XpressRC to eliminate use of the console cigarette lighter for powering the unit.

Littlefuse Add-A-Circuit (Parts-Express p/n 071-585)

<http://www.parts-express.com/pe/showdetl.cfm?Partnumber=071-585&FTR=071-585&CFID=13206806&CFTOKEN=38122375>

Cigarette Lighter Socket (Parts-Express p/n 265-570)

<http://www.parts-express.com/pe/showdetl.cfm?Partnumber=265-570&FTR=265-570&CFID=13206806&CFTOKEN=38122375>

## **Kuda Mounting Base**

I used Kuda p/n 092445, appropriate for my Mini without the OEM navi system. This adds a reasonably attractive extension to the middle dash for mounting the XpressRC.

[http://www.kudausa.com/kuda\\_mount\\_and\\_holder\\_for\\_mini\\_mini\\_cooper\\_since\\_2007-34-529.html](http://www.kudausa.com/kuda_mount_and_holder_for_mini_mini_cooper_since_2007-34-529.html)

I also purchased their “XM Radio T Plate” (p/n HH-1637), though if you still have all the parts from the XpressRC car kit (I didn’t) you may not need this.

## **Right Angle Miniplug Cable**

This cable has a right angle plug at each end, which I preferred to keep the audio cabling laid as flat as possible on the XpressRC dock and Aux In. Couldn’t find one at Radio Shack, so purchased this one from RAM:

<http://www.ramelectronics.net/audio-video/audio-cables/mini-phone-plug-3-5mm-rca-ipod-stereo/right-angle-mini-stereo-3-5mm-cable/prod55869B.html>

## **Connector Wire**

For connecting the Add-A-Circuit and ground wire to the Cigarette Lighter Socket, I used 18-gauge “speaker wire” from Radio Shack, which I liked because of the dual conductor red+black insulation. Also used shrink wrap to cover the wire solders, and a large “ring tongue connector” for the ground connection, also from Radio Shack.

I also made use of a soldering iron and voltmeter / ohmmeter.



## Antenna Installation

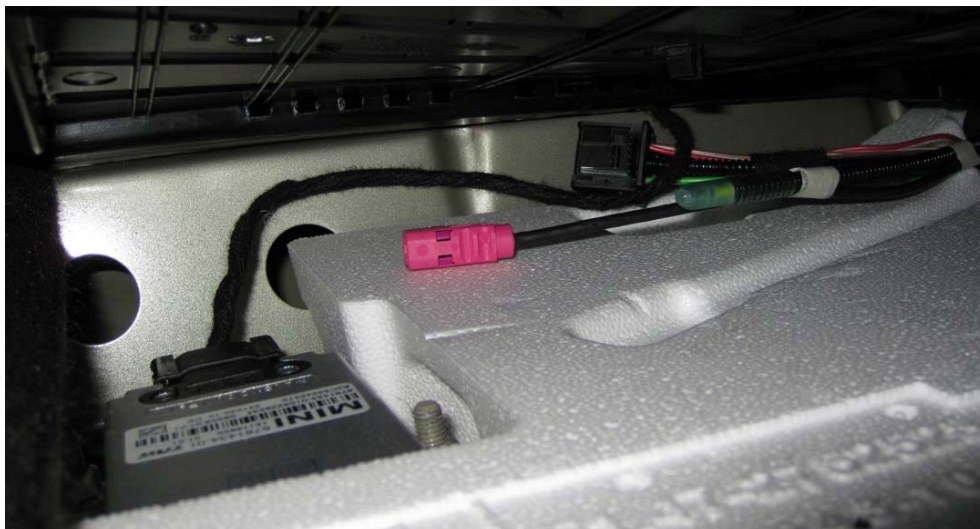
Luckily the factory Sirius antenna in the Mini Cooper can be used effectively with the XM XpressRC, meaning you can eliminate the need to install the XM aftermarket antenna.<sup>1</sup>

The cable end for the OEM antenna is in a plastic box under the passengers seat. For access, move the passenger seat up as far as possible, exposing the box as shown below from the rear (i.e. when sitting in the rear seat).



Remove the two screws shown in the picture above.

Pull up on the box and peer in with a flashlight. You'll see a cable with a pink end connector (a "FAKRA" connector) as shown in the next picture.



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<sup>1</sup> This isn't always the case. Some Sirius antennas draw too much current from their LNA (low noise amplifier) for XM receivers, or are tuned to reject some of the XM signal band for better Sirius performance. However, as posters on NAM had noted, the Mini Cooper antenna works with the XpressRC, so we're lucky.

Connect the straight end of the Antenna Extension Cable (the other right angle end will go into the radio dock) into the end of the OEM antenna cable. (You'll probably want to insert something under the plastic box lid to keep it up and will probably find yourself on your head in the back seat to do this.)

It may seem like the cable doesn't fit, but keep trying and eventually it will snap into place, with the result appearing as in the following picture.



Route the extension cable out the left side of the box (so it can easily be threaded to the front console later) and screw the box back into place.

## **Power / Fuse Installation**

Prepare the power supply by attaching the Add-A-Circuit cable to the Cigarette Lighter Socket: Solder a length of dual conductor connector wire (about 3-4' to eventually extend between the fuse box and the back of the center console) to the lighter socket leads. Use an ohmmeter to determine which lead is ground (connected to side shield inside the connector) and hot (connecting to center terminal inside the connector) coming from the lighter socket. Crimp the hot lead to the Add-A-Circuit wire connector. To the ground lead, solder or crimp a ring tongue terminal (connector) to eventually be connected to a bolt in the fuse box area.

Remove the fuse panel from the right front passenger's side panel. You'll see a fuse key on the inside of this panel, as shown below for my Mini: You'll want to refer to your panel to pick the right fuse, as it does change from model to model (e.g. in my R55 fuses are assigned differently from those discussed on the NAM forums).



Two fuses are discussed for potential use on the NAM forums (using the numbers in my Mini):

- F34 – Comes on only with ACC on or ignition on, turns off when ACC is off.
- F23 – Stays on for some time after ACC off, so you can potentially listen with the car off.

I did not experiment with F23, but instead picked F34. (On/off with ACC is fine with me, and I didn't like the idea of the radio draining battery after ACC off unless I manually turn it off). The rest of the instructions assume use of F34.

Remove the existing F34 fuse (7.5A in my Mini). It may be necessary to use pliers, but be careful not to crush the fuse.

Insert one of the fuses that came with the Add-A-Circuit in the top position (see instructions that come with the Add-A-Circuit). I used 3A, since the XpressRC is spec'ed at 2A @ 5V, or less than 1A at the 12V delivered through the fuse. Insert the old 7.5A fuse in the lower position.

The Add-A-Circuit instructions say plug it in one way, then the other to see what works. I preferred to use a voltmeter to determine which end of the fuse socket was really hot when ACC was on, orienting the "wire" side of the Add-A-Circuit to correspond to the hot terminal, but either technique for orientation works.

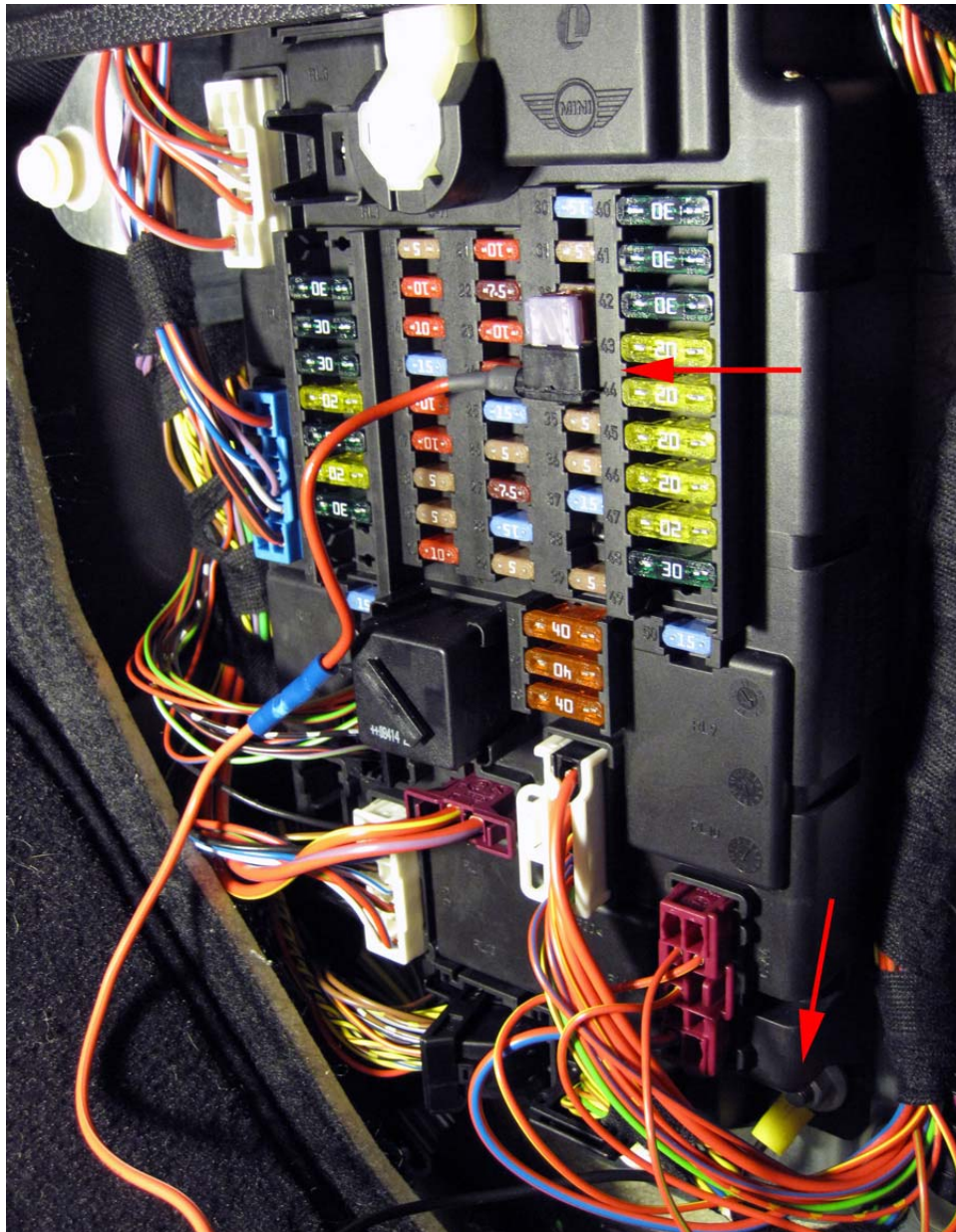


The result was the Add-A-Circuit plugged in as shown in the next picture (see red arrow in upper right of the picture).

For Ground, I used the bolt in the lower rear area of the fuse panel, removing the nut, inserting the wire with the connector over the bolt, and replacing the nut. See the red arrow in the lower right of the picture.

As a sanity check, I connected both the antenna extension cable (from under the seat) and the cigarette lighter adapter from the XpressRC into the Cigarette Lighter Socket, fired up the car, and made sure the radio worked OK.

Next I snaked the power cables from the fuse panel under the passenger rug (up near glove box) placing the cigarette lighter adapter into a relatively empty up behind the top/back of the center console for later, and replaced the fuse panel cover.



## Kuda Mounting Base Installation

For me (a novice in removing interior panels), this was the trickiest and most frustrating part, but I believe that's partially because the Kuda base is "close" but not an exact fit for my model Mini.

First, remove the center console side panel by carefully pulling it to the right, first from the bottom and working your way up. (Eventually you'll need to open the glove compartment to get it all the way out.) You'll need to completely remove it to add a screw needed by the Kuda.

The following two pictures show this panel as removal begins and after it is completely removed.

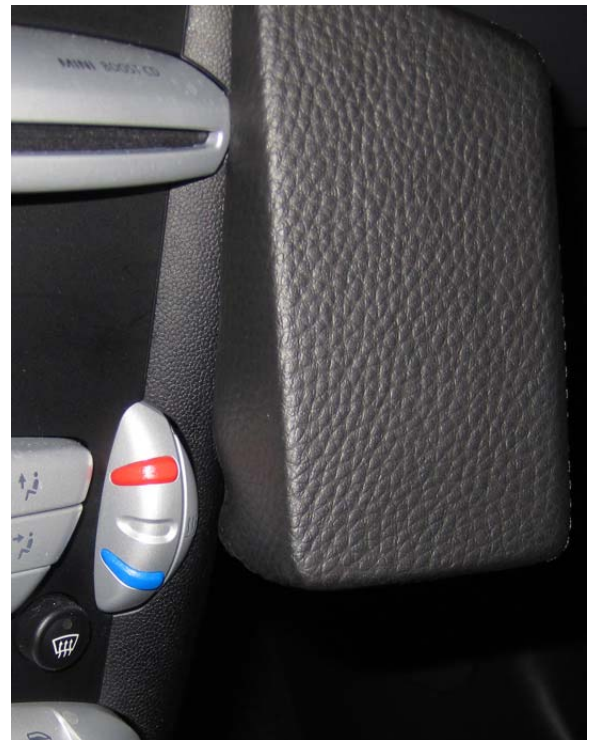


Next you'll determine placement of the Kuda base. Per the Kuda instructions, a tab on the Kuda squeezes in a crack next to the CD bezel and another by the temperature adjustment switch, and a screw attaches to a metal plate within the glove box. Well, for my car, there was no way any tab was going to squeeze in next to the temp switch without making it totally inoperative, and the location of the Kuda screw for the glove compartment was nowhere near metal (or actually not really even in the glove compartment). So what I did was:

- Bend the tab on the Kuda intended for the temp switch all the way in the unit and completely out of the way.
- Bend the tab on the Kuda for the CD case out a bit, so it could fit into the slot easier.



- Carefully position the Kuda so it was held by the CD tab, then drill a hole in the *plastic* in the side of the exposed console, as shown below.



The result was the Kuda just *barely* cleared the opening glove compartment door, did not interfere with the temp switch operation, and was held firmly enough in place by the screw into the console and tab into the CD bezel area.

Lastly, reposition the console side panel. The Kuda screw will unfortunately make it bow out a bit, but it is not that noticeable (or at least I can live with it).

## Mount and Connect Radio

Use the adhesive mounting pad to connect the XpressRC dock to the face of the Kuda mount.

For this step, have a CD handy, as you'll want to position the dock and radio so a CD can just clear the radio when the CD is inserted.

Finally, connect the wires to the dock for the antenna, the power adapter, and the audio signal (to Aux Input). For cables, I routed the excess inside the same console side panel as removed in the previous steps, pulling it back far enough to route and hide the wires there.

The cigarette lighter power adapter and socket were tucked up in a space behind the center console. The antenna cable from under the seat was hidden in the lip between the console plastic and carpet next to the passengers seat.

The net result: no more dangling wires, an easily viewed and accessed radio, no extra XM antenna, and everything in the car is still accessible and working!