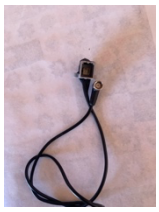
Modifying an Android Audio head to use factory features of a 2010-2015 Prius when replacing a JBL audio system.

My JBL unit was not working well, with choppy audio on Bluetooth calls and a flaky touchscreen. When I attempted to replace the touchscreen, I broke one of the ribbon cable connectors, making the unit useless. I purchased a replacement Android audio head from Inefala. I wanted to use the factory installed Toyota hardware whenever possible. Here are the modifications I made.

The original JBL unit used 8 connectors to wire into the Prius, while the Android unit used only 3. I want to take advantage of the features available on the other connectors. My JBL unit was dead, so I disassembled it and cut the sockets off the PCBs to use to build my own wiring harnesses.

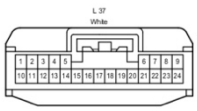
The first two changes were easy. The Prius radio antenna connector was unusually long, and it didn't look like the shielding reached the Android shielding. One of the unused connectors on the Android head unit included an antenna connector, so I cut that off and soldered it directly to the Prius antenna wire. This was not what I did elsewhere, as I tried to leave the Prius wiring untouched, but the antenna connector got stuck in the Android head and the cable ripped off it when I carelessly tried to remove it.

The second was the GPS antenna. Rather than having the provided one stuck to my dashboard or windshield, I used the factory antenna. I cut the screw-on connector for the head unit and about a foot of cable and soldered it to the GPS antenna socket from the JBL.

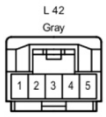


Next was the factory backup camera. Most of the signals were on connector L37 with the reversing signal on L42. First a simple single wire connection from Pin 5 of L42 to the BACK input signal from the Android harness. This signal was also wired to Pin 24 of L37 to provide power to the backup camera. Next I soldered Pin 22 to the central wire of an RCA video coax connector, and soldered both Pins 21 and 23 to the shield of the coax. Again, I was using the socket I harvested of the JBL to make these connections so I could snap it to the Toyota wiring harness to test and adjust if needed. Plug the RCA connector into the camera input and the electrical connection is complete, but I had to also go into the Android settings to change the expected video format to CVBS. The factory camera is lower resolution and I may attempt to replace it with the provided camera. The good thing is I won't have to change the wiring now or attempt to run the provided cable through the ceiling and down the hatchback.

L37	
1	Microphone MACC – Exc. Korea
2	CANH
3	CANL
4	
5	Microphone SNS2
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	Microphone MACC – Korea
18	Microphone Shield GND
19	Microphone MIN+
20	Microphone MIN-
21	CGND - Camera Shield
22	V+ - Camera Video +
23	V- Camera Video -
24	CA+ - Camera +12V



L42	
1	PKB – Parking Brake
2	IG – 12V Ignition
3	SPD – Speed
4	
5	REV – Reverse



Last was the factory microphone, which was the most challenging for me because I couldn't find anyone who had succeeding in doing this online. There are several videos and posts about connecting a Toyota overhead mic to an aftermarket audio system, many talking about adding a 100K Ohm inline resistor, but none of them were for the 2010-2015 Prius specifically.

Let's start with the basic connections. I cut the 3.5mm jack off the provided mic and wired it to the L37 socket. Pin 19 MIC+ goes to the tip and Pins 18 and 20 went to the shaft. The overhead mic is powered and needs +5V on Pin 17 or Pin 1, depending on the Toyota wiring harness (pin 17 for me). I got +5V by tapping it off of one of the provided USB cables. In my case (and what I would usually expect) +5V was on the red wire.

I connected this up, but all I got was very faint audio at best. I tried adding 100K Ohm resistor in series on MIC+, as many had suggested that this would fix an impedance mismatch, but it was no help. I tried several other values with no luck. I noticed one other pin which people were unsure about: Pin 5 labeled Microphone SNS2. In some places it was labeled MUTE. The pin measured +5V indicating it was being pulled up in the overhead mic. If this is a muting signal, maybe it needs to be pulled down to enable the mic. I tacked it to GND through a 50 Ohm resistor, though I suspect it could be directly tied to GND. This did the trick. The mic was now working.

I continued to experiment with inline resistors, though directly connecting MIC+ to the plug tip worked pretty well on its own. I ended up with a 1K Ohm resistor inline which seemed to give the best volume while minimizing the background hiss. I am not an audio engineer, so I was basically just guessing. Maybe someone with some actual knowledge can improve on this, but I'm done for now!