

Installation Guide

EM-BUC-KIT-JW




BACKUP CAMERA & INTERFACE KIT

Compatible with Jeep Wrangler 2007 - 2018 JK/JKU Models




Important


Please read and follow the instructions carefully. To emphasize special information, the symbol and the words **Warning**, **Caution** and **Note** have special meanings. Pay special attention to messages highlighted by these signal words. 

These instructions are designed as a guide to help make the installation of this product successful. Always use caution and ask for assistance if you are not sure how to proceed.

AAMP Global & EchoMaster are not responsible for any damage that may occur during installation or any changes to the vehicle interior.

 **WARNING**

Indicates a potential hazard that could result in a death or serious injury

 **CAUTION**

Indicates a potential hazard that could result in vehicle damage

NOTE

Indicates special information to make installation easier or instructions clearer.

Vehicle Preparation & Protection


 **CAUTION**

Consult your vehicle owner's manual to disconnect the battery. Do not disconnect ANY airbag connectors or indicators. Doing so may result in activating a diagnostic code. These codes will require the dealer to perform the reset procedure which may incur a reset fee. If you are unsure of any vehicle trim removal process consult the OEM service manual.

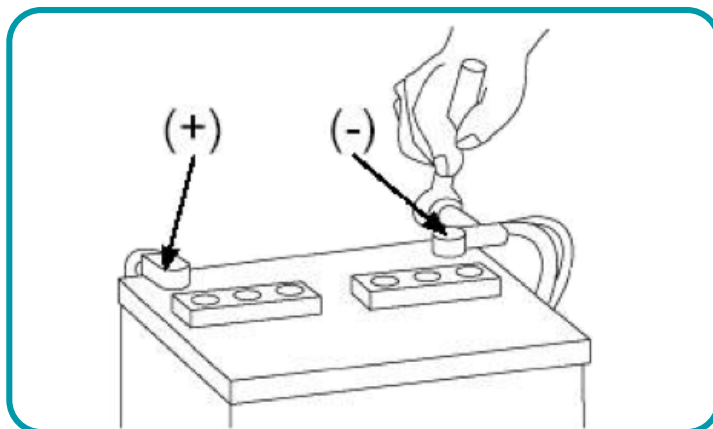
Removing vehicle trim panels in extreme hot and/or cold climate could result in damage. Use care when removing all vehicle trims. Using painter's blue tape on the vehicle trim panels can help limit any scratches and/or marring. Use a nylon trim panel removal tool whenever possible.

NOTE

Consult Vehicle owners guide before disconnecting negative battery cable

 **WARNING**

DO NOT TOUCH the positive terminal with any tool when removing the negative battery cable



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What's in the box



| Image | Description | Qty |
|-------|--------------------------------------|-----|
| 1 | Camera & Spare Tire Mounting Bracket | 1 |
| 2 | BCI-CH21 Camera Interface | 1 |
| 3 | BCI-CH21-HAR Main Wire Harness | 1 |
| 4 | BCI-CH21-AUX Auxillary Wire Harness | 1 |
| 5 | Locking Push Nut | 1 |
| 6 | Camera Extension Cable | 1 |
| 7 | Camera RCA/Power Wire Adapter | 1 |



Recommended Tools

Lug Wrench

Plastic Trim Tool

7mm Socket

8mm Socket

10mm Socket

Ratchet

Socket Extension

Torx T-30

Diagonal Cutters

Wire Crimpers

Electrical Tape

Wire Feeder

Drill / Drill Bits

Hammer

11/16" (17mm) Deep Socket

Small Pick Tool

Installation Notes

Read this installation guide thoroughly before disassembling vehicle or making wire connections. Installation of this product requires technical skill, experience, and specialized tools. If unsure, it is recommended to have it professionally installed by an authorized EchoMaster Dealer.

This guide covers basic installation of the BCI-CH21 for rear camera only. If adding front or side cameras, navigation unlock or any other advanced features of the BCI-CH21, consult the BCI-CH21 Installation Manual.

A video installation guide is available at:
<https://stingerelectronics.com/installvideos>



Questions?

Reach out to our Technical Support Team:

Phone: 727-592-5991

Email: support@aampglobal.com

Chat: [EchoMaster.com](https://www.echomaster.com)

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Disassembly

Step 1

Remove the spare tire off of the tire carrier.

NOTE

Before proceeding with disassembly, it's recommended to confirm wheel design will work with the camera mount by temporarily installing the camera mount (page 12) and reinstalling the spare tire. Confirm a usable opening in the wheel is located at center. This may require removing and rotating the wheel until a usable opening is located.



Step 2

Remove the trim panel on the inside of the tailgate by pulling it away from the tailgate along the bottom of the panel from one side to the other. Then swing the panel upward to disengage the upper tabs. A plastic trim tool may be needed for this step.

NOTE

Once a part is removed, place it in a safe area to avoid damage.

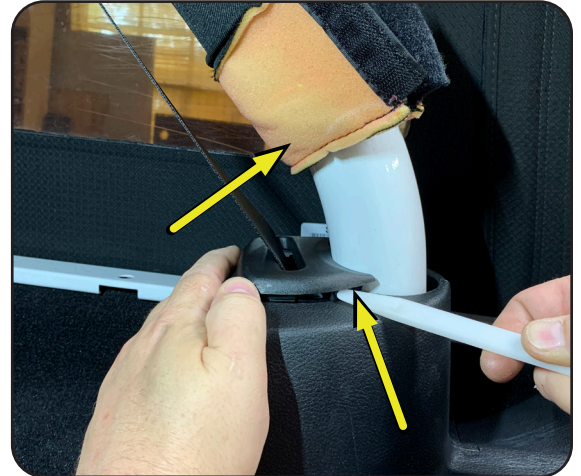


Illustrations are typical and may not match exact vehicle detail

Disassembly (continued)

Step 3

Fold up the rear passenger roll bar cover and pop up the plastic seatbelt guide using a plastic trim tool. Slide it up the seat belt so that it is out of the way.



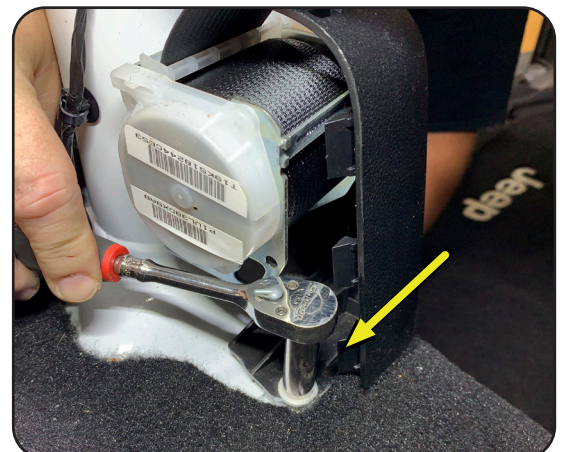
Step 4

Using a plastic trim tool remove the back side cover from the base of the roll bar.



Step 5

Remove the 10mm nut that fastens the rear trim panel into place.



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Step 6

Remove the (2x) T30 Torx bolts that fasten the rear trim panel into place.



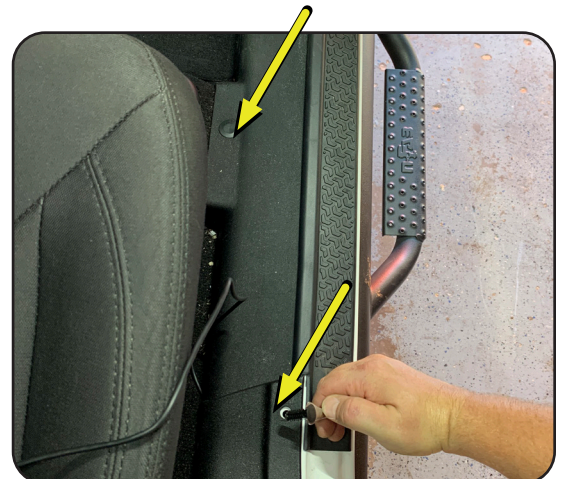
Step 7

With all the nuts and bolts removed, pull the rear trim panel towards the center of the vehicle to remove it.



Step 8

Prepare the passenger side door sill for removal by removing the two plastic fasteners.



Illustrations are typical and may not match exact vehicle detail

Disassembly (continued)

Step 9

Grab the passenger side door sill at the front most edge and pull it towards the middle of the vehicle to release the two fasteners. Remove the sill panel and set aside.



Step 10

Remove the glove box compartment by using the handle to open it and then squeezing the sides to release the retaining posts. Once retaining post are clear of the sub dash, tilt down and pull towards the rear of the vehicle to remove.



Step 11

Using a plastic trim tool remove the passenger side dash trim panel.



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Step 12

Remove the knee bolster panel below the steering column using a plastic trim tool to release the upper left and right clips and swing the panel downward to disengage lower locking tabs.



Step 13

Remove the two 7mm screws from the bottom edge of the radio/instrument cluster trim panel on either side of the steering column.



Step 14

Using a plastic trim tool, gently pry to release and remove the power window switches or storage pocket below radio. Disconnect the connector on the back of the switch assembly.



Illustrations are typical and may not match exact vehicle detail



Disassembly (continued)

Step 15

Remove the 7mm screw inside the switch opening.



Step 16

Remove the rubber mat from the storage tray above the radio and remove the 7mm screw underneath.



Step 17

Starting below the radio, reach into the window switch opening and firmly grasp the lower bezel and pull the bezel to release the lower retaining clips.



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Step 18

Using the storage tray and area over the gauges, pull the top edge of the panel to release the upper retaining clips. Lower the steering wheel and remove the panel.



Step 19

Remove the four 7mm screws securing the radio and pull the radio from the sub-dash.
(Non-display base radio shown for illustration purposes only)



Step 20

Disconnect all wire harnesses and antenna cables from the back of the radio.



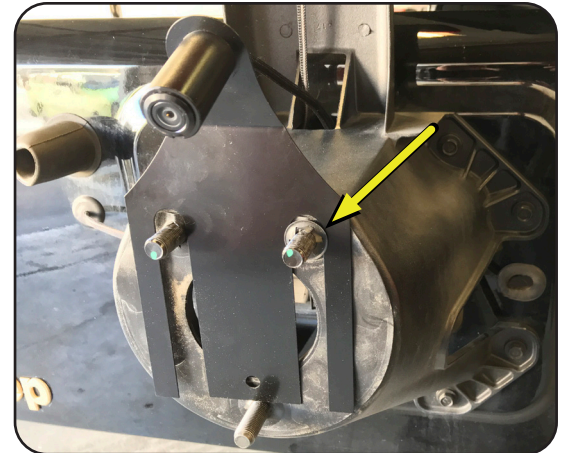
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Mounting the Camera

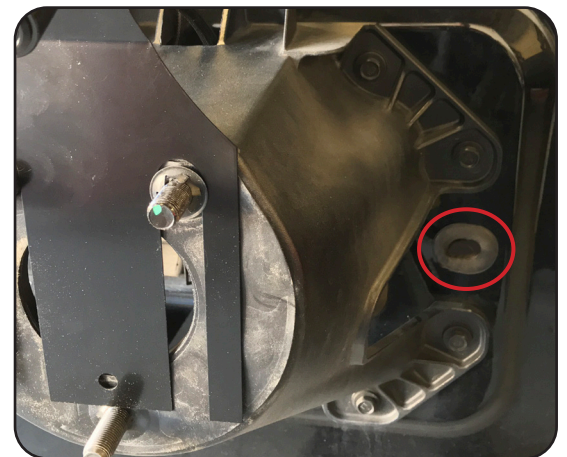
Step 1

Slide the camera mount onto the top wheel studs. Using 11/16" (17mm) deep socket and a hammer, install the push nut onto one of the wheels studs.



Step 2

Remove the rubber grommet on the right side of the tire carrier.



Step 3

Using diagonal cutters or similar, cut a slit in the grommet to allow the camera cable to pass through.



Illustrations are typical and may not match exact vehicle detail

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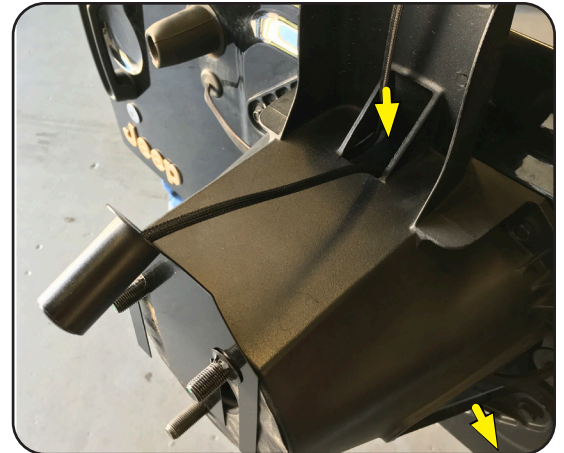
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Routing the Camera Cable

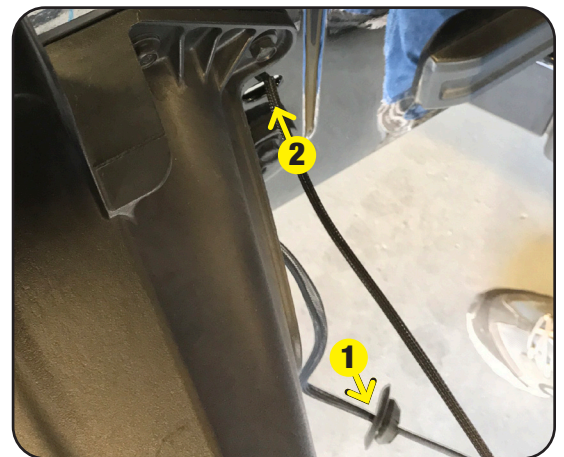
Step 1

Route the camera cable through the factory opening in the top of carrier and through the opening towards the passenger side.



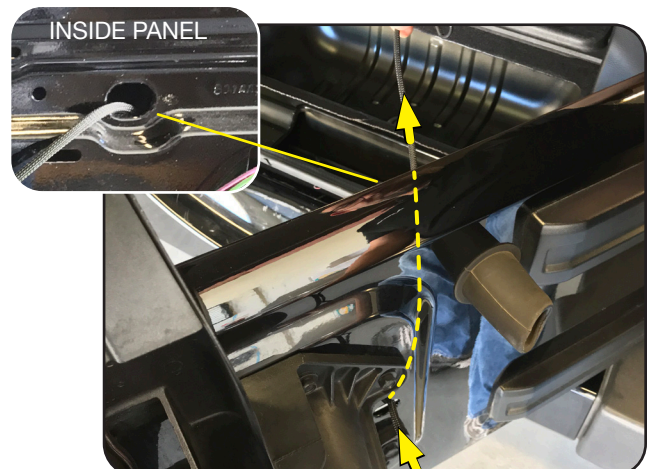
Step 2

Feed the cable through the rubber grommet (1) and then into the tailgate through the hole in the outer panel (2).



Step 3

Feed the cable inside the tailgate up to the access hole on the inside door panel. A wire fishing tool may be needed.

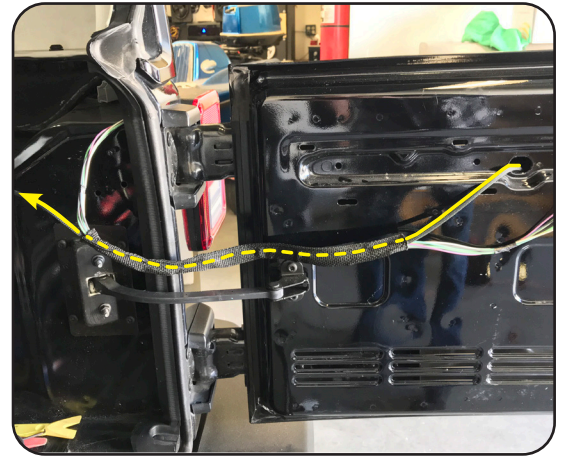


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Routing the Camera Cable (continued)

Step 4

Unclip and untape the tailgate wire harness that runs into the cargo area. Using a wire feeder, route the camera cable through the fabric wire loom.



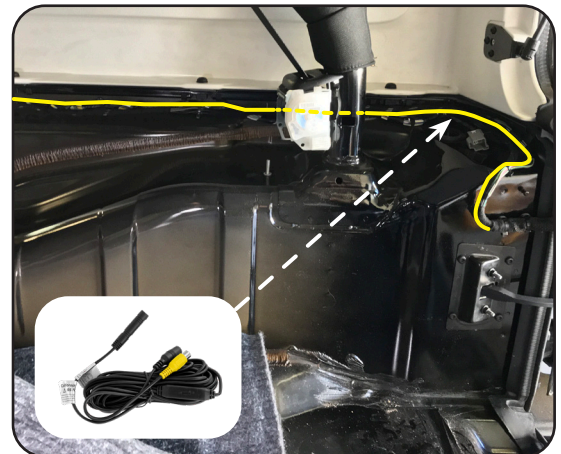
NOTE

The zip tie clips securing the wire harness can be removed by using a small pick tool to release the zip tie locking tab. Or the zip tie can be cut and then a new zip tie ran through the base of the clips.

Step 5

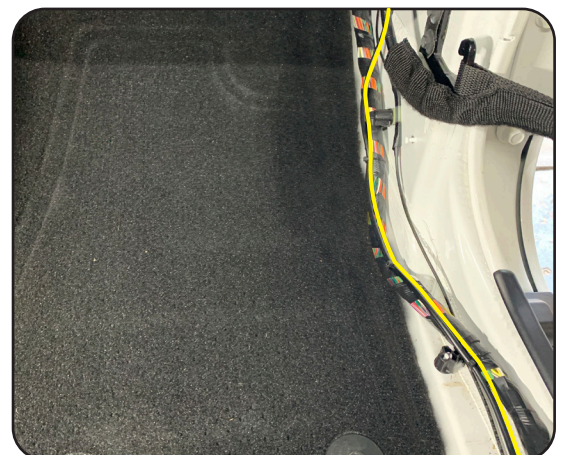
Connect the Camera Extension Cable to the Camera Cable by lining up the arrows on the two 4-pin ends and pushing together.

Route the camera extension cable towards the front of the vehicle following the factory wire harness. Secure with zip ties.



Step 6

Continue following the factory wire harness forward, across the door sill(s), up to the glove box area. Secure with zip ties.



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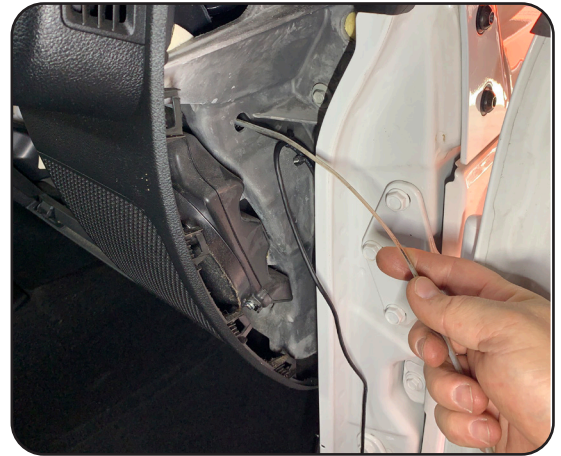
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Step 7

Using a wire fishing tool route the cable through the hole in the passenger side of the dash just above the speaker.



Step 8

Route the cable across the top of the glove box to the radio opening. Secure with zip ties.



Step 9

Route the camera cable through the metal radio support bracket.



Illustrations are typical and may not match exact vehicle detail



Wire Connections

Step 1

Connect the Camera RCA/Power Lead Adapter to the end of the Camera Extension Cable.



Step 2

Crimp the red male bullet connector to the Red camera power wire. Crimp the blue female spade connector to the Black camera ground wire.



Step 3

Connect the Programmable Output 1 red wire on the BCI-CH21-HAR (gray plugs) to the red camera power wire.



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Step 4

On the BC1-CH21-AUX harness (white plugs), disconnect the two yellow RCA's that are marked CAMERA.



Step 5

Connect the male yellow RCA on the Camera RCA/Power Lead Adapter to the female RCA marked CAMERA on the BCI-CH21-AUX harness.



Step 6

OPTIONAL: The BCI-CH21 has a status LED that indicates when a camera is active. If this is desired, mount the LED and connect the Red and Black wires marked LED ONLY to the LED. If the LED is not used, bundle and zip tie the LED wires to the main harness.



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Wire Connections (continued)

Once installed, the factory screen will automatically switch to the reverse camera whenever the vehicle is placed in reverse gear. The reverse camera can also be manually activated at anytime by pressing and holding the center button on the back left side of the steering wheel for at least 4 seconds. If the vehicle does not have controls on the back of the steering wheel, the supplied on-demand activation toggle switch can be used to force the reverse camera on if desired.

Step 8A

For vehicles with steering wheel controls, or if on-demand camera activation is not desired, set the toggle switch to the Center Position (Off), bundle and zip tie the switch wires to the main harness.



OR

Step 8B

For on-demand camera activation using the toggle switch, route and install the toggle switch in the desired location. Set switch to Center Position (Off) until the BCI interface is programmed to the vehicle.



NOTE

The switch hole size is 1/4" and the nut is 8mm.

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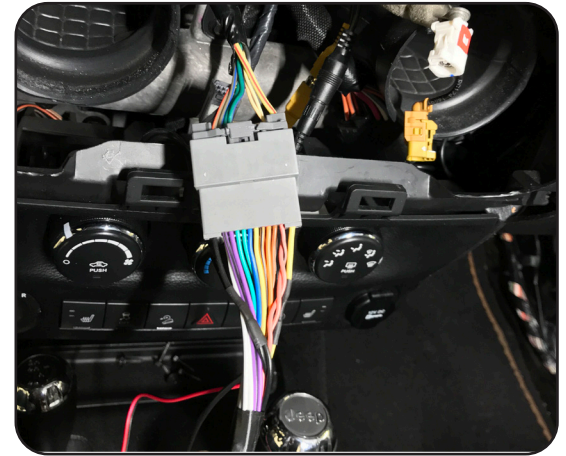
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Step 9

Locate the gray 22-pin vehicle radio plug that was unplugged from the radio during disassembly. Connect it to the matching female plug on the BCI-CH21-HAR.



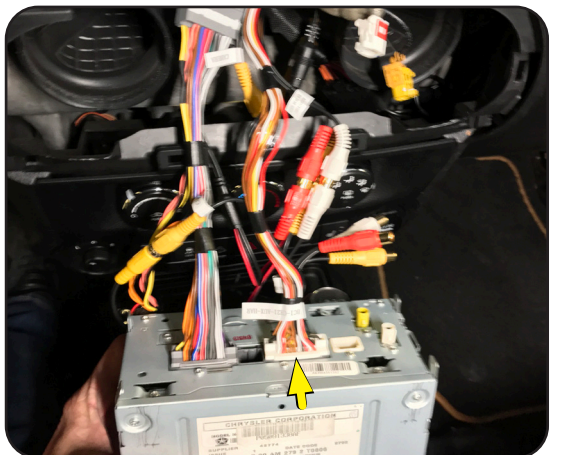
Step 10

Plug the other end of the BCI-CH21-HAR into the back of the radio.



Step 11

Plug the matching connector on the BCI-CH21-AUX harness into the other 22-pin port on the back of the radio.



NOTE

Nothing will be plugged into the other end of the BCI-CH21-AUX harness.

Illustrations are typical and may not match exact vehicle detail



Wire Connections (continued)

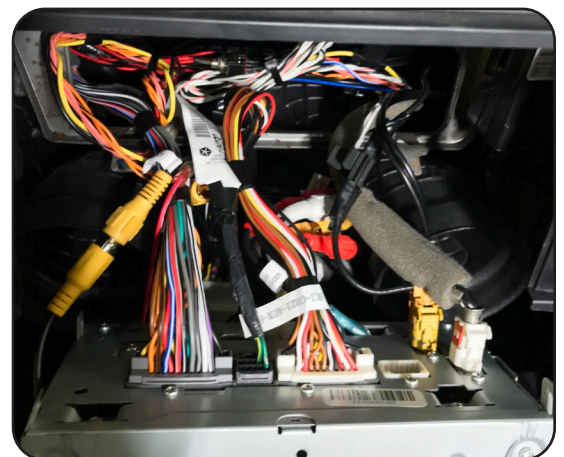
Step 12

Connect the black wire from the Camera RCA/Power Lead Adapter to the radio chassis as shown.



Step 13

Reconnect all remaining plugs and antenna cables that were removed from the back of the factory radio.



Camera Interface Initialization

Step 1

On the side of BCI interface, set DIPSWITCH 1 to the Down (ON) position.

All other dipsitches in the Up (OFF) position.



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Step 2

Reconnect the vehicle battery

Turn the ignition to the On position. Plug the 20-pin plug and 4-pin plugs on the BCI-CH21-HAR into interface connector 1 and 2.

Both LEDs will blink green while the module is initializing. Once initialized, LED1 will turn solid red and LED2 will begin blinking green. If LED2 blinks red, there is a problem with the data connection to the factory radio. Refer to the troubleshooting section on page 6 of the BCI-CH21 manual.



NOTE

Temporarily rest the radio on a soft cloth on the center console or partially slide it into the radio opening.

Step 3

Turn the vehicle ignition Off, shut the doors and lock the vehicle with the factory keyfob. Wait 10 minutes.

After 10 minutes, start the vehicle and test the camera by placing the vehicle in reverse.



Step 4

After confirming camera operation, bundle and zip tie any excess wiring. Slide the BCI interface into the cavity at the rear right of the radio opening as far as it will go.



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Step 5

Position all wiring and connectors to the left and right sides, out of the area directly behind the radio. Slide the radio into place making sure no wires are getting pinched between the radio and metal radio bracket.



Final Notes

It is recommended to start reassembly with remounting the spare tire. Check the camera view to ensure the angle is desired and that the wheel is not interfering with the camera image. The camera mount is "bendable" if angle adjustment is required.



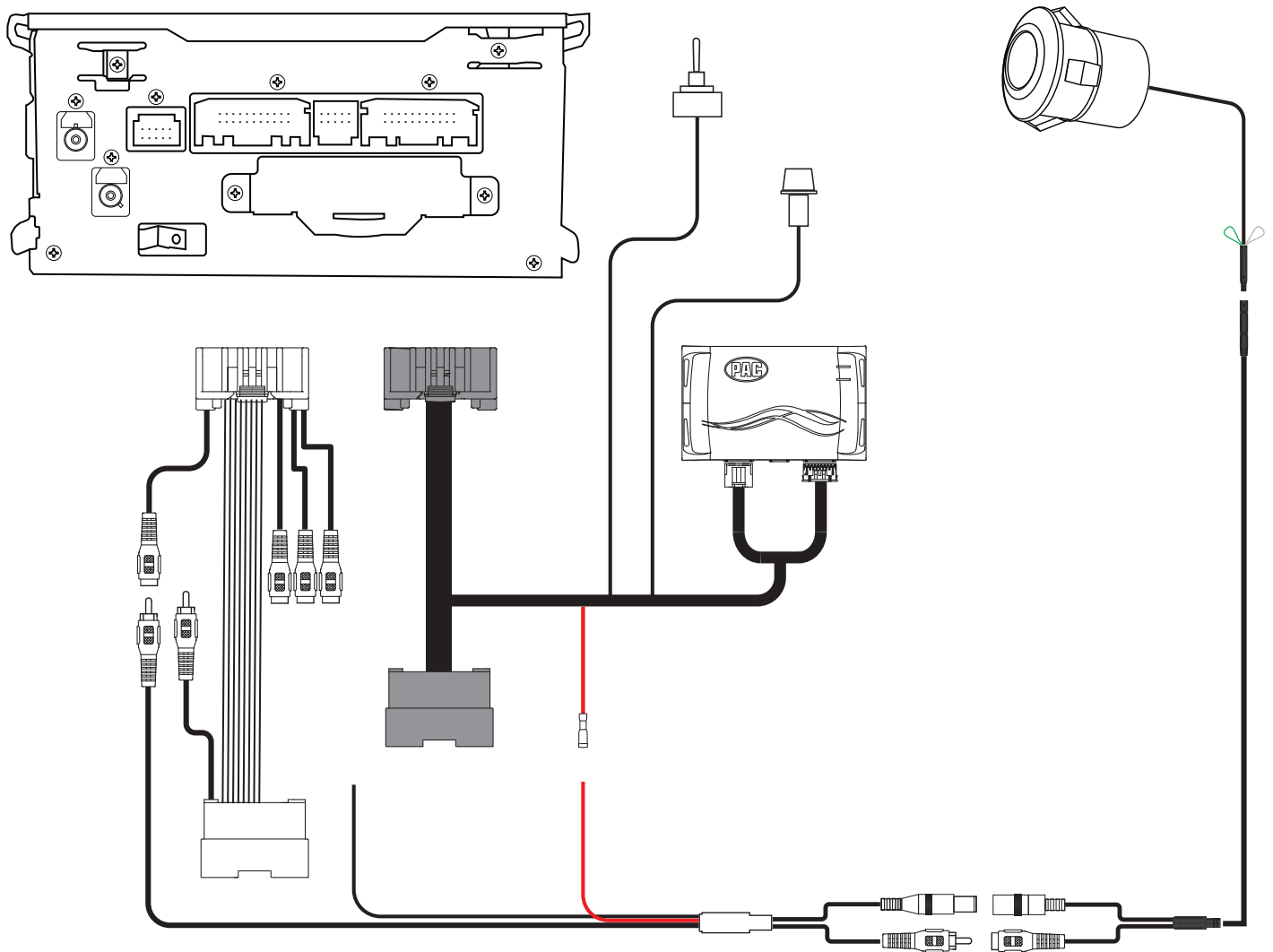
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Wiring Diagram



Illustrations are typical and may not match exact vehicle detail

AGREEMENT: End user agrees to use this product in compliance with the instructions and terms of use above and with all State and Federal laws. EchoMaster provides instructions and safety warnings with respect to this product and disclaims all liability for any use not in conformity with those instructions or other misuse of its product. If you do not agree, please discontinue use immediately and contact EchoMaster. This product is intended for off-road use and passenger use only.



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