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2000 JEEP Wrangler OEM Service and Repair Workshop Manual

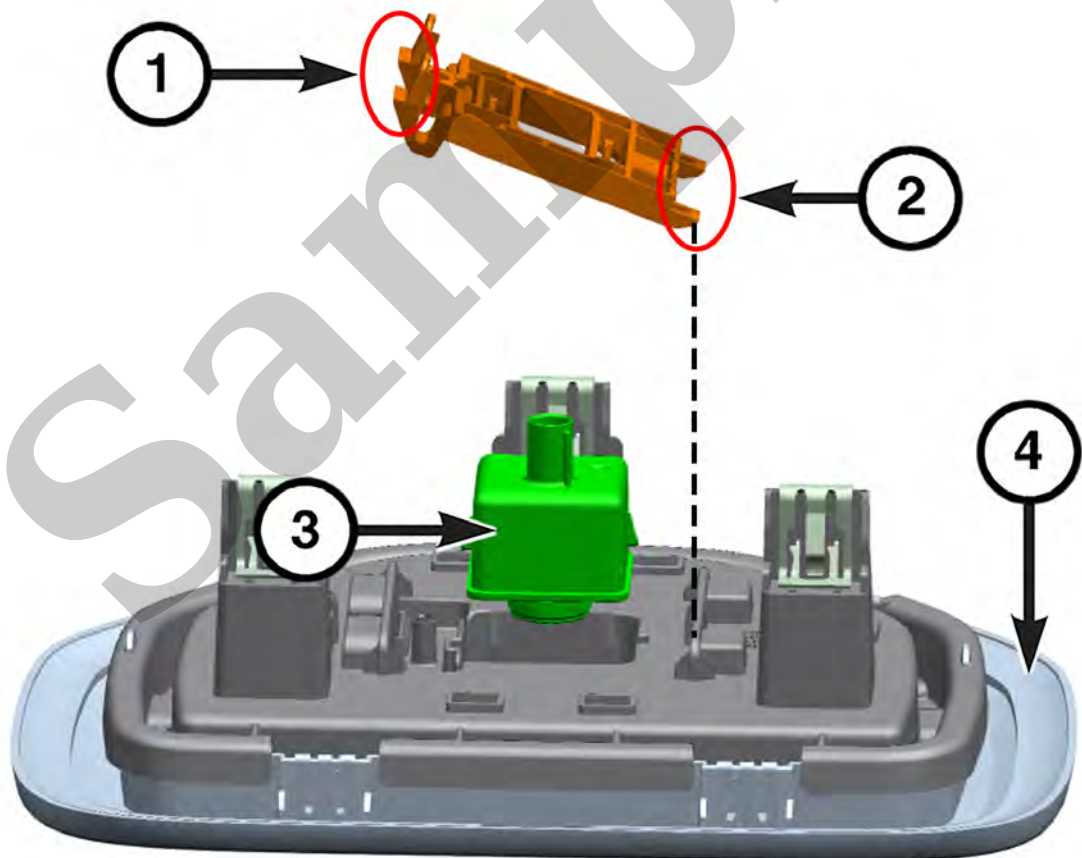
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Rear Interior Camera

REAR INTERIOR CAMERA

REMOVAL

1. Using a trim stick or equivalent, release the rear dome light from the headliner. Disconnect the wire harness connectors and remove lamp from vehicle.



- Uconnect® 5 with a 213 mm (8.4 inch) DSM and sales code U(*)R
- Uconnect® 5 NAV with a 213 mm (8.4 inch) DSM and sales code U(*)L
- Uconnect® 5 NAV with a 257 mm (10.1 inch) DSM and sales code U(*)N

There is an optional navigation system for which the operator has the option of choosing a street address, point of interest, trip itinerary and other features outlined in the operator's manual.

OPERATION

NOTE

The Security Gateway Module (SGW) is the Controller Area Network (CAN) gateway between the radio, telematics module, Data Link Connector (DLC) and the other vehicle CAN modules. An SGW failure could prevent the radio from powering up, the telematics module from communicating or a scan tool from communicating with the vehicle. For additional information on the SGW, ([Refer to Electrical/8E - Electronic Control Modules/MODULE, Security Gateway/Description and Operation](#)).

NOTE

Use of the MIT019 Multi-Media Tester may cause the radio screen to go blank.

The audio system components are designed to provide audio entertainment and information through the reception, tuning and amplification of locally broadcast radio signals in both the Amplitude Modulating (AM) and Frequency Modulating (FM) commercial frequency ranges. If the vehicle is so equipped, the audio system can also receive, amplify or process certain cellular, Satellite Digital Audio Radio Service (SDARS) and Global Positioning System (GPS) navigation signals. The audio system components operate on battery current received through a fuse in the interior PDC.

The SGW is in the audio and telematics systems to provide security against certain types of attacks and threats from the scan tool, telematics and entertainment buses, which can put the rest of the vehicle's buses at risk of intrusion. The SGW lies electrically between the vehicle on one side, and the Data Link Connector (DLC), telematics and entertainment systems on the other side. The main function is to gate messages from one bus to another. The SGW monitors the B(+) Feed, switched ignition feed, CAN circuits, software and hardware for any concerns.

The optional navigation radio system receives GPS signals from up to eight satellites to display the position and direction of the vehicle. An electronic gyro-sensor and the speed sensor in the vehicle enable the system to display the present vehicle position even in locations where GPS signals may be blocked. When a destination is selected, the navigation system uses information from the map to quickly calculate a route. As the vehicle is driven along the chosen route, the operator is guided with pictorial displays and voice prompts.

The radio also provides the compass direction to the BCM, which in turn provides it to the Instrument Panel Cluster (IPC) to use for display in the Electronic Vehicle Information Center (EVIC).

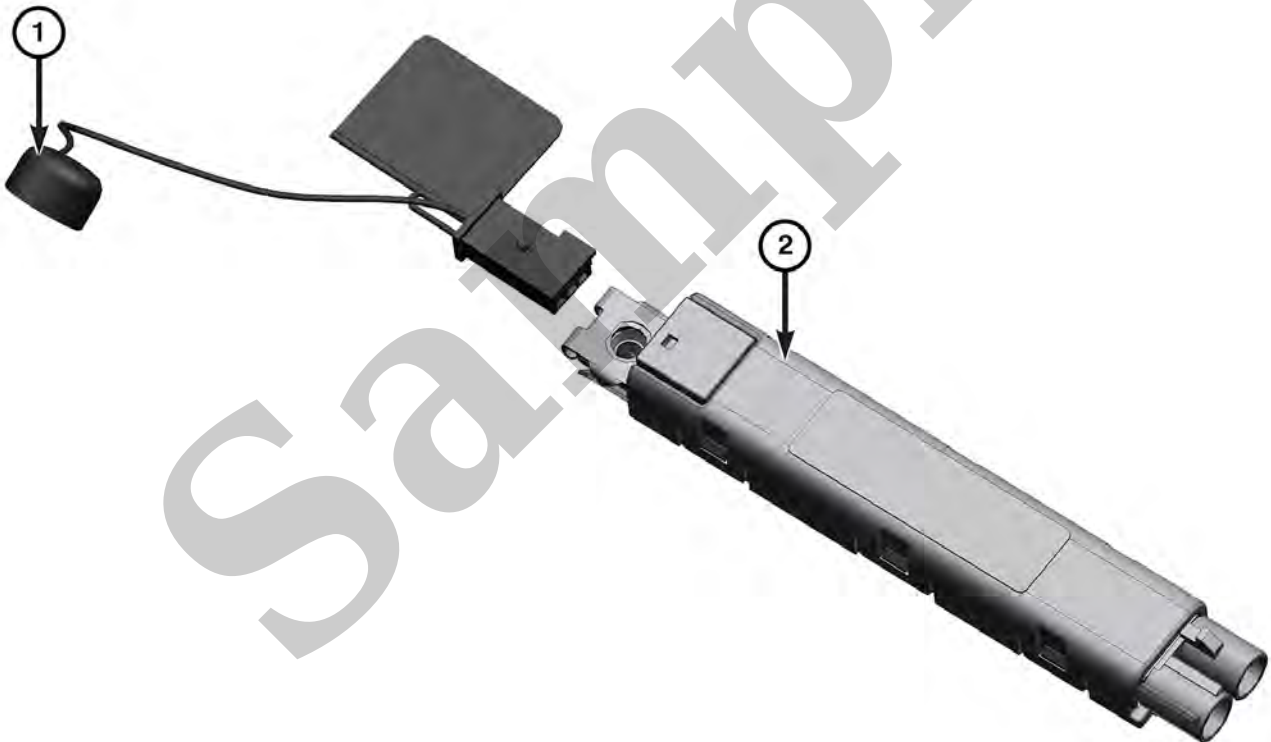
3 - Antenna

Digital audio broadcast is a digital radio standard for broadcasting digital audio radio services, used in many countries around the world, though not in North American countries. The antenna (3) for digital audio broadcast signals is screened to the left rear quarter window glass and connects to the digital audio broadcast antenna module (1) using a separate snap-on type pigtail connector (2), which amplifies the digital audio broadcast antenna (3) signals being sent to the radio.

A digital audio broadcast antenna module (1) and antenna (3) are used in the countries that use it in place of an AM/FM antenna to receive digital audio broadcast signals.

The digital audio broadcast antenna is screened to the left rear quarter window glass and is serviced only with the quarter glass. ([Refer to Body/Stationary Glass/GLASS, Quarter/Removal and Installation](#)).

Antenna Module



0806159319

1- Pigtail Connector

2- Digital Audio Broadcast Antenna Module

On the rear of the floor console is a dual-paired USB port. The pair of ports on the driver side are full function USB ports, however the pair of ports on the passenger side are charge only ports. Each pair consists of a USB-A port and USB-C port.

NOTE

Use of the MIT019 Multi-Media Tester may cause the radio screen to go blank. For diagnosis and testing of the media hub and USB ports, refer to the **MULTI-MEDIA TEST** in [\(Refer to Non-DTC Diagnostics/Audio/Video/Diagnosis and Testing\)](#).

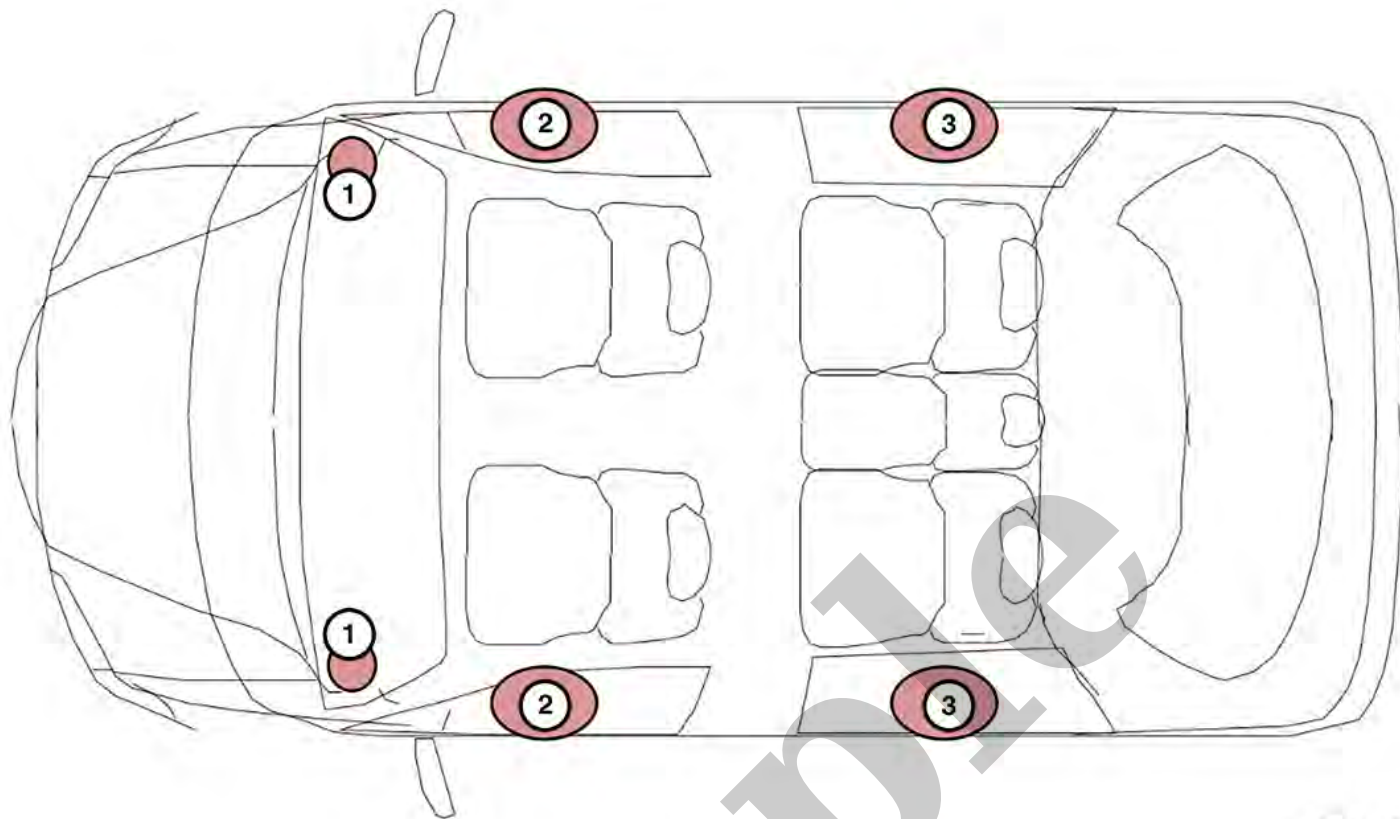
Media System Monitors

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On models that are equipped with the rear seat entertainment system, video monitors are placed on the back side of the front seats that allow the rear seat occupants to watch videos using various methods of input to the monitors and each can play different content using the source connections on the bottom of each monitor.

There are plug-in jacks (1-3) on the media hub on the bottom side of each monitor to show video directly from a Blu-Ray player or video camera, connect video games for display on the screen, and play music directly from



0806161000

1 - Two 3.5 inch instrument panel speakers.

2 - Two 6x9 inch front door speakers.

3 - Two 6x9 inch rear door speakers.

The Base speaker system (sales code RCG) has six speakers in the system.

1. Two 3.5 inch instrument panel speakers.
2. Two 6x9 inch front door speakers.
3. Two 6x9 inch rear door speakers.

The McIntosh Premium III speaker system (sales code RCA) has 18 speakers, a subwoofer and an external 17-channel (16 channels used) 960 watt (914 watts available with 16 channels used) amplifier with ANC built into the amplifier.

1. Three 3.5 inch + 1 inch active 2-way instrument panel speakers.
2. Two 6x9 inch front door speakers.
3. Two 3.5 inch + 1 inch passive 2-way rear door speakers.
4. Two 6x9 inch rear door speakers.
5. One 17 channel amplifier with ANC.
6. Two 3.5 inch + 1 inch passive 2-way liftgate speakers.
7. One 10 inch subwoofer assembly.

Video Routing Module (VRM)

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The VRM routes audio and video signals from the front, left and right media system monitor input ports to the vehicle's video screens. The signals are sent via individual Low Voltage Differential Signaling (LVDS) wire harnesses. The VRM monitors the input and output signals for any wiring or connection concerns.

The VRM communicates with the radio using an Ethernet connection and also the CAN-FD data bus.

The VRM receives two fused B(+) feeds from a single 10 amp fuse in the rear Power Distribution Center (PDC). Two grounds are continuously supplied via an eyelet connected to a ground stud at the left rear below the load floor.

Ethernet Inputs

- VRM rear seat entertainment data from the radio

Ethernet Outputs

- Rear seat entertainment controls to the radio for the VRM

CAN-FD Inputs

- Vehicle configuration from BCM

CAN-FD Outputs

- Audio control data

AUDIO SYSTEM DIAGNOSTIC TABLE

CONDITION	POSSIBLE CAUSES	CORRECTION
SERVICE (SDARS) AUDIO RECEPTION		and Testing).
SOUND DISTORTION (VIBRATION FROM SPEAKER AREA, BUZZING - HUMMING)	1. Door trim panel loose or missing fasteners.	Inspect door trim panel and correct as necessary. Replace any missing fasteners.
	2. Water shield loose or misaligned.	Inspect watershield and adjust as required.
	3. Items placed in door trim panel map pockets vibrating or moving from side to side.	Remove items from door trim panel. Make sure that the vibration is no longer present.

REAR VIEW CAMERA

The hardwired circuits of the Rear View Camera (RVC) and those between the RVC and the radio may be diagnosed using conventional diagnostic tools and procedures. Refer to the appropriate wiring information. The wiring information includes wiring diagrams, details of wire harness routing and retention, connector pin-out information and location views for the various wire harness connectors, splices and grounds. For proper wire repair, ([Refer to Non-DTC Diagnostics/Circuit Testing Procedures/Standard Procedure](#)) and connector repair procedures, ([Refer to Non-DTC Diagnostics/Circuit Testing Procedures/Removal](#)) and ([Refer to Non-DTC Diagnostics/Circuit Testing Procedures/Installation](#)).

However, conventional diagnostic methods will not prove conclusive in the diagnosis of the RVC or the radio. The most reliable, efficient and accurate means to diagnose the electronic controls and communication related to radio operation, as well as the retrieval or erasure of a Diagnostic Trouble Code (DTC) requires the use of a diagnostic scan tool. Refer to the appropriate diagnostic information.

NOTE

Before performing tests, it is important to check the vehicle sales codes or build configuration to verify if the RVC supplies the image displayed on the radio screen and not another module.

CONDITION	POSSIBLE CAUSES	CORRECTION
	2. Both backup lamps inoperative.	2. Test and repair the open backup lamp switch output circuit between the BCM and the tail lamps, if required.
	3. Ineffective BCM inputs or outputs.	3. Use a diagnostic scan tool to test the BCM inputs and outputs. Check Reverse Gear input and check Local Interface Network (LIN) bus voltages to the overhead console. Refer to the appropriate diagnostic information.
NO CAMERA IMAGE IN RADIO VIDEO DISPLAY - DOES DISPLAY CHECK ENTIRE SURROUNDINGS MESSAGE BRIEFLY AFTER SHIFTING TO REVERSE AND BACKUP LAMPS DO OPERATE	1. Ineffective camera LVDS coaxial circuit or shield circuit.	1. Check the LVDS coaxial cable center terminal for 12 volts (R1 radios). Check for loose or damaged wiring connections between the camera and the radio. Refer to the appropriate diagnostic information. Replace the LVDS cable, if required. If the LVDS coaxial cable in the Liftgate needs replacing (Refer to Electrical/Power Liftgate/Standard Procedure).
	2. Ineffective camera.	2. Replace the ineffective camera, if required.

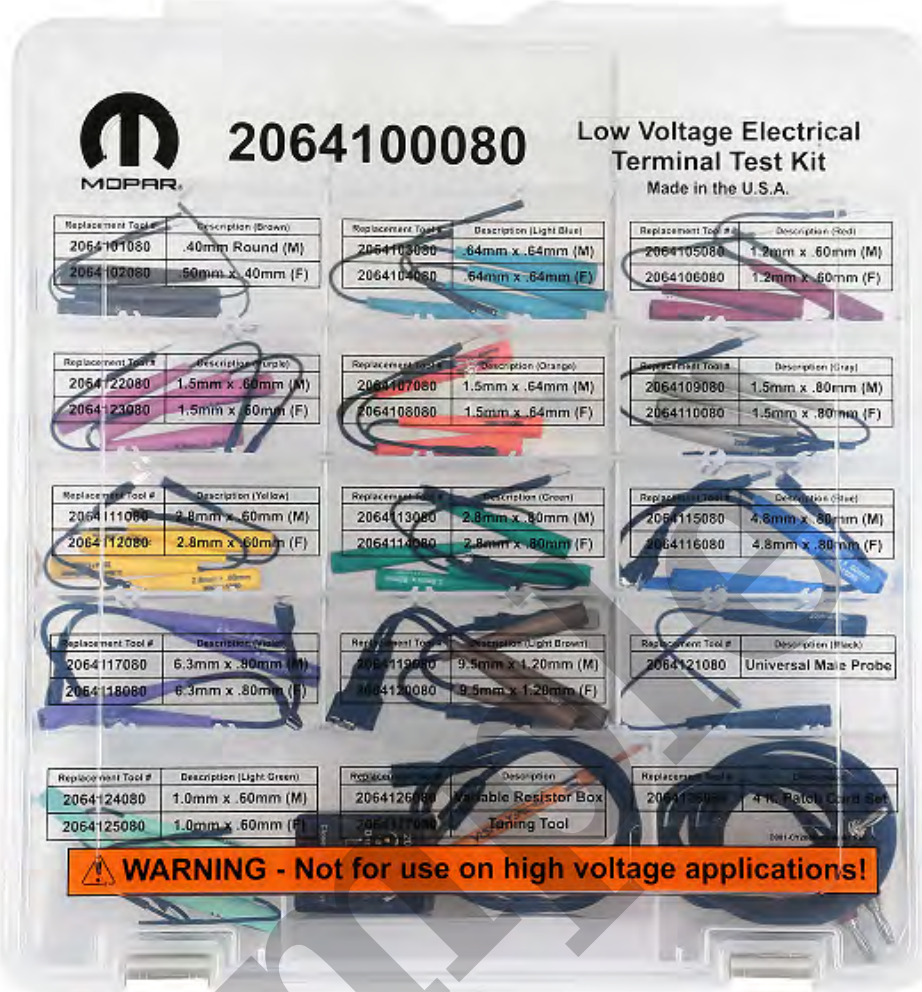
REMOTE RADIO SWITCHES

WARNING

Disable the airbag system before attempting any steering wheel, steering column, seat belt tensioner, side airbag or instrument panel component diagnosis or service. Disconnect and isolate the negative battery (ground) cable. Wait two minutes for the airbag system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the airbag system. Failure to follow these instructions may result in accidental airbag deployment and possible serious or fatal injury.

Check for applicable Technical Service Bulletins (TSB), Star Online Publications, and the use of a diagnostic scan tool. Check for any Diagnostic Trouble Code (DTC) data. Repair any communication (LIN, CAN, etc) DTC's or concerns before proceeding in this section. If a DTC is found, refer to Section 28 and perform the appropriate diagnostic procedure before proceeding in this section.

For a complete LIN BUS SYSTEM wiring diagram, ([refer to the Wiring Information](#)) .



and insert the probing end (2) into the terminal being tested. Use the other end of the tool (1) to insert the meter probe. Use an ohmmeter to check the switch resistances as shown in the Remote Radio Switch Test chart; and then go to **Step 13**

REMOTE RADIO SWITCH TEST

Switch	Switch Position	Minimum Resistance (kilohms)	Nominal Resistance (kilohms)	Maximum Resistance (kilohms)
Right	Volume Up	5.22	5.32	5.42
Right	Volume Down	9.18	9.28	9.38