ACURA

Job Aid

September 2021 Version 2

MOST Bus Network: Overview, Troubleshooting, and Repairs

Supersedes Version 1, dated September 2021, to revise the information highlighted in yellow.

APPLIES TO

Year	Model	Trim Level
2022 and later	MDX	ALL
2019 and later	RDX	ALL
2021 and later	TLX	ALL

REVISION SUMMARY

- Under TOPICS COVERED, some of the page numbers were changed.
- Under MOST Electronic Control Line (ECL) Diagnostic Mode, information was revised.

BACKGROUND / INTRODUCTION

This job aid contains information on the MOST Bus Network and troubleshooting information for common problems.

NOTE: This job aid replaces the following publications and Tech2Tech video segments:

- Service Bulletin 19-062, *Service Manual Update: MOST Bus Network Failure Log*
- Service News, *Popping or Crackling from the Speakers? Check the MOST Bus Network*
- Job Aid, *Using the MOST Connector Tools*
- Tech2Tech Segment, *Get to Know the MOST Connector Tools*
- Tech2Tech Segment, *A Look at MOST Bus Network Connectors*
- Tech2Tech Segment, *Let's Talk MOST Bus Network and ECL Diagnostics*
- Tech2Tech Segment, *Check Out the MOST Bus Network Failure Log*

TOPICS COVERED

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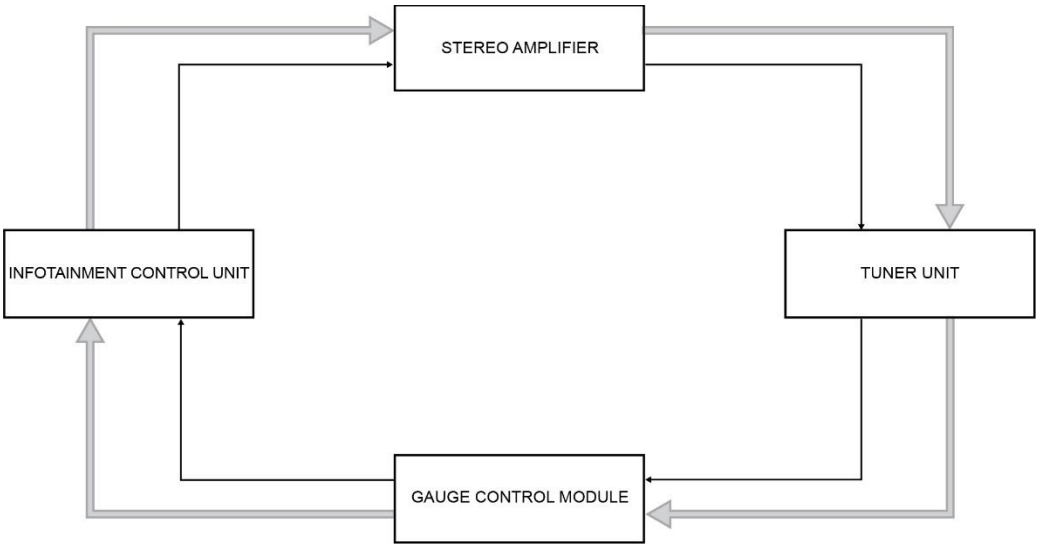
MOST BUS NETWORK OVERVIEW

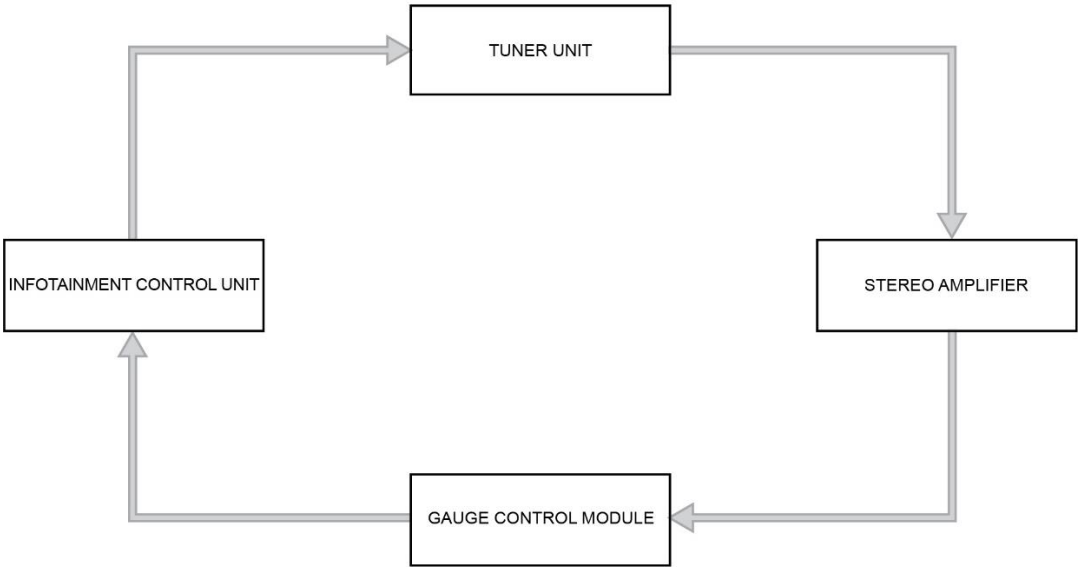
The Media Oriented Systems Transport or MOST Bus Network is used for high-speed bandwidth communication between the audio/visual system components on certain Acura models. This is a serial network and is configured in a ring structure that links one component to the next like a daisy chain that passes data in a single direction. A bus is used for communicating audio, video, and control signals to each unit in the network.

Below are examples of the MOST Bus Network.

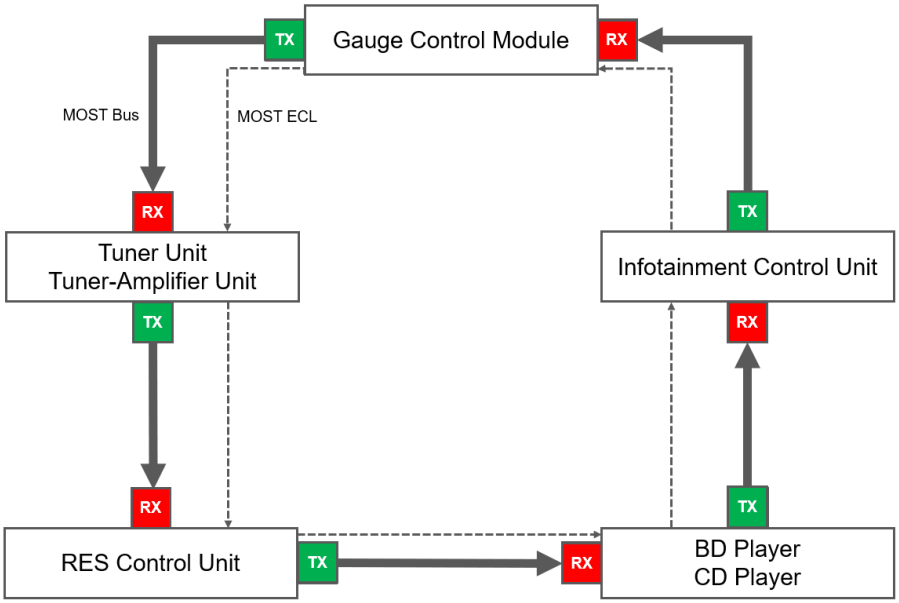
RDX



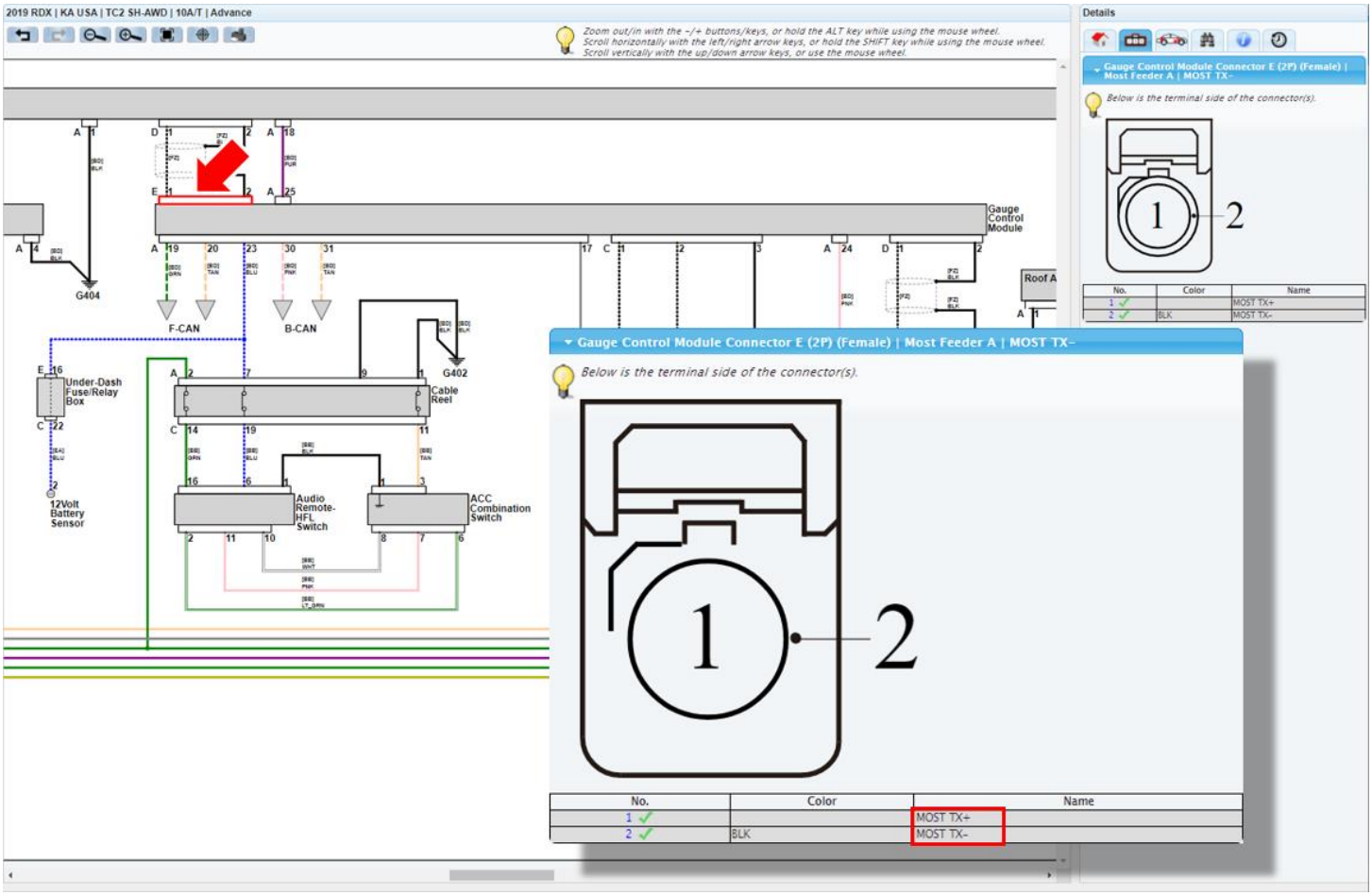
MDX, TLX



The gauge control module acts as the gateway in the MOST Bus Network. Each control unit on the network has transmitting and receiving coaxial cables and the electronic control line (ECL). The transmitting, known as a TX connector, is green in color and the receiving, known as a RX connector, is red in color. Any open connections or shorts in the network wiring will cause audio and visual system functions to be inoperative.



Within the TX and RX connections, there are the TX+ / TX- and the RX+ / RX- terminals. The “+” indicating the information line and the “-“ indicating the shielding ground.



MOST ELECTRONIC CONTROL LINE (ECL) DIAGNOSTIC MODE

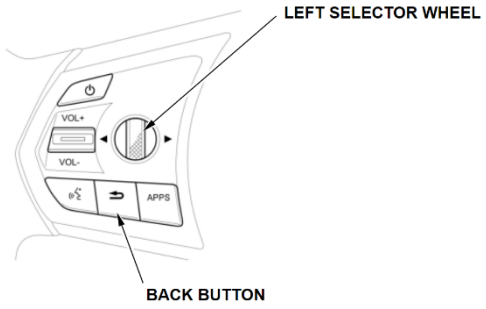
A typical failure in the MOST Bus Network will cause a no-response condition from the infotainment system with the center display unit going blank. Any component or connection failures within the network can cause this condition. If you see any audio functions or information in the gauge control module, the blank screen may just be a display issue and not a network failure.

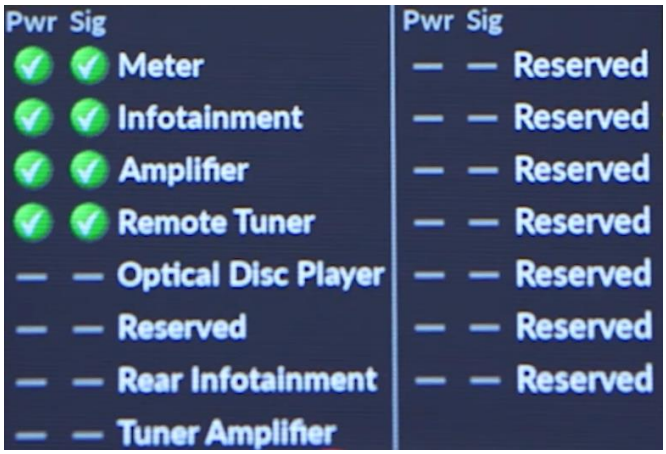
When a failure occurs, it will be necessary to locate where in the network the failure occurred. To help you do this, a MOST Bus Condition or commonly known as the ECL diagnostic mode is available in the gauge control module.

NOTE: The ECL diagnostic mode is only helpful if the network has a hard failure. Do not enter this mode if the network has an intermittent failure. For intermittent failures, proceed to the MOST Bus Network Failure Log on **page 13**.

To start the ECL diagnostics, do the following:

1. Close all doors and the tailgate (if equipped).
2. Turn the vehicle to the ON mode.
3. Press the right selector wheel on the ACC combination switch to dismiss all warning or information messages displayed on the multi-information display (MID).
4. Hold down the left selector wheel on the audio remote-HFL switch and then press and hold the BACK button until the MOST bus diagnosis screen is displayed (for about 5 seconds).



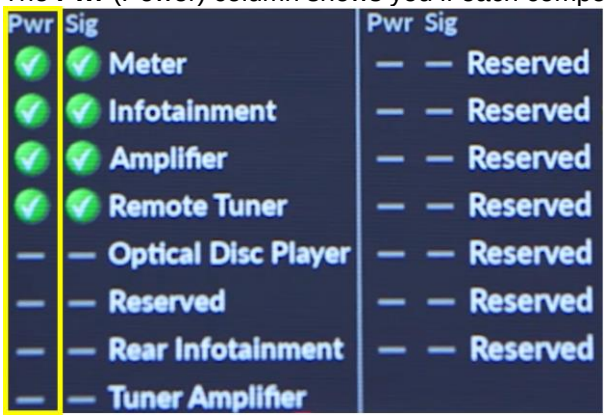


How to read the display

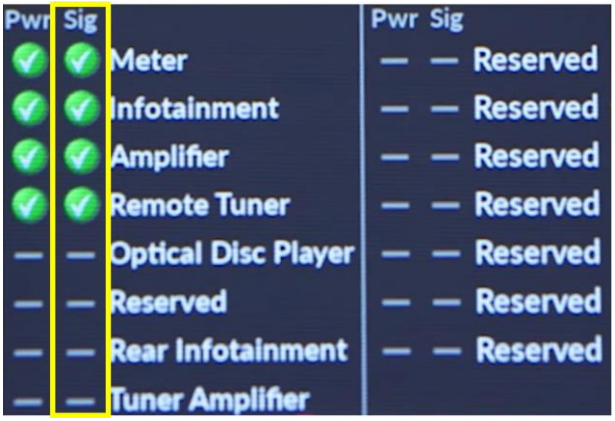
The table below shows the meaning of the indicators.

Symbol		Status
	**OK**	• The power or MOST signal status is OK at this time.
	**NG**	• The component lost power or cannot receive a MOST signal. • The component is not connected to the module using the bus.
—	**N/A**	• The component is offline. • The component is not equipped.

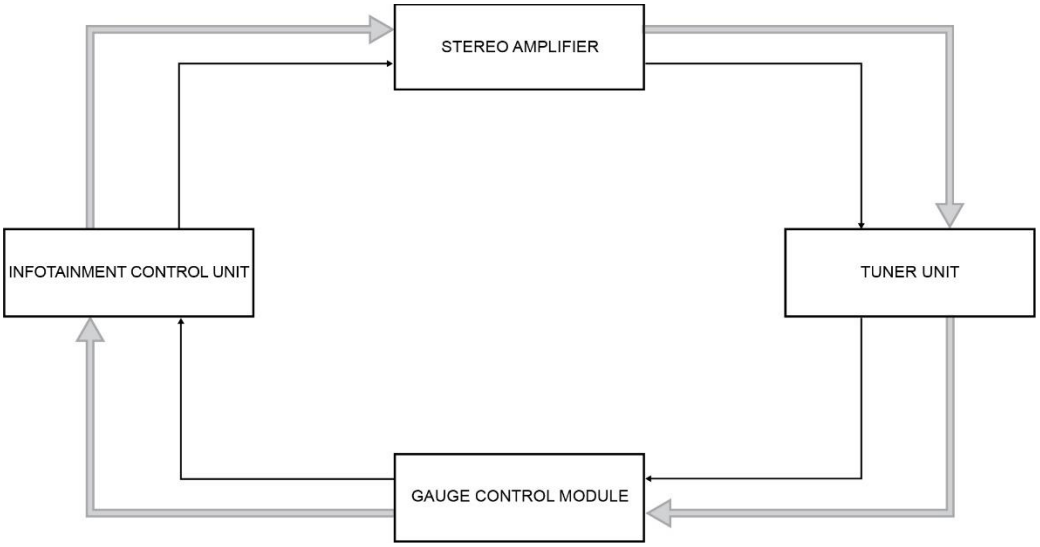
The **Pwr** (Power) column shows you if each component is online or not.



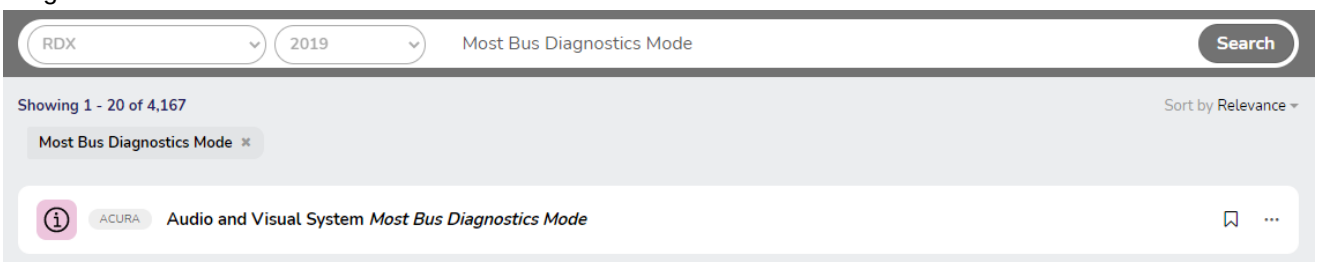
The **Sig** (Signal) column shows if the component is receiving a signal.



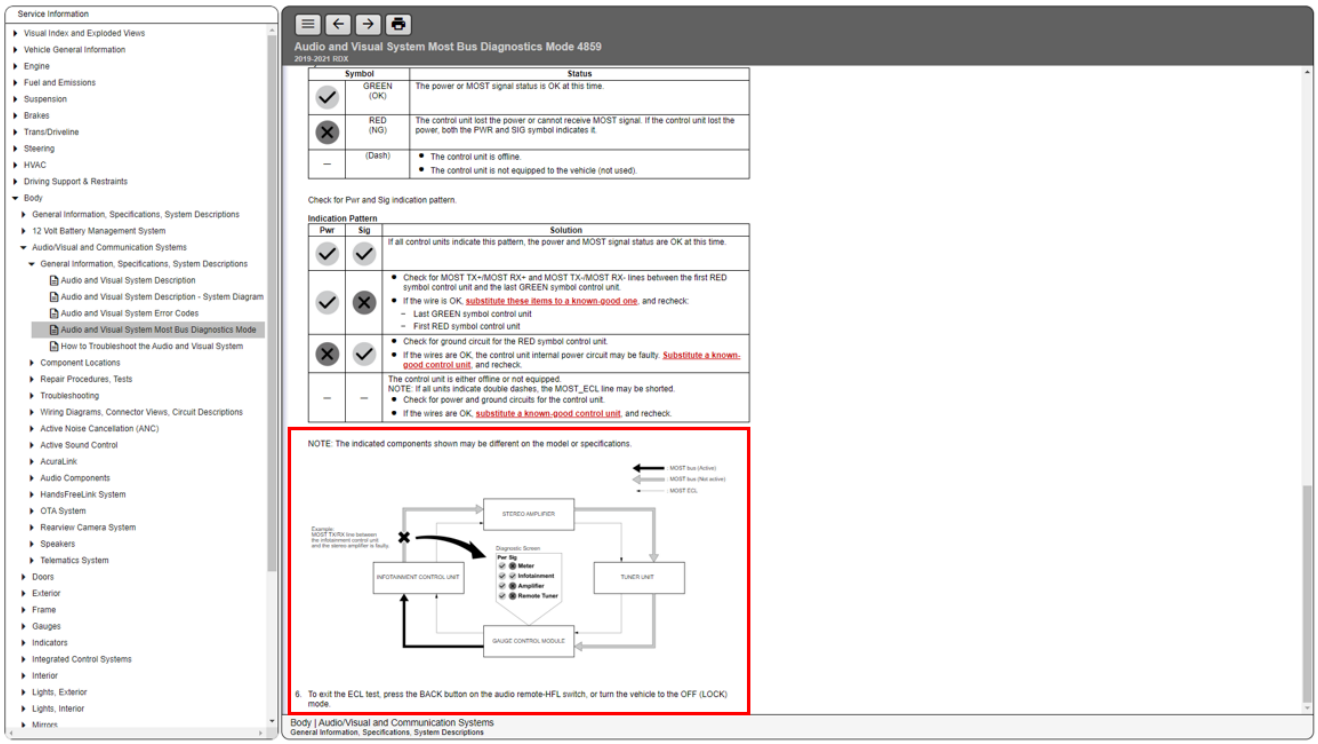
When using the ECL diagnostic mode, it is important to understand the network structure for the model you are working on. Always refer to the network chart found in the service manual to identify the network's communication flow in direction.



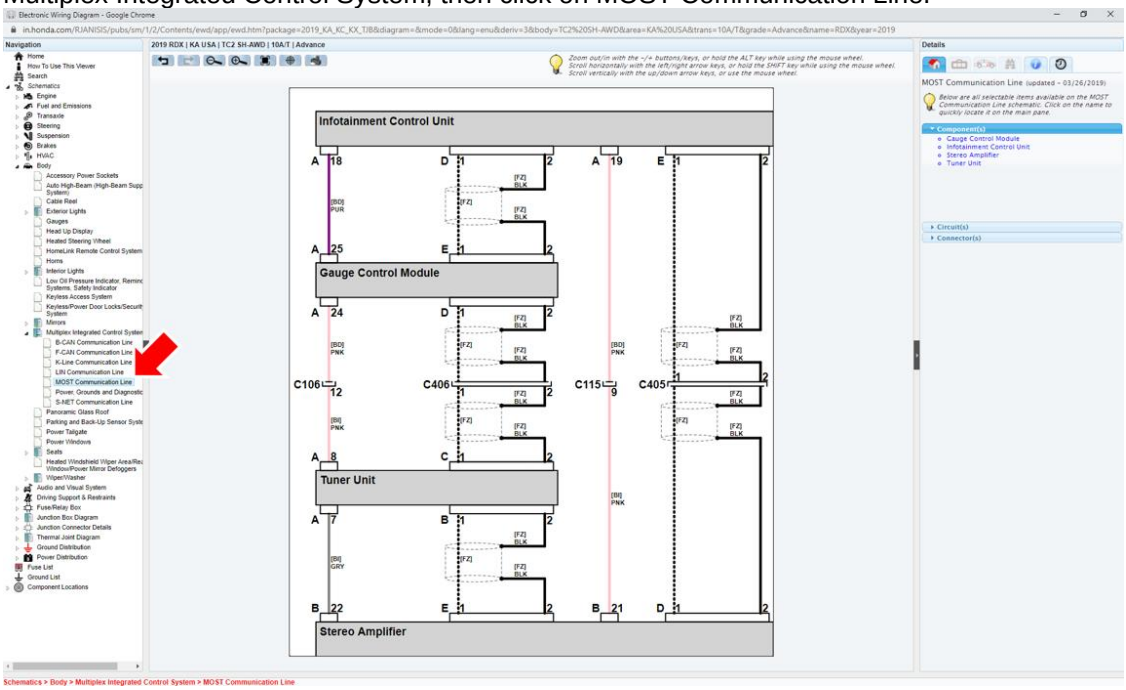
This network chart can be found in service information. First, select the model and year. Then, enter “MOST Bus Diagnostics Mode” in the keyword search. From the search results, click on Audio and Visual System Most Diagnostics Mode.



Scroll down towards the bottom for the chart.



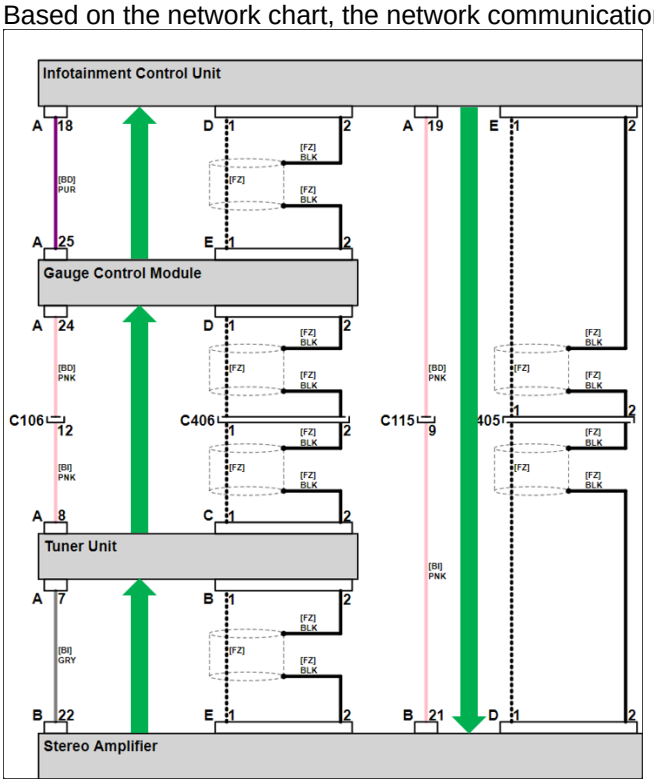
Once you identify the communication flow, use the EWD to identify what components are equipped on the particular model you are working on. To do this, go to the EWD. After choosing the trim or entering the VIN, go to Schematics, Body, Multiplex Integrated Control System, then click on MOST Communication Line.



Since the EWD does not show a ring structure, use the network chart from the service manual to visualize the network communication flow.

NOTE: Use this same procedure to find the network chart and the MOST communication line schematic in the EWD for the MOST Bus Network Failure Log procedure on **page 13**.

Based on the network chart, the network communication flow can be visualized like below.



NOTE: The component names between the service manual and the display will not match. Refer to the following table.

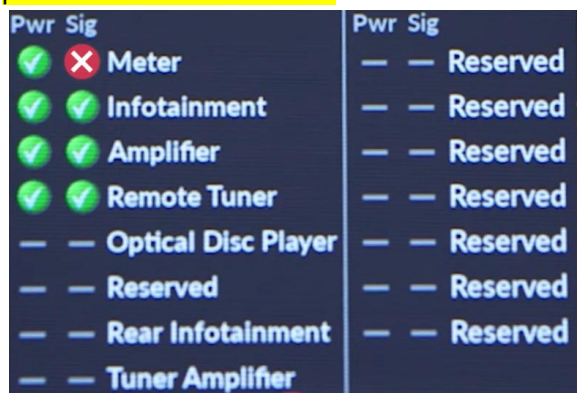
ECL Diagnostics Name	Service Manual Network Chart Name
Meter	Gauge Control Module
Infotainment	Infotainment Control Unit
Amplifier	Stereo Amplifier
Remote Tuner	Tuner Unit
Optical Disc Player	BD (Blue Ray) or CD Player
Rear Infotainment	RES Control Unit
Tuner Amplifier	Tuner-Amplifier Unit

The table below shows the different combinations of indicator patterns.

Pwr	Sig	Description or Probable Cause
		The power and MOST signal status is OK at this time.
		The component is online but is not receiving signal on the network. • Check the TX+ / RX+ and TX- / RX- lines between the previous control unit in the MOST network ring. • Check the wires and connector terminals. If they are OK, install a known-good component and retest.
		• Check the ground circuit of the indicted component. • Check the wires and connector terminals. If they are OK, the component's internal power circuit may be faulty. Substitute a known-good component and retest.
—	—	The component is either offline or not equipped. NOTE: If all components indicate double dashes, the MOST ECL line may be shorted. • Check the network chart to confirm if the component is part of the network. The model and trim you are working on may not be equipped with that component or is not part of the network. • Check the power and ground circuit for the indicated component. • Check the wires and connector terminals. If they are OK, the component's internal power circuit may be faulty. Substitute a known-good component and retest.

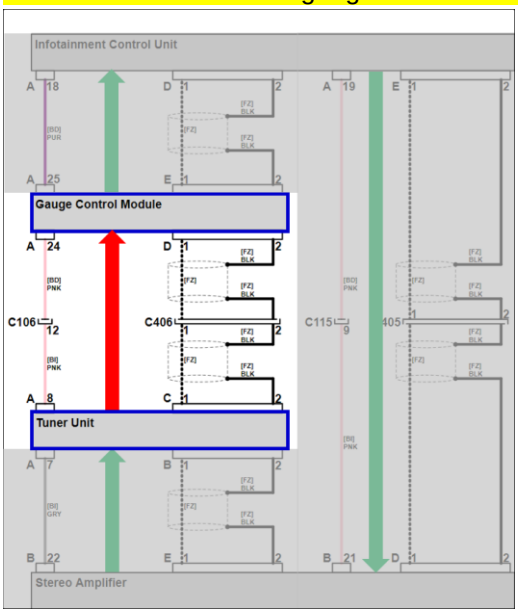
NOTE: The infotainment control unit must never be substituted with a known-good unit as it will cause telematic network problems.

In this first example, the meter (gauge control module) reported a signal problem. Go to the applicable EWD and review the circuit. When a problem occurs in the network, it means that there is a problem at both the reporting component and the previous one in the network.

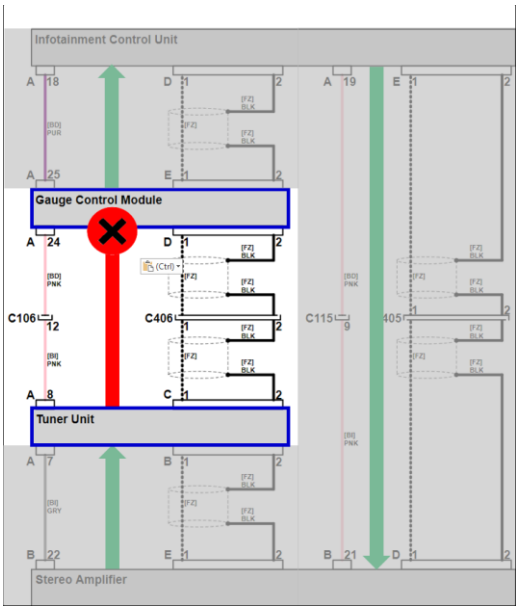


ECL Diagnostics Name	Service Manual Network Chart Name
Meter	Gauge Control Module
Infotainment	Infotainment Control Unit
Amplifier	Stereo Amplifier
Remote Tuner	Tuner Unit
Optical Disc Player	BD (Blue Ray) or CD Player
Rear Infotainment	RES Control Unit
Tuner Amplifier	Tuner-Amplifier Unit

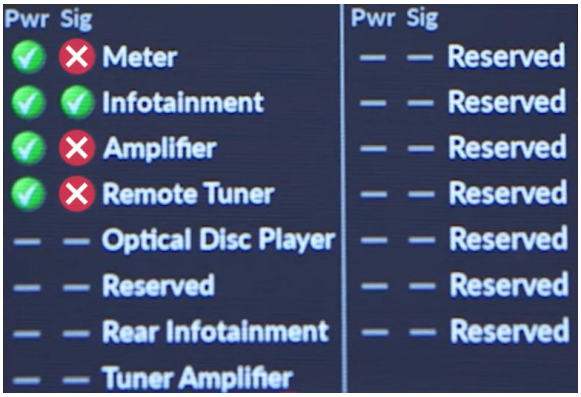
First, looking at the EWD, the previous component to the gauge control module is the tuner unit. This means that the circuit from the tuner unit to the gauge control module needs to be checked.



Troubleshooting this circuit revealed a bad connection at the MOST connector at the gauge control module.



In this next example, the meter (gauge control module), amplifier (stereo amplifer) and remote tuner (tuner unit) reported a problem.



ECL Diagnostics Name	Service Manual Network Chart Name
Meter	Gauge Control Module
Infotainment	Infotainment Control Unit
Amplifier	Stereo Amplifier
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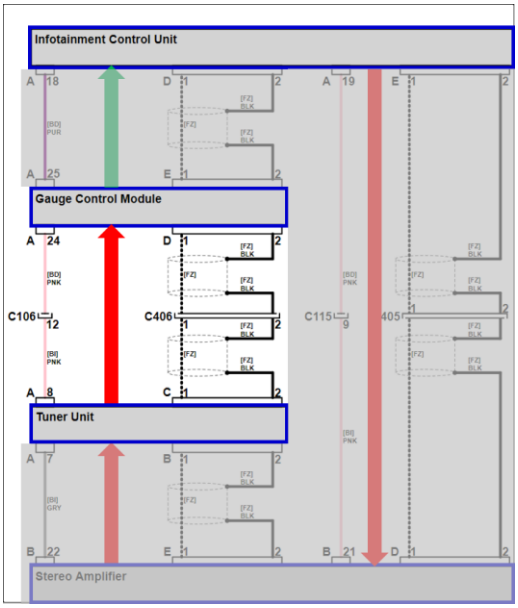
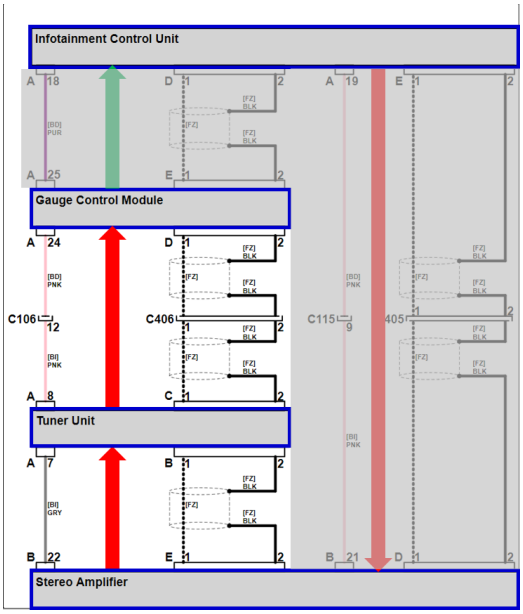
Rear Infotainment	RES Control Unit
Tuner Amplifier	Tuner-Amplifier Unit

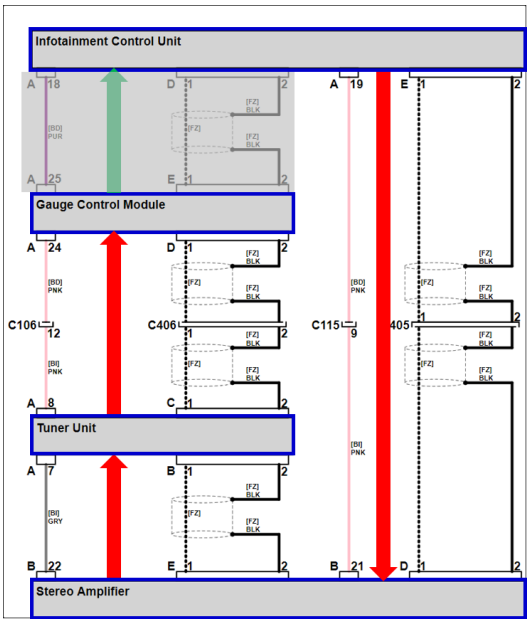
First, looking at the EWD, the previous component to the gauge control module is the tuner unit.



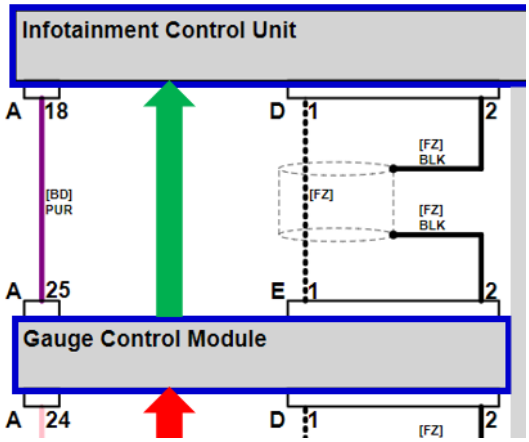
Second, the previous component of the tuner unit is the stereo amplifier.



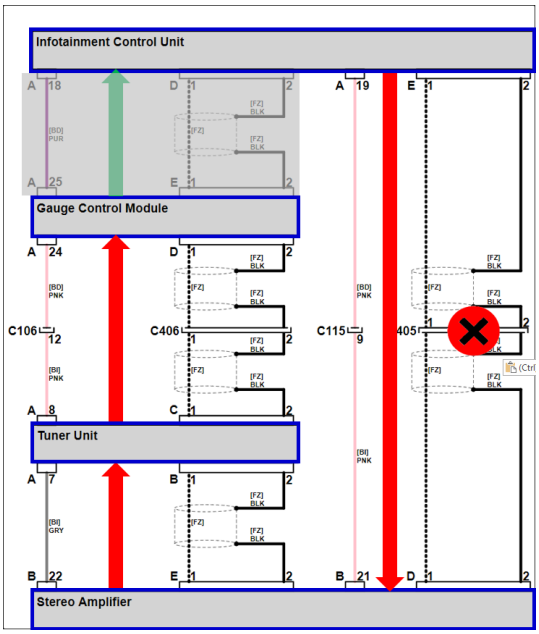
Lastly, the previous component for the stereo ampflier is the infotainment control unit. This means that the circuit from connector E of the infotainment control unit to connector D of the gauge control module needs to be checked.



As mentioned in the MOST Bus Network Overview section, the MOST network is configured in a ring structure where information is past from one component to another in a single direction. However, the gauge control module acts as the gateway of the network where the information starts and ends at the gauge control module. This is why in the example, the circuit between connector E of the gauge control module and connector D of the infotainment control unit is not affected.



When encountering these types of network problems, always start at the beginning of the problem. In this example, start checking the connections at connector E of the infotainment control unit and work your way along the circuit until you find the problem. In conclusion, troubleshooting found a bad connection at C405 between the infotainment control unit and stereo amplifer.



Video

[For a video on ECL diagnostics, click on this link.]

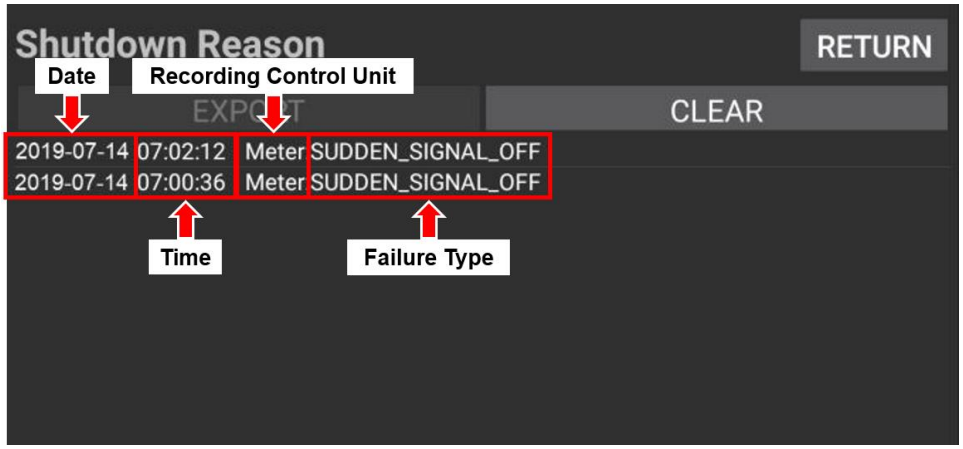
MOST BUS NETWORK FAILURE LOG

Whenever a problem occurs in the network, the information of the failure is captured in a log. This failure log is primarily meant to be used during troubleshooting intermittent network failures.

These failures may range from:

- Complete signal loss and a blank screen on the center display unit.
- Popping or crackling noise from the speakers.

The failure log lists each failure by date, time, and type.



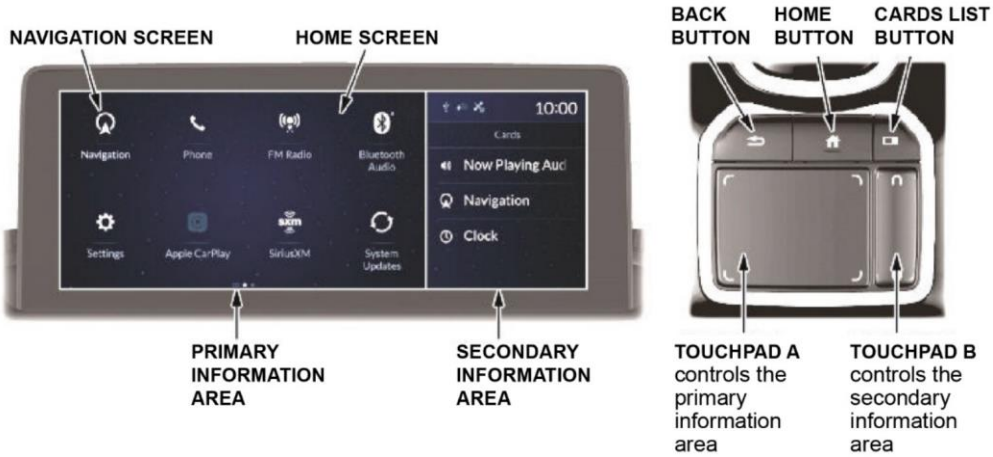
There are two failure types:

- **SUDDEN_SIGNAL_OFF**: This failure is for a temporary or complete loss of signal on the network.
- **CRITICAL_UNLOCK**: This failure is for electrical noise on the network.

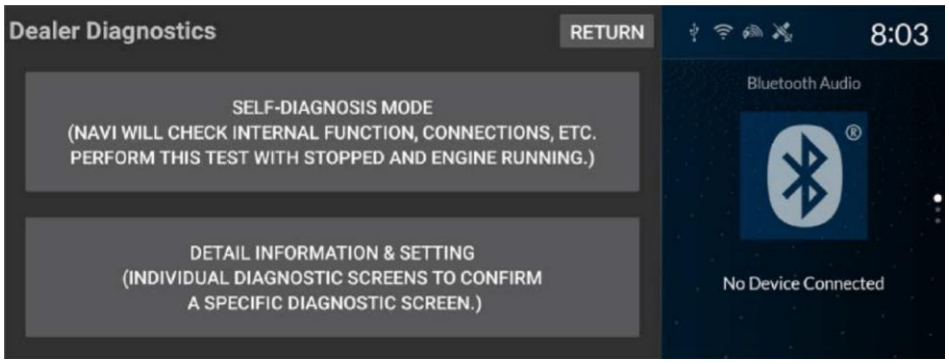
This log also identifies which control unit on the MOST Bus Network recorded the failure. The recording control unit tells you the failure occurred between that control unit and the previous one on the network. This log can hold up to 10,000 failures, with the most recent events at the top.

Follow these steps to access the logs.

1. Turn the vehicle to the ON mode.
2. On the touchpad, press and hold the Back, Home, and Cards List buttons at the same time. Hold until the **Dealer Diagnostics** menu screen appears in the primary information area. You will hear a tone when you release the buttons.



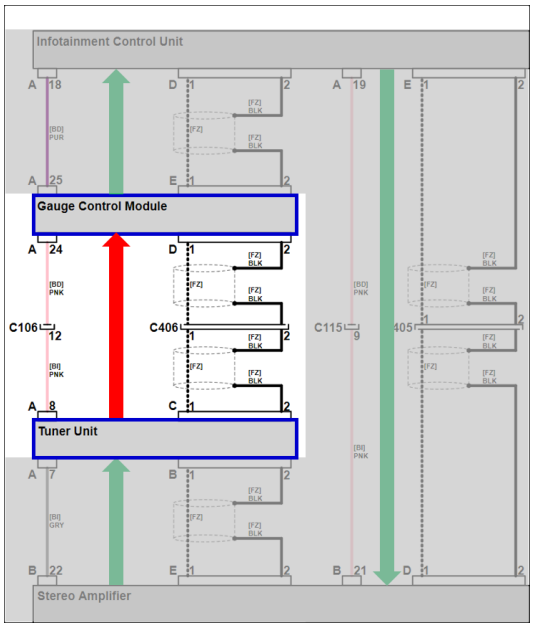
3. Using Touchpad A, select **DETAIL INFORMATION & SETTING**.



4. Scroll down the menu and select **SHUTDOWN REASON**.

Look for the most recent even on the list. In the example below, the cause of the intermittent failure can be identified as **Meter:SUDDEN_SIGNAL_OFF**, dated 2019-10-23 with a time stamped 10:01:43. There was a complete loss of signal between the gauge control unit and the previous transmitting component on the network.

Similar to the MOST Electronic Control Line (ECL) Diagnostic Mode procedure, you must determine the network flow and the previous component to the reported failed component. In this case, the previous component to the gauge control unit is the tuner unit, and troubleshooting will focus on the circuit between the two components.



System Limitations

Below are things to remember when reviewing the logs.

- Will only show reported failures, not current ones.
- May not report speaker popping noises.
- Will not record during a permanent network failure and cannot be accessed during that time. In the event of a current network failure, use the MOST Electronic Control Line (ECL) Diagnostic Mode on **page 4**.

After Repairs

After repairs are completed to the network, be sure to clear the failure logs. This can only be done through the failure log screen by pressing the **CLEAR** button.

Video

For a video of how to view the logs and how to interpret them, click on this link.

NOTE: The video references the service bulletin, 19-062 *Service Manual Update: MOST Bus Network Failure Log* which has been replaced with this job aid.

PROPER CONNECTOR INSPECTION & HARNESS ROUTING PROCEDURES

As previously described, some of the symptoms that the customer may experience are popping or crackling noises from the speakers, a blank center display unit or the sound cutting off. After performing the ECL diagnostics or the MOST Bus Failure Log and narrowing down the area to inspect, you need to inspection for proper connections of the MOST coaxial connectors and proper harness routing.

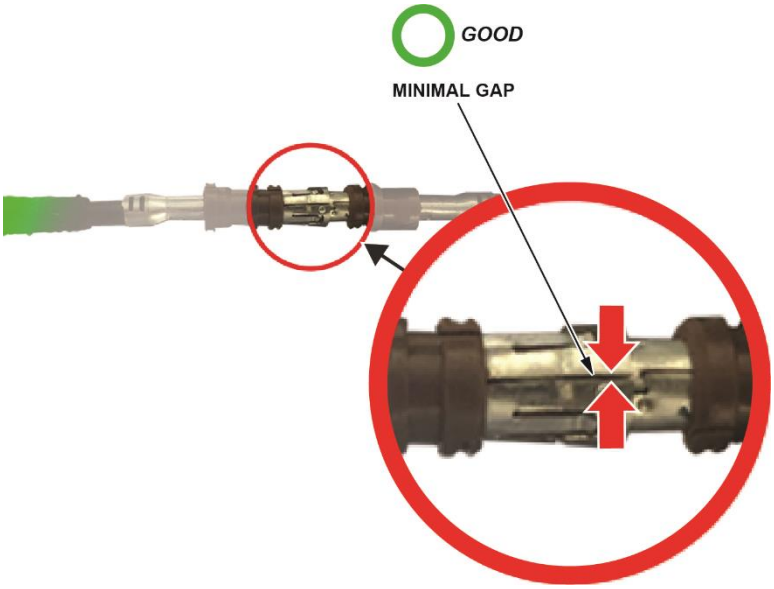
Connectors

There are three types of connectors you will find in the network. These connectors are commonly known as FAKRA connectors and will be referenced as such in various Honda publications and training materials.

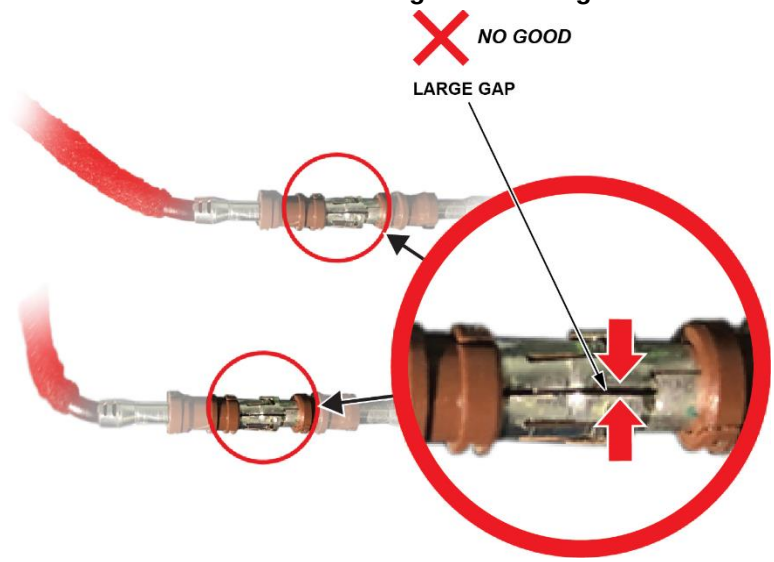
Connector Image	Connector Style	Color	Purpose
	Straight	Red	Receiving
	Straight	Blue	Inline
	90° Straight	Green	Transmitting
	90° Offset	Green	Transmitting

Due to its design, it is important that the connectors are installed properly and any external forces such as from the wire harness do not contribute any tension. The tension created on the connector terminal such as a bad wire harness routing will create a condition known as side loading. Here are some examples.

No tension on the harness, no side load



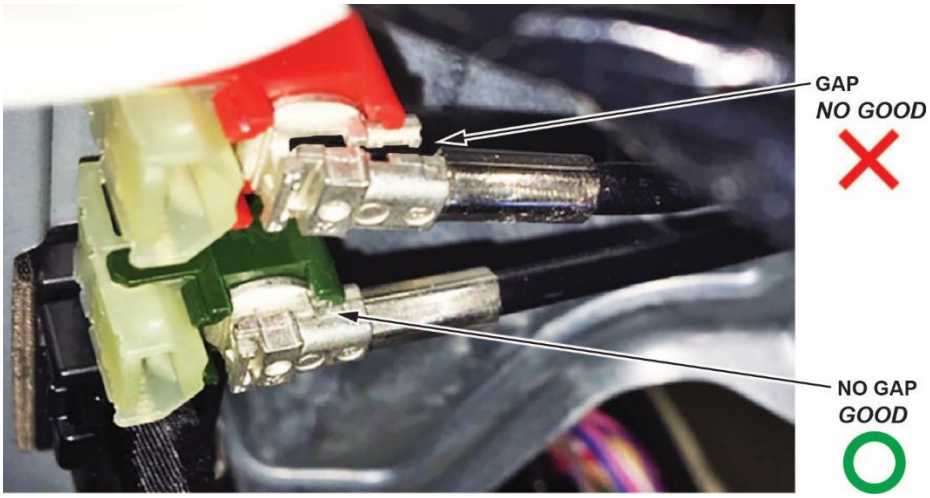
Harness tension at 45 and 90 degrees creating side load. The terminal will spread at the gap.



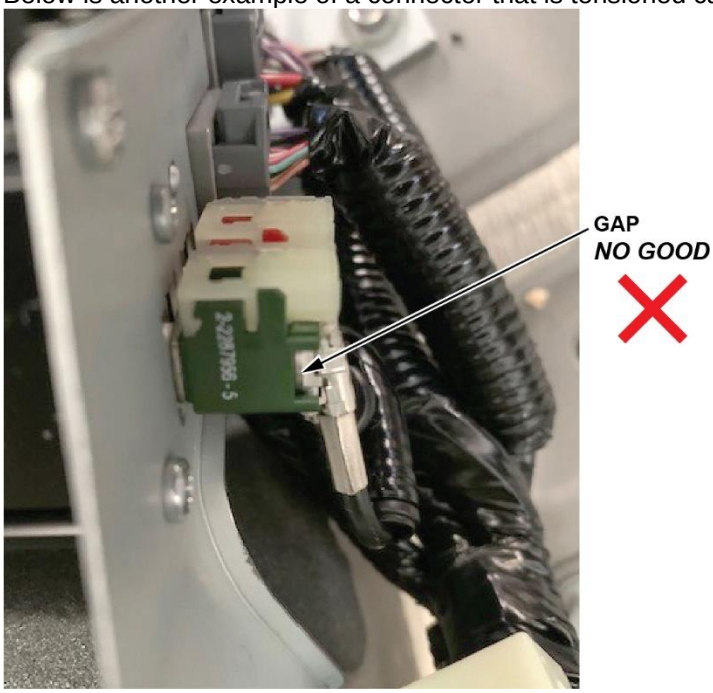
NOTE: The various service bulletin repair procedures available on SIS related to repair MOST-related problems will have you install a new terminal to help avoid terminal spreading. However, it is important to still make sure that the harness wire and connectors are installed back to their original condition.

The following are some examples of mis-installed connectors and incorrect wire harness routing.

Example 1
The green connector sits correctly, perpendicular to the control unit while the red connector sits at an angle caused by tension on the wire harness.



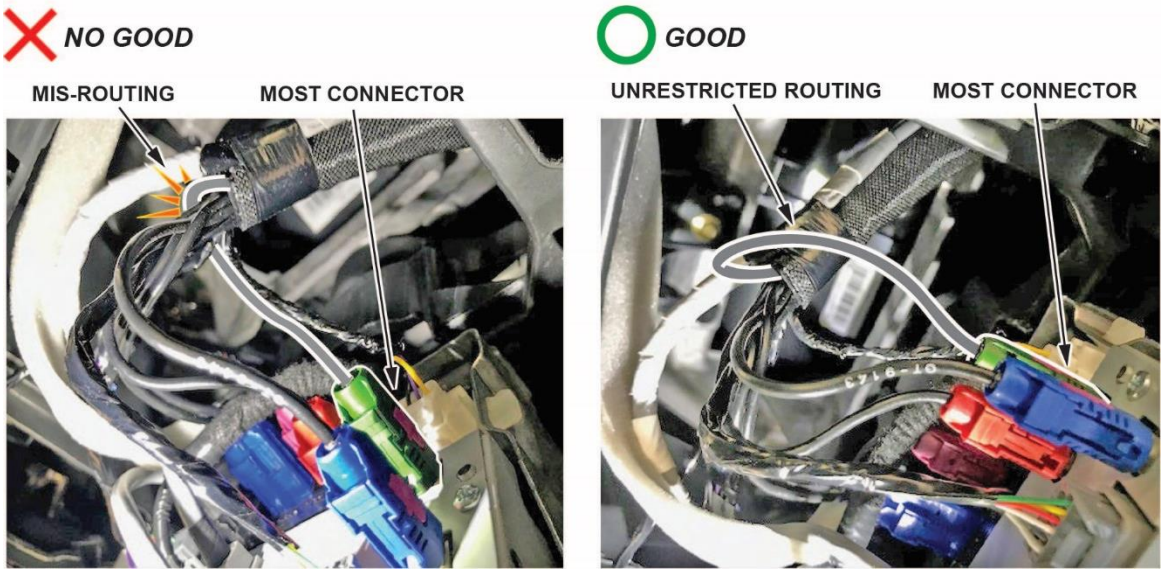
Below is another example of a connector that is tensioned causing the green connector to sit an angle.



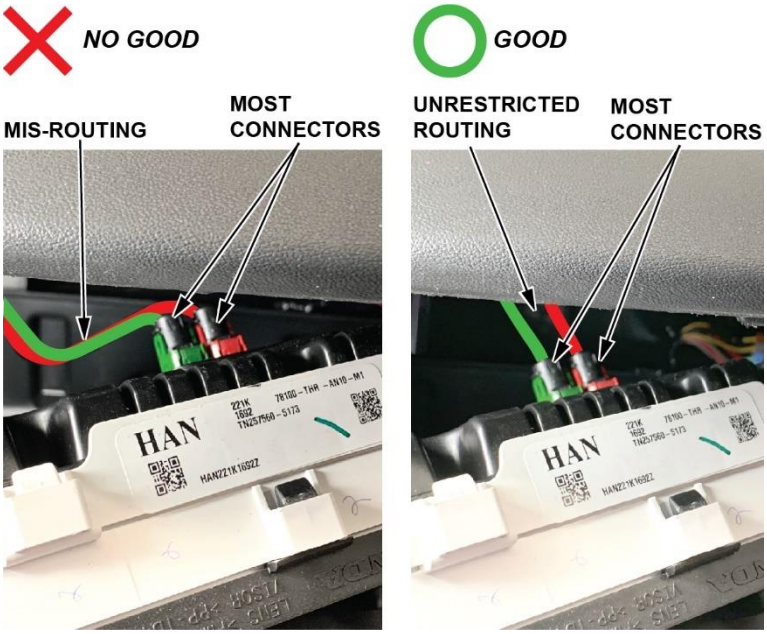
In both examples, the connector is considered damaged, and the wire harness must be replaced. These connectors **are not** repairable.

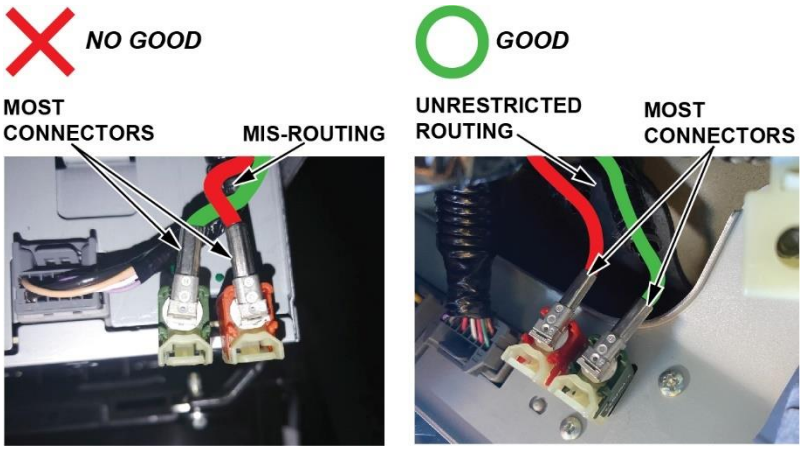
Example 2

One wire was mis-routed causing tension to the green connector. To repair this, disconnect the MOST connector and reroute the harness wire to remove the tension.

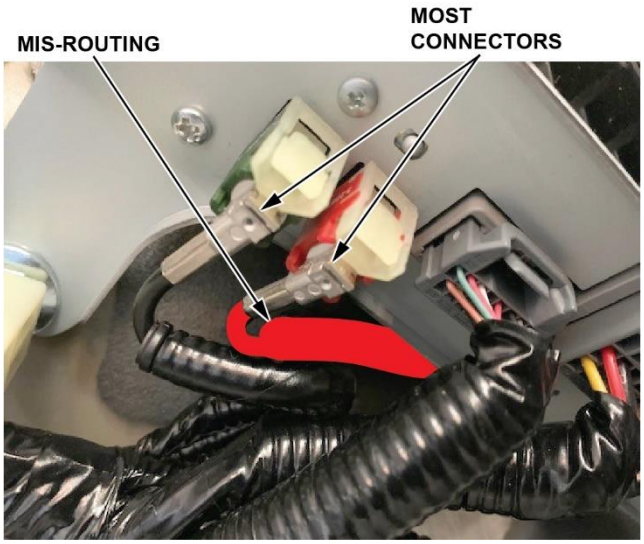


Below are more examples of incorrect harness mis-routing.



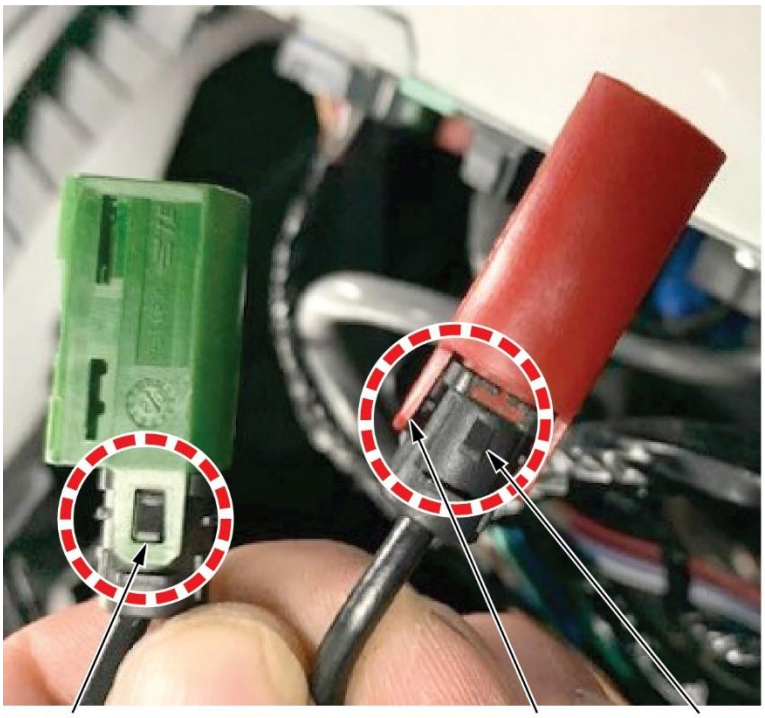


NO GOOD

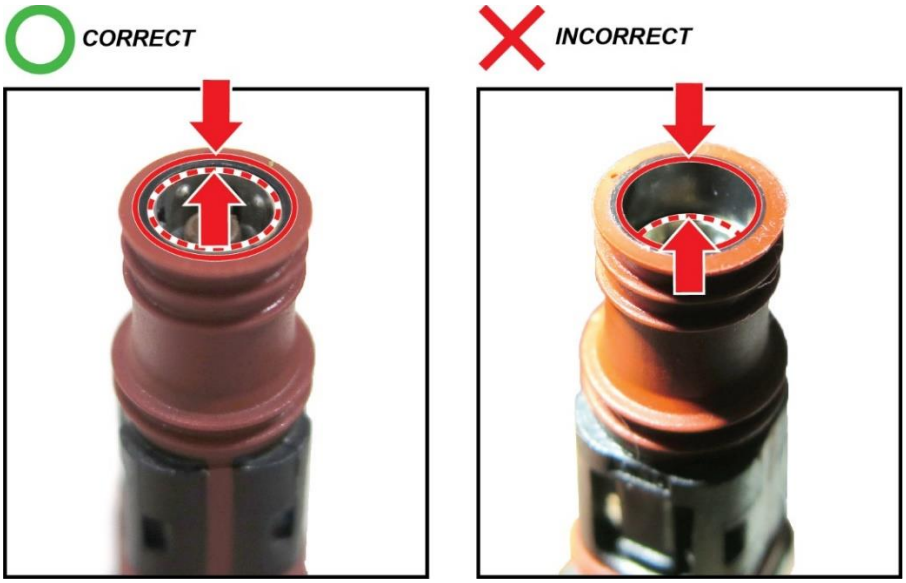


Example 3

The updated terminal is correctly installed onto the green FAKRA housing but not on the red one. The connector was installed 90 degrees off and was not engaged to the locking tabs.



Example 4
The wire is not fully seated into the new terminal. The edge of the wire must sit with the edge of the updated terminal.



When inserting the wire into the new terminal, make sure you hear a click to ensure it is fully seated.

The previous examples shown can cause failures in the network. For additional examples of good harness routing, refer to the following service bulletins.

Service Bulletin Number	Service Bulletin Title
20-031	Popping/Crackling from the Speakers; Display Blank
21-009	Warranty Extension: 2019−20 RDX MOST Bus Network Connectors

Video
For additional information on poor connections, click on this link.

USING THE MOST CONNECTOR TOOLS

This section contains information on tools to help you remove the connectors on various units within the MOST bus network. Acura highly recommends using these tools when removing the connectors to prevent damage to both the connector and the terminal. If either are damaged, the harness must be replaced.

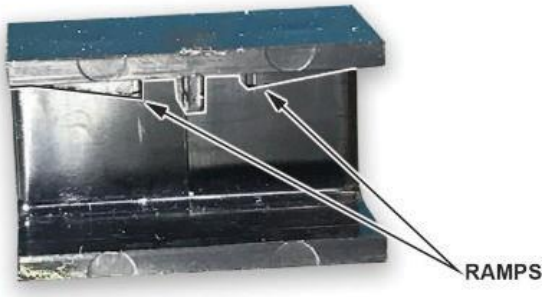
Tool Information

Tool Image	Tool Name	Tool Number
	STRAIGHT FAKRA PULLER	07AAC-THRA200
	90 DEGREE FAKRA B PULLER	07AAC-TJBA100

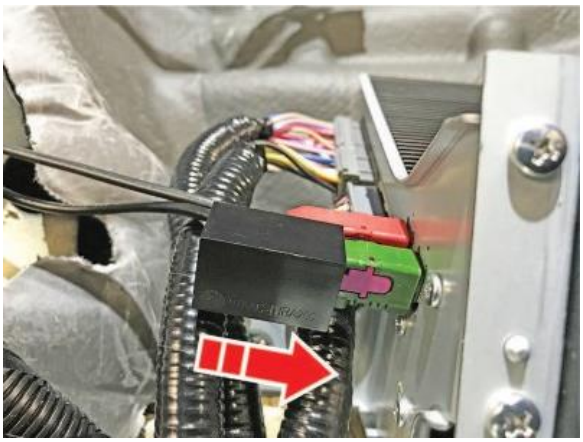
Tool Usage

Before unplugging a MOST connector, note the orientation of the harness leading to it and make sure to install it the same way. A mis-routed harness can cause the connector to not seat properly, resulting in network problems.

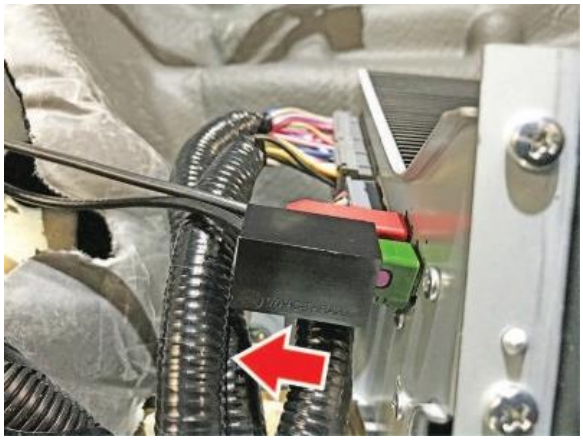
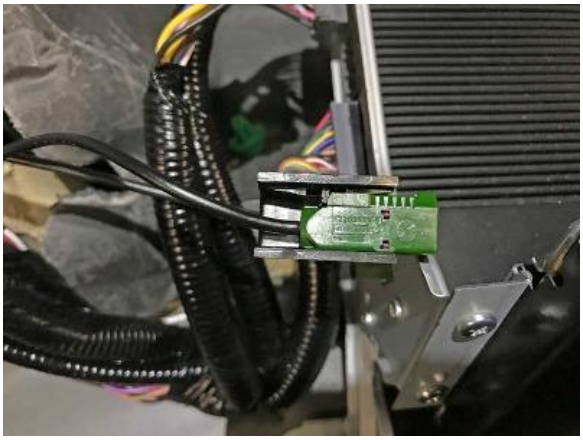
STRAIGHT FAKRA PULLER (T/N 07AAC-THRA200)



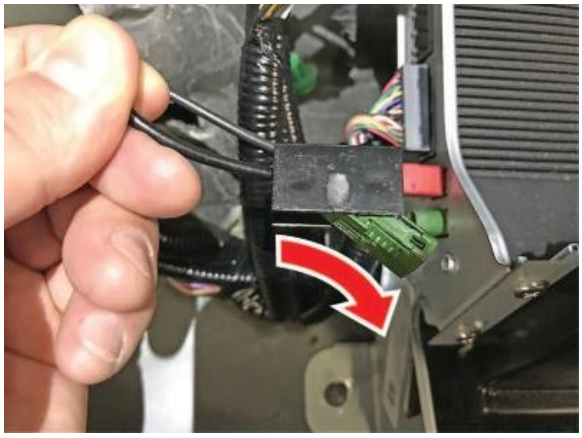
1. Slide the tool over the rear of the connector. Make sure the ramps inside of the tool push on the locking tab of the connector.

2. Once you feel it click into place, the tool is fully seated. Pull straight back to release the connector.

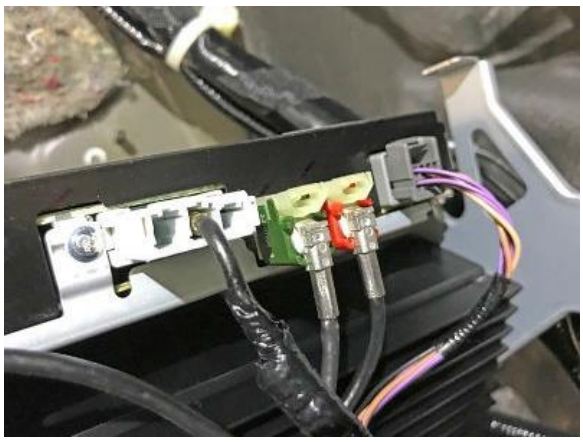
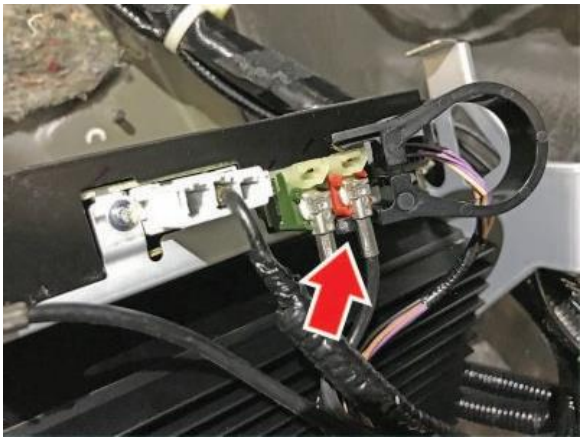



3. Remove the connector from the tool. Rotate the bottom of the connector (opposite the lock tab) out first. This will avoid the lock tab catching on the tool.

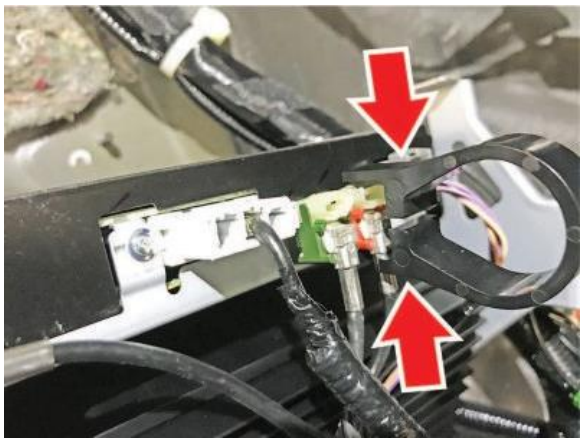


90 DEGREE FAKRA B PULLER (T/N 07AAC-TJBA100)

1. Install the tool from the side, allowing the lower part of the tool to reach behind the connector.

2. Squeeze both sides of the tool to unlock the connector, then pull straight back.




Video

For a video of how to use these tools, click on this link.

NOTE: The video references the job aid, *Using the MOST Connector Tools* which has been replaced with this job aid.

END