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Case Number: S258A000023

Release Date: December 2025

Symptom/Vehicle Issue: Intermittent Audio, No Audio, Distorted Audio

Customer Complaint/Technician Observation: Customer complaints related to no Audio, Audio Cutting in and out or Audio distortion.

Discussion:

This diagnostic procedure is intended to help service technicians accurately determine whether the audio amplifier is the root cause of a customer concern or if the issue originates elsewhere in the audio system.

The procedure includes evaluation of vehicle chime functionality, tone tests for each audio channel, and verification of radio input signals to confirm proper communication and signal routing between the radio and amplifier.

These tests allow technicians to isolate amplifier-related faults from issues caused by the radio or wiring harness. In most cases, a failed test result will indicate a problem external to the amplifier rather than an amplifier malfunction itself.

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1. AMP Chime Test – Amplifier Internal Verification

Purpose:

Determine whether the fault is internal to the amplifier by validating chime routing and playback.

Preconditions:

- Vehicle ignition ON.
- Gear selector functional.
- Audio system operational.
- Diagnostic tool available for DTC reading.

Test Procedure:

1. Mute the entertainment audio by pressing the **Mute** button.
2. Place an object behind the vehicle to activate the rear park chime. Place the vehicle in Reverse (R).
3. Confirm that the **Chime indicator/alert** is displayed in the instrument cluster.
4. Listen for the chime through the vehicle speakers.

Expected Result:

- Chime is audible through the speakers.
- Corresponding visual cue appears on the instrument cluster/dash.

Next Step / Pass-Fail Criteria:

- Pass: If chime is heard and visual cue is present, the amplifier is functional.
- Fail: If chime is not heard:
 - Perform a **Hard Reset** of the amplifier – See Section **AMP Hard Reset** at the end of this document.
 - Read DTCs using diagnostic tool – See Section **List and Clear DTCs** at the end of this document.

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- If no DTCs or a DTC indicating internal amplifier fault is logged, conclude the amplifier has an internal failure and replacement is required.

2. Tone Test – Amplifier to Speaker Connection Validation

Purpose:

Confirm proper connection and functionality between amplifier output channels and corresponding vehicle speakers. A failed test may indicate a specific speaker fault, wiring issue, or a defective amplifier channel. While the probability of a full amplifier failure is low, it cannot be ruled out. Tone test works in vehicles equipped with Premium Audio. To verify which channel is linked to which speaker refer to Section **DT Premium Audio Systems** at the end of this document.

Preconditions:

- Vehicle ignition ON.
- WiTech Tool connected to vehicle OBD port.

Test Procedure:

1. Connect WiTech Tool to vehicle OBD port.
2. Navigate to “**Misc Functions**” in the AMP from Topology page - Figure 1.

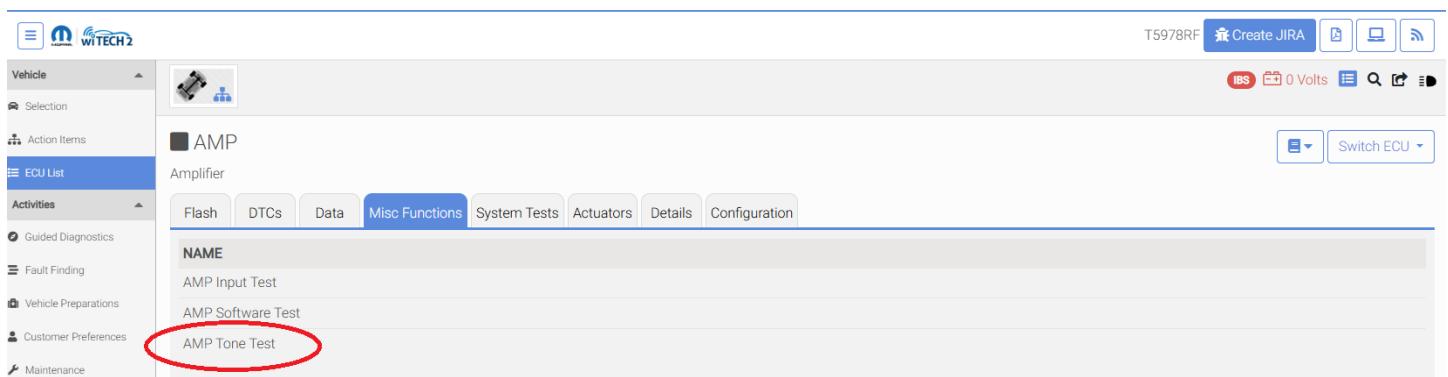


Figure 1 WiTech2 Main Page

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3. Select the “AMP Tone Test” in the screen shown in Figure 2.

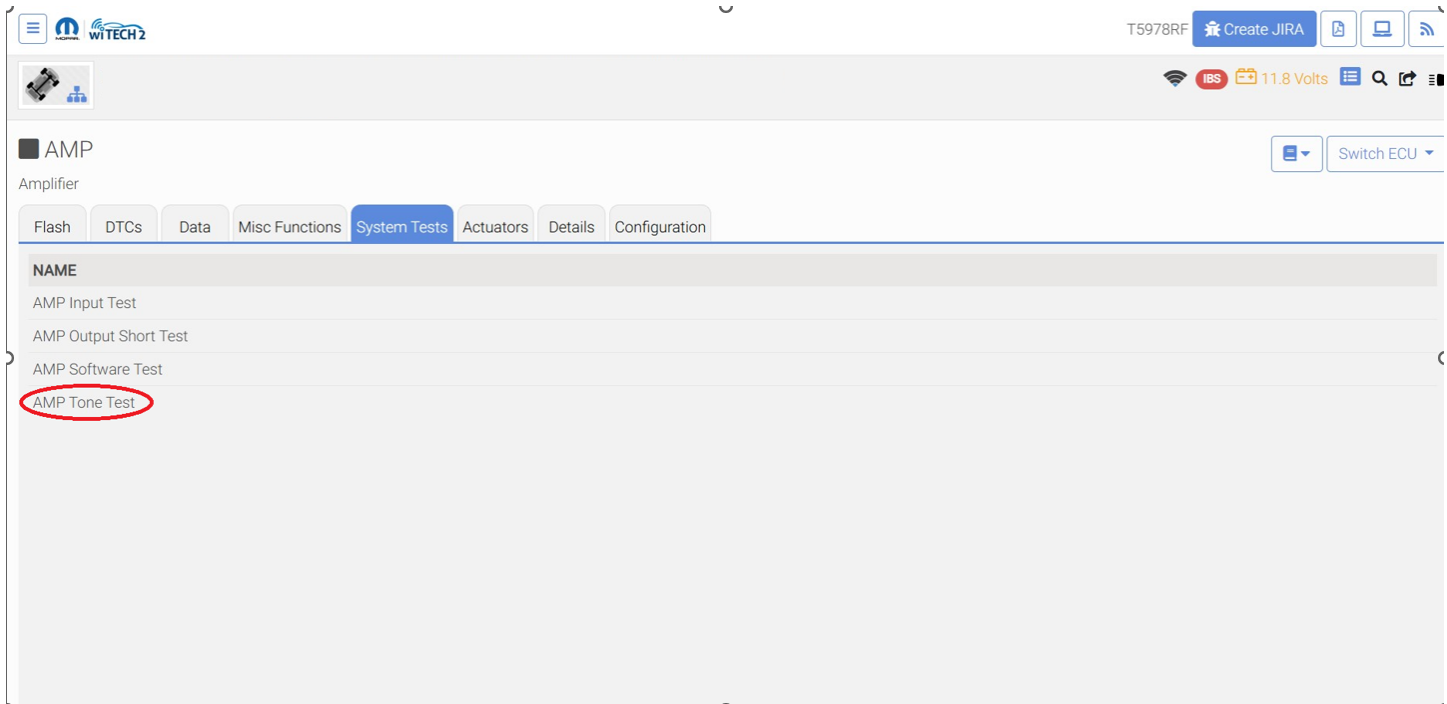


Figure 2 System Tests

4. In the screen shown in Figure 3 click the “Continue” button.

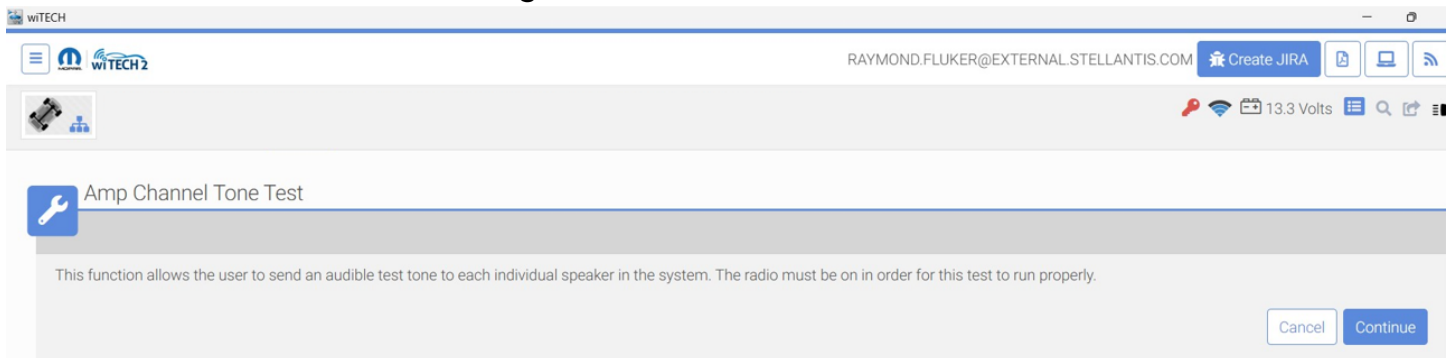


Figure 3 AMP Channel Tone Test

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5. In the dropdown menu shown in Figure 4 select a channel and press continue. Tone will be heard in that channel.

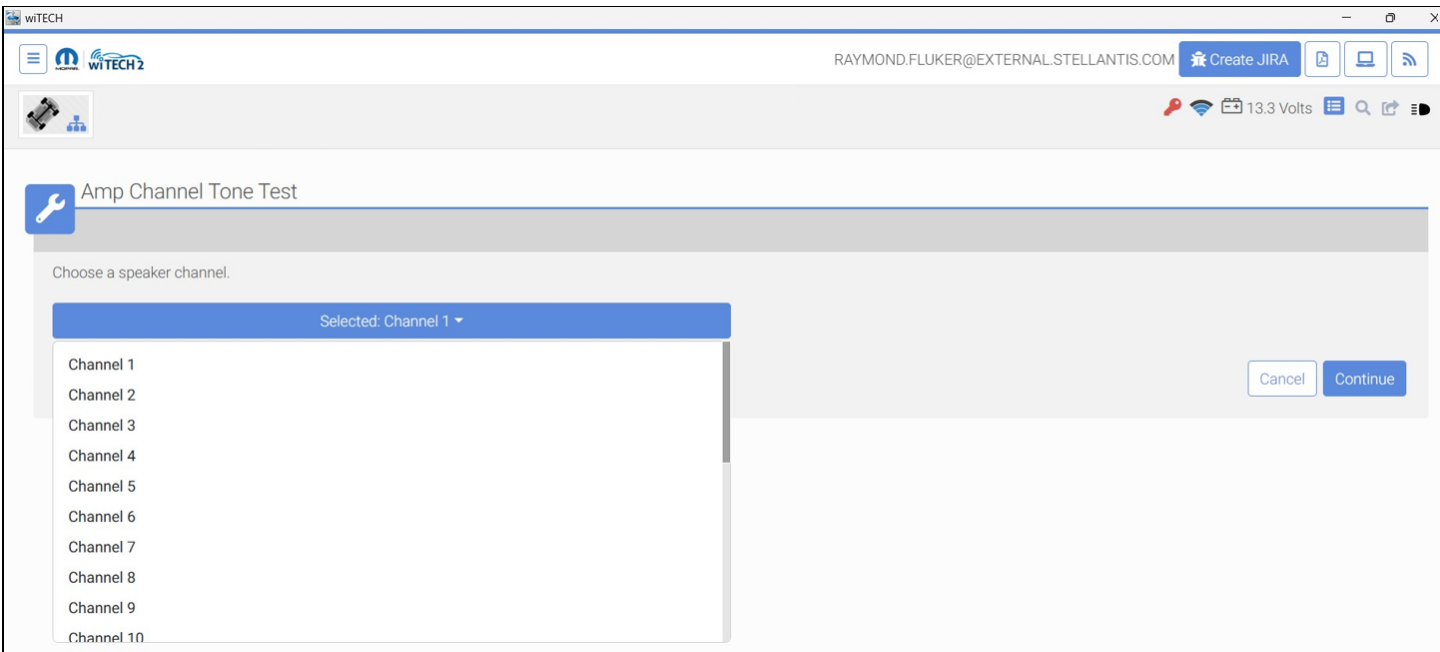


Figure 4 Channel Selection

6. If needed, tone test can be played in another channel. In the below screen (Figure 5) select another channel to play the tone test or "Cancel" to exit.

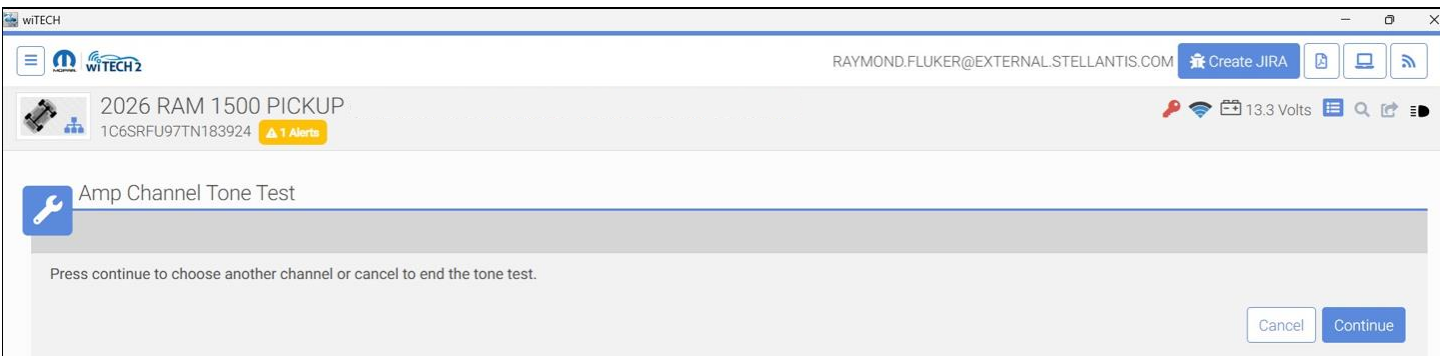


Figure 5 Selection of another channel or cancel

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7. Confirm an audible test tone is heard from the corresponding speaker.
8. Repeat Step 5 for each individual output channel.
 - o Note: Number of channels varies by amplifier variant (e.g., 17Ch Amp = 16 speaker channels + 1 sub/amp channel).

Expected Result:

- A clear test tone is heard from each speaker when its channel is activated.

Next Step / Pass-Fail Criteria:

- **Pass:** All channels produce an audible tone through their respective speakers.
- **Fail:** If a specific channel does not output sound:
 - o Inspect and confirm wiring, speaker, and connector integrity for that channel.
 - o If replacing/repairing those components does not resolve the issue, the amplifier channel is defective → Replace amplifier.

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3. Radio Input Test – Validation of Radio-to-Amplifier Connection

Purpose:

Verify communication and signal routing between the radio and amplifier. A failure typically indicates an issue with the radio or wiring harness between the radio and amplifier. Amplifier faults are unlikely in this test.

Preconditions:

1. Vehicle ignition ON.
2. WiTech Tool connected to vehicle OBD port.

Test Procedure:

1. Connect Witech Tool to the vehicle OBD port.
2. Navigate to “**ETM - Misc Functions**” in the home page and select “**Radio to AMP Audio Connection Test**” - Figure 6.

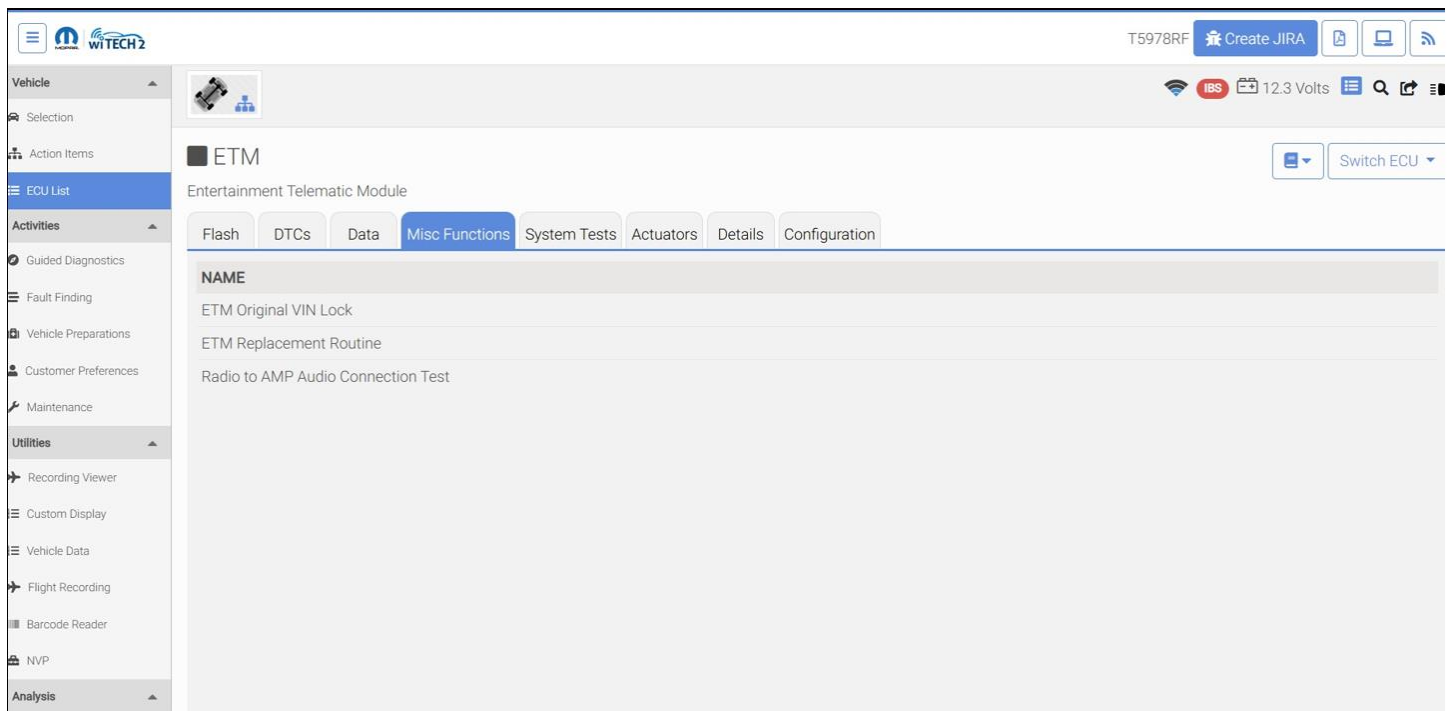


Figure 6 WiTech2 Main Page

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3. In the screen below (Figure 7) click continue.

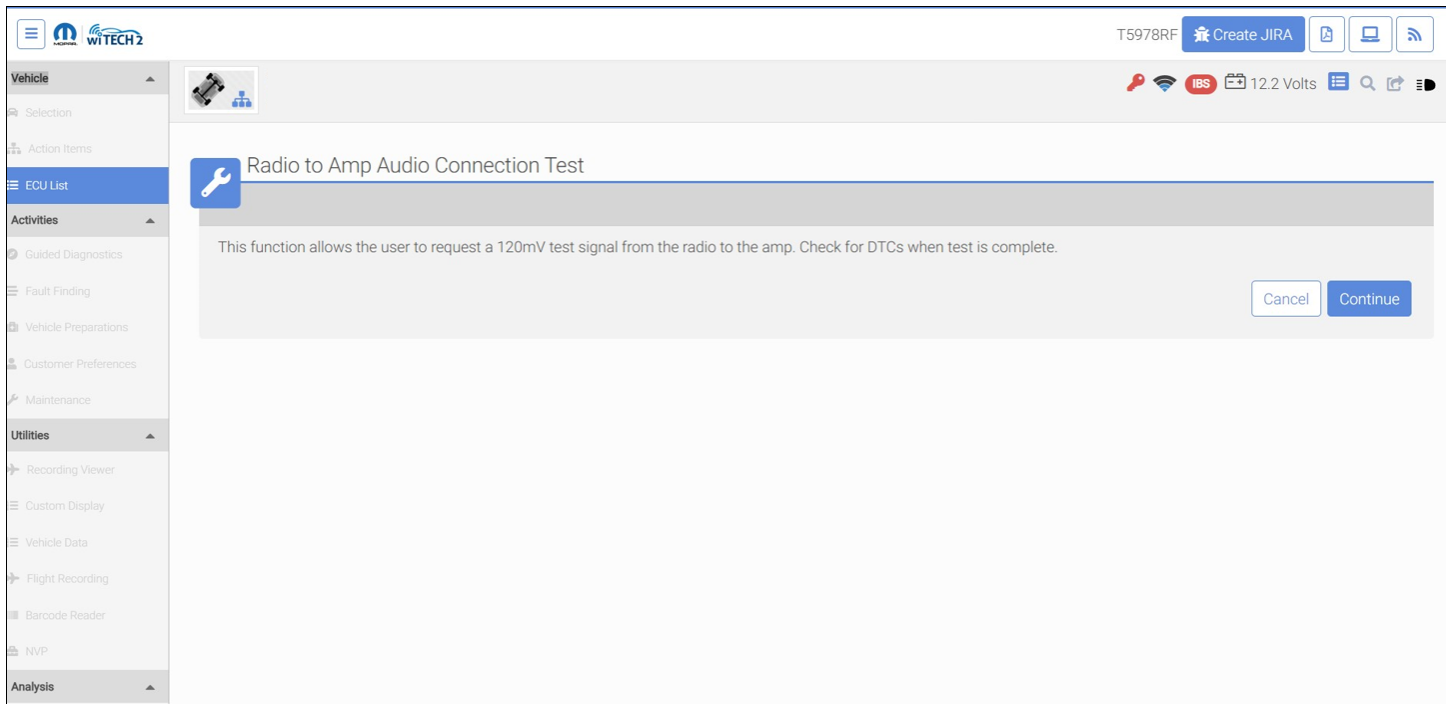


Figure 7 Radio Input Test

4. In the following screen shown in Figure 8 there are several options.
- Fail: (+) and (-) not present
 - Fail: (+) or (-) not present
 - Pass
 - Fail: (+) and (-) present but out of phase

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SPEAKERPOS	VALUE
Left Front Channel	(+) and (-) Present and In Phase
Left Rear Channel	(+) and (-) Present and In Phase
Right Front Channel	(+) and (-) Present and In Phase
Right Rear Channel	(+) and (-) Present and In Phase

Figure 8 Channel response

Next Step / Pass-Fail Criteria:

- **Pass:** All channels return *(+) and (-) Present and in Phase*, confirming proper radio-to-amplifier input connection.
- **Fail:** Any other value indicates a possible issue with the **radio** or **wiring between radio and amplifier**. Amplifier replacement is generally **not required** for this failure mode.

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AMP Hard Reset

To reset the AMP, follow the next steps

1. Navigate to Guided Diagnostics (Figure 9) and select “Reset ECU”.

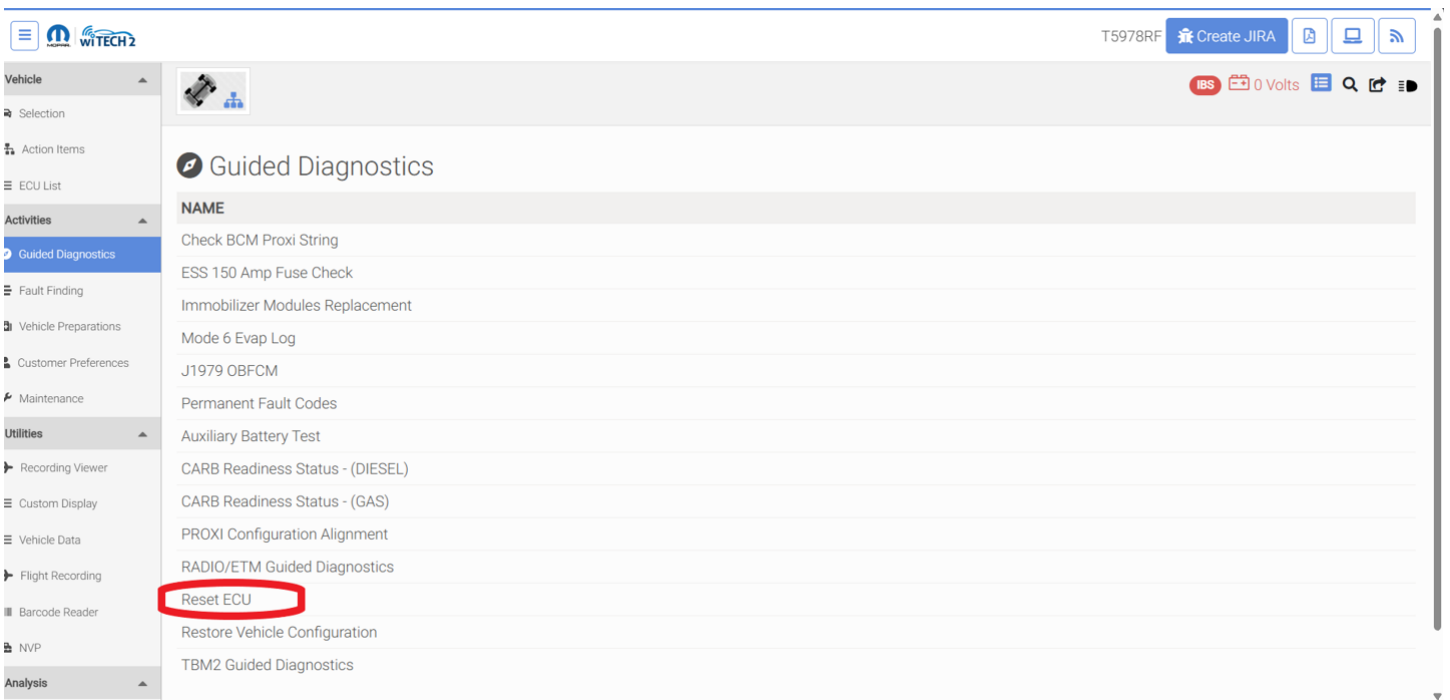


Figure 9. ECU Reset

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2. Press “Continue” in the next screen. (Figure 10)

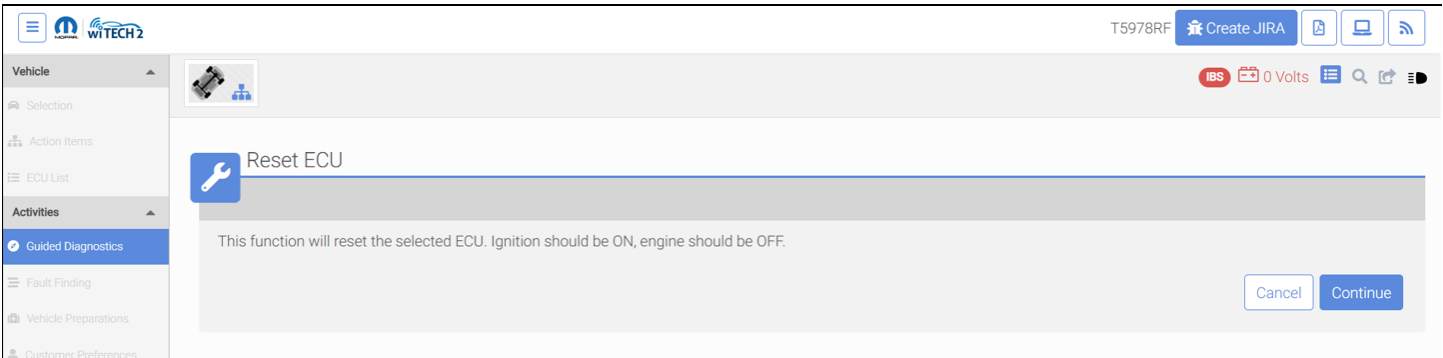


Figure 10. Continue

3. Select the “AMP” ECU in the following list. (Figure 11)

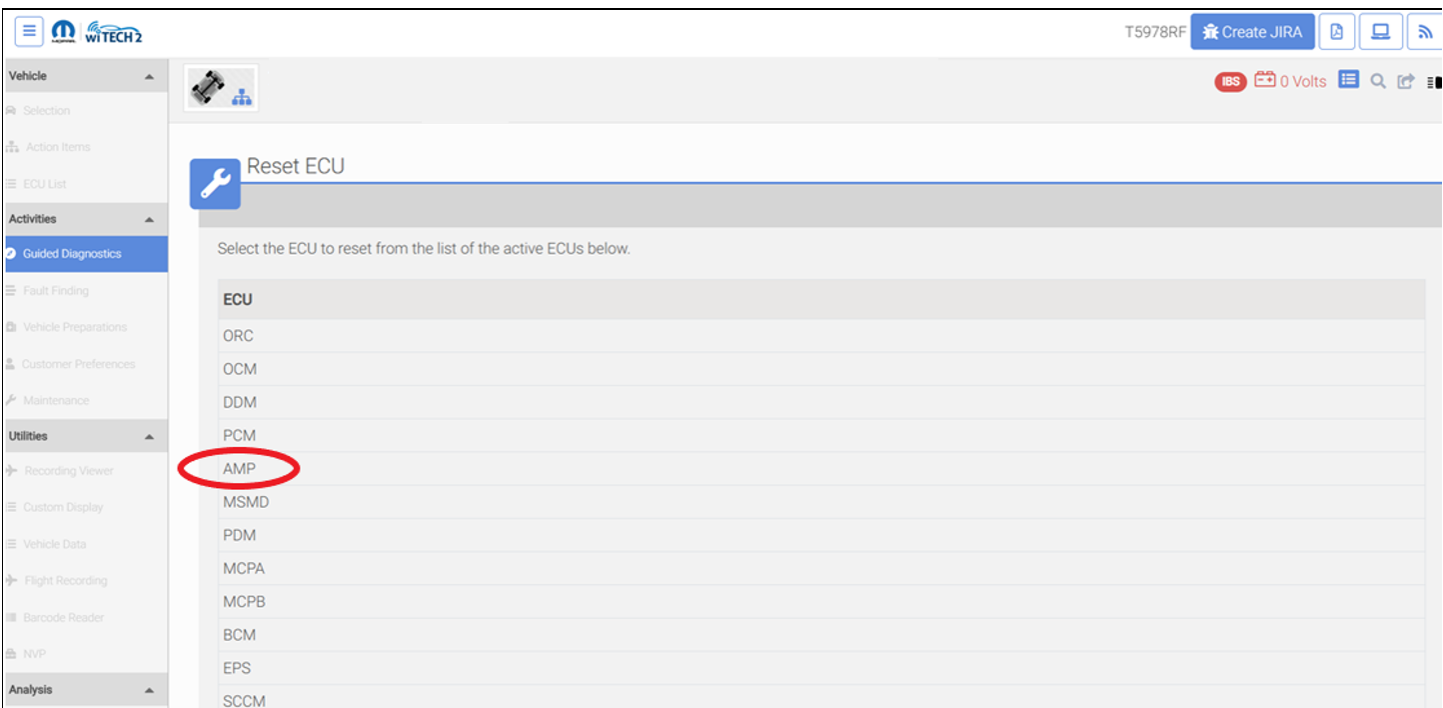


Figure 11. List of Modules

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4. Select the option “Continue to reset the AMP” and click “Continue” (Figure 12)

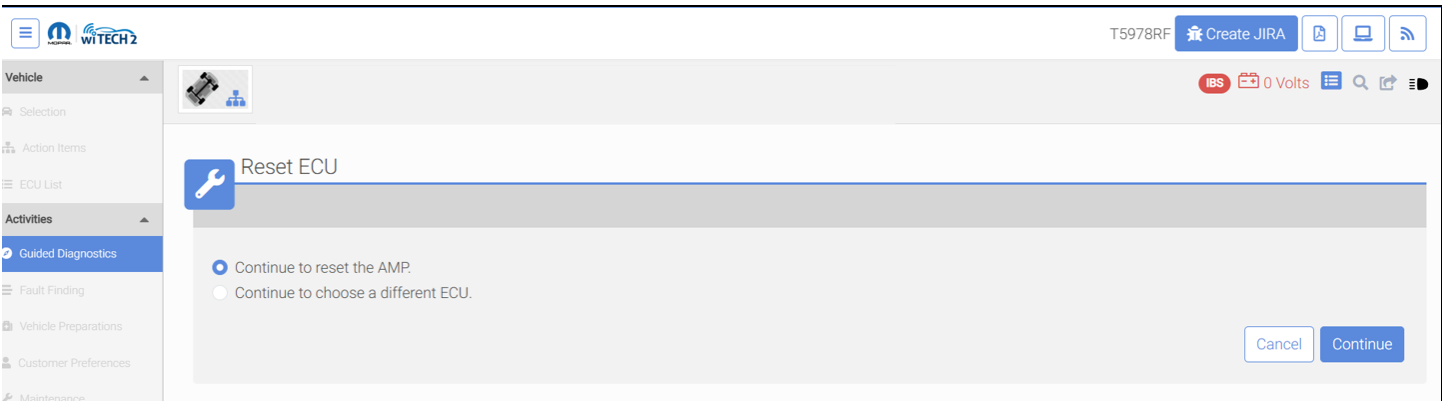


Figure 12. AMP Reset

5. The message “AMP was reset successfully” should appear in the next screen. (Figure 13)

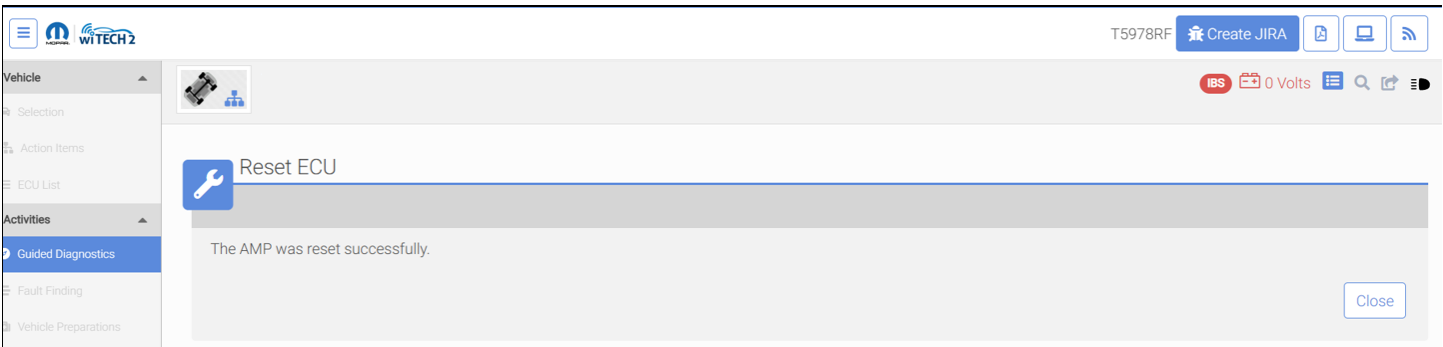


Figure 13. Reset successful

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List and Clear DTCs

To see the list of DTCs and to clear them, if needed, follow this steps.

1. While the AMP module is selected from the ECU list. Go to the **DTC tab** so see set or cleared DTCs
2. If required select the option **“Clear all DTCs”** as shown in Figure 14. AMP DTCs.

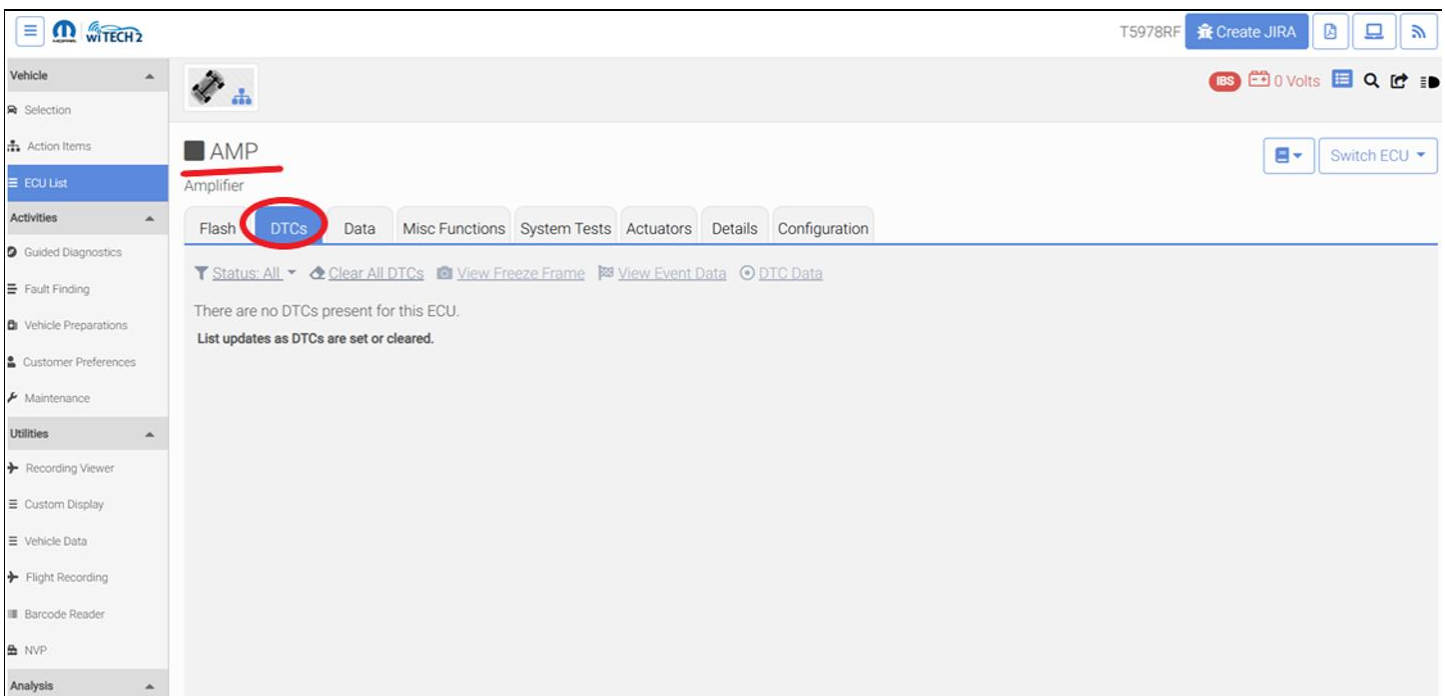


Figure 14. AMP DTCs

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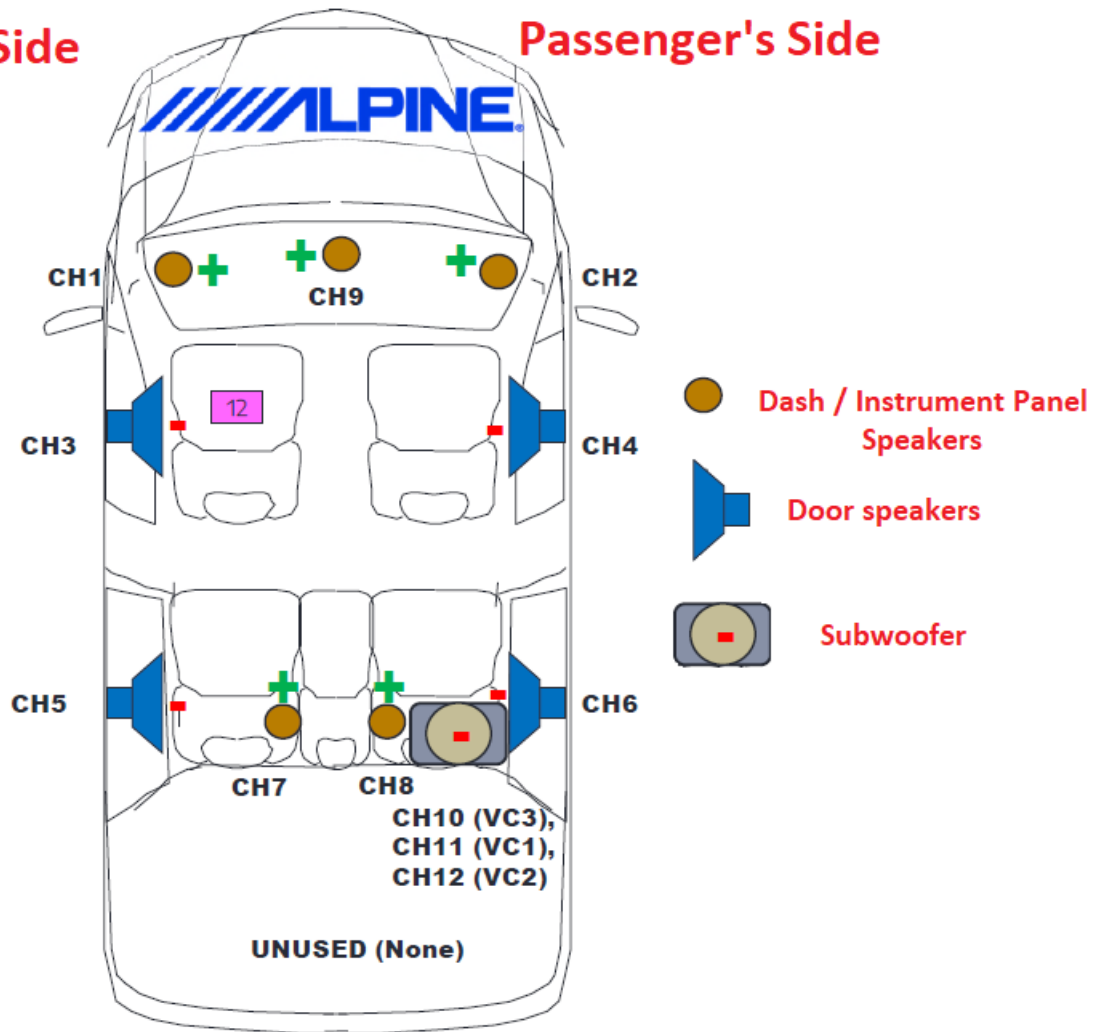
DT Premium Audio Systems

CH1, CH2 ... etc denote the Audio Amplifier Channels.

- ✓ Alpine Audio System RC3 - 9 Amplified Speakers W/Subwoofer

Driver's Side

Passenger's Side



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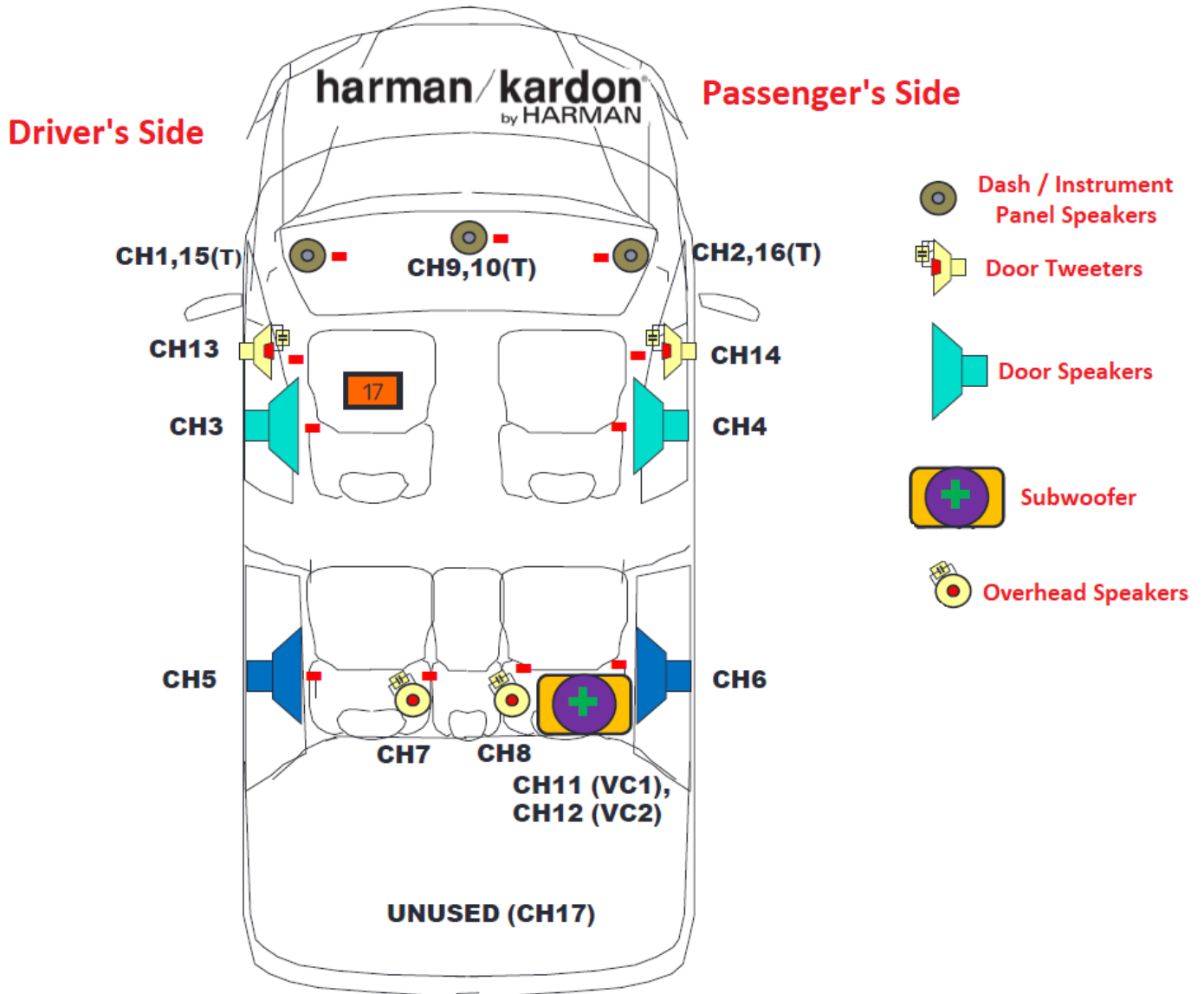
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✓ Harman Audio System RCA – 19 Spkr Harman Kardon prem speaker system



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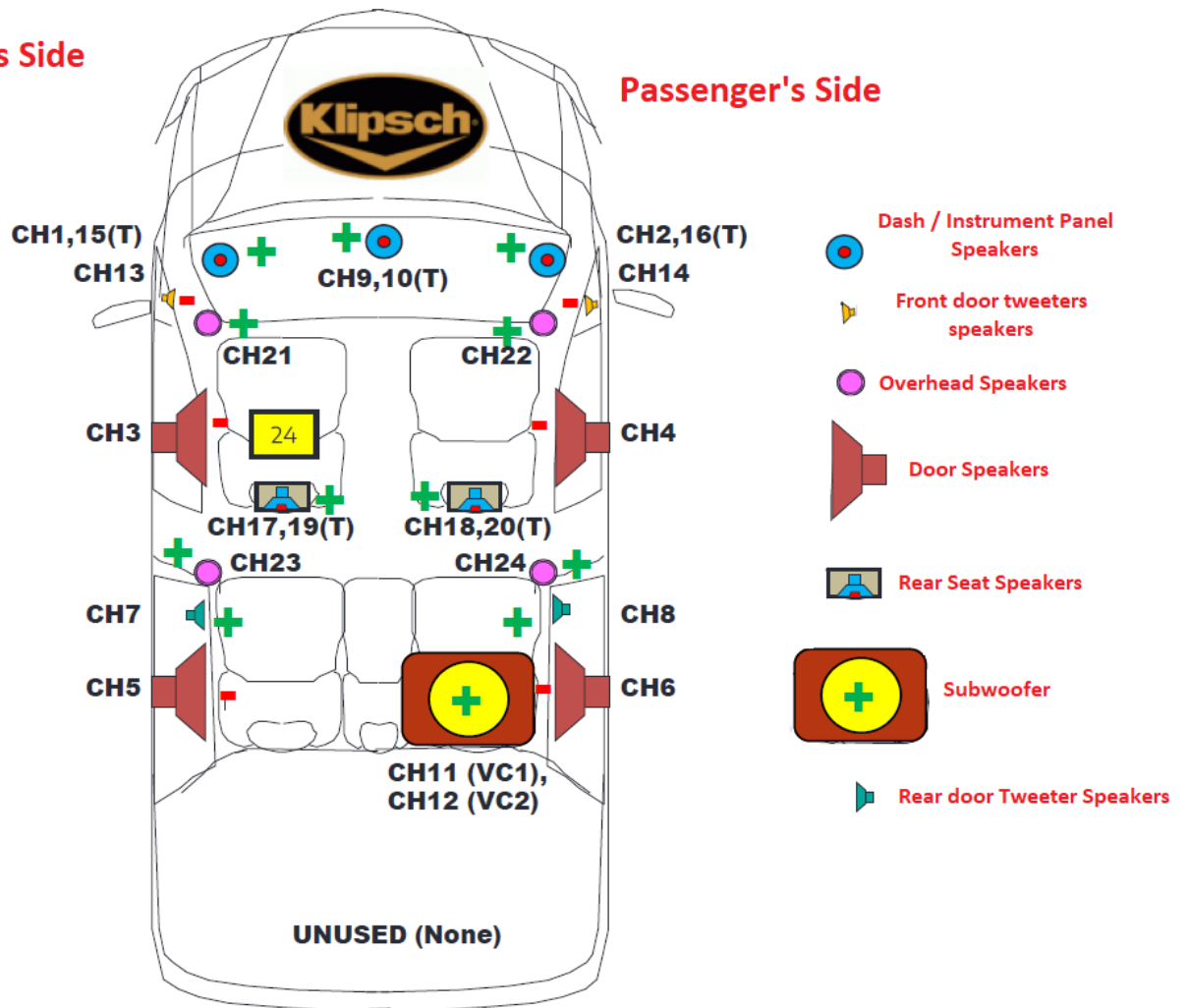
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✓ Klipsch Audio System RGE – 23 Spkr Klipsch reference speaker system

Driver's Side

Passenger's Side



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