

ELECTRICAL – DIAGNOSTIC TIPS – A2B DIAGNOSTICS

Issue

- Customer may have concerns related to microphone related functions not being available

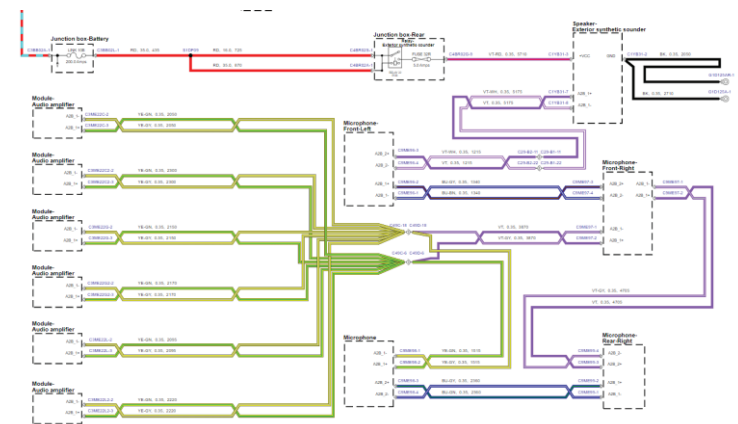
Technical Description

- This condition can be caused by a failure of the A2B network, or a component of the A2B network blocking communication

Status

- A2B network faults require an On Demand Self Test (ODST) on the audio amplifier to be completed
- A2B network is a daisy chain style network.
- The engineering menu in the vehicle touch screen will allow you to determine how many A2B nodes are expected to be seen, and how many nodes are reporting.
- This can help you diagnose the concern robustly with minimal disassembly.
- Refer to Workshop Manual – 415-01 Information and Entertainment system – Voice Control for details

22-23MY New Range Rover, New Range Rover Sport, Defender



ELECTRICAL – DIAGNOSTIC TIPS – A2B DIAGNOSTICS CONTINUED

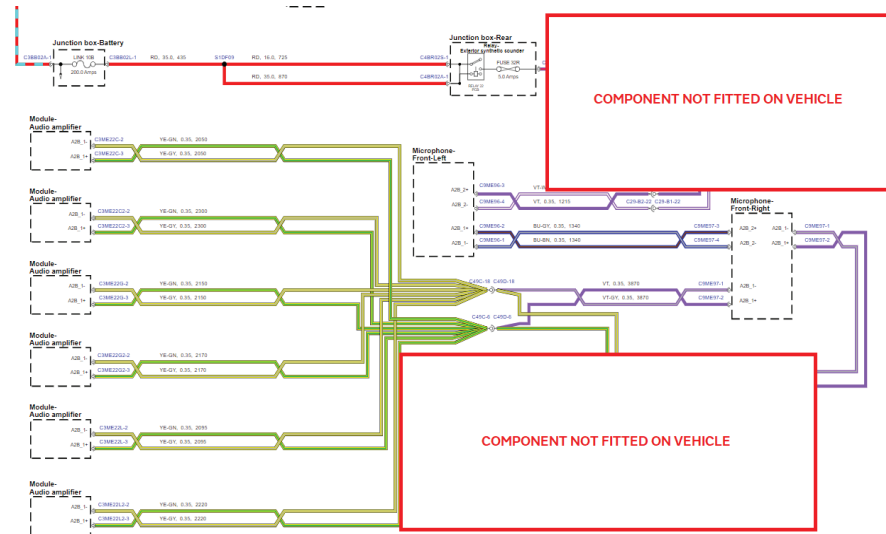
Example vehicle: 2023 Defender fitted with 2 microphones from factory with left front microphone unplugged

Make sure that you understand what components are fitted to the specific vehicle you are diagnosing.

Example: Defender vehicles can have 2 or 4 microphones. I have blocked out items not fitted to the vehicle in testing

Using the schematic, you can then identify that the A2B network starts at the Amplifier module, then goes to the front right microphone (Node 1), and then to the Left front Microphone (Node 2)

TOPIx shows all potential variants, therefore there are multiple amplifiers shown.



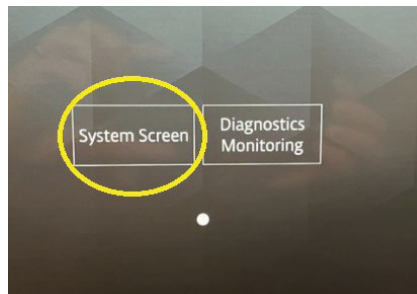
ELECTRICAL – DIAGNOSTIC TIPS – A2B DIAGNOSTICS CONTINUED

Example vehicle: 2023 Defender fitted with 2 microphones from factory with left front microphone unplugged

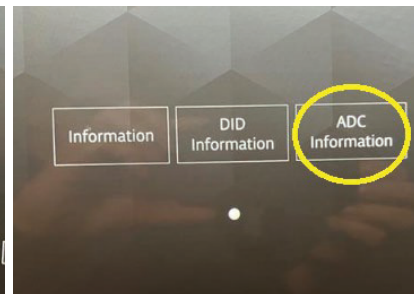
Using the Engineering screen in PIVI, you can identify that 1 node is responding out of an expected 2 nodes (Microphone 1 and 2)



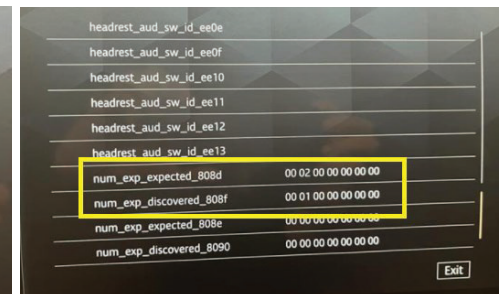
Press and hold above the clock for approximately 10 seconds with the vehicle stationary.



Select "System Screen"



Select "ADC Information"

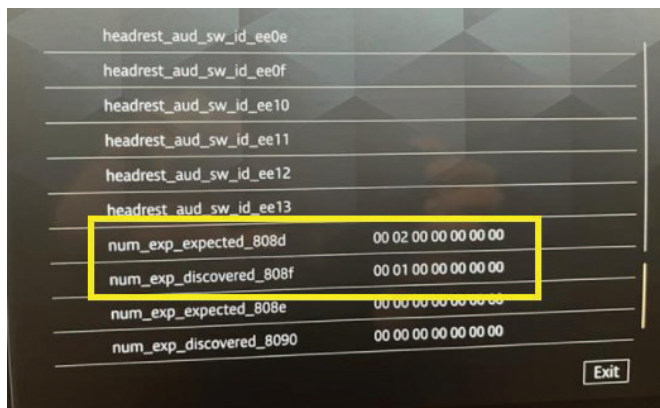


Num_exp_expected = Number of A2B nodes that the amplifier is expecting to respond.

Num_exp_discovered = Number of A2B nodes that have responded to the amplifier request

ELECTRICAL – DIAGNOSTIC TIPS – A2B DIAGNOSTICS CONTINUED

Example vehicle: 2023 Defender fitted with 2 microphones from factory with left front microphone unplugged



The A2B Network on the demonstration vehicle has 2 components.

That is why the system is expecting 2 responses.

1 from the right front microphone (first one in line)

1 from the left front microphone (second one in line)

As the left front microphone has been unplugged, the system only gets a response from the right front microphone.

Since this is a daisy-chained network, the component prior to the fault (wiring or component) will be the last one to respond.

If 3 out of 4 are discovered, count to the 3rd component on the daisy chain (Do not count the amplifier)

The diagnostics in this case isolates the amount of investigation to the wiring between the left and right microphone, or the microphone itself without the intrusiveness of gaining access to the amplifier. Right front microphone being the only component to respond.