Technical Service Bulletin

Topic	Infotainment Upgrade Unit Diagnosis | Continental GT/GTC and Flying Spur
Market area	Bentley: worldwide (2WBE),China 796 VW Import Comp. Ltd (Vico), Beijing (6796),Russian Federation 935 Volkswagen Group RUS (6935)
Brand	Bentley
Transaction No.	2076639/2
Level	EH
Status	Released for publishing
Release date	Apr 7, 2025

New customer code

Object of complaint	Complaint type	Position
information, navigation, communication, entertainment -> radio, navigation, MMI and drive device functions	functionality	

Vehicle data

Sales types

Type	MY	Brand	Designation	Engine code	Gearbox code	Final drive code
39*	2012	E		*	*	*
39*	2013	E		*	*	*
39*	2014	E		*	*	*
39*	2015	E		*	*	*
39*	2016	E		*	*	*
39*	2017	E		*	*	*
39*	2018	E		*	*	*
4W*	2014	E		*	*	*
4W*	2015	E		*	*	*
4W*	2016	E		*	*	*
4W*	2017	E		*	*	*
4W*	2018	E		*	*	*

Documents

Document name
master.xml
biu_diagnosis_guide.pdf

Condition

Failure evident with Bentley Information Upgrade Unit.

Technical Background

The attached document is to aid diagnosis for any faults that may be found within the Bentley Infotainment Upgrade Unit.

Production Solution

N/A

Service

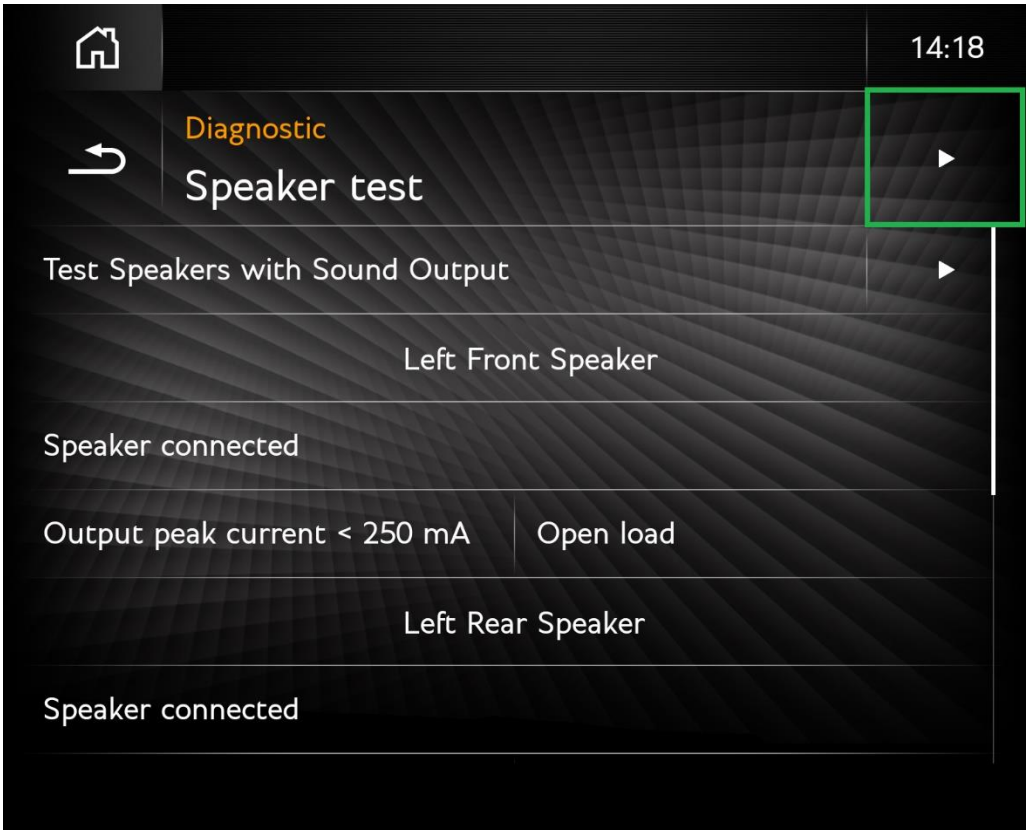
Use the attached document to support with diagnosis of faults found within the Bentley Infotainment Upgrade Unit.

BIU DIAGNOSIS

Table of content

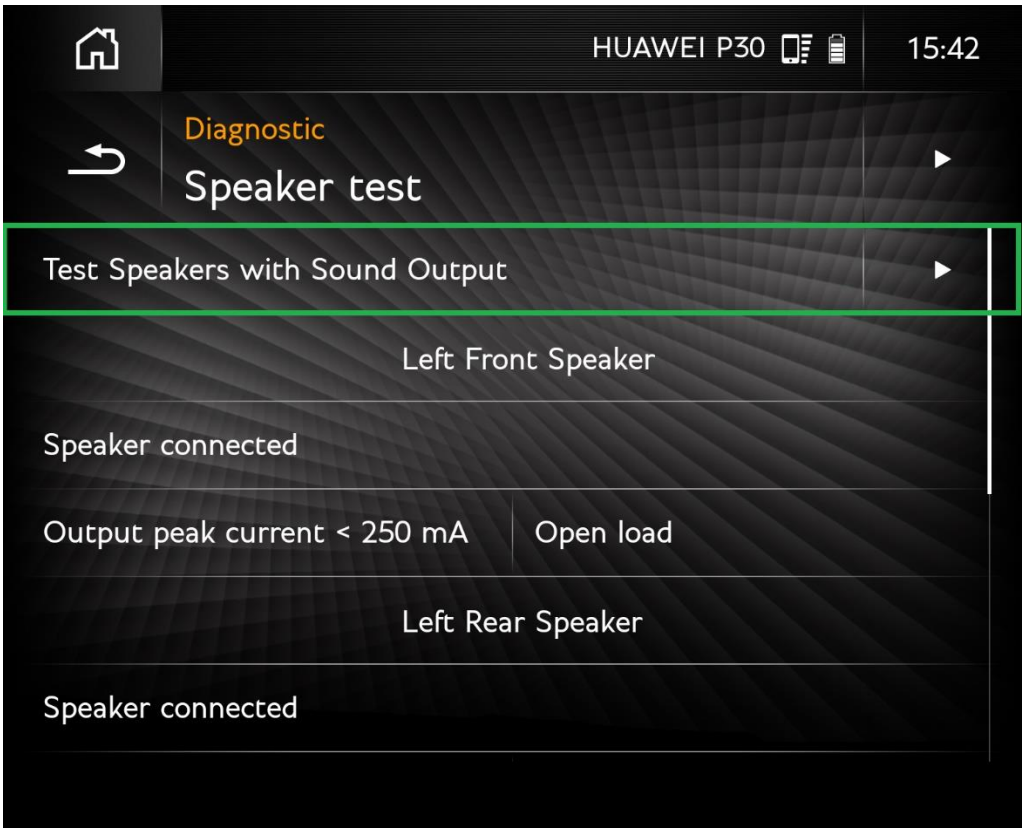
Speaker Test

Pressing the top right Icon starts the Speaker diagnosis and updates the status texts accordingly.



Sound Output

The Sound Output tests each Speaker by playing a Sound for each speaker.



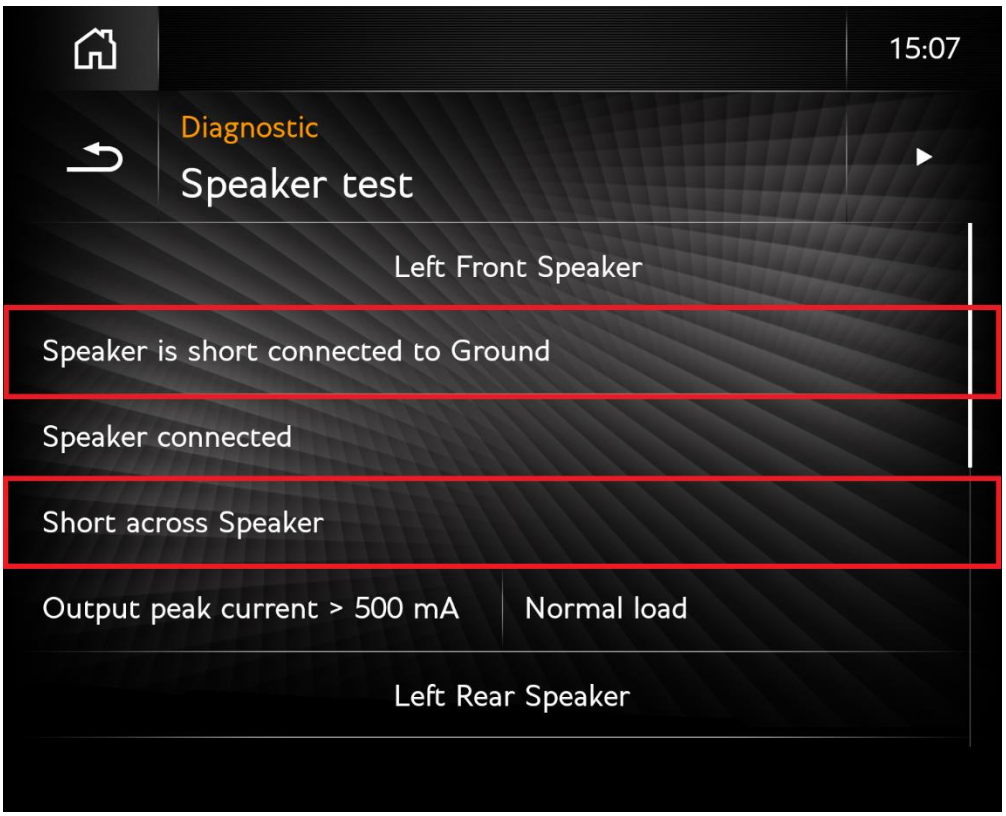
The table below defines every diagnosis value.

Left Front Speaker
Short to GND
Short to VCC
Disconnection of a speaker
Short across speakers
Normal Load
Thermal warning 1 active
Left Rear Speaker
Short to GND
Short to VCC
Disconnection of a speaker
Short across speakers
Normal Load
Offset detected and automute
Right Front Speaker
Short to GND
Short to VCC
Disconnection of a speaker
Short across speakers
Normal Load
Diagnostic status
Standby status
Right Rear Speaker

Short to GND
Short to VCC
Disconnection of a speaker
Short across speakers
Normal Load
Thermal warning 3 active
Thermal warning 2 active

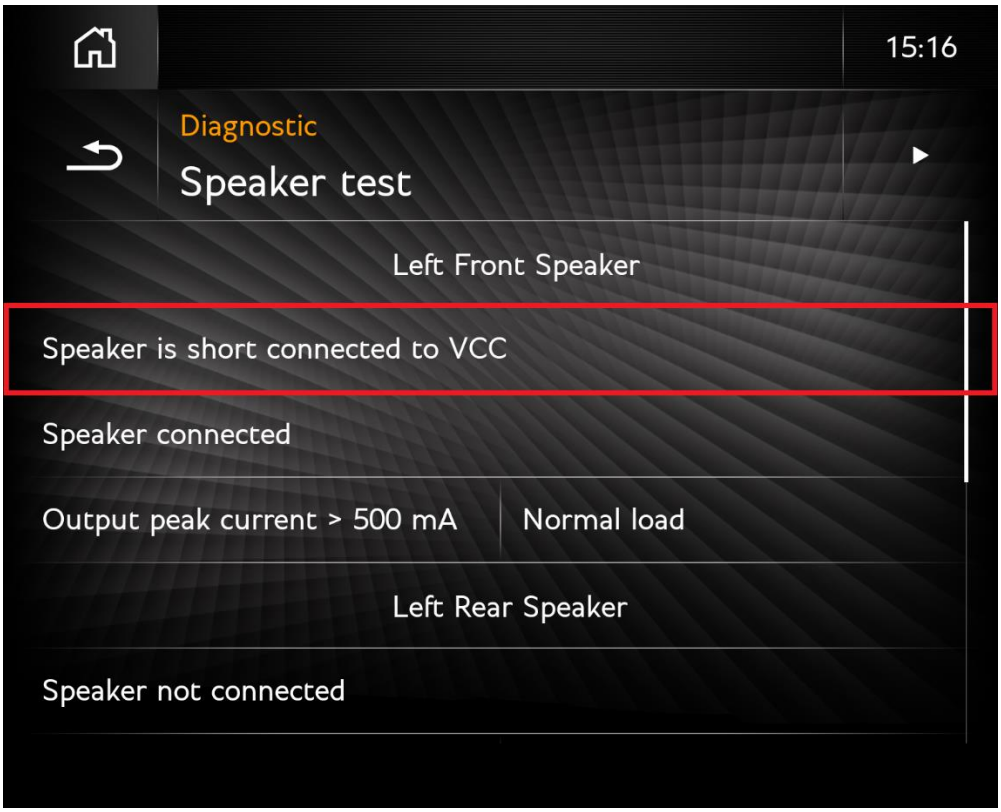
Short to Ground

A "short to ground" occurs when there's an unintended connection between a device's circuit and the ground line. This connection bypasses normal components and allows electricity to flow directly to the ground, which can damage the device. It's essential to identify and fix this issue quickly to prevent damage and ensure safety. Tools like a multimeter can be used to detect unexpected electrical flow and help locate the short circuit.



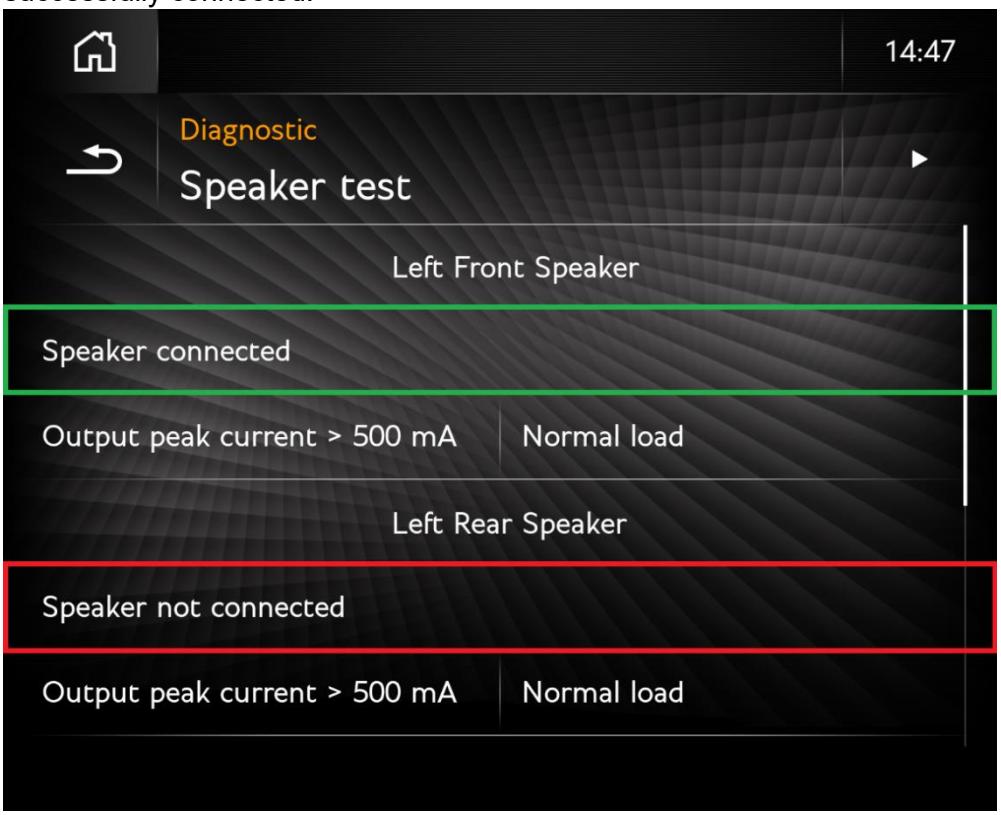
Short to VCC

A "short to VCC" occurs when there's an unintended direct connection between a component of a device's circuit and the VCC line, which is the main source of positive voltage. This kind of short circuit bypasses the intended paths and components, allowing excessive current to flow directly from the power supply. This can lead to overheating, damage to the device, and potential safety hazards. Detecting a short to VCC typically involves using diagnostic tools like a multimeter to trace and resolve these unwanted connections.



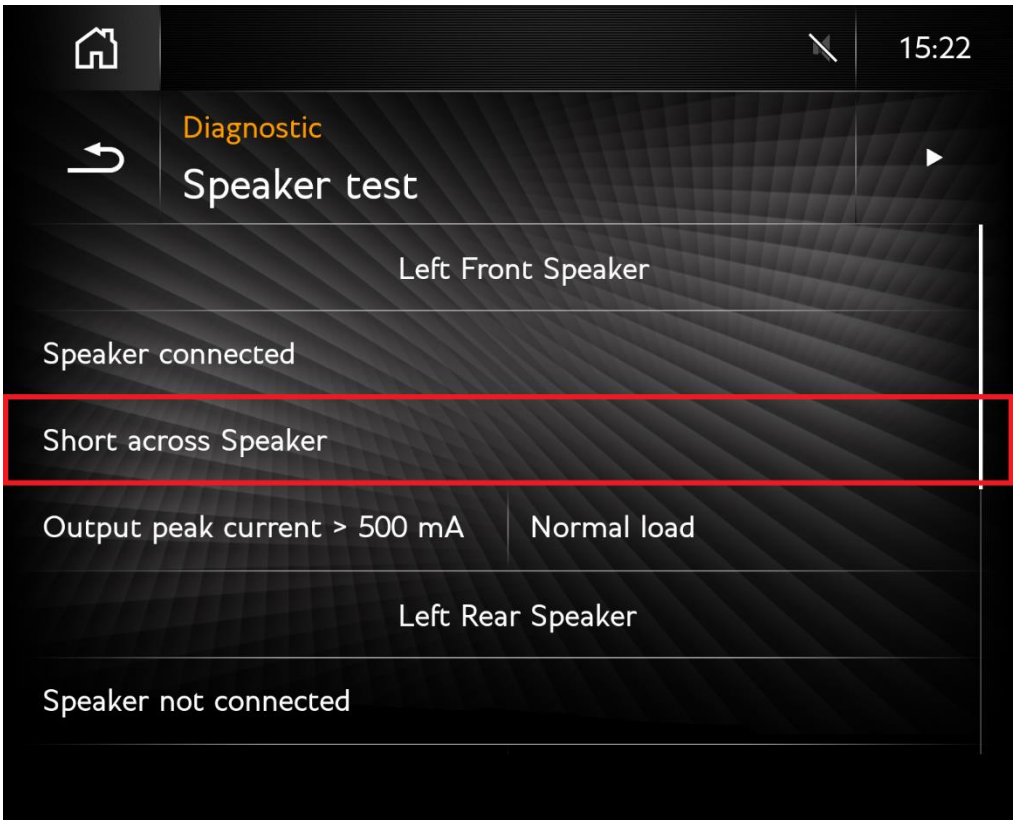
Speaker Connection

The Diagnostic View displays the status of the speaker's connection, indicating whether it is successfully connected.



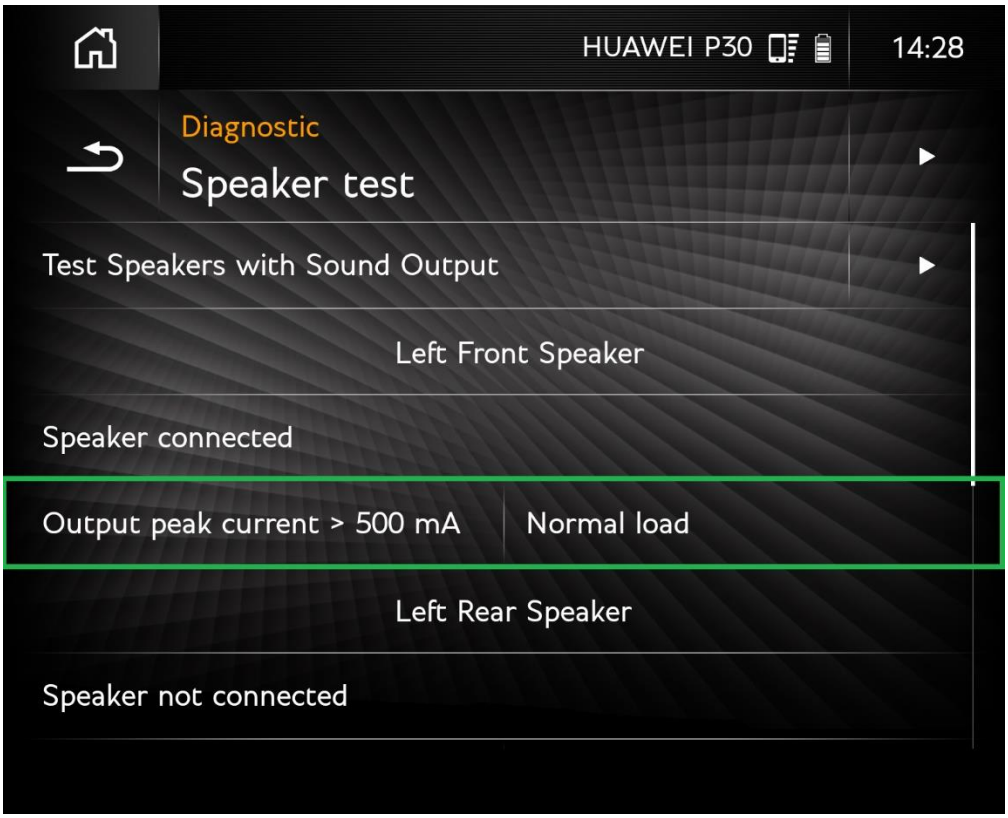
Short across Speaker

A "short across speaker" occurs when an unintended direct connection is made across the speaker terminals, bypassing the speaker itself. This situation allows current to flow directly between the terminals without passing through the speaker, which can prevent sound production and potentially damage the amplifier and speaker due to excessive current flow. To diagnose and fix a short across speaker, use tools like a multimeter to check for unwanted direct connection.



Load

The load is responsible for monitoring the output current sent to the speakers. An Output peak current more than 500 mA indicates a normal load.

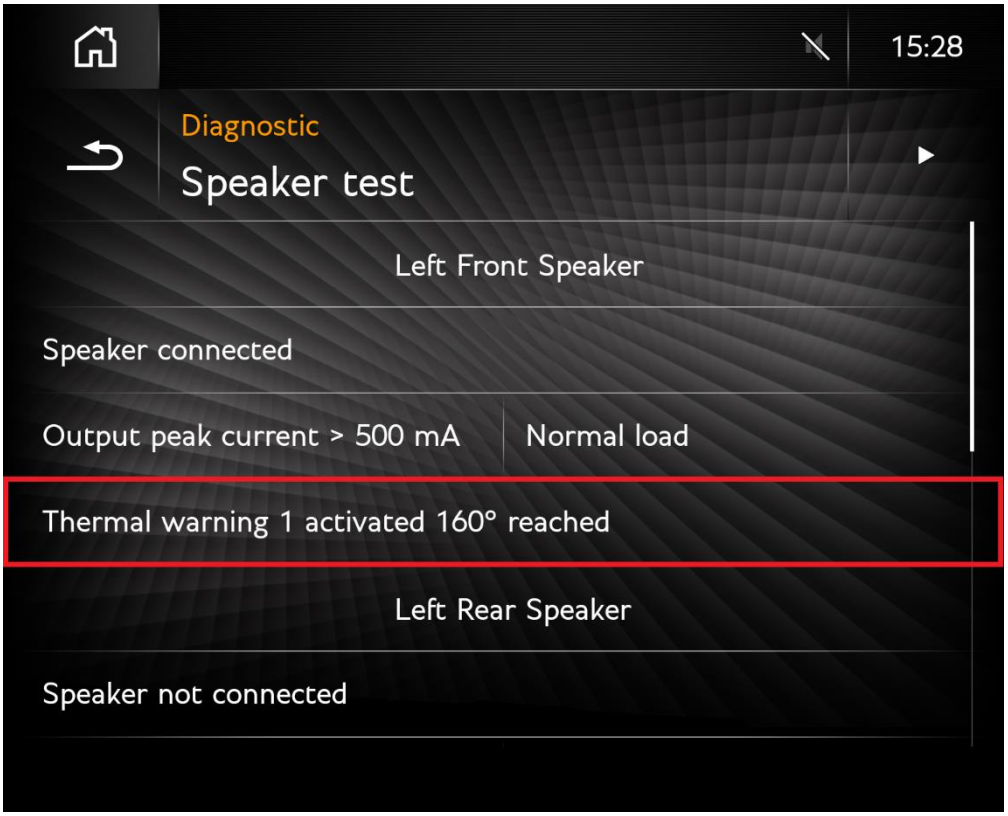


An "open load" condition refers to a disruption in the electrical load connection due to an incomplete circuit. This occurs when there is a break or fault within the speaker wiring or connection points, resulting in an output peak current of less than 250 mA. To resolve an "open load" condition, check and secure all wiring connections, repair any breaks in the circuit, and ensure that all components are properly connected.

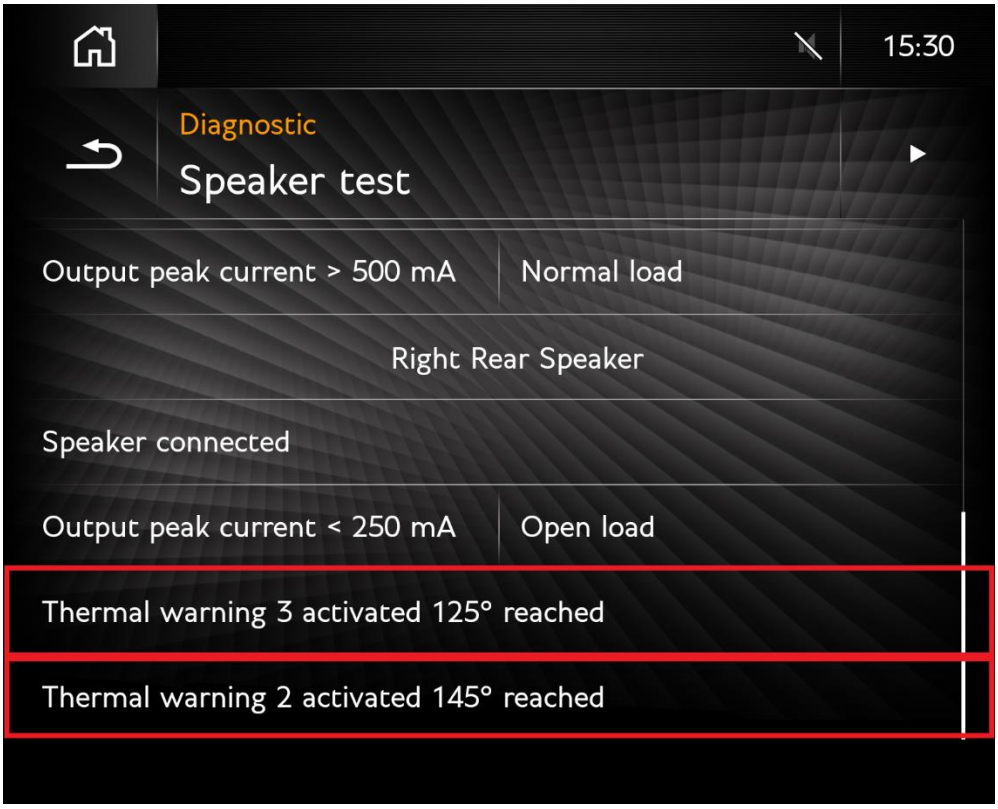
Thermal Warning

"Thermal Warning" is a safety feature of the amplifier that monitors the internal temperature of the amplifier's components. This warning indicates when the internal temperature approaches a critical threshold that could potentially damage the amplifier if not addressed. It serves as an early alert to take preventive actions, such as reducing the load or improving cooling, to prevent the amplifier from reaching a temperature at which it would automatically regulates itself. Regular monitoring of this warning helps maintain the amplifier's performance and prolong its lifespan by ensuring it operates within safe temperature limits.

Thermal Warning 1



Thermal Warning 2 + 3



No audio from speaker

This view indicates whether the car is equipped with a Naim system and whether the MediaBox is connected. The MediaBox connection status is determined solely by the presence of the thick cable (see below picture). If this cable is not connected, the MediaBox will be recognized as disconnected.

Radio

This screen provides an interface for controlling and monitoring the radio settings, particularly for DAB, FM, and AM frequencies.

FM/AM Ant Status: Status of the FM/AM Antenna.

DAB Ant Status: Status of the DAB Antenna.

Label: Identifies the name or label of the current radio station or service being tuned in.

ServiceID: A unique identifier associated with each radio service or station in digital broadcasting systems. This ID helps to differentiate between various stations within the same ensemble.

Ensemble: In DAB (Digital Audio Broadcasting), an ensemble is a group of radio services transmitted together on the same frequency.

SNR (Signal-to-Noise Ratio): A measurement of signal quality. The higher the SNR, the clearer the audio quality, as it indicates the strength of the radio signal relative to background noise.

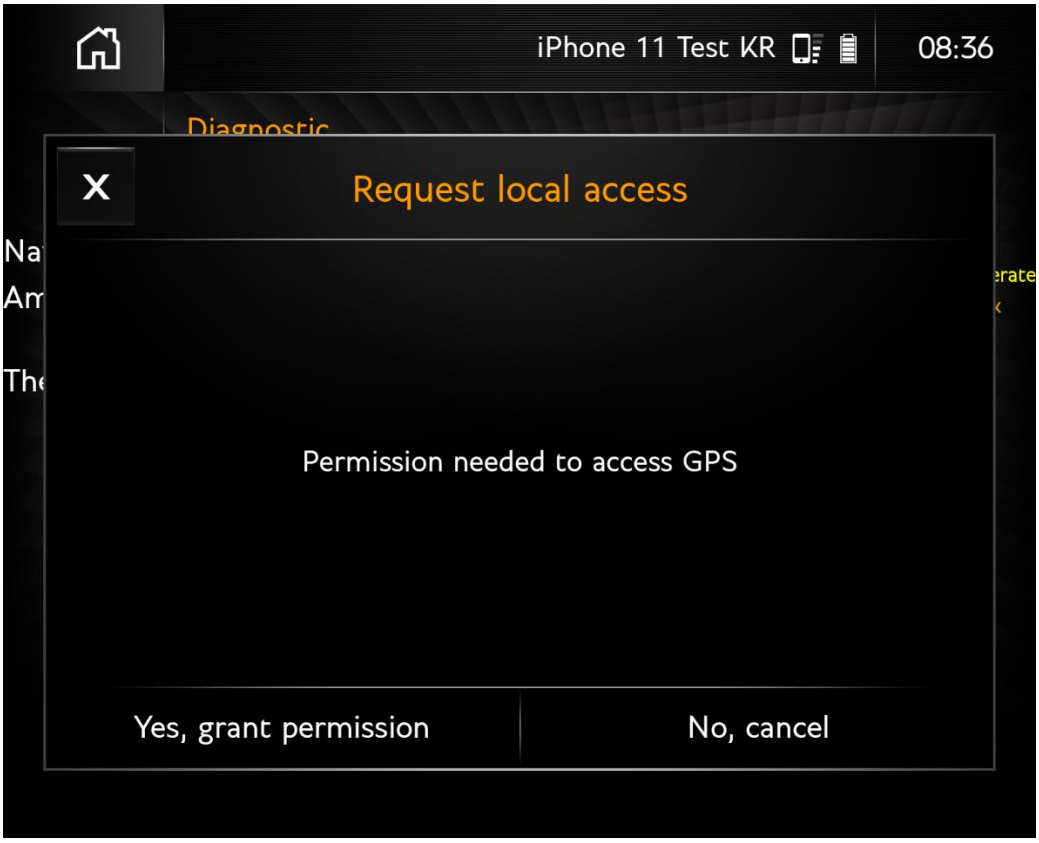
RSSI (Received Signal Strength Indicator): A measure of signal power received by the radio. Higher values generally represent stronger signals.

Audio (QoS): Indicates the Quality of Service (QoS) level for the audio signal. It assesses how stable or reliable the audio stream is, with higher values indicating better quality.

Navigation

The Navigation Diagnosis shows the number of available satellites, the signal strength of each satellite in dB-Hz and the accuracy of the location in meters.

To visualize these values, it is required to grant permission for the GPS.



In the top right corner, a legend is provided to describe each color based on signal strength:

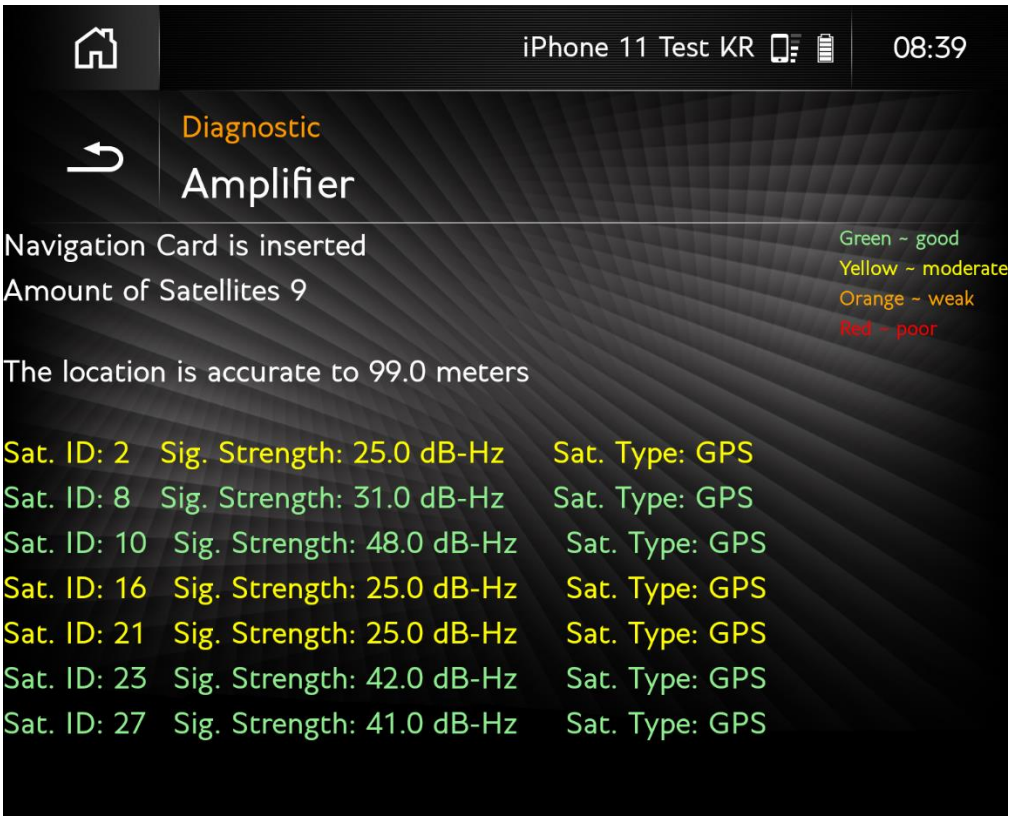
Good Signal Strength: More than 30 dB Hz

Moderate Signal Strength: Between 20-29 dB Hz

Weak Signal Strength: Between 10-19 dB Hz

Poor Signal Strength: Less than 9 dB Hz

The system automatically checks every 5 seconds whether the navigation SD card is inserted and updates the status text accordingly.


iPhone 11 Test KR
08:39
Diagnostic
Amplifier
Navigation Card is inserted
Amount of Satellites 9
Green ~ good
Yellow ~ moderate
Orange ~ weak
Red ~ poor
The location is accurate to 99.0 meters
Sat. ID: 2 Sig. Strength: 25.0 dB-Hz Sat. Type: GPS
Sat. ID: 8 Sig. Strength: 31.0 dB-Hz Sat. Type: GPS
Sat. ID: 10 Sig. Strength: 48.0 dB-Hz Sat. Type: GPS
Sat. ID: 16 Sig. Strength: 25.0 dB-Hz Sat. Type: GPS
Sat. ID: 21 Sig. Strength: 25.0 dB-Hz Sat. Type: GPS
Sat. ID: 23 Sig. Strength: 42.0 dB-Hz Sat. Type: GPS
Sat. ID: 27 Sig. Strength: 41.0 dB-Hz Sat. Type: GPS

Telephone

The Telephone Diagnostic view is an interface used to monitor and assess various aspects of a phone's connectivity and operational status. Here are the key features of this diagnostic view:

Telecom Service Status – Indicates whether the service is active and whether roaming is enabled.

Signal Strength – Shows the strength of the network signal.

Battery – Displays the battery's charge level.

Remote Device Name – The name of the device being tested, in this case "iPhone 11 Test KR".

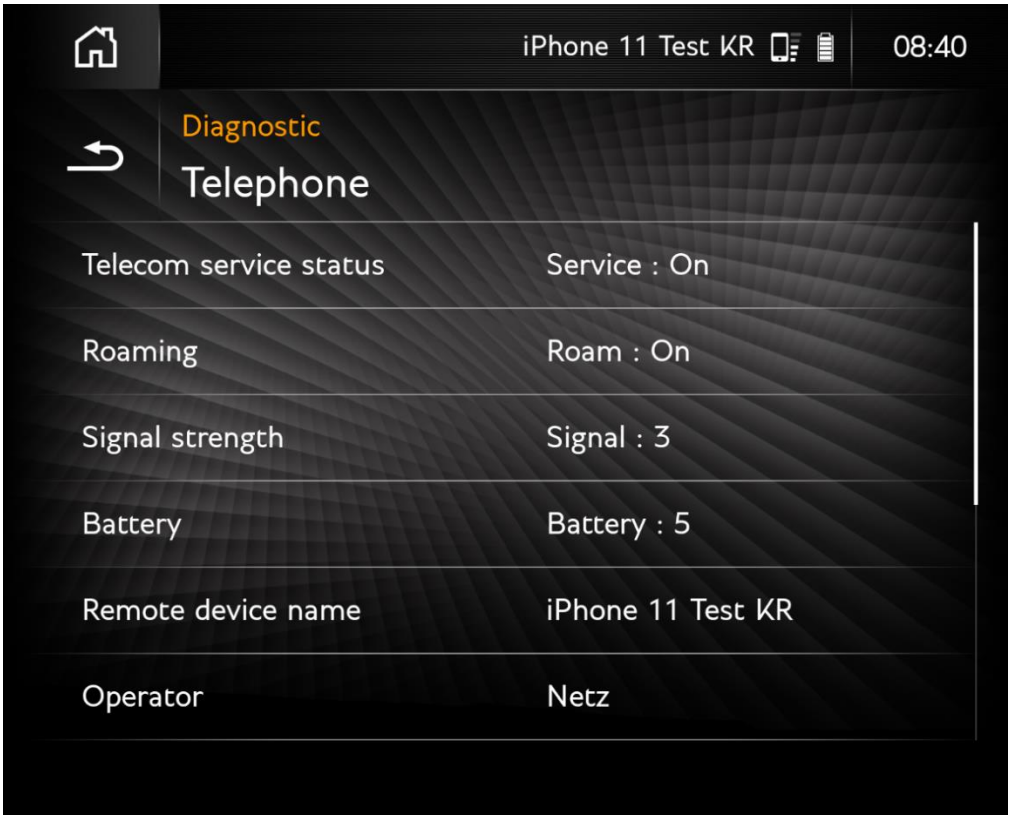
Operator – The network operator providing services.

Local Number – The phone number assigned to the device.

HFP State and **HFP Audio State** – Status indicators for the Hands-Free Profile (HFP), showing whether a connection is established and whether audio is being transmitted over this connection.

Remote Voice Dial – Indicates whether voice dialing through a remote connection is enabled.

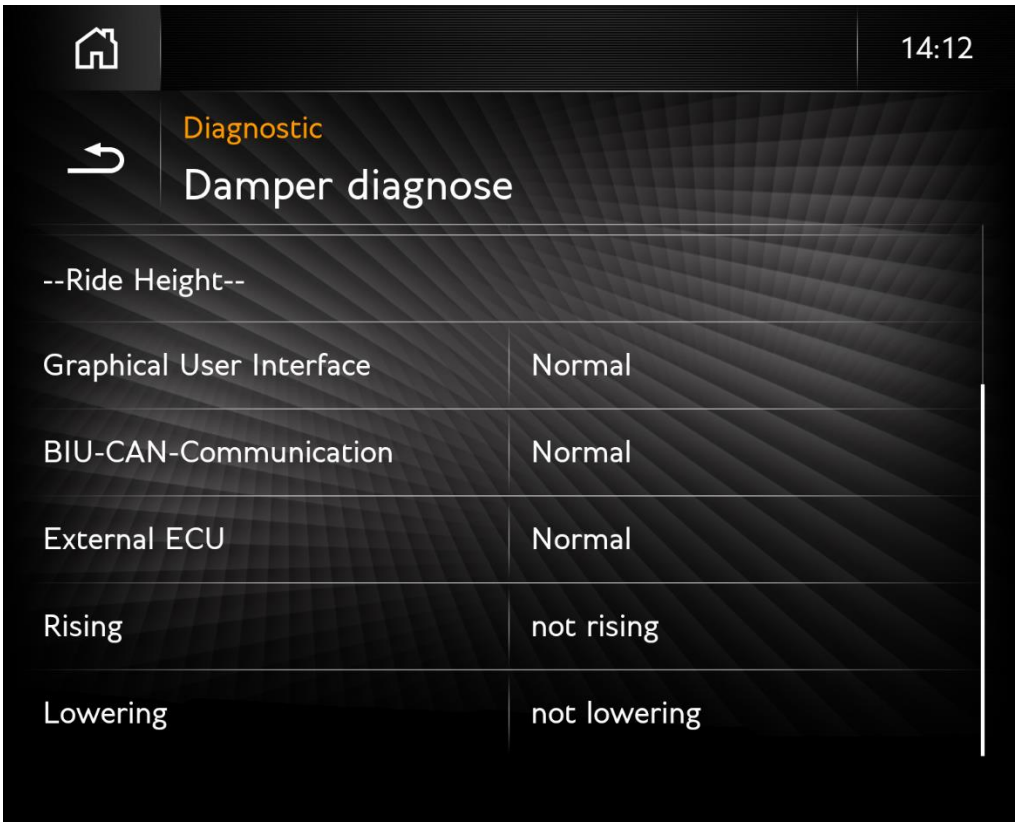
HFP InBand Ringtone Support – Shows whether ringtones through the Hands-Free Profile are supported.




iPhone 11 Test KR
08:40
Diagnostic
Telephone
Operator
Netz
Local number
HFP state
Connected
HFP audio state
At Phone
Remote voice dial
Off
HFP InBand ringtone support
Yes

Damper Diagnosis

The damper diagnosis feature provides a clear visualization of how different components communicate regarding damper firmness and height. This view displays the values held by each component, including the graphical user interface, BIU-CAN-Communication, and External ECU, at the time of diagnosis. In the event of an error, the view identifies which component is responsible for the failure. This view also shows weather the car is rising or is lowering.

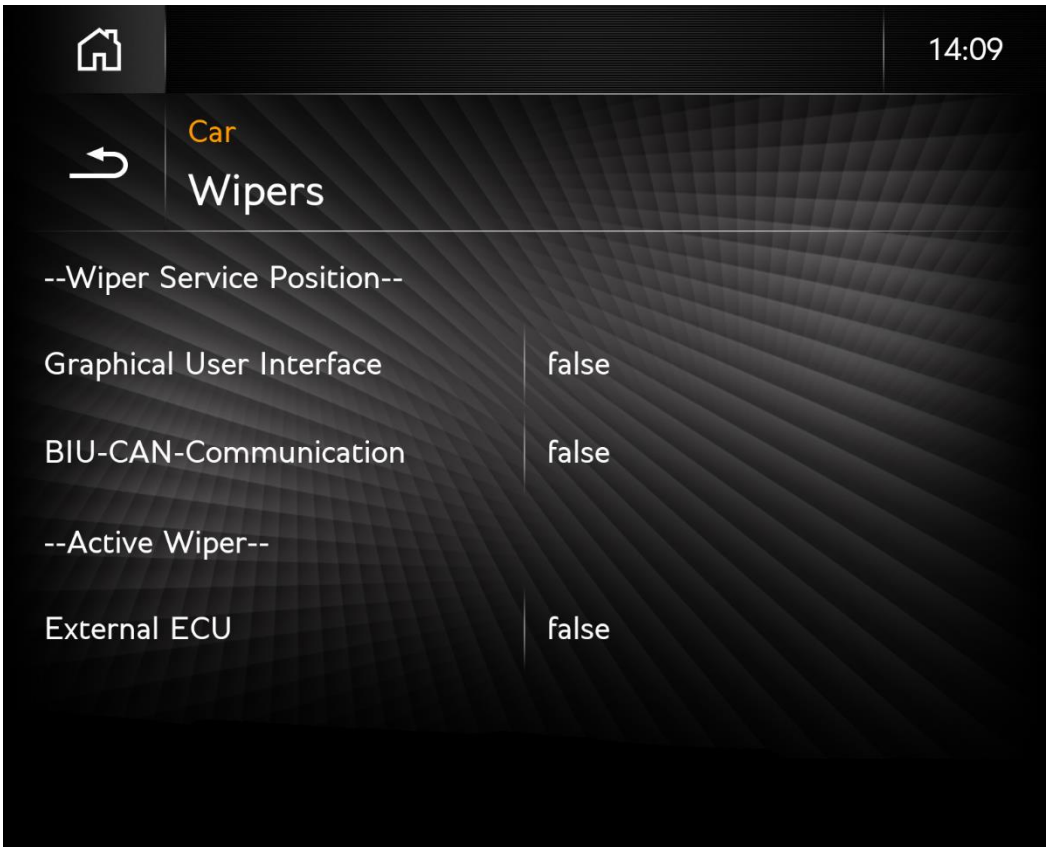

14:12
Diagnostic
Damper diagnose
--Ride Height--
Graphical User Interface
Normal
BIU-CAN-Communication
Normal
External ECU
Normal
Rising
not rising
Lowering
not lowering

Wiper Park

The Wiper Park View is divided into two sections: **Wiper Service Position** and **Active Wiper**.

The Wiper Service Position section displays the values for both the graphical user interface and the BIU-CAN-Communication. When the Wiper Service Position is enabled, the values for the graphical user interface and BIU-CAN-Communication are set to "true."

The Active Wiper section shows the value of the External ECU. Activating the wipers sets the External ECU value to "true."

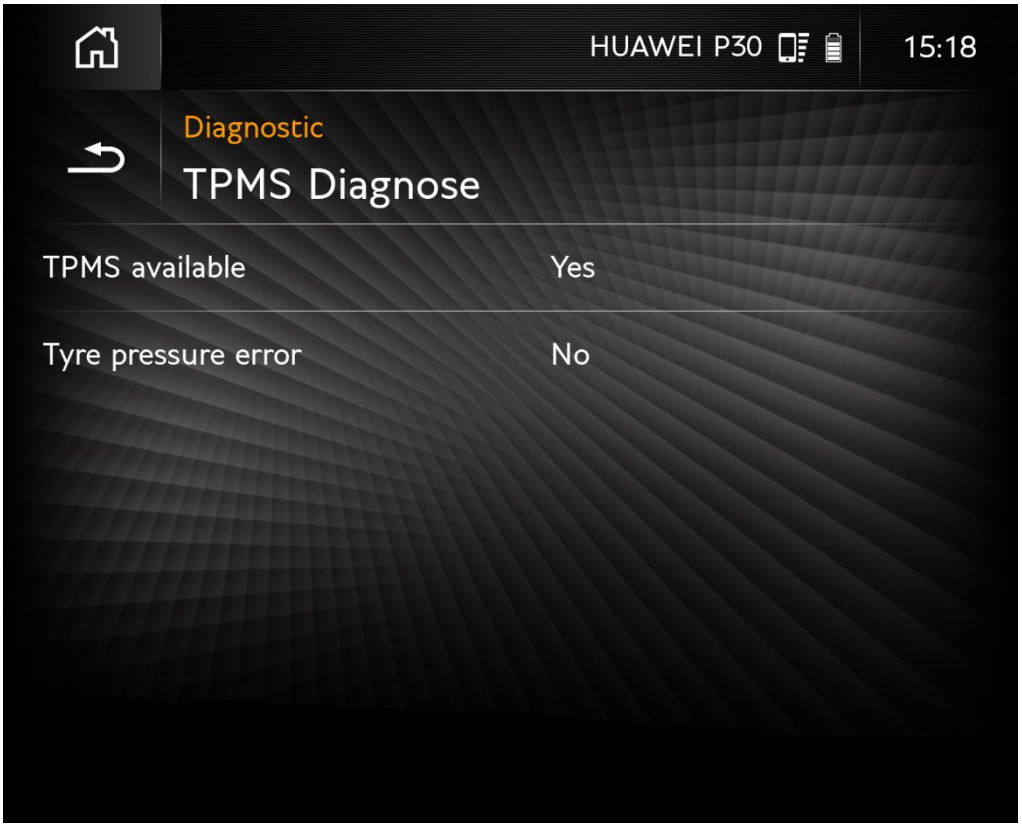


TPMS Diagnosis

The TPMS Diagnose View displays the availability of the TPMS and the tire pressure error values.

TPMS availability is set to true when communication between the BIU-CAN system and the external ECU is functioning correctly.

The Tyre pressure error reflects the value of the External ECU.

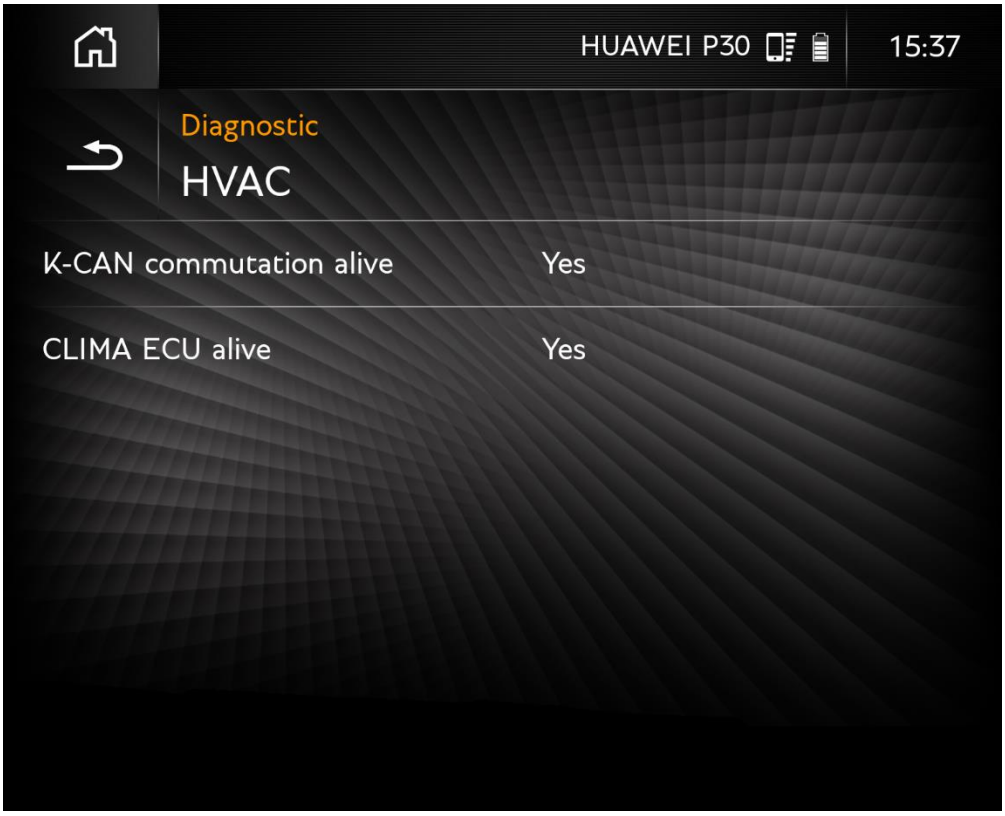


HVAC Diagnosis

The HVAC Diagnose View displays the K-CAN communication status and the availability of the CLIMA ECU.

The K-CAN communication alive and the CLIMA ECU alive reflects the communication between the BIU-CAN and the External ECU.

Disconnecting the HVAC Cable will lead to no K-CAN or CLIMA ECU communication.

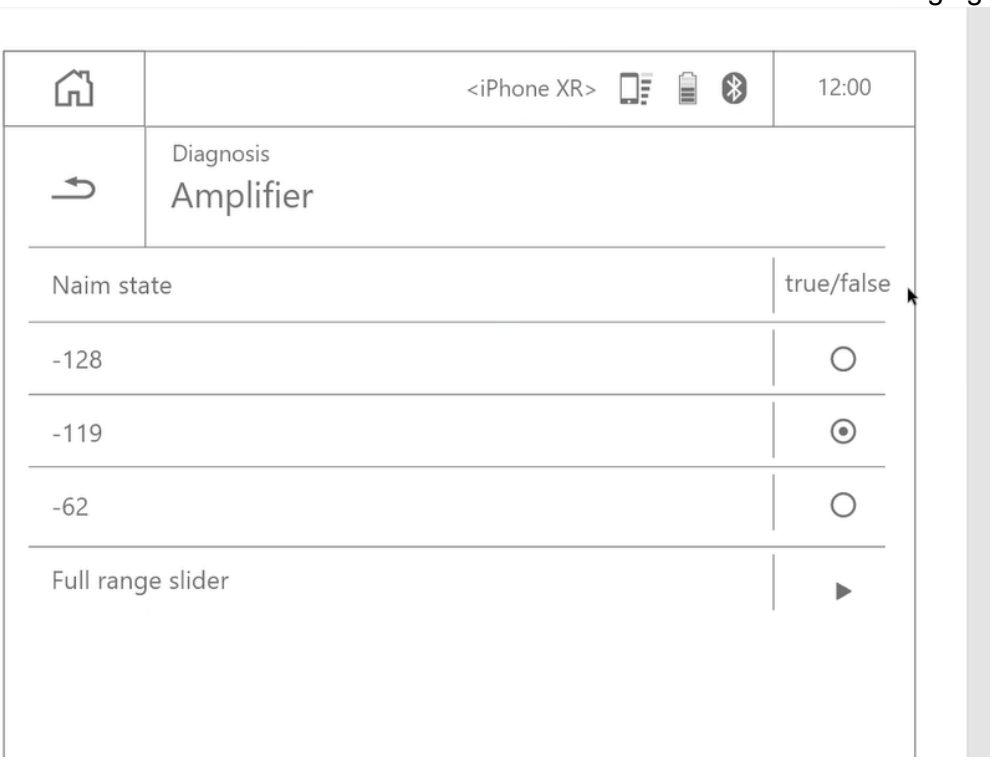


Amplifier

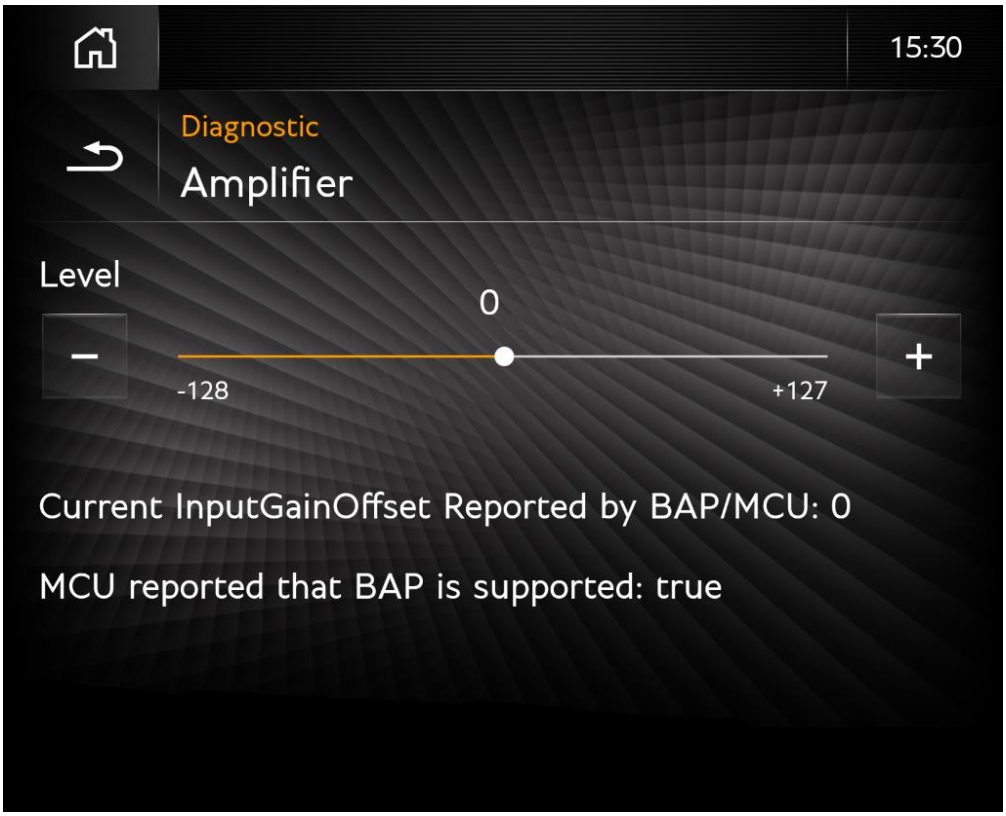
Inside the Amplifier menu it is possible to adjust the Input Gain Offset. Each vehicle has its own Input Gain Offset value.

Input Gain Offset

The Input Gain Offset is a setting in audio processing that adjusts the strength of the amplifier's input signal, optimizing the volume of input signals to ensure they remain within an ideal level range. The current implementation allows for the adjustment of the Input Gain Offset between -128 and +127. Two different views are available for managing this setting.



View 1 NAIM Car



View 2 Non NAIM Car