**Features**

- AEK-AUD-C1D9031 compact AVAS solution
- AEK-MCU-C4MLIT1 domain zone controller
- Two AEK-LCD-DT028V1 display expansion boards
- Two integrated loudspeakers
- Current sensing for open-load detection in play or mute state
- Speaker disconnection switch
- Hardware mute button
- Plays a preloaded wave file (car key on, neutral and drive modes)
- Size: 290 x 210 x 70 mm
- Included in the AutoDevKit ecosystem

**Description**

The **AEKD-STereoAVAS** is an AutoDevKit acoustic vehicle alerting system (AVAS) demo. It consists of an AEK-AUD-C1D9031 compact AVAS board, an AEK-MCU-C4MLIT1 domain zone controller, and two AEK-LCD-DT028V1 display expansion boards, plus two loudspeakers and a switching button.

The AEK-AUD-C1D9031 communicates with the AEK-MCU-C4MLIT1 via CAN protocol, exchanging commands like start/stop to simulate alerting sounds used in e-vehicles.

The sound is reproduced by the AEK-AUD-C1D9031 ECU through a pair of integrated class D audio amps connected to the loudspeakers.

Two AEK-LCD-DT028V1 boards with resistive touch allow the user to interact with the demo. The first screen shows a graphic simulation of the electric motor rpms, while the second allows starting/stopping the demo and regulating the sound volume and the engine rpms.

An important system safety feature reproposed in our demo consists in the open-load detection in play or mute state.

Toggling the “disconnect speaker” switch, the FDA903D embedded in the AEK-AUD-C1D9031 detects the open load in play or in mute and the blue LED lights up.

This open-load detection depends on the sound amplitude. If the blue LED does not light up, turn the volume up through the dedicated touch screen button.

Switching on the hardware mute button on the AEK-AUD-C1D9031 board, an orange LED (D7) turns on to indicate that the system is in the hardware mute state.
1 Demo architecture block diagram

Figure 1. Demo architecture block diagram
Schematic diagrams of boards included in AEKD-STEREOAVAS kit are available at relevant schematic links:
AEK-AUD-C1D9031
AEK-MCU-C4MLIT1
AEK-LCD-DT028V1
3 Board versions

Table 1. STEVAL-LLL013V1 versions

<table>
<thead>
<tr>
<th>PCB version</th>
<th>Schematic diagrams</th>
<th>Bill of materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEK$STEREOAVASA (1)</td>
<td>AEK$STEREOAVASA schematic diagrams</td>
<td>AEK$STEREOAVASA bill of materials</td>
</tr>
</tbody>
</table>

1. This code identifies the AEK$STEREOAVAS evaluation kit first version. The kit consists of a AEK$AUD-C1D9031 whose version is identified by the code AEK$AUD-C1D9031A, a AEK$MCU-C4MLIT1 whose version is identified by the code AEK$MCU-C4MLIT1A and a AEK$LCD-DT028V1 whose version is identified by the code AEK$LCD-DT028V1A.
## Revision history

**Table 2. Document revision history**

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision</th>
<th>Changes</th>
</tr>
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<tbody>
<tr>
<td>11-Jul-2023</td>
<td>1</td>
<td>Initial release.</td>
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