EOL Box

Introduction

The EOL box is used as an End of Line (EOL) termination in audio systems that use a 20kHz pilot tone to detect open and short conditions. The termination is placed at the farthest end of the loudspeaker circuit. Unlike most loudspeakers the EOL box is reactive at 20kHz such that the resulting current can be measured using HiQnet Audio Architect™ software. If the circuit is either opened or shorted, the measured 20kHz current will change. The EOL box presents either a 10Ω or 5Ω load at 20kHz, selectable using an external impedance switch.

This method requires the 20kHz pilot tone to be mixed together with the audio. The pilot tone can be generated within the DCi Network family of amplifiers and the USP4 family of CTs amplifiers. Additionally the DSP built into the DCi Network and USP4 has the ability to allow for the pilot tone to bypass the internal speaker processing.

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Installation

The EOL box should be mounted securely, near the LAST speaker in the circuit. The EOL box has a large tab that should allow for easy mounting on any type of circuit. The box is NOT weatherproof and should not be mounted outdoors. It MAY be necessary to use more than one box per circuit.

If the loudspeaker circuit has multiple branches, begin by placing the EOL box at the junction. Then after testing if some branch circuits are still not detectable, add an additional EOL box at the end of each branch one at a time, using the minimum number of EOL boxes.

Setup

The Audio Architect software provides user controlled upper and lower limits. These limits should be adjusted per channel based on system testing. No two circuits are exactly the same. See the HiQnet Audio Architect™ help file for more detailed information.

Reporting Errors

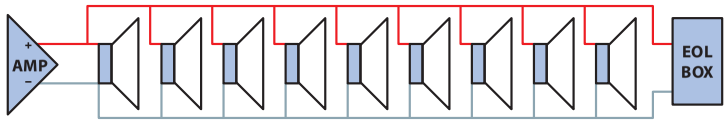
When the measured current exceeds either the upper or lower limit, an error is reported. The user must select the error reporting method. Controls are provided to report the error to the aux port and to the network.

Impedance Switch

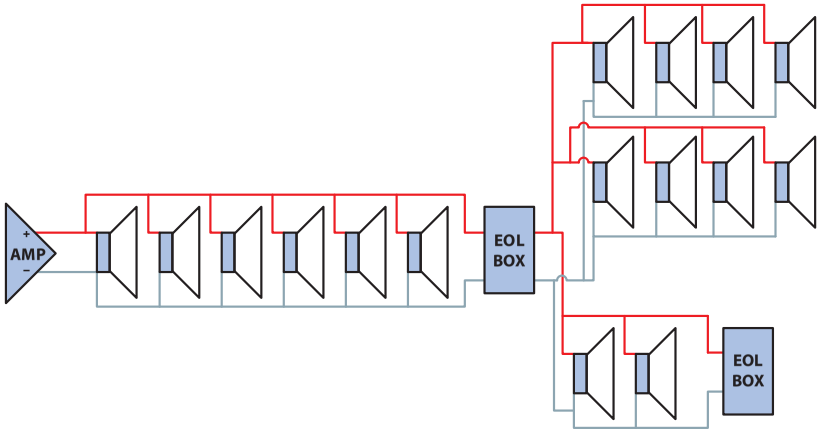
When the switch is in the left position the box is configured as a 10Ω load. With the switch in the right position the box is configured as a 5Ω load.

Example Wiring Diagrams

Simple



Complex



Note: that some loudspeaker circuits are extremely reactive and very electrically complex. Some impedance measurement and analysis may be required to achieve a predictable measurement.