

BTL/SE connection

Technical Information

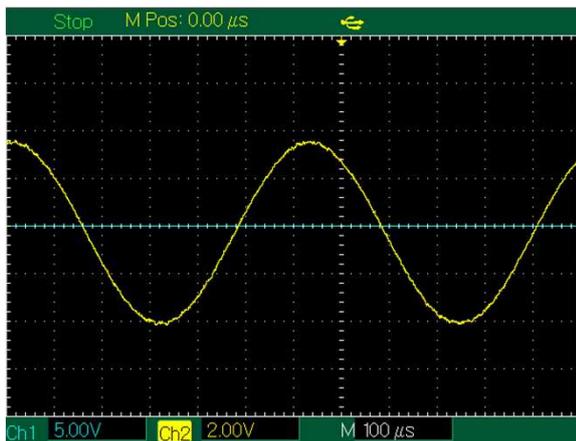
GLADEN MOSCONI

== NEXT LEVEL CAR AUDIO ==

High- / Low-Level, BTL / SE - more than just signal level!

OEM headunits and amplifiers are available in different versions. When connecting to an amplifier / DSP it is important to know the topology and to consider the characteristics.

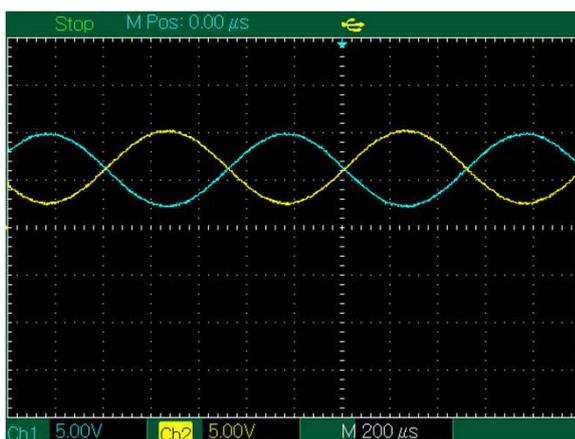
SE – single ended:



Voltage at (+) and (-) of the signal wire

With amplifiers based on the SE principle, the negative wire is firmly connected to the (audio) ground. The signal is only transmitted via the positive wire. Since the music signal is an alternating voltage, the voltage on the positive line can be positive or negative to ground. This requires a power supply which generates a symmetrical voltage. From a technical point of view, SE amplifiers work identically to line outputs (low-level), **the negative wires of several channels may be connected.**

BTL – bridge tied load:



Voltage at (+) and (-) of the signal wire



BTL amplifiers in the OEM area do not have a power supply unit. In order to generate an AC voltage, both signal lines are pulled to half the battery voltage. Both signal wires carry the signal, whereby the negative wire is inverted. The signal voltage is the difference between the two voltages. **With BTL power amplifiers, the negative leads of several channels must never be connected (e.g. by common grounding in the signal cable), and the negative wire must not be connected to the vehicle / audio ground!**

BTL amplifiers can be recognized by the DC voltage $B+/2$ of any signal wire to vehicle ground.

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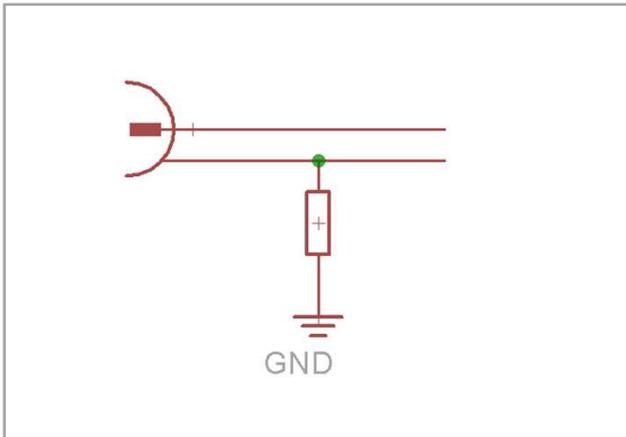
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Input switch for Mosconi power amplifiers and DSP:

Low-Level-Mode:

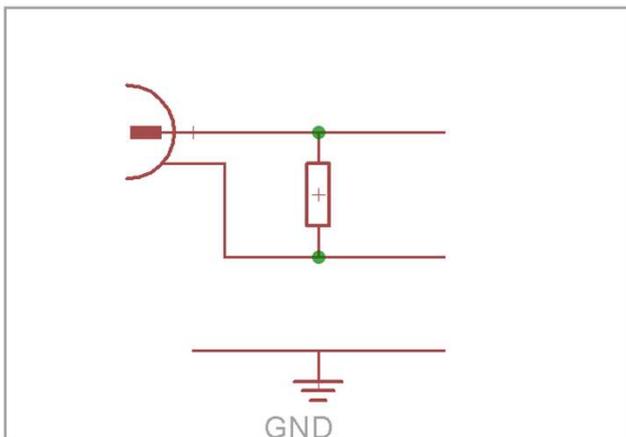


Input circuitry in low-level mode

If the low-level mode is selected at the input of the amplifier / DSP, the negative wire of the signal (cinch ring) is fixed to the ground via a low resistance. In this mode only signal sources with a fixed signal ground may be connected (Line-Out or SE, if the signal voltage is not too high).

In this mode, a BTL source is short-circuited to ground and to each other. This leads to switching off, to defects or to strong noises!

High-Level-Mode:



Input circuitry in high-level mode

In high-level mode, neither of the two signal wires (cinch ring and cinch pin) has a connection to ground. The resistor is now between both wires to simulate a loudspeaker at the source. In this mode both BTL and SE amplifiers may be connected.

Remote detection:

The remote detection can be switched (BTL/SE) independently of the high / low switch. In BTL mode the DC voltage B+/2 is detected, in SE mode the music signal is used for detection.

If possible, BTL detection should always be preferred here.