

BoutLin-2134 Line > XLR balanced out module

With this module we provide a tiny circuit which converts an internal line signal into a balanced signal which is available at a male XLR chassis connector. It can be directly mounted in a panel.

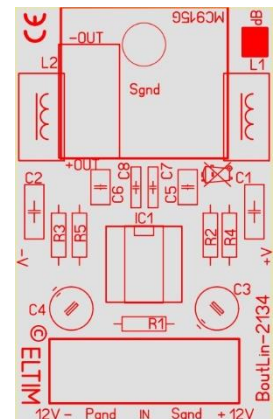
- Convert your existing line output(s) to buffered and balanced one(s) !

With the Burr-Brown [OPA2134](#) dual opamp as we use here, a superb sound quality is guaranteed. The voltage swing capability is up to 16Vrms into 600 ohms, even with very long, capacitive cables! Incoming RF interfering signals coming from the connected cable are also taken care of in the best possible way and the required components are located immediately behind the output connector.

This module can be used in any audio equipment where a line signal needs to be converted in a better balanced output signal. You could replace the line connector by a balanced one just by mounting this module.

BoutLin-2134 layout

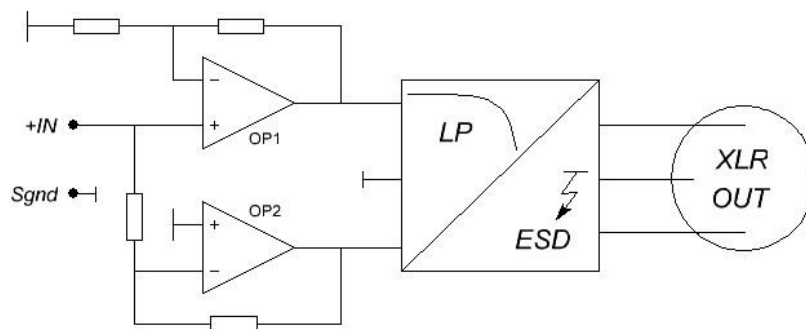
The tiny, 34x55mm PCB contains all the parts required and a quality, gold plated XLR male chassis connector. At the top a MC915G XLR male chassis connector. At the bottom a 6-pole screw terminal for the internal wiring. The IC is at a milled socket, so you can replace it by other, pin compatible types.



Scale 1:1

Circuit diagram

Actually, this schematic shows just two basic opamp circuits; the top one is non inverting and the bottom one is inverting the incoming signal, resulting in two buffered counter phase signals as a balanced line requires. In 90% of all cases a circuit like this is used in all kinds of electronics to make a balanced signal. However, it setup does nothing more than buffering and inverting a signal. We also have [highest grade balanced output modules](#).



The circuit doesn't need input/output capacitors. Due to the symmetrical power supply the input as well as the outputs are at ground level (0Vdc) already. Note that if the input signal contains a DC-signal, it is passed 1:1 to the output AND unbalancing the circuit. As long as this DC is in the mV range this won't cause serious problems.

If a DC signal is present, check the connected gear and/or mount a capacitor of your choice (2,2-10uF) in series with the output of the specific equipment or in series with the input line of this module. This capacitor blocks all DC-signals.

Power Supply

There are power supply connections (+12V and -12V) for use in low voltage applications below +/-13V.
Do not use higher voltages here, since these lines are paralleled by 15V Zener diodes which will draw severe currents otherwise!

In a Power Amplifier there is mostly no low supply voltage available, so we arranged some extra's.
Since this module will be used in bridged amps as well, higher PS voltages can be applied to the extra V+/V- pins in the range of $\pm 18 - 75\text{Vdc}$. These are then connected to the amps power supply rails.
15mA Constant Current Diodes (CCD) provide a constant current over this wide voltage range. Then 15V Zener diodes regulate the internal supply to $\pm 15\text{Vdc}$. 6mA flows into the IC, the other 9mA via the zeners.

Mounting

This module is mounted with the gold plated, male (MC915G) XLR output connector only, with a drill hole of $\varnothing 22\text{mm}$.
Since this PCB hardly has any weight, mounting the connector to the cabinet chassis is sufficient.
Instead you could mount a 3-pole screw terminal, where the module is fixed with a single M3 bolt.



The internal connections are done via a 5-pole screw terminal.

Models

This basic converter/buffer module is provided with 0dB gain as it will mostly be used.
We could provide versions with different amplification/impedance values as well on request.

Some figures

Input impedance:	100kohms (other on request)
Output impedance:	0,05 ohms
Max voltage swing:	V power supply -1,5V
Frequency range:	> 8MHz.
Slew rate:	> 20V/uS
Distortion:	< 0,00008% THD
Gain:	0dB (other on request)
Noise figure:	< 104dBu
Capacitive load:	high
Power Supply voltage:	+/- 4 to 13V @ $\pm 12\text{V}$ connections, 12mA +/- 18 to 75V @ $\pm 12\text{V}$ connections, 20mA
Dimensions	55x34x27mm (LxWxH)

The output is short circuit protected.

DIY

We like to invite you to visit our [webshop](http://www.eltim.eu) where over 15.000 products can be found, all for high quality audio DIY. You'll find our own wide range of modules, drive units, crossover parts, connectors, cabinets, etc. etc.

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