

## **EBTECH® Line Level Shifter® Applications 8/12/13**

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**LLS-2: Two channel box with 1/4" Smart Jacks (TS or TRS)**

**LLS-2-XLR: Two channel box with 1/4" Smart Jacks and XLR**

**LLS-8: Eight channel single space rack with 1/4" Smart Jacks (TS or TRS)**

**LLS-8-XLR: Eight channel single space rack with XLR jacks**

*What's converting between -10dBV and +4dBu all about? Most consumer music gear has -10dBV inputs/outputs, while most pro gear has +4dBu inputs/outputs (which is 11dB greater or 3.5 times louder). Additionally, the -10dBV signal lines are unbalanced and are susceptible to picking up noise, whereas the pro gear lines are generally balanced and more immune to picking up noise.*

*Incorrectly matching the signal levels between pieces of gear can result in volumes that are too low, having to turn up the gain and increase the noise floor. It also limits the range of volume control between all inputs, which makes it difficult to get a good mix and can potentially overload the -10dBV inputs. The Line Level Shifter® converts between unbalanced and balanced lines as needed and efficiently converts back and forth between -10dBV and +4dBu.*

*The Line Level Shifter® also eliminates hum, just like the EBTECH® Hum Eliminator™. The difference is that the Line Level Shifter® always steps up or down your signal. Below are more specific applications for the Line Level Shifter®.*

**AUDIO / VIDEO** - The audio inputs on most video camcorders are unbalanced -10dBV. When running a sound mix from a +4dBu output to the camera, use a Line Level Shifter® to ensure its input is not overloaded and the signal is not distorted. Use a Line Level Shifter® when running the audio feed from a -10dBV (VCR / DVD / CD / MP3 Player) to a +4dBu sound system to get the best possible signal quality.

**BROADCASTING** - Broadcasters frequently need to hook up a consumer -10dBV output MP# Player or CD player, etc... to a balanced +4dBu input. The Line Level Shifter® allows this to be done without losing volume and eliminates hum at the same time.

**COMPUTER SOUND CARDS** - Most sound cards have unbalanced -10dBV inputs/outputs. A Line Level Shifter® allows the sound card to work with a +4dBu device and eliminates hum at the same time. Even balanced sound cards have tremendous susceptibility to ground loops because of the computer's power supply. If you are experiencing noise issues but do not require a change in signal voltage, use a Hum Eliminator™.

**DJ MIXERS** - Most DJ mixer main outs are unbalanced -10dBV RCA and most power amps have balanced +4dBu inputs. When going from a -10dBV DJ mixer to a +4dBu power amp, over 2/3rd's of the amp's volume is lost. That turns a 600-watt amp down to 175 watts. Many DJs prefer the feature set of a particular -10dBV unit and the few DJ mixers that have +4dBu outputs can cost much more than a -10dBV DJ mixer. Use a Line Level Shifter® to get all of the lost power back and get rid of any hum problems at the same time!

**GUITAR AMP FX LOOPS** – The signal levels in most guitar amp effects loops are all over the place. Some may be too strong signal for floor effects, other may be too weak. Unless your amp has adjustable levels on the send and return you're stuck with what you got; unless you have a Line Level Shifter®! Use the Line Level Shifter® to increase or decrease the Send and Return as needed for your particular situation. A more efficient matched signal level means better tone and in the world of guitar, tone is EVERYTHING!

**KEYBOARDS / SAMPLERS / SYNTHS** - Most keyboards, samplers, and synthesizers have 1/4" unbalanced -10dBV outputs. The Line Level Shifter® converts these outputs to +4dBu for use with a +4dBu mixer or other +4dBu device without losing volume. Balancing the outputs can help make long signal runs hum and noise free.

**MIXERS / RECORDING** - Almost everyone hooks up a -10dBV, unbalanced output from a consumer MP2 Player or CD player, etc... to an otherwise high performance system. You will get a better signal-to-noise ratio (SNR) using the Line Level Shifter® rather than by turning up the mixer's input gain. You can also balance the lines at the same time. Getting the best noise floor means adding the least amount of active gain. Recording with unbalanced -10dBV outputs (keyboards, effects units, drum machines, computers, etc.) often requires a lot of active gain. Use the Line Level Shifter® to run these units up to balanced +4dBu and provide the best mix you can get. Some high-end mixers only have +4dBu inputs; when -10dBV equipment is hooked up to these inputs, use a Line Level Shifter® to get a better signal level. Tape return levels are often mismatched with the mixer. They either overload the mixer's input or don't drive it loud enough. The Line Level Shifter® works both ways, either stepping the signal up or down.