Active Direct Box

AR-133

Why do I need a DI Box?

Signals from electronic instruments such as guitars, keyboards and similar sound sources generally have a low level, high impedance output, which will not interface with the low impedance balanced input found on professional sound mixing consoles. Furthermore these signals cannot be driven up long cable lengths without serious loss of level and degradation.

The DI box converts this signal to a more suitable form without interfering with or modifying the signal at the instrument source, and should provide freedom from ground and power line related problems.

Passive DI boxes have limited applications as they will inevitably affect the signal source for guitar type applications, and can also have an insertion loss of around 20dB.

The only safe and predictable way to provide direct feeds from instruments or other sources is by using an Active DI box utilising an input amplifier driving an output transformer.

The AR-133 fulfills all the requirements of an active DI and more.

- Switchable input attenuation
  - 0dB for guitar-type pickups
  - -20dB for line level signals
  - -40dB for speaker feeds
- Matches the level and impedance with unity gain without loading the source
- Can drive signals up long cable lengths
- Powered from console phantom power or internal battery
- Automatic switchover to battery if phantom power fails
- Parallel Link Jack output to feed amplifiers directly
- Parallel XLR input for converting unbalanced outputs to balanced lines

The audio signal path of the AR-133 is an enhanced design based upon the long established BSS AR-116, now regarded by many as a reference unit.

The sound quality, particularly on acoustic guitar and bass guitar pick-ups, is recognised as outstanding.

The uses, however, are not limited to guitars or keyboards. The AR-133 is suitable for use whenever it is critical to match levels and impedances, sources need isolation or long cables are used.

BSS Audio

AR-133 Active DI Box

The provision of both jack and XLR connectors on the input further extends the use of the AR-133 with a multitude of source devices.

Powered from the console or battery

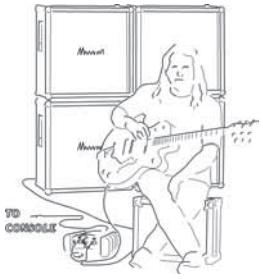
The AR-133 takes its power either from the standard micro-phone phantom powering available from the desk, or from an internal 9V battery. When phantom is used, the power led on the AR-133 is lit continu-ously. If the phantom fails, the battery immediately takes over, with a flashing led showing battery use.

Earth lift for solving grounding problems

The earth lift switch enables the input signal's earth to be sepa-rated from the output ground, a quick and easy way to prevent ground-loop problems.

Typical Applications
Guitar pick-up feed

Suggested Attenuation Setting 0dB



The low level, high impedance signal from the guitar pick-up is translated by the AR-133 into the high-level, low impedance balanced signal required by the front-of-house console.

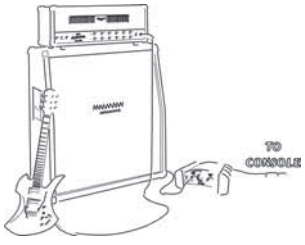
Keyboards - line level feed

Suggested Attenuation Setting -20dB (line level) or -40dB (amp level)

The line level output of the keyboard is balanced and matched by the AR-133.
In multiple keyboard setups where a mixer-amp is used for monitors, the AR-133 can be used to save on DI boxes by taking the output of the amplifier as the interface to the console, rather than using separate DI's for each keyboard. In this case, either a line output or the speaker output can be used, depending on the mixer/amp.

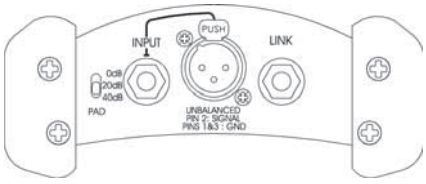
Speaker feed

Suggested Attenuation Setting -40dB



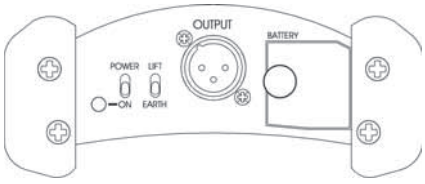
Taking a feed from the amplifier output allows the post-amplifier, post EQ/effects signal to be fed to the console, meaning that a particular effect/amp sound can be sent to the mix.

Input Section



Input Impedance	1M Ohm (pad at 0dB) 47k Ohm (pad at -20dB) 47k Ohm (pad at -40dB)
Max Input Level	+9dBu (pad at 0dB) +29dBu (pad at -20dB) +49dBu (pad at -40dB)
Connectors	Two Parallel 1/4" jack connectors and a parallel XLR connector (unbalanced) Jack: Tip Hot (+ve) Sleeve Ground XLR: Pin 2 Hot (+ve) Pin1 & 3 Ground

Output Section



Output	Transformer Balanced
Max. Output Level	+8dBu into 600 Ohms or greater
Connector	XLR3-32 or equivalent

System Performance

Distortion (THD)	< 0.005% at 1kHz, 0dBu output
Noise	<-105dB unweighted, 22Hz-22kHz, rms*
Frequency Response	30Hz to 20kHz, +0dB/-1dB

General

Main/Standby	9 volt PP3 type, battery preferably alkaline.
Current drain	:on phantom, less than 7.5mA :on battery, less than 2mA.
Phantom Power	+20 volts DC to +48 volts DC
Weight	650 gms, excluding batteries.
Overall Dimensions	59 mm x 124 mm x 143 mm (2.3" x 4.9" x 5.6")

** Noise measured relative to maximum output.*

In keeping with our policy of continued improvement, BSS Audio,reserves the right to alter specifications without further notice.This product was designed developed and produced by BSS Audio, Hertfordshire, England.

BSS Audio, A Division of Harman International Industries Ltd,
Cranborne House, Cranborne Road, Potters Bar,
Herts EN6 3JN, England
Tel +44(0)1707 660667 Fax +44(0)1707 660755
email: info@bss.co.uk, online http://www.bss.co.uk
BSS Audio USA
1449 Donelson Pike, Nashville TN 37217
Tel (615) 360 0277 Fax (615) 360 0480
email: BSSAudioUSA@harman.com

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