BDS$_{v3}$ / BDS$_{v3-N}$

REMOTE AUDIO
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www.remoteaudio.com

The Remote Audio BDS (Battery Distribution System) has been the standard power management system in ENG audio bags for over a decade. Once considered a luxury, the ability to power multiple pieces of audio equipment with a single rechargeable battery is now a necessity as equipment demands become more complex. The BDS system accommodates this need with a reliable, convenient, and robust design.

Description

Remote Audio's BDS system consists of a reverse-polarity protected and overload protected distribution box with on/off switch, six outlets, power source (typically a rechargeable battery such as the NP-1), an input cable, and output cables for the devices being powered. The primary purpose of the BDS system is to simultaneously turn on and off multiple pieces of equipment being powered by a single source. For this basic function, the BDSv3/BDSv3-N may be used exactly like the older BDSv2 that it replaces. The input and output connections are the same, so all former BDS input and output cables made by Remote Audio are compatible with the BDSv3/BDSv3-N. The capacity of the box is limited to 5 Amps.

The BDSv3* design takes the system to a new level of refinement and functionality with the addition of an optional 6-pin connector for the RM (remote meter) accessory. The RM can turn on and off the BDSv3 remotely, and can display the voltage of the power source and the amperage draw of the equipment. The BDSv3 can be used without the RM remote meter. In this case, the toggle switch turns the unit on and off. When turned on, the switch illuminates.

**The BDSv3-N does not include an RM port, but is upgradable via Remote Audio.*

Using the BDSv3 with the optional RM remote meter

When connected to the RM remote meter, and the BDSv3 toggle switch is in the OFF position, the RM controls the on/off circuit of the BDSv3. This allows the BDSv3 box to be placed deep in the bag, out of the way. To turn the BDSv3 on or off with the RM, press and hold both buttons of the RM for three seconds. When on, the RM will display the voltage of the power source. Pressing the lower button (labeled "AMPS") will display the current draw of the devices being powered for as long as the AMPS button is pressed. If the BDSv3 toggle switch is in the on position, the RM will not turn off the BDSv3. In this case, the on-off function of the RM will only turn on and off the meter display.

Connectors and cables

The outlet connectors on the BDS box are a special switching type that requires a long shaft mating plug with a 2.5mm hole. This connector set was chosen for its strength and so that unused (exposed) outlets on the box are not active until a cable with the proper mating connector is plugged into it, helping prevent accidental short circuits. Output cables by Remote Audio are manufactured specifically for use with the BDS, and come with unique low-profile right angle locking connectors. Therefore, it is recommended that only Remote Audio brand output cables be used with the BDS system. The polarity of the outlets is "center positive". "Y" cables are available for connecting more than six devices. Input cables, battery adapters and AC-DC adapters by Remote Audio are also available.

The input connector on the BDS box is a common TA4M (miniature 4-pin male XLR) with the standard scheme of "pin-1 NEG, pin-4 POS". To improve reliability and reduce voltage drop, the contacts are doubled 1-2 and 3-4 at the circuit board. Therefore, if the user wires their own input cables, it is recommended to connect pins 1-2 and 3-4. The power indicator built into the BDS box switch can be used to confirm proper polarity of the input cable (if it illuminates, the polarity is correct).

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The orange ring… Switch vs Unswitched.
Outlet #1 can be either "switched" or "unswitched". "Switched" means that the outlet turns off and on. "Unswitched" means that the outlet is always on when power is present. The factory default for outlet #1 is "unswitched", as indicated by an orange ring. This feature is often desired for the audio mixer. For example, in this configuration, when only the mixer and boom mic are needed, turning off the BDS box will turn everything off (receivers, etc.) except for the mixer.

This can be a convenient way to turn off everything that is not needed, extending the life of the battery. The status of outlet #1 can be easily reversed to "switched" by opening the BDS box and moving a jumper from the unswitched position to the switched position as labeled on the circuit board. No soldering is required to make this change. Care must be taken to not over-tighten the outlet connector nut when replacing the orange ring.

Short circuit and overload protection
The BDS box has auto-resetting protection against output short circuits and loads in excess of 5 amps, with each outlet capable of handling up to 3 amps each. If the BDS fails to pass power, it could be due to an overload or a short circuit. In the case of a short circuit of an individual output cable or piece of gear, only that outlet's breaker will trip, protecting the other connected gear from damage. If a piece of gear fails to power up, that output cable should be checked for continuity with a multimeter (shorted or open conductors), or replaced entirely. The BDS box will also protect itself when connected to loads of over 5 amps, and the on/off toggle switch will no longer be illuminated. However, it is very rare for field audio bags (the primary intended use for the BDS) to have current draws in excess of 5 amps. Using the optional RM (Remote Meter) with the BDSv3 will take the guesswork out of calculating the amperage draw of your system.

Reverse polarity protection
As a protective feature for devices being powered, in the event that an input cable or battery adapter is miswired, the BDSv3 will not pass reverse polarity voltage to its outputs. Unlike some reverse polarity protection circuits, the BDS circuit does not cause a voltage drop during normal operation.

Noise and shared power systems.
Thousands of satisfied field audio professionals are using the BDS system to power their equipment. However, it is possible to have unwanted audible noise induced into audio systems by a common (shared) power source. To optimize your system, it is recommended to use line level signals instead of mic level signals whenever practical. Also, turn phantom voltage off of all preamp inputs that are connected to non-microphone devices. If noise is still heard, to determine the cause, unplug one device at a time from the BDS box, noticing any change in noise associated with the removal of each device. If the noise goes away after unplugging a particular device, try powering that device with a separate battery. If using a separate battery causes the noise to go away, then the problem is a ground loop associated with the combination of a common power source and audio grounding schemes. Be aware that this noise will not be removed with "L/C" filters found in some distribution boxes. To remove the noise, here are four options for interrupting the ground loop: 1) Use a separate battery for the offending device. 2) Try different grounding/floating schemes with the audio cables. 3) In devices that use a single 9V battery, use an isolating 9V battery eliminator such as made by Lectrosonics (isolating AA eliminators should soon be available). 4) Use a power isolator cable such as the Remote Audio Juicer cable (30 watts max, but a bit large for bag use).

Mounting clip
The BDSv3 box comes with a stainless steel clip to aid in securing the box to a bag or strap. Additional holes on the box are available for positioning the clip in the opposite direction. NOTE: Keep the original clip screws. Attaching the clip with screws longer than those originally supplied can damage the BDS box and void the warranty.

Repairs
Items needing repair may be sent directly to:
Remote Audio Products
220 Great Circle Road, Suite 114
Nashville, TN 37228.
Prior to returning any items, contact Remote Audio for an RA# (return authorization number) at 615-256-3513, or repairs@remoteaudio.com

Limited Warranty
For a period of 1 year (for the BDSv3 box), or 6 months (for BDS cables) from the time of sale, defects in parts and workmanship will be either repaired or replaced at the determination of Remote Audio. Dated proof of purchase required.