go▸Rack™

PERFORMANCE PROCESSOR

Owner's Manual

dbx® by HARMAN

Warranty

1. Please register your product online at dbxpro.com. Proof-of-purchase is considered to be the responsibility of the consumer. A copy of the original purchase receipt must be provided for any warranty service.

2. dbx warrants this product, when purchased new from an authorized U.S. dbx dealer and used solely within the U.S., to be free from defects in materials and workmanship under normal use and service. This warranty is valid to the original purchaser only and is non-transferable.

3. dbx liability under this warranty is limited to repairing or, at our discretion, replacing defective materials that show evidence of defect, provided the product is returned to dbx WITH RETURN AUTHORIZATION from the factory, where all parts and labor will be covered up to a period of two years. A Return Authorization Number must first be obtained from dbx. The company shall not be liable for any consequential damage as a result of the product's use in any circuit or assembly.

4. dbx reserves the right to make changes in design or make additions to or improvements upon this product without incurring any obligation to install the same additions or improvements on products previously manufactured.

5. The foregoing is in lieu of all other warranties, expressed or implied, and dbx neither assumes nor authorizes any person to assume on its behalf any obligation or liability in connection with the sale of this product. In no event shall dbx or its dealers be liable for special or consequential damages or from any delay in the performance of this warranty due to causes beyond their control.

Technical Support & Service

If you require technical support, contact dbx Technical Support. Be prepared to accurately describe the problem. Know the serial number of your device – this is printed on a sticker attached to the chassis.

Before you return a product to the factory for service, we recommend you refer to this manual. Make sure you have correctly followed installation steps and operating procedures. For further technical assistance or service, please contact our Technical Support Department at (801) 566-8800 or visit dbxpro.com. If you need to return a product to the factory for service, you MUST first contact our Technical Support Department to obtain a Return Authorization Number.

NO RETURNED PRODUCTS WILL BE ACCEPTED AT THE FACTORY WITHOUT A RETURN AUTHORIZATION NUMBER.

Please refer to the Warranty information, which extends to the first end-user. After expiration of the warranty, a reasonable charge will be made for parts, labor, and packing if you choose to use the factory service facility. In all cases, you are responsible for transportation charges to the factory. If the product is still under warranty, dbx will pay the return shipping.

Use the original packing material if it is available. Mark the package with the name of the shipper and with these words in red: DELICATE INSTRUMENT, FRAGILE! Insure the package properly. Ship prepaid, not collect. Do not ship parcel post.

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Overview

Introduction

The dbx® goRack™ is an easy-to-operate portable loudspeaker processor. Based on our industry-leading DriveRack® Series processors, the goRack sits next to a set of powered speakers and provides powerful signal processing, including Anti-Feedback, Compression, Subharmonic Synthesis, and EQ. Each processing function can easily be enabled or disabled via the top-panel buttons, and settings can be adjusted via the goRack's large rotary encoder.

The goRack can be used to provide loudspeaker processing in a conventional sound system by placing it between the mixer and powered speakers/amplifiers or as a stand-alone 2-channel mixer/loudspeaker processor, making it ideal for band rehearsal spaces, live performance of solo artists or duos, weddings, or speech/presentation applications.

The goRack's rear panel houses combination 1/4" / XLR inputs that can be connected to either mixer outputs, or straight to instrument or microphone outputs. The Mic/Line switch on each input selects the proper input sensitivity while dual gain controls on the top panel provide independent level adjustment. The goRack's stereo 1/8" Mini Aux Input allows for direct connection of a mobile device or portable music player. The XLR outputs allow for interfacing with powered speakers or stand-alone amplifiers.

The goRack represents the best of dbx's DriveRack processing in its purest, most simplified form, all housed in a sleek, compact form factor that fits in your hand, or back pocket.

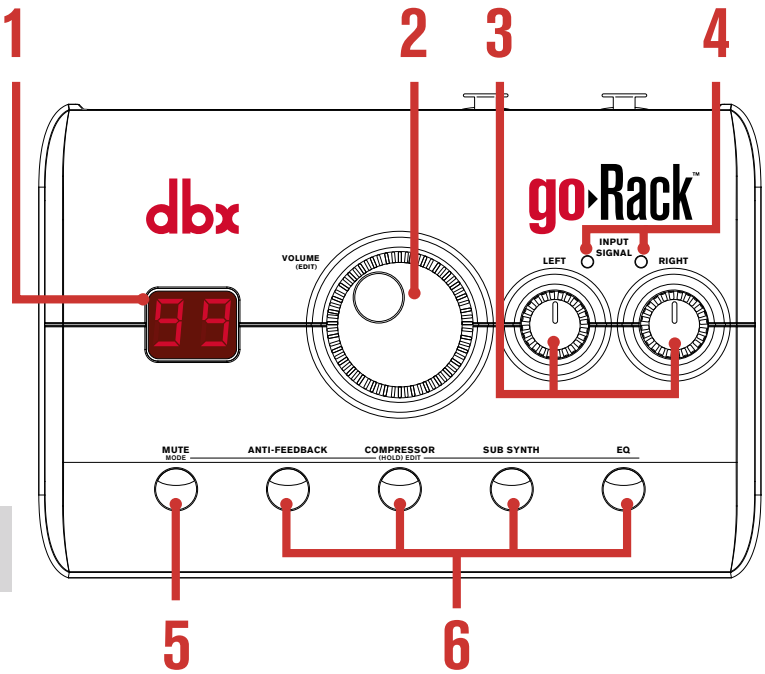
Thanks for choosing dbx.

Features

- *48 kHz / 24-Bit Processing*
- *3 Routing Options (Dual Mono Sum, Stereo, & Advanced)*
- *Anti-Feedback Using dbx's Proprietary Advanced Feedback Suppression Algorithm*
- *dbx Compression*
- *dbx Subharmonic Synthesis For Deep, Punchy Bass*
- *16 Selectable EQ Curve Presets*
- *2 Combination XLR / TRS Inputs (Selectable Between Mic or Line Level)*
- *Stereo 1/8" Aux Mini Input*
- *2 XLR Outputs*
- *Output Mute Button*
- *7-Segment Display*
- *Independent Mic / Line Input Level Controls*
- *Included Power Adapter*

User Interface & Connectors

Top Panel



1. **7-Segment Display**
   This display shows selected options and processor settings.

2. **VOLUME (EDIT) Encoder**
   This rotary encoder is used for adjusting the goRack's output volume or for editing settings after pressing and holding any of the processor buttons.

3. **LEFT / RIGHT Input Gain Knobs**
   Adjust these gains to optimize the signal levels for the main LEFT/RIGHT inputs. The MIC/LINE switches on the rear panel should be set to the correct position for the application before adjusting these knobs.

   NOTE: AUX INPUT signals are not affected by the Input Gain knobs.

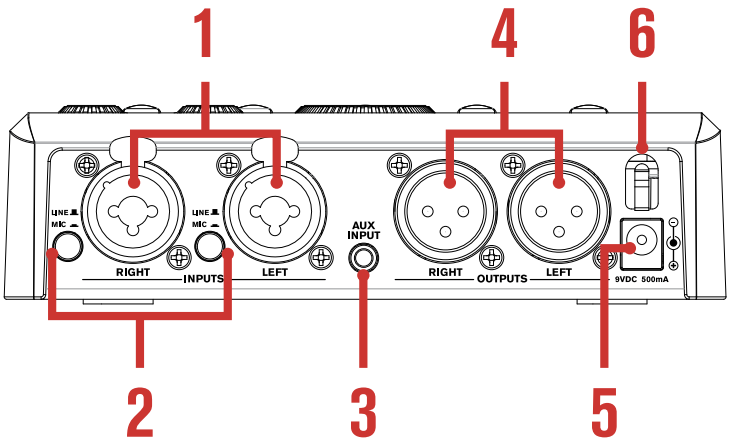
4. **INPUT SIGNAL LEDs**
   These multi-colored LEDs display the input signal level strength and available headroom.

   - **Green**
     Indicates signal is present.
   - **Orange**
     Indicates the signal level is approaching the headroom limit.
   - **Red**
     Indicates the input signal is clipping and the input gain should be reduced.

5. **MUTE (MODE) Button**
   Pressing this button will mute/unmute the goRack's outputs. Pressing and holding this button for 2 seconds enters Routing mode (indicated by a flashing LED), where you can select a routing option. See ***'Configuring The goRack's Routing' on page 6*** for more information on the routing options available in the goRack.

6. **Processor Buttons**
   Pressing each of these buttons will enable/disable the corresponding processor type (LED off = processor disabled, LED on = processor enabled). Pressing and holding each button for 2 seconds will enter Edit mode (indicated by a flashing LED), where the selected processor can be edited using the **VOLUME (EDIT)** encoder.

Rear Panel



1. **LEFT / RIGHT Combination Input Jacks**
   Connect your mixer, microphone, or instrument outputs to these combination 1/4" / XLR input jacks. The input sensitivity of these jacks are set using the MIC/LINE switches next to each jack and the input gain can be adjusted using to the top-panel LEFT/RIGHT input gain knobs.

   The input signals can be routed in stereo or mono summed to the output jacks. See ***'Configuring The goRack's Routing' on page 6*** for more information on the Routing modes available in the goRack.

2. **MIC / LINE Switches**
   Match these swtches to the type of connections being made to the input jacks. Select the LINE option when connecting the outputs of a line-level device, such as a mixer or the output of an instrument with a built-in pickup. Select the MIC option when connecting a microphone.

3. **AUX INPUT Jack**
   Connect a mobile device or portable music player to this 1/8" (3.5mm) stereo Mini jack. There are a couple of different processing routing options available for this jack (see ***'Configuring The goRack's Routing' on page 6*** for more information).

4. **XLR Output Jacks**
   Connect these electronically balanced XLR outputs to the amplifier or powered speaker inputs.

5. **DC Power Input Jack**
   Connect the included Harman power adapter to this power input jack.

6. **Power Adapter Cord Retaining Clip**
   Route the power adapter cord through this retaining clip to prevent accidental removal of the power plug (see ***'Applying Power' on page 5*** for more information).

Setup

Making Connections

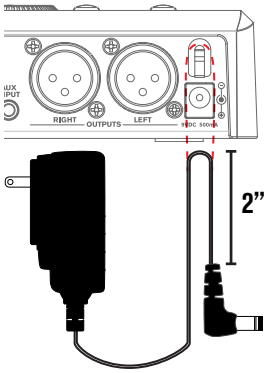
Audio Connections

1. Ensure the power is turned off on all interconnecting equipment and the goRack before making audio connections.
2. Connect the outputs of the mixing console, microphones, or instruments to the inputs of the goRack and set the goRack's MIC/LINE input switches accordingly. Use the highest quality cable available with the shortest possible cable runs.
3. Connect the goRack's outputs to the amplifier or powered speaker inputs.

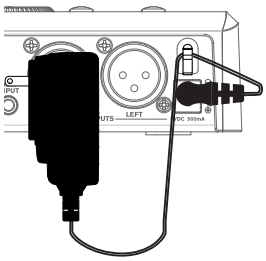
TIP: See ***'Application Diagrams' on page 22*** for application notes and system diagrams which can be used for reference when connecting the goRack to your system. See ***'Audio Cable Diagrams' on page 26*** for information on cable wiring.

Applying Power

1. Ensure your power amplifiers or powered speakers are turned off.
2. As shown in the illustration to the right, pinch the power adapter cord together, leaving approximately 2 inches of cable before the power plug, then route the cord into the cord retaining clip on the goRack's rear panel.



3. Connect the power adapter jack to the DC power input.
4. Apply power to the goRack by connecting the other end to an available AC power outlet. Since the goRack does not have a power switch, an AC power strip or power conditioner can be used for switching power to the goRack on or off.
5. Apply power to your mixer then your power amplifiers or powered speakers.

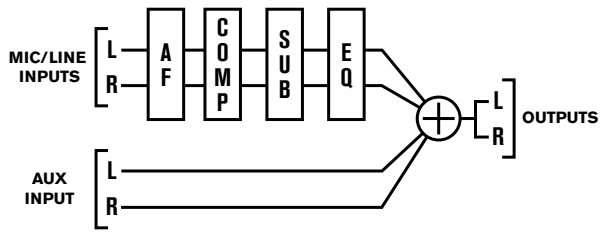
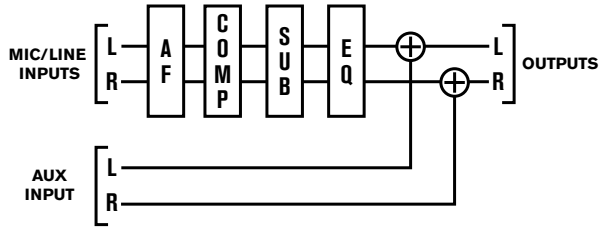
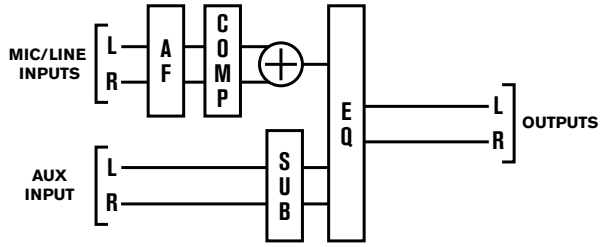


WARNING! When powering up a fully connected PA system, it is advisable to ALWAYS turn on the goRack (and mixer if applicable) first then turn on your amplifiers or powered speakers last. It's also a good idea to ensure the goRack VOLUME or mixer output gains are reduced before applying power to the amplifiers. When powering down the system, you should ALWAYS power down the amplifiers/powered speakers first, wait about 10 seconds to allow them to discharge, then power down the goRack (and mixer if applicable). In short, every time you use your system, the power amps should be the last components turned on and the first components turned off.

Configuring The goRack's Routing

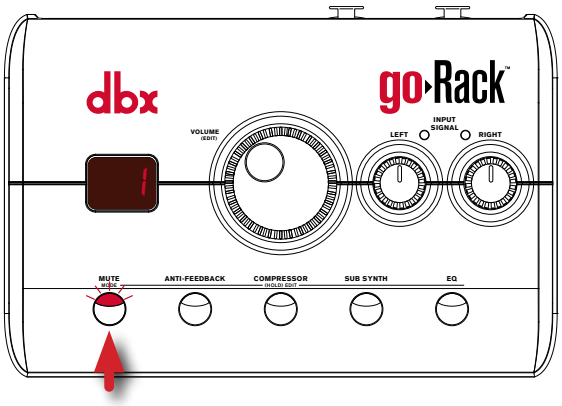
The goRack offers 3 routing options to select from. The following table provides a description of each of these routing options.

Routing Options

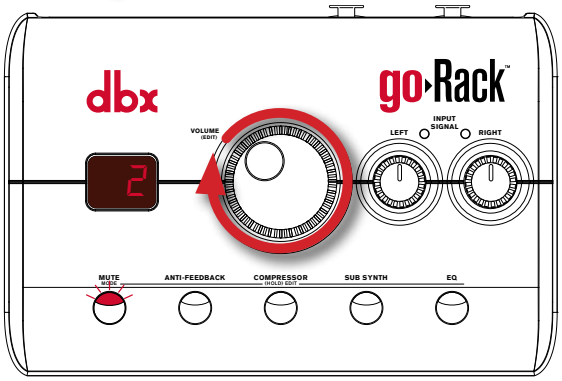
Option	Type	Description	Routing Diagram
1	Mono	This is the default setting from the factory. This option mono sums all input signals and feeds them to both outputs. This option is ideal for the solo artist or duo. For example, one input could be used for connecting a microphone and the other for an instrument, such as an acoustic guitar with a built-in pickup. This option is also well-suited for speech/presentation applications.	
2	Stereo	This option maintains stereo imaging through the goRack. Select this option when connecting the goRack between the mixer and powered speakers or amplifier in a conventional, stereo PA system. ***NOTE:*** Since the Subharmonic Synthesis effect manipulates lower frequencies, it is a mono effect. If absolute stereo separation is required, the Subharmonic Synthesis effect should be turned off.	
3	Advanced	This option mono sums the MIC/LINE inputs just like option 1, but maintains stereo imaging in the AUX INPUT. It also moves the Subharmonic Synthesis processing and adds EQ processing to the AUX INPUT. Use this option when you don't want signals connected to the MIC/LINE inputs to be processed with Subharmonic Synthesis and want to add equalization to the AUX INPUT signal.	
			LEGEND AF = Anti-Feedback COMP = Compressor SUB = Subharmonic Synthesiser EQ = Equalizer

To select a Routing option:

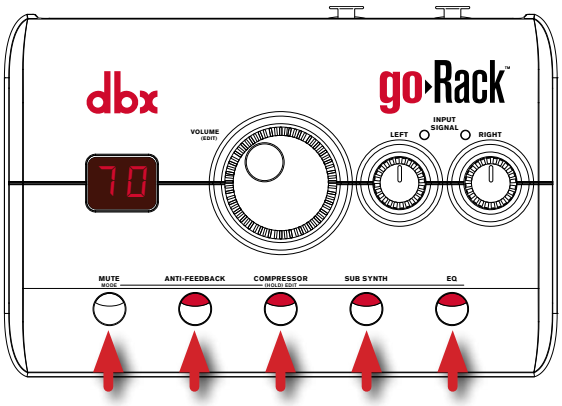
1. Press and hold the MUTE (MODE) button for 2 seconds (the LED will flash, indicating Route mode is active).



2. Select the desired option by turning the VOLUME (EDIT) encoder.



3. When done, press any button to exit Route mode.



Setting Initial System Levels

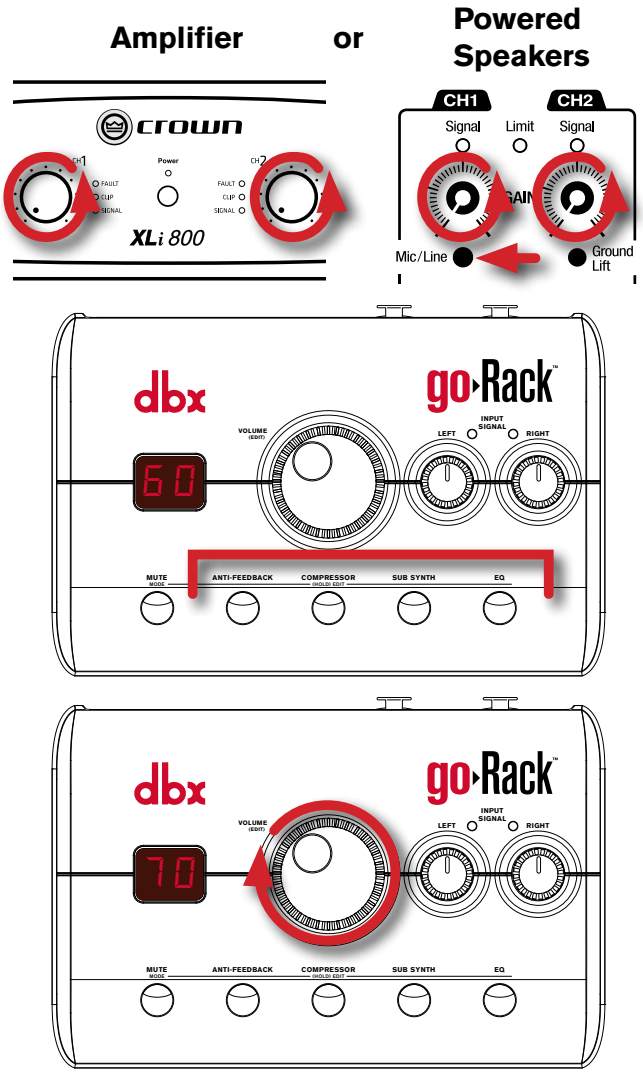
Properly setting system levels will help keep distortion and noise levels down, improve anti-feedback operation, and provide ample headroom for clean and safe operation of the sound system.

To set system levels:

1. Turn down your amp or powered speaker levels. If your powered speakers have Mic/Line switches, set them to "Line".

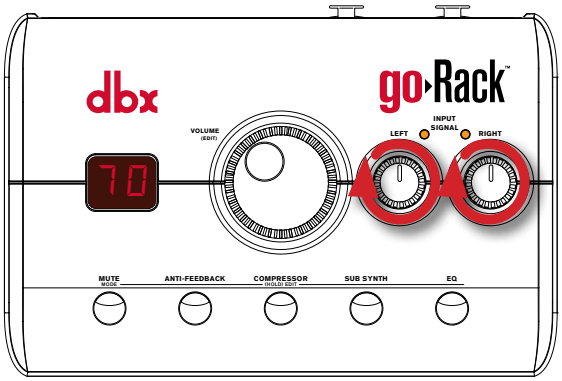
2. Make sure all processors are turned off.

3. Turn the VOLUME encoder to 70.

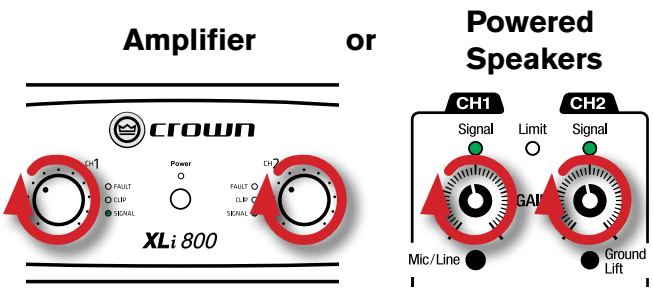


4. With signal present on the LEFT/RIGHT inputs, adjust the LEFT and RIGHT input gain knobs until the INPUT SIGNAL LEDs occasionally light orange.

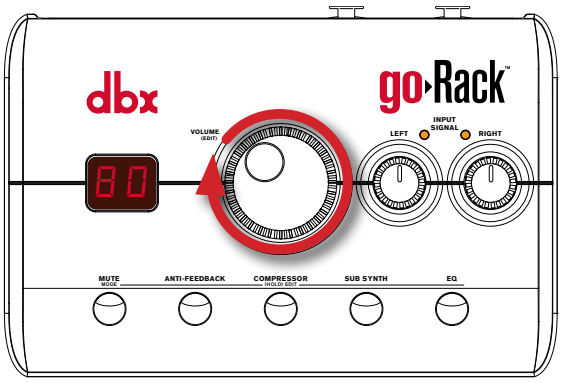
   Note that the INPUT SIGNAL LEDS also indicate signal level for the AUX input. However, the LEFT/RIGHT input gains will only adjust level for the LEFT/RIGHT inputs. Levels for the AUX input should be adjusted using the output level control available in the connected device.



5. Turn up the volume on your amp or powered speakers until the desired level is achieved – do not turn them up so far that the "Clip" or "Limit" LEDs light. If Clip or Limit LEDs light, the volume controls should be lowered until they no longer light.



6. Further system level adjustments can be made during the performance using the goRack's VOLUME encoder if required.



TIP: If additional system level is required or the source levels are too dynamic (meaning the source levels vary dramatically between soft and loud), try enabling and adjusting the compressor. See ***'Compressor' on page 14*** for further information on using the compressor.

Operating The goRack

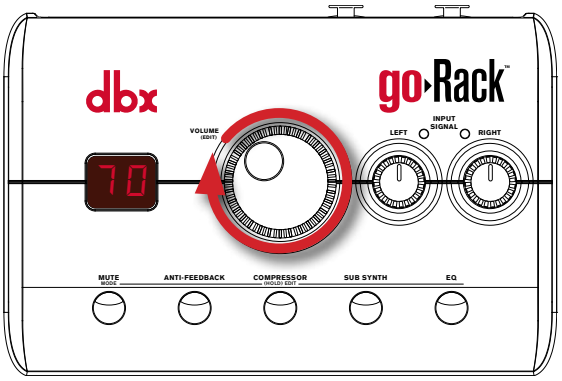
This section of the manual describes the processing types available and how to operate the goRack.

Master Volume

When the goRack initially boots, the **VOLUME** encoder will control master output volume. This is the default operating mode. Volume is controlled post-compression and pre-limiting.

To adjust master volume:

1. Turn the VOLUME encoder clockwise to raise the output volume or counter-clockwise to lower the volume.



Output Limiter & Clipping

A non-editable limiter is in place on the outputs to prevent harsh digital clipping. You may hear the limiter affecting the signal if your output levels get too close to clipping.

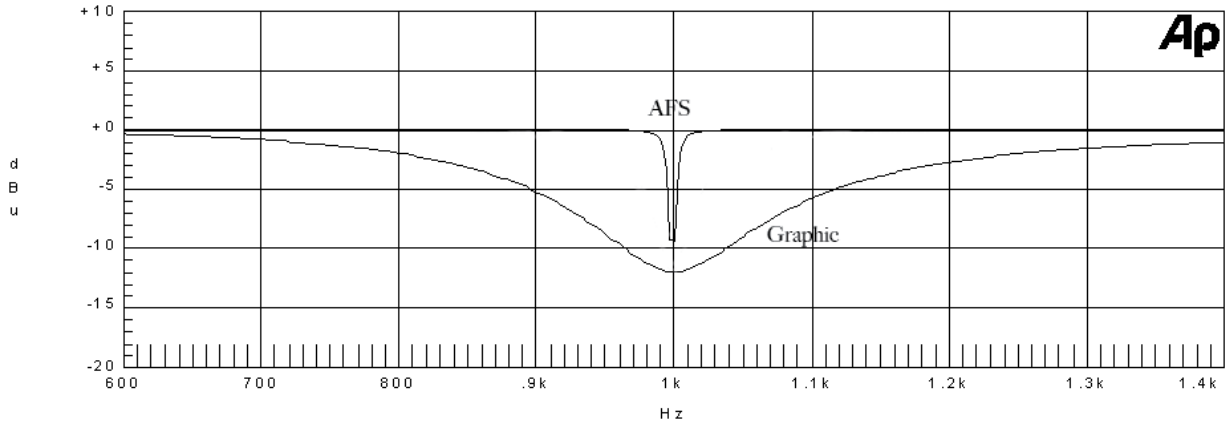
A small dot in the lower right hand corner of the display will light if the output channels are driven into clipping. This occurs if you have added too much gain to your signal via the Compressor, Sub Synth, or EQ processing modules. If you see this dot light, your signal is clipping and you need to turn it down. The easiest way to do this is to lower the master volume using the **VOLUME** encoder. You may also want to adjust your input gains, Compressor amount, Sub Synth amount, or EQ setting to help avoid clipping.

Anti-Feedback

Feedback is caused when an in-phase audio loop is created between an input transducer (such as a guitar pickup or microphone) and an output transducer (a loudspeaker). The goRack includes the exclusive AFS™ (Advanced Feedback Suppression) algorithm to help combat this dreadful phenomenon. The 10 Live AFS filters will automatically detect and suppress feedback. Just press the **ANTI-FEEDBACK** button and the goRack will do the rest.

AFS uses precision frequency detection and state-of-the-art processing to determine the exact range of feedback frequencies to remove (instead of indiscriminately removing large sections of audio). In the past, graphic equalizers were used to eliminate feedback from a system. This was an acceptable method for eliminating feedback, but when this method is put up against precision notch filters, such as those found in AFS, it becomes very evident that using graphic equalizers for this task severely affects the tone of the system. With AFS, the precision filters remove only a fraction of the frequency spectrum, eliminating the feedback with far less audible artifacts. The below diagram shows a comparison of filter widths between the AFS filters and conventional 1/3 octave graphic EQ filters.

Filter Precision Comparison Chart



TIP: AFS works best when the signal entering the goRack's inputs is sufficient. If the signal level is too low, AFS may be slow to respond to feedback. See ***'Setting Initial System Levels' on page 8*** for further information on setting the goRack's input gains.

Available Anti-Feedback Options

The Anti-Feedback options available in the goRack allow you to adjust the width of the notch filters. A description of each of these options is provided in the following table.

Anti-Feedback Width Options

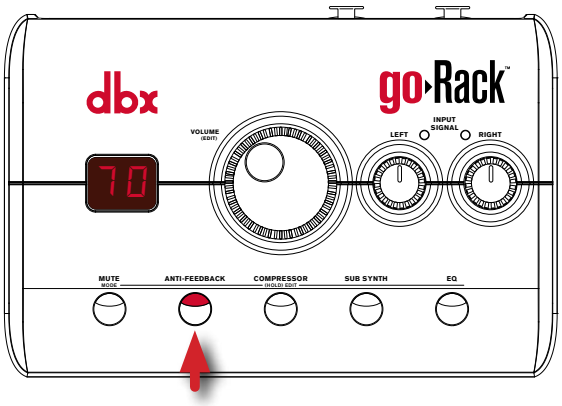
Option	Application Type	Description
1	MUSIC (NARROW)	This setting has a constant bandwidth of 8 Hz below 927 Hz and a constant Q of 116 at or above 927 Hz. This option is optimized for live music sound reinforcement and offers the highest level of sonic quality. When this option is selected, the AFS algorithm will zero in on the offending feedback frequency, while leaving the surrounding frequencies unscathed. With this option selected, the AFS filters will take slightly longer to set than when using the MUSIC/SPEECH setting, although the difference in time will be quite negligible.
2	MUSIC/SPEECH (MEDIUM)	This setting has a constant bandwidth of 9 Hz below 260 Hz and a constant Q of 29 at or above 260 Hz. This option is optimized for live music or speech sound reinforcement and provides the best all-around protection. It will provide the best combination of fast feedback suppression and precision, using filters slightly narrower and less audible than the SPEECH setting, but slightly faster than the MUSIC setting. If you're not sure which setting to use or the system is being used for music and speech sound reinforcement, select this option.
3	SPEECH (WIDE)	This setting has a constant bandwidth of 11 Hz below 76 Hz and a constant Q of 7 at or above 76 Hz. This option is optimized for speech sound reinforcement, where wider notch filters are less noticeable. Select this option when using the sound reinforcement system for speech only. With this option selected, notch filters will be wider, but will provide the fastest, most solid protection against feedback.

WARNING! If AFS is turned on and filters are set (in use), be careful when turning AFS off, as all filters will be immediately removed from the signal path and sudden feedback could occur. It is recommended that you lower your mixer output volume or the goRack's output volume before turning AFS off.

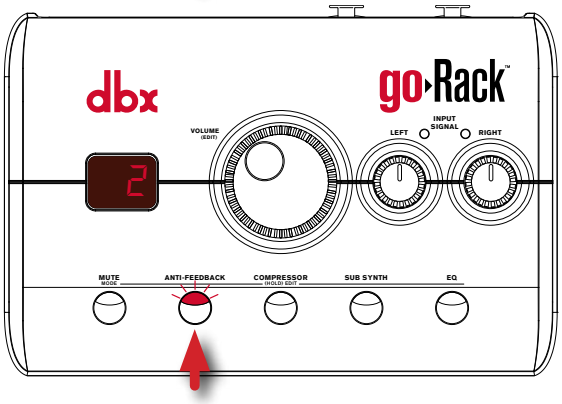
NOTE: When all the AFS filters have been set, they will begin to round robin – meaning that if all filters have been set and new feedback occurs, the first filter set will be released then re-set at the new feedback frequency location.

To use Anti-Feedback:

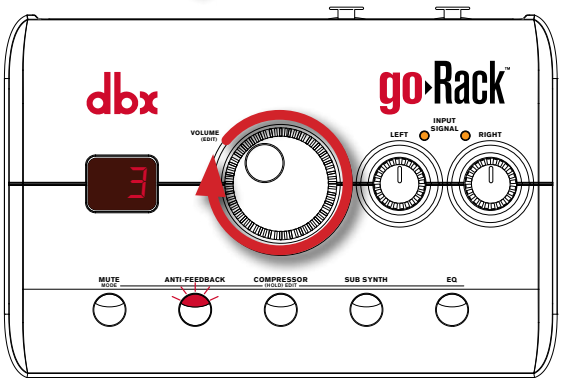
1. Press the ANTI-FEEDBACK button to enable the Anti-Feedback module (the LED will light, indicating the processing module is enabled).



2. To adjust the filter width options, press and hold the ANTI-FEEDBACK button for 2 seconds (the ANTI-FEEDBACK LED will flash, indicating Anti-Feedback Edit mode is active).

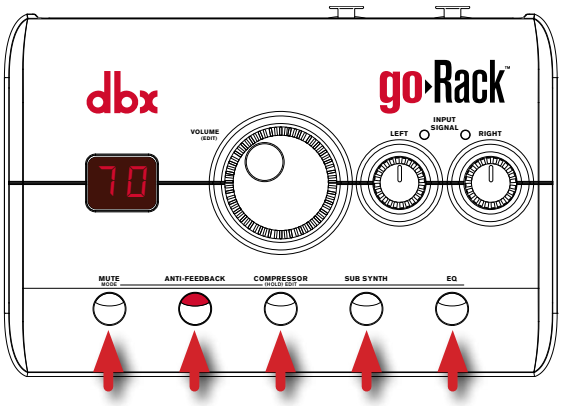


3. Turn the VOLUME (EDIT) encoder to select the desired filter width option (see ***'Available Anti-Feedback Options' on page 12*** for option descriptions).



4. When done, press any button to exit Edit mode.

   Note that any set AFS filters will be automatically cleared whenever the AFS button is disabled or the goRack is power cycled.



Compressor

A compressor is used to compress the dynamic range of the audio signal, bringing up the softer portions of the signal and lowering the louder ones. In live sound applications, it is common to compress the audio at different stages in the signal chain. For example, you may apply compression to individual instruments using the mixer's channel inserts. It is also common practice to apply compression to a group of instruments using the mixer's bus or group inserts. You can also apply a final stage of compression to the entire mix (commonly referred to as mixbus compression) in order to add some additional "body" and "glue" to the mix.

If connecting microphones or instruments directly to the goRack and using it as a 2-channel mixer, more compression can be used in order to level out the sound sources and provide a more consistent and professional sound on dynamic sources, such as vocals, speech, acoustic guitar, and bass. If using a dedicated mixer along with dedicated compression on individual channels, the compressor in the goRack can be used more judiciously for adding a small dose of additional dynamics control to the entire mix.

Typically, a compressor has two, three, or more parameters to adjust, making them difficult to set for the novice user. The most common parameters on a compressor are the threshold, ratio, and makeup gain. The threshold sets the level at which compression will occur, the ratio sets how much compression will occur once the threshold is exceeded, and the makeup gain raises the output level to compensate for level lost due to compression. Oftentimes, there will also be attack and release controls for adjusting how quickly the compressor will react and release its compression.

Compressors also have a knee, which affects the transition in and out of compression. A compressor's knee can be hard, soft, or selectable between the two. A hard-knee compressor provides a more aggressively compressed sound, whereas a soft-knee compressor will typically sound more gentle and smooth; OverEasy™ is the term used for dbx soft-knee compressors.

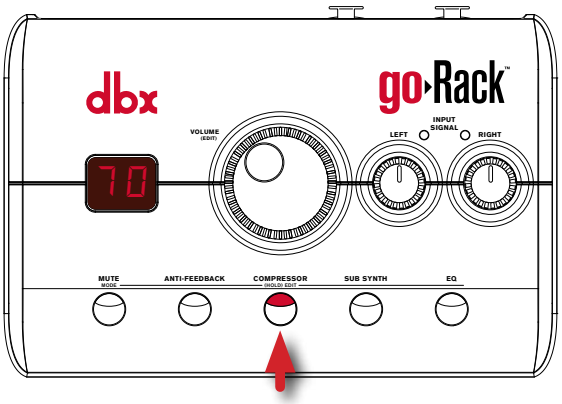
The compressor in the goRack is modeled after the classic dbx 163 analog compressor line. It is a soft-knee (OverEasy) compressor with a fixed ratio of infinity:1, program-dependent auto attack and release times, and one parameter which affects both the threshold and makeup gain under the hood. The soft-knee compression curve helps prevent over-compression due to the high ratio used. The combination of these features make it very easy to obtain professional results with minimal effort when setting the goRack's compressor.

Available Compressor Parameter

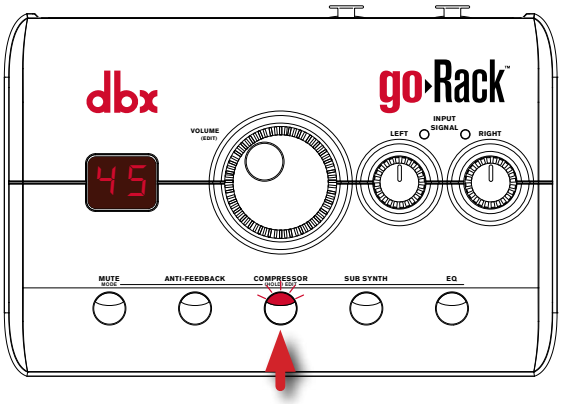
COMPRESSION AMOUNT *[1 - 99]*
Adjusts the amount of compression applied, with 1 being essentially no compression and 99 being the maximum amount of compression.

To use the Compressor:

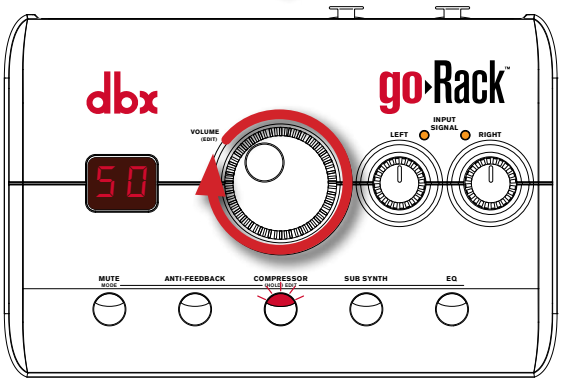
1. Press the COMPRESSOR button to enable the Compressor module (the LED will light, indicating the processing module is enabled).



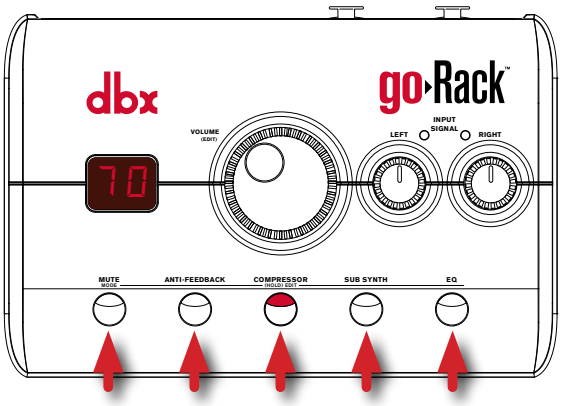
2. To edit the compressor, press and hold the COMPRESSOR button for 2 seconds (the COMPRESSOR LED will flash, indicating Compressor Edit mode is active).



3. While auditioning the sound source(s), turn the VOLUME (EDIT) encoder until the desired amount of compression is achieved.



4. When done, press any button to exit Edit mode.



NOTE: Applying too much compression can have adverse side effects, such as level “pumping” or potential increased risk of system feedback. If these conditions occur, it is recommended that the compression amount be reduced.

NOTE: When applying compression, make sure the “Clip” or “Limit” LEDs on your amp or powered speakers do not light.

Subharmonic Synthesizer

dbx subharmonic synthesis (or sub synth) processing has been specifically optimized to enhance the low frequencies in audio material and was designed for use in a variety of professional audio applications, including nightclub and dance DJ mixing, theatre and film sound, sound design, music recording, live music performance, and broadcasting. In certain applications, using traditional EQ to enhance this extremely low frequency region typically does not provide desirable results and can increase noise potential and stage rumble (low-frequency feedback) in live PA systems. Another problem is that the audio source may not have sufficient low end in this region to boost or the mics used to capture the sound may not capture these extremely low frequencies.

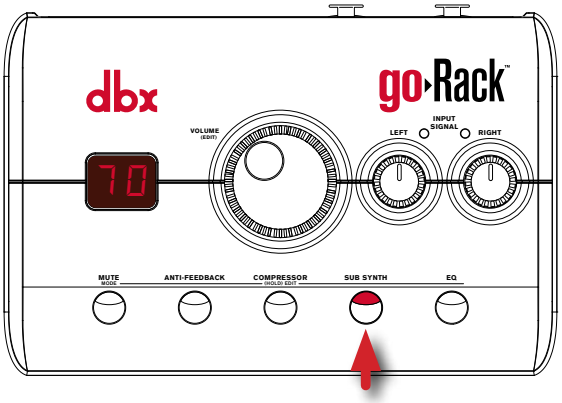
Subharmonic synthesis looks at frequencies around 100 Hz in the audio program and creates synthesized frequencies an octave below, providing noise free low-end enhancement that people can really feel! Subharmonic synthesis is best suited for sound systems utilizing subwoofers and in applications where deep low-end response is required.

Available Subharmonic Synth Parameter

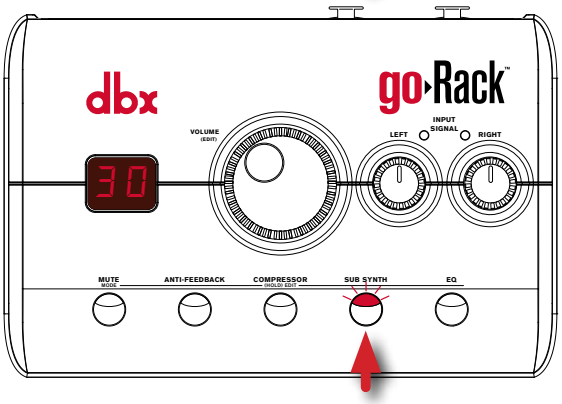
SUBHARMONIC SYNTHESIS LEVEL *[1 - 99]*
Adjusts the amount of subharmonic synthesis effect added to the signal, with 1 being essentially no effect and 99 being the maximum amount of effect.

To use the Subharmonic Synthesizer:

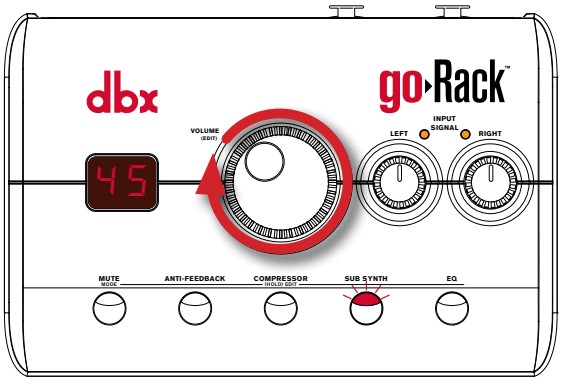
1. Press the SUB SYNTH button to enable the Sub Synth module (the LED will light, indicating the processing module is enabled).



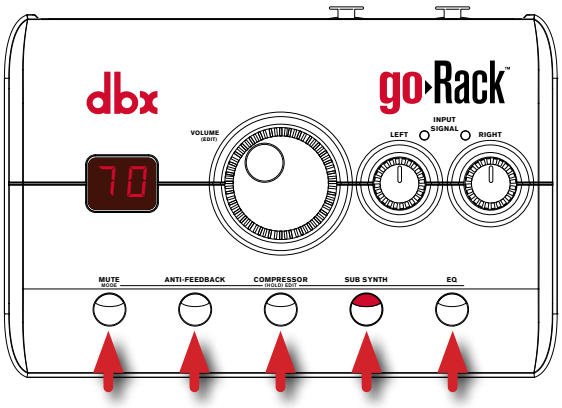
2. To edit the sub synth, press and hold the SUB SYNTH button for 2 seconds (the SUB SYNTH LED will flash, indicating Sub Synth Edit mode is active).



3. While auditioning the sound source(s), turn the VOLUME (EDIT) encoder to set the desired amount of sub synth effect.



4. When done, press any button to exit Edit mode.



IMPORTANT! The subharmonic synthesis process produces low-frequency audio signals that some speakers may not be designed to reproduce. Attempting to achieve enhanced low end with these systems may not be possible and may result in over-stressing your loudspeakers. If you can't hear a discernable difference when raising the sub synth effect, it is recommended that you disable the effect. For best results, subwoofers should be used with the sub synth effect.

TIP: If you experience low-frequency artifacts on a voice when using subharmonic synthesis with a dedicated mixer, try engaging a high pass filter, using EQ, or a combination thereof on the vocal's mixer channel to reduce the artifacts. If a high pass filter and EQ are not enough, try lowering the amount of subharmoic synthesis applied to the signal.

If you're using the goRack as a 2-chanel mixer and you wish to use subharmonic synthesis processing on music played through the goRack's AUX INPUT jack and don't want vocals or instruments to be treated with the sub synth effect, select the goRack's routing 3 option. See ***'Configuring The goRack's Routing' on page 6*** for more information on changing routing options.

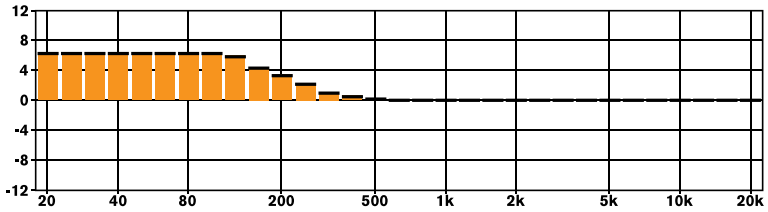
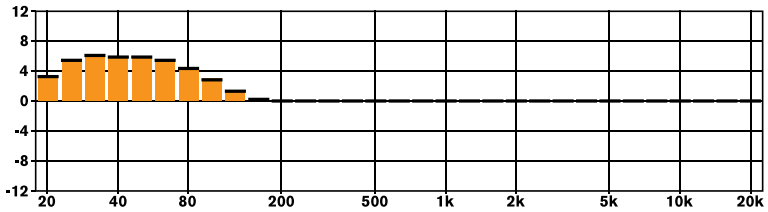
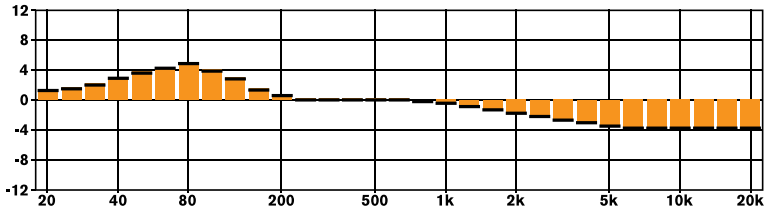
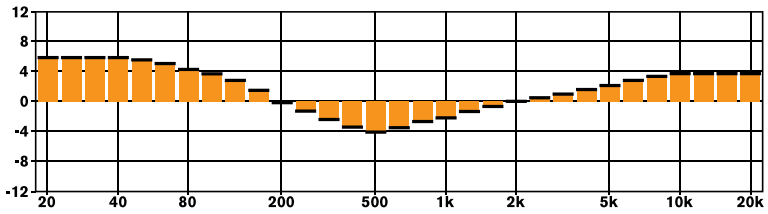
EQ

Various factors will determine how a sound system will sound in a room, such as the frequency response of the speakers, the frequency response of any microphones or instruments used, and the room acoustics to name a few. The goRack has 16 EQ preset curves to select from. These EQ preset curves can be used to quickly tune the frequency response of the sound system to help compensate for some of these limitations and help improve clarity and impact. The EQ can be turned on or off using the **EQ** button.

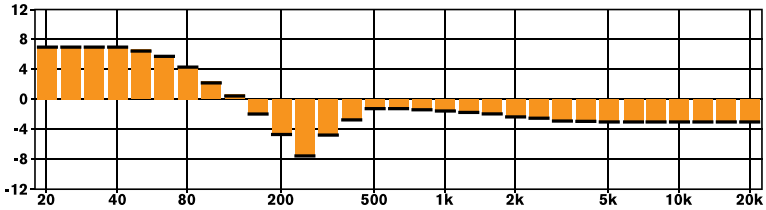
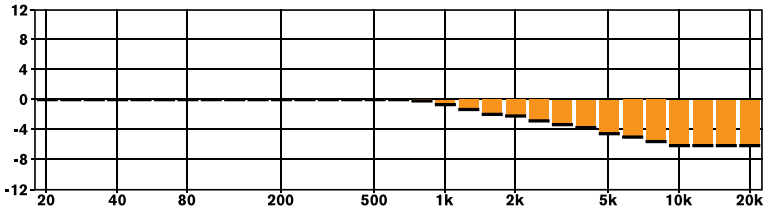
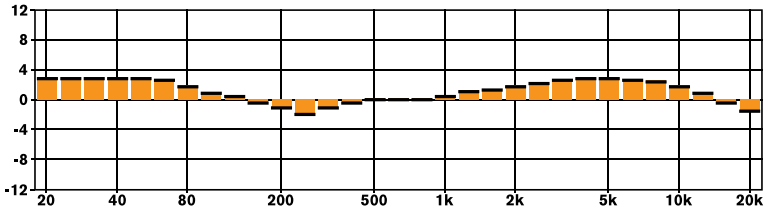
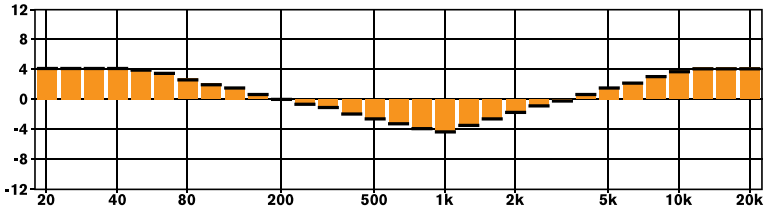
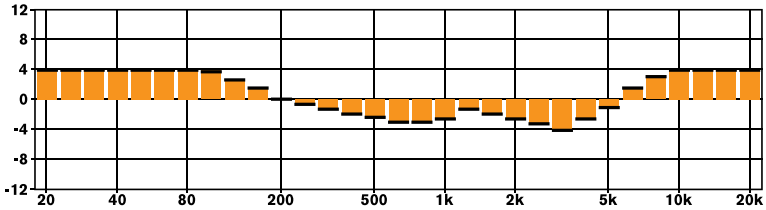
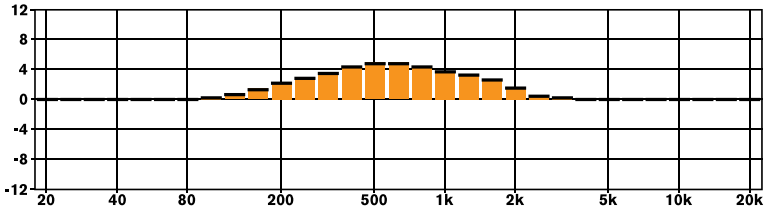
Available EQ Presets

The following table describes each of the available EQ preset curves.

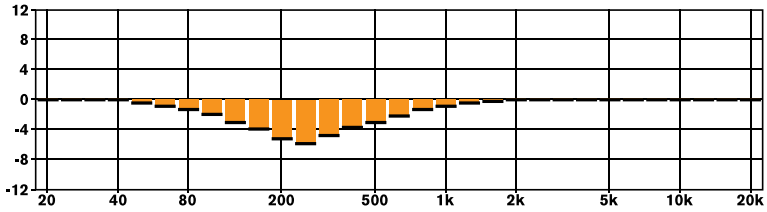
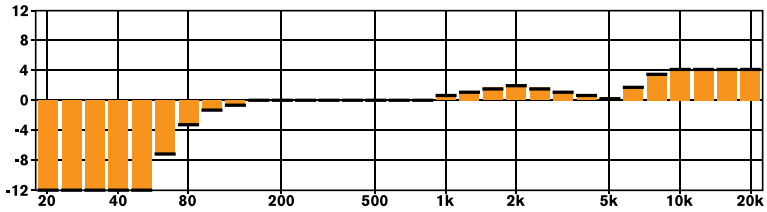
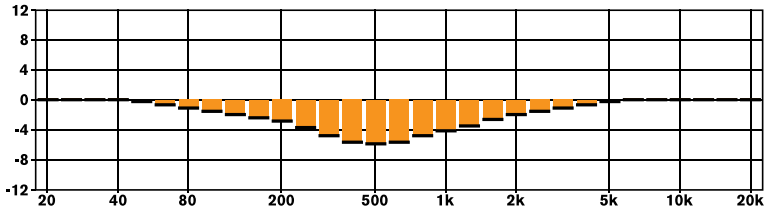
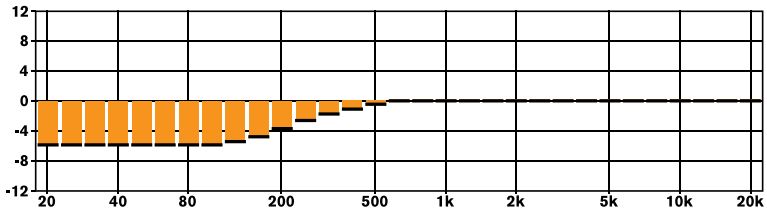
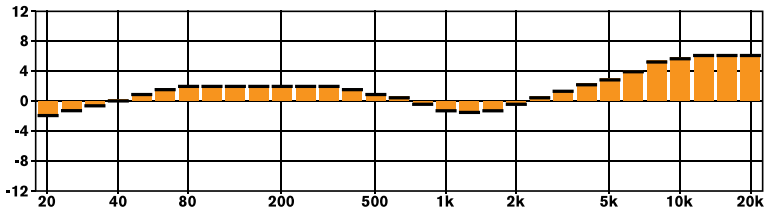
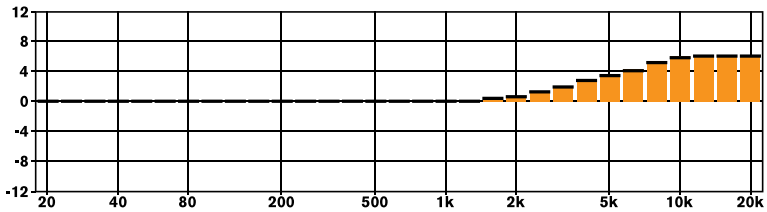
EQ Presets

Option	Name	Description	EQ Curve
1	Bass Boost	This EQ curve can help when the system sounds “thin” and lacks “body” and is similar to raising the LOW tone control on a stereo system.	
2	More Sub	Select this curve when the system has body but lacks definition in the bass.	
3	Venue	This EQ curve works well when the system is slightly “bright” and the bass frequencies are lacking. Try this curve when the room is a bit reverberant due to brightly reflective surfaces, such as windows.	
4	EDM/ Pop	This curve provides enhanced bass and treble frequencies with a midrange scoop and is well suited for Electronic Dance and Pop Music or DJ use. This is the classic “smiley face” EQ curve.	

EQ Presets

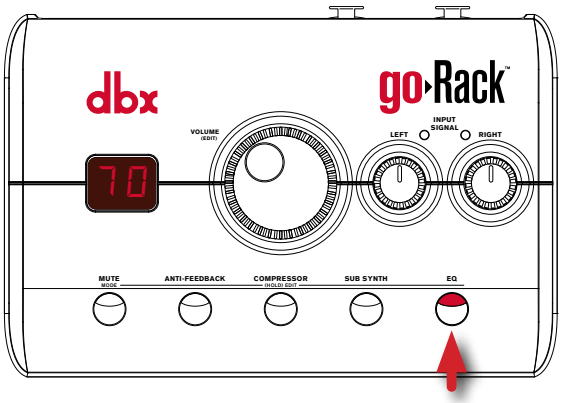
Option	Name	Description	EQ Curve
5	Deep	This EQ curve will enhance the bass while simultaneously scooping out some lower-midrange "mud" and slightly reducing the midrange and treble frequencies, providing a deeper, sub-bass sound.	
6	Treble Cut	Select this curve to tame treble frequencies when a system sounds overly "bright" and "harsh". It is similar to lowering the HIGH tone control on a stereo system.	
7	Acoustic	This curve is optimized for live reproduction of an acoustic guitar performance.	
8	Rock	This curve is well suited for the reproduction of a live rock music performance.	
9	Loudness	This curve can be used to balance the system's frequency response when operated at lower system levels. It is optimized to provide a "perceptually flat" response at 80 dB SPL.	
10	Mid Boost	This EQ curve can help add midrange definition to a sound system that lacks it.	

EQ Presets

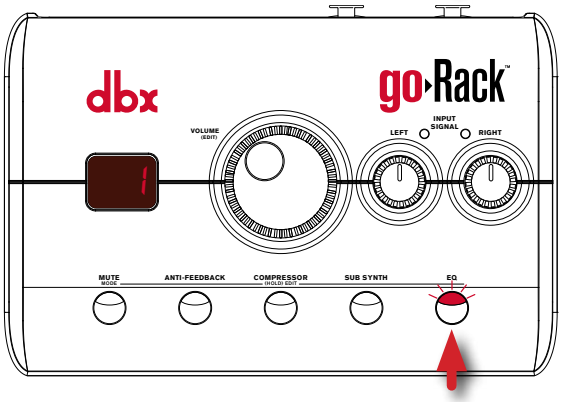
Option	Name	Description	EQ Curve
11	De-Mud	This EQ curve can reduce “mud” which can build up around the 300 Hz region.	
12	Speech	This curve can help reduce low-frequency noise and increase intelligibility in systems reproducing speech only.	
13	Mid Cut	This curve can help tame a system that sounds “boxy” or has excessive midrange frequencies and make it sound more musical.	
14	Bass Cut	Select this curve to tame bass and lower-midrange frequencies when a system sounds “boomy” and “muddy” and is similar to lowering the LOW tone control on a stereo system.	
15	Jazz	This curve is optimized for the reproduction of a live jazz performance.	
16	Treble Boost	This curve can help add top-end “air” and “clarity” to a speaker system that lacks it and is similar to raising the HIGH tone control on a stereo system.	

To use the EQ:

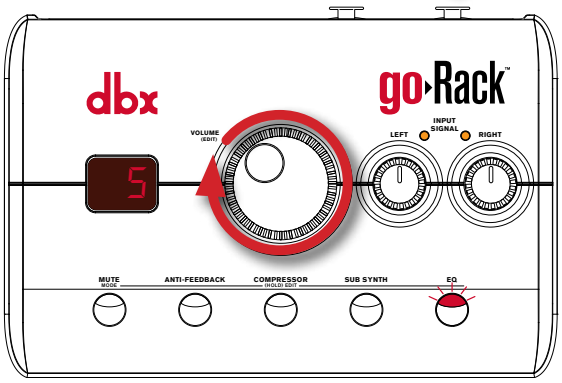
1. Press the EQ button to enable the EQ module (the LED will light, indicating the processing module is enabled).



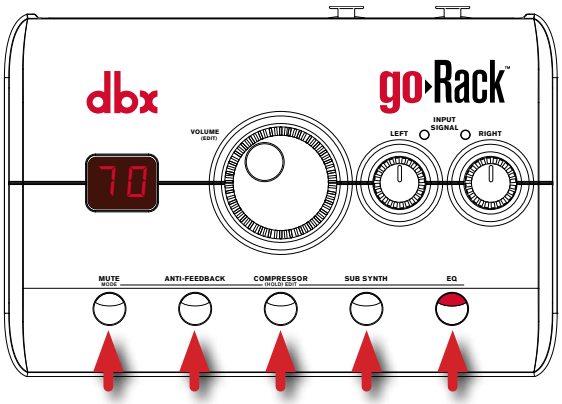
2. To change the EQ setting, press and hold the EQ button for 2 seconds (the EQ LED will flash, indicating EQ Edit mode is active).



3. While auditioning the sound system, turn the VOLUME (EDIT) encoder and select the EQ curve that sounds best for the application.



4. When done, press any button to exit Edit mode.



Application Diagrams

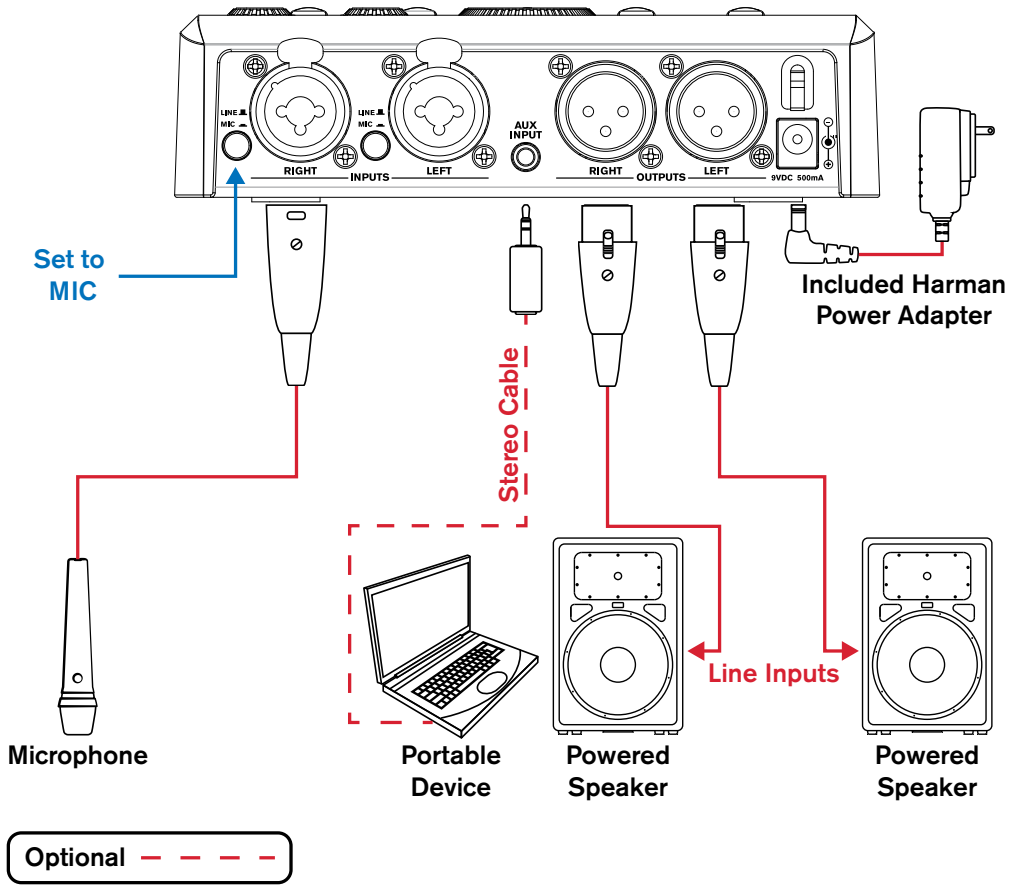
Use these diagrams and notes for reference when initially connecting and configuring the goRack for your application.

Application 1: Speech/Presentation

This application is suited for speech/presentation applications and provides a 2-channel mixer, aux input, and system processing. The microphone can be connected to the goRack's MIC/LINE 1 input. If a second microphone is required, the MIC/LINE 2 input can be used. The AUX INPUT can be used for connecting a portable device for audio playback.

Application Notes:

- Make sure your powered speakers (or amplifiers) are turned off before making connections.
- Make connections as described in ***'Making Connections' on page 5*** then apply power to the system according to the instructions described in ***'Applying Power' on page 5***.
- The routing 3 option will work best for this application. See ***'Configuring The goRack's Routing' on page 6*** for information on goRack routing options.



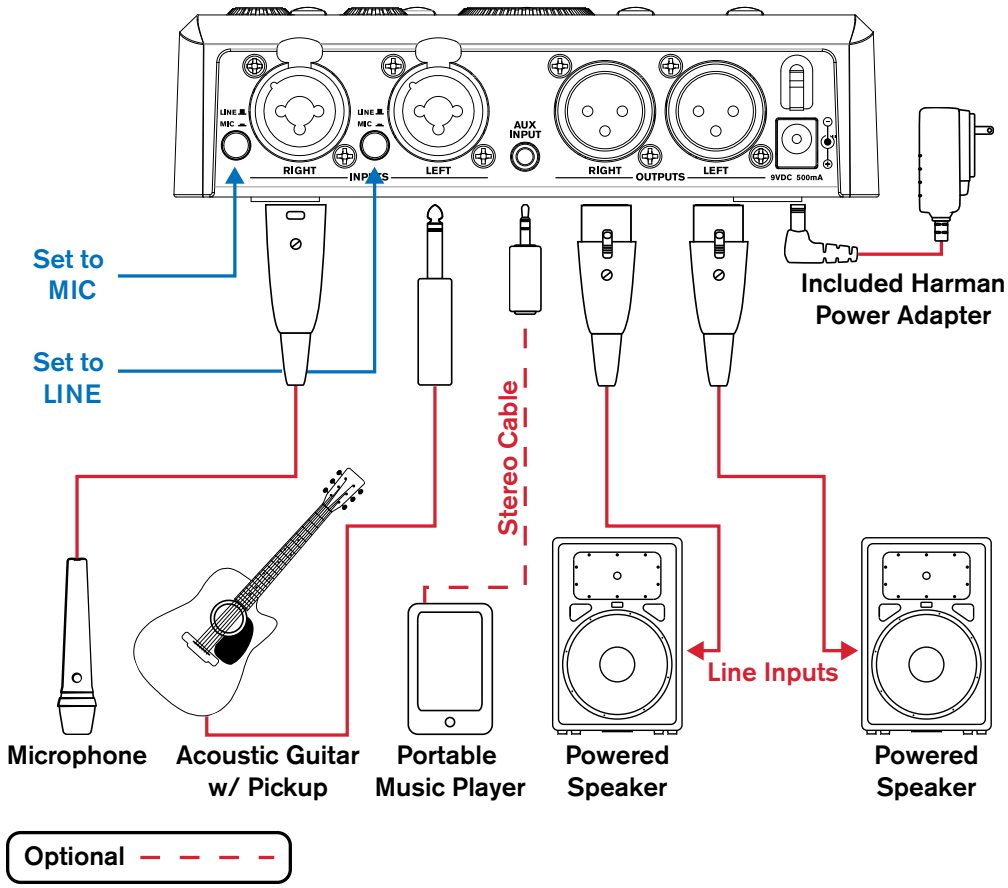
NOTE: A stereo (Tip-Ring-Sleeve) Mini cable should be used for the connection between the portable device and AUX INPUT. See ***'Audio Cable Diagrams' on page 26*** for more information on these cable types.

Application 2: Solo Artist/Duo Performance

This application is suited for solo artist/duo performance applications and provides a 2-channel mixer with system processing. The goRack's two combination MIC/LINE inputs can be used for connecting microphones or direct instruments. The AUX INPUT can be used for connecting a mobile device or music player for backing tracks or music playback between sets.

Application Notes:

- Make sure your powered speakers (or amplifiers) are turned off before making connections.
- Make connections as described in ***'Making Connections' on page 5*** then apply power to the system according to the instructions described in ***'Applying Power' on page 5***.
- The routing 3 option will work best for this application. See ***'Configuring The goRack's Routing' on page 6*** for information on goRack routing options.



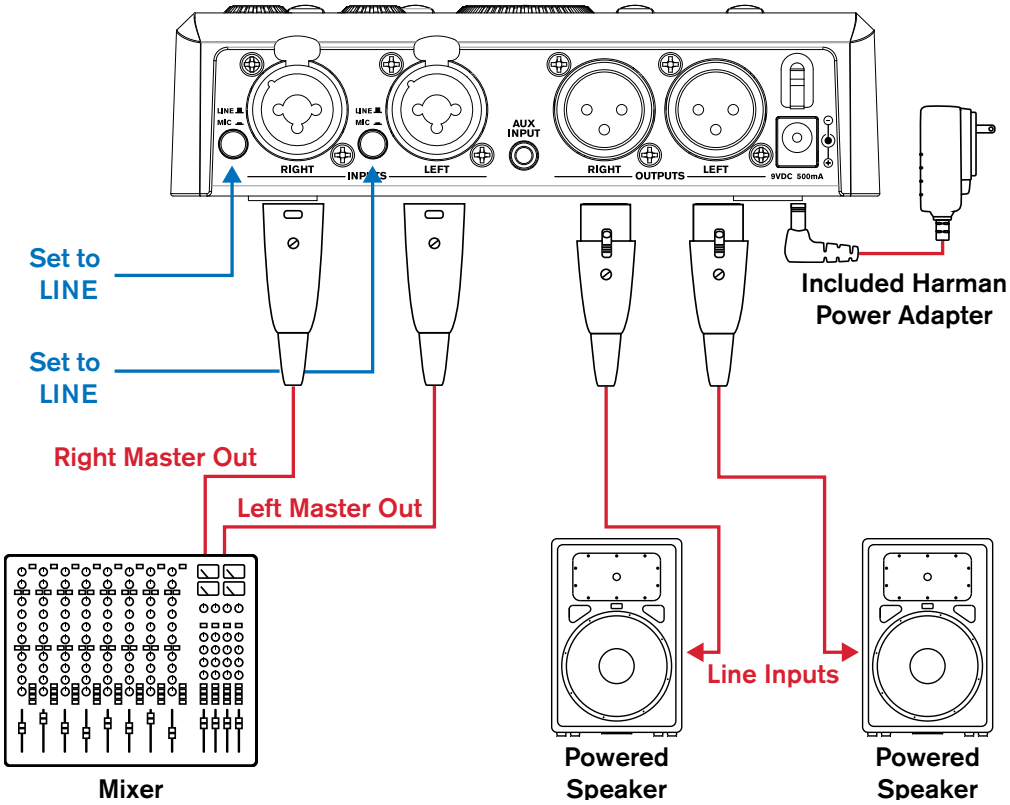
NOTE: A stereo (Tip-Ring-Sleeve) Mini cable should be used for the connection between the portable music player and AUX INPUT. If connecting instruments to the goRack's LEFT/RIGHT inputs using 1/4" plugs, unbalanced TS (Tip-Sleeve) instrument cables should be used. See ***'Audio Cable Diagrams' on page 26*** for more information on these cable types.

Application 3: Band Performance/DJ

This application is suited for band rehearsal spaces, small venue live performances, or small DJ applications where the sound system already consists of a dedicated mixer and the goRack is used for system processing only. The goRack's two combination MIC/LINE inputs can be connected to the mixer's left/right master outputs. Stereo imaging will be maintained through the system when using the LEFT/RIGHT inputs and the pan pots on the mixer can be used to place sound sources in the stereo field if required.

Application Notes:

- Make sure your mixer and powered speakers (or amplifiers) are turned off before making connections.
- Make connections as described in ***'Making Connections' on page 5*** then apply power to the system according to the instructions described in ***'Applying Power' on page 5***.
- The routing 2 option will work best for this application. See ***'Configuring The goRack's Routing' on page 6*** for information on goRack routing options.



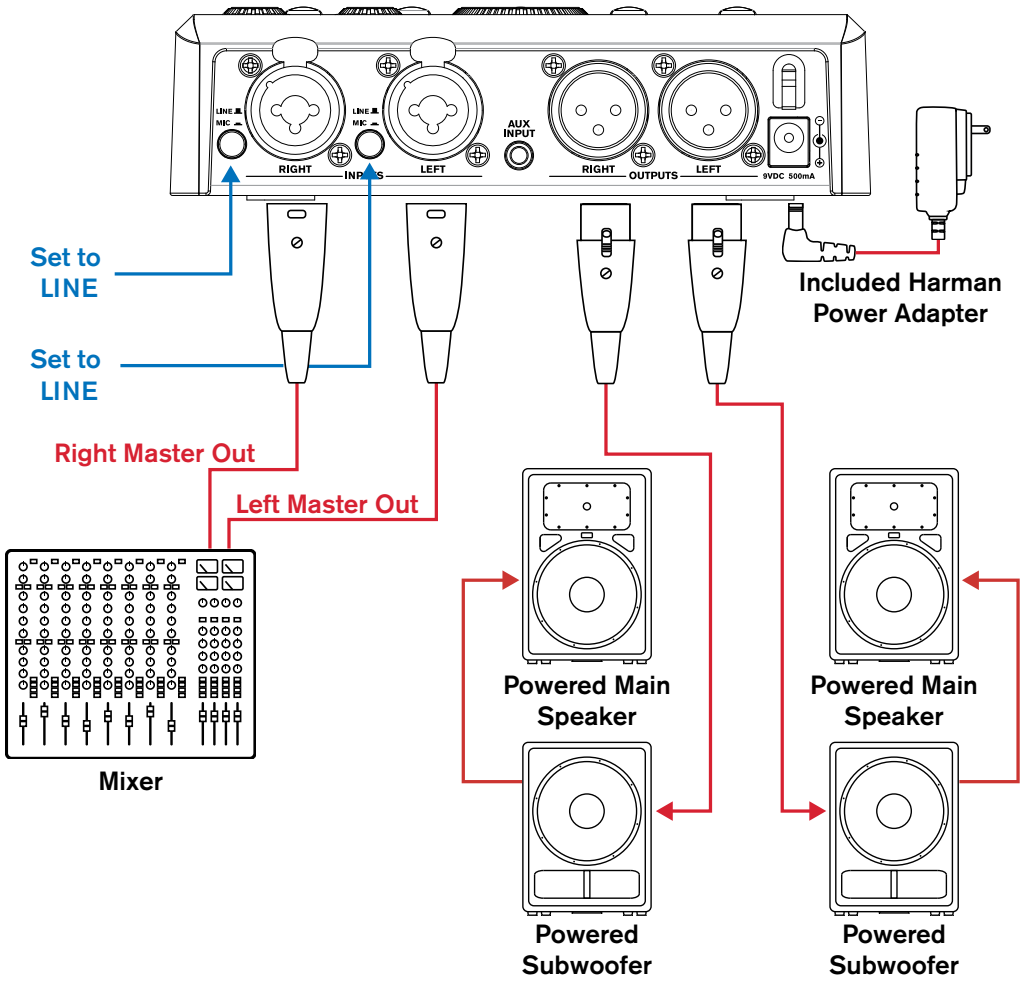
NOTE: For best noise performance, balanced cables (XLR or 1/4" TRS Phone) should be used between the mixer and goRack if the mixer's outputs are balanced. See ***'Audio Cable Diagrams' on page 26*** for more information on these cable types.

Application 4: Using Powered Subwoofers

This application is just like application 3 but with the addition of subwoofers and is better suited for larger DJ or live performance applications. This type of configuration allows the goRack's sub synth processing to be fully utilized. Powered subwoofers designed for live sound use typically contain a built-in active crossover and additional line-level outputs that can be connected to the main powered speakers, eliminating the need for an external active crossover.

Application Notes:

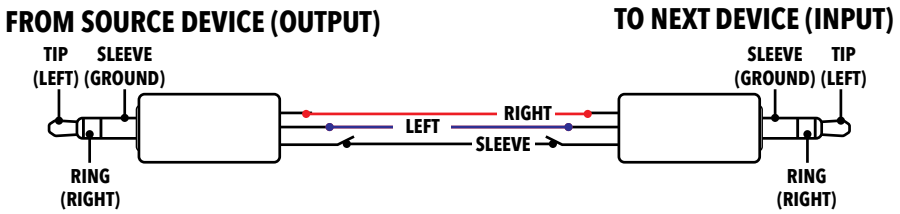
- Make sure your mixer and powered speakers (or amplifiers) are turned off before making connections.
- Make connections as described in ***'Making Connections' on page 5*** then apply power to the system according to the instructions described in ***'Applying Power' on page 5***.
- The routing 2 option will work best for this application. See ***'Configuring The goRack's Routing' on page 6*** for information on goRack routing options.



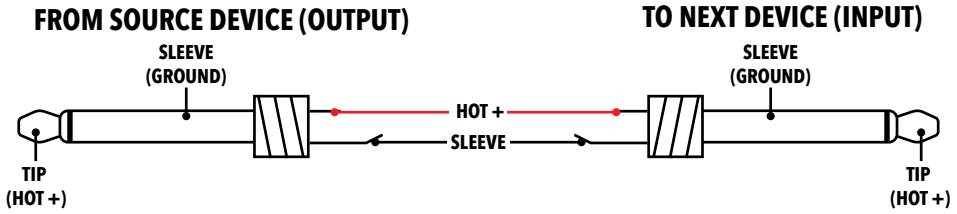
NOTE: For best noise performance, balanced cables (XLR or 1/4" TRS Phone) should be used between the mixer and goRack if the mixer's outputs are balanced. See ***'Audio Cable Diagrams' on page 26*** for more information on these cable types.

Technical Information

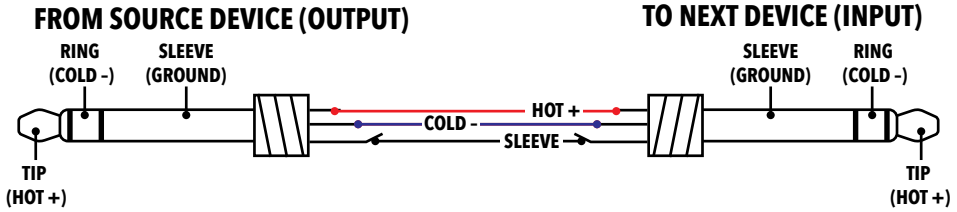
Audio Cable Diagrams



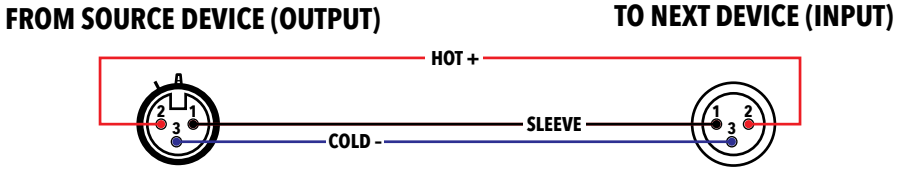
3.5 mm TRS MINI TO TRS MINI



1/4" TS PHONE TO TS PHONE



1/4" TRS PHONE TO TRS PHONE



FEMALE XLR TO MALE XLR

Specifications

INPUTS

Mic/Line

Number of Inputs:	2, independently switchable between mic or line level
Connectors:	Female ¼" - XLR combination
Type:	Electronically balanced, RF filtered
Impedance:	Switch set to MIC: 2 kΩ balanced, Switch set to LINE: 22 kΩ balanced
Max Gain:	Switch set to MIC: 48 dB, Switch set to LINE: 5 dB
Max Input Level:	Switch set to MIC: 0 dBu, Switch set to LINE: +20 dBu
CMRR:	> 45 dB

Aux

Number of Inputs:	1
Connector:	Female stereo 1/8" (3.5 mm) TRS mini
Type:	Unbalanced, RF filtered
Impedance:	20 kΩ
Max Input Level:	+20 dBu

OUTPUTS

Number of Outputs:	2 line outputs
Connectors:	Male XLR
Type:	Impedance balanced, RF filtered
Impedance:	40 Ω
Max Output Level:	+14 dBu

MIC/LINE A/D & D/A PERFORMANCE

Converters:	24-bit
Dynamic Range:	115 dB A-weighted

AUX INPUT A/D PERFORMANCE

D/A Converter:	24-bit
D/A Dynamic Range:	106 dB A-weighted

SYSTEM PERFORMANCE

Internal Processing Wordlength:	32-bit floating point
Sample Rate:	48 kHz
Dynamic Range:	103.5 dB A-weighted 102.5 dB unweighted
THD+Noise:	0.04% typical at 0 dBu in/out, 1 kHz
Frequency Response:	20 Hz – 20 kHz, +0 /- 0.5 dB
Interchannel Crosstalk:	< -80 dB, -84 dB typical
Latency:	Input to output: 3.4 ms

POWER SUPPLY

Model:	PS0913DC-04 (9 VDC)
Operating Voltage:	100-240 VAC, 50/60 Hz
Power Consumption:	4.5 Watts (500 mA)

PHYSICAL

Unit Weight:	1.2 lbs. (0.54 kg)
Shipping Weight:	2.04 lbs. (0.93 kg)
Dimensions:	6.1" (L) x 4.1" (W) x 1.69" (H) 154.9 mm (L) x 104.1 mm (W) x 42.9 mm (H)

Specifications subject to change without notice.

Additional Resources

dbx Website

http://dbxpro.com

goRack Product Page

http://dbxpro.com/en-US/products/goRack

dbx Support

http://dbxpro.com/en-US/support

dbx User's Forum

http://dbxpro.com/forum

Phone: (801) 566-8800
Website: dbxpro.com
Support: dbxpro.com/en-US/support

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goRack Owner's Manual
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