Daking Audio

Daking Audio Mic Pre EQ Manual

VERSION 1.0

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Safety Considerations

1. Read, follow and keep these instructions.
2. Heed all warnings.
3. Do not use this equipment in or near water. Do not place liquids on or near the device because the device might be damaged during a spill.
4. Clean only with a soft dry cloth.
5. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
6. Use only Daking supplied power supplies to prevent damage to your device or create safety hazards.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
9. Protect the power cord and all connecting cables from being walked on or pinched particularly at plugs, receptacles, and the point where they exit from the device.
10. Only use attachments/accessories specified by the manufacturer.
11. Unplug this device when unused for long periods of time.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when a power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
13. Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

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Daking Audio Mic Pre EQ

1.1 About Daking Audio

Congratulations! You've purchased a Mic Pre EQ, a very high end piece of gear! The Mic Pre EQ uses all discrete transistor Class A circuits, Jensen input and output transformers and printed circuit board mounted switches. Signal capacitors are precision polypropylene or ultra low-leakage electrolytic types. Our boards are assembled on a mil-spec assembly line. The chassis are stainless steel for maximum RF and hum rejection and a long lasting finish. Every unit is hand finished, tested, burned in, and tested again in a second facility.

Also, we just couldn't stand to use plastic knobs, so we designed our own anodized, engraved aluminum knobs that give a much more precise and quality feel. We designed our gear to be gear you'd own for life, not some passing fancy you'd leave in the dust once you figured what the good stuff sounds like. This IS the good stuff.

-Geoff Daking

1.2 Quick Start Guide

1.2.1 Don't read the manual!

Most of you will already know how to use mic preamps perfectly well and might be even a little offended at the idea of reading the instruction manual. So don't read it. This manual is not for you.

This manual *is* for someone that knows enough to buy the very best (Daking of course!), but doesn't have a lot of experience using recording gear.

You might be a bass player who just got a DAW and wants a cleaner more accurate sound from your mics in your home studio. You might be a student that just got a check from Mom & Dad and who wants to go buy something nice for yourself.



You might be the guy standing ankle-deep in a pool of salt water, trying to yank the grounding pin off your mixer's power cord so you can plug it into your 2-prong ungrounded outdoor outlet.

This manual is especially for you!

Whenever you see the Duh! Guy, you can be assured that most professionals will already know this stuff. Be sure to explain this stuff to your friends in a snotty and condescending tone, so you too can be part of the tradition of know-it-all engineers and recordists!

1.2.2 Purpose

The job of a microphone amplifier is to make a mic level signal into a line level signal so that it can be recorded, mixed or processed. The purpose of an EQ or Equalizer is to boost or cut groups of frequencies to shape the frequency response, tone or timbre of an audio signal. Many times this is to correct for a particularly dark microphone, like a ribbon, or a particularly bright microphone like some small diaphragm condensers. In mixing, EQ is also used to remove frequencies from one source to make room for another to prevent masking.

1.2.3 Basic Set Up

Plug a microphone into the **Mic Input Jack** on the Mic Pre EQ using a microphone (XLR Female to XLR Male) cable. If the mic you are using is a condenser microphone that requires phantom power, push in the **+48 Button** to engage phantom power. Patch out of the **Output Jack** of the same preamp to the line level input of your recording device using either a microphone (XLR Female to XLR Male) cable or balanced line (XLR Female to a ¼" TRS Male) cable.

You can also plug line level sources (like the output of a different preamp or an insert send) into the **Line Input** XLR jack.

1.3 The Power Supply

Your Mic Pre EQ ships with an external 48V DC power supply. External power supplies offer many advantages over internal power supplies like reducing hum from 50 or 60 cycle power sources and improving the safety of the equipment you are using.

1.4 Back Panel



1.4.1 In General: XLR Connectors



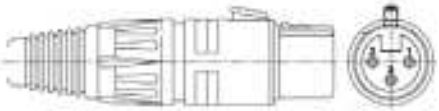
XLR connectors are more expensive, more reliable and offer a stronger connection than ¼" TRS connectors. They also have the option of a locking latch that helps to keep the cable from being pulled out accidentally. If worse comes to worse, you can connect two XLR cables together to make a longer run. The XLR connection is strong enough that you can swing a hand-held microphone around your head like a cowboy for quite a long time before the mic flies off and knocks someone's teeth out.

XLR males are used for Outputs and XLR female are used for Inputs. Makes sense, right? Many people confuse the male and female XLR parts, because the female plug fits into the male plug to join together. The male XLR has 3 pins (male pins…) inside the plug and the female XLR has three holes inside the plug (female holes…). Check out the diagrams below:

Neutrik Male XLR Plug



Neutrik Female XLR Plug



1.4.2 Microphone Input (XLR)

The microphone input accepts a mic-level signal. Mic level signals are generally very low in voltage around a couple of millivolts or 1000^{ths} of a volt. The job of the mic preamp is to increase the mic-level signal by up to 70 dB to be line level, which is between 1 and 2 volts.

1.4.3 Line Input (XLR)

The line input accepts line level signals and bypasses the microphone preamplifier so that the EQ can be used by itself. The Line button needs to be pushed on the front panel to use the line input.

1.4.4 Line Output (XLR)

The output signal from your preamp comes from here. The output signal is line level, not mic level, so patching it into a mic pre-amp afterwards is unnecessary and probably will just cause problems.

1.4.5 Power Supply Connection

This is the jack where you connect your external 48V DC power supply.

1.5 Front Panel: The Preamplifier Section



1.5.1 The Output Level Knob

The Output Level knob is akin to the fader on a channel on a mixer. You use this to control the level leaving the Mic Pre EQ. If you are boosting with the EQ heavily you will probably need to turn the output level down and if you are cutting heavily with the EQ you may need to bring the level up.

1.5.2 The Gain Knob

The Gain Knob allows you to control the amount of gain added to the input signal. The knob is stepped in 5dB increments. The gain should be set as high as possible without hearing audible clipping or distortion, or overloading the following stage in the signal chain. For instance, your Mic Pre EQ can support outputs up to +28dB, but most audio interfaces clip at +18dB. The gain control would have to be set so as to not overload the audio interface. Professional consoles are capable of handling levels as high as +30dB in some cases.

1.5.3 The Line Button

The Line buttons switches the input of the Mic Pre EQ from the Mic Input to the Line Input bypassing the microphone preamplifier.

1.5.4 Pad Button

The Pad button is a 20dB attenuator useful when the gain switch is in its lowest position and the peak indicator (*) is still being lit. Most commonly the Pad button will be required for extremely dynamic sources like drums and percussion, or extremely loud sources like electric guitar through a large amplifier. The Pad button only works on the microphone input, not on the line input.

1.5.5 +48 Button

This button controls the 48 volt phantom power which is used to power the onboard electronics in condenser microphones or active direct injection (DI) boxes.

1.5.6 Ø Phase Button

The Ø button flips the phase of the audio signal by swapping pin 2 and pin 3 of the XLR jack of the microphone input. This does not affect the phase of the instrument input because it is unbalanced.
Most often this is used when two microphones are being used on the same source, like the top and bottom microphones for a snare drum. Often the phase is flipped on the bottom microphone so that the two microphone signals will be in phase. When two microphones are out of phase and mixed together the sound often is hollow sounding, with some frequencies boosted and some frequencies cut. Phase flip is also commonly used when two microphones are used on a single guitar speaker cabinet.

1.5.7 The Mute Button

As you might expect the mute button cuts signal from the output of the Mic Pre EQ.

1.5.8 The Bypass Button

The Bypass button removes the EQ section of the unit from the signal chain allowing you to use the microphone preamp without the equalizer.

1.6 The Front Panel: The Equalizer Section

1.6.1 General instructions

Each of the four bands of EQ available has its own frequency and gain control. If you aren't using a band of EQ turn the frequency control knob to the "out" position. This will ensure that you are adding the least amount of noise to the signal chain.

1.6.2 The 20kHz Low Pass Button

The 20K Low-Pass Filter button rolls off high frequencies at a rate of 6dB per octave. The Mic Pre EQ has high frequency extension well past 40kHz. Rolling off un-needed high frequencies can improve headroom.

1.6.3 The 25Hz High Pass Button

The 25 Hz High Pass Filter rolls off bass frequency at a rate of 12dB per octave. This improves headroom and eliminates the possible problems with sub-audible frequencies.

1.6.4 High Frequency Section

The High Frequency band of your Mic Pre EQ is a shelving type filter which means that all frequencies beyond the turnover frequency are boosted or cut by the same amount. The turnover frequency can be set to 8kHz, 10kHz, 12kHz, 15kHz, 20kHz and "Out" which bypasses the high frequency band of EQ.

1.6.5 High Mid Frequency Section

The High Mid band of the Mic Pre EQ is a peak/notch type with variable Q. The center frequency can be set to 1.5K, 3K, 5K, 7K, 9K and "Out"which bypasses the filter.

1.6.6 Low Mid Frequency Section

The Low Mid band of the Mic Pre EQ is a peak/notch type with variable Q. The center frequency can be set to 125Hz, 250Hz, 500Hz, 1K, 2K and "Out"which bypasses the filter.

1.6.7 Low Frequency Section

The Low Frequency band of your Mic Pre EQ is a shelving type filter which means that all frequencies beyond the turnover frequency are boosted or cut by the same amount. The turnover frequency can be set to 30Hz, 50 Hz, 80 Hz, 100 Hz, 150 Hz, and "Out"which bypasses the low frequency band of EQ.

1.7 Signal Flow: Patching Into and Out of Your Mic Pre EQ

1.7.1 Microphone to Mic Pre EQ to Audio Interface or Mixer

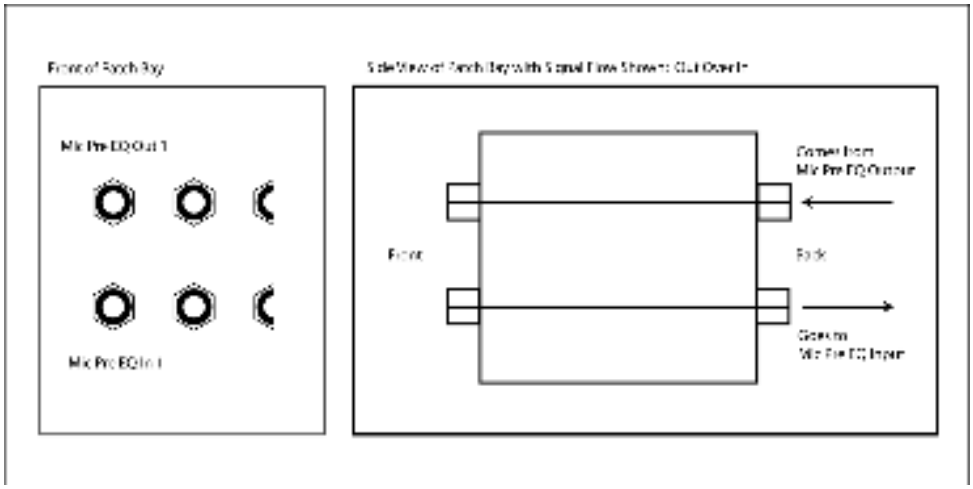
Basic Cables Needed:
(1) Microphone Type Cable (Female XLR to Male XLR)
(1) Female XLR to Male ¼" TRS Balanced Cable

Patch from the microphone to the mic input on the Mic Pre EQ using the female XLR to male XLR microphone cable. Patch out of one of the line outputs to a line input on your audio interface or console using either a female XLR to ¼" TRS cable or a female XLR to male XLR cable.

1.7.2 Via a Patch Bay

In most professional setups, processors are racked and then installed as part of a patch bay system. This makes it easier to make connections, because you don't need to go behind the rack to plug and unplug cables.

Patch bays are usually made up of modules with 2 jacks in the front, one over the other, and two jacks (or solder terminals, or DB25, etc) on the back. For the sake of this manual, we'll assume you're using a ¼" TRS patch bay with jacks on the front and back.



You do not want to normal the inputs and outputs from the compressor to each other. This will create a feedback loop. Converting a half-normal module to a non-normaled module is sometimes as simple as rotating the module in the patch bay. See the manual for your patch bay.

Cables Needed:
XLR Male to ¼" TRS Male
(1) XLR Female to ¼" TRS Male

Steps:
1. Patch from the bottom back jack on the patch bay module to the mic input on the Mic Pre EQ using the ¼" TRS to XLR Male cable.

2. Patch to top jack of the patch bay module from the output of the Mic Pre EQ using the XLR Female to ¼" TRS cable.

3. Now you can patch into a mic pre from the front of the patch bay. Simply run a patch cable from your source microphone and into the bottom jack on the module and then run from the top jack on the module to wherever the signal needs to go.

1.8 Specifications

- Transformer balanced input
- Jensen Input and Output Transformers
- Discrete transistor circuitry
- Class "A" amplifiers
- Single sided amplification
- Stepped Gain Control in 5dB increments
- All relay switching w/gold bi-furcated contacts
- Switched +48 Volt Phantom power
- 20dB pad on mic input
- All metal construction for noise immunity
- Aluminum knobs
- Power supply included
- 70dB gain

Specifications are subject to change without notice.