MOXi

2 Channel Instrument Preamplifier / EQ / DI
Owner's Manual Rev. A
06/10/2025

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1 Welcome

If you're reading this, you are probably a working musician or at least working musician adjacent. Which means you've probably already spent years honing your craft. Maybe you tour the world in a jet or ride your bike to play at the local pub. You've probably gotten up on stage tired, given more than you thought you had, and made it home barely awake but your soul still on fire. You have friends and bandmates out there that are your family. And some of your friends (maybe the very best ones) are made of wood, steel, bone and strings.

Regardless of where and how and why you play, from here on out, when you look down at that stage floor, your MOXi will be one of those friends, making you sound better and your job easier. A trusty companion for the long haul.

While MOXi is not the most complicated piece of gear you've ever operated, it does come with a few setup options, which means we recommend you have a look at this owner's manual to familiarize yourself with the finer points. After that, you'll likely find MOXi to be intuitive, powerful and user friendly.

Most of all, we made this preamp so you can make great music. So read this manual and then get back out there. And please let us know when you're coming through Lyons, or give us some news on the socials - we'd love to meet you.

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2 Safety And Symbols

Caution: **Read Accompanying Documents**

This symbol, located on the equipment and in this manual, refers to important instructions. Read this manual thoroughly before operating this equipment.

Service Information

The Grace Design MOXi contains no user serviceable components. Contact Grace Design for repair and upgrade information. In the event that your Grace Design MOXi needs to be returned to the factory, contact us for a return authorization number.

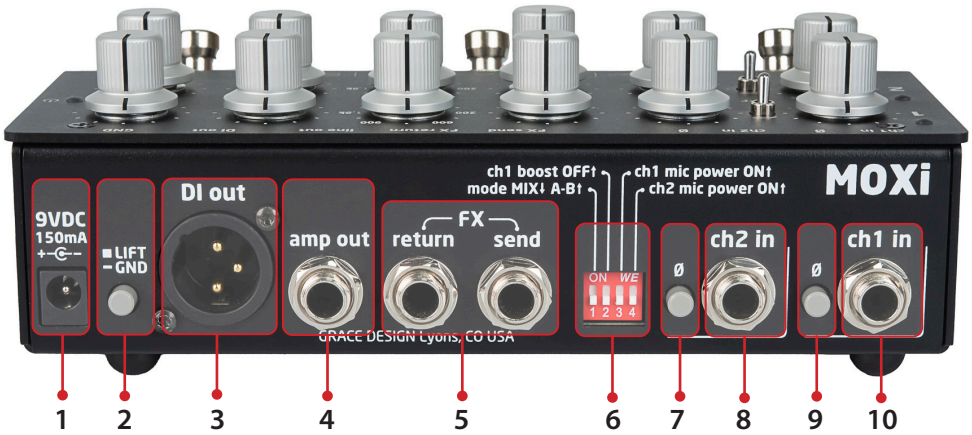
3 Features

- Open, musical and detailed instrument preamplification for discerning artists
- 2 channel audio path with MIX or A/B output options
- Mono FX loop with individual send and return
- Ultra precision 0.5% thin film resistors used in the signal path
- Careful power supply design and grounding for professional level headroom and line driving ability
- Ground isolated DI output with high quality, low distortion, fully shielded transformer
- Super rugged 1/4" connectors with heavy duty metal bushings
- Powerful, independent EQ on both channels – hi and low shelving and sweepable midrange
- Switchable 75Hz HPF on both channels
- A / B footswitch for multiple instrument configurations or soloing different pickups
- Mute/ tune footswitch mutes all outputs except FX send
- Boost footswitch for variable 10dB level boost
- Rear panel switch for Boost defeat on ch1
- Dedicated line level stage amp output
- 6V mic bias power available on both 1/4" inputs
- Phase reverse switch for each channel
- Fixed 1MEG Ohm input impedance both channels
- 9VDC, 150mA power input, 2.1mm center negative
- Included power supply: external wall plug universal AC input, low noise 9V, 500mA, negative tip output
- Full 5 year transferable warranty / built for a long, happy life on the road
- Designed and built by us in Lyons, CO, USA

4 Top Panel Features

1. Signal / clip LED indicator (ch1&2)
2. Gain controls
3. 75Hz High Pass Filter
4. Low frequency shelving cut and boost
5. Parametric Midrange cut and boost
6. Parametric Midrange frequency select
7. High frequency shelving cut and boost
8. Boost level
9. Power indicator LED
10. Mix control
11. MUTE footswitch
12. BOOST footswitch
13. A/B footswitch

5 Rear Panel Features



1. Power in 9VDC, 150mA, 2.1mm negative tip
2. DI Ground lift switch
3. DI / ISO output
4. Amp output
5. FX loop send and return
6. DIP switch bank
7. ch2 Phase Reverse Switch
8. ch2 1/4" Instrument Input
9. ch1 Phase Reverse Switch
10. ch1 1/4" Instrument Input

6 Connections

6.1 1/4" INSTRUMENT INPUTS, CH1 & CH2

These inputs are for connecting any instrument pickup, electret mic or line source to the MOXi. The ch1 connector is a standard 1/4" jack wired tip signal, sleeve ground. The ch2 connector can accommodate a normal TS instrument cable OR two different signals from a dual source pickup system on a single TRS 1/4" cable. This jack is wired tip signal, ring signal (normaled to ch1), and sleeve ground. (*more on this in chapter 8*). Both ch1 and ch2 inputs have a 1MEG Ohm input impedance.

6.2 INSERT SEND AND RETURN (FX LOOP)

These connectors provide a buffered, unbalanced insert point (pre-boost) for connecting outboard effects or a tuner to MOXi. This allows mono outboard signal processing to be placed in series with the signal, while still utilizing all of MOXi's output capabilities. They are 1/4" TS jacks each wired tip signal, sleeve ground. If you wish to only send signal to a tuner, you may connect the SEND to your tuner's input and leave the RETURN disconnected. Doing this will allow your tuner to always be active even when the MOXi is MUTED. In the event that your FX pedals are being overdriven, a -6dB insert send pad can be activated via internal jumper #10.

6.3 AMP OUT

This output is for sending an unbalanced, non-transformer isolated output to a stage amp or anywhere else you may need an additional signal. This output is muted when the MUTE footswitch is activated. This can be set to not mute via internal jumper #8

6.4 DI OUTPUT

This output is a balanced and transformer isolated XLR for sending your signal to the front of house console, monitor console or any mixer or interface. The XLR pinout is: pin 2 positive, pin 3 negative and pin 1 ground. Output level is -18dB, and can be adjusted to be -6dB via internal jumper #11

6.5 9VDC POWER INPUT

This is a standard 2.1mm barrel jack, with the center negative. Your power supply needs to be capable of delivering at least 200mA. Either use the included power supply unit, or make sure that the supply you are using conforms with the power input requirements. Improper DC powering can result in bad performance, which is no fun.

7 Operation

7.1 WHERE TO PUT YOUR PREAMP?

Your MOXi will look all shiny when you first pull it out of its box, but trust us, it's built to stand up to just about any kind of stage abuse it might encounter. All the pots have metal shafts and are securely mounted to the top panel. All the 1/4" jacks have heavy duty metal bushings. The steel and aluminum chassis is ready to survive rough treatment. Like the rest of our pedal line, MOXi is designed to be studio-grade audio hardware, properly ruggedized to live on the stage.

NOTE: the rubber feet can be unscrewed from the bottom panel if needed for using Velcro® to attach your MOXi to a pedalboard.

7.2 INSTRUMENT / LINE INPUTS

These are the inputs you will use for connecting your instruments to MOXi. There is a wide array of different pickup types in the world: active electronics in an electric bass, passive bridge plate transducers, contact mics, soundhole magnetics, clip-on mics, etc... We designed MOXi to work well with all of them.

Using a Dual Source Instrument with a Single TRS Cable

As previously mentioned, the ch2 input can accommodate two different signals from a dual source pickup system on a single TRS 1/4" cable. The connector is a standard TRS 1/4" jack and is wired:

- Tip signal to ch2 input
- Ring signal to ch1 input
- Sleeve to ground

This feature makes using a dual source pickup system very convenient. Assuming your instrument is properly wired with a TRS output jack, you can simply use a standard TRS cable to connect both sources to MOXi, then EQ and blend each signal accordingly. The sonic results of this kind of acoustic pickup system can be very excellent.

6V Power

Both instrument inputs can be used with an electret capacitor microphone. These are most commonly small lavalier style mics mounted inside or outside of an instrument. These microphones usually contain a small integrated preamp which requires a small voltage to power. MOXi can send 6V mic bias power out on both of these inputs. This is activated via DIP switches #3 and 4 on the rear panel. This 6V power is applied to the tip of each channel's input jack. ***NOTE: When activated, the 6V circuit raises the channel's input impedance, which can noticably alter the tone of a passive pickup (K&K) if plugged-in instead of a mic. We strongly recommend turning this switch OFF when not in use!***

Phase Reverse

Both ch1 and ch2 have phase reverse switches, located next to each 1/4" input jack. Use these switches to toggle the polarity of either channel. Experiment with these methodically to find the setting that sounds right. If you are blending two sources on one instrument, you may find that flipping the polarity on one source or the other sounds best. If you are using MOXi to toggle between two different instruments, you probably won't need to mess with their relative polarity.

Phase relationships can be very complicated and discrepancies can result in accentuated or de-accentuated bass response of a blended signal. It can sound tubby, hollowed out and thin, or just weird. The rule of thumb here is whatever sounds right to you is right.

You may encounter scenarios where the front of house or monitor engineer requires you to try flipping the phase to achieve better phase coherency with other signals in the mix. At the very least, it's good for you to know how to operate these controls and hear them in use with your instruments.

7.3 FILTERING AND EQ

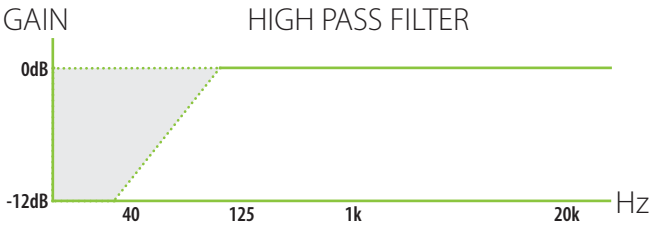
MOXi is equipped with identical, fully independent EQ controls on each channel. If you haven't used EQ's or filters much, we will provide a basic overview, but the full theory of this process is more than we'll cover here, so we recommend some adjunct reading:

http://en.wikipedia.org/wiki/Equalization

As with all audio processing techniques, the more you know, the better you will sound.

HPF This toggle switch activates the fixed 75Hz HPF.

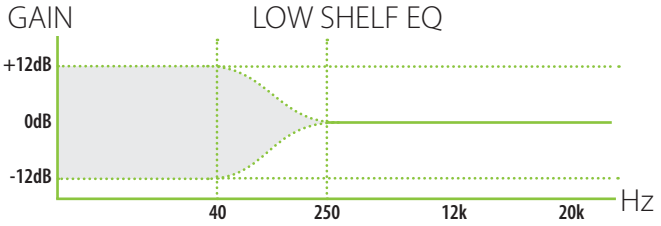
A High Pass Filter will only allow signal information above its set frequency to pass to the output. This filter employs 12dB per octave roll off and uses a Thomson – Butterworth response for the best combination of passband flatness and time domain response. Fancy.



If you are on a stage with an acoustic guitar, and there is lots of low end making you sound bad, or feeding back, or both, the HPF might be your first stop to try to control those problems.

Low

The Low control of the MOXi preamplifier is fixed at a 250Hz corner frequency with a gain range of -12 to +12dB. This is a fixed shelving type control, which means everything below the 250Hz is boosted or cut. Use this control for cutting and boosting bass frequencies. It's all about the bass.

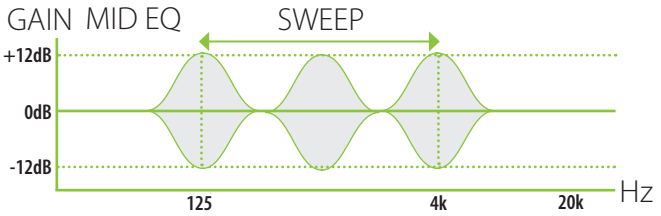


Mid

The mid range section of MOXi's equalizer is a sweepable bell filter, which enables you control the mid range gain and frequency with a fixed Q factor of 2. The range of these controls are:

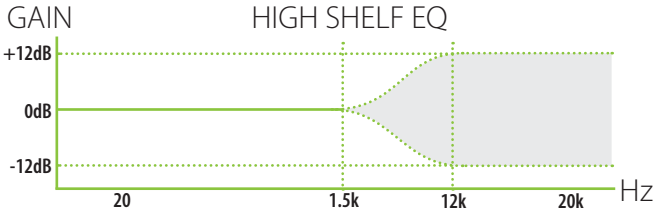
Gain = +/- 12dB

Freq range = 125Hz – 4kHz



High

The High control of the MOXi preamplifier is set with a 1.5kHz corner frequency, with a gain range of -12 to +12dB. This is a fixed shelving type control, which means everything above the 1.5kHz is boosted or cut. Simply put, this is a treble control. If you think your banjo may be too bright, turn this knob counterclockwise. If you think your guitar needs a little more bite, turn this knob clockwise.



7.4 OUTPUT CONTROLS AND SETTINGS

Boost

This knob sets the amount your signal is boosted when you activate the 'BOOST' footswitch. Fully counter-clockwise is zero boost added, fully clockwise adds +10dB of boost. This circuit is global, with the boost applied to both channel's outputs. However, boost can be defeated on ch1 by setting rear panel dip switch #2 to "CHANNEL 1 BOOST OFF". This is useful if you are using a microphone or more feedback prone pickup in ch1 that you would rather not have boosted .

Mix

This control adjusts the mix (or blend) between ch1 and ch2.

Before using this control, it's important to verify if the preamp is set to MIX or A/B mode. This setting is toggled via the rear panel DIP switch #1. With the switch in MIX mode (the down position), this control operates as a simple mixer. With this knob turned fully counter-clockwise, the outputs will be sending 100% ch1. With the knob turned fully clockwise, the outputs will be sending 100% ch2. With the knob centered at 12 o'clock, the outputs with be sending a 50/50 blend of ch1 and ch2.

If the preamp is set to A/B mode via the rear side panel DIP switch #1, this control will still have an effect on the level balance of the 2 channels. We recommend leaving this control set to 12 o'clock when using A/B mode.

7.5 FOOTSWITCH CONTROLS

Blend – A/B

This is the far left foot switch on MOXi. If the unit is set to blend mode via rear panel DIP switch #1, then this switch will do nothing, and both adjacent LEDs will be permanently illuminated. If the unit is set to A/B mode, then this switch will be used to toggle between ch1 and ch2, with the accompanying amber LEDs lighting and extinguishing accordingly. This toggle mode is exclusive, so if you have ch1 selected, ch2 will be muted and vice versa.

Boost

Yep. This switch activates the Boost circuit, at the level you have set with the upper row 'boost' knob. For those about to rock, hit this switch first. The LED will light up GREEN for go.

Mute / Tune

This switch mutes all MOXi outputs (DI out and AMP) except the FX send out. This enables you to quickly and easily cut your signal to tune or unplug your instrument without having to wave down the sound person to mute your channel. When MUTE / tune is active, the adjacent LED illuminates RED.

7.6 REAR PANEL CONTROLS

Phase Reverse

These two push button toggle switches reverse the polarity of each channel's audio signal. To reverse the polarity of either channel, simply push the toggle in, to return to no polarity reverse, push the toggle again to return it to it's outer position.

DIP Switches

This is a bank of 4 DIP switches, used to activate various modes or settings. Switch 1 selects between MIX and A-B mode. 2 deactivates the boost circuit on ch1. Switches 3 & 4 activate 6V mic bias power on the instrument inputs.

DIP switches can be a little finicky to adjust, which is good as they probably won't get inadvertently changed, but tricky when you actually want to switch them. Use the edge of a fingernail, a guitar pic or a toothpick, taking care not to dig into the plastic too hard. You'll get the hang of it.

8 Internal jumpers

While most of the MOXi controls are on the outside and easy to adjust, there are 3 extra setup options which can be adjusted via internal jumpers in case you need them. These options are:

1. **Jumper J8: a -6dB pad placed at the insert send in case your MOXi is overloading an FX pedal in your insert chain.**
2. **Jumper J10: an option to have the AMP OUT jack *not* mute when the mute switch is engaged.**
3. **Jumper J11: adjusts DI output level, which changes the output from -18dB to -6dB.**

These jumper locations are shown in the 'jumper location' picture on the following page.

8.1 ADJUSTING INTERNAL JUMPERS

If you are handy with a screwdriver, you'll be able to adjust a jumper setting without a problem. However, this is not something you should attempt to do on a dark stage or in the back of the tour van. Directions for disassembling the chassis and accessing the jumpers is as follows:

1 IMPORTANT: Before you do anything, disconnect MOXi from the power and disconnect any instrument cables. Place MOXi on a clean, flat surface with good lighting.

2 With a #1 phillips screwdriver, remove the 4 chassis screws, located on the outer edges of the front bottom and rear top of the aluminum top chassis (figure 1)

figure 1

3 Orient the unit so it is facing towards you. Slowly and carefully pull up on the top chassis and flip it up and away. This will reveal the top and bottom circuit boards (figure 2).

figure 2

4 You will notice a ribbon cable which attaches the top and bottom PC boards - BE SURE not to put any strain on this cable and its connectors. You will be able to gently lift the top of the chassis upright and rest it directly behind the bottom chassis, as shown in figure 3.

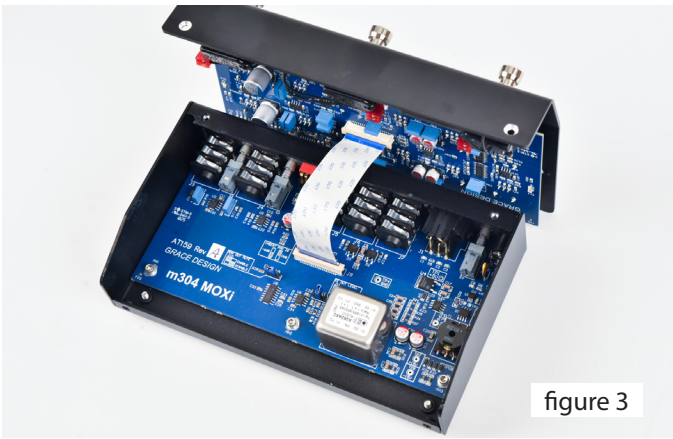


figure 3

5 Now refer to the following jumper location diagram to adjust the jumpers you wish. To move a jumper, use tweezers or your fingers (figure 4) to gently pull the jumper off of its header pins. To reposition the jumper, double check the diagram, then gently press the jumper back down in the correct location.

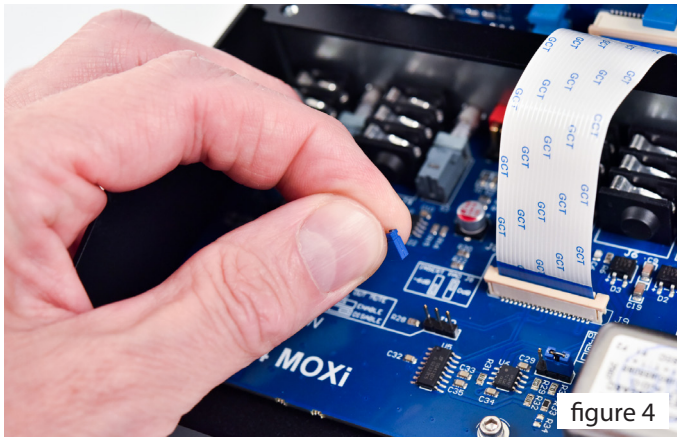
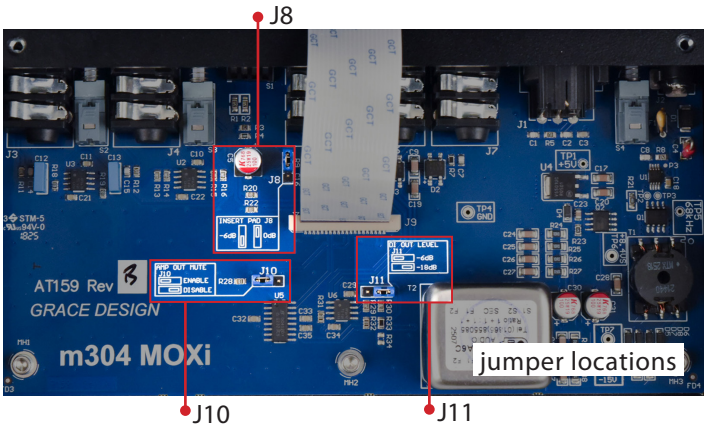
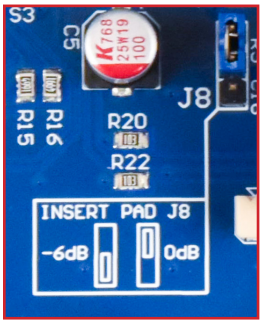


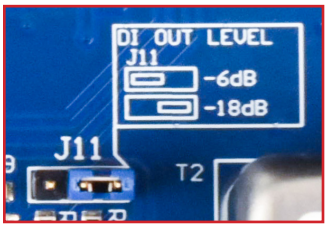
figure 4





6 J8 adjusts the insert pad, and is set to '0dB' at the factory, with the jumper on the middle and top pins. Place jumper on middle and bottom pins for the -6dB pad.

7 J10 is set at the factory so the AMP OUT jack mutes when the mute switch is engaged. Set jumper over center and right pins to have the amp out *not* mute when mute switch is engaged.



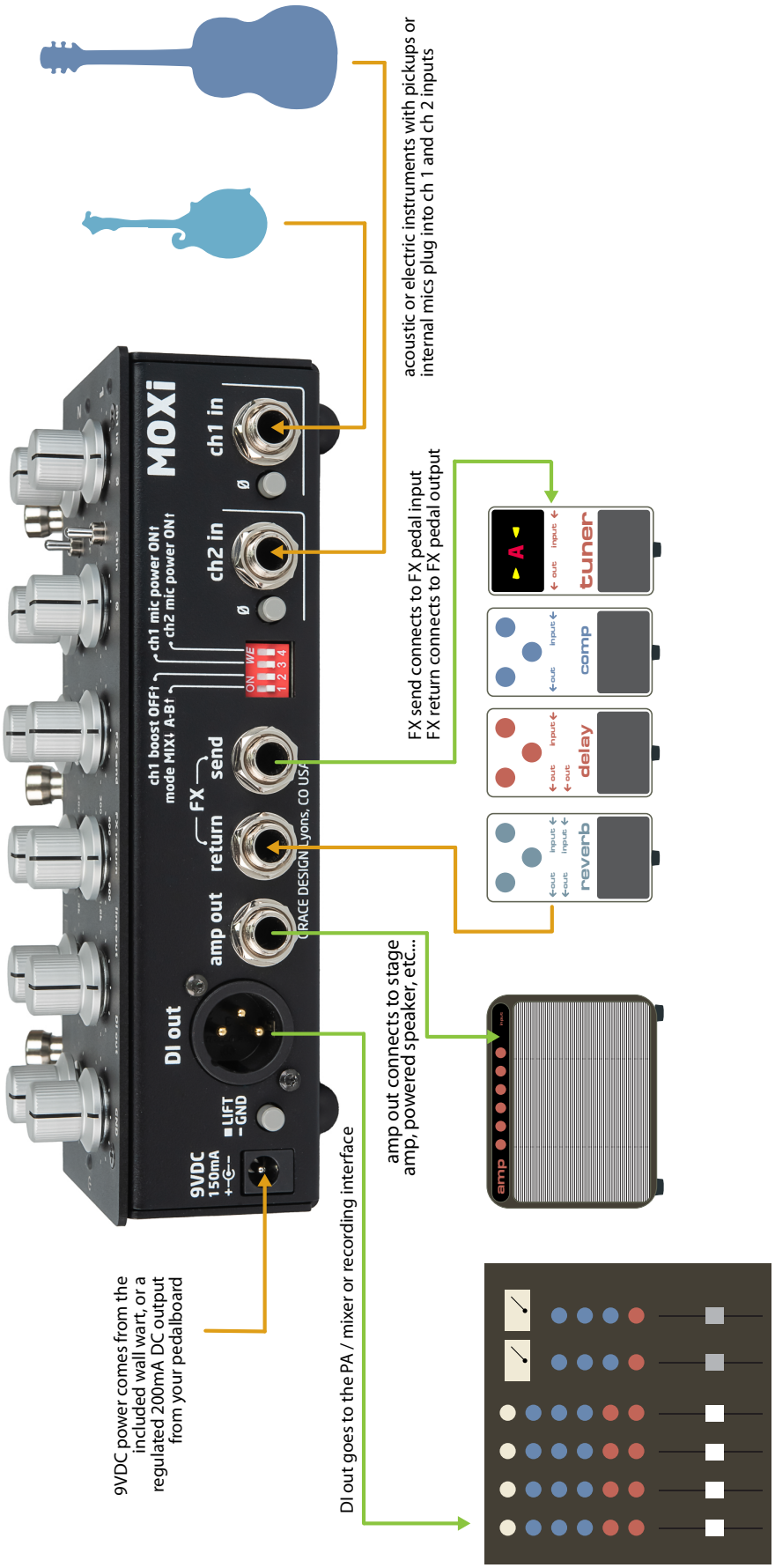
8 J11 is set at the factory to -18dB DI out level. Place jumper on center and left pins for -6dB out level.

9 When you are finished adjusting the jumpers, make sure there are no loose jumpers or any other junk lying around inside.

10 Then carefully reassemble the top and bottom chassis, making sure to let the ribbon cable fold easily back in place. If there is any tension or something isn't fitting properly, carefully pull the top and bottom back apart and inspect for interference.

11 Once you have put the unit back together, replace the 4 screws, making sure they go in straight and true. You may need to nudge the top panel back and forth a bit to ensure the holes line up evenly. Do not tighten the screws until all 4 are cleanly started in the threads.

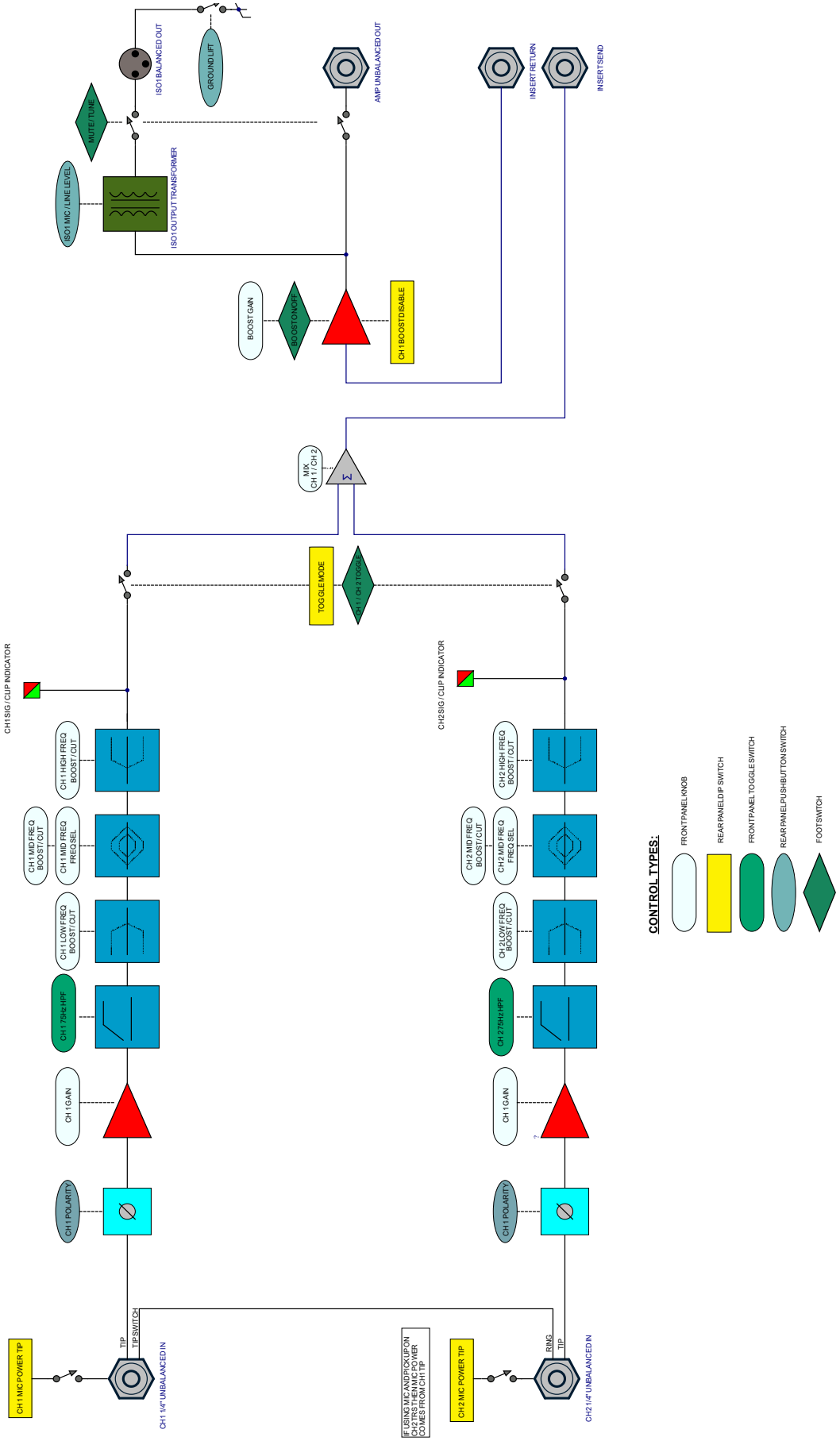
9 Connection Diagram



MOXi connections

Nothing too terribly complicated here - just the basics about how to plug stuff in and out of your preamp. If you aren't sure about how something works, please have another look at your owner's manual, check out our website - www.gracedesign.com - or feel free to call us, we are always glad to help out in any way we can. 1.303.823.8100, M-F, 9-5 MST

10 Block Diagram



11 Specifications

GAIN RANGE	
Ch 1 In, Amp Out, Boost 0dB	0dB to +38.5dB
Ch 1 In, Amp Out, Boost +10dB	+9.5dB to +48dB
Ch1 In, DI Out, Boost 0dB	-20dB to +18dB
Ch1 In, DI Out, Boost +10dB	-11dB to +28dB
Boost	0 -10dB
THD+N 1kHz, 22Hz-22kHz BW (Amp Output)	
@ 0dB Gain Line out +10dBu	<-92dB
DI out -10.27dBu	<-76dB
@ 20dB Gain Line out +10dBu	<-89dB
DI out -10.27dBu	<-78dB
@ 40dB Gain Line out +10dBu	<-74dB
DI out -18.8dB	<-73dB
INTERMODULATION DISTORTION - SMPTE/DIN 4:1 7kHz/50Hz	
@ 40dB Gain Line out +10dBu	<0.040%
DI out -18.8dB	<0.070%
OUTPUT NOISE 20Hz-22kHz BW 50Ω source	
Minimum Gain, Amp Out	<-91dBu
Minimum Gain, DI Out	<-110dBu
Maximum Gain, Amp Out	<-65dBu
Maximum Gain, DI Out	<-87dBu
FREQUENCY RESPONSE (Ch1 or Ch2 Input to Amp Output)	
Ch1 or Ch2 Input @ 0dB Gain, -3dB	4Hz-148kHz
FREQUENCY RESPONSE (Ch1 or Ch2 Input to DI Output)	
Ch1 or Ch2 Input @ -20dB Gain, -3dB	6Hz – 51kHz
I/O IMPEDANCE	
Ch1 and Ch2 Input	1.0MΩ
Insert Input	20kΩ
Insert Output	300Ω
DI Outputs	150Ω
Line Output	150Ω
SIGNAL / PEAK LED METER Amp Out Levels	
Green threshold	-10dBu
Red threshold	+7dBu
MAXIMUM INPUT LEVEL	
Ch1 and Ch2 Input, minimum gain	+20dBu
Insert Return	+16dBu
MAXIMUM OUTPUT LEVEL - 100k Ohm load, 0.1% THD	
DI Outputs	+15dBu
Line Out	+21dBu
Insert Send (Pad Off)	+17dBu
Insert Send (Pad ON)	+11dBu
High Pass Filter	
High Pass Filter 75Hz	-3db @ 75Hz
EQ	
Gain	+/-12dB
Low Frequency	250Hz Shelving
High Frequency	1.5kHz Shelving
Mid Frequency	125Hz-4kHz, Q=1
OUTPUT MUTE ATTENUATION	
DI Output	-98dB
Line Out	-95.5dB
POWER CONSUMPTION	
9VDC	1.1W 130mA
WEIGHT and DIMENSIONS	2.2lbs H2.5" x W7.1" x D4.4"

12 Cleaning and Maintenance

Your MOXi is chassis is constructed out of high quality aluminum and steel. Under normal circumstances, very little maintenance is required to keep it looking good. However, if you find it getting more dirty or dusty than you like, here are some cleaning tips: We recommend using a little shot of Windex™, applied to a clean, dry, lint free cloth. Gently wipe all surfaces, taking care not to allow the cleaning product to build up around or under the knobs.

13 Warranty

- Grace Design warrants this product to be free of defective parts and workmanship for a period of five years. This warranty period begins at the original date of purchase and is transferable to any person who may subsequently purchase the product during this time.
- This warranty excludes the following conditions: normal wear and tear, misuse, customer negligence, accidental damage, unauthorized repair or modification, cosmetic damage and damage incurred during shipment.
- During the time of this warranty, Grace Design will repair or replace, at its option, any defective parts or repair defective workmanship without charge, provided the customer has appropriate proof of purchase and that the product has its original factory serial number.
- In order for Grace Design to provide efficient and timely warranty service, it is important that you register your product(s) within 10 days of the original date of purchase. You may register your product directly with Grace Design by telephone (303-823-8100 Monday-Friday 9:00am to 5:00pm MST), or you can register your product online at www.gracedesign.com.
- This warranty is in lieu of all other warranties whether written, expressed, or implied, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.
- In no event will Grace Design be liable for lost profits or any other incidental, consequential or Exemplary damages, even if Grace Design is aware of the possibility of such damages. In no event will Grace Design's liability exceed the purchase price of the product.
- This warranty gives the customer specific legal rights. The customer may also have other rights, which vary from state to state. Some states do not allow limitations on implied warranties or consequential damages, so some of the limitations of the above may not apply to a particular customer.

14 Manual Revisions

Revision	Page	Change	Date	Initials
A	all	Initial release	06/27/2025	edg