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**THE REDEYE 3D
PHANTOM**

OPERATORS MANUAL

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REDEYE 3D PHANTOM

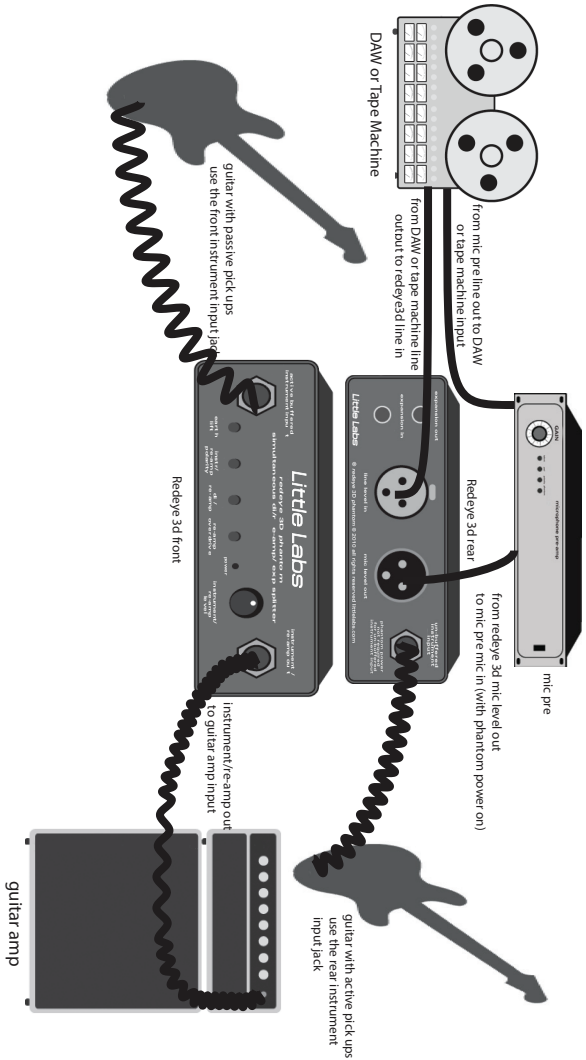
SEVEN EASY STEPS TO ACCURATE RE-AMPING

- 1) Plug your passive pickup guitar into the active buffered instrument input on the front of the Redeye 3D or your active instrument into the un-buffered instrument input on the rear.
- 2) Plug the male xlr mic level out into a microphone pre-amplifier. If you use the active buffered instrument input, turn on phantom power on the mic-pre.
- 3) With all buttons on the Redeye 3D out, plug your guitar amp into the instrument re-amp out. Strum your instrument and listen; if you have a hum, not a typical pickup-related hum, but a constant hum like a half stuck in the guitar amp jack hum, try the earth lift switch; that should cure it. If you don't, don't push anything.
- 4) Feed the output of the microphone pre-amplifier into whatever your recording medium is, which could be Protools, a tape machine, a DAW with a funny name, or... and put this machine in input so you monitor thru the machine.
- 5) With the gain settings set low on the microphone pre-amplifier, push in the re-amp button on the Redeye 3D. Slowly bring your gain up on the Microphone pre-amplifier so the sound level from your amp sounds the same as when the Redeye 3D was in DI mode (button out); you can go between the two settings until it's right. That should be your right setting. If you are hitting the recording medium too hard to get the level you need, you can push in the re-amp overdrive and back off the microphone preamp level.
- 6) Go ahead and record something; when playing back, the Redeye 3D must be in re-amp mode.
- 7) The sound coming back should sound exactly like what you heard when the recording medium was in input and provided your microphone pre-amplifier is relatively clean and your recording medium is also clean, it should sound very close to plugging and playing directly into the amp.

You might not have the luxury of having the whole re-amp chain, but trying this method will give you confidence that your re-amped signal will sound "correct."

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REDEYE 3D PHANTOM COMPLETE RE-AMPING CHAIN



Dear valued Little Labs customer,

Congratulations on your purchase of the Redeye 3D Phantom. This box is s the new, improved major revision of the popular Little Labs Redeye direct box / re-amp box. More people are re-amping now than ever, and we at Little Labs know re-amping! We made this new major Redeye revision to ensure we continued to make the best sounding, most flexible, easiest to use, and reasonably priced re-amping and direct box product available.

For easy, accurate re-amping, the Redeye 3D lets you listen thru your whole recording chain, from Redeye 3D direct box, to mic pre to DAW (or tape machine), to Redeye 3D Re-amp, to your guitar amp.

In DI (direct box) mode, the instrument / re-amp out on the front of the Redeye 3D works as a thru signal, so you can simultaneously feed your guitar amp while supplying a signal from the rear xlr to your mic pre and DAW or tape machine.

In re-amp mode, the instrument / re-amp out on the front of the Redeye 3D signal comes from the line level output of the DAW or tape machine (converted to HI z guitar level signal) to feed your guitar amp.

This simple way of listening thru the chain (re-amp mode) and being able to bypass the mic pre and DAW or tape machine in the chain (DI mode) makes level adjustments a snap. Listening thru the chain also assures you a re-amped guitar sound that will be identical to what was heard when laying down the track.

Yours truly,
Jonathan Little

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REDEYE 3D PHANTOM WHAT IS IT MADE OF?

The original Redeye was a direct box or re-amping device using a Little Labs custom wound transformer. This transformer was chosen for its sonic characteristics. It is made with the same core material and winding technique as the legendary UTC transformers found in many classic pro audio devices. The New Redeye 3D Phantom features two of these excellent transformers for simultaneous direct box and re-amping use.

We have also added to the Redeye 3D a very high quality, hi-fi, phantom-powered, high impedance instrument buffer. When you are using the Redeye 3D with sensitive passive pickups, this high-quality buffer assures no tone change from loading will occur.

For those who use active pickups or prefer the sound of a passive direct box, you still have the option of plugging into the Redeye 3D direct box passive input, as in the original Redeye, with no phantom power necessary.

Besides the active buffer circuitry and the two transformers, the Redeye 3D is a volume control, switches, connectors, and resistors in a nice chassis.

You can make some custom changes internal to the Redeye 3D; that might be just what a few of you need, but we'll talk about that later.

REDEYE 3D PHANTOM INTERFACING GUITAR PEDALS

The Redeye 3D is a simple and easy way to interface guitar pedals into a pro-environment. Plug the Redeye 3D's instrument re-amp out into the pedal's input, then plug the pedal's output into the Redeye 3D's instrument in (you can use the buffered or unbuffered in, it will most likely make little difference). Feed the mic level out into a microphone preamplifier, and you have a +4dB balanced line level in and out effect. BUT PLEASE NOTE: Keep the di/re-amp button engaged, or you get a loop, and a nasty squeal will result!

You can often come right out of the pedal and into the console without using the Redeye 3D's DI. You might have to turn the line trims up a little, but you don't have to be paranoid about disengaging the re-amp button.

REDEYE 3D PHANTOM DIY MODS

The Redeye 3D has a couple of mods for a DIYer that you can implement internally.

1. Increasing input impedance on the buffered input. Only do this if you are a piezo pickup user that doesn't use a pre-amp in front of the piezo or for some bass guitars. It will sound clanky on standard guitars, Telecaster, Strat, or Les Paul. The resistor to change is #209 to a 10 Meg ohm.
2. Convert the passive input into a buffered-out long guitar cable driver. Change the zero ohm jumper #16 to a 100-ohm resistor and jump a wire over the normal on the jack's tip.
3. If you have a Redeye 3D with a serial # less than 13978, you can update to increase re-amp overdrive from +10dB to +20dB, thus accommodating the re-amping of the hottest modern pickups! Change resistors #1 and #2 from 1.65k Ω to 300 Ω 1/4 watt metal film 1%. This mod does change the re-amp input impedance to a more vintage impedance of 600 Ω , but that should not be a problem.

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REDEYE 3D PHANTOM LINE LEVEL FEMALE XLR IN

The female XLR is the input of the re-amp section of the Redeye 3D Phantom; what needs to be fed in here is a line level (+4dB) low impedance balanced signal from the output of a DAW, a tape machine or send off a console. The input impedance on this input is $9k\Omega$; if the re-amp overdrive is selected, the input impedance is 600Ω ($4k\Omega$ pre serial #13978).

After the signal enters the Redeye 3D, the signal will be reduced by approximately 15dB, converted to a hi-impedance unbalanced (guitar signal), and available at the front panel instrument/re-amp level out jack to feed an amp or pedal.

REDEYE 3D PHANTOM EXPANSION IN AND EXPANSION OUT

These are simply parallel (1/4" TRS) jacks with the line level female XLR in. They allow you to plug in balanced (TRS) plugs or unbalanced (TS) plugs low impedance signals from the output of a DAW, a tape machine, or send off a console.

You can plug in the expansion in jack on the Redeye 3D from our other products, the PCP or the Pepper expansion out jacks, using a TRS balanced cable. This setup creates another output of these devices that can be located far from the source (with ground isolation and the same transformers). So let's say you feed three amp heads in the control room with the PCP; use this method with the Redeye 3D to feed a combo amp in the live room.

The expansion in and outs allow you to easily daisy chain multiple Redeye 3Ds to feed multiple guitar amps or pedals.

Use your imagination; for example, utilize one microphone preamplifier fed from the Redeye 3D mic, level out XLR and back in the line level female XLR, and create a guitar splitter with as many outputs as Redeye 3Ds.

With four Redeye 3Ds rack mounted, you can easily create a truly excellent transformer-isolated guitar splitter in a pinch! You can do more than that, but I will let you wrap your brain around it and figure out all the possibilities.

REDEYE 3D PHANTOM ACTIVE BUFFERED INSTRUMENT INPUT

Using this buffered front panel instrument input, you must have the Redeye 3Ds output male XLR on the rear of the unit plugged into a microphone preamplifier and have the phantom power on the microphone preamplifier activated. If the Redeye is properly hooked up to the pre and the phantom is on, the red led will be lit.

The maximum level you can feed into this input is approximately +16dB before clipping (that's a lot for an instrument). The input Impedance is approximately 1 meg Ω . We experimented with a much higher input impedance which might have helped piezo pickup users (piezo users, see DIY section if you want to know how to mod), but for standard guitars using passive pickups like a Telecaster or a Les Paul, the 1 meg Ω sounded like plugging directly into the amp, which when re-amping, is essential.

REDEYE 3D PHANTOM UN-BUFFERED INSTRUMENT INPUT

A passive un-buffered instrument input is available on the rear of the Redeye 3D. This input requires no phantom power, and the red led need not be on for the Redeye 3D to function in this passive mode. If you want the same sound as the original Redeye, this input will be the input. It sends your instrument signal directly to the primary of the transformer.

This input is best for active instruments, keyboards, synths, guitars with pre-amps built in, and anything with lots of gain and not sensitive to loading. The load presented by the Redeye or Redeye 3D for these types of instruments is very high at approximately $30k\Omega$ but not high enough for passive devices, which are much more sensitive to loading. The maximum level you can feed into this input is not defined because a transformer doesn't clip, but NOTE: It is not designed for high-level, high-current speaker signals.

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REDEYE 3D PHANTOM

INSTRUMENT / RE-AMP OUT AND LEVEL TRIM

The high-impedance instrument output on the front of the Redeye 3D is in DI mode, the "thru" to the amp. In re-amp mode, this is your re-amp output to the amp. The adjacent instrument/re-amp level trim works as an attenuator, just like the volume control on your guitar, and works in both the thru and re-amp out mode.

When using the actively buffered instrument input, this output in DI mode will be very close in level to what is plugged in; in other words, it passes thru the Redeye 3D with approximately unity gain. I say approximately because depending on the amp it is plugged into, it might have a little more or a little less, but it should be close. You can internally set this by moving a jumper to +3dB of gain instead of unity, but most guitar players like unity gain, so it's just like plugging directly into the amp.

When using the unbuffered instrument input, this output in DI mode will be -3dB from what is plugged in, so in other words, you lose a small amount of level. If you use this on a passive pickup, it will seem like more level loss because of the combination of loading the pickup and this level loss. The 3dB loss is due to traveling thru the internal electronics passively.

REDEYE 3D PHANTOM

RE-AMP OVERDRIVE

This button, when engaged, gives you an extra 20dB* on the instrument/re-amp out, but only in re-amp mode. Useful when you record the track low or find, even when hitting the recording apparatus at a healthy level, your particular instrument has a very high output and needs it to hit the amp harder (metal heads will like this).

*This was changed from +10dB to +20dB on serial#s 13978 and up; it's an easy mod if you have an older unit.

REDEYE 3D PHANTOM EARTH LIFT & RE-AMP POLARITY

The earth lift button should be engaged when you have everything hooked up and hear a hum in your amp or what you are recording. The hum is caused by a ground loop where more than one path to ground allows a current to flow between the grounds. If this hum doesn't know the song, it must be eliminated.

Re-amp polarity, or a phase switch on some devices, pushes the signal instead of pulling or vice versa. It only works on the instrument level re-amp out, and you might notice little difference when you push it. It really comes in handy when you use the expansion in and out jacks with multiple redevye 3Ds feeding multiple amps. When different amps sound is combined in the air or when miced and recorded, some push, some pull, and a much fuller sound is heard when they work together, all pushing or all pulling. This button allows you to make the amps work together easily. To get deeper into this polarity and phase thing, check out a Little Labs IBP!

REDEYE 3D PHANTOM MIC LEVEL MALE XLR OUT

This is the output of the DI section of the Redeye 3D Phantom; what comes out here is a low impedance (500 ohms) balanced signal approximately 18dB below what is plugged into the instrument inputs. It should be plugged into a microphone preamplifier, and if you are using the actively buffered input, the microphone preamplifier should have phantom power engaged.

Understanding gain structure in recording is important. Remember that a passive pickup guitar puts out anything from -10dB to -25dB. Going thru a mic-level direct box like the Redeye 3D drops this level by another 18dB, so you need a microphone pre-amplifier gain set anywhere from +32dB to +47dB to get a +4dB (OVU) line-level signal. Pop quiz later...