

# Gold Digger

## 4x1 Microphone Selector



# User Guide

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# Radial® Gold Digger Microphone Selector

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## **INTRODUCTION**

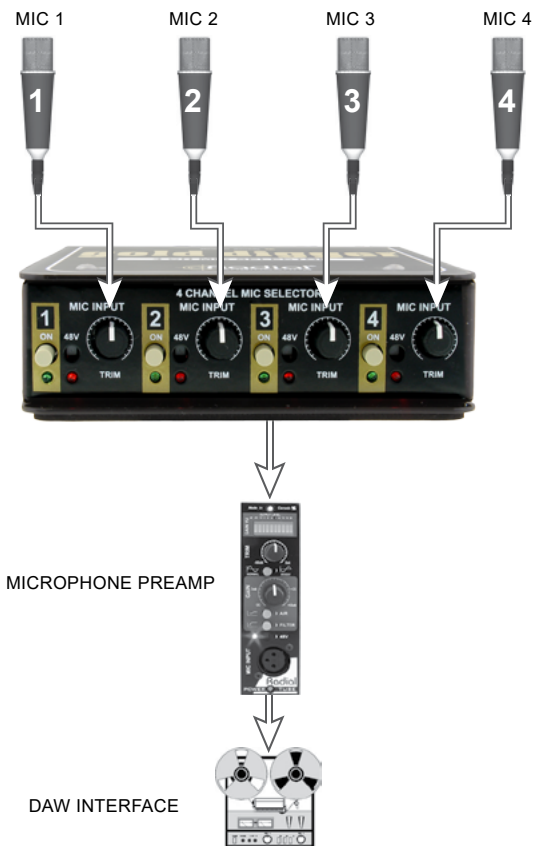
Thank you for purchasing the Radial Gold Digger. We are very excited about how this product can improve workflow and efficiencies in the studio. We are also very confident that once you get it in use, you too will find it to save you time and bring another level of creativity to your production.

Although the Gold Digger is extremely easy to use, it is well advised that you take a few minutes to quickly read through this short manual. Inside, you will surely find some hints on how to best approach using the Gold Digger in your studio. If you do not find everything you need, please go to the Gold Digger web pages on our site and visit the FAQ section. This is where we publish the latest updates and answer questions from users.

**OVERVIEW**

The Gold Digger is a 4-in, 1-out switcher designed specifically for microphones. Although this may seem simple from the outside, there are a number of concerns that were addressed to make it work easily, quickly and without noise. This includes switching 'powered microphones' such as condensers without creating huge pops that can blow tweeters. Another concern is keeping old vintage ribbon mics safe. We wanted to make it easy to set up a fair comparison. This meant that the Gold Digger could not impart any form of coloration or distortion to the signal path, but we also had to have some type of level control to ensure the tests are conducted fair and square so that one mic would not be louder than the next.

Ultimately, you will find the Gold Digger to be super easy to use and will save you time as you find the best mic to suit a certain application. Have fun. Experiment. This is what the Gold Digger is designed to do.



*Typical Setup Diagram*

FEATURE SET



1. CHANNEL ON 1 to 4: Radio style push button switches automatically turn the selected mic on and the other microphones off to eliminate bleed. Illuminated LED indicates which channel is active.
2. +48V PHANTOM: Turns on the phantom power that condenser microphones and active direct boxes require. Switch is recessed to protect against accidental 'turn on' that could damage vintage ribbon mics. LED indicator illuminates when phantom is active.
3. TRIM ADJUST 1 to 4: Individual 'set & forget' trim controls let you quickly match the signal level between different mics to ensure a fair and honest comparison.
4. RECESSED PANEL: Extended lip creates protective zone around the switches and controls when using the Gold Digger on stage or in less than ideal locations.
5. 14-GAUGE STEEL: Heavy duty construction eliminates stress on the PCB and provides excellent shielding against magnetic fields and RF which otherwise could introduce noise.
6. CABLE CLAMP: Locking cable clamp lets you secure the power cable to the Gold Digger to prevent accidental disconnection.
7. 15VDC: Like professional mixers, the power supply is taken out of the box to reduce noise and ensure the most transparent signal flow.
8. XLR OUTPUT: Use to connect the Gold Digger output to a microphone preamp.
9. XLR INPUTS: Use to connect microphones to the Gold Digger. Heavy duty glass-filled XLRs with nickel-silver contacts are stronger than steel and provide 100% isolation between channels to reduce noise and crosstalk.
10. PAD: Full bottom no-slip neoprene foam pad provides electrical insulation and mechanical isolation for plenty of stay-put-ness.

## MAKING CONNECTIONS

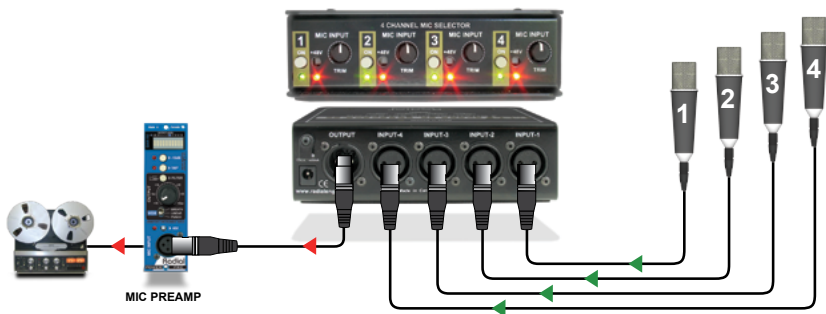
Before making audio connections, always ensure volume levels are turned down or off. This prevents turn-on transients which could harm more sensitive components such as tweeters. There is no power switch on the Gold Digger. As soon as you connect the power supply, it will turn on. If you are using the Gold Digger in a mobile studio or in a high traffic area, you may want to use the power supply cable clamp for an extra secure power connection.

With the power connected, follow these steps to set up the Gold Digger controls. First, make sure each of the four Gold Digger mic inputs has the +48V phantom power switch in the off position (outward, LEDs off). Also turn off the phantom power feature on your mic preamp. For best results, the Gold Digger should be the only source of phantom power. Next, set the four TRIM controls to maximum (fully clockwise).

Take a moment to notice how the mic input ON buttons work. When pressed, the switch will simultaneously turn-on the mic input while also turning-off whatever mic is currently active. This switching method allows only one mic signal to pass through the Gold Digger at a time.

Connect your microphones to the Gold Digger mic inputs using standard XLR cables. Determine if +48V phantom power is needed depending on the type of microphone. Most condenser microphones can be powered by the Gold Digger's onboard phantom power. Dynamic or ribbon mics do not need it and phantom can be left off for those mic inputs. Simply use a small screw driver to access the recessed +48V switch if phantom is needed. An illuminated LED indicates the phantom power is active for that mic input.

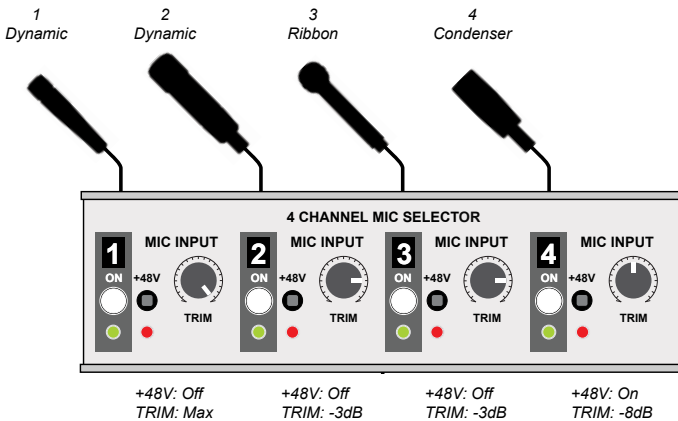
Connect the Gold Digger's male XLR output to your preamp or mixer and use a low gain setting for testing. Select input-1 (LED will illuminate) and monitor the mic signal as you slowly turn up the volume on your audio system. It is always best to test all four mics at low volumes as this reduces opportunity for feedback or noise due to bad cables or improper connections. Move on and repeat the signal check process for the rest of the mics connected to the Gold Digger inputs. Once all four mics are tested and working, you can set the front panel TRIM controls to balance the outputs of the microphones.



## SETTING THE TRIM LEVELS

Setting the TRIM levels on the front panel is a very important step if you are interested in achieving a fair evaluation between mics. The Gold Digger's four TRIM controls allow the output level of each mic to be adjusted individually. Properly setup, there should be very little change in level when switching between the four mics. This will help ensure a fair and honest evaluation of your microphones.

Begin by ensuring all four TRIM controls are set to maximum (fully clockwise). Next, determine which of the four mics has the **lowest** output level by switching between mics while monitoring the output. Once the lowest output mic has been determined, the TRIM controls are used to attenuate the louder mics to match. For instance, if mic-1 is the lowest output mic, leave it's TRIM set at maximum and reduce the gain of the other mics to match. Turn the louder mic's TRIM controls counter-clockwise until the relative output level stays the same when switching between mics.



Once all of the mic levels have been matched, you can finalize your preamps gain setting and additional signal processing like compression and equalization. Keep in mind that dynamic microphones do not have built-in buffers like condensers. This means that when you adjust the TRIM level, the tone may change slightly because of small changes to the impedance. Good news here is that if you are comparing a dynamic to a condenser, the condenser, by virtue of it's active buffers, will usually be louder and less prone to impedance changes, thus trimming down the level on condenser mics will have no sonic effect on the sound allowing you to make a fair comparison between dynamic and condenser mics.

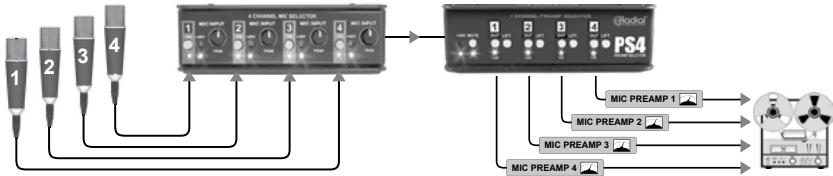
## WHEN DOES 'COMPARING MICS' MAKE SENSE?

The most obvious time to use the Gold Digger will be with vocalists. There is no question that singers perform better when the sound they hear in their headphones is the one they envision in their head. Using the Gold Digger to compare mics on guitar cabinets can lead to very interesting results as well. The same can be said on a snare drum or even on a kick drum. Putting up more than one mic takes no time at all, and with the Gold Digger in the signal path, you are not adding any noise or distortion so you are not compromising your tone in any way. Just have fun!

**USING THE GOLD DIGGER TO COMPARE DI BOXES**

You can also compare direct boxes following the same procedure. You would be surprised at how different each DI can sound. In fact you may be surprised to find that just like microphones, DIs all have different personalities that can truly flatter certain instruments or render them listless.

For even more fun, get a Radial Cherry Picker! This lets you compare various preamps to find the best one for a given vocal.



**RADIAL GOLD DIGGER SPECIFICATIONS**

- Circuit Type..... Passive signal path with active relay switching
- Frequency Response ..... 10Hz to 100kHz +/- 0.0dB
- THD + N ..... 0.0003%
- Dynamic range ..... -140dBu
- Equivalent Input Noise..... -115dBu
- CMRR..... -92db @ 55Hz
- Input Impedance..... 600 Ohms nominal
- Output Impedance ..... Same as source impedance
- XLR Configuration: ..... Follows AES spec: pin-1 ground, pin-2 hot (+), pin-3 cold (-)
- Power requirement ..... 15VDC / 150mA (adapter supplied)
- Size (W x H x D): ..... 5.8" x 1.88" x 4.5" (148mm x 48mm x 115mm)
- Weight ..... 2.1 lbs. (0.96 kg)
- Warranty ..... 3 years, transferable limited warranty

## THREE YEAR TRANSFERABLE LIMITED WARRANTY

RADIAL ENGINEERING LTD. ("Radial") warrants this product to be free from defects in material and workmanship and will remedy any such defects free of charge according to the terms of this warranty. Radial will repair or replace (at its option) any defective component(s) of this product (excluding finish and wear and tear on components under normal use) for a period of three (3) years from the original date of purchase. In the event that a particular product is no longer available, Radial reserves the right to replace the product with a similar product of equal or greater value. In the unlikely event that a defect is uncovered, please call 604-942-1001 or email [service@radialeng.com](mailto:service@radialeng.com) to obtain an RA number (Return Authorization number) before the 3 year warranty period expires. The product must be returned prepaid in the original shipping container (or equivalent) to Radial or to an authorized Radial repair center and you must assume the risk of loss or damage. A copy of the original invoice showing date of purchase and the dealer name must accompany any request for work to be performed under this limited and transferable warranty. This warranty shall not apply if the product has been damaged due to abuse, misuse, misapplication, accident or as a result of service or modification by any other than an authorized Radial repair center.

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