

# Chameleon Labs

## Model 7602

Microphone Preamplifier and Equalizer

### Owner's Manual

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Your Model 7602 microphone preamplifier has a transformer balanced input with a range between 20dB and 80 dB of gain. The separate line input is transformer balanced and accepts input levels from -20 to +10dB. The equalizer section is a selectable 3 band design with a flexible filter section.

The Model 7602 has been carefully constructed and individually tested for quality. It utilizes pure class 'A' circuitry. This unit is made with 100% discrete components, hand wound transformers and was fabricated to precisely match vintage counterparts manufactured in the early to mid 70's.

The Chameleon Labs Model 7602 is based on high audio performance design techniques. By employing classic circuit design, polystyrene capacitors, a gold contact gain selector and custom wound transformers Chameleon Labs ensures that the Model 7602 will exhibit classic audio sound.

Your Model 7602 represents a dramatic breakthrough in delivering vintage audio performance at an affordable price.

## **Features of the Model 7602:**

- Fully balanced transformer mic input and output;
- Balanced XLR outputs;
- Hi-Z direct inputs for instruments on the front panel;
- 48VDC phantom power selector on the front panel;
- 20 position gold contact rotary gain switch for both Mic and Line sections;
- Output level control functions as a fader when going straight to tape;
- Oversize power supply provides many times the current needed for optimum sound quality and will power two units;
- One-year warranty

## **Front Panel Controls: (Left to Right)**

### ***DI Button-***

This button routes the Direct Input jack into the unit.

### ***48V Button-***

This button supplies 48 V.D.C. (Phantom Power) to the Microphone Input XLR jack.

### ***EQ Button-***

This button turns the equalizer section on.

### ***Ø Button-***

This button reverses the phase of the unit 180°.

### ***Filter-***

This is a high pass filter with 3db loss at 300Hz, 160Hz, 80Hz, and 50Hz with an 18db cut per octave slope.

### ***Low Equalization -***

This section has a shelving slope with four frequency selections: 220Hz, 110Hz, 60Hz, and 35Hz. This equalizer affects the selected frequency and all others below it.

### ***Mid Equalization -***

This section has a peaking characteristic with six frequency selections: 360Hz, 700Hz, 1.6k, 3.2k, 4.8k, and 7.2k. The gain control provides 20db of boost or cut.

### ***High Equalization-***

This section has a shelving characteristic with five frequency selections: 16k, 12k, 7k, 4.9k and 3.4k. This section adjusts the selected frequency and all others above it. The gain control provides 20db of boost or cut.

### ***Microphone / Line sensitivity-***

This pot controls input level for the microphone and line inputs. The microphone and line inputs have their own input connectors on the rear panel and a separate input transformer. Each rear input has its own section of the control on the input gain selector switch. The microphone section provides 20 to 80db of boost in 5db steps, and the line section provides +10 to -20db of adjustment.

### ***Output-***

Acting as a console fader, this control is placed after the gain stage and before the output stage. This allows for trimming of the input signal between the 5db steps of

the input switch, as well as allowing the input to be intentionally overdriven. The normal position for this control is wide open.

## **Connecting the Preamplifier / Equalizer**

### *Audio Connection*

Microphone input connections are made with the female XLR connector on the rear of the unit. This connector is wired with pin 2 HOT, pin 3 common and pin 1 is ground. (shield) The 48 Volt D.C. power is supplied on pins 2 and 3.

The Instrument (DI) connection is made using the balanced 1/4" TRS jack on the front panel. The connector is wired with the TIP being positive, The RING being negative and the SLEEVE being ground. (shield)

Line input connections are made with the male XLR connector on the rear of the unit. This connector is wired with pin 2 HOT, pin 3 common and pin 1 is ground. (shield)

Output connection is made using the male XLR connector on the rear of the unit. This connector is wired with pin 2 HOT, pin 3 common and pin 1 is ground. (shield)

## *Power Supply Connection*

A 4 pin, screw on type connector will provide power to run the Model 7602 unit. A Model CPS1 power supply is **required** to power this unit. The CPS1 power supply contains a toroidal transformer to reduce 60Hz hum. To insure quiet operation, mount the power supply at least one rack space away from the Model 7602 main unit. The Model 7602 comes with an interconnecting cable that will connect it to one of the two power outputs on the CPS1. A CPS1 will power two Model 7602 units. Be careful when connecting the power cable to insure correct mating of the two connectors. They are keyed and should go in with very little effort and then screw down for added safety. If more than gentle pressure is required, it is possible that the plug is misaligned and should be rotated for a correct fit. **DO NOT FORCE** the power connector. The power pin is wired as follows:

- Pin 4 is Audio Ground (shield)
- Pin 3 is +48 Volts D.C.
- Pin 2 is +24 Volts D.C.
- Pin 1 is -24 Volts D.C.

## *First time users*

### **Set up of the Model 7602**

1- Select 40 dB on the *Microphone / Line sensitivity* control. Turn the Output control fully counter clockwise. Make certain that the *DI*, *48V*, *EQ* and *Phase* buttons are all out.

2- Connect a microphone to the Female XLR plug on the rear panel. If the microphone requires Phantom Power, press the *48V* button in.

3- Connect the male, Line Output XLR connector, located on the rear panel to the input XLR on your recorder or D.A.W.

(If you are sending to a device that does not have a gain control, use the *Output* control to adjust your signal so that your loudest signals just fail to reach the maximum input levels on your recording device.)

4- Turn the *Output* control clockwise until you can see level on the input of your recorder. Increase until the desired level is achieved. ( *Vintage Hint*: Adjusting the Microphone / Line sensitivity control along with the Output control can provide a variety a different sounds by overdriving the amplifier circuits while lowering the final output level in order to not overdrive the recorder.

5- If you wish to connect the equalizer section to the line output of your board or D.A.W., simply connect to the female, line input XLR on the rear panel.

6- When an electronic instrument such as an electric guitar is used, it may be plugged directly into the ¼” DI plug located on the front panel. Press the ***DI*** button in to select this input device.

7- If phase reversal is needed, press in the ***phase*** button (a zero symbol with a diagonal line through it).

8- To insert the equalization section into the circuit, press the ***EQ*** button in. Each section can be set to OFF with the ***frequency selector*** knob. As you add or subtract gain within the equalizer, be sure to adjust your overall gain with the ***output*** control. When the ***output*** control can no longer make the adjustments that you need, you may switch to a higher or lower gain setting on the ***Microphone / Line sensitivity*** control.

## Specifications

### *Input impedance:*

Microphone – 1,200 ohms  
Line – 10,000 ohms  
D.I. – 100,000 ohms

### *Sensitivity:*

Microphone – -80dBm to -20 dBm in 5dB steps for 0 dBm output.  
Line – -20 dBm to +10 dBm in 5 dB steps for 0 dBm output.

### *Noise:*

Measured at 80 db of gain with 200 ohm input termination, **without** 20Hz to 20kHz to assist in filtering out noise.

-49dbu with final output stage at 50% EIN -129 dbu;  
-46dbu with final output stage at unity EIN -126 dbu;  
-56dbu without final output stage EIN --136 dbu.  
Controls either “flat” or switched out.

### *Output:*

Balanced and floating to feed a 600 ohm load.  
Maximum output +26 dBm into 600 ohms, or +20dBm into 150 ohms.

### *Output impedance:*

600 ohms, balanced (source impedance 75 ohms).

***Frequency Response:***

11 Hz – 77.65 kHz – 3 dB.

Level variation is less than 0.2%.

***Distortion:***

1k Hz = 0.0245%

All tests results were measured using a Stanford Research Model SR780 signal analyzer and a Fluke 8060a.

Input signal was 1v rms input signal and 20dbu output signal.