Wunder Audio™

Owner's Manual

PEQ2

peq2.5.1.09

Contents

Section	Page
Introduction	3
General Notes	4
Module Connection	5
Front Panel	6
Operation Notes	7
Specifications	8
Warranty	9
Warranty Registration	10

Introduction

Thank You for selecting the Wunder Audio PEQ2™. The PEQ2 is a fully Class-A discrete 1970's-style mic-pre/ equalizer. The design employs propretary, custom-designed mic, line, and output transformers. It can directly replace the 1073 module. The 18-way gold plated Amphenol connector will mate with vintage "80 Series" consoles or racks designed for a 1073 or equivalent.

The key to the sound of the Wunder Audio modules are the transformers. The PEQ2 is different from the PEQ1 as it incorporates Upgraded "NICO" transformers (Nickle/Iron/Colbalt). This "Mu" metal was made in the USA at the same factory that supplied the Nickle/Iron/Colbalt cores that were use in the 1960 s in our favorite vintage gear. Wunder went through the painstaking steps of having this metal re-made by the original factory and is the only recipient of this new batch of core metal.They are to the exact specifications as transformers that were custom made for the old Zeppelin desk.These transformers are physically large and just fit in the 1073 style module housing!

One of the most interesting features about the PEQ2, besides the magical mic-pre and EQ, is that you can record bass guitar and other instruments by plugging direct into the Line Input. When accessing the Line Input, you will get more low-end than any direct box/mic preamp combination. There is a very wide range of gain in the line input incorporating 60 dB of gain. The upper end of this gain stage from -24 to -42 dB is bracketed "HiZ" on the front panel which is suitable for tracking instruments. Here you will have monster bass sounds like no direct box can achieve.

The "HiZ" range on the line input can also be used as a second, totally different mic pre on the PEQ1 using a different transformer, thus a different sound. Try it. You can actually plug a microphone into the "LINE INPUT" XLR on the back of the unit.

Interestingly, the 66 dB of line input gain is double that of a 1073 and therefore has a huge amount of headroom. Thus when EQ-ing a source coming back into the PEQ2 from tape or hard disk to you will notice a fat, wide open sound with virtually no phase shift.

All the switches are custom made by Greyhill. The custom made potentiometers are Vishay audio-grade, made with conductive plastic for a long life (one million cycles). Large Sprague "Orange Drop" capacitors are used in the equalizer circuit. The EQ and Phase Switch are manufactured by Isostat for a vintage touch. The Panasonic FC 105˚C Electrolytic capacitors are used to insure reliable high temperature operation and long life. Metal can, not plastic, transistors from the UK are predominantly used in the amplifier stages. The hook-up wire is from the UK and is hand assembled to "Military Spec". A single circuit board offers a vast sonic improvement over 5 separate boards found in a 1073 eliminating the use of multiple edge-board connectors and redundant wiring. The enclosures are CAD designed to 1/1000" tolerance and are bright-nickel plated and have PEM nut hardware throughout for solid construction. Finally, the custom-designed anodized aluminum knob set on the PEQ2 gives the module character. The boost and cut knobs are solid brass with shiny nickel plating. The knob markers are embedded with white plastic dowels so the white mark will never wear off.

General Notes

Installation
It is recommended that the PEQ2 modules be installed in any Rack or Console that was designed to power up a 1073 module.

Water and Moisture
As with any electrical equipment, Wunder Audio products should not be exposed to water or excess moisture. If any liquid enters the enclosure, it should be returned to your dealer for servicing.

Servicing
The user should not attempt to service this unit. Doing so can void the warranty. Please refer all servicing to Wunder Audio.

Module Connection

Your PEQ2 is provided with an Amphenol 18-way card edge connector on the rear of the module. This card edge connector is wired up identical to a 1073 module.

The wiring scheme is detailed as follows:

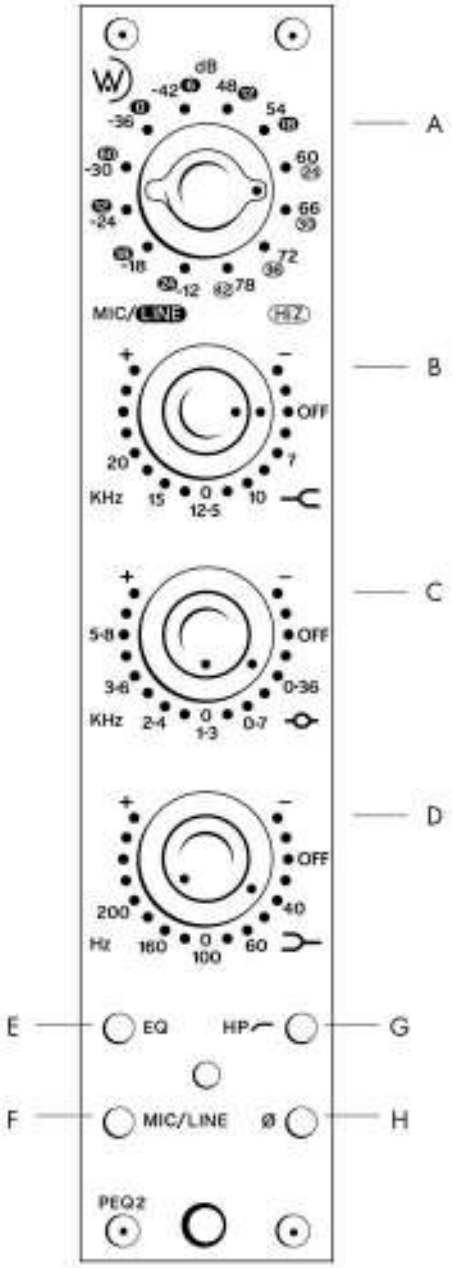
power requirements: 24 volts DC at approximately 100 mA

connections:

A	Microphone Input +
B	Microphone Input -
C	
D	
E	0 volts Ground
F	Line Input +
H	Line input -
J	
K	external fader input
L	external fader output
M	
N	
P	
R	Line Output +
S	
T	Line Output -
U	24 volts+
V	Chassis

Note: Chassis must be connected to 0 volts via the backplane harness

Front Panel



Dimensions: The front panel of the PEQ1 measures 45mm x 220mm (1.75" x 8.70")

A Gain Switch - This red winged knob controls a 12-position switch. Each switch position will show two values. The "Line" gain level is circled whereas the "Mic" gain level is not circled .

B High Frequency control - The high frequency is adjusted using this dual concentric knob. The outer black knob determines the frequency at which boost or cut will occur. This knob also has an off position. The inner silver knob provides continuously variable BOOST or CUT from 0 to +/- 20 dB of the selected frequency. This knob should be set to the 6 o clock position to achieve no boost or cut.

C Mid control - The Mid frequency is adjusted using this dual concentric knob. The outer black knob determines the frequency at which boost or cut will occur. This knob also has an off position. The inner silver knob provides continuously variable BOOST or CUT from 0 to +/- 20 dB of the selected frequency. This knob should be set to the 6 o clock position to achieve no boost or cut.

D High Low control - The Low frequency is adjusted using this dual concentric knob. The outer black knob determines the frequency at which boost or cut will occur. This knob also has an off position. The inner silver knob provides continuously variable BOOST or CUT from 0 to +/- 20 dB of the selected frequency. This knob should be set to the 6 o clock position to achieve no boost or cut.

E EQ Switch - The Equalizer is activated by depressing this switch.

F Mic/Line Switch - This switch determines whether the unit is in Microphone Preamplifier or the Line Input mode.

G Discrete High Pass Filter - Corner Frequency is set at 90 HZ.

H Phase Switch - The Output Polarity is Shifted 180 degrees by depressing this switch.

Operation Notes

Powering Up
When installing or removing a PEQ2 module from a rack or console please make sure that the power of the rack or console is off.

Running
It is not necessary that you leave this unit permanently switched on. If you decide to leave your equipment powered up, the modules should still run problem free.

Gain Setting
We have adopted the British convention where the gain value on the faceplate indicates the amount of gain applied to achieve the rated output of 0 dBm. Turning the gain knob clockwise will always raise the output gain even though the gain setting will indicate a greater negative number.

If a 0 dBm signal is fed into the module the gain switch needs to be set to zero to achieve a unity 0 dBm output. If a -12 dBm signal was fed into the module, then the gain switch on the module will need to be turned up to -12 to to achieve unity 0 dBm output.

The PEQ2 operates from a microphone or a line source and raises the level of the incoming signal to 0 dBm for feeding into a 600 ohm load. The level of the incoming signal can be between -78 dBm and -12 dBm for a microphone input, or between +24 dbm and -42 dbm for a line input. After performing the various signal processing requirements the signal output is 0 dBm.

The Line Input provides a very wide range of input sensitivity. There are four Hi-Z settings on the gain knob. The four highest gain settings on the line input knob (-24 through -42) are ideal for an electric musical instrument which may be plugged directly into the Line Input.

As with any Microphone Preamp or Equalizer, it is recommended that you check your Microphone or Line input levels on a solo meter especially after a large EQ boost so the unit is at unity gain.

Specifications

Input Sensitivity

Mic -78 to -12dBm in steps of 6dB on Mic into 600 ohms

Line +24 to -42 in 6 dB steps

All Inputs & Outputs are Transformer Fully Balanced and Floating.

Output Maximum

+23dBm into 10k

Frequency Response

+0/-1dB from 20Hz and 115KHz with EQ switched out

-3 dB points at 8.5Hz and 120KHz with EQ switched out

Noise

Better than -125dB measured from 10Hz to 20KHz

Signal to Noise

Better than 82dB @ 1000Hz with input at +4dBu

Distortion

Typically <.01%. Better <.025 at full power at all Frequencies

Equalizer

HF Controls: 5 Switched frequencies 7K, 10K, 12.5K, 15K, 20K Plus OFF with continuously variable boost/cut max of +/- 20dB

Mid Controls: 6 Switched frequencies 0.36K, 0.7K, 1.3K, 2.4K, 3.6K , 5.8K Plus OFF with continuously variable boost/cut max +/- 21dB

Low Controls: 5 Switched frequencies 40Hz, 60Hz, 100Hz, 160Hz, 200Hz Plus OFF with continuously variable boost/cut max +/- 20dB

Warranty

Limited Warranty
This warranty is provided by the dealer where the Wunder Audio product was purchased, and by Wunder Audio. This warranty is valid only for the original purchaser. We warrant Wunder Audio products against defects in material or workmanship for a period of one year from from date of purchase to the original purchaser only, and agree to repair or, at our option, replace any defective item, except external power transformers, without charge for either parts or labor.

This warranty does not cover damage resulting from accident, misuse or abuse, lack of reasonable care, the affixing of any attachment not provided with the product, loss of parts, or connecting the product to any but the specified receptacles. This warranty is void unless service or repairs are performed by a authorized service center. No responsibility is assumed for any special, incidental or consequential damages. However, the limitation of any right or remedy shall not be effective where such is prohibited or restricted by law.

For service and repairs covered in this warranty
If a Wunder Audio product meets the above warranty, then the purchaser s sole remedy shall be to return the product to Wunder Audio, where the defect will be repaired without charge for parts and labor. The product will then re returned via prepaid, insured freight, method and carrier to be determined solely by Wunder Audio. All returns to the factory must be in the original packing (new packing will be available if needed), accompanied by a written description of the defect, and must be shipped to Wunder Audio via insured freight at the customer s own expense. Charges for unauthorized service and transportation costs are not reimbursable under this warranty, and all warrantees, express or implied, become null and void where the product has been damaged by misuse, accident, neglect, modification, tampering or unauthorized alteration by anyone other than Wunder Audio. We will not repair transit damage under the no-charge terms of this warranty.

When sending a product in for servicing, be sure to include your sales slip as proof of purchase date, or registration card. Proper registration is made by filling out and returning to the factory the warranty card attached to this general warranty statement, along with a copy of the original sales receipt as proof of the original date of purchase. Only one card is issued with each unit, and the serial number is already recorded on it.

If the warranty registration card has already been removed then this is not a new unit, and is therefore not warranted by the factory. If you believe this to be a new unit then please contact the factory with the details of purchase.

The warrantor assumes no liability for property damage or any other incidental or consequential damage whatsoever which may result from failure of this product. Any and all warrantees of merchantability and fitness implied by law are limited to the duration of the expressed warranty. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. All warrantees apply only to Wunder Audio products purchased and used in the United States.

NOTE: No other warranty, written or oral is authorized for Wunder Audio products.

Warranty Registration

Please fill out the registration form below. Email document to:
mike@wunderaudio.com

Registration entitles you to product support, full warranty benefits, and notice of product enhancements and upgrades. You must complete and return the following to validate your warranty and registration.

Model _____ Serial No. _____

Purchase Date _____ Supplier _____

Please detach the portion below and send it to Wunder Audio

- -

Model _____ Serial No. _____

Purchase Date _____ Supplier _____

Name of Owner _____

Address _____

City, State, Zip _____

Telephone _____

Email Address _____

Name of Dog or Cat _____

Serial Numbers of other Wunder Audio Equipment _____

_____

_____