

OPERATIONAL MANUAL

CharterOak Acoustic Devices MODEL PEQ-1 STEREO PROGRAM EQUALIZER



Thank you for purchasing the CharterOak PEQ-1 Stereo Program Equalizer. You have purchased one of the best sounding equalizers in the world. The PEQ-1 is a solid-state equalizer that employs ultra-high quality input and output transformers.

READ CAREFULLY BEFORE PROCEEDING

Any changes or modifications to this equipment will void your warranty and could void your authority to operate this equipment under the EC or FCC rules.

1. Copyright: You acknowledge that no title to the intellectual property in the PEQ-1 is transferred to you.
2. Inspection: Inspect packing boxes, PEQ-1, and cables for damage, unusual marks, or shortages. It is your responsibility to report damage, shortage, or misshipments in a timely manner. CharterOak Acoustic Devices and/or its dealers will not be responsible for claims arising from damage in shipping, nor will claims for shortage or misshipments be honored, more than 30 days after ship date without direct authorization from CharterOak.
3. **Read this manual carefully and completely before attempting to use the PEQ-1.** Improper operation could result in damage to product. It is the user's responsibility to understand the safe use and operation of this device.
4. The shipping box of the PEQ-1 system will include (1) Owner's Manual, (1) PEQ-1 Unit, (1) a UL approved power cord, (1) Warranty Registration Card. Fill out the Warranty Registration Card and return to CharterOak Acoustic Devices at your earliest ability to activate the Lifetime Warranty.

The material contained in this manual consists of information that is property of CharterOak Acoustic Devices and is intended solely for use by the purchasers of the equipment described in this manual. CharterOak Acoustic Devices expressly prohibits the duplication of any portion of this manual or the use thereof for any purpose other than the operation and/or maintenance of the equipment described in this manual without the express written permission of CharterOak Acoustic Devices.

Serial numbers are located on the rear right side of each unit. We suggest that you record the serial numbers in the space provided below. Refer to it whenever you call or email CharterOak Acoustic Devices Service Department. Make sure that you return your completed warranty card immediately.

Features and specifications subject to change without notice.
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Serial No. _____

Purchase Date _____

Where Purchased _____



WARNINGS AND PRECAUTIONS

Always follow the basic warnings and precautions listed below to avoid the possibility of serious physical injury to you or others, death, damage to the device, from electrical shock, short-circuiting, damages, fire, or other hazards.

These warnings and precautions include but are not limited to the following:

This device contains no user-serviceable parts. Do not attempt to disassemble or modify the internal components of the PEQ-1 in any way. Doing so will void your warranty.

Do not expose the PEQ-1 to rain, or use it near water or in damp conditions.

If the audio cables become frayed or damaged, there is a sudden loss of sound during the use of the PEQ-1, or if any unusual smells or smoke should appear to be caused by it, immediately turn off the power on all devices in use, disconnect the PEQ-1, and have it inspected by qualified technicians.

Only use the AC line voltages supported by the multi-tap power transformer employed in the PEQ-1. The PEQ-1 has a voltage selector switch located at the rear of the unit which allows for 115 and 230 volt operation.

Do not place the audio or power cords near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cords, place heavy objects on them, or place them in positions where anyone could walk on, trip over, or roll anything over them.

The PEQ-1 is extremely robust and is designed to provide years of continuous operation, even in adverse environments. However, if possible, you should not expose the PEQ-1 to any excessive dust or vibrations, or extreme cold or heat. This includes but is not limited to: a car on a hot day, direct sunlight for extended periods of time, or near a heater, radiator, or air conditioner.

NOTE: CHARTEROAK Acoustic Devices cannot be held responsible for damages caused by improper use or modifications of the PEQ-1 Program Equalizer.



INTRODUCTION

The CharterOak PEQ-1 is designed to enhance your stereo mixes more than any other single component in your signal path.

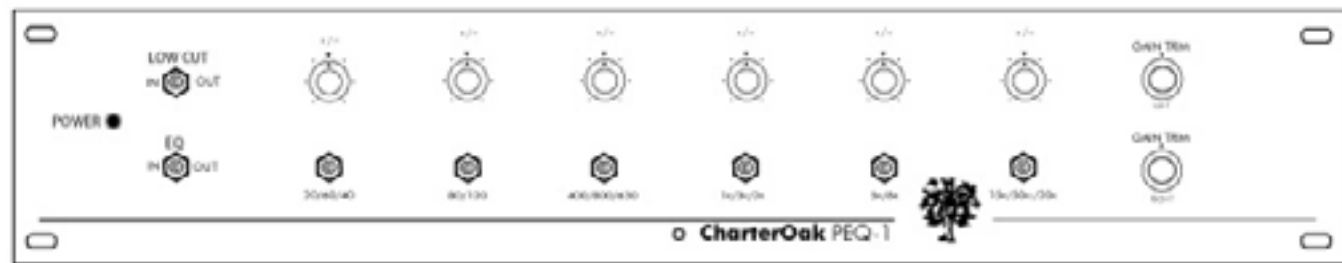
In the PEQ-1, CharterOak has developed a stereo tone control of unparalleled quality. The equalizer is intended to function not as a corrective equalizer, but rather as a stereo tone control that can enhance tonal balance and timbre with simple adjustments, no phase shift, and no sonic deterioration.

You will find that if there is no distortion in your source recording, that you will be able to add generous amounts of presence at frequencies as high as 50kHz without any harshness or noise.

The CharterOak PEQ-1 allows you to make the most subtle or the most radical adjustments in order to restore the vitality and life to a poorly recorded master, or to further enhance a very good clean mix.

The CharterOak PEQ-1 employs the finest electronic components available today, from the capacitors in the signal path to the input and output transformers. It comes with a lifetime warranty for parts and service for the original owner and will run on supply voltages of 110-120 to 220-230 VAC.

IN USE



FREQUENCY ADJUSTMENTS

The PEQ-1 is unique in that its layout and functionality follows the sensitivity, and range of our natural hearing. For instance, there is less potential for cut and boost as you work your way towards the mid range since our hearing is most sensitive in this register and the equalizer allows for more radical adjustments at the outer boundaries of our natural register of hearing.

The equalizer is arranged in six filter sets with a total of sixteen switched center frequencies with a separate low cut filter. The low cut filter starts at 40Hz and is down 6dB at 20Hz. The bandwidth around each center frequency is fixed at two octaves allowing for the filters to overlap in a very natural and musical way. This allows for an extremely musical approach to the final equalization of your program material even when making the most subtle enhancements.

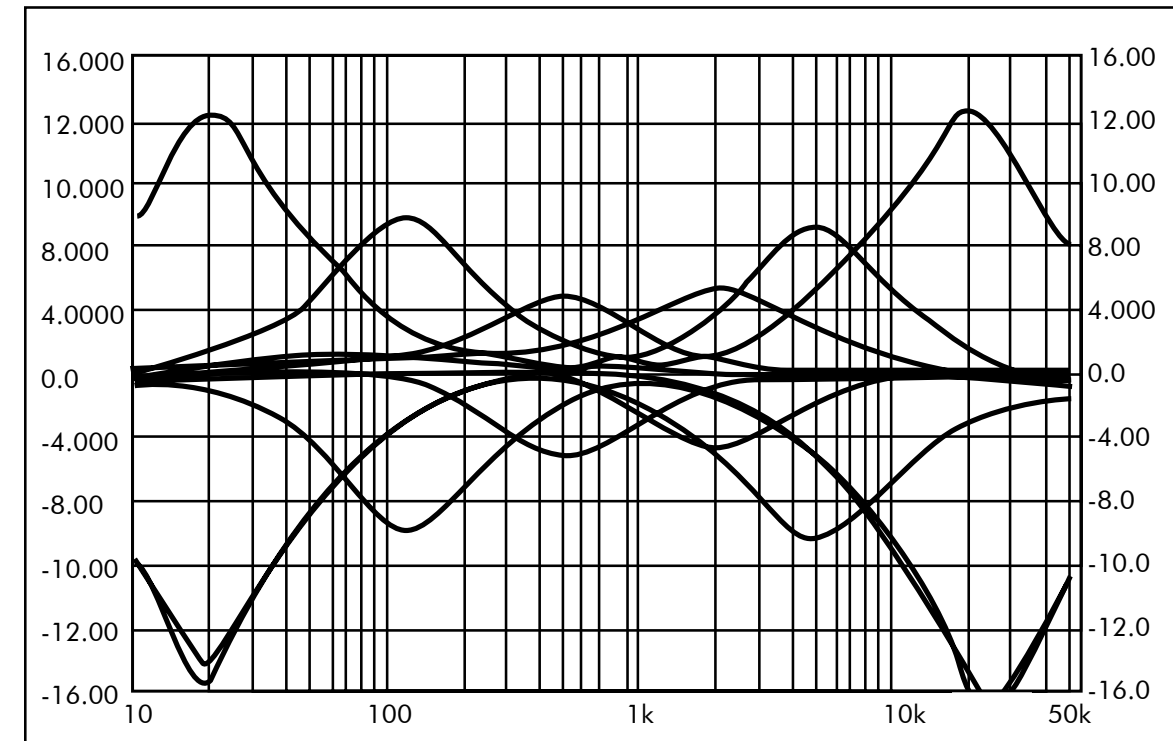
The frequency ranges and minimum boost/cut values are arranged in the following way.

- 20Hz/60Hz/40Hz +/- 12dB
- 80Hz/120Hz +/- 8dB
- 400Hz/800Hz/630Hz +/- 4dB
- 1kHz/3kHz/2kHz +/- 4dB
- 5kHz/8kHz +/- 8dB
- 15kHz/50kHz/20kHz +/- 12dB



We at CharterOak have elected NOT to put any printed legend on the face plate of the unit as it relates to amounts of cut and boost in an attempt to get engineers to simply listen to what they are doing and set the controls where it sounds best, rather than worry about a number that might seem too radical.

Center Frequencies Shown are 20Hz, 120Hz, 630Hz, 2kHz, 5kHz, and 20kHz. Notice that greater potential for cut and boost is allowed at the highest and lowest center frequency points, and less as you move into the mid range where our ears are most sensitive to minute changes. This feature will help you achieve the most musical results.



GAIN TRIM

The PEQ-1 is fitted with individual gain trim controls for both left and right channels. These can be used to correct the left-right balance of your mix and to calibrate the unit in your signal path.

SPECIFICATIONS

- Frequency response 20Hz-20kHz within 0.4db. - 3db down at 60kHz
- 2nd/3rd Harmonic Distortion 0.01% below + 21 dBu
- Maximum output +23dBu
- Signal to Noise Ratio -85dB referenced to +4dBu
- Crosstalk below noise level



Input impedance 600 ohms (transformer balanced)
Output impedance 600 ohms (transformer balanced)
Power Requirements 110-115VAC/220-230VAC
Physical Dimensions: 2RU

WARRANTY

CharterOak Acoustic Devices will repair this product, free of charge, in the event of defect of materials or workmanship for the lifetime of the product. This warranty is extended only to the original purchaser. This warranty covers failures due only to defects in materials and workmanship which occur during normal, intended use and does not cover damage which occurs in shipment or failures which are caused by products not supplied by CharterOak Acoustic Devices. This warranty does not cover failures which arise from accident, misuse, abuse, neglect, mishandling, misapplication, faulty installation, improper adjustment, alteration or modification of product, incompatibilities, line-power surges, acts of God, or service performed by anyone other than CharterOak Acoustic Devices or its authorized agent.

CharterOak Acoustic Devices
47 Pearl Street
Enfield, CT 06082 USA
T 860-698-9794
F 860-698-9812
service@charteroakacoustics.com
www.charteroakacoustics.com

