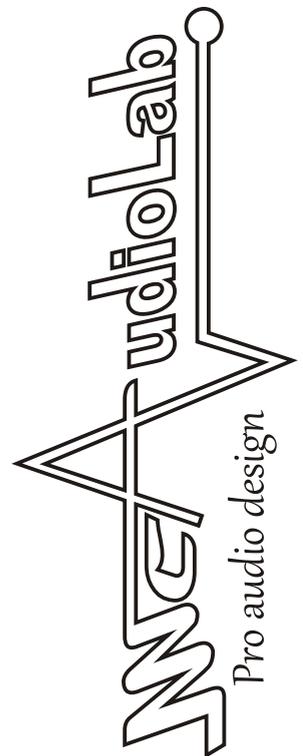


EQ1ch

Vacuum Tube
passiveEqualizer



OPERATING INSTRUCTIONS



Thank you for purchasing the
MCAudioLab EQ1ch Tube Equalizer.

IMPORTANT

The EQ1ch is designed to operate at the voltage/frequency specified on the label on the back of the unit as well as the serial number.

The ground pin of the power cord is internally connected to the chassis. This is the standard configuration in professional equipment and is required by most electrical codes. Please carefully check the studio grounding scheme if ground loop hum is detected.

The serial number must be quoted on every communication in order to get technical support. Please register your new MCAudioLab product on “product registration” page on the MCAudioLab website.

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INTRODUCTION

This single-channel equalizer EQ1ch is a passive equalizer with RC / LRC circuitry and class-A vacuum tube output stage. The input balanced signal is driven by a solid state circuitry.

The RC passive shelving equalization circuitry (low freq. and High cut freq.) are based on the classic design that is still the best-sounding way to achieve high quality tonal control. An active vacuum tube output section has fixed gain (make-up gain) to compensate “dB” lost by passive stage and to accomodate input signal to balanced line. The mid-high frequency (parametric) section with boost and “Q” control is based on LRC circuitry. The EQ1ch is a highly musical equalizer for a variety of program material from individual tracks to voices and instruments.

The output stage is driven by the Lundahl transformer. All power supplies are solid state and fully regulated for long hum-free operation and highly filtered to avoid noises from the electricity mains. Each passive eq is hand-built and meticulously tested before the shipment.

WARNING!

Please read the following before you start your new MCAudioLab Tube Equalizer:

Any tube product is sensitive to a high sound pressure level environment. This may cause microphonic response in a recording situation. Make sure you are able to fit shock mount and place the unit in isolation if necessary. Direct light will effect tubes as well. It is a good practice to avoid installing the tube mic preamp to very high sound or vibration levels.

PLEASE be sure to have enough space between any stuff; this will ensure your tube unit will not be over heat. Over heating will cause damage to the tubes and shorten their life span.



FEATURES

Hibrid vacuum tube and solid state design
Passive out level volume control
Bypass switch (hard bypass)
Three LED peak level
XLR Input connector
XLR Output connector
Lundahl Output transformer
Passive RC-RLC filters
Sowter inductor @ mid-high freq.
One 6DJ8 vacuum tube (markup gain)
Ground lift switch (output only)
19"/2U-rack space

TECHNICAL DATA - EQ1ch specifications

Input line Impedance >10k Ohm
Balanced XLR Output (line level);
Recommended minimum load output Impedance 600 Ohm
Maximum Level +23 dBu
Output Low-Z, transformer-balanced
Distortion: <0.05% THD @ 1kHz (flat response)
S/N ratio: 115dB
Power supply type: Linear, solid-state; soft start for tube plate supply

Power Requirements: 10 Watts
Unit depth: 33 cm
Weight 4,5 kg

EQ1ch filter characteristics:

Low Boost/Cut at 20, 30, 60, 90, 120, 150Hz;
Shelving; 0 to 14dB Boost; 0 to 12dB Cut

High Cut at 4, 6, 8, 10, 12, 16, 20KHz
Shelving; 0 to 10dB

High Boost at 0.6, 1, 1.5, 2, 3, 4, 5, 8, 10, 12, 14, 16KHz;
0 to 24dB (sharp Q)
0 to 16dB (broad Q)

High Bandwidth "Q"
Sharp: 0.8 to 4 dep. on frequencies
Broad 0.2 to 1.2 dep. on frequencies

Adjustable output from $-\infty$ to 0 (atten. control)

FUNCTIONS

OUTPUT

The output knob is the master volume control (passive attenuation control potentiometer).

It set the amount of signal sent to the output stage. The range is from $-\infty$ (knob hard left) to 0: the maximum amount of gain stage (hard right).

INPUT

The rear panel features a XLR (balanced) input connector; it is optimized for low impedance audio line signal (tip. 600 Ohm).

BYPASS switch

This toggle switch connects directly the input XLR socket to the output XLR one (pin to pin connection). The bypass switch act only if the EQ1ch is powered on.

When the bypass switch is engaged, the bypass LED on the frontpanel light turns on.

LED METER

It is *PEAK LED METER*: A three LED meter shows the amount of signal at the XLR output according to the +4dB standard:

The "sgn" green LED means a signal equal or greater than -15dB is on the XLR out.

The "0dB" orange LED means a signal equal or greater than +4dB is on the XLR out.

The "ovr" red LED means a signal of +15dB (or greater) is on the XLR out.

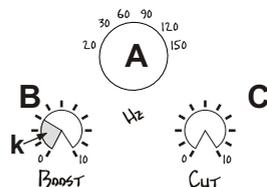
EQ CONTROLS

LOW FREQ.

Rotary switch selector **(A)**(20, 30, 60, 90, 120, 150Hz). Use it to select the low frequencies.

Low Boost (B) knob controls the amount of gain of the selected freq. by the selector A. The Low Boost is a shelf filter with 14dB max gain.

Low Cut (C) knob controls the amount of attenuation on the selected freq. by the selector A. The Low Cut is a shelf filter with 12dB max attenuation. Boost and Cut controls may be used at the same time; the cut filter action is reduced in this case if used with boost control trim exceeding the first quarter **(K)**.



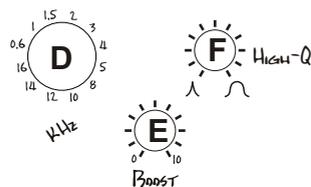
MID./HIGH FREQ.

Rotary switch **(D)** (12 steps) selector for Mid/High freq. (600Hz; 1, 1.5, 2, 3, 4, 5, 8, 10, 12, 14, 16KHz)

Boost pot. knob (E) controls the amount of gain on the selected freq. by the stepped rotary switch D. The Boost is a peak parametric filter with 20dB gain max. The maximum gain depends on the parametric "Q" control position knob.

"Q" control knob on mid./high freq. **(F)**

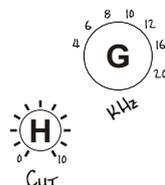
The "Q" pot. knob control can be used to change the "Q" factor on mid./high filter section. It acts on mid./high boost section only. By the "Q" control knob you change the peak filter from broad to sharp.



HIGH FREQ.

Rotary switch selector **(G)** (4, 6, 8, 10, 12, 16, 20KHz). Use it to select the high frequencies.

Low Cut (H) knob controls the amount of attenuation on the selected freq. by the selector G.. The Low Cut is a shelf filter with 10dB max attenuation.



Power

Use this switch to turn the unit on and off.

The power is applied to the EQ1ch circuitry when the Power switch is in the up position. Please remove the power cord if you plan not to use the EQ for a long period.

GROUND LIFT

When it is activated, pin 1 (signal ground on XLR connector) is not connected to ground to avoid hum. Ground lift acts on XLR output connector only.

AC Plug

EQ1ch uses a standard, detachable IEC power cord. Insert the AC power cord firmly into this socket.

Caution: please check the voltage setting on your EQ1ch. The voltage setting is printed on a label on the rear panel. Make sure the voltage setting complies with your local supply; if not, please notify MCAudioLab before powering up. Your EQ1equalizer has been factory set to the correct mains voltage for your country. If you plan to take the unit to countries with a different main voltages, you will need to send the EQ1 to the MCAudioLab Service Center for the correct transformer primaries wiring conversion and fuse changing.

Do not attempt to defeat the safety ground connection!

Fuse

This unit has an external AC line fuse (easy access to change your fuse, as necessary) to protect it from damages due to overload conditions. If the fuse fails, replace it. If the fuse fails repeatedly, do not use the unit and contact MCAudioLab for service information.

Remove the power cord before checking or replacing the fuse.

To avoid any permanent damage replace the fuse with the same rate and type only.

Survival Tips For Tube Equipment:

After using the equipment, let it cooling down properly prior moving it. A properly cooled gear prolongs tube life due to the internal components being less susceptible to the damage caused by vibration.

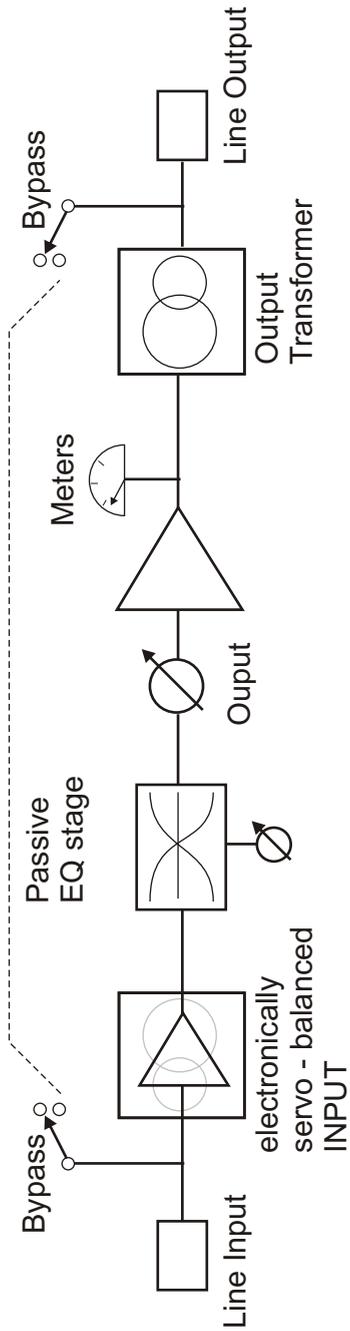
Be sure the tube has room temperature before turning it on. The heat generated by the tube elements can crack a cold glass housing.

Protect the gear from dust and moisture. If liquid gets into, or if the gear is dropped or otherwise mechanically abused, it must be checked out in an authorized service center before using it.

Proper maintenance and cleaning in combination with routine checkups by your authorized service center or dealer, will ensure the best performance and longest life for both tubes and audio equipment.

CAUTION: Tube replacement should be performed when the power cord is unplugged from the unit. Capacitors keep the high voltage for long time after you switch the unit off. Do not try to replace the tubes before 1 hour from the last usage.

EQ1ch signal flow schematic



All XLR connectors are wired according to AES standard: pin 1 is ground (GND), pin 2 is the “high” or “+” and pin 3 is the “low” or “-”.

A positive voltage on pin 2 of the input will result in a positive voltage on pin 2 of the output.

Grounding and Shields

The pin 1 (GND) of the input XLR connector is directly connected to the equipment ground.

The GND is connected to pin 1 of the output XLR connector by the ground lift switch.

Note:

MCAudioLab shall not be liable for technical or editorial errors or omissions in this manual, nor for incidental or consequential damages resulting from the use of this material.

Features and specifications subject to change without notice.