



# PG PRECISION MASTERING EQUALIZER

## The Circuit

...is pretty self explanatory.

2 x 4 bands of EQ with switchable HPF/LPF on the low and high end, wrapped around an MS matrix, and a master gain.

## The Philosophy

Based on the highly regarded "NetEQ", by the late Barry Porter.

After many years of **listening** tinkering with the design, building, and **listening**, and adjusting, and **listening**, and doing custom units with various solutions -- and **listening** -- the only thing that remains unchanged is the parallel filter section.

The in- and output sections, the high and low pass filters, the layout of the circuit, the Q circuit, and the whole implementation of it has been redesigned, and when the listening tests were done, I took a really deep dive into the details and precision of all the controls.

What I have arrived at, is a very personal iteration of the circuit, with a new level of refinement. Still a **P**orter at its core, but also, very much a **G**rinder.

## Frequency Selection

23 frequency steps for each band, matched to 1% or better, Blore Edwards Switches.

## Gain

+/-5.5dB total gain per band, as well as +/-5.5dB of total gain on the dual concentric master gain, all in steps of 0.5dB, Blore Edwards Switches.

## Q

The Q was changed from RMS to peak gain behaviour.

RMS behaviour keeps the energy constant, while the peak behaviour keeps the peak level constant.

*Think of a balloon, if you squeeze it to make it narrower, it gets longer (higher peak, same amount of energy), but if you let a little air out, it will stay the same height as before (static peak, less energy).*

What is preferable comes down to temperament, but aside from the practical aspects, I found that the redesigns gave a less ringy and more intuitive behaviour, especially at more narrow settings.

## High & Low Pass Filters

In the original design, the high and low pass filters were added in series with the core circuit, and they were done with a simple RC filter on an opamp.

I always found them to be a bit “out of place”, when I switched them in, with the bands standing out relative to the rest of the EQ, so I nixed Porter’s HP/LP add-on, and with the help of a few relays, I tapped directly into the core of the parallel circuits.

The resonance peaks on them don’t look very good on paper, but they sound amazing, and they are fully sympathetic to the other bands, when they are in action.

## MS

Ms circuit, built on modern, precise, integrated circuits.

## Center Section

- Bypass, bypasses the filter section
- MS, wraps the MS encoder and decoder around the whole filter circuit.

# **Appendix**

## **Recall Sheet**

# RECALL SHEET

(Download full size on website)

**Q** **E** **L** **L** **Y**  
ANALOG COLOURING DEVICES

	 2 3 4	 2 3 4 5	 2 3 4 5	M/S IN L/R BYPASS	 2 3 4	 2 3 4 5	 2 3 4 5	 2 3 4	
	 43 47 53 59 65 72 81 90 38 35 31 28 25 23 20 18 194 174 156 139 125 111 100	 222 246 274 304 338 376 420 467 180 162 146 131 118 106 96 1K 904 809 724 649 590 520	 977 1K1 1K2 1K3 1K4 1K6 1K8 2K 796 719 648 585 528 476 429 4K 3K6 3K3 2K7 2K4 2K2 2K	 POWER	 43 47 53 59 65 72 81 90 38 35 31 28 25 23 20 18 194 174 156 139 125 111 100	 222 246 274 304 338 376 420 467 180 162 146 131 118 106 96 1K 904 809 724 649 590 520	 977 1K1 1K2 1K3 1K4 1K6 1K8 2K 796 719 648 585 528 476 429 4K 3K6 3K3 2K7 2K4 2K2 2K	 4K6 5K3 5K9 6K5 7K2 8K 8K8 9K8 11K 12K 13K5 15K 16K5 2K8 2K3 2K1 20K 18K	
	 1.5 1 .5 0 .5 1 1.5 2 2 2.5 3 3.5 4 4.5 5 5.5 5.5 5 4.5 4 3.5 3 2.5 2	 1.5 1 .5 0 .5 1 1.5 2 2 2.5 3 3.5 4 4.5 5 5.5 5.5 5 4.5 4 3.5 3 2.5 2	 1.5 1 .5 0 .5 1 1.5 2 2 2.5 3 3.5 4 4.5 5 5.5 5.5 5 4.5 4 3.5 3 2.5 2	 1.5 1 .5 0 .5 1 1.5 2 2 2.5 3 3.5 4 4.5 5 5.5 5.5 5 4.5 4 3.5 3 2.5 2	 1.5 1 .5 0 .5 1 1.5 2 2 2.5 3 3.5 4 4.5 5 5.5 5.5 5 4.5 4 3.5 3 2.5 2	 1.5 1 .5 0 .5 1 1.5 2 2 2.5 3 3.5 4 4.5 5 5.5 5.5 5 4.5 4 3.5 3 2.5 2	 1.5 1 .5 0 .5 1 1.5 2 2 2.5 3 3.5 4 4.5 5 5.5 5.5 5 4.5 4 3.5 3 2.5 2	 1.5 1 .5 0 .5 1 1.5 2 2 2.5 3 3.5 4 4.5 5 5.5 5.5 5 4.5 4 3.5 3 2.5 2	 1.5 1 .5 0 .5 1 1.5 2 2 2.5 3 3.5 4 4.5 5 5.5 5.5 5 4.5 4 3.5 3 2.5 2
	LOW	LOW MD	HIGH MD	HIGH	MASTER GAIN	LOW	LOW MD	HIGH MD	HIGH

PRECISION MASTERING EQ

## Info

Units are hand built by Gustav Goly in Odense, Denmark.

In the event of a problem with your PG Precision Mastering Equalizer, unplug it, and contact your dealer, or GOLY direct for repairs.

## Contact

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I do not answer unscheduled calls, so please book a call by mail in advance, if you need to talk.

Your unit is serial #

Gustav Goly

## Declaration of CE Conformity

The construction of this unit is in compliance with the standards and regulations of the European Community.