

5 .75 1
.35
10
0
RELEASE
HARD off 23 49
3.2 106 159 234
SC HP



BYPASS
IN IN

BOLY

CrossCompressionEQ



2K1 3K2 4K9
1K5 7K3 .45
96 12K 18K 22K
FREQ Hz
2 0 2
4 4 4 5
6 8

The Circuit

The CrosscOMPressionEQ (COMPEQ) is a stereo processing unit with two bands of EQ.

You can switch each band between shelving and peak bell filters, and they both feature a full, dynamic section, with the expansion like “cross compression”. (More on that later).

The side chain is split between the boundaries of the frequency domain of each band respectively, and the low band side chain has a variable high pass filter.

The Philosophy

The unit is basically the 6RU DAQ/DS dynamic suite, boiled down to a 2RU design, focusing on the essential elements for mix- and mastering applications.

You can use this unit as a bax style EQ, a dynamic “auto-tilt”, a standard EQ, two full band compressors working in tandem, two band of EQ, or a mix of the many options available. It will also hold down dynamics, or inject a dynamic element into your program material.

Frequency Selection

Frequency selection for the high/low bands.

Gain

+/-10dB total gain per band.

Shelving/Bell

Switches the low band between peak bell/low shelving mode, and the high band between peak bell/high shelving mode.

Hard/Soft

“Hard” is a medium ratio with a medium knee, while “soft” is a low ratio with a soft knee.

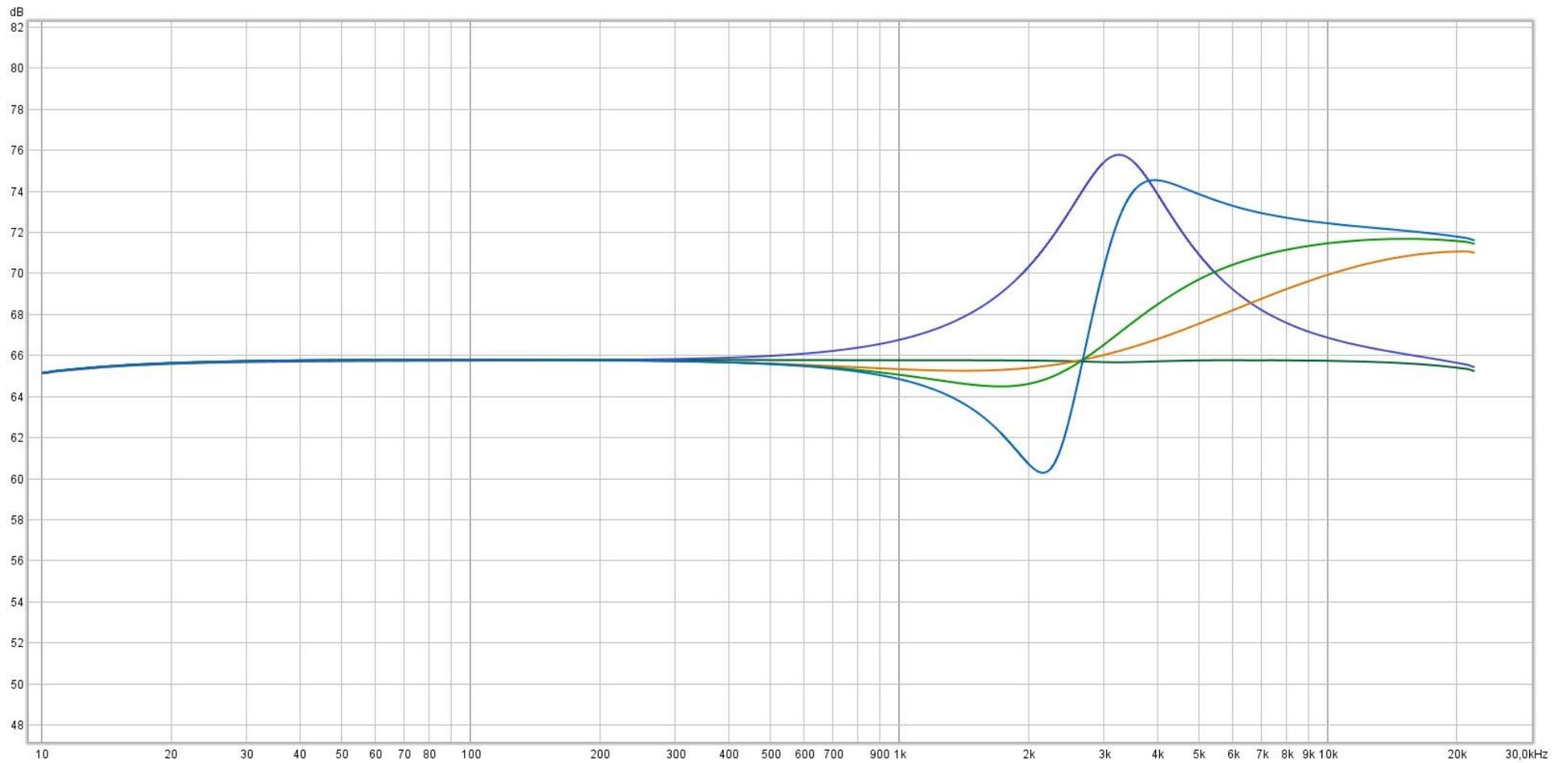
...beyond Q

Q ranges from extremely narrow to extremely wide, which means, you can practically use each band as a full spectrum processing device, or go beyond surgical settings, to where the resonance of the filters get pretty wild.

The original intention was to lock the shelving into a constant Q, but it was still variable in the early days of doing listening tests. The engineers did not take my advice to “set the Q around 0.7 in shelving mode”, and it turned out, the variable Q in shelving was extremely useful.

In general, you will want to keep it around 0.7, but you can carve out some really helpful and unusual shapes by going below, and get a smooth filter around 3 and above.

You can also use it to manipulate how the respective shelving filters shape the curves coming into the audible frequency spectrum, which is typically what higher-than-audible-range and boost/silk EQ type designs aims to do by drawing a standard bell EQ boost out of range (like a 40K band), and essentially sculpting the slope coming back into the audible spectrum.



Graphs to exemplify how the resonance varies with Q on the shelving filters
 High band@3k2Hz+10dB Purple = Bell mode/Q1, Orange = Shelving mode/Q3, Green = Shelving mode/Q1, Blue = Shelving mode/Q 0.1

Dynamics section

Standard compression, standard attack and a release, with 3 auto-modes. This is not a generic consumer unit, and I don't believe in restricting the ranges to "fool proof". We give you the option, because going a little off road is sometimes extremely pleasing. If you want play it safe, avoid the yellow and red settings!

Cross compression

Inverts the amount of compression done on a band, and injects it to the opposing band at the set ratio. Since you're using the low end to counteract the high end, and vice versa, it can be described as "musical" in a meaningful way.

It's also important to note, that use of the cross compression and compression does not exclude each other, so the processing allows for 4 dynamic interactions going on at once.

Tip:If you bypass a band, you can still activate the cross compression. In this scenario, you use the controls for ratio/attack/release exclusively for that.

Master Gain

+/-10dB total gain

SC HP

Low band side chain high pass frequency adjust.

In

Switches in the respective bands

Bypass

Hard bypass of the unit

HR/Off/Res

Off bypasses the dynamics

H(ead)R(oom) mode, adjusts the range of the compression for levels pushing into the headroom limit.

Res(olution) mode, adjusts the range of compression to a lower working level, leaving optimal headroom and space.

Calibration

CV

Adjust +/-5V referring to the test pads on the lower right side of the PCB, using the respective trimmers placed above

Low band

- Make sure filter is out
- Adjust bias for meter 0
- Set frequency to around 100Hz, and Q around 3
- Activate the filter
- Get a relative output reading of 0dB
- Adjust gain to +10
- Trim internal gain for a relative output reading of 10dB at 100Hz
- Trim meter range or a meter reading of +10dB

High band

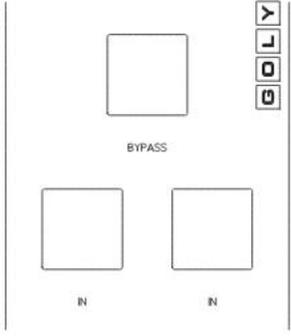
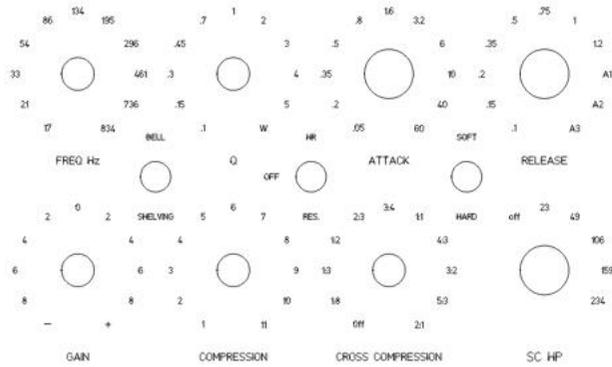
- Make sure filter is out
- Adjust bias for meter 0
- Set frequency a click right of 960Hz, and Q around 3
- Activate the filter
- Get a relative output reading of 0dB
- Adjust gain to +10
- Trim internal gain for a relative output reading of 10dB at 1K
- Trim meter range or a meter reading of +10dB

Appendix

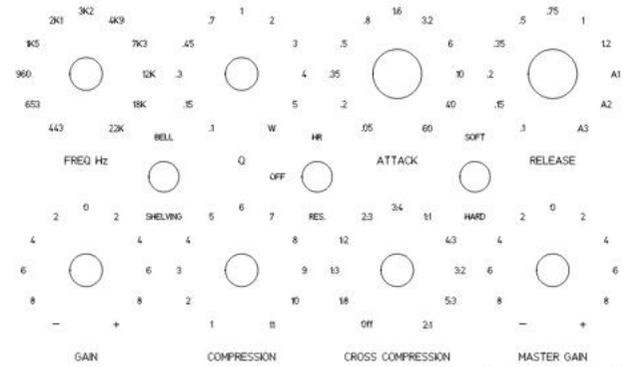
Recall Sheet

RECALL SHEET

(Download full size on website)



CrossCompressionEQ



Info

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

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

Contact

Mail Info@goly.dk

Web www.goly.dk

Phone +45 53161601

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.