The Circuit

The CompEQ is a 2 band stereo EQ.

You can switch each band between shelving and peak bell filters, and they both feature a full, dynamic section, as well as a dynamic tilt (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.

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.

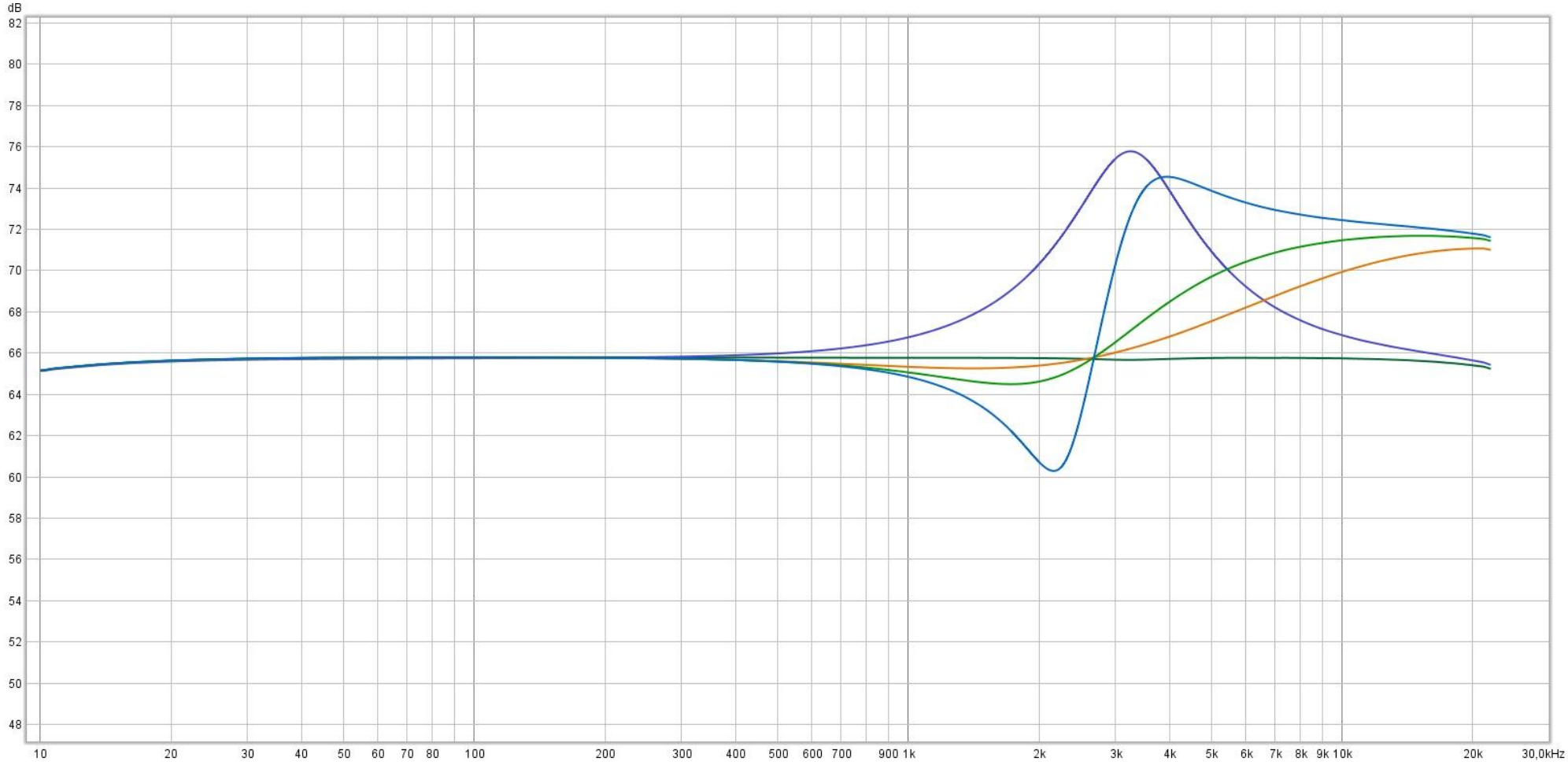
...beyond Q

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. This is typically what higher-than-audible-range and boost/silk EQ type designs aim to do, 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

Standard compression, standard attack and a release, with 2 auto-modes. This is not a generic consumer unit, and I don't believe in restricting the ranges to "fool proof". I'm trusting you with the added range, even though it can make the unit sound unflattering in some instances, because going a little off road is sometimes extremely pleasing. If you want play it safe, avoid the yellow and red settings!

Dynamic Tilt

Read the amount of compression done on one band, and inverts it on the other band. It can be described is "musical" in a meaningful way, since it bounces off the program material. One of the more obvious uses is setting it up a as a tilt EQ that operates dynamically.

The use of the dynamic tilt and compression do not exclude each other. This means, the unit allows for 4 dynamic interactions going on at once.

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

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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.

CompEQ/EQ modes

EQ mode excludes the dynamics, while CompEQ mode includes them.

On the previous revision, this was a 3 way switch with an EQ mode (bypass) and two CompEQ modes (Res and HR). These switches the compression reference to different levels to utilize the throw of the switch better at more conservative levels.

The fact that compression was triggered with the dial at 0 at around 14dBU on the res setting caused a lot of confusion, so moving forward, the unit is calibrated for headroom, and you can adjust for your reference level internally (if needed).

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 0dBU
- Adjust gain to +10
- Trim internal gain for a relative output reading of 10dBU 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 0dBU
- Adjust gain to +10
- Trim internal gain for a relative output reading of 10dBU at 1K
- Trim meter range or a meter reading of +10dB

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.