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COSINUS – Analogue Room Correction

The COSINUS is specialized in the correction of room modes and comes as a purely analogue device without the AD / DA-conversion that is necessary for digital filters in the monitoring path. In demanding audio environments, such as mixing or mastering, the problems remaining after the room acoustics are restricted to the bass range; The COSINUS offers three fully parametric bandpass filters per channel from 20 to 240 Hz . It is also possible to control up to two subwoofers by selecting the seperation frequency (bass management) and analogue phase correction.

The low frequency behavior of acoustically small rooms (below 40 m2) is determined by room resonances (eigenmodes, standing waves) causing cancellations and booming. Bass traps – tuned or broadband – provide focused absorption and are effectively used for correction in control rooms, home theatres and HiFi rooms. If not enough traps can be used – due to insufficient space or budget – room correction filters are used for optimizing the frequency response at the listening position. Digital systems provide a huge amount of filter banks but ADDA Conversion between monitor control system or mixing desk and power amplifier is mandatory. According to the requirements of **mb**akustik the COSINUS was developed for ambitious users who don't want any interference at this crucial point of the signal path.

As all Roger Schult products, the COSINUS is hand-crafted and precision-engineered in Germany.

Technical Data
12 / 2016

3 Band pass filters (BP1 usable as X-Over in position „full left" *(disables BP1 Q-factor function!))*

Frequency range	20 Hz to 232 kHz
Gain, rotary control	+/- 10 dB range
Q Factort, 11-position switch	0.3 / 0.5 / 0.7 / 1.0 / 1.5 / 2.5 / 4 / 6 / 10 as well as LP / HP and Hard-Bypass in position „full right"

Input (electronically balanced)

Reference input level	+6 dBu
Maximum input level	+23 dBu
Input impedance	10 kOhm

Output (electronically balanced)

Maximum output level	+26 dBu / (0.05% THD+N)
Output impedance	40 Ohm (gilt für jeden Ausgang)
Gain at linear setting	0 dB (+0.1 / -0.2 dB)
Signal-to-noise ratio	< 100 dB
Noise level (UWTD / WTD)	< 80 dBq / < 76 dBq
Harmonic distortion	THD+N / 0 dBu 0.01%
Frequency range	20 Hz - 40 kHz (+ 0.1 / - 0.2 dB)

Phase shifter

Gain, rotary control	+/- 5 dB
Phase, continuously variable rotary control	10° - 125 ° , Mid indent at 90° phase
3-position flip switch	10° - 125° / 0 / +180°

Input (electronically balanced)

Reference input level	+6 dBu
Maximum input level	+20 dBu
Input impedance	10 kOhm

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Output (electronically balanced)

Reference output level	+6 dBu
Maximum output level	+25 dBu (0.003% THD+N)
Output impedance	40 Ohm
Gain at linear setting	0 dB (+0.1 / -0.2 dB)
Signal-to-noise ratio	< 100 dB
Noise level (UWTD / WTD)	< 91 dBq / < 81 dBq
Harmonic distortion	THD+N / 0 dBu 0.007%
Frequency range	20 Hz - 40 kHz (+/- 0.1 dB)

Layout

In / Out	XLR, balanced
Power supply	230 V AC
Faceplate dimensions	19“ / 3 RU, 48.26 x 8.89 x 31.5 cm (BxHxT)
Faceplate finish	Aluminium, chromated
Weight	4.4 kg

Features

- Three bandpass filters with continuously adjustable level +/- 10 dB, continuously adjustable frequency between 20 and 240 Hz and Q-factor between von 0,3 and 10
- 100% analogue without ADDA Conversion
- Extreme neutral sound due to intelligent design and premium components
- Compare mode guarantees minimum channel differences
- Bandpass 1 can be used as x-over to generate low pass signals for subwoofer systems. Bandpass 2 and 3 can then be used for either the sub path or main monitors.
- Phase shifter with adjustable phase and level to match phase of subwoofer and main monitors
- Containing two consequently separated channels the COSINUS can drive stereo subwoofer systems.
- Flexible routing due to separated connections for each filter segment

Applications

Analogue filter and bass management including phase shifter for mastering, analogue mixing and HiFi, remedy room mode issues and bass problems in your monitoring setup, match and optimize the phase response of a subwoofer, control up to two subwoofers by selecting the seperation frequency (bass management) and analogue phase correction

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