

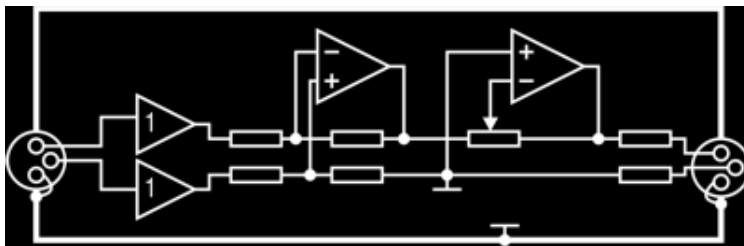
Makua, the Preamplifier

Long Read



ANALOGUE DESIGN FOR A DIGITAL AGE

With the knowledge in hand to design minimally invasive electronics without needing to be minimalist, we decided that our preamp should be complete. Very complete. The basic Makua is an extremely transparent gain stage and a programmable routing matrix. The chassis has ample room to fit optional extras, most notably a DAC and a phono stage. The 6 preset buttons are programmable via USB or Bluetooth to access any combination of channel, processing and routing. In a system with mainly digital sources, the preset buttons would be programmed to select between them. Vinyl lovers on the other hand might want to use several buttons to select the same turntable but with different EQ settings to suit their large collection of historic LP's. All five inputs are switchable between XLR and floating RCA connections, and all can be assigned as either phono or line. All stages in the Makua use discrete amplifier modules in a little known topology called "single-ended driven differential". Compared to doubly executed signal paths, this structure prevents noise from propagating all the way through. The Makua is amazingly immune to influences like mains quality and choice of interlinks. The relay-based volume control directly controls the gain of the output stage. Dynamic range and linearity of this arrangement is much greater than those of stepped attenuators. Operation is smooth and entirely glitch free.



I/O

5 balanced and 5 unbalanced inputs, all routable through optional processor boards like the phono stage.

2 parallel outputs for bi-amping.

4 programmable trigger outputs.

Processing

Balance and input gain offset.

Phase invert and mono sum.

Full software control of routing and processing

Performance

Maximum input/output level: 20 dBu (7.75 Vrms)

Unweighted noise voltage at unity gain: 1.9 μ V

Input impedance: 100 kohm

Output impedance: 44 ohm

Distortion at maximum signal level (THD, IMD): not measurable, estimated around -150dB.

Bandwidth >200 kHz

Gain range: -70 dB to +15 dB.

Gain resolution: <1 dB, better than 0.2 dB over normal listening range.

Dimensions and Weight

420mm(W) x 110mm (H) x 345mm (D). Depth includes volume knob and connectors.11kg