

Truth is Beauty

“Truth is Beauty”

Mola Mola embodies the idea that once you’ve removed everything that isn’t the music, that what remains is the music.

This is radical. Today’s high-end audio has become all about mixing circuit topologies and parts to make a sonic blend that the designer thinks “sounds about right”. You’d almost forget that getting closer to the sound as crafted by the artist really means keeping the replay system from changing it.

Turning this simple insight into hardware is probably the toughest way to do audio. All simple circuits change the signal audibly, so one has to get to grips with more complicated ones that don’t. We analyse every sub-circuit mathematically and look for ways to eliminate every error term. When the practical circuit measures as predicted, we listen to search for unexpected sources of colouration. These are then included into the maths and the whole process repeats.

After every stage has proven immaculate performance, the same is done with the whole product and so problem spots get methodically rooted out before they hide themselves and become “audible but not measurable”.

The result is something never before heard of in high-end audio: amplifiers and converters whose output signal cannot be distinguished, by ear, from the input signal. So what does that sound like? In a few words: natural, nimble, rich and musically enthralling.

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Makua

the preamplifier

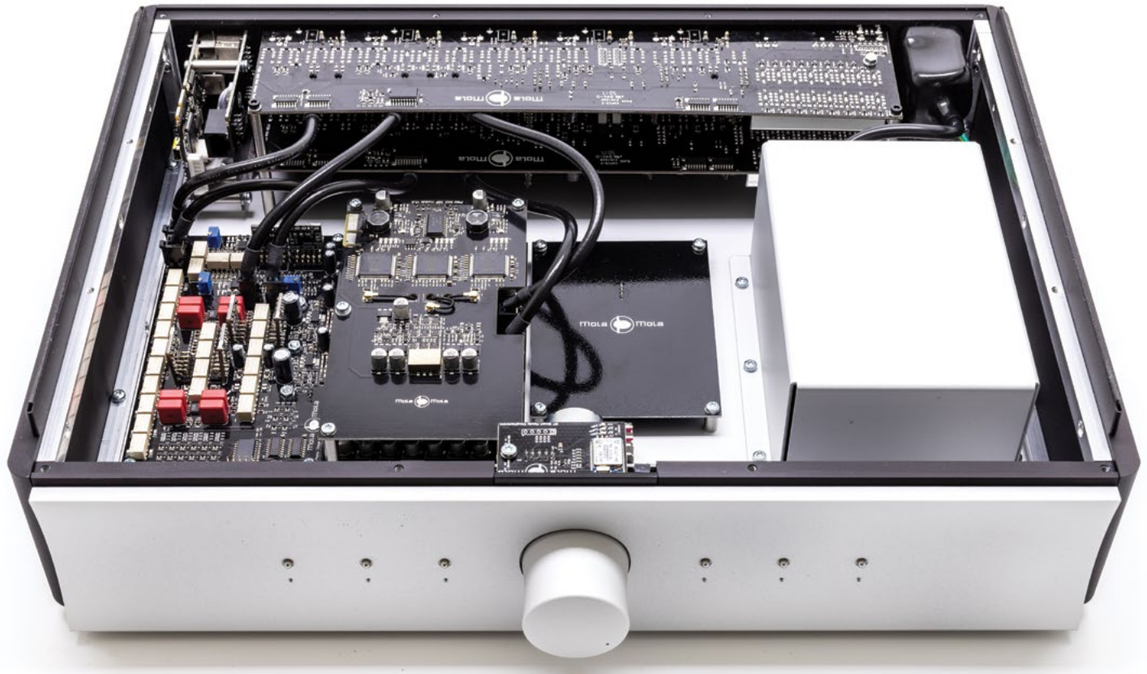
Analogue design for a digital age

With the knowledge in hand to design minimally invasive electronics without needing to be minimalistic, 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 RS232 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.









KEY FEATURES

I/O

5 balanced and 5 unbalanced inputs
selectable by switch and software
2 parallel balanced outputs for bi-amping (XLR)
4 programmable trigger outputs (3.5mm Jack)

ROUTING AND PROCESSING

All inputs routable through optional processor
boards like the phono stage
Processing balance and input gain offset
Phase invert and mono sum
Full software control of routing and processing

PERFORMANCE

Maximum input/output level: 20dBu (7.75Vrms)
Unweighted noise voltage at unity gain: 1.9µV
Input impedance: 100kΩ
Output impedance: 44Ω
Distortion at maximum signal level (THD, IMD): -150dB
Bandwidth >200kHz
Gain range: -70dB to +15dB
Gain resolution: <1dB, better than 0.2dB
over normal listening range

CONTROL

6 programmable presets
Remote control
Mola Mola Remote app
Roon Ready (if DAC option fitted)
RS232 (SUB-D)

ADD-ON

Mola Mola Phono stage
Mola Mola DAC (Roon Ready)

DIMENSIONS AND WEIGHT

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



Tambaqui

the DAC that stands alone

Digital that's as good as analogue

Responding to popular demand, Mola Mola launched the famous discrete DAC from the Makua as a separate unit.

Mola Mola's Tambaqui DAC is the perfect upgrade for owners of complete high-end systems who want to retain the characteristic sound of their existing preamplifier whilst lifting their digital sources to another level. The converter is a two board stack. On the first board, all incoming digital audio is upsampled to 3.125MHz/32 bits and converted to noise shaped PWM. On the other board are two mono DACs, in which a discrete 32-stage FIR DAC and a single-stage 4th order filtering I/V converter, convert the PWM into analogue with a breathtaking 127dB SNR.

This is near the theoretical limit for 24-bit files and far beyond that of even quad-speed DSD. Uniquely, distortion remains below the noise floor even for full scale signals. With the addition of a lossless digital volume control and headphone outputs, it is also the ideal control hub of a minimalist audio system for music lovers who have moved on to a digital sources only system. This DAC, combined with Mola Mola amplifiers constitutes the finest digital replay chain available, irrespective of price.

Analogue that's as good as digital



roon ready

The music player for music lovers
The Mola Mola Tambaqui is Roon ready certified!









KEY FEATURES

OPERATING PRINCIPLE

PWM DAC with 32-stage discrete analogue FIR output stage. Avoids "sigma delta" tones and "R2R" glitch and low-level linearity errors. Asynchronous upsampling to 3.125MHz/32 bit. 7-th order noise shaper clearing 80kHz band. Each input rate has an optimised upsampling filter chain.

I/O

Optical (Toslink), S/PDIF (Cinch), AES/EBU (XLR),
USB type B, Ethernet (Roon Ready),
Bluetooth (A2DP, APTX), I²S over HDMI
Balanced output (XLR), Headphone output (6.3mm Jack,
Balanced XLR 4pin), 2 programmable trigger outputs (3.5mm Jack)

SUPPORTED FORMATS

PCM up to 384kHz /32 bits (>192kHz and >24 bits via USB and Roon only) DoP and Native DSD up to quad speed (USB and Roon only)

PERFORMANCE

Full-Scale Output Level (XLR): 18dBu
Full-Scale Output Level (headphone): 18dBu
Signal to Noise Ratio: 127dB
THD, IMD: -135dB
Bandwidth: Up to 80kHz (apodising response)
Integrated jitter: <1ps from 10Hz upwards,
<300fs from 1kHz upwards
Jitter rejection: >80dB at 1Hz after 20 seconds of lock

CONTROL

4 programmable presets
Remote control
Mola Mola Remote app

DIMENSIONS AND WEIGHT

200mm (W) x 110mm (H) x 320mm (D)
5.2kg



Mola Mola Lupe

The stand alone phono stage.

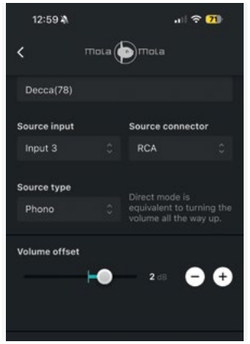
The standalone version of our well-known archival grade Phono stage features three single-ended inputs and one balanced input. It has a balanced output as well as a single-ended output. The Lupe with its dedicated power supply and the added "subsonic filter" provides the discerning record aficionado with the most accurate set-up for recreating the magic of the turntable as it was intended.

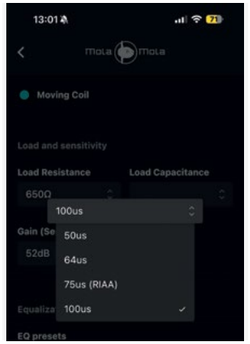
The display of the well-known "half sized chassis" Lupe offers at a glance information on the settings.

What was conceived as a simple RIAA add-on for the Makua Preamp (and also available in the Kula Integrated amplifier) has quickly spiralled into the quietest and probably most versatile phono stage ever built. MC/MM input stages are optimised for current noise and voltage noise respectively. Unlike the more common arrangement of an MC head amp feeding into the MM stage, the two stages are fully independent, realising an equally short signal path for both. Input gain is switchable in 5dB steps over a 42dB range.
Input resistance and capacitance are individually switchable. Available EQ settings cover practically all cutting curves including 78 RPM.

All settings are software controllable, either on the fly using a smart-phone or tablet via the Mola Mola Remote app or directly stored under the preset buttons. The Lupe can be configured to route any of the four inputs through the phono stage, this allows you to have multiple turntables and/or cartridges connected.









KEY FEATURES

PERFORMANCE

Input noise (MC): 0.35nV/rtHz

Input noise (MM): 0.9pA/rtHz

Sensitivity: variable from 30µV to 5mV

THD, IMD: not measurable

RIAA conformance: +/-0.1dB

Subsonic filter -3dB @20Hz

I/O

1 balanced input

3 unbalanced inputs

3 groundpins

1 pair balanced outputs

1 pair single ended outputs

1 trigger input

1 trigger output

AVAILABLE GAIN SETTINGS

MM	MC
45dB	52dB
50dB	57dB
	62dB
	67dB
	72dB
	77dB
	82dB
	87dB

AVAILABLE LOAD RESISTANCE SETTINGS

MM	MC
120kΩ	1kΩ
75kΩ	650Ω
47kΩ	400Ω
30kΩ	250Ω
18kΩ	150Ω
	100Ω
	60Ω

AVAILABLE LOAD CAPACITANCE SETTINGS

MM	MC
0pF	N/A
50pF	
100pF	
150pF	
220pF	
270pF	
330pF	
380pF	

AVAILABLE TIME CONSTANTS

t1: 200, 250, 318, 400, 450µs

t2: 50, 64, 75, 100µs

bass shelf: 14, 18, 20dB



Kula

Integrated amplifier

The integrated that truly belies its size!

Imagine a sleek, compact design that oozes class and attention to detail.

Imagine an amplifier design that packs enough power to comfortably handle even the most demanding of loudspeakers.

Imagine a complex yet agile and easy to use fully transparent line stage.

Imagine every possible Phono EQ setting available from the comfort of your favourite listening chair.

Imagine a highly acclaimed discrete DAC boasting the best specs and sound around.

Imagine, combining all of the above!

Reality. Is. Kula!

Kula is an à la carte modular design creating a fusion of highly technical previous accomplishments. The chassis itself is borrowed from the acclaimed Makua preamp, as is the line stage section and its optional phono stage with independent adjustable settings and up to 6 separate inputs.

The optional DAC section which also is available in the Makua, is identical to the world-class Tambaqui stand-alone unit and features 5 digital inputs including Roon endpoint and Bluetooth. Additionally, the Kula incorporates a Mola Mola exclusive amplifier which boasts an output of 150 Watts @8Ω, doubling into 300 Watts @4Ω. Clearly enough power to drive any loudspeaker with ease.









KEY FEATURES

I/O

3 balanced and 3 unbalanced inputs,
selectable by switch and software
2 Pairs of Furutech binding posts.
Directly connected to the amplifier PCB using
Kubala-Sosna cable. All inputs routable through
optional processor boards like the phono stage
Processing balance and input gain offset
Phase invert and mono sum
Full software control of routing and processing
Mastering mode

PERFORMANCE

Maximum input level: 20dBu (7.75Vrms)
Input impedance: 100kΩ
Unweighted Signal/Noise Ratio: 113dB
2x 150W/8Ω @1% 1kHz, 2x 300W/4Ω @1% 1kHz
2x 100W/8Ω @0.0005% 1kHz, 2x 200W/4Ω @0.00075%, 1kHz
Output Impedance: 2mΩ – 7mΩ (20-20kHz)
(measured directly on binding posts)
Bandwidth 50kHz @ -3dB
Gain resolution: <1dB, better than 0.2dB over
normal listening range

CONTROL

6 programmable presets
Remote control
Mola Mola Remote app
Roon Ready (if DAC option fitted)

ADD-ON

Mola Mola Phono stage
Mola Mola DAC (Roon Ready)

DIMENSIONS AND WEIGHT

420mm (W) x 110mm (H) x 370mm (D).
Depth includes volume knob and connectors.
9,6kg



Ossetra

the power amplifier

Transcending amplifier class

In the years gone by since the original release of the Mola Mola Kaluga power amplifier, we have been working on further improvement of our class D technology. With the Mola Mola Ossetra we have made another significant step in our proprietary Mola Mola Trajectum amplifier technology.

The design of the Mola Mola Ossetra amplifier started from a blank sheet, redesigning every aspect of the amplifier and extending its capabilities beyond the highest expectations.

On the power supply side, next to a significant noise reduction we improved both dynamic and continuous output power. Combined with the vastly increased current capabilities of the amplifier output stage, it makes this amplifier able to drive practically any load.

The Mola Mola Ossetra is a full-bridge power amplifier design, the full-bridge output makes the amplifier design fully balanced from input to output.

For the Mola Mola Ossetra we designed all new discrete class A gain stages. Using these new gain stages enabled us to revise the gain structure of the entire amplifier. This results in exemplary noise and distortion performance of the complete system.

The amplifier bandwidth of over 100kHz, keeps the frequency response absolutely flat within the audio band. The minimal load dependency establishes absolute consistency, irrespective of loudspeaker load.

The input stage distortion is below our current measurement threshold at approximately -150dB (~0.000003%), ensuring an immaculate power stage performance.







KEY FEATURES

PERFORMANCE

350W/8Ω, 700W/4Ω, 900W/2Ω

Gain: 22dB or 28dB

Unweighted Signal/Noise Ratio: 130dB

Input Impedance: 300kΩ

Output Impedance: <0.0015Ω (DF>5000), all frequencies

Bandwidth: >100kHz

DISTORTION (THD, IMD)

<0.0002%

(all frequencies and power levels)

I/O

Balanced and unbalanced input, selectable by switch

2 pairs of Furutech binding posts.

Biwired directly to the amplifier PCB using

Kubala-Sosna cable.

Trigger input (3.5mm jack)

DIMENSIONS AND WEIGHT

200mm (W) x 110mm (H) x 335mm (D) Depth includes

speaker terminals. 7kg



Mola Mola Perca

Small sized and versatile

The Mola Mola Perca is a stereo power amplifier in our well-known half size chassis. Capable of delivering 150 Watts into an 8Ω load and doubling to 300 Watts into 4Ω, it will drive any loudspeaker with ease, refinement, and clarity.

The ultra-low distortion class A input stages are implemented on a separate board, together with their own high performance voltage regulation. Taking the NCORE® technology from our mother company Hypex Electronics as a reference point we set out to refine our Class D, self-oscillating principle and feedback concept, resulting in our proprietary Mola Mola Trajectum platform which is also applied in the Mola Mola Kula integrated amplifier.

To cater to a wider range of applications a new gain selection feature is added which enables switching between 22dB and 28dB. The Mola Mola Perca features selectable balanced and single ended inputs, Furutech binding posts, and an on/off trigger connector.

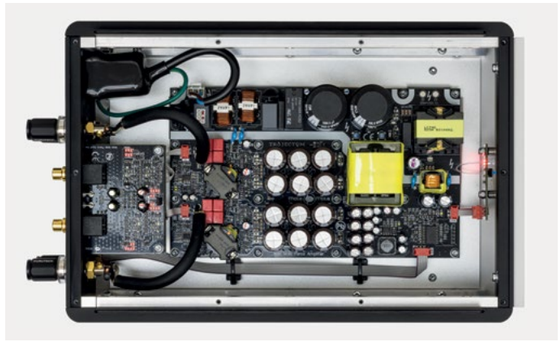












KEY FEATURES

POWER

2x 150W 8Ω

2x 300W 4Ω

GAIN

22dB or 28dB

SIGNAL/NOISE RATIO

128dB

I/O

1 pair balanced inputs, switch selectable

1 pair unbalanced inputs, switch selectable

2 pairs of Furutech loudspeaker binding posts wired directly to the amplifier board with Kubala-Sosna cable

Trigger input

DISTORTION (THD AND IMD)

<0.0003%

INPUT IMPEDANCE

100kΩ

OUTPUT IMPEDANCE

<0.002Ω

(Or Damping factor >4000)

BANDWIDTH

100kHz

Mola Mola remote

The Mola Mola remote is designed to go with the stylish approach of the Mola Mola electronics.
It is a simple design made to the highest standards possible. Milled from a single block of aluminium just like the Makua, Ossetra and Tambaqui this aesthetic design oozes quality!

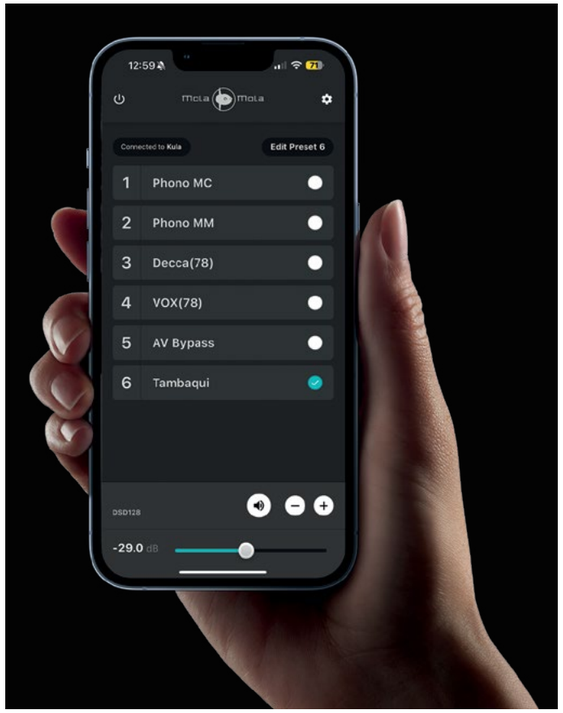


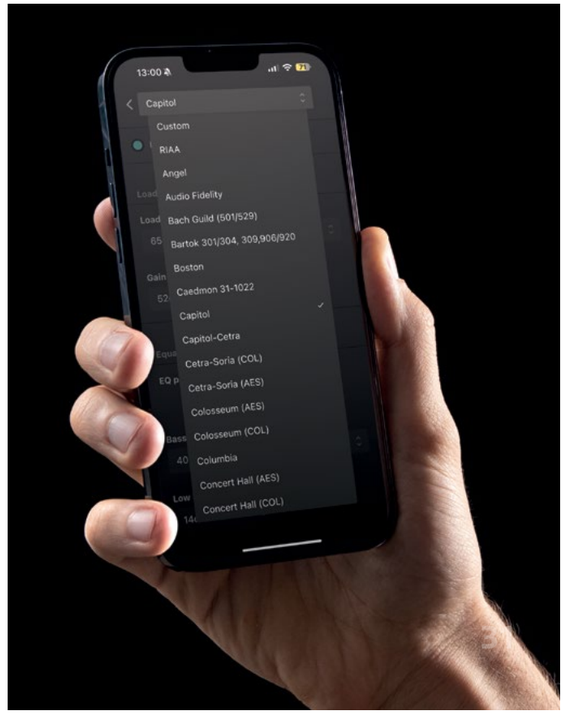
Mola Mola Remote app

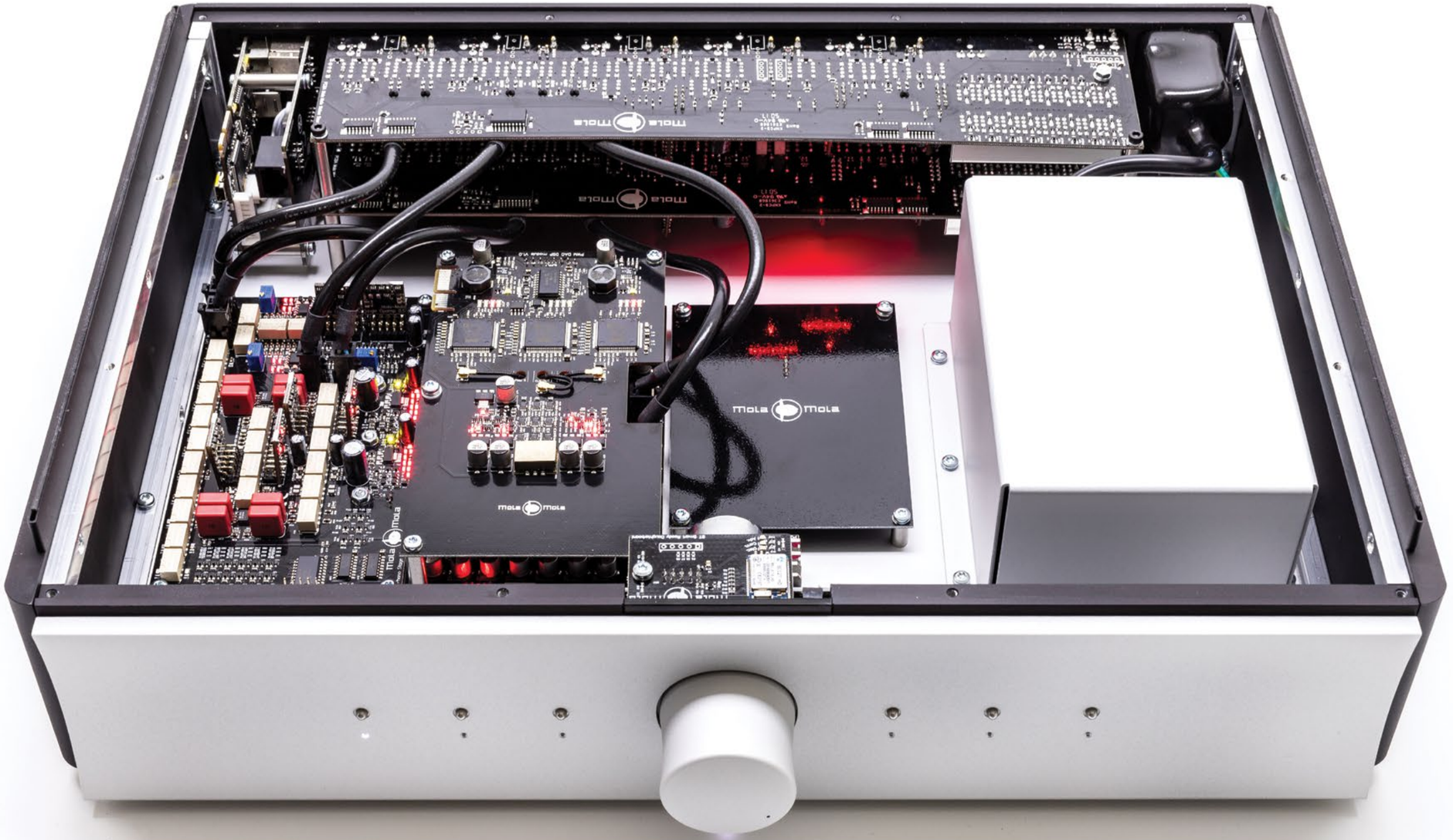
for Android® and iOS®

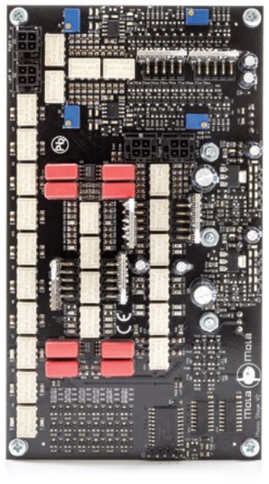
Use the Mola Mola Remote app, for smartphone and tablet, to view and control the settings of your Makua, Tambaqui, Kula and Lupe devices.

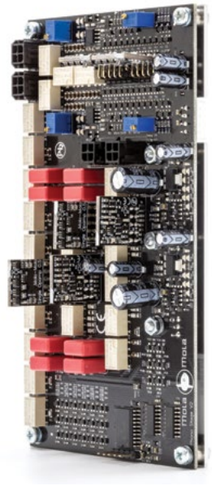
Functions of the app include:
Volume control
Preset selection and configuration
Phono stage parameters
View DAC status and firmware versions
Firmware update

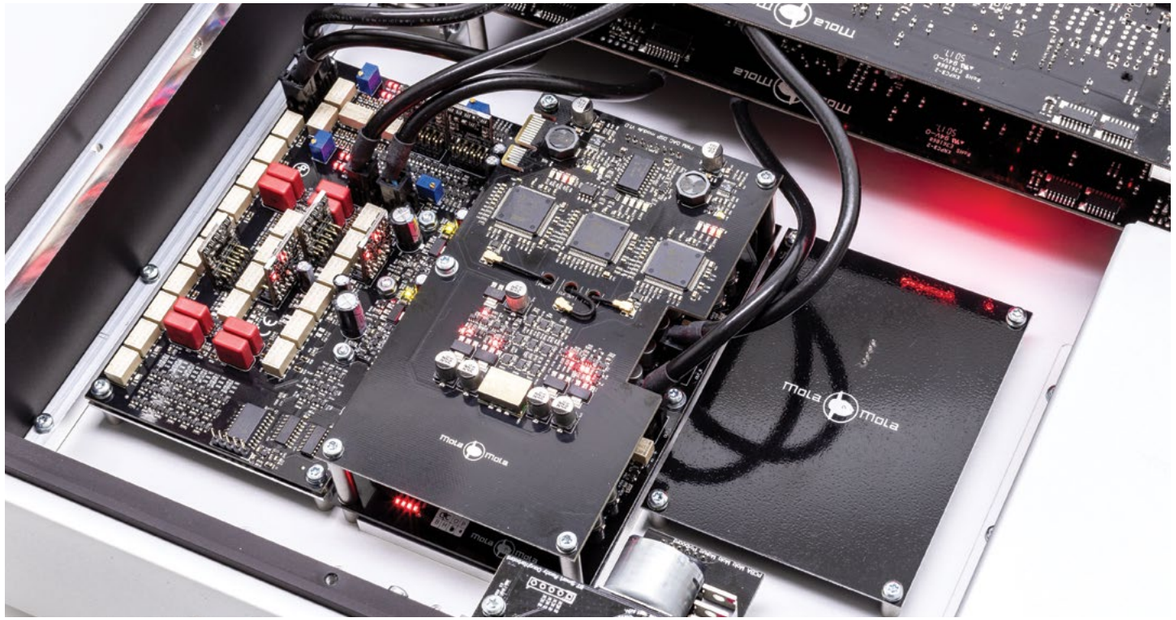





mola mola







Mola Mola Phono stage

An archival grade phono stage

What was originally intended to be a simple RIAA add-on for the Makua Preamp has quickly spiralled into the quietest and probably most versatile phono stage ever built. MC/MM input stages are optimised for current noise and voltage noise respectively. Unlike the more common arrangement of an MC head amp feeding into the MM stage, the two stages are fully independent, realising an equally short signal path for both. Input gain is switchable in 5dB steps over a 42dB range. Input resistance and capacitance are individually switchable. Available EQ settings cover practically all known cutting curves used, including most 78 RPM.

All settings are software controllable, either on the fly using a smartphone or tablet with the Mola Mola app or directly stored under the preset buttons. The preamp can be configured to route any input through the phono stage, this allows you to have multiple turntables and cartridges connected.

KEY FEATURES

PERFORMANCE

Input noise (MC): 0.35nV/rtHz

Input noise (MM): 0.9pA/rtHz

Sensitivity: variable from 30µV to 5mV

THD, IMD: not measurable

RIAA conformance: +/-0.1dB

AVAILABLE TIME CONSTANTS

T1: 200, 250, 318, 400, 450µs

T2: 50, 64, 75, 100µs

Bass shelf: 14, 18, 20dB

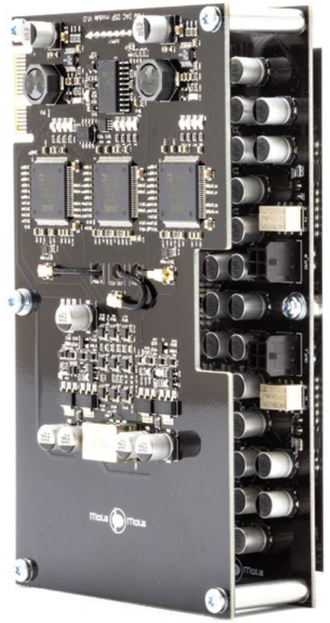
Mola Mola DAC

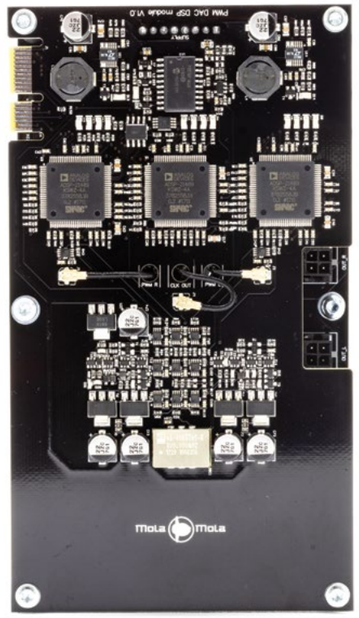
Future-proof by being far ahead

We decided to design, from the ground up, a discrete DAC whose unbeatable staying power results simply from being more than 10 years ahead of the performance curve. To put it into perspective: today's best DAC chip available, claims no better than 22 bits' worth of dynamic range and only 20 bits' worth of linearity. High resolution music deserves better than that. To accommodate this, Mola Mola's DAC is designed using circuits and digital algorithms that were entirely developed in house.

The converter is a two board stack that fits into one of the option slots in the preamp. On the first board, all incoming digital audio is upsampled to 3.125MHz/32 bits and converted to noise shaped PWM. On the other board are two mono DACs, in which a discrete 32-stage FIR DAC and a single-stage 4th order filtering I/V converter, convert the PWM into analogue with a breathtaking 127dB SNR. This is near the theoretical limit for 24-bit files and far beyond that of even quad-speed DSD. Uniquely, distortion remains below the noise floor even for full scale signals. A quick look at current and historic trends of high-end IC's indicates that for the foreseeable future this kind of performance will remain unavailable to manufacturers forced to rely on the same "chip du jour" that also powers their competitors' products.

Even by today's exacting standards, extraordinary care has been taken to deal with jitter. Mola Mola's DAC uses a home-grown asynchronous upsampling algorithm whose input frequency measurement slows down rapidly until after a few seconds of lock, the frequency ratio measurement is frozen. Frequency stability is then wholly determined by the internal clock, a laboratory grade 100MHz SC-cut oscillator. This is effectively an atomic clock sans the physics package (which contributes nothing to spectral purity but quite a lot to cost).







KEY FEATURES

I/O

AES/EBU (XLR)

Optical (Toslink)

USB type B

Bluetooth (A2DP, APTX)

Ethernet (Roon Ready)

SUPPORTED FORMATS

PCM up to 384kHz /32 bits (>192kHz and >24 bits via USB only)

DoP and Native DSD up to quad speed (USB only)

PERFORMANCE

Full-Scale Output Level: 20dBu

Signal to Noise Ratio: 127dB

THD, IMD: -135dB

Bandwidth: Up to 80kHz (apodising response)

Integrated jitter: <1ps from 10Hz upwards,

<300fs from 1kHz upwards

Jitter rejection: >80dB at 1Hz after 20 seconds of lock



Mola Mola

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