

Lejonklou Sagatun 1.3 Mono preamp and Tundra 2.2 Mono power amplifier

by Alan Sircom

A surface look at Lejonklou's top amps would likely file them under 'quirky'. A fully dual-mono preamplifier and power amplifier, with a relatively low power output, the kind of minimalism that borders on outright nihilism, and a decidedly 'Scandiwegian' nomenclature puts this relatively unknown four-boxer in the 'huh?' camp. Then you listen to them.

Lejonklou – the brand – is the brain-child of Uppsala-based Fredrik Lejonklou, an electronics engineer and music lover who is perhaps best-known for his excellent moving magnet phono stages. Lejonklou (the man and the brand) has been strongly influenced by Linn and Naim (reputedly from his teenage years) and in particular the classic 'Tune Dem' used by Linn Products to evaluate and demonstrate its audio products. However, the Sagatun Mono and Tundra Mono arguably take the Tune Dem farther than Linn does today.

The amplifiers all use a dual Switch Mode Power Supplies (SMPS), arranged not as one-per-channel – which is common – but always as one for positive rail and one for negative rail. This arrangement is twice as expensive as normal SMPS designs, but with no increase in power. When one power supply (in the power amps, where power is needed) pushes the loudspeaker drive units out, the second power supply is resting. And when the second power supply is pulling the drive units in, the first power supply is resting.

The reason for this design is not more power, but more control of that power. In each SMPS, there is a feedback loop that makes sure the output voltage is stable. When using a single power supply, with positive and negative voltages (the standard arrangement), only one feedback loop is possible, despite this loop affecting both voltages. When the amp needs to deliver a positive current to push the speaker drive units out, the feedback loop will adjust the switching signal inside the SMPS in order to keep the voltage at the output perfectly stable. This works well for the positive rail BUT at the same time, the negative rail will also be adjusted! So instead

of staying stable, the negative rail will fluctuate each time the positive rail delivers current. And vice versa. The only way to stop the positive and negative rails from affecting each other in this way is to use TWO power supplies, each with their own feedback loops.

The 40W Tundra Mono uses the latest – and supposedly the best – Thermal Interface Material (TIM) that quickly moves any heat generated by the output devices on to 1.2kg of copper heatsink (from whence it dissipates to the aluminium case and to the air). There is also a spring loaded transistor clamp which keeps the pressure against the TIM and copper constant at all temperatures, and a trimmable main idling current, which is useful in settings where heat could remain a problem (such as inside a cabinet). The amount of cooling affects the idling current and therefore the performance of all amplifiers, but this trim function reduces the potential problem to a minimum. It's like designing the amplifier for its surroundings. This requires plugging the supplied multimeter into the Status Port, turning the trim dial, and repeating the process a few hours later when everything has stabilised. This is explained in the supplied manual, which is useful if a little terse. Or minimalist, as befits the amplifier.

In a way, it's how the amp is built rather than the circuit itself that matters. The amp is built by hour upon hour of listening tests, to every aspect, every component (which often ends up being manually re-measured and selected to extremely tight tolerances (Fredrik claims less than 0.1% tolerance for resistors), as well as stand-offs, fasteners, temperature levels, and more. This doesn't mean the circuit is unimportant – the amplifiers are engineered well, and then evaluated, in an iterative process. The engineering integrates with the listening tests. This is a painstaking process in all respects, but is akin to blueprinting a car engine. It's the amp, just at its very best.

Connecting the amp is easy, but requires a quick read of the manual. At the back of each Sagatun are eight phono



inputs. Ignore the colour coding of the plugs themselves and think more of the legends on the back of the amplifier. The leftmost pair of phono sockets are coded red (as in 'do not use') and yellow for a single-input, always switched to that channel, amplifier. The next four are four line inputs for a more conventional switched preamplifier, and the rightmost pair are preamplifier outputs.

To connect a single source amp, simply connect the left hand output of your source to the yellow input of one Sagatun, connect one of the outputs to the left Tundra power amp, connect that to the left hand loudspeaker and then repeat with the right hand channel. If you have more than one input, ignore the yellow-marked input and connect inputs one, two, three, and four in order. It's probably best to connect one input to left and right preamps, then move on to the next, if you don't want to end up with a mix of inputs.

To get synchronised volume controls, the two Sagatun Mono amps are connected by a Toslink control link, with two connectors marked 'Master' and 'Servant' (a tribute to Depeche Model) and a switch between the two. The Master amplifier receives remote commands and sends

those commands and front panel controls to the Servant, and the Servant will obey commands sent from the Master. These can be daisy-chained, for someone wanting a spot of multichannel action, and the combination of thin, light, and cool-running boxes makes this more of a practical – if hardcore – proposition than most.

The Tundra mono amp makes the Sagatun look like it positively bristles with inputs. Aside from the aforementioned status port and trim dial, it has a single phono input, a single phono output (for bi-amping), and a single set of 4mm banana plug sockets. That's pretty much it. The amplifier has two stages of thermal protection (at 50°C, the amp gradually limits its maximum output and, if that doesn't work, at 70°C, it goes into mute until the heatsink is sufficiently chilled out), but short and overload protection was omitted for the sake of the performance. If you short the speaker terminals, or drive the amplifier beyond 'orange' on the Sagatun's volume light, you can damage the amplifier.

The amplifiers are not designed to be stacked atop of one another. The four, slightly adjustable rubber feet are designed to fit on shelves, and will leave a residue on the top-plate ►

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► of the amplifier below. Using the Tune Dem to draw these conclusions, Lejonkluo recommends the Harmoni rack by Nokturne Audio, but Quadraspire makes a good alternative. The Tune Dem applies to everything down to recommended cabling, even to the point of preferring discontinued and older versions of current cables, and eschewing the 'looks like a python, costs as much as an AC Cobra' designs. The best – in Fredrik's opinion – is Linn's early silver interconnects (new ones are OK, but not quite as good as the early models), Linn's now discontinued K-400 bi-wired speaker cable (preferably anything over 2.48m of the cable). Aftermarket power cords are not recommended, and the thicker black standard three-core power cords are sufficient (Fredrik has performed Tune Dems on different kinds of standard power cord and did come up with specific recommendations on the power cords of every country apart from Switzerland and Australia!)

Minimalism reigns supreme here. The mono preamps bristle with just three buttons and a single light above the name. The buttons raise or lower the volume control (and act as a child lock if you press them both together – this can make for some interesting moments for those of us who have a habit of

mashing buttons), while the third button – marked SRC/Mute – runs through the four inputs or mutes the amp if pressed and held. These relate to volume, source, and mute controls on an RC5 remote control. The single light is deceptively useful, as it blinks and runs through a series of different colours to denote volume level, input selected, whether it's run in unity gain, mute, or running at -12dB part mute (which can only be activated by a remote, but is useful for lowering the volume while talking on the phone, or if it's connected to the TV and the adverts are played at peak loudness). The Tundra mono has two blue LEDs, which can be turned off.

The preamps are best left perma-powered (they don't draw much current and don't get warm), but the power amps come on song after an hour, and are best powered down if the system is left fallow for any length of time. I don't know whether or not my samples came extensively run in or brand new out of the box, but their performance didn't vastly improve over hours of listening. What you hear from day one is what you get.

What you get is a remarkably taut, precise, and exceptionally entertaining sound. OK, those who want a big, ►

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► loose, flabby, flubby sound, full of saccharine sweetness, and buttery richness will want to look elsewhere. But, not everyone views music through the medium of diabetes and furred arteries, and the precision the Lejonklou Quartet brings to music is extraordinarily persuasive.

I must admit to there being a listening learning curve with the Lejonklou Four. At first listen, you think the sound a little lean in the bass, slightly drier sounding in the midrange, and that presents a small, forward soundstage. As you progress with the amplifier combination, you start to discover that your focus changes. That leanness in the bass is in fact a taut, overhang-free bottom-end that is both extremely well controlled and – most importantly rhythmically ‘right’. That drier than usual midrange becomes more about expressing the harmonic and melodic structure, the metre of the music, and the lyricism of the musicians, rather than the ephemera of how ‘nice’ the sound gets.

Perhaps the best way of demonstrating this presentation is with the title track from the album *Room 29* by Jarvis Cocker and Chilly Gonzales [DG]. The album – set around and played in Hollywood’s Chateau Marmont – can easily be just a pleasant, slightly bland, spatial event of piano and voice. You’ll listen to it, nod along politely, and leave the rest of the recording unplayed. Through the Lejonklou, though, the poignant piano rhythms coupled with the metre of Cocker’s sing-speak sarcasm as he says “help yourself to pretzels”, locks you in place and the whole album has to be played. Rinse and repeat with the rest of your collection. You realise most amps focus on the wrong parts of the music. In fact, they often don’t focus on the music at all. However, the Lejonklou amps burrow into your musical DNA, and it’s one hell of a heady retrovirus!

The elephants in the room are, for once, not hidden. The Tundras are 40W amps that omit overload protection, so no playing it with insensitive loudspeakers to thrash levels (it goes surprisingly loud with the right speakers, but party levels are not recommended). Meanwhile the Sagatun is a two box, dual-mono, minimalist preamp design, and that compromises ease of use ‘somewhat’. There are no bells and whistles, and if you aren’t good with remembering flashing lights and colour schemes, you might want to keep the manual out as a cheat sheet.

TECHNICAL SPECIFICATIONS

Lejonklou Sagatun Mono 1.3 preamplifier

Inputs: one RCA (purist mode) or four RCA mono inputs
Signal input impedance (all inputs): 10 kΩ
Signal input maximum level: 5VAC
Frequency range: 2Hz to 200kHz
Volume range: -80 to +20 dB in 1dB steps
Output impedance: 300Ω
Output recommended load: More than 1kΩ
Output Level: 0 to 7.5VAC
Dimensions (WxHxD): 35 × 6.9 × 35cm per chassis
Weight: 3.4 kg per chassis
Price: £3,050 per channel

Lejonklou Tundra Mono 2.2 power amplifier

Inputs: one RCA mono input
Output power (all ratings continuous): 40W into 8Ω
 20Hz–20kHz RMS (at less than 0.1% THD) and 57W into 4Ω 20Hz–20kHz
Frequency range: (-3 dB) DC to 130 kHz
Signal input impedance: 10kΩ
Signal input maximum level: 1.65VAC and 40mVDC
Signal gain: 20.8dB
Output impedance/Rec. load: 0.05Ω/4–16Ω
Output peak voltage 26 V
Dimensions (WxHxD): 35 × 6.9 × 35cm per chassis
Weight: 4.4 kg per chassis
Price: £2,850 per channel

Manufactured by: Lejonklou HiFi AB

URL: www.lejonklou.com

Sold in the UK by: Hidden Systems Ltd

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Room elephants be damned! To my mind, the Lejonklou Sagatun and Tundra Mono amps are how amplifiers are supposed to sound. There is a tendency for some amplifiers to follow Beecham’s quip – “The English may not like music, but they absolutely love the sound it makes” – in that they make music sound beautiful, but completely free from what makes people passionate about music itself. The Lejonklou Four invert this: they get to the core of what makes people enjoy music. Recommended! +