

SWITCH-MODE SEMI-DIGITAL: LYNGDORF AUDIO SDAI 1275 £1,095

Formerly TacT, Danish brand Lyngdorf Audio's SDAI 1275 is a fully balanced, remote controlled, switch-mode integrated amplifier which has no relays or fuses in its signal path. It measures 450x361x100.6mm and weighs 15.5kg. SDA is an abbreviation for Semi Digital Amplifier which designates it separately from Lyngdorf Audio's higher-cost True Digital Amplifiers (TDA). Lyngdorf say that "the SDAI 2175 is a less complex design (than TDA) which relies on analogue inputs to generate the digital switching at the output. The output stage operates by pulse-width-modulation (PWM) at a very high switching rate and constant voltage. This is similar to the operating principle of the (high-end) TacT Millennium (TDA), but while the Millennium converts the digital information directly from the digital source, the SDAI 2175 utilizes analogue inputs to generate PWM switching at the output".

Lyngdorf use PWM because they claim that the "SDA 2175 generates 75% less heat than a Class AB amplifier of similar power. Heat is the

greatest contributor to component ageing. Capacitors in particular are prone to heat damage over time". The quoted specification for the SDAI 1275 is impressive - when compared with those from similarly priced hi-fi integrated amplifiers - with a power output of 220W/8ohms and 375W/4ohms. The company says that the SDAI 1275 uses a digitally controlled analogue attenuator, and the volume is controlled with 0.1 dB steps (over a 100dB range). Instrument-grade dual gold relays are used for input switching that Lyngdorf claims are normally only used in expensive measurement equipment "for high linearity and low losses".

The Lyngdorf can also adjust the attenuation to each input by 6dB to optimize signal to noise ratio. The seven inputs (one is XLR balanced) can be individually adjusted in 0.1 dB steps, while the display is programmable to name the input. The transformer is a 650VA Toroid-Holmgren design for which Lyngdorf state that it "is particularly resistant to mechanical hum". Internally it uses capacitors for its power supply regulation rated at over 40,000 micro-Farads and a separate board for the IEC mains input with mains filtering. Further SDAI 1275 features include, two preamp outputs (one balanced), individual balance adjustment for each input with 0.1 dB steps, channel balance + - 0.05 dB "at any level down to -80 dB", 3.5mm jack connector trigger output for control over additional SDA 2175 power amplifiers and RS 232 connections for software modifications.

Build quality

on the Lyngdorf is exceptional for the asking price with a super-slick level of finish and attention to design detail that is usually seen in much more expensive products. For instance the thick faceplate has a beautifully machined chamfered opening which frames the display and control buttons, while the power on/off button has its own recessed machined opening. The heatsinks on either side are also nicely machined types which are smooth to the touch instead of razor-sharp.

The SDAI 2175 casework utilises CNC machined aluminium including its chassis which is differentiated from the typical steel chassis, and occasional aluminium outer panels of the norm. The visible fixings on the top panel are recessed hex-head types which are preferable to the typical cross-head screws. Additionally the base plate uses 4mm thick aluminium sheet, once again instead of steel which is better

at reducing magnetic interference which can detrimentally affect sound quality. Overall the visual design of the Lyngdorf is unpretentious yet discerning and discretely attractive, which is what I prefer as it gives long term owner satisfaction.

SOUND QUALITY

On Ligeti's 'Trio For Violin, Horn And Piano' the Lyngdorf was fascinating, as it was able to illuminate deep into the rather quiet but dynamically superb recorded musical structure with an uncommon ability compared to the other amplifiers on test. The whole of the Ligeti piece was opened out with great insight and with stunning musical

timing, again the best of the group, outdoing the superb Sugden. The musical separation was just effortless for an amplifier of this price and the tonality was excellent with an extremely accomplished timbre - where it was also completely in time with the rest of the musical structure. The violins had a very pleasing timbre with wonderful extension and expression. The violin phrasing was particularly good. The Lyngdorf handled the first crescendo very well with an unnerving sense of control.

The Lyngdorf had a completely neutral presentation in comparison with the other amplifiers on test when listening to 'Dreams' by Fleetwood Mac. The musical timing - considering the gelling together of the different vocal and instrumental strands as a cohesive musical structure, to form a well-balanced and more natural pace and tunefulness - was simply first-rate. The Lyngdorf displayed excellent bass dexterity and was very good with the vocals, where there was no sense of discernible strain or high frequency stridency in the female vocals. On 'Never Going Back Again' the Lyngdorf was able to reproduce





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a wonderful vocal from Lindsey Buckingham. There was a really nice delicacy and multilayered sophistication, and it seemed eerily in the room.

Guitar timbre and expression, while not as three-dimensional as the Sugden, was still extremely precise in its ability to slice through the air. This reproduction of the guitar and vocals also reinforced the Lyngdorf's excellent musical timing ability as it was inherently cohesive to the songs structure. On 'Don't Stop' the whole musical structure was beautifully revealed and had the Lyngdorf's exacting musical timing intact where every vocal, element, strand and instrumental intonation was superbly executed and free flowing. Individual aspects such as vocals were excellent, while the instrumental timbre had good definition. Bass was dextrous and also well defined while the treble was able to open out the music into a widescreen dimension.

Steve Steven's 'Flamenco A Go Go' was thrilling; all the elements gelled to produce stunning musical timing. Bass was again excellent, which gave a lift to the lower mid while not being unnaturally extended as to dislocate itself from the rest of the music. This upper bass/lower midrange frequency quality helped to provide rhythmic thrust and enjoyment through Steve Steven's rocket-ship rush of acoustic guitar melodies. On 'Our Man In Istanbul' there was the recurring talent of the Lyngdorf in enabling stunning instrumental and vocal separation. The gorgeously sexy vocal from Azam Ali was especially good with the Lyngdorf's separation ability as there was a sense of openness not available on the other amplifiers, where her

voice was deliciously free-flowing and super-clear without a single hint of high-frequency glare or harshness. The Lyngdorf's musical timing abilities also took the complexities of 'Our Man In Istanbul' in its stride – making for a neutral yet thrilling ride.

CONCLUSION

Like the Sugden, this is a genuinely unusual and special sounding amplifier, although for quite different reasons! It is initially underwhelming, but due to its massive power output it was able to provide an excellent grip and drive to the differing demands of all the music used. It has an eerie sense of control and superlative musical timing that never stifled its tonal resolving ability. As such it was very special with completeness in the most important aspects of the musical structure - such as outstanding instrumental and vocal separation which was surgically unravelled but never clinical. The Lyngdorf is not a sugary sounding device (unlike the Marantz, for example), although it remained resolutely musical in a neutral,

unflappable and dynamic manner. Build quality is equally brilliant for the asking price while the visual design is my favourite of the group as it expresses a buttoned-down discretion that can only come from first-class craftsmanship. In some respects, this product sounds like 'superfi'; its refinement, subtlety, unflappability and sheer control are remarkable, and many will instantly

MEASURED PERFORMANCE

The distortion behaviour of this amp is influenced by its tightly limited bandwidth. Harmonics of higher frequencies are curtailed, meaning past 6kHz or so distortion starts to go down, not up. At 6kHz though, where second and third harmonics fall within the bandwidth of the output filters, distortion at low levels of a few watts measured just 0.003% into 8ohms, rising to 0.007% into 4ohms, third harmonic predominating in bridge conditions, as second cancels. Near full output (30V) the worst case result was 0.02%, second and third harmonic, into 4ohms, a low value. In the midband, distortion levels were much the same, so this amplifier is consistent in its behaviour, which means the distortion spectrum is not constantly changing, always a good sign. The SDAI 2175 interestingly possesses a better distortion performance than conventional amplifiers.

This is a bridge amplifier, like most 'digital' switching amps. It has no problem swinging massive output, no less than 220W into 8ohms and 324W into 4ohms, whilst barely getting warm, due to high efficiency. There's 35V d.c. on both output lines, but protection circuits guard against damage from shorts to ground or any differential output offset that would threaten the loudspeaker. It is not d.c. coupled throughout though; tests showed input d.c. did not affect output conditions.

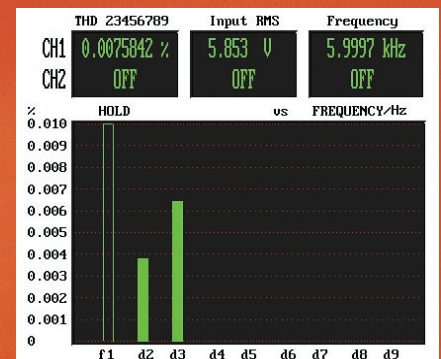
Frequency response of digital amps like this is, in theory, load dependent, because of the output

filters. However, the SDAI 2175 varied little between 4ohms and 8ohms, looking flattest on the lower value. The upper -1dB bandwidth limit is 27kHz; the lower limit is 1Hz.

Sensitivity is very low at 1V maximum. I don't understand this, as most sources give 0.5V or thereabouts, so it's far too low; only CD gives more. External phono stages, tuners and such like must give 1V to match this amp - and few do.

This is a heavily engineered amplifier in all senses, more so than usual. It measures extremely well, except for low sensitivity which will make matching difficult. NK

Power	220watts
CD/tuner/aux.	
Frequency response	1Hz- 27kHz
Separation	88dB
Noise (IEC A)	107dB
Distortion	0.003%
Sensitivity	1Vdc offset
8/21mV	



VERDICT

Remarkably sophisticated and powerful amplifier that's subtle but infectiously musical too.

LYNGDORF AUDIO
SDAI 1275 £1,095

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FOR

- design and build
- neutral yet engaging
- stunning musical timing
- massive power

AGAINST

- takes time to appreciate

Conclusion

These four amplifiers were all different, yet all are very capable performers and as such this should be celebrated. Both the lower powered Sugden and Minimax designs had no trouble driving the ribbon tweetered Aurum Cantus Leisure 3SE speakers to what I consider very loud levels in my 6.5x4.5m listening room. When Noel Keywood measured them he said, "sensitivity was low at 82dB but this wasn't surprising as the 'speakers' impedance is very high, measuring 12ohms overall. It (the Aurum Cantus) is a very light load, even for a valve amp. But does need 'power' (volts) to go loud".

When correctly load matched, the Class A transistor Sugden A21a had useful power and ably gripped the speakers to produce the best instrumental timbre of the whole group. Additionally it had excellent resolution which was interesting, allied to a generally neutral but engaging sound quality that I really enjoyed. The Sugden's sound quality can be described as very linear, tightly organised yet soulful which makes it a bit of a chimera of an amplifier! It does run hot though, and thus I would treat it as a valve amplifier allowing between thirty to sixty minutes 'warm' up before use and then switching off afterwards. The Sugden did not have the best bass extension, but the more complex and important bass dexterity was nicely aligned to the rest of the higher frequencies to produce its linear but tuneful sound. It didn't always have the best vocal timbre but because it was so well balanced and musically well-timed, in isolation this is not noticeable. The Sugden is especially well-built but not flashy in appearance and though it didn't have a remote control, this was not an issue for me. I loved it because it's such a simple, unreconstructed, unalloyed music maker.

The switch-mode Semi Digital Lyngdorf SDA 1275 was also really accomplished, and pure joy to use and listen to. It has an unflappably neutral sound quality that was always in control of the demanding

frequency extremes from the different music used. This neutrality also meant that the Lyngdorf is not smooth, lush or sweet and that is a good thing as this ability is important for preserving the individuality of the music used. And for listeners who enjoy a wide, dynamic and manifold selection of music this will be a prescient quality. The Lyngdorf's

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neutrality does not mean it sounds cold, clinical or even grey as some perceptions and realities of digital amplifiers have been in the past – far from it! Additionally the Lyngdorf had a very cohesive sound with superlative musical timing which was a real pleasure to listen to as I could concentrate through particularly dense recordings such as Steve Steven's 'Flamenco A Go Go' where the Lyngdorf had a real flair for both vocal and instrumental separation. It is beautifully constructed in a high-end high-quality manner and visually, for me at least, offered a discrete self-confident visage. This for me is the second star of the group, self-effacingly musical, subtle yet exhaustively thorough in the way it conveys what's going on in a performance, with an amazing sense of imperturbability.

The Class A valve Minimax M520 excelled in all the vocal timbres experienced through the different recordings used in the test. It has a good ability with instrumental timbre also and I was surprised at its musical timing ability which was rather good. The build quality and design were excellent and commendable for the asking price without even a hint of hair shirt or 'rugged/agricultural' construction. The Minimax has a superbly crafted remote and remotely-controlled tonal flexibility with its Pentode or Ultra Linear modes which were very useful – as they were not superfluous gimmickry

because of the demands of the different music used necessitated adjustment.

The Marantz was a surprise as a Class AB amplifier; it was the most tonally characterful amplifier in the group! It was intriguing because it has a wonderful full-bodied nature to the recordings used and some very nice vocal timbre was also revealed.

It initially sounded more diffuse than the others and a little underwhelming but given some patience the Marantz rewarded the listener with some stunningly powerful dynamic swings that could really grip a crescendo or tempo swing. The Marantz was never flustered though and always remained in control. The Marantz is super-slick in construction with remote control and an excellent lateral-thinking upgrade path using more PM1551s (or even a high-end PM11-S1) enabling it to be bi-amped or go into 5.1 multichannel if desired! For these reasons, it's by far the best all rounder in the group, with a uniformly high standard in every department from phono stage to remote – but it's less focused on sonics.

Overall then – as you've probably surmised – standards were extremely high, but we'd give the gongs to the Sugden and Lyngdorf for being brilliant music makers. The amazing thing is that they sound so different – like the difference between the Beatles and Beethoven. That's what happens when you go from Class A to D!

REFERENCE SYSTEM:

Onkyo DV-SP1000E Universal Player (£2,800)
Aurum Cantus Leisure 3SE Speakers (£1,250)

MUSIC:

György Ligeti (Edition 7) 'Chamber Music' (1998) CD
Fleetwood Mac 'Rumours' (1977/2001) DVD-Audio
Steve Stevens 'Flamenco A Go Go' (2001) DVD-Audio