



NETWORK MUSIC PLAYER

COUNTRY OF ORIGIN



HONG KONG

Reviewer: Joël Chevassus

Financial Interests: [click here](#)

Source: Esoteric K-03, Apple IMac Lion OSX, Squeezebox Touch + Welborne Labs PSU, Audio GD Ref 5, Totaldac, Trends UD-10.1, MacBook Lion OSX with HiFace USB to S/PDIF interface

Amp/Preamp: Rogue Audio Hera II, SPL Volume2, Orpheus Lab Three M, Trends TA-10.2

Speakers: Vivid Audio K1

Cables: Skywire Audio 2020 digital cable, Naturelle Audio interconnects Live 8 MK2, JPS Labs Superconductor 3 interconnects, Gabriel Gold Revelation interconnects, Audio Art SC-5 SE speaker cables

Power cords: Audio Art Power 1 SE, Furutech

Stands & room: DIY stuff, Vicoustic panels

Review component retail: \$3.980 introductory direct price, €5.500 established dealer-network price



Context. Today high-resolution file playback is one of the most interesting ways to achieve first-class sonic performances at home. Enabling it are downloads from a few websites as 24-bit FLAC or AIFF files at 96kHz or 192kHz sampling rates. Fast broadband access and the direct connection of the recording industry with the Internet has introduced a second stage using native 1-bit DSD (Direct Stream Digital) files. This requires some specific upgrades within our conventional playback equipment and the number of D/A converters able to decode DSD is still limited but rapidly increasing. Does this mean one can exceed the best of legacy SACD spinners with DSD streamers directly decoding native master recordings or high-quality remasters?

That would be some technical achievement and eliminate another barrier between the recording studio and our listening rooms. Even though DSD should be no perfect stranger to most audiophiles, it's still useful to issue a reminder of what it is precisely. DSD—Direct Stream Digital—is a generic pulse-density modulation data format which uses one bit at a very high sample rate. The standard rate is $64 \times 44.1\text{kHz}$, i.e. 2.8224MHz. When this standard DSD rate was still argued to be insufficient for professional use, a doubled rate of 5.6448MHz was added for the most advanced monitoring recorders such as Korg units.

The Super Audio CD (SACD) uses this data format for high-resolution stereo and (if provided) multi-channel tracks whilst often also including standard Redbook stereo audio on a separate physical disc layer (the so-called hybrid disc which accounts for most commercial releases). Copyright-protection data is embedded as a physical modulation of the width of the data stream 'pits' and only licensed SACD production plants have the necessary technology to encode this data. Due to a very conservative commercial policy from Sony, SACD production has remained an esoteric niche market and a disc without that physical copyright-protection data is not playable on current standard SACD players.

Processing native DSD still isn't easy today despite the recent fashion renewal for audiophile DSD streamers. The extent of installed recording equipment able to process DSD data directly is rather limited due to Sony's policies. Hence most of it is by now out of production. Next most systems that claim DSD compatibility actually transcode DSD to high-resolution PCM (24/96 or 24/192), perform all signal processing at that resolution, then convert the result back to DSD. This represents a very practical way to maintain a work flow within the processing facilities most record companies are used to. Thus the only thing you know for sure about most SACDs is that they are distributed in the DSD format. Just don't insinuate the same about their actual production process. There is no proof that the producer used a bona fide DSD recorder.



DSD files may be burnt to DVD media as standard UDF (universal disk format) files and Sony released a specification to support this. However, since the physical copyright protection data of a standard SACD cannot be imposed to a conventional computer DVD drive, such burnt discs won't play back on standard SACD players. However early Sony PS3 machines do recognize this format and will play it back as will all Sony Vaio computers and any standard PC with Windows Media Player 10/11 upgraded to the DSD plug-in.

It thus comes as no surprise that for the time being, DSD streaming remains more theoretical promise than widespread use. Ripping SACD really isn't an open process and DSD downloads in the West remain quite rare still. For instance this site currently offers about 40 DSD titles whilst Channel Classics has about 140 downloads. They claim to have been processing recordings in pure DSD since 2001. For two years now the Dutch have been using an 8-channel Grimm converter they consider one of the very best available.



DSD downloads remain limited and whoever invests now in DSD-capable hardware and software obviously bets on the future of DSD downloads. The existing catalog of DSD recordings is certainly rich as the technology has been used in sound processing for quite a long time. It presently only lacks an entrenched distribution model to jump-start the next 'revolution' in audiophile-quality recordings.





Another possibility for geeks and computer-savvy audiophiles is Sony's first-generation Playstation 3 where a particular software modification (hack) of this BluRay player and gaming console enables ripping of SACD in DSD format by anyone with a sufficient background in audio computing. As the first machine designed by Sony (i.e. the Playstation One) became an unexpected audiophile toy, the Playstation 3 keeps haunting audiophiles as the only possible option to rip SACD! Many novelists could not have imagined a more salacious hifi story.



The SACD ripping process via hacked PS3 has become widely detailed on the net and works with a reverse-engineered PS3 application. SACD includes various copy protection measures of which the most prominent is pit signal processing. The ISO image of an SACD is ripped to individual stereo or multichannel DFF or DSF files for later conversion and playback. Foobar can also convert these DFF files to PCM on the fly whilst specific tools like Saracon can generate high-resolution PCM equivalents like 24/352.8 DXD files which require a compatible DAC for playback. But this remains a barely legal game of very restricted access considering the sum of prerequisites: use of an early still operational PS3 (only the first two generations of Sony's Playstation 3 game console are capable of reading SACD ScarletBook and bypass the copy protection if their firmware doesn't exceed 3.55!); ownership of a DSD player; and a DSD or 24bit/352 kHz-capable DAC. Is there a real market for such a hacker's hobby?*

* Reader Olav Håland informed us that he owns the Sony SCD-XE800 which can play back DSF files. "I have that very budget-friendly SACD player which cost around \$300 when available here in Norway. I download DSF files from downloadnet or other places. Then I make a folder on the PC with each song inside that folder. Then I burn it to a DVD. When I play it it back it really sounds superb. I have no way of knowing whether it plays as DSD or converted to PCM but regardless it is a very convenient way of enjoying DSF files."



Returning to formal DSD downloads, many may consider it strange to be asked to pay more for current DSD file downloads than they ever did for the physical SACD disc containing the same files when manufacturing a SACD, printing its liner notes and marketing it through conventional retail channels had to be costlier than now putting DSD files up for download. According to record companies however these DSD containers are the master tapes or more exactly mother files as a kind of family jewel not really comparable with any tangible physical disc.

Another technical consideration in the field of audio computing is the choice between all-in-one solutions and separates. A further concern is requisite storage capacity. The first dilemma is a question of versatility versus integration. The choice of separates—DACs and players—give the user maximum versatility and the largest evolutionary options like use of the type of high-end D/A converter which is rarely if ever installed in an integrated device. Versatility also concerns the player itself as a computer will never limit its overall functionality to just simple audio streaming.



Unfortunately even if the results I personally achieved with many decent computers and player software was far from unsatisfactory, jitter always seemed to remain a true limitation compared to results obtained with a high-end CD transport. Managing digital flow in my opinion remains a very important issue. A second issue is relative stability. A dedicated server or streamer undoubtedly offers a more stable environment and operations than a multi-function computer. Pointing at a streamer rather than a dedicated server becomes a personal matter of choice. The server may create specific technical issues related to its internal hard disk: noise, vibrations, capacity. Streamer issues are more about network complexity and communication between NAS, streamer and iPad remote. These technical features generally impact cover art display and search capabilities but sometime also recognition of certain audio file formats. For instance when using the Aurender S10 via external HDD storage, I lost most of the capabilities of its stunning remote iPad app. Nothing yet is perfect in this computer audio environment and everyone must make personal choices according to key priorities.

The design of today's Lumin streamer becomes an interesting compromise for my personal goals. The Lumin puts no limitations on storage capacity, is completely silent and fast due to external NAS storage, compatible with other UpnP apps like Kinsky (Linn app) and should avoid traumatic jitter issues considering its high-quality internal DAC. It comes with a more than decent and proprietary iPad app, allows for very high-resolution files and thus keeps the door open to the market's future. Another personal motivation to investigate this machine was the fact that the Lumin is an industrial solution from a company with good knowledge of digital processing. It is not the typical kind of audio company which merely recently started dabbling in computers.



Lumin Music in fact is a subsidiary of Pixel Magic Systems Ltd. which was founded in May 2003 as a privately held video technology equipment manufacturer for home theater and professional A/V markets. With offices in Hong Kong and San Jose/California, Pixel Magic has dealer/distributor networks for its own brand of products in over 25 countries and ODM/OEM customers in Europe and USA. Pixel Magic was the world's first developer to produce a Linux-based video processor under the Crystalio brand. Their core business is being focused on the development of innovative technologies for home-theater video processing/scaling products and high-definition TV-related products with advanced software programming features and design. Last year Pixel Magic decided to enter the audio market with a technically advanced streamer through a newly launched company - Lumin Music. Was this newcomer poised to change the status quo of this still developing market segment?



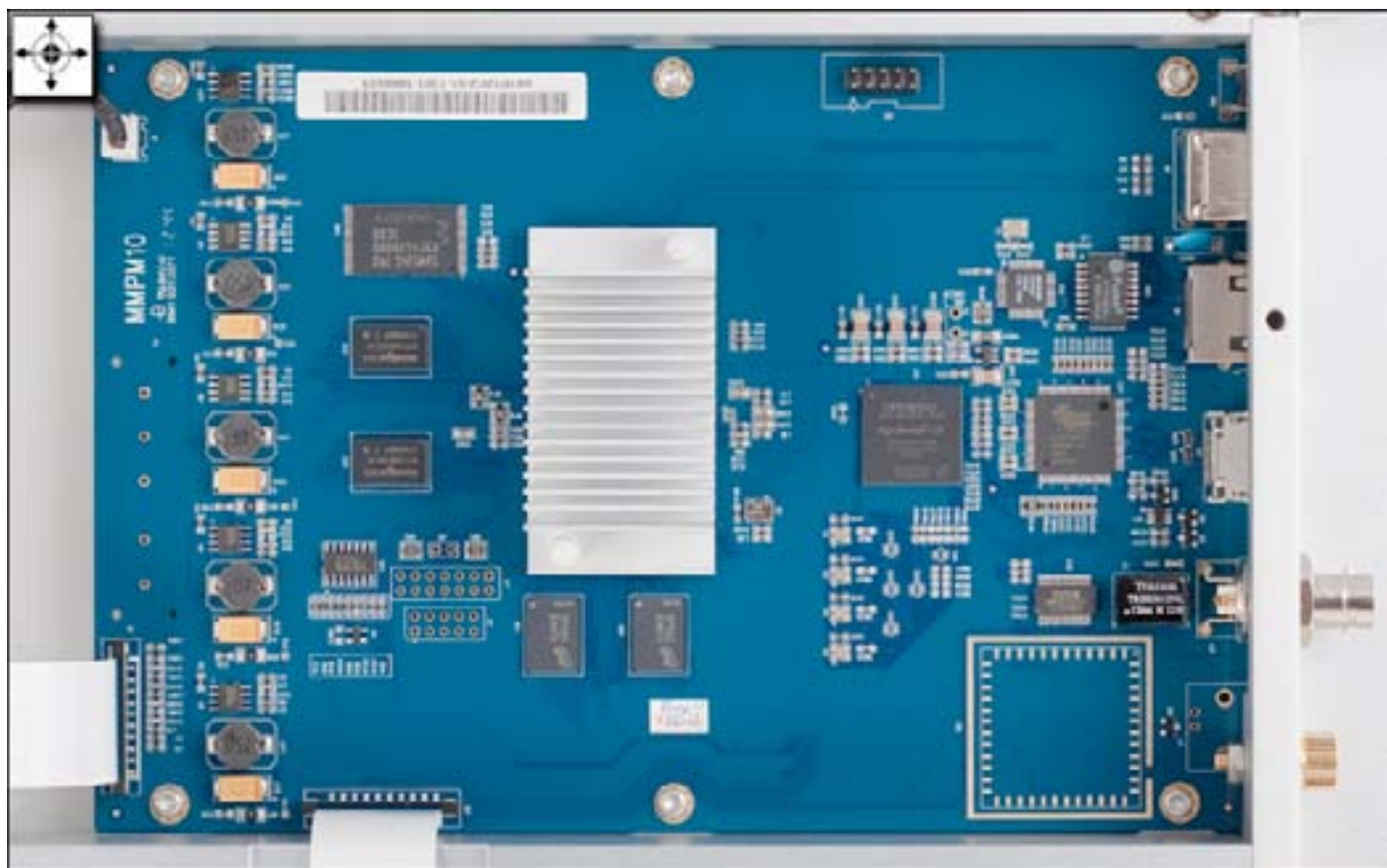
My first surprise was the care given to the overall packaging and presentation. The Lumin arrived very nicely packaged. Build quality and power supply were impressive for a device in this price range. The Lumin consists of four parts - the player itself, the external power supply, the independent external storage (not included) and the user interface (software provided). The player is beautifully carved from solid aluminum billet with a Linn Klimax-type 'roof' over the rear panel which hides all cabling from top view. You can push the deck all the way up against the wall and still have enough room for all cable connections. The same care was lavished on to the bottom panel with its beautifully etched Lumin logo. This massive CNC casing is presumably the perfect Faraday shield against EMI/RF pollution. The outstanding build quality and industrial design in fact reminded me much of the five times as expensive Linn Klimax and the Devialet D-Premier though the French's visual sex appeal remains unsurpassed from my perspective.



The external power supply is typically audiophile-grade and includes two toroidal transformers. The Lumin player does not reflect its disproportionately heavy 8kg mass by measuring a svelte 350mm wide by 345mm deep by 60mm high. The narrow front panel houses a small blue-green alphanumeric display to show the main playback information of title, track number, track duration, track format, track length and sampling frequency. A circle located at the right of the display shows whether the streamer is ready for playback. For firmware updates the display also shows the currently installed version. Beneath the Lumin's roof sit one Ethernet RJ45 port and RCA/XLR analog outputs as well as BNC and HDMI digital outputs plus two USB ports presently reserved for firmware upgrades. In the future it may be possible to directly stream music files from a connected USB storage device. The BNC output supports PCM at 16-24 bits and 44.1kHz up to 192kHz. The HDMI supports files all the way to 1-bit DSD at 2.8MHz.

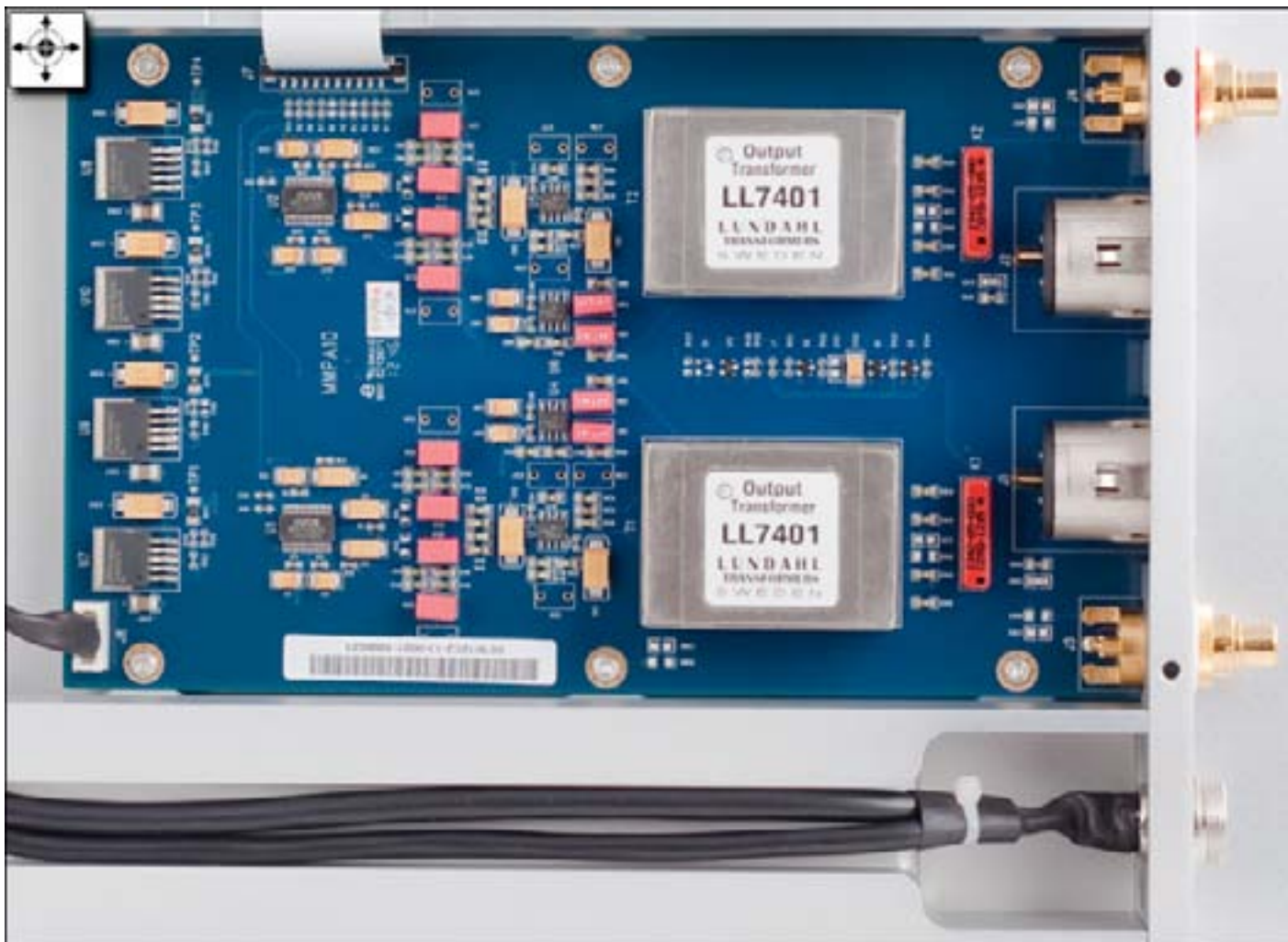


Again, the overall industrial design seems inspired by Linn's top-of-the-range Klimax DS to which was added DSD. Even the balancing Lundahl 7401 output transformers, Wolfson WM8741 converters and surface-mount construction pay homage. The Wolfson silicon supports 32-bit/384kHz PCM and native DSD 64 with very low noise, high dynamics and advanced digital filtering. Lumin's DSP enables various sample rates, DSD-to-PCM conversion on the fly and of course native DSD-direct mode. It is the first dedicated audiophile network player with an HDMI output for a native DSD bit stream. In that mode the BNC output is disabled whilst with DSD-to-PCM conversion one can output DSD as 176.4kHz or lower PCM via both BNC and HDMI.



To support 44.1–384kHz PCM and 2.8MHz DSD, the Lumin runs four separate ultra-low phase-noise clock crystal oscillators from Japanese maker Nihon Dempa Kogyo. One NZ2520S Series clock is for 44.1/88.2kHz, one for 48/96kHz, one for 176.4/352.8kHz/2.8MHz and one for 192/384kHz. As a streamer the Lumin must be connected to a network-attached storage device with a UPnP server and PC/Mac network. Setup is quite simple. The most complicated parts relate to the NAS settings since they determine the server functions. The essential thing here is to set up the computer, NAS and Lumin on the same network of your internet router. It's also important to install the recommended Minimservers UPnP app on your local network to retrieve meta data. The Lumin app in fact was designed around the Minimservers' architecture. This allows the indexing of native DFF/DSD files which is not always possible with servers like Synology's proprietary UPnP software. With thanks to friend Thierry for his helpful support, I successfully installed the Minimservers on my Synology D112 NAS.

Except for DFF browsing, I could still use Synology's own server (or a Qnap variant if your NAS is a Qnap). Nevertheless the Minimservers is the most convenient and apparently stable environment within which to manage cover and tag display over the Lumin app. The Lumin streamer is said to handle most mainstream high-resolution formats like native DSD, PCM-embedded DSD aka DoP or PCM up to 32/384 as DXD studio masters. Some minor present restrictions should be lifted with future firmware upgrades. I for example couldn't play DXD files unless they were encoded as AIFF or WAV. I had further small issues with Qobuz downloads whose metadata seem embedded differently. Those the Lumin couldn't locate to display. All of these issues could be resolved by converting the 'bad' files to the same format with the DBPoweramp or XLD softwares.

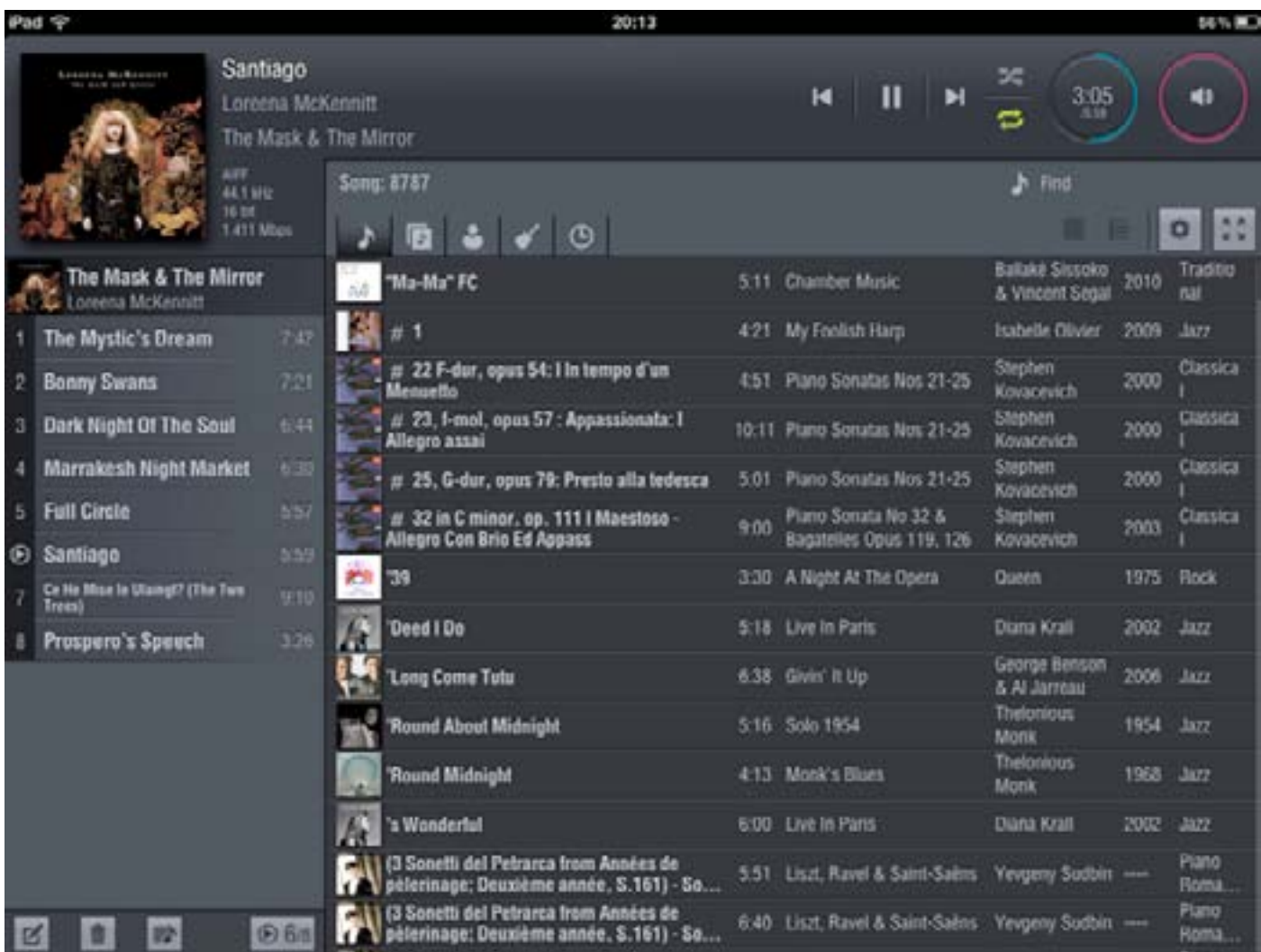


The Lumin supports gapless playback and uses the Linn UPnP AV protocol to install a certain level of compatibility. For now the only remote is the Apple iPad. iPhone or iPod support doesn't exist as yet. The remote also works exclusively with the UPnP AV media renderer which supports Linn-style operation (i.e. it doesn't work with generic UPnP renderers). The Lumin Control Point looks very intuitive and attractive. It is not far removed from the best I'd previously experienced with the Aurender S10. My only two criticisms are linked to the standard UPnP architecture and the app's early status (i.e. many additional features should be added over time). For numerous screen captures of what the GUI looks like, [click here](#).



One, the search function was mostly MIA and I had to make do with the preset filters of Lumin's app. The search function was limited to the data stored in the iPad's cache as tags of various albums. Multiple-entry selection was impossible. I still had a complete overview of all tracks and albums ordered by song name, artist, genre and recording year however. On the top right of the iPad it was also possible to see different views of the same filter which were presented as album art, header list and song list. A classical music lover presently simply lacks the ability to browse by composer.

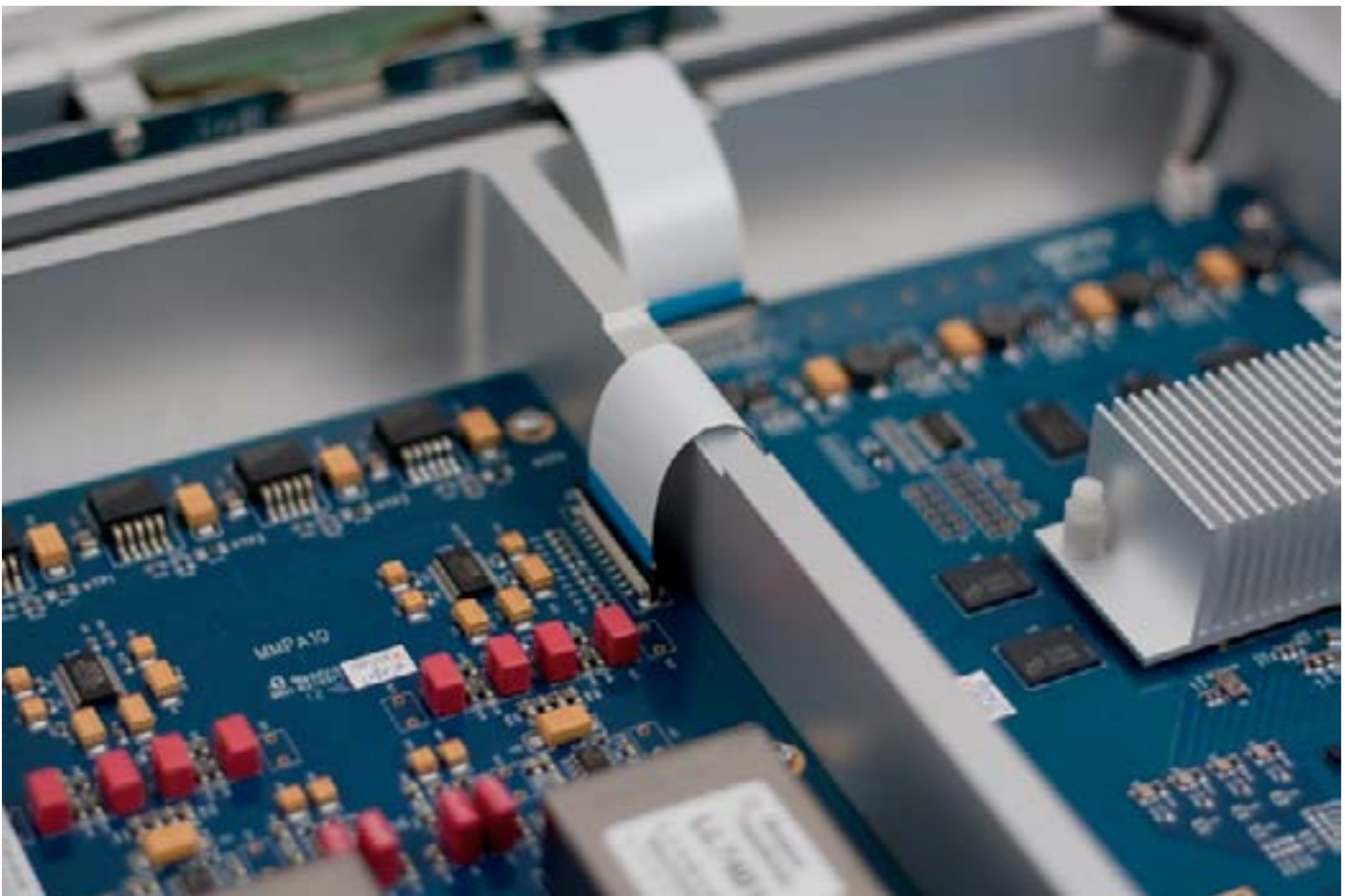
Two, one cannot browse the NAS directory by folder. One must use a 3rd-party Linn-friendly app like the Kinsky freeware to sort through the media server tree. This means that the user must get involved in the creation of a detailed index of the NAS directory. Even so I still experienced more crashes and abnormal reactions with the Kinsky embedded in the Minimservr than with Lumin's proprietary app. With Minimservr the latter displays album title, album artist, artist, composer, year, genre, track title, track number and cover art link. The UPnP protocol simply refuses to send any specific server tree configuration to the Lumin control point.



Another consideration is the Lumin's tag sensitivity which will only 'see' correctly tagged files. This relies on accurate tagging by the user. As already stated, I experienced difficulties with all files downloaded from Qobuz. Another issue with the Lumin app is the display of native DSD files. Those cannot be tagged to then not be directly visible over the Lumin app. For now such files had to be launched via Kinsky but future software fixes should remedy this. On the extremely positive side, the intuitive and beautiful app made browsing most pleasant indeed by storing tags in the iPad's flash memory. It does require a few minutes to scan, read and cache all library metadata for the first time and of course relies on available storage on the iPad yet the latter didn't seem excessive. With my 16GB iPad I encountered no issues. This process of caching art work is a background task by the way. It does not interfere with other operations.



The native tag browsing skill allows one to easily sort any playlist by song title, album title, artist, composer (optional), genre and year. The browser panel can also be maximized to fill the screen entirely by hiding the playlist window. The Lumin app provides for several playback options such as play now (adds selection to the bottom of the playlist and skips to it for immediate playback), play next (adds after the current playing title), play later (adds selection to the bottom of the playlist) and play and replace (replaces the whole playlist with selected files).



Beyond its undoubtedly brilliant aesthetics, the Lumin app also allows for default upsampling settings for each kind of file format. This makes for very interesting options between native playback (no upsampling) and various sample rates up to 192kHz and bit depths up to 24. Another option is the previously mentioned on-the-fly transcoding of DSD bitstream to PCM. There is no downsampling however and native files cannot be played back at lower than their original sample rates.

Recent firmware and application updates have enabled de-emphasis of 44.1kHz files directly from the settings panel. To explain what de-emphasis means, I need to refer to the pre-emphasis concept. Some early digital recording and playback gear used 14-bit converters despite dealing with 16-bit audio. They also used brickwall filters. The resultant noise could be made relatively quiet using pre-emphasis. This boosted the signal especially at its higher frequencies during the recording process before it was stamped to CD. Embedding flags in the disc's sub code told a CD player to apply de-emphasis during playback. Modern CD players have built-in de-emphasis in their analog outputs.

By the late 1980s pre-emphasis stopped being used because reliable 16-bit DACs with oversampling and other technologies minimized the conversion and filtering noise without need for such preprocessing of the recordings. Most major-label CDs with pre-emphasis were manufactured in Japan during the early and mid 1980s. Besides being stored in the sub code along with the audio data, the pre-emphasis flag was also supposed to be stored in the table of contents. Yet many CDs' TOC says no pre-emphasis when in fact the sub code shows it is there. Generally once a CD has been ripped to any lossless audio format, the pre-emphasis flag is lost. It appears that there's no standard to store the emphasis flag in an actual file besides a cue sheet table which won't work with the Lumin. Lumin's de-emphasis for 44.1kHz CD files option is thus a manual switch to toggle the Wolfson DAC's de-emphasis on or off.

The DSD game. DSD streaming provided me with insanely fantastic results. The standard approach should be to use mainly DFF or DSF as the true SACD mother files. DSF is a stereo-only simplified form of DFF used for SACD mastering and 5.1-channel downloads. With this player it seems quite impossible to use DST direct-stream transfer files which are a compressed form of the original DFF or DSF files. With SACD production, compression is obligatory for 5 or 6 channels but can also be employed for simple 2-channel productions. The DST encoding algorithm is far from simple however and must be verified by a CRC cyclic redundancy check which is calculated over the DSD frame data and embedded in the DST file.

You can get those files via ripping the ISO file of an SACD with a hacked PlayStation 3. The compressed DST files stored on an SACD disc obviously require less storage space than their original DFF/DSF uncompressed originals. But using such files adds extra decompression playback, hence the potential for more jitter and a less natural sound. This could explain why I had better results using the Lumin in native DSD mode than playing the equivalent discs over my Esoteric player which had to first 'unzip' the DST files on the actual discs.

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soundkaos

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is performing a duet with BASSO PROFUNDO at High End Munich from 9 -12 May - hear them on Stand K15/Hall 4 and Room F220

WIR STELLEN AUS

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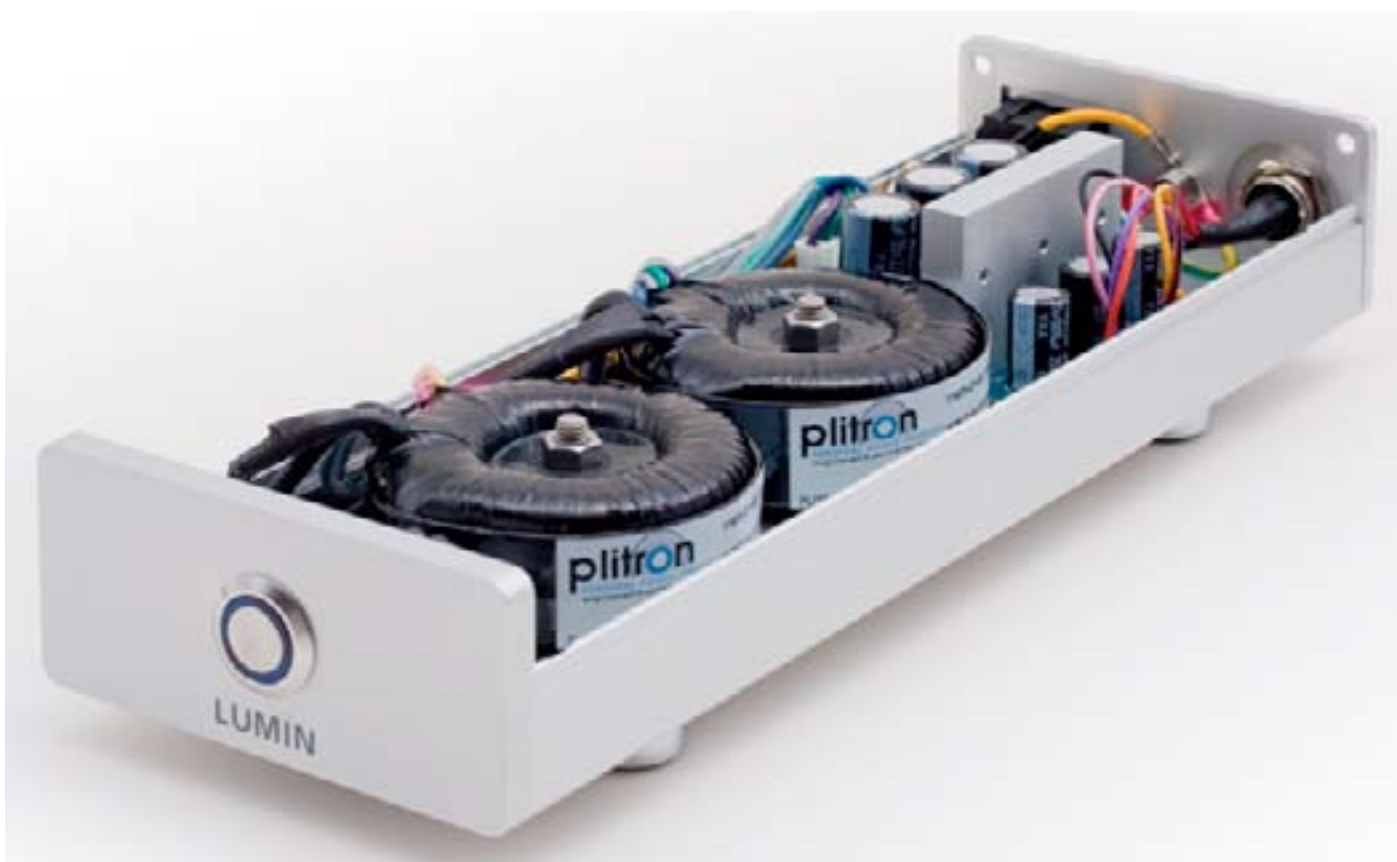
10.12. MAI 2013 MÜNCHEN

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The advertisement features a dark background with white and orange text. On the left, the 'soundkaos' logo is displayed in a stylized font. Below it, the 'PRIMA DONNA' model name is written in large, bold, orange letters. To the right, there are line drawings of three different speaker models: a tall, oval-shaped floor speaker, a smaller rectangular floor speaker, and a compact, angled floor speaker. In the top right corner, there is a red circular logo with the text 'WIR STELLEN AUS'. Below this, the 'HIGH END' logo is shown with a soundwave icon. At the bottom right, there is a white rectangular box containing the text '10.12. MAI 2013 MÜNCHEN' and the website 'WWW.HIGHEND2013.DE'. At the bottom center, there is a line of text: 'is performing a duet with BASSO PROFUNDO at High End Munich from 9 -12 May - hear them on Stand K15/Hall 4 and Room F220'. At the top, the text 'WAVE AUDIO SPEAKERS MADE FROM TONEWOOD' is written in a light grey font.



The most currently relevant issue about the DFF/DSF format resides with its limited tag abilities though DSF seems more open than DFF (J.River for instance appears capable to tag the former). This is a twice-valid concern with the Lumin app's exclusive tag browsing. Other control points like Kinsky will recognize DFF/DSF files through Miniserver and display the cover art if a jpg file has been included in the folder. It's not very practical but works. It's also possible to create a specific DSD folder within the NAS tree and browse this folder through the Kinsky app each time you want to play a DSD file. Another solution is changing the original file's DNA by creating a DoP file. DoP stands for DSD over PCM. It's a new bitstream format that packs DSD inside a PCM container and simply flags the PCM file as containing DSD so any enabled D/A converter knows what to do with it. Again, the Lumin can natively play back DFF and DSD files. Thanks to a modification of its SACD plugin, Foobar 2000 can tag such files. This modification adds the extra convert to DSD over PCM option and creates 24/176.4 DoP files packing native DSD. Such DoP files can be written in any lossless format like WAV, AIFF, ALAC or FLAC. Now it becomes child's play to tag your DSD files through your usual metadata editor and DoP files should work in any UPnP server which supports these common lossless formats.



The Lumin obviously detects the flags which announce DoP content to automatically switch to native DSD playback mode. One issue is that DoP file sizes slightly exceed that of their DFF originals. Depending on its container, a DSD album could require 3-4GB of storage which could become relevant. I also found original DFF files to be more stable than their DoP versions. This might have been linked to Foobar's conversion/packing process but could also relate to file size. I would strongly recommend FLAC containers which produce smaller file sizes which from a streaming view might be easier to handle than AIFF equivalents. Unfortunately this requires a metadata editor other than the ubiquitous iTunes. For now DSD tagging remains a factor. One hopes that the growing number of DSD-enabled DACs will create a climate that introduces better tagging conventions in the near future. For the time being the best options seem to be DSF rips with J.River tagging or DoP/FLAC extraction via Foobar. Coming back to the machine under review, measurements provided by the manufacturer are as follows - 20Hz-20kHz response within + 0.01/-0.18dB, A-weighted noise of -110.9, dynamic range of 112.dB, THD of 0.0022% and stereo crosstalk of -110dB. Power consumption is 20 watts in use and 15 watts in standby.

Sound. Until now each computer-based music solution I've hosted had me gleefully persist in thinking that good CD players definitely had a rosy future. And I still think that. My conviction based on sound rather than old habit is simply weakening. That's how enlightening the Lumin's exceptionally positive experience proved to be. But I continue to believe that it will be as difficult to completely eradicate CD players as it has been to consign turntables to the scrap heap. The coincident distribution of CD and audio files grows from the same recording process. It presents no particular reason why CD production should get terminated [this argument would seem very weak relative to distribution and the ongoing decline of actual disc resellers – Ed.] A significant example is Channel Classics' parallel offering of SACD discs and DSD files. Another aspect is the reciprocity between the files extracted from a CD and the ones you can burn to a blank. The huge personal collections of CDs might thus not become dead stock anytime soon.



That said, the convenience of computer audio solutions has already led to a massive embrace of downloaded or ripped files. The diversity of playback software, computer architectures, D/A conversion tools and relocking devices has simply created a true maze on how to pursue the best sound. Jitter, playback algorithms and D/A converters introduce so many different flavors that one could feel compelled to claim the complexity of the most sophisticated perfume creations. If at times computer audio may lack a bit transparency or not create as wide and deep a soundstage, its primary criticism must be stability. Here the Lumin streamer retaliates with a very stable environment whose only possible changes are firmware updates and any possible variance introduced from using its digital outputs. I didn't have opportunity to test the HDMI output with an external DSD-capable DAC. But I did test the S/PDIF output with my Esoteric K-03. This provided me with very good results against the Lumin's internal digital mode. The K-03 only had a slightly different tonal balance with an airier treble. Clearly Lumin's designer didn't add their outputs as just a convenience feature. Whilst personal preference gave the nod to the Lumin's own DAC over the Esoteric, this really was just a matter of taste.

In comparison with the K-03, the Lumin's Redbook performance was plainly superior. There was not one area where the Lumin could be considered inferior. Tonal balance seemed a bit more neutral, timbres were more realistic, three-dimensional imaging was just as good, dynamics were outstanding and the Lumin's liquid character provided the in my opinion greater listening pleasure. Let that sink in! This was astonishing performance against the Japanese deck which to me remains one of the very best CD/SACD players on the market and trades for a much higher sticker [\$13,000 – Ed]. Comparing DSD playback, I must confess that even though Esoteric is well known for their accuracy, it sounded digital and narrow against the Lumin. It was the latter's streaming which sent me to the concert hall with that very rare feeling of truth and evidence - naturalness, sweetness and scale. The walls of my listening room really seemed to vanish. Still it's quite difficult to describe precisely just how good this sound was. When I listened to Ivan Fischer conducting Mahler's 4th Symphony [Channel Classics DSD download], I had the sensation of listening to a completely different recording or mastering than with physical disc playback. It was just like comparing a good recording to a direct live event. The Lumin added a kind of analog sound comparable to what can be achieved by the best turntables - but with more realism, depth, dynamics and detail. I felt amazed like a kid listening to the Lumin's DSD playback.



But not all DSD files I explored over my allotted two months delivered the same amazing contact high. Rude awakening? Not really. I simply realized that DSD isn't any superior-most format unless the whole production process occurred in the DSD domain starting of course with the recording equipment itself. DSD is an amazing medium but it's far from obvious what was done to the original master before it got finally stamped to disc for distribution. The differences are worlds removed from being academic. A record company like Channel Classics who only process in 100% DSD have reached such an exalted level of realism that returning to Redbook becomes a true and real yawn. The main issue really is about what exactly has been the DSD signal's journey between microphones and stamper. It unfortunately appears that most these travels cross PCM land at some point.





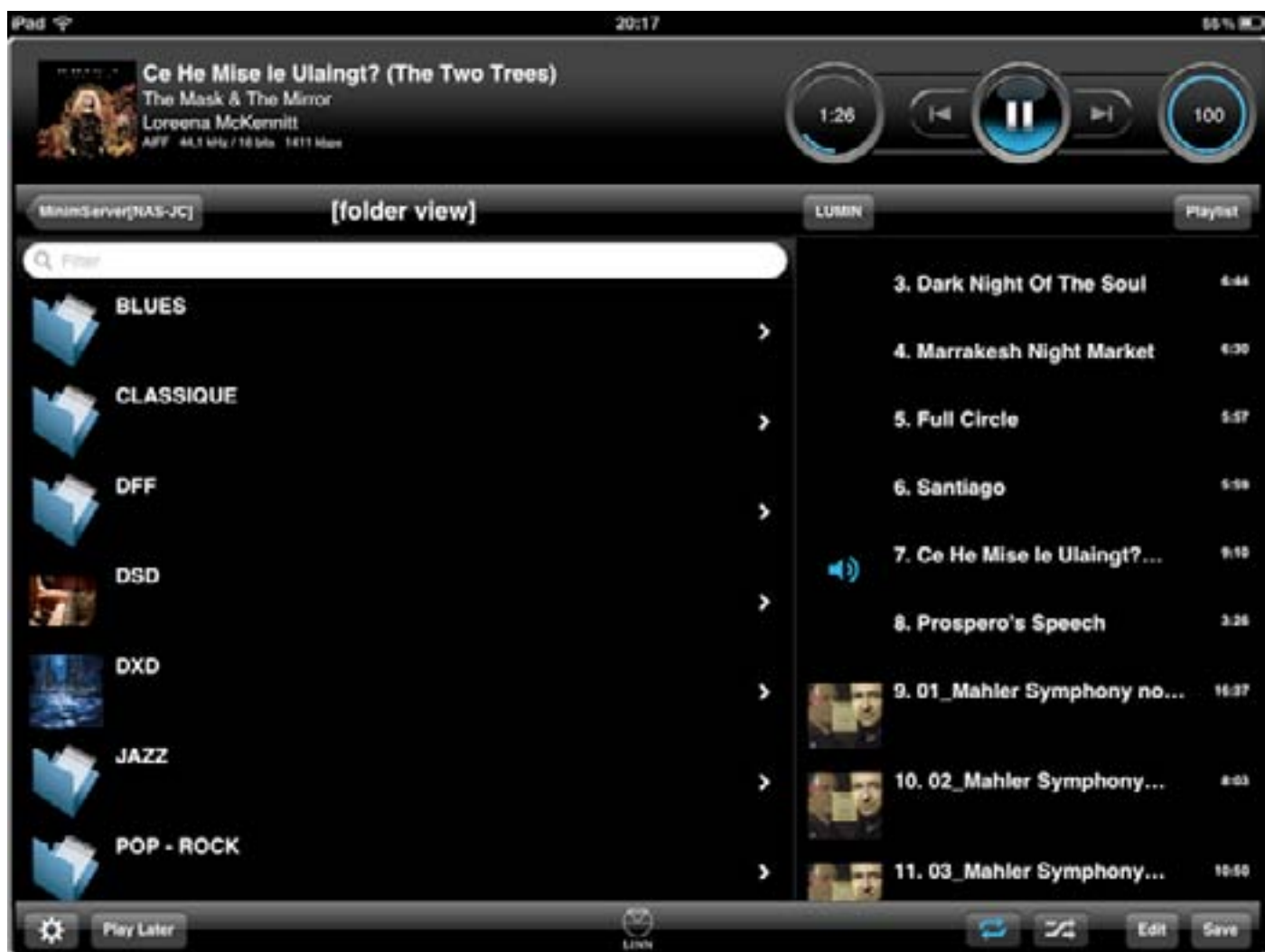
Bringing the Lumin into focus and considering pure DSD mother files, I was amazed by the fact that streaming DSD would so distinctly outclass spinning disc playback. Perhaps the primary reason is the niche status of SACD and the limited technical development for its playback compared to CD. Another possible reason is the extra DST unzip-on-the-fly process generating more jitter. The only sure thing is that reason and rationale are far from clear. You'll simply have to trust me when I state categorically that my Lumin loaner's DSD streaming trounced all renowned SACD players I still might have tried.



On Channel Classics' Mahler's Fourth, the second movement "In gemächlicher Bewegung, ohne Hast" was far more organic in streaming mode. The solo violin was both carnal and liquid and showed off astounding phrasing whilst preserving the music's ghostly character. I think most of the stunningly realistic nature of DSD streaming was due to the fact that various instruments were focused with such incredible precision. There no longer was the customary twin-layer effect of 'some performers in the back, the rest upfront'. There was outstanding seamlessness and continuity of staging. I would say that DSD streaming of genuine DSD-

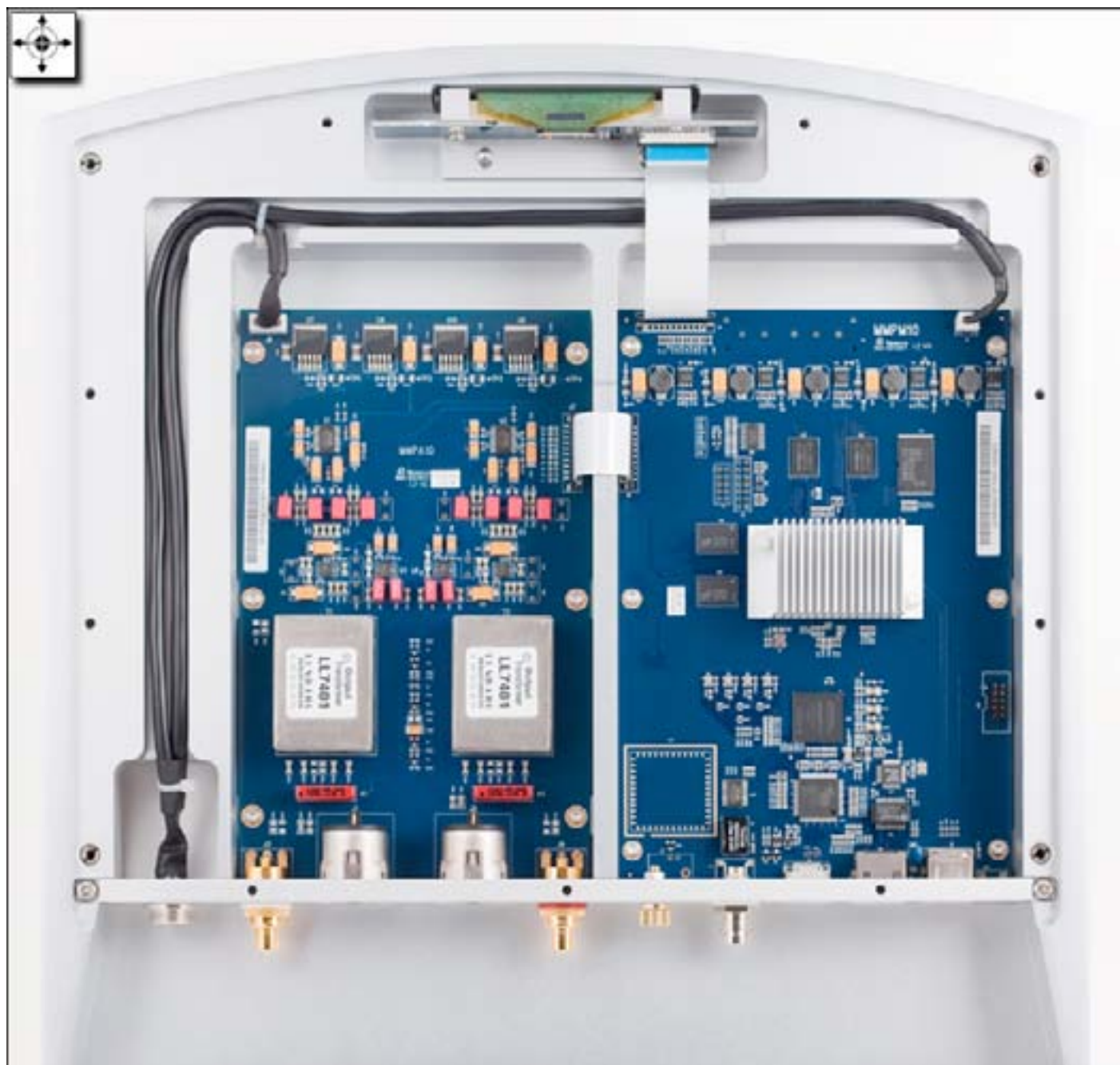
recorded files was so different from typical 24/96 or 24/192 PCM that comparison to the familiar Redbook standard no longer was a simple question of being softer, wider and more resolved. It was fundamentally different and far more realistic. It appeared to me as a new kind of threshold in sound reproduction. Of course the DSD recordings of Ivan Fischer's works are sterling examples of accuracy and the Grimm Audio DAC used by Channel Classics on the recording side must be credited in some way for these stunning results.

If the Lumin parted the high heavens with high-resolution DSD, it remained a top dog for Redbook. It in fact gifted me with the best sound I've yet experienced from any digital source. For CD it outclassed my Esoteric, my Jadis transport, the Aurender S10, any of my iMac/Macbook-based solutions and all the Vortexbox-based products I reviewed. In this more common territory of Redbook material, the Lumin played CD rips with the utmost clarity which didn't mean hyper-detailed via a boost in the upper or mid treble. The tonal balance of my Chinese loaner was close to perfection instead. The Lumin also delivered a liquid sound exempt from any harshness which wasn't always the case for the Aurender S10 or Linn streamers I heard in the past. It offered a fantastic level of detail with tone to die for. Despite its apparent neutrality, the Lumin was never anything but involving and lively.



Listening to the Concerto Italiano conducted by Rinaldo Alessandrini in "Tuma Partite, Sonate e Sinfonie", I was amazed by the effortlessly luxuriant string sounds. Generally this recording seems to be a bit forward and despite the overall quality not completely natural and quite exaggerated. With the Lumin its naturalness instantly returned. Violin attacks were fast and precise but with an overall feeling of quietness and pace which was previously missing. The full-bodied instruments seemed to breathe correctly and the soundstage was more extended in width and depth. On voices too the Lumin remained a most pleasing source. Listening to Canadian jazz singer Sophie Milman on Make someone happy, the naturalness of her powerful voice was impressive. Once more the Lumin managed the synthesis of micro detail by highlighting the smallest vocal inflections within overall spatial coherence and a stunningly seamless background. Against the Canadian girl's genuine qualities and especially her clear phrasing and effortless voice, the Lumin provided a very relaxed realistic backdrop.

Conclusion. This Chinese newcomer is set to radically alter the current hierarchy of dedicated audio computer solutions. It's the first of its kind that had me seriously contemplate to permanently switch to virtual media without any compromise in sound quality. The Lumin outclassed the very best CD/SACD transports where it could have safely stopped and grinned. But it pushed onwards and up by opening the doors to what for me was the most exciting audio experience I've yet had: DSD streaming? To complete the picture, the Chinese streamer also offers a very convenient iPad UPnP app that found itself highly appreciated by many diehard Linn users.



In short, this DSD streamer outclassed anything I've heard at home or beyond. Whilst I dislike such expressions, it proved to be a keen Linn killer. About 10 listeners who heard my loaner sold off their Linn streamers to buy the new kid in town. A few prerequisites like configuring a NAS with Miniserver are mandatory and will call for minimal IT skills from the installer or user. It's no harder than any other streamer setup except perhaps the Squeezebox which remains the king of easy. Beyond its outstanding sound quality, the Lumin also gets the most elevated marks for user-friendliness, aesthetics, versatility and evolutionary capacities – not bad for the maiden release from a rising Hong Kong company I'm sure we'll be hearing a lot more of in the near future! My experience with it became such a personal enjoyment that it proved impossible not to convert my loaner into my new digital reference. Considering the nearly unbelievable price/performance ratio, I give it a most enthusiastic award!



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LUMIN

The audiophile PCM/DSD streamer

2013

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