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he recent changes in music distribution have been nothing but revolutionary. Since the dawn of mechanical reproduction of sound we have always dealt with the physical media, first strip of paper, then a cylinder and a flat 78 rpm record, through vinyl Long Play, reel-to-reel and cassette tape, to the Compact Disc. Dozen other consumer and professional audio formats came and went along the way, never to be heard of again. Yet it is the CD that seems to have become the last link in this chain. Its success has not been and will certainly not be repeated by either DVD-A, SACD nor Blu-ray Audio. For many years to come, what will remain on the battlefield will be vinyl and – for some time – Compact Disc. The future, and for some already the present, is the music "cloud". An audio file.



However, disappearing of a well-rooted technology brings about a sort of accumulation of innovations that are expected to give it a second lease of life and delay its retirement. I have no idea what causes the "swan song" that is visible today in the case of the Compact Disc format. This is partly due to the desire to maintain revenues from patents in a particular technology or related to a given format. This means cutting the inflow of money to companies working on further innovations. It is the same with record pressing plants - when the demand for physical media decreases, a substantial part of their revenues will also disappear. I know that many of them, including those in Poland, are urgently looking for other sources of income. But perhaps that is the reason behind the real explosion of innovations related to the Compact Disc format. It's visible both on the "software" side, or CDs, and the hardware side, or CD players. I wrote about the former in my editorial to the November issue of "High Fidelity" (Audio Files - a wonderful new world, see HERE). The driving force behind those changes turn out to be Japanese companies, led by JVC Victor Company, Sony Music and Universal Music.

The first of them, aside from continued improvements to the XRCD, and now XRCD24 Super Analog (in the case of analog tape source) and Refined Digital (digital tape source), has come up with something that is currently taking the market by the storm and is used by both other companies: HR Cutting.

What I'm talking about are Polish bands and their recordings from the 1970s and early 1980s. I know them from the original vinyl LPs, and this is how I appropriated them. I am aware of their technical limitations, not helped by the quality of vinyl they were pressed on. Hence, their remastered digital editions seem to me more attractive than the original analog versions. Such is life. But even they carry the "original sin" not removed by the baptism carried out by the remastering team. Their sound is fairly shallow. This cannot be corrected by simply bumping up a part of the frequency band. The DAC from Mr. Kiuchi does it effortlessly each and every time. Its sound is very resolved, and it performs a kind of emphasizing of individual mix components that are present in the relevant frequency range. It is therefore not simply a heavier, darker sound. It is more vivid, more natural and denser, but not with the density of syrup but rather of good port wine. And it goes straight to your head just as easily.

This kind of bottom end shaping makes the recordings sound quite serious, in a way that is engaging and does not allow the listener to fall asleep. An attempt to read something while the Reimyo is playing will quickly make us realize that although we are still holding a book (newspaper, magazine, ebook reader, etc.), we do not really see the letters anymore. We're listening.

Instruments' bodies are shaped almost perversely, thickening right in front of us, putting on a body that begs to be touched. I'd never before heard such nice sounding guitars by Hołdys or Sygitowicz, nor had been so impressed by Komendarek's keyboards.

The vast quality difference I'm talking about, which affects not only Polish albums – I just referred to them as an extreme example of how their sound can be improved, is best shown by the comparison of Bach's Violin Concertos under the direction of Yehudi Menuhin. On the one side, let's put the box with an analog remaster produced by Mr. Kiuchi (released by Hi-Q Records), and on the other side any EMI digital remaster. I have a 1995 double CD version with the first three Concertos, released by EMI in the Seraphim series. Although once I was not particularly bothered by its sound, I cannot listen to it anymore. The reason is that I heard the XRCD24 version, simply brilliant in its depth, density and instruments' presence. The old remaster sounds dead in comparison. I am fairly sure that the majority of digital sources will sound just like that when pitted against the Reimyo.



As we know, HR Cutting (High Resolution Cutting Process) is a new invention owned by JVC, it seems. It is a modified method of cutting the glass matrix, which is used in the pressing plant for the production of CDs. Ordinary music companies send the material to the pressing plant in the same format it is to be cut; in other words 16-bit, 44.1 kHz. It can be provided on a CD-R, DAT, or sent over the Internet. The material is then encoded and laser cut in a glass matrix. JVC modified the process many years ago to minimize the number of actions (steps) that take place between the music material leaving the mastering studio and the finished CD. The material is first digitized (in the case of analog tape) or reclocked and upsampled (digital tape). Then it is recorded on Sony Magneto Optical (MO) Disc with the 24-bit resolution (in the case XRCD24; it was 20-bit with the XRCD and XRCD2). The sampling rate is 88.2 kHz, which is twice that of the CD. Conversion to 16/44.1 took place just before burning the disc and was made "on the fly". These CDs bear the XRCD, XRCD2 and finally XRCD24 logo, and the technique has been called K2.

HR Cutting seems to be its further development. The material delivered to the pressing plant has 24-bit resolution and the sampling frequency is 176.4 kHz, which is four times higher than on the CD. Conversion to 16/44.1 and signal encoding is made "on the fly". There is, however, an important difference - the K2 process was used exclusively by JVC, and the discs were only pressed in its factory in Yokohama. The discs that use HR Cutting are also pressed by other companies, not only JVC. Sony does it on CDs and Universal Music on SHM-CDs and Platinum SHM-CDs. It turns out that thanks to these efforts even such a limited format as the Compact Disc can be further improved.

But to take advantage of what the companies "squeezed out" of the Red Book standard defining the Compact Disc format, it must be properly played back. And here the hard part begins, which is hardware related. "All the real CD players are gone", to paraphrase a classic Mel Cooleys' song. Well, not entirely, given the example of the DAP-999EX Limited D/A converter from Japanese Reimyo under review today. They do, however, slowly become a disappearing species. That alone should be enough to include it – incidentally – in the Red Book of Endangered Species. Mr. Kiuchi, the owner of Reimyo (and of Hamonix, Bravo!, and Enacom; co-originator and coowner of XRCD patents), mentally a Samurai and the master of kendo by choice, believes that it is worth doing it. His system, which consists of the CDP-777 transport and DAP-999EX Limited DAC is one of the best products of this type in the world. The transport uses the flagship Philips CD Pro-2M mechanism that now falls out of production, and the DAC employs the K2 processor Mr. Kiuchi is particularly attached to, both on the recording and mastering side. Once used exclusively by JVC, even now it is found in just a few audio products, all hailing from Japan. The Limited DAC sports its latest version. The DAC has one task: to decode the signal from CDs. Its input resolution is 24 bits but its upper sampling frequency is

However, one should bear in mind those sonic characteristics that may raise doubts. The soundstage depth is not the biggest I have heard. You may not hear it – I actually doubt anybody can realize that without having a top Lektor from Ancient Audio or a flagship dCS for direct comparison. The reason is that the instruments seem absolutely three-dimensional and presented here and now. Consequently, we just don't care so much about what's behind them. There's a lot going on there, too, but it is secondary compared to the foreground. The vocals were charming and the guitars were sending shivers down my spine for a reason. The sound was extremely vivid, so you can't talk about a flat perspective. It's just not the type of presentation that would open up a very deep space behind the speakers. The main idea here is, as it seems to me, the complete opposite. It's about making the act of listening to music more intimate. We're meant to feel as if we were in the middle of it all, engulfed in a bubble of dense sound. What's right in front of us is the most important. And that seems almost real.

It's worth noticing the behavior of the 4-5 kHz range. When Gahan was taking a breath, the lower range was slightly emphasized - I've mentioned this before - but the "throat" related elements also seemed stronger. Even the cymbals had part of their range slightly accented. So did the brass section. And the violins. It is part of the total sonic package I've mentioned previously, rather than a problem to be solved. But you hear it as a "turning up" of or "pushing the pedal down" on the sound even harder. If this accent fell somewhere lower, it could be referred to as emphasizing the sibilants. The DAP sounds sweet and rather warm, and doesn't even know what "emphasized sibilants" are. But it knows perfectly what to do to make the instruments seem more natural than live, and even more tangible than at a concert. But it does it through turning up and boosting this range. The sound is thus open, powerful and warm at the same time, as if the output stage was tube rather than solid state based.

Holding something like the DAP-999EX Limited in your hand, it's hard to stop yourself from conducting tests and experiments. The unit practically provokes you to auditions, promising to submerge you in the presentation and realistically fulfilling this promise. It does it not only thanks to its fantastic resolution, meatiness, density, fluidity and coherence, but also through several processes that turn even the most boring stuff into an exciting spectacle.

The bass is strong and filled with harmonics; it's internally coherent which makes it saturated. The entire region up to the lower midrange seems more powerful. And I have no doubts about that. But it is not a matter of simply raising the level of the entire range, but has to do with adding energy to individual instruments – it's not the same thing. To verify this difference I listened to several albums which originally sound low and dense. I couldn't stop myself from

## limited to 48 kHz.

I do not believe in coincidences. Hence, when I found out about the modification, I was sure that it was directly related to HR Cutting. Previously, the processor, as it is described in the company literature, interpolated the 16-bit signal to 24-bit and upsampled it to 88.2 kHz (as with the XRCD24). Now it interpolates it to 24-bit (no change here), but upsamples it to 176.4 kHz. While not mentioned explicitly, it is exactly the same process that is used in HR Cutting, where the material delivered from the mastering studio has a lower sampling rate. In a surprisingly detailed technical description that we find in the booklet accompanying the album II Trillo del Diavolo by Tartini, Veracini, Mossi and Bonporti (Enrico Onofri, Imaginarum Ensemble) we read that the material was recorded in Italy in 24/96. After arriving at the Japanese pressing plant it was first upsampled to 176.4 kHz in a k2HR device to be then encoded in 16/44.1 and pressed on the CD. That is exactly the same thing we get, in a consumer form, with the Limited DAC version from Mr. Kiuchi.

<u>A few words with...</u> Kazuo Kiuchi, Combak Corporation - owner



Wojciech Pacuła: How does the Limited version differ from the previous one?

Kazuo Kiuchi: The Limited upsamples the input signal twice higher than the older DAC version - we now have 176.4 kHz instead of 88.2 kHz. It does it in a smooth manner using newer technology. We do not pit the old and the new version against each other, as they are completely different devices.

How did you come across the K2 converter and become its supporter?

The K2 processor was developed on the basis of musical signal processing in the JVC recording studio laboratory and not in the laboratories of electronic companies and is, in my opinion, the most amazing digital processor. To get out of this processor as much music as possible, we have employed the resonance control technology used in Harmonix products.

Please tell me something about the Hi-Q project, in which you are involved.

I am personally responsible for the music production released on XRCD24 Hi-Q Records, ordered by Red River Export Company. We also help them with sales, using our partners around the world.

As we all know, Philips stopped the production of the

what could only be compared to the results of homeopathic healing methods. As you can read in the company literature, DAP's digital filters, including the K2, convert the 16-bit input signal to 24 bits and upsample it from 44.1 kHz to 176.4 kHz. It so happens that the signal fed to the HR Cutting glass matrix machine has the exact same parameters. From the technical point of view this is irrelevant, because the signal is converted to 16/44.1 right before the laser either way, and the DAC receives 16/44.1 signal from the CD transport. But there is something about the sound of HR Cutting CDs that works really well with the Reimyo. It is actually a very similar set of characteristics. Density, tangibility, resonance and resolution. Regardless of whether it is classical music on a regular CD (II Trillo del Diavolo), rock on a Platinum SHM-CD (Dire Straits and The Rolling Stones) or, again, classical music on an XRCD24 (Okihiko Sugano Record Collection box). What they all have in common is how their sound becomes fuller and denser. If we dealt here with bumping up of a particular subrange, whether on the recording's or the DAC's side, they would be superimposed on each other and emphasized. The Reimyo does something completely different: it enters into the sound even deeper, even fuller, and in an even tastier way.

## Conclusion

Those seeking precision in the source sound will be disappointed, though. At least in the following understanding: purity + attack + selectivity. That is something the DAP Limited will not guarantee. It digs deep, but it does that at the cost of the above. Its frequency response is shaped "with a certain idea" and it emphasizes the region between the bass and midrange and a part of midrange above, where the cymbals' range begins. The latter lights up the sound a bit, but it is evidently a "treatment".

However, I think that anyone who has ever heard a high-end component from Japan, be that a Kondo or a Reimyo, knows that they are from an entirely different world. And 'out of this world' is the best way to describe the sound of the new DAC from Kiuchi-san, the Samurai. I best learned what it can do with the recordings during my headphone audition, with the Bakoon HPA-21 amplifier and the HiFiMAN HE-6 magnetostatic headphones that had not sounded like that ever before. It was a top high-end headphone system, which had both the meatiness of dynamic cans, and the full body and speed of electrostats. With my Harbeths, the Reimyo unfurled the kind of things I rarely ever experienced at home. Never before had Depeche Mode and Polish albums from the 1970s and 1980s sounded so well at my place. They may not have had such an accurate texture as on my Lektor Air, or such a deep soundstage. But this offer is as attractive as a credit card associated with an account that is always full to the brim. And how can you not use it?

## TESTING METHODOLOGY

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Preparing for the DAP review, I tried out several transports to determine whether they are really so much different from each other as I remembered it. An additional incentive for that was my conversation with Jarek Waszczyszyn (Ancient Audio) who talked about his attempts to use ordinary computer CD drives, similar to what MSB Technology does. While I expected that, the results surpassed even my wildest expectations. For comparison I used the CDP-777 Reimyo transport, the Ancient Audio Lektor AIR V-edition, the Audio Research Reference CD9 (all sporting the Philips CD Pro-2M), the Naim CDX2 and two multimedia players – the Asus BDS-700 Blu-ray player and the Dune HD Max file/Blu-ray player. The differences between them were huge! The Dune disgraced itself in

CD Pro-2M transport – how does your company deal with that?

When it comes to servicing our players and transports, I would like to reassure all our customers that we have accumulated spare parts for many, many years to come. As to whether the CDT-777 will still be in production, we have the same situation: we have purchased enough CD Pro-2M drives to continue selling the CDT-777 for a long time.



SOUND

Albums auditioned during this review

- Okihiko Sugano Record Collection, Victor Edition/Trio Edition, Audio Meister XRCG-30025-8, 4 x XRCD24 [2012];
- Alan Parsons Project, I Robot, Arista/Sony Music Japan SICP 30168, "Legacy Edition", 2 x BSCD2 (1977/2013).
- Antonio Caldara, Maddalena ai piedi di Cristo, René Jacobs, Schola Cantorum Basiliensis, Harmonia Mundi France HMC 905222, 2 x CD (1996/2002).
- Bach, Violin Concertos, Yehudi Menuhin, EMI/Hi-Q Records HIQXRCD9, XRCD24, CD (1960/2013).
- Bach, Violin Concertos. Double Concerto, Yehudi Menuhin, EMI/Seraphim 5685172, 2 x CD (1960 | 1961 | 1962/1995).
- Black Sabbath, 13, Vertigo/Universal Music LLC (Japan) UICN-1034/5, 2 x SHM-CD (2013).
- Depeche Mode, Should Be Higher, Columbia Records 758322, SP CD (2013).
- Dire Straits, Dire Straits, Vertigo/Universal Music LLC (Japan) UICY-40008, Platinum SHM-CD (1978/2013).
- Exodus, The Most Beautiful Dream. Anthology 1977-1985, Polskie Nagrania Muza/Metal Mind Productions MMP 5CD BOX 002, "No. 0020", 5 x CD (1980 | 1982/2006).
- Happy The Man, 3rd "Better late...", Belle 132047, SHM-CD (1983/2012).
- Miles Davis, The Complete Birth of the Cool, Capitol Jazz/EMI 4945502, CD (1957/1998).
- · Nat "King" Cole, Welcome to the Club,

this role right at the outset. The Asus coped well, but it was obvious that it makes no sense to go with anything more than a \$700 DAC to improve its sound. The Lektor and the CD9 fared much better, beaten by a whisker by the CDX2 due to its better bass. However, I had no doubts that the CDT-777 was the only source that could be pitted against the DAP-999EX Limited. Only the most expensive CEC TL0X might have shown something equally good.

I used the Harmonix HS-102 digital interconnect to connect the transports to the DAP and the Harmonix X-DC350M2R Improved Version power cords throughout. The CDP-777 transport has so widely spaced feet that I could not set it up on the Acoustic Revive RAF-48H platform and it sat directly on the decoupled shelf of the Finite Elemente Pagode Edition rack. The platform was under the DAC that was additionally seated on three Franc Audio Accessories Ceramic Disc Classic feet.

The audition had the character of an A/B comparison with the A and B known. Music samples were 2 minutes long. Whole albums were also auditioned.



Mr. Kazuo Kiuchi is a supporter of tube designs, keen to use socalled audio accessories – anti-vibration spacers, racks, cables, mains-related components and others. However, looking at the DAP-999EX Limited DAC, it would be hard to suspect him of that. Right from the beginning, one thing is clear, though: the K2 processor is for him the central component of this unit.

The DAC is not really big. Its low front panel sports four buttons to select one of the four inputs, AES/EBU, RCA, BNC or Toslink. The choice is indicated by a green LED above the selected button. To their left are additional LEDs indicating the sampling frequency (48 kHz, 44.1 kHz, 32 kHz), the transport lock, possible lock error and deemphasis. The latter is virtually unheard of anymore, although DACs have it installed as a standard. I found literally a couple CDs from the 1980s at home, which require it.

The rear panel is a reflection of what we see in the front, with the central spot occupied by four digital inputs. Next to them are two pairs of analog outputs, unbalanced RCAs and balanced XLRs. The manufacturer does not indicate which XLR pin is 'hot'. In order to use it both with 'European' (now also American) and 'Japanese' (and formerly American) cables, the rear panel sports a phase switch – 0/180°. One needs to pay attention to another thing – the DAC output voltage is significantly higher than the CD standard: 2.55 V instead of 2 V (on RCA outputs). Consequently, it will play much louder than other players and this needs to be corrected during auditions by turning down the preamplifier volume. The only on/off switch is on the rear panel, so apparently the DAC should remain powered on. The converter is supplied with the Harmonix X-DC/1.5 m power cord. The unit is housed in a solid aluminum enclosure that features specially designed feet.

We can have a peek of what to expect inside, looking at a block diagram attached (in accordance with the best practices of Japanese manufacturers) to the manual. While my Limited arrived with a manual from the previous version, it still proved valid in the fundamental areas. The signal from the inputs is first sent to the digital receiver, and from there to the LSI K2 DSP, where it is converted from 16/44.1 to 24/176.4. That is a novelty as the previously used K2 chip upsampled the signal "only" to 88.2 kHz. The basic method, however, remained unchanged – it is still synchronous upsampling. The next step is a system of digital filters with 4x oversampling. This section is coupled to the DAC chips via

Columbia/Audio Fidelity AFZ 153, SACD/CD (1959/2013).

- Ornette Coleman, The Shape of Jazz to Come, Atlantic Records/ORG Music ORGM-1081, SACD/CD (1959/2013).
- Perfect, Perfect, Polskie Nagrania Muza/Polskie Radio PRCD1596, CD (1981/2013).
- Siekiera, "Nowa Aleksandria", Tonpress/MTJ cd 90241, 2 x CD (1986/2012).
- Tartini, Veracini, Mossi, Bonporti, Il Trillo del Diavolo, Enrico Onofri, Imaginarum Ensemble, Anchor Records UZCL-1019, "HR Cutting", CD (2013).
- The Enid, In the Region of the Summer Stars, EMI/Belle 132084, SHM-CD (1976/2013).

Japanese versions of CDs & SACDs available at



You can see an iron consequence in what Mr. Kiuchi does. What I mean is the sound of his signed products and the discs that he produces. And it doesn't matter whether we look at components from two or five years ago, or the latest ones. The changes are obvious and I remember clearly what the previous version of the DAP-999EX sounded like. But all the new stuff falls into a goal which has been - or so I think - set long ago, when the owner of Reimyo started working with audio devices. The most important characteristic of the reviewed converter is the density and depth of sound. If I were to outline a path whose one direction is Reimyo, the other one would be Audionet, Sony and older components from dCS. In a team with DAP I'd group up units from Audio Research, Jadis, emm Labs, and Vitus Audio. At a closer look, this kind of generalization should be of course discarded but it's useful at first glance. Playing any album on the Reimyo source you'll experience a déjà vu. But only if you've previously heard some top turntables. If yes, you'll quickly make a connection with what you've heard some time in the past: the Japanese DAC sounds in a way that we usually associate with a thick, saturated turntable sound, like that of the Avid HiFi designs. You can't mistake this for anything else, because it's not the result of suggesting certain sonic characteristics but rather a consequent developing of the idea of presenting music on an emotional level.

Even this brief introduction should be enough to figure out that we are not talking here about a "neutral" sound – far from it! The DAP has a clearly shaped sound that evidently shies away from such terms as "absent", "hidden" or "accurateness". While all these things are good and valuable in themselves, they are usually poorly used in audio. Becoming a goal in itself, they distort the presentation, thus separating us from the "suspension of disbelief" and participation in music. And that is unforgivable.

In his brands, including Reimyo, Mr. Kiuchi offers a complete change of perspective. The DAP Limited sounds lush and incredibly tangible, compared with the previous generation of products from this company and from other manufacturers in general. It treats all kinds of music material in a similar way, regardless of what we currently play. For example, we spin Depeche Mode Goodnight Lovers single and play isan Falling Leaf Mix from it, and we are literally blown away by how brilliantly Gahan's voice can be presented. Soon we start looking for other vocal oriented CDs (even though Depeche Mode is not a "vocal" band, i.e. all its musical optocouplers to isolate the input from the DACs. The latter are 24bit units with 8-times oversampling. They are followed by low-pass analog filters and gain and buffering circuits. And the output.



The PCB with electronic components occupies the entire bottom of the unit. The "Digital Audio Processor" designation used by the manufacturer seems to be spot on in this case. Almost everything we can see here has been taken directly from the previous version. But we can also spot a change - and it is crucial. Before we get to it, the signal first gets to the digital receiver - a venerable Yamaha YM3436D chip, valued by manufacturers for its low jitter and distortion resistance. The chip accepts the signal up to 24 bits, but its sampling frequency is limited to 48 kHz. The receiver is isolated from the input by impedance matching transformers. In the previous version the signal then was sent to the K2 JCV8009 chip soldered right next to the receiver, which handled the interpolation and 16-bit to 24-bit conversion and upsampling to 88.2 kHz. Now it is different. In the center of the main PCB, in what looks like dedicated spot, there is mounted another PCB with logic circuits. At the input we see the same K2 JCV8009 chip (the one on the main board appears to be inactive), here surrounded by eight CMOS gates working - I presume - as part of the upsampling circuit and digital filters. The NPC digital filter used previously appears to be inactive. The board also features an excellent master clock, far better than before, with an even better power supply. Before leaving the board, the signal goes to digital filter - another mature but excellent circuit: Burr-Brown DF1706. It is known for being used with the Burr Brown PCM1704 D/A converters (long out of production). We can see them on the main circuit board, at the output, and what's important is that they are paired. They are surrounded by excellent Sanyo capacitors (purple), which are also used in my Lektor AIR. I/U conversion is handled by the OPA627 BB, and low-pass filters and gain stage is based on the standard JRC 5534 opamps. There are two large polypropylene capacitors that are not in the signal path, though. The section with the DAC chips is isolated from the K2 circuit via optoelectronic components. The output connectors are not gold-plated.

The power supply section is truly outstanding. The mains socket sports filters from 2Pi and Enacom, another Mr. Kiuchi's company. Other components are a very good fuse from HiFi-Tuning and two elegant C-core transformers. They feature five secondary windings (separate for the analog section, D/A analog and digital sections, PLL, and digital section). There are a lot of filtering capacitors and precision voltage regulators. It is a professional device, using many long-out-of-production NOS components. elements are balanced) and each time absorb with our entire being everything that is generated by the speakers. What we hear is "from the gut", meaty, and somewhat similar to the sound of the Lumïn network music player. But – to be honest – the Reimyo system does it even better. Despite the fact that we're talking about an outdated 16-bit and 44.1 kHz standard. I referred to Depeche Mode because I longed for years to hear something like that, and even with the original vinyl pressings the vocals are thinned out, emaciated and hidden deep in the mix. The DAP clearly modifies the sound, but it does it in a way that sends shivers down my spine. For I have not yet heard SUCH Gahan.



As it seems, it's all about emphasizing the mid and upper bass and the lower part of midrange, where the male vocals stop operating. This is a clear departure from neutrality, but it is done in good faith and carried out with success. And it is the winners that write the history, isn't it? Anyway, the point is not about simply emphasizing a part of the frequency band. That can be as well done in a \$300 player or amplifier, but without the slightest chance of getting the same result. The DAP does it a bit like it were remastering the material, as if it were a tube device used to redo a multi-track master tape, maintaining the right balance between the vocalist and the instruments.

Even this, however, would be only a "trick", not a "strategy". The Reimyo does it deliberately and in depth, without simply skimming the surface only to impress us. We will notice a similar effect with all other instruments that frequently sound too thin or too light, like B3 Hammond Organs, electric guitars, and analog synthesizers. I could carry on with the DM example, as their last three albums have been a brilliant display of using the latter instruments, but what perhaps burned even more vividly in my mind were the remasters of the debut albums by Perfect and Budka Suflera as well as Exodus' Supernova.

## **Technical Specifications (according to the manufacturer)**

Input Quantization: 16-bit Sampling Frequency: 48 kHz, 44.1 kHz, 32 kHz, auto-switching **Digital inputs:** 1 x AES/EBU/Input Impedance: 110 Ω 1 x BNC/Input Impedance: 75 Ω 1 x RCA/Input Impedance: 75 Ω 1 x Toslink (Optical) Digital Processing: K2 Technology (K2 LSI, 16-24bit) D/A Converter: 24-bit, 16-time oversampling Output voltage: XLR - 5.1 Vrms RCA - 2.55 Vrms Frequency Response: DC – 20kHz (+/-0.5 dB) S/N Ratio: > 114 dB (IHF-A) Dynamic Range: > 100 dB Channel Separation: > 105 dB (1 kHz) Linearity: +/-0.5 dB (+10 dBm ~ 90 dBm) 1 kHz IHF-A THD: > 0.003% (1 kHz Vo = F / S) (30 kHz LPF on) Power Consumption: 15 W Dimensions: 430(W) x 44(H) x 337(D) mm Weight: 5.5 kg Standard Accessory: Harmonix X-DC2 / 1.5 m power cord

Gallery



Galeria















