AUDIO REVIEWS
May 2012

Blue Horizon Noise Analyzer

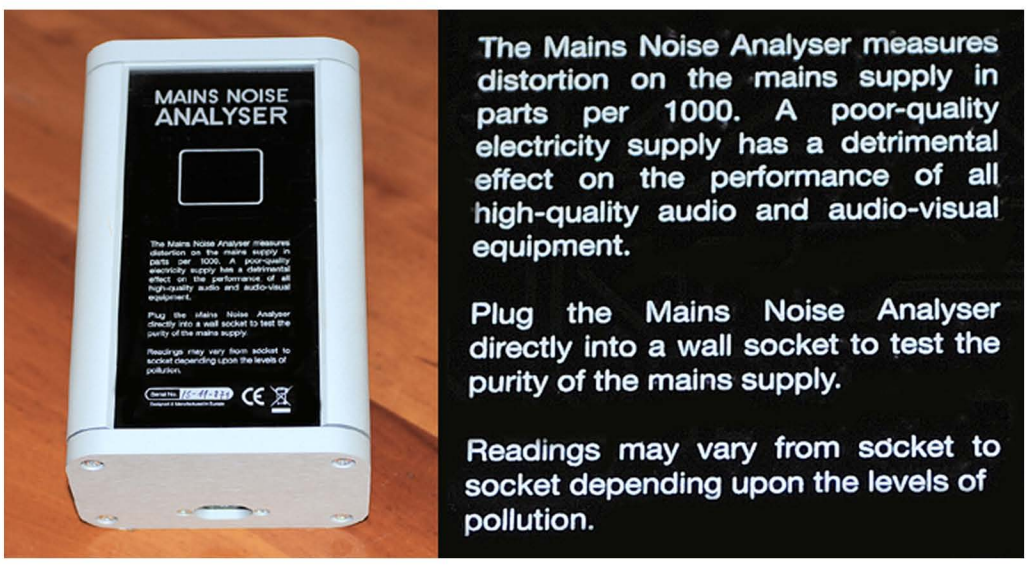
Country of Origin: Great Britain

Reviewer:	Marja & Henk
Sources:	PS Audio PWT; PS Audio PWD; Dr. Feickert Blackbird/Zu DL-103
Streaming sources:	XXHighEnd; iTunes
Preamp/integrated/power:	Tri TRV EQ3SE phonostage; Audio Note Meishu with WE 300B (or AVVT, JJ, KR Audio 300B output tubes); Yarland FV 34 CIIISA; Qables iQube V1; Devialet D-Premier;
Speakers:	Avantgarde Acoustic Duo Omega; Arcadian Audio Pnoe; Vaessen Aquarius
Cables:	complete loom of ASI LiveLine cables; full loom of Crystal Cable cables; Nanotec Golden Strada #79 nano 3; Nanotec Golden Strada #79; Nanotec Golden Strada #201
Power line conditioning:	Omtec Power Controllers; PS Audio Powerplant Premier; PS Audio Humbuster III; Isotek Syncro [in for review]
Equipment racks:	ASI amplifier and TT shelf
Sundry accessories:	Furutech DeMag; ClearAudio Double Matrix; Nanotec Nespa #1; Exact Audio Copy software; iPod; wood, brass, ceramic and aluminum cones and pyramids; Shakti Stones; Manley Skipjack
Room treatment:	Acoustic System International resonators, sugar cubes, diffusers
Room size:	downstairs ca 7 x 5m with a ceiling height of 3.50m, brick walls and concrete floor, upstairs ca. 14.50 x 7.50m with a ceiling height of 3.50m, brick walls, wooden flooring.
Price of review item:	€650

Perhaps little is as controversial in audio land as power accessories. Multiple visions on proper power delivery each come with their own polemic as though it were a religion. And perhaps they are religious visions. Most of them are based on shielding, filtering, secret nano ingredients or quantum modes of operation. And of course there's a wide variety of mixes of these ingredients. The results are thick, thicker and completely sick cables with price tags to match. The other end of the spectrum is represented but the thin - thinner - thinnest maxim. Heathens not in this church believe in $1 cables. When was a ticket to hell this cheap?

Aside from cables there are powe r strips active or passive. They come in either separate boxes or as mains cables with growths. Such devices can filter, regenerate or both. Bad things are filtered out, pure 'clean' power remains. Unstable wall voltages can be regenerated by dedicated one-tone (50 or 60Hz) amplifiers known as power regenerators.

In general the music lover is told that whatever is output from the wall is of inferior quality for her precious audio gear. This inferior power needs to be filtered, regenerated and carefully transported to the audio device over the last meter. Indeed the music from the speakers is nothing but a modulated mains signal. That mains signal then should be as good as possible. On its way from the power plant the signal gets polluted by Satan knows what. Late at night music sounds so much better, doesn't it? That's because there's less pollution. Or so we're told. It seems like an airtight argument.



So we faithfully buy into this rationale. We get ourselves a nice regenerator, then spend a small fortune on nice cables. And voilà, the music really does sound better. Details are less muffled by noise, transients are perkier. Even though the investment pays off aurally, questions remain. What really made that difference? And is more achievable?

At the last Milan show we met with IsoTek's Keith Martin. We had some tea and lunch and as a result of various conversations were eventually sent a surprise package with some of his latest products. Next to IsoTek Keith also runs Blue Horizon. The former focuses on power products, the latter on more general audio accessories. In our package we found -

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among other things we will report on separately - a so - called Mains Noise Analyser under the Blue Horizon brand. A clear aluminum casing of 17 x 10 x 7cm has a black semi - translucent fascia with a 3 x 2.5cm window for an LCD display. The only connection to the outside world is a C2 shotgun connector. Use is as simple as blinking an eye. Plug the provided mains cable into a wall or other outlet. Then read the number displayed on the small screen and listen to the noise emitting from the small single driver firing out the back of the device.

The display goes from 000 to 999. From 000 to 200 green lines above and below the digits indicate the noise level from good to fair. 200 to 400 gets yellow lines for just acceptable noise levels. Above this level the lines get red for poor to horrible AC line noise. The speaker adds an additional and unexpected indicator of mains quality. We encountered slow ticks, low-frequency brown noise, loud white noise and - hold on to your berets - radio reception of various Christian stations! Hey, we did say this subject bordered on the religious.

Those familiar with the Audio Prism Noise Sniffer will spot a resemblance to the Noise Analyser though the Blue Horizon adds the numerical output which makes the judging and comparing process a bit easier. It does however lack the volume attenuation possible with the Noise Sniffer.

Keith Martin explains: "In general the Noise Analyser analyses all frequencies found on the mains, then filters out the main 50Hz sine. All other frequencies detected are displayed in parts per 1000 as a proportion of the mains and amplified for audible output. Using this promillage, a reading of 500 is thus proportional to 50% unwanted frequencies. The Analyser is not a spectrum analyzer. By comparison it is far more simple. It does however put into context the ever growing problem with our power lines around our homes. There we have two types of mains noise. Common mode is usually referred to as RFI and differential mode is created when components draw power."

With our new loaner toy the first thing we did was of course run around our house and plug its power cord into any a vailable outlet. The outcome was a real shocker. We'd measured some of these outlets earlier with a simple Fluke meter and found that voltage was quite stable but had some DC riding along. This DC or zero offset will cause some transformers to vibrate and to emit direct noise; and cause additional noise from microphonic components like certain tubes. Hence we have a PS Audio Humbuster on hand to filter out that DC component whenever necessary. With the visual and aural output from the new analyzer things now looked pretty nasty.

We found an average reading of 615 on the wall outlets plus many radio stations. These radio stations were mostly Christian sorts of (m)utterings. That wasn't surprising. We live in the Dutch Bible Belt after all. An Internet search showed that they all occupy the AM band. Whether these radio stations are of the pirate variety we don't know - yet - but we counted at least 5 different station which at times interfered with each other.

Bottom line?

The power in our house was far from free from unwanted artifacts and our installed power-line wiring inside the walls must act as an effective antenna.

To assess this mains noise further we visited our neighbor who is a trance and dance DJ with his own home recording studio. We plugged the Noise Analyser into his sockets. Not only to our but also his regret we got very high readings but no radio - and that even with wall sockets from his supposedly 'clean' groups for the studio. Later we would get more insight into various causes.

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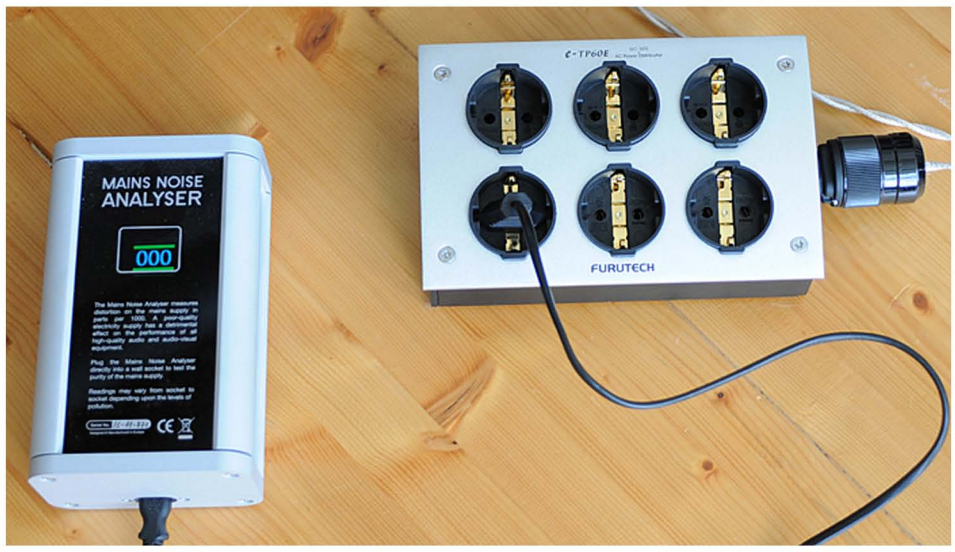
Still surprised we continued the plug'n'play session with our own audio setup. Here we have a PS Audio PPP regenerator. When we plugged the Noise Analyser into one of its outlets, we got a 000 reading. No noise or radio at all. This thing works great. That was interesting too as the PPP is not advertised as a power filter, just a regenerator. Somewhere along the line there must be a filtering stage. We suggest - but other opinions are welcome - that it has to do with the last stage. This is a stepup transformer since the PPP was initially built for the 110V US market but we needed 230V.

During our Blue Horizon experiments we had a visitor who brought along his new PS Audio P10 power regenerator. Curious as we are we of course treated the P10 to an analysis. Guess what? Noise and radio reception were our rewards. The P10 contains no line filtering. For many very enthusiastic owners of the P10 - who even traded their PPP in for it - this lack of filtering apparently is no problem.

Still curious we now cascaded the P10 behind the PPP from one of the PPP's outlets. All remaining free outlets on the PPP continued to show 000 and were silent. All outlets on the P10 now showed readings around 280 and there was white noise though no radio.

In a follow-up email exchange with PS Audio's Paul McGowan we tried to get these measurements explained. Apart from reassurances that the P10 does not filter in any way, the fact that all of a sudden there was high - frequency noise - that is noise above 60Hz - could not be explained. Somewhere the P10 must generate that noise (or act as its own antenna to receive it past its input which we knew to be perfectly clean). Here we have to emphasize that just like the PPP the P10 is not intended or advertised as a filter.



Logique, n'est pas?

Enter the Blue Horizon Noise Analyser. The output from the PPP was picture - perfect clean. So was the output from any socket on a Furutech passive TP60E power strip. We are supposed to know that dimmers and switching power supplies are evil AC power polluters. Here was a chance to catch them in flagrante. First we used a Hypex Ncore 1200-based power amplifier, a commercial evaluation unit with a switching PSU. Connected with a highly shielded Crystal Cable power cable, switched on the Ncore made the analyzer go to 038 whilst emitting a high - pitched sound. A spectrum analyzer on an iPad - we kept on analyzing - showed this frequency burst to sit around 7kHz. Swapping out the Ncore amp for a dimmer on a 300 - watt halogen bulb, the reading went down to 003 without sound, proof that not all dimmers are noisy. This friendly dimmer was a transformer-based model that's also mechanically quiet.

With just a PS Audio PWT CD transport on the power strip, the reading was 0000 without sound. The Devialet D-Premier with its switched PSU and loads of high - frequent parts inside caused a low 037 in standby

A major benefit of the P10 is its number of output sockets also in the EU version. In contrast the European version of the PPP is limited to 5 outlets, insufficient for our purposes. What to do? Add a power distributor. Cleaned - up power in, multiple clean power lines out.

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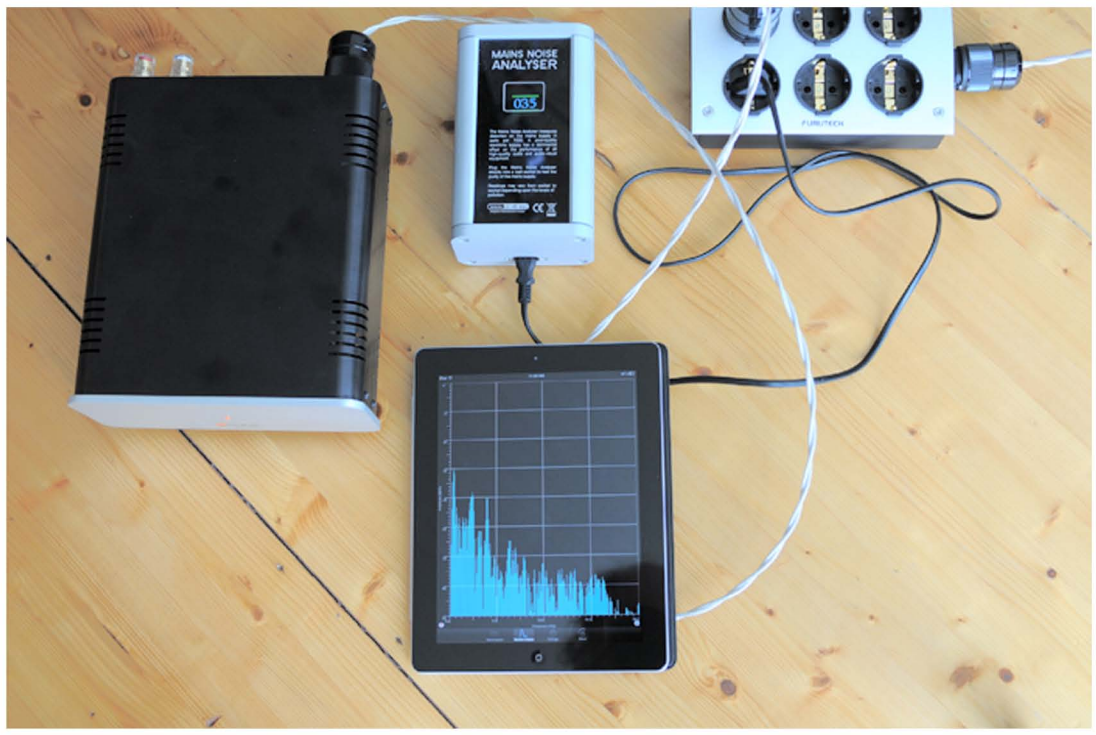
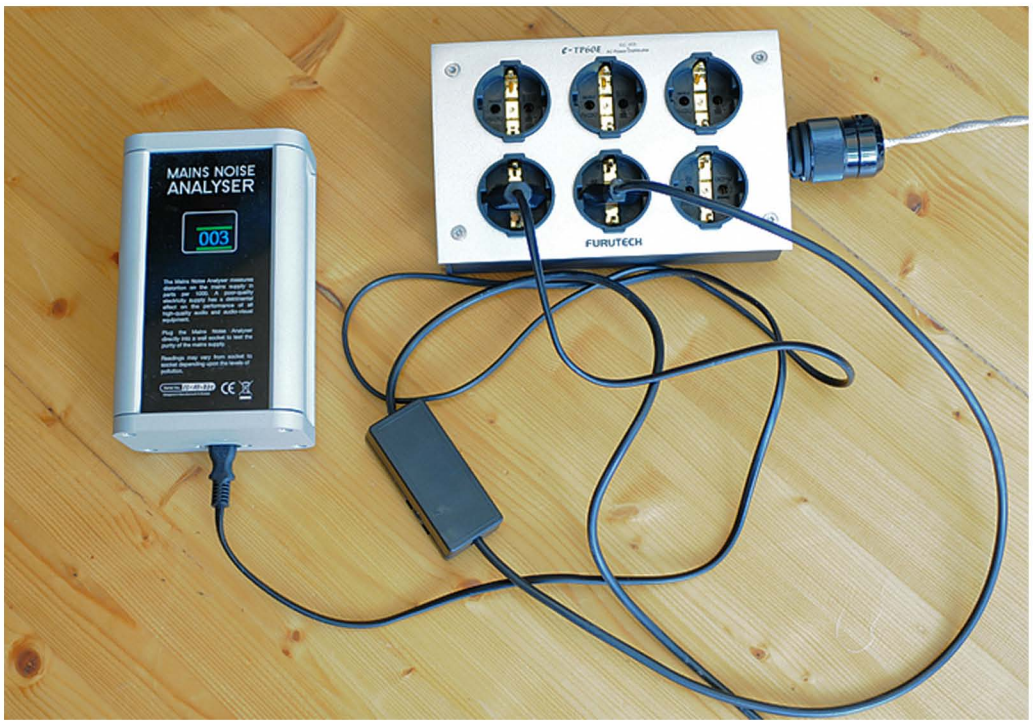
mode without any sound from the analyzer.When we added the PWT the reading went down to 0000 and still no noise. Powering the D-Premier to active the reading went to 105 and noise, albeit of low output.

Finally we added the two Avantgarde Duo self - powered woofers to the mix. This got ugly. The reading went to 440 and the speaker at the back of the Analyzer started to literally scream. Here we had to conclude that digital gear is not as bad relative to dirty power issues as we are told. In this case the simple woofer amps polluted the power lines far more severely than a high - power class D amp with switch - mode power supply. In our personal setup the cleanest power came from running the PWT, D-Premier and Avantgarde Duo on separate and dedicated outlets of the PPP. Divide and conquer.

What happens in a situation where there is no clean power to begin with? For this question we used a PWT CD transport, PWD DAC and passive Furutech TP60E. The wall outlet we used caused a reading of 426 plus a



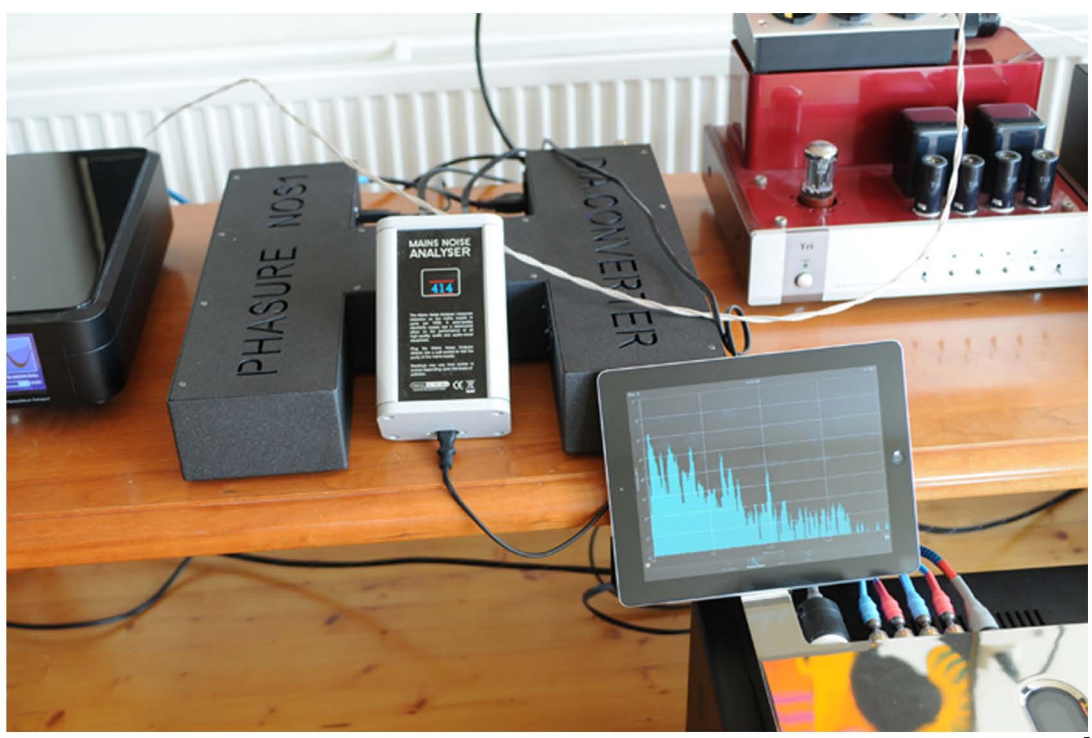


preacher. The reading remained consistent once the power strip was in place. When the CD transport plugged in still switched off, the display showed 029 and the analyzer emitted some crackling noise. The preacher had vanished.
Disconnecting the transport and plugging the PWD DAC in whilst still off changed the display to a whopping 507 together with two interfering radio stations. When we added the transport again but still in the off position, the reading went down to 037 and the crackling sound was back. Just a single radio station appeared when the transport was switched on together with 037 on the display. Both units powered on caused really loud noise and 109 on the display.

Another audio story we're told over and over again is how bad computers are for power quality. Time for a little private investigation. Our iMac was plugged into a power strip. With the computer off the display on the Noise Analyser showed 281 and our familiar radio station was present. Switching the iMac on made no difference. What did was unplugging the computer from the power strip. The reading went up to a high 577 and

medium loud noise emitted from the speaker at the back of the analyzer. A similar scenario unfolded with a laptop plugged into the strip. Connected the meter showed a lower reading albeit with radio reception.

From this we conclude that power issues / component interactions remain puzzling and not at all straightforward. What we learnt is that a dedicated regenerated and filtered power zone like the PS Audio PPP and similar gear offer works best. Having our system run that way the Blue Horizon Noise Analyser showed all zeros and no noise. Sonically this translated to the most realistic images with shockwave transients and clean decays. The other thing we learnt is that the Noise Analyser is mandatory for reviewers. For consumers at least their dealer ought to have one and loan it to them or come over and do an analysis. Simply selling and installing a regenerator/filter is not enough. Component interaction will play funny and unexpected tricks. Those can be eliminated by trial and



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error but need confirmation with an analyzer.

Critics may protest that it remains unclear what exactly the analyzer measures and whether the measured noise really has a detrimental effect on our hifi sound. The first is very true. Only a very expensive electrical analyzer can determine what rides on the power line and what causes it. Regarding the latter, in our case eliminating the cleaning agent of PPP and instead relying on 'pure' wall power simply killed the music. What we'd still like to see for this mains analyser is a volume control because some noise can get very loud; and an adapter by way of a male IEC so that power cords too can be assessed.

Quality of packing:	Excellent
Condition of component received:	Primo.
Quality of owner's manual:	Simple card says it all
Pricing:	The benefits of insights gained completely warrant the expense.
Human interactions:	The way they should be.
Remark:	The results beg for further investigation regarding the shielding of cables (or not), inline filters built into power cords and such. To be continued...

Marja & Henk

Blue Horizon website