

Twin Peaks

Meridian Audio have been at the forefront of DVD-A development since its inception, so who better to produce the format's ultimate system? **Simon Pope** sits agog at the 800/861 V3 DVD-A player and surround sound controller...

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Under Bob Stuart perhaps no other company has done more to perfect the sound of digital audio than Meridian. Their ability with digital audio has led them to the forefront of DVD-Audio development and the only UK hi-fi manufacturer on the DVD Forum Working Group 4. It's only to be expected then, that Meridian have in their considerable arsenal the 800 Series of DVD products, featured here in Version 3 form, that are undoubtedly the pinnacle of DVD-Audio replay.

Very little equipment that enters the HFW portals is greeted with a stunned silence as it emerges from the box but the 800/861 combination almost demands it.

The look, never mind the theory, behind the 800/861 combination is awesome. It's only when you start to even comprehend a mere fraction of what's going on inside that you realise just how awesome it is. Here is one very, very serious example of both high fidelity and digital engineering - the 800 DVDAudio/Video player is quite possibly the most technically advanced optical disc player in existence.

Let's start with appearance. Both units are finished in beautiful black lacquer and in operation feel like a million dollars. The bold 'Meridian' stamp is accompanied on the front fascia by a high quality green LED display and neat and luxuriously oversized control buttons. Smaller, advanced controls lay beneath flip-down panels.

There's a lot going on here (the literature and manual are of near-biblical proportions), too much to cover fully in a few pages, but basically there are a number of key points that should be explained. The phrase 'high fidelity' is almost inadequate for this combination; it is not so much hi-fi as a highly advanced and programmable digital music server that is also built to last for another reason - it has awesome upgradability for future applications.





The 861 processor can be fully equipped with a variety of input/output sockets

Building Blocks

The point to note here is that the whole system, or "architecture", is modular. The 800 and 861 are, as Bob Stuart puts it, "built like a computer", with a combination of cards that provide the customers own configuration. All of these cards and drives are removable and replaceable. This can range from additional digital outputs or progressive video output on the 800 player to component video cards and even an MC phono card (!) for the 816 controller. Future software upgrades will be available to download for customers from the company's website.

The V3 (Version 3) 800 player uses a ROM drive (there are actually two drive bays in the machine), so chosen by Meridian for its reliability in recovering data accurately. Meridian then use their proven audio technology to get the best possible audio quality from this data.

Another important feature in the 800 is its upsampling capability where a complex digital filter doubles the rate of samples from the source so that the system that follows can produce the sound more accurately. So CD information, for example, starts at 44.1 kHz/ 16-bit and the Meridian proprietary DSP upsamples this to 88.2kHz and 24bit. DVDs with 48kHz sampling are upsampled to 96kHz and 24-bit. It can handle sampling frequencies of up to 192kHz and the output analogue cards use a very high quality, studio grade digital-to-analogue conversion system.



Both the 800 and 861 are configured like a computer with removable cards

Any 24/192 DVD-A information will be downsampled by the 800 to 24/96. However, as Bob Stuart is at pains to point out, there is as yet no industry standard digital interface for 192kHz, hence the need to downsample for an external digitally connected unit like the 816. When a standardised interface is agreed then Meridian will configure a suitable card.

The 800 is, of course, a very high quality DVD video player which has an optional progressive output card for improved picture quality with less shimmer, and it also has a translation feature for PAL or NTSC for those displays that don't support one of the formats. It will decode Dolby Digital and DTS DVD video discs and provide both multichannel and two channel outputs.

If you intend to use an all Meridian system, then the 800 can be used alone, with the player simply feeding straight into the company's DSP loudspeakers. We used alternative transducers in the form of Quad electrostatics (actually, a fine match!) and the cheaper L Series loudspeakers. Therefore we put the 861 processor into use.

This beast, when used in combination with the 800, uses Meridian's Smart Link connection which, very importantly, transfers high-band data digitally for optimum sound quality - necessary for use with Meridian's bass and time delay management. The 861 is

multiroom capable and can be configured with up to ten 24/96 outputs, with bass management available for all formats. There's a mind boggling variety of DSP modes (fourteen in all) for personal preference. If you require 7.1 Dolby EX decoding, then a Dolby bitstream connection must be made from the 800 to the 861 for full decoding.



The cards are added to the chassis according to particular requirements

Setting the Scene

This equipment isn't something you merely chuck in the boot of your car from the retailer's loading bay; it needs expert installation. You even need to consult the retailer about your particular system requirements before anything arrives at the house. Installation needs to be carried out by a Meridian trained installer and a laptop PC is required for this process. The system is built with bidirectional computer control via the RS232 interface. Simply taking the things out of the box and plugging them won't work if you actually want to hear and see something! Even the most hardened gadget freak would balk at this combination, so leave it to a professional, as I wisely did. Once completed this apparent minefield of technology is -amazingly - a doddle to use.

I started by using the 800/861 in good old stereo CD mode, with a pair of Quad ESL 988 electrostatics and an MJ Acoustics Pro 100 sub used very subtly. Power was supplied by Meridian's own stereo 557 power amp and 'speaker cables were Chord Company Odyssey and Anthem interconnects.



With a variety of discs ranging from Taverner's unaccompanied choral music, via Bruckner symphonies, right up to the aural onslaught of Rage Against The Machine, the combination simply couldn't fail. I use a Meridian 506.24 as my reference CD player and the 800 had all the traits of the sound of it's humbler brother, but magnified them a hundredfold.

I was first struck by the amount of musical detail present. It was combined, essentially, with a beautifully inherent smoothness that few players of any kind provide with Compact Disc. There was a great balance between intricacy and warmth, one that makes for extremely easy listening over a long period of time - and let's face it, when you pay this kind of money you should aim to get your money's worth out of it!

The Meridian combo doesn't have the organic 'whole' of Linn's similarly priced Sondek CD 12 but concentrates more on the layers of the music to create its beguiling appeal. Despite this warmth, there's plenty of bass and attack, as heavy rock and dance music discs revealed.



You're Surrounded

Already enamoured with the 800 as a CD player alone, turning the configuration to multichannel really showed the stellar heights to which this Meridian pair can soar. At its best the system literally took my breath away with its performance. The 861 has a list of configurable settings far too long to go into, but once the 800 player is set up in two channel mode (via the on-screen menu) then the 861 was configured to switch into Trifield mode with two-channel (stereo) discs.

Trifield mode uses the two main left and right loudspeakers, along with the centre and subwoofer, to create an impressive enhanced form of 'stereo' replay which brings a new take to the format. The sound is naturally stretched way back into the room and there's a superb sense of three-dimensionality to it all, creating literally (with the Quads anyway) a curved wall of sound studded with images.

Let's not forget that whilst this is ultimately, and primarily, a system for the music lover it also plays movies, and very well too. The superbly choreographed fight scenes in *Crouching Tiger, Hidden Dragon* had awesome impact, with near perfect picture quality. It also made me realise that, as daft as it may sound, the Quad electrostatic is a damn fine AN 'speaker. There's no boom and tizz, of course, but what you do get, especially through the Meridian kit, is a fast, natural and dynamic sound with great dispersion.



Where the Meridian gear really came into its own though was with multichannel DVD-Audio discs where it showed what exactly can be achieved, sound wise, with the format. A range of different types of music showed that it can handle dexterity, delicacy and sheer clout in equal measures. And all with indisputably superior sound quality. I've never heard the Teldec series of Beethoven symphonies sound so real. When the opening bars of the fifth symphony sprung into action there was a sense of realistic drive and sheer energy that is a light year away from Compact Disc, no matter how good the recording. String tones were exceptionally natural and the violin section sounded like I've rarely heard it in the home, muscular and sinuous. Where the format shows what it can do in a pure audiophile way is in the space and lightness that accompanies any woodwind passage, which can be simply jaw-dropping. The rear channel 'speakers, in the shape of Quad's fast and detailed I I Ls acted as natural surrounds, creating ambience and space in, again, a highly realistic manner. Moving on to the Debussy preludes for piano, the Meridian delivered a well balanced and fluid sound that also had oodles of presence and good detail. Again, the way the recording acoustic was captured was especially impressive.

With multichannel studio mix rock from in-er-face bands like Stone Temple Pilots the sound was big and all-encompassing, with full-on attack and plenty of taut,

deep bass. Indeed, so good is the sound in multichannel DVD-A that I would challenge any seasoned listener or critic of either DVD-A or multichannel to find fault. It certainly changed my outlook on everything both sonically and domestically - analogue watermarking, intrusive rear channel 'speakers, extra bulky amps etc. all became irrelevant, as the sound was simply breathtaking at times and took audio to another level.

End Bits

It's both very easy to sum this system up, yet very difficult! Obviously, it's frighteningly expensive, but then again, lest we forget, so are many cars that you get shot of in three years and will have depreciated by an equivalent amount.

This isn't a transitory gadget - it's more an investment for the soul! Soundwise, it's perhaps not ultimately as ultra-detailed and intricate as the very top, similarly priced super high-end hi-fi I've heard, but to me it's more musical. What's important is that you never lose sight of the fact that this is for edification and enjoyment, as opposed to hi-fi for hi-fi's sake - techo-religion where the 'listener' kneels at the shrine of the blessed rack and pays more attention to the manual than the music.

Overall, the 800 is perhaps the finest overall CD player I've ever laid ears on. When you consider that there are some CD-only players round that demand this outlay, the price tag doesn't seem all that eye-watering. In the past I've been lucky enough to be in close proximity to top class orchestras banging out the best music, and at times this combination with DVD-Audio discs honestly brought me closest to the experience than any other hi-fi system I've encountered. And that is no mean feat.

With the enjoyment I've experienced from using this system, I'd buy it tomorrow if I was in the position to. However, like many others, I can't. Unless I become President of the World Bank overnight, sell my family into slavery or poison any wealthy relatives!

Measured Performance

In common with most DVD-A players, the 800-series accommodates all 5.1 channel decode modes (except dts 96/24), while the enhanced off-board processing of the 861 delivers the full 7.1 channels possible with Dolby EX.

Digital data is transferred from 800 to 861 in two ways. Compressed Dolby and dts bitstreams are passed in the usual fashion while, uniquely, up to 6 channels of uncompressed digital audio may be transferred via three S/PDIF links using the encrypted MHR (Meridian High Resolution) protocol.

Depending on your choice of software, the 800 decodes up to 5.1 channels and then either upsamples (in the case of 44.1 kHz CD or 48kHz DVD) or downsamples this data (in the case of 192kHz DVD-A) to a common 96kHz/24bit format recognised by the 861 external

processor. This limits 192kHz sampled DVD-A audio to 45kHz analogue bandwidth maximum, instead of 95kHz.

The performance of the 861 is clearly optimized for 96kHz/24bit data, for while 44kHz/ 16bit CD replay is very good, there are clear reductions in distortion and gains in low-level linearity with 96kHz/24bit DVD-A. For example, although Meridian's digital inputs are all crystal-locked and buffered for incoming sample rates from 44.196kHz, jitter falls from a mere 130psec with 44.1 kHz CD to an astonishingly low 30psec with 96kHz DVD-A.

With 44.1 kHz and (multichannel) 48kHz data, distortion ranges from 0.002 - 0.0008% from 20Hz - 20kHz at full signal level, increasing slightly to 0.004 - 0.007% at -20dB below full level. However, with true 24bit data, Figure (1) shows distortion falling to a minimum of 0.0005% at 1kHz, with best-case figures of 0.001 % and 0.0015% at -20dB and -30dB below full level, respectively. This results in an exceptionally 'clean' looking spectrum at levels where there's plenty of musical action taking place.

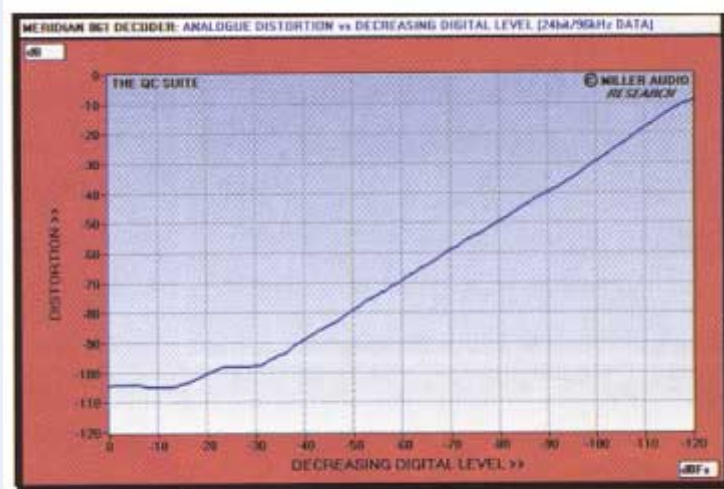


Figure 1

Regardless of data, care must be taken with the volume setting. If peak digital levels are present on the source material then the 800/861's volume should not exceed "93". This is equivalent to a 3V maximum analogue output, beyond which it is immediately plunged into clipping.

The next graph (figure 2) demonstrates the 861's superb low-level linearity that, despite its A-wtd S/N amounting to just 106dB, remains true to -110dB down, with averaged errors of < 1dB from -115dB to an astonishing -120dB. Of course, true 24bit data holds the promise of a 146dB dynamic range, but this is never realised in practice because of limitations in associated analogue circuitry.

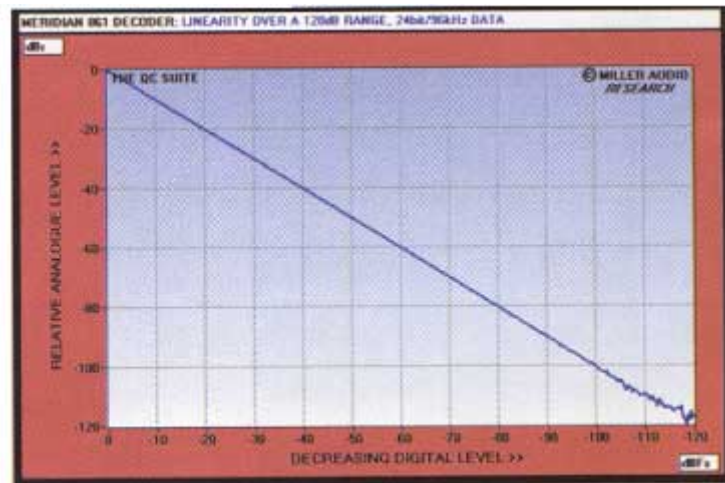


Figure 2

With 96kHz sampled digital sources, the 800/861's analogue response is -0.3dB down at 20Hz but flat to 45kHz unless "HS Output" is selected on the 861, which provides a roll off beyond -32kHz amounting to -1.8dB at 45kHz.

DVD-A players typically offer far lower levels of ultrasonic noise than their SACD cousins, but the 800/861 is particularly impressive in this regard. Figure (3) illustrates the low noise and distortion (-0.004%) associated with a 40kHz signal, derived from 24bit/96kHz data (indigo trace). The equivalent output from Philips DVD-763SA (bright-blue trace), also tested in this issue, in SACD mode is included for reference.

Figure (3) also reveals a digital image that escapes the 861's digital filter with 96kHz DVD-A data. As this appears well above the audio range, it's unlikely to have any impact, though images associated with 44.1 kHz and 48kHz digital audio are better suppressed at -105dB.

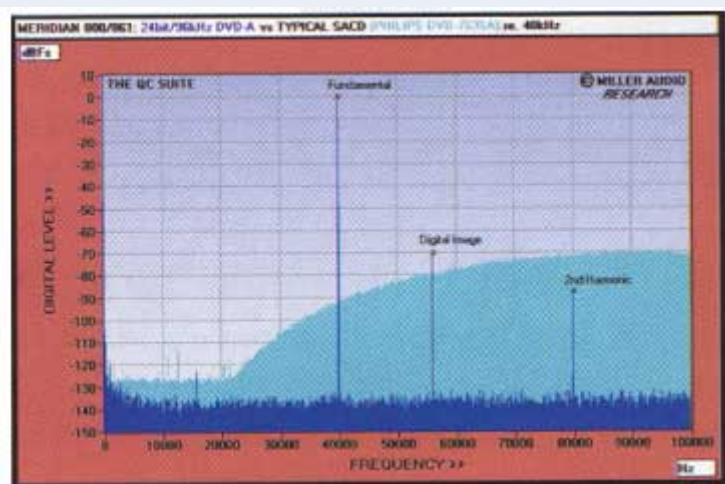


Figure 3

Overall, the 800/861 represents a technical reference in many areas of performance, continuing the tradition of the marque. PM

Verdict

Takes audio to another level, if you can afford it. Without doubt the finest optical disc playing system we've encountered. Smooth and cohesive, it plays anything you chuck at it with ultimate finesse.

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Text by Simon Pope, measurements by Paul Miller.