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MERIDIAN 208 BITSTREAM CD PLAYER/PREAMPLIFIER

John Atkinson



Meridian 208 CD player/preamplifier

CD player with integral preamplifier and full remote control of functions via supplied 209 handset, two line-level inputs, one tape loop and optional phono input, fixed and variable outputs, one pair of optical outputs, and one coaxial digital output. CD player specifications, fixed outputs: Frequency response: 20Hz–20kHz ± 0.2 dB. THD: < 0.004%. Noise: < 94dB. Conversion: Bitstream, PDM, differential time-aligned mode, 256x-oversampling digital filtering with passive final low-pass filtering. Precision: 16 bits. Output impedance: 12.6 ohms, fixed outputs. Maximum output level: 2.208V, fixed outputs. Preamplifier specifications: Output impedance: 12.5 ohms, variable outputs. Maximum output level: 10.02V (for 1% THD), variable outputs. Sensitivity: 50.7mV in for 500mV output. Line stage gain: 19.9dB. Dimensions: 12.6" (320mm) W by 3.9" (99mm) H by 12.6" (320mm) D. Serial number of unit tested: F100386. Price: \$2950 including handset (phono module costs \$250). Approximate number of dealers: 50. Manufacturer: Boothroyd/Stuart Ltd., 13 Clifton Road, Huntingdon, Cambs. PE18 7EJ, England. North American Distributor: Meridian America Inc., 14120-K Sullyfield Circle, Chantilly, VA 22021. Tel: (703) 818-3028. Fax: (703) 830-7625.

"Desperation is the Mother of Invention." Isn't that how the proverb goes? Certainly it applied ten years ago in the case of the Philips engineers working on the development of the Compact Disc system. Given a specification that had included a 14-bit data word length, they had duly developed a 14-bit DAC chip, the TDA1540, only then to be informed that the CD standard decided upon after Sony joined forces with the Dutch company would involve 16-bit data words. (Thank goodness!) Philips having already committed the 14-bit design to silicon, they would not have a 16-bit DAC ready in time for the medium's launch in the Fall of '82. They were thus faced with the problem of squeezing four times the resolution from their existing 14-bit DAC. The result was an ingenious digital filter that combined 4x-oversampling and noise-shaping—the latter is effectively a digital feedback loop, the error produced when the filtered digital data are truncated to 14 bits being fed back to the beginning—to give a digital system with full 16-bit resolution. Philips's true 16-bit DAC chip, the TDA1541, followed in 1985, but the seeds of ingenuity had obviously

been sown: if the combination of oversampling and noise-shaping can increase the resolution of a DAC using too few bits, then why not go all the way and implement a system that used a simple 1-bit DAC and make up for the shortfall in resolution by taking the oversampling, noise-shaping process to the limit?

The result was a D/A system, internally referred to by Philips as "DAC3" (the two earlier systems were DAC1 and DAC2, of course), which was introduced in the summer of 1989. I discussed the design of the system in detail in June 1989 (Vol.12 No.6, p.57), but briefly, the SAA7321 DAC3 chip massively oversamples the input data at a 256x rate, interpolating the new sample values to produce a 17-bit datastream sampled at 11.02MHz.¹ The data words are then fed to a 1-bit DAC, with the 16-bit error fed back in a noise-shaping loop. Mathematically, this should—and does—result in the pulse stream

¹ Meridian launched their 602 transport and 603 D/A processor at the SCES in June, the latter using Philips's second-generation Bitstream DAC chip, the SAA7350BS. This runs at a 384x-oversampling rate of 16.9MHz and allows its user to match it with a proprietary digital filter. These products will be more expensive than the 200-series components, however.

output by the DAC having the full 96dB+ dynamic range of a conventional 16-bit system. But unlike multibit systems, this "Bitstream" DAC is inherently linear and monotonic over its entire range—the reasons why were given in Peter Mitchell's "Industry Update" in January 1990 (Vol.13 No.1, p.36)—requiring no laser-trimming of on-chip resistor values or in-production adjustment of linearity, both of which add to a CD player's manufacturing cost, hence price.

I was told by Philips last year that the Bitstream DAC was therefore intended to be used in low-cost and portable players, the company saying that they would remain with their TDA1541-based chip set for high-performance players. Very rapidly, however, once designers had tried the Bitstream approach, it became apparent that, correctly implemented, it could surpass traditional D/A conversion in the preservation of low-level detail. (Even Philips has now introduced a Bitstream player, the LHH500.)

Hard on the heels of the introduction of Meridian's 206 CD player, which I favorably reviewed last July and which uses Philips's conventional multibit DAC, the English company redesigned their 207 CD player/preamplifier to incorporate the Bitstream DAC. The result was the 208, the subject of this review.

Technical details

Superficially identical in appearance to the 206, the 208 consists of two extruded aluminum chassis faced with glass and bolted together. The 208's transport is on the left, this sliding out in its entirety to allow discs to be loaded and unloaded. When closed, the transport is sealed against airborne vibration. The right-hand side carries function buttons, some of these lit by LEDs when operated, and a green 7-segment display panel. Three LEDs also display signal polarity, disc pre-emphasis, and errors. Two yellow buttons on the far right control volume up and down, there being 64 discrete steps as well as a mute function. There are also source-select buttons for analog line, tape, and the optional phono inputs, these latching on the first push, reverting back to the CD output when pushed a second time. Although there is a back-panel power switch, Meridian recommends the 208 be left on continuously, a front-panel Standby switch shutting the display down but leaving the circuitry powered. All front-panel functions are duplicated with the supplied model 209 remote handset, this also having an absolute-polarity button, fast search buttons—unusually, the output mutes during search—and a numeric keypad for direct track access.

The rear panel carries three pairs of analog outputs—fixed from the CD player, variable

from the preamp section, and tape out—and three pairs of analog input phonos. There is also a headphone output. A pair of TOSLINK optical data outputs are provided, as is one coaxial phono data output. There is also a DIN “Communications” socket to allow the 208’s functions to be controlled by the remote supplied with the Meridian D600 “digital” active loudspeakers.

The SAA7321 incorporates two channels of digital filtering and DACs as well as output op-amps; a single chip can thus be used for the complete analog signal reconstruction for a stereo player. Meridian uses two chips in a more sophisticated manner, however. Each is fed both the normal digital datastream and an inverted version of that data. One chip outputs pulse streams representing normal and inverted analog left-channel signals, L and –L, and the other pulse streams representing R and –R. These four pulse streams are passively low-pass filtered, reconstructing the analog waveforms in the process; then, rather than being fed to the on-chip op-amps, they’re taken to two NE5534 integrated-circuit op-amps, these low-noise types with a good output drive capability. The two inputs of each op-amp are fed the non-inverted and inverted analog signals for one channel; its output therefore represents the difference between the two signals, and any even-order harmonic distortion or correlated (common-mode) noise will be canceled as a result. Departures from linearity common to both DACs on the one chip will also be canceled, with increased low-level resolution being the result. A second 5534 appears to be used in this stage’s overall feedback loop, while an LF353 op-amp provides a DC-servo action to keep the direct-coupled output’s average value at ground potential. FETs pull the output to ground when the mute button is pushed.

As with other Meridian products, the construction is first-rate. All the audio circuitry is carried on computer-grade, four-layer printed circuit boards, these incorporating a full ground plane. Much design attention has also been paid to the Philips transport mechanism, and a high-precision central quartz-locked clock is used to minimize the effects of data jitter (see later).

Sound

Amplification used with the Meridian 208 consisted of either an Audio Research Classic 60 or a pair of Mark Levinson No.20.5 monoblocks fed via 15’ lengths of AudioQuest Lapis or Audio Research unbalanced interconnect. Loudspeakers used during the auditioning included the Celestion SL700, Avalon Eclipse, Icon Parsec, Monitor Audio Studio 10, Infinity Modulus/Modulus active subwoofer, Meridian D600, and Dick Olsher’s Black Dahlia design, all except the active Meridian bi-wired with 5’ lengths of AudioQuest Clear.

For reference, LPs were played on a Linn Sondek/Ekos/Troika setup sitting on an Archi-Dee table with RIAA equalization and gain provided by a Mod Squad Phono Drive EPS, this feeding one of the line-level inputs of the Meridian 208. (The Linn was fitted with the new Lingo external power supply—enthusiastic review to follow shortly.)

I first used the 208 as a line-level preampli-

fier, comparing the effect it had on the sound of other sources with my Mod Squad Deluxe Line Drive AGT passive control unit. (The Mod Squad is still the most transparent full-function passive control unit I have heard.) It might be thought that a preamp stage inside a CD player, with all that RF energy floating around, and in particular one that uses op-amps for gain and FET-switching to implement the remote volume control, might be compromised in sound quality. That didn’t prove to be the case here. Though it did add a slight veiling compared with the Mod Squad unit, the 208’s line stage was superbly clean, with excellent bass weight and a freedom from electronic glare. Not only is the luxury of remote control of volume addictive, I feel the 208 is good enough when used as a preamplifier that those whose priority is to get the best CD sound should seriously consider using a 208 as the heart of the system, its line inputs used to take tape and tuner sources or even the output of an auxiliary phono stage. (The review sample was not fitted with Meridian’s own \$250 phono stage, so I can’t comment on its sound.)

I also used the 208 to drive the Meridian D600 active loudspeakers that I reviewed a year or so ago (in Vol.12 No.11), its two optical digital outputs allowing each speaker to be driven separately. This proved to give the best sound I had heard from these speakers. If you own D600s, you should seriously consider acquiring a 208. Taking an analog feed from the 208’s fixed outputs in order to compare Bitstream D/A conversion with the D600’s oversampling multibit DACs wasn’t possible, however, as it didn’t prove possible to match levels closely enough for rigorous comparison.

Used as a conventional CD player with its fixed outputs feeding the Mod Squad control unit, it was immediately obvious that the 208 produced one heck of a fine sound: open and detailed, with excellent bass extension and a solid, deep, well-defined soundstage. There was little of the sense of treble hash that so often overlays digital sound quality. If you’ve heard Wendy Carlos’s excellent recorded essay on reconstructing the sounds of real instruments with synthesizers (*Secrets of Synthesis*, CBS MK 42333), you’ll be familiar with my feeling that, no matter how closely its advocates say their efforts approach reality, synthesized sound is more akin to shaped and textured noise than to real instruments. Right from the start, no matter how good it may be in some ways, CD playback has always had a similar character, in my opinion, the sound of complex sources like the orchestra tending to become overlaid with HF buzz. This the 208 does to a considerably lesser extent than the norm, to the benefit of the music.

Some might find the 208’s sound to be rather laid-back, preferring a more vivid presentation of music’s high frequencies. My tastes veer in the opposite direction, however, provided that this laid-back balance is not achieved at the expense of suppressing detail, and detail is something the 208 has no problem in decoding. The piano sound on my recordings on the *Stereophile* and *HFN/RR* Test CDs was both harmonically and spatially correct, the piano image suspended unambiguously in the space between the loudspeakers.

Dispensing with the control unit and driving the power amplifiers straight from the 208’s variable outputs gave an even more musical sound, something that surprised me considering that I had felt the 208’s line stage to be a little veiled compared with the Line Drive. Used in this way, the 208 approaches Class A performance in the magazine’s biannual “Recommended Components” feature. My only criticism would be a slight leanness to its lower midrange.

Reviewing products in isolation is useful in that it gives you a broad idea of their absolute merit. *Stereophile* readers, however, need to be told of a product’s relative performance, how it stacks up against the current benchmark products. I had on hand the Kinergetics KCD-40 and Meridian 206 CD players that I reviewed in Vol.13 Nos.1 and 7, respectively, and the Meridian 203 and Stax DAC-X1t Bitstream and multibit processors. I carried out two sets of tests with the five units. The first set was with the reference processor or player feeding the 208’s line input and the 208’s variable outputs feeding the power amplifier; A/B switching could thus be performed with the 208’s remote control. In this situation, however, the 208’s line stage is in circuit for every source. As it might be felt that the active circuitry would homogenize any differences, I therefore carried out a second set of tests with all the units’ outputs driving the Mod Squad Line Drive Deluxe, this in turn feeding the power amplifier. All interconnects were 1m lengths of AudioQuest Lapis. My impressions that follow are based on the results of both sets of tests.

My first comparison was with the Meridian 203 processor that has been so enthusiastically reviewed by Bob Harley and Sam Tellig in recent months. Retailing for \$990, the 203 basically packs the Bitstream D/A circuitry from the 208 into a single box, omitting the absolute phase switch and error indicator light. For the comparisons, the 203 was driven from one of the 208’s optical data outputs with a 1m optical fiber link supplied by Meridian. To show how critical level matching is with CD player tests, Tom Norton and I were listening to the 203, referring back to the 208; we had listened to a couple of tracks just out of curiosity, concluding that the 203 was more detailed and dynamic. But: “The 203 sounds louder,” said Tom. I agreed. It was—by just 0.5dB! Though this would introduce two more sets of contacts into the 203’s signal path, I had to lower its output with series potentiometers to match the 208’s level before proceeding with my more critical auditioning. (All levels were subsequently equalized within 0.1dB at 1kHz.)

At first, it was hard to hear *any* difference between the 203 and 208 in either of the test conditions. Tonally, the units were almost identical—which is to be expected, given the fact that both of them are from the pen (pen?) of the same designer and feature identical DACs and output stages. But after several tracks had been played, I began to feel that the 208 was slightly more open in its sound quality. I find the purist guitar and double-bass recording on the *Stereophile* Test CD, with its fragile recorded acoustic, to be particularly good at revealing small differences in soundstaging ability. The 208 was that little bit better at enabling you to

hear the way in which the guitar transients were reflected from the Chapel of Loretto's stone-faced walls. By contrast, the 203 presented the instruments as though they were in a somewhat less reverberant, more anonymous-sounding acoustic. But it was close. I could happily live with the 203.

I said above that the two Meridians were tonally almost identical. The "almost" is because ultimately I felt that the separate processor had a rather less-well-defined, less extended low-bass register. The 203 was leaner; though the 208 had a fatter midbass region, it also had a low bass which seemed to just keep on going down compared with the 203. Curiously, this reminded me of J. Gordon Holt's experience of the two-box Sony R1 CD player, the transport of which supplies an accurate, low-jitter clock signal to the D/A processor in addition to the time-multiplexed stereo audio datastream via a separate optical link. Perhaps—and this is a big perhaps—the better bass performance of the 208 is due to the fundamentally lower jitter offered by an integrated player. (See my discussion of the audible effects of jitter in the appendix to this review.)

The next comparison was with the Meridian 206, this player using the traditional 16-bit, 4x-oversampling Philips chip set. In my review of the 206 last July, I had remarked that it was the best player to use this chip set that I had heard, even better than the massive two-box Philips LHH1000. In particular, I felt the 206 to have excellent bass weight, well-defined imaging with good depth, and a refreshing freedom from the grainy treble so typical of ordinary CD replay. With a *Stereophile* test CD playing in each machine, the tonal differences between them were a little easier to hear than with the 203. The older player was both somewhat brighter and more forward in the midrange and sounded "louder" as a result. The flute on *Stereophile's Poem* album was consequently more full-bodied on the 206, while piano perhaps had somewhat more harmonic richness than on the 208. Low frequencies were similar, though the 208 did occasionally sound thinner in the lower midrange, the 206 having more midbass slam. As a result, the leading edges of bass instruments, the rosiny guttiness that starts the woody thrum of well-recorded double-bass, had a little more bite via the 208, though they had their full weight with the 206.

Again, however, even though the multi-bit player was no slouch in this regard, the Bitstream player was that little bit better at decoding the sense of space in a recording. On both my piano recording and Robert Harley's guitar and bass recording on the *Stereophile* Test CD, there was just that essential bit more of a sense of sonic reality via the 208. And on Peter Mitchell's organ recording on the same CD, the ostinato offbeat eighth-notes at the work's beginning were more easily placed in space.

How did the 208 stack up against the Kinergetics KCD-40, a player that has received universal approval in the high-end press for its musicality? Again, tonally, there were audible differences between the two players. The Kinergetics was softer-toned in the highs, the 208 leaner in the lower mids; both fell slightly behind the 206 in bass weight. But spatially, I was hard put to hear any difference. Both had

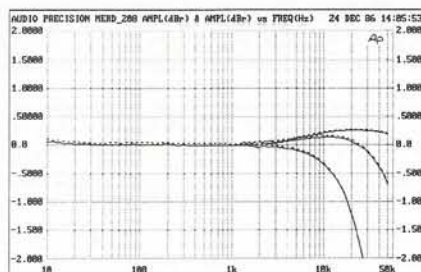


Fig.1 Meridian 208, line input frequency response, 100mV input (right channel dashed), volume control at 32 (top), 48 (middle), 64 (bottom)

a similarly solid sense of a soundstage hanging between and behind the loudspeakers. Both had equally valid presentations of the music.

The 208 is obviously up there with the best-sounding players and processors. It seemed appropriate, therefore, to put it in the ring with the best-sounding CD sound I have heard, that from the Stax DAC-XIt, a processor which both gets the closest I have heard to analog and costs a cool \$12,000! Again, one of the 208's optical data outputs was used to feed the processor.

With the exception of the occasional listening session at LA's or RH's, I hadn't listened to the Stax for some months—since I compared it with the 206, in fact. With the first track to bounce back the laser beam, Jennifer Warnes's "Ballad of the Runaway Horse" from Rob Wasserman's *Duets* (MCA MCAD 42131), that feeling, as Sam Tellig put it, of there being "more there there" came back in spades. Not only did Miss Warnes's lispy contralto hang there in space between the speakers, but there was a believable but admittedly totally artificial sense of space occupying the loudspeaker end of the room. "Delicious" is the only word to describe the spatial spread of the accompanying "Ooohs" that come in the second verse as decoded by the Stax. Switching to the Meridian closed-in the sense of space slightly but also flattened the individual images within that space. It was still excellent; it just didn't have the same degree of palpability as the Stax. Tonally, the more expensive processor presented the voice with somewhat less of a phlegmy edge, the 208 sounding a little leaner through the midrange. The 208's midbass was also fatter than that of the Stax, the tube processor having lows that were as deep but more cleanly defined.

All things considered, however, the 208 produced some of the finest sound from CD I have heard in my listening room, even if, as Larry Archibald remarked after we had spent an afternoon auditioning the Infinity Modulus system fed by the 208 and the Linn, "Your LP player still sounds better." I decided, therefore, on one final listening test, one that I rarely try as, with the exception of the Stax, I have yet to hear CD replay come close. This was a particularly cruel test, as it involved playing the Chopin track from the *Stereophile* Test CD on the 208, its fixed outputs feeding the Mark Levinson No.20.5s directly, then comparing that sound with that of the original 15ips analog master tape with the balanced outputs of the recorder (a Revox PR99, my A77 on which the recording had been made suffering from senility), again feeding the Levinsons directly. There was therefore no preamplifier or volume control

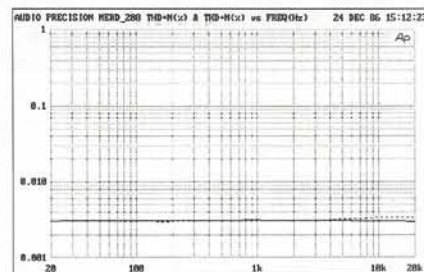


Fig.2 Meridian 208, line input THD+Noise, 1V input, V/C at "48" (right channel dashed)

of any kind to degrade the sound. Loudspeakers were the Monitor Audio Studio 10s, interconnects AudioQuest Lapis. As I mentioned earlier, the 208 sounds particularly fine on this track, decoding an excellent sense of space and throwing a well-defined piano image. But when I played the tape, as much as I enjoyed the sound of the 208 in isolation, the tape had a sense of solidity, of reality, that transcended the sound from CD. Okay, no matter how good the player, a CD is only as good as the A/D converter with which the original analog signal, from microphone or tape recorder, had been transferred to digital. In this case, I had used the Nakamichi A/D to transfer the analog tape to R-DAT, a processor which had seemed to sound very good. But even played on the otherwise excellent-sounding 208, it was like comparing superb, even enjoyable hi-fi with something that had much of the palpability of the real thing.

Operationally, the 208 was a doddle to use, track access being fast and the remote-control functions intuitive to grasp. Unlike the 206, the control logic now allows tracks to be selected directly with the "Next" button or the numeric keypad, without the "Play" button having to be pushed. Like the 206, though, the 208 still ignores subsequent commands while it is acting on the current one; you can't control volume, therefore, while the player is searching for a selected track, which is a minor inconvenience.

Measurements

Looking first at the 208's preamplifier section, the output impedance from the variable outputs was a low 12.5 ohms, meaning that the 208 should not be fazed by long or very capacitive cables, or low power-amplifier input impedances. The maximum output level (for 1% THD) was a hefty 10.02V RMS, this obtained with a 1.02V RMS input and the volume control at maximum (64). (With a CD, this maximum output was obtained from a 0dB signal with the control set to 57.) The volume control itself showed excellent channel matching, the difference between channels averaging less than 0.05dB from level 64 down to level 16, below which the difference reached a maximum of 0.3dB at the lowest setting (1). The steps themselves varied between 0.7dB and 1.3dB in a regular pattern.

The line stage is non-inverting, but its frequency response showed a somewhat anomalous behavior. With the volume control at "64" and a 100mV input level, the response drooped by 1.2dB at 20kHz, as can be seen

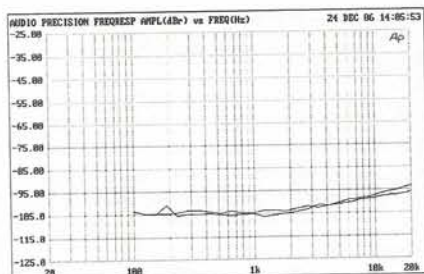


Fig.3 Meridian 208, line input separation

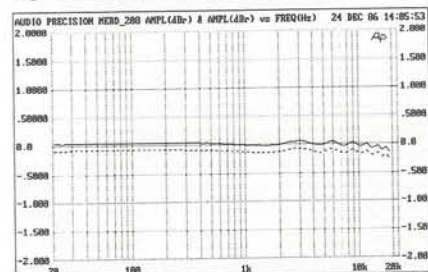


Fig.4 Meridian 208, frequency response (right channel dashed) (0.5dB/vertical div.)

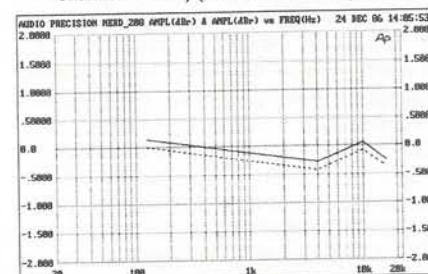


Fig.5 Meridian 208, de-emphasis error (right channel dashed) (0.5dB/vertical div.)

from the bottom curve in fig.1. Yet at lower settings of the volume control the response peaked up in the top octave by a fraction of a dB, again as shown in fig.1, implying that the HF rolloff of the 208's line stage is inversely proportional to the volume control setting, something I have not seen before. Apart from the premature rolloff when the volume control is near maximum, I doubt that this will be audible, however.

Distortion levels for the 208's line stage were astonishingly low. Fig.2 shows the THD and noise measured with a 1V input and the volume control at 48 averaging 0.03% across the band. Intermodulation levels also measured less than 0.01%. Channel separation was also excellent, as can be seen from fig.3, being greater than 95dB across the band with the undriven input shorted.

Turning to the CD player section with all measurement taken from the fixed outputs, fig.4 shows the frequency response, with a slight amount of passband ripple visible from the digital filter. The de-emphasis error (fig.5) shows the somewhat anomalous behavior that Robert Harley also found in the Meridian 203's performance last month. Channel separation was better than the 206; at worst, it was 78dB at 16kHz. The output impedance from the fixed outputs was a low 12.6 ohms, while the maximum output level was 0.86dB higher than the 2V standard at 2.208V. (Actually, I can't remember when I measured a CD player that had a true 2V maximum output level: presumably every manufacturer wants his player to sound that little bit louder than the competi-

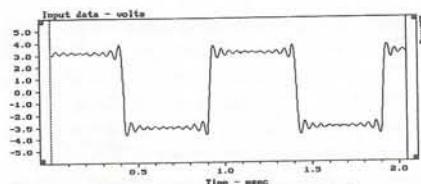


Fig.6 Meridian 208, 1kHz squarewave at 0dB

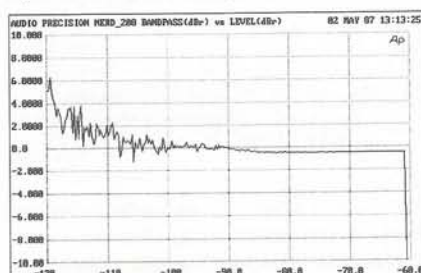


Fig.7 Meridian 208, departure from linearity, left channel

tion in the dealer's sound room, hence the overall creep upward.)

A 1kHz squarewave at maximum level reproduced with the Gibbs phenomenon "ringing" due to the linear-phase bandwidth limiting (fig.6), this unclipped. As with the Meridian 206, the 208's output is polarity-inverting. Flipping the polarity is a piece of cake with the remote control, however; owners should remember that the 208's CD output signal is non-inverted when the red polarity LED is lit. (This inversion is achieved by inverting the digital datastream from CD; the switch therefore has no effect on the 208's analog inputs.)

Robert Harley enthused about the 203's linearity last month; the 208 was equally superb, as can be seen from fig.7, computed by the Audio Precision system from the data gathered while the player reproduced the 500Hz fade-to-noise with dither track on the CBS Test CD. Almost equaling the performance of the \$12,000 Stax, the 208's actual output level is within a fraction of a dB of what it should be down to below -100dB and within +2dB to -114dB! (The curve shown is for the left channel; the right channel was identical.) The excellent linearity was confirmed by sweeping a bandpass filter across the audio band while the player plays the dithered 1kHz tone at -90.31dB from the CBS Test CD. (The dithering means that any distortion apparent on this tone is due to the player's electronics and not to the coarse signal quantizing at this level.) Note the absence of power-supply noise and of HF distortion harmonics in the resultant spectrum (fig.8). Listening to both the 128x-oversampled bonger track on the Chesky Test CD (JD37) and the CBS fade-to-noise track revealed a total absence of harmonics and heterodyne-type (shortwave radio) whistles superimposed on the pure tone as it descended into silence some 120dB down from peak level. Looking at the waveform of an undithered 1kHz tone (fig.9), the stepped waveshape can just be made out, overlaid with audio-band noise, reinforcing the 208's excellent low-level resolution. (See fig.10 in the Stax review, August 1990, p.110, for the best low-level resolution we have measured.)

Error correction was among the best I have

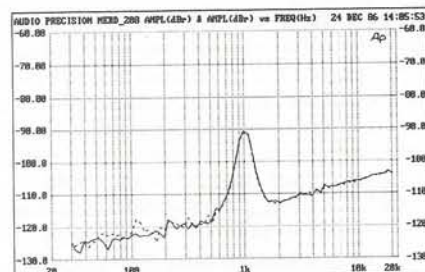


Fig.8 Meridian 208, dithered 1kHz tone at -90.31dB with noise and spurs, right channel dashed (1/3-octave analysis)

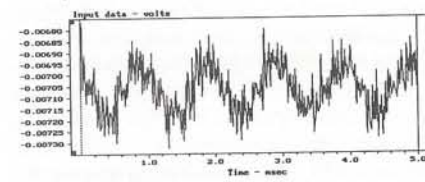


Fig.9 Meridian 208, undithered 1kHz tone at -90.31dB

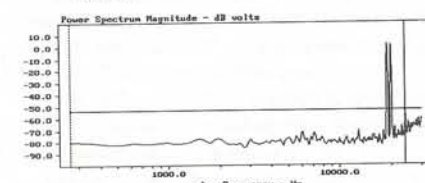


Fig.10 Meridian 208, HF intermodulation spectrum, 300Hz-30kHz, 19+20kHz at 0dB

experienced—Meridian does claim much-improved error handling. The only tracks on the Pierre Verany Test CD to give the 208 any trouble were those featuring one or more 2.4mm gaps in the spiral data path—extreme groove damage!

Finally, I examined the 208's intermodulation performance with a signal consisting of a 1:1 mix of 19 and 20kHz tones, the composite waveform reaching a peak level of 0dB. The spectral analysis of the Meridian's output is shown in fig.10; there are *no* intermodulation products visible, apart from residual spikes at 18kHz and 20kHz, some 70dB down from the 19kHz level. The aliasing product at 24.1kHz (44.1kHz-20kHz) can be seen at -55dB, shown by the cursor position; though better suppressed than with machines using the Philips 4x-oversampling, 16-bit linear chip set, it is still a little higher in level than with the very best-sounding players.

Conclusion

If typical CD sound resembles shaped and textured noise, Meridian's 208 joins that select group of components that more closely approaches the ease and spectral purity of good analog sound. Yes, I still preferred the ridiculously expensive Stax processor, but remembering that the 208 costs a quarter that highflying component's price, and considering that it includes a superb-sounding, remote-control line-level preamplifier, *and* that it is, at least in the eyes of this audiophile, beautiful, it can almost be considered good value for money. Buy it and live happily ever after. But to be honest, *if* you have an older CD player with a good transport—something like the Marantz CD94, for example, or even the Meridian 206—you can probably get quite close to the 208's sound with the \$990 Meridian 203. Now *that's* a bargain! **S**