

# Soulnote S-3 Reference

Still big in Japan, the SACD takes pride of place in Soulnote's 'ultimate digital playback system' that also includes the option of digital filterless conversion and external clocking  
 Review: **Ken Kessler Lab: Paul Miller**

**W**ith Soulnote having already proved its *analogue* mettle in these pages with the E-2 phono preamp [HFN Nov '23], does the brand have similar prowess with digital? And not just with CDs, for this S-3 flagship is a fully-fledged SACD player.

At £19,900, the S-3 Reference, to give its full name, may come in at the upper reaches of integrated SACD players but it significantly undercuts many high-end two-box solutions. Aside from the choice of silver or black, there is only one other thing to consider, the optional X-3 Clock Generator at £4500 (not supplied for this review). Also available is the identically featured D-3 DAC for £1000 less, but it seems a false economy to forego the transport even if you already have one.

## MASTER OF THE ARTS

Massive at 454x170x393mm (whd) and heavy at 27kg, the S-3 is a superbly built unit that comes with a handsome wooden plinth measuring 475x410mm. I couldn't say I heard a difference when I removed it and put the S-3 onto my default Acapella platform, but it sure looks nice. Otherwise the S-3 rests on three rather than four feet – actually massive 'grounding spikes' – and is very easy to level.

Soulnote has mastered the art of blending a lot of features into a fascia that looks minimalist. The *trompe l'oeil*? All of the details are tiny. I counted no fewer than 15 LED indicators in addition to the numerical display, and nine buttons for transport, input and filter selection, plus power on/off. One might be tempted to dive straight in without looking at the manual but this is necessary to understand the various filters on offer.

To the left, in the row beneath the centrally positioned disc tray, are lights to

**RIGHT:** Dual PSUs (far left and right) feed the digital and analogue sections of both left and right channels. Two ESS9038PRO DACs are employed per channel, feeding a proprietary 'Type-R' balanced output stage [bottom]. The SACD/CD transport has a tray loader [top]

indicate which filters are chosen, polarity inversion, and which of the digital inputs are in use. Relevant buttons are positioned below the LEDs. On the righthand side, above the transport controls and open/close, are lights to indicate CD or SACD, selected playback mode, eg, repeat, and either external clock or incoming sampling frequency.

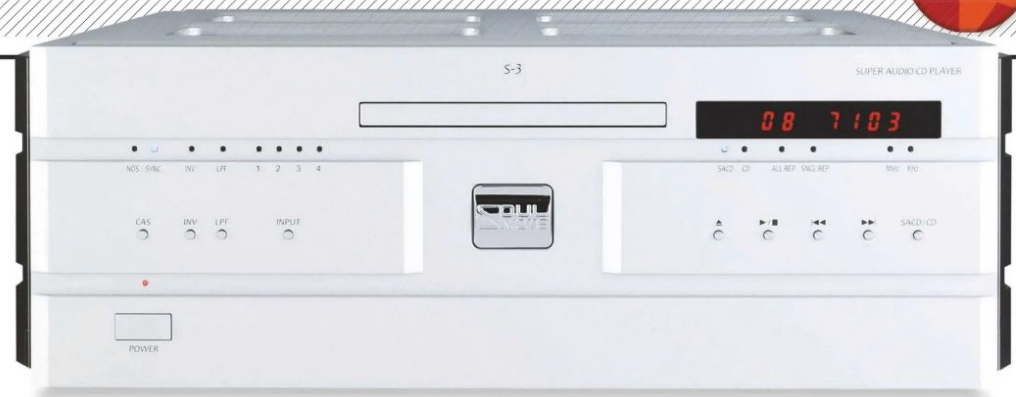
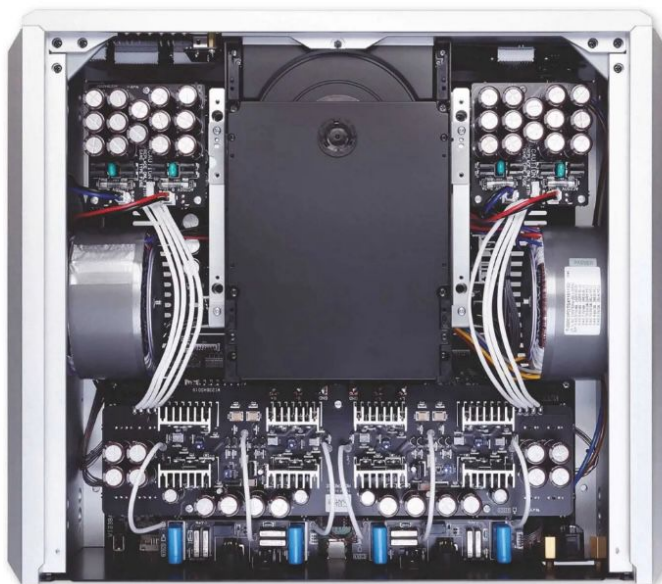
As expected of a single-box player that can be used as a DAC, the S-3's back panel is comprehensively equipped. In addition to a choice of balanced XLR or single-ended RCA analogue outputs, the digital inputs include a proprietary multi-pin 'Zero Link' and, for the rest of us, there are AES/EBU via XLR, conventional coaxial, and a couple of USB-B inputs. Conveniently, the (analogue) XLR pin configuration may be flipped via

a switch on the rear, alongside manual or automatic selection of the S-3's low-pass filter, and a final switch that defaults to the internal clock or selects the optional external clock, alongside the appropriate input.

*'The blarney trumpet evoked New Orleans soul'*

## GUESSING GAME

What might prove a boon or a distraction are the filters. I say that because there was no predictability – some discs sounded better with the FIR filter, others with NOS (no filter), including those from the same labels and artists. But as the filters are switchable from the remote it's not the burden it could have been, and is something to add to polarity inversion if you're the sort who can't resist fiddling around with settings rather than settle for defaults.



The S-3's NOS (non-oversampling) mode applies only to CD playback – it's not accessible with SACD – and its pros and cons are described in PM's Lab Report [p55]. What surprised me were the results, an SHM-CD and a gold CD showing less variance than 'plain vanilla' CDs – but even that wasn't consistent. How far back in the mastering chain one has to go to find out why I cannot say, but it's up to the listener's own penchant for A/B switching to decide which is best.

All this reflects the fact that while Soulnote employs two ESS9038PRO DACs per channel here, its decision to opt for just one of the in-built filters (seven are baked into this tried-and-tested DAC chip) and a NOS alternative, speaks volumes for the uniqueness of the product. Massive linear power supplies are fitted, with independent L/R grounding, while the 'Type-R non-NFB' analogue output circuit is a two-stage, fully discrete affair with the first, unity gain, stage performing I-to-V conversion on the current output of the DAC(s).

Another feature is the switchable LFP (low-pass filter), the impact of which

depends as much on the behaviour of one's loudspeakers and room. Suffice it to say, the S-3 allows you to fine-tune the sound in numerous ways, and it will benefit your CDs – normal, gold, what-have-you – such that they come close to sounding as good as the SACDs, especially SHM CDs.

## HAVE A LITTLE FAITH

Used in balanced mode, the S-3's operation was hard to criticise. The remote also operates other Soulnote hardware, which might explain why some functions are missing – eg, power on/off and polarity inversion, but those are hardly worth mourning. It had no trouble choosing between SACDs and CDs, but does take its time assessing which type of disc has been inserted, not unlike PS Audio's PerfectWave transport [HFN May '18].

Note that switching off the display, leaving only the red power-on indicator, made an audible change for the better: quieter, if you can believe that. Add that to the two filter choices and what follows makes more sense. Before focusing on SACDs, I wanted to deal with CDs as they

**ABOVE:** Heavyweight milled fascia design hosts key transport controls and track/time display on the right with input selection and filter/phase invert on the left. Disc tray is slim but sturdy

constitute the bulk of most libraries, even for SACD devotees. I listened to five different editions of the same album, to test the filter/no filter options.

Before listing them, I do realise that they may have come from different production masters, but their value here was in the formats. Blind Faith's eponymous debut from 1969 is one of my all-time Top 10 albums, so I played, in ascending order of sound quality, the 1986 'normal' CD [RSO 825 094-2], the 2001 Polydor Deluxe Edition CD [3 14 549 529-2], Mobile Fidelity's AAD UltraDisc gold CD pressed in Japan [UDCD 507], the Japanese Ultimate HQ MQA CD [Polydor UICY-40175] and the hands-down best one of all, the SHM Platinum CD [Universal UICY-40013].

## WEIGHT AND DEPTH

In every case, use of the S-3's FIR and NOS filters allowed me to close the gaps between them, even if I had no overall preference. The ear-opener, however, was playing the worst and then the best, the 1986 CD followed by the SHM, which exposed the scale of the gap *vis-à-vis* the formats. The weight and depth of Ginger Baker's drumming on the opening track, 'Had To Cry Today', increased with the NOS filter as did the differentiation between the guitar and bass when following the same lines – more so when applied to the 1986 CD, less so for the superior SHM Platinum.

Better still for 'hearing' the S-3's filters were the more delicate moments in 'Can't Find My Way Home', the two acoustic guitars which open the track both meshing and competing at the same time. I also focused on, of all things, the trashy cymbal, which accented the track and contrasted on multiple levels with the toms, their ☞

## SACD LEGACY

No audio pundit alive would deny that DSD downloads and streaming look likely to kill off physical media for good. Though online digital sources might continue to improve, sound quality still takes second place to convenience, and convenience rules for non-audiophiles. However, despite its low profile outside of Japan, SACD continues to offer salvation for audiophiles who 1) prefer physical media, 2) have a use for digital playback, and 3) want something better-sounding than 'Red Book' CDs, streams or other digital formats. SACD may be a well-kept secret, but the format is alive and awaiting your partaking.

One needn't look far to find that support is not limited to Japanese music labels. Specialists around the world continue to supply sublime SACDs of rock, pop, jazz and classical titles, as well as generating new material, among them 2L in Norway, Dutton Vocalion in the UK and Octave, Analogue Productions and Mobile Fidelity in the USA. Their catalogues are vast, prices the same or less than vinyl. And the sound? Pick up an old Sony PlayStation 3, or a used Denon, Oppo or Pioneer 'universal' player. Simply switch between CD and SACD on a dual-layer disc. Sit back. And I won't say 'I told you so'.

## SOULNOTE S-3 REFERENCE

The Soulnote S-3's support for S/PDIF, USB, CD and SACD, plus FIR and NOS filter options, accounted for over 400 measurements here... And the results are illuminating because the filterless (NOS) pathway is not consistent between CD and external LPCM sources, the former affording a far superior performance [see Graph 1]. In practice, Soulnote's FIR filter is the 'Sharp Minimum' option from the ESS9038PRO DAC (not the linear phase example seen on its website), this offering a full 93dB stopband rejection and no pre-ringing on transients – but strong post-ringing – and a response flat to within  $\pm 0.05\text{dB}$  with CD. The NOS option has no time domain distortion (no ringing) but also no suppression of digital aliasing and a response that rolls away to  $-0.8\text{dB}/10\text{kHz}$  and  $-3.2\text{dB}/20\text{kHz}$  with CD. There is no appreciable difference in A-wtd S/N (113.5dB) or mainline distortion (0.004%/FIR and 0.0039%/NOS at 1kHz/0dBfs) except at 20kHz where there is obvious overload in the top 5dB of the NOS path's dynamic range [red infill, Graph 1]. CD jitter is 875psec (FIR) and 850psec (NOS), and 510psec with SACD, but this all remains fairly benign as it's caused by  $\pm 100\text{Hz}$  PSU rectifier noise [see Graph 2].

LPCM inputs (24-bit) have the same 113.5dB A-wtd S/N ratio and similar 0.003-0.01% THD (20Hz-20kHz, re. 0dBfs) with the FIR filter as with CD but the NOS pathway introduces a higher, 'flat' THD of  $\sim 0.007\%$  over the top 50dB of its range [solid pink trace, Graph 1]. Moreover there is significant PSU-modulation via the USB and S/PDIF NOS pathway that is absent via CD. Finally, SACD extends to  $+0.2\text{dB}/50\text{kHz}$ ,  $-6\text{dB}/80\text{kHz}$  and  $-24\text{dB}/100\text{kHz}$  with levels of bass/mid distortion, and low-level resolution, that are consistent with CD (there is no 'SACD'/NOS' pathway). PM



**ABOVE:** Digital inputs are on coaxial, USB-B (x2), AES/EBU and a proprietary 'Zero Link' port for use with compatible network transports. An external 10MHz clock is also supported. Outputs are on on RCAs and configurable, balanced XLRs

textures growing more lifelike with the FIR filter in tow. But I must emphasise again that there are no hard and fast rules: you have to select NOS or FIR by ear.

Dispensing with CDs for SACDs, of which I don't have one for Blind Faith, I was able to compare my current go-to reference SACD, Dr John's *In The Right Place* [Analogue Productions CAPA 006 SA] with Mobile Fidelity's gold CD [UDCD 619]. As superb as is the latter, especially when compared to the standard CD on Atlantic, the SACD lifted every parameter of the sound.

### MAKING SPACE

This disc landed on the top of my reference pile for a number of qualities, but most notable are the attack, the bass control, and the sounds of Dr John's distinctive vocals and star instrument: piano. 'Such A Night' is always irresistible, but the S-3 performed something to an unexpected degree. It constructed a flawless, seamless soundstage

with – and I know you're going to question my sanity for saying this – an immediately palpable sense of atmosphere, not just open space.

Within the presentation, the backing vocalists stage left sounded positively angelic, with the bla-a-arty trumpet evoking



**LEFT:** Soulnote's RC1000 'remote commander' covers off all CD/SACD track access functions, program and repeat play, filter selection and (digital) input selection

real New Orleans soul. Let me not wax too insanely glorious about this because the SACD sounds fabulous even via my small desktop system's Sony Blu-ray player. But through the S-3? Something akin to magic.

It was the same with John Prine's self-titled debut [Analogue Productions CAPA 004 SA], its unplugged acoustic guitar exposing a brittleness in the regular CD. The way the S-3 matches natural tonality with a soundstage and sense of space utterly free of artifice is the party trick. The last time I heard an SACD sounding this uncoloured and authentic was via dCS's four-box Vivaldi stack [HFN Feb '13], for the price of an Aston Martin.

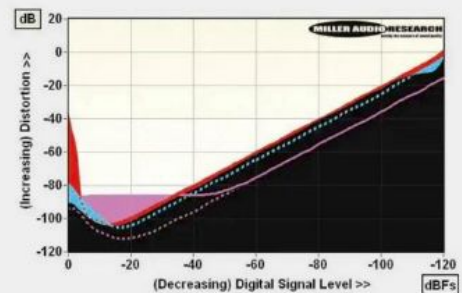
### INFLUENCER

All that was left to make me want an S-3 was to try it as a DAC with three dissimilar transports: the circa-1989 Marantz DA-12, the PS Audio PerfectWave and a coaxial feed from my trusty Marantz DV-8300. This listening session reinforced my belief that DACs exercise greater influence on sound than transports, which adds to the appeal of Soulnote's DAC-only D-3. However, it also makes the extra £1000 for the S-3 even more of a bargain... ⚡

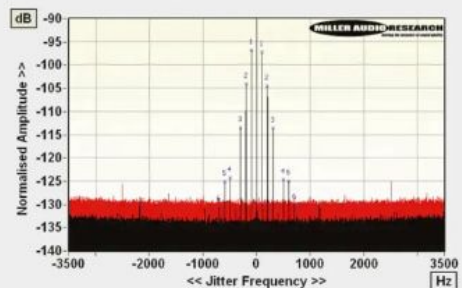
### HI-FI NEWS VERDICT

Because I'm predisposed toward SACD, one might presume that I'm going 'easy' on the Soulnote S-3. But having five SACD players to hand (if not a £100k-plus deck), I am happy to declare that this unit not only exemplifies why SACD is the finest physical digital source yet, it also further elevates CD sound to narrow the gap between digital and analogue. Which is all one could want. This player is an utter joy.

Sound Quality: 89%



**ABOVE:** Distortion vs. signal level over a 120dB range – CD (1kHz FIR, black; 20kHz FIR, blue; NOS, red); LPCM 48kHz/24-bit (1kHz FIR, pink dashed; NOS, pink)



**ABOVE:** High res. jitter spectrum comparing SACD (red) with 48kHz/24-bit LPCM/USB (black, w. mkrks)

### HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	5.25Vrms / 6.7-58ohm (XLR)
A-wtd S/N ratio (CD / SACD)	113.5dB / 112.9dB
CD Distortion (20Hz-20kHz, 0dBfs)	0.0040-0.011%
SACD Dist. & Noise (20Hz-20kHz, 0dBfs)	0.0040-0.046%
Freq. resp. (20Hz-20kHz/50kHz/100kHz)	+0.0 to -0.1dB / +0.2dB / -24dB
Digital jitter (CD/SACD)	875psec / 510psec
Resolution (re. -100dBfs; CD/SACD)	$\pm 0.1\text{dB}$ / $\pm 0.2\text{dB}$
Power consumption	37-47W (1W standby)
Dimensions (WHD) / Weight	454x170x393mm / 27kg