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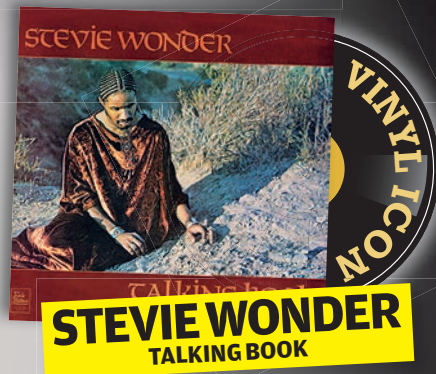


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# MBL 1511F

This DAC from Germany's high-end MBL marque boasts battleship construction and immaculate build quality. But it's not even the company's top model...

Review: **John Bamford** Lab: **Paul Miller**

Welcome to a world of truly luxurious audio. From the portfolio of Berlin's MBL Akustikgeräte, the 1511F D-to-A converter is almost as large as the Mark Levinson amplifier that sits in my equipment rack. Built around a substantial metal chassis with brushed aluminium panels and polished acrylic trim pieces, it weighs 16kg and sports five digital inputs and three line outputs (one balanced and two single-ended). The outputs are simultaneously active should you wish to feed your main system, a secondary system and a separate headphone amplifier, for example. As it's nothing other than a DAC, yet costs as much as many hi-fi enthusiasts' entire music systems, you'd be right to assume it aspires to being 'up there' with the best of them...

## DIFFERENT THRILLS

This is one of the components in MBL's Noble Line range, a step up the price ladder from the company's 'entry level' Corona Line separates [*HFN* Sep '12]. OK, so it could be judged a 'mere toy' if compared with the company's Reference Line 1611F DAC that costs twice the price, or if put alongside the wildly elaborate form of Light Harmonics' Da Vinci DAC [*HFN* Apr '13] which, despite having only two inputs, costs (gulp) £20k. Still, this is like comparing an AMG S-Class Mercedes with a Ferrari: you'd expect them to offer different thrills, both equally exhilarating.

The 1511F's front panel houses a large VFD status panel flanked by two rows of control buttons that govern input selection, standby, mute, and allow setting of the display brightness in seven steps (including off). One button labelled True Audio disables the DAC's error correction circuits. It is recommended that True Audio is engaged 'for maximum sound quality'. An error light in the display will warn if

incoming data is corrupted – when playing a badly scratched CD, for example – in which case disengaging True Audio might improve playability by obviating clicks and dropouts. The company's Noble Line range includes a CD transport (model 1521A) to partner the 1511F, the former naturally supplied with a remote handset that will also control the DAC's major functions. Made of alloy and finished in black or silver, the remote is available separately for £175.

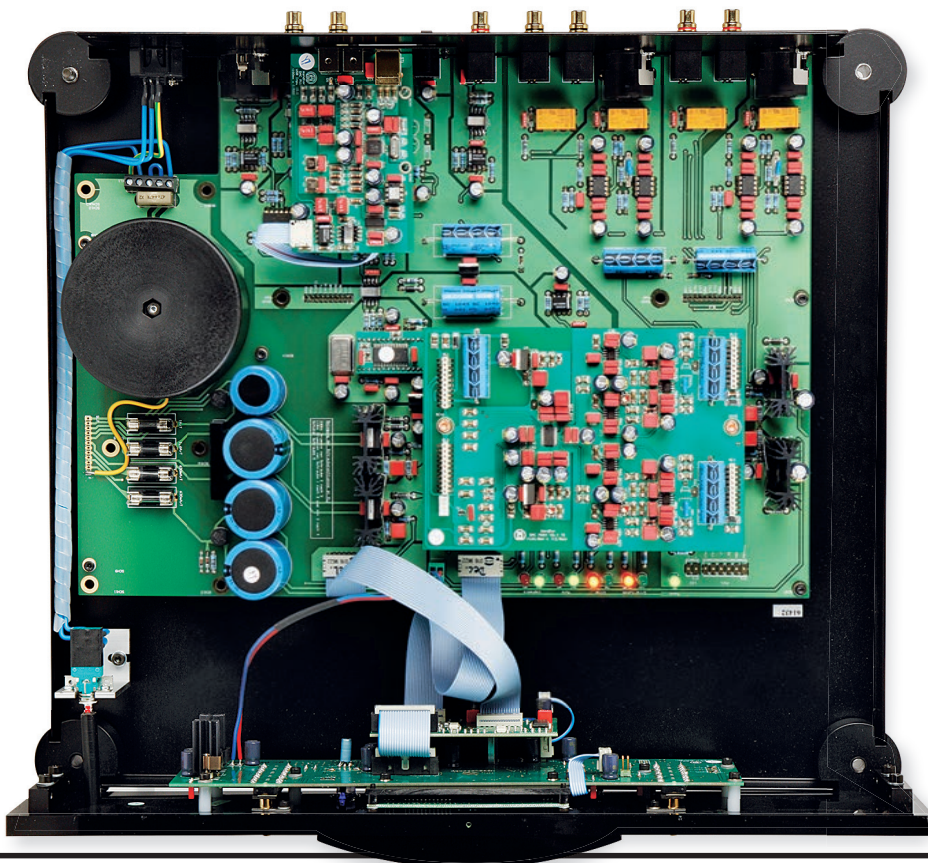
## AIMING FOR A BALANCE

Previous incarnations of the 1511 dating back some five years featured a proprietary 'SACD Link' for marrying with appropriate MBL disc players, but since hi-res audio is now predominantly computer audio-based this has been replaced with a USB input. And this current version employs an improved 'descrambling algorithm' claimed

to deliver a 'smoother transition between the low-level delta sigma and high-level multi-bit parts' of the DAC.

As with the USB and S/PDIF inputs of the Corona C31 CD player/DAC [*HFN* Sept '12], all of the 1511F's inputs are limited to accepting data up to a maximum of 24-bit/96kHz, which might disappoint number-counting obsessives collecting hi-res downloads in the largest possible file sizes. I'm also guilty in this respect: it's kinda daft, since I know that many of today's finest-sounding DACs that accept 192kHz data may subsequently downsample internally. Moreover, the S/N ratio and low-level linearity performance of some of the latest top spec DACs featuring 32-bit/384kHz-capable USB inputs (and even more rarified DoP functionality for native playback of DFF files) often suggest resolution capabilities no better than 16-17

**RIGHT:** A work of art comprising full-sized and surface-mount components together with Crystal's popular CS4398 DAC. Note status LEDs for power, error, mute and de-emphasis







bits. Ultimately, one must conclude it is the sound quality performance of a DAC – and its *true* ability to offer substantially-better-than-CD resolution with hi-res recordings – that's paramount, not the numbers on its specification sheets.

On this topic, MBL's chief development engineer Jürgen Reis says: 'Research shows that when we compare the sound of a 96kHz or 192kHz recording through today's replay systems, the differences we perceive are due to typically-employed digital filtering techniques.'

'Since we believe the ear to be four to five times more sensitive to *pre*-ringing than to *post*-ringing, we've designed a psychoacoustically optimised filter type best described as approximately four-fifths minimum phase and one-fifth linear phase, as we're aiming to give the best balance between impulse behaviour, stopband rejection and band pass transition.'

'When developing our asynchronous USB MCMI [Master Clock Mode Interface] we focused on low jitter clocks, with low noise and high bandwidth voltage regulators, and aimed for extremely high isolation to

avoid computer noise entering the D-to-A stage. We did in fact intend to make the F version of the 1511 24/192-capable, but I was not happy with the sound because the bass lacked some punch and the midrange was missing some definition.'

While at the core of the 1511F lies the same Crystal CS4398 DAC seen in the Corona C31 player/DAC, there are many differences in design topology. The 1511F's display and control power supplies are fed from separate windings on the power transformer and

isolated from the analogue and digital paths with opto-couplers. To further lower interference there are *two* input receivers. An auxiliary receiver with fixed oscillator measures incoming sampling rate, isolated from the DAC's digital audio path to minimise ingress of noise. Its 'voicing' is also different from the C31's [see boxout].

### ANALOGUE LOVER'S DELIGHT

If you've witnessed one of MBL's demonstrations at an audio fair, its electronics driving the company's unique


'Muted trumpet  
displayed just  
the right amount  
of searing blast'

**ABOVE:** Blue VFD shows incoming USB sampling frequency. With the other inputs it reads CD when data is seen to be 44.1kHz, DVD-V if 48kHz and DVD-A if 88.2kHz or 96kHz

Radialstrahler omnidirectional speakers (which have multiple segment strips of carbon fibre acting as bending-mode radiators when a signal is applied to their voice coils), you'll know that when tuning and voicing its components Reis and his engineering colleagues are hardly working in the dark. The firm's larger speaker models create high fidelity images of musicians that are convincingly lifelike.

Listening to the 1511F via balanced (XLR) connection to the Mark Levinson No.383 amplifier and Townshend monitors in my listening room [click on 'Meet the Team' at [www.hifinews.co.uk](http://www.hifinews.co.uk)] I thought it sounded richly textured and colourful. I was reminded of the sort of lyrical, 'filmic' quality I experienced last year when playing host to CEC's elaborate belt-driven CD transport together with the Japanese specialist firm's DA3N DAC [*HFN* Nov '12].

In some ways you could describe the sound character as an analogue lover's delight – inasmuch as it's pungent and meaty, with an invitingly warm midrange and super-smooth treble quality. There was certainly no sharp-edged 'digital hardness' to be heard here. Even when playing barren, clinical-sounding recordings, the 1511F unquestionably seduced me with its charms. I re-visited the somewhat vicious 'Grounds For Divorce' from Elbow's *The Seldom Seen Kid* [Polydor 1764098] and found it a little less comfortable than with the softer-focused CEC DAC, I concede. With the 1511F the energy was bolder and crashing guitars and percussion more strident – and, I'm bound to conclude, rather more honest.

Indeed, I judged the 1511 to be beautifully balanced. Yes, the bass was bold and punchy – hey, I like it like that! – while remaining always to appear 'calm', 

## SYSTEMATIC DESIGN

Along with Tokyo's TAD Labs and Connecticut's Krell Industries, MBL of Berlin is one of only very few high-end audio manufacturers producing complete replay systems from source to loudspeakers. Doing so affords complete control, allowing tuning of the electronics for precisely the sound character they desire. Says MBL's chief development engineer Jürgen Reis: 'Although the DAC circuit and output drive chips in our 1511F are the same as those used in our Corona Line C31 CD player, the DAC has been tuned to sound quite different. With more expensive Noble Line components such as this, we want to give our customers a more emotionally-oriented sound; one could say a more "analogue-style" sound, with smoother and more relaxed high frequencies. Where necessary we employ higher-grade internal components if we judge them to deliver more musical enjoyment. And in the 1511F in particular, we have tweaked the group delay of the digital bi-phase signal so the bass delivers more "rhythmic swing". Since the acoustic aspect is tuned differently, the measurements will be different.'

## OUTBOARD DAC



**ABOVE:** Two coaxial, one optical (S/PDIF) and XLR (AES/EBU) digital inputs are joined by a USB port. There is one coaxial digital output but a total of two single-ended (RCA) and one balanced (XLR) audio output. Input sample rates are limited to 96kHz

self-assured and even-handed. My favourite rock and jazz/rock recordings (countless live Zappa albums, alongside 1970s-vintage live performances of Focus and Ian Carr's Nucleus, to name a few of my references) were delivered with immediacy and delicacy in equal measure, together with outstanding dynamic qualities.

I can't concur wholly with Reis's description of the 1511F sounding 'more analogue and relaxed' than his C31 player/DAC, since I found the C31 exceptionally smooth and luscious-sounding. In my system, at least, the 1511F sounds less creamy and more tightly-focused than the C31, with better transparency thanks to its 'blacker blacks'. And where I judged the C31 to be a bit euphonic, with a coloured sense of richness, the 1511F sounded more open with Patricia Barber's *Companion* live set from 1999 [Blue Note/Premonition 724352 29632]. Where MBL's cheaper DAC never fails to draw you in to a musical event, this 1511F paints better holographic images, with a deeper and more lifelike sense of three-dimensionality.

### AUTHENTIC ZING

Digiphobes adamant that most digital replay sounds remorseless and barren really should bow to the intimacy and involvement the 1511F delivers. I was knocked for six by the way it remained composed while tracking the dynamic contrasts throughout the song 'GiornoNotte' from Italian singer Alice Pella's *Little Dream* album [Suono Records SR001]. The combination of the electric piano's energy and its aggressive zing seemed particularly authentic, while the muted trumpet displayed just the right amount of body and searing blast. I was also carried away by Otis Redding's

timeless 'Sittin' On The Dock Of The Bay' from his posthumous 1968 *Dock Of The Bay* album [24/96 download, HDtracks]. The way in which the 1511F presented images was glorious, instruments emanating from a black background and portrayed vividly in space, the layering of drum kit, electric guitar and accompanying instruments clearly depicted. It also produces a charming, welcoming sound – I'd dare to describe it 'a sound for relaxing to at home' rather than analytical studio-type monitoring. I've no doubt the voicing of MBL's electronics is beautifully matched to its loudspeakers which render dimensional space in the most tactile fashion.

Let's face it, if *your* day job necessitated sitting in front of a replay system of such high calibre for hour upon endless hour, listening to music and making judgements on the subtle subjective effects caused by changes in the electronic and mechanical design of your sources and amplifiers, you'd be bound to conclude 'Well, there sure are worse ways to earning a living.' ☺

### HI-FI NEWS VERDICT

Choosing any component is a matter of system integration: what does it do for you in *your* system? MBL's 1511F DAC is indeed 'up there', its sound waiting to be judged alongside the finest high-end DACs available at any price. Its ability to paint spookily realistic images out of silence is nothing short of fabulous, while its build quality shows carefully considered engineering both inside and out.

Sound Quality: 86%

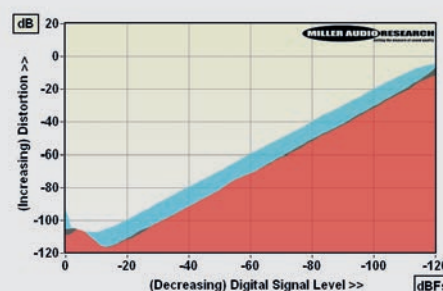


## LAB REPORT

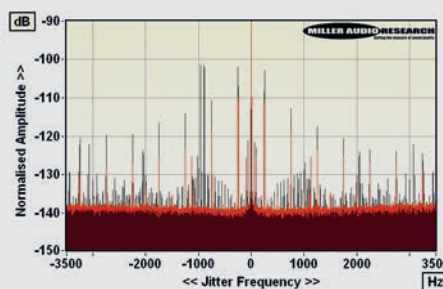
### MBL 1511F DAC

Although we have only recently featured the MBL Corona Line C31 CD player/DAC [HFN Sep '12], the 1511F DAC actually bears a closer technical relationship with the older 1531 CD player [HFN Oct '06]. The digital filter characteristics of Crystal's legacy CS4398 DAC have been 'tweaked' here to minimise any pre-echo at the expense of greater post-echo artefacts, yielding what MBL describes as a filter with a performance that's 80% minimum phase and 20% linear phase. The impact on frequency response is most evident with 44.1/48kHz inputs, which roll off within the treble region to the tune of -1dB/12kHz and -3dB/20kHz. The effect is less marked with 96kHz digital inputs which reach -0.5dB/20kHz and -3.5dB/45kHz. Higher sample rates are not supported but the USB input arguably offers the more refined performance with jitter falling from 580psec (S/PDIF) to 190psec [see Graph 2, below].

Maximum output is a solid 3.9V through the balanced XLRs which offer a moderate 96ohm source impedance while the 113dB A-wtd S/N ratio holds true via S/PDIF and USB inputs. Distortion is exceptionally low at <0.0003% through the midrange over the top 30dB of its dynamic range while figures <0.0005% at 20kHz over this same range (and channel separation of 130dB) pay testament to the quality of MBL's analogue output stage [see Graph 1, below]. There's only one oddity to report – the USB input 'clips' with a 0dBfs/20kHz digital input in True Audio mode. Readers can download full QC Suite test reports detailing the MBL 1511F's S/PDIF and USB performance by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'download' button. PM



**ABOVE:** Distortion vs. 24-bit/48kHz digital signal level over a 120dB dynamic range. S/PDIF input (1kHz, red) and USB input (1kHz, black; 20kHz, blue)



**ABOVE:** High resolution jitter spectra comparing USB (red) and S/PDIF (black) inputs with 24-bit/48kHz data. Jitter is lower via USB at 190psec

### HI-FI NEWS SPECIFICATIONS

Maximum output level (balanced)	3.93Vrms at 96ohm
A-wtd S/N ratio (S/PDIF / USB)	113.1dB / 113.1dB
Distortion (1kHz, 0dBfs/-30dBfs)	0.00009% / 0.00016%
Dist. & Noise (20kHz, 0dBfs/-30dBfs)	0.00025% / 0.00049%
Freq. resp. (20Hz-20kHz/45kHz)	+0.0dB to -3.0dB/-3.5dB
Digital jitter (48kHz/96kHz/USB)	580psec / 300psec / 190psec
Resolution @ -100dB (S/PDIF / USB)	±0.2dB / ±0.9dB
Power consumption	19W
Dimensions (WHD)	450x425x113mm