

Exposure 5510

Leading the charge in Exposure's flagship 5510 series is a new integrated amplifier that leverages technology from the 3510 monoblock. But what's this... an OLED display?

Review: Mark Craven Lab: Paul Miller

By kicking off its new 5510 series with an integrated amplifier, Brit brand Exposure (Malaysian owned but still based near Brighton) is already ringing the changes over its previous 5010 line, which only included a preamp and monoblock power amplifiers [HFN Nov '18]. You can expect 5510 pre/power models to arrive in due course, but until then the 5510 Integrated, at £4600, can be considered the company's flagship.

This amp also introduces some notable changes over Exposure's more affordable 3510 Integrated [HFN Nov '21], even if the two models are cut from a similar cloth. Like its sister amp, the 5510 is – out of the box – an all-analogue, all line-level affair, with the option of being fitted with a module to handle digital or vinyl sources. It's identically sized too, dimensions of 440x115x300 (whd) making it an easy fit in any equipment rack. Missing, though, is the 3510 Integrated's choice of a 'titanium' colourway instead of classic black. Exposure has also opted not to include a built-in headphone amp here, preferring to keep the 5510 as a 'purist' model.

FOUR BY TWO

The company rates its new amplifier at 2x120W/8ohm, from a Class AB power stage utilising four Toshiba transistors per channel. As PM discusses in his Lab Report [p75], this figure represents an on-paper upgrade over the 3510, but in practice the available output into 8/4ohm from the two models – both exceeding their rated spec – is broadly similar. However, the 5510 has a deal more 'grunt' when driving very low impedance speaker loads. The 5510's output stage is now DC-coupled, with a DC servo, in a topology borrowed from the 3510 monoblocks [HFN Jul '23] and the forthcoming 5510 monoblocks. This gets rid of one large decoupling capacitor in the

output stage's feedback network – good news for sound quality!

Where the 5510 breaks new technological ground, for Exposure at least, is in the volume control, which uses a resistor ladder network to give precise adjustment over a massive ~95dB range [see PM's boxout, p73]. To keep abreast of the new volume control, the 5510 features another Exposure first – an OLED panel. Compared to the displays of some rival integrated amps, this is on the small side, occupying a narrow strip in the centre of the fascia, but information – selected input and volume – is still easily read from across the room thanks to its use of white text on a black background.

Five levels of brightness for the OLED window can be cycled through using the display button on the 5510's front panel or bundled remote control [see p75]. Choose either of the two brightest options and the screen automatically goes dark after a

minute, which will be appreciated by those who like 'lights-off' listening (although there's still the amp's status LED, which glows red, to contend with).

ON THE MENU

Opposite the display button is another labelled 'Menu', which grants access to screens for changing the amplifier's output between fixed and variable (the former for use in home theatre systems); setting its default start up volume between '10' and '40'; and checking the current software version. There's nothing else here to fiddle with, which is a boon for those who appreciate an easy life, but the absence of a 'Menu' button on the remote control is slightly irritating.

Menu navigation is through the 5510's source selection rotary, which operates with a similarly satisfying click as the volume control. In standard form the amp sports six analogue inputs, which

'Minimoog and steel guitar battled away in the foreground'



RIGHT: Evolved from the 3510, the 5510 features the same two pairs of Toshiba power transistors per side [on internal heatsink, centre] but with an uprated PSU [right and centre] and new resistor ladder volume circuit [top left]



are labelled Aux 1, Aux 2, Aux 3, STR (for streamer), AV and Tape on the display and rear panel. These can't be renamed, so you'll need to remember which source is connected to which input.

As said, the 5510 can be fitted with one (and only one) of Exposure's optional plug-in modules. For digital sources, its £540 DAC+ board has a choice of optical or coax inputs, plus USB-B, and supports up to 192kHz LPCM and DSD64 (DSD256 over DoP). Vinyl lovers can choose from MM and MC options (£360 each), and a new board compatible with DS Audio's optical cartridges will launch before the end of 2025. Whichever board is fitted, you lose just one of the 5510's analogue inputs. These all use single-ended RCA connections – you might reasonably hope for a balanced XLR option at this price level.

Next to the 5510's inputs on its rear are three sets of RCA outs, one offering a tape record function, the other two being pre-outs for use with external power amplifiers or a subwoofer. There are then two pairs of speaker terminals (for bi-wired systems, rather than A/B listening), all on inset 4mm connections suitable only for banana plugs.

These speaker terminals are a familiar sight on Exposure amplifiers, and the 5510 doesn't veer away from the company playbook in terms of its styling, either. This model's smart, brushed metal fascia, gold-coloured lettering around its controls, and general 'classic hi-fi' look means it will blend in well with other Exposure units, including its 360 Turntable and new standalone DAC [see p23].

TONE RANGER

In its promotional materials, Exposure is eager to emphasise the all-rounder status of the 5510 Integrated, saying it's equally suited to 'delicate acoustic pieces' as it is 'high-energy rock'. The company will get no quibble from me here, as with the amp up and running with a Matrix Audio Element X2 Pure streamer [HFN Dec '23] and B&W 705 S3 Signature speakers [HFN Aug '24], I enjoyed listening sessions spanning various musical genres and time periods – 'enjoyed' being the operative word.

Like previous Exposure amps, the 5510 Integrated covers all hi-fi bases with quiet authority, its performance perhaps unflashy but consistently appealing. A degree of

ABOVE: Available in solid black casework (no titanium option here), the 5510 features an OLED panel indicating the action of the logic-controlled input rotary and stepwise volume

midband warmth and sweetness makes playback unfatiguing, but it finds ample detail in the bass and treble to give music a dynamic, wide-ranging feel. Nor should you be fooled by its unassuming design, as there's sufficient power here to unleash a surging bassline or orchestral crescendo.

As regards that claim of 'high-energy rock', the 5510 brought out all the swagger and drive of The Quireboys' 'There She Goes Again' [A Bit Of What You Fancy; Parlophone CDP 7 93177 2], where lead singer Spike Gray sounds uncannily like Faces-era Rod Stewart, and the standard guitar band instruments are joined by horns and piano. This was a fun, rollicking listen, but aided by grip in the rhythm section and excellent insight into the different midband elements.

On lesser systems, the relentless thrash-metal riffs of Slayer's 'Postmortem', from *Reign In Blood* [American Recordings; 192kHz/24-bit] can sound like mush, despite producer Rick Rubin sharpening up the band's sound considerably on this landmark release. Exposure's amp again maintained a good handle on the pounding drums, and kept the band's twin distorted guitars distinct even while its generally sweet demeanour slightly softened their caustic edge. A focused, somewhat narrow image matched the tight musicianship on show; the eerie opening of 'Raining Blood', which follows immediately after, was afforded a wider, bigger presentation.

BALLADS WITH BITE

For the very definition of 'a change of pace', and a better indication of the 5510's relaxing, moreish sound, Slayer was swapped for Céline Dion. The Canadian singer's cover of Jennifer Rush's ballad 'The Power Of Love', from her 1993 album *The Colour Of My Love* [Columbia 474743 2], might seem superfluous given the primacy of the original, but its ostensibly glossy

STEP BY STEP

Arguably the 5510's most significant update over the older 3510 amplifier [HFN Nov '21] is the new stepped-resistor volume control, replacing Exposure's traditional ALPS potentiometer. A total of seven relays are used to switch a bank of precision resistors offering a full 99 steps (plus mute), each step representing a ~1dB increment in level. The network is positioned under the main PCB [see pic, p72] although the driver IC can be seen above. This new volume circuit is also the reason why Exposure has equipped the 5510 with an OLED display – the same facility will also be debuted on the forthcoming 5510 preamplifier.

Stepped attenuators offer the promise of very accurate level adjustment and precise channel matching, unlike traditional pots that typically drift below –60dB where L/R errors of 1-3dB are not uncommon. Exposure's attenuator proves its mettle – over the top 10dB ('99' to '89' on the display) the increments are –1.1dB; –2.3dB; –3.3dB; –4.1dB; –5.1dB; –6.25dB; –7.25dB; –8.1dB; –9.1dB and –10.1dB. Stepping down 10 increments at a time yields an attenuation of –20.5dB (79); –30.6dB (69); –40.7dB (59); –50.2dB (49); –60.2dB (39); –70.1dB (29) and –80.1dB (19), all with a channel matching within ±0.1dB. Below '9' on the display the steps lie between 0.8dB and 1.0dB reaching a final attenuation of –96.7dB at '1'. This is an excellent result, and correctly buffered too, so the 5510's freq. resp. does not change with volume setting [see Lab Report, p75]. PM

INTEGRATED AMPLIFIER



ABOVE: The 5510 offers five line ins (with optional modules for MM/MC/DS phono and digital/DAC), a tape loop and two preamp outs. Dual 4mm speaker cable sockets support bi-wiring but are for banana plugs only – no bare wire or spade lugs here!

production is packed with depth and percussion details, and there's her epic vocal to deal with too. The 5510 delivered it with aplomb: bass notes rich and plump, synths smooth in the background, and the stereo image of Dion beautifully focused front and centre. When her soprano voice took on a slightly raw, gritty quality in the chorus, the 5510 teased out the change in character without it sounding 'obvious'.

BOW WOW

To put it another way, this is not an amplifier that will cause your ears to prick up at every fleeting, minor detail, but they're always there to be heard. Another example: the high-pitched synth lines that form part of the backing to Pink Floyd's 'Shine On You Crazy Diamond, Pts. 6-9' [*Wish You Were Here*, Capitol; DSD64], while Minimoog and steel guitar battle away in the foreground.

It's tempting to say the Exposure 5510 is made for music such as this, as its sound signature fits so well with the track's rich, analogue production – particularly the fat, liquid tones of the Minimoog –

and the company began life in 1974, just as the band were at their peak. But fulsome lows, speaker-driving ability and a little warmth aren't attributes that only serve 1970s prog rock. Billie Eilish's 'Billie Bossa Nova' [*Happier Than Ever*, Interscope; 44.1kHz/24-bit]

LEFT: Exposure's new full system remote caters for the 5510's input selection, volume, mute and power on/off



benefitted from the amplifier's blend of generous, deep-driving bass and tonal sweetness, while even the metallic, oddball techno of The Brandt Bauer Frick Ensemble's 'Teufelsleiter' [*Mr. Machine*, !K7 Records] gained an agreeably organic, largescale quality.

This cements the 5510's all-rounder status, as does the plug-and-play nature of its specification, but I'm aware prospective buyers will expect more, given the far-from-budget price tag. Good for Exposure, then, that its new top-line amplifier sounds beautifully refined and 'hi-fi' when the content demands – hearing Lisa Batiashvili in complete mastery of her violin, on Deutsche Grammophon's *Visions Of Prokofiev* [96kHz/24-bit], proved its mettle.

During the Violin Concerto No. 2's *Allegro moderato*, fibrous, sinewy violin tones shifted in weight and tempo as they weaved around the deeper, set-back sounds of the Chamber Orchestra of Europe. Batiashvili felt impressively close and real, her rapid finger work and precise bowing made visible in the mind's eye by Exposure's articulate, natural-sounding amp. ☺

HI-FI NEWS VERDICT

Those interested in the 5510 Integrated may want to also audition the more affordable 3510, as the two units are nearly identical in terms of connections and are similarly specified. That said, the appeal of Exposure's latest and more sophisticated amplifier is undeniable, from its blissfully simple operation to its confident, involving performance. Music-making doesn't always sound this effortless.

Sound Quality: 87%

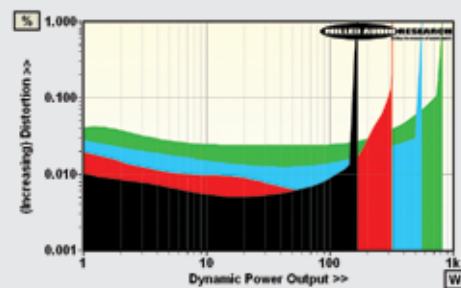


LAB REPORT

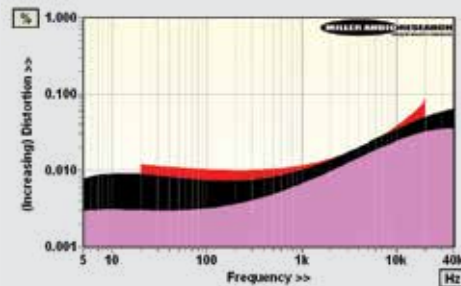
EXPOSURE 5510

A comparison between our inside pictures, and a few moments on the lab bench, reveals the clear connection between the design of the 5510, the 3510 [*HFN* Nov '21] and its predecessor, the 3010S2 [tested for *HFC* Jul '13]. The maximum +41.1dB gain and slightly below-average 80.7dB A-wtd S/N ratio are largely unchanged, but this remains a white noise rather than invasive hum, so the subjective impact is benign. The 5510's power output is also identical to the 3510's at 2x135W/8ohm and 2x225W/4ohm – Exposure feeling confident to 'update' the specification from 2x110W to 2x120W here – but the newcomer's ability to drive low impedance loads has been significantly boosted. While the 3510 offered 166W, 318W, 546W and 762W into 8, 4, 2 and 1ohm loads under dynamic conditions (<1% THD/10msec), the 5510 ups the ante with 167W, 320W, 560W and 820W, respectively [see Graph 1]. Maximum current is lifted from 27.6A to 28.5A, though either figure is massive for a 'mere' 100-watter!

Exposure's revised output, with DC servo, is reflected in the reduced 0.009-0.011ohm source impedance (20Hz-20kHz) and extended sub-bass response where the -3dB limit is now 2Hz rather than the 3510's 5Hz. The HF response is unchanged at -1dB/20kHz and -16dB/100kHz while distortion now has a slightly different profile – higher at lower power (0.007-0.05% vs. 0.003-0.05% re. 1W, 20Hz-20kHz) but lower at higher power (0.003-0.03% vs. 0.006-0.051% re. 10W). Importantly, these changes mean that distortion is now more consistent with output so, even at 100W, the 5510 holds to 0.01-0.085% [re. 20Hz-20kHz; see red trace, Graph 2 below]. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Maximum current is 28.5A



ABOVE: Distortion versus frequency versus power output (1W/8ohm, black; 10W, pink; 100W, red)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	135W / 225W
Dynamic power (<1% THD, 8/4/2/1ohm)	167W / 320W / 560W / 820W
Output imp. (20Hz-20kHz/100kHz)	0.009-0.011ohm / 0.12ohm
Freq. resp. (20Hz-20kHz/100kHz)	-0.1dB to -1.0dB/-16.1dB
Input sensitivity (for 0dBW/120W)	24mV / 270mV
A-wtd S/N ratio (re. 0dBW/120W)	80.7dB / 101.5dB
Distortion (20Hz-20kHz, 1W/10W)	0.007-0.05% / 0.003-0.031%
Power consumption (Idle/Rated o/p)	20W / 390W (1W standby)
Dimensions (WHD) / Weight (each)	440x115x300mm / 12kg