



DYNAUDIO FOCUS 600XD

ACTIVE DIGITAL LOUSPEAKERS

Take a good look at the Dynaudio Focus 600XDs, because they represent the future of reproduced sound in the home. While you're looking and pondering that statement, you do need to take into account the fact that the Focus 600XDs are not 'just' loudspeakers — inside them you'll find almost everything you need to reproduce audio in your listening room: all you need to provide is a music source. That music can be supplied in analogue or digital form via conventional wires, or it can be supplied digitally and wirelessly from your phone, your computer, a NAS drive, the internet... or, if you're of a mind, from a CD or DVD player.

So, yes, Dynaudio's Focus 600XD is not 'just' a loudspeaker. Inside each one is a digital-to-analogue converter, an electronic crossover, four power amplifiers to drive the four drivers (two bass drivers, one midrange and a tweeter) plus, of course, there's the control circuitry that allows you to use the infra-red remote control provided with the 600XDs to turn the speakers on or off, mute their output, switch inputs between analogue and digital, select input source (Line In, Optical In, Coax In or USB), select a Hub source (A, B or C), turn the speakers' front-baffle LED displays on or off... and, of course, adjust speaker volume. There's also a radio frequency transceiver to grab any music you send wirelessly from a Dynaudio 'Hub' or, if you connect, say the left-channel speaker via a wired digital connection, the transceiver inside that speaker can transmit the right-channel information wirelessly to the right-channel speaker, so you don't have to connect any wires to that speaker (except, of course, for the all-essential 240V mains power cable). Finally, there's an upgrade port (marked 'Service') that makes it possible to easily upgrade the internal circuitry with any new features or functions when they become available. All of which makes the Focus 600XD a very, very full-featured high-end loudspeaker indeed.

And 'high-end' is also an operative word here because Dynaudio is no Johnny-come-lately to the audio scene: the company has been at the cutting-edge of high-end sound since it was first established in 1977. It is one of the very few loudspeaker companies in the world that manufactures its own drivers, and is

Reviewer greg borrowman

almost unique in using over-sized (in some cases up to 75mm in diameter) voice coils to provide the motive force for those drivers. Importantly, Dynaudio does not just 'assemble' its drivers in Denmark — it also makes the parts for those drivers in Denmark itself, in its own factory... the cones, the voice coils, the suspensions, the chassis. It even energises its own magnets. So Dynaudio speakers are truly 'in-house' designs. All Dynaudio's research, development and production takes place in Skanderborg, Denmark, yet despite this, the company was German-owned until 2014. (It is now owned by GoerTek Inc, one of China's largest manufacturers of electro-acoustic products.)

Each Focus 600XD sports a pair of 180mm-diameter bass drivers that have a thermo-formed MSP (magnesium silicate polymer) cone that's driven by a 54mm diameter voice-coil former around which is wound wire extruded from pure aluminium. Aluminium has a higher temperature rating than the copper wire that is more often used in voice coils, and it's also lighter, which is what enables the use of larger-diameter voice coils.

The advantage of using of a large voice coil is that drive force is distributed more efficiently over the cone's surface, which effectively reduces distortion. The bass drivers in the 600XD (18W54 Esotec+ units with ultra-long throw suspensions and cast aluminium chassis) were reportedly developed specifically for it. At 270Hz, the audio signal is switched (via an electronic DSP-based crossover, with 24dB/octave slopes) from the two bass drivers to the single midrange driver, which is identical in construction to the bass drivers except that it has a smaller-diameter cone (140mm) and a commensurately-smaller voice coil (though at 38mm, it's still considerably larger than the 25mm voice coils used on most midrange drivers).

The midrange driver hands over at 3.1kHz to the 600XD's 27mm soft-dome tweeter, the output of which can be varied by up to 2dB by using a three-position treble contour switch on the terminal panel on the rear of the speakers. Also on this panel is an input sensitivity switch to optimise the sensitivity for analogue input signals (+6dB, 0dB, -6dB). This seems to have been provided primarily to ensure the effective operation of Dynaudio's built-in volume control (about which

more later). Each one of the four drivers inside Dynaudio's 600XD is driven by its own individual Class-D amplifier, rated by Dynaudio with a power output of 150 watts. So, between the left and right speakers, the total power available is a staggering 1200 watts (600 watts per channel).

Dynaudio has certainly used an arcane method to display the internal system status of the 600XDs. At the top corner of each speaker is a series of ten LEDs — arranged vertically — and it's these that are used to show you what's going on inside the speakers. For example, if the bottom-most of the LEDs (LED10) is blue, it means the speaker is switched on and an audio signal is playing. If it's flashing blue, the speaker is switched on, but can't find an audio signal. If it's coloured violet, the speaker is on, and an audio signal is playing and the left and right speakers are connected via a wired link. If

the LED is red, power is available to the speaker, but it's not switched on. (And if it's not doing anything, there's no power!) If the LED above this one (LED9) flashes red, the speaker is muted and volume level is indicated by how many of the LEDs above the bottom one are lit. So far, so good... all fairly intuitive... it's when it comes to selecting a Hub or an input that things become tricky. For Hub selection, LED1 flashes for Hub 1, LED5 flashes for Hub 2 and LED9 flashes for Hub 3. But for input source selection, LED1 flashes for Input 1, LED3 flashes for Input 2, LED5 flashes for Input 3, and LED7 flashes for Input 4! The one thing I can say about all this is that it takes a good while to get used to... On the other hand the LED display is also very entertaining, because during some operations (such as searching for an active input, or at switch-on and switch-off) the LEDs put on a mini light-show, 'chasing' up and down as they turn on and off sequentially.

As you'd expect of Dynaudio, the Focus 600XD is available in a wide range of finishes, including satin white and satin black lacquer as well as in rosewood and walnut finishes (both of which are real wood veneers). Special order finishes are available, but attract a 30 per cent price premium. All models have black grilles that attach to the front baffles via hidden neodymium magnets.

IN USE AND LISTENING SESSIONS

Loudspeaker placement is often a compromise between where the speakers will sound best in the room, where they will look best, and where it's actually practical to locate them... a statement that applies to all loudspeakers, no matter what their design. However the Dynaudio 600XDs have aces up their sleeves, because if you're forced to place them anywhere other than in the optimum positions in the room, they have DSP circuitry on-board that can compensate for that less-than-optimum position.

For example, if you position the speakers in the best position in the room, you simply select the 'Neutral' setting of the DSP. But if you have to place them closer to a wall than is optimum, you can use the DSP's 'Wall' setting to compensate. And, if you simply must have the speakers close to the corners of a room... yep, you've guessed it, the 'Corner' setting will correct for this position too. In even-better news, the compensation circuit can be set individually for each speaker, so you could have the left speaker in a corner and the right speaker back against a wall and still get the correct sound balance. Room compensation is accomplished using a seven-position rotary control on the rear of each speaker, so there's a little extra setting variability allowed to cover each speakers' actual proximity to a wall or corner.



You certainly have a multiplicity of choices when it comes to connecting the Dynaudio Focus 600XDs to your music sources, though some of these involve the purchase of a Dynaudio Hub (\$599), to which you can connect all your analogue and digital sources, after which the Hub would send those signals wirelessly to your speakers. Using a Hub set-up affords the opportunity to have different speakers in different rooms reproducing different signals. (It also means you could use Bluetooth, but for this you'd need to plug a Bluetooth receiver — such as Arcam's rBlink [\$349] — into the Hub.) However, if you use Dynaudio's Hub to distribute audio signals in this



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way, the maximum digital transmission capability is 16-bits/48kHz, so high-res audio is not possible. [Editor's Note: Just before we went to press we heard that Dynaudio would be announcing an upgraded version of its 'Hub' at the 2015 High End show in Munich. This new model will allow 24/96 streaming to the Focus XD. It will also receive Bluetooth.]

For this review I elected to use a fully-wired set-up, using analogue signals delivered from an external pre-amplifier individually to the left- and right-channel speakers, as it is this mode that delivers the highest audio quality. (Sending signals wirelessly between the speakers themselves involves digital conversion as well as an upper limit of 24-bit/96kHz.) When using active set-up, I further had the opportunity

of using the Dynaudio's own volume control to adjust playback volume (by setting the rear-panel switch on the speakers to 'Master' and 'Slave') or bypassing it so I could use my pre-amplifier's own volume control (by setting the rear-panel switch to 'External'). I elected to use my pre-amplifier's volume control to control volume, partly for reasons of convenience but also partly because I found Dynaudio's inbuilt volume control to be fairly coarse, offering only a limited number of settings. (Technically, the highest audio quality is achieved by delivering 24-bit/192kHz digital signals directly to the 600XD's digital inputs, but you do need to route the digital signal to both the left and the right speaker via wires. As mentioned previously, if you use only a single digital cable to one speaker, and depend on it to transmit the digital signal wirelessly to the other speaker, the digital signal will be downgraded to 24-bit/96kHz during the wireless transmission, plus there'll also be a slight time delay introduced by the wireless link, which means that even if your speakers were positioned perfectly, sounds from the left-channel speaker would arrive at the listening position a few milliseconds earlier than the signals from the right-channel speaker.)

By now you should have figured out the technical advantages of using a fully active DSP loudspeaker design: a flatter and more extended frequency response, improved sound quality, reduced intermodulation distortion (IMD), enhanced dynamic range capabilities and the potential to deliver much higher in-room sound pressure levels (SPLs). But listing the technical advantages will never prepare you for the sound quality, particularly when a design has been as well-executed as it has with the Dynaudio 600XDs. They sound simply magnificent.

I found the clarity of the sound issuing from the 600XDs to be jaw-droppingly good... and that's across the entire frequency spectrum... there simply isn't a weak link anywhere. The bass is almost bottomlessly deep and can deliver anything from the sledge-hammer-like impact of an aggressive kick drum to the



subtle caress of a viola with equal authority and with unparalleled accuracy. So much so that I found myself replaying the intro track, *Prelude*, from Milo Greene's new album 'Control' over and over just to savour the seductive sound of it, as well as the depth and power of the bass delivery.

The same held true of the midrange. Vocals in particular are delivered with a crispness and a 'you are there' liveness that will have you shaking your head in wonderment. The intimacy of Holly Cole's voice as she sings *Alison* is rendered perfectly, and the backing is all in harmonious balance. As for the articulation of the Dynaudios, it's simply exceptional... I was awed by the 600XD's presentation of Simone Dinnerstein's performance of Bach's *French Suite No. 5 in G Major* as performed live on her album 'The Berlin Concert' (Telarc CD-80715). On this disc you can also hear how 'real' appear the sound of the audience's clapping via the 600XD's — applause being a particularly good test of a loudspeakers' tonal accuracy. And as for the stereo imaging, well that's just to die for... so good that if someone on-stage were to drop a pin, the moment it hit the floor your eyes would immediately flick down and visually locate the exact point you heard it make contact.

And the high frequencies? It seemed to me that the tweeter in the 600XD's delivered exactly the same sound I heard when I was auditioning Dynaudio's Evidence Platinums, which retail at more than \$100,000, so I would have sworn I was listening to Dynaudio's most expensive tweeter, the Esotar², which is reckoned by many to be the world's best. The tweeter in the 600XD is not an Esotar², but one of Dynaudio's lower-spedced Esotec+s, but it appeared to me that thanks to the triple advantages of the electronic crossover, having its own private driving amplifier and maybe some subtle DSP correction, the Esotec+ tweeter when driven actively performs at the level of an Esotar² being driven passively, which means you'll hear a beautiful, sweetly delicate sound and benefit from a frequency response that extends far beyond the range of the human hearing and one that is thus absolutely tailor-made for delivering the potential subtleties of high-res audio recordings.

CONCLUSION

Dynaudio has kicked an 'own goal' developing the Focus 600XD's, because in so many ways, I think they're the best-sounding Dynaudio speakers I've ever had the pleasure of auditioning... and yes, I'm including the Evidence Platinums. But even if you care to argue that the 600XD is not the best-sounding model in Dynaudio's range, a single audition is all you'll need to have

you agreeing that it's certainly the best value-for-money model in the range. As regards the competition, you'll have to pay a lot more than what Dynaudio is asking for the Focus 600XD's to buy any pair of passive speakers that sound anywhere near as good... after which you'll have to cough up for pre and power amplifiers as well, plus a DAC, and even then you still won't have the interconnectivity and upgradability that's already built into the 600XD's. £

▽ THE PANEL ON THE REAR OF THE 600XD'S CABINET HOUSES THE ANALOGUE AND DIGITAL INPUTS, MASTER/SLAVE SETTING, SPEAKER POSITION KNOB, TREBLE BOOST/CUT, A USB PORT FOR SERVICING /UPGRADES, AND THE IEC POWER SOCKET.



SPECIFICATIONS

DYNAUDIO 600XD

DIGITAL INPUT: 16/24 bits

SAMPLE RATES: 44.1/48/88.2/96/176.4/192kHz

ANALOG INPUT VOLTAGE: 1/2/4Vrms (+6/0/-6dB)

WIRELESS HUB PLAYBACK: 16-bit/48kHz

WIRELESS DIRECT PLAYBACK: 24-bit/96kHz

TWEETER: 27mm soft-dome

MIDRANGE: 140mm MSP cone with 38mm aluminium voice coil

WOOFERS: 2 × 180mm MSP cone with 54mm aluminium voice coil

CROSSOVER: Active DSP-based, time-coherent phase-linear FIR filters, 270Hz and 3.1kHz with 24dB/octave slopes, vertical and horizontal dispersion optimised

FREQUENCY RESPONSE: 20Hz-24kHz

CABINET VOLUME: 51 litres (bass)/ 8 litres (midrange) (both closed)

WEIGHT: 27.0kg (each)

DIMENSIONS (HWD): 1095 × 213 × 337mm

INTERNAL AMPLIFIER POWER: 4 × 150W

STANDBY POWER CONSUMPTION: <0.5W

FINISHES: Satin white/Satin black lacquer; Rosewood/Walnut real-wood veneers

PRICE: \$14,999 per pair

WARRANTY: Three years

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