

DYNAUDIO EMIT M30

LOUDSPEAKERS



Dynaudio has come a long way since it first came into being in Skandeborg, Denmark, in 1976, but despite improvements in materials and manufacturing technologies—and that the company is now owned by Chinese giant GoerTek Inc.—Dynaudio products are still very much and very uniquely Danish—in fact we’re reliably informed that despite GoerTek’s purchase of Dynaudio, all Dynaudio drivers will continue to be manufactured in-house—and largely by hand—in Denmark.

Peel the front grille from a Dynaudio loudspeaker and you’ll immediately recognise it’s made by Dynaudio, even if there’s no manufacturer’s badge in sight. The first giveaway is the use of a magnesium silicate polymer (MSP) material for the bass and midrange cones and the second is the unique manner by which the very large dust-cap is attached to those cones, via a series of tabs rather than the usual continuous plastic weld.

This ‘tab’ technique was developed by Mark Thorup, of Dynaudio. It’s not only unique but also very clever, because it means the dust cap and the cone can be formed at the same time using just a single piece of

MSP, and also ensures that the cone is reinforced close to where it meets the voice-coil former, a technique that improves both the frequency response and the phase response of the driver.

As for that voice coil, Dynaudio uses some of the largest-diameter voice coils in the business (relative to cone size), with the coil on even the smallest cones measuring 75mm in diameter rather than the 25–30mm diameter coils used by most other driver manufacturers. This large voice coil diameter means fewer coil turns are required which improves electrical efficiency and reduces heat build-up in the coil and in the voice coil former.

Due to the large diameter of its coils Dynaudio uses aluminium wire, rather than the usual heavy copper.

THE EQUIPMENT

The Emit M30 is part of a 'budget' series of speakers released by Dynaudio in October 2015. The other speakers in this range (at least at the time of writing) are the Emit M10 and Emit M20 bookshelf/standmount designs

All Dynaudio drivers are manufactured in-house—and largely by hand—in Dynaudio's own factory in Denmark.

and the Emit M15 centre-channel. As should be evident, Dynaudio is obviously expecting that these speakers will be used in multi-channel and home theatre applications, either with identical speakers in all channels except the centre, or with the M30s as the front channels and the smaller speakers as the rear channels.

The Emit M30 is the only floor-stander in the Emit Series (at least at the time of writing) and, as you can see from the photographs accompanying this review, it's a three-driver two-way design using two 170-mm bass/midrange drivers and a single 25-mm soft dome tweeter. What you can't see (because the port that would give it away is at the rear of the speaker cabinet) is that the M30 is a bass reflex design.

Although the two bass drivers are listed as being '17cm' in diameter by Dynaudio, the overall diameter of each one is a bit larger than this, at 175mm, but because of the design of the surround, the actual cone diameter is considerably less, at 114mm. However, it's the Thiele/Small diameter that is the most important dimension to know about any driver, and for this driver it's 125mm, which gives an effective cone area (known as the 'Sd', if you want to get technical), of 123cm². However, because the two bass/midrange drivers operate in parallel, the overall Sd for the system is 246cm². So if Dynaudio had used just a single driver, it would have needed to be around 230mm in diameter (overall) to deliver the same level of bass.

Unlike many three-driver two-way systems, which use a 2.5-way crossover, so the one of the two bass/midrange drivers is rolled

off early, leaving the upper bass midrange driver to deliver the midrange on its own, the two bass/midrange drivers in the Emit M30 operate in parallel, covering exactly the same frequency range. While this does disadvantage the Emit M30 in some respects, it does have the advantage that it allows Dynaudio to use a very simple two-way first-order (6dB/octave) crossover network to cross the bass/midrange drivers to the tweeter, but despite

being simple, it's a high-spec design—as you'd expect of Dynaudio—using air-cored inductors, ceramic resistors and MKP capacitors. It's connected to the drivers via very thick Dynaudio-brand Figure-8 cable.

The bass/midrange drivers (Type 84464/7364370) are made in Denmark by Dynaudio and have a hefty centre-vented magnet that attaches to the diecast aluminium chassis via 'moon-lander' style tubular struts, so there's maximum airflow behind the cone, which is important in a bass reflex design. As stated earlier, the voice coil is 75mm in diameter and wound with aluminium wire. Fairly unusually for a speaker at this price-

point, the two drivers are flush-mounted and attached using standard softwood screws.

The tweeter (Type 81702/7369582) in the Emit M30 is also made in Denmark by Dynaudio and has a 25mm coated fabric dome. Unlike the bass/midrange drivers, the tweeter's front plate is recessed into the front baffle, but like those drivers, it's fixed in place using standard softwood screws, rather than bolts with captive locking threads.

If you're interested in seeing how these drivers are made—and it is interesting, even if you know nothing about driver manufacturing—you can watch a seven-minute video factory tour of Dynaudio's Danish facility here: www.avhub.com.au/Dynaudio_Factory_Tour which includes sequences showing how the bass drivers and tweeters are assembled.

The cabinet of the Emit M30 measures 204×275×960mm (WDH), weighs 18kg and is available in two painted, lacquered finishes: satin white and satin black. The cabinet itself is made from the 'soft' MDF that's typically used in China and is 25mm thick over the entire front baffle and 19mm thick elsewhere. All internal walls are covered with panels of soft foam, while the inner air space is filled with standard non-allergic speaker fill. The bass reflex port, which is located on the rear panel immediately above the speaker terminal plate, has a flared exit and is

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215mm long and 65mm in diameter. The speaker terminal plate is circular and has just two multi-way banana-capable plastic terminals, so bi-wiring and bi-amping are not options with the M30.

At just under a metre high the Emit M30s are quite tall, yet they have a fairly small 'footprint', so even if you use the provided spikes to mount the speakers, the cabinets can tip over fairly easily if given a fairly good shove: a characteristic which should be factored-in if you share your home with small children or boisterous pets. Careful placement could ameliorate this, but for maximum security it would be better to fit larger base-plates to the bottoms of the speakers in order to improve their stability... something anyone with even average home handyman skills could easily do quite cost-effectively.

IN USE AND LISTENING SESSIONS

Since Dynaudio speakers are renowned the world over for their 'live' sound quality, I kicked off my listening sessions with a real rocker, the Seratones' 'Get Gone' album. I not only love this Louisiana quartet's music, but also its attitude. I mean, just read the band's mission statement: '*We, the Seratones, are four musicians highly skilled in the art of rocking your socks off, bringing the house down, and blowing your mind. Our goal is to make your musical experience replenish your faith in the power of rock & roll.*' And trust me, 'Get Gone' will certainly replenish your faith in the power of rock and roll (if, indeed you ever lost it... I know I surely haven't!). A highlight of the Seratones' *oeuvre* is the stunningly powerful voice of Ms A. J. Haynes. She can rock, she can roll, she can croon and boy, she sure can scream. And sometimes she has to scream in order to be heard above the bedlam of sound from her band. *Sun* kicks off with a punk-rock homage to the power chord opening of The Who's *Tommy* before revelling in grunge guitar and machine-gun-like drum attacks. But the album is nothing if not eclectic because, were it not for the garage-band sound, *Don't Need It* could be a take-out from a Monkees album, and the closer *Keep Me* is so dreamy it could be... well, listen and decide for yourself who it could be. But if you really want the Dynaudio Emit M30s to rock, make sure you dial in *Chandelier* at high volume and settle back for the ride. What you'll hear is the Emit M30s delivering fast, stomach-hitting drum sound

to die for, chunky twangy bass lines and a vocal that's so real-sounding and exciting that you'll find yourself playing air guitar in the breaks... or was that only me?

After several sessions of the Seratones I wanted to hear how the Emit M30s would sound with a more pared-back sound and an album with top-notch production values. So what better album to use than Tinpan Orange's newest offering, 'Love is a Dog' which, for my money, is their best of the five they've so far released, and also by far and away the best album I've heard all year. It's all headlined by Emily Lubitz's startlingly ethereal voice (here helped along by a wide variety of tastefully-added FX). The album's wonderful sonics are down to producer Harry James Angus (The Cat Empire, Jackson Jackson) and engineer Matthew Neighbour (Missy Higgins, Matt Corby, Courtney Barnett.)

I was not at all surprised to find the Dynaudio Emit M30s sounded even better with 'Love is a Dog' than they did with 'Get Gone'. With Tinpan Orange's music you can hear the purity of the Dynaudio's midrange sound, and the superbly-extended treble response of the M30's tweeter. You can also hear the 'space' around the music. The articulation of the Emit M30s is also clearly in evidence, and this articulation is most welcome because the lyrics to 'Love is a Dog' are seriously insightful, such as on *Rich Man*, where Lubitz warns women against the seductive charms of men with money, or the title track which is her analysis of the end of a love affair, or the melancholy of *Light Across the Water*. It's not all gloom and doom though: you can sing along to *Hear From Me*, even if it is a song about a controlling woman. If you buy only one album this year, this is the one to get... and it's available for download (various formats), on CD, and on vinyl (of which there's even a limited-edition version on translucent orange vinyl). If you're not prepared to buy 'Love is a Dog' on my say-so you can get a free feel for the music on Bandcamp... but be warned that the streamed sound is truly terrible, not a patch on the paid-for FLAC download, which is perfect.)

If you're one of those audiophiles who likes the 'close your eyes and you're there' experience, the Dynaudio Emit M30s deliver this in spades, across all genres, but the album that really did it for me was a Mary Chapin Carpenter's 'The Things That We Are Made Of.' This is an utterly gorgeous

album and, if you haven't heard Carpenter's voice, 'gorgeous' is also a perfect descriptor of that as well. Listen to her smokily sensual delivery of the lines '*For every time that I've been foolish that I've wished that I'd been wise, the power of regret still gets me right between the eyes*' from the track *Something Tamed, Something Wild* and you'll immediately hear what I mean. On this album you can hear not only the tonality of her voice but also the uncanny accuracy of the Dynaudio Emit M30's imaging, delivering not only stage width but also stage height and stage depth.

CONCLUSION

The Emit M30 is certainly the lowest-priced floor-standing model Dynaudio has ever had in its range but since Dynaudio speakers always command premium prices, it's certainly not a 'budget' loudspeaker! But you'll know it's not a budget design from the minute you start listening to a pair... and you'll also hear why it's always worth spending a little bit more to invest in a pair of high-quality loudspeakers, rather than settling for something less. 🌟 *Jess Roden*

Readers interested in a full technical appraisal of the performance of the Dynaudio Emit M30 Loudspeakers should continue on and read the LABORATORY REPORT published on the following pages.

CONTACT DETAILS

Brand: Dynaudio
Model: Emit M30
Category: Floorstanding Loudspeakers
RRP: \$2,999
Warranty: Five Years
Distributor: BusiSoft AV Pty Ltd
Address: Suite 4. 792-796 High Street
 Kew East VIC 3102
TF: 1300 888 602
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- Superb imaging
- Life-like sound
- Well-paced bass



- Stability
- Spkr terminals

LABORATORY TEST RESULTS

Newport Test Labs measured the frequency response of the Dynaudio Emit M30 as being 50Hz to 22kHz ± 3 dB which is not only an excellent response, but also one that's very close to Dynaudio's own specification of 40Hz–23kHz ± 3 dB... so close, in fact, that the high-frequency discrepancy could be due to differences in the positioning of the measuring microphone and the low-frequency discrepancy due to the technique used to measure the -3 dB down point. It's worth noting though, that a 10Hz difference is quite small, even at low frequencies, because whereas a 50Hz extension takes the speaker down to G1#, a 40Hz extension would take it down to D1#, just one and a half tones lower on the tempered scale.

The frequency response is not only extended at both ends of the audio spectrum, but also quite linear, so the response is not 'tilted' to favour either the bass or the treble. There is a very slight 'sag' in the response centred at 2.5kHz, which is presumably where the crossover frequency is, but it's minor, being well within the ± 3 dB envelope. In fact, the frequency response remains within a ± 2.5 dB envelope from 60Hz to 20kHz, which is an outstandingly good result.

The excellent frequency response result is reflected in the in-room response that's shown in Figure 1, where Newport Test Labs has graphed the response from 20Hz up to 10kHz using a pink noise test stimulus, and you can see that from 70Hz up to 10kHz, it's within ± 2 dB and, once again, there is no spectral tilt.

Graph 2 shows the high-frequency response of the Dynaudio Emit M30 in greater detail, using a gating technique that gives the same result that would be obtained if the speaker were to be measured in an anechoic chamber. It shows both the frequency response with the grille fitted (red trace) and the frequency response without the grille (black trace). You can see that the frequency response is clearly flatter, more linear and more

Figure 1. Averaged in-room response using pink noise test stimulus with capture unsmoothed. Trace is the averaged result of nine individual frequency sweeps measured at three metres, with the central grid point on-axis with the tweeter. [Dynaudio Emit M30]

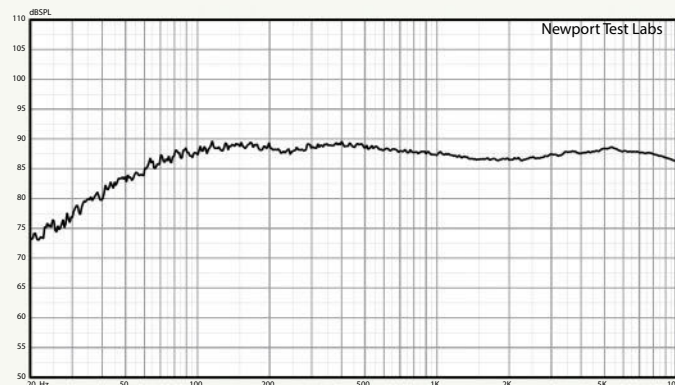


Figure 2. High-frequency response, expanded view showing grille off (black trace) vs. grille on (red trace). Test stimulus gated sine. Microphone placed at three metres on-axis with dome tweeter. Lower measurement limit 600Hz. [Dynaudio Emit M30 Loudspeaker]

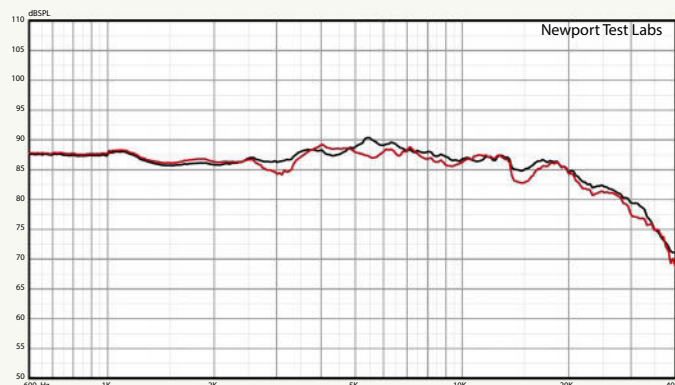


Figure 3. Low frequency response of front-firing bass reflex port (red trace) and woofer. Nearfield acquisition. Port/woofer levels not compensated for differences in radiating areas. [Dynaudio Emit M30 Loudspeaker]



An exceptionally good design that measured extremely well on Newport Test Labs' test bench.

extended without the grille, but the differences are so minor that I doubt they would be audible, even given a direct A-B comparison of 'speaker grille-on' vs. 'speaker grille-off'.

The low-frequency performance of the Dynaudio Emit M30, as measured by *Newport Test Labs* using a near-field technique that again simulates the response that would be obtained in an anechoic chamber, shows the bass drivers' combined response is flat down to 80Hz after which it rolls off very gradually to a minima at 28Hz. The response rolls off so gradually, in fact, that it appears that the cabinet is acting more like a sealed enclosure than a bass reflex one. The bass reflex port's output is also unusual, peaking at 25Hz and shelving from around 40Hz up to 90Hz before dropping off very sharply above 140Hz. These traces lead me to believe that Dynaudio

Figure 4. Impedance modulus of left (red trace) and right (yellow trace) speakers plus phase (blue trace). Black trace under is reference x ohm precision calibration resistor. [Dynaudio Emit M30 Loudspeaker]

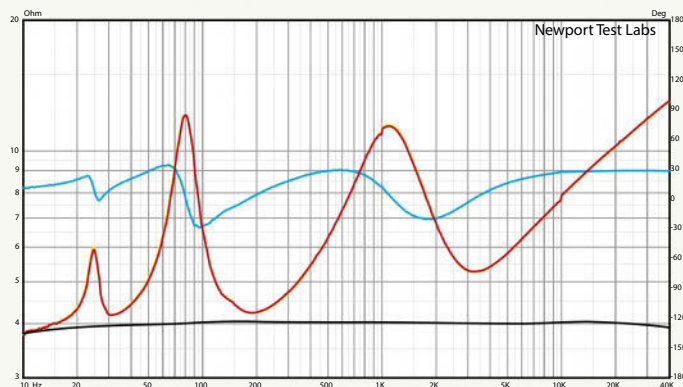
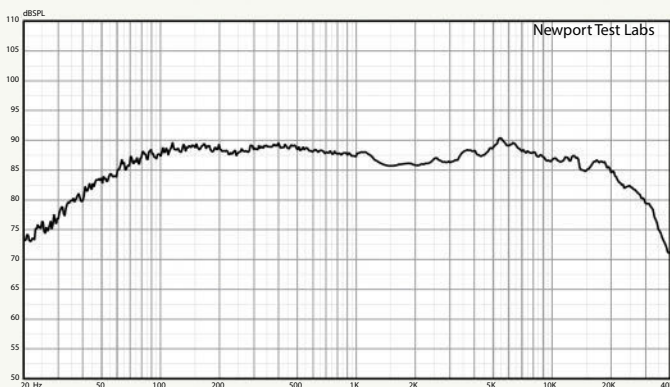


Figure 5. Frequency response. Trace below 1kHz is the averaged result of nine individual frequency sweeps measured at three metres, with the central grid point on-axis with the tweeter using pink noise test stimulus with capture unsmoothed. This has been manually spliced (at 1kHz) to the gated high-frequency response, an expanded view of which is shown in Graph 2. [Dynaudio Emit M30 Loudspeaker]



is tailoring the low-frequency response in a non-standard way in order to gain additional bass extension.

Graph 4, which shows the impedance modulus for both left and right loudspeakers, proves that the quality control procedures in place at Dynaudio are outstandingly good, along with quality of the drivers they manufacture, because the two traces are so close that to all intents and purposes they are identical. I don't think I have ever seen such good left/right speaker matching, which augurs well for stereo imaging.

The impedance itself is nicely controlled, rising only a little over 10Ω at the resonant frequencies, and climbing nicely above 20kHz which will guarantee ensure that any driving amplifier is comfortably loaded. The impedance dips to about 4.2Ω at 200Hz, so Dynaudio's specification of it being nominally 4Ω puts our sample comfortably within that spec, while at the same time meaning it will be an easy load for any amplifier, not least because its phase angle (blue trace) is relatively benign, swinging no more than ±30 degrees.

Newport Test Labs measured the sensitivity of the Dynaudio Emit M30 as being 85.5dB-SPL at one metre for a 2.83Veq input, using its standard, stringent test procedure. This is just 0.5dB less than Dynaudio's specification and also an excellent result, though slightly lower than the average for similarly-sized floorstanding loudspeakers, which makes me think Dynaudio has sacrificed some efficiency in order to gain bass extension. Given the power-handling capacity of Dynaudio's drivers, thanks to the use of 75mm-diameter voice coils, three times larger than usual, this would seem to me to be a very sensible trade-off. The Dynaudio Emit M30 is not only an exceptionally good loudspeaker design, one that measured extremely well on *Newport Test Labs'* test bench, it's also an exceptionally well built loudspeaker and therefore gets my very highest recommendation. 🌱

Steve Holding

Readers should note that the results mentioned in the report, tabulated in performance charts and/or displayed using graphs and/or photographs should be construed as applying only to the specific sample tested.