

# Manger Audio Z1 Loudspeakers

The Manger Z1 uses the interesting and innovative “Manger Sound Transducer,” which operates, in this case, from 360Hz but is capable of covering frequencies from 80Hz to 40kHz. I think it’s useful to discuss this unit in a little more detail as it differs from the usual setup of woofer and tweeter in a two-way loudspeaker design. This is mostly taken from the MANGER website.

## THE MANGER SOUND TRANSDUCER (MST)

Josef W. Manger, the Father of Daniela, the current boss over at Manger, looked at the traditional concept of the piston action of a normal transducer and realised that it had issues that he could overcome - essentially, his idea was for a resonance-free unit. To achieve this, Josef looked at the concept of bending waves so that his Wideband speaker acted much like when you throw a pebble into a pond - the waves start at the centre of a plate-like diaphragm and move outward towards the edge. The diagram below explains this better than I will, but the thin and flexible diaphragm has a rigidity that decreases as you move away from the centre. This means that high frequencies run to the inner bit of the membrane, whilst lower frequencies run to the edge of the star-shaped damper where they are absorbed to ensure no reflections come from the edge of the driver. So, the driver can be used from 80-40KHz and essentially acts as a point source, which has obvious benefits with regards to imaging. Another benefit here is that when compared to a three-way speaker where the crossover has to be designed to split three sets of frequencies (high, mid and low), the MANGER doesn’t need to do that. The MANGER website tells me that the active surface of the 19cm diameter diaphragm gets smaller as the frequencies increase, ensuring that the effective surface is always small in comparison to the wavelength it is radiating.

The MST uses two voice coils that are mounted mechanically in series, but switched electrically in parallel and use aluminium wire on an aluminium backing and copper strip leads to make the coil long but very light in weight. The displacement is  $\pm 3.5$  mm but the total weight is only 0.4 grams. This double voice coil arrangement was patented by

**The Manger Z1 is a large standmount loudspeaker that uses the innovative and very interesting Manger Sound Transducer for the mids and tops. In the UK the speakers cost £9720. Hifi PiG’s Stuart takes a listen.**

Reviewed by  
Stuart Smith



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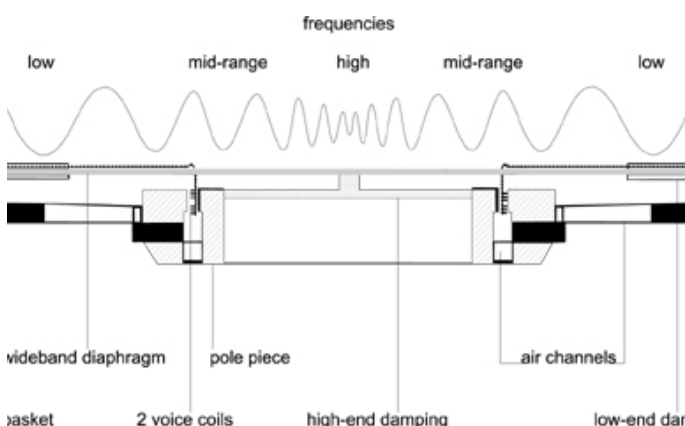
## BUILD AND FEATURES OF THE MANGER Z1 LOUD-SPEAKER

MANGER way back in 1968 and the company claim it suppresses the natural resonance of the unit.

The main driver on the MST has 15 neodymium magnets that concentrate their magnetic field of “1.32 Tesla on an air gap of only 0.95 mm width, in which the lightweight 70 mm diameter coil moves, supply the drive for the diaphragm and are responsible for the fast rise time and the high sensitivity of 91 dB, 1W/1m”

The diaphragm of the MST is the bit you can see at the front of the loudspeakers and it has an interesting star shape. The flexible nature of the diaphragm represents “a frequency-independent impedance for the driving force” which MANGER tells us makes it behave like an “ohmic resistance in a power circuit.” MANGER also tell us that “Neither leading nor lagging forces are stored, i.e. neither potential energy (spring/capacity) nor kinetic energy (mass/inductance). These stored forces also lead to the transient errors or also transient noises described above in the commonest piston loudspeakers (each electrodynamic dome tweeter is, for example, such a piston loudspeaker).”

MANGER also tells us that the advantages of the MST are: “a perfect impulse behaviour without any transient errors, whatsoever! The incoming signal is converted directly into sound. Initial transients from vocals and instruments are reproduced with absolute dead-on precision... an all-important prerequisite for our sense of hearing to recognise and localise the different musical sounds in a given space.” They also suggest that listener fatigue is lessened because “due to the total absence of transient noise, the MANGER® sound transducer cannot be heard nor localised.” In addition, they say that the design of the MST ensures that those sitting outside the sweet spot will also be able to enjoy proper stereo imaging, which is useful for non-isolationist readers out there.



I’ve given the MST a section of its own because I think it warrants a bit of singling out given that it is something of a departure from other (relatively) wide-band speaker drivers, but there is more to the MANGER Z1 than just the interestingly designed mid/tweeter. However, for everything below the 360Hz crossover point, a more traditional woofer is employed. This woofer is an 8” (200 mm) custom-made Carbon Fiber-Paper Sandwich Design with a 42mm Voice coil.

This is a fairly hefty speaker for a stand-mounter (21.0” x 10.6” x 14.3” (534 x 270 x 364 mm)) and it weighs 26kg (57.3 lbs) but it looks very elegant with its rounded edges that are there to “improve radiation behaviour”. The speaker has a thick front panel to reduce housing vibrations, there are struts inside too to improve the rigidity of the cabinet.

Round the back, you’ve got WBT nextgen™ Plasma-Protect™ speaker sockets and that’s pretty much your lot. You can bi-wire them if that’s the kind of thing that tickles your audiophile fancy.

There are no ports on this speaker as it’s an infinite baffle design and I’m pretty excited to see this. It’s a while since we’ve had a closed-box speaker in for review at HiFi PiG Towers.

The Z1 is listed as being on the LINN Space Optimisation database, on the LINN Exakt Filter database, and also has Devialet SAM processing available. These are interesting points and suggest to me that MANGER is specifically targeting the users of Devialet and LINN products - certainly not a daft move on their part.

You can get the Z1 in loads of different RAL colours, with veneers (including American Black Walnut), or in ultra-high gloss. The review sample came in a matt white finish and I think they look very nice indeed.

There is a stand available that comes in silver or black and is made of Aluminium, but no stands were supplied with the review units. The stand costs a not insubstantial 3800 Euros. I spoke with Daniela Man-

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ger about this and she told me the stands very well made in Germany and that kind of craftsmanship doesn't come cheap. She also made an excellent point that other stands can be used and many of their clients do use them on furniture which I think adds to the luxury-lifestyle element of the speakers - see pics opposite for a couple of examples supplied by Manger.

Overall I think this is an excellent-looking loudspeaker that is big enough to deliver decent bass performance but can't be said to be bookshelf-sized. In white or black it will fit into any home environment in the same way as other black or white speakers would, and the veneers give end-users the opportunity to tailor the look of the speakers to their home. However, it is the myriad of RAL colours that excites me the most as you can have a loudspeaker that not only fits your decor but also looks pretty funky - funky is good!

Packaging is excellent and the speakers came with a vinyl (with download code) copy of the Landberg Sessions on Straight To Tape records - a nice touch!

In the boxes you get the speakers plus a pouch that has a cleaning cloth, a pair of white gloves to stop you getting your grubby fingers on them, though I'd love to think this is one for the oldskool ravers out there - you'll know the score if you were there. There is also a set of very thin jumpers to connect between the upper and lower speaker binding posts.

My first impressions on getting them out of the boxes were that they were very large, but very well put together. Looks-wise I really like them, though there's no getting away from their size.

## WHAT I'M EXPECTING

I like to set this out for myself when I'm taking notes for a review item as it allows me (and you, dear reader) to look at any expectation bias and to see if the product lives up to my expectations. Here I'm expecting the MANGER Sound Transducer to throw a clean-sounding presence-band and to have exceptional imaging qualities. Despite what the MANGER website tells me, I'm expecting the sweet spot to be quite narrow with regards to sound staging (though MANGER tells us differently), but that's likely down to me not fully understanding how the MST theory

works in practice.

Given they are a closed box design and of fairly modest proportions when compared to our floor-standing reference speakers, I'm expecting clean and fast bass that doesn't go particularly low but is accurate and devoid of any chuffing that badly implemented ported designs can impart.

## SOUND OF THE MANGER Z1 LOUDSPEAKERS

For the duration of this review I used the MANGER speakers attached to our Electrocompaniet AW 800 M amplifier that was being controlled by the VINIUS TVC-05 preamp. I used both digital and analogue files and records with the digital being dealt with by our AURALIC streamer and Lampizator DAC and the vinyl with a TECHNICS 1200G/ HANA Umami Red into a Music First SUT and Phonostage. Speaker cables, interconnects, and power cables were by ATLAS, TELLURIUM Q, and CHORD. All powered components were powered from a TORUS power unit with secondary powered bits and bobs being fed by a PURITAN AUDIO unit.

I let the Z1s run in for a while and during this process I made a note that I had these down as very refined loudspeaker and perhaps a bit polite for my tastes. However, this running-in time is kind of discounted for the actual review, though I think it's worth mentioning here. I also spent this time getting the positioning right and found that (for me) they worked best when toed in ever so slightly. This toeing in improved and further focused the imaging - perhaps those looking for a less focused (on the hot spot) soundstage will have them straight on down the room. As always and with any loudspeaker, it's essential to do a bit of experimenting to get the position right for the presentation you prefer. As the running in time progressed, I found that the speakers did loosen up a good deal and whilst they were still refined, they also became more lively in the bass which I initially thought was a little light. Again, this goes to show that whatever the speaker, you need to give them a little time to reach their optimum performance.

Running in period over, it was time to sit down and spend some serious time with the MANGER Z1.

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My job (in part) with any product that comes in for review is to play stuff through them that I think is beyond them, or not best suited to them. With that and what I said in the paragraph about the run-in period in mind I reached for ACDC's Back in Black. I'd expected the Z1s to struggle a bit, to be honest. However, I was pleasantly surprised by their performance and following on from the decay of the opening bells and opening bars of the guitar and cymbal splashes, that kick drum sounded awesome - not overblown or flabby - I was able to hear the beater on the drum and its specific sound. As the song progressed it was good to hear the detail across the board with good separation in the mix without being overly apart or lineated. Vocals projected slightly into the room, but what I thought was really interesting was the way in which it was easy to picture the vocalists in the room/on the stage. This was the first album that had Brian Johnson on vocals and his enthusiastic performance comes across wonderfully. There is power throughout the album and the Z1s don't get in the way of that. Yes, they are refined, but don't let that stop you from auditioning them if rock is your thing, I don't think you will be disappointed. The more I listened to this first record proper on the Z1s, the more I began to warm to their performance. On the imaging side of things, I wouldn't say the speakers "disappeared" (this term is reviewer twaddle in my opinion) but the sound does come from beyond the left and right of the speakers, giving me a wider stage than I was expecting. I enjoyed listening to the whole of this record on the Z1s.

I followed Back in Black up with Body Count's eponymous album and can confirm these do rock very well. There's a sound (guitar riff I think, but sounds like machine gun fire) that moves across the stage throughout the track and the Z1s got this imaging down to a tee. Likewise, the drums could be positioned across the stage to where they had been mic'd. Bass was again tight and accurate, but for my tastes, I'd have liked it to go a smidge lower. However, these are closed-box speakers of a good size so you do get a good sense of the bass on the tunes you are listening to. The opening to the third track (Body Count) is a little bit quieter and more relaxed and I found the Stairway to Heaven-like guitar easy to get a sense of the playing and effects used. The bass guitar then comes in and it's easy to follow the lines. Up the volume and the speakers don't get at all flustered suggesting that you can really crank these up to realistic volumes and still enjoy the de-

tail that is obvious and across the board.

Bongshang's album Crude from 1993 on Doovf Records is Gallic rock that blends traditional music and instruments with instruments more associated with rock music - a bit Poguesy, I guess. It was recorded in Lerwick at the Garrison Theatre and that "live" feel to the record comes across very well. What also comes across very well is the sound and speed of the fiddle playing which can sometimes sound harsh and grating with some speakers - I reckon that's the MST coming into play here. Is there a softening of the upper registers, I thought to myself. You know what, I don't think there is, I just think the speakers don't over-egg it in this respect and represent the sound in a natural kind of way. The vocal on the track "If and Well" is a little restrained in its delivery and the speakers really do mirror this, but without any embellishment. It was the speed and reactivity of the speakers to instrument dynamics that really impressed me here - a tightness and rightness without feeling constrained. There is every possibility of a speaker making an homogenous slop of this record in places, but the Z1s just didn't, nor did they delineate the different instruments in such a way that the whole sounded artificial - I definitely got a sense that I was listening to real instruments recorded in a real space. I enjoyed this record on these speakers. It also struck me that my chosen reference amp (Electrocompaniet AW800 M) was an excellent choice for using with these speakers. During the review process our second AW800 M arrived but it was too far down the review process to plug it in and test with these speakers as I needed to get used to the new sound with our own system before doing any reviews with the pair.

So, a speaker should be able to play all kinds of music and I think these did well with everything I threw at them, but I did find myself gravitating towards albums and songs that used acoustic instruments.

With the above statement about live instruments in mind (and ignored), I pulled Original Pirate Material off the virtual shelf. It's the first record by The Streets and a classic in the PiG household. I'd expected to find the Z1s a bit bass-light and not really to do very well with this album, but I was wrong. From the opening sampled strings to when that bass kick comes in on the opting track I was hooked and listened to the full album without pause or feeling the need to rewind to reassess bits and bobs in the mix - something I usually do a lot when reviewing.

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There's a power to the bass, but without any bloating at all and it occurs to me that I'd love to hear a bigger floorstanding version of these to fill out the bottom end just a tad more. This is not to suggest that these are bass-light, they work very well within their dimensional constraints and I think adding some kind of porting would have compromised their bass performance (tightness and speed) for greater perceived depth, but less precision. With all that said, the sub-bass on *Has it Come to This* is fantastic. I know I bang on a lot about bass in my reviews but it's an important part of a speaker's performance for me - it has to be tight, fast and without hangover and the Z1s are great in this respect. Dynamically, these speakers really do deliver - they seem to react immediately and start and stop very quickly at all frequencies.

With the above in mind, I reach for a track that gets mentioned a lot in my reviews and that's Todd Terry's *Resolutions* record. It's a drum and bass kind of record from a producer best known for his House music output. There's a LOT going on and it's very dynamic and demanding. It also goes very low and is a real workout for any loudspeaker. The MANGERS don't flutter an eyelid and present this album with all the power and dynamics I expect from it. Yes, the very low frequencies are somewhat absent BUT, I'd rather sacrifice those if they were to be presented in a slack and flabby kind of way which can happen with some ported loudspeakers. On "MY Style" there is a sound that comes seemingly impossibly from very well left and forward of the left-hand speaker and this really threw me as I'd never heard it sound like that before - impressive imaging and representation of the psychoacoustic effects used in the mix. I get the same effect on the vocal effects on the track *Yo!* These speakers, that I expected and initially thought to potentially be a bit polite, just aren't at all.

## QUIBBLES

These are a big speaker for a standmounter and I would suggest that the dedicated stands from MANGER should be seen as a must-buy, though these add another 3800 Euros to the price, taking the total to almost 14K Euros.

They take a while to come on point and loosen up, particularly where bass and imaging are concerned. Once they do, they are very good in both areas.

I listened (as I always do) to a LOT more music than I talk about in the written review, but I've tried (as I always do) to pull out tracks that get across the nature of the speakers and any faults and positive aspects they have. I threw a lot at these speakers that I thought would bamboozle them, but I was surprised at how they reacted positively to some of the torture tracks.

Overall, I really enjoyed my time with these speakers, and I wish I hadn't formed an unwarranted opinion that they would be polite and a bit boring - they aren't.

Dynamically speaking, the MANGER Z1s are hyper-reactive and have a speed that has both acoustic and electronic instruments come across wonderfully. With acoustic instruments, there is real insight into the tone and timbre of different instruments. Likewise, effects and sound of recording space are presented with space and realism, without being forced or overdone.

Bass does not go as low as our reference speakers that have isobaric bass, but it does go low enough and it is very tight and fast - exactly how a good closed-cabinet design should be. Folk that don't like flabby bass or speakers that have a port chuff will love these.

The MST driver is an interesting design and it works as advertised. When listening to a speaker you should not be able to hear the crossover points and this is just the case with the Z1s.

I'd expected these to be excellent with female vocals and the usual audiophile rubbish that gets trotted out at shows by brands too afraid to push speakers beyond their comfort zone (and they were pushed here), but what surprised me was their ability to feel fully integrated from top to bottom with tracks that are more demanding and dynamic.

On the negative side, the speakers are large for standmounts and the stand adds significantly to the price. And this is one of the areas the MANGER Z1s lose points from me. At 10K Euros they would have got our top award IF the stands had been included, as it is I reckon nearly 4K extra is a bit much.

As always, I asked myself If I would part with my

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own money for these and I think I probably would if they included the stands, though I'd LOVE to hear the brand's S1 floor-standing speakers.

I'm awarding these speakers Five Hearts, and whilst I thought they were wonderfully dynamic, fast, insightful, spacious and with fab' imaging, I can't help but think the stands are both essential (what other stands could you use) and a tad pricey. Had they been an extra 500 Euros or included in the asking price of the speakers, there would be no doubt they would have got our top award!

## AT A GLANCE

### Build Quality and Features:

Excellent build with a purposeful weight

Quality binding posts

Excellent and intuitive packaging - useful for repackaging

Innovative design and sound of the MST driver is a big plus for me

### Sound Quality:

Superb through the mids and upper mids

Imaging is good left and right of the hot seat, but it's not as holographic as you move off-centre, though there were times when I was caught off-guard by sounds that appeared from well beyond the left and right of the speakers

Bass is good, tight, and not at all overblown - a big plus for me, though they don't go as low as the isobaric bass in our reference Audiovector R6...but then, they were never going to

The MST driver ensures a clean and natural sound through the all-important frequencies and without colouration

Good at low volumes as well as when being pushed

### Value For Money:

The stands add considerably to the price and take it to 14K Euros

### We Loved:

Dynamics are fantastic with these speakers once warmed up and playing "on song"

Good looking

Excellent details through the mids and tops

Excellent bass performance and I didn't miss the missing sub-bass, though I don't think these really need a sub

Loads of different colours to suit all tastes

### We Didn't Love So Much:

Expensive stands

**Elevator Pitch Review:** The MANGER Z1 are a large standmount, sealed box loudspeaker that costs 10,000 Euros without stands - the stands add considerably to the price. They use an innovative mid/tweeter transducer that is unique to MANGER and works as advertised to give clean and uncoloured mids and tops. On acoustic instruments, this transducer brings a degree of realism that is rare. Being a well-designed infinite baffle they have a tight and speedy bass performance that doesn't hang about or come across as being flabby, though they don't go as low as our reference - I didn't miss this! Overall these are a very good speaker that offer a great sound at a realistic price when compared to the competition, though I do think the stands add too much to the asking price.

### Price:

10,000 Euros or £9720 as tested.

Stands are 3800 Euros or £2250