



## NINE REAR

Comparison of active nearfield monitors: Adam A-7 X, Blue Sky SAT-6.5 EXR, Omnitronic PSM-6.5 A, Emes Black tv HR", M-Audio DSM-1, Mackie HR-624 MkII, PSI Audio 14 M, Focal Solos 6 Be and Focal CMS-65

The monitor speaker leads a strange life in home recording and professional studios. There is a lot of talk and discussion about microphones, preamps and conversion, and quite a bit of money is spent for that equipment – but rarely does someone ask about which studio monitors were used. That's a surprise, because the monitor is actually the final and most crucial link in the audio chain and, more than any other piece of equipment, has a direct impact on the quality of our work.

We expect a studio monitor to reproduce a recording naturally so that the quality of the recording and its sound can be accurately assessed. If we can't hear the bass boom, the midrange "honk," or the treble sound too sharp, we can't dial in the EQ correctly. If we can't hear the influence of compression and reverb on the stereo image, we will never be able to create a three-dimensional sound image. An (old) studio saying boils this: "A true monitor lets good stuff sound good and bad stuff sound

bad." Nevertheless, generations of musicians have had a tough time defining what a "true" monitor is.

The monitor speaker is a topic one has to approach carefully because of the many factors that can affect its sound in the studio. Audio signals such as instruments or the human voice can sound different anywhere the room, the same is true for the studio monitor itself. In other words: One would put a lot of effort into positioning two mi-



# WINDOWS

by Chris Reiss

The listening sessions for our recent studio monitor comparison were as thrilling as a Hitchcock movie. Nine different models delivered different views of the sound structure between and behind the stereo base. Seven listener/reviewers evaluated these views and have all agreed the one monitor delivered the most harmonious sound window.

crophones in phase in front of the guitar cabinet. When it comes to studio monitors, hardly anyone would question the monitor setup in terms of frequency cancellations or think of the studio room as an acoustic challenge.

## Introducing the Candidates

For our monitor comparison, we have nine current pairs of various brands competing against each other: the Adam A7X, the Blue Sky SAT 6.5 EXR, the Omnitronic PSM-

6.5 A, the xx "Black tv HR", the M-Audio DSM-1, the Mackie HR -624 MkII, the PSI Audio 14 M, the Focal Solo 6BE and the Focal CMS-65.

These are all active nearfield monitors that are to be positioned at listening distances of up to two meters. A closer listening distance is only suggested for the PSI Audio 14M.

All monitors except one are designed as two-way systems with bass reflex ports. The Mackie is an

exception here by being equipped with a passive radiator – an additional speaker membrane, which is not being actively driven but moved by variations of air pressure inside the box. This construction may have certain advantages over regular bass reflex ports. In the best case, a lower frequency tuning of the box can be achieved in a relatively small enclosure.

All monitors are well-built, there was nothing to criticize with con-

# Heads and Ears

At this point guest listeners have some words to offer about the models that were tested and general advice on choosing the right monitor:



**Nicolay Ketterer:** tools 4 music author and sampling expert

"Apart from the fundamental design quality, it is only possible to know how to mix on a monitor once you have worked with it: Is the individual frequency response of the monitor

misleading me in my own mixes? Most of the monitors have a nearly flat frequency response on paper but reality shows—and that's to a great extent due to individual auditory perception—that the perfect monitor does not exist. When I bought my monitors the most decisive factor for me was the transient behavior. How crisp are the transients reproduced and what can I learn from that? With some monitors, my mixing resulted in an excessive, over-equalizing compression on some tracks, while with others, the compression was too soft mainly because the reproduction led me to the wrong conclusions, at least for my taste. With the current tests, I specifically noticed that the 'microscopic' behavior of some monitors can lead to wrong conclusions as well. For example, The Focal Solo 6BE had reproduced the reference tracks with an overemphasis in the upper mids. The impression I had of the Adam A7X was very positive. Its open character, the nicely balanced frequency spectrum and the easily located, highly defined sound made it my favorite of the test. It still has its own 'sound' but when the sound is right and the transient behavior as well, that makes it a recommendation to buy. Of course you should go out and hear for yourself!"



**Ali Lionnet:** producer, composer and sound engineer (among other things he has produced Mellow Mark, Cubanito 20.02, G's Incorporated)

"My winners are the Adam A7X followed by the Blue Sky SAT 6.5 EXR and the Focal Solo 6BE. Because of the performance for price, my choice would be Adam. The A7X was the speaker with the finest resolution, though it tended to slightly beautify things as well. In terms of price-performance ratio, I found some monitors simply too expensive. On the other hand I was positively surprised by the Omnitronic PSM 6.5 A, for me, I would really recommend it for newcomers or people on a limited budget."

struction. The manufacturers have their own production methods: Emes builds their speakers completely in Germany, Focal in France and PSI Audio in Switzerland, Adam has components manufactured in China and assembles the speakers in Berlin. All other manufacturers in this test have their models manufactured in Asia.

## Listening Comparison

In this test we focused on a subjective comparison by ear and less on analytical measurements. An ideal frequency response looks nice on paper but does not necessarily mean that the speaker sounds perfect to the ear of the listener.

To get a broader opinion, I invited six colleagues into the studio who all earn their money in different areas of studio work. In three listening sessions that lasted several hours each, seven engineers (myself included), producers and studio musicians compared the monitor models and rated them using the following criteria: neutrality, bass, mid and treble response and spatial imaging.

A Pro Tools LE system (digi 003 rack) served as a player whose eight

outputs allowed for the control and switching between four pairs of monitors at a time. As for listening material, we used various music recordings as a reference which were provided by the testers. Prior to testing, all the monitors were trimmed to equal volume using an SPL meter and pink noise.

After having listened to the first four pairs of monitors, we came to an interim verdict meaning the winner of the first round was retained and the other three monitors were replaced by new candidates. In three rounds, all monitors could be compared this way whereby every winner served as an internal reference speaker of the test. The last four 'survivors' of this shoot-out finally had to undergo the blindfold test: the testers listened to the music material while switching back and forth between those models without knowing which one was which.

The fact that this kind of listening test can only lead to a subjective result in the end should be made clear here. Also, room acoustics play a major role. Add to that the fact that all test listeners work in their studios with different monitor brands and thus – consciously or unconsciously – tend to compare the models tested with the sound image they are familiar with. Nevertheless, all



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seven test listeners came – independently of each other – to an agreed upon regarding the first three positions and their respective order. had not expected such an unanimous result of a subjective listening comparison in advance.

### Breaking In Speakers – Myth or Fact?

There is an ongoing debate among studio and HiFi experts whether breaking in loudspeakers is useful in order to bring the mechanical parts of the speaker to full potential. Some experts recommend letting the speakers run for several hours straight so that the rubber surrounds and the speaker's moving parts get used to their work.

Some say the result is a more transparent high frequency response and a tighter bass response. We were not able to clarify to which extent the monitor performance improves effectively or the ear slowly becomes accustomed to the new sound. Opinions ranged from 'nonsense', 'homeopathic improvement of the sound' to 'clearly audible difference'. We had no prior opportunity to break in the monitors extensively, but all monitors were running for several hour at a time during test sessions that were spread over nearly two weeks. If there were reproducible differences at all, then they should be ignored at least in the time frame we had available, because the last group of test listeners that came in a few days later achieved an almost identical result with the first group.

### Adapting to Room Acoustics

A modern studio monitor should also include the option to adjust the frequency response of the speaker to room conditions. The implementation of this feature varies between manufacturers. With the exception of the PSI 14M, which does not allow any adjustment, every speaker at least offers at least the possibility of adjusting the bass and treble range.

Of course, this can't compensate for significant room acoustics

problems. Basically, this problem should be solved independently from the monitors being used because of the fact that only in proper combination can the best possible monitoring outcome be achieved. For the listening tests, we left the room EQ options untouched since the recording room that was used for listening sessions was acoustically balanced and none of the monitors had been placed near a wall or in a corner.

### Adam A7X

Seven testers from different backgrounds voted the A7X their favorite. This model impressed most notably with its tight bass response. Low frequency bass drum sounds were fully reproduced with impressive accuracy. The special X-ART ribbon tweeter performed transparently in the high frequency range, though some listeners thought that it would tend to "beautify" the treble range. The crucial midrange was good and spatial imaging (tonal depth and stereo image) is very good. One reason why the Adam A7X was chosen as the winner is certainly the overall balance of the monitor, performing well in all of the areas evaluated.

### Blue Sky SAT 6.5 EXR

The largest and most expensive monitor of this test found itself head-to-head in competition for second place with the Focal Solo 6BE. The SAT 6.5 convinced the test listeners based on neutral reproduction throughout its entire frequency range. Only in the lower frequencies was the Blue Sky not as



Blue Sky „SAT 6.5 EXR“

crisp as the Adam, and in terms of spatial imaging it had to admit defeat by the Focal Solo 6BE. But there are other things about the SAT 6.5 EXR that can be criticized: The heat sinks of this very heavy enclosure are not sunk in and are sharp-edged. A status LED on the front would also be desirable.



Emes „Black tv HR“



**Chris Adam:** studio guitarist, tools 4 music author "This monitor test was a welcome opportunity to listen to all the mid-priced models in the market and also see how things have developed in the last few years. The last time I made such a big effort with a comparable amount of test

candidates to listen to was in 2005 when I was looking for new monitors for my own studio.

**Insight number 1:**

My preference for a certain kind of fundamental tuning in sound seems to persist as there were Adam monitors on top of my list back then and they are still on top now. For me and my work it's important that I like the basic sound of a speaker, neutrality and truth aside. The thought that I have to spend many hours in front of a set of speakers I need to get used to seems counter-productive to me. But as tastes differ, the many different manufacturers and sound philosophies have their right to exist, meaning that opinions of experts do not necessarily have to fall into line with your preferences.

**Insight number 2:**

Since the studio monitor is made to be a mixing aid, it should not mask mistakes in the mix but also I want changes to the sound to appear clearly audible. The best thing to do when considering a new purchase would be to take the top candidate into the studio where it could be tested in familiar surroundings with known program material and familiar EQs in a mix and then compare the results. In this context I found the idea of my colleague Lionnet very good and worth copying not only to use highly polished mixes for testing outside the own studio, but also to take mixes with known flaws as a listening reference. It is revealing to hear whether said inconsistencies in the mix will show up while playing or not, in this respect we had noticed significant differences between our test candidates."



**Alexander Klebl:** studio owner, music producer, audio design and audio branding (www.marell.de) "My favorites are the Adam A7X and the Focal Solo 6BE. To my ears, the Adam monitors are a tad finer in resolution and the transient response is excellent. Both

monitors are ideally suited for audio design and, thanks to their versatility, also for music productions from rock to classical music."



**Emes Black tv HR**

Opinions differed on the Emes "Black tv HR". The transient response of the Emes monitors was outstanding and the tonal depth was reproduced cleanly and with nuance that couldn't be found with any other speaker. The coaxial design is in full effect here. Albeit one thing was considerably apparent: Through the Emes, the vocals on our reference tracks were always somewhat louder than on all the other monitors, a sign of an over-emphasized frequency range at around 1.5kHz. Together with the bass response that was only rated average, the Emes monitor slipped into the middle of the overall ranking.

**Focal CMS-65**

The small Focal monitor did not make as much of an impression on us as its big brother. The CMS-65 had been highly rated in terms of reproducing high frequencies and its spatial imaging. It provides an authentic sound image within the high and midrange frequencies, but the test listeners were missing this accuracy in the low frequencies. Therefore, in the overall rating, the CMS finds itself at a bottom position of the ranking. One thing to highlight here is the solid aluminum enclosure and the damping rubber mat for underlaying and special spikes for decoupling the monitors from the ground they stand on.



### Focal "Solo 6BE

The Focal Solo 6BE finished second in this listening comparison. In the first listening phase, all test listeners had already testified impulsively to the Solo 6BE's excellent reproduction characteristics, which were later confirmed later in the course of the test. The Focal plays bass frequencies as clearly as the Adam monitor, but it has to admit defeat to the test winner when it comes to the midrange. In terms of spatial resolution, the "Solo 6" wins the direct competition with the Adam and is only surpassed by the Emes monitor. The Focal's beryllium tweeter is able to transmit very nuanced high frequencies and is in no way inferior to Adam's ribbon tweeter. Some of the listeners felt the high frequency reproduction of the Focal monitor was in fact more enjoyable when compared directly to the A7X. The Solo 6BE is surely an eye catcher in the studio: the marbled woofer, red wooden side panels and striking beryllium tweeter give the Focal a pleasing appearance.

### Mackie HR-624 MkII

The Mackie monitor transmits extreme low bass frequencies with the help of a passive radiator design. With this architecture, ex-

remely low frequencies can be achieved with a relatively small enclosure size. Therefore setting up the HR-624 MkII needs to be done a bit more precisely than usual because of the rear firing second woofer. Overall, the HR-624 MkII's reproduction characteristics were rated as average but when it comes to features this model scores above average with only one point difference from the winner of the test.

### M-Audio DSM-1

The M-Audio monitor was rated average in respect to frequency response as there was a noticeable flaw in the lower frequencies. In respect to spatial imaging, the DSM-1 consistently earned good grades. It was the only monitor of this test that came with a built-in D/A converter and corresponding digital input.

### Omnitronic PSM-6.5 A

The Omnitronic monitor was a surprise to all listeners: Despite its very low price, the PSM-6.5 A delivers decent audio results. Everybody in the listening room agreed that the Omnitronic could be a serious and reasonable priced alternative for recording novices. There is still an audible difference to the more



Mackie HR-624 MkII



expensive competitors though, most notably with the first three winners. This monitor sounds quite balanced in terms of bass, mid and treble reproduction. Only the PSM-6.5 A's spatial imaging is substandard: The sound image had little spatial depth and was only noticeable between the speakers. However, its ranking in this comparison is remarkable.

### PSI Audio 14 M

I can say right off that the bass the PSI-Audio 14 M can produce is amazing. The smallest speaker in this test sounds powerful and unexpectedly spacious. The 14 Ms are real nearfield monitors, made for small rooms like broadcast-

ing vans or space-conscious editing suites. Because of its design, the 14 M has a very well defined sweet spot, so it is advisable not to exceed the listening distance of one meter. The small metal cube is built in an exemplary manner. The handy metal handle which allows for stand or wall installation show the practical side of the design engineers.





**Heiko Hainz:** studio guitarist (www.authenticguitar.de) The Adam A7X and Focal Solo 6BE are among my favorites, though it's quite likely I would choose the Adam monitors. The tonal depth, resolution and the tight bass were amazing. I also find the volume control at the front panel of the monitor very handy."



**Aggi Berger:** drummer, composer and producer "The Adam A7X is my absolute favorite. Not to mention the affordable price. I had the feeling that I was hearing a very analytic and truthful monitor. The wonderfully sounding, deep and musical Focal Solo 6BE is the second winner for me.

Many thanks to Martin Hopfengart, owner of ff studios in Buchbrunn near Wuerzburg, who provided his studio rooms for the several hours of listening sessions. Many thanks go to Thomann music store as well, they were able to help us out with a missing pair of monitors very quick and unbureaucratically.



PSI Audio 14 M

### Finale

Believe it or not: Seven testers from different backgrounds have agreed independently from each other but unanimously on the three winners of this listening comparison: The winner is the Adam A7X, closely followed by Focal Solo 6BE and Blue Sky SAT 6.5 EXR.

It must be said that the monitors that do not belong with the top three were not that badly rated. Even the lowest priced pair by Omnitronic was given a recommendation for budget-minded newbies. Generally speaking, the better the user knows his monitors in his or her own premises, the better he or she will be able to evaluate audio material professionally and make corrections accordingly.

At last, numerous highly successful productions had been mixed on Yamaha NS-10 monitors, their reproduction characteristics can be discussed at length. This test has also shown that each one of the selected monitors has its own flaws and strengths in one domain or the other according to the guest listeners. Finally, it is the sum of all parts in the audio puzzle that makes the listening result: the monitor's reproduction characteristics, the acoustics of the room, the personal idea of what constitutes an ideal sound that has been developed by the user, the program material and the settling-in period where one gets familiar with these special parameters as he goes along. The further this process progresses, the better the chance for achieving professional results.

Our advice: Before you go out and buy a new set of monitors, you should prepare a reference CD with selected tracks and then try out the winning trio together with the budget Omnitronic monitor in direct comparison. On the other hand you also could invite some fellow musicians and have a comparative listening discussion. That's not only communicative, but can also be very amusing because of the heated debates that sometimes arise. ●●●



Omnitronic PSM-6.5 A

