

Instrumente | Beschallung | Recording | Bühnenlicht | Management

**ENGLISH  
VERSION**

**SOUNDCHECK**

# SOUNDCHECK

Das Bandmagazin

06|14

B 1977  
Nr. 06/2014  
Juni 2014

Deutschland € 5,50  
Österreich € 5,90  
Schweiz sfr 10,90  
Luxemburg € 6,00  
Italien € 6,90

 **SOUNDCHECK**  
bei facebook!  
[www.facebook.com/soundcheckmagazin](http://www.facebook.com/soundcheckmagazin)



SOUNDCHECK  
06  
Juni 2014



## Alleskönner mit Biss

**Dynacord AXM 12A: Megaflexibler  
Aktiv-Monitor mit PA-Qualitäten  
und üppigster Ausstattung**



**IM  
TEST**

**Bilderbuch**

Frischer Indie-Rock meets  
geniales Sampling

**Special: Mikrofon-Allrounder**

Starke Schallwandler für Bühne,  
Studio und Proberaum

**Helden der Bühne:**


GoPro Hero 3+ Black  
Edition Music Bundle

Das Bandmagazin  
Instrumente | Beschallung | Recording | Bühnenlicht | Management

## POWERED MONITOR

Dynacord AXM 12A

# One for all

The background of the advertisement is an underwater scene. Two large, black, wedge-shaped Dynacord AXM 12A powered monitors are the central focus, appearing to float in the water. The monitors have a perforated metal grille on the front and a circular logo on the side. In the background, a shark is swimming towards the right, and another shark is in the foreground, swimming towards the left. A jellyfish is visible on the left side of the frame. The water is a deep blue color with many small bubbles and light rays filtering through from above.

Dynacord is presenting in the AXM 12A the successor to its popular AM12: a wedge-shaped stage monitor. The new model is designed to do everything differently and better, and it is immediately apparent that it is constructed quite differently to its predecessor. New force has been given here to the term “multi-function box”, as, to judge from the feature set, there seems hardly a task that you couldn't tackle with an AXM 12A or two.

The Dynacord AXM 12A is an active bi-amping monitor with coaxially arranged 12-inch and 1.75-inch drivers, the latter being a compression driver. This arrangement offers several advantages: one is the very small footprint—this is a compact enclosure; another, a saving in weight: the box weighs just under 15 kg. Thirdly, the position of the tweeter in the centre of the woofer ensures very even radiation over 90°. Fourthly, the entire frequency range is heard to emanate from the same direction, sparing us the usual “woofer to the left, tweeter to the right” listening experience. This also makes unnecessary the fiddling around with screwdrivers associated with rotatable tweeters. The localization of all frequency bands in the same direction is particularly important with vocal monitors, as to avoid feedback and to reduce noise levels on stage, the monitor needs to be placed as close to the performer as possible, and at short range, confused localization can make it hard to sing in tune.

The connection and operating panel is on the right instead of at the back, which has the advantage of making it accessible from the stage rather than being exposed to the tender mercies of the audience when the monitor is placed at the front edge. The Dynacord AXM 12A is furnished with a 35mm stand adapter, which is on the bottom of the device when the cabinet is pole mounted and at the singer's feet when it is used as a wedge. This has the further advantage that when the monitor is mounted on a tripod, the connection panel is to the side, and the cables, rather than sprouting heavenwards (whence cometh the rain) are afforded some shelter as well as being more easily visible.

The 15-mm-thick birch plywood enclosure sports the usual structured lacquer finish and exhibits the kind of solid construction we have

come to expect from Dynacord. The handle forms part of the wooden side panel. The operating panel is recessed and therefore well protected during transportation as well as in operation, by which I mean not only from mechanical influences but also from any likelihood of raindrops falling on the power socket.

The nominal output (RMS) of the two power amplifiers adds up to 335 watts. The 260-watt power amplifier for the 12-inch driver features a lightweight Class-D construction, whereas a 75-watt Class A/B power amplifier furnishes the needs of the tweeter.

Different ways of specifying the total output yield more eye-friendly figures—in this case, 520 watts IHF-A. Either way, a peak-continuous level of 128 dB at a distance of one metre is assured, and anyone accustomed to anything higher on a rock stage has my deepest sympathy, as before very long they'll be reading product tests for hearing aids rather than stage monitors. Putting it another way: 128 dB is plenty sufficient.

Dynacord has turned away here from control panels bristling with switches, offering us instead an input section with digital processing and a display. And it is in this area that the most exciting discoveries are to be made. The AXM



*Flexible mounting options: thanks to the integrated stand adaptor.*

reproduced by the box itself but also available at the XLR MIX OUT socket. A resourceful minstrel with a vocal microphone, guitar and playback device could use this, then, to send his own mono mix to the PA.

The menu, which is operated using a single control, delights us with a wealth of features, the best of which are the tone controls. Here, we discover a three-band EQ with a sweepable centre band as well as a sweepable notch filter. These are complemented by a low-cut filter, tu-

## » Dynacord offers us an input section featuring digital processing and a display«

12A enthuses with combo inputs capable of accepting either line or microphone level signals and that can be plied via the menu with ... (drum roll) ... individually switchable phantom power! This is excellent news because it means you can connect not only condenser microphones but also active DI boxes fed by devices such as the small but trusty preamp for your steel-string guitar, the sound of which you, no doubt, particularly cherish. ‘Combo’, of course, means you can just as easily plug a jack straight into the socket. There are two of these XLR/jack combination sockets as well as a stereo RCA. It is possible to sum both inputs or else to use only the left input internally and feed the right to the MIX OUT socket. This allows you to create a stereo system swiftly using the internal mixer. The three inputs can be mixed using the dedicated rotary controls. The resulting mix is not only

neable between 50 and 200 Hz, and accessible from the stage. My enthusiasm here is attributable to my own experience, as a performer, of poor monitor equalization. A wicked thought: if the sound man, even at the end of the sound check, still hasn't managed to get the EQ right, and the monitor of your female vocalist is still not entirely free from feedback, with tone controls like these you could just take matters into your own hands: a quick twiddle of the low-cut to eliminate feedback at the bottom end, rein in any squealing with the parametric mid, and take out the most penetrating “here's-where-the-feedback-occurs-most-often” frequency altogether with the notch filter. The latter attenuates a very narrow frequency band, sweepable between 70 and 10,000 Hz, by 10 dB, though you can, of course, switch it off altogether. Taken together, these options and the fact that, with a

### TECHNICAL SPECIFICATIONS

› Nominal output RMS	260 W + 75 W
› Driver configuration	12", 1.75" neodymium, coaxial
› Dispersion pattern	90° conical
› Frequency range	50 Hz–20 kHz (-10 dB)
› Crossover frequency	1.6 kHz
› Cooling	convection (no fan)
› Connections	2 x combo (48V switchable), RCS In L and R, Mix Out (XLR), Thru
› Weight	14.9 kg
› Dimensions	414 x 339 x 484 mm

point source, optimal orientation is possible, provide the perfect prerequisites for a feedback-free gig.

The menu offers other less critical setting options, such as the time that elapses between your last interaction with the control panel and the display dimming. What is of practical relevance, however, is the delay parameter. Delay can be applied to the entire box—which, in the case of monitor applications, would amount to workplace bullying but is eminently sensible when the box is part of a delay line. Thanks to its flat design and the adapter provided for pole-mounting, the AXM 12A is well suited to such tasks. The requisite routing is easily accomplished: just connect it to the Thru of a PA top. The delay time is indicated



*Lateral connection panel: easily accessible from the stage and less vulnerable to tampering by the audience.*

ted in metres (travelled at the speed of sound), with one metre being roughly equivalent to three milliseconds.

Over and above the equalizer and filters, the box offers six presets the names of which give an indication of their reproduction characteristics. A further five presets can be stored as User Settings. “Monitor 1” has a linear frequency response. “Monitor 2” features a lift in the region most critical to intelligibility. “Monitor 3” reduces the comb filtering effect that occurs when two AXM 12A boxes are placed alongside one another, with the EQ curve cancelling out the coupling effects. “GuitarCab” simulates the frequency response of a guitar cabinet. This is nice if you want to combine the AXM 12A with a guitar processor to make a guitar rig. And why not? This is, after all, a box that directs the sound where it’s meant to go. And as a loudspeaker box, it is constructed in accordance with high acoustic standards—which is more than be said of the vast majority of guitar cabinets and combos. The “Main PA” preset is for when the AXM 12A is used as a full-range PA box and “Top + Sub”, for when a subwoofer is added to the rig; here a low-cut filter serves to eliminate the frequency range reserved for the subwoofer. All the PA presets are equipped with FIR filters to ensure a more

linear frequency response, whilst the IIR filters of the monitor presets are designed to reduce to a minimum the signal propagation delay. All presets leave the tone controls and low-cut intact; these are not the type of programs you use to store and reload EQ settings. Here, the EQ, feedback filter, low-cut and presets all operate in parallel, with each retaining its influence on the resulting sound.

The response characteristic of the box is remarkably linear. Beneath 70 Hz it would be wrong to expect any heroics, but aside from sweet-sounding enhancements around 100 Hz and above 15 kHz, any irregularities are confined to  $\pm 2$  dB. That’s what I call loudspeaker construction of the highest order! The directional graphs show very stable, radial dispersion within an 80° cone above 1 kHz, with a gradual widening of the angle as the frequency falls to 200 Hz, below which the dispersion is omnidirectional. The conical dispersion can be compared to the beam of a tightly focussed spotlight. You take aim and hit the

target. To be sure of avoiding chaos, raise the cut-off frequency of the high-pass filter; then the Dynacord AXM 12A will make no greater contribution than an in-ear monitor to the acoustic slush on stage. And the impulses are dry and direct. The power amplifiers keep a tight rein on the drivers. The sound doesn’t waft around, so with a stereo configuration one is conscious of the quality of the spatial imaging.

I have used the Dynacord AXM 12A as a vocal monitor for a female singer in a top forty band and also for monitoring my own performances as a guitarist. The Dynacord AXM 12A convinces with extremely detailed, clearly localizable, dry, directional reproduction. The sound pressure levels are impressively high, and with vocals or a six-string guitar you’ll never touch on the lower boundary frequency. The small area the device takes up on stages that are always too small is a powerful argument in its favour—especially when tripods have to be moved—as it means a way can always be found of manoeuvring the box into the ideal position, sufficiently close to your ear. The comprehensive filter options struck me as particularly good, as did the phantom power, which I find even more interesting for active preamps than for

condenser microphones. I connected a Tech 21 Bass DI, for example, which cuts a fine figure as an acoustic guitar preamp.

The “PA” preset has the best sound. Here, the processor gives the bass a little help, with linear reproduction all the way up to 15 kHz, above which it adds an extra portion of treble. The size of the box, obviously, imposes physical limits on the bass reproduction. Fifty hertz is the stated lower limit, though below 70 Hz there isn’t much going on. But what would be the point anyway? In monitor applications, the only people likely to worry are those drummers who like to feel in their bones some physical feedback from every kick, but in that case all they need do is combine this box with a subwoofer or—better still—a bass shaker in the drum throne. Larger multifunction boxes have an easier time reproducing the lowest bass frequencies; they take advantage of bass reflex effects to enhance the bottom end and emulate a subwoofer, but this is only relevant when the box is used often as a full-range system mounted on a tripod. Even there the AXM 12A makes a good impression, but its particular strengths are less in evidence when it is used in this way. Its forte is close-range monitoring, where its clearly centred conical dispersion is pure gold. When it is mounted on a tripod, on the other hand, this could even be a disadvantage, as it results in the higher frequencies radiating to the same extent upwards into the ceiling as downwards. Besides, the localization problems associated with enclosure designs whereby the tweeter is positioned above the woofer scarcely matter when the listener is at some distance from the box, so conventional multifunction boxes tend to perform better on tripods. For monitor applications in the wedge position, however, this is not the case. That is why for monitoring applications it pays to invest in specialized monitor boxes.

Conventional trapezoidal multi-function boxes operate in a less-than-ideal way when lying on the ground. If the horn pattern is 90° x 60° in the standing position (to ensure less sound goes into the ceiling and the breadth of the audience is taken into account), this means that when the box is lying down, the performer has to remain within a 60° arc in order to hear the high frequencies. That is why many conventional wooden boxes allow you to rotate the horn through 90°. This, however, involves a great deal of fiddling around with cordless screwdrivers and the screws that attach the horn directly to the wood and isn’t something you’ll want to do very often—certainly not for one gig. Furthermore, a bass-reflex tube tuned low is not an essential item in monitor applications. Except, that is, for drummers, to whom the use of



**Extremely well adapted to the stage:**

*the robust metal grille is a match for the rigours even of rock concerts stand.*

multifunction boxes as monitors is to be recommended: drummers don't move about, so in their case a 60° x 90° dispersion pattern poses no problem and they appreciate powerful low frequency reproduction for the feedback it gives them on each kick. For vocal monitoring applications, on the other hand, it is an advantage to have a box like the AXM 12A that has a coaxial design with a conical dispersion pattern.

**A monitor is also an item of stage furniture. It's nice to be able to climb over it from time to ti-**

**me.** And with this one you can. The grille does, admittedly, give slightly but it immediately springs back and no dent is left. The upper edge is robust enough to support your entire weight or to push off from. Another refreshing feature is that the cable linked to the mains plug is extra long, which means less call for power distributors on the stage.

**The Dynacord AXM 12A is convincing in every respect.** One may have heard louder and larger monitors. But anyone who thinks more volume is what is required is making a conceptual error. It is better to use a monitor, or monitor path, to target the sound in limited doses. The sound on stage should never be that loud. The comprehensive signal routing and tone control possibilities offered by the AXM 12A are exemplary in that respect. To have at your disposal a three-band equalizer with a parametric mid, plus a sweepable notch filter, plus a tuneable low-cut, plus basic presets with different frequency responses for monitoring, monitor pairs and full-range operation, is to be lavishly equipped both for the task of shaping the

## AT A GLANCE

› **Dynacord AXM 12A**

› **Distributor** Dynacord, [www.dynacord.de](http://www.dynacord.de)

› **Price (RRP)** 1.069 EUR

› **Evaluation**

- ▲ Very linear reproduction
- ▲ Well-directed dispersion
- ▲ Compact dimensions, lightness
- ▲ Very good range of functions
- ▲ Phantom power, semi-parametric EQ
- ▲ Low-cut and notch filters
- ▲ Mix Out and delay function

tone and for the war against feedback. Individually phantom-powered combo inputs are another novel luxury. With a stand adaptor for pole mounting as well as a delay function, the AXM 12A is a universally applicable sound reinforcement tool. Its defining features, however, are the quality of its reproduction and clearly centred localization, which is the result of the coaxial loudspeaker configuration and conical dispersion—a design that brings with it at the same time two further advantages: the cabinet is both compact and light.

✘ Jan-Friedrich Conrad