



GRACE DESIGN

M904/M904B

STEREO MONITOR CONTROLLER

If there's a consistent weakness in DAWs and systems made of discrete kit, it's the monitoring side of things – something traditionally taken care of at the console. NIGEL PALMER looks at the Grace Design way and takes a shine to it.

THE REVIEWER

Nigel Palmer has been a freelance sound engineer and producer for over 20 years. He runs his CD mastering business, Lowland Masters (www.lowlandmasters.com), from rural Essex where he lives with his family and two dogs.

‘What’s a monitor controller?’ and ‘Why would I want one?’ are questions commonly heard these days as digital audio workstations (DAWs) continue to dominate the Pro Audio universe. If you’ve ever tried juggling speaker levels, headphone feeds, multiple analogue and digital inputs and outputs, plus talkback, mono, dim and mute functions just using your trusty audio computer’s hardware you’ll see the point right away: in a nutshell, a monitor controller makes up for the lack of facilities traditionally provided by the centre section of the mixing console, and now that so much work is done ‘in the box’ without a mixer, such facilities have become harder to generate. Look around and you’ll see quite a few companies offering controllers primarily aimed at DAW users, with as many flavours of solution to the problem as there are products – manufacturers range from big players to the more specialised ‘boutique’ end of the market, one of the latter being US company Grace Design of Boulder, Colorado, with both stereo and multichannel offerings in the form of its m904 and m906 systems.

The m904 stereo monitor controller (see the sidebar for an overview of the 5.1 m906) was first introduced in 2004. As the company’s Michael Grace – a long-time keen location recordist – told me recently, it came “from the need for me to simplify my location setup and not have to

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use a little mixer to control my speakers and then another amplifier for headphones: I just wanted a simple box that did talkback, level control and speaker and headphone switching, where I could listen to multiple sources.” This original requirement still comes through in the final piece, allied with typical Grace attention to sound quality, ergonomics, and an elegant appearance.

Overview

The m904 comes in two variants: a 2U rack-mountable unit with all the controls on the front panel; or the m904b, which has a blank 2U mainframe connected via a 25’ (7.62m) cable to a remote control unit, the m904RCU – this second being the version provided for review. The remote has the same set of controls as the ‘live’ panel version, and can be purchased separately and used with that unit for added convenience.

The controls on the paperback-sized remote are clearly laid out, set off by the same attractive brushed stainless steel finish seen on the rack unit. At the remote’s top left are eight illuminated buttons determining which input is being monitored: specifically these are two balanced, one unbalanced and a cue (DAW headphone feed) for analogue, plus two AES, one S/PDIF, and one TOSLINK/ADAT toggle for digital. To the right is an LCD display showing system settings dependent on the mode in use, below which

are a further six buttons. The top three are 'sel' and they select the various clocking options, then 'mon->cue' to route the selected input source to the unit's cue output (which can double as an extra speaker feed), and 'cal', which accesses the setup parameters. Beneath is a further trio of switches for mono, dim (depth being adjustable in calibration mode) and mute. To the right is a pair of larger switches for toggling between the main speaker pairs and talkback. Finally there are two rotary encoders with associated three-digit displays for separately adjusting headphone and speaker outputs in 0.5db steps from 0 to 100dB. The main level knob doubles as a value control in calibration mode, and both encoders can be double-clicked downward to either mute or engage a preset headphone volume or recall a stored level on the speakers. Finally on the remote are a multipin socket for the umbilical and a headphone socket, the driver circuitry for this being the same as in the company's standalone m902 headphone amplifier.

The front of the rackmount 'brain' of the m904b gives few clues to its function, the only visible features being a second headphone jack and an illuminated power switch, but a look at the rear reveals a comprehensive set of connectors, including XLRs and phonos for the inputs already mentioned. In addition are AES and S/PDIF digital thru connectors providing a buffered output of a user-selectable digital input – a number of uses, including master clones and feeds to digital outboard, suggest themselves here – wordclock and superclock socketry with a termination switch, and a talkback mic input whose gain and phantom power status are software-controllable in calibration mode. Also present are analogue outputs including cue, the two speaker sets, and a fixed DAC (digital to analogue converter) feed following the last selected digital input, an analogue equivalent of the digital thru with comparable applications. Finally, on the back panel can be found a remote multipin, a talkback footswitch and mains facilities.

M906 5.1 MONITOR CONTROLLER

The m906 is the m904's bigger brother, aimed at studios working primarily in surround. It comes only in a mainframe/remote configuration and also has a separate half-rack 1U power supply, but otherwise there's much in common with the 904. Michael Grace: "The 904 and 906 share pretty much identical technology, but the 906 has four more channels." This is clearly seen in the general layout of the remote, with inputs at top left, calibration and monitor switching to the right, and headphone and monitor level controls plus their associated displays at the bottom. The unit also features the same 24-bit 192kHz ADC and DAC implementation as the 904, with the Grace proprietary s-Lock circuitry to smooth jittery sources. Closer inspection, however, shows that this is something of a 904 on steroids as the multichannel operation requires an additional degree of complexity, although this has been enabled in a typically unfussy way. Input and output selector

switches here have extra six-channel variants in both digital and analogue, and there's a row of seven buttons below these catering for solo and mute on individual channels, including the sub or .1 channel. In the multichannel world easily accessible mute and solo selection becomes important for fast setup and audio troubleshooting, and top-level placement is probably the best way to do it rather than buried in sub-menus, as I've seen elsewhere. Also, in addition to the 904's stereo speaker sets, the user also has two in 5.1.

As the 904's 2U mainframe rear panel is already well filled with connections for stereo operation, it's pretty clear that something would have to give to accommodate the extra channels in the same 2U space on the 906: this has been neatly solved with no loss of facility by providing the multichannel DAC out, speaker feeds 1 and 2, digital and analogue inputs on multipin connectors instead of XLRs.



The M904, standard, comes with front panel controls attached and the option of a remote. The M904b has a blank fascia and is supplied with the remote.

In Use


As I normally use a pair of DACs to separately drive speakers and headphones when mastering, I was looking forward to the comparative luxury of having everything in one place. Getting basic functionality with the m904b in my rig wasn't difficult, just a question of unplugging the can and speaker digital feeds from my Benchmark DAC-1s and plugging them into the 904's mainframe along with the SPDIF from my Alesis Masterlink. The Masterlink is a valuable reference I often use to check favourite tracks from its hard drive or from client CDs against work in progress – the trick here is that everything I listen to in the course of the working day is heard through the same DAC, so reference music has the same presentation as the DAW output and helps to provide a better idea of where we're going relative to the real world. So it proved with the 904: switching between sources couldn't have been simpler, and the careful attention to ergonomic detail, switch feel, illumination and so on made for a focused working experience, in large part thanks to Michael's brother Eben, whose speciality such things are.

So, easy to use and easy on the eye: how about the sound? Very good to my ears – both the ADC and DAC have clearly been designed with analogue performance very much in mind. I've said this before but it bears repeating – there are a limited number of good converter chips out there, and all the designers have access to them; where thoughtful and ingenious design really raises the stakes is in the analogue circuitry necessary to make those chips come alive, and a talented designer will work hard to maximise the potential. This is why it's not unknown to

find different products using the same base chip having major differences of presentation and fidelity. As Michael Grace says, "The more I learned about [digital technology] the more it all became analogue." In the m904 I'd say he's done the user proud as day-to-day operation quickly became transparent to me, the unit going straight into my setup with no problem. One impression I had about the sound was that in comparison to the Benchmark's neutrality the Grace DAC seemed a tiny bit 'nice', a little easier on the ear. It's hard to expand on such a claim without the kind of rigorous blind testing that was hard to do the way I was set up, but whatever the effect it didn't seem to do jobs passing through any harm at all, and made for an enjoyable and non-fatiguing listening experience.

Conclusion

I'll be quite sad to see the back of the Grace m904b. Having all those useful facilities in one place proved more than handy and showed a clear possible upgrade direction for my rig. I thought the headphone amp was great for edits and QC, and the ergonomics undoubtedly helped my workflow – I also liked the look of the thing and its obvious solidity of build.

There are a number of features, such as talkback, cue, and multiple speaker outs, clearly aimed at the recording end of music production and which I had little opportunity to try in a mastering context, but I've no reason to think that these should work other than very well if the rest of the facilities are anything to go by. As always, there's no getting away from the fact that quality costs, but I think either m904 variation emphatically deserves to be heard and seen by anyone serious about high quality and convenient monitoring. 

INFORMATION

☎ Grace Design M904 \$2.995
M904B \$2.395
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