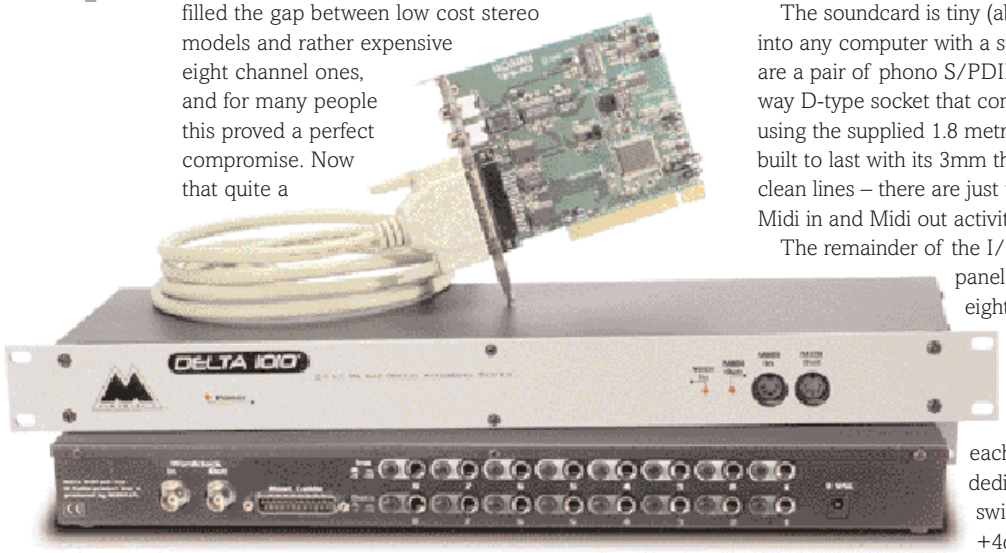
# M Audio **Delta** 1010

'Don't play with toy converters' says the M Audio advertisement. In Martin Walker they may well be preaching to the converted.

Some companies take big gambles by launching revolutionary new products that may or may not succeed in the market, others tend to design products that are the cheapest in their class to ensure good sales. Midiman seem to work in a rather different way, by looking at the existing market, spotting the gaps, and then designing high quality products that fill the niches. One case in point is their Dman 2044 soundcard, which with four analogue ins and outs neatly filled the gap between low cost stereo models and rather expensive eight channel ones, and for many people this proved a perfect compromise. Now that quite a few soundcards have been launched with converters capable of 24-bit/96k operation, Midiman have once again looked at the cheap ones, looked at the high-priced 'professional' models, and made their move – the result is the new M Audio range.




Compared with the many other colourful Midiman products (such as the Midi interfaces), the entire M Audio range is a little more upmarket, with full 24-bit/96k capability and a restrained (for Midiman anyway!) black and silver livery [what, no more airborne cattle? – CH]. The Delta 1010 is the flagship of this range, and, as its name suggests, there are a total of 10 inputs and 10 outputs – comprising eight analogue ins, eight analogue outs, and stereo S/PDIF in and out. It also has handy Midi in and out sockets, along with wordclock in and out for those whose digital studios are run from a single high quality master clock.

## The Design

Like many recent designs, the Delta 1010 comes in two parts – a PCI soundcard that fits into a Mac or PC computer, and a completely separate 1U high rack-mounting breakout box with most of the sockets. It's reminiscent of the Event/Echo Layla, and the big advantage of this type of two-part design is that the A/D and D/A converters are all housed inside the breakout box, and are therefore well away from potential electrical interference inside the computer. This is particularly important with 24-bit circuitry, because we are dealing with a potential dynamic range of 144dB!

The soundcard is tiny (about 12cm long) and should fit into any computer with a spare PCI slot. On its backplate are a pair of phono S/PDIF connectors, along with a 25-way D-type socket that connects to the rackmount case using the supplied 1.8 metre long cable. The case looks built to last with its 3mm thick front panel, and has very clean lines – there are just three LED indicators (power, Midi in and Midi out activity) and a pair of Midi sockets.

The remainder of the I/O sockets are on the back panel. All eight analogue inputs and eight analogue outputs are TRS 6.5mm jacks, and therefore suitable for either balanced or unbalanced operation. One slightly unusual feature is that each and every one of these has a dedicated hardware pushbutton to switch between -10dBV or +4dBu sensitivity. Most other designs do this in software, so that you can alter sensitivity without having to delve into the innards of your rack. However, in Midiman's favour it has to be said that many people will set and forget the switch positions in their studios, and there can be certain noise benefits in 'hard wiring' analogue circuitry, rather than controlling its gain from afar.

The remaining back panel sockets are a pair of BNCs for wordclock In and Out, a 25-way socket marked Host Cable (which connects to the PCI soundcard), and one for the supplied 9V AC power supply. Since some people prefer to have power supply switches on the front panel for easy access, and others prefer them out of harms way on the back panel, Midiman have provided a clever twist in sensing the signal from the PCI soundcard, so that the rack unit is powered up automatically when you switch on your computer.

## Delta Force

Unlike many other soundcards, the Delta 1010 isn't bundled with questionable software such as games and

demos – Midiman see it being used by serious musicians who will run serious applications. The entire supplied software fits onto a single floppy disk containing the drivers and a comprehensive Control Panel utility – a total of just fifteen files and 689kB of data. No doubt some musicians will grumble at not getting loads of 'freebies', but why fill your hard drive with things that you won't end up using in the long term and which could make it more sluggish in the process?

Once the soundcard has been inserted in a suitable PCI slot, the next time you power up your computer it should be detected automatically. Both the drivers and Control Panel then get installed automatically after you insert the floppy disk. Included with my Delta 1010 were Windows 95/98 and NT drivers, along with ASIO ones for Cubase VST and Logic Audio users, but both PC DirectSound and Mac drivers should also be included in the package by the time you read this. I used my Pentium II 450MHz system as a test bed, and was back on the desktop and ready to roll within a couple of minutes of installing the card and switching on. As with nearly all soundcards, the operating system views the hardware as a selection of stereo channel pairs – four for the analogue outputs (labelled WavOut 1/2, WavOut 3/4, WavOut 5/6, and WavOut 7/8), four for the analogue inputs (PCM In 1/2, PCM In 3/4, PCM In 5/6, and PCM In 7/8), and one each for S/PDIF Out and S/PDIF In, along with an extra input pair labelled Mon Mixer (more on this in a moment).

The M Audio Delta Control Panel utility can either be launched as an option from the normal Windows Control Panel, or from inside Cubase VST, and it has four pages of options. The Patchbay/Router page lets you select which signals are sent to each of the five pairs of hardware output sockets (labelled H/W Out 1/2, H/W Out 3/4, H/W Out 5/6, H/W Out 7/8, and H/W Out S/PDIF). During the playback of hard disk audio tracks these would normally be connected to the signal from the corresponding hard disk audio playback channels (WavOut 1/2 and so on), but you can instead patch any hardware input signals (either analogue or S/PDIF) to any hardware output – very useful when monitoring input signals during recording, since this totally avoids any software latency.

In the case of H/W Out 1/2 and H/W Out S/PDIF, you can instead patch them to the output of the Monitor Mixer, whose controls are on another page of the utility. There are 20 possible inputs to the Monitor Mixer – WavOut1 through WavOut8 and the WavOut S/PDIF stereo pair, along with all 10 H/W Inputs. Each input channel has Solo and Mute buttons, a peak-reading level meter, output level fader, and a Stereo Gang button is provided per pair for stereo fades. The stereo Master Output of the Monitor Mixer has Mute and Stereo Gang buttons, along with level meter and level fader for each channel. Together the Patchbay/Router and Monitor Mixer are quite versatile – you could, for example, route the S/PDIF Input to H/W Out 1/2 to monitor your digital input through analogue speakers, or mix together up to 20 mono inputs and monitor the combined output either through speakers (using H/W Out 1/2) or a DAT machine (via H/W Out S/PDIF). You could also choose the Mon Mixer input mentioned earlier in your software application, to record the entire mixer output onto a single hard disk track – handy to replace a small mixer on location work perhaps.

The third and fourth pages of the Control Panel provide controls for Master Clock, locking of sample rates, various options for Professional and Consumer S/PDIF flags, and settings for both Wave and ASIO buffers. These latter options let you optimise the latency value for your own computer. On my PC I managed to use the lowest setting of 8ms for the Wave driver (ideal for achieving low latency 'real-time' software synth performance), and also the lowest setting of 336 samples per buffer with the ASIO drivers, giving me a latency of 8ms at 44.1k, while at 96k I had to raise it to 528 samples per buffer, but still giving me an amazing 5ms latency.

## 10 out of 10?

Typically, 24-bit converters provide a real world dynamic range of between 100dBA and 120dBA, and the more expensive they are, the higher this figure gets. Midiman have decided (sensibly in my opinion) not to make their M Audio range the cheapest available, but instead to use AKM converters of high enough quality to give an audible improvement over most 16-bit and 20-bit designs. I could certainly hear the difference, particularly at the top end, which sounded slightly more open and focused than my own 20-bit Event Gina card, even when replaying 16-bit material. Recording at 24-bit resolution gave even more impressive results, and background noise levels were also commendably low – I confirmed Midiman's own dynamic range figure of 109dBA. Recording with 24 bits at 96k sounded even better, although you will need a powerful system to run many tracks in this format, since they use three times as much data as 16-bit/44.1k ones. On the digital side, the S/PDIF I/O managed bit-for-bit copies of existing material, which is all you can ask.

Overall I was very impressed by the Delta 1010 – it may not be the cheapest 24/96 capable card on the market, but cheapness is not what Midiman are about. This is a professional product at a realistic price – if you want excellent sound quality, low software or 'zero' hardware latency, as well as a versatile little monitor mixer, the M Audio Delta 1010 will give you everything you need.

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### Price

• *$2299*