

# RME HDSPe MADIFace

Audio on the move is a growth area as witnessed by the wealth of affordable and effective pocket recorders and the rise of the laptop. **ROB JAMES** encounters an interface that takes a portable computer to a completely different level.

For people wanting more than simple stereo in a mobile package, a laptop with a suitable audio interface is an increasingly popular choice. Laptops are now more than powerful enough to run mainstream DAW and sequencer software and hard drives are becoming larger, faster and cheaper. The question is, just how far can you push this particular envelope?

German manufacturer RME makes some of the best interface cards and converters in the business including a number of MADI devices. Despite the fact that a single, conventional AES3 link can carry two channels, the multicore cables required to transport high channel counts are still unwieldy, fragile and expensive. MADI is one of the great digital interface protocols, AES10, AKA the Serial Multichannel Audio Digital Interface to give it its full title, and promises long distance communications for up to 64 (extended mode) bi-directional channels over just two copper coaxial BNC or optical fibre cables. The only obstacle to wider acceptance used to be interface cost and RME has set out to change that. The idea of a recording laptop with this number of channels of I-O is highly seductive and the HDSPe MADIFace brings all this MADI goodness to laptops via the ExpressCard slot.

For UK£765.11 (+ VAT) RME supplies a compact ExpressCard/34 device, an I-O box and software. The connection between the hardware devices uses a standard 6-pin FireWire cable, however, RME employs its own protocol and FireWire machinery should emphatically not be connected. RME also suggests limiting the length of the connection to 1m.

Many PC laptops have an ExpressCard 54/34 slot. Unfortunately, the ExpressCard slot mechanical design is not especially clever. There is no locking mechanism and a 34 card in a 34/54 dual slot is an accident waiting to happen because it can wobble about and disconnect. Therefore RME recommends taping the card to the laptop to prevent inadvertent disconnection. Alternatively there are plastic spacers available from Expansys and probably other suppliers. Even if you have one I would still add a bit of tape for security.

The breakout box is built like a tank. On the rear panel there are two heavy wire hooks for cable strain relief or for fixing the unit in position. These are threaded into place and can be turned as required or removed and the captive nuts used as fixings. The 6-pin FireWire socket is also on the back panel. On the front, optical and coaxial sockets are present for connection to MADI I-O boxes or a mixing console. MADI coax uses standard 75Ohm cables with BNC connectors. MADI optical cables are borrowed from professional networking and are made from very fine glass fibres in a protective sheath with SC type connectors and are most decidedly not compatible with the familiar Toslink cables. Also, unlike Toslink, the wavelength used (1300nm) is invisible to the human eye. Multimode transmission is employed and this supports cable distances spanning up to nearly 2km.



I am not a huge fan of laptops for professional audio use, due principally to the difficulty of selecting a suitable model (*I think we realised that in your Ten, V7.7. Ed*). In particular this concerns which FireWire/ExpressCard chipset is employed and the one to have is Texas Instruments (TI). Although other chipsets will usually work up to a point, there are frequently snags when it comes to low latency and high track counts. (Mac users shouldn't be feeling too smug at this point since for some months from late 2007 Macbooks were fitted with a non TI chipset). As a result, it has taken me some months to decide on a suitable purchase. The good news is that suitable laptops don't have to cost a fortune. You are more likely to find the right chipset in middle of the road models — I eventually found one for just over UK£300. OK, it needed a RAM, and maybe a processor, upgrade but an extra gig of RAM cost me less than £15 and I haven't felt the need to upgrade the processor yet, given that I'm able to record 64 tracks SD (i.e. 44.1kHz or 48kHz) without a problem. 32 tracks of 96kHz or 16 tracks of 192kHz are also possible.

This is more than a simple I-O interface. The DSP elements controlled by the excellent RME TotalMix application enable the HDSPe MADIFace to behave as a free patchbay and/or mixer for up to 64 inputs and outputs. It can distribute inputs to several outputs simultaneously and up to 32 stereo independent submixes can be set up for such things as headphone feeds. External devices can be inserted in record or playback paths. The ASIO multiclient driver supports the use of several different programs at the same time, but only with different playback channels. TotalMix enables these different program outputs to be mixed and monitored on a single stereo output. MIDI control of mixing functions is included and the HUI remote control protocol is supported. TotalMix is a deceptively powerful application and the learning curve reflects this. After a while it all clicks into place and you don't think about it.

DigiCheck, RME's Windows digital audio analysis tool, now in version 5 is a free download. It is based on a rewritten ASIO audio engine, which supports single channel selection and simultaneous use of multiple cards in all functions for test, measurement and analysis of digital audio. Tools include a 30-band spectrum analyser, a correlation meter and goniometer. These can be displayed individually or all together. There is also an integrated recording program, Global Record. This stripped down recorder imposes very little system overhead and can be used for acquisition in a low power laptop. The brand new Surround Audio Scope is a scalable 6-channel surround display with multicorrelation meters and combined Peak/RMS level meters.

Installation of Merging Technologies Pyramix Native took but a few minutes, setting it up to talk to the MADIFace took even less. I chose to use a multitrack recording template for the first recording without modifying it. This gives 56 tracks with all the I-O automatically configured. My expectations were not high but, lo and behold, after arming all the tracks and hitting record, a ribbon of recording appeared on all 56 tracks (at 48kHz) without the rather feeble laptop processor even breaking a sweat. Subsequently, I extended the track count to 64 with similar results. Obviously, if I was going to make a habit of this, a larger or external hard disk would

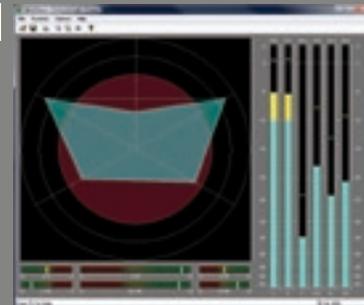
be required. For better security, RAID should be considered.

RME's MADIFace represents a major paradigm shift in music recording, enabling a very serious multitrack recorder to be implemented in a notebook PC. ■

**PROS** With a pretty basic laptop and external storage you can have a very high quality 64-track recorder; excellent audio quality; the included software.

**CONS** Not RME's fault but the ExpressCard interface is mechanically fragile; the difficulty of selecting a suitable notebook PC; TotalMix takes a while to learn.

## EXTRAS



DigiCheck 5 is based on a rewritten ASIO audio engine, supporting single channel selection and simultaneous use of multiple cards in all functions. For example, it is now possible to record 192 channels at the same time using Global Record via three MADI cards, or to display the phase relations from any channels even from different cards.

## Contact

**RME, GERMANY:**  
Website: [www.rme-audio.com](http://www.rme-audio.com)