

Tascam DV-RA1000

James Wilkinson re-discovers the power and flexibility of standalone digital two-track recording.

The obvious question many people raise these days when they're confronted with a new standalone CD/DVD burner is: 'Why do I need an external device when I already have a burner in my computer that works fine?'. The answer is simple: your computer's CD/DVD burner offers virtually none of the features commonly found in most standalone recorders, let alone the comprehensive feature set offered by Tascam's new DV-RA1000. Much like the CD/DVD burner in your computer, the DV-RA1000 is a CD writer that can burn DVD+RW media, formatted with the Universal Disk Format 1.5 (UDF), and CD-R/RW media recorded to the Redbook standard (16-bit/44.1k), but that's where the similarities end.

The DV-RA1000 is in another league entirely to the burner in your PC or Mac, and in some respects comparing these two alternatives is like the proverbial apples and oranges mismatch. Apart from being well constructed, able to function autonomously (standalone) and accommodate several recording/playback formats, this multi-talented 2RU recorder offers a plethora of features and routing options that have been largely lost to professional audio environments with the demise of the DAT player. When the DAT became as unfashionable as a 'mullet' its departure left a void that has arguably never really been filled (unless of course you're still recording to DAT – and still sporting that mullet!). Perhaps the DV-RA1000 will spark a resurgence in standalone digital recorders, and finally restore some relevance to the idea of an external device playing the role of 'master recorder'. If it's to do so, it will be down to the success (or otherwise) of one distinct feature – DSD.

DSD Recording

Arguably the most noteworthy feature of the DV-RA1000 is its ability to record and play back Direct

Stream Digital (DSD). Its Burr Brown PCM1804 A/D and DSD1792 D/A converters not only provide PCM (Pulse Code Modulation) resolutions up to 24-bit/192k they also allow true DSD recording and replay, by bypassing the PCM filter section of the converter. Sony developed DSD for Super Audio CDs (SACD) several years ago now, providing a phenomenal sampling rate of around 2.8 million times a second (2.822MHz/1-bit), that's 64 times that of a traditional 44.1kHz CD. On paper this yields a 100kHz bandwidth and 120dB of dynamic range. The Tascam uses the standard DSDIFF file format, which can be read by DSD computer systems such as Sony Sonoma, Philips SACD Creator, Sadie and Pyramix, or simply read by any computer with a DVD-ROM drive capable of playing DVD+RW discs.

While the recorder can happily burn these DSDIFF files (a DVD+RW will provide 109 minutes of DSD recording time at 2.822MHz/1-bit) and play them back, it's important to understand that the DV-RA1000 doesn't record or play back formatted Super Audio CDs or DVD-Audio discs, nor can the DSD audio files it burns to disc be played in an SACD or DVD-A player. It will only play DV-RA1000 discs or standard CDs.

Until now, DSD recording has existed primarily at the extreme high end of digital converter technology, and despite a concerted effort on the part of Sony and Philips to push it, the hi-res SACD digital format derived from DSD has been taken up by less consumers than was anticipated; the world seemingly more enamoured with file-friendly formats like MP3 than they are with superior sounding ones like SACD. The reasons for this are complex and beyond the bounds of this review, but suffice it to say, the hi-res format is hardly encouraged when most audio facilities still don't own a single DSD master recorder. How can the blame for the poor take-up of hi-res digital technology be placed solely at the





feet of consumers when parts of the audio industry itself make little effort to embrace it? If the main excuse why most recording studios and broadcast facilities haven't a single DSD recorder on their premises is cost, that excuse no longer applies – with the release of the DV-RA1000 you're getting a true DSD recorder at a bargain price.

Back Panel Connectivity

You only have to look at the back panel of the DV-RA1000 (see photo) to understand just how much connectivity it offers above and beyond your computer's CD burner. Around the back you'll find balanced +4dBu XLR connectors and unbalanced analogue RCA –10dBV ins and outs, a USB2 port, Word Sync, wired remote port and serial control connector (RS-232C). There's no timecode, but there's no shortage of digital formats available either, with 44.1k to 96k S/PDIF, 44.1k to 192k single/dual wire AES/EBU and BNC connectors for SDIF-3/DSD-raw. File formats used are Broadcast Wave (.wav) and DSDIFF. There's even a USB port that allows you to transfer files to and from your computer – an ability that's central to how this machine operates. Let me explain. As a high-definition data recorder, many of the discs burnt on this machine are not formatted to play on other machines (as per a normal audio CD), and it's common practise for files to be transferred, edited and subsequently re-burnt to another format. For example, you can record audio as DSDIFF but it will not play on an SACD player until it has been reformatted to another disc.

In USB mode, the DV-RA1000 appears on your PC as a hard drive from which files can be easily added or removed. Tascam recommends you have USB2, but it seemed to have no trouble transferring files or burning a CD-R disc using Toast via USB1, and the range of DVD/CD media available for use is increased in USB mode too.

Front Panel

On the front panel of the DV-RA1000 you'll find a headphone jack with volume control, timer switch and transport controls (including a mute button) for play, stop etc. and a large jog/data wheel. There's a Virtual Front Panel (VFP) – or screen – that is underlined by five user-programmable buttons, and it's here you can navigate between the unit's many functions such as track erase, pitch control, dithering, finalising and an oscillator.

The back panel has enough digital inter-connectivity to effectively act as a digital router.

To the right of these controls are four more buttons to select Effect (digital EQ and dynamics), Monitoring (I/O monitoring), Fade (adds fades to your files) and Sync Record. Sync Record and Auto Cue work by setting a threshold level for signal received from another machine that, when exceeded, starts record/playback. There's even a keyboard PS/2 connector on the front panel, which allows data entry (via that stray keyboard you have laying around), making the naming of projects, files and associated notes a breeze. The unit also has a feature-packed wired remote control. To the uninitiated a wired remote might seem a little antiquated, but it's impossible to lose, requires *no* batteries, and you don't need to point it in the right direction for it to function... this is why a wireless remote is seen as a 'no go' in many pro and broadcast circles.

Hidden Benefits

As a tip, when using the unit's 'Monitor' mode you can route different analogue/digital signals between formats, which in a sense turns the machine into a multi-format patchbay (e.g. go in analogue RCA and out digital AES/EBU or S/PDIF). This allows greater flexibility than may be available with your current digital audio setup. The internal EQ, dynamics processing and fades are useful, but could be easier to execute with your favourite PC-based audio software (although the internal limiter is handy to prevent digital overs when making a live recording).

With its powerful ability to record both DSD and hi-res PCM digital formats; its multitude of analogue/digital connectors and the effortless ability to link with your PC, this is an affordable and flexible media burning machine, which would certainly prove a welcome addition to a wide range of audio production facilities.

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