

A black Tascam DA-302 digital audio recorder. The front panel features two DAT tape decks on the left and right, each with a window showing the tape reels. Between the decks is a central control area with a digital display showing '00000002' and various buttons for 'COUNTER', 'REWIND', 'PLAY', 'PAUSE', and 'RECORD'. Below the display are two large knobs for 'INPUT' and 'OUTPUT'. The left side of the unit has a 'POWER' switch, 'PHONES OUT' jack, and 'PHONES' jack. The right side has a 'PHONES' jack. The bottom of the unit has a row of buttons for 'STOP', 'PLAY', 'PAUSE', and 'RECORD', along with transport controls like 'REW', 'F.FWD', 'STOP', 'PLAY', 'PAUSE', and 'RECORD'. The Tascam logo and model number 'DA-302' are visible on the top left.

It seems so obvious now: package two DAT machines together, with one remote control, and let them record simultaneously, sequentially, from one to the other — even allow one deck to record while the other plays back. Yet a format that's taken for granted when it comes to your standard analogue compact cassette has only just become available to DAT users: Tascam's DA302 is the first ever dual DAT recorder.

All the advantages of the dual-deck format are here, such as savings of cost and space, high-speed dubbing (a first for DAT recorders?) and so on, with, luckily, few of the compromises. When you think of a dual cassette machine, the picture you have in your mind is likely to be of one deck that records and has loads of features and another, less-well specified deck that simply plays back. While

there are one or two exceptions (Tascam's own rackmounting 202 MkIII is notable) where both sides *do* record, they're not that common. There are no such concerns with the DA302's spec: both decks have a nearly identical feature set, both will record, and there are some nifty options that offer virtually the flexibility of two separate machines, but without using up two deck's worth of space.

Physically, the DA302 is the size of a typical pro DAT machine: 3U high and quite deep. On the technical front, the DA302 uses 1-bit delta-sigma A/D and D/A converters; in practice, this means that it produces good, natural-sounding recordings.

The front panel is awash with controls, and no wonder: each deck has its own transport and track ID management controls. There's a single custom display in the middle of the front panel, but within the display are two level meters and two tape counters, along with various status icons — sample rate, dubbing mode, Auto ID, and so on. With two decks on board, headphone monitoring could be a problem: a three-way switch lets you listen to either deck separately, or both together.

Of course, a remote control is provided, and the provision of separate transport, ID and locate buttons for each deck means that it's one of the busiest I've seen. It's also wired rather than infra-red; the reasoning behind this is that if you have more than one machine (multiple DA302s can

be linked together and operated via a single remote), various infra-red remotes could interfere with each other. A wired remote stops this problem. The one let-down here is that the remote's plug is at the *rear* — not the most accessible of locations, especially if your rack is full and totally enclosed.

The remote control has a battery compartment, with a lid that is actually very difficult to remove. There's a reason for this: the remote control doesn't actually need batteries! Just plug and play.

The rear panel sports all the unit's audio connections, and it's here that we encounter the first of the small number of compromises: the analogue connections are on unbalanced phono sockets, and there's only one stereo analogue input. If you're recording the same material on both decks at the same time, or are doing a continuous recording using both decks, then this single input is fine. It's simply not possible to make two completely independent recordings via analogue inputs. There are, however, separate stereo analogue *outs* for each deck. In addition, a Cascade stereo output pair is used when linking more than one DA302 together; this simply passes audio appearing at the analogue inputs straight out of the unit untouched.

Independent recording on the two decks is possible digitally, however. Both decks have separate digital ins and outs, on phono sockets (plus a digital Cascade

socket). The DA302 is preset to work with the consumer S/PDIF digital format, but can be switched to professional AES/EBU digital audio, albeit unbalanced and without that format's standard XLR connector (all you need is an XLR to phono cable with pin 2 as signal and both pin/and 3 going to the screen).

The so-called External Control I/O connectors are back here as well, and are used to link (via the special WR-7000 synchro cable) multiple decks together, for simultaneous or continuous recording or playback.

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Let's have a quick look at the DA302's feature set. To get to the important points first, I'll note that it *will* record at a sample rate of 44.1kHz via the analogue inputs (this CD-compatible rate isn't available on some domestic DAT machines), as well as 48kHz and the long-play 32kHz. It'll happily respond to any incoming digital audio, and switch sampling rates accordingly. One question you'll want an early answer to is: "Will the DA302 infect my recordings with some form of copy inhibit, such as SCMS (Serial Copy Management System)?", to which the answer is "No... unless you want it to". As befits a pro machine, SCMS is disabled, but if you want your recordings to have the limited digital-to-digital copy protection offered by this system, you can choose to enable it.

Beyond that, both decks offer a familiar collection of facilities that make working with DAT recordings a relatively straightforward task. Management functions relating to track IDs and so on are comprehensive: when incoming audio is detected, an ID is written and the track numbered, but this ID can be changed, erased or skipped later. Although IDs are entered sequentially, they can also be re-numbered at a later time, and you can set up temporary programs so that tracks will play back in any order (like a CD player).

The way in which the two decks interact is pretty straightforward. Apart from not being able to simultaneously record different audio on both decks via the analogue inputs, practically anything you'd reasonably want to do is possible: you can record onto one deck; the same material can be recorded onto both decks at once; an entire tape can be cloned with a couple of button pushes (it starts to get really interesting when you realise that an entire tape can be cloned at double speed), and a new tape can be assembled from recordings off various tapes. The one restriction is that high-speed duplication can only be accomplished on one machine; it's not possible in a multiple-machine setup.

The current limit for DAT tape lengths seems to be 120 minutes (with 125-minute lengths available from suppliers such as HHB). This means two hours continuous recording at 44.1kHz and 48kHz, or four hours at 32kHz long play (the difference in audio quality here is not so

bad — the frequency response of the latter is roughly equivalent to FM radio). But your DA302 has two decks, and yes, it offers a 'continuous' recording facility, whereby one deck will start recording once the tape in the first deck is finished. That means eight hours continuous recording at 32kHz, which is ideal for many purposes (conferences and festivals, for example). If you need more than eight hours, buy another deck and slave it from the first, or use the 'Loop' function. This lets you swap tapes when the first deck is finished; the first deck will then start recording *again* once the second deck has finished recording.

If there's one downside to using DAT as a mastering medium, it's backing up. Remember that data (and your digital masters are data, after all) is only as secure as the number of backups you have. Buy one machine and you'll have to do two mixes onto two separate tapes if you want a safety copy (and will those mixes be identical?). The alternative is the expense of another DAT machine or finding a DAT-owning friend who's willing to share. Enter the DA302. For around the price of two budget domestic DAT recorders, you get two pro machines (with a pro warranty) in one 3U package — one year of security, plus space, wiring and cash savings! Now it's now up to you: make two identical masters while mixing, or make your backups later. And it couldn't be easier to compile a production master, all digitally of course.

Pro users may well go for multiple DA302s: wire two or

more together, and you can produce multiple DAT copies of a day's work in the time it would normally take to make one, allowing everyone involved in a project to have a DAT to listen to. Professionals of a different order — those in need of 'piped music' — can have up to eight hours of continuous high-quality background muzak, or two separate four-hour programmes for two different locations. Business types in need of records of lengthy presentations can forget their shorthand: even if it lasts eight hours, you'll have every last word on tape.

Sonically, the DA302 is easily on a par with Tascam's respected family of DAT machines, and when you combine this fact with the amazing flexibility of two decks in one package, what more could you ask of a mastering machine?

After noting that I consider the DA302 to be a professional machine, you may be wondering where the professional balanced XLR audio connectors are. For many people who will buy the DA302 — and the asking price is set to include the serious bedroom or project studio owner — balanced connectors may not be a necessity; the phono connectors will suffice. But, should your studio be fully balanced, there is an option: the £85 LA-D302 balanced analogue I/O kit. The kit adds a single pair of balanced XLR inputs (shared, like the phono inputs, by both decks), and two pairs of balanced XLR outs. If you don't want or need balanced connectors, you don't have to pay for them. But if your studio goes upmarket, you

don't have to scrap your DAT machine: it can be economically upgraded at a later date.

Apart from the obvious functions accessed by buttons on the front panel and/or remote, the DA302 has two 'Menus' of global functions for you to play with. These let you decide whether the digital output format is S/PDIF or AES/EBU, adjust the brightness of the display, and decide whether recordings are free of copy-inhibit or not (free, one generation, or prohibit) amongst other things. Even more usefully, there is also a playback error rate display (for each deck) and an indication of elapsed head drum rotating time (great for keeping tabs on when you might need a service), again for both decks.

Pros

- Unique dual DAT-deck package.
- Flexible recording, copying and playback options.
- Not expensive considering facilities.

Cons

- Remote wired to back panel.
- Slightly confusing display.

Summary

A machine like the DA302 should have happened years ago. If you can't see the advantage of two DAT machines

in one box for under £1500, read the review again!