

The bench test [1]

In it for the

What our experts say...

TIMES AND MARKETS CHANGE, technologies come and go – but one thing you can always rely upon is Mitsubishi making top-end video surveillance recorders. It seems like Mitsubishi has been building them since the year dot, so they must be doing something right.

Its VHS time-lapse machines were famously long-lived and somewhere deep in the *Security Installer* archives there's a Bench Test review, written in the late 1980s if memory serves, of a Mitsubishi surveillance VCR that had clocked up something like 50,000 hours use without a service. It was still on its first set of heads and the picture quality was almost as good as the day it was built.

Tape head wear is no longer an issue and it's amazing to think that we used to get quite excited about cramming more than 150 hours of fuzzy video on a three-hour tape. Nowadays recording times – not that such things are spoken of all that often anymore – are measured in weeks, or months, in the case of the Mitsubishi DX-TL4509 digital video recorder. In fact, with its full complement of internal and external storage, adding up to an impressive eight terabytes, this machine is theoretically capable of recording continuously for more than 18 months!

Behind that headline grabbing facility is a versatile, well-featured, high-performance 9-channel DVR (a 16-channel variant is also available). It's a triplex design that comes with 500Gb drive as standard with the option for a second drive and the previously mentioned 7-terabyte external storage unit.

It uses the increasingly popular JPEG 2000 compression system and resolution is 720 x 576 pixels (frame recording mode) at up to 50 fields/sec per camera. There's a choice of five quality (compression) settings with image file sizes ranging between 5 and 34kb, and the option of Field or Frame recording with the rate variable between 0.125 and 25 fps in 12 steps.

Behind the scenes everything is controlled by a Linux-based operating system, and the display options include single, quad, 3 x 3, sequential, covert and Alarm display. With the supplied

network software it's possible to remotely view all inputs, search and playback recordings, access the DVR's configuration menus and operate PTZ controls.

It's evident from the hefty-looking case that there has been no attempt at miniaturisation or prettification. It's a purposeful looking lump of a machine measuring 425 x 353 x 128 and weighing in at 10.5kg.

Inside the case there's a sight to behold. The machine is built around a heavy-duty chassis, the layout is fairly conventional and apart from the mainboard and a couple of other PCBs most of the parts are standard off the shelf components, but what sets this apart from pretty well every other DVR we've seen recently, is the almost obsessive attention to detail. It is unbelievably neat and tidy. There are no loose cables flopping around. Transparent dividers support the cables that pass between the various boards and components, and they're perforated, to allow the free circulation of cooling air. Where cables pass through holes in the chassis there are plastic guards to prevent chafing. In short the standard of construction is of a very high order and it is clearly built to last.

Setup and operation

With its unrivalled experience in designing and manufacturing video recording equipment you would expect the TL4509's controls to be a model of clarity. Unfortunately that is not the case and unless you go to the trouble of installing a USB mouse (not supplied) navigating the on-screen menu is an absolute nightmare.

There appears to be no rhyme or reason to the design and operation of the OSD. To enter setup mode it is necessary to press a button under the hinged flap and from there on in choices are made using the row of display mode and PTZ buttons (lettered A to E) underneath the PTZ, with an occasional

excursion to the camera selector buttons. On some menus you have to switch back and forth between the two banks of buttons. Even the most basic operations take forever. In short forget it and get a mouse!

Even with the assistance of a mouse the menus still take some getting used to. It's almost as if the on-screen displays were designed by two rival departments, who don't talk to each other. Entering setup mode displays a bar menu along the bottoms of the screen and after selecting (or clicking on) an item a pop-up menu appears, with items listed in reverse order and unlike a conventional PC type menu display they do not disappear when you have finished with them. Strangely the boxy pop-ups are in a completely different visual style to the softly rounded and blue-tinted



menu bars. It gets worse; we won't bore you with the details but suffice it to say the person (or more likely committee) that designed the camera title setup clearly has sadistic tendencies. Once in setup mode you can step through three menu bars, which appear at the bottom of the screen. The first one deals with Search (by Time & Date, Alarm, Bookmark or Motion), Copy (to internal or external drives), Hard Disk Information, Protect Data options and PTZ control.

The second menu bar has options for Recording (per camera input frame rates & recording quality, Alarm and Emergency Recording settings), Timer setup, Motion

Mitsubishi's DX-TL4509E nine channel DVR is a top performer – but beware of its menus...

long haul

Detector setup, System setup (reset, OSD settings, Multiplexer, Passwords, OSD menus) and Save Menu. Finally, on the third menu bar there are sub menus for Com/LAN settings, PTZ setting, Service Information, Restore/Copy drive information, Memory status and Clear Data.

Most of the menu options are reasonably straightforward, though inputting data and making changes is a lot harder than it needs to be thanks to the idiosyncratic design. Praise where it is due, though, and the Motion Detection system is surprisingly versatile and easy to use. It uses a 23 x 22 target grid so it can be set very precisely to ignore small or irrelevant movements, and there's a useful set of configuration settings, including five sensitivity



settings, variable motion threshold and interval time, Test Mode and the facility to copy settings to other camera inputs.

One useful piece of information that could have been made more accessible is the estimated recording time, which is automatically recalculated after any changes have been made to the camera settings. This is buried deep on the Recording menu and whilst Alarm recordings are automatically protected, without this information it is possible that potentially important recordings could be inadvertently overwritten. In the end, however, the only good thing we can think of to say about the setup menus are that once the

machine has been configured you rarely need to use them. The rest of the controls are much easier to live with.

Routine operations, such as setting display mode, camera selection and so on, are largely intuitive and simple to use. Switching from live monitor (Record) mode to playback requires a single button push and is more or less instant. The Search facilities, whilst fairly basic, are reasonably easy to use (with a mouse), the jog/shuttle dial provides a fast and accurate way to locate and review a section of a recording, and exporting a recording (with embedded PC viewer software) is very straightforward.

Network connections can be made via standard web browser (Internet Explorer) or supplied software. When using the former it is necessary to key in the DVR's IP address then enter the user ID and Password. A viewer plug-in is downloaded to the browser and it is ready to use. Options include live monitoring and playback of all connected channels and access to the DVR's configuration menu covering User Registration, setting Recorder and Camera Titles, email notification setup and clock setup.

Performance

In common with other DVRs we've looked at that also use JPEG 2000 compression, image quality is excellent. On the lowest quality setting (L1-5kb) it looks a touch ragged, but on the medium and higher levels (L4-22kb & L5-34lb) the picture reveals a lot of fine detail with strong vibrant colours and negligible noise or processing artefacts. Image stability is outstanding at all playback speeds and there is virtually no lag when

changing speed or direction.

The single channel audio recording facility is set by default to camera channel 1 though it can be assigned to any of the other eight channels from the setup menu.

Audio quality is actually quite good, and whilst not exactly up to hi-fi standard it is nonetheless perfectly adequate for recording speech and the sort of incidental sounds picked up by camera mikes.

Mechanical stability is good, though because of the hard drive we couldn't subject it to the usual sound trashing from the *S*/rubber mallet. It didn't flinch when gently bumped or knocked, however.

Factspanel

Equipment:	DX-TL4509E
Application	Retail, transport, financial, corporate
Distributor	SLD Security & Communications
Address	The Old Forge Ockham Lane Ockham, Surrey GU23 6PH
Telephone	01483 225633
Fax	01483 225634
E-mail	Sales@sld.co.uk
price (ex VAT)	£1,660.00
CE Mark awarded	Yes
Format	JPEG 2000
Recording system	100 FPS across 9 ch
Recording times	0.25 Fps to 25 Fps per channel fully configurable.
Audio : recording	1 x RCA audio channel
Sound system	PCM
Horizontal resolution	720 x 480 Frame recording 720 x 240 Field recording
Supply voltage	AC100-240v 50/60hz
Max current consumption	0.9A
Size in mm	425 x 353 x 126
Weight	9.1kg without HDD
Warranty	2 years

What the manufacturer says ...

Mitsubishi Electric's Visual Information Systems division, a world leader in the design of innovative security solutions has introduced a new 9 channel digital recorder to its comprehensive range, the DX-TL4509E.

Previewed last year at the IFSEC exhibition, the DX-TL4509E is now available in the UK and completes Mitsubishi's line up of fully featured, reliable DX-TL recorders.

The DX-TL4509E benefits from a number of advanced features including triplex functionality, built in motion detection and a dual multiplexer output that allows for the simultaneous monitoring of both live and recorded footage. This 9 channel DVR utilises the latest JPEG2000 compression technology,

which ensures that high quality, fine detailed pictures are captured; in addition the DX-TL4509E comes with a built in USB, CD-R/RW and DVD-R/RW drive which is a key feature in today's market.

The DX-TL4509E records up to 100pps and comes as standard with 400Gb of

HDD. There is room for an additional bay allowing an extra HDD to be added, and if more memory is required up to 7Tb can also be added externally, using the ZD5UE Hard disk extender box.

All of Mitsubishi's DX-TLs are suitable for a range of applications including retail, banking, corporate and the public sector. They come with a 24 month warranty, with technical support available from Mitsubishi's in-house service division for added peace of mind.

Alistair Duthie, divisional manager said, "The DX-TL4509E complements our existing range of DVRs which include an advanced and a mid-range 16 channel DX-TL, ensuring that we are able to offer a solution to meet the requirements of installers, integrators and of the end-user."



Overall assessment

Were it not for the horrible menu display and awful control system plus the dense and at times baffling instruction manuals, the TL4509 would have received extra points all round, putting it at or close to the top of the high-end DVR league table.

It certainly deserves to be there in terms of performance and facilities, and not forgetting the outstanding build quality. The only saving grace is the fact that the menus need only occasional visits once it has been configured. If you do encounter one of these machines remember our earlier warning and do not go anywhere near the setup menus without a mouse!

Putting those concerns to one side for the moment then the TL4509 really does stack up well against the opposition, particularly if its network facilities are put to good use. It's a serious piece of kit that will do the job it is designed to do efficiently and with a minimum of intervention, and if its predecessors are anything to go by, it will continue to do so for many years.

Product assessment

Design and design features	★★★★
Circuitry and components	★★★★
Ease of installation and wiring	★★★
Range and variety of functions	★★★★
Accompanying instructions	★★★
Technical advice and backup	★★★★
Value for money	★★★★

Grading Key: Outstanding ★★★★★ Very good
 ★★★★★ Above average ★★★ Average ★★
 Below average ★

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In it for the long haul

on test:

The DX-TL4509E DVR
from Mitsubishi Electric

