

DX-TL1600E/EM THE DIGITAL RECORDER

Changes for the Better



Advanced digital recording and playback functions

Date & time search, alarm list search, skip search, index search and camera filtering search

- High speed retrieval of recordings in less than 0.7 seconds.

Jog & shuttle

- Dual function control for scene selection and easy menu operation.

Forward and reverse slow motion, frame by frame, quick playback and still frame.

- Key images can be quickly found and displayed.

Pre-alarm function

- Images are continuously stored so that recording can be started in advance of the alarm trigger.

Multi-language on screen display (DX-TL1600EM)

- English, German, French, Spanish and Swedish.

Image file watermarking

- Image files carry a 'watermark' that identifies it as an original image, free from tampering.

Password lock

- All set-up parameters can be locked to prevent accidental or intentional tampering.

RS-232C

- The DX-TL1600E/EM is equipped with an RS-232C port as standard. In addition to controlling and configuring DX-TL1600E/EM, this port can be used for importing character strings and superimposing the characters onto video images. It is also possible to search by these characters (character search).

Recording capacity

The below table shows the approximate recording time using the built in 60Gb disk. The camera operation setting is set to 'priority 1' for all cameras. When motion detection is on the recording interval is limited to 12.5, 6.25, 4.17, 2.5 and 1 pictures per second.

Picture Grade	D:Days H:Hours				
	SUPERIOR	HIGH	MEDIUM	STANDARD	BASIC
25 Picture/Sec*	0D 12H	0D 18H	1D 3H	1D 12H	2D 0H
12.5 Picture/Sec	1D 1H	1D 12H	2D 6H	3D 0H	4D 1H
8.33 Picture/Sec*	1D 14H	2D 7H	3D 9H	4D 12H	6D 2H
6.25 Picture/Sec	2D 2H	3D 1H	4D 13H	6D 0H	8D 3H
5.0 Picture/Sec*	2D 15H	3D 20H	5D 16H	7D 12H	10D 4H
4.17 Picture/Sec	3D 4H	4D 14H	6D 19H	9D 1H	12D 5H
2.5 Picture/Sec	5D 7H	7D 16H	11D 9H	15D 1H	20D 8H
1 Picture/Sec	12D 16H	18D 9H	27D 7H	36D 4H	48D 21H
Number of Pictures	1,143,000	1,657,000	2,457,000	3,257,000	4,400,000

*Not possible to select in case motion detection mode active.

SPECIFICATIONS

Item	Description
Main Recording Medium	60 GB fixed magnetic recording device (HDD) Possible to maximum 360 GB (total) by externally connecting disks
External Recording Medium	It is externally connected to I/O port (SCSI-2) Extended recording HDD: Maximum 100 GB x 3 units Backup/copying : DDS-2, DDS-3, MO, ZIP, DVD-RAM
Signal System	PAL system
Signal Compression System	JPEG system : Sampling system 13.5 MHz Compression unit : Field
Number of Picture Elements Processed	684 x 288 pixels (5 picture grade)
Video Terminal	Input 16-channel input BNC : 1.0Vp-p 75Ω Output Monitor output BNC : 1.0Vp-p 75Ω...2 systems S terminal : Y 1.0Vp-p 75Ω/C 0.286Vp-p 75Ω 16 channels through output BNC : 1.0Vp-p 75Ω (output during AC power supply)
Horizontal Resolution	More than 450 lines (superior, high mode)
Recording Interval	Can be set for each camera with function to estimate recording possible time
Timer Recording	Independent 8 programs, 3 patterns Operation : Setting of days of the week (Monday - Sunday, every day, specified days of the week) Camera operation 3 patterns, basic recording interval, backup, skip, power motion detection
Alarm Recording	Recording time : 2sec,5sec,10sec,15sec, 30sec,45sec,1min,2min,5min,10min,contact input
Pre-alarm Recording	Pre-alarm time is adjusted in 3 stages, long, middle, and short

Item	Description
Power Failure Recovery Recording	Auto-start of unit after power failure
Use Capacity Display	Displays percentage of hard disk space used
Menu Display	DX-TL1600E : English DX-TL1600EM : English, German, French, Spanish, Swedish
Motion Detection Function	For each camera (detection area setting, detection sensitivity setting, recording start dot number setting) Recording pictures : Maximum 12.5 pictures
Timer Adjusting Function	Time adjusting input (back terminal)
Retrieval	Time date search, index search, skip search, alarm list search, camera piling search
I/O Terminal	External device connecting terminal (SCSI-2/half pitch 50 pins)
Multiplexer Function	Division display : 4, 9, 16 divisions Sequential display : possible with 1/4/9 screen
Remote Access Interface	RS-232C (D-SUB 9 pins), 10 base-T Ethernet (RJ-45) Note: Interfaces do not work simultaneously
Power Supply	AC100-240V 50/60Hz
Power Consumption	rated input 1.0-0.5A (100-240V)
Guarantee at Power Failure	31 days (when vanadium/lithium secondary battery is fully charged)
Operational Conditions	Temperature : 5°C-40°C Humidity : 30%-80% Altitude : Max 2000m
Dimensions (WxDxH)	425 x 380 x 113mm
Weight	7.6 kg
Accessory	AC Power code x 2 Instruction Manual

Model DX-TL1600E/EM

DIGITAL VIDEO RECORDER WITH NETWORK OPTION



MITSUBISHI ELECTRIC CORPORATION
KYOTO WORKS : 1 ZUSHO BABA NAGAOKAKYO CITY KYOTO 617-8550, JAPAN PHONE:(075)958-3094 FAX:(075)958-3730

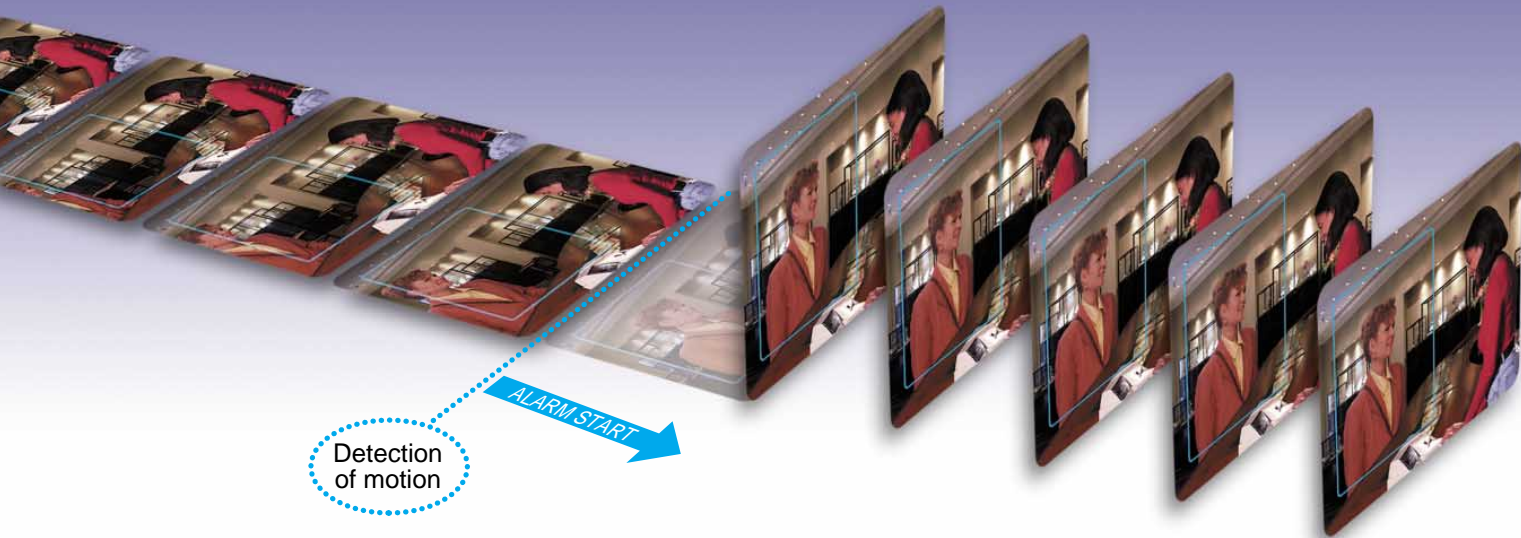
SLD Security & Communications
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State-Of-The-Art Digital Technology
Easy to control and set-up
5 selectable recording qualities

NOTICE
New publication, effective August.2001.
Specifications subject to change without notice.

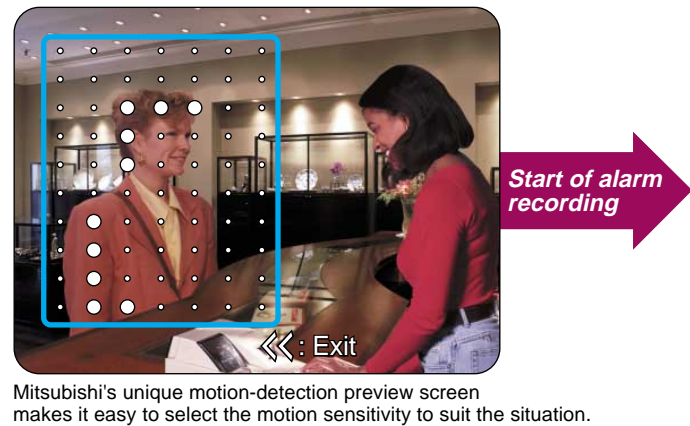
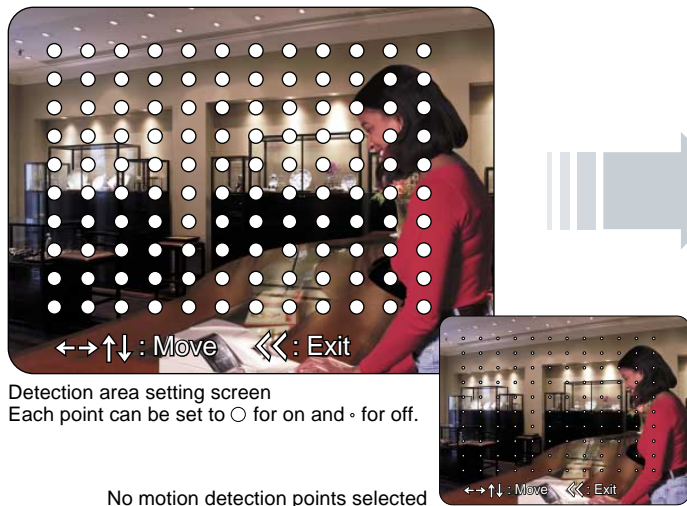
Motion detection prevents unnecessary recording and enhances playback efficiency.



Motion detection included as standard

- Differences between sequential frames are used to trigger recordings so that recording time is maximised.
- No external sensors are required leading to reduced installation cost.

The detection area and sensitivity can be set for each camera.

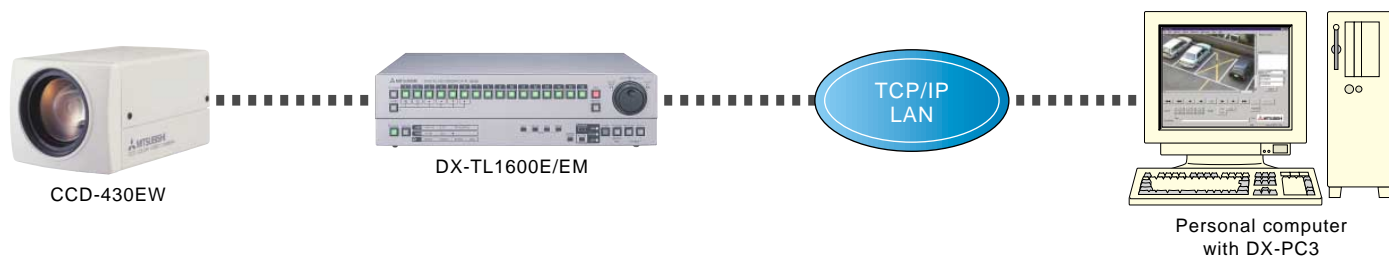


Mitsubishi's unique motion-detection preview screen makes it easy to select the motion sensitivity to suit the situation.

Network interface

- Efficient monitoring with a personal computer.

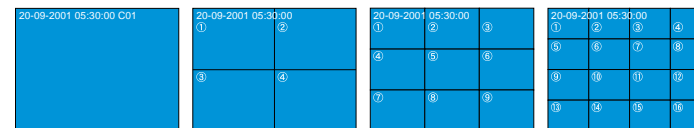
The DX-TL1600E/EM comes with built in network capability. The system can communicate with a PC using an Ethernet connection and Mitsubishi's remote viewing software (DX-PC3). This powerful function allows the review of recorded events and live images remotely, along with selection and viewing of multiple cameras just as though the operator was on site.



16 Input Multiplexer function

- Efficient monitoring with multi-screen displays.

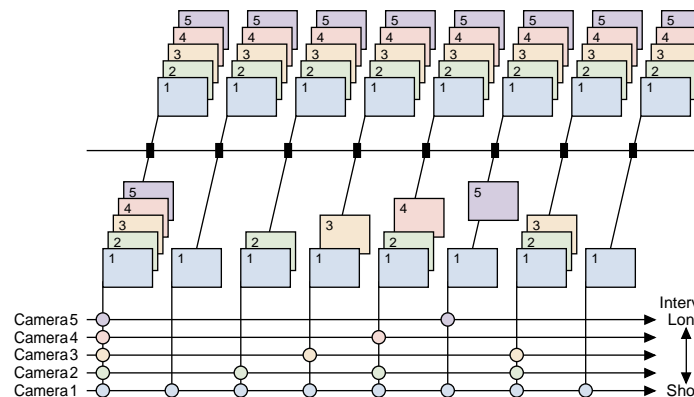
Full screen, 4, 9 or 16 pictures can be selected for display on the monitor. The built-in multiplexer, continues to record all camera sources regardless of what is selected for display on the monitor. The multiplexer can also provide extra monitoring efficiency by automatically switching display modes at the time of a motion detection alarm.



Recording interval setting for each camera

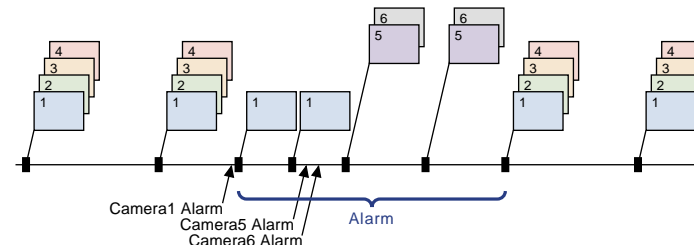
- Set up each camera with its own recording interval

It is possible to set each camera with any one of 5 recording intervals to suit the monitoring application. E.g. Set a camera in a high traffic area to a short interval while another camera can have a longer recording interval because it is looking at a scene with less activity.



- Different recording intervals for alarm recording

During an alarm event the recording interval can be switched to provide a shorter record interval for the camera where the event is detected. Alarm events from 2 cameras can be managed simultaneously.



Extend the recording period with an external HDD

- Expand the storage space up to 360 Gb.

External SCSI HDDs can be added to expand the capacity from 60Gb to 360 Gb. This will allow long periods of automated recording if required.

Example: Bank or building society branch.

■ During office hours

Mon.-Fri. (9:00-5:00). All 6 cameras are used for recording.

■ After office hours

Mon.-Fri. (0:00am-9:00am, 5:00pm-0:00am). Sat.-Sun.(24hours)
Only 3 cameras at the entrance and in ATM section are used for recording.

■ Recording mode

Recording Speed	Picture Grade	Number of camera
1.04 pictures/Sec./Camera	Standard	When 6 cameras are used for recording
0.33 picture/Sec./Camera	Standard	When 3 cameras are used for recording

■ Required recording capacity

	Mon.-Fri.(9:00am-5:00pm)	Mon.-Fri.(0:00am-9:00am, 5:00pm-0:00am)	Sat. and Sun.(24hours)
Entrance --- C1	✓	✓	✓
Inside --- C2	✓	✓	✓
Inside --- C3	✓	✓	✓
ATM --- C4	✓	✓	✓
ATM --- C4	✓	✓	✓
Service Entrance --- C6	✓	✓	✓
Necessary No. of pictures	180,000/day	57,600/day	86,400/day
	4,140,000/23days	1,324,800/23days	691,000/8days
Necessary capacity	73GB	24GB	13GB

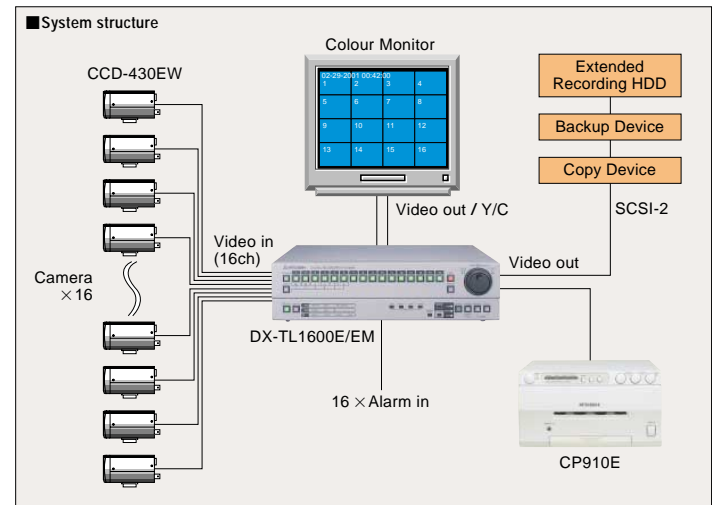
■ One month recording needs 110GB capacity, and 330GB enables 3 month automatic operation in this case.

■ During night time, the motion detection recording requires less capacity than above.

External copy and backup option

- Easy and versatile copy and backup functions

The DX-TL1600E/EM is compatible with HDD, ZIP drive, DVD-RAM and DDS drives. Back up can be performed without stopping recording.

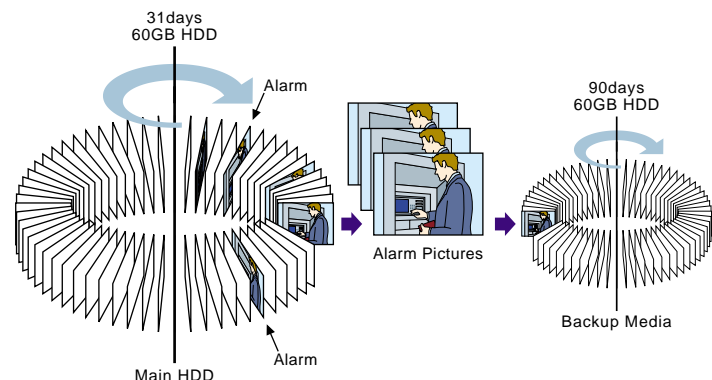


All camera pictures through output terminal equipment

Alarm backup mode

- Automatic backup of alarm events

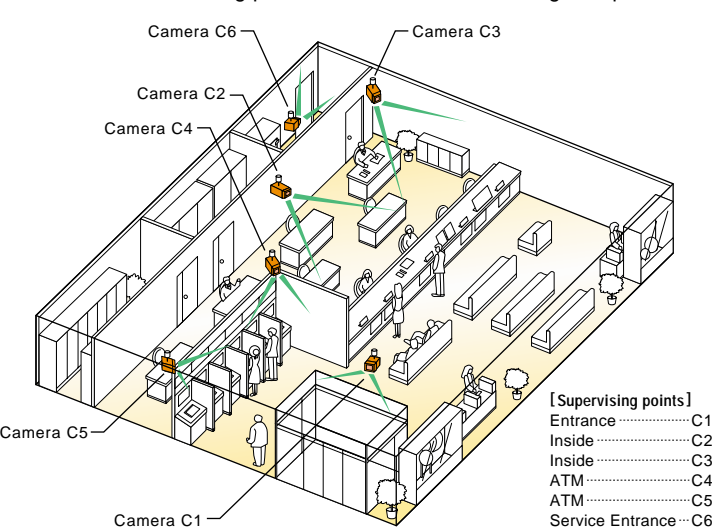
An alarm recording may require longer storage than a normal recording, in this case the alarm backup mode can automatically transfer the alarm data to the back up drive connected to the SCSI socket. This will ensure that the important alarm data is isolated from the normal recordings.



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- [Supervising points]
- Entrance C1
- Inside C2
- Inside C3
- ATM C4
- ATM C5
- Service Entrance C6