



DVMR<sup>e</sup>-16CT

Calibur DVMR<sup>e</sup> Triplex is Kalatel's newest digital video multiplexer and recorder. Incorporating the popular Calibur Triplex multiplexer features, this DVMR<sup>e</sup> is designed to meet all your digital recording needs. It records high-resolution pictures to its built-in 40-, 80-, 160-, or 320-GB hard drive—allowing it to store from a few hours to more than three years of color images. Live and recorded images can be viewed simultaneously on separate monitors, or combined onto one monitor while the

DVMR<sup>e</sup> Triplex continues to record.

Users can specify the number of pictures per second (pps) or seconds per picture (spp), making it ideal for time-lapse recording, event recording (activity/motion, ATM/ POS transactions), and alarm recording.

The DVMR<sup>e</sup> Triplex captures up to 60 pictures per second, more than 2 times as many as other recorders and 3 times as many as most multiplexer/VCR combinations. Users can set up individual cameras

to record in time-lapse mode, event mode, or both modes at different rates.

Front panel controls are user friendly and intuitive for simple operation, combining the look and feel of classic multiplexer and VCR controls. For example, record and playback functions emulate a security VCR. The built-in jog/shuttle dial's outer ring provides variable-speed forward and reverse play. The inner dial moves through a paused recording frame by frame. The DVMR<sup>e</sup> Triplex is configured with simple on-screen menus.

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### Features

- Triplex™ capability enables users to watch live and recorded images on one monitor while continuing to record
- Parallel Video Processing (PVP) for ultra-fast recording up to 60 pps (50 pps PAL)
- Search video clips using motion search to find motion in a user-defined area
- Jog/shuttle control provides variable-speed forward and reverse play and frame-by-frame scrutiny of a paused recording
- Graphical disk analysis screen display for improved recorded data analysis
- Dual multiscreen monitor displays for live viewing and playback
- Multiplexer functionality with built-in digital recording
- Ethernet LAN/WAN capability, TCP/IP protocol
- View live or recorded images remotely using WaveReader™ software
- PTZ over Ethernet capability provides remote PC control of PTZ units
- ATM interface associates ATM receipt text with corresponding video, enabling searches by ATM transaction number or any other text on a customer's receipt
- POS interface associates receipt text with corresponding video, enabling searches by any text on a customer's receipt
- Intrusion and activity motion detection
- Record speed selectable per camera
- Record mode selectable per camera (time-lapse, event, or both)
- Selectable record image quality: high, medium, or standard
- Displays include full-screen, sequenced, picture-in-picture, and multiscreens (16-way, 13-way, 10-way, 9-way, 7-way, 6-way, 4-way)
- Pre- and post-alarm recording
- Continue recording while you review, retrieve, or store images on your Triplex
- Available with 40-, 80-, 160-, or 320-GB hard drive capacity
- Archive onto Calibur™ DVS<sup>e</sup>, RAID, DAT, AIT, or recordable CDs
- Remote communication with modem for PSTN/ISDN or DSL
- Save images as JPEG or BMP for easy distribution on e-mail
- Secret watermark confirms that recorded or shared images have not been altered
- Local motorized PTZ control with CBR-KB3/J or KTD-405 keypad\*
- Network up to 31 DVMR<sup>e</sup>s via RS485
- Automatic color/monochrome camera detection, termination, and gain control
- Wavelet video compression
- Camera presets linkable to alarms
- Three ways to search: disc analysis, motion, time/date/camera
- Up to 20 Ethernet connections for multiple users
- Available in up to 20 languages

\*Call Kalatel for a list of supported third-party PTZ hardware. Additional Calibur hardware may be required in some systems.



*Continued from page 1*

The DVMR<sup>e</sup>'s Triplex's new motion search capability makes it easy to pinpoint when an object moved in or out of a field of view and find out who was involved. Just define a target area in a camera's view and then initiate a search. The hard drive will be scanned for video clips with motion in the target area.

It can also capture transaction text data and associate it with stored video for use in Automated Teller Machine (ATM) and Point of Sale (POS) applications, using Kalatel ProBridge interfaces and leading industry protocol converters. Published protocol is available for use in developing interfaces for access control and other text insertion-related applications that require RS232 serial port messages for use as text/event triggers. Data can quickly and easily be retrieved to provide visual verification for disputes associated with ATM transactions, cash register transactions, access control logs, or other audit trail-oriented systems. Search for video can include cameras, date range, time range, the transaction sequence number, or any other text that occurred during the transaction.

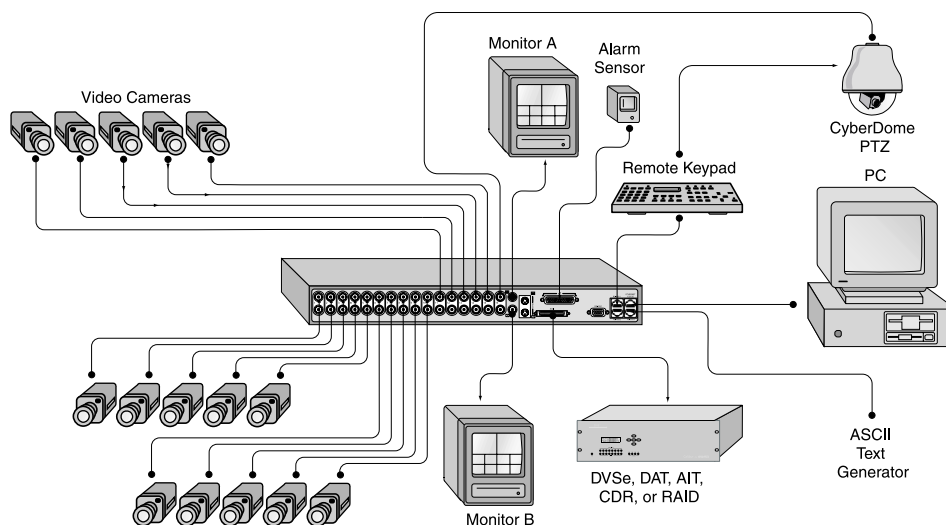
The DVMR<sup>e</sup> Triplex is Ethernet-ready. Up to 20 users can connect simultaneously, with one user viewing playback of recorded images, and 19 others viewing live images. Operators can also use a modem to connect to a remote DVMR<sup>e</sup> Triplex over standard telephone lines. When connected, users can view live or recorded images, all while continuing to record. With Kalatel's WaveReader software (included with every unit), users can select and post images or clips to the

network; store, print, and e-mail images; and store video clips. Wavelet video compression makes it possible to archive compact files with high image resolution, and a secret watermark ensures the integrity of each recording.

Using a desktop or laptop PC and WaveReader software, users can watch live or recorded video from any DVMR<sup>e</sup> in their network and even control PTZ units connected to the DVMR<sup>e</sup>. This enables users to remotely pan, tilt, zoom, and manually focus the camera. Additionally, users can remotely create or select a camera preset. Almost anything you can do with the keypad controllers, you can now do with WaveReader and a remote PC, including setting up a unit and recording the unit configuration for backup or cloning similar configurations. Users no longer have to drive to a remote site and spend hours searching VCR tapes for critical events. On-screen menus and WaveReader software enable users to search by alarm, time, date, camera number, and text from ATM machines, cash registers, ACS's, and other similar devices. With the new event and motion search capabilities, finding a desired recording is simple. When the event is found, the scene can be selected to automatically begin playback.

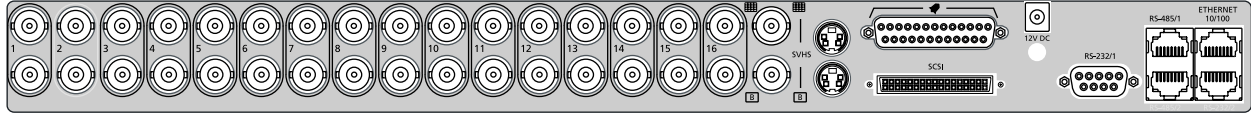
Additionally, WaveReader software's WaveStudio feature enables users to adjust various image enhancement controls, such as intensity, contrast, hue, saturation, and noise level, making it easier to scrutinize each image. Optional digital recording accessories such as the Calibur DVSe, DAT, AIT, CD-R, or RAID enable users to automatically archive continuous recordings, images, and video clips.

## System Diagram



*The DVMR<sup>e</sup> Triplex can accommodate 4, 10, or 16 cameras. Using two monitors, the user can view live multiscreen images as they are being recorded and multiscreen playback of recorded images simultaneously. The unit can archive to a DVSe/DAT/RAID/AIT/CD-R through the SCSI port. LAN/WAN connection is through an RJ45 connector. External alarm sensors can be connected via the terminal blocks on the DB25 breakout board (included). It is remotely controlled by a PC using an RS232 port. Up to 32 DVMR<sup>e</sup>s and keypads can be connected to the same RS485 network.*

**Rear Panel Connections**



**Recording Capacity Charts**

**40-GB Storage Capacity (NTSC)**

Record Mode		2 hr plus	2 hr	12 hr	24 hr	48 hr	72 hr	168 hr	960 hr
		60 pps	30 pps	10 pps	5 pps	3 pps	2 pps	1 pps	0.125 pps
Resolution	High	7 hr	13 hr	40 hr	3.4 days	6.7 days	10.1 days	23.6 days	134.7 days
	Medium	9 hr	19 hr	56 hr	4.6 days	9.3 days	13.9 days	32.4 days	185.2 days
	Standard	15 hr	30 hr	3.7 days	7.4 days	14.8 days	22.2 days	51.9 days	296.3 days

**80-GB Storage Capacity (NTSC)**

Record Mode		2 hr plus	2 hr	12 hr	24 hr	48 hr	72 hr	168 hr	960 hr
		60 pps	30 pps	10 pps	5 pps	3 pps	2 pps	1 pps	0.125 pps
Resolution	High	13 hr	27 hr	3.4 days	6.7 days	13.5 days	20.2 days	47.1 days	269.4 days
	Medium	19 hr	37 hr	4.6 days	9.3 days	18.5 days	27.8 days	64.8 days	370.4 days
	Standard	30 hr	59 hr	7.4 days	14.8 days	29.6 days	44.4 days	103.7 days	592.6 days

**160-GB Storage Capacity (NTSC)**

Record Mode		2 hr plus	2 hr	12 hr	24 hr	48 hr	72 hr	168 hr	960 hr
		60 pps	30 pps	10 pps	5 pps	3 pps	2 pps	1 pps	0.125 pps
Resolution	High	27 hr	54 hr	6.7 days	13.5 days	26.9 days	40.4 days	94.3 days	538.7 days
	Medium	37 hr	3.1 days	9.3 days	18.5 days	37.0 days	55.6 days	129.6 days	740.7 days
	Standard	59 hr	4.9 days	14.8 days	29.6 days	59.3 days	88.9 days	207.4 days	1,185.2 days

**320-GB Storage Capacity (NTSC)**

Record Mode		2 hr plus	2 hr	12 hr	24 hr	48 hr	72 hr	168 hr	960 hr
		60 pps	30 pps	10 pps	5 pps	3 pps	2 pps	1 pps	0.125 pps
Resolution	High	54 hr	4.5 days	13.4 days	27 days	53.8 days	80.8 days	188.6 days	1,077.4 days
	Medium	3.1 days	6.2 days	18.6 days	37 days	74 days	111.2 days	259.2 days	1,480 days
	Standard	5 days	9.8 days	29.6 days	59.2 days	118.6 days	177.8 days	414.8 days	2,370 days

## Technical Specifications

### Inputs

Camera:	4, 10, or 16 looping BNC connectors, NTSC/EIA or PAL/CCIR compatible; auto-terminating
Conditioning:	AGC, 0.5 to 2.0 V pk-pk video accepted
Termination:	Automatic, 75 ohm or Hi-Z if looped
RS232 Port 1:	DB9 male connector. For POTS, remote control and front panel emulation
RS232 Port 2:	RJ45 connector for ASCII text insertion and event generation

### Video Outputs

Monitor A Y/C:	One monitor A multiscreen output, S-VHS, 4-pin mini-DIN connector.
Monitor A Composite:	One monitor A multiscreen output, BNC connector, NTSC/EIA or PAL/CCIR compatible
Monitor B Y/C:	One monitor B multiscreen output; S-VHS, 4-pin mini-DIN connector
Monitor B Composite:	One monitor B multiscreen output, BNC connector, NTSC/EIA or PAL/CCIR compatible

### Archive

Archive Device Type:	Calibur DVSe, DAT, AIT, RAID, CD-Writer*
SCSI 2: Connector:	One 50-pin SCSI-2 port DB 50-S-SCSI (reversed) *Call Kalatel for recommended models.

### Network

Type:	10/100 Ethernet (auto-sensing); one RJ45 connector
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### Video

Display Memory:	2048 x 1024 memory array per monitor; 32 Mb total display memory
Colors:	YUV 4:2:2, 16.8 million colors
Grayscale:	256 levels
Horizontal resolution:	720 pixels
Vertical resolution:	484 active lines NTSC/EIC, 576 active lines PAL/CCIR

### Alarm Handling

Alarm inputs:	4, 10, or 16 programmable NO or NC in menus
Alarm outputs:	Two form-C relays, each NO and NC; rated 0.5 A continuous, 1.0 A momentary

Alarm latching:	Three settings: latched, transparent, timed-out; programmable 1-100 sec
Alarm recording:	Programmable priority control: interleaved, exclusive, or none
Alarm displays:	Automatic alarm multiscreens; programmable

### Video Motion and Activity Detection

Zones per camera:	256, 16 x 16 grid
Sensitivity settings:	10 levels
Gray levels per zone:	256 levels
False alarm rejection processing:	3 levels
Size discrimination:	256 levels
Activity record speed:	Programmable per camera
Status output:	Link to relay

### Recording

Hard drive:	40 GB standard to 320 GB optional
Record speed:	Selectable; 60 pps (50 pps PAL) to 0.125 pps; event, time-lapse, or both
Compression:	Wavelet format; standard-, medium-, and high-quality settings selectable per camera

### Miscellaneous

Input voltage:	12 VDC, 90 V - 264 V AC/DC adapter included
Power:	35 W nominal
Temperature:	0 to 40 °C (32 to 104 °F), operating
Relative humidity:	90 percent, noncondensing
Dimensions:	17.42 x 13.50 x 1.75 in. (444.47 x 343.00 x 4.45 mm)
Weight:	9 lb (4 kg)

### Ordering Information

DVMRe-4CT, 10CT, or 16CT:	Triplex, color, NTSC/EIA
DVMRe-4CTX, 10CTX, or 16CTX:	Triplex, color, PAL/CCIR
KTD-405:	Optional remote keypad, includes motorized PTZ control capabilities
CBR-KB3(X):	Optional remote keypad, includes motorized PTZ control capabilities
CBR-KB3/J(X):	Same as CBR-KB3 but with proportional joystick control
CBR-RK6:	Optional 1U rack-mount kit
CBR-PB2:	Optional ProBridge for PTZ applications (contact Kalatel for available models)

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