The MMX-165C offers true cross point matrix switching and multiplexer display and record functionality in one product. Cameras can be viewed in multi-display formats on monitor A while switched output is viewed on monitors B, C, D, and E. An optional expansion module can be used to create a 32 x 5 multiplexer/matrix switcher. Full resolution pictures from all cameras are recorded to a VCR. Parallel Video Processing (PVP™) outputs up to 60/50 (NTSC/PAL) unique pictures to your monitor and VCR to deliver more recorded documentation in 32 or 16 camera systems then previously possible with matrix switchers and/or other multiplexers. Unique Triplex™ allows simultaneous live and playback pictures to be displayed on one multiplexed monitor.

The MMX-165C is set up through QuickInstall on-screen menus. Connected VCRs can be controlled from the multiplexer/matrix switcher. VEXT automatically optimizes VCR synchronization and prevents loss of critical pictures regardless of VCR record speed or how often record speeds change. Macros trigger a prerecorded key sequence, offering one-button response to alarms, guard shift change or day/night setups. Video Motion Detection "sees" alarm conditions,

The Calibur MMX-165C, a 16-camera-input, 5-monitor-output, multiplexer/matrix switcher
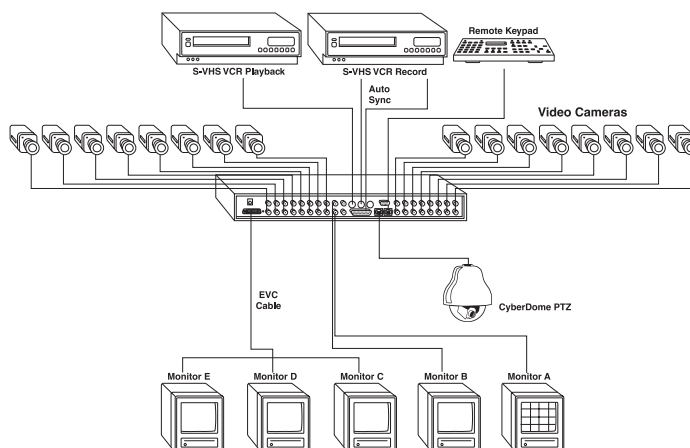
Features

- Multiplexer display and record functionality with built-in 16 x 4 matrix switcher and one multiplexed monitor
- Salvo switch cameras on monitors B, C, D and E
- Triplex™ simultaneous live and playback on one monitor
- PVP™ ultrafast VCR and monitor update speed
- VEXT automatic VCR record speed synchronization
- Video motion detection (intrusion) and activity detection with active feedback setup scope
- S-VHS VCR input and output
- S-VHS monitor output
- Live in full-screen, sequencing, PIP, quad, 7, 9, 10, 13 or 16-up display
- Playback in full-screen, sequencing, PIP, quad, 9, 10 or 16-up display
- Covert camera feature removes selected camera(s) from display without altering recording
- One-touch "freeze"
- Electronic PTZ

- Associated multicamera display upon alarm
- 16 alarm inputs, 2 relay outputs
- Alarm history display (100 events)
- Manually activated alarm
- VCR control from MMX-165C
- 16 macros
- Motorized PTZ control and programmable presets on alarm with CBR-KB3/J keyboard*
- Supports up to 31 keyboards via RS-485
- Cascade up to 31 multiplexers and control up to 496 PTZ via RS-485
- RS-232 and/or RS-485 remote control, setup upload/download and programming
- Plays back tapes made by other manufacturers' multiplexers**
- Setup view screens show entire system setup
- Two passwords for supervisor or standard user
- AutoInstall™ with AutoList™, automatic termination, automatic camera detection, automatic gain control

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

** Call Kalatel for a list of other multiplexer manufactures whose tapes our units will play back.

displays user-defined associated cameras, activates external devices, and keeps a history log.

The MMX-165C. Multiplexer and matrix switcher functionality in one product, easy expansion to 32 cameras, superior integration and alarm management.

System Diagram

The multiplexer/matrix switcher connects to up to 16 cameras when used without an expansion module. Five monitors can be used, one to view multiscreen display and four to view switched full-screen display. Two VCRs can be used, one to record and one to play back. VEXT connection assures automatic and precise VCR synchronization. One external alarm sensor can be connected per camera. Remotely controlled by a PC via RS-232 or RS-485. A total of 32 multiplexer/matrix switchers and keyboards can be connected to the same system.

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Technical Specifications

Video

Display memory: 2048 x 2048 memory array, 32 MB Live/ Play plus 32 MB Record=64 MB total display memory.

Sampling rate: 17.7 MHz (PAL/CCIR), 14.2 MHz (NTSC/ EIA)

Colors: YUV 4:2:2, 16.8 million colors

Grayscale: 256 levels

Horizontal resolution: 720 pixels

Vertical resolution: 484 active lines NTSC/EIA, 576 active lines PAL/CCIR

Alarm Handling

Alarm inputs: 16 NO or NC setup in menus.

Alarm outputs: 2 form C relays, each NO and NC. Rated 0.5 A continuous, 1.0 A momentary

Alarm latching: 3 settings: latched; transparent; timed-out. Programmable.

Alarm recording: Automatic priority control, interleaved or exclusive, or none.

Alarm displays: Automatic alarm multiscreens, program- mable.

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

Recording priority: 2x, 4x, interleaved, or none

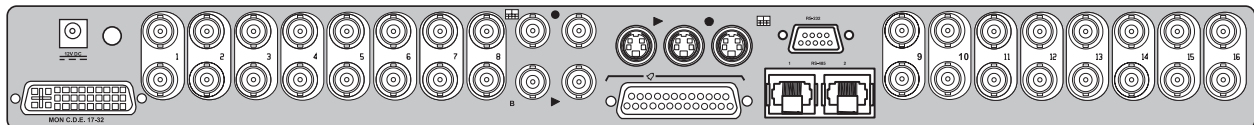**Status output:** Link to relays, alarms

Expansion

EVC cable (supplied with 3 BNK connectors). Port can also be used for system expansion when connected to MMX-325CE

Miscellaneous

Input voltage: 12 VDC, 90 V - 264 V AC/DC adapter included

Power: 25 W nominal

Temperature: 0 to 40º C (32 to 104º F), operating

Relative humidity: 90%, noncondensing

Dimensions: 17.5 x 14 x 1.7 in. (444 x 360 x 43 mm)

Weight: 9 lbs. (4 kg)

Ordering Information

MMX-165C: 16 x 5 camera, color, multiplexer/matrix switcher, NTSC/EIA

MMX-165CX: 16 x 5 camera, color, multiplexer/matrix switcher, PAL/CCIR

CBR-KB3(X): Optional remote keyboard, includes motorized PTZ control capabilities

CBR-KB3/J(X): Same as CBR-KB3 but with proportional joystick control

CBR-RK2: Optional 1U rackmount kit

CBR-ALM: Optional alarm input module

CBR-PB2: Optional probridge for PTZ applications (contact Kalatel for available models)

Rear Panel Inputs and Outputs

Inputs

Camera: 16 looping, BNC connectors, NTSC/EIA or PAL/ CCIR compatible auto terminating.

VCR: 2 NTSC/EIA or PAL/CCIR compatible: 1 BNC connector; 1 4-pin, mini-DIN, S-VHS YC input.

Conditioning: AGC, 0.7 to 2.0 Vp-p video accepted.

Termination: Automatic ON/OFF 75 ohm on rear panel, per camera.

Outputs

Monitor: 6: 1 MON-A multiscreen output, BNC connector, NTSC/EIA or PAL/CCIR compatible; 1 MON-A multiscreen output, S-VHS, 4-pin, mini-DIN; 1 MON-B full-screen switched, BNC connector, NTSC/ EIA compatible; 3 MON-C, D, E via 35 pin connector using supplied EVC cable with three attached BNC connectors, NTSC/EIA or PAL/CCIR compatible.

VCR: 2: 1 BNC connector, NTSC/EIA or PAL/CCIR compatible; 1 S-VHS VCR, 4-pin mini-DIN, output.

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