

**DEDICATED MICROS INCORPORATED
Eco4, 4-CAMERA, HIGH PERFORMANCE DIGITAL VIDEO MULTIPLEX
RECORDER**

**DIVISION 28 – ELECTRONIC SAFETY AND SECURITY
Subdivision 28 23 19 Digital Video Recorders and Analog Recording Devices**

PART 2 - PRODUCTS

2.0 DIGITAL VIDEO RECORDER WITH BUILT IN MULTIPLEXER (DVMR)

The digital video recorder and multiplexer (hereafter referred to as DVMR) shall provide a high quality, 4-channel recorder capable of storage and playback of images from 1 to 4 camera inputs.

2.1 RECORDING CAPABILITIES

- 2.1.1 The DVMR shall be able to record full-screen video images continuously, upon motion detection, or according to a time schedule to its internal hard drives.
- 2.1.2 The DVMR shall have the capability to simultaneously record, archive background images, and allow multiple user network viewing and playback with no loss of performance.
- 2.1.3 The DVMR shall support a maximum record rate of up to 30 PPS (pictures per second) (NTSC) or 25 PPS (PAL).
- 2.1.4 The DVMR shall provide record scheduling options for Standard PPS, Event PPS, and Events Active.
 - 2.1.4.1 The Standard PPS shall be the record rate for standard continuous recording.
 - 2.1.4.2 The Event PPS shall be the record rate upon motion or external alarm.
 - 2.1.4.3 The Events Active shall provide options to record alarms, activity, both alarms and activity, or none, according to the event mode.
 - 2.1.4.4 The Event Mode shall provide the option of overriding the standard recording rate upon event or alarm notification, with an interleave or no recording mode.
 - 2.1.4.4.1 The interleave mode shall prioritize recording of active or alarmed cameras in the multiplex sequence.
- 2.1.5 The DVMR shall contain a 40, 80 or 160GB internal hard drive to record and store up to 1 week, 2 weeks, or 1 month (respectively) of digital recording.
 - 2.1.5.1 This capability shall be based on the equivalent of 24-hour time-lapse mode, at SVHS quality (3 PPS and 18KB file size).

- 2.1.5.2 The DVMR shall record to the internal hard drives on a “first in, first out” sequence.
- 2.1.6 All recording to the hard disk shall have a digital signature applied at the source, with no loss of record performance.
 - 2.1.6.1 The digital signature shall ensure the integrity of each image, or sequence of images by imprinting the date, time and ID of the unit on which the images were recorded on each image.
- 2.1.7 The DVMR shall provide an option to protect images or crucial incidents from overwriting.
 - 2.1.7.1 The Protected Images option shall allow the start and end times of an event to be defined and protected against overwriting.
 - 2.1.7.2 The Alarm Protection option shall protect panic alarms, global input alarms or both to be protected against overwriting.
 - 2.1.7.3 The Pre-alarm and Post-alarm Protection option shall allow the user to save video before the alarm occurred as programmed in the Record Schedule's Standard PPS.

2.2 REALTIME AND STANDARD MONITOR VIEWING

- 2.2.1 The DVMR shall provide full screen and full screen programmable sequencing of camera views for the main and spot monitors.
- 2.2.2 The DVMR's main monitor shall provide programmable screen formats in live mode for:
 - 2.2.2.1 Realtime Picture-in-picture
 - 2.2.2.2 Realtime Quad
- 2.2.3 The DVMR's main monitor shall provide programmable screen formats in playback mode for:
 - 2.2.3.1 Standard Picture-in-picture
 - 2.2.3.2 Standard Quad
- 2.2.4 The DVMR's main monitor shall have x2 electronic zoom (in live mode) and freeze frame.
- 2.2.5 The DVMR shall provide the option of using a composite video BNC connector for the main monitor.
- 2.2.6 The DVMR shall provide a composite video BNC connector for the spot monitor.

2.3 MULTIPLEXING

- 2.3.1 The DVMR shall incorporate a duplex multiplexer for live quad viewing or playback of images without interrupting multiplex recording.

2.4 SEARCH AND PLAYBACK

- 2.4.1 The DVMR shall offer VCR-style keys for:

- 2.4.1.1 One button touch playback

- 2.4.1.2 Frame advance/rewind, fast picture search, four speed fast forward or rewind and pause keys

- 2.4.1.3 Event log, including event log filter with quad preview facility, programmable by event type, time and date and/or camera number

- 2.4.1.3.1 Event type options include:

- 2.4.1.3.1.1 External alarms

- 2.4.1.3.1.2 Activity detection

- 2.4.1.3.1.3 System events

- 2.4.1.4 GOTO time and date

- 2.4.1.5 Playback in quad, picture in picture and full screen

- 2.4.1.6 Copying recordings to supported external CD-R

2.5 VIDEO MOTION DETECTION

- 2.5.1 The DVMR shall provide a 16 x 8 masking grid for each camera view.

- 2.5.2 The DVMR shall provide the option of five levels of motion sensitivity for each camera view.

- 2.5.3 The DVMR shall have a global trigger light duty relay output (500mA at 12V-48V max) for video motion detection.

2.6 SCHEDULING

- 2.6.1 The DVMR shall be user-programmable to automatically:

- 2.6.1.1 Select time of day for recording

- 2.6.1.2 Select cameras to be recorded

- 2.6.1.3 Switch alarms and activity on/off

- 2.6.1.4 Select interleaved alarms and activity

- 2.6.1.5 Alter the record rate for standard, alarm and activity recording

2.7 ARCHIVING

- 2.7.1 The DVMR shall provide drivers for recommended external SCSI devices for archiving images or for extending hard drive capacity.
 - 2.7.1.1 The DVMR shall continue to record to internal hard drives while archiving to recommended external SCSI devices.
 - 2.7.1.2 The DVMR shall include the digital signature on images sent to external devices.
- 2.7.2 The DVMR shall automatically detect recommended archive devices on power-up.
- 2.7.3 The images on these archive devices include the digital signature applied to each image, or sequence of images, to be verified for authenticity during review from a PC.

2.8 TIMED EXPIRY

- 2.8.1 The DVMR shall have a timed expiry option that allows images to be held for a selected number of days.
 - 2.8.1.1 Images on the disk that are older than the number of days selected shall not be accessed.

2.9 ALARMS

- 2.9.1 The DVMR's alarm contacts shall have individually programmable polarity.
- 2.9.2 The DVMR shall provide 1 contact per camera.
- 2.9.3 The DVMR shall have spot monitor sequences alarm capability.
- 2.9.4 The DVMR shall provide a global/panic alarm input to force all cameras into an alarm condition at the alarm record rate.
- 2.9.5 The DVMR shall have a trigger light duty relay output (500mA at 12V-48V max).

2.10 E-MAIL NOTIFICATION ON ALARM

- 2.10.1 The DVMR shall support automatic e-mail upon alarm (up to five e-mail addresses on the same mail server).
- 2.10.2 The DVMR shall notify the following events on a camera by camera basis:
 - 2.10.2.1 Alarm
 - 2.10.2.2 Activity
 - 2.10.2.3 Camera fail
- 2.10.3 The DVMR shall also notify the events of system power up, system power down, global alarm, panic alarm or date change.
- 2.10.4 The DVMR shall supply the following information in each e-mail sent:
 - 2.10.4.1 Machine ID

- 2.10.4.2 Camera number
- 2.10.4.3 Alarm number
- 2.10.4.4 Time
- 2.10.4.5 Link to network viewer
- 2.10.4.6 Optional JPEG picture of camera image on first alarm

2.11 COMMUNICATIONS AND NETWORKING

2.11.1 The DVMR shall have a standard 10BASE-T Ethernet connection.

2.11.1.1 The Ethernet connection shall allow live and recorded viewing on a networked PC using the included Dedicated Micro's Network Viewer, or via web pages over a standard Internet browser.

2.11.1.1.1 The Network Viewer software shall include the capabilities of:

- 2.11.1.1.1.1 Live full and quad screens of all cameras
- 2.11.1.1.1.2 VCR-style fast forward and rewind, playback and frame advance/rewind
- 2.11.1.1.1.3 GOTO time and date and unique quadrant event review
- 2.11.1.1.1.4 User-defined copies of digitally signed images over the network
- 2.11.1.1.1.5 Archived images viewing via Dedicated Micro's PC Playback software (included in package)
- 2.11.1.1.1.6 Manual copying of single images as JPEG and sequence of images as AVI to save to PC
- 2.11.1.1.1.7 Supports exterior Pan/Tilt/Zoom (PTZ) and telemetry presets (telemetry equipment not included in package)
- 2.11.1.1.1.8 Multiple user access (up to five users), with simultaneous live viewing and playback capability
- 2.11.1.1.1.9 Configurable password protection
- 2.11.1.1.1.10 Event log user-definable by event type, camera number and time/date.

2.11.1.1.2 The web pages features shall include:

- 2.11.1.1.2.1 Viewing of live images in full screen and quad format, including telemetry control

2.11.1.1.2.2 Playback in full screen with GOTO function

2.11.1.1.2.3 Password authentication

2.11.1.1.2.4 Compatibility with Mac and Linux, using Netscape browsers version 4.7

2.11.2 The DVMR shall support remote network support for remote system adjustments.

2.11.3 The DVMR shall have a network bandwidth limitation option, which can be configured on the unit itself.

2.12 FILE EXPORT

2.12.1 The DVMR shall support file export of digitally signed images over the network.

2.13 ADDITIONAL FUNCTIONALITY

2.13.1 The DVMR shall maintain all user-defined programming in the event of power loss or power down.

2.13.2 The DVMR shall provide the capability for the user to read the menus in any of twelve languages. Languages shall include English, French, German, Spanish, Italian, Chinese, Russian, Czech, Polish, Hungarian, Dutch and Swedish.

2.13.3 CAMERAS

2.13.3.1 The DVMR shall provide composite BNC inputs for up to 4 color or monochrome cameras.

2.13.3.2 The DVMR shall provide a loop through BNC connection for each camera input, with software-configured termination.

2.13.3.3 The DVMR shall auto-detect connected cameras and begin recording automatically upon power-up.

2.13.3.4 The DVMR shall provide on-screen indication on the main monitor if power or video capability is lost from any or all cameras.

2.13.3.5 The DVMR shall have a global trigger light duty relay output (500mA at 12V-48V max) for camera fail.

2.13.3.6 The DVMR shall feature time-base correction to eliminate the requirement for external camera synchronization.

2.13.3.7 The DVMR shall provide a user-programmable, 12-character title for each camera.

2.13.3.8 Hidden cameras:

2.13.3.8.1 The DVMR shall provide the option to view all or selected cameras, without affecting camera recording.

2.13.3.8.2 The DVMR shall provide the capability to view all or selected hidden cameras via the network.

2.13.3.9 The DVMR shall have software-controlled contrast adjustment for each camera.

2.13.3.10 The DVMR shall have software-controlled color adjustment for each camera.

2.13.3.11 The DVMR shall include protocols for recommended Pan/Tilt/Zoom dome cameras.

2.13.4 MENU SYSTEM

2.13.4.1 The DVMR shall provide a user-friendly, paged menu system that is controlled from the face of the DVMR and viewable on a composite monitor (not included) that can be connected to the DVMR's main monitor output.

2.13.5 DAYLIGHT SAVINGS TIME

2.13.5.1 The DVMR shall provide a default clock setting to automatically self-adjust for daylight savings time.

2.13.6 COLOR RESOLUTION

2.13.6.1 The DVMR shall have a color resolution sampling rate of 13.5 MHz to CCIR 601.

2.13.6.2 The DVMR shall have the following number of pixels:

2.13.6.2.1 Live images at 720h x 448v (NTSC) or 720h x 512 (PAL)

2.13.6.2.2 Multiplexed/recorded images at 720h x 224v (NTSC) or 720h x 256v (PAL)

2.13.6.3 The color resolution shall have 16.8 million colors with 256 levels of gray, and eight-bit luma.

2.14 COMPRESSION

2.14.1 Standard JPEG format files.

2.15 DATA

2.15.1 The DVMR shall have a RS-232 PPP serial port.

2.15.2 The DVMR shall have a SCSI 2 narrow, 50-pin, high-density connector.

2.15.3 The DVMR shall have a 1x Ethernet RJ-45, 10BASE-T connection.

2.16 TEMPERATURE RANGE

2.16.1 The DVMR shall be operational in temperatures ranging from 41 – 131 degrees Fahrenheit (5-55°C).

2.17 RELATIVE HUMIDITY

- 2.17.1 The DVMR shall be operational in a relative humidity range of 5 – 85 percent, non-condensing.

2.18 PHYSICAL PROPERTIES

2.18.1 DIMENSIONS

- 2.18.1.1 The DVMR shall measure 2.5 inches (H) x 10.0 inches (W) x 10.25 inches (D), or 65.3mm (H) x 254mm (W) x 260mm (D).

2.18.2 WEIGHT

- 2.18.2.1 The DVMR unit and power supply unit shall weigh a combined 8.91 pounds (4.05 KG).

2.19 ACCESSORIES

- 2.19.1 A power supply unit shall be included to provide an input voltage of 100-230 Va.c. 50/60 Hz. and an output voltage of 5, +12, -12 Vd.c.