DEDICATED MICROS INCORPORATED
BX2-1TB 16 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 (DVR)

The digital video recorder and multiplexer (hereafter referred to as DVR) shall provide a high quality, 16-channel recorder capable of storage and playback of images from 1 to 16 camera inputs.

2.1 RECORDING CAPABILITIES

2.1.1 The DVR shall be able to record video images continuously, upon motion detection, or according to a time schedule to its internal hard drives.

2.1.2 The DVR 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 DVR shall support a maximum record rate of up to 120 PPS (pictures per second) (NTSC) or 100 PPS (PAL).

2.1.4 The DVR shall provide record scheduling options for Standard PPS, Event PPS, Event Type, and Event Mode.

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 A Variable Record Speed shall be available to prioritize cameras based on the Standard PPS.

2.1.4.3.1 The variable record rate per camera shall be shown as update rates in seconds.

2.1.4.3.2 The variable record rate shall be variable using low, standard and high settings.

2.1.4.4 The Event Type shall provide options to record alarms, activity, or both alarms and activity, according to the event mode.

2.1.4.5 The Event Mode shall provide the option of overriding the standard recording rate upon event or alarm notification, with an interleave or exclusive recording mode.

2.1.4.5.1 The interleave mode shall prioritize recording of active or alarmed cameras in the multiplex sequence.

2.1.4.5.2 The exclusive mode shall record only the active or alarmed cameras in multiplex sequence.

2.1.5 The recorder shall contain 640GB and 1.2 TB of internal storage for video images.

2.1.6 The DVR shall have four hard drives to record and store up to 2 months or 4 months (respectively) of digital recording.

2.1.6.1 This capability shall be based on the equivalent of 24-hour time-lapse mode, at SVHS quality (6 PPS and 18KB file size).

2.1.6.2 The DVR shall record to the internal hard drives on a “first in, first out” sequence.

2.1.7 All recording to the hard disk shall have a digital signature applied at the source, with no loss of record performance.

2.1.7.1 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.

2.1.8 The DVR shall have event partitioning to allow the user to define separate areas of disk space for protected storage of alarms and events.

2.1.8.1 The event partition area in Gigabytes shall be configurable by the installer and shall overwrite itself when full.

2.2 AUDIO

2.2.1 The DVR shall support simultaneous audio recording and playback on a single channel in real time.

2.3 REALTIME MONITOR VIEWING

2.3.1 The DVR shall provide full screen and full screen programmable sequencing of camera views for the main and spot monitors.

2.3.2 The DVR's main monitor shall provide programmable multi-screen in live mode for:

2.3.2.1 Picture-in-picture

2.3.2.2 Quad

2.3.2.3 9 way

2.3.2.4 8+2

2.3.2.5 12+1

2.3.2.6 16 way

2.3.3 The DVR's main monitor shall provide programmable multi-screen in playback mode for:

2.3.3.1 Picture-in-picture

2.3.3.2 Quad

2.3.4 The DVR's main monitor shall have x2 electronic zoom and freeze frame.

2.3.5 The DVR shall provide the option of using a composite video BNC connector or S-video 4-pin, mini DIN connector for the main monitor.

2.3.6 The DVR shall provide a composite video BNC connector for the spot monitor.

2.4 MULTIPLEXING

2.4.1 The DVR shall incorporate a duplex multiplexer for live multiscreen viewing or playback of images without interrupting multiplex recording.

2.5 SEARCH AND PLAYBACK

2.5.1 The DVR shall offer VCR-style keys for:

2.5.1.1 One button touch playback

2.5.1.2 Frame advance/rewind, fast picture search and pause keys

2.5.1.3 Event log, including event log filter with quad preview facility

2.5.1.4 GOTO time and date

2.5.1.5 Playback in quad, picture in picture and full screen

2.5.1.6 Copying recordings to supported external SCSI devices

2.6 VIDEO MOTION DETECTION

2.6.1 The DVR shall provide a 16 x 8 masking grid for each camera view.

2.6.2 The DVR shall provide the option of five levels of motion sensitivity for each camera view.

2.6.3 The DVR shall provide up to 30 minutes of tagged pre- and post activity recording per event.

2.6.3.1 The pre-alarm recording shall only occur if standard recording is taking place.

2.6.4 The DVR shall support a main monitor display of last camera to sense activity, with a default 2-second dwell per active camera, and return to pre-activity display capability.

2.6.5 The DVR shall have a buzzer activated upon activity.

2.6.6 The DVR shall have a global trigger light duty relay output (500mA at 12V-48V max).

2.6.7 The DVR shall have 16 internal programmable relay outputs (500mA at 12V-48V max) that respond to video motion detection.

2.7 VIDEO MOTION SEARCH FACILITY

2.7.1 The DVR shall have video motion search to allow recorded searches on the hard disks, based on movement in a particular area of the image.

2.8 SCHEDULING

2.8.1 The DVR shall be user-programmable to automatically:

2.8.1.1 Select time of day for recording

2.8.1.2 Select cameras to be recorded

2.8.1.3 Switch alarms and activity on/off

2.8.1.4 Select interleaved or exclusively recorded alarms and activity

2.8.1.5 Alter the record rate for standard, alarm and activity recording

2.9 ARCHIVING

2.9.1 The DVR shall have the capability to save individual images, event sequences and user-defined recorded sequences to the unit's internal CD-R, without interrupting recording to the DVR's hard drives.

2.9.2 The playback of images from the unit's CD shall be available via a personal computer's standard CD ROM drive.

2.9.3 The DVR shall provide drivers for recommended external SCSI devices for archiving images or for extending hard drive capacity.

2.9.3.1 The DVR shall continue to record to internal hard drives while archiving to recommended external SCSI devices.

2.9.3.2 The DVR shall include the digital signature on images sent to external devices.

2.9.4 The DVR shall automatically detect recommended archive devices on power-up.

2.9.5 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.

2.10 TIMED EXPIRY

2.10.1 The DVR shall have a timed expiry option that allows images to be held for a selected number of days.

2.10.1.1 Images on the disk that are older than the number of days selected shall not be accessed.

2.11 ALARMS

2.11.1 The DVR shall provide normally open/closed alarm contacts available via internal connection.

2.11.2 The DVR's alarm contacts shall have individually programmable polarity.

2.11.3 The DVR shall provide 8 contacts per camera, with the ability for multiple alarms to trigger one camera and/or one alarm to trigger multiple cameras.

2.11.4 The DVR shall have spot monitor sequences alarm capability.

2.11.5 The DVR shall provide up to 30 minutes of tagged pre- and post alarm recording per event.

2.11.5.1 The pre-alarm recording shall only occur if standard recording is taking place.

2.11.6 The DVR shall support a main monitor display of last camera in alarm, with a default 2-second dwell per alarmed camera, and return to pre-alarm display capability.

2.11.7 The DVR shall provide trigger telemetry preset on alarm.

2.11.8 The DVR shall have a buzzer activated upon alarm.

2.11.9 The DVR shall have a trigger light duty relay output (500mA at 12V-48V max).

2.11.10 The DVR shall have 16 programmable internal alarm inputs.

2.12 E-MAIL NOTIFICATION ON ALARM

2.12.1 The DVR shall support automatic e-mail upon alarm (up to five e-mail addresses on the same mail server).

2.12.2 The DVR shall notify the following events on a camera by camera basis:

2.12.2.1 Alarm

2.12.2.2 Activity

2.12.2.3 Camera fail

2.12.3 The DVR shall also notify the events of system power up, system power down, global alarm, panic alarm or date change.

2.12.4 The DVR shall supply the following information in each e-mail sent:

2.12.4.1 Machine ID

2.12.4.2 Camera number

2.12.4.3 Alarm number

2.12.4.4 Time

2.12.4.5 Link to network viewer

2.12.4.6 Optional JPEG picture of camera image on first alarm

2.13 COMMUNICATIONS AND NETWORKING

2.13.1 The DVR shall have a standard 10BASE-T Ethernet connection.

2.13.1.1 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.

2.13.1.1.1 The Network Viewer software shall include the capabilities of:

2.13.1.1.1.1 Live full and quad screens of all cameras

2.13.1.1.1.2 VCR-style fast forward and rewind, playback and frame advance/rewind

2.13.1.1.1.3 GoTo time and date and unique quadrant event review

2.13.1.1.1.4 User-defined copies of digitally signed images over the network

2.13.1.1.1.5 Archived images viewing via Dedicated Micro's PC Playback software (included in package)

2.13.1.1.1.6 Manual copying single images as JPEG and sequence of images as AVI to save to PC

2.13.1.1.1.7 Supports exterior PTZ and telemetry presets (telemetry equipment not included in package)

2.13.1.1.1.8 Multiple user access (up to five users), with simultaneous live viewing and playback capability

2.13.1.1.1.9 Configurable password protection

2.13.1.1.1.10 Event log user-definable by event type, camera and time/date.

2.13.1.1.2 The web pages features shall include:

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

2.13.1.1.2.2 Playback in full screen with GOTO function

2.13.1.1.2.3 Password authentication

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

2.13.2 The DVR shall support remote network support for remote system adjustments.

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

2.14 FILE EXPORT

2.14.1 The DVR shall support file export of digitally signed images over the network.

2.15 ADDITIONAL FUNCTIONALITY

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

2.15.2 The DVR shall provide the capability for the user to read the menus in any of eight languages. Languages shall include English, French, German, Spanish, Italian, Chinese, Czech and Russian.

2.15.3 CAMERAS

2.15.3.1 The DVR shall provide composite BNC inputs for up to sixteen color or monochrome cameras.

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

2.15.3.3 The DVR shall auto-detect connected cameras and begin recording automatically upon power-up.

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

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

2.15.3.6 The DVR shall provide a user-programmable, 12-character title for each camera.

2.15.3.7 Hidden cameras:

2.15.3.7.1 The DVR shall provide the option to view all or selected cameras, with affecting camera recording.

2.15.3.7.2 The DVR shall provide the capability to view all or selected hidden cameras via the network.

2.15.3.8 The DVR shall have software-controlled contrast adjustment for each camera.

2.15.3.9 The DVR shall have software-controlled color adjustment for each camera.

2.15.3.10 The DVR shall include protocols for recommended Pan/Tilt/Zoom dome cameras.

2.15.4 MENU SYSTEM

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

2.15.5 DAYLIGHT SAVINGS TIME

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

2.15.6 COLOR RESOLUTION

2.15.6.1 The DVR shall have a color resolution sampling rate of 13.5 MHz to CCIR 601.

2.15.6.2 The DVR shall have the following number of pixels:

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

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

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

2.16 COMPRESSION

2.16.1 Standard JPEG format files.

2.17 DATA

2.17.1 The DVR shall have 4x 9 pin serial port connectors

2.17.2 The DVR shall have 2x 485-bus MMJ connectors for 485-bus peripheral device connections.

2.17.3 The DVR shall have a SCSI 2 narrow, 50-pin, high-density connector.

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

2.18 TEMPERATURE RANGE

2.18.1 The DVR shall be operational in temperatures ranging from 41 – 104 degrees Fahrenheit (5-40°C).

2.19 RELATIVE HUMIDITY

2.19.1 The DVR shall be operational in a relative humidity range of 5-85 percent, non-condensing.

2.20 PHYSICAL PROPERTIES

2.20.1 DIMENSIONS

2.20.1.1 The DVR shall measure 6.75 inches (H) x 17.3 (W) x 20.3 (D), or 170mm (H) x 440mm (W) x 517mm (D).

2.20.2 WEIGHT

2.20.2.1 The DVR unit shall weigh 40.7 pounds (18.5 KG).

2.20.3 POWER SUPPLY

2.20.3.1 The DVR shall require an input voltage of 100-230 Va.c. 50/60 Hz.

2.21 ACCESSORIES

2.21.1 An infrared remote control unit shall be provided for system operation with the ability to:

2.21.1.1 Change cameras and camera views

2.21.1.2 Playback images from the hard disk

2.21.1.3 Search using the GOTO function and review the event log