MICRODVR II EMBEDDED DIGITAL VIDEO RECORDER

TECHNICAL SPECIFICATIONS   **SECURITY SYSTEM**
DIVISION – 28 ELECTRONIC SAFETY AND SECURITY
LEVEL 1__28 20 00 ELECTRONIC SURVEILLANCE
LEVEL 2__28 23 00 VIDEO SURVEILLANCE
LEVEL 3__28 23 19 DIGITAL VIDEO RECORDERS AND ANALOG RECORDING DEVICES

PART 2 – PRODUCTS

2.01 GENERAL

    A. All equipment and materials used shall be standard components that are regularly manufactured and utilized in the manufacturer's system.

    B. All equipment and components shall have been thoroughly tested and proven in actual use.

2.02 GENERAL SPECIFICATIONS

    A. The Digital Video Recorder (DVR) shall process analog video inputs into digital data files utilizing MPEG-4 compression. The DVR shall contain an embedded OS, support frame rates of up to 180FPS, network connections, enhanced network packet throttling and SD flash socket for system programming settings and storage. The DVR shall also support at a minimum:
          a. Support for up to 6 cameras
          b. Simultaneous serial and IP interfaces to point-of-sale, access control, and alarm system data
          c. Individual camera frame rate and resolution settings
          d. Enhanced video compression with network packet throttling
          e. State-of-the-art Serial ATA drives
          f. Advanced diagnostics and enterprise management support
          g. Three USB 2.0 ports
          h. LAN/modem connectivity
          i. Spot monitor standard output for video tour sequencing
          j. Front-panel USB port for video image transfer to memory stick
          k. Remote transfer of DVR video information in an executable file to USB compatible memory device
          l. Single, password-protected video evidence file format
          m. Ability to accept real-time transaction-based recording synchronized with selectable video inputs
          n. Three DVR chassis options for standard configuration, DVD support and removable hard drive.

2.03 OPERATING SYSTEM

    A. The DVR shall utilize an embedded stable OS that resides in non-volatile memory. The DVR shall not use a standard PC based OS and should not require constant virus or OS patch management proper security protection.

2.04 VIDEO PROCESSING AND COMPRESSION

    A. The DVR shall use MPEG-4 based compression for the processing of the composite analog video into digital format.

    B. Compression quality shall be selectable with a minimum of three levels that can be programmed to maximize operational storage requirements.

    C. The compression quality shall be individually programmable for each camera. The DVR shall also support global levels for ease of use.

D. The DVR shall provide a minimum resolution support of 320 x 240 expandable to 640 x 240 and up to 640 x 480 without the need for additional hardware.

2.05   GENERAL RECORDING

A. The DVR shall support a recording mode that records all video for a selectable programmable period after which time individual video frames can be removed for motion content.

B. The DVR shall support motion based recording to delete unused video clips to extend storage requirements.

C. The unit shall segment video recordings into three modes; short term, mid term and long term video.

2.06   MOTION PROMPTED ARCHIVING

A. The DVR shall support -Prompted Archiving (MPA).

B. The DVR shall have the ability of selecting motion only events to be stored from a master video file of all recorded video.

C. .Motion based video recording files shall be color coded for ease of search.

2.07   AUTHENTICATION AND PROTECTION

A. The DVR shall use an Unalterable Image Format (UIF) to maintain the security and integrity of the digital video files.

2.08   STORAGE

A. The DVR shall be provided with a minimum of 250GB of storage and options for up to 2TB depending on the chassis..

B. The standard DVR shall support up to two hard drives.

C. The DVD chassis shall support one hard drive.

D. The removable drive chassis shall support one removable SATA drives.

E. The DVR shall utilize Serial ATA disk drives that support higher transfer speeds, lower power consumption and do not use IDE ribbon cables.

F. The Removable drive bay should contain a keylock to reduce unauthorized access

G. The DVR shall support programming for short and long term storage.

H. Short term storage should be programmable to record all video for a defined period of time. Mid term storage shall be assigned to motion only.

I. The DVR platform shall be offered with optional support for RAID 1 configuration for up to 1TB redundancy.

2.09   EVENT OFF-LOAD

A. The unit shall include a front panel accessible USB port or optional DVD/CD drive for event off load.

B. The DVR shall transfer video files to the off load device along with an executable player to enable the playback of the video on a PC.

C. The files stored on the event off-load device shall be password protected to help prevent unauthorized use of the captured video.

D. Video event downloaded shall also be supported via the network port.

2.10 SCHEDULUES

A. The DVR shall support program schedules related to individual days, weeks (7 days) or work weeks (Mon-Fri).

B. Day mode – each day of the week should be programmed individually.

C. Week – each day of the week should be programmed identically.

D. Work week – work days (Monday through Friday) shall have the same schedule while weekends (Saturday and Sunday) support a different program setting.

E. All schedules shall support individual programming for each camera

2.11 CONTROLS

A. The DVR shall contain front panel controls to provide basic user functions for the selection of live and recorded video information.

B. The front panel shall include arrow keys for ease of menu selections and navigation.

C. The front panel shall contain clearly marked mode selection buttons for Video, Alarm, Switcher and 75ohm termination selection.

D. The DVR shall provide the ability of having an administrator lock out the front panel buttons to prevent unauthorized use.

2.12 FRONT PANEL INDICATORS

A. A series of LEDs corresponding to up to 6 cameras shall be located on the front panel.

B. The front panel shall contain LEDs to indicate recording, video sequencing, input impendence and alarm signaling.

C. There shall be an additional series of LEDs corresponding to Power, Locked, Connected and Error status.

2.13 VIDEO INPUTS

A. The DVR shall ship configured with hardware to support up to 6 cameras on the chassis.

B. Enabling of video inputs shall be via software and licensed.

C. The input signal type shall be selectable for NTSC or PAL signals.

D. The input signal level shall be 1Volt peak to peak, composite with 75 ohm termination. Inputs can be set to high impendence via a menu accessible software setting.

E. The DVR shall provide the ability to support up to 30FPS per input with appropriate software.

2.14   VIDEO OUTPUTS

A. The DVR shall have an option to contain a composite video output.

B. The output can display multiplexed video playback for single screen or quad view.

C. The output signal level shall be 1 volt peak to peak and 75ohm termination.

2.15   ALARM SIGNALING

A. The DVR shall include 6 alarm inputs that can be programmed to trigger video events for the system.

B. The alarm inputs shall be selectable for normally open or normally closed as well as either latching or momentary operation.

2.16   COMMUNICATIONS

A. Network: The DVR shall an Ethernet 10/100 base T port for TCP/IP LAN/WAN connectivity.

B. The DVR shall be programmable for static or dynamic (DHCP) IP addressing.

C. The DVR shall support multiple simultaneous user connections and operation for accessing live and recorded video.

D. The DVR shall include a built in modem for PSTN connectivity.

E. The DVR shall contain five (3) USB 2.0 ports (2 back panel, 1 front panel).

F. There shall be a minimum of two RS-232 serial data ports built into the unit. One of the ports can be used for local retrieval and transmission.

G. The DVR shall provide a RS-232 port that can be used for transaction data and external device data gathering.

H. The DVR shall contain a serial port for support of PTZ (pan-tilt-zoom) cameras with control from the client interface.

2.17   USER INTERFACE SOFTWARE

A. The DVR shall be supplied with a client based software application that provides an easy-to-use graphical interface for the viewing, processing, playback and overall management of the system video processor.

B. The interface software shall support an administrator and user level for remote access to the system. Only authorized access functions can be operated within these levels.

C. The DVR shall provide support for at least four simultaneous remote connections for live and/or playback of video without any local degradation to video recording or quality.

D. The DVR shall support identification of active users upon log on by the administrator.

E. The on screen display area shall include automatic tiling and sizing of up to 16 dockable camera windows.

F. The displayable cameras shall be individually selectable or automatically displayed and scaled based upon available playback input channel video.

G. The software shall provide the ability to download firmware updates.

H. The User Interface Software shall be hosted on a commercial off-the-shelf computer that meets the following specifications:
   a. Windows 2000 or XP

   b. Internet Explorer 5.0 or greater

   c. Direct X version 9 or later or latest version of Microsoft direct X (www.microsoft.com/directx)

   d. Video adapter supporting at least 16 bit video (65,536 colors)

   e. Ethernet Network interface port

   f. 256MB of RAM

   g. 64MB of Video Graphics memory

   h. DVD or CD burner for offloading event video files

   i. Free Hard Drive space for local video event storage (as needed)

2.18 REMOTE PROGRAMMING FUNCTIONS

A. All DVR program functions shall be supported by the client interface software including but not limited to:

   a. Selection, addition and removal of remote accessible sites
   b. Ability to select video input or inputs for live viewing
   c. Ability to select video input or inputs for playback
   d. Search for specific video images based upon time or date
   e. Search for specific video images based upon transaction, number or event.
   f. Program support for video recording modes
   g. Programming of general, motion and event based recording
   h. Scheduling of video image rates, resolution, and recording modes
   i. User definable resolution and quality settings
   j. Network Throttling
   k. Download buffering
   l. Password Management
   m. Time gap selection
   n. Camera titles of 16 characters for each input
   o. Alarm management, alarm system response and alarm scheduling

2.19 REMOTE SYSTEM DEVICE LOGS AND STATUS

A. The DVR shall provide the means to view and download remote system properties showing the current set-up, programming and operational modes of the video processor including but not limited to:

   a. Hardware version
   b. Software version
   c. Enabled system features
   d. Number of cameras being used
   e. Frame rate selection(s)

  f. Motion recording mode
  g. Compression resolution mode
  h. Recording capacity modes and levels for short and long term settings
  i. Drive information
  j. Serial number(s)
  k. Hard Drive SMART status
  l. Disk free space
  m. Data device connectivity
  n. User log audit trail

2.20 SYSTEM ENTERPRISE MANAGEMENT SOFTWARE

A. The DVR shall be compliant and available for optional system management software support. The system management optional software shall provide for health checks, device status log information, Hard drive status, camera input status, firmware upgrades, password management and other system wide functions.

2.21 MECHANICAL

A. Dimensions: The maximum dimensions for a fully loaded model with four removable hard drive bays shall not exceed 2RU and overall dimension no larger then 8.7" w x 12" D x 3.5" H. (21.95cm x 30.5cm x 8.9cm)

B. Weight: Standard system shall weight no more then 10 lbs (4.5kg).

2.22 ENVIRONMENTAL

A. Operating Temperature: 40-120° F (*4* to *50* ° C)

B. Humidity: 0 to 90% non-condensing.

2.23 ELECTRICAL

A. External universal power supply capable of operation in domestic and international markets.

B. 100-120VAC/200-240VAC and 50/60Hz selectable.

C. Two built in 12VDC outputs rated at 500mA each

2.24 REGULATORY AND COMPLIANCE

A. FCC Class A Part 15

B. Canada – ICES-003

C. EN55022

D. UL

2.25 INSTALLATION AND OPERATION INSTRUCTIONS

A. The unit shall ship with a CD containing all installation and operating instructions.

2.26 WARRANTY

A. The product shall contain a 3-year warranty from the manufacturer.