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VITEK CHRONO SERIES 8 CHANNEL DIGITAL VIDEO RECORDER

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

28 20 00 ELECTRONIC SURVEILLANCE

28 23 00 VIDEO SURVEILLANCE

28 23 29 VIDEO SURVEILLANCE REMOTE DEVICES AND SENSORS

This specification is intended for use by the design/constructing professional and any user of Vitek security products to assist in developing project specifications for security and video surveillance systems.

This specification can and should be modified as necessary to accommodate individual project conditions.

PART 1 GENERAL

1.01 SUMMARY **1.02 WARRANTY**

- A. Provide manufacturer's standard warranty

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Vitek Industrial Video Products, Inc.
- B. Provide Video Surveillance Recorder from single source manufacturer.

2.02 EIGHT CHANNEL DIGITAL VIDEO RECORDER

A. General

- (1) Product specifically designed for closed circuit television recording and multiplexing.
- (2) The digital video recorder (DVR) shall have pentaplex operation, simultaneously record, playback, provide data redundancy, copy backup video and transmit over the network.
- (3) The DVR shall use modular hard disk media, with a digital format capacity of 500 gigabytes, one (1) terabyte or two (2) terabytes per module, maximum four (4) two (2) terabytes modules.
- (4) The DVR shall use modular optical disk media, capable of reading and writing to CD-R, CD-RW, DVD-R, DVD-RW, DVD+R and DVD+RW.
- (5) Encoding and decoding of the video shall use H.264 compression technology.
- (6) Encoding and decoding of the audio shall use G.723 compression technology.



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B. Recording Modes

- (1) Available recording resolution shall be:
 - a. D1 resolution (720H & 480V) sampling and three dimensional scan conversion to enable jitter-free stabilized pictures in a single frame at sixty (60) frames per second.
 - b. Half D1 resolution (720H x 240V) sampling at one hundred twenty (120) fields per second.
 - c. CIF resolution (360H x 240V) sampling at two hundred forty (240) images per second.
- (2) Picture quality shall be provided at Very High, High, Standard, Low.
- (3) Include Event (Motion Detection, Sensor Detection, Video Loss and Text-in), Schedule, Emergency and Manual Recording Modes.
- (4) Each camera shall support individual recording rate and image quality settings for Event, Schedule, Emergency and Manual Recording Modes.
- (5) Event recording modes shall provide the option of selecting any channel of choice to begin recording when an event is detected.
- (6) Furnish On Screen Display (OSD) on the monitor and also recording of the following information: year, month, day, hour, minute and second.
- (7) Furnish OSD on the monitor and also recording of alphanumeric camera channel location description of up to 8 characters.
- (8) Furnish OSD on the monitor and also recording of alphanumeric event description of up to 8 characters.
- (9) Include up to thirty (30) seconds of pre-event recording buffer for all individual camera channels.
- (10) Include up to thirty (30) minutes of post-event recording buffer for all individual camera channels.
- (11) Include panic record mode without limit.
- (12) Include Automatic Deletion feature scheduled for one (1) to one hundred eighty (180) days.

C. Search and Playback

- (1) Include Go-To-Time, Calendar, Event and Text-in Search.
- (2) Text-in Search shall search any combination of alphanumeric characters.
- (3) Playback shall provide a smooth, continuous forward playback and fast forward up to 32x normal playback speed in single channel display mode.
- (4) Playback shall provide a smooth, continuous reverse playback and rewind up to 32x normal playback speed in single channel display mode.

D. Storage

- (1) Furnish automated disk management and a Real-Time Operating System (RTOS) platform to include up to eight (8) terabytes of digital video storage.
- (2) Furnish disk mirroring redundant array recording.
- (3) DVRs with a native Microsoft Windows operating system shall not be acceptable.
- (4) DVRs requiring external disk management or disk defragmentation functions shall not be acceptable.

E. Display

- (1) Permit direct camera selection for recording and playback of any of eight (8) video sources at the same time as multiple screen viewing and multiplexed camera encoding.
- (2) Built-in programmable sequence with dwell time up to one (1) minute.
- (3) Built-in Picture-In-Picture with selectable sizes and positions.
- (4) Separate Spot, multiple screen and multiple screen/RGB.
- (5) Independent & sequenced channels of choice in four (4) separate spot output.



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- (6) Display mode of one (1), four (4), eight (8) for both live and playback.
- (7) Two (2) times digital magnification feature shall be included with the digital video recorder.
- (8) Freeze feature shall be included with the digital video recorder.
- (9) The channel title shall have up to eight (8) alphanumeric characters.
- (10) The languages displayed shall be: English, Korean, Spanish, Slovenian, Chek, Turk, Dutch, Russian, Mandarin, Japanese, Italian, French, Cantonese, Polish, German, and Portuguese.

F. Control

- (1) Camera functions and control shall be accessible for eight (8) cameras without optional equipment.
- (2) Camera functions and control shall be accessible for eight (8) cameras with an optional mouse.
- (3) Camera functions and control shall be accessible for eight (8) cameras with included infrared remote controller.
- (4) Access all camera control, set-up, alarm functions, motion detection, including preset and sequence.
- (5) Controllable camera functions shall be accessible from via front panel controls, Infrared Remote Controller, Internet Explorer plug-in client, Central Management Software or the optional system controller.
- (6) These functions shall include direct access to preset positions, zoom, focus, tilt and pan. Further camera functions and control shall be accessible for all cameras through the use of the optional control unit Model VT-KBD1.

G. Inputs

- (1) Furnish eight (8) inputs of video connection via BNC female connections.
- (2) Furnish eight (8) inputs of audio connection via RCA female connections.
- (3) Furnish eight (8) inputs of Normally Open or Normally Closed sensor connections via terminal blocks.
- (4) Furnish one (1) RS-232 input via DB9 connection
- (5) Furnish four (4) Universal Serial Bus 2.0 Ports for Human Interface Device (HID) mouse.
- (6) Furnish one (1) RJ-45 connection for network.

H. Outputs

- (1) Furnish eight (8) outputs for connection of all video sources to external monitoring systems including multiple screen and spot monitor video outputs via BNC female connections.
- (2) Furnish four (4) outputs for connection of spot monitor output.
- (3) Furnish eight (8) outputs for relay connections via terminal block.
- (4) Furnish four (4) Universal Serial Bus (USB) 2.0 Ports for external storage and copy connection.
- (5) The video input level shall be one volt peak-to-peak (1Vp-p) composite, seventy five ohm (75Ω) balanced.
- (6) Furnish one (1) DB15 connection for RGB output and shall provide resolution of 800x600, 1024x768, 1280x720, 1360x768, 1440x900, 880x1050.
- (7) Furnish one (1) RCA connection for audio output.



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I. Event Notification

- (1) Event recording modes shall provide the option of sending a notification e-mail to up to five (5) pre-programmed e-mail addresses every 5, 10, 15, 20, 25, 30, 40, 50, 60 seconds, 2, 3, 4, 5 and 10 minutes.
- (2) Event recording modes shall provide the option of callback feature to up to ten (10) pre-programmed server addresses every 5, 10, 15, 20, 25, 30, 40, 50, 60 seconds, 2, 3, 4, 5 and 10 minutes.
- (3) Event recording modes shall provide the option of executing a pre-programmed PTZ preset function when an event is detected.
- (4) Event recording modes shall provide the option of activating any alarm relays.

J. Network

- (1) The DVR shall support DHCP and DDNS protocol.
- (2) The DVR shall monitor the environment via internal Explorer Web Client and Central Management Software.
- (3) All video recorder recording, review, playback, camera control and setup, digital video recorder setup and network video mode setup functions shall be available via the internally mounted network interface.
- (4) Feature shall permit direct camera selection for recording playback of any of eight (8) video sources at the same time as multi-screen viewing and multiplexed camera encoding.
- (5) The DVR shall provide two-way audio transmission.
- (6) Included bandwidth throttling for optimization of bandwidth usage.

K. Backup

- (1) The DVR shall create a backup copy of the video via built-in DVD-RW drive on following available optical media: CD-R, CD-RW, DVD-R, DVD-RW, DVD+R, DVD+RW.
- (2) The DVR shall create a backup copy of the video via Universal Serial Bus (USB) 2.0 Ports on following available flash drive: USB Flash Memory up to 64 Gigabytes.
- (3) The DVR shall create a backup copy of the video via Universal Serial Bus (USB) 2.0 Ports on following available external Hard Disk Drive (HDD): external Hard Disk Drive up to 2 terabytes.
- (4) The remote client shall download a backup copy of the video via network on Personal Computers (PC) running Microsoft Windows XP, Vista and 7 Operating Systems.
- (5) The backup copy shall be in a proprietary, self-executable file, containing date and time stamp with a digital watermark.
- (6) The backup copy shall be in a proprietary format, playable via the central management software, containing date and time stamp with a digital watermark.
- (7) The backup copy shall be in MP4 format, playable via Apple's Quicktime player.
- (8) The backup copy shall be in M4U format, playable via Apple's Quicktime player, providing the date and time stamp.

L. System

- (1) The operating system (OS) shall be embedded Linux.
- (2) The DVR shall have a dedicated Database structure.
- (3) The DVR shall have a dedicated hardware and software watchdog function.

M. Environmental

- (1) The DVR's power consumption shall be 12VDC, 6.67 Amps / 80 watts.
- (2) The operating temperature shall be six (6) to forty (40) degrees Celsius or forty-one (41) to a hundred and four (104) degrees Fahrenheit



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- (3) The relative operating humidity shall be zero (0) to eighty (80) percent, non-condensing.

2.03 SUGGESTED PRODUCT

- A. The DVR shall be a Vitek CHRONO Series model VT-CN840.

PART 3 EXECUTION

3.01 ACCEPTABLE INTEGRATORS
3.02 INSTALLATION