

## **ENDURA® – DVR5300 SERIES 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 used in the manufacturer's system.
- B. All systems and components shall have been thoroughly tested and proven in actual use.
- C. All systems and components shall be provided with the availability of a toll-free (U.S. and Canada), 24-hour technical assistance program (TAP) from the manufacturer. The TAP shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge for as long as the product is installed.
- D. All systems and components shall be provided with a one-day turnaround repair express and 24-hour parts replacement. The repair and parts express shall be guaranteed by the manufacturer on warranty and nonwarranty items.
- E. The digital video recorder shall be installed by an Endura® certified dealer/integrator. Certification for installation shall be conducted by the manufacturer and shall provide all necessary knowledge to fulfill the systemization and deployment across diverse networks and infrastructures, as well as provide commissioning abilities at the integrator level.

#### **2.02 DIGITAL VIDEO RECORDER**

- A. The digital video recorder shall be fully Endura compatible. The unit shall record IP streams and/or analog video from either Endura video encoders or from analog cameras using multichannel encoders. It shall be able to record up to 48 analog video inputs at 30 images per second at 4CIF resolution. It shall play back up to 32 simultaneous streams and support up to 10 simultaneous queries.
- B. Each multichannel encoder shall encode up to 16 channels of live analog video into MPEG-4 video streams at up to 4CIF resolution and 30 images per second per channel. The multichannel encoder shall also encode up to 16 audio inputs simultaneously into G.711 digital audio streams. The multichannel encoder shall have 16 video inputs and 16 audio inputs. The encoder shall send these video and audio streams directly to the digital video recorder over a USB 2.0 interface.
- C. It shall be possible to connect up to three multichannel encoders to a single digital video recorder with USB cables to record up to 48 analog video inputs. This shall allow for customization of the number of video inputs and storage for each recording site.
- D. Video shall be viewed, played back, and controlled from any Endura viewing system by a network decoder, virtual console display, or workstation. When viewing streams generated by the encoder in an Endura system, streams shall be decoded at their recorded rate.

- E. Video from a digital video recorder and encoder shall be viewable through a Pelco 9700 Series matrix switcher.
- F. The digital video recorder shall provide fault tolerance by employing RAID 5 disk management across up to 12 hard disk drives to eliminate downtime caused by a single hard disk drive failure. If a single hard disk drive fails, the RAID 5 implementation shall protect data from being lost. In addition, during an error condition or array rebuild, it shall be able to record up to 48 video streams at 4CIF resolution and up to 30 images per second each, play back up to 32 simultaneous streams, and support up to 10 queries. It shall feature a hot drive swap that automatically configures the drives when installed.
- G. The digital video recorder shall use redundant power supplies to eliminate the power supply as a single point of failure.
- H. The digital video recorder shall have expandable storage capacity using Pelco's iSCSI-based storage expansion boxes.
- I. The digital video recorder shall be capable of continuous scheduled alarm/event and motion recording. Pre- and post-alarm recording shall also be available and shall be fully programmable on a per channel basis. The digital video recorder shall maximize storage efficiency using EnduraStor™ technology. Upon user selection, EnduraStor shall automatically reduce the recorded frame rates of video after a programmed delay period, ensuring that the user has access to real-time video when needed most. EnduraStor shall not reduce the frame rate on alarm- or motion-based video.
- J. All video shall be digitally signed before being written to the hard disk drives. Video authentication shall be verified on the system before being played back with the Endura video player.
- K. Diagnostics shall be systemized with other Endura products. The following diagnostics shall be reported to the Endura system: hard disk drive status, power supply status, fan status, air temperature, and video input stream status. Administration shall be able to view the status of individual components in real time to prevent failures before they occur.
- L. The digital video recorder shall meet or exceed the following design and performance specifications.

## 2.03 POWER SPECIFICATIONS

- A. Digital Video Recorder
  - 1. Power Input 100-240 VAC, 50/60 Hz, autoranging
  - 2. Power Supply Internal, dual-redundant, hot-swappable
  - 3. Cable Type 2 USA (117 VAC), 2 European (220 VAC),  
2 UK (250 VAC)  
All, 3 prongs, molded connector, 6 ft (1.8 m) cord
  - 4. Power Consumption
 

100 VAC	<u>Operating Maximum</u> 339 W, 3.40 A, 1157 BTU/H
115 VAC	335 W, 2.95 A, 1143 BTU/H

220 VAC

332 W, 1.58 A,  
1133 BTU/H

- |                                |  |
|--------------------------------|--|
| B. Multichannel Encoder        |  |
| 1. Power Input                 | 100-240 VAC, 50/60 Hz, 0.7 A, autoranging  |
| 2. Cable Type                  | 1 USA (117 VAC), 1 European (220 VAC),<br>1 UK (250 VAC)<br>All, 3 prongs, molded connector, 6 ft (1.8 m) cord |
| 3. Power Consumption (Maximum) |  |
| 100 VAC                        | 40 W, 137 BTU/H  |
| 115 VAC                        | 40 W, 137 BTU/H  |
| 200 VAC                        | 40 W, 137 BTU/H  |

## 2.04 ENVIRONMENTAL SPECIFICATIONS

- |                              |   |
|------------------------------|---|
| A. Operating Temperature     | 50° to 95°F (10° to 35°C) at unit air intake                  |
| B. Operating Humidity        | 20% to 80%, noncondensing                                     |
| C. Maximum Humidity Gradient | 10% per hour  |
| D. Operating Altitude        | -50 ft to 10,000 ft (-16 m to 3,048 m)                        |
| F. Operating Vibration       | 0.25 G at 3 Hz to 200 Hz at a sweep rate of 0.5 octave/minute |

## 2.05 PHYSICAL SPECIFICATIONS

- |                               |   |
|-------------------------------|---|
| A. Digital Video Recorder     |   |
| 1. Construction               | Steel cabinet   |
| 2. Finish                     | Bezel: gray metallic with black end caps<br>Chassis: black matte finish |
| 3. Dimensions                 |   |
| a. Without Rails              | 24.3" D x 17.0" W x 5.2" H<br>(61.8 x 43.2 x 13.2 cm)                   |
| b. With Rails                 | 24.7" D x 19.0" W x 5.2" H<br>(62.7 x 48.26 x 13.2 cm)                  |
| 4. Unit Weight                |   |
| a. Empty (No storage drives)  | 51 lb (24 kg)   |
| b. Fully Equipped (12 drives) | 67 lb (31 kg)   |
| 5. Mounting                   | Rack, 3 RU per unit<br>(Rack ears and screws provided)                  |
| B. Multichannel Encoder       |   |
| 1. Construction               | Steel cabinet   |
| 2. Finish                     | Bezel: gray metallic with black end caps<br>Chassis: black matte finish |
| 3. Dimensions                 |   |
|                               | 16.7" D x 17.0" W x 1.7" H<br>(42.4 x 43.2 x 4.3 cm)                    |
| 4. Unit Weight                |   |
|                               | 13.35 lb (6.10 kg)  |
| 5. Mounting                   | Rack, 1 RU per unit<br>(Rack ears and screws provided)                  |

**2.06 SYSTEM SPECIFICATIONS**

A. Storage (DVR5300)													
1. System Drive	2 GB compact FLASH solid state drive												
2. Video Storage													
a. Internal Capacity	Up to 6.98 TB												
b. Total Capacity	Up to 62.82 TB with addition of up to eight SEB5100 storage expansion boxes												
3. Interface	SATA, hot swappable												
4. RAID Level	5												
B. Video (ENC5300)													
1. Video Standards	NTSC/PAL/EIA/CCIR composite												
2. Video Compression (Coding)	MPEG-4												
3. Video Resolution	<table><tr><td></td><td><u>NTSC</u></td><td><u>PAL</u></td></tr><tr><td>a. 4CIF</td><td>704 x 480</td><td>704 x 576</td></tr><tr><td>b. 2CIF</td><td>704 x 240</td><td>704 x 288</td></tr><tr><td>c. CIF</td><td>352 x 240</td><td>352 x 288</td></tr></table>		<u>NTSC</u>	<u>PAL</u>	a. 4CIF	704 x 480	704 x 576	b. 2CIF	704 x 240	704 x 288	c. CIF	352 x 240	352 x 288
	<u>NTSC</u>	<u>PAL</u>											
a. 4CIF	704 x 480	704 x 576											
b. 2CIF	704 x 240	704 x 288											
c. CIF	352 x 240	352 x 288											
4. Video Inputs	16, BNC, looping, 0.5-1 Vp-p												
5. Video Outputs	1, BNC, 1 Vp-p												
6. Video Termination	Software controlled												
7. Video Display	Remote operation using WS5050 or VCD5000												
C. Audio (ENC5300)													
1. Audio Encoding	G.711 speech codec												
2. Audio Bit Rate	64 kbps												
3. Audio Levels	1 Vp-p, 10 kohms												
4. Audio Connectors	16, 3.5 mm monaural												
5. Audio Inputs	Line in												
D. Network (DVR5300)													
1. Interface	2, Gigabit Ethernet RJ-45 ports (1000Base-T)												
2. Security	2 modes: secure mode (device authentication) and unsecure mode												
E. PTZ Protocols													
	Coaxitron® (ENC5300)												
	Pelco D and Pelco P (DVR5300)												
F. Alarms/Relays (ENC5300)													
1. Alarm Inputs	16, programmable, 5.0 VDC 10 kohms, triggered, CM9760-ALM compatible												
2. Relay Outputs	4, form-C relay, 2 A at 30 VDC or 0.5 A at 125 VAC, CM9760-REL compatible												
G. Video Activity Detection (ENC5300)													
1. Zones	3 plus background zone												
2. Zone Types	Any shape, user-definable in 16 x 16 pixel blocks												
3. Sensitivity	Adjustable												
H. Auxiliary Interfaces (DVR5300)													
1. USB 2.0	4 high-speed USB 2.0 ports on rear panel												
2. Camera Control	1, RJ-45 connector; RS-422 from DVR5300 to CM9760-CDU-T												

## I. Front Panel Indicators/Functions

### 1. Digital Video Recorder

- |                            |  |
|----------------------------|--|
| a. Power                   | Blue                                     |
| b. CPU Activity            | Yellow                                   |
| c. Network Activity        | Green                                    |
| d. Network Status          | Green, amber, red                        |
| e. Unit Status             | Green, amber, red                        |
| f. Individual Drive Status | Green, red                               |
| g. Power Button            | On, off (soft), off (hard)               |
| h. Configuration/Reset     | Configuration, reboot, reset, and cancel |

### 2. Multichannel Encoder

- |                        |                   |
|------------------------|-------------------|
| a. Power               | Blue              |
| b. USB Video Status    | Red               |
| a. Power               | Blue              |
| b. USB Video Status    | Red               |
| c. USB Video Operation | Green             |
| d. Unit Status         | Green, amber, red |

## 2.07 CERTIFICATIONS

- A. CE, Class A
- B. FCC, Class A
- C. UL/cUL Listed
- E. C-Tick
- F. S-Mark for Argentina
- G. GOST

## 2.08 STANDARDS/ORGANIZATIONS

- A. Pelco is a member of the MPEG-4 Industry Forum
- B. Pelco is a member of the Universal Plug and Play (UPnP) Forum
- C. Pelco is a member of the Universal Serial Bus (USB) Implementers Forum
- D. Pelco is a contributor to the International Standards for Organization/Electrotechnical Commission (ISO/IEC) Joint Technical Committee 1 (JTC1), "Information Technology," Subcommittee 29, Working Group 11
- E. Compliance with ISO/IEC 14496 standard (also known as MPEG-4)
- F. Compliant with International Telecommunication Union (ITU) Recommendation G.711, "Pulse Code Modulation (PCM) of Voice Frequencies"

## 2.09 WARRANTY

- A. 36 months, parts and labor

## 2.10 SUPPLIED ACCESSORIES

- |                           |                                     |
|---------------------------|-------------------------------------|
| A. Digital Video Recorder |                                     |
| 1. Power Cords            | 2 USA, 2 European, 2 UK             |
| 2. Rack Mount Kit         | Brackets, rails, and hardware       |
| 3. Hard Drive Carriers    | 12 (all filled) or 6 filled/6 empty |
| 4. USB Cables             | 3 USB 2.0 cables with labels        |

- |                          |                               |
|--------------------------|-------------------------------|
| B. Multichannel Encoder  |                               |
| 1. Power Cords           | 1 USA, 1 European, 1 UK       |
| 2. Rack Mount Kit        | Brackets, rails, and hardware |
| 3. Terminal Blocks       |                               |
| a. Alarm Terminal Blocks | 4, 8-pin                      |
| b. Relay Terminal Blocks | 2, 6-pin                      |

## 2.11 PELCO MODEL NUMBERS

The digital video recorder supports up to 48 simultaneous full frame rate/full resolution input streams and offers 1.5 TB to 6.0 TB of internal storage, 1.19 TB to 4.76 TB of video storage.

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|-----------------|--|
| A. DVR5324-1500 | 6 drives, 1.5 TB internal storage, 1.16 TB video storage   |
| B. DVR5324-3000 | 6 drives, 3.0 TB internal storage, 2.32 TB video storage   |
| C. DVR5324-6000 | 12 drives, 6.0 TB internal storage, 4.65 TB video storage  |
| D. DVR5324-9000 | 12 drives, 9.0 TB internal storage, 6.98 TB video storage  |
| E. DVR5348-1500 | 6 drives, 1.5 TB internal storage, 1.16 TB video storage   |
| F. DVR5348-3000 | 6 drives, 3.0 TB internal storage, 2.32 TB video storage   |
| G. DVR5348-6000 | 12 drives, 6.0 TB internal storage, 4.65 TB video storage  |
| H. DVR5348-9000 | 12 drives, 9.0 TB internal storage, 6.98 TB video storage  |
| I. ENC5308      | 8-channel USB multichannel video encoder that encodes video, audio, and control data for transmission over a USB 2.0 link to a digital video recorder  |
| J. ENC5316      | 16-channel USB multichannel video encoder that encodes video, audio, and control data for transmission over a USB 2.0 link to a digital video recorder |

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