

Model: CR1615ET Series

Architectural and Engineering Specifications

Version 1.0

PART 2 - PRODCUTS

Division 28 – Electric Safety and Security

Section 28.23.19 – Video Surveillance – Digital Video Recorder and Analog Recording Devices

Section 28.23.12 - Video Surveillance – System Infrastructure

2.1.0 Manufacturer

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2.2.0 General

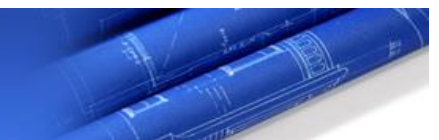
2.2.1 Product Description

CR1615ET ET 15 Series (HD-TVI DVR) is a HD over Coaxial Recording System designed and manufactured by COSTAR VIDEO SYSTEMS. ET 15 Series utilizes existing coaxial cable to leverage analog infrastructure for seamless upgrade to 1080P surveillance solution. The ET 15 Series is a hybrid system which supports 1080P and backward compatible with multi standard analog camera. The ET 15 Series is an 8 Channel unit and supports up to 240ips (images per second) Full HD recording with H.264 compression codec, up to 5MP resolution and UHD display with HDMI output. The ET 15 Series is equipped with 8 Channel BNC ports, 4 internal HDD ports and 1 eSATA port. The ET 15 Series is an integrated security system, capable of time division multiplexing and real time recording of multiple cameras and storing their digitized and compressed images on embedded hard disk drives for fast search and retrieval either locally at the unit, or from a remote workstation using a Graphical User Interface (GUI). The ET 15 Series is equipped with technology that allows legacy coaxial cable to work up to 1500ft with advanced camera OSD control. The ET 15 Series is fully compatible with COSTAR VIDEO SYSTEMS products across different platforms such as DirectNET Series solution and StarNET Video Management System.

2.2.2 General Specification

1. The ET 15 Series shall be a Linux embedded unit with 16 Channel BNC (Multi standard Analog) video recording capability.
2. The ET 15 Series shall be equipped with 1 Gigabit network port, 16 BNC ports.
3. The ET 15 Series shall have 4 internal SATA ports and 1 eSATA port.
4. The ET 15 Series shall have 1 HDMI output and 1 VGA output, 1 BNC (Spot) output.
5. The ET 15 Series shall have 16 alarm inputs, 4 alarm relay outputs, 1 alarm reset in.
6. The ET 15 Series shall have 4 RCA audio inputs, 1 RCA audio output, 1 HDMI audio output.

7. The ET 15 Series shall have 1 USB 2.0 port and 1 USB 3.0 port.
8. The ET 15 Series shall have 1 RS-232, 1 RS-485 terminal block.
9. The ET 15 Series shall have 1 internal buzzer.
10. The ET 15 Series shall support up to live 480ips (Image per Second).
11. The ET 15 Series shall support up to 5MP resolution.
12. The ET 15 Series shall support UHD display with HDMI output.
13. The ET 15 Series shall support simultaneous live view, record, play back, data transmission in real time.
14. The ET 15 Series shall support recording frame rate: 480ips@1080P.
15. The ET 15 Series shall support H.264 compression codec.
16. The ET 15 Series shall provide Graphical User Interface (GUI) with multi lingual support.
17. The ET 15 Series shall support 2X – 12X digital zoom in live view mode & playback mode.
18. The ET 15 Series shall provide time lapse, event, time lapse + event, pre/post-event, panic recording schedule.
19. The ET 15 Series shall adjust Multi Standard Analog camera's configuration.
20. The ET 15 Series shall support alarm, audio, motion, video loss, video blind, text-in, system event triggering, fan error, record failure, storage related alerts and alarm in error.
21. The ET 15 Series shall support email (attach clip (.cbf)), callback to remote s/w, push notification (StarNET Mobile), NETFS (FTP) notification.
22. The ET 15 Series shall provide Time-lapse, Event log, Motion, Text-in search options.
23. The ET 15 Series shall support 4 channels 1080P synchronous playback.
24. The ET 15 Series shall be equipped with Chained-Fingerprint™, SSL, Password encryption options.
25. The ET 15 Series shall support FEN service (A name resolution service equivalent to DDNS), Bonjour, DNS-SD (DNS Service Directory).
26. The ET 15 Series shall be compatible with StarNET, iNEX, StarNET Mobile and Webguard.
27. The ET 15 Series shall be compatible with network accessory: network keyboard, network switch, etc.
28. The ET 15 Series shall be controlled by network keyboard with USB mouse support and remote control.



2.3.0 Technical Specification

2.3.1 Video Specification

1. Analog Video Inputs: up to 16 Multi Standard Analog cameras
 - A. Built-in 16 channels BNC Switch
2. Supported Camera type: 5MP, 4MP, 3MP, 1080P30, 1080P25, 720P30, 720P25 and CVBS (NTSC / PAL).
3. Video Outputs: 1 HDMI, 1 VGA, 1 BNC (Spot)
 - A. The ET 15 Series shows live video through VGA, HDMI, and CVBS Spot monitor. It supports various camera display formats; Full-screen, Quad (2x2), 3x3, 1+5, 1+7, PIP.
4. Display Resolution:
 - A. HDMI: 3840x2160, 1920x1080, 1440x900, 1280x1024
 - B. VGA: 1920x1080, 1440x900, 1280x1024
 - C. Composite: 720x480(NTSC), 720x576(PAL)
5. Maximum Live Display Speed: Up to 480ips
6. Live Digital Zoom: x2 ~ x12
7. PTZ Control and Setup
 - A. The ET 15 Series shall allow control of PTZ cameras to authorized users and be used to maneuver a PTZ camera using Built-in GUI PTZ control; Pan, Tilt and Zoom, Focus Near / Far, SET 15 Series / Move to Preset, Advanced PTZ capabilities. When PTZ capable camera is connected, this function shall be enabled automatically.
 - B. Network Keyboard shall be supported with USB mouse.
8. Image Authentication: Chained Finger Print
9. Additional Information
 - A. The ET 15 Series shall support the following features: Sequence Monitoring, Screen Freeze, Covert cameras, Color Control (Brightness, Contrast, Saturation, Hue), event monitoring.
 - B. The ET 15 Series shall display camera ID, recording status and recording mode information on the screen.



2.3.2 Audio Specifications

1. Audio Input: (line level)
 - A. ET 15 Series: 4 RCA
 - B. The ET 15 Series shall support recording and re-broadcasting of audio inputs from audio equipped cameras and audio input connected.
 - C. The ET 15 Series shall stream live and recorded audio to connected local speaker / amplifier and remote clients such as StarNET, iNEX Windows / MAC Workstations and Mobile Devices.
2. Audio Output
 - A. ET 15 Series: 1 RCA + 1 HDMI
 - B. Audio signal can be transferred to the audio output devices such as a speaker via RCA or HDMI port.
3. Audio Codec Format: G.726
4. Audio Data Size: 128 Kbps (per channel)
5. Two-way (Bidirectional) Audio:
 - A. Audio equipped camera, audio device and StarNET, iNEX
 - B. Audio equipped camera, audio device and ET 15 Series

2.3.3 Recording Specifications

1. Maximum Recording throughput
 - A. The ET 15 Series shall support up to 480ips@1080P recording.
2. Recording Resolution: Up to 5MP (Camera specific)
3. Recording Resolution: 5MP, 4MP, 3MP, 1920x1080, 1280x720, 960x480, 720x480, 960x240, 720x240, 480x240, 360x240
4. Video Compression Codec: H.264
5. Recording Schedule
 - A. The ET 15 Series shall allow camera-by-camera configuration of the following recording modes:
 - i. Time Lapse Recording (Continuous), Event-Based Recording, Time Lapse with Event-based Recording, Panic Recording, Pre / Post Event Recording
 - B. The ET 15 Series shall allow the user to create and edit video recording schedules for each connected camera
 - i. Basic Schedule
 - ii. Advanced Schedule which includes different profiles and dwell timer per each occurred event
 - C. The ET 15 Series shall include the ability for Pre-Event recording, which records video for a specified time before an event or alarm has occurred. The allowed time Pre-Event recording



is from 5 seconds to 30 minutes.

6. Additional Information

- A. The ET 15 Series shall support individual camera Recording Profile Setup.
- B. The factory default resolution is set at the maximum of the camera's resolution. This is adjustable parameter according to custom configuration.

2.3.4 Playback Specifications

- 1. Performance
 - A. The ET 15 Series shall support 4 channels 1080P synchronous playback.
- 2. Display Format
 - A. The ET 15 Series shall offer multi-screen playback (single-screen, quad or multiple layouts), series display (displaying images from one camera image by image), and full-screen display.
- 3. Search Mode: Time-lapse, Event log, Motion, Text-in.
 - A. The ET 15 Series shall provide various search filters for fast retrieval; Calendar Search, Go to Search, Record table search, Search by Event, Motion, Text-in, Bookmark Search.
- 4. Playback Digital Zoom: x2 ~ x12

2.3.5 Storage Specifications

- 1. HDD: Internal SATA x4, eSATA x1, (Up to 6TB capacity for each disk)
- 2. Total Capacity: 48TB = 6TB x (4 Internal + 1x4 eSATA option)
 - A. The ET 15 Series shall support increased recording storage capability if direct attached storage device such as eSATA storage unit is connected
- 3. Data Export
 - A. Device: USB Storage Device (USB HDD, USB Memory)
 - B. Data Export with Audio: Supported
 - C. Multichannel Data Export: Supported
 - D. The ET 15 Series shall have the ability to save the current images to Bitmap, JPEG and video clip as an ".exe" file. The Clip Player is a self-executable file (Single / Multi Channel with compressed video and audio), which requires no additional program to play back on any compatible Windows PCs. The exported file can be saved using USB thumb drives.
- 4. Additional Information
 - A. The ET 15 Series shall be equipped with Self-Monitoring Analysis and Reporting Technology (S.M.A.R.T.), incorporating a suite of advanced diagnostics that monitor the internal operation of hard drives and provide early warning for many types of potential problems.



2.3.6 Network Specifications

1. Network Connection: Gigabit ethernet (Client) x 1 port
 - A. Network connection is used for connecting the remote client software in LAN or WAN environment
 - B. Remote Data Throughput: 3Mbps to 12Mbps (depending on quality and resolution configuration)
2. Remote Data Export: Clip Player, AVI, JPG
 - A. The still or moving images can be captured using remote client software as a JPG, AVI, CBF or EXE file format. (dynamic remote application)
 - B. File Printer Interface: PDF file printer
3. Remote Client Viewer application: StarNET, iNEX, StarNET Mobile, Webguard
 - A. StarNET: Windows and Mac OS (Note: mGuard for Mac OS is limited in functionality)
 - i. StarNET (for Windows only) supports simultaneous firmware upgrade on multiple ET 15 Series
 - B. iNEX: Windows OS
 - C. StarNET Mobile: iOS, Android
 - D. Webguard works with ET 15 Series' embedded web server using a Web Browser with ActiveX plug-in.
4. Maximum Client Connections
 - A. Remote connection: 10 (Search: 2)

2.3.7 Alarm and Event Specifications

1. Alarm Input / Output (terminal block)
 - A. 8 In / 4 Relay Out
 - B. Alarm Input Type: 8 TTL, NC / NO Programmable, 2.4V(NC) or 0.3V(NO) threshold, 5V DC
 - C. Alarm Output Type: 4 relay outputs, 2A@125V AC, 1A@30V DC
2. Alarm Reset Input: 1
 - A. Input Type: 1 TTL, terminal block
3. Internal Buzzer: Yes (78dB at 10cm)
4. Trigger Events: Alarm in, Audio detection, Motion detection, Trip-zone, Video loss, Text-in, and System events
 - A. The ET 15 Series shall support alarm sensor trigger in and relay out functions in such event of motion detection, video loss detection, video obscuring, and abnormal system reboot.
 - B. Maximum Channels of Text Input: 8



5. Event Notification: Email, notification Remote S/W, Push notification (StarNET Mobile), NetFS (FTP).
 - A. The ET 15 Series shall support e-mail notification when events occur: sensor, motion, video loss, camera obscuration, Text-in and / or stop recording
 - B. Mobile device push notification: users can receive push notification on their phone when an event is triggered.
 - C. The ET 15 Series shall include a system log report support that records and displays information relating to alarm events, reboots, and other system information. The user shall receive event notification.

2.3.8 External Interface Specifications

1. Serial Interface: RS232, RS485 (Terminal Block)
2. User Control Interface: Mouse, IR Remote Control, Front Buttons, Network Remote Keyboard,
3. USB Interface: USB 2.0 x 1, USB 3.0 x 1

2.4.0 Mechanical Specifications

1. Operating System: Embedded Linux
2. Unit Dimensions (W x H x D): 430 mm x 88 mm x 413 mm (16.9" x 3.5" x 16.3")
3. Unit Weight: 6.0 kg (13.2 lb.) (with 1 HDD)

2.5.0 Environmental Specifications

1. Working Temperature: 0°C to 40°C (32°F ~ 104°F)
2. Operating Humidity: 0% ~ 90%

2.6.0 Electrical Specifications

1. Power Input: AC 100-240V, 50 / 60Hz, 1.2 ~ 0.6A
2. Power Consumption: 76W
3. Regulatory Approvals:
 - A. Electrical: FCC, CE, KC, CB, UL, PSE



Version History

Version	Writer	Revision Date	Remarks
1.0	Tech	June 28, 2018	Initial release

