

Model: CSP-10SVR256

Architectural and
Engineering Specifications

Version 1.0

PART 1: PLEASE REFER TO ATTACHED DOCUMENTS - OVERVIEW & FORMAT SAMPLES

PART 2: PRODUCTS

Division 28 – Electric Safety and Security

Section 28 23 29 – Video Surveillance Remote Devices and Sensors

2.1.0 Manufacturer

1. Costar Video Systems
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2.2.0 General

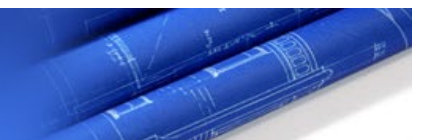
2.2.1 Product Description

CSP-10SVR256 is a Network Video Recorder (NVR) designed and distributed by Costar Video Systems. The NVR is a 256 Channel unit, and it supports up to 1024Mbps(128MBps) with H.264/H.265 compression and intelligent codec. The NVR is equipped with 4 Gigabit Ethernet interfaces, 8 internal HDD bays, 4 PCIe slots and RAID 0, 1, 5, 6, 10 supported.

The NVR 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 NVR is equipped with technology that allows connected cameras to be discovered and configured automatically. The NVR is fully compatible with Costar Video products across different platforms such as TVI solution and Video Management System.

2.2.2 General Specification

1. This NVR is for “StarNET Pro” only.
 - You can also refer to “[StarNET Pro A&E Specification](#)”.
2. The NVR shall be a Microsoft® Embedded Windows Server 2016 unit with 256 Channels IP network video recording capability.
3. The NVR shall be equipped with 4 Gigabit Ethernet interfaces (RJ45, 1000Base-T), and 1 Designated Service port (RJ45).
4. The NVR shall be equipped with 4 PCIe slots.
5. The NVR shall be equipped with 2 240GB SSDs for an operating system



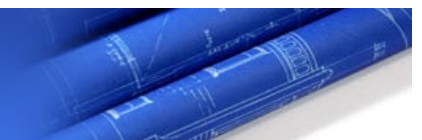
6. The NVR shall have Intel® Xeon® Processor silver 4210 2.2G 10C/20T, and 1 x 8GB DDR4-2666MT/s RDIMM.
7. The NVR shall have 8 internal SAS/SATA ports
8. The NVR shall have 2 VGA outputs (1 Front, 1 Rear).
9. The NVR shall have 2U rackmount chassis with 737.5mm of maximum depth.
10. The NVR shall have redundant power.
11. The NVR shall have 5 USB ports (Front 2 USB 2.0, Rear 2 USB 3.0, 1 Service only RJ45 port)
12. The NVR shall support RAID 0, 1, 5, 6, 10.
13. The NVR shall support up to 1024Mbps(128MBps) of recording throughput and recording resolution up to 12MP.
14. The NVR shall support simultaneous live view, record, playback, data transmission in real-time.
15. The NVR shall support H.264 and H.265 compression.
16. The NVR shall provide a Graphical User Interface (GUI) with multilingual support.
17. The NVR shall provide time-lapse, event, time-lapse + event, pre / post-event, panic recording schedule.
18. The NVR shall support recording bitrate control mode: CBR and VBR.
19. The NVR shall support alarm, audio, motion, trip zone, video loss, text-in, system event triggering, face detection, record failure, storage-related alerts, and more.
20. The NVR shall support email, remote notification (call back) to remote work stations, and mobile device push notification.
21. The NVR shall provide Time-lapse, Event log, Motion, Thumbnail, Text-in search options.
22. The NVR shall be equipped with iBank, Chained-Fingerprint™, Edge Encryption Recording, SSL/TLS, Two-Factor Authentication, and Password encryption options.
23. The NVR shall support FEN service (A name resolution service equivalent to DDNS).
24. The NVR shall support Bonjour service when registering the camera.
25. The NVR shall be equipped with dynamic remote streaming option mode for enhanced remote access experience.
26. The NVR shall be compatible with StarNET Pro, StarNET Mobile +, and Web Live Client.
27. The NVR shall be compatible with network accessory: analog encoder, decoder, network keyboard, network switch, media converter, EoC converter, etc.
28. The NVR shall be controlled by network keyboard with USB mouse support and remote control.

29. The NVR shall provide up to 90% savings on storage and bandwidth, providing faster, better searching of clearer images by providing compatibility with Costar Intelligent Codec and MAT functions.
30. The NVR shall provide a self-diagnosis feature and troubleshooting report.
31. The NVR shall have 4 different Network Interface Card (NIC) Teaming modes -1. IEEE 802.3ad Dynamic Link Aggregation (LACP), 2. Generic Trunking, 3. Smart Load Balancing and Failover, 4. SLB with Auto Fallback Disable.

2.3.0 Technical Specification

2.3.1 Video Specification

1. Network Video Inputs: up to 256 IP cameras
 - A. The NVR can connect the cameras up to 256 by adjusting the network bandwidth for each camera even though the camera has a high video resolution such as 8MP or 12MP.
2. Supported Camera protocol: AXIS, PANASONIC, ONVIF™, Basler, Mobotix, Pelco, Sony, 360 Vision, RTP/RTSP
 - A. The NVR supports integrated third-party cameras with AXIS, PANASONIC, ONVIF™, Basler, Mobotix, Pelco, Sony, 360 Vision, and RTP/RTSP protocol as well as Costar cameras.
 - B. Analog Encoder can be attached via network to work with analog cameras.
 - C. Some third-party cameras may not be compatible with the NVR even though the cameras support AXIS, PANASONIC, ONVIF™, Basler, Mobotix, Pelco, Sony, 360 Vision, RTP/RTSP protocol.
3. Video Outputs: 2 VGA Output (1 Front, 1 Rear)
 - A. The NVR shows live video through a VGA monitor.
 - B. The NVR supports dynamic streaming feature. High resolution video profile (Live 1) is used for full or 2x2 screen layout, and Low-resolution video profile (Live 2) is used for 3x3 or more screen layout.
4. PTZ Control and Setup
 - A. The NVR 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 / Move to Preset, Fisheye Dewarping, and Advanced PTZ capabilities. When PTZ capable camera is connected, this function shall be enabled automatically.



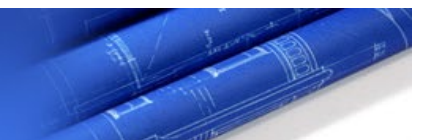
- B. Network Keyboard shall be supported with USB mouse.
5. Security
- The NVR shall have various protocols to strengthen security.
- A. Authentication: DirectIP®, Firewalls on NVRs, Two-Factor Authentication.
 - B. Network: TLS (Transport Layer Security), FEN (For Every Network) Security.
 - C. Image Data: iBank, Chained Fingerprint, Edge Encryption Recording.
6. Additional Information
- A. The NVR shall support the following features: Sequence Monitoring, Screen Freeze, Covert cameras, Privacy Mask, Color Control (Brightness, Contrast, Saturation, Hue), event monitoring.
 - B. The NVR shall display camera ID, recording status, and recording mode information on the screen.
 - C. The NVR shall display advanced information such as information port such as port number, resolution, codec, and IP camera connection number.

2.3.2 Audio Specifications

- 1. The NVR does not have a designated audio port.

2.3.3 Recording Specifications

- 1. Maximum Recording throughput
 - A. The NVR shall support up to 1024 Mbps(128MBps) recording throughput
- 2. Recording Resolution: Up to 12MP
- 3. Video Compression: H.264, H.265
- 4. Recording Schedule
 - A. The NVR shall allow camera-by-camera configuration of the following recording modes:
 - i. Time-Lapse Recording (Continuous), Event-Based Recording, Time-Lapse Recording with Event-based Recording, Panic Recording, Pre / Post Event Recording
 - B. The NVR shall support the configuration of the following video parameters for each available stream on connected cameras.
 - i. Frame Rate, Resolution, Quality (Bit Rates), Compression type.
 - C. The NVR 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 time per each occurred



event

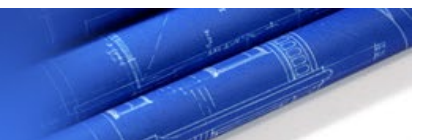
- D. The NVR shall include the ability for Pre-Event recording, which records video for a specified time before an event or alarm has occurred.
- 5. Bitrate Control Mode: CBR (Constant Bit Rate) / VBR (Variable Bit Rate)
- 6. Additional Information
 - A. The NVR shall support individual camera Recording profile Setup.
 - B. The NVR shall be able to configure the camera's live and recording resolution, compression method, picture quality, transfer speed, frame rate settings in Stream setup. In recording mode, the factory default resolution is set at the maximum of the camera's capability. This is adjustable parameters according to custom configuration.
 - C. NVR shall record up to 256 audio inputs if the connected cameras and devices support audio features.

2.3.4 Playback Specifications

- 1. Performance
 - A. The NVR shall support 64 channels Full HD synchronous playback. (Recommended to use Client on another pc)
- 2. Display Format
 - A. The NVR shall offer multi-screen playback (single-screen, multiple layouts), sequence display (displaying images from one camera image by image), and full-screen display.
- 3. Search Mode: Time-lapse, Event log, Motion, Text-in, Thumbnail
 - A. The NVR shall provide various search filters for fast retrieval; Calendar Search, Go to Search, Record table search, Search by Event, Motion, Text-in, Bookmark, and Museum Search.

2.3.5 Storage Specifications

- 1. SDD: 2 240GB SDD for Operating System
- 2. HDD: 8 HDD SATA/SAS bays.
- 3. RAID 0, 1, 5, 6, 10 are supported.
- 4. Total Capacity: Max 128TB with 8 x 3.5" SAS/SATA HDDs
 - A. The NVR shall support increased recording storage capability if an external storage device such as CSP-10EXT-48TB unit is connected with a storage controller.
- 5. Data Export
 - A. Device: USB Storage Device (USB HDD, USB Memory, etc.)
 - B. Data Export with Audio: Supported
 - C. Multichannel Data Export: Supported
 - D. The NVR shall have the ability to save the current images to Bitmap, JPEG, and video clip as



a “.exe” (Clip Player) file. The Clip Player is a self-executable file (Single / Multi-Channel with compressed video and audio), which requires no additional program to playback on any compatible Windows PCs. The exported file can be saved using USB thumb drives.

6. Additional Information

- A. The NVR 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:

- A. 4 Gigabit Ethernet RJ45 ports (Broadcom Net Xtreme), 1 Designated Service RJ45 port.

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 Pro, StarNET Mobile +, Web

- A. StarNET Pro: Compatible with Microsoft Windows OS
- B. StarNET Mobile +: iOS, Android, and Windows Mobile platform
- C. WebGuard Web works with NVR's embedded web server using a Web Browser with ActiveX plug-in.

4. Maximum Concurrent Client Connections

- A. Remote connection: 64 (Search: 10)

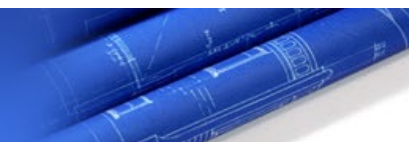
2.3.7 Event Specifications

1. Trigger Events: Alarm in, Audio detection, Motion detection, Trip-zone, Tampering, Video loss, Text-in, Face detection, and System events

- A. The NVR shall support alarm sensor trigger-in and relay out functions in such event of motion detection, video loss detection, video obscuring, tampering, and abnormal system reboot.

2. Event Notification: Email, notification Remote S/W, Push notification (StarNET Pro + Mobile)

- A. The NVR shall support e-mail notification when events occur sensor, motion, video loss, camera obscuration, Text-in and/or stop recording
- B. The NVR shall include a system log report support those 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 (DB9 Terminal Block)
2. User Control Interface: Front Button, Mouse, Network Remote Keyboard, RS232C Command Interface
3. USB Interface: USB 2.0 x 2, USB 3.0 x 2, Service only Micro USB port 1

2.4.0 Mechanical Specifications

2.4.1 Dimensions

1. Form factor: Rack (2U)
 2. Height: 86.8mm (3.4")
 3. Width: 434.0mm (17.08")
 4. Depth: 737.5mm (29.03")
 5. Weight: 28.6kg (63lbs)
- * Dimensions do not include bezel

2.4.2 Environmental Specifications

1. Operating Temperature: 10°C to 35°C (50°F ~ 95°F)
2. Storage Temperature: -40°C to 65°C (-40°F ~ 149°F)
3. Operating Humidity: 10% ~ 80% Relative Humidity.
4. Non-operating Humidity: 5% to 95% Relative Humidity, 38.7°C (101.7°F) Maximum Wet Bulb Temperature, Non-condensing
5. Operating Vibration: 0.26 Grms at 5 Hz to 350 Hz
6. Storage Vibration: 1.88 Grms at 10 Hz to 500 Hz for 15 min
7. Operating Shock: Six consecutively executed shock pulses in the positive and negative x, y, and z axes of 6 G for up to 11ms
8. Storage Shock: Six consecutively executed shock pulses in the positive and negative x, y, and z axes (one pulse on each side of the system) of 71 G for up to 2 ms
9. Operating Altitude: 3048m (10,000ft)
10. Storage Altitude: 12,000 m (39,370 ft)

2.4.3 Electrical Specifications

1. Power Supply Unit Input: 50/60Hz, 100-240Vac, 10-5A.
2. PSU Classification: Platinum
3. Power Consumption: 750W
4. Heat Dissipation: 2891 BTU/hr
5. PSU Features: Redundant, Hot Swappable.

2.5.0 Certifications

1. Emissions Classification: FCC Rating Class A
2. Electromagnetic Compatibility (EMC): CISPR 22, EN55022, EN55024, FCC CFR 47, Pt 15, ICES-003, CvNS14336-1, CNS13438, GB4943, GB9254, EN 61000-3-2, EN61000-3-3
3. Directives: RoHS, Reach (SVHC), WEEE

Version History

Version	Writer	Revision Date	Remarks
1.0	Tech Support	10.06.2020	Initial Release

