

# 256-channel Video Surveillance Server

3U 16 HDD Network Video Recorder and Server



## System Overview

The Dahua Video Surveillance Server combines a powerful Graphics Processing Unit (GPU) and an advanced Network Video Recorder (NVR) into an all-in-one surveillance server. This advanced NVR allows simultaneous recording of 256 cameras and offers 768 Mbps of bandwidth.

## Functions

### Intelligent Video System (IVS)

IVS is a built-in video analytic algorithm that delivers intelligent functions to monitor a scene for Tripwire violations, intrusion detection, and abandoned or missing objects. A camera with IVS quickly and accurately responds to monitoring events in a specific area. In addition to scene analytics, the camera detects and captures a snapshot of human face in a defined area within a scene, and offers tamper detection by recognizing a dramatic scene change and generating a warning message to inspect the camera.

### N+M Hot Standby

The highly reliable N+M Hot Standby redundancy design provides a secure, fail-over technique ensuring immediate backup. In the event of a system failure, the standby server instantly takes over the primary server's actions ensuring no data is lost.

### Fisheye Dewarp

Fisheye dewarping solves the problem of distortion in the circular panoramic view. The NVR offers various dewarping modes for different installations and configurations that enhance the video, in both live or playback modes. Each dewarping mode offers options to adjust each scene.

- Intel Quad-core Processor
- Maximum 768 Mbps Incoming Bandwidth
- 256 IP Channel Video Access
- Up to 24 MP Resolution for Preview and Playback
- Compatible with Dahua Analytics+ Cameras
- Supports PTZ Cameras with Smart Tracking
- Supports RAID 0/1/5/6/10/50/60
- SAS 3.0 for Storage Extension
- Three (3) HDMI and One (1) VGA Video Outputs
- Redundant Power
- Five-year Warranty\*

### Automatic License Plate Recognition

The NVR automatically captures and stores vehicle license plate images from a dedicated license plate capture camera connected to the NVR. During playback, an operator can perform a license plate search by Time and Date to view thumbnail images of all plates captured during the specified time period. License plate capture technology offers effective entrance/exit management, traffic surveillance, and parking lot monitoring.

### High Efficiency Video Coding (H.265)

The H.265 (ITU-T VCEG) video compression standard offers double the data compression ratio at the same level of video quality, or substantially improved video quality at the same bit rate, as compared to older video compression technologies. H.265 offers such impressive compression by expanding the pattern comparison and difference-coding, improving motion vector prediction and motion region merging, and incorporating an additional filtering step called sample-adaptive offset filtering.

### Smart H.265+

Smart H.265+ is the optimized implementation of the H.265 codec that uses a scene-adaptive encoding strategy, dynamic GOP, dynamic ROI, flexible multi-frame reference structure and intelligent noise reduction to deliver high-quality video without straining the network. Smart H.265+ technology reduces bit rate and storage requirements by up to 70% when compared to standard H.265 video compression.

Technical Specification			
System			
Main Processor		Embedded Micro Controller	
Operating System		Embedded LINUX	
Operating Interface		Web (PCAPP), Local GUI	
Analytics+ Recording			
Perimeter Protection		256 Channels	
Human Face Detection		128 Channels	
License Plate Recognition		64 Channels	
Video Parameters			
Remote Connections		256 Channels	
Network Bandwidth		RAID	Single HDD
	Incoming	768 Mbps	768 Mbps
	Recording	768 Mbps	512 Mbps
	Outgoing	768 Mbps	768 Mbps
Supported Resolution		24 MP, 16 MP, 12 MP, 8 MP, 6 MP, 5 MP, 4 MP, 3 MP, 1080p, 960p, 720p, D1, CIF, QCIF	
Decoding Capability		2 Channels of 24 MP at 20 fps 3 Channels of 16 MP at 20 fps 6 Channels of 12 MP at 20 fps 7 Channels of 12 MP at 15 fps 6 Channels of 8 MP at 30 fps 12 Channels of 8 MP at 15 fps 7 Channels of 6 MP at 30 fps 9 Channels of 5 MP at 30 fps 11 Channels of 5 MP at 25 fps 12 Channels of 4 MP at 30 fps 18 Channels of 4 MP at 20 fps 19 Channels of 3 MP at 25 fps 12 Channels of 1080p at 60 fps 24 Channels of 1080p at 30 fps 36 Channels of 720p at 30 fps	
Video Output		VGA: One (1) Channel HDMI: Three (3) Channels Supports 4K Video Output VGA Out 1 and HDMI Out 1 send the same video stream	
Multi-screen Display		Maximum 36-channel Local Live View Maximum 16-channel PCAPP Live View Customized Display	
Third-party Support		ONVIF, RTSP, Sony, Panasonic, Axis, Arecont, Pelco, Canon, Samsung	
Network			
Video Compression		Smart H.265+, H.265, Smart H.264+, H.264	
Audio Compression		G.711a, G.711u, PCM, G726	
Interface		Four (4) RJ45 Ports (10/100/1000 Mbps) Self-adaptive E	
Network Port Mode		NIC Binding Mode, including: Multiple-address Mode, Load Balancing, Fault-tolerance	
Network Protocol		HTTP, HTTPS, TCP/IP, IPv4, RTSP, UDP, SMTP, NTP, DHCP, DNS, DDNS, P2P	
Interoperability		ONVIF (Profile S, T and G), CGI, SDK	
Web Browser		PCAPP (other browser can only setup, no live view)	
Mobile Operating System		iOS, Android	

Playback and Backup

Multiple-Channel Playback	Maximum 16-channel Playback
Record Search	Video Detection Search, Manual Record, I/O Alarm, Intelligent Event, All Records
Storage Medium	Internal HDD SAS Disk Array Enclosure
Backup Method	HDD Peripheral USB Storage Device
Playback Function	Play, Pause, Stop, Fast Forward, Fast Backward, Reverse Play, Frame by Frame Play, Full-screen, Backup (clip/file), Snapshot, Digital Zoom, Audio On/Off

Storage

Internal HDD	16 SAS/SATA 3.0 HDD Ports Up to 16 TB capacity for each Disk
HDD Mode	RAID 0/1/5/6/10/50/60

Alarms

General Alarm	Motion Detection, Tampering, Local Alarm
Anomaly Alarm	IPC offline alarm, storage error, HDD full, IP conflict, MAC conflict, login lock, AI module temperature alarm, AI module offline, fan malfunction
Intelligent Alarm	Human face detection, human face recognition, perimeter protection (intrusion, tripwire), plate recognition
Alarm Linkage	Record, snapshot (full image), local external alarm output, IPC external alarm output, access and control, audio prompt, buzzer, log, preset, email

Auxiliary Interface

Front Cover		7-in. HD LCD (1920 × 1080 or 1280 × 1024), Hot-swappable
Audio	Input	One (1) Channel (reserved)
	Output	One (1) Channel
Alarm	Input	16 Channels
	Output	Eight (8) Channels
eSATA		One (1) Port (reserved)
SAS		Two (2) SAS 3.0 Ports
RS232		One (1) Port (for debugging or transparent COM data)
USB		Four (4) Ports: <ul style="list-style-type: none"><li>Two (2) USB 2.0 Ports (front panel)</li><li>Two (2) USB 3.0 Ports (rear panel)</li></ul>
Video Output	HDMI	Three (3) Channels, supports 4K output
	VGA	One (1) Channel
Network		Four (4) RJ45 Ports (10/100/1000 Mbps) Self-adaptive Ethernet Ports

Electrical	
Power Supply	100 VAC to 240 VAC ±20%, 50/60 Hz Redundant Power Supported
Power Consumption	110 W, without HDD and idling
Fan	Redundant module, hot-plug

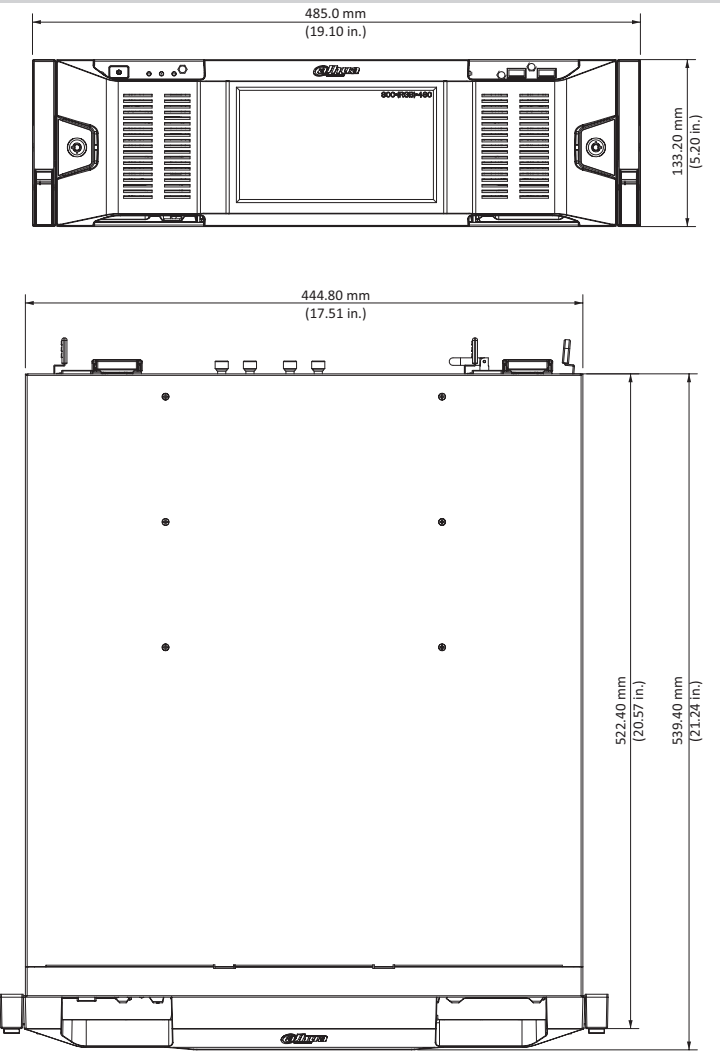
Environmental	
Operating Conditions	0° C to +45° C (32° F to 113° F), 10% to 90% RH
Storage Conditions	0° C to +40° C (32° F to 104° F), 30% to 85% RH
Operating Altitude	5000.0 m (16,404.20 ft)

Construction		
Dimensions	Chassis	3U, 444.80 mm x 539.40 mm x 133.20 mm (17.51 in. x 21.24 in. x 5.20 in.)
	With Mounting	485.0 mm x 539.40 mm x 133.20 mm (19.09 in. x 21.24 in. x 5.20 in.)
	Packaging	689.0 mm x 779.0 mm x 464.0 mm (27.13 in. x 30.67 in. x 18.27 in.)
Net Weight		16.0 kg (35.27 lb)
Gross Weight		17.0 kg (37.48 lb)
Installation		Desktop or Rack-mount

Certifications	
Safety	UL 60950-1 CAN/CSA C22.2 No. 60950-1-07 EN 60950-1/IEC 60950-1
Electromagnetic Compatibility (EMC)	CFR Part 15 FCC Subpart A EN55024, EN55035, EN50130-4, EN60950-1

Ordering Information		
Type	Part Number	Description
IVSS	DHI-IVSS7016DR	3U 16 HDD 256 Channels Video Surveillance Server with Redundant Power, LCD screen

Dimensions (mm/in.)



Rear Panel

