



# GVD AI Cloud VMS 4.0 Workstation, Conductor, & Videowall Decoder

## E4200, E2200, D4200, & SW-E1100

As GVD upgrades the **VMS** to **4.0**, a new architecture is ushered in, with a string of new features, including cloud, AI readiness, and distributed (hybrid) storage.

Allowed by the new architecture, GVD **VMS 4.0** offers an easy way to scale up to lessen the complexity of large-system integration and communication.

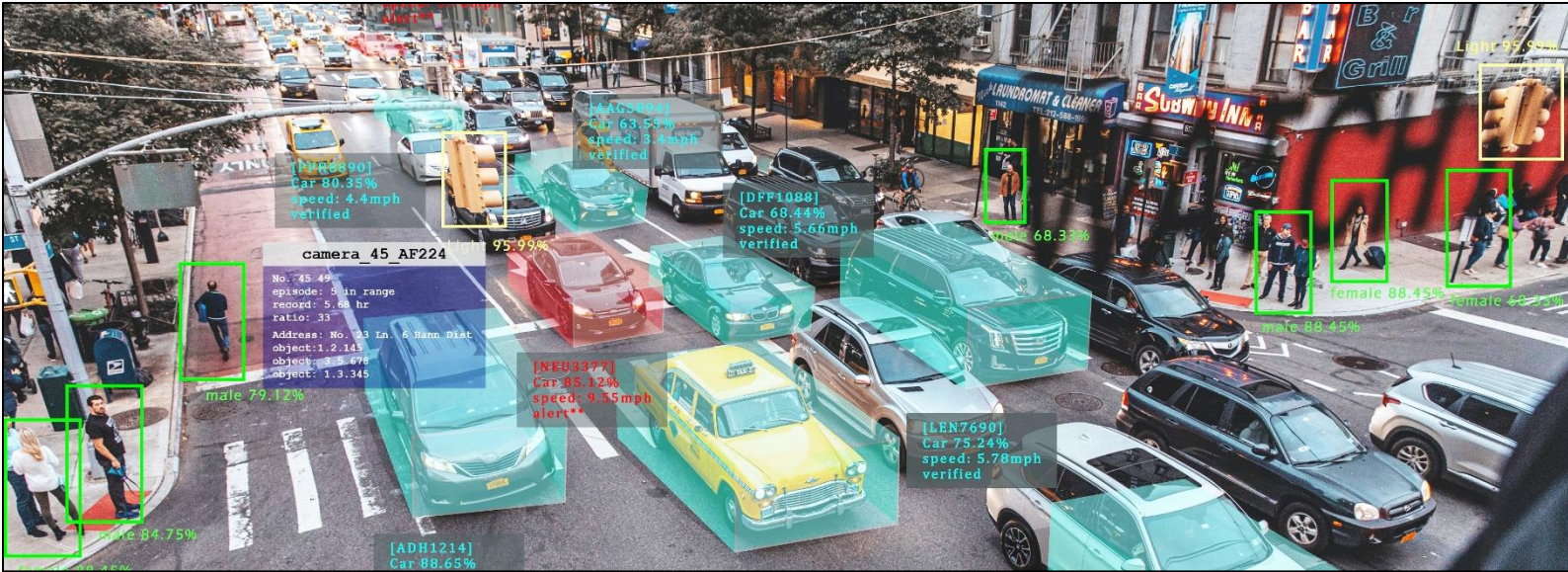
The **4.0** can easily stack up to a group of workstations, video walls, NVRs, data servers, storage, 3<sup>rd</sup>-party systems, and 100,000 IP cameras. The system also allows the **VMS Workstations** to run any operation once to apply throughout the system.

- ▶ 100,000 IP cameras support
- ▶ **iGance Dashboard** powered by enterprise *Elasticsearch* to query system big data
- ▶ High-capacity system integration and communication.

Another highlight of GVD **VMS 4.0** is the **iGance Dashboard**, which can encapsulates system big data with simple graphs in a real-time way. All system health, device status, device recording status, device recording days, common system tasks, etc., can be quantified and visualized through pies and charts.

GVD **VMS 4.0** is cloud-based and AI-ready and manages up to 100,000 channels. It is your best choice for all sophisticated video analytics and critical missions.





# Software Features

## iGance Dashboard



GVD iGance Dashboard not only sketches overall system statuses with graphs, but also breaks down system details, including NVR status, channel video connection status, video recording days, and video recording status.



## AI Deep-Learning



GVD has the most sophisticated AI engines for high-end video analytics up to date, including Facial Recognition, LPR, Vehicle Classification, and Behavior Analysis. GVD **Deep Learning** uses NVIDIA's high-performance GPU to minimize image processing time and significantly shorten the time of running algorithms.

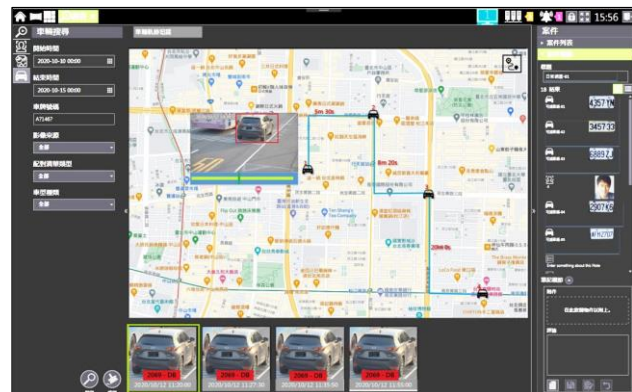


## eMaps



To ease the complexity of large-scale IP video surveillance, GVD features *eMaps*, which further feature two types: Geographic street maps and floor plans. With these maps, security operators can easily oversee and manage a big group of devices deployed city-wide or nation-wide and quickly spot a device to respond to an alarm.

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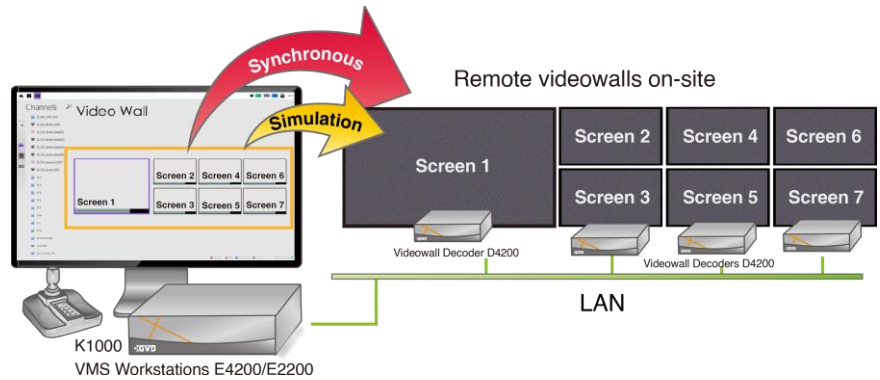


# Software Features

## Synchronous Videowall Control



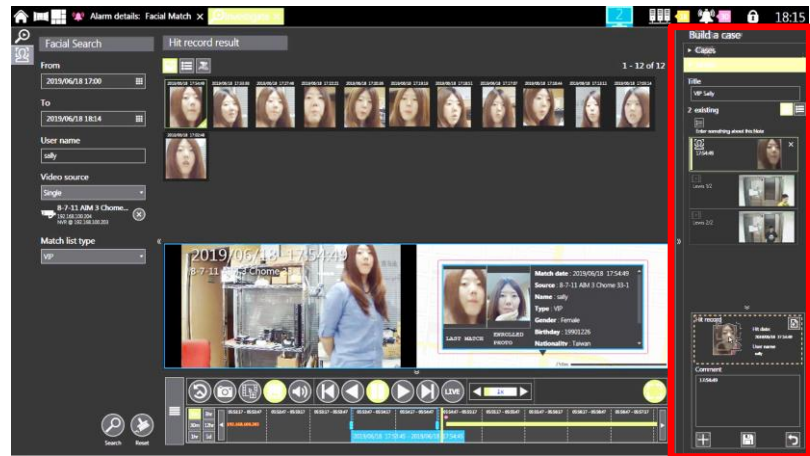
"Synchronous Videowall Control" means your operations at the system center will promptly apply to a remote videowall. Supported content and operations on videowalls include Alarm list, video live-view, video playback, PTZ, and fish-eye video dewarp. Also, the UI makes you aware of a videowall's actual location on-site.



## CaseBuilder



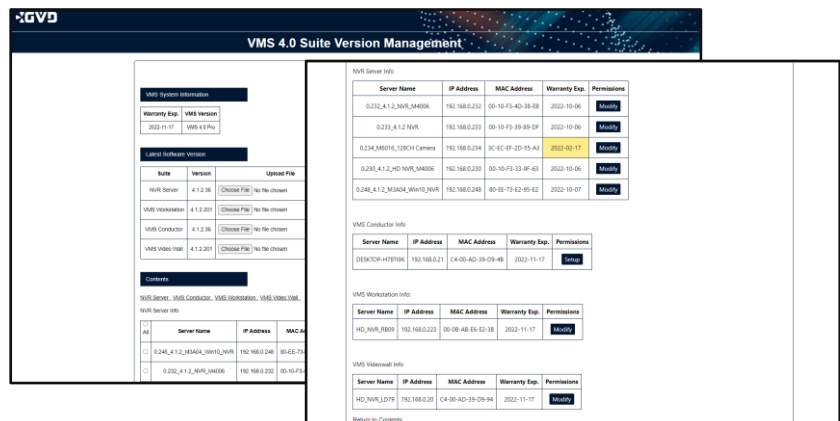
GVD CaseBuilder can systematically inquire into a case on your business floors. You can document each of your investigation act with an "Investigation Note", attached with text, video clip, and screenshots for support. You can further store such notes in an "Investigation Case", which then forms organized documentation of your investigation.



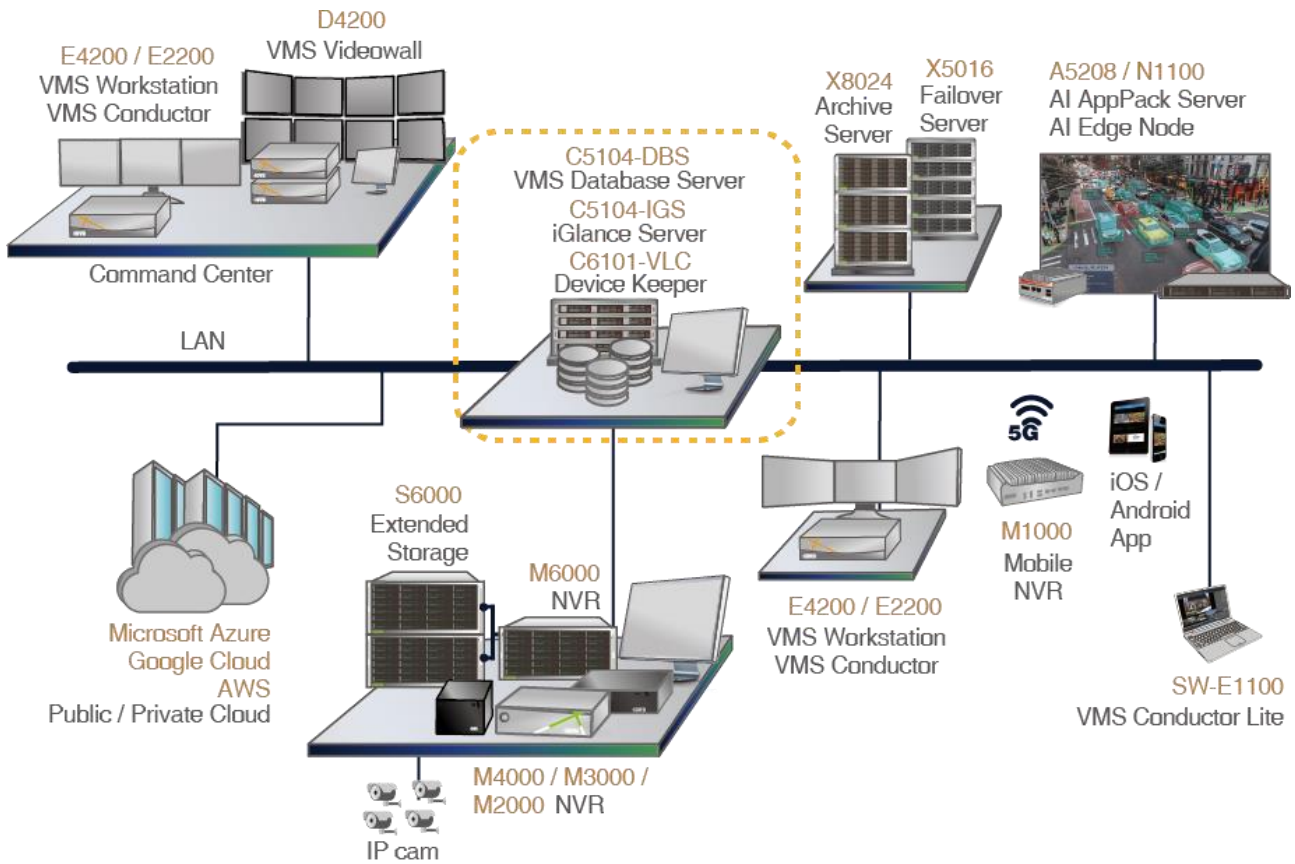
## Device Keeper



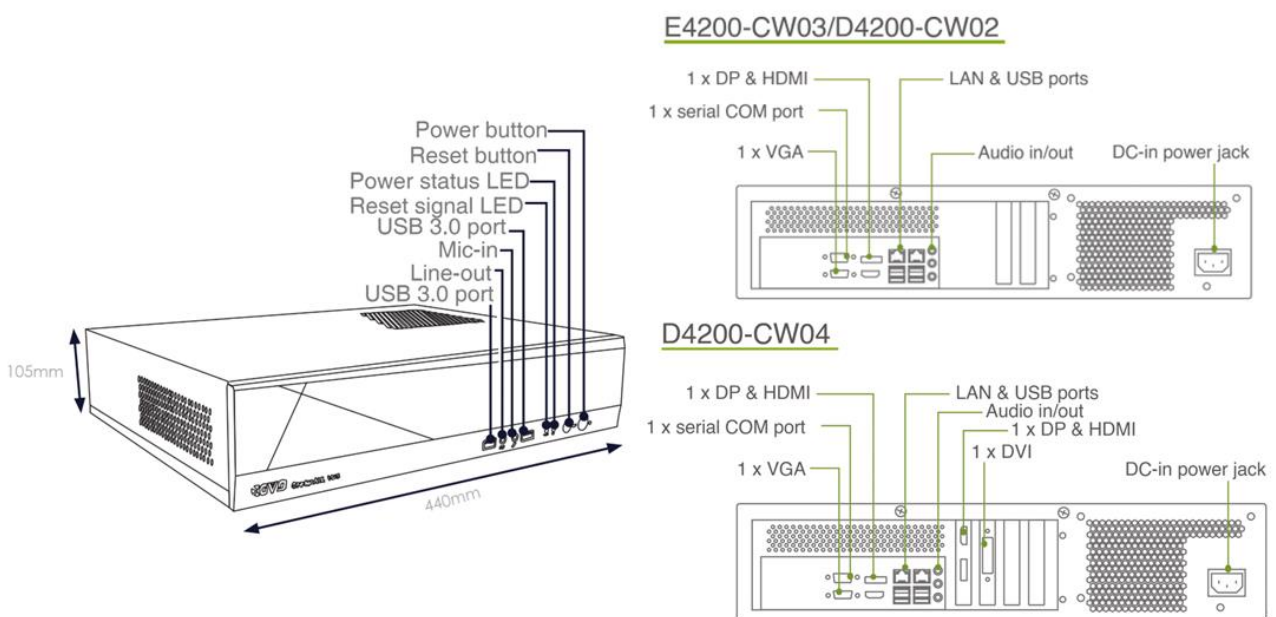
GVD Device Keeper is an automated system to maintain a large group of GVD servers. With four menus, **Recipe, Version Management, License Management, and Interlink Permission Management**, you may overview software versions, dispatch licenses, and auto-upgrade a lot of GVD servers. All tasks are centralized and simplified in Device Keeper to avoid human mistakes and improve efficiency and productivity.



# System Architecture



# Hardware Dimensions



# Hardware Specifications

## E4200, E2200, & D4200



Product		E4200-CW03	E2200-CW03	D4200-CW04
Description		VMS Manager	VMS Conductor	VMS Videowall
System	CPU	Intel® Core™ 8 Core		
	Memory	16G		
	Operating System	Windows® 10 IoT Enterprise		
	Watchdog	Hardware watchdog & software watchdog		
Storage	Hard Disk Drive	1 x 500G SSD		
Display	Output	1 x VGA, 1 x HDMI, 1 x DP		MB: 1 x VGA, 1 x HDMI, 1 x DP Graphic: 1 x HDMI, 1 x DP, 1 x DVI
	Local display resolution	1920 x 1080 or 4096 x 2160 (w/ HDMI)		
	Multi-display	2 x Full HD + 1 x 4K (HDMI) or 3 x Full HD	2 x Full HD + 1 x 4K (HDMI) or 3 x Full HD	2 x Full HD + 2 x 4K (HDMI) or 4 x Full HD
Interface	USB port	Front: 2 x USB3.0; Rear: 4 x USB3.0		
	Audio port	Front: 1 x mic-in, 1 x line-out; Rear: 1 x mic-in, 1 x line-in, 1 x line-out		
	Serial COM port	Rear: 1 x RS232 (DB9)		
Network	Interface	2 x 1Gb LAN		
	Protocols	TCP/IP, UDP, HTTP, HTTPS, SMTP, SNMPv3, DNS, DHCP, NTP, ARP, ICMP, FTPc, FTPs, DDNS, RTP (RTCP, RTSP), IGMPv3, UPnP, CIFS, NFS, IEC802.1x		
Power	Voltage	100~240 Vac, 50-60Hz		
	PSU	450W	300W	
	Redundancy	N/A		
	Consumption (w/o HDD)	110W		180W
Environment	Operating temp.	0°C ~40°C (32°F ~104°F)		
	Storage temp.	-10°C~45°C (14°F~113°F)		
	Operating humidity	10%~90%		
	Storage humidity	5%~95%		
Mechanic	Certification	CE & FCC		
	Dimensions (W)x(H)x(D)	440mm x 105mm x 340mm		
	Net weight w/o HDD	3.91 kg		4.63 kg
Video	Display resolution	D1, 1.3~20 megapixels		
	Local display performance	D1@1800fps (AVS enabled) 2M@375fps (GPU enabled)	D1@1800fps (AVS enabled) 2M@725fps (GPU enabled)	D1@2100fps (AVS enabled) 2M@1440fps (GPU enabled)

# Software Specifications

## E4200 & D4200



Software (VMS Manager)	E4200-CW03	D4200-CW04	
<b>Management</b>	No. of connected cameras per system	10,000	
	No. of connected NVRs per system	1,024	
	No. of users	No restriction	
	No. of connected video wall screens	40	
	No. of monitors	3	4
	NVR management	Yes, supported via the bundled SW-E2200-CW03	
	Camera management	Yes, supported via the bundled SW-E2200-CW03	
	Alarm management	Yes	
	Device management and search	Yes	
	Vehicle management	Yes	
	Failover Server (X5016)	Supported	
	Backup Server (X8024)	Supported	
	Directory Server (C5002-DDS)	Supported	
	Integration Gateway (C5001 Series)	Supported	
	Video Wall Decoder (D4200 Series)	Supported	
	LPR NVR (M4106-LPR)	Supported	
	POS NVR (M-Series NVR)	Supported	
	ATM NVR (M-Series NVR)	Supported	
	Keyboard with joystick	Yes, GVD <b>K1000</b> for PTZ controls	
<b>Video controls</b>	Video codec	H.265, H.264+, H.264, MPEG4, M-JPEG, MxPEG	
	Audio codec	G.711, G.726, AAC	
	2-way audio	Yes	
	Display resolution	CIF ~ 20 megapixels	
	Display performance (AVS enabled)	1800@D1 ( <b>E4200</b> ); 1800 @D1 ( <b>D4200-CW02</b> ); 2100@D1 ( <b>D4200-CW04</b> )	
	Streaming type	Unicast & Multicast	
	Encryption	Yes, AES-128bits	
	Metadata	Yes	
	Adaptive Video Streams	Yes	
	HW acceleration (GPU decoding)	Yes (Intel, nVIDIA)	
	Video stream down sampling (resolution & FPS) option	Yes	
	Maintenance of image aspect ratio	Yes	
	Video buffering	Yes	
	Snapshot	Yes	
	Digital zoom	Yes	
	ROI	Yes	
	VCA metadata overlays on-video	Yes	
	Uninterrupted live video from NVR/Failover Server	Yes	
	Uninterrupted video playback from cameras / NVRs / Failover / Backup Servers	Yes	
	Fisheye video display	1P, 2P, 1x1, 2x2, and original view	
	Display pattern	1, 4, 5, 6, 8, 9, 12, 13, 16, 18, 24, 25 (A 64-video pattern (max.) is supported via SW-E2200-CW03)	

# Software Specifications

## E4200 & D4200



Software	(VMS Manager)	E4200-CW03	D4200-CW04
	View operation	ROI & ePTZ, software de-warp & ePTZ, digital zoom in/out, on-screen PTZ	
	Playback control	General playback (forward/backward/pause), jump to the next / previous frame, go to a certain date, speed controls (0.25x, 0.5x, 1x, 2x, 4x, 8x, 16x, 32x)	
	Video export	Yes, Download Manager (*.MKV, *.AVI and *.AVA support)	
<b>Videowall controls</b>	User's remote switch among video patterns	Yes	
	User's remote video playback controls	Yes	
	User's remote control of video digital zoom	Yes	
	User's remote control of panoramic fish-eye de-warp	Yes	
	User's remote control of pushing video	Yes	
	User's remote control of pushing GIS/Facility map to video wall	Yes	
	Synchronous video controls (E4200 vs. D4200)	Yes	
	Adaptive Video Streams	Yes	
	Video stream down sampling (resolution & FPS) option	Yes	
	Video wall control panel	Yes (Dispatch single/multiple videos, video patterns, touring, change pattern layout, change screen settings)	
	Uninterrupted live video from NVR/Failover Server	Yes	
Uninterrupted video playback from cameras / NVRs / Failover / Backup Servers	Yes		
<b>Alarm management</b>	Alarm video popup	Yes	
	Alarm message popup	Yes	
	Active alarm list (on one full screen)	Yes	
	Active alarm list (on map)	Yes	
	Alarm video instant playback	Yes	
	CaseBuilder	Yes	
<b>Playback</b>	Independent playback in playback mode	Yes	
	Synchronous playback mode	Yes, up to 16 channels via SW-E2200-CW03	
	Event/alert list in recording	Yes	
	Graphical timeline	Yes	
	Adjust playback speed	Yes	
	Looping	Yes, via SW-E2200-CW03	
	Digital Zoom	Yes	
	ROI	Yes	
	Fisheye video de-warp	1P, 2P, 1x1, 2x2, and original view	
	VCA metadata overlays on-video	Yes	
	Smart search	Search for missing objects, foreign objects, ATM/POS transaction data via SW-E2200-CW03	
CaseBuilder	Yes		
<b>Map</b>	HTML map	Yes, via SW-E2200-CW03	
	Facility map	Yes	
	GIS map	Yes, with OpenStreetMap	
	Standard graphical maps	Yes	
	Number of linked map layers	No restriction	

# Software Specifications

## E4200 & D4200



Software	(VMS Manager)	E4200-CW03	D4200-CW04
	Video preview and instant playback	Yes	
	Device status (alert, video lost, etc.)	Yes	
	Quick-find of a device on map	Yes	
	Quick-find of an alert device on map	Yes	
	Integrated PTZ controls	Yes	
	Map navigator	Yes	
<b>PTZ</b>	PTZ controls	Mouse & GVD <b>K1000</b> (A keyboard with a joystick)	
	PTZ operation	Direction controls, zoom in/out, preset, patrol, to center position, auxiliary commands	
<b>Language</b>	Supported languages	VMS Manager supports English, Japanese, Korean, Traditional Chinese, & Simplified Chinese  SW-E2200-CW03 supports 20 languages including English, Spanish, French, Dutch, Italian, Japanese, Chinese, etc;	



# Software Specifications

## SW-E1100 & SW-E2200-CW03

Software Product		SW-E2200-CW03	SW-E1100
Description		VMS Conductor software	PC Thin Client
Hardware recommendation	CPU	Intel® Core™ i5, recommended i7	
	RAM	4GB at least	
	Operating System	Microsoft® Windows® 7, 8.x or 10 (64 Bit) (Professional, Ultimate), Microsoft® Windows® Server 2008/2012 (64 Bit)	
	Display (Triple monitors support)	Min. 2048 MB graphic memory (GeForce GTX graphics cards of at least 1050 Ti are recommended for the GPU); 1280 x 1024 for the minimum resolution and 1680x1050 for the recommended resolution)	
	LAN	Gigabit Ethernet	
	Input devices	USB keyboard; wheeled USB mouse	
Management	No. of connected NVRs	128	3
	No. of connected cameras	600	128
	No. of users	No restriction	
	No. of connected video wall screens	10	No
	No. of monitors	3	1
	NVR management	Yes	No
	Camera management	Yes	No
	Alarm management	Yes	
	LPR NVR (M4106-LPR)	Supported	
	POS NVR (M-Series NVR)	Supported	
	ATM NVR (M-Series NVR)	Supported	
	Keyboard with joystick	Yes (K205)	No
Video Controls	Video codec	H.265, H.264+, H.264, MPEG4, M-JPEG, MxPEG	
	Audio codec	G.711, G.726, AAC	
	2-way audio	Yes	
	Display resolution	CIF ~ 20 megapixels	
	Streamin type	Unicast & Multicast	
	Encryption	Yes, AES-128bits	
	Metadata	Yes	
	Adaptive Video Streams	Yes	
	HW acceleration (GPU decoding)	Yes (Intel, nVIDIA)	
	Video stream down sampling (resolution & FPS) option	Yes	
	Maintenance of image aspect ratio	Yes	
	Video buffering	Yes	
	Sanpshot	Yes	
	Digital zoom	Yes	
	ROI	Yes	
	VCA metadata on video (overlay)	Yes	
	Fisheye video display	1P, 2P, 1x1, 2x2, and original view	
	Display pattern	1, 2, 3, 4, 5, 6, 8, 9, 12, 13, 16, 18, 24, 25, 36, 48, 64	
	Viewing operation	ROI & ePTZ, software de-warp & ePTZ, digital zoom in/out, on screen PTZ	
	Playback controls	General playback (forward/backward/pause), jump to the next / previous frame, go to a certain date, speed controls, go to some time later / ago (0.5/1/5 minutes)	

# Software Specifications

## SW-E1100 & SW-E2200-CW03

Software Product		SW-E2200-CW03	SW-E1100
	Video export	Yes, *.MKV, *.AVI and *.AVA supported	
Video wall Controls	User's remote switch among video patterns	Yes	No
	User's remote control of video playback	Yes	No
	User's remote control of pushing video	Yes	No
	Adaptive Video Streams	Yes	No
	Video stream down sampling (resolution & FPS) option	Yes	No
Alarm management	User's remote switch among video patterns	Yes	No
	User's remote control of video playback	Yes	No
	User's remote control of pushing video	Yes	No
	Adaptive Video Streams	Yes	No
	Video stream down sampling (resolution & FPS) option	Yes	No
Playback	Independent playback in playback mode	Yes	
	Synchronous playback mode	Yes, up to 16 channels	
	Event/alert list in recording	Yes	
	Graphical timeline	Yes	
	Adjust playback speed	Yes	
	Looping	Yes	
	Digital Zoom	Yes	
	ROI	Yes	
	Fisheye video de-warp	1P, 2P, 1x1, 2x2, and original view	
	VCA metadata overlays on-video	Yes	
	Smart search	Search for missing objects, foreign objects, or ATM/POS transaction data	
	Maps	HTML map	Yes
Standard graphical maps		Yes	
Number of linked map layers		No restriction	
Video preview and instant playback		Yes	
Device status (alert, video lost, etc.)		Yes	
Integrated PTZ controls		Yes	
Map navigator		Yes	
PTZ	Controlling device	Mouse & GVD K205 (A keyboard with a joystick)	
	PTZ operation	Direction controls, zoom in/out, preset, patrol, to center position, auxiliary commands	
Language	Supported languages	20 languages including English, Spanish, French, Dutch, Italian, Japanese, Chinese, etc.	