



M1 Fanless ATM & Mobile NVRs

Small, powerful & travel-ready

With the M1 Series, GVD brings performance and mobility to NVRs. The M1 Series is GVD's brand new line of rugged NVRs to look after the safety of urban living from general business to critical missions. The whole series are fanless to allow quiet and clean thermal mechanism to make the system reliable and flexible-to-install.

- Fanless design for location-flexibility and reliable running
- Supports 8 IP cameras, with PoE LAN ports
- 3G, 4G, and WiFi for real-time video monitor and alarm notice (3G/4G for Mobile NVRs only)
- Railway transportation standard EN50155/EN50121-3-2 certificated (Mobile NVRs only)
- European banking standard UVV-Kassen certified (Fanless ATM NVR only)



2 Markets

Mobile & Fanless ATM NVR

To answer the rugged needs, the M1 Series presents two different groups of NVRs, one is the Mobile NVRs for vehicle transportation, and the other is the Fanless NVRs for ATM banking and city surveillance on outdoor streets. Both groups are ruggedized by both hardened external housing and selected internal components. The following will deliberate these two groups of NVRs.

Mobile NVRs



MT142, MT242, MT184, MT284

Exactly as the name suggests, GVD **Mobile NVRs** are made to work while traveling on the road. They come with the license for 2 to 8 camera channels, PoE LAN ports, rich data connections (some of them on option), ignition power management, and isolated DIO. PoE LAN ports facilitate the in-car installation of cameras while rich data connections reinforce the NVR's contact with the business headquarters or control center. Ignition power management monitors car battery usage and prevents NVR startup failure. These NVRs are also equipped with isolated DIO to let you add in-car devices without much trouble. With a GPS receiver opted for, you can pinpoint the vehicle hundreds of miles away on a map in a real-time way. And, with a G-sensor loaded (also on option), the **Mobile NVR** can instantly launch alerts once serious vibration or car crash happens. Close and seamless collaboration between an NVR and the control center is so easy to get.

Each of the **Mobile NVR** models meets the standards of **E-Mark** and **EN50155**, **EN50121-3-2**, and **EN61373**.

The **Mobile NVRs** spread the protection beyond the traditional business floors, and therefore they can be accommodating for some itinerant activities such as a bank CIT car's bank pickup or the fleet management needed by transportation business.

Design Concept

- **Hardened structure**
increases the ruggedness
 PoE LAN ports with M12 connectors are featured on the M1242 to withstand intensive industrial uses, especially in moving vehicles.
- **Fanless cooling**
dust-free & noise-free for clean, quiet and reliable system running
- **Wide-range DC-in**
prevents incorrect voltage input that damages the system

- **Wide-temperature design**
withstands harsh environment
- **Vibration/shock sustainable**
Shock/vibration sustainable with EN50155 & EN50121-3-2





2 Markets

Mobile & Fanless ATM NVR

Fanless ATM NVRs

M1142-A

Alongside the Mobile NVRs, there is a “Fanless NVR” dedicated to ATM application, the M1142-A This NVR comes with 1) fanless cooling system, and 2) wide-temperature (-20~60°C) tolerance to withstand harsh environment.

This fanless ATM NVR has everything needed for a robust embedded system. It has rich I/O ports, including USB 3.0 and serial COM, HDMI and VGA ports, and it supports two 2.5” HDD/SSD to bring you ample storage. The ruggedness of this NVR makes itself good choice for mission-critical street control and ATM.

This fanless NVR supports all brands of ATM to video-document each transaction at an ATM, by the help with only an additional protocol converter box. And the NVR is certified by UVV-Kassen (EU) to guarantee high quality for digital recording devices used in financial institutions.

For street control, this fanless NVR is also good for a “Smart City”, in which NVRs are installed disparately in a city to collect and transmit video to a government entity for analysis to deter crimes or manage traffic.

Design Concept

- **Fanless cooling**
dust-free & noise-free for clean,
quiet and reliable system running



- **Tiny form factor**
for space limited applications, small but powerful



- **Wide-temperature design**
withstands harsh environment





Product Highlights

■ Book-sized

Although taking only a small footprint of roughly 3.5", the Fanless NVR has everything needed for a robust embedded system. It includes rich IO and 2.5" storage inside. The Mobile NVRs are equally attractive when it comes to size. Except for the extra powerful M1184/M1284, they come in small book size to make it easier for installation.

■ Power over Ethernet

The whole M1 Series features PoE LAN ports. Cameras can tap power from the NVR through Ethernet cables. Each port delivers power up to 25.5W and simultaneously transfers data up to 1000 Mb/s over a single CAT-5e/CAT-6 cable, which saves the need to get an extra source of energy and makes the camera installation easy.

■ Video walls at Control Center

A video wall with dozens of synchronous live videos on multiple monitors can help the control center quickly cover as many conditions and situations as possible going on with its fleet. Despite vast video traffic, the NVR needs not compromise with video quality since GVD **Central Management Solution** is sophisticated with the techniques to optimize live video streams. Besides, the solution has enhanced video wall management tool to let you arrange onscreen GUI representation of video walls to reflect the real-world positions.

■ Control Center Solution

For enterprise- and multi-site projects, the full M1 lineup can scale up to GVD's **Central Management Solution**, simply through your flexible add-ons of GVD products. The solution supports up to 10000 channels. A control center solution is available, and through a stable network, a Mobile NVR can stay in close connection with the control center hundreds of miles away to keep the security operators aware of any suspicious event. GVD **Central Management Solution** can help you manage up to 10000 channels and 1200 vehicles.

Highlight of Mobile NVRs

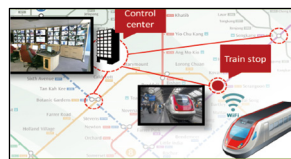
■ Touch-enabled

GVD Central Management Solution is tailor-made to meet mobile needs. It features an expanded set of intuitive GUI to support touch control for a vehicle driver to view video or launch alarms in a more straightforward way. A unique onscreen panic alarm button is there for a driver to hit and react to an incident without any delay. Video patterns are reduced to only 1x1 and 2x2 for a bus or truck driver to swiftly grasp what is going on in his motor.



■ GPS receiver & G-sensor -

If you opt for a GPS receiver inside the mobile NVR, the mobile NVR can be tracked and located on a map tool so the control center can be sure whether the vehicle is off a route or designated area. If you opt for a G-sensor inside the mobile NVR, the vibration of a vehicle can be detected provided the G-sensor has been set to measure vibration at a regular time interval, e.g., every 2 seconds or so. The control center can be alerted in case of a severe vibration that puts the vehicle in the danger of car crash.



■ Ignition power management

The mobile NVR features ignition power management, with user-definable power-on/off delays for 12V car and 24V bus/truck battery power. The system administrator can manage the time between ignition signal and system power on/off, and the control center can be alerted once battery gets low as long as the system is stable and running and the network connection is steady.

■ Easy-swappable storage

A Mobile NVR has at least one outside-accessible storage drive slot to simplify data exchange between the NVR and control center.



Software features

Powerful alarm management

For the Mobile NVRs, you can define a critical hardware state, such as CPU overheat, or a channel state, such as video loss, to trigger an alarm. For the Fanless ATM NVR, you can define either a text or a number in a transaction data to trigger an alarm. You can also define which action to take to call the attention of the security operators to that alarm – by a video pattern or a text message that pops up, or a command to make the NVR start recording video.

Two-way audio

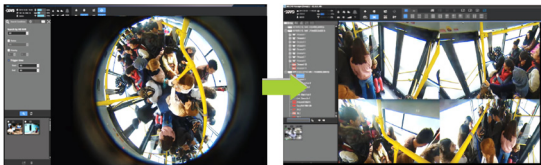
Some of the sophisticated IP cameras that feature 2-way audio have got the support from GVD Central Management Solution. By using two-way audio IP cameras, the security operators in the control center can communicate with the security guard around an IP camera.

Video walls at Control Center

The Adaptive Video Streams detects real-time network bandwidth and CPU capacity to make the system send the lower-profile sub-stream instead of the higher mainstream in case the accessing viewer is small enough to compensate for display quality. Except for the economy of viewing, sub-streams can be recorded and stored in reduced size of storage.

Fisheye dewarp & ePTZ

The system has a software dewarp technique to bring the different dewarp features of various camera manufacturers to an established standard of GVD's. Users can easily get the dewarp from their fisheye cameras without taking additional settings. GVD's software dewarp is the total solution to fisheye dewarp.



Video Content Analysis

The system integrates sophisticated VCA (including VMD, E-Fence, etc.) to analyze the transaction at an ATM or a teller window. VCA also helps the system to launch an alarm when something unusual is going on in the monitored area. It contributes to deter crimes and reduce the time and money needed for the investigation of a case, and of course, in the worst cases, it provides you with the evidence needed by the police to track down the criminals.

Software features (Fanless ATM NVR only)

Transaction data retrieval and export

With Alarm Mode, you only need to define which NVR, which ATM, which keyword, which value and which period to search. The Fanless ATM NVR will run the search across thousands of sites to seek the match(es), with relevant video. The system also exports transaction to a PDF, with relevant screenshots, or to a video pattern, with related video(s).

Software features of Mobile NVRs

Touch-enabled onscreen panic button

The system features an onscreen panic alarm button in an enlarged and conspicuous graphical form factor for a car driver or bus/truck driver to react to a threat to persons or property that comes up in his motor.



GPS-integrated map & G-sensor alarm

The VMS features a map tool that offers global satellite imagery and street maps. If you opt for a GPS receiver inside the Mobile NVR, through a stable network, the Mobile NVR can be tracked and pinpointed real-time on the said map tool. Except for watching over the fleet, such a map tool is also helpful for GPS analysis and speed detection. If you opt to load the mobile NVR with a G-sensor, you can detect and monitor the vibration and rotation of a vehicle, so a G-sensor alarm can be launched when a severe vibration or car crash happens.

Video backup

The Mobile NVR runs on a sophisticated NVR Manager, which allows IT professionals to export video data onto some other external storage such as a USB disk. The NVR Manager also has a powerful tool to make the storage management easier. IT professionals can perform video backup once a CIT car or truck arrives at the bank depot. Up to 30 Mbps is supported for backup throughput.

Power alarm management - alarm snapshot

The Mobile NVR features an Alarm Mode that lists all the alarms triggered. When an alarm is launched, the control center will see an alarm screen on the management console and also on one of the videowalls. An alarm screen is displayed with a brief description and some snapshots of the alarm event to convey the clearest message of an incident.



Optimized in-car video display

To facilitate in-car use, the VMS features a reduced set of patterns with 1x1, 2x2 and 3x3 views for a bus driver or truck driver to flip through so he/she can quickly grasp what is going on in his motor, with ease, and without much distraction.

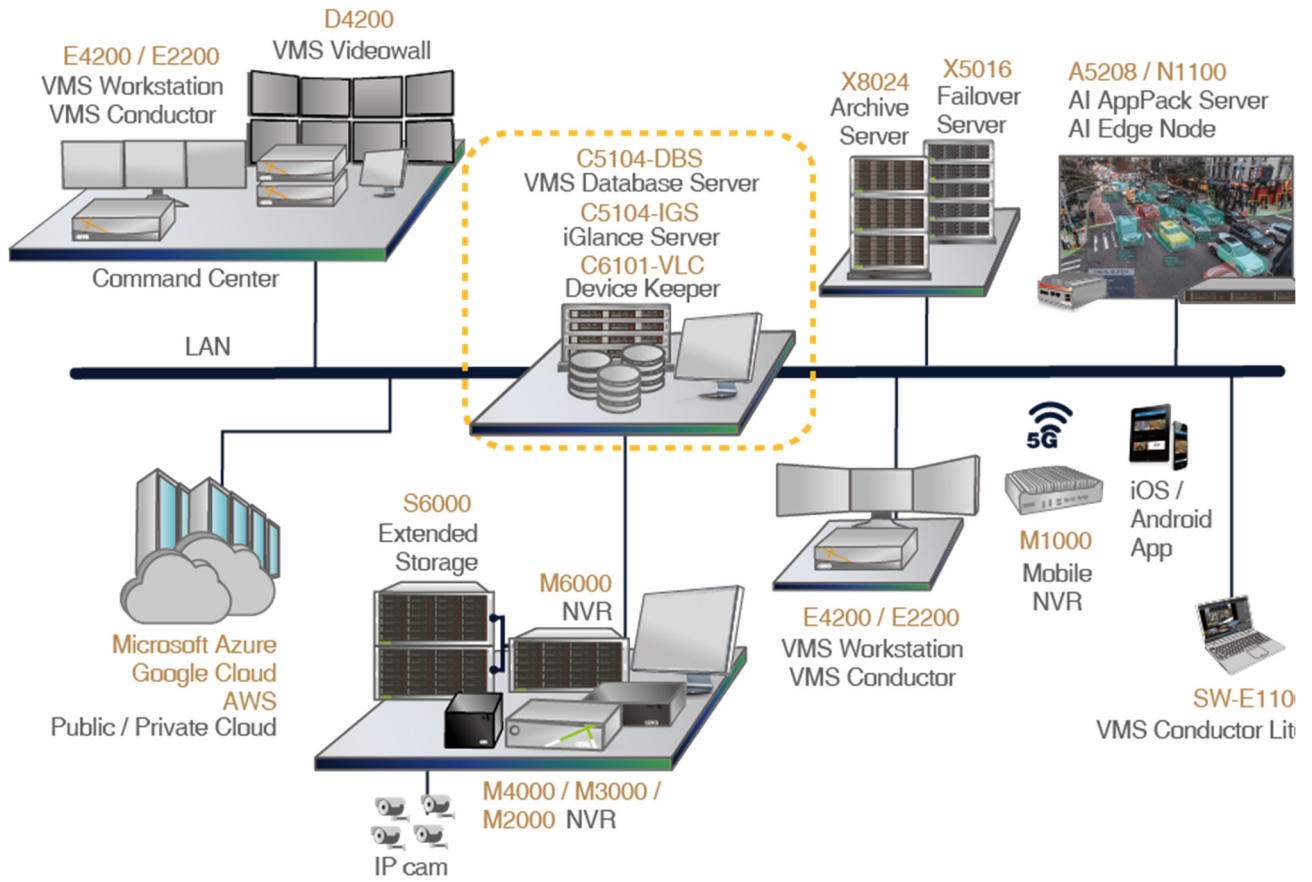


1x1 and 2x2 layout switch



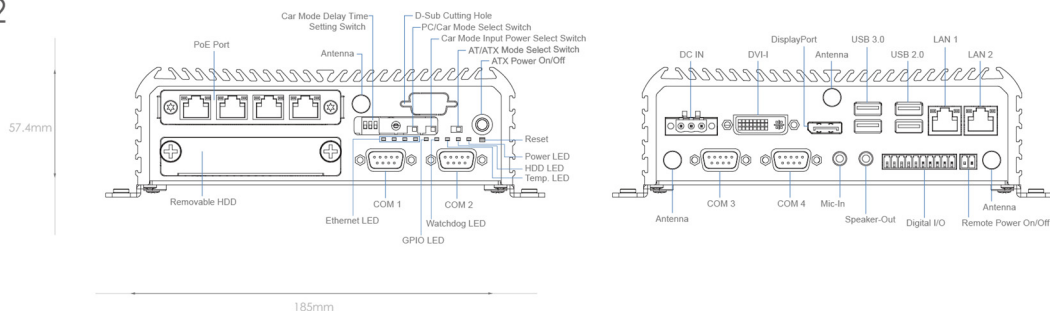
3x3 layout switch

System Architecture

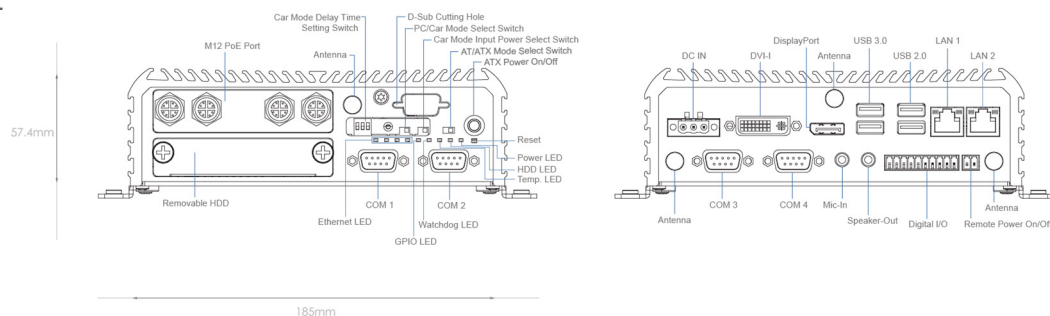


Dimensions

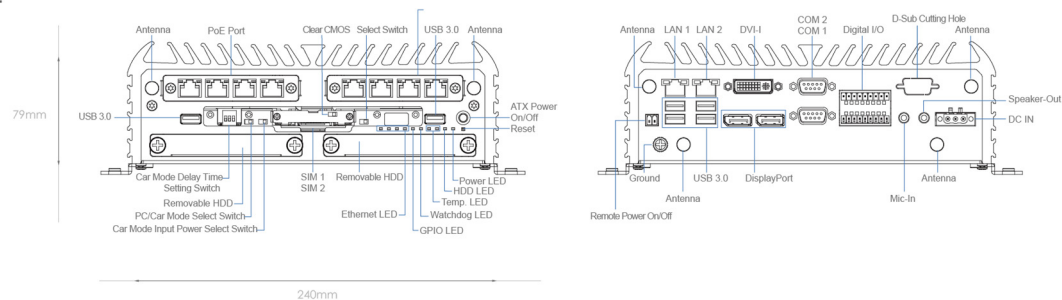
MT142



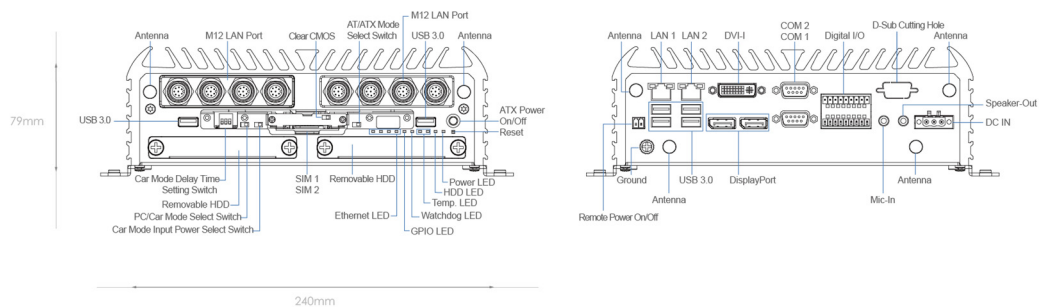
MT242



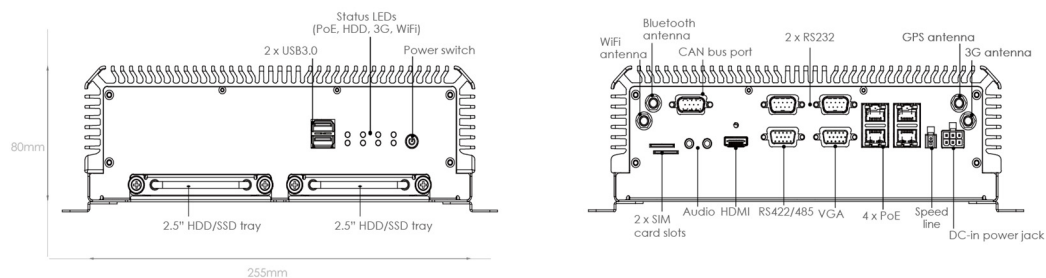
MT184



MT284



M1142-A



Hardware Specifications



Product	MT142	MT242	MT184	MT284	M1142-A
Description	Train / Vehicle Server				Fanless ATM NVR
System	CPU	Intel® Celeron® 3765U		Intel® Celeron® G3900TE	Intel® Celeron® 3855U
	Memory	4G			
	Operating System	Windows® 10 IoT Enterprise			Windows 7 Embedded
	Watchdog	Hardware watchdog & software watchdog			
Storage	Interface	2.5" SATA			
	Hard disk trays (bays)	2 pcs (1 x internal; 1 x removable)	4 pcs (2 x internal, 2 x removable)		2 pcs (easy-swappable)
	Storage capacity	2 x 2TB		4 x 2TB	2 x 2TB
	RAID level	RAID 0, 1, 5, 10			N/A
Display	Interface	1 x DVI-I, 1 x DisplayPort		1 x DVI-I, 2 x DisplayPort	
	Local display resolution	1920 x 1200			
Network	LAN	2 x RJ45; 4 x PoE	2 x RJ45; 4 x PoE w/ M12 conn.	2 x RJ45; 8 x PoE	2 x RJ45; 8 x PoE w/ M12 conn.
	WLAN (Optional)	WiFi			
	3G / 4G	2 x external SIM sockets		3 x SIM sockets (1 x internal, 2 x external)	
Navigation	GPS	Yes			
Sensor	G-sensor				
Other I/O	USB port (Front & Rear)	2 x USB 3.0, 2 x USB 2.0		6 x USB3.0; 2 x USB2.0 (internal)	
	CAN bus				
	Audio port	1x mic-in, 1x speaker-out			1x DB9 OBD-II
	Serial COM port	4 x RS232/422/485		5 x RS232/422/485 (3 internal)	
Power	Ignition power control	Yes			N/A
	Voltage	DC 9-48V			100~240Vac, 50-60Hz
	Consumption (w/o HDD & PoE)	220W			160W
Environment	Operating temp.	-40°F ~ 158°F (-40°C ~ 70°C)		-13°F ~ 158°F (-25°C ~ 70°C)	
	Storage temp.	-40°F ~ 185°F (-40°C ~ 85°C)		-22°F ~ 185°F (-30°C ~ 85°C)	
	Relative humidity	10% to 95% (non-condensing)			
Mechanical	Certification	CE, FCC Class A, E-Mark, EMC conformant and shock/vibration sustainable with EN50155, EN50121-3-2, & EN61373			CE, FCC
	Dimensions (W)x(H)x(D) mm	185 x 57.4 x 197	185 x 57.4 x 197	240 x 79 x 261	240 x 79 x 261
	Net weight w/o HDD	2.27 Kg	2.54 Kg	4.44 Kg	4.98 Kg
					3 kg

Software Specifications



Software		MT142	MT242	MT184	MT284	M1142-A
Video recording	IP camera license	4		8		4
	Recording rate	Max. 64Mbps				
	Recording resolution	D1, 1.3~20 megapixels				
	Recording mode	Full-time recording, manual recording, scheduled recording, recording by event, alarm, video motion detection				
	Video codec	H.265, H.264, MPEG4, M-JPEG, MxPEG				
	Audio codec	G.711, G.726, AAC				
	Streaming type	Unicast & Multicast				
Video display & management	Local display (w/ AVS)	330fps@D1				
	No. of live video streams	64				16
	Display pattern	1, 2, 3, 4, 5, 6, 8, 9, 12, 13, 16, 18, 24, 25, 36, 48, 64				
	Live-view operation	ROI, ePTZ, corridor mode, software de-warp, digital zoom in/out, onscreen PTZ				
	ONVIF	ONVIF 2.6+, Profile-S				
	Synchronous playback	Up to 16ch				
	Playback controls	Forward/backward playback, pause, jump to next/previous frame, go to date, speed controls, go to 0.5/1/5 minutes later/ago				
	Video export	Via USB (*.AVI, *.AVA & *.MKV supported), digital watermark				
	Video search	By time, alarm, event, missing object, foreign object, E-Fence, people counting, transaction data from POS				
	PTZ	Controlling device	Mouse, K205 Keyboard			
Operation		Direction controls, zoom in/out, preset, patrol				
VCA	Features	E-Fence, video motion detection, people counting, missing/foreign object search				
	Event search	Search for a missing or foreign object; search for an event of people counting, video motion, or E-Fence				
	Trigger source	Video loss, sensor trigger, HDD crash, system crash, abnormal transaction from POS, E-Fence, video motion detection, people counting				
	Reaction	User-definable text message, video pattern popup, e-mail, output alarm signal, trigger recording, PTZ preset				
	Setup	A Rule Wizard for flexible setup				
Alarm	Trigger source	Video loss, sensor trigger, HDD crash, system crash, abnormal transaction from POS, E-Fence, video motion detection, people counting				
	Reaction	User-definable text message, video pattern popup, e-mail, output alarm signal, trigger recording, PTZ preset				
	Setup	A Rule Wizard for flexible setup				
Remote access clients	Web client	IE 9.0, 10.0, 11.0				
	App client	iOS 10 and above; Android 5.0 and above				
	PC thin clients	VMS(E4200/D4200), SW-E2200-CW03, E90-Window 7/8/10				
	Number of clients	5				
POS	License	8 units				
	Integration	Integrable with all brands via GVD POS filters				
	Transaction (data) view	Pattern-view with both transaction data and relevant videos				
	Data search/retrieval	Search by time, keyword or price to retrieve transaction data with relevant video				
	POS alarm	Alarm setup by item or value; supporting popup alarm, email alarm, text message alarm, etc.				
System	System update	NVR software update				
	Backup & recovery	Yes, by VHD (virtual hard disk)				
	Event logs	Event logs of system, cameras, users, etc.				
	Languages	20+ languages are supported, including English, Spanish, French, Dutch, Italian, Japanese, Chinese, etc.				