WEBGATE HD CCTV

HD-CCTV **NVR**

Network Video Recorder

UHN Series

Product Manual

(EN Rev 1.17)

HD-CCTV NVR Manual.

Thank you for purchasing a Network Video Recorder. Before installation or operation please become familiar with the user manual and other referenced manuals mentioned in the booklet. User manual, software and hardware described here are protected by copyright by law. With the exception of copying for general use within fair use, copying and reprinting of the user manual, either partially or in entirety, or translating it into any another language without the consent of our Corporate office is strictly prohibited.

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The manufacturer does not assume any responsibility concerning the sale of this product and does not delegate any right to any third party to take any responsibility on its behalf. The product warranty does not cover cases of accidents, negligence, alteration, misuse or abuse. No warranty is offered for any attachments or parts not supplied by the manufacturer.

The manufacturer does not assume any responsibility for followings

- ✓ Malfunctions due to negligence by user
- ✓ Deliberate disassembly and replacement by user
- ✓ Connection of power source other than a properly rated power source
- ✓ Malfunctions caused by natural disasters (fire, flood, tidal wave, earthquake, etc)
- ✓ The warranty period for HDD is one year
- ✓ Any data damage due to HDD damage

The product is not for exclusive use of crime prevention but for assistance in cases as fire or theft. We take no responsibility for damage from any incident.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause
Harmful interference in which case the user will be required to correct the interference at his own expense.

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)
This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB
Cable should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.
Household users should contact either the retailer where they purchased this product or their local government office, for details of where and how they can take these items for environmentally safe recycling.
Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

Correct disposal of batteries in this product

(Applicable in the European Union and other European countries with separate battery return systems.)
This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.
To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.

Symbol	Publication	Description
~	IEC60417, No.5032	Alternating current

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Introduction

Warning

Warning

- ✓ Please do not bend or press power cord by force which could lead to fire.
- ✓ Be careful not to pull or plug with wet hands to avoid fire or electric shock.
- ✓ Must connect the power cord to a grounded outlet. It may cause electric shock and injury, and may cause product malfunction.
- ✓ In case of changing built-in lithium battery, it should be replaced with same brand or similar one to prevent a danger of explosion. Since old batteries could be a factor of environment contamination, please disposed of them properly.
- ✓ Do not throw the batteries in fire or heating units. Neither short circuit nor disassembly is prohibited.
- ✓ Do not open the top cover otherwise it could lead to electric shock and product damage.
- ✓ The previous recorded data is deleted if record continues when HDD is full so please check disk setup status.
- ✓ Manufacturer takes no responsibility for any damaged data due to customer's carelessness or negligence.

A-rated device(Broadcasting Communication Equipment for business use only)

Users/Sellers should under this is A-rated device for business use only and it must not be used outside of family.

Caution

- ✓ Do not place heavy objects on top of the product.
- ✓ Product is for indoor use only and it is not water or damp proof. Use product to its environmental specifications (Temperature & Humidity). To clean the product, gently wipe the outside with a clean dry cloth.
- ✓ Product uses AC power of 110V ~ 240V. Be cautious not to cause electric damages to the product.
- ✓ Be careful not to drop the product. Physical shocks may harm the product including internal HDD. In addition, please do not throw or drop it.
- ✓ Product is made of metal you can hurt another human if you throw or used as a weapon. Keep away from the reach of children and install in a safe place.
- ✓ If Product does not operate properly, please contact the manufacturer for service. Tampering or disassembling the product will void the warranty.
- ✓ The product can transmit real time video over network or internet and can be used for monitoring purpose depending on installation sites. So please check and review related regulations before installation.

Experience and technical skills are needed for the installation of this product. Improper installation may cause fire, electric shocks, or defects. Contact the nearest dealer for installations.

Contents of the manual can differ according to firmware or Software upgrade, and the appearance of products may be changed for the improvement of quality without an advance notice

◈ System power off

In case user turn off device by force while device is working, it could give damage on HDD and device so please turn off device safely using OSD menu. You should install a UPS system for safe operation in order to prevent damage caused by an unexpected power failure.

◈ Working Temperature

The working temperature of the product is 5°C~45°C or 41°F~113°F. NVR may not work properly if left in low temperature for a long period of time. If such is the case, then store at room temperature for some time before using it again.

Main Specification by Models

Function	4 channel PoE NVR (V3)	8 channel PoE NVR (V3)	16 channel PoE NVR (V3)	16 channel NVR (V2)
	UHN404P-H1-V3	UHN808P-H1-V3	UHN1616P-H2-V3	UHN1600-H2(V2)
HDD	SATA*1	SATA*1	SATA*2	SATA*2
HDD Hot Swap	X	X	X	X
Max Resolution of IP Camera	4K	4K	4K	4K
Recording	H.264, H.265	H.264, H.265	H.264, H.265	H.264, H.265
ONVIF	O	O	O	O
WESP	O	O	O	O
PoE	O	O	O	X
LAN port	1 WAN + 4 PoE	1 WAN + 8 PoE	1 WAN + 16 PoE	1
HDMI 4K	O	O	O	O
VGA	O	O	O	O
Remote DVR	O	O	O	O
Flame Detection	O	O	O	O
SENSOR IN	O	O	O	O
RELAY OUT	O	O	O	O

(O: Supported / X: Not-Supported)

Function	36 channel PoE NVR	16 channel RAID NVR	36 channel RAID NVR	64 channel RAID NVR
	UHN3616P-H4	**UHN1600-H6R**	**UHN3600-H6R**	**UHN6400-H6R**
HDD	SATA*4	SATA*6 + eSATA*1	SATA*6 + eSATA*1	SATA*6 + eSATA*1
HDD Hot Swap	X	X	X	X
Max Resolution of IP Camera	4K	4K	4K	4K
Recording	H.264, H.265	H.264, H.265	H.264, H.265	H.264, H.265
ONVIF	O	O	O	O
WESP	O	O	O	O
PoE	O (PoE, 16 Ports)	X	X	X
LAN port	1 + 16 PoE	2	2	2
HDMI 4K	O	O	O	O
VGA	O	O	O	O
Remote DVR	O	O	O	O
Flame Detection	O	O	O	O
SENSOR IN	O	O	O	O
RELAY OUT	O	O	O	O

(O: Supported / X: Not-Supported)

Function	16 channel FULL SIZE NVR	36 channel FULL SIZE NVR	64 channel FULL SIZE NVR	64 channel HOT SWAP NVR
	UHN1600-H8	**UHN3600-H8**	**UHN6400-H8**	**UHN6400-H16S**
HDD	SATA*8 + eSATA*2	SATA*8 + eSATA*2	SATA*8 + eSATA*2	SATA*16 + eSATA*1
HDD Hot Swap	X	X	X	O
Max Resolution of IP Camera	4K	4K	4K	4K
Recording	H.264, H.265	H.264, H.265	H.264, H.265	H.264, H.265
ONVIF	O	O	O	O
WESP	O	O	O	O
PoE	X	X	X	X
LAN port	2	2	2	2
HDMI 4K	O	O	O	O
VGA	O	O	O	O
Remote DVR	O	O	O	O
Flame Detection	O	O	O	O
SENSOR IN	O	O	O	O
RELAY OUT	O	O	O	O

(O: Supported / X: Not-Supported)

<Note>

1) It is highly recommended that category 6 ethernet cable. If you don't use category 6 gigabit ethernet cable, it may cause not saving video when data traffic is high.
2) Shielded ethernet cable must be used for PoE port.
3) The name of mobile application is WEBEYE.
4) 64 channel NVR has 2 eSATA ports, but currerntly, only one eSATA is supported. 2 eSATA will be supported soon.
5) NVR can receive network camera's sensor input even if NVR does not have SENSOR IN.
6) Bitrate of network camera is set by the Q level of NVR"s program page. Bitrate according to Q level and resolution is shown as below table. This table shows the bitrate of 1st stream and the bitrate of 2nd stream is set by about 15% of the bitrate of 1st stream. Thus, the total bitrate according to Q level is bitrate (in below table) x 1.15.
   Some network camera supports limitetd bitrate, and for that case, the real bitrate can be different from the below table. Real 1st stream's bitrate is shown in [Func Menu] > [Information] > [Camera] and total bitrate is shown in [Func Menu] > [Information] > [Network].

Resolution	2M pixels	4M pixels	8M pixels
Bitrate (for 30fps)	Q10 : 8000Kbps	Q10 : 12000Kbps	Q10 : 16000Kbps
	Q9 : 6666Kbps	Q9 : 10000Kbps	Q9 : 13333Kbps
	Q8 : 5333Kbps	Q8 : 8000Kbps	Q8 : 10666Kbps
	Q7 : 4000Kbps	Q7 : 6000Kbps	Q7 : 8000Kbps
	Q6 : 3533Kbps	Q6 : 5300Kbps	Q6 : 7066Kbps
	Q5 : 3066Kbps	Q5 : 4600Kbps	Q5 : 6133Kbps
	Q4 : 2600Kbps	Q4 : 3900Kbps	Q4 : 5200Kbps
	Q3 : 2133Kbps	Q3 : 3200Kbps	Q3 : 4266Kbps
	Q2 : 1666Kbps	Q2 : 2500Kbps	Q2 : 3333Kbps
	Q1 : 1333Kbps	Q1 : 2000Kbps	Q1 : 2666Kbps

7) PoE NVR V3 series products support the Midspan PoE mode, and it may not be compatible with some switching hubs.

※ **PoE modes**

- **Midspan** : Data is transferred through wires 1, 2, 3 and 6 of UTP cable, and power is transferred through wires 4, 5, 7 and 8 which are not used for data communication.
- **Endspan** : It delivers both data and power through same UTP wires.

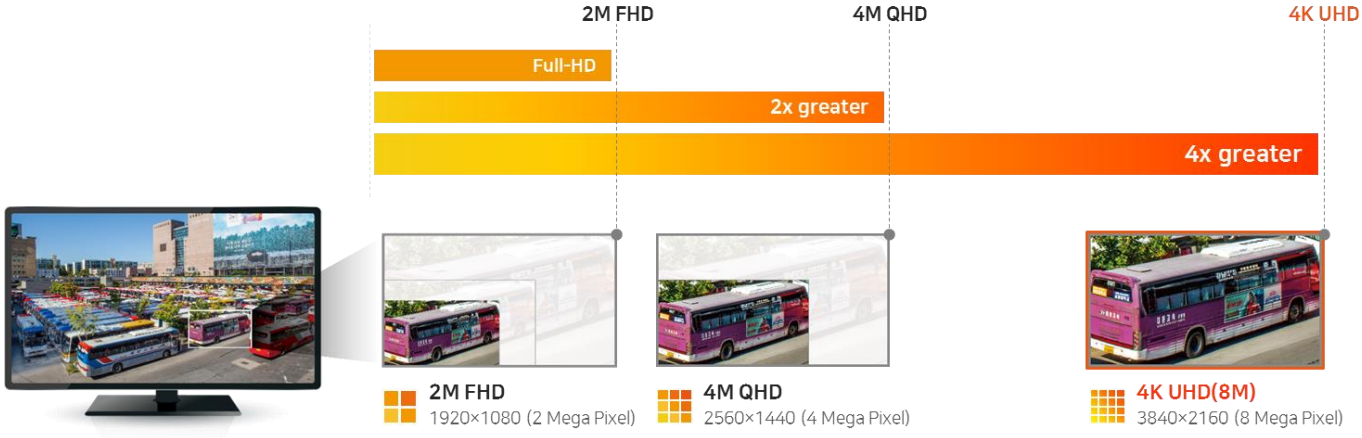
Key Features

Products support IP camera supporting Onvif Profile-S or WESP. Products support real-time live monitoring, real-time recording/playback, backup, push alarm and audio of connected IP camera.
Other DVR's video channel can be treated as an IP camera and NVR supports all NVR functions to other DVR's video channel.
Also, it is possible to control NVR from other PC located in remote place such as Windows PC's 'remote desktop'. (Remote DVR function)
Products can record video from max 5 seconds before event occurrence and record up to 30 fps per channel.

- ✓ Supports IP camera
  - Onvif Profile-S
  - WESP
- ✓ Remote DVR function
- ✓ Supports Normal/Event Record, Schedule/Event Record, Emergency Record
- ✓ Supports archiving event list (sensor, video loss, motion detection, Text, Flame detection)
- ✓ Max 5 seconds pre-alarm recording per each channel

UHD (Ultra High Definition)

The max supporting resolution of IP camera is 4K UHD. Also, 4K UHD video output is supported.



PoE (Power over Ethernet)

The power can be supplied to IP camera using only ethernet cable (not required any other power cable). It is highly recommended that shielded Ethernet cable must be used for PoE port.

Flame Detection

Flame detection camera (N1080BL-AF-F2, NK1080BL-AF-F2) which is equipped with feature to detect flame can be connected to NVR and it will notify manager of flame alarm quickly thoughout NVR, CMS and mobile phone.

Screen Output

- ✓ Supports 4K UHD monitor output
- ✓ Various Multi-division Screen Mode –1, 2, 4, 6, 9, 10, 13, 16, 25, 36, 64, Custom A/B/C
- ✓ Auto Sequence, Event Pop-up

Voice Recording

Supports real time voice input and recordinig function.

- ✓ Real time 1ch voice input and recording function
- ✓ Input: 1ch RCA, Output : 1ch RCA (Rear), 1ch HDMI (Rear)
- ✓ Audio recording and playback can be performed simultaneously

Search and Playback

Various useful functions for search & playback

- ✓ Simultaneous playback for every channel
- ✓ Playback by time, date, channel
- ✓ Time / Calendar / Event / Thumbnail / Bookmark search

Save and Backup

You can record video data into the internal HDD, and image can be copied to USB memory.

- ✓ Backup device: USB memory stick (FAT32)
- ✓ External storage device: e-SATA HDD or NS04R (exclusive network storage device)
  - Support max 128 TB using internal storage and e-SATA

Network

Supports LAN, xDSL, and etc., and key functions can easily be controlled by web browser or customized CMS program.

- ✓ Live monitoring/playback/backup from the remote site
- ✓ Multi-streaming feature for slow network environment (supports nHD monitoring)
- ✓ Sending event info(image) using E-Mail/ FTP
- ✓ Recorded video playback, save, search function, and NVR control function on PC via CMS
- ✓ Mobile application for android and iOS.
- ✓ Supports 10/100/1000 Mbps Ethernet/xDSL
- ✓ Managing up to 1024 NVRs with CMS
- ✓ Supports HTML5 Webviewer
- ✓ Remote DVR for controlling and monitoring NVR at remote place

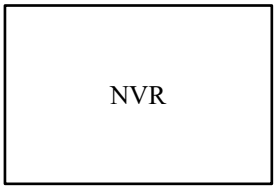
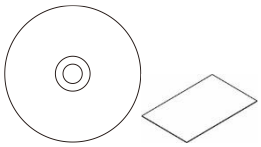
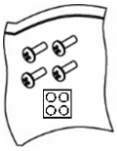
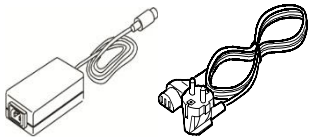
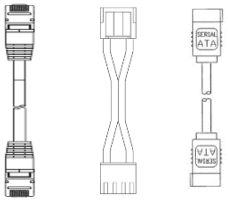
Others

- ✓ User friendly GUI and mouse
- ✓ Easy and simple firmware upgrade, and recorded video back up function using USB stick
- ✓ Using Ac the PC Playback function, replay the NVR's HDD on a PC
  (HDD set as RAID could not be played on the PC, even if HDD is connected to PC)
- ✓ Supports PTZ Control, PRESET and PATROL function
- ✓ Support Onvif Profile-S
- ✓ Booting logo and empty channel logo can be changed
- ✓ Changing multiple channel names using USB memory
- ✓ Reset button on the rear panel of NVR (V3 model only)

Components

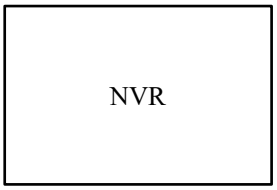
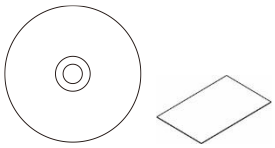
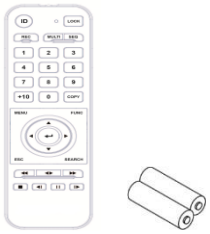
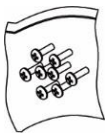
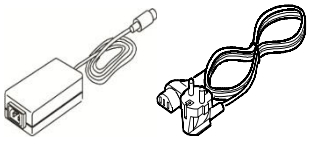
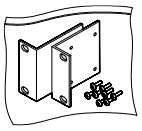
Please check the below to make sure you have every part.

4 / 8 / 16 CHANNEL PoE NVR (V3)

		
NVR	Mouse	SW & Manual CD Quick guide
		
HDD mounting screw Rubber feet for bottom plate	Adapter & Power Cord	LAN cable HDD power cable(*) SATA cable(*)

* It can be differently applied depending on models

16 CHANNEL NVR (V2) / 36 CHANNEL PoE NVR / 16 CHANNEL FULL SIZE NVR / 36 CHANNEL FULL SIZE NVR / 64 CHANNEL FULL SIZE NVR / 16 CHANNEL RAID NVR / 36 CHANNEL RAID NVR / 64 CHANNEL RAID NVR

			
NVR	Mouse	SW & Manual CD Quick guide	Remote Control & Batteries (*)
			
HDD mounting screw	Adapter & Power Cord (*)	19" Rack bracket & screw (*)	

* It can be differently applied depending on models.

64 CHANNEL HOT SWAP NVR

Part name	Component name	Quantity
NVR	NVR	1 EA
HDD guide componets	HDD guide	32 EA
	HDD mounting screw	64 EA
Lack mount components	Lack mount	2 EA
	Lack mounting screw	6 EA
ETC	SW & Manual CD	1 EA
	Mouse	1 EA
	AC power cord	1 EA
	Key	2 EA
	Foot	2 EA
	Terminal block	5 terminal : 2 EA 6 terminal : 2 EA

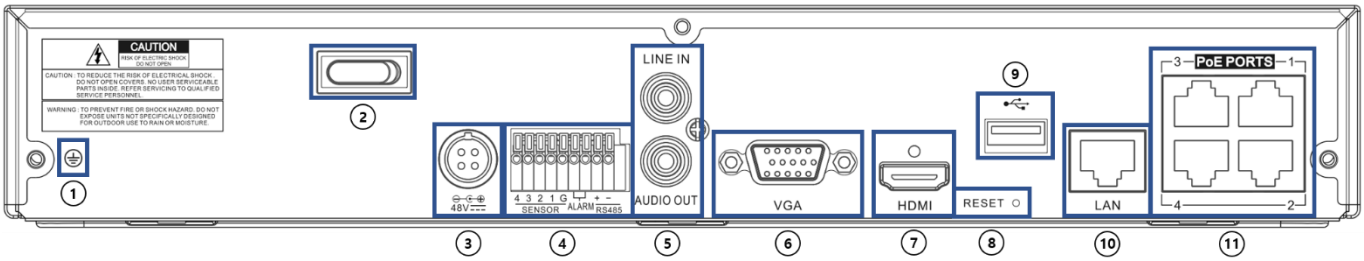
Product Description

4 CHANNEL PoE NVR (V3)

Front view

part name		function description
1	USB Port	USB port for USB memory or mouse.
2	POWER	It turns on when power is ON
	REC	Shows record status and it turns on while recording

Rear view



No.	part name	function description
1	Ground Connection	Connection terminals that connects NVR to an outside device
2	POWER	Power ON/OFF switch
3	DC 48V	DC 48V adapter port
4	SENSOR IN / ALARM OUT / RS485	SENSOR IN: External sensor input port ALARM OUT: Relay connection port. RS485 : RS485 communication port. WKC-200 keyboard can be available.
5	LINE IN / AUDIO OUT	LINE IN : LINE(Audio) input connection terminal AUDIO OUT : Speaker output terminal
6	VGA	Video output port for VGA monitor
7	HDMI	Video output port for main (HDMI) monitor
8	RESET	It initialize the all setting values to factory default. 1) Turn off the power with power switch, and turn on the power again while pressing the reset button. 2) Release the reset button after about 5 seconds then NVR will be initialized.
9	USB	USB port for USB memory or mouse.
10	LAN	Network connection terminal (RJ-45) for 'IP address 1'
11	PoE PORTS	Network connection terminal (RJ-45) for PoE IP camera. IP addresses of IP camera connected to PoE should have the same IP address band with 'IP address 2'.

<Warning>

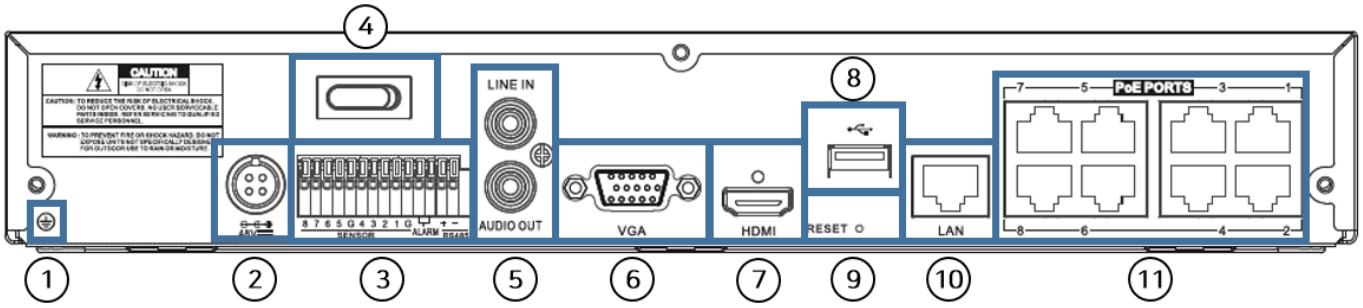
PoE NVR V3 series* products support the Midspan PoE mode, and it may not be compatible with some switching hubs..

8 CHANNEL PoE NVR (V3)

Front view

	part name	function description
1	USB Port	USB port for USB memory or mouse.
2	POWER	It turns on when power is ON
	REC	Shows record status and it turns on while recording

Rear view



No.	part name	function description
1	Ground Connection	Connection terminals that connects NVR to an outside device
2	DC 48V	DC 48V adapter port
3	EXTERNAL I/O	EXTERNAL I/O port (SENSOR IN, RELAY OUT, RS485)
4	POWER	Power ON/OFF switch
5	LINE IN / AUDIO OUT	LINE IN : LINE(Audio) input connection terminal AUDIO OUT : Speaker output terminal
6	VGA	Video output port for VGA monitor
7	HDMI	Video output port for main (HDMI) monitor
8	USB	USB port for USB memory or mouse.
9	RESET	It initialize the all setting values to factory default. 1) Turn off the power with power switch, and turn on the power again while pressing the reset button. 2) Release the reset button after about 5 seconds then NVR will be initialized.
10	LAN	Network connection terminal (RJ-45) for 'IP address 1'
11	PoE PORTS	Network connection terminal (RJ-45) for PoE IP camera. IP addresses of IP camera connected to PoE should have the same IP address band with 'IP address 2'.

< Warning >

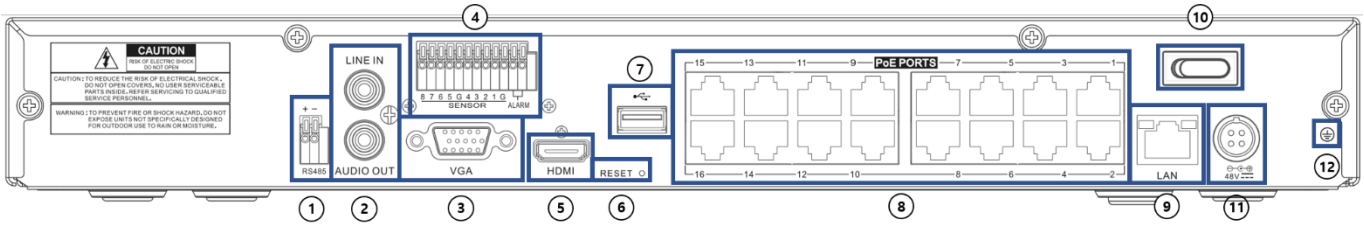
PoE NVR V3 series* products support the Midspan PoE mode, and it may not be compatible with some switching hubs..

16 CHANNEL PoE NVR (V3)

Front view

	part name	function description
1	USB Port	USB port for USB memory or mouse.
2	POWER	It turns on when power is ON
	REC	Shows record status and it turns on while recording

Rear view



No.	part name	function description
1	RS485	RS485 : RS485 communication port. WKC-200 keyboard can be available.
2	LINE IN / AUDIO OUT	LINE IN : LINE(Audio) input connection terminal AUDIO OUT : Speaker output terminal
3	VGA	Video output port for VGA monitor.
4	SENSOR IN / ALARM OUT	SENSOR IN: External sensor input port ALARM OUT: Relay connection port.
5	HDMI	Video output port for main (HDMI) monitor
6	RESET	It initialize the all setting values to factory default. 1) Turn off the power with power switch, and turn on the power again while pressing the reset button. 2) Release the reset button after about 5 seconds then NVR will be initialized.
7	USB	USB port for USB memory or mouse.
8	PoE PORTS	Network connection terminal (RJ-45) for PoE IP camera. IP addresses of IP camera connected to PoE should have the same IP address band with 'IP address 2'.
9	LAN	Network connection terminal (RJ-45) for 'IP address 1'
10	POWER	Power ON/OFF switch
11	DC 48V	DC 48V adapter port
12	Ground Connection	Connection terminals that connects NVR to an outside device

< Warning >

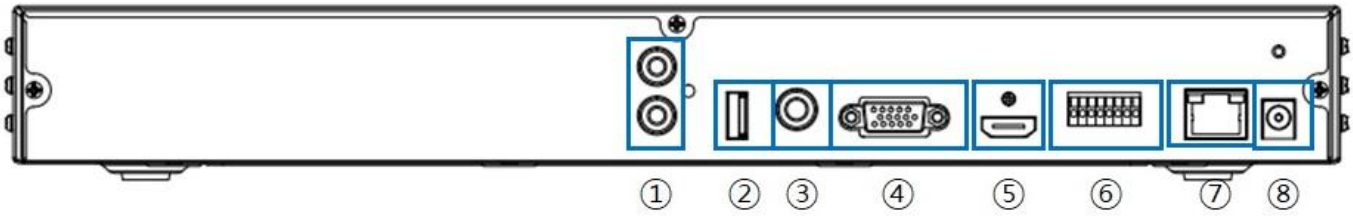
PoE NVR V3 series* products support the Midspan PoE mode, and it may not be compatible with some switching hubs..

16 CHANNEL NVR (V2)

Front view

	part name	function description
1	USB port	USB port for flash memory or mouse.
2	PWR	It turns on when power is ON
	REC	Shows record status while recording
	EVENT	Turns on if event is triggered
	NET	Shows network connection status and it flickers if network is connected

Rear view



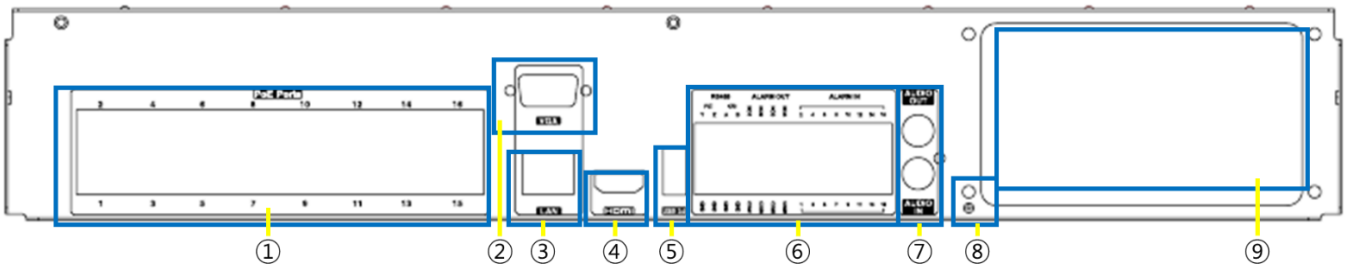
No.	part name	function description
1	AUDIO IN/AUDIO OUT	AUDIO IN: Audio input connection terminal AUDIO OUT: Speaker output terminal
2	USB3.0	USB port for USB memory, mouse. It supports upto USB 3.0.
3	CVBS	Connection port for CVBS output
4	VGA	Video output port for VGA monitor
5	HDMI	Video output port for main (HDMI) monitor
6	EXTERNAL I/O	EXTERNAL I/O port (SENSOR IN, RELAY OUT, RS485)
7	LAN	Network connection terminal (RJ-45)
8	DC IN	DC 12V adapter port

36 CHANNEL PoE NVR

Front view

	part name	function description
1	REC	Shows record status and it turns on while recording
	NET	Shows network connection status and it turns on if network is connected
	PWR	It turns on when power is ON
2	USB port	USB port for USB memory or mouse.

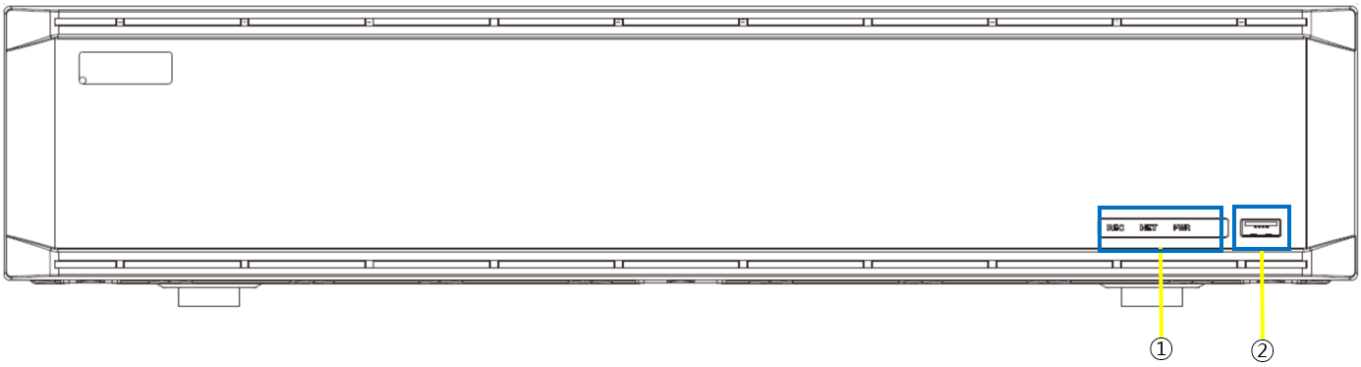
Rear view



No.	part name	function description
1	PoE Ports	36 channel PoE NVR supports max 16 PoE. IP addresses of IP camera connected to PoE should have the same IP address band with 'IP address 2'.
2	VGA	Video output port for VGA monitor
3	LAN	Network connection terminal (RJ-45) for 'IP address 1'
4	HDMI	Video output port for main (HDMI) monitor
5	USB3.0	USB port for USB memory, mouse, etc. It supports upto USB 3.0.
6	RS485 / ALARM OUT / ALARM IN	RS485 K/B: RS485 communication port. WKC-200 keyboard can be available. RS485 P/Z: not available ALARM OUT: Relay connection port ALARM IN: External sensor input port
7	AUDIO IN/AUDIO OUT	AUDIO IN : Audio input connection terminal AUDIO OUT : Speaker output terminal
8	Ground Connection	Connection terminals that connects NVR to an outside device
9	Power Input	AC100V~AC240V power cord socket. If power cord is not connected to an grounded outlet, it may cause damage or malfunction of the product.

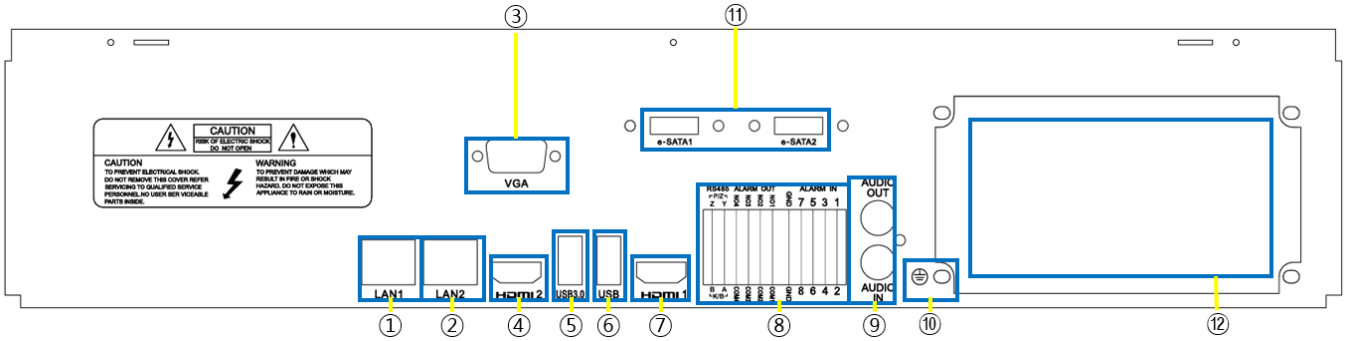
16 CHANNEL FULL SIZE NVR / 36 CHANNEL FULL SIZE NVR / 64 CHANNEL FULL SIZE NVR

Front view



	part name	function description
1	REC	Shows record status and it turns on while recording
	NET	Shows network connection status and it turns on if network is connected
	PWR	It turns on when power is ON
2	USB port	USB port for USB memory or mouse.

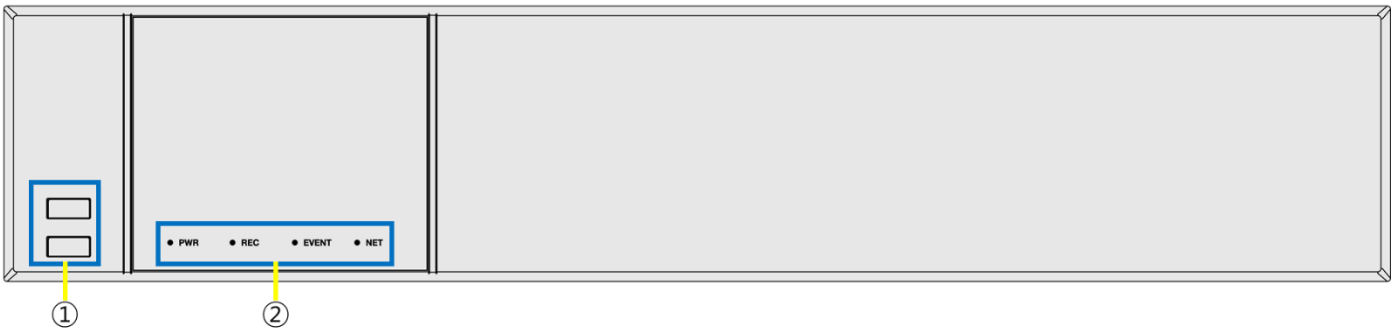
Rear view



No.	part name	function description
1	LAN1	Network connection terminal (RJ-45) for 'IP address 1'
2	LAN2	Network connection terminal (RJ-45) for 'IP address 2'
3	VGA	Video output port for VGA monitor
4	HDMI2	Video output port for sub (HDMI) monitor
5	USB port	USB port for USB memory, mouse, etc.
6	USB port	USB port for USB memory, mouse., etc.
7	HDMI1	Video output port for main (HDMI) monitor
8	RS485 / ALARM OUT / ALARM IN	RS485 K/B: RS485 communication port. WKC-200 keyboard can be available. RS485 P/Z: not available ALARM OUT: Relay connection port ALARM IN: External sensor input port
9	AUDIO IN/AUDIO OUT	AUDIO IN: Audio input connection terminal AUDIO OUT : Speaker output terminal
10	Ground Connection	Connection terminals that connects NVR to an outside device
11	e-SATA1 / e-SATA2	e-SATA ports for external SATA storage devices
12	Power Input	AC100V~AC240V power cord socket. If power cord is not connected to an grounded outlet, it may cause damage or malfunction of the product.

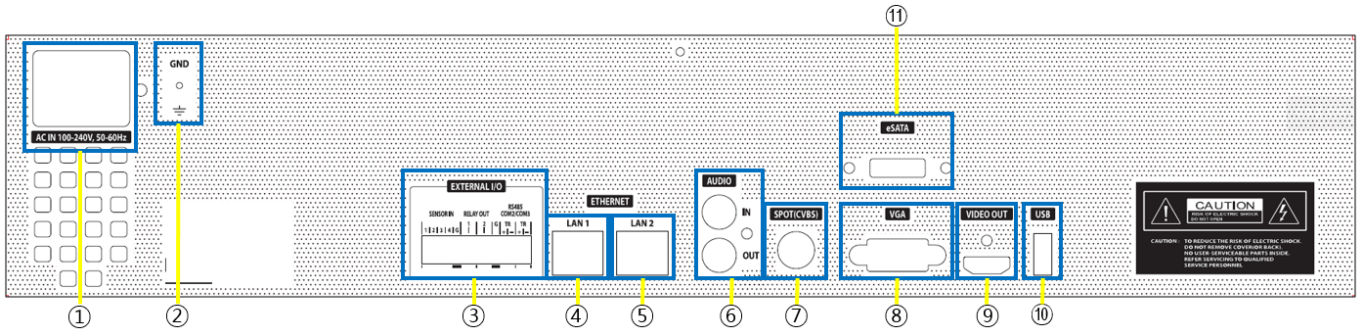
16 CHANNEL RAID NVR / 36 CHANNEL RAID NVR / 64 CHANNEL RAID NVR

Front view



part name		function description
1	USB port	USB port for flash memory or mouse.
2	PWR	It turns on when power is ON
	REC	Shows record status while recording
	EVENT	Turns on if event is triggered
	NET	Shows network connection status and it flickers if network is connected

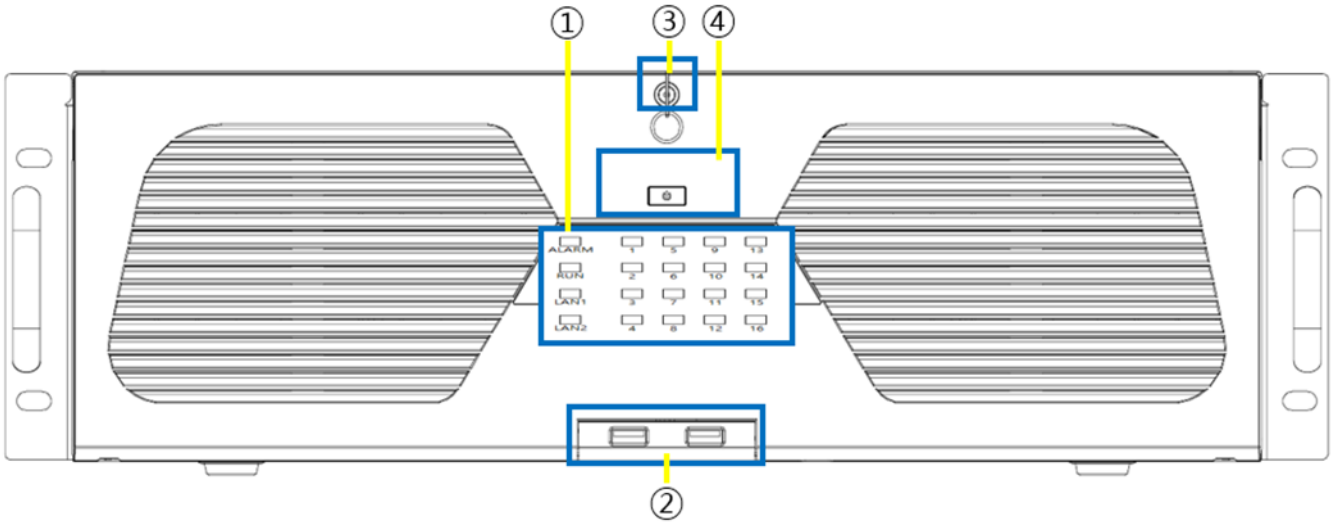
Rear view



No.	part name	function description
1	AC IN 100~240V, 50~60Hz	AC100V~AC240V power cord socket. If power cord is not connected to an grounded outlet, it may cause damage or malfunction of the product.
2	GND	Connection terminals that connects DVR to an outside device
3	SENSOR IN / RELAY OUT / RS485	Sensor: External sensor input terminal. Relay: Relay connect terminal. RS485 Com2/3: For connection with RS-485 device.
4	LAN1	Network connection terminal (RJ-45) for 'IP address 1'
5	LAN2	Network connection terminal (RJ-45) for 'IP address 2'
6	AUDIO IN / AUDIO OUT	Audio Input: Audio input connection terminal Audio Output : Speaker output terminal
7	SPTO(CVBS)	Connection port for CVBS SPOT monitor
8	VGA	Video output port for VGA monitor
9	HDMI	Video output port for main (HDMI) monitor
10	USB	USB port for USB memory or mouse.
11	e-SATA	e-SATA ports for external SATA storage devices

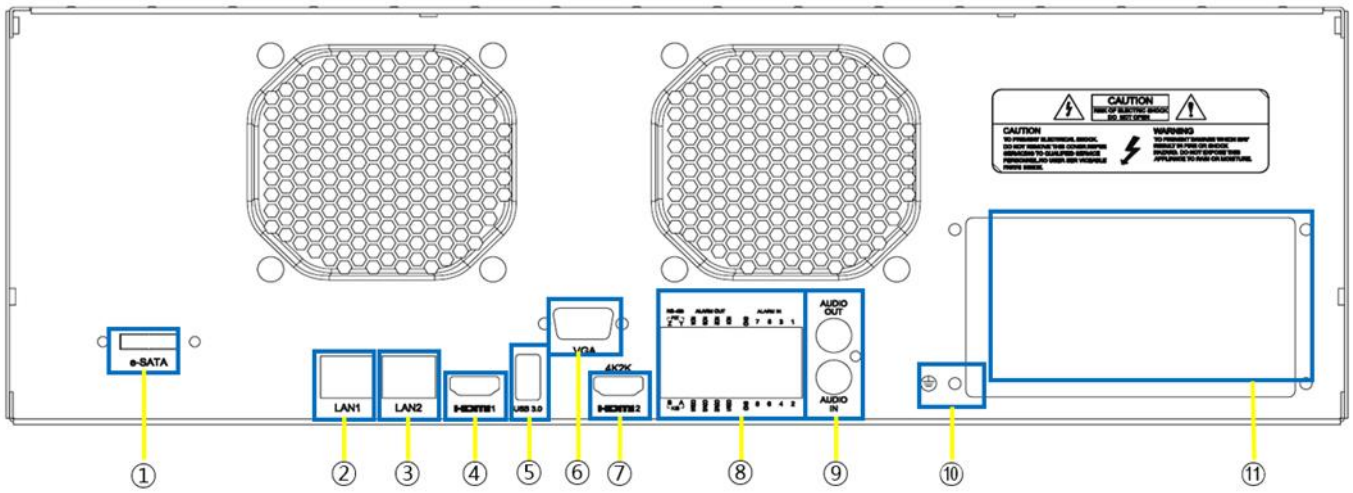
64 CHANNEL HOT SWAP NVR

Front view



part name		function description
1	ALARM	Shows event status and it turns on if event is occurred
	RUN	It turns on when power is ON
	LAN1	Shows network connection status of LAN1 and it turns on if network is connected
	LAN2	Shows network connection status of LAN2 and it turns on if network is connected
	1~16	Shows HDD status. It turns on if that HDD is connected and it flickers if that HDD is in use (read or write)
2	USB port	USB port for USB memory or mouse.
3	Front lock	Front lock for HDD exchange. User should unlock to exchange HDD.
4	Power button	Power button

Rear view



No.	part name	function description
1	e-SATA	e-SATA ports for external SATA storage devices
2	LAN1	Network connection terminal (RJ-45) for 'IP address 1'
3	LAN2	Network connection terminal (RJ-45) for 'IP address 2'
4	HDMI2	Video output port for sub (HDMI) monitor
5	USB 3.0	USB port for USB memory, mouse, etc. It supports upto USB 3.0.
6	VGA	Video output port for VGA monitor
7	HDMI1	Video output port for main (HDMI) monitor
8	RS485 / ALARM OUT / ALARM IN	RS485 K/B: RS485 communication port. WKC-200 keyboard can be available.

No.	part name	function description
		RS485 P/Z: not available ALARM OUT: Relay connection port ALARM IN: External sensor input port
9	AUDIO OUT/AUDIO IN	AUDIO IN : Audio input connection terminal AUDIO OUT : Speaker output terminal
10	Ground Connection	Connection terminals that connects NVR to an outside device
11	Power Input	AC100V~AC240V power cord socket. If power cord is not connected to an grounded outlet, it may cause damage or malfunction of the product.

Installation

Check settings

This NVR is high quality security device with a high capacity built-in HDD and important curcuits. Before installation, please read carefully below recommendations as high internal temperature of the product can lead to damages and shorten product life cycle.

Power ground

Must connect the power cord to the grounded outlet.
If not, it may cause electrical shock, damage or malfunction of product.

Recommendations on installing a NVR in a rack.

1. Don't seal the inside of rack where NVR is installed.
2. Keep airflow through inlet and outlet.
3. If there is another device installed in the rack, secure additional space or install air ventilation.
4. Installation of an air circulation fan around each inlet and outlet is strongly recommended.
   (Install filter around inlet or outlet for harmful substances)
5. Keep ambient temperature between 5°C~45°C around NVR.
6. Please connect the ground of NVR and ground of rack.

Warnings if HDD is installed

1. Please be extra careful not to damage HDD as it easily breaks.
2. During installation, make sure insulated coat doesn't come off or isn't placed in the worng place.
3. Don't lose screws and parts.
   (If screws an parts are not screwed or assembled correctly, product may not operate)
4. Check HDD compatibility list HDD
   (Please check with CS team of manufacturer.)
5. Partition table must be removed for HDDs used in PC or other NVR models before installation.

Adding HDD

Remove the power cord before installation to protect NVR against possible damage and an electric shock. Please call the store you purchased the product from if it isn't operating correctly due to installation or configuration mistakes.

- ✓ **Warnings regarding Data loss**
  Please handle with care so HDD data isn't damaged.
  Check HDD compatibility before installing additional HDD.
  Be careful not to give any shock on HDD during operation which could lead to possible damage or malfunction .
- ✓ **Cases when HDD and its data can be damaged.**
  To minimize the data loss, please copy data as often as you can.
  Physical shock during disassembly or installation may lead to Data damage.
  Sudden power outage or turn off of NVR can damage HDD.
  Please don't try to move or shock NVR while HDD is working.

HDD installation

4 CHANNEL PoE NVR / 8 CHANNEL PoE NVR (V3)

① Loosen the screws to open the cover.

② Connect the power and data cables.

③ Turn over the machine and secure the HDD with the screws.

④ Install back the cover and secure it with the screws.

16 CHANNEL PoE NVR (V3)

① Loosen the screws to open the cover.

② Slide the two screws slightly into the holes in the HDD.

③ Turn over the machine and secure the HDD with the screws.

④ Connect the power and data cables.

⑤ Turn over the machine and secure the HDD with the screws.

16 CHANNEL NVR (V2)

This series of the product supports 2 SATA hard drives. Please make sure that the device is powered off before the installation. The pictures of the installation are only for reference, please take the real object as the standard.

① Loosen the screws to open the cover.

② Slide the two screws slightly into the holes in the HDD.

③ Put the HDDs onto the bottom of the device.

④ Connect the power and data cables.

⑤ Turn over the machine and secure the HDD with the screws.

⑥ Install back the cover and secure it with the screws.

<NOTE>

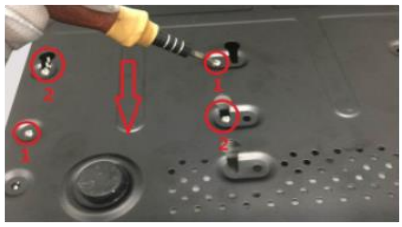
In case of using HDD with power consumption over 6W, it is highly recommended to use optional adaptor with higher current (DC 12V 5A). (16 channel NVR (V2) includes DC 12V 5A adaptor as default.)

36 CHANNEL PoE NVR

This series of the product supports 4 SATA hard drives. Please make sure that the device is powered off before the installation.
The pictures of the installation are only for reference, please take the real object as the standard.

① Loosen the screws to open the cover.

② Slide the two screws slightly into the holes in the HDD.



③ Turn over the machine and place the HDD with two screws onto the bottom of the case. Then lock the screws according to the order of the marks.

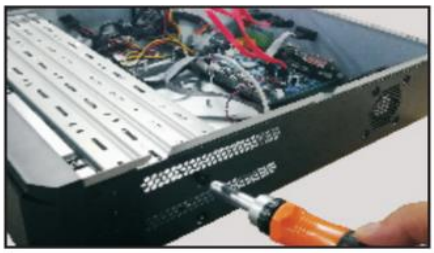
④ Install the other three HDDs according to above-mentioned method.

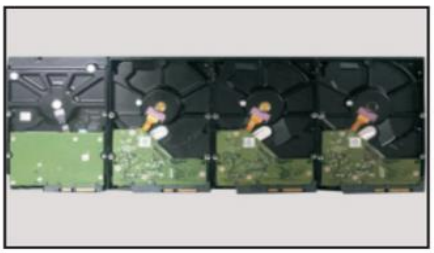
⑤ Connect the power and data cables.

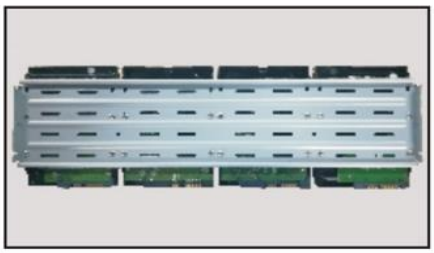
⑥ Install the cover back and fix it.

16 CHANNEL FULL SIZE NVR / 36 CHANNEL FULL SIZE NVR / 64 CHANNEL FULL SIZE NVR

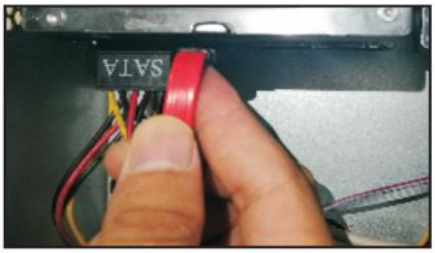
This product supports 8 SATA hard drives. The pictures of the installation are only for reference, please take the real object as the standard. Please make sure that the device is powered off before the installation.
① Remove the cover and loosen the screws to take out two mounting bars.
② Fix the HDDs on the mounting bar with screws.

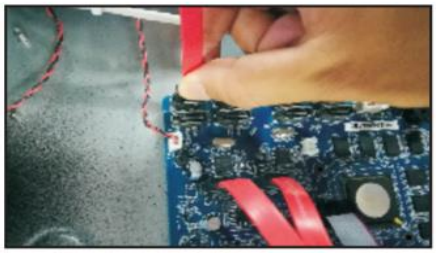






③ Install the two mounting bars with HDDs back to the device (It is recommended to install the copper-pillar provided in case the HDDs are damaged by external forces).
④ Connect the power and data cables.

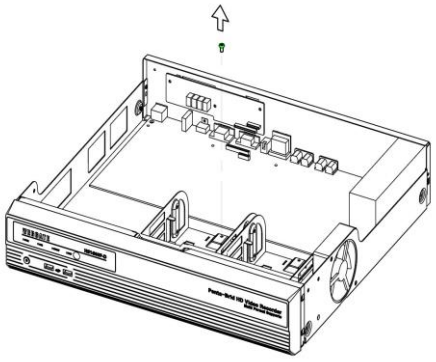




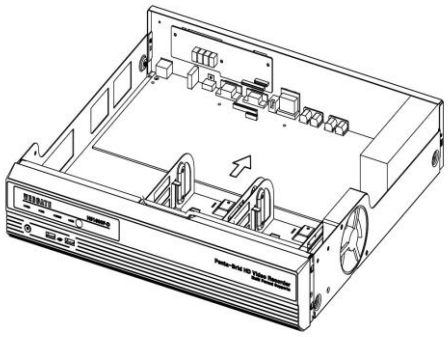
⑤ Install back the cover and secure it with the screws.
Tips: Please check the inside structure of the device and make sure the cables connected well before installing the cover back.

16 CHANNEL RAID NVR / 36 CHANNEL RAID NVR / 64 CHANNEL RAID NVR

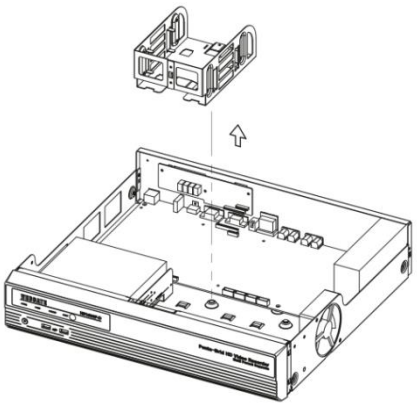
1. Unscrew bracket screws that are fixing it to a NVR.



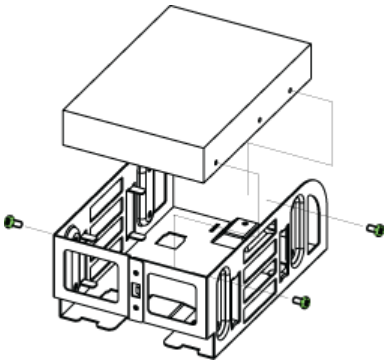
2. Push HDD bracket to a direction shown in the right picture and separate from fixtures.



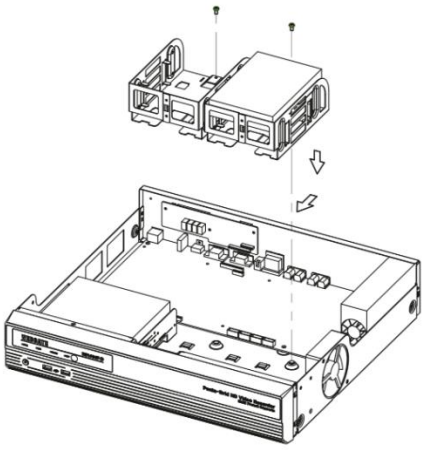
3. Lift HDD bracket to a direction shown in the right picture and separate from the bottom.



4. Place HDD in a HDD bracket and fasten 4 screws on each side.



5. Place HDD bracket fastened with screws in NVR and fasten it on the bottom with screws.



<Note>
Below is SATA cable socket sequence of a mainbaord.
Up to 6 HDDs can be installed inside NVR.

INT F can not be used as RAID function.

Main Board	Disk Manager
INT A	INT A
INT B	INT B
INT C	INT C
INT D	INT D
INT E	INT E
INT F	INT F
eSATA	eSATA

64 CHANNEL Hot Swap NVR

This series of the product supports 16 SATA hard drives. Please make sure that the device is powered off before the installation.

① Get the brackets and screws of installing HDDs from the accessories and then fix two brackets to the HDD.

② Open the front panel of the device.

③ Use one hand to hold the handles of the two brackets respectively and push the HDD into the HDD slot. Clamp the HDD to make sure the HDD to install successfully.

④ Choose the number of installing HDDs according to your need as above-mentioned methods.

<Warning>
The HDD guide is made of plastic, so be careful not to apply strong force or to damage it when assembling screws with strong torque.

Connecting other devices

VIDEO Output (HDMI) connection

Support HDMI monitor having 1920X1080 and UHD/4K (3840X2016) resolution. Also, NVR can automatically detect the max resolution of HDMI monitor when the HDMI resolution is set to "UHD/4K (Preferred)". So, if the monitor supports only FHD, the video output resolution will be FHD. If the monitor supports UHD/4K, the video output resolution will be UHD/4K.
Some monitor can be detected as FHD monitor even if the monitor supports UHD/4K. At that case, please set the NVR's HDMI resolution as "UHD/4K (Fixed)".
Note that 4 channel PoE NVR and 8 channel PoE NVR support 1920x1080 only.

VGA Monitor connection

VGA output supports main monitor output (HDMI duplicate) and SPOT output*. The supported resolutions are 800x600, 1024x768, 1280x1024 and 1920x1080. Please check the supported resolution of monitor.

* Adopted differently based on product specification

<Note>

- ✓ **Reboot is required when the HDMI resolution is changed**
  Select the resolution at [Menu – Device – Monitor – HDMI Resolution] and reboot
- ✓ **Changing VIDEO output resolution by Remote Controller**
  Push [FUNC-4-2-3-1-2-*X*-FUNC-MULTI] button sequentially and resolution will be changed according to the value of *X.*
  X: 1 – 1920x1080(2M)
  X: 2 – 3840x2160(UHD/4K Preferred)
  X: 3 – 3840x2160(UHD/4K Fixed)
- ✓ **Changing the mode of VGA / SDI output**
  Select the mode of VGA / SDI output at [Menu – Device – Monitor – SDI/VGA/CVBS Output] and reboot.
- ✓ **Changing VGA output resolution**
  [Menu – Device – Monitor – VGA Resolution]: select resolution of VGA output.
  Please reboot after changing completed.
- ✓ **Changing VGA output resolution by Remote Control**
  Push [FUNC-4-2-3-1-2-*X*-FUNC-MULTI] button sequentially and resolution will be changed according to the value of *X.*
  X: 1 - 800x600
  X: 2 - 1024x768
  X: 3 - 1280x1024
  X: 4 - 1920x1280

<Caution>

1. Must connect the power cord to the grounded outlet. If not, it may cause electric shock or injury, and may cause the damage or malfunction of product.
2. It is recommended to use certified HDMI cable. If the cable is not a certified cable, 4K UHD may not be displayed. (Recommended: HDMI 2.0 certified cable)
3. If HDMI resolution is set to "UHD/4K (Prefered)" and HDMI monitor does not support 3840x2160 (4K UHD), then the resolution of video output will be automatically changed to 1920x1080. If monitor supports 4K UHD, then the resolution of video output will be automatically changed to 4K UHD. *
4. If HDMI resolution is set to "UHD/4K (Fixed)" and HDMI monitor does not support 3840x2160 (4K UHD), then monitor cannot display anything. Please change the HDMI resolution to 1920x1080 by Remote Controller.

* It can be differently applied depending on models.

Connecting a Camera

Please connect the network cable and register/connect the IP cameras using UI. IP cameras supporting Onvif Profile-S or WESP can be connected. Also, other DVR (supporting WESP)'s channel can be connected such as an IP camera.

Connecting a power cord

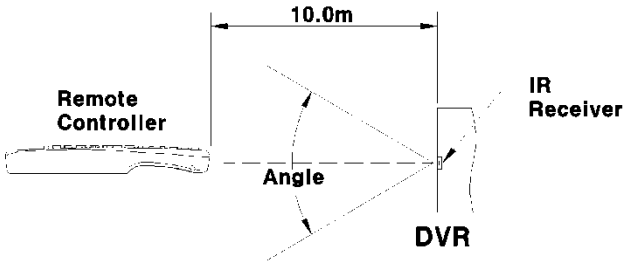
When power cord is connected, NVR starts booting automatically.

Connecting an audio

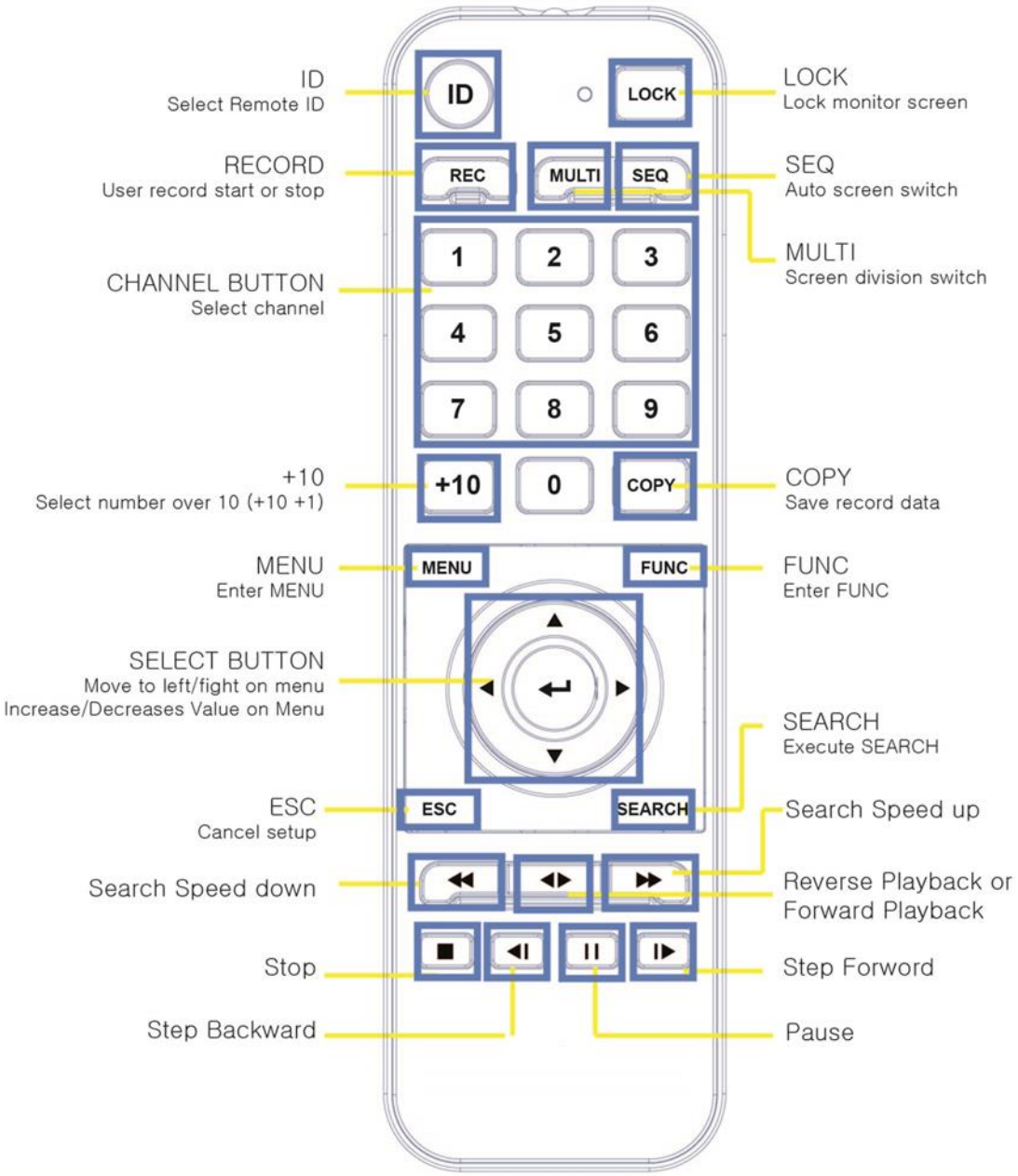
RCA cable to connect audio input/output devices to NVR.

Remote control

Can use every function of the DVR and control several DVRs with only one remote control. To be able to use the remote control, please create a user ID on the remote control ID section of system settings. (See the right picture for working angle of a remote control)



Horizontal Angle : ± 30°
Vertical Angle : ± 30°



Connecting external device

Connecting USB Device

USB port can be used for copy of recorded data and for mouse.
See below table for USB Device specifications.

USB specifications	Ver 2.0 or later
Usable device	USB Memory Stick
Voltage specifications	DC 5V / Max. 1A

<Caution>
USB memory stick should be formatted as FAT32.
NVR may not recognize USB Flash memories that require additional program on MS Windows.

Connecting eSATA Device

(Only for models supporting eSATA) If external eSATA storage is used, it can be connected to a rear eSATA port. Additional power for eSATA device will be required as NVR doesn't supply power.

<Note>

1. Check compatibility of eSATA with NVR as not all eSATA are compatible with NVR.
2. If eSATA is connected to NVR when it is on, it may not be recognized depending on external devices. So we recommend following the below steps.
   1) Turn off NVR.
   2) Turn off eSATA then connect it to NVR.
   3) Turn on eSATA.
   4) Turn on NVR.

Connecting input/out terminals

Wire end handling

See below for wire end handling used in terminal block. Please work on single line and multiple line as they have different thicknesses.

- Multiple lines: Peel off the recommended length (8~10mm) and lead-coat it. Use AWG 22 ~ 26.
- Single line: Peel off the recommended length (8~10mm) and use AWG 20 ~ 26.

Connecting the sensor

Specification

Below requirements need to be met in order to connect the sensor to ALARM IN port.

Specifications	Number of input channels	Refer the specification of the model.
	Input Type	N.C, N.O support
	Supported sensor	Dry contact sensor
	Connection method	Connect the trimmed wire to terminal block

Connecting relay

Specifications

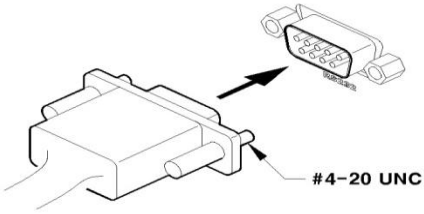
Please see the below table for alarm output requirements.

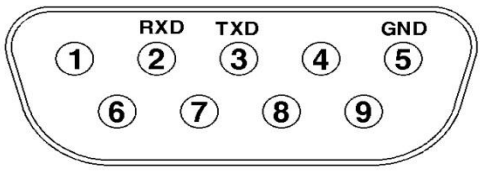
Specifications	Number of output Ch.	Refer the specification of the model.
	Output type	Dry Contact
	Connection method	Connect the trimmed wire to terminal block

Connecting USB TO SERIAL

Connecting Text Input Devices (ATM / POS / Access Control)

By connecting the USB TO SERIAL cable to USB port of NVR, it is possible to record text data which is input from external device such as POS/ATM through USB TO SERIAL cable with video.





Please set the serial configuration and text information at [Device] menu for RS232 (D-Sub 9pin) connection.

<Note>
Currently, the model name "NEXT-RS232 4P" is available for USB TO SERIAL cable.

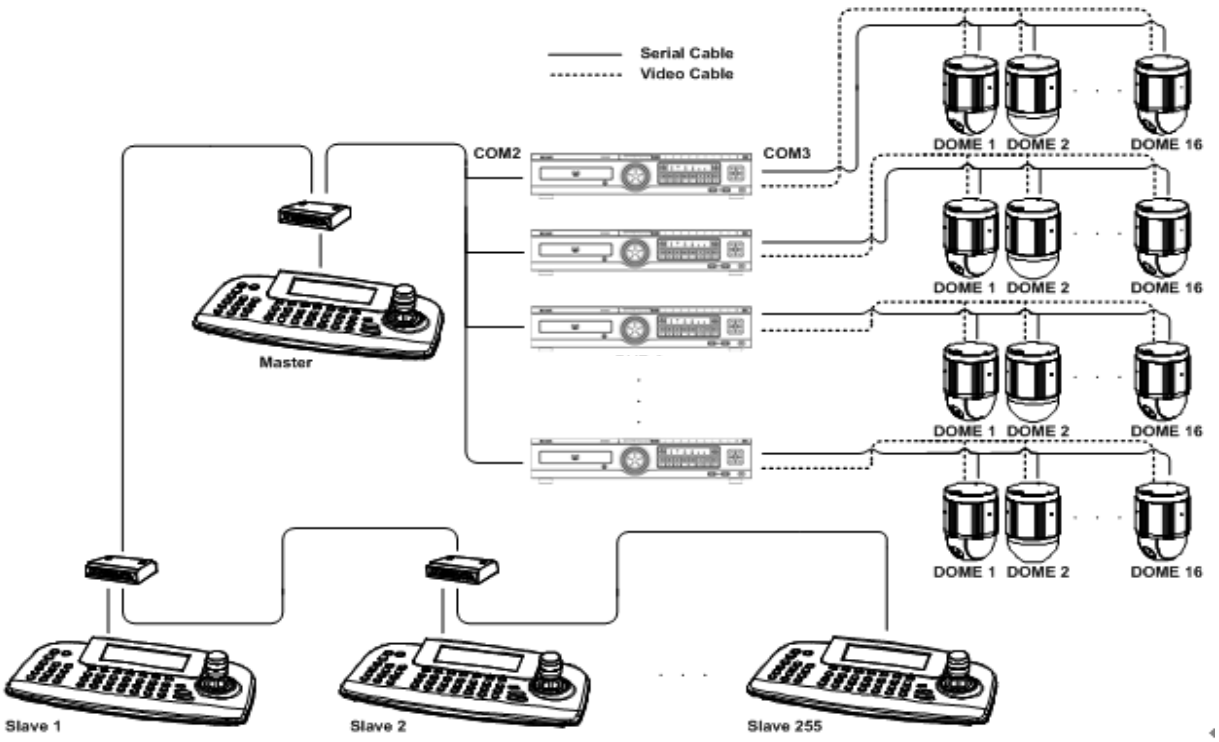
Connecting RS485 K/B serial port to external device *

Keyboard device can control all functions of NVR and IP PTZ camera connected to NVR when Keyboard device is connected to RS485 K/B serial port of NVR. Also, multiple keyboards connected in parallel can be used. Keyboard can select NVR's ID and can control specific NVR among parallel connected NVRs.
Please refer the manual of PTZ and keyboard for more detail.

* Adopted differently based on product specification

Connecting PTZ & Keyboard

NVR can be connected using keyboard and PTZ control is possible for all channels connected to NVR. Also, multiple keyboards extension as Slave can be used limitless with Master Keyboard. In the case, Master Keyboard has priority for all controls. Please refer the instruction manual for PTZ keyboard connection & its way of control which comes with PTZ/ Keyboard.



Configuration using 2 serial ports

PTZ and Keyboard can be connected to NVR's 2 serial ports. In such case, keyboard can control NVR and PTZ at the same time, and NVR can control PTZ devices.

The upper diagram represents configuration of multi NVRs with PTZ. To control PTZ using keyboard, please select NVR ID then select camera for control.

control device	connection device
Keyboard (Master/Slave)	All NVRs can be controlled, all PTZ can be controlled
NVR	PTZ directly connected to NVR can be controlled

Configuration using 1 serial ports

When using 1 serial port, user can connect both of PTZ and Keyboard to a port, and user can select a PTZ through the keyboard. According to NVR's COM port setting, connected controllable device can be selected, and by choosing a NVR ID, keyboard can control several NVRs.

In case PTZ is setup on NVR COM port, user can use it as follows.

Control device	Connection device
Keyboard (Master/Slave)	All NVRs can't be controlled/ All PTZ can be controlled
NVR	Only PTZ directly connected to NVR can be controlled

In case Keyboard is setup on NVR COM port user can use it as follows

Control device	Connection device
Keyboard (Master/Slave)	All NVRs can be controlled, All PTZ can be controlled
NVR	All PTZ can't be controlled

Appendix

Problem solving [FAQ]

problem & symptom	solution
If system power isn't on, LED on the system front won't operate	✓ Check the power of system ✓ Check power voltage in out ✓ Check or replace power supply if power doesn't turn on after above procedure
No video on some channels with black screen	✓ Check the camera connected with relevant channel. Occasionally, the symptom may occur if camera video doesn't input correctly. ✓ Check if power is supplied to camera correctly. ✓ Occasionally, the symptom may occur with weak video signal from video distributor when the video is connected with variable systems. In this case, the symptom can be figured out/ solved connecting the camera directly to NVR.
Only logo screen shows repeatedly	✓ Do auto upgrade using front USB port. 1. USB memory with FAT32 format is required. 2. Copy NVR's Firmware file (*.dat) to USB memory. 3. Insert that USB memory to NVR's front USB port. 4. Turn OFF and ON the NVR's power. 5. During booting, progress bar will be displayed on monitor and NVR will be automatically rebooted. ✓ If auto upgrade is failed, main board may have a problem or SW is damaged. Please contact CS for a further check.
Cursor doesn't move in Calendar Search.	✓ Check if marked at channel and date you want playback ✓ Both channel and date should be checked to start playback.
"HDD FAIL" icon and error message pops up.	✓ Please check HDD connection status. Please contact local dealer if this message continues to pop up even if there is no problem in connection.
There is no added information of HDD after installing additional HDD.	✓ Please check if additional HDD is compatible with NVR. To know more about compatibility, please contact CS team of manufacturer.
Network setup using router is difficult.	✓ Please refer to product manual for details ✓ Please refer to UPnP section under "Network connection and setup" if a user is using router for network connection.
Lost password.	✓ Please contact CS team of manufacturer.
Copied data is not played in the PC.	✓ Please don't remove media during copy or don't turn off NVR. ✓ Please install multi codec for playback data copied in avi format.
Recording is not working.	✓ Please check if camera input is well connected ✓ Please check record mode. ✓ Please check HDD is ready for record.
Recorded picture quality is not good.	✓ Please set picture quality as higher quality on webpage of IP camera.

Compatible HDD

For compatible HDD information, please refer to technical supports of manufacturer.
For NVR model using DC 12V adapter: In case of using HDD with power consumption over 6W, it is highly recommended to use optional adaptor with higher current (DC 12V 5A).
In case of 4ch PoE NVR and 8ch PoE NVR, we recommend using up to 3TB for Seagate Skyhawk HDD and upto 6TB for WD Purple HDD.

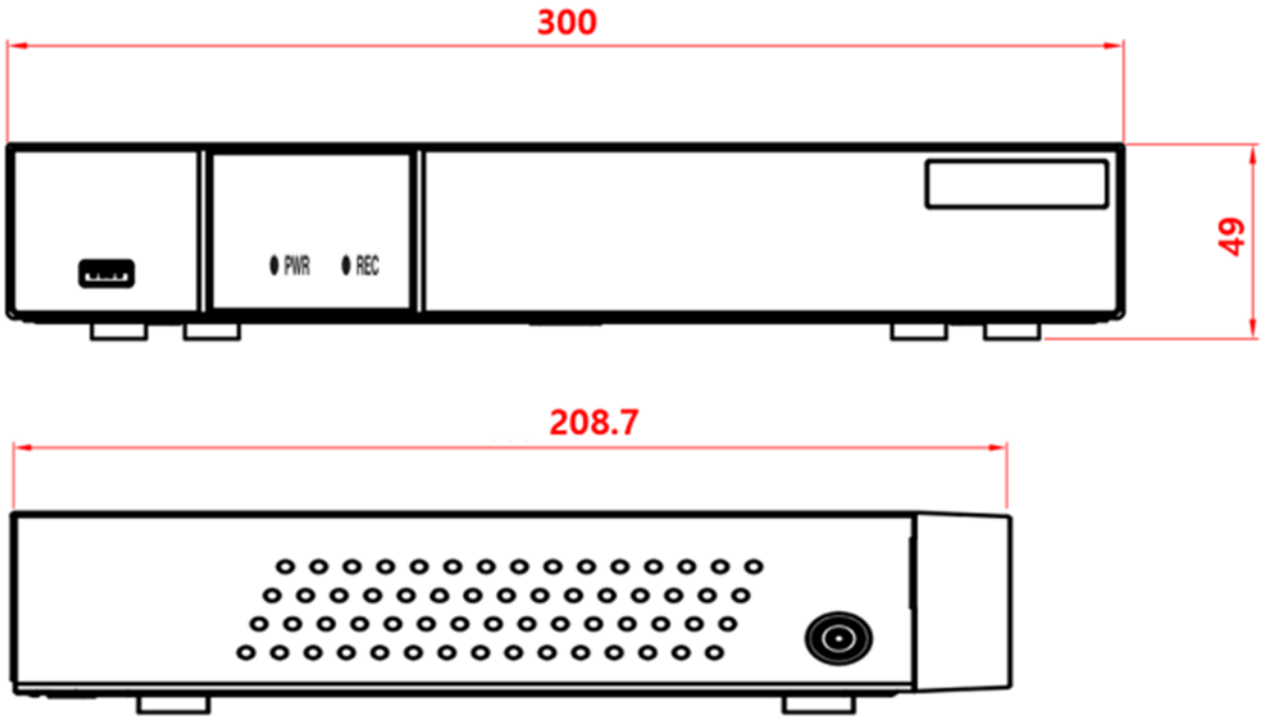
Factory default set-up values

System			
Date/time	Time		Current time
	Time zone		UTC +09:00 Seoul
	Daylight Saving Time (DST)		Off
	Date Format		Month/Day/Year
	Sync with NTP		Off
Disk	Overwrite		On
	Block Playback		Off / 5Day
User Setup	User		admin
	Password		12345
	Additional User Setup	Auto Login	On / admin
		Auto Log-Out	Off / 1 Min
		Auto Lock	Off / 1 Min
Utility	NVR Alias		NVR0
	Language		Previous setting (Manually set when shipment)
	Key Buzzer		On
	NVR Keyboard ID		1
	NTSC/PAL		Previous setting (Manually set when shipment)
	Setup Wizard		Previous setting (initial setting : on)
Network (Previous setting is not changed when Factory Reset)			
Network	Type		Ethernet
	Automatic Addressing (DHCP)		Off
	IP Address 1		192.168.0.5
	Net Mask 1		255.255.255.0
	Gateway		192.168.0.1
	UPnP Port Forwarding		On
	DNS 1/2/3		4.2.2.1 / 0.0.0.0 / 0.0.0.0
	Port		80
	Bandwidth Limit (Mbps)		unlimited
	Video Streaming (RTSP)		Port 554 / Auth On
	IP Filtering		Off
	Service Streaming		Remote DVR
DDNS			inactivate
WRS			Inactivate
Radius			inactivate
Device			
Camera	Status		On
	Name		Cam 1 ~ 64
PTZ	Port		Inactivate
	Device		Inactivate
	Address		Inactivate
	Baudrate		Inactivate

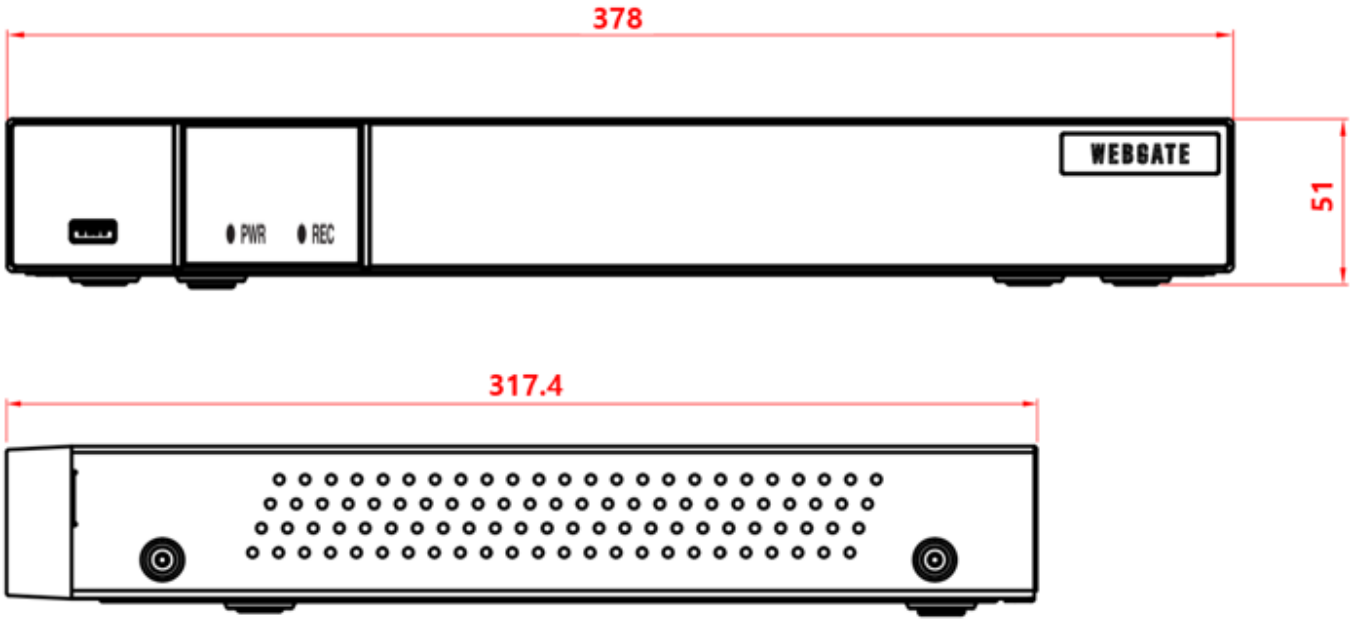
	Keyboard	Port	None	
Monitor	Edit Auto Sequence (SEQ)	Channel	Cam 1~64	
		SEQ Rotation	1~64	
	Sequence Interval		5 (Sec)	
	Restore after Event popup		Off	
	Resolution	HDMI resolution	1920x1080	
		VGA resolution	1920x1080	
Event				
Event	Activate Event Check		On	
	Schedule		Always Check	
	Event Actions	Buzzer	Off	
		Email	Off	
		FTP	Off	
		Video Popup	Off	
		System Alarm	Always on event	
			System	HDD Fail Password Fail
			Others	Inactivate
		Camera Preset	Off	
		Alarm Push	Enable	
			System	HDD Fail
	E-mail Setup	Recipient Address 1	receiver@gmail.com	
		Recipient Address 2		
		Recipient Address 3		
		Sender Address	dvr1@dvr.com	
		Subject	Event Notification	
		Attach Picture	Off	
		SMTP Server Address	SMTP_SERVER	
		SMTP Server ID	Email_id	
		SMTP Server Password	xxxxxxx	
		SMTP Server Port	25	
		SMTP Server Authentication	Not Use	
	FTP Setup	Server IP/URL	FTP_SERVER	
		FTP Directory	/	
		User Account ID	ftp_user	
		User Account Password	xxxxxxxx	
Motion	Video Channel		All channel	
	Activate Motion Detection		On	
Record				
Record	Record Mode		Normal/Event Record	
	Program		A (Normal/Event max fps for all channel)	
	Emergency Record		On	
	Pre Event Duration		5 seconds	
	Post Event Duration		5 seconds	

Product Dimension

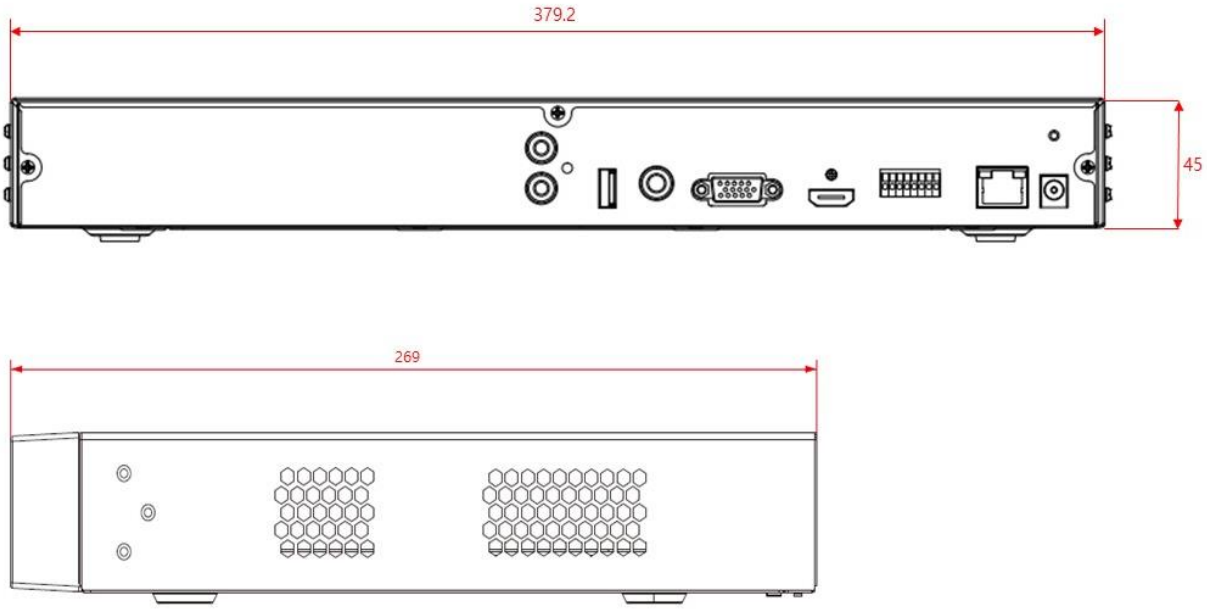
4 CHANNEL PoE NVR (V3) / 8 CHANNEL PoE NVR (V3)



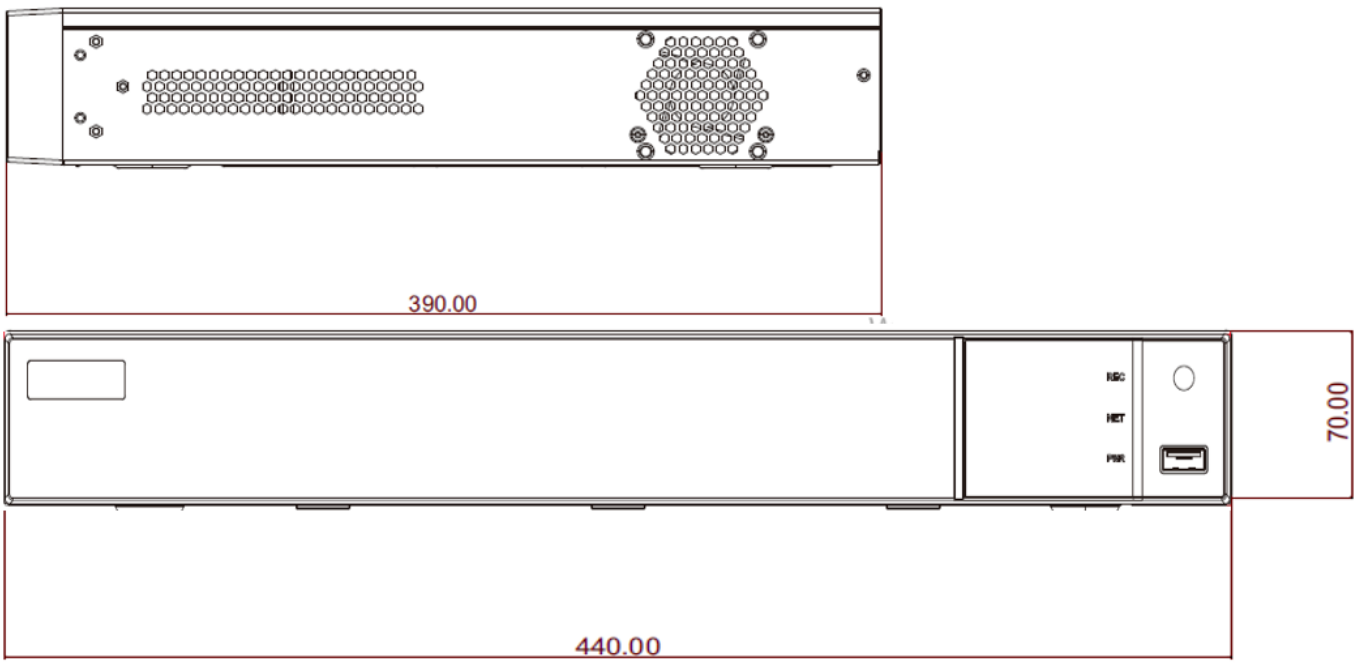
16 CHANNEL PoE NVR (V3)



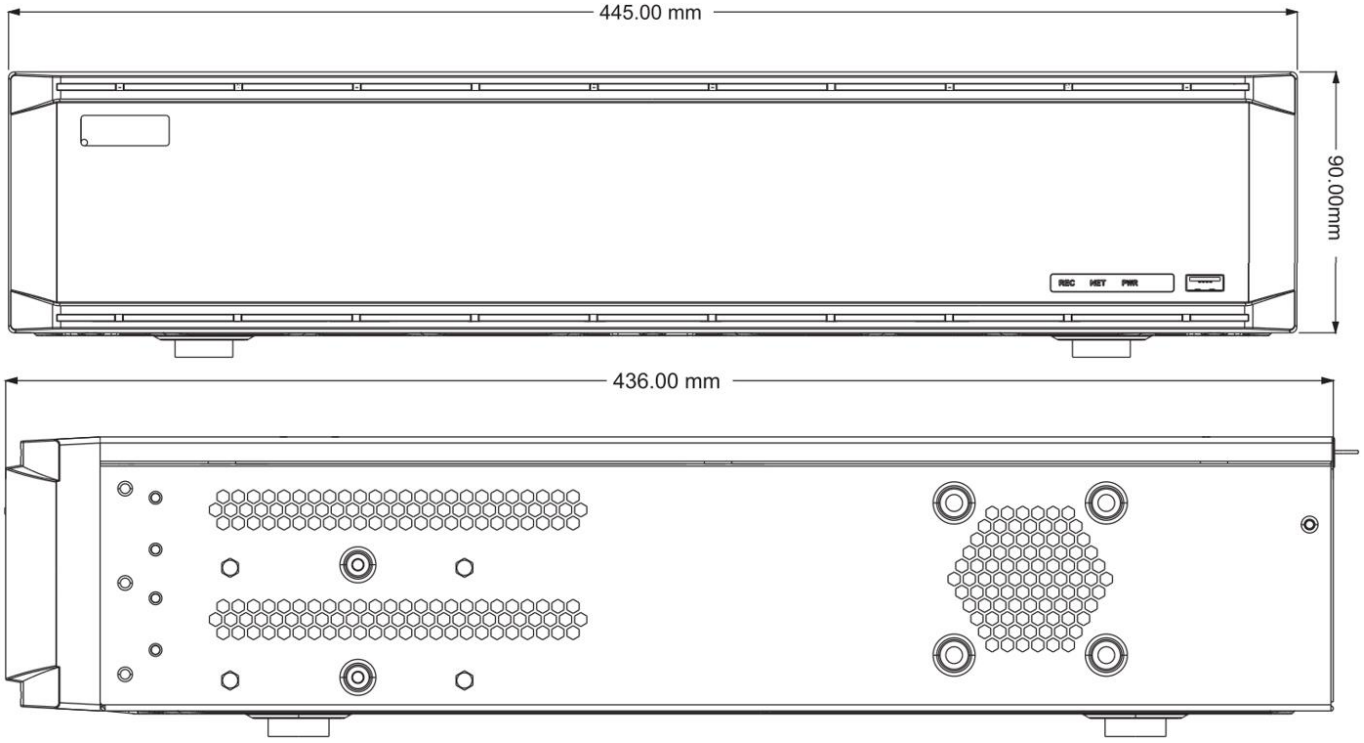
16 CHANNEL NVR (V2)



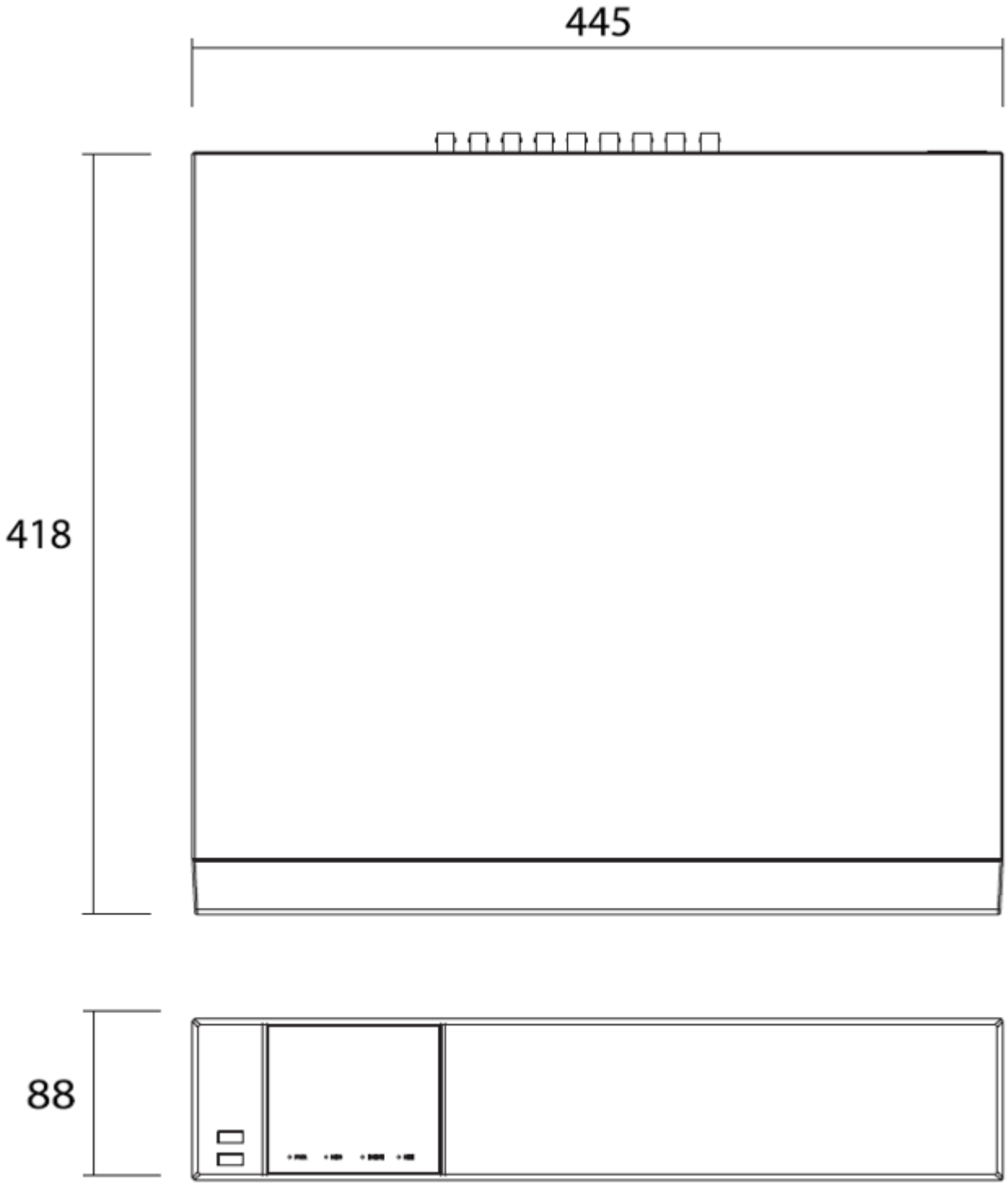
36 CHANNEL NVR



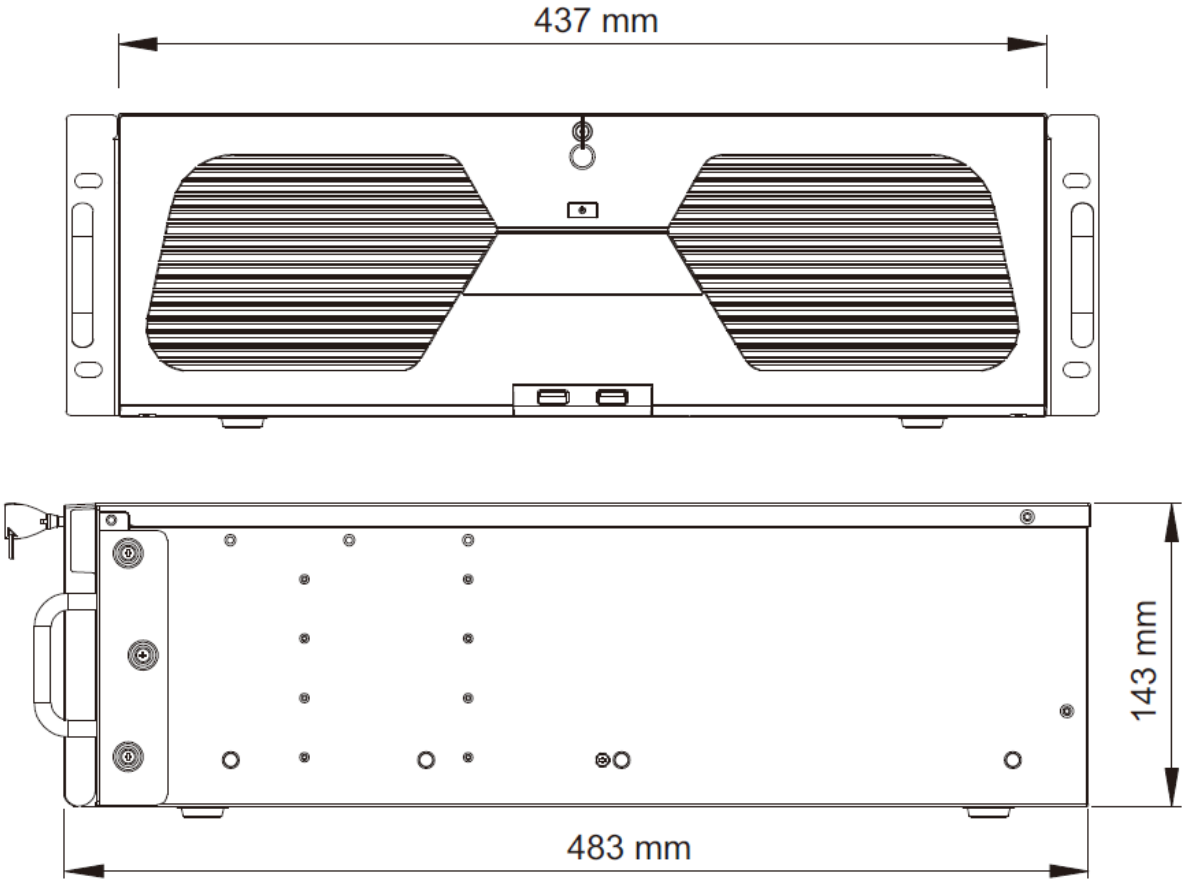
16 CHANNEL FULL SIZE NVR / 36 CHANNEL FULL SIZE NVR / 64 CHANNEL FULL SIZE NVR



16 CHANNEL RAID NVR / 36 CHANNEL RAID NVR / 64 CHANNEL RAID NVR



64 CHANNEL HOT SWAP NVR



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Manufacturer might service at user's cost for following request made by customer.

1. Customer notice.
   - ✓ Please make regular schedule to check unit status (Daily check is recommended).
   - ✓ Manufacturer will not take any responsibility on the physical/human damage caused by robbery, natural disaster.
   - ✓ A/S will include product only manufactured by original manufacturer.
   - ✓ Any damage caused during installation will be dealt with Installation Company.
   - ✓ Manufacturer doesn't't take any responsibility on wrong specified feature excluded in product manual or described improperly by other shopping mall.
   - ✓ Please make sure to backup recorded data as recorded data will be removed while manufacturer repair the unit. Manufacturer will not be responsible for any data loss caused during repair service.

2. Service request for product usage.
   - ✓ Service request on signal check according to usage environment, power check, network setting.

3. Installation or explanation request on external device to be integrated with this product.

4. Simple assemble or disassemble, adjustment and any request for S/W upgrade.
   - ✓ Service request for any damage caused by other stuff coming into device.
   - ✓ In case of simple adjustment without disassemble.
   - ✓ Just for S/W upgrade (not for product repair)

5. Others
   - ✓ Any damage comes from carelessness of customer or explanation request for usage. (Please contact manufacturer for consumable parts)
   - ✓ Any damage comes from wrong media use and service request for this.
   - ✓ Any damage comes from wrong installation.

※ We recommend for user to contact (☎+82-1644-3421) before claiming customer service since customer service will require certain amount of cost.

Warranty

Product name	Digital Video Recorder	Warranty term
Model name	4 CHANNEL PoE NVR (V3) 8 CHANNEL PoE NVR (V3) 16 CHANNEL PoE NVR (V3) 16 CHANNEL NVR (V2) 36 CHANNEL PoE NVR 16 CHANNEL FULL SIZE NVR 36 CHANNEL FULL SIZE NVR 64 CHANNEL FULL SIZE NVR 16 CHANNEL RAID NVR 36 CHANNEL RAID NVR 64 CHANNEL RAID NVR 64 CHANNEL HOT SWAP NVR	1 years after purchase (This warranty term can be changed by contract for supply.)
Date of purchase	/ /	
Warranty term	/ /	
Serial number		

Customer's address	Name	
	Contact	
Address of shop(Company name)	Name	
	Contact	

◈ Please fill out vacant area before selling products.

★ **For customer service** ★

Please read through product manual before claiming customer service.
Any simple malfunctions due to customer's misunderstanding on the product will be fixed by customer's side.
For requesting service?
Please inform details of malfunctions correctly.
Free or non-free repair will be decided based on details of warranty card.

WebGate Inc.
6F Hanlim Venture Town B/D 284 Gongdanro Gunpo Gyeonggido, 435-862 Korea
Main TEL: +82-31-428-9300
Client Service TEL: +82-1644-3421

The damage coming from following condition will be repaired at customer's cost.

1) Any damage comes from customer's carelessness.
2) In case not recommended power is entered.
3) In case user repair unit at their own.
4) Any damage comes from natural disaster (Fire, Flood, earthquake, etc)
5) Consumable parts replacement.

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