

Network Video Recorder

Model KC-VR1N

Instruction Manual

Version 1.1

Before using this product, be sure to read this instruction manual.





2nd floor, Kudan Center Building, 4-1-7 Kudankita, Chiyoda-ku, Tokyo 102-0073 Japan
TEL +81-3-6272-5967

*The contents of this document are subject to change without prior notice.



Revision history			
Rev.	Revision date	Details of revision	Prepared by
1.0	2024.11.7	First edition	Shimada
1.1	2024.12.23	Correction of erroneous description, addition of product installation method on DIN rail	Shimada








Safety Precautions

Meaning of indication

 WARNING	Indicates a hazardous situation which, if the precaution with this indication is not observed, could result in death or serious injury.
 CAUTION	Indicates a hazardous situation which, if the product is erroneously handled by ignoring the precaution with this indication, could result in bodily injury and/or property damage.

Meaning of symbol

	Indicates a “prohibited action.”
	Indicates a “matter to which you should pay attention.”

 WARNING	
	If an abnormality, such as smoke, strange odor, abnormal sound, or entry of water or foreign matter in the product, occurs, immediately stop using the product. Use of this product with an abnormality or failure may cause fire or electric shock.
	Do not disassemble or modify this product. Failure to follow this instruction may cause fire, electric shock, or failure.
	Securely fix this product. Failure to follow this instruction may cause it to fall.
	Make sure that water and foreign matter do not enter the product. Failure to follow this instruction may cause fire, electric shock, or failure.
	Use the specified power voltage. Connect and disconnect the connection cable with the power supply turned off. Failure to follow this instruction may cause fire, electric shock, or failure.
	Connect cables according to the instructions. Do not damage, forcefully bend, or pull cables. Failure to follow this instruction may cause fire, electric shock, or failure.






 CAUTION	
	Do not use this product in an environment out of its operating environmental range. Failure to follow this instruction may cause the product to fail.
	Do not drop this product or give a strong shock to it. Failure to follow this instruction may cause the product to break or fail.
	Do not install this product at a location subject to direct sunlight or heat for a long period. Failure to follow this instruction may cause the product to fail.
	Do not short-circuit the signal output. Failure to follow this instruction may cause the product to fail.

Table of Contents

1. Scope of Application.....	6
2. Product Overview	6
3. Configuration.....	6
4. Specification.....	7
5 . Appearance Drawing	9
6. Explanation of Components, Explanation of Attachment of Accessories	10
7. Installation of DIN Rail Mounting Brackets (Optional) and Installation of Product on DIN Rail	12
8. User Interface.....	14
8-1. Browser display	18
8-2. Scheduled recording	19
8-3. Stopping recording	19
8-4. Data format.....	20
9. Disclaimer.....	21
10. Precautions on use.....	21
11. Federal Communications Commission	22
12. Environmental protection notice	22
13. Others	22

1. Scope of Application

This instruction manual applies to the “Network Video Recorder KC-VR1N.”

2. Product Overview

This is a 4-ch network video recorder compatible with PoE. It can record video according to schedules or events by connecting to KOWA environment-resistant IP cameras. Transmission for up to 100 m is possible due to the M12 X-code cable.

3. Configuration

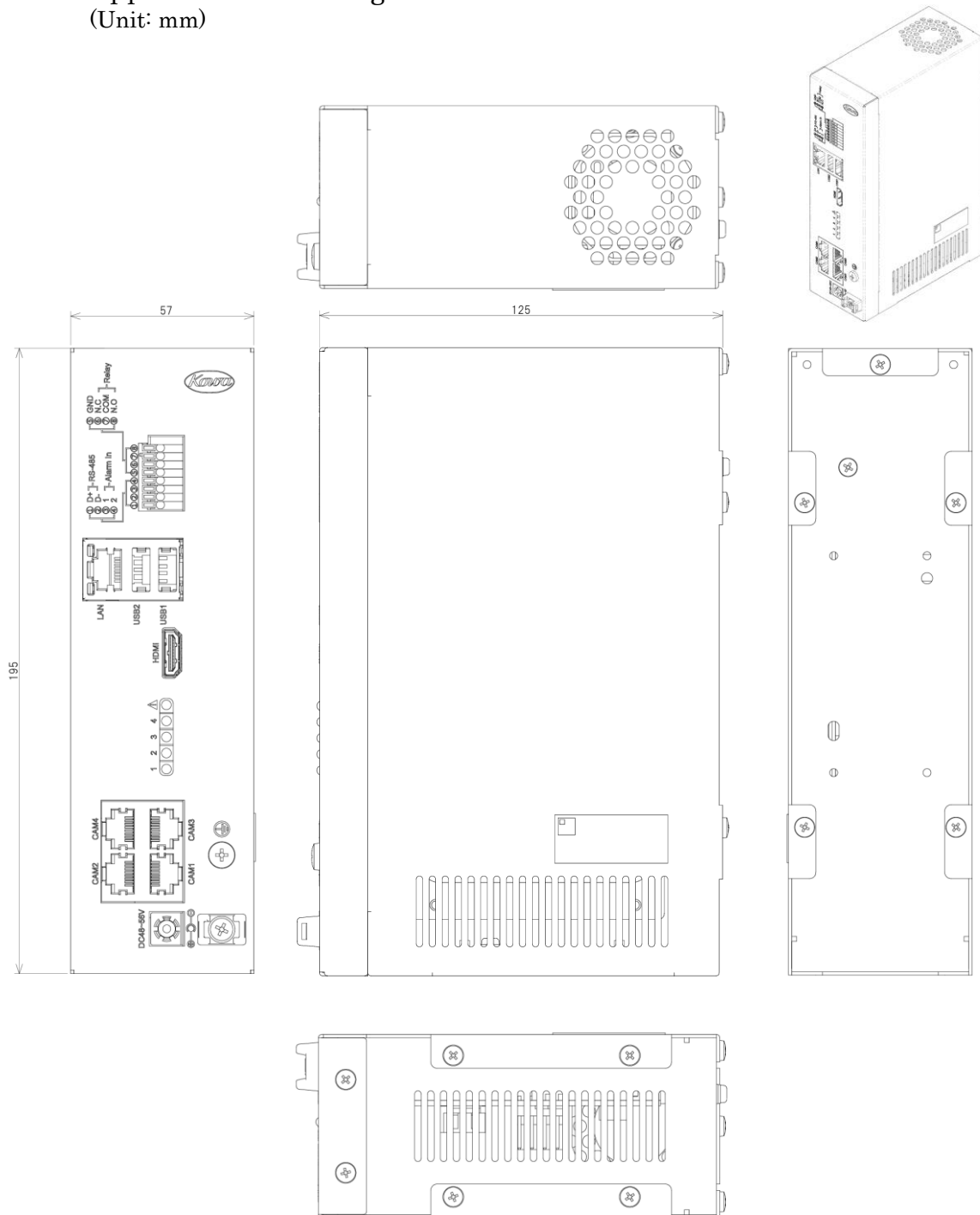
- NVR body	.....	1
- Cable tie	.....	1
- Rubber foot	.....	4
- DIN rail mounting bracket	.....	Optional
- AC adapter	.....	Optional
- AC cable	.....	Optional

4. Specification

Table 1 Main Specifications

External interface	
Ethernet	RJ-45 10/100 Base-T×1
Monitor output	HDMI×1 : Up to 4K2K
USB	USB2.0×2
Trigger input/output	Alarm input × 2 Relay output × 1
RS-485	D+, D—
Power supply input	DC + 48 to 56V DC jack outer/inner diameters: 5.5 mm/2.1 mm AC adapter (option product: FSP120-AWAN3-2YKS 100-240 V AC input, DC24V output, 120 W Recommended replacement interval: 3 years)
Video, Audio	
IP camera input	RJ-45×4, max 15 W (total max 60W) at each PoE 802.3af port.
Split screen	1, 4
Compatible with multi-streams	Main stream, Sub stream
Video compression format	H.264+, H.264, MJPEG
Camera control protocol	ONVIF Profile S
Recording function	
Recording modes	Manual, Schedule, Alarm input, Event, Motion, Constant
Pre-recording time	5 to 60 seconds
Search function	Date/Time, Event, etc.
Playback speed	×2 to ×64
Storage, Backup, Fan	
Internal SSD	1TB
Recorded data backup method	USB memory stick, FTP server
Storage information	SMART information, free disk space
Recommended fan replacement interval	5 years
Network	
Network function	Static, DHCP, PPPoE, DDNS
Remote browser	Microsoft Edge, Google Chrome
Max. number of accesses	10 users
Various functions	
Initial connection settings	IP Address : 192.168.1.220 User name: admin Password: admin
System setting saving	Save, Load
Language	Nine languages (Japanese, English, and others)
Event function	Output: video push, e-mail, buzzer output, e-map highlight, split screen, relay output Input: HDD capacity shortage, HDD error, no network connection, camera loss, camera motion, camera alarm IN, NVR alarm IN
System function	System log, Help, Setup wizard, Album, Streaming optimization
Camera setting	Automatic connection, Plug & Play function, Image setting, Video setting, Motion setting

System requirements	
Recommended PC operation specifications	Windows10 operating environment
Rating	
Power supply input	DC + 48 to 56V
Power consumption	10 W or less (excluding camera)
Operating temperature/humidity	0°C to +45 °C/20 %RH to 80 %RH (no dew condensation)
Storage temperature/humidity	-30°C to +60 °C/20 %RH to 90 %RH (no dew condensation)
External dimensions	57(W) × 195(H) × 125(D) mm (excluding protrusions)
Mass	Approx. 1.1 kg
Flame retardance	The resin exposed outside is either UL94 flame retardant grade V-0, 5VA or 5VB material.
Environmental Compliance	RoHS2 Compliance
Country of origin	Japan



6. Explanation of Components, Explanation of Attachment of Accessories

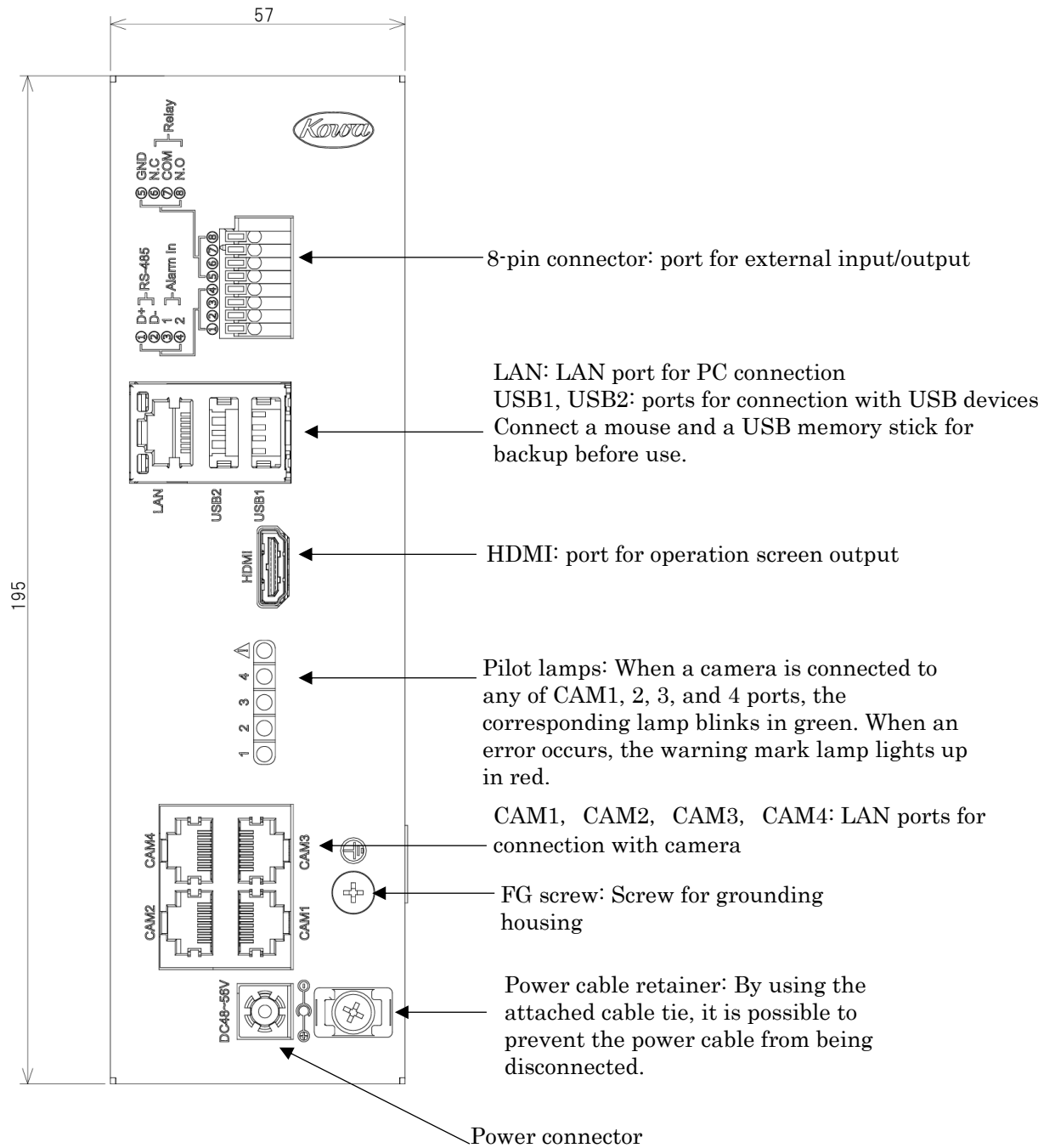


Fig. 2: Front face connectors

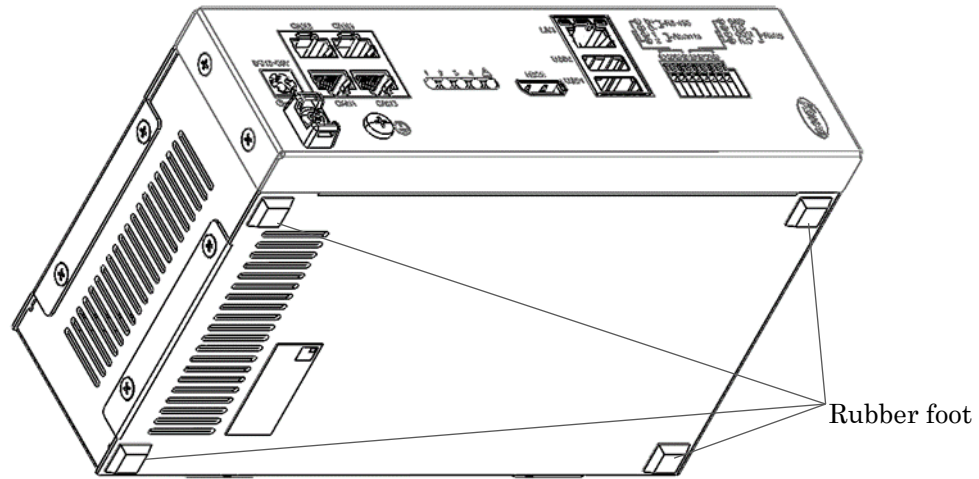


Fig. 3: Example of attachment of rubber feet (horizontal installation)

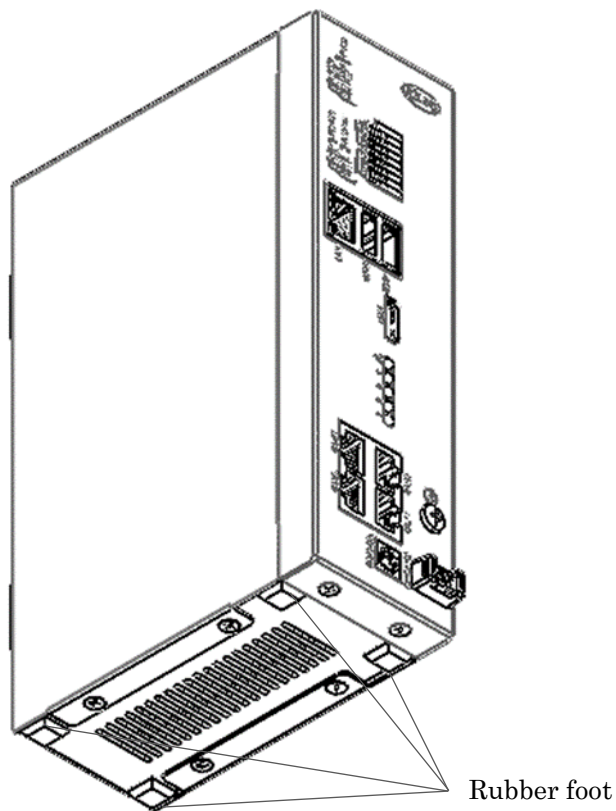


Fig. 4: Example of attachment of rubber feet (vertical installation)

* To prevent slipping and vibration, attach the supplied rubber feet. Attach rubber feet by referring to Fig. 3 when installing the NVR horizontally or Fig. 4 when installing it vertically.

7. Installation of DIN Rail Mounting Brackets (Optional) and Installation of Product on DIN Rail

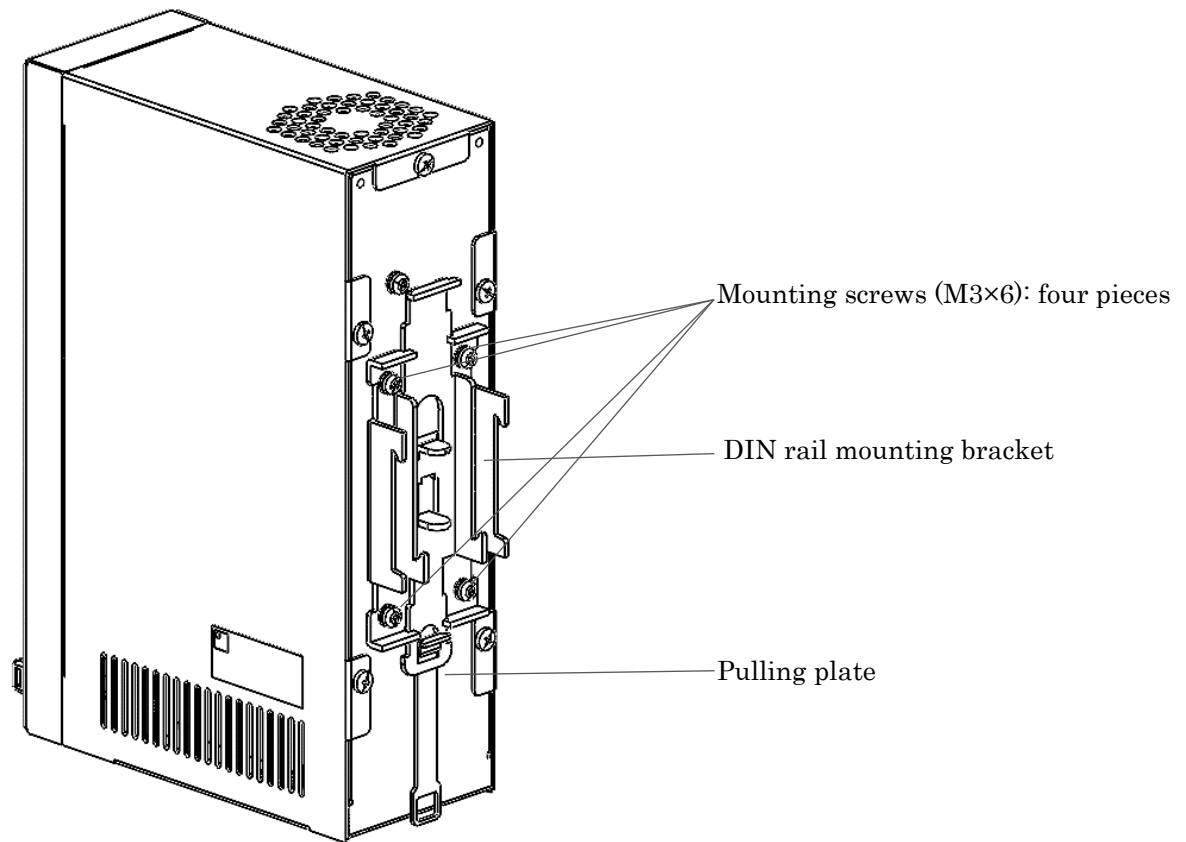


Fig. 5: DIN rail mounting bracket installation drawing (rear face)

* As shown in Fig. 5, clamp the pulling plate with the mounting brackets, then secure the brackets with the mounting screws.

For mounting the NVR on a DIN rail, refer to Fig. 6. For dismantling the NVR from a DIN rail, refer to Fig. 7.

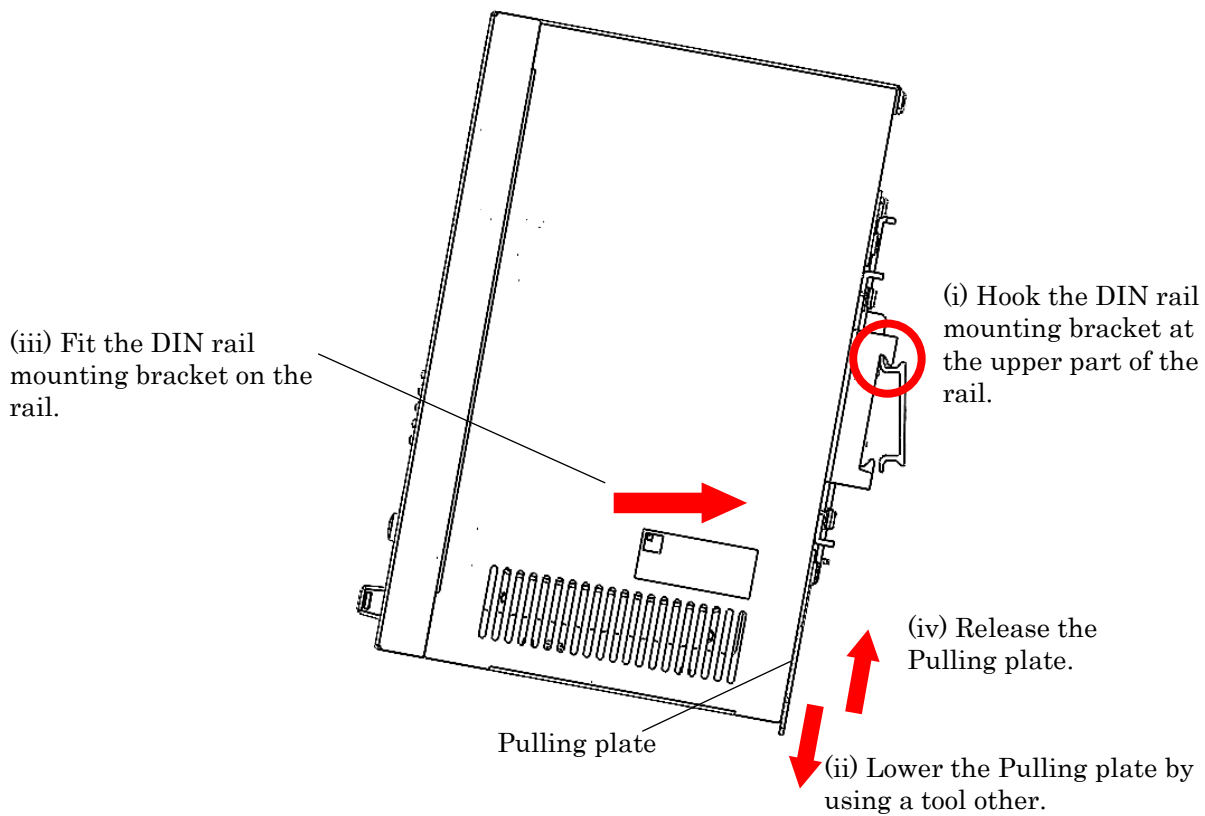


Fig. 6: Mounting NVR on DIN rail

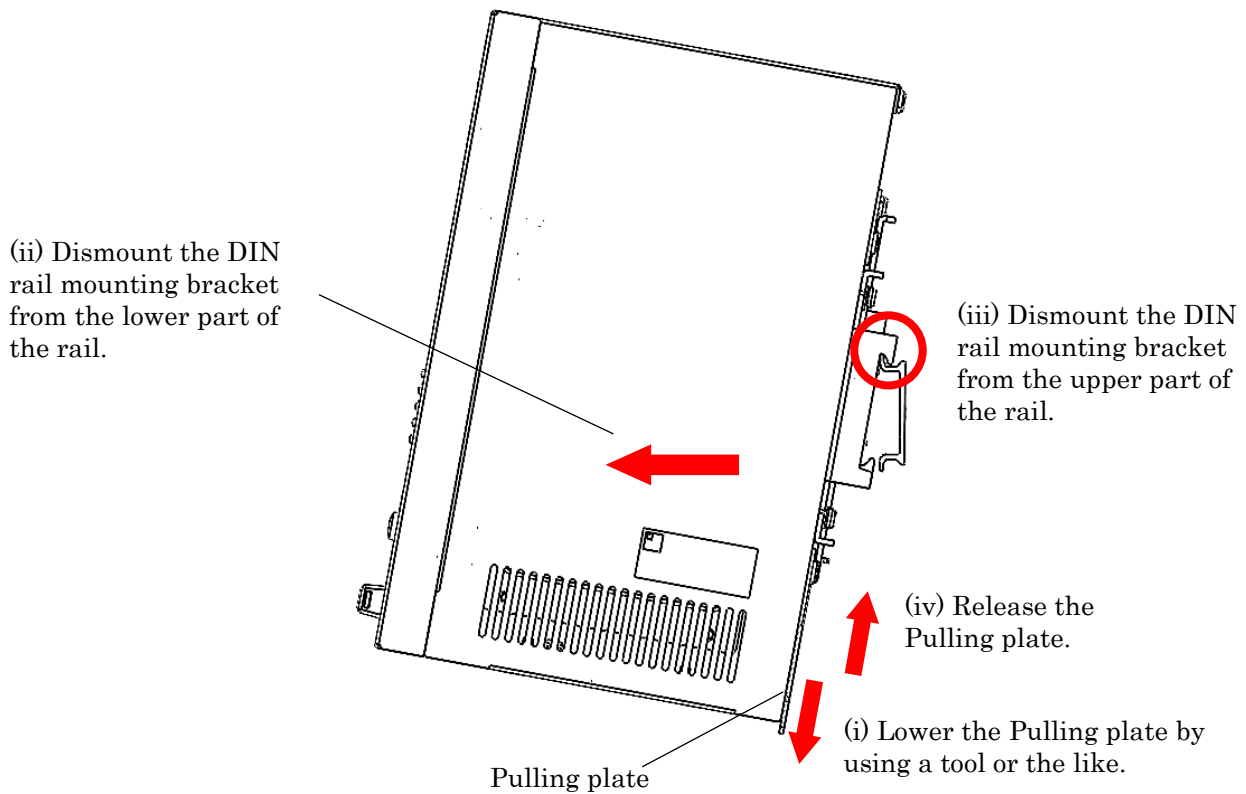


Fig. 7: Dismounting NVR from DIN rail

8. User Interface



Fig. 8 Startup screen/Live mode

* Details refer on the <Help> (P.18).

<Startup screen/Live mode>

(i) These icons have the following main items:

- : Clicking this icon opens the Wizard window. For details, refer to <Wizard> (P.15).
- : Clicking this icon opens the setting window. For details, refer to <Settings> (P.16).
- : Clicking this icon opens the camera search window. For details, refer to <Camera search> (P.16) on a later page.
- : Clicking this icon opens the album window. For details, refer to <Album> (P.17) on a later page.
- : Clicking this icon opens the backup window. For details, refer to <Backup> (P.17) on a later page.
- : Clicking this icon opens the help window. For details, refer to <Help> (P.18) on a later page.

(ii) Display the live video from a connected camera.

(iii) This side menu consists of Display Controller, Camera List, System Information, Storage Information, Log, E-map, and Digital Output.

(iv) Refer to <PlayBack mode> (P.15) on a later page.

(v) The dates on the calendar, where recording data is saved, will be displayed in red.



Fig. 9: Timeline

<PlayBack mode>

When the timeline or calendar is clicked, the mode changes to PlayBack mode. This mode allows you to check the data stored in the NVR.

- (i) Displays the date/time of the recording data. In live mode, this section displays the current time.
- (ii) Clicking a button indicated with time changes the timescale of the timeline.
- (iii) The time for which there is recorded data is indicated by a red bar on the timeline.


* Clicking the  icon at the upper right of the screen switches to live mode.



Fig. 10: Wizard window

< Wizard >

Wizard will guide you through the initial setup of your camera. (Password, time, connecting camera, language)

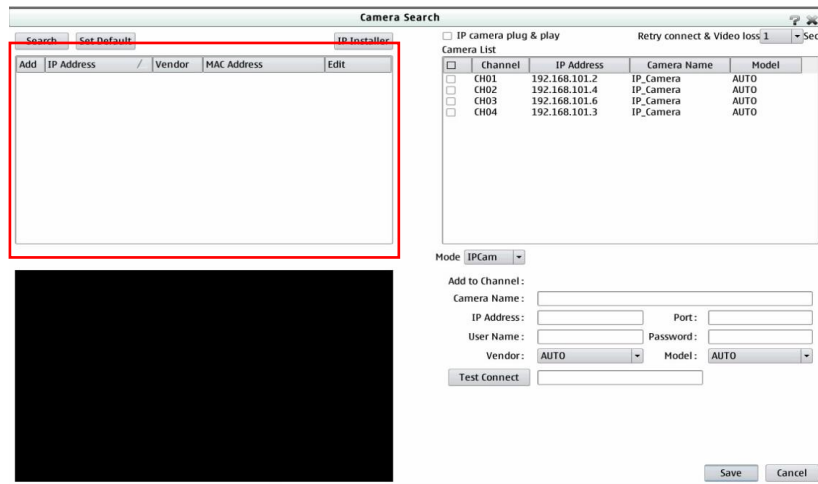


Fig. 11: Camera search window

<Camera search>

This section is used to search for cameras connected to the NVR. Detected cameras are displayed inside the red frame.

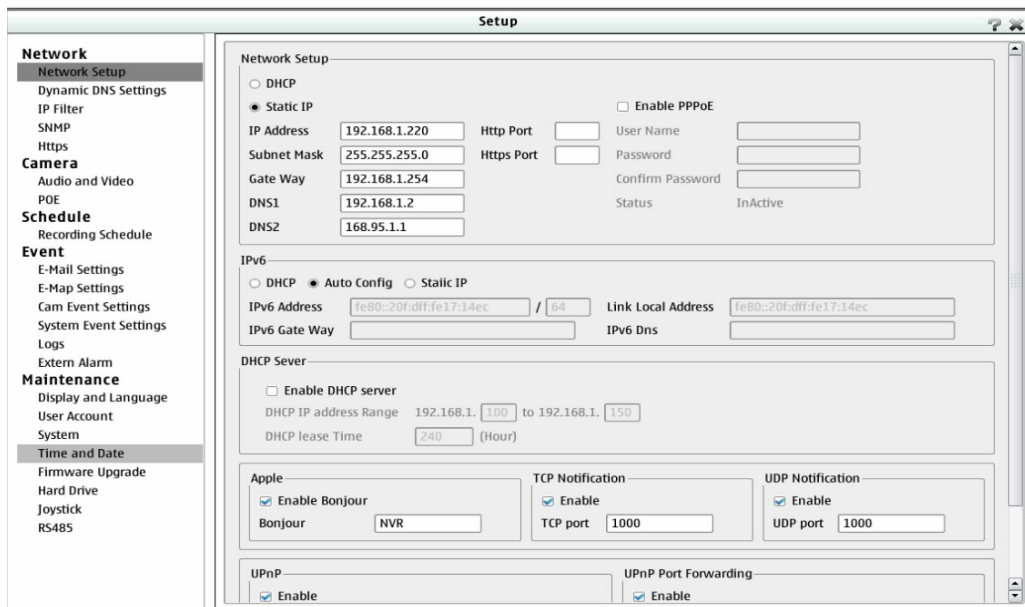


Fig. 12: Setting window

<Setting>

In this section, it is possible to configure various NVR settings.

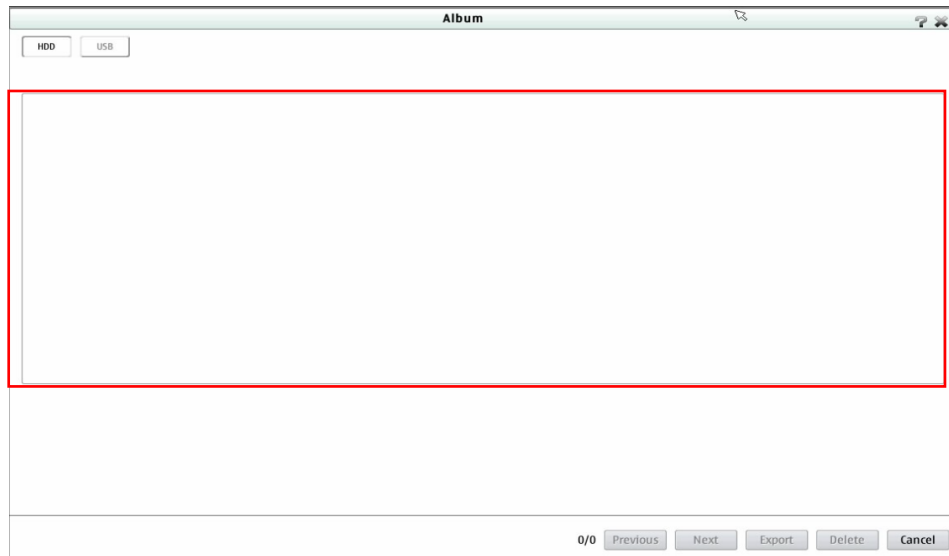


Fig. 13: Album window

<Album>

Saved image data in snapshot are displayed in red frame. By using a USB memory stick, it is possible to extract image data.

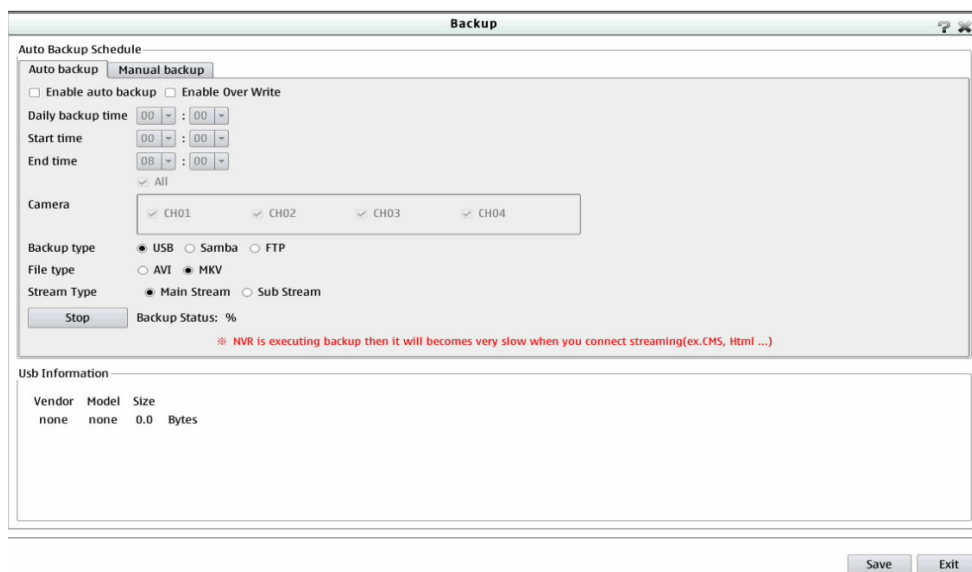


Fig. 14: Backup window

<Backup>

In this section, it is possible to extract data that were recorded by the NVR.

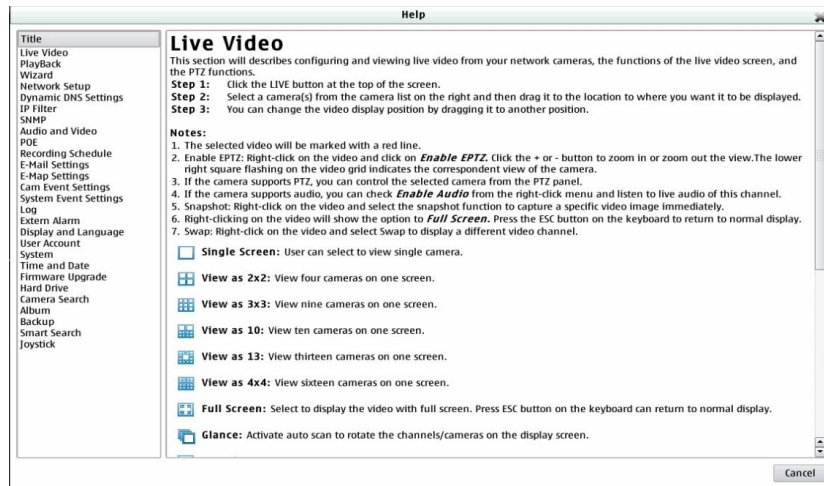


Fig. 15: Help window

<Help>

This page provides detailed explanation of the functions of the NVR. Help can also be found by clicking the help button located at the upper right of each window as shown in Fig. 16.



Fig. 16: Help button

8-1. Browser display

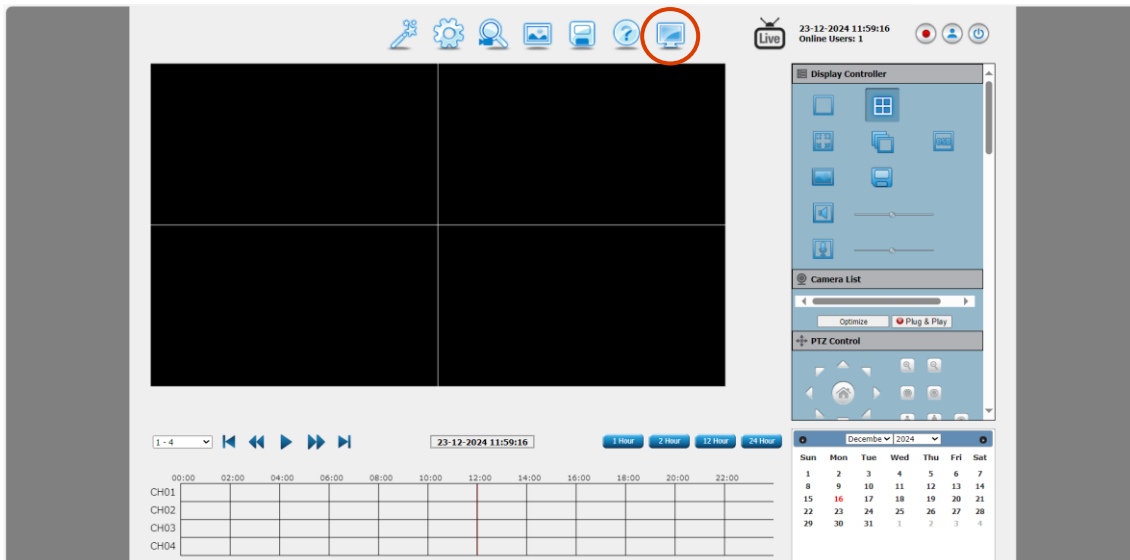




Fig. 17 Startup screen/Live mode in browser display

By connecting the NVR to a PC and entering the IP address of the NVR on a PC browser, it allows you to access and operate the NVR. When access is successful, the screen shown in Fig. 17 appears.

* Please connect a computer with Windows OS.

The Browser display's function are same as the above function. The difference from the above functions is that by clicking the icon indicated by a red circle on Fig. 17, it allows you to move to the startup screen.

8-2. Scheduled recording

Select the recording schedule on the setting window (Fig. 12). Schedule recording starts by checking the “Enable scheduled recording” check box, and switch the recording mark  at the upper right of the screen to . By selecting a recording method from Continuous recording, Record on event, Record on motion, and Record on digital in, and then dragging the cursor on the timeline, it is possible to set the recording schedule from Sunday to Saturday. The bar colors represent the recording methods. Finally, clicking the [Save] button at the lower right saves the settings. For other detailed setting methods, refer to the Help window.

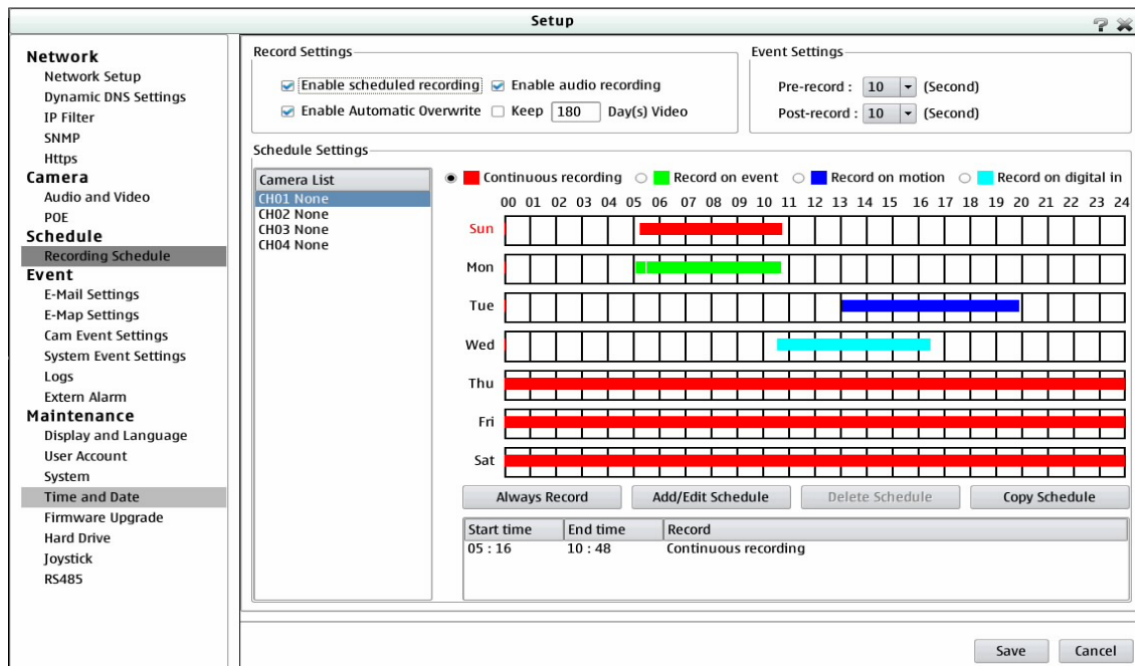





Fig. 18. Scheduled recording

8-3. Stopping recording

Select the recording schedule on the setting window (Fig. 12), and please check the “Enable scheduled recording” check box is unchecked. Clicking the recording mark  changes the recording mark to  and stops the recording. Clicking the recording mark  starts the recording.

8-4. Data format

* We recommend that you back up the data before format.

From the “Hard Drive” section on the setting window (Fig. 12), it allows you to format data. Initializing will start, by checking the model's checkmark, and clicking the [Format] button indicated by a red circle as shown in Fig. 19.

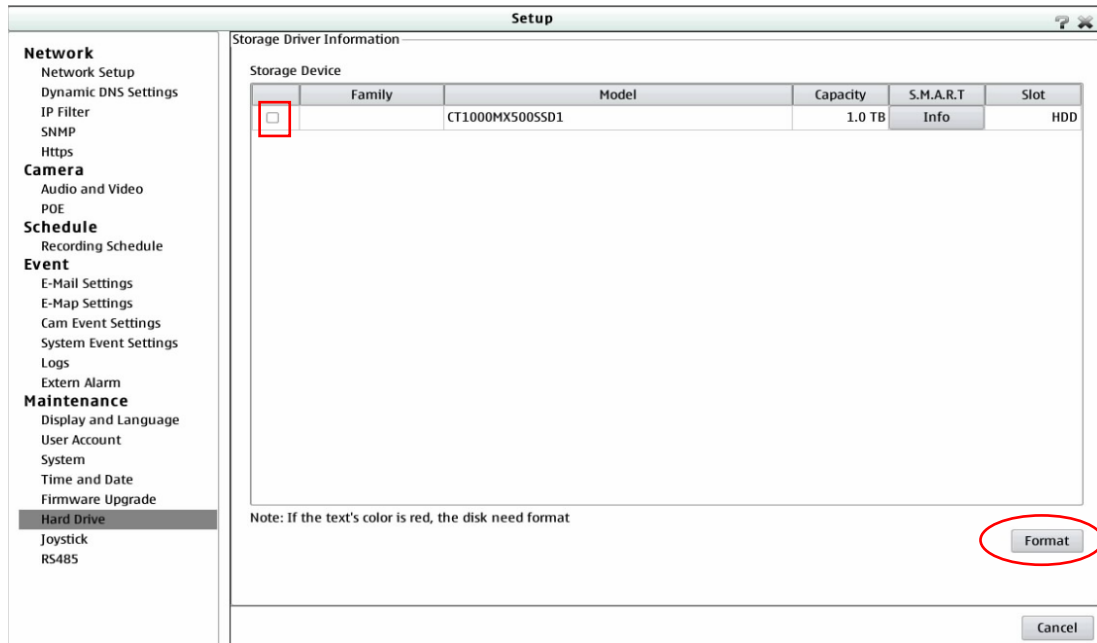


Fig. 19. Data format

9. Disclaimer

- We do not take any responsibility for fires, earthquakes, floods, lightning strikes, acts by third parties, other accidents, customer intentional or negligence, misuse, or failures, damages, and damages (including items caused by third parties) caused by use under abnormal conditions.
- We are not responsible for any incidental damages (loss of business profit, interruption of business, change or loss of memory content, etc.) arising from the use of this product or inability to use this product.
- We are not responsible for any damage caused by not complying with the contents described in this manual.
- We are not responsible for any damage caused by malfunction, etc. due to combination with connected devices.
- The warranty period for this product is one year from the date of delivery.
- Do not disassemble or modify this product. Even within one year after delivery, the warranty will no longer be valid.
- We are not responsible for any failure or damage caused by maintenance, repair, etc. by the vendor from which you purchased this product or by anyone other than our company.
- Even after the warranty period has expired, we will repair the product for a fee upon your request if the repair can maintain the function of the product.
- Items not described in the specifications of this product are not covered by the warranty, and our company does not take any responsibility.

10. Precautions on use

- Do not touch the fan inside the NVR. Failure to follow this instruction may cause the product to fail.
- When connecting to a PC, use a PC that does not have security software installed.
Failure to follow this instruction may prevent the product from operating normally.
- If the PC does not satisfy the recommended specifications or it is co-used for another usage, video may not be appropriately displayed. Therefore, prepare and exclusively use a PC that satisfies the recommended specifications.
- As a USB memory stick to be connected to the NVR, use a memory stick that has been formatted in FAT32 and has a capacity of 32 GB or less.
- The clock inside the NVR deviates from the correct time as the days go by. Periodically correct the clock.
- Install the product so as not to block the vents.
- Do not install the product upside down.

11. Federal Communications Commission

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: 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.

12. Environmental protection notice

At the end of its life span, this product may not be disposed as normal household waste. It must be disposed of at a collection center for recycling of electrical and electronic equipment or contact the manufacturer directly. The product label, inside the manual, or on the packing points to this information. The materials are recyclable according to their labelling. Through reusing, material recycling, or other forms of utilization of old devices you are making an important contribution to the protection of the environment. Please ask your local administrator for the responsible waste disposal center or contact the manufacturer.



13. Others

The product specifications are subject to change without prior notice for product improvement. The functions, designs, etc. provided in this instruction manual are subject to change without prior notice. We kindly ask for your understanding.