

XDR-450/D

5 CH Hybrid HD Mobile DVR
(1) 1080P + (4) AHD 1080P / 720P

Upgrade Version – May 2022



IMPORTANT: The newly upgraded features for XDR-450/D enhanced version applies to serial number containing XDR450D**NTK**xxxxx

User Guide

This manual covers the setup, connection and features of the XDR. For XDR viewing PC desktop software, refer to Ventra software manual

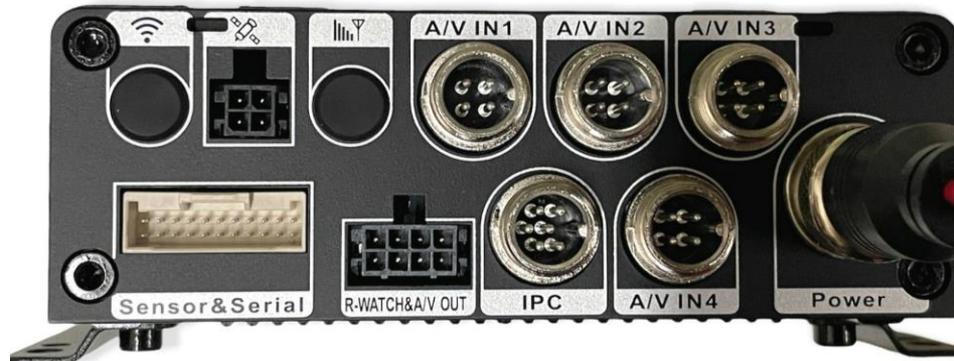
THIS MANUAL CONTAINS UPDATED FEATURES AND SPECIFICATION. PLEASE REFER TO UPDATE NOTICE

Please read and follow all instructions and features before use. Save for future reference.

Specification, models and features are subject to change without prior notice
www.ventrainc.com

***** New Update Notice (Important) *****

- The newly upgraded XDR-450/D version applies to serial number containing XDR450DNTKxxxxx
- System now supports both 1080PHD and 720P (AHD) resolution (see explanation below)
- SD card capacity has been increased to 512 GB total storage. 256 GB per slot x 2
- Recording - (1) 1080P IP x 30FPS + (4) 1080P AHD @ 12 FPS / 720P AHD @ 30 FPS
- New Video out connection (AV OUT) & cable EX4-NPIG
- NDAA Compliant – Novatek SoC



- XDR supports AHD cameras. XDR CPU recognizes/processes video format in Pairs
- If all cameras are the same resolution (1080 / 1080), cameras can be connected in any A/V In 1 – 4 Port
- If mixing camera format, some 1080P and some 720P, then the cameras must either be installed in pairs or skip port
- If connection of mixed format camera is NOT in accordance with this guideline, XDR may not recognize camera or display video

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Introduction

XDR-450/D Hybrid High Definition Mobile DVR is an upgraded version of the advanced vehicle recording solution for any types of vehicle AND asset.

Design for rugged and demanding environmental factors such as heat, vibration and extended continuous recording cycles.

Equipped with customizable settings enable Ventra MDVR to not only record Audio, Video, Speed and Route History, it offers various fleet management capabilities for Safety, Security and Fleet Management.



Any Vehicle

Any Application

Any Industry

FEATURES

- Easy To Install, Setup and Manage
- Rugged and Secure
- Small form factor



Failure to follow these safety warnings could potentially result in an accident, collision resulting in serious injury or death

- **Install the device in a manner that does not obstruct the driver's view of the front or sides of the vehicle, or interfere with the safety of operating the vehicle.**
- **Do not operate, adjust or view this recorder while driving or when vehicle is in motion**
- **Do not place the device unsecurely on the dashboard, or place the device in front of or above an airbag**
- **Please comply with all driving and traffic regulations**
- **To reduce the risk of fire or electric shock, do not expose the DVR to water, liquid, rain or moisture**
- **Disconnect the power from the XDR if equipment or wire is exposed to liquid**
- **Disconnect and replace the cable if wire is stripped or damaged**
- **When exposed to direct sunlight for a period of time, the equipment may become hot. Please exercise caution when touching the equipment**
- **Do not disassemble or alter the equipment, cable or accessories as this may lead to equipment error and failure, thus voiding all warranty**
- **In the event of an impact or accident, please check to ensure the equipment is properly secured. Inspect the mounting bracket and screws for any signs of damage**
- **Disconnect and replace the cable if wire is stripped or damaged**
- **When using the power connection cable, ensure all connections are secured**
- **Metallic coating on front window of vehicle may cause interference in GPS signal**
- **Use only recommended Micro SD card specifications as it may affect data storage. SDXC Min Class 10 and Up**
- **When Power is connected, do not remove the micro SD card as it may cause memory card failure**
- **Do not modify the name of file folders in the SD card as it will cause directory and recording issues**



Windshield Mounted Device Legal Notice

Please check and comply with ALL local, state and federal laws and or regulations regarding windshield mounted devices. Some state laws prohibit drivers from using suction mounts on their windshield when operating motor vehicles. Other state laws allow the suction mount to be mounted to be located only in specific locations on the windshield. Numerous states have enacted restrictions against placing objects on the windshield in locations that may obstruct the driver's vision.

IT IS THE USER'S RESPONSIBILITY TO MOUNT VENTRA EQUIPMENT IN COMPLIANCE WITH ALL PPLICABLE LAWS AND ORDINCANCE

Audio and Video Recording Legal Notice

Certain local, state and federal laws may prohibit recording of audio and or video in vehicles or public area, or without knowledge and or consent, please check and comply with ALL local, state and federal laws and regulations.

Certain local, state and federal laws may require signage or display that indicate recording of audio and or video in vehicles or public area. Please check and comply with ALL local, state and federal laws and regulations

IT IS THE USER'S RESPONSIBILITY TO USE VENTRA EQUIPMENT IN COMPLIANCE WITH ALL PPLICABLE LAWS AND ORDINCANCE

Use of this product other than its intended purpose is strictly prohibited.

Ventra Technologies Inc. does not assume any responsibility for any fines, violation, penalties or damages that may be incurred as a result of the use of the product

Ventra Technologies Inc. is not responsible for any direct, indirect, incidental or consequential damages, arising out of use, misuse or inability to use of our products.



SD Card Requirement and Compatibility

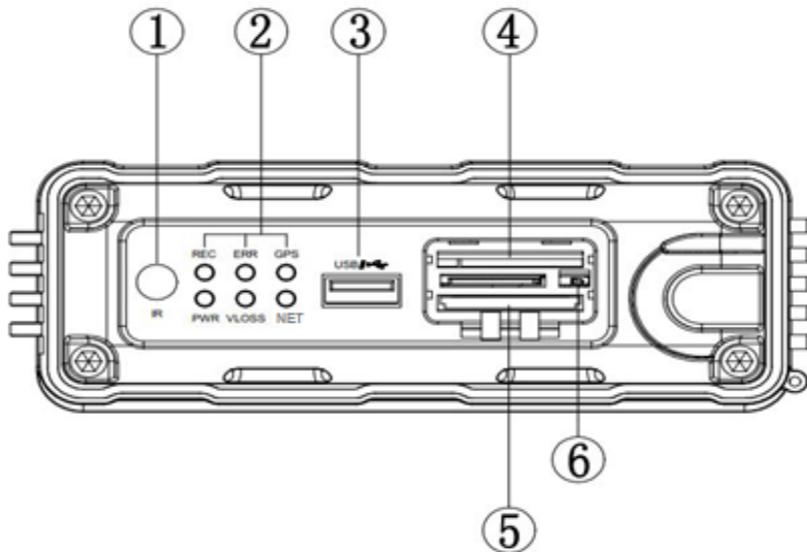
- To avoid damage and or data loss, power off the XDR **BEFORE** inserting or removing the SD card
- Turning the power off or removing a memory card during operation such as formatting, deleting, recording and playback may cause data loss

SD Card Requirement and Compatibility

- Only New SD card should be used and are highly recommended to ensure reliability and data integrity
- XDR supports **SDXC: 32GB to 256GB Class U1 / U3 and faster per slot (Minimum card write speed 20MB/sec and faster)**
- SanDisk Ultra/ Extreme and Transcend Ultimate SD card may be used
- When unspecified memory class are used, XDR may not record data properly and recordings may be lost or damaged
- Ventra is not responsible for any damage , data loss, or system error resulting from SD card error and or damage, computer issues or virus
- **XDR utilizes a propriety file format for security , each card MUST be formatted IN the XDR prior to use**

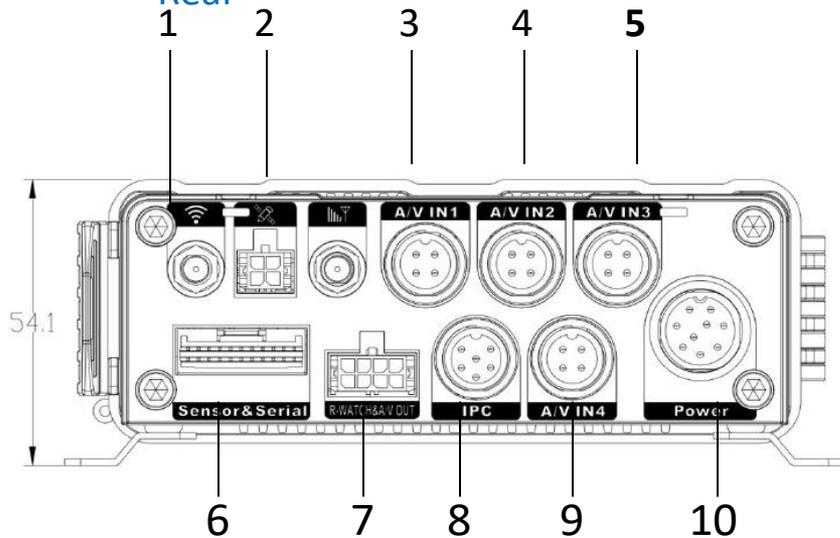
System Layout

Front



1	IR Receiver	Remote Control Signal
2	REC	Recording Indicator
	ERR	Error indicator
	GPS	GPS status indicator
	PWR	Power indicator
	VLOSS	Video loss indicator
	NET	N/A
3	USB	FW upgrade / Video export
4	Primary SD Card Slot	Record video data files
5	Secondary SD Card Slot	Expansion / Mirror data slot
6	DVR Cover Sensor / Switch	DVR cover detection / Auto shutdown when cover is opened

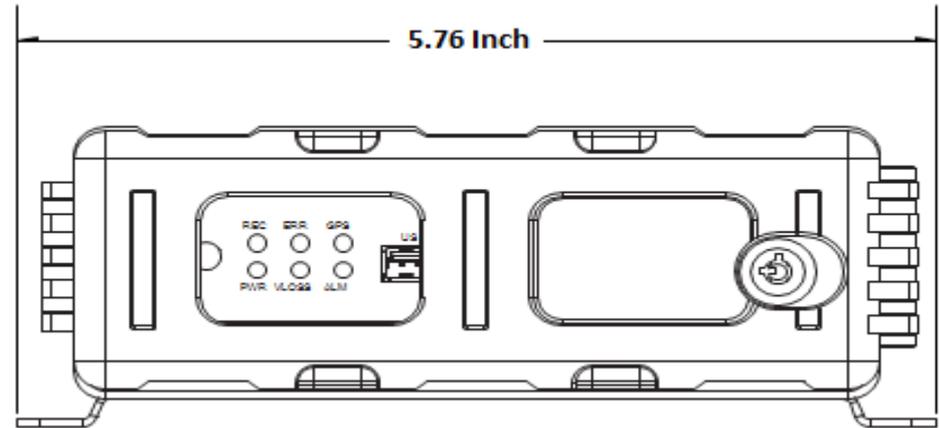
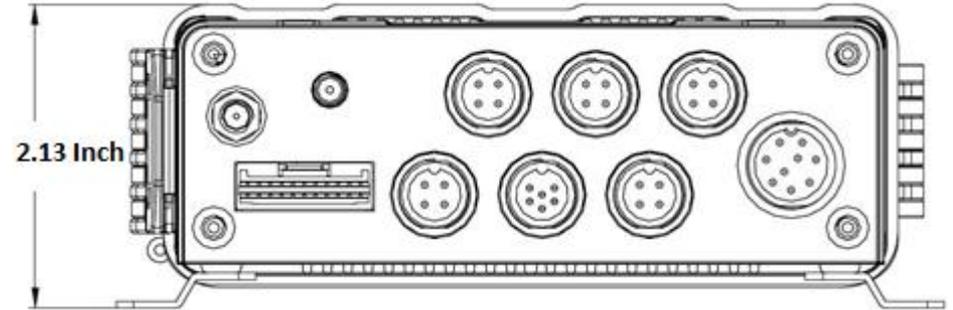
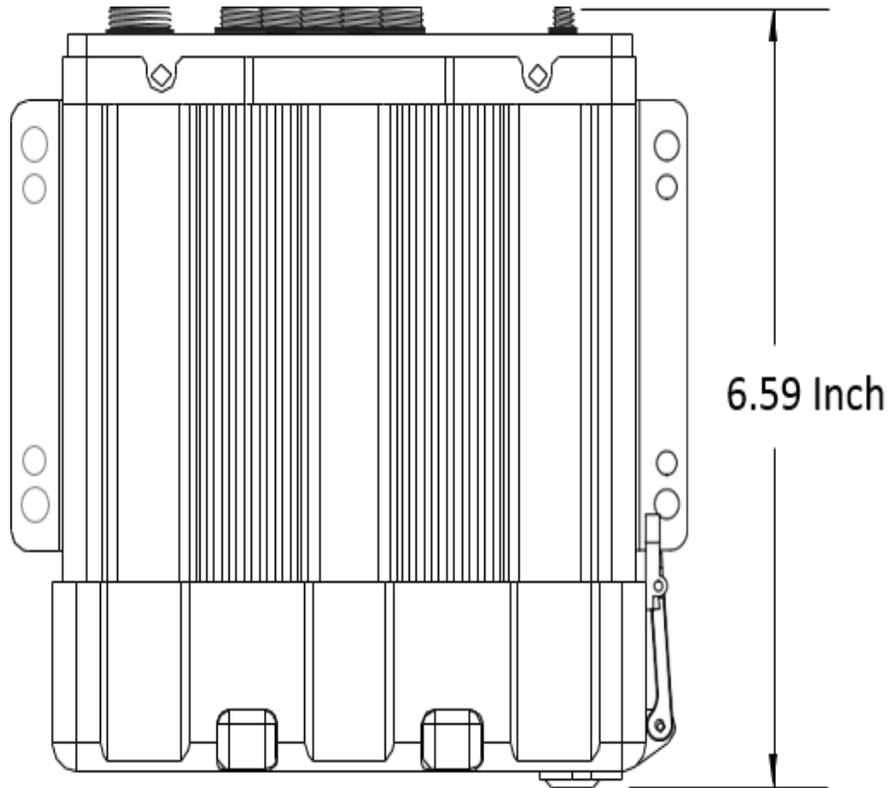
Rear



1	N/A	N/A
2	GPS Input	External passive GPS receiver input
3	AV In 1	CH 1 Analog HD (AHD)
4	AV In 2	CH 2 Analog HD (AHD)
5	AV In 3	CH 3 Analog HD (AHD)
6	Sensor / RS232 (EX4-ALC)	Alarm input sensor (8 inputs) / RS-232
7	AV Out (EX4-NPIG)	Video Output to monitor or EX4-PGM Tablet
8	IPC (AV In 5 - HD)	720P HD IP Video Input (CH 5)
9	AV In 4	CH 4 Analog HD (AHD)
10	Power	DC 8V – DC 36V

Labeling may differ due to product update

System Dimension



System Components

Included:



XDR



Camera



GPS Receiver



SD Card



EX4-NPIG Video out
Cable



Power Cable



Software /
Manual

Optional:



EX4-XC2d Analog
Outdoor Camera



EX4-XC1D
Analog Indoor
Camera



EX4-XC4D
Left/Right Side
Outdoor Analog
Camera



EX5-XC2 720P HD
Camera w/ IR +
Audio



EX4-PGM Tablet
for Programming /
Back Up Monitor



EX5-CBLxx HD
Camera Patch
Cable 15ft, 30ft



EX4-NPIG (For
Video Out to LCD
monitor)



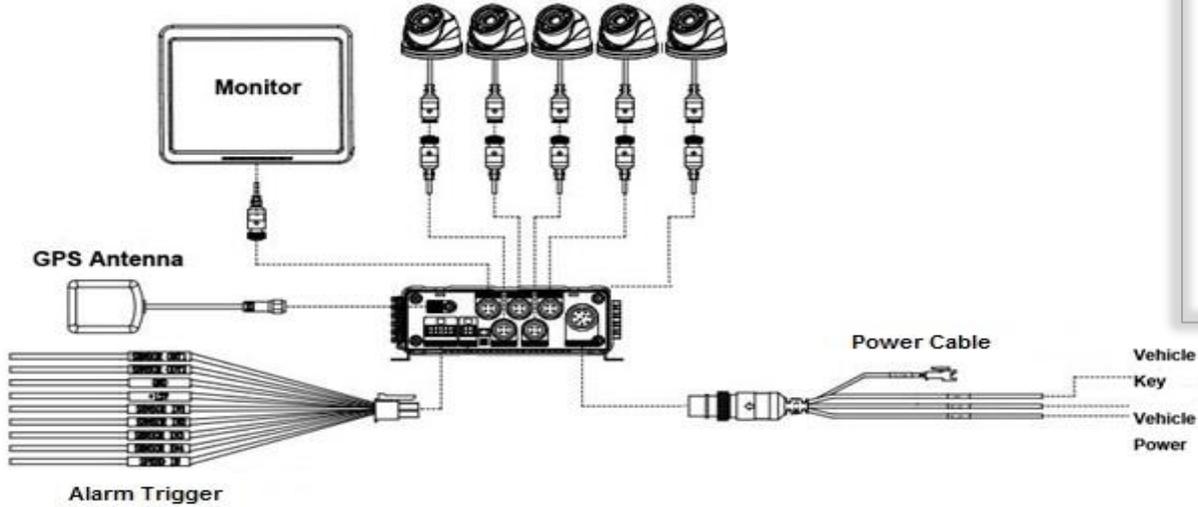
EX4-CBLxx
Analog Camera
Patch Cable 9ft –
60ft



EX4-ALC
8 Input Alarm
Cable

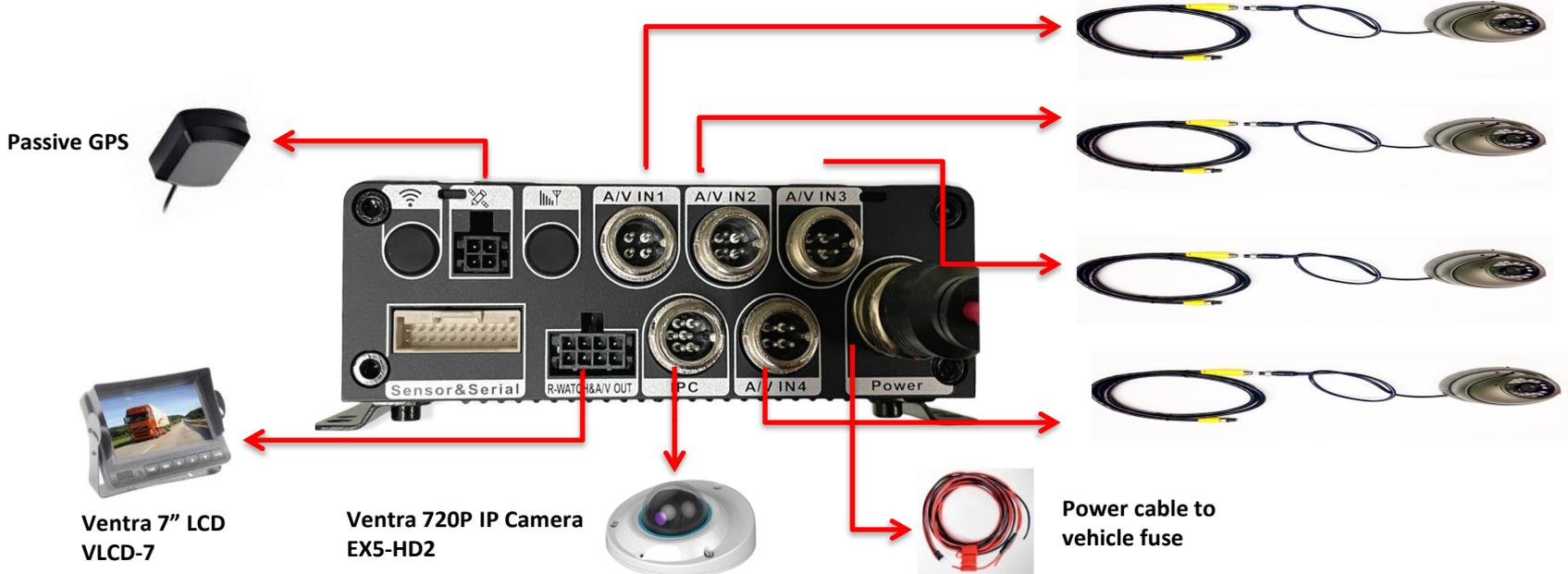
Visit www.ventrainc.com – mobile DVR camera page for latest camera options

XDR System Layout Diagram

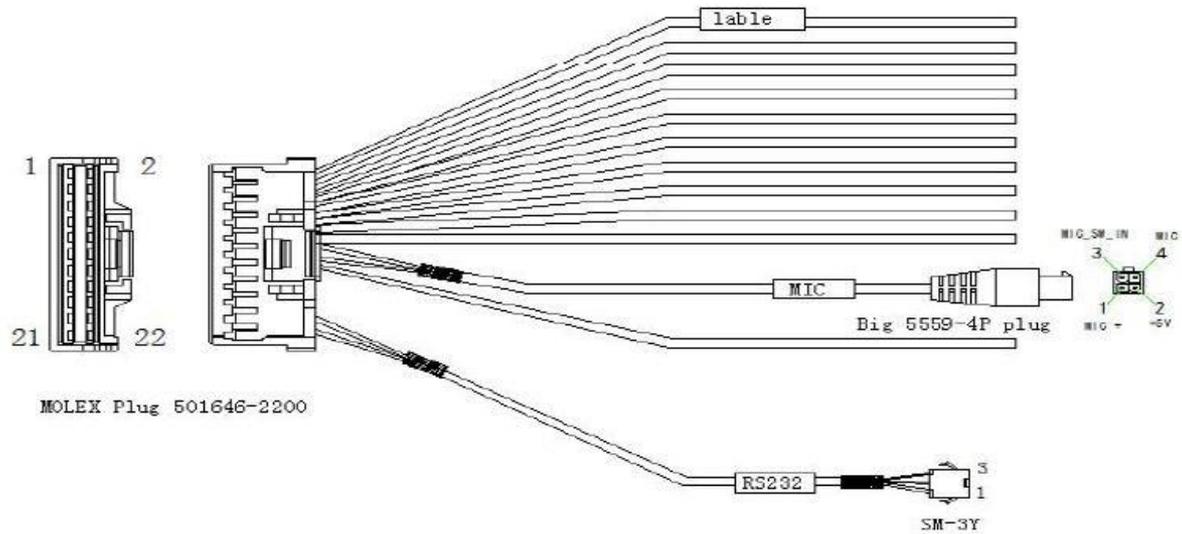


- Connect Analog cameras into AV IN 1 – 4
- Connect Ventra EX5-HD Camera to IPC
- Connect external passive GPS receiver
- Connect Power cable to vehicle
- Connect A/V Out (EX4-PIG) to monitor
- Connect Optional 8 port alarm trigger, RS232/485 cable (EX4-ALC) (sold separately)

Analog HD Cameras 1 ~ 4



Ventra EX4-ALC Alarm Cable Layout - New



Diagram

501646-2200 table

1	green	SENSOR IN1
3	gray	SENSOR IN2
5	light green	SENSOR IN3
7	light blue	SENSOR IN4
9	gray	SENSOR IN5
11	orange	SENSOR IN6
13	blue&black	SENSOR IN7
15	blue&white	SENSOR IN8
17	blue	SPEED IN
12	red&white	SENSOR OUT1
14	red&yellow	SENSOR OUT2
19	black	GND
21	red	+5V
big 5559-4P		
16	3	MIC-SW
20	4	MIC-
22	1	MIC+
21	2	+5V
SM-3Y		
18	black	1 GND
10	2	232RX-1
8	3	232TX-1

Alarm Cable Can Be connected for a wide array of applications

- Door Open / Close
- Light Trigger
- Siren Trigger
- Reverse Gear Signal
- Lift Arm / Gate

For Sensor In:

High Voltage: 5~12V (when rest state is 0 and trigger causes momentary voltage increase)

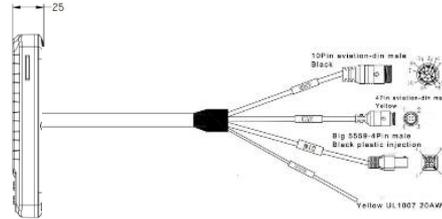
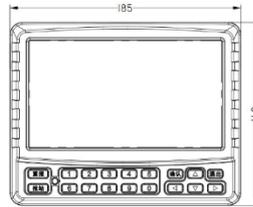
Low Voltage : 0~2V (when normal state is constant power and trigger causes momentary voltage drop)

For Sensor Out:

Triggered Voltage: 12V

Default Voltage: 0V

7" Touch Screen Programming Tablet and LCD monitor

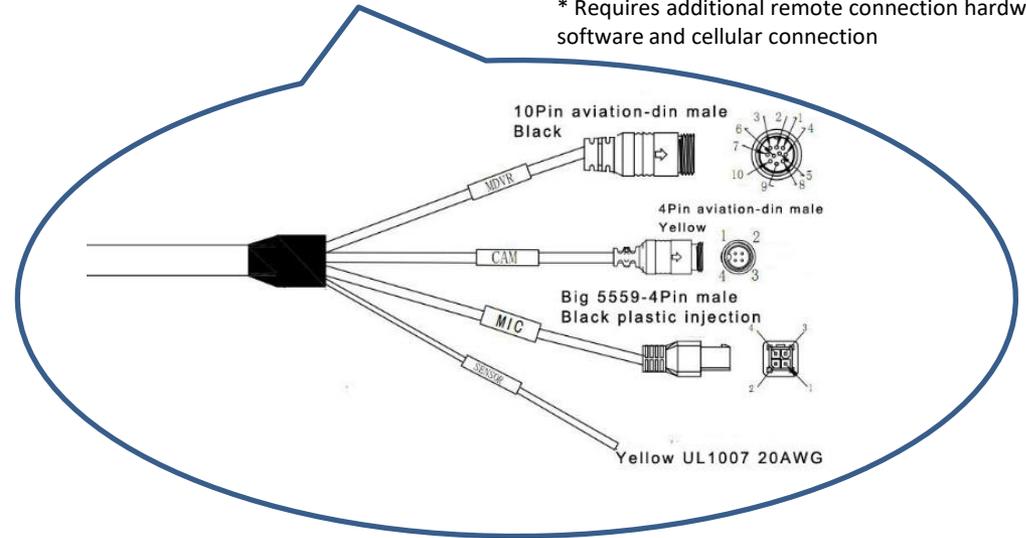


Connection to XDR and other accessories

EX4-PGM

- Programming XDR system
- LCD monitor for live viewing / back up
- Touch Screen for easy access
- Supports 2 way audio communication*

* Requires additional remote connection hardware, software and cellular connection



Connecting Analog Camera

To connect XDR using Ventra Cameras (EX4-XC1/D, EX4-XC2/D, EX4-XC3/D, EX4-XC4/D)

Ventra EX4-CBLxx 4 PIN Patch Cable

- Utilize Ventra pre-made EX4-CBL patch cables (sold separately) ranging from 5 to 60ft to connect the camera to XDR (*Fig. 1 EX4-CBLxx xx denotes length*)
- Each patch cable comes with 4 PIN DIN for easy connection to conveniently transmit Audio / Video & Power (*Fig. 2*)

To connect XDR using 3rd Party Analog Cameras

- Utilize Ventra EX4-PIG to convert from 4 PIN DIN to standard BNC Video / Audio and 2 power wires. Now the system can be connected using coax cables (*Fig. 3 EX4-PIG*)
- Connect the EX4-PIG to standard RG59 Coax cables / Siamese to connect to Ventra cameras. A separate power is required to power the camera if using coax cable

Fig. 1 EX4-CBL Patch Cable



Fig. 2

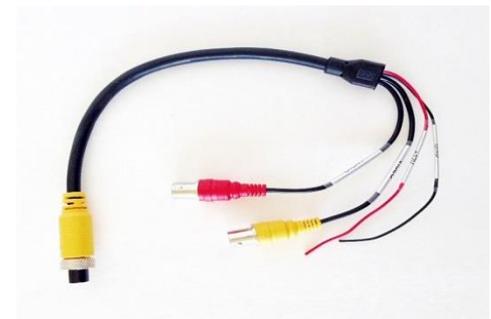


Fig. 3 EX4-PIG

Connecting Ventra EX5 HD Camera

To connect XDR using Ventra 720P IPC Cameras

EX5-HD2 – Ventra proprietary IP camera. XDR supports (1 CH) IPC

Ventra EX5-CBL HD Camera 6 PIN Patch Cable

- Utilize Ventra pre-made EX5-CBL patch cables (sold separately) available in 15 or 30ft to connect EX5-HD camera
(Fig. 1 EX5-CBLxx xx denotes length)
- Each EX5-CBLxx patch cable comes with **6 PIN** DIN for easy connection to conveniently transmit Video, Power and Audio (if camera has built in audio)
- Connect EX5-HD camera with cable to **IPC** port on XDR

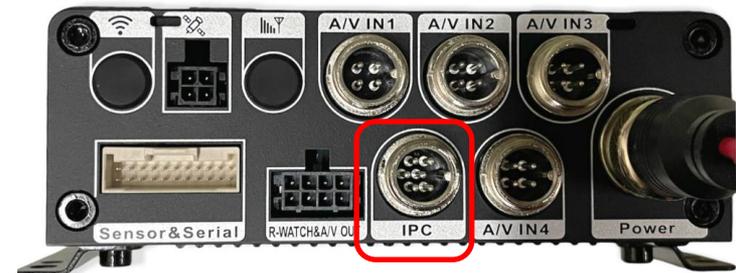


EX5-HD2
720P HD Outdoor Rated IP Camera

Fig. 1 EX5-CBLxx HD 6PIN Patch Cable
(xx denotes length)



Fig. 2 IPC port for HD camera



XDR Setup Connection via Mouse and Video Out



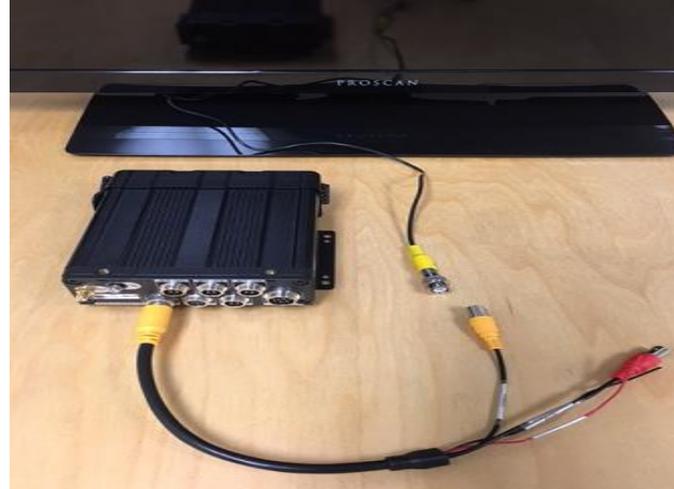
1. XDR Front Panel – SD Card Slots, USB Port and System LED



2. Connect USB mouse to XDR for programming



3. XDR Rear – Connect **EX4-NPIG** to **AV-OUT** port on XDR for video out connection to monitor. May need BNC to RCA converter

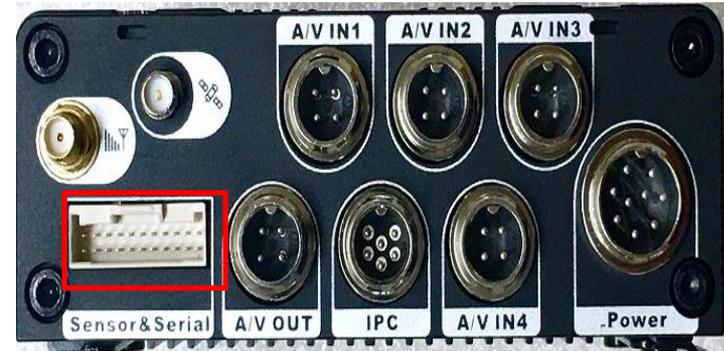


4. XDR Rear – Connect EX4-NPIG to RCA video connection to monitor to monitor

XDR Setup Connection via EX4-PGM



1. Connect EX4-PGM to extension cable

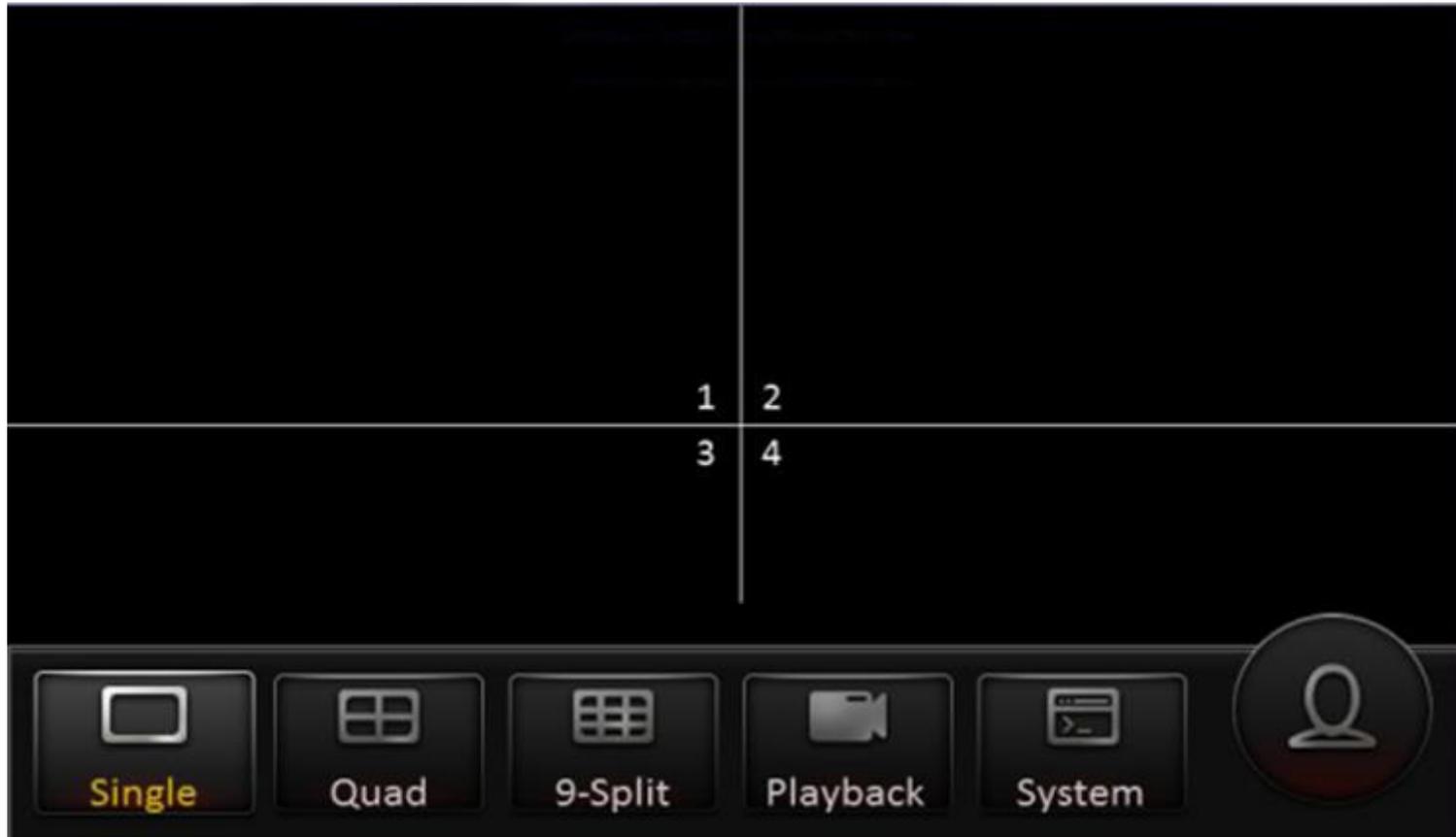


2. Connect **EX4-ALC** (Sold Separately) to Sensor/Serial Port. Connect EX4-PGM to EX4-ALC

3. Once the wires are connected, the EX4-PGM will be powered by the XDR



OSD Menu Layout



Live View Display Screen Mode

Playback

System Status

Setting

Getting Started

1.1 Formatting the SD Card

1. XDR utilizes a propriety file format for security , each card MUST be formatted IN the XDR prior to use.
2. MS Windows will NOT recognize the SD card when inserted and will display error message and ask to Repair or Reformat the card. **Do NOT format or Repair the card via PC.** (This is a safety feature of the system). Data can only be recognized by the Ventra XDR Software
3. Do NOT Insert or Remove SD card while XDR is powered ON
4. To connect to the XDR, there are 2 methods
 - Mouse to the USB port on the XDR
 - EX4-PGM programming tablet
5. To Format the card, Login to **XDR Settings** by selecting the  > **Login** > **Setup** > **Maintenance** > **Storage**
 - **Default ID:** admin
 - **Password:** admin
6. Select **Maintenance Tab** > **Storage Tab** > pick the SD Slot to format (Any previous data will be erased)
7. Top Slot = Primary, Bottom Slot = Secondary. (If using only 1 card, insert into Top Slot)
8. Each system support 2 Slots for SD card up to 256 GB max per slot. To add additional card, please use only **CLASS U1 / U3 and faster**

To access the OSD keyboard, click mouse in each field. Or use touch screen if utilizing EX4-PGM programmer

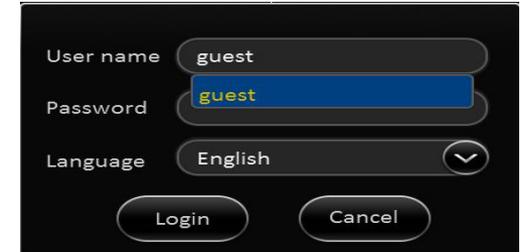
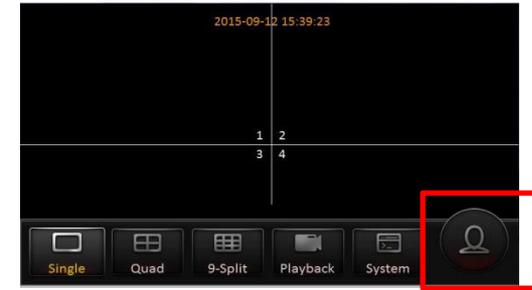
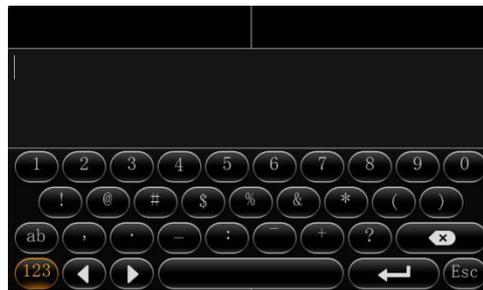
Enter =



Cancel =



Cursor =



Basic Setup – Register Vehicle / Driver / Device ID

2.0 Register – Vehicle / Driver / Device Info

Note: Save each tab individually before proceeding to next tab throughout the entire programming process

1. **Device ID:** currently not in use

2. Vehicle Info

- Vehicle Number (Required for software to identify system)
- Vehicle Plate (Optional)
- Line Number (Optional)

3. Driver Info

- Driver Number (Optional)
- Driver Name (Optional)



Basic Setup – Date / Time Setup

2.1 Time setup – Date / Time

Note: Save each tab individually before proceeding to next tab throughout the entire programming process

1. Set **Date / Time** Format
2. Set **Time Zone**
3. **Time Sync** - set date and time
4. Enable **Satellite** time sync via external GPS receiver. Once signal is acquired, XDR will automatically sync time
5. **Center Server**- synchronize time with time server (optional)
6. **NTP Sync** – Syncs to specified time servers (Optional)
Multiple sync methods can be selected. XDR will select the signal based on availability



2.2 Daylight Saving Time (DST)

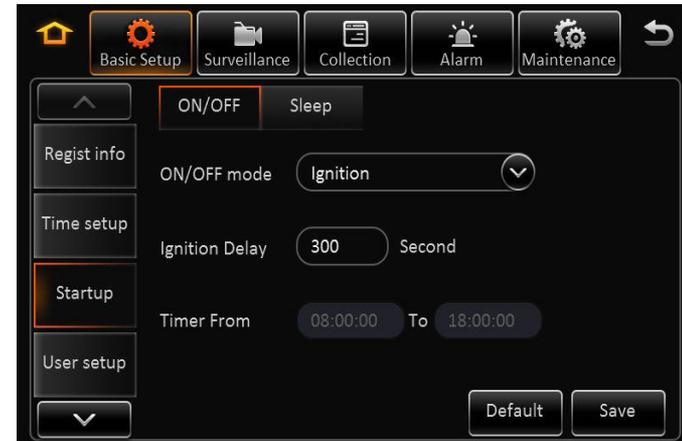
1. Enable / Disable DST
2. Select Hour Offset from dropdown menu
3. Select Mode from drop down menu
4. Enter date and time of effective DST



Basic Setup – System Startup

2.3 Startup – On / Off

- On / Off:** How the XDR is activated (3 Modes)
 - **Ignition (Default)**
 - **Timer**
 - **Ignition or Timer**
- Ignition Delay:** Time delay between vehicle ignition off to XDR powering off (0-300 seconds) – recommend 5 ~ 10 seconds
- Ignition:** XDR powers on as vehicle ignition is on (**Default**)
- Timer :** If Timer option is selected, the schedule for Start and End Time must be set . This schedule only applies to the XDR and does not affect or shut down the vehicle ignition
- Ignition or Timer:** XDR will power on from either trigger. However, both criteria have to be met in order for the XDR to power off. XDR will not shut off if the scheduled shut down time has been reached while the vehicle ignition is still on.



2.4 Startup – Low Battery

- Sleep:** No consumption standby
- Low Voltage Protect:** Enable / Disable the XDR from auto shutting off when reaching the low battery voltage threshold to prevent battery drain
- Battery Low Voltage:** Protects the vehicle battery by setting threshold to turn off XDR
Default for 12V = 9V, 24V = 21V
- Voltage Startup:** When the vehicle battery is consistently greater the than set value, it will automatically boot up.
Default for 12V = 12.5V, 24V = 24.5V
- Low Voltage Upload:** Enable / Disable low voltage report log



Basic Setup – User Setup

2.5 User Setup

1. **Idle Time:** The length of time the system remains in settings mode before logging out. **Recommend (10 Minutes)**
2. **User Name:** Default are **admin** and **user**
3. **User Group:** It is categorized as **Administrator** and **Normal user**
Admin: View videos, change settings and export logs
User: View videos but cannot change settings or logs

Add, Delete or Edit

1. Only Administrators can delete or add new users (up to 2)
2. User name cannot be duplicated or empty
3. Edit / Change password

IMPORTANT: Do not lose password. For security reasons, Ventra does not have password reset for user access



Basic Setup - Network Setup

XDR-450/D supports remote connectivity and viewing with the addition of the **EX4-RJ45 Ethernet Converter Pigtail** and **XDR Server Software** (both sold separately)

EX4-RJ45 connects to the **IPC** Video Port, converting the IP Camera Port into a Ethernet communications Port. In doing so, it does occupy 1 camera port and reduces the total number of cameras that can be installed on XDR from 5 to 4

This enables the XDR-450/D to connect to an external WiFi and or Cellular Router via Ethernet connection

Additional settings are required in the **Network Tab** within the XDR

For detailed info, refer to XDR-450/D Remote Connectivity User Guide



Surveillance – Live View

4.0 Surveillance – Live View - Preview

1. **Preview Audio:** Enable / Disable audio during live view of cameras
2. **Image Setup:** Adjust live view parameters - Color, Contrast, Brightness
3. **Margins:** Adjust live view screen setup
4. **Startup Screen:** Set live view display in Single, Quad or Nine CH mode
5. **Channel:** Select the channels to display on screen

Note: 1 CH can only select 1 4CH Must Select 4



4.1 Surveillance – Live View – Auto Loop

1. Auto loop allows different cameras to be displayed on a monitor with its unique time duration.
2. **Add, Edit Or Delete** Cameras and settings
3. **Add:** Enable “Auto Loop” box to access “Add Screen” Button, select desired camera and duration of display
4. **Delete:** Click the “X” Button of the camera to be deleted
5. **Edit:** Click the Menu button icon of the camera to edit time and settings



4.2 Surveillance – Live View – Live OSD

1. Select various information to display on monitor in live view mode. The information in this section is not recorded/watermarked.
2. **Add, Edit Or Delete** Cameras and settings



Surveillance – Record – General / Main Stream

4.3 Surveillance – Record - General

Reminder: Save each tab individually before proceeding to next tab

This section covers the general system wide setting of the XDR

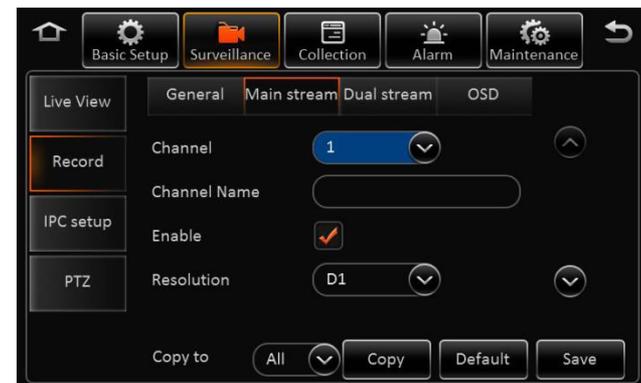
1. **System** – PAL / NTSC (Default = NTSC)
2. **Overwrite**: How the system stores new recording once the storage is full
 - **Capacity**: As SD storage is full, system will overwrite oldest data
 - **Date**: XDR will overwrite old data based on date
 - **Alarm**: XDR will overwrite old data based on alarm
4. **Lock Duration**: Number of days to lock an alarm event file 1 – 31 days (Default 7 days)
5. **Pre-Recording**: Enable/ Disable and Length of recording before an event (Recommend 1 to 3 minutes)



4.4 Surveillance – Record – Main Stream

This section enables, disables individual cameras as well as custom parameters for each. If setting is same for all cameras, click “Copy To > All”.

1. **Channel**: Select the camera from Channel 1 - 5
2. **Channel Name**: Assign name to each channel - optional (rear, side door, interior...etc)
3. **Enable**: Enable or Disable each camera in the system. If camera is NOT enabled, it will NOT record in the system
4. **Resolution**: Select resolution for camera (**AHD Camera** = CH 1 ~ 4, **IPC Camera** = CH 5)
(**CH 1 – 4**) 1080P/ 720P / D1 (**CH 5**) = 720P HD Resolution
5. **Frame Rate**: Select frame rate of individual camera (1 – 30FPS)
1080P = 12 FPS max, 720P = 30 FPS max



Surveillance – Record – Main Stream

4.4 Surveillance – Record – Main Stream (Continued)

Reminder: Save each tab individually before proceeding to next tab

- 5. **Quality:** Video quality in relation to Bit Stream (1 – 8, 1 = Best) Recommend 4 or 5
- 6. **Record Mode:** Select how the camera is activated
 - **Ignition / Power:** When vehicle ignition is on
 - **Event:** Only when an event occurs
 - **Time:** Active between a set schedule

7. **Audio:** Enable / Disable audio recording if camera supports audio

8. **Alarm Quality:** XDR supports separate video recording quality in terms of bit stream between Normal and Alarm.

Default Video quality is 3 and Alarm Quality is 2

For example: Normal recording can be changed to 4 to reduce storage size and Alarm Quality at 2 so when an event occurs, video quality is enhanced.

9. **Encode Mode:** VBR / CBR Default = VBR

VBR = Variable Bit Rate

Variable bit rate automatically adjusts recording bit stream based on environment

CBR = Constant Bit Rate (Occupies more storage)

Constant bit rate maintains recording bit stream regardless of environment



Surveillance – Record – Dual Stream

4.5 Surveillance – Record - Dual Stream

Reminder: **Save each tab individually before proceeding to next tab!!**

This section covers what type of storage is used and the recording method of the 2nd SD card (If utilized). Dual Stream is also utilized for continuous recording from 1st card to the 2nd card in continuous loop format.

To enable continuous loop recording on both SD cards for maximum storage capacity, select **NONE** in Record Mode

- Record Storage:** Internal SD / External SD Default = Internal SD
XDR utilizes the 2 onboard SD slots as internal recording
- Record Mode:** Mirror / Alarm Back Up / Sub Stream / None
 - **Mirror:** Mirroring identical data to be stored on both SD cards. Channel selectable
 - **Alarm Backup:** Events triggered by Alarm are stored
 - **Substream:** Substream is a sub recording of the Main recording that can be compressed in video quality and resolution. Individual parameters can be set based on selected cameras
 - **None:** Continuous LOOP recording from 1st SD card to 2nd SD card when storage is full. This enables the system to continuously record from one card to another, replacing the oldest files with the latest.

4.6 Surveillance – Record - OSD

- Select various information to record , watermark and displayed on monitor in all video recordings.



Surveillance – IPC / HD Camera Setup

4.7 Surveillance – IPC / HD Camera Setup

NOTE:

1. This section is solely for the configuration, enabling and setting for the EX5-HD series cameras which is a 720P HD resolution IP camera. Each camera has its own internal IP address within the XDR
2. Default IP address for the HD camera = **10.100.100.1**
3. Any IP cameras can start from IP address 10.100.100.1 - 32
4. Recommend setting the EX5-HD camera on CH 5 (by scrolling down the screen), as CH 1 – 4 are utilized for Analog Cameras

Setup:

1. Connect the EX5-HD series IP camera to the IPC slot on the XDR prior to setup
2. To enable the HD camera in CH 5, scroll down to CH 5 and select **Enable**
3. Click on Magnifying glass on the selected CH  for XDR to scan and auto detect IP address once camera is connected.
4. To view, change or manually enter IP address of each camera, user can also select the menu option 
5. **Outside:** This setting optimizes the EX5-HD camera when installed in outdoor environment

If system does not detect IP address of EX5-HD camera when entered or having technical difficulty configuring the camera, select **Default**

The system will automatically detect an connected EX5-HD cameras. Select the box and enable the camera.

Reminder: Click SAVE when done to store all settings



Surveillance – IPC / HD Camera Setup

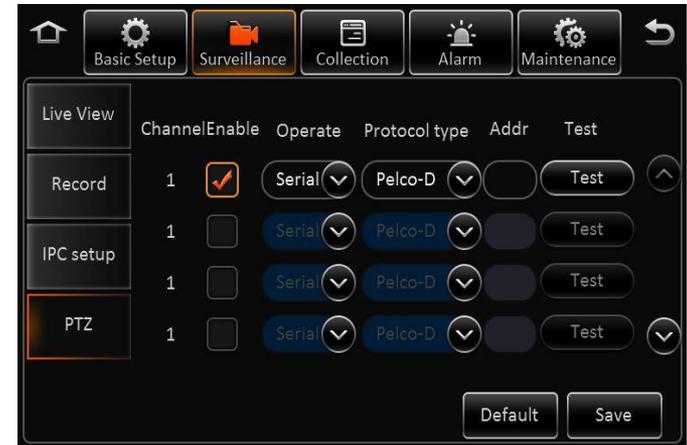
4.8 Surveillance – PTZ

NOTE:

PTZ settings applicable only for PTZ enabled analog or IP cameras

Setup:

- 1. Enable / Disable PTZ function in each Channel**
- 2. Operate:** Serial / N9M, ONVIF.
- 3. Protocol Type:** Serial Mode Supports
 - N9M
 - Onvif
 - Pelco D
 - Pelco-P PTZ
- 4. Address:** Applies to Serial mode
- 5. Test:** Test PTZ function, select Test to enable On Screen PTZ control panel

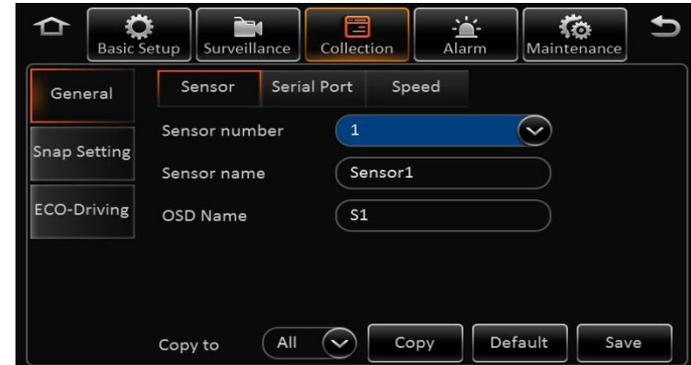


Collection of Data – General

5.0 Collection – General - Sensor

Note: Save each tab individually before proceeding to next tab

1. **Sensor Number:** Select from drop down menu of the sensor to edit
2. **Sensor Name:** Optional – assign name to each sensor (i.e. Door, trunk, lift arm)
3. **OSD Name:** The name embedded in video and data recordings
4. **Copy:** If settings are the same, select **Copy To** individual or all sensors



5.1 Collection – General – Serial Port

Note: XDR-450D supports RS232 port only - Requires optional EX4-RS232

1. **RS232-1 / RS232-2 :** Applies to 3-Axis G Sensor, Expansion 485 Bus signal and GPS data
2. **RS485-1 / RS485-2 :** Applies to PTZ, control panel, 485 Bus signal and GPS Data
3. **Baud Rate:** 2400 – 115,200 9 classes optional



5.2 Collection – General – Speed

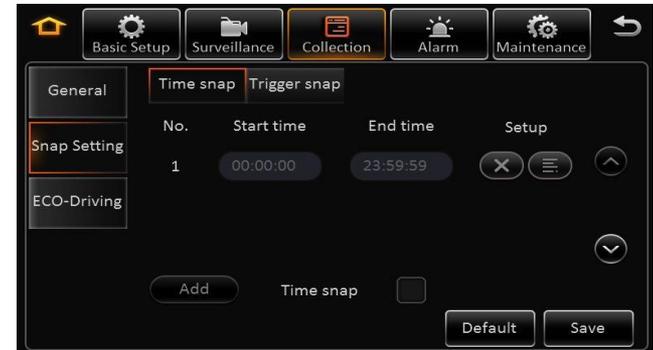
1. **Unit of Measurement:** KM/H or MPH
2. **Source:** Speed determined by GPS



Collection of Data – General

5.3 Collection – Snap Setting – Time Snap

1. **Start Time / End Time:** Set schedule of image snapshot. Check the Time Stamp Box to enable, edit and add.
2. Edit by selecting the  menu icon. Delete by selecting the X icon
3. **Add:** XDR supports up to 8 different schedules for image Snapshot configuration



5.4 Collection – Snap Setting – Trigger Snap

1. **Alarm Snap – Snap Link Setup:**
 - Select camera channel
 - Enable / disable image snapshot feature
 - Select resolution of image (D1, WD1, CIF)
 - Select image quality (1 -8) 1 = Best
 - Upload Type: Available only in XDR-480 and XDR580
 - Snap number of images
 - Interval (5 – 3600) seconds



Click Ok to Save, or Copy to apply same configuration to other sensors and cameras



Alarm – Base Configuration

6.0 Alarm – Base – Speed Alarm

Enable / Disable Overspeed Event trigger

Alarm Type: Important or General

Trigger: Set speed limit trigger

- Overspeed Early Warning

If max speed is set at 60 MPH, when vehicle reaches 50 MPH, system will trigger and activate an alert to optional external device (light, buzzer)

- Speed: Max vehicle speed limit

- Alarm duration (0 -255 seconds)

Alarm Linkage:

Channel: XDR supports multiple cameras to be assigned for recording when specific alarm is triggered

Post Recording: Duration of recording to be marked as post alarm event

Lock: Lock specific alarm recording to keep for specified duration – refer to *section 4.3 General > Surveillance > Record > Lock Duration days 1 – 31 days*

3G: Applicable only for the XDR-580H

Linkage Output: 1 or 2 – Enable link alarm output when alarm is triggered

Output delay Time: alarm output duration after alarm is removed 0 – 255 secs

Alarm upload: Enable to upload to platform (Only on XDR-580)

Linkage screen: Link channel to show full image when alarm is triggered

PB alarm duration: Available alarm duration after urgent alarm is removed

Alarm snap: Enable to link image snapshot



Alarm – Base Configuration

6.1 Alarm – Base – Panel Alarm

Requires optional XDR-PANB panic button and EX4-RS24 cable

Enable / Disable Panic Alarm trigger

Alarm Type: Important or General

Trigger: Set time delay for panic alarm activation 0 -255 seconds

Alarm Linkage:

Channel: XDR supports multiple cameras to be assigned for recording when specific alarm is triggered

Post Recording: Duration of recording to be marked as post alarm event

Lock: Lock specific alarm recording to keep for specified duration – refer to *section 4.3 General > Surveillance > Record > Lock Duration days 1 – 31 days*

3G: Applicable only for the XDR-580H

Linkage Output: 1 or 2 – Enable link alarm output when alarm is triggered

Output delay Time: alarm output duration after alarm is removed 0 – 255 secs

Alarm upload: Enable to upload to platform (Only on XDR-580)

Linkage screen: Link channel to show full image when alarm is triggered

PB alarm duration: Available alarm duration after urgent alarm is removed

Alarm snap: Enable to link image snapshot



Alarm – Base Configuration

6.2 Alarm – Base – I/O Alarm

Requires optional EX4-ALC 8 input alarm cable

Enable / Disable I/O Alarm trigger 1 - 8

Alarm Type: Important or General

Trigger: Low or High trigger (Default is Low)

For Sensor In:

High Voltage: 5~12V
Low Voltage : 0~2V

For Sensor Out:

Triggered Voltage: 12V
Default Voltage: 0V

HIGH Voltage = Sudden increase in voltage causing trigger

Low Voltage = Sudden decrease (drop) in voltage causing trigger

Alarm Linkage:

Channel: XDR supports multiple cameras to be assigned for recording when specific alarm is triggered

Post Recording: Duration of recording to be marked as post alarm event

Lock: Lock specific alarm recording to keep for specified duration – refer to *section 4.3*

General > Surveillance > Record > Lock Duration days 1 – 31 days

3G: Non applicable

Linkage Output: 1 or 2 – Enable link alarm output when alarm is triggered

Output delay Time: alarm output duration after alarm is removed 0 – 255 secs

Alarm upload: Enable to upload to platform (Only on XDR-580)

Linkage screen: Link channel to show full image when alarm is triggered

PB alarm duration: Available alarm duration after urgent alarm is removed

Alarm snap: Enable to link image snapshot



Alarm – Base Configuration

6.3 Alarm – Video Loss

Enable / Disable Video loss Alarm

Alarm Type: Important or General

Trigger: Channel selection

Channel: Select channels to detect video loss

Set Period / Schedule: Create schedule for video loss detection

Channel: XDR supports multiple cameras to be assigned for recording when specific alarm is triggered

Post Recording: Duration of recording to be marked as post alarm event

Lock: Lock specific alarm recording to keep for specified duration – refer to *section 4.3 General > Surveillance > Record > Lock Duration days 1 – 31 days*

3G: Applicable only for the XDR-580H

Linkage Output: 1 or 2 – Enable link alarm output when alarm is triggered

Output delay Time: alarm output duration after alarm is removed 0 – 255 secs

Alarm upload: Enable to upload to platform (Only on XDR-580)

Linkage screen: Link channel to show full image when alarm is triggered

PB alarm duration: Available alarm duration after urgent alarm is removed

Alarm snap: Enable to link image snapshot



Alarm – Base Configuration

6.4 Alarm – Advanced

G Sensor Alarm – detect shock and impact

Enable to activate G Sensor to detect shock and impact to vehicle. System requires calibrations

After the XDR is installed in vehicle or asset, ensure that its parked on a flat and even surface.

Select **Trigger** to program G Sensor sensitivity. Certain vehicles and road conditions will be more prone to false triggers. Setting may need to be fine tuned accordingly

Select **Calibrate** for system to record current condition and baseline

Alarm Linkage:

Channel: XDR supports multiple cameras to be assigned for recording when specific alarm is triggered

Post Recording: Duration of recording to be marked as post alarm event

Lock: Lock specific alarm recording to keep for specified duration – refer to *section 4.3 General > Surveillance > Record > Lock Duration days 1 – 31 days*

3G: Non applicable

Linkage Output: 1 or 2 – Enable link alarm output when alarm is triggered

Output delay Time: alarm output duration after alarm is removed 0 – 255 secs

Alarm upload: N/A

Linkage screen: Link channel to show full image when alarm is triggered

PB alarm duration: Available alarm duration after urgent alarm is removed

Alarm snap: Enable to link image snapshot



Maintenance – Configuration

7.0 Maintenance – Configuration File Import / Export

NOTE: If using both corded USB mouse to control and USB thumb drive for Firmware storage, a USB hub may be used to provide multiple USB port

USB thumb drive may need to be formatted in the XDR prior to use. This can be done in the Storage Tab.

In the configuration menu, user can export and or import configuration file for system settings. This can be used for restoring a system, loading templates for setting up multiple XDR with same configuration.

- Insert USB Thumb drive to export the configuration file to the root folder, file name is **ConfigFile**
- Insert flash drive to import configuration file into XDR. System will display notice when import successfully completed

Remark: Config file does not import the register info and speed adaption info.

7.1 Maintenance – File Data Export Setup

XDR supports exporting of data to USB thumb drive for specific file and time frame

Data Export File Type: GPS data file, vehicle info file, ACC info file, CAN info file, Dial info and Captured pic.

- Select All or specific time period to export
- Select start and end time
- Select file type



Maintenance – Upgrade

7.2 Maintenance – Upgrade (Firmware)

NOTE: If using both corded USB mouse to control and USB thumb drive for Firmware storage, a USB hub may be used to provide multiple USB port

USB thumb drive may need to be formatted in the XDR prior to use. This can be done in the Storage Tab.

In the Upgrade menu, user can update Firmware for XDR, EX5-HD camera (IPC) or EX4-PGM (CP4) programming tablet.

- Download and Copy firmware to a BLANK USB thumb drive
- Firmware must be saved into a folder labeled “upgrade” on the USB drive
- Insert USB Thumb drive to USB port and select specific Upgrade
- System will reboot and display notice when import successfully completed

For latest firmware, visit www.ventrainc.com



Maintenance – Storage Format

7.3 Maintenance – Storage Format

NOTE: Do NOT insert or remove the SD card when the system is powered on, it may cause system error and corrupt recording files

XDR uses a proprietary file format, all SD cards **MUST** be formatted in the XDR prior to recording.

USB thumb drive may require formatting for file export/import

Storage type: **SD card** (Internal), **USB drive** for File Export, Settings Import/Export, Firmware updates

Each SD slot supports 256 GB SD card max. System supports max **512 GB (256 GB x 2)**

Minimum Speed of SD Card: Class U1 or U3 and faster (20MB/s write speed)



- Insert SD card while system is powered off
- Select Format for each SD card
- Once format is completed, SD card capacity will be displayed
- Not Found: XDR didn't detect SD card (not install or card malfunction)
- Unformatted: SD card detected, but unformatted.(New HDD)

Technical Specification

Specification subject to change without prior notice - 05 2022

Function Overview		Preview, Recording, Playback, Route History
System	OS	Linux 4.9
	Control Mode	IR remote control, USB Mouse, EX4-PGM
Video	Input	5 channels (1) IPC 1080P / 720P + (4) AHD 1080P / 720P / D1
	Output	1 channel
	Video System	NTSC/PAL optional
Audio	Input	5 channels (From Camera) 2VPP Input Impedance 4.7k
	Output	1 channel
Display	Display Split	1/4
	OSD	GPS information, Vehicle ID, License plate, Driver ID, Alarm, Temperature, Voltage, Device information, Firmware version
	Operation Interface	Semi-transparent GUI
Recording	Video/Audio Compression	H.264/ H.265 ADPCM, G711U, G.711A
	Video Resolution	NTSC: 4 x 1080P @ 12FPS, 4 x 720P @ 30 FPS PAL: 4 x 1080P @ 10FPS, 4 x 720P @ 25 FPS IPC: 1 x 1080P @ 30 FPS
	Image Quality	1~8 levels adjustable (1 is the best)
	Recording Mode	Startup / Manual / Schedule / Alarm (sensor trigger, speed, acceleration, video loss, temperature)
	Pre-Recording / Post-recording	Up to 60 minutes Pre-Event / Up to 30 minutes Post-Event (Applicable only when XDR is already powered on and recording)
	Mirror Recording	Yes (Using one of the two SD Cards)
Sensor	GPS	External passive GPS receiver
	G- Sensor	Built-in 6-axis shock inertia sensor
I/O	Serial	External RS-232 x 1, RS485 x 1 (sold separately)
Playback & Backup	Playback Channel	1 channel by local playback, 1/4 channel by software playback
	Search Mode	Date/time, channel, file type
	GPS	GPS location tracking, speed detection and time sync
Storage	SD Card	512 GB Max (256 GB x 2) - Class U1 / U3 speed or faster write – Max 256 GB per slot
Temperature	Operating	-30F – 150F (- 34C ~ 65C)
Humidity	Relative	<95% non-condensing
Weight		1.85lb (0.83KG)
Dimension	L x W x H	5.59" x 5.7" x 2.13" (167 x 146.3 x 54.1 mm)
Interface	USB	USB 2.0 × 1 (Type A)
	SD	SD × 2
	Sensor	8 inputs, 2 outputs (sold separately)
	Speed	Passive GPS receiver
Power	Input	8 - 36V DC
	Output	500mA @ 5V
		Max. Power Consumption: 29W Standby Power Consumption: 0 W Working current: input 13.5V@1.2A, 27V@0.5A Standby current: 0A

Product Warranty

Ventra Technology warrants the system against defects in material and workmanship for a period of **one (1) year** from the date of original purchase. During this period, Ventra's liability for any defective product, or any product part, shall be limited to the repair or replacement of the product, at Ventra's sole discretion.

This warranty does not apply to defects or damages resulting from mishandling, accident, abuse, negligence, lightning, water/liquid, power surges, improper interfacing, operation outside of design limits, misapplication, improper repair, or unauthorized modification.

The term "Ventra Product" is limited to the hardware components and required firmware. It DOES NOT include software applications or programs, non-Ventra products or peripherals. To the extent permitted by local law, all non-Ventra products or non-Ventra branded peripherals - such as external storage SD card are provided provide the respective manufacturer's own warranties directly to you, and are not covered by this Limited Warranty.

To obtain service within the warranty period, please contact Ventra at (888) 418 3833 or tech@ventrainc.com for assistance. If product repair or replacement is necessary, a Return Merchandise Authorization (RMA) will be issued. The Customer will be solely responsible for shipping charges, insurance and proper packaging to prevent breakage in transit, whether or not the product is covered by this warranty. All shipments of repaired or replaced products by Ventra will be F.O.B. California.

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