XDR-1280/D

12 CH Hybrid HD Mobile DVR

(4) 1080P IPC + (8) Analog 1080P/720P AHD, D1

Quick Start Guide

This manual covers the setup, connection and features of the XDR. For management 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
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⚠ IMPORTANT HDD and SD Card Requirement and Compatibility

- To avoid damage and or data loss, power off the XDR **BEFORE** inserting or removing the HDD or SD card

- Turning the power off or removing a HDD or memory card during operation such as formatting, deleting, recording and playback may cause system error and or data loss.

- Only New HDD and SD card should be used and are highly recommended to ensure reliability and data integrity

- When unspecified storage 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 HDD or SD card error and or damage, computer issues or virus

- **XDR utilizes a propriety file format for security , each HDD / SD card MUST be formatted IN the XDR prior to use**

It is extremely important to use HDD and SD cards that are suitable for rugged environments, constant data writing, continuous operation and models that are designed specifically for DVR.

- **SD CARD:** 32GB to 128GB   Minimum Class U1 and up - 20MB Writing Speed or faster (*SanDisk Extreme and Transcend Ultimate SD card*)

- **HDD SATA or SSD** : 500 GB - 1 TB Max Storage   2.5"

Due to rugged environment of mobile recording in vehicles, Ventra does not warrant the HDD, video recordings or data integrity. Warranty of HDD are provided by the respective manufacturer

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XDR-1280/D Camera Frames Per Second (FPS) Chart

Camera Resolution	Channels	FPS
AHD-720	8	30
IPC-1080P	4	30
AHD-1080P	8	10
IPC-1080P	4	30
AHD-1080P	4	10
IPC-1080P	8	20
AHD-1080P	2	30
IP1080P	8	20
AHD-720P	4	30
IPC-1080P	8	20

Video Stream Rate and Storage Based On Video Quality Level (1 – 8)
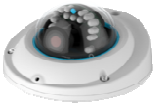
			1	2	3	4	5	6	7	8
CIF	352 x 240	Stream (kB/s)	1024	768	640	512	440	350	312	280
		MB / Hour / CH	450	338	281	225	193	154	137	123
D1 / VGA	704 X 480	Stream (kB/s)	2048	1536	1280	1024	900	800	720	640
		MB / Hour / CH	900	675	563	450	396	352	316	281
720P	1280 x 720	Stream (kB/s)	6144	4800	4128	3456	2784	2112	1440	768
		MB / Hour / CH	2700	2109	1814	1519	1223	928	633	338
1080P	1920 x 1080	Stream (kB/s)	8192	6390	5505	4068	3712	2816	1919	1024
		MB / Hour / CH	3600	2808	2419	1788	1631	1238	843	450

System Components

Included:

XDR-1280D MDVR	1TB SSD HDD	(1) EX4-XC1D 720P AHD Camera	GPS Passive Receiver	X12-CAM8 Camera input cable	EX12-MPIG Male DIN to BNC Video Cable	Remote Controller	Power Cable	Software / Manual

Optional:

EX5-HD3IP1080	EX5-HD2 720P HD Camera w/ IR + Audio	EX4-XC2 Analog D1 Outdoor Camera	EX4-XC4 Left/Right Side Outdoor D1 Analog Camera	EX4-PGM Tablet for Programming / Back Up Monitor	XDR-PON 4 Port Switch required for EX5-HD series cameras	EX5-CBLxx HD Camera Patch Cable 15ft, 30ft and 50ft	EX4-CBLxx 4 pin DIN Camera Patch Cable 15ft – 60ft	EX12-ALC Input / Output Alarm Cable

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XDR System Layout Diagram

AHD Cameras 1 - 8

Monitor 1

AV OUT

EX12-MPIG

EX4-CBL*xx*

Monitor 2

EX12-CAM8

GPS

AV IN

CAN

VGA

GPS

Serial

Power   Amplifier   Panel   LAN   USB

EX12-ALC

To Vehicle Power

XDR-PON

12V DC
GND
Ignition

To Vehicle Power

Ethernet CAT5 Cable

EX4-PGM

Mic

EX5-HD IPC camera 1 - 4

12V DC
GND
Ignition

XDR-UPS
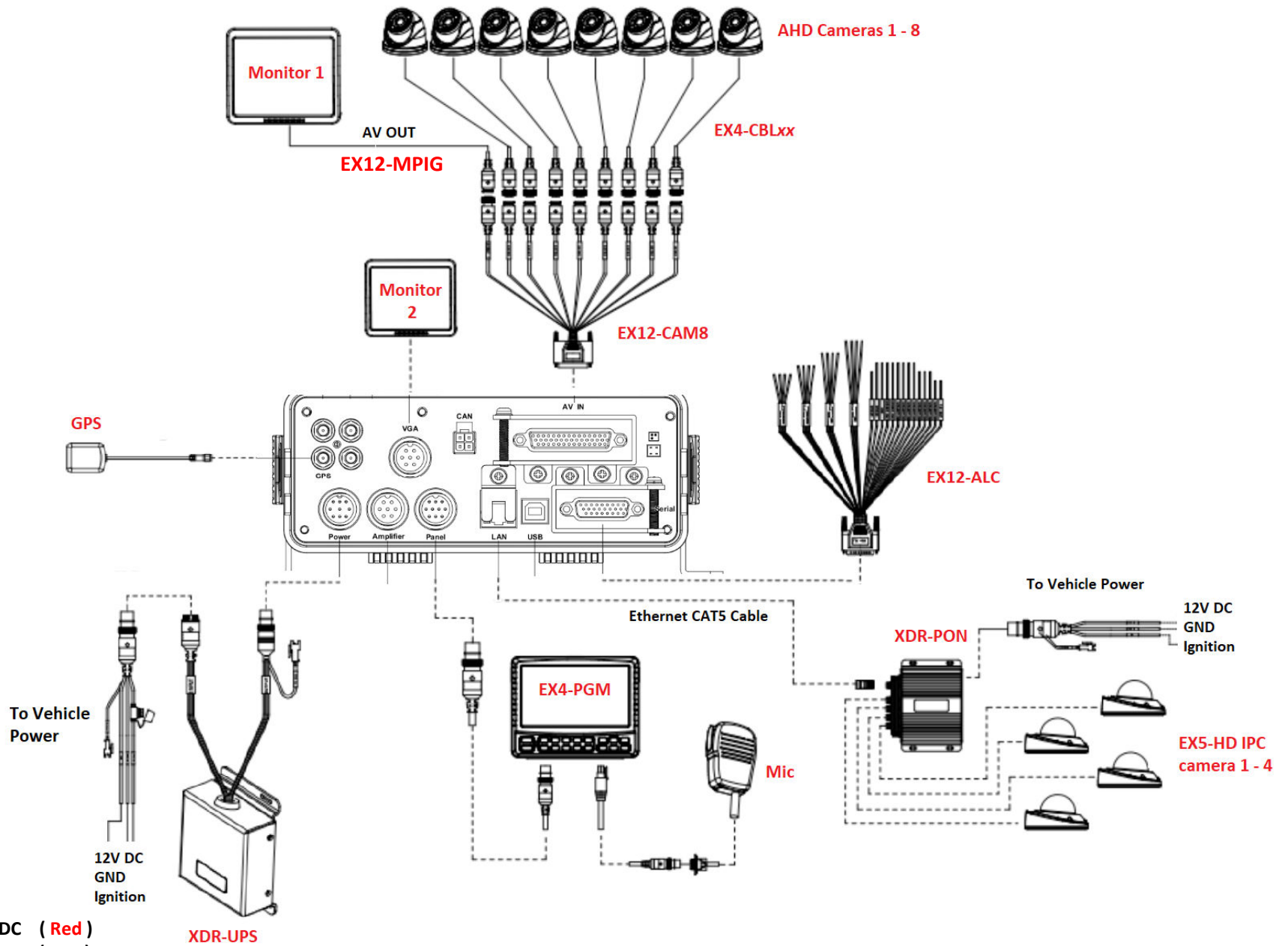
3 Wires:

- 12 / 24V DC   (Red)
- GND   (BLK)
- ACC / IGN   (YEL)

Powering the XDR (12V / 24VDC)

1. Insert the appropriate fuse blade into the Red power cable
   Blue Fuse = 12V   **Brown** Fuse = 24V

2. Connect the 3 power wires to the vehicle's fuse

   Red   = 12VDC Power

   Yellow   = Ignition / Accessory

   Black   = Ground

3. Connect the power cable to the Power connection on the XDR

XDR Cover / Latch MUST BE CLOSED in order for the XDR to Power ON!

Fig. 1 Pic of Power Cable
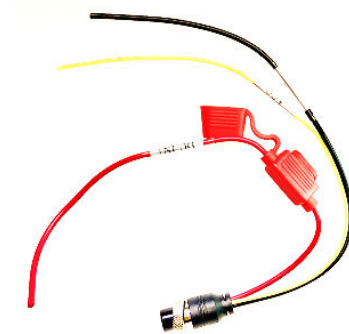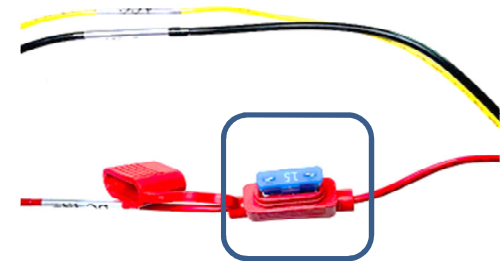

Fig. 2 Fuse Blade

Fig. 3 XDR Power connection

CAUTION

■Installation by a Professional technician is highly recommended

■Exercise caution when connecting the power to prevent shock. Do not use sharp object to force cable

■Ensure connection to the proper fuse to avoid damage or interference with vehicle operation

■Refer to vehicle owners manual for fuse guideline

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Connect Ventra EX4-XC series 1080P, 720P AHD and D1 resolution camera (4 PIN DIN)

EX12-CAM8   Figure 1   Figure 2   Figure 3

EX4-CBL

(EX4-XC1D, EX4-XC2, EX4-XC2D, EX4-XC4) with 4 PIN DIN

- Connect the EX12-CAM8 cable to the AV IN connector at the rear of the XDR
   shown in *Figure 1*

- Each EX4-XC4 series camera that connects to the XDR requires an EX4-CBLxx
   cable to XDR *(Figure 2 EX4-CBLxx   xx denotes length)*

- XDR transmits Audio / Video & Power through the 4 PIN DIN cable *(Figure 3)*

- *EX4-CBL available in 15, 33 and 60ft*

- *Maximum length / distance is 120ft by connecting 2 EX4-CBL4*

Connect XDR-PON Switch to XDR-1280

Fig. 1 XDR-PON Switch
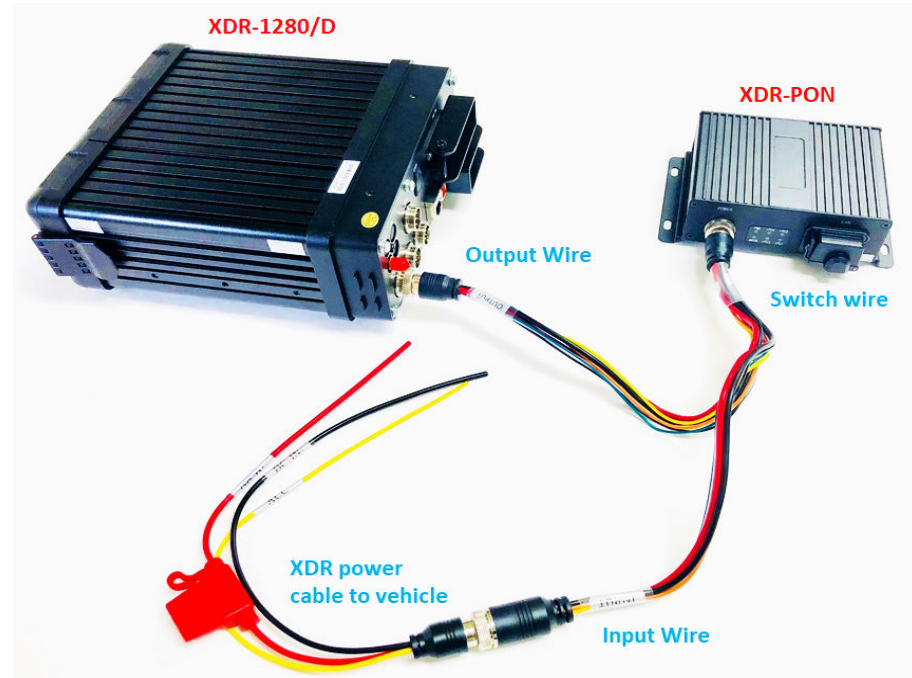
Fig. 2   Connect Power to XDR and XDR-PON

For EX5-HD1, EX5-HD2, EX5-HD3IP1080 cameras

<u>**Requires Ventra EX5-CBLxx 6PIN DIN cable and XDR-PON 4 camera switch**</u> (*sold separately*)

- Connect the power cable included with the XDR-PON to both the XDR-1280 and the PON switch

  - **Switch wire** connects to XDR-PON

  - **Output wire** connects to XDR-1280

  - **Input wire** connects to power cable of the XDR

Connecting Ventra EX5 HD series 1080P, 720P IP camera (6 PIN DIN)

Fig. 1 XDR-PON Switch

Fig. 2   Connect Power to XDR and XDR-PON

For EX5-HD1, EX5-HD2, EX5-HD3IP1080 cameras

Requires Ventra EX5-CBLxx 6PIN DIN cable and XDR-PON 4 camera switch (*sold separately*)

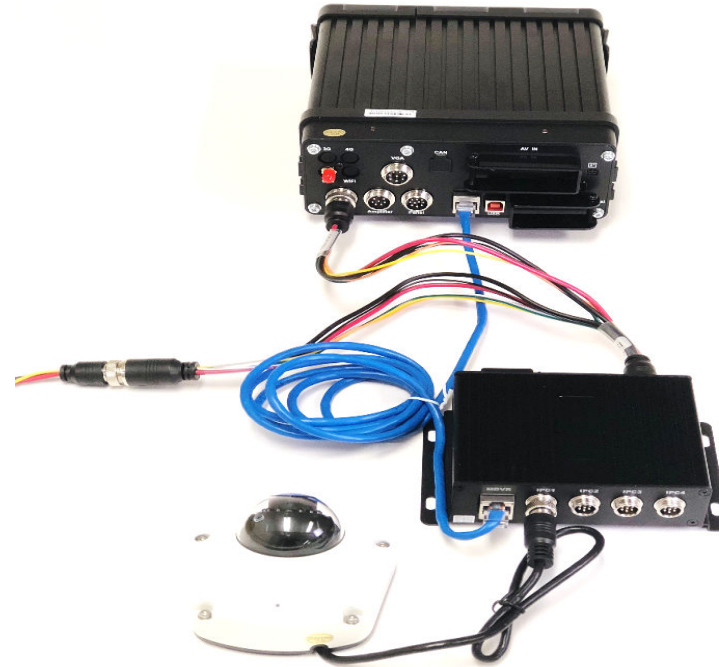- Connect an Ethernet CAT5 cable from the LAN port on the rear of XDR-1280 to the PON switch
   port labeled <u>MDVR</u>

- Connect EX5-CBLxx 6 PIN DIN cable to IPC port 1 – 4 (sold separately)

   (EX5-CBLxx   xx denotes length available in 15, 30 and 50ft)

EX4-PGM (OPTIONAL)

7" Touch Screen Programming Tablet and LCD monitor
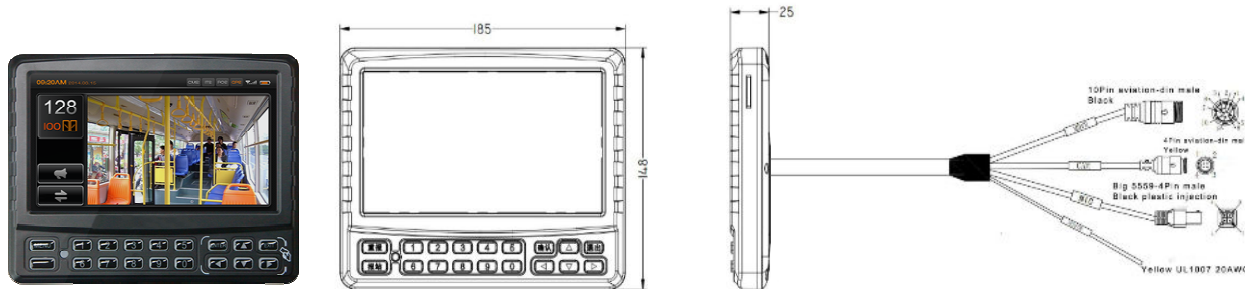
EX4-PGM - optional

- Programming XDR system
- LCD monitor for live viewing / back up
- Touch Screen for easy access

Connect the EX4-PGM with the 5M extension cable to the "Panel" Connector on XDR

XDR-1280 Video Out to LCD Screen Connection

1. Connect EX12-CAM8 to XDR
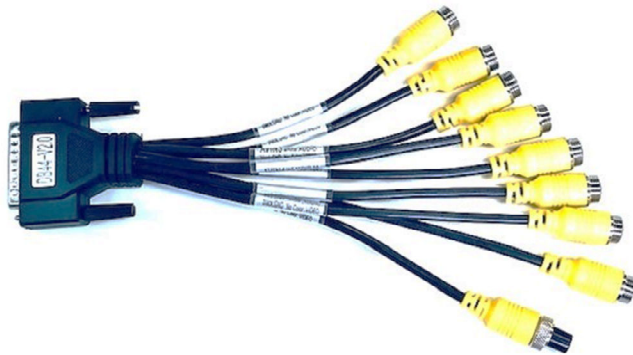
2. Using **AV Out 1** port to connect to EX12-MPIG included with XDR
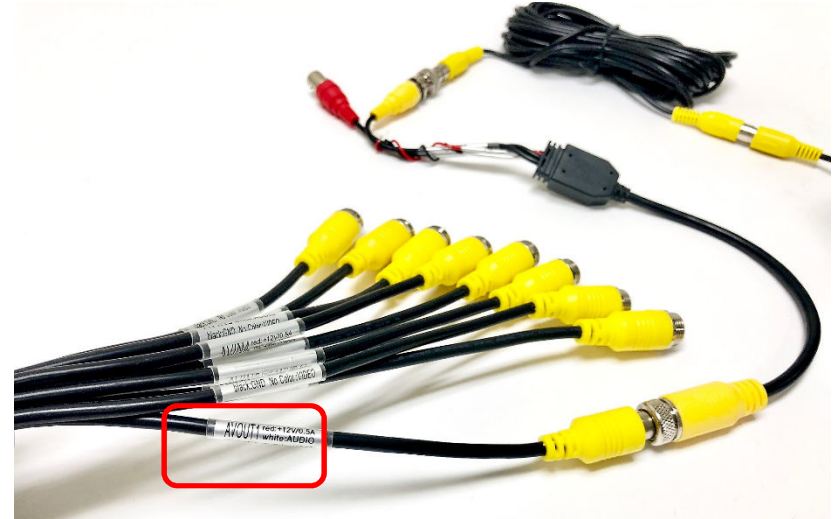
3. Use a BNC to VGA Converter to connect to the Video Cable Lead on EX12-MPIG

RCA Cable

BNC to RCA Converter

EX12-MPIG

AV OUT 1

4. Connect RCA cable to EX12-MPIG

OSD Menu Layout

Single	Quad	9-Split	Playback	System	

Live View Display Screen Mode   Playback   System Status   Setting
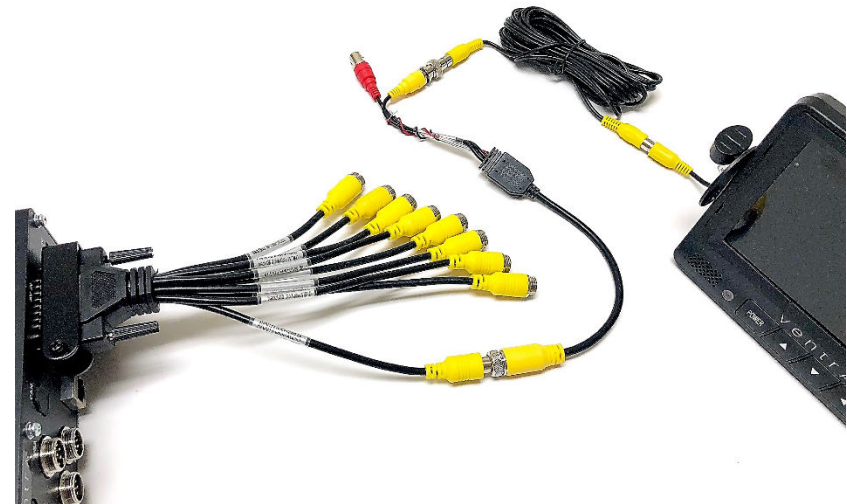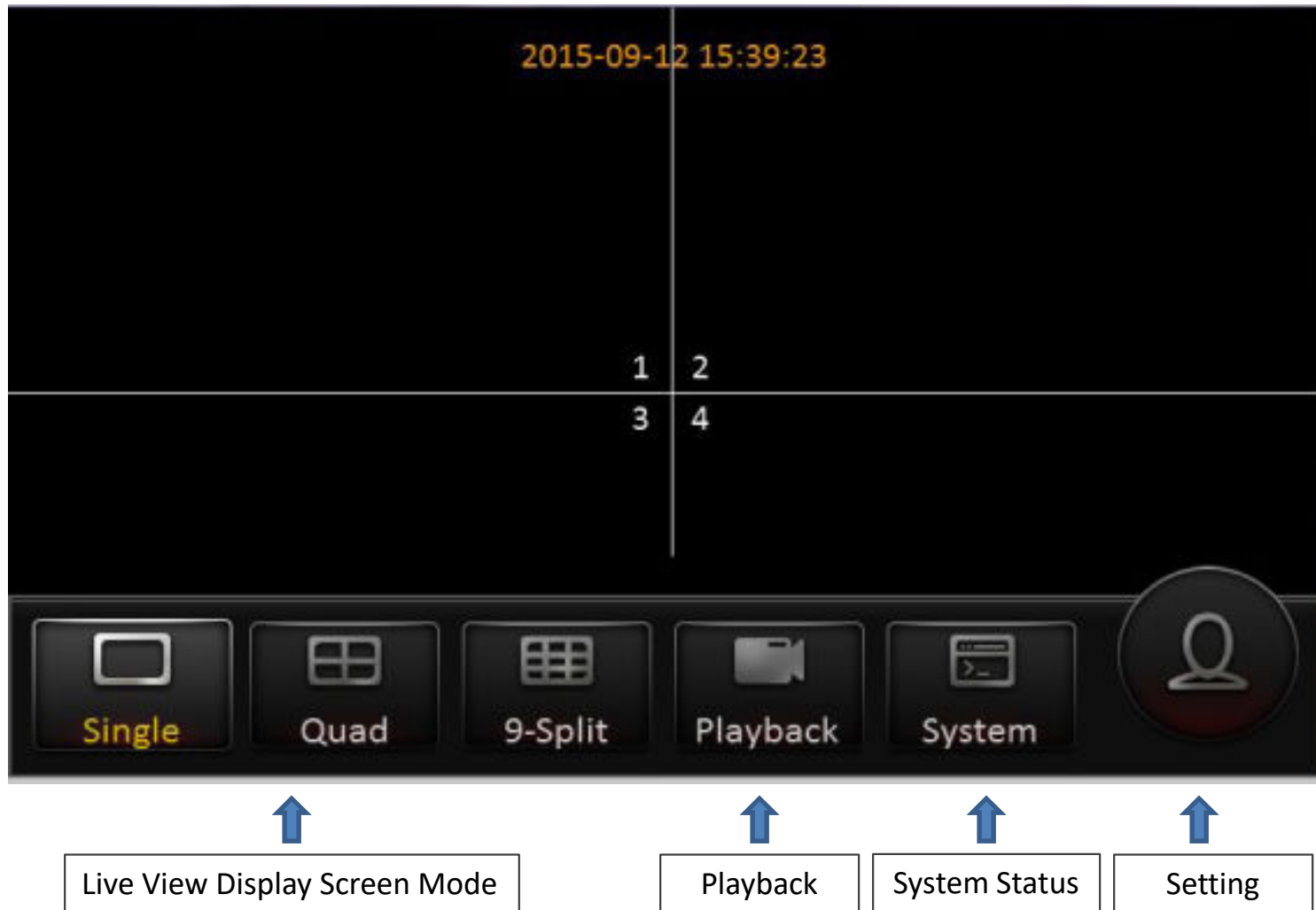
Getting Started

Login to XDR Menu

To access the OSD keyboard, RIGHT click on mouse. Or use touch screen if utilizing EX4-PGM programmer

To connect to the XDR, there are 2 methods

- Corde Mouse to the USB port on the XDR
- EX4-PGM programming tablet

Enter =

Cancel =

Cursor =
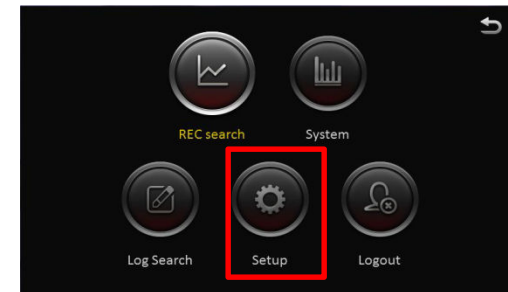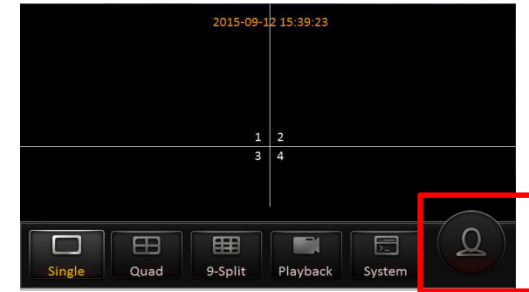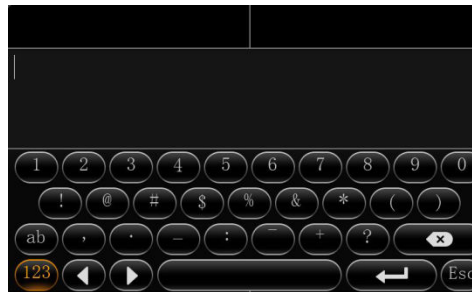
- To Format the card, Login to **XDR Settings** by selecting the

  > Login > Setup > Maintenance > Storage

    - **Default ID:** admin
    - **Password:** admin

- Select **Maintenance Tab** > **Storage Tab** > pick the SD Slot to format   (Any previous data will be erased)

- Top Slot = Primary,   Bottom Slot = Secondary.   (If using only 1 card, insert into Top Slot)

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 HDD and SD cards <u>MUST</u> be formatted in the XDR prior to recording.

USB thumb drive does NOT require formatting for file export/import

Storage type: <u>Refer to HDD / SD card requirement and specification on PAGE 7</u>

HDD (Internal) 1TB Max

SD card (Internal) - Max 128GB per slot- U1 speed minimum

USB drive for File Export, Settings Import/Export, Firmware updates

- Insert HDD and or SD card (if applicable) while system is powered off
- Select <u>Format</u> for storage device
- Once format is completed, capacity of each device will be displayed

- Not Found: XDR didn't detect SD card (not install or card malfunction)

- Unformatted: SD card detected, but unformatted (New HDD)
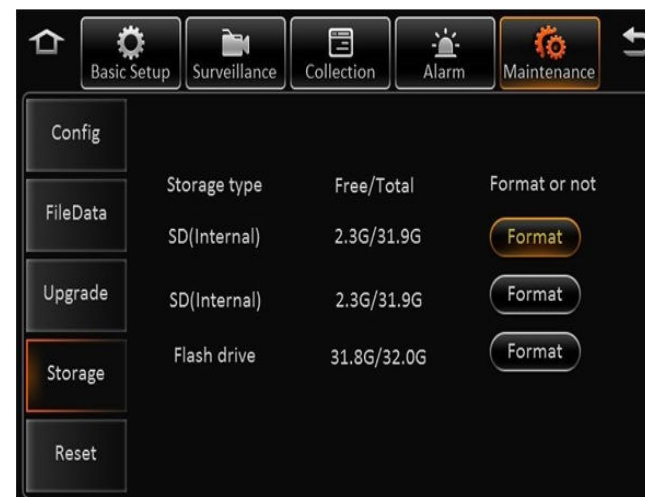
Basic Setup – Register Vehicle / Driver / Device ID

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

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

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

Startup – Power On / Off

1. **On / Off**: How the XDR is activated (3 Modes)

   - **Ignition** (Default - Suggested)

   - **Timer**

   - **Ignition or Timer**

2. **Ignition Delay**: Time delay between vehicle ignition off to XDR powering off (0-300 seconds)

   Recommend 5 – 10 seconds

3. **Ignition**: XDR powers on as vehicle ignition is on

4. **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

5. **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.
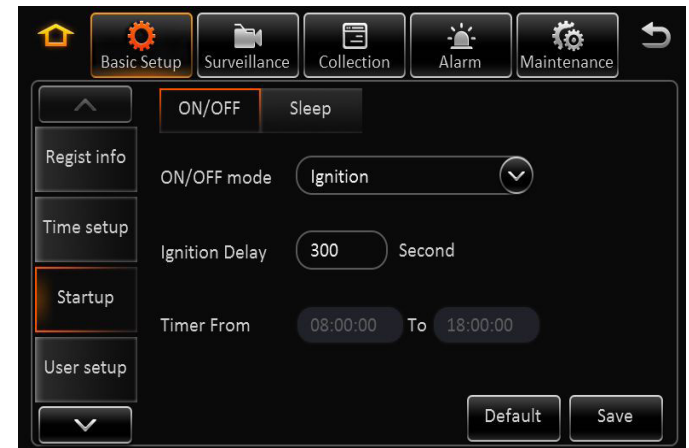
Basic Setup – User Setup

User Setup

1. **Idle Time**: The length of time the system remains in settings mode before logging out.

   Recommend (5 or 10 Minutes)

2. **User Name**: Default **admin**

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

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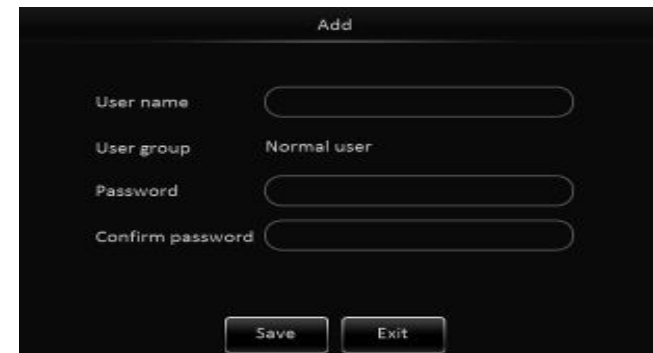
Output to Monitor Screen

Display on monitor View – Preview

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

1. **Preview Audio**: Enable / Disable audio during live view of cameras

2. **Image Setup**: camera parameters - Color, Contrast, Brightness

3. **Margins**: Adjust screen display offset to match the monitor

4. **Startup Screen**: Set live view display in Single, Quad or Nine CH mode

5. **Channel**: Select the channels to display on screen

    Note: Single can only select 1   Quad Must Select 4

Display on monitor View – OSD

1. Select various information to display on monitor in viewing mode. The information in this section is not recorded/watermarked.
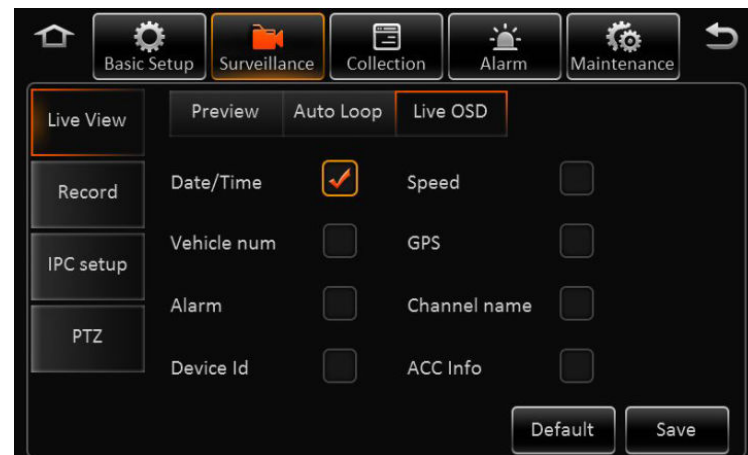
4.3   Surveillance – Record - General

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

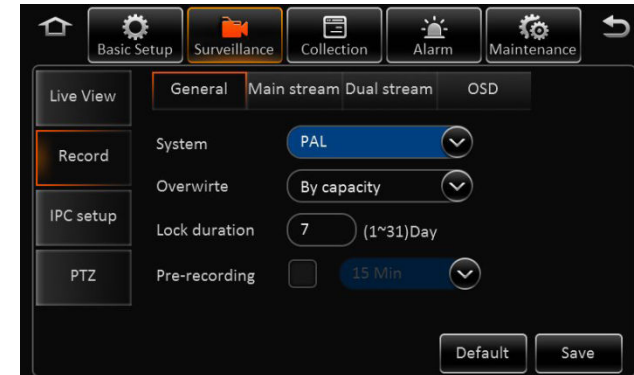**This section enables, disables individual cameras as well as custom parameters for each. If setting is same for all cameras, click "Copy To > All".**

1.   **Channel:** Select the camera from Channel 1 - 12

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

         Analog HD (AHD) Camera = CH 1 ~ 8 =   1080P AHD, 720P AHD, D1

         IPC HD Camera = CH 9 – 12   = 1080P HD, 720P HD Resolution

5.   **Frame Rate:** Select frame rate of individual camera (1 – 30FPS) Default 25
         Higher the frame rate, bigger the file storage size
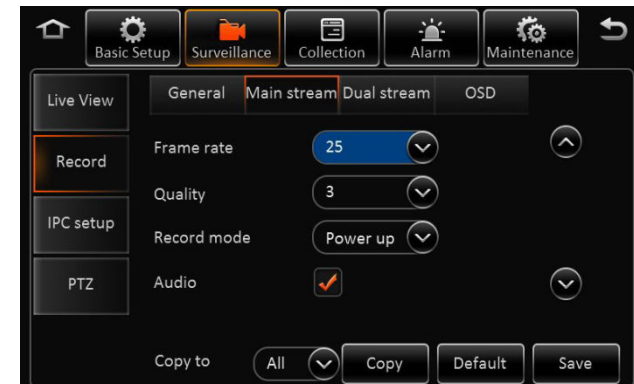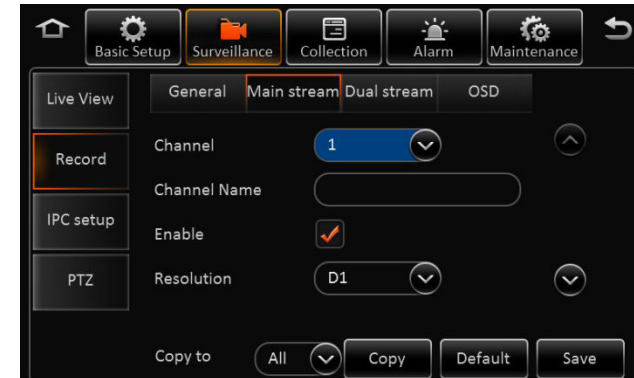
4.4 Surveillance – Record – Main Stream (Continued)

Reminder: Save each tab individually before proceeding to next tab

5. **Quality:** Video quality in relation to Bit Stream (1 – 8, 1 = Best) Default = 3

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

Record – Main Stream

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) Default = 3

5.   **Record Mode:** Select how the camera is activated

-   **Ignition / Power UP**: When vehicle ignition is on   (Default)
-   **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

Record – Dual Stream

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, select <u>NONE </u>in Record Mode

1. **Record Storage:** Internal SD / External SD   <u>Default = Internal SD</u>

2. **Record Mode**: Mirror / Alarm Back Up / Sub Stream / Loop (Select 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 when storage is full. This enables the system to continuously record, replacing the oldest files with the latest.

Record - OSD

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

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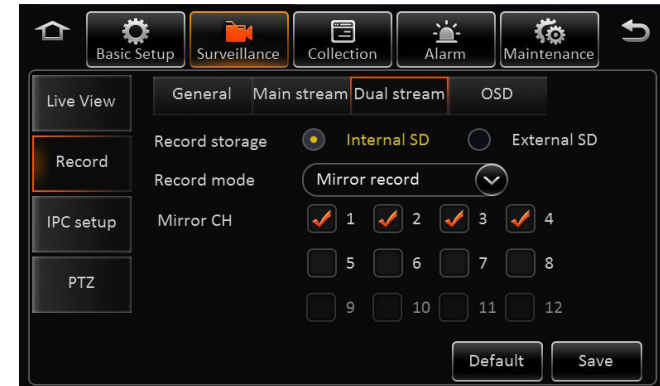
IPC / EX5 HD Camera Setup

IPC / HD Camera Setup   EX5-HD1 / HD2

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

Configuration

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**

(Use blank USB flash drive to ensure proper file storage)

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.*
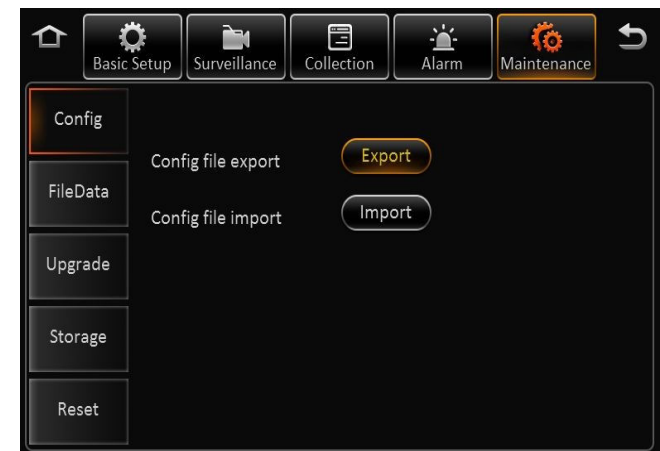
Technical Specification

Function Overview		Preview, Recording, Playback, Route History
System	OS	Linux 2.6.24
	Control Mode	IR remote control
Video	Input	5 channels (1) 720P HD + (4) Analog HD 720P (AHD) or D1 Resolution 720 x 30FPS + 4 x 15 FPS
	Output	1 channel
	Video System	NTSC/PAL optional
Audio	Input	5 channels (From Camera)
	Output	1 channel
Display	Display Split	1/4
	OSD	GPS information, alarm, temperature, voltage, device information, firmware version
	Operation Interface	Semi-transparent GUI
Recording	Video/Audio Compression	H.264/ADPCM
	Image Resolution	PAL: D1(704x576), HD1(704x288), CIF(352x288) NTSC: D1(704x480), HD1(704x240), CIF(352x240) HD (1280 X 720)
	Image Quality	1~8 levels adjustable (1 is the best)
	Recording Mode	Manual/schedule/Alarm (sensor trigger, speed, acceleration, video loss, temperature)
	Post-recording	Maximum 30 minutes
	Mirror Recording	Yes (Using one of the two SD Cards)
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	256GB Max - 32GB/64GB/128GB Class 10 SDHC card – Max 128GB per slot
Interface	USB	USB 2.0 × 1
	SD	SD × 2
	Sensor	8 inputs, 2 outputs
	Speed	1 channel pulse speed detection
Power	Input	DC8-36V
	Output	500mA@12V
	Current	Impulse current: input 13.5V@1.3A Working current: input 13.5V@1.2A, 27V@0.5A Standby current: 0A

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