



BEAM®

VEHICLE SAFETY SYSTEMS

TE-CDVR-4 & TE-CDVR-G
User Manual

Hardware Guide



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Chapter 1 Accessories and Interface

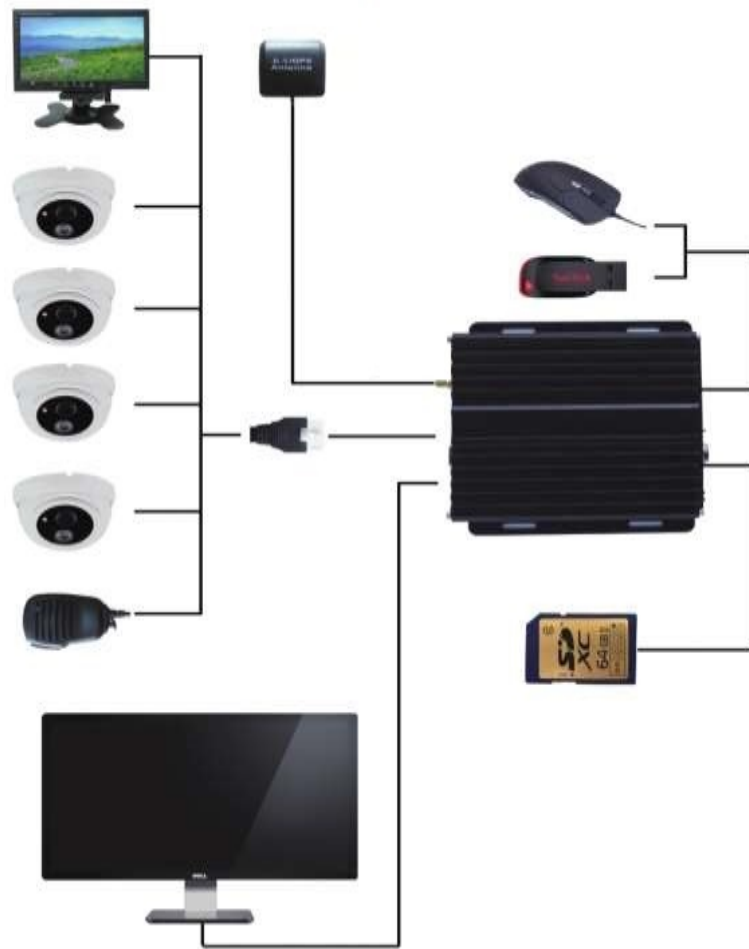
1. DVR and accessories

Before you use this product please check the accessories in the packing box. If there is anything missing or damaged please contact your seller. The DVR and accessories are listed as following:

List of DVR and accessories

Description	Picture	Quantity
DVR		1
Power cable		1
I/O cable		1
AV cable		1
GPS antenna (TE-CDVR-G Only)		1
USB Mouse Not included		1

2. System connection



System connection

3. Panel introduction



Figure 1. Front panel



Figure 2. Back panel

4. Interfaces Definition

Here we introduce the definition of the interfaces of Power, I/O, AV Input & Output. See as following:

4.1 Power interface

10-36V	10-36V	ACC
GND	GND	GND


Figure 3. Power interface definition

4.2 I/O Interface definition



Figure 4. Front view of I/O Interface

I/O Interface definition



PIN	Color	Definition	PIN	Color	Definition
1	Blue	Alarm output	2	Black	Ground
3	Purple	Alarm input 2(Positive)	4	Purple	Alarm input 1
5	Purple	Alarm input 4(Positive)	6	Purple	Alarm input 3
7	Red	5V Output	8	White	TXD(TTL Level)
9	Grey	Not used	10	Yellow	RXD(TTL Level)

4.3 Aviation interface definition



AV-IN Camera Interface



AV-OUT Monitor Interface

Chapter 2 Installation and Application

1. SD card installation

Please insert the key into the hole of the lock on the front panel, and switch it to the

open status, then pull the cover toward right, you will see the SD card slot.



Figure 5. SD card Installation

Please insert the SD card as per the icon indication, Then close the SD cover and lock it (Please remember to lock it, otherwise, The SD card will not work)



Figure 6. SD card installation

2. Antenna Connection (TE-CDVR-G only)

Please connect the GPS antenna as per the picture as below. We suggest you put the GPS antenna externally on the vehicle's roof for maximum reception.



Figure 7. Antennas Connection

3. Power Connection

Connect power and ground to the vehicles circuits with RED to constant power (10-36V DC), YELLOW to ignition (5-36V DC) and black to chassis ground.



Figure 8. Power Connection

The yellow ignition wire is used to detect the ignition signal. We strongly suggest you connect it with the "RUN" terminal of the ignition switch, or any terminal in the vehicle's switch box which will have power only when the vehicle is turned on.

4. Camera Connection

You can connect the camera with the AV input cable directly, or by extension cable (optional). The AV cable in the accessories box has mark on each connector, AV 1-4 are for cameras connection.



Figure 9. Cameras connection

Note: Before you connecting the cameras, please double check the resolution of the AV interface, make sure your cameras are the same resolution as set in the DVR.

5. Monitor connection

The device supports VGA and CVBS output. You can switch the output mode in the menu.

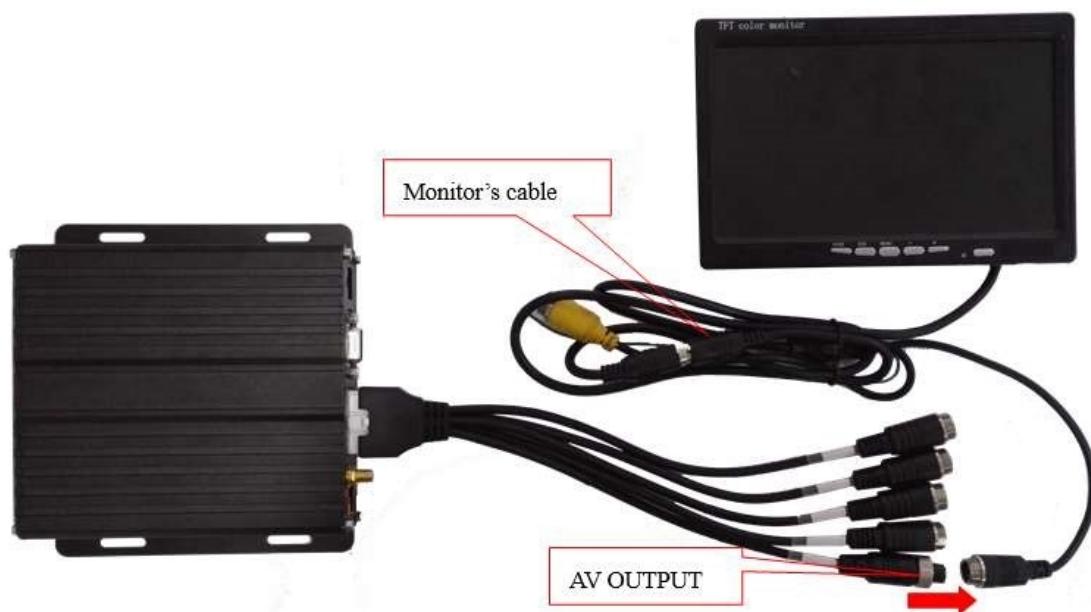


Figure 10. Monitor connection

Note: Before you connecting the monitor, please double check the resolution of the AV interface, make sure your monitor is the same resolution as the DVR output.

6. I/O wires connection

When you're going to use it, please connect the wires as the I/O interface definition. You will also find tips of the interface definition in the DVR menu.

Alarm input connection

This device provides 4 channels alarm inputs (2 channels Positive trigger, 2 channels negative trigger). You can connect the positive pole of circuit of the reverse light, turn light, door open & close etc with them for applications such as reverse assistant, camera channels switching.

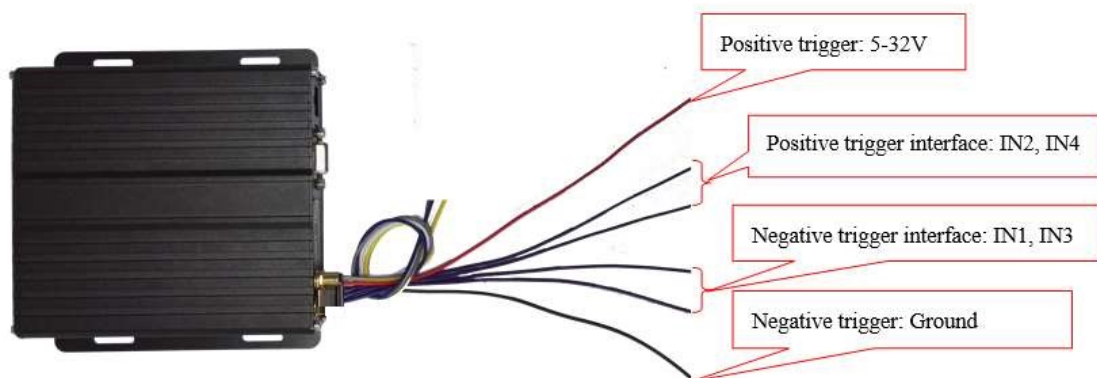


Figure 12. Alarm Input Connection

I/O wires				Alarm Trigger	
PIN	Definition	Color	↔	Color	Alarm trigger
3	Alarm input2	Purple	↔	Red	5-32V
5	Alarm input4	Purple			
4	Alarm input1	Purple	↔	Black	Ground
6	Alarm input3	Purple			

Alarm input Connection

6.1 Reverse assistant

The device comes with a Reverse assistant feature.

Example of setup: with Alarm Input2 connected to the positive pole of reverse light's power, see as following:

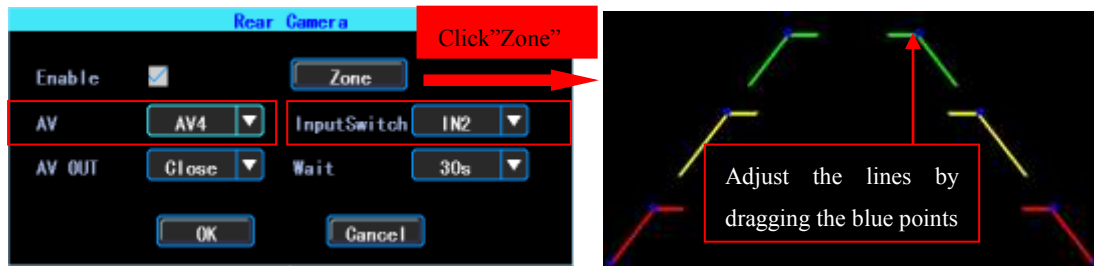


Figure 13. Reverse Assistance Connection

I/O wires				Alarm trigger	
PIN	Definition	Color	↔	Color	Alarm Trigger
3	Alarm input 2	Purple	↔	Red	Positive pole of Reverse light

Reverse Assistance Connection

Setup in the DVR menu "Advanced" → "RearCamera", see as following, click "OK"



AV: Please select the reverse camera's channel

InputSwitch: Please select the alarm input number which is connect with the reverse light's power

Note: When using reverse assistance, please use IN2 or IN4 positive trigger

When you shift to reverse, the DVR will display the reverse camera's channel only.
See as following:



Figure 14. Reverse Assistance

6.2 Serial ports connection

The device provides a group of serial ports which are used to connect with some user's peripherals, the interface is LVTTTL (3.3V) level



Figure 17. Serial ports Connection

I/O wires				Peripherals	
PIN	Definition	Color	↔	Color	Definition
2	Ground	Black	↔	Black	Ground
8	TXD(TTL level)	White	↔	Yellow	RXD
10	RXD(TTL level)	Yellow	↔	White	TXD

Serial ports connection

Software Guide



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Chapter 1

Overview

TE-CDVR is a DVR designed for Analog HD vehicle monitoring. With built-in high performance image processor and advanced H.264 video compression technology, it provides AHD video recording, storage and playback solution. It comes with smart power management system which can recognize the power type automatically. When detected the battery's voltage is lower than the given value, the device will shutdown automatically and keep ultra-low standby consumption.

Chapter 2

Quick setup

1. Device Installation

Please refer to Hardware Guide for installation and cables connection.

2. User Login

Right click the mouse, you will call out the login interface, please input your UserName, Password, and select your language, click "OK" to login the menu. (The default UserName is admin, without Password), see below:



Login	
UserName	admin ▼
Password	*****
Language	English ▼
OK Cancel	

User Login Interface

Right click the mouse, select “Menu” to start setup menu, see below:

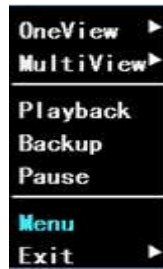


Figure 1. System Menu

“Menu” is the primary screen of the system setup and control, see below:



Figure 2. Primary Menu

3. Set up the System time

Path: Basic->DateTime, see below:



Figure 3. System date and time

TimeSYNC: Date and Time can be synchronized with GPS/BD

4. Set up cameras

Path: Menu->Record->Mode. Please set up your cameras' SignalType and Valid/Invalid. The DVR works with both AHD and general cameras. If you use AHD cameras, please select the first Type, if you use general cameras, please select the third Type, if you use both

general and AHD cameras, please select the second Type. See as following:



Figure 4. Recording setting

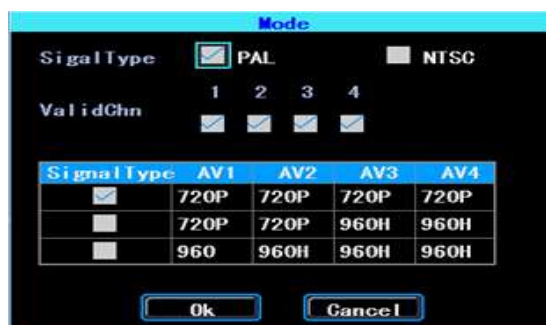


Figure 5. SignalType setup

Note: If your cameras don't display image on the monitor, please check this setup.

5. Wizard

Path: Menu->Wizard. This Wizard is not applicable to the TE-CDVR-4 or TE-CDVR-G

1.1 Video Playback

The device supports one channel video playback, Select “Playback” in the System menu, then the video searching interface will appear. Please search the video according to your requirement.

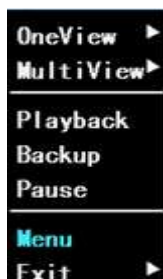


Figure 12. System menu



Figure 13. Video searching

The days in yellow contain recorded video. The blue parts in the time line bar are recorded video. Please move the cursor of your mouse to the corresponding channel and time, and then left click it to replay the video.

1.2 Video Backup

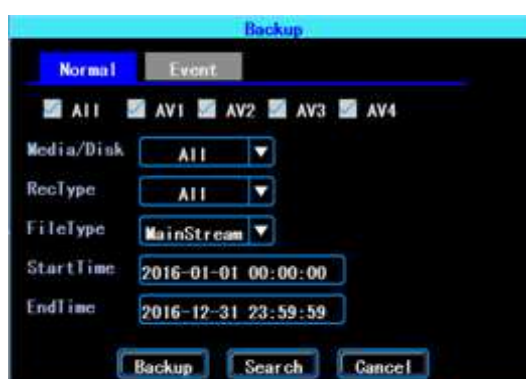


Figure 14. Video Backup

You can backup the video with an USB drive. There are two backup modes: "Normal backup" and "Event backup"

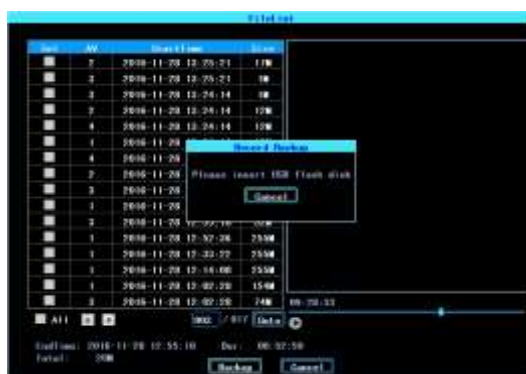


Figure 15. Video file list

Select the video file which you want to backup and then click "Backup", remove your mouse and insert your USB drive, then the backup will start.

2. Basic Setting

The basic setup includes basic setup items such as DateTime, Vehicle Information, and Preview etc.



Figure 16. Basic setting

2.1 Date Time setting



Figure 17. Date Time setting

Time synchronization: The system's date and time can be synchronized with GPS/BD.

2.2 Vehicle Information



Figure 18. Vehicle Information

Device ID: It is used to identify which vehicle the system is installed into.

2.3 Preview setting



Figure 19. Preview setting

OSD: On Screen Display. You can select some information to display on the preview screen (the displayed information is for preview, not for recording)



Figure 20. Preview OSD

2.4 Video Output



Figure 21. Video Output

2.5 On/Off setting

On/Off “Ctrl” setting is for turning on and shutting down the device automatically WHEN THE DEVICE IS ON STANDBY AFTER ACC IGNITION OFF. You can set up three time segments.

ACC Delay: You can set up the device to keep working for a given time period after the vehicle ACC ignition off.



Figure 22. On/Off Control setting

The On/Off “Volt” is for setting the voltage to shut down and start on the device, this feature can avoid the device draining the vehicle’s battery.

The device will detect the current voltage automatically, when the vehicle’s battery voltage is lower than the Shut.Volt, the device will shut down automatically to avoid discharging the battery. When the voltage is higher than the PowerVolt, the device can be turned on.



Figure 23. On/Off Voltage setting

2.6 System setup



Figure 24. System Setup

2.7 System Information

System information includes: Device Model, Serial Number, Hardware & Firmware version etc.



Figure 25. System Information

3. Network setup (not used)

4. Recording Setup

Recording setup includes Mode, Main Stream, Sub Stream, Recording OSD, Image, Mirror recording setting.



Figure 33. Recording setting

4.1 Recording Mode setting

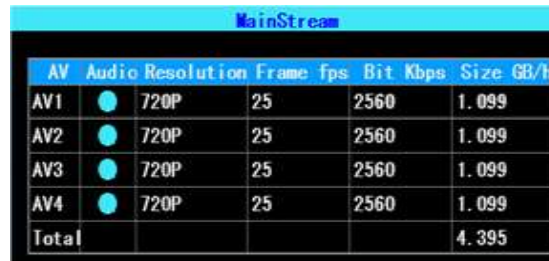


Figure 34. Recording Mode setting

Please set up your camera Signal Type and Valid/Invalid. The DVR works with both AHD and general cameras. If you use AHD cameras, please select the first Type, if you use general cameras, please select the third Type, if you use both of general and AHD cameras, please select the second Type.

4.2 Main Stream

Main Stream will be stored in local disk. This interface shows the current Main Stream setting and the corresponding storage size, you can click any line to set up the corresponding parameters.



AV	Audio	Resolution	Frame	fps	Bit Kbps	Size GB/h
AV1	<input checked="" type="radio"/>	720P	25		2560	1.099
AV2	<input checked="" type="radio"/>	720P	25		2560	1.099
AV3	<input checked="" type="radio"/>	720P	25		2560	1.099
AV4	<input checked="" type="radio"/>	720P	25		2560	1.099
Total						4.395

Figure 35. Main Stream List

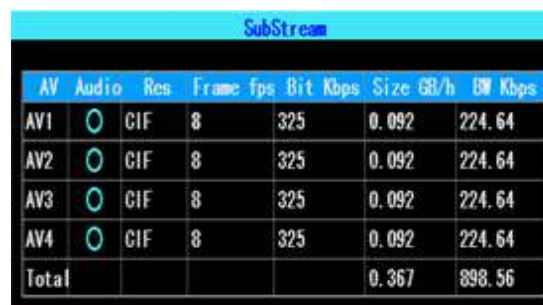


Channel: 1 Audio
Resolution: 720P Frame (fps): 25
BitRate: Fix Bit (Kbps): 2560
Quality: Good
Note:Size of record 1.099 GB/h
CopyTo AV 2 Ok Cancel

Figure 36. Main Stream AV setting
Bit is adjustable between 1024Kbps-4096Kbps
(6 levels of image quality).

4.3 Sub Stream

SubStream is not used for TE-CDVR-4 or TE-CDVR-G



AV	Audio	Res	Frame	fps	Bit Kbps	Size GB/h	BW Kbps
AV1	<input type="radio"/>	GIF	8		325	0.092	224.64
AV2	<input type="radio"/>	GIF	8		325	0.092	224.64
AV3	<input type="radio"/>	GIF	8		325	0.092	224.64
AV4	<input type="radio"/>	GIF	8		325	0.092	224.64
Total						0.367	898.56

Figure 37. Sub Stream setting

4.4 Recording storage

Select to record to SD card and activate Over Write loop recording.



4.5 Recording OSD (On Screen Display)

You can set up the information you want to be recorded in the video. This information will be overlaid on the playback video.



Figure 40. Recording OSD

4.6 Image setting

Image setup is used to adjust to camera's image effect.



AV	Brightness	Contrast	Hue	Saturation
AV1	50	50	50	50
AV2	50	50	50	50
AV3	50	50	50	50
AV4	50	50	50	50

Figure 41. Image setup

4.7 Mirror setting

This feature can turn over the camera's image horizontally or vertically (for both preview and recording)



Type	AV1	AV2	AV3	AV4
Hori.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Verti.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 42. Mirror setting

5. Advanced setting

This interface is used for UserManagement, Driving Habits monitoring, UART port setting, Temperature Sensor, and Reverse Lines setting.



Figure 43. Advanced setting

5.1 User Management

You can add, modify, delete users, and modify the login username and privileges.

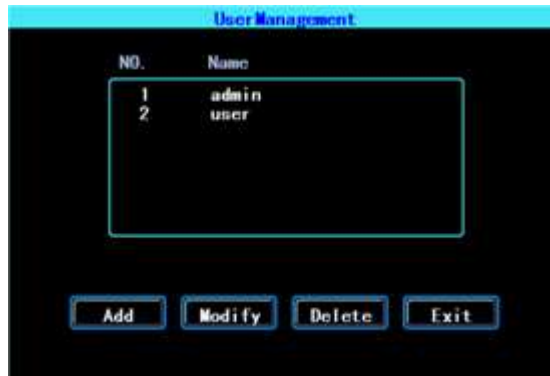


Figure 44. User Management

5.2 Driving Habits monitoring

(this feature is not available)



Figure 45. Driving Habits monitoring

5.3 UART setting

This device has 1 UART port (TTL). You can connect some peripheral devices such as TTS (Text To Speech), Network Pass Through etc with the DVR via our UART converter.

Uart setting List						
NO.	Mode	Baud	PIN NO.	Func.	State	
0	232	9600	TX(8)RX(10)	SerialNet	—	

PIN NO. is the index of 10PIN

Figure 46. UART setting list

5.3.1 UART-TTS

Select UART to get into UART setting interface.

Select “TTS” in the drop-down box of “Function”. Config the parameters as per the picture followed:

Figure 47. UART setting

5.3.2 UART-Serial Net (Pass Through)

Select UART to get into UART setting interface.

Select “SerialNet” (PassThrough) in the drop-down box of “Function”. Config the parameters as per the picture followed:

Figure 48. UART setting

5.4 Reverse Camera

The DVR comes with Reverse camera function. Any channel can be used for the reverse camera.

Click "Zone" to set up the reverse assistance lines.

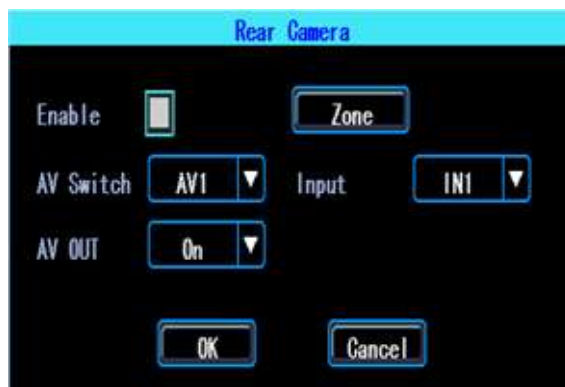


Figure 49. Reverse camera setting

Note: Default is "On" at "AV OUT". If you select "Off", the screen may sleep when there is no image for a period of time.

The assistance lines are adjustable (dragging the blue points)

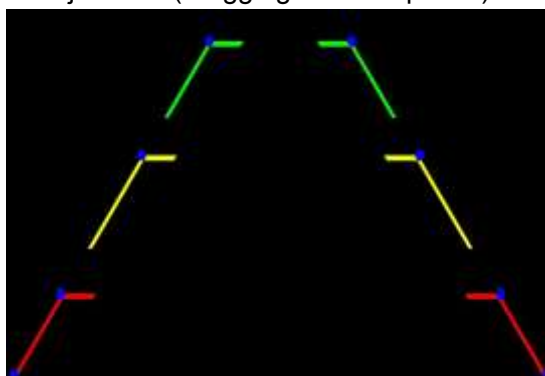
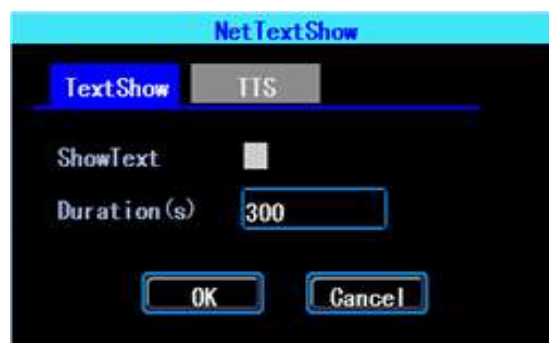


Figure 50. Assistance lines setting

5.5 NetTextShow

(this feature is not used)



6. Device Maintenance

“Device Maintenance” includes the basic maintenance of the device such as Log searching, Disk Management, Config parameter import/export, and System Upgrading.

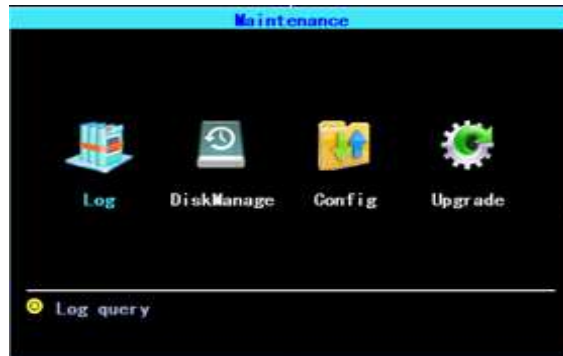


Figure 53. Device Maintenance.

6.1 Log Inquiry

Inquiry the system's running log according to the required Log Type and Time Range.



Figure 54. Log inquiry

The log will record the device's exception, local operation, system on/off, alarm information etc.

6.2 Disk Management

You can check the status of the disk here.



Figure 55. Disk Management

The disk need to be formatted in the device when you use it for the first time.

6.3 Related with the Parameter

Import/Export is used to import/export the setup and config information for setup in batch. After setting up one device, export the setup parameters with your USB disk, then insert the USB disk into second device's USB port and reboot the device, it will get the setup parameters automatically. (If you don't want to reboot the device, you can import the setup parameters in menu, see as followed)



Figure 56. Import/Export

PLEASE USE THE RESTORE FUNCTION CAREFULLY TO AVOID THE LOST OF YOUR IMPORTANT DATA

6.4 System upgrading

Please format your USB disk as FAT32 type and copy the upgrading file to the root directory of the USB disk. Then reboot the device, it will upgrade automatically. If you don't want to reboot the device, you can upgrade it in the menu "Import/Export". Select the upgrading type, click OK, then insert the USB disk. The system will detect the USB disk and the file and then upgrade automatically.



Figure 57. System upgrading



7. Alarm setting

Alarm setup interface includes the setting related to all alarm types, such as I/O alarm, Video Loss, Fatigue Driving, Over Speed, Disk error.



Figure 58. Alarm setting

7.1 Input Alarm

The device has 4 alarm inputs, 2 and 4 are positive trigger, 1 and 3 are positive/negative trigger (optional)

In	Type	PIN NO.	Enable	Buzzer	Out	State
1	Negative	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Positive	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Negative	6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Positive	5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PIN NO. is the index of IO PIN

Figure 59. Input Alarm list

Click the corresponding lines to setup

ChnInput: 1 Type: Negative

Enable: Reverse:

Buzzer: Output:

SwitchChn: No Delay: 0sec

EventName: IO_EVENT 1 ReportType: Normal

Snapshot: AV1 AV2 AV3 AV4

Trigger priority. 1 to 4, high to low

CopyTo Chn 2 Ok Cancel

Figure 60. Input Alarm setting

There are three input modes: high level, low level and open. For positive trigger, the normal trigger level is high, but if the reversed logic is enabled, the trigger level is changed to low level and open. It is same for negative trigger.

Alarm Input Trigger status list

Alarm Trigger		Positive trigger	Negative trigger
Reversed Logic	No	High level	Low level
Reversed Logic	Yes	Low level/Open	High level/Open

7.2 AlarmOut setting

You can set up the type of alarm output (interact, remote, manual), Manual is used to debug the device.



Figure 61. AlarmOut Setting



Figure 62. Alarm Out Types

7.3 Video Loss

Video Loss alarm will be triggered if there is no camera or wrong camera type is connected to a valid channel.



Figure 63. Video Loss alarm setting

7.4 Fatigue Driving Alarm

The Fatigue Driving time is calculated since the device was started. In this interface you can set up the fatigue driving time, to remind the driver to avoid driving fatigue.



Figure 64. Fatigue Driving setting

7.5 OverSpeedAlarm



Figure 65. OverSpeedAlarm Setting

7.6 DiskError

You can set up alarm when there is Disk Error detected by the device



Figure 66. Disk Error setting

Chapter 4

Installation Warnings

1. When you received the product, please open the box and check the device and accessories. If there is anything damaged or missing, please contact your seller.
2. When installing and operating the device, please check the standard of all electronics and the connections to the vehicle and other devices
3. Please double check the input power voltage, it should be 8-36V DC, to avoid the damage caused by wrong voltage.
4. The device should be install in a location away from extreme heat and humidity.
5. Allow for adequate airflow around the device.
6. Installation should be done in compliance with the local, state, and federal regulations.