Safety Precautions

To Whom It May Concern
Thank you for purchasing the RoadHawk E10 DVR. Please contact your local dealer for any assistance. We will backup services via local dealers. Rights are reserved to upgrade software and hardware without notice beforehand. Please read this manual prior to use of this product.

Installation Precautions

- Make sure power connections are disconnected before installation.
- System installation by professional installers only.
- Please use recommended and genuine SD Cards.
- Please contact local dealers in case of service requirements.

In Use Precautions

- Please keep the inner components free from dust or liquids.
- Please do not disassemble the equipment. Please contact local dealers or the manufacturer for prompt service.
- Please remove the battery from remote control if not in use for long times.
- The equipment should be connected to vehicle ground. This is to keep the DVR away from static electricity damage.
Vehicle DVR System

Surrounding

● Please use the DVR under recommended temperatures away from the sun and heat source.
● Please keep this equipment away from humid surroundings.
● Please keep this equipment away from smoke and dust.
● Please do not drop the equipment.
● Please keep this equipment in ventilated space.
● Please supply rated voltage and amperage to the equipment.
● Please keep flammable objects away from the equipment.
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A. PACKAGING

1. Accessories
   ■ 3Pin Power Cable x 1PCS
   ■ Alarm Harness x 1PCS
   ■ Mono Audio Microphone x 1PCS
   ■ 3 Meter IR Cable Lead and Foam Tape x 1PCS
   ■ Velcro x 1PCS
   ■ Remote Control x 1PCS
   ■ CD x 1PCS
   ■ Quick User Guide x 1PCS
   ■ Mounting Brackets
   ■ GPS Antenna / Receiver

2. Review
   Please review the package first. The packaging material should be protected from impact during delivery. Please remove the PE bag to make sure no damage to the DVR.
B. FEATURES

- Equipped with 4 cameras to record front/rear/left/right/inner of vehicle.
- VIDEO OUTPUT to monitor to playback video at site and LIVE view.
- H.264 video compression codec.
- Recording Resolution: D1 & CIF
- Graphic User Interface.
- 1 x audio / 3 x Alarm Input / 1 x Alarm Output.
- Reliable event log.
- Time and date record display on screen.
- System initialized after memory card loaded and power supplied.
- SD card recording for rugged use.
- Three axis G-Sensor.
- GPS provides speed, coordinate and route.
## C. SPECIFICATIONS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>4ch Vehicle System</td>
</tr>
<tr>
<td>Video Format</td>
<td>NTSC/PAL</td>
</tr>
<tr>
<td>OS</td>
<td>Embedded Linux</td>
</tr>
<tr>
<td>Video Input</td>
<td>4 Cameras</td>
</tr>
<tr>
<td>Camera Power Output</td>
<td>4 x Power12V / 250mA</td>
</tr>
<tr>
<td>Video Output</td>
<td>x1 Video Output</td>
</tr>
<tr>
<td>Audio Input</td>
<td>x1 Audio Input</td>
</tr>
<tr>
<td>Audio Output</td>
<td>x1 Audio Output</td>
</tr>
<tr>
<td>Alarm I/O</td>
<td>x3 Alarm Input / x1 Alarm Output</td>
</tr>
<tr>
<td>Operation Interface</td>
<td>GUI</td>
</tr>
<tr>
<td>Language</td>
<td>English/Traditional Chinese/Simplified Chinese</td>
</tr>
</tbody>
</table>

### Recording Frame

<table>
<thead>
<tr>
<th>Format</th>
<th>Max. fps @D1</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTSC</td>
<td></td>
</tr>
<tr>
<td>PAL</td>
<td></td>
</tr>
<tr>
<td>NTSC</td>
<td>60 fps</td>
</tr>
<tr>
<td>PAL</td>
<td>60 fps</td>
</tr>
<tr>
<td>NTSC</td>
<td>120 fps @CIF</td>
</tr>
<tr>
<td>PAL</td>
<td>100 fps @CIF</td>
</tr>
</tbody>
</table>

### Display Mode

- Full Screen / Quad

### Operation Mode

- Recording / Playback

### Resolution

#### Live

<table>
<thead>
<tr>
<th>Format</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTSC</td>
<td>720 x 480</td>
</tr>
<tr>
<td>PAL</td>
<td>720 x 576</td>
</tr>
</tbody>
</table>

#### Record

<table>
<thead>
<tr>
<th>Format</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTSC</td>
<td>360x240@CIF / 360x288@CIF</td>
</tr>
<tr>
<td>PAL</td>
<td>720x480@D1 / 720x576@D1/</td>
</tr>
</tbody>
</table>

### Backup

- SD Card
Vehicle DVR System

<table>
<thead>
<tr>
<th>Search</th>
<th>Mode</th>
<th>Time/Date</th>
<th>Event Record</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Full Screen</td>
</tr>
<tr>
<td>Indicator</td>
<td>3 LED (REC、GPS、Power)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Video Loss Alert</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buzzer</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G-SENSOR</td>
<td>Three Axis G-Sensor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPS</td>
<td>Speed / Coordinate / Route</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remote Control | Cable Lead Provided |
Watch Dog | Auto Reboot after Power Cut |
Power Input | (1) DC 8V~32V (2)ACC Bonus Power Subject to Software |
Dimensions | 151mmX115mmX30mm (LXWXH) |
Operation Temperature | -20°C~65°C |

D. DIMENSIONS

Unit : mm

![Dimensions Diagram]
E. FRONT / REAR PANEL

1. Front Panel
2. INSTALLATION GUIDE

- **Video Output / Audio Output / Video Input**
  
  - V. Video Output
  - A. Audio Output
  - 1. Video Input
  - 2. Video Input
  - 3. Video Input
  - 4. Video Input

- **Power I/O**

  3Pin Power Cable Definition:
  1. Red - DC8~28V Vehicle Power Input - Positive
  2. Blue - ACC Control
  3. GND - Ground Wire - Negative
Vehicle DVR System

- Alarm I/O

1. Alarm IN 1 (Red+12V)
2. Alarm IN 2 (Brown+12V)
3. Alarm IN 3 (Yellow+12V)
4. Alarm OUT (Orange+12V)

G. Ground Wire (Black)

- Alarm IN Application

Monitor can switch to full screen of rear view or side view. Driver can view a blind spot when alarm is activated.

- CH 1 → Reversing Signal Input
- Ground → Connected with the 2 & 3 black wire of the power cable.

Quad while no alarm

Full Screen while alarm input

- Alarm OUT Application

12V, Max1.5A output connected with beeper or siren
F. RECORD / STOP

1. Reboot/Record
   System is ready 40 seconds after reboot. The SD card indicator will start to flash when the system is recording video.

   Indicators
   - Green – is on when the system receives power from the vehicle.
   - Red – SD card recording it flashes.
   - Blue – flashes when receiving valid GPS signal.

2. Power Off/Stop Recording
   When power to the system is stopped, the unit will stop recording video.
G. REMOTE CONTROL
Remote control playback and PC site playback are available.

- Remote Control

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Navigator</strong></td>
</tr>
<tr>
<td><strong>Menu</strong></td>
</tr>
<tr>
<td><strong>Enter</strong></td>
</tr>
<tr>
<td><strong>CH1~CH4</strong></td>
</tr>
<tr>
<td><strong>Quad</strong></td>
</tr>
<tr>
<td><strong>Record</strong></td>
</tr>
<tr>
<td><strong>Mute</strong></td>
</tr>
<tr>
<td><strong>Play</strong></td>
</tr>
<tr>
<td><strong>Stop</strong></td>
</tr>
</tbody>
</table>
Vehicle DVR System

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>![Pause]</td>
<td>Pause in Playback Mode</td>
</tr>
<tr>
<td>![Fast Forward]</td>
<td>Fast Forward in Playback Mode</td>
</tr>
<tr>
<td>![Fast Reverse]</td>
<td>Fast Reverse in Playback Mode</td>
</tr>
</tbody>
</table>
H. GUI & Operation

- Live View – Quad

- Live View – Full Screen

◆ Instructions
  - Press 1 to 4 to display CH1 to CH4
  - Press quad for quad display
  - Press Menu to enter menu
  - Press Play for playback mode
Vehicle DVR System

◆ On screen GUI icons
  • Recording
  • GPS on
  • Audio Recording
  • Manual Recording
  • G-Sensor Triggered
  • 0 km/h: Speed of the Vehicle
I. OSD menu

Instructions:
- Press Menu in live mode to enter the menu.
- Enter menu and press navigator buttons to locate the option. Press enter to enter option.
- Press Menu to exit
(2) Menu and Configuration

1. Set Encode Parameter

- **Recording Configuration**

<table>
<thead>
<tr>
<th>Frame Rate</th>
<th>NTSC</th>
<th>D1</th>
<th>5fps-10fps</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CIF</td>
<td>5fps-30fps</td>
<td></td>
</tr>
<tr>
<td>PAL</td>
<td>D1</td>
<td>5fps-15fps</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CIF</td>
<td>5fps-25fps</td>
<td></td>
</tr>
<tr>
<td>Quality</td>
<td>Normal</td>
<td>Better</td>
<td>Best</td>
</tr>
</tbody>
</table>

2. Set Parking Mode

- You can set the frame rate during “Parking Mode”.
- Recording frame rate setting for “Parking Mode”.
- Frame rate - 5, 10, 15, 20, 25, 30 Max. 15 @D1 · Max. 30 @CIF
(3) Set Video Parameter

- Channel – press ▲ ▼ on the remote control
- Brightness/Contrast/Hue – press ▼ ▲ on the remote control
Press enter to save the configuration.

(4) Set Time

- “yy/mm/dd/mm/ss/Time Zone”
- Auto Time Calibration by GPS

(5) Set Plate Number

- Range of Input - A~Z & 0~9
(6) Delete All Record Data

※ All the files on the SD card will be deleted.

(7) Default Live View Channel

◆ Choose which camera is displayed for LIVE view by default when the system is started.

(8) Power Management

◆ You can set how long the system will record video for once the vehicle has been turned off.
(9) MDVR ID

- MDVR ID – the unique serial number of this device.

(10) Alarm Setting

- Alarm Option – Off / CH1 to CH3
- The selected channel will come up with full screen upon alarm trigger.

(11) G_Sensor Setting

- G_Sensor Option – On/Off
- G_Sensor Mode – Automobile Mode & Truck Mode
- G_Sensor Sensitivity – Lowest/Low/Normal/High/Highest

★ Video file of the impact moment will be saved not overwritten in condition of G-Sensor trigger.

**WARNING:** If the G_Sensor sensitivity is set too low, the camera may not create an EVENT file if there is a collision. In all cases after a collision, turn off the system and remove the SD card to prevent data being overwritten.
(12) Default Settings

- Returns the system to factory pre-set condition.
- System will reboot after default setting.
(13) Backup

- Can backup files via list or search. Press Enter to enter playback mode and start backup files.

(14) Language Settings

- Language Option - English / Traditional Chinese / Japanese / Korean / Russian/Spanish / Deutsch

(15) Firmware Update

- Use USB Flash Memory to upgrade the firmware.
- DO NOT cut the power off during upgrade. System will reboot when the upgrade is done.
(16) Version

- Shows the latest version of the firmware installed on the device.

J. Playback Setup

On site playback and PC playback are available.

- On site playback
  1. Press Play in live mode to enter playback mode.
  2. Press Play to enter option
  3. Select the option and press enter to see the file list.

- Manual Recording
- G-Sensor Recording

4. Select a file and press Enter to start playback.
PC Playback

1. Install the software CarBox2.exe from the supplied CD-ROM. Or download it from the RoadHawk website.

2. Reminder – Right click the mouse on the CarBox icon and select “Open as administrator” to run the software on Windows 7 OS.

3. Insert the SD card from the DVR in to the computer.

4. Click Playback icon to enter playback mode.

5. Select the storage device and the file list comes up. Click a file to start playback.
K. PC Player

- Execute player CarBox2.exe layout as below
  - DirectX 9.0 is Required

- Interface

★ GPS / Speed / Google Map optional

(1). Playback Tool
◆ Snapshot

Click the icon 📸 image will be saved as a .bmp file.
Image will be saved in the file named as “Snapshot”.

![Snapshot](image.png)

◆ Arrangement

Storage Device

Use PC to read storage device before recording.
Recording format and other settings can be set accordingly.
Save the configuration and put the storage device in to the DVR. The recording will follow the rules set in the configuration.

<table>
<thead>
<tr>
<th>Quality</th>
<th>Picture Quality – high/normal/low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Quality</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Frame Rate</td>
<td>Frame per Second</td>
</tr>
<tr>
<td></td>
<td>D1 – 5fps to 10fps</td>
</tr>
<tr>
<td></td>
<td>CIF – 5fps to 30fps</td>
</tr>
<tr>
<td>Resolution</td>
<td>Resolution D1 &amp; CIF</td>
</tr>
<tr>
<td>Video Format</td>
<td>D1</td>
</tr>
<tr>
<td></td>
<td>D1</td>
</tr>
<tr>
<td></td>
<td>CIF</td>
</tr>
<tr>
<td>Informatio n</td>
<td>License plate number or name of the driver</td>
</tr>
<tr>
<td>Feature</td>
<td>Details</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>UI Mode</td>
<td>Size of the software is adjustable 1920<em>1080 / 1440</em>800 / 1024*576</td>
</tr>
<tr>
<td>Password</td>
<td>Password is to protect the storage device being read, written and formatted. Password up to 15 characters. ★ Password must not be forgotten.</td>
</tr>
<tr>
<td>Time Zone</td>
<td>Set to GMT in the UK.</td>
</tr>
<tr>
<td>Copy Me to Storage</td>
<td>Copy playing software to SD card. User can install the software to any computer from SD card.</td>
</tr>
<tr>
<td>Unit of Speed</td>
<td>Setup the unit of speed Km/h Mile/h Knot</td>
</tr>
<tr>
<td>G-sensor Sensitivity</td>
<td>G-sensor Mode and Sensitivity</td>
</tr>
<tr>
<td>Audio Recording</td>
<td>Audio recording ON/OFF</td>
</tr>
<tr>
<td>Power Management</td>
<td>Recording time after ignition off.</td>
</tr>
<tr>
<td>Parking Mode</td>
<td>Recording frame rate after ignition off.</td>
</tr>
</tbody>
</table>

◆ Backup
Start Backup

Save the video files to PC for fast playback.

Click the icon to enter backup interface.

1. Select a storage device.

2. Select a file

<table>
<thead>
<tr>
<th>ID</th>
<th>RECORD TIME</th>
<th>EVENT TYPE</th>
<th>TIME END</th>
<th>Total Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2013-08-13 17:34:04</td>
<td>Record Start</td>
<td>2013-08-13 18:26:27</td>
<td>00:52:23</td>
</tr>
<tr>
<td>2</td>
<td>2013-08-13 18:26:27</td>
<td>G Sensor By Not Ov...</td>
<td>2013-08-13 18:26:46</td>
<td>00:00:19</td>
</tr>
</tbody>
</table>

3. Select a file format

Backup Format

- SD Format / AVI Format

Save as *.sd
Save as *.avi
Save as *.sd speed, GPS and G-Sensor will be included.
Save as *.avi only video and audio available.

4. Start time and end of the time can be selected.

5. Browse the file folder

6. Start Backup
**Playback**

Playback video from the SD card or backup files.

1. Choose the Local Disk, Removable Storage or Backup File
2. Choose the file
◆ Format

Please read FORMAT/RECOVERY for details.

(2). GPS Coordinates and vehicle direction.
(3). G-SENSOR

G-SENSOR
X – left / right forces of the vehicle.
Y – front / rear forces of the vehicle.
Z – up / down forces of the vehicle.

(4). Speed Meter

(5). Volume

(6). Slide Bar

(7). Playback Speed

(8). Playback date selection

Quick selection by minutes
Selection by date
Selection by Hours/Minutes (24-hours)
L. FORMAT/RECOVERY

◆ Delete All Record Data
   All the storage devices must be formatted beforehand and on a monthly basis to keep the SD card in good condition.
   ※ Files should be saved to PC prior to format.
   Format SD card in DVR and on PC software are both available.

(1) Format in DVR
1. Use remote control to enter menu select the option Delete All Record Data
2. Select “yes” to proceed with Delete All Record Data.
3. Live mode comes up after Delete All Record Data is done.

(2) Format on PC
1. Put the SD card in to the PC and execute the software CarBox2.exe
2. Click the icon to enter Format Tool box.

4. Click Format

5. Select Yes

◆ Restore the Storage Device
Prepares the SD card for use in the DVR.
※Files should be saved to PC prior to Restore.
(1) Restore in DVR

1. Put the storage device in PC and execute the software CarBox2.exe
2. Open Format Tool Dialog. Select a storage device and click Restore.

![Format Tool Dialog]

3. Restore this disk. Click Yes to restore.

![Confirmation Dialog]

4. Restore Disk Completed.
5. Follow Windows format procedure to complete the process.
6. Click 「Yes」 to start formatting the Storage.

7. Click "OK" to finish restore SD Card.

8. Press 『OK』 to finish.