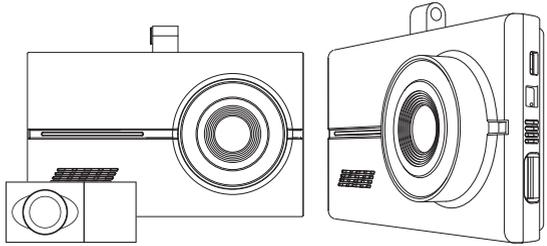




FHD PROGRESSIVE SCANNING



USER MANUAL

Limited Lifetime Warranty

- Before using this product, it is recommended to read and understand this black box correctly.
- This product records the video when an accident occurs in the car, but does not guarantee that all video and accidental video recording. An accidental moment caused by a small impact that does not cause the G-sensor to operate may not be recorded as an event image. In addition, we will not be responsible for the loss of video not backed up.
- The recorded images of this product are auxiliary materials to judge the circumstances of the accident. ESV Co., Ltd. shall not be responsible for any profit or loss arising from the accident (loss of money, business damage or indirect damage).
- The Micro SD card, which is the storage media of this product, needs continuous user care and attention.
- We are not responsible for any problems that occur when using the product in violation of the instructions in the manual.
- GU Black Box will continuously add and complement the functions of the product and apply the new technology. All information and specifications of product changes and user manuals for performance improvement may be changed without prior notice to the user.

06 How to use and operate the system

Live view Screen

Current date and time display (Automatically synchronized when installing optional external GPS module)

Indicate whether GPS is connected

Show if ADAS function is enabled

Switching screen ON / OFF according to LCD screen touch (Note) Pressing LCD for more than 7 seconds will move to touch calibration screen

Current speed display (when installing optional external GPS module)

Go to home menu screen

Volume setting of speaker output

ON / OFF setting of voice recording function

Switching live view screen mode (Front Screen → Back Screen → PIP)

Home Screen

- Checking and Playing Recorded Video
- Go to live view screen
- Go to system settings
 - Time setting, Touch calibration, LCD hold time, Clock screen use setting, Format memory, initialize settings
- Go to Preferences Environment setting
 - Recording related settings (event / motion sensitivity, cutoff voltage setting, parking mode selection)
 - ADAS setting (ADAS function selection, bonnet line setting)
 - Audio settings (system volume and recording settings, audio / sound effect / ADAS sound settings)

ADAS(Advanced Driver Assistance System) Settings

For normal operation of the ADAS function, we recommend installing a black box at the rear of the room mirror at the top center of the vehicle windshield.

- When a traffic light is located inside a dotted green line TLDS(Traffic Lights Detection System) function is activated. (The TLDS function may not operate normally when the traffic light is located elsewhere.)
- In the bonnet line adjustment menu, you can see the horizon. Adjust the vertical angle of the black box to match the red horizontal line.
- Set the lane sensitivity to 1 to 5 steps on each of the left and right sides. (The lane departure notification operates according to the adjusted sensitivity.)
- Use the left and right arrows to adjust the blue vertical line to the center of the lane. (The adjusted position becomes the baseline of the departure announcement for the front car.)

When setting the ADAS function, stop in a safe place and operate. There is a risk of traffic accident accidentally ahead.

07 How to check the recording image

- ✓ "After connecting the Micro SD card to the PC, select the removable drive and press "TAT_Viewer" You can check the recorded image"

1. Select TAT_Viewer.exe
2. Double-click to open
3. Press Save

4. Select the folder to save

1. Execute "TAT_Viewer".
2. When the TAT Explorer opens, select the file to play.
3. Press the Save button to set the path to save.
4. After the video is saved in the set path, it can be played back with the normal PC Player.

08 Private Viewer Software

PC Viewer Use

File management

Playing Screen

Map information and rear view screen

Open

Magnifier

Capture

Volume control

Brightness control

G-sensor graph

Preferences (Environment setting)

left & Right Reverse

F/R Speed

H/L Speed

Turn Speed

※Press the Open button to select the drive where the file is located.

- ✓ Drive created when Micro SD card is inserted into PC (drive name is different according to the PC state) After selecting the desired mode, select the file in the list. It is played when double-click or play button or hot key is pressed.
- ✓ Map information can be output only for the specified file with external GPS. However, the computer you are playing must be Internet-enabled.
- ✓ You can view the front / rear recording image only for the files stored with the rear camera.
- ✓ Front and rear images can be changed by pressing the button. You can switch between front + map or rear + map.

! [PC Viewer Download] Download PC Viewer program of the corresponding model from GU homepage (www.guelec.co.kr/)

F/W (Firmware Upgrade)

1. Download the firmware to be upgraded according to the model from the ESV Co., Ltd. website.
2. After saving the downloaded firmware file to the Micro SD card and disconnect the SD card from the PC.
3. Insert the SD card into the power-off black box.
4. If the black box is turned on, it will be upgraded automatically.
5. After completing the firmware upgrade, you will be prompted to restart the system.

! Do not turn off the product or start the car until the firmware installation and system restart are complete.

09 Technical Specifications

Specifications

Model	E3	
Section	Front Cam	Rear Cam
Camera	5M Pixels	5M Pixels
Resolution	FHD1920 x 1080	HD 1280 x 720
Compression Method	Video : H.264, Audio : PCM	
Recording	Driving Recording, Event Recording, Parking Recording, Manual Recording	
Low Voltage Shutdown Function	Support	
Audio	Built-In Microphone	
ADAS	(LDWS) Lane Departure Warning System / TLDS (Traffic Lights Detection System) FVSA Front Vehicle Starting Advice	
Frame Per Second	Max 30fps	Max 30fps
Angel of View	Diagonal : 120	Diagonal : 101.8
Memory	16GB (Max.64GB Support)	
Video Output	3.5" TFT LCD (480x320)	
Size / Weight	110x 95mm / 110g	54 x 32mm / 22.5g
Power	12V ~ 24V DC	
Power Consumption	Max 4.5W	
Operating Temperature	-20℃ ~ 75℃	

- We recommend you to use 12V vehicle on this product.

02 Safety and Cautions

This is to prevent user's safety and property damage. Please read it and use it correctly and carefully

Warning!

Failure to observe the following may result in death or serious injury to the user.

- Operation of the product is not recommended during driving. There is a risk of traffic accident accidentally ahead. It is recommended to stop and operate in a safe place.
- Do not cut or modify the power cable arbitrarily. Please use only genuine. It may cause product malfunction or fire and electric shock.
- Do not use in a place with high humidity or flammable gas or liquid. It may cause an explosion or fire.
- Do not use the product in a place with high temperature such as in a closed vehicle or in direct sunlight. It may cause product malfunction or explosion and fire.
- Do not connect to a power source other than the rated voltage. It may cause explosion and fire.
- Install in a place that is not obstructed by visibility while driving. There is a risk of traffic accident.

Caution!

Failure to observe the following may result in personal injuries or property damage.

- It is recommended that you do not modify or repair the product yourself. If the user disassembles or repairs them arbitrarily, he / she can not receive free services. We are not responsible for any damage to the product or damage to the vehicle if the power cable is modified or cables are cut.
- Please park in direct sunlight. If the indoor temperature is increased due to the outdoor parking during summer or direct sunlight, the product may not operate normally or malfunction may occur.
- If you do not use the product for a long time, do not leave the product with the power cable connected. It may cause fire or breakdown, or Even if the low-voltage shut-off function is supported, there is a risk of discharge in long-term parking due to its own dark or hidden current.
- It is recommended to wipe the product with a dry cloth after spraying with detergent or not wiping with a wet tissue. May cause product failure
- Please check if the main body is installed securely. The product may fall due to vibration, which may cause injury and product damage.
- If you over-tint the vehicle's windshield, the picture quality may not be clear.

03 Features

Main Features

- High resolution image**
 - Provides crisp, smooth images of FULL HD 1920 × 1080 and 30 frames per second using a 5 megapixel sensor.
- Providing private viewer program**
 - It is possible to set differentiated functions with image confirmation through exclusive viewer program.
- Applying TAT system**
 - Unlike the FAT file saving method, which saves the image information as a file after a certain period of time, it uses the TAT method that sequentially saves the image information every moment.
- Low-voltage shutdown function**
 - It supports low voltage shutdown function to prevent discharge of vehicle battery power when parking for a long time. You can select the cut-off voltage from the terminal's menu and the dedicated viewer (when recording parking).
 - When the cut-off voltage is OFF in the menu, the under-voltage cut-off function does not work. Since the vehicle battery power is discharged when parking for a long time, please select it only when using the auxiliary battery. Is not responsible.
 - When the system power is off due to the low voltage shutdown function, the parking record function of the product is not supported.

- High temperature shutdown function**
 - When the ambient temperature of the black box is higher than a certain temperature, the power is automatically turned off to protect the image and the black box body.

- ADAS function**
 - It supports LDWS (Lane Departure Warning System), FVSA (Front Vehicle Start Alert) and TLDS (Traffic Light Detection System).
 - You can use the ADAS function without connecting an external GPS, but it may malfunction. An external GPS connection is recommended to improve the accuracy of the ADAS function.
 - ADAS may not operate or malfunction depending on the operating environment such as night, daytime, backlight, and rain. Therefore, use the ADAS function only as an aid for safe operation.

- Super capacitor application**
 - It is possible to safely save the video file being recorded even if power is suddenly cut off due to an accident.

- Parking recording function**
 - Supports parking recording when connected to the power supply at all times. It switches to the parking mode 30 seconds after the vehicle is turned off. In motion detection mode, it is recorded when a shock is detected or motion is detected. The low voltage shutdown function and the high temperature shutdown function operate only in the parking recording state.

- Time-lapse recording function**
 - Parking mode recording can select motion detection mode and time lapse mode. When selecting Time-lapse / Parking mode, you can record 2 frames per second and record for a long time.

- Event recording function**
 - If the sensor detects a shock more than the sensitivity set by the G-sensor during event recording, event recording starts. It records 10 seconds after 10 seconds and 10 seconds after the event. Sensitivity setting can be set from the event sensitivity in the terminal recording setup menu and the G-sensor sensitivity in the dedicated viewer environment setting.

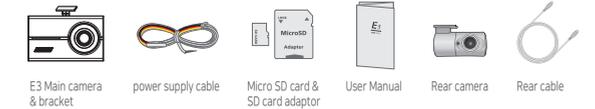
- Manual recording function**
 - If urgent moment recording is required, press the manual recording button briefly to start forced recording. 10 seconds before and 10 seconds after the point is pressed, 20 seconds of video is recorded. After 10 seconds from the point where the forced recording button is pressed, it is switched to the running recording automatically.

- Safe Driving Assistant**
 - After connection of external GPS, guide speeding camera information when selecting operation from menu

04 Product Components and Names of Parts

The basic configuration and sold separately are subject to change without prior notice for quality improvement.

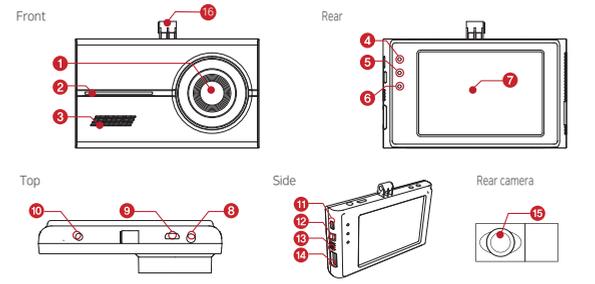
Basic Components



Optional components



Name of parts

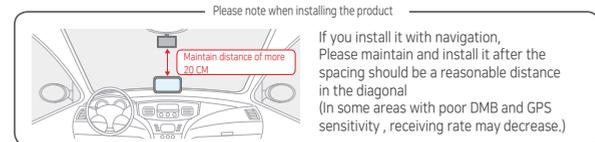


1	Front camera	FULL HD 1920×1080 500 Million pixels	8	DC-IN	12~24V power connector
2	Security LED	Cross flashing left and right: In normal / park mode OFF during shock/manual recording in driving mode Blinking when motion / shock detection in parking mode	9	Rear camera port	Rear camera cable connector
3	Speaker	Voice guidance	10	External GPS	External GPS Connector
4	GPS(Blue)	Illuminates when GPS is connected, turns off when parking mode	11	Manual Recording	Manual Recording
5	PWR(Green)	Turning On during normal recording, turned off during park mode	12	Power switch	Power ON / OFF switch
6	Event(Red)	Flashing when shock/manual recording, flashing when SD card recognition failure Off in parking mode	13	Microphone	Voice Recording
7	Touch LCD	Built-in 3.5" LCD with Touch Screen	14	Micro SD card slot	Inserting Micro SD card
			15	rear camera	FHD 1920 × 1080 2 Million pixels
			16	Holder Connection	Holder connection Part

05 How to install the system

1. Insert the Micro SD card into the black box. Press once again to easily remove the Micro SD card.
 - ! When inserting the SD card, insert it so that the Logo part can be seen as shown in the figure.
2. Insert the Micro SD card into the black box. Press once again to easily remove the Micro SD card.
3. Secure the black box body to the bracket fixed to the front.
4. Remove the film from the rear camera mount and attach it so that it does not touch the heat line on the rear glass of the vehicle.
5. Connect the black box terminal to the rear camera connector. Connect the flush-type power cable to the black box's power supply (DC IN), then connect the ACC, B+, and GND on the vehicle's Fuse Box.
 - Please use the parking recording function by connecting the buried power cable.
6. If you want to connect directly from the fuse box in the car, please describe the connection terminal for each wiring color.
 - ACC (cigar jack signal) (emergency light electric seat etc.)
 - B+ (electric seat, etc.)
 - GND (Ground to GND vehicle)

ACC : When the car key is ON, 12V is checked for the first 1, second, and 1th connection of the key.
B+ : 12V is always connected regardless of the car's ON / OFF signal. Etc.), electric seat, etc.)
GND : ground to vehicle ground) Connect the power cable to the Fuse box of the vehicle
7. If you turn the vehicle on, you'll hear a sound.
8. Please adjust the bracket angle after watching the video by using LCD monitor.
9. External GPS: Connect to the GPS connector(terminal)



Warranty Card

Product Warranty
Thank you for purchasing the GU Black Box. We guarantee the following products in accordance with the Consumer Damage Compensation Regulations for each item. The warranty period of the GU Black Box Co., Ltd. is one year, and the warranty period of components other than the main body and consumable parts is three months. The product warranty for this product is covered under the warranty. The warranty period is calculated from the date of purchase, so please complete this warranty and keep your receipt. (If the purchase date can not be confirmed, the warranty period will be calculated from the date three months have elapsed from the month of manufacture.)

Types of Consumer Damage	Warranty	
	within warranty	after warranty
When major repair is required within 10 days after purchase	product exchange, refund of purchase	not applicable
Replacement products fail within 10 days, requiring major repairs	Purchase refund	not applicable
If the fault occurs more than 3 times in the same fault	free repair	repair
If the fault occurs more than 4 times in the same fault	product exchange	repair
If the operator has lost the product requested by the customer	Refund by adding 10% from the amount of product exchange	depreciated depreciation
If the parts cannot be repaired because they do not have spare parts	product exchange	not applicable
If repair parts are available but not repairable	product exchange	not applicable
<ul style="list-style-type: none"> ■ In the event of malfunction due to consumer error (repair of charge) <ol style="list-style-type: none"> 1. User's carelessness (drop, shock, breakage, unreasonable operation, etc.) or misuse 2. In case of failure due to use of components not specified by us or optional parts 3. If a customer or a third party who is not our A / S Newsman has a problem after repair or remodeling 4. Customer's intentional or negligent breakdown and product damage ■ Other cases <ul style="list-style-type: none"> - In case of failure due to natural disaster (fire, flood, salt, earthquake, lightning, etc.) - Consumable parts have reached end of life - due to external causes 	repair	repair

- This warranty is valid only in the country of purchase.