

# DEFENDR

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## USER MANUAL

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# ABOUT THIS MANUAL

Thank you for your purchase of the DEFENDR. The contents of this manual may be subject to change without prior notice.

**Warranty** This product does not guarantee that it will record all accidents. In accordance with Personal Information Security Law & related legislation, GRDIAN is not responsible for any problems due to illegal use of this product. Recorded video produced by this product constitutes the secondary data that may help to determine the circumstances of an accident. GRDIAN is not responsible for any loss or damage caused by an accident.

For more information about Warranty visit: <http://www.grdian.com/support/warranty>

**Repairing** Do not attempt to repair the DEFENDR yourself. Doing so will void the Warranty, damage your device or may cause injury. If your DEFENDR is damaged or is defective, contact GRDIAN.

**Copyright & Trademark** The instruction manual is protected by Copyright Law, and all rights to it are protected by law. It is prohibited to reproduce, copy, modify, or translate this instruction manual without permission.

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# IMPORTANT SAFETY INFORMATION



**WARNING:** Failure to follow these safety instructions could result in fire, electric shock, injury, or damage to your GRDIAN device or other property. Read all the safety information below before using the DEFENDR+.

**Handling** Handle the DEFENDR with care. The DEFENDR can be damaged if dropped, burned, punctured, crushed, or if it comes in contact with liquid. If your DEFENDR is damaged, do not continue using it, as it may cause injury. Use the correct input voltage. Do not spray cleaning products on the device. Detach the power cord from the device if the device emits an unusual smell or if there is smoke. Do not remove the microSD card while it is saving or reading data. Remove the power cord from the device if you are planning not to use the device for a long time. If the product is damaged or the power supply is cut due to an accident, video may not be recorded. Do not continue using if the device is bulging due to a swelling battery. Do not operate 24/7.

**Repairing** Do not attempt to repair the DEFENDR yourself. Doing so will void the Warranty, damage your device or may cause injury. If your DEFENDR is damaged or is defective, contact GRDIAN.

**Distraction** Do not operate the product while driving. Operate only when your vehicle is parked. Do not install the device where it interferes with the driver's vision.

**Exposure to Extreme Heat** The DEFENDR and its accessories comply with applicable surface temperature standards and limits. However, even within these limits, sustained exposure to heat for long periods of time may cause damage to the device. Use common sense to avoid situations where your skin is in contact with a device or its power adapter when it's operating or plugged into a power source for long periods of time. It is important to keep the DEFENDR and its power adapter in a well ventilated area when in use.

**Choking hazard** Some accessories may present a choking hazard to small children. Keep these accessories away from small children.

# ACCESSORIES



GPU Mount (Power Only)



Car Charger



Micro USB



Wire Clips

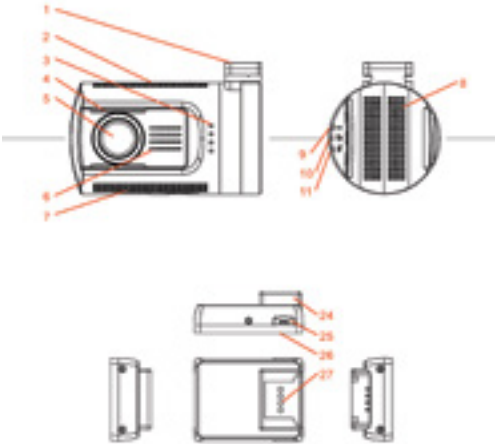


VHB Pads



GPS Mount (Optional)

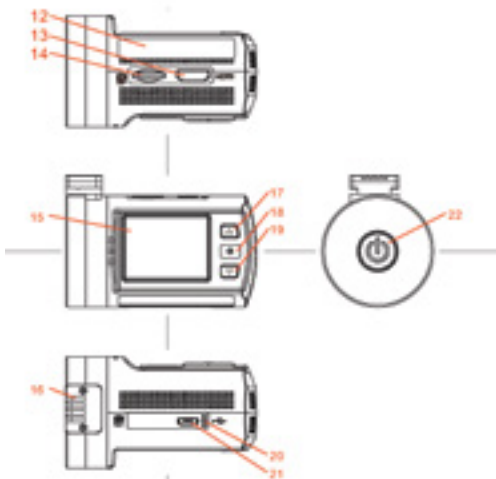
## A QUICK LOOK



1. Mount
2. Cooling Vent
3. Speaker
4. CPL Mounting Bar
5. Lens
6. Cooling Vent
7. Cooling Vent

24. Mount
25. MicroUSB Port
26. VHB Pad
27. Mounting Contacts

## A QUICK LOOK



- 12. Label
- 13. HDMI
- 14. MicroSD Card Slot
- 15. 1.5" TFT Screen
- 16. Mounting Contacts
- 17. UP Button & Mic On/Off
- 18. OK Button
- 19. DOWN Button
- 20. MIC
- 21. MicroUSB
- 22. POWER Button



# RECOMMENDED MEMORY CARDS

## Memory card compatibility

- Up to 128GB
- MicroSD cards with a class rating of 10 are recommended.
- For a list of recommended memory cards visit: [www.grdian.com/blogs/grdian/recommended-dash-cam-memory-cards](http://www.grdian.com/blogs/grdian/recommended-dash-cam-memory-cards)

# GETTING STARTED

## First Time Use

Before using your DEFENDR:

1. **Format your microSD card.** For a list of recommended memory cards, visit: [www.grdian.com/blogs/grdian/recommended-dash-cam-memory-cards](http://www.grdian.com/blogs/grdian/recommended-dash-cam-memory-cards)
2. **Charge the battery.** Connect your DEFENDR device to a power source.
3. **Insert your microSD into the device.**
4. **Set up the mount.** Apply the adhesive to your DEFENDR mount. Adjust the mount to the top center part of your vehicle's windshield. Plug into car charger.
5. **Power up the DEFENDR.** The DEFENDR should automatically turn on and begin recording.

## USING YOUR DEFENDR

### Turning ON/OFF your device

1. Your device will automatically turn on when plugged into a power source.
2. To turn OFF your device press and hold the **POWER** button.

### 3 Modes: Recording, Standby, Playback

1. **Recording Mode:** Device enters recording mode automatically when powered on.
2. **Standby Mode:** Places device on Standby, allowing you to take a picture. Press **OK** button to enter Standby Mode.
3. **Playback Mode:** Playback videos or review pictures taken. When in Standby Mode, press and hold **DOWN** button to enter Playback Mode.

# USING YOUR DEFENDR

## Recording Mode: Start/Stop Recording

1. DEFENDR is preconfigured to begin recording when your vehicle is turned on or when it detects a power source. When your vehicle is turned off, the DEFENDR is preconfigured to stop recording and turn off.
2. To Stop recording, press the **OK** button.

## Standby Mode: Using and accessing the MENU

1. Enter Standby Mode by pressing and holding the **UP** button.
2. Use the **UP/DOWN** buttons to move around the Menu. Press **OK** to select a category, and **UP/DOWN** to change the settings.
3. To exit the Menu, hold the **UP** button for 2 seconds.

## Standby Mode: Taking a picture

1. You can only take a picture when the device is in Standby Mode. Press **OK** to come out of recording mode. Press and hold **OK** to take a picture.

## Playback Mode: Viewing Videos and Pictures

1. In Standby Mode, press and hold the **DOWN** button to enter Playback Mode.
2. Press and Hold **DOWN** button to switch from video viewer to photo viewer.
3. Navigate by pressing **UP/DOWN** Buttons. **ENTER** button to view the file.
4. To play/pause a video, press the **OK** button. To speed up video press the **UP** Botton, to slow down press the **DOWN** button.
5. To exit the video, pause the video by pressing the **OK** button and then press and hold the **UP** or **DOWN** button.
5. To access playback menu, press and hold the **UP** button.

# USING YOUR DEFENDR

## Playback on TV

1. Plug an HDMI cable into your DEFENDR device. Operating the camera remains the same.

## Playback on the Computer

1. To review your videos and photos on your memory card, plug a micro USB into the device and your computer.
2. We recommend using a microSD card to SD card adapter.

## USER INTERFACE



Time Remaining

Recording Time

## ICONS



White Balance



Exposure Compensation



Loop Recording



File Locked



Mic On



Video Recording Mode



Battery Status



GPS Status



Motion Detection



MicroSD Card Status



Recording Status

# CAMERA SETTINGS

**Note: Recommended settings in bold**

## VIDEO RESOLUTION

Resolution	fps	
2560 X 1080, 21:9	30fps	
<b>2304 x 1296, 16:9</b>	<b>30ps</b>	
1920 X 1080, 16:9	45fps	
1920 X 1080, 16:9	30fps	
1920 x 1080, 16:9	30fps	HDR
1280 X 720, 16:9	60fps	
1280 X 720, 16:9	30fps	

## VIDEO QUALITY

**SUPER FINE**

FINE

NORMAL

Adjusts video quality. Higher quality videos result in higher bit rate and will take up more storage space.

## PHOTO RESOLUTION

Resolution	M
2688 x 1512, 16:9	4M
4000 x 2250, 16:9	9M
4800 x 2700, 16:9	13M

## PHOTO QUALITY

**SUPER FINE**

FINE

NORMAL

Adjusts photo quality. Higher quality videos result in higher bit rate and will take up more storage space.

# CAMERA SETTINGS

## AUTO EXPOSURE METERING

<b>CENTER</b>	Sets measuring are for Auto Exposure, affecting video brightness and quality. Center is recommended under normal conditions.
AVERAGE	
SPOT	

## EXPOSURE COMPENSATION

-2.0 -1.7 -1.3 -1.0 -0.7 -0.3 0 +0.3 +0.7 +1.0 +1.3 +1.7 +2.0

Manually adjust Exposure Values to improve image brightness.

## WHITE BALANCE

<b>AUTO</b>	Adjust image white balance to improve color balance in videos and images in different weather and light conditions. Auto is recommended under most conditions
SUNNY	
CLOUDY	
TUNGSTEN	
FLUORESCENT	

## FLICKER

<b>AUTO</b>	Adjusts the sensor flicker frequency to fit your AC power frequency and reduce the effect of flickering lamps. If you are unsure, choose Auto
60 HZ	
50 HZ	

## ROTATE IMAGE 180°

ON	Rotates the screen 180° for reverse mounting
OFF	

## LOOP RECORDING

1 MIN	Set the time of each file as DEFENDR loops record. Setting it to OFF will give you a maximum of 4GB of data.
3 MIN	
<b>5 MIN</b>	
OFF	

## LDWS DETECTION

OFF	LDWS detects and warns the driver in the event of a lane departure, including normal planned lane departures.
ON	

# CAMERA SETTINGS

## LDWS CALIBRATION

To calibrate your LDWS for use, adjust the reference lines. Use the UP and DOWN buttons to move the top line to the height of the horizon then press OK and then use the UP and Down buttons again to move the bottom line to the height of the front of your car. Press OK again to confirm adjustment.

## AV-OUT

OFF	Turns off/on AV.
ON	

## MOTION DETECTION

OFF	Adjusts motion detection sensitivity.
LOW	Motion Detection is used to save on storage space. Off is recommended
MIDDLE	to insure DEFENDR continuously records.
HIGH	

## GREEN INDICATOR

GPS STATUS	Define the indicating function of the
MIC STATUS	Green Indicator
OFF	

## G-SENSOR SENSITIVITY

OFF	G-Sensor detects 3-axis impacting forces. If the impact is over the threshold value, the current recording will be locked and protected to avoid being over-written. Adjust the sensitivity of the G-Sensor value here. 3G is recommended for normal driving conditions.
2G	
2.5G	
<b>3G</b>	
3.5G	
4G	
4.5G	

## POWER OFF DELAY

1 MIN	DEFENDR will power off when there is no activity. If Motion Detection is on, DEFENDR will continue recording as long as it detects motion.
3 MIN	
5 MIN	

# CAMERA SETTINGS

## SCREEN OFF DELAY

15 SEC  
30 SEC  
1 MIN  
3 MIN  
5 MIN

Adjust time it takes for the screen to go on stand by.

## GPS STAMPING

OFF  
LOG ONLY  
ON

With the optional GPS Mount, DEFENDR is capable of recording your location and speed. LOG ONLY writes the data within the video file. ON shows the GPS and speed on the video itself.

## SPEED STAMPING

OFF  
KM/H  
MPH

With the optional GPS Mount, DEFENDR is capable of recording your speed. Set how DEFENDR records your speed.

## DRIVER NUMBER STAMPING

OFF  
ON

Driver number can be stamped onto the video itself.

## DRIVER NUMBER

000000000

Define the Driver Number here with 9 characters or numbers.

## DATE STAMPING

OFF  
YYMMDD  
MMDDYY  
DDMMYY

Set the option to display the date on your video.



# CAMERA SETTINGS

## TIME STAMPING

OFF  
12 HOURS  
25 HOURS

Set the time format here.

## DATE AND TIME

-08 2015 / 11 / 11 12:00  
Time Zone Date Time

With the GPS mount, the time zone, date, and time will be automatically adjusted. Note: May still need adjusting with GPS Mount.

## LANGUAGE

ENGLISH  
русский

Set the language here.

## FORMAT CARD

NO  
YES

Format card before using. ALL FILES WILL BE ERASED. If you are using a microSD card bigger than 32GB, format the card on a computer to be FAT32 format.

## RESTORE DEFAULTS

NO  
YES

Restore the device to its factory default settings.

## FIRMWARE VERSION

Displays the current version of the firmware version installed on your device.

## SOFTWARE UPDATES

Visit [www.grdian.com/support/defendr-product-support](http://www.grdian.com/support/defendr-product-support) for the latest updates for your DEFENDR device.

# MOUNTING YOUR DEFENDR



## Instructions

1. Apply VHB pad to your GPU or GPS Mount. Plug in your DEFENDR device and adjust to the top center of your vehicle's windshield, behind your rearview mirror.
2. Connect the car charger. Run the wire into the slits of your windshield illustrated above, and then into the rain guard on the side. Use the provided wire clips if you are unable to push the wire into the slits of your windshield. Run the wire down and find slits to fit your wire in.
3. Plug in your car charger into cigarette lighter socket. Visit [www.grdian.com/blogs/grdian/dash-cam-installation](http://www.grdian.com/blogs/grdian/dash-cam-installation) for more instructions

## Removing the Mount

1. We suggest using a piece of wire to cut between your windshield and VHB pad in a sawing motion. To remove the VHB pad residual use a WD-40 spray. Please do not use a crowbar or similar as it might damage your windshield.

## Hardwiring your DEFENDR device

1. Hardwiring hides your wires completely and integrates into your vehicle. The hardwire kit comes with Low Voltage Protection to protect the car battery from drain. Consult a car technician to help you hardwire your DEFENDR dash cam.

Note: Not all vehicles are built the same way. Installing your dash cam may differ from instructions provided.

**GRDIAN™**  
*CAPTURE THE UNEXPECTED*



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