2CH Wi-Fi + LCD DASH CAMERA
LK-9370 WD

User Manual ver. 1

LUKAS Dash Camera

※ The Lukas application can be found on the Google Play Store and the Apple App store.
※ The Lukas application can be used with Android 4.0 or later, iOS 5.0 or later.
※ Wi-Fi connection may not be stable depending on the wireless condition and smartphone.
※ Contents about this manual and LUKAS application can be different from real operating depending on the version and type of product.
※ Recorded video will save as 'Standard Definition' regardless of configuration setting when Wi-Fi is connected.
※ GUI or functions in the manual may differ depending on the software version.

Thank you for choosing Lukas Dash Camera.

This manual is based on the LK-9370 WD model.
The latest firmware & manual version can be found at our website **www.lukashd.com.**

▤ Please read carefully before using this product ▤

※ This manual should be reviewed and retained for future reference.

※ Qrontech reserves all rights to this manual in accordance with the copyright law.

※ Content of this manual is subject to change without notice to ensure quality control.

※ Differences in device functionally may differ depending on firmware.

※ This product was designed as an accessory for safe driving, in the event of an accident, all responsibility is borne by the vehicle operator. Please use this product responsibly.

▤ Scope of guarantee and responsibility ▤

※ This product is a vehicle-accessory for recording image and sound for the simulation of an accident. Recorded data may then be used as evidence and/or reference purposes. We cannot guarantee this product to capture all accident related video image and sound.

※ We will not be held responsible for any damages and/or data corruption or loss caused by a malfunction of this product.

※ In general, the memory card lifespan for this product is 6 months and may be subject to data corruption or loss due to static electricity and/or external voltage. For this reason, it is highly recommended for the user to coy and save important data to other media (Hard disk, CD, Portable memory etc.)

※ Memory card may contain corrupt image (image recording omissions, image cuts, frame change and omission, other defect in image recording) due to a decrease in reading/writing speed and other defects. For the best results, please use Lukas genuine SD memory cards and format periodically (Once a week for 8GB SD memory card, and once a month for 8GB microSD memory card).

※ This product is a supplementary device to record the driving images of a vehicle. Simpy use it as a reference to check driving images as it may not be record depending on the driving condition.

※ We will not be held responsible for any damages related to engine output if user records in parking mode without a portable auxiliary battery.

LK−9370 WD
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1. Instruction for Use

▤ 1-1. Device Precautions ▤

1. **Do not expose device to direct sunlight or cold weather for extended periods of time.**

   Device exposure to direct sunlight and extreme temperatures may damage to the device.

2. **Do not dismantle or alter the product.**

   Do not disassemble, modify, or attempt to repair the device. Any alterations to the device can void the manufacturer's warranty.

3. **Do not dismantle or alter the device accessories.**

   Do not disassemble, modify, or attempt to repair any accessories for this product. (Cigar Jack Cable, Mount, etc.)
   This may cause damage to the vehicle and/or device. Any resulting damage shall be the responsibility of the use and is not covered under manufactures warranty.

4. **Do not allow liquid to come into contact with device.**

   Please note this device is not waterproof and exposure to liquid and foreign substances may cause a device malfunction, short circuit, and/or fire. Use caution when cleaning the device and clean with a soft and dry cloth.

5. **Do not expose the device to heavy impacts.**

   Excessive impacts to this device can cause a malfunction. Handle the product with care.

6. **Only use manufacture approved power cable and accessories.**

   Any damages or loss to device/vehicle as a result of accessory incompatibility will not be covered under manufactures warranty.

7. **Do not operate the device for extended periods of time while the vehicle is not running.**

   Excessive use of the device while vehicle is off can cause drainage to the vehicle's battery.

8. **Video quality may vary depending on extreme lighting conditions.**

   Quality is subject to alterations in extreme dark/light areas and conditions. Most notability when entering/exiting a tunnel or parking garage.

9. **Data may not be recorded if accident is lower than a predetermined threshold.**

   In extreme cases, the device may not record data during an accident due to possible low impact forces. In addition, a high force impact may disrupt power to the device and data may be lost.

10. Do not disconnect the power source while the device is turned-on.

    Disconnecting the power source may cause the device to malfunction. Please use only the recommended voltage for power connection.

11. Some PCs may not support Lukas Viewer or there may be some disconnections in voice/image depending on the PC's specifications.

12. AE operations at night may vary depending on vehicle (black, red) low light reflection.

13. There may be frame omissions due to rapid AE operational changes in low light areas. Please reset the installation angle of the device if AE operation malfunction.

14. Video quality may be subject to noise when recording in poor lighting environments.

15. In the event of a sudden frame change or switching between parking & driving modes, there may be a loss of data.
    Please reset the installation angle of the dash camera if AE operation malfunctions.

16. Motion detectors may malfunction in the event of an extreme increase/decrease to the surrounding lighting conditions of the vehicle.

17. The motion detection function may not operate properly in environments with poor lighting conditions due to noise and vehicle security LED(s).

18. The left/right side image quality of this device may vary due to characteristics of the wide-angle lens.

19. Image quality may display 'flickers' of light due to traffic and street light.

20. This product supports OBD Ⅱ, but users are recommended to inquire of distributor or customer center about applicable vehicle, model and More information before use. (Software/hardware modification).

21. Please ensure all accessories are connected to device(s) to avoid data loss.

22. We will not be held responsible for any damages related to engine output if user records in parking mode without a portable auxiliary battery.

23. The device can only be connected via Wi-Fi one device at a time.

24. For playback of recorded videos using Wi-Fi, the reception may vary according to the data transfer rate and the smartphone.

25. The range of Wi-Fi reception may vary.

26. Do not continue to use this device if a malfunction is apparent, Please contact our C/S center or your local distributor with any questions and/or concerns about this product.

▌ 1-2. Installation ▌

1. Keep device clear of clutter.

   Please ensure the surrounding area is clutter free to avoid reflections/vibrations that may reduce the image/audio quality.

2. Ensure camera lens is clean at all times.

3. Do not attempt to operate or install the device while driving.

   For your safety, do not attempt to operate or install the device while driving to avoid a traffic accident.

4. Please keep the device securely mounted at all times.

   Please ensure that the device is securely mounted before operating the vehicle. This will ensure the best image quality and avoid distractions to the driver while in motion

5. Please avoid excessive window tints, as this may distort image quality.

6. Install this product at the point furthest away from the antenna or receiver as possible.

   The electromagnetic waves produced by the device may distort receiving sensitivity.

7. Videos may appear dark when using a CPL filter.

   We don't recommend using a CPL filter at night or with vehicles with excessive window tints.
   Depending on tinting, conditions, a 'rainbow' effect may appear on recorded data.

8. Please remove the UV filter when using a CPL filter.

▌ 1-3. GPS ▌

1. GPS signal may not be received depending on the surrounding environment such as building, underground parkades, and trees.

2. A combination of factors including weather can delay the time to receive the first GPS signal after power is connected to the device.

3. External electronic devices and window tinting may affect the GPS reception.

4. Vehicle speed accuracy may vary between 1-30km/h (0.5-19mph) depending on the reception area when stopping the vehicle.

5. GPS information may be lost when switching off the device.

▤ 1-4. Memory Card ▤

1. Do not remove the memory card by force while the product is in recording mode.

   Be sure to turn off the product before removing the memory card. Removing the memory card while the device is on may damage the video file or cause an operation error of the memory card.

2. Formatting SD Card once a week (8G), microSD once a month at minimum (8G) is recommended.

   Repetitive writing and deletion by the device can cause damage to the memory card(s) and files. Accordingly, periodic formatting of the memory cards can prevent files from being damaged. The lifespan of a memory card is 6 months and we are not responsible for any recording errors that may take place as a result of prolonged usage after the 6 month period.

3. Please use Lukas Genuine memory cards to ensure the best quality.

   We will not be held responsible for any problems related to the usage of memory cards not provided by us.

4. Handle with care when inserting and removing the memory card(s) to avoid burns.

   The memory card(s) operate at high temperatures, and we recommend you use caution when inserting and removing.

5. Operating temperatures may vary depending on the performance of memory cards.

6. Be sure to back-up your recorded videos using as extra storage device. (PC, external HDD, etc.)

   A back-up of the memory card data using an external storage device may prevent the loss of important data.

7. Be sure to format the memory card first before you change settings on Lukas viewer.

8. Even after reformatting a memory card, it can be used in the device without configuration files such as firmware. The latest set values are contained within the device, and will be automatically applied to the SD card(s) when inserted.

9. Please format memory cards using Lukas viewer program or dash cam.

   Format the memory cards on Lukas viewer after insert the memory cards into PC using SD card reader. You can also format the memory cards on dash cam device itself or Lukas application.

10. Be sure to insert the microSD Card into the device.

    Without a microSD Card, event recordings will not be saved.

2. Features

▶ Supports a variety of recording functions

 Vivid picture quality with dedicated sensors Front view / Rear view dash cam : 2.1M Effective Pixel(1/2.9") Sony IMX322 Full HD dedicated sensor

▶ Distortion−free recording with wide angle lens

Front View : 1920X1080p Full HD recording. Wide screen with max. 30fps / 16:9 Diagonal (approx. 135°) /
             Effective viewing angle : Horizontal (approx.107°), Vertical (approx.. 55°)
Rear View : 1920X1080p Full HD recording. Wide screen with max. 24fps, Diagonal (approx.. 130°) /
             Effective viewing angle : Horizontal (approx.105°), Vertical (approx.. 54°)

▶ 3.5inch LCD(480X272) + Full Touch

▶ Supports Wi−Fi (802.11b/g/n (2.4∼2.4835GHz))

▶ Equipped with car battery discharge prevention function
Multi−booting support
Leakage current 100uA or less

▶ Supports a variety of recording functions
 − Continuous recording : Generates recording files at three−minute interval continuously
 − Event recording : Records before/after impact occurs for 30 sec in total
 − Dual Slot (SD + microSD), Dual Save (Always+Event/ Motion+Event)

▶ Supports largest memory capacity of 512GB (SD Card 256GB + microSD Card 256GB)

▶ Supports voice guidance in 21 languages (English, Korean, Russian, Chinese, French, Spanish(Europe, South America), Arabic, Japanese,
  Thai, Vietnamese, German, Mongolian, Turkish, Italian, Hindi, Czech, Cantonese, Portuguese, Bahasa Indonesia, Bahasa Melayu)

▶ Supports Integrated (GPS+GLONASS) (optional)
▶ Supports Dual Security LED & 37mm UV filter(standard), CPL filter(optional)

- ▶ Detachable fixed/rotating mounts
- ▶ No electric current interruption by minimizing height of rear view camera
- ▶ Operating temperature: −20℃(−4℉)～ 70℃(158℉) (highest temp. in LCD type)
- ▶ Stores 1 million driving information data
- ▶ Supports OBD II (optional)
- ▶ Parking alert function
  Catalogues the number of motion events detected during parking mode recording (optional in configuration setting)
- ▶ Built-in microphone
  Records audio simultaneously
- ▶ Direct SD card format
  Able to format the memory card(s) directly from the device (refer to 31, 38 page)
- ▶ Built-in super cap
  An internal battery replacement is not necessary due to a built-in semi-permanent super capacitor which will write all files onto the SD card(s) before device powers down completely
- ▶ Video playback
  Video can be viewed from the PC & Mac Lukas dedicated Viewers or on the LCD screen of the camera
- ▶ Firmware upgrade support
  Firmware will be upgraded for improvement of product function and error correction
- ▶ Configuration setting available
  User is able to configure the device settings and a variety of functions including customized situation-specific recording, and the weekly car day alarm directly from the Lukas dedicated viewer or by using the device configuration menu
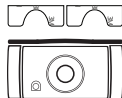
3. Package & Part Name

▤ 3-1. Package Guide ▤

Front Camera
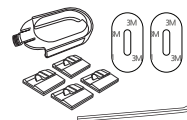(microSD card 8GB + Wi-Fi dongle +
UV filter included)

Rear Camera,
Adhesive Tapes

Hard Wire Power Cable

Front/Rear
Connection Cable

Fixed Type Bracket Set
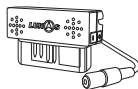

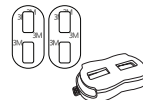Installation Guide

SD Card

microSD Card Adaptor

CPL Filter (Optional)

OBD II (Optional)

Cigar Power Cable
(Optional)

Rotating Type Bracket Set
(Optional)

- Please handle device components with care.
- Product package is subject to change depending on models and types (Hard wire power cable is not included in type D model).
- Be sure to use original package components.
- Do not use microSD card adaptor in the dash cam or it may malfunction.

▤ 3-2. Name & Part Function ▤
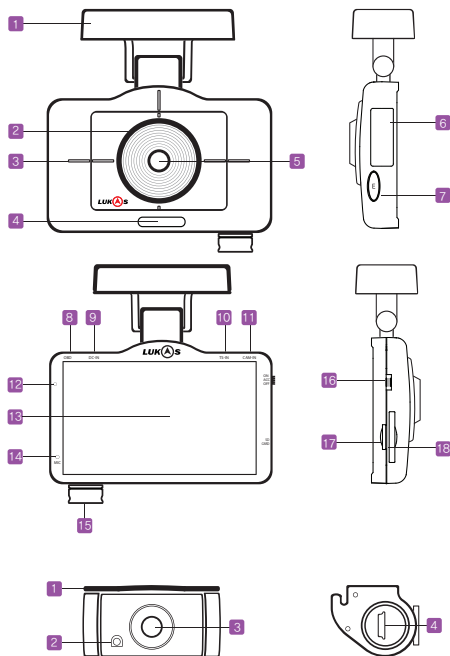
	Name	Function
1	Stand & GPS(Built-In)	Installed into vehicle & receives GPS info(only applies to device with GPS stand)
2	37mm UV Filter	Used to protect lens through UV protection filter and lengthen sensor
3	Speaker	Audio signal output
4	Security LED	Displays dash cam operating status, gives warning
5	Camera Lens	Video signal input (CMOS Digital Sensor)
6	S/N Label	Product name & product serial number
7	Emergency Recording (E) Button	Manual recording when necessary (generate 30 second file in event folder)
8	OBD	OBD connection (Only for type D model)
9	DC-IN	Supply power to dash cam through power connection
10	TS-IN	Turn signal input connection (Only for ADAS model)
11	CAM-IN	Rear camera input connection
12	Operation Status LED	Display dash cam operation status etc.
13	LCD & Touch	Displays driving video and video being recorded, Set configuration settings
14	MIC	Voice signal input
15	Wi-Fi	Wi-Fi Dongle connetion
16	Power Switch	Dash cam power supply switch
17	microSD Slot	Used to insert/separate microSD card
18	SD Slot	Used to insert/separate SD card

|	Name	Function
1	Rear Stand	Allows rear view camera to be mounted to vehicle
2	Security LED	Displays dash cam operating status, gives warning
3	Camera Lens	Video signal input
4	Cable Connection	Rear view cable connection terminal

4. Installation

▦ 4-1. Precautions ▦

※ Before installation, park your vehicle on a flat surface and an area with normal light exposure.
   Turn off the engine and remove the key from the ignition. (Be sure parking brake is ON)

※ Pick a spot for the device around the rear view mirror not blocking the driver's view.

※ Do not install the device with the lens facing upwards or it may cause a GPS and/or an event malfunction.
   (With no GPS detection, keeps recording in event mode).

※ Clean the windshield area where the dash cam will be installed.

※ Adjust camera lens angle to show still image(car bonnet) on approx. 40% of the recording screen.

 － If the lens is installed too low, it blocks traffic signs, keeping you from seeing exact information. When the lens is installed too high,
   the screen looks dark overall due to the bright sky.

▦ 4-2. Installation Steps ▦

1 Put on two-sided adhesive tape on front/rear stand of the device.
Connect the Wi-Fi dongle to the front camera.
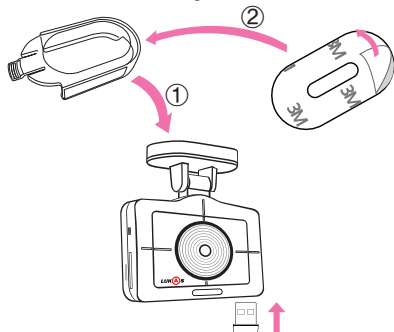
2 Select a place not blocking the driver's view, install front camera onto
the windshield around the rear view mirror.

Do the same with the rear camera onto rear windshield.

※ Detaching and reattaching the adhesive tape causes the tape to
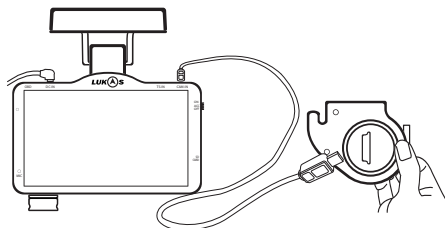   lose its stickiness.
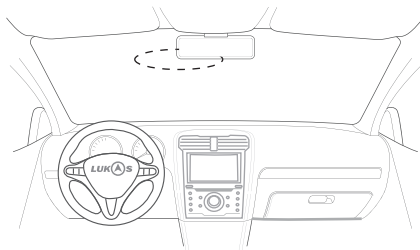
▧ 4-2. Installation Steps ▧

3 Insert SD card and microSD card into front camera.
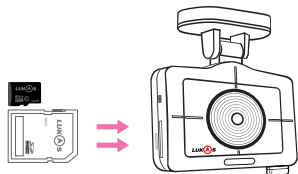
※ If you do not insert microSD, event files are not saved.
※ Do not insert the microSD card into the SD card slot using the microSD
   card adaptor. It may cause malfunction or damages.

5 Connect front camera and rear camera with front/rear connection cable.
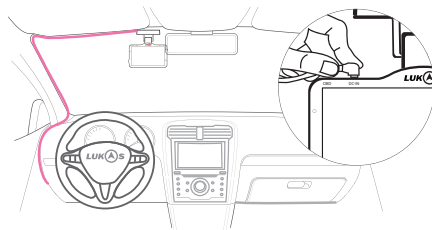

※ If there is no SD card, the device will not work.
※ Dash cam is rebooted when the rear camera connection cable gets
   plugged or unplugged in the main body.
※ Dash cam does not work properly if the rear connection cable is not firmly
   connected to the rear camera.

4 After connecting power cable to the front camera, arrange and hide
the power cable along A pillar.

6 After installation, turn on the engine first and then the power switch on
(ACC or ON) of dash cam. Check normal working status in the LCD screen.

※ Please ensure rear connection cable is connected/disconnected when
   the device power is off. Otherwise, damage to the device may occur

▤ 4-3. Power Cable Hardwiring ▤

1

Locate the vehicle fuse box and fuse diagram. Identify the fuses which have power/no power while the vehicle engine is off.

※ Use fuse tongs to conveniently insert and remove individual fuses.

2

Identify a fuse that has no power (e.g. cigarette lighter, audio etc.) to connect with the red ACC wire and insert it back to fuse box.

※ Location of ACC power supply may differ depending on the vehicle.

※ Please connect to output side, or a fire could occur.

3

Identify a fuse that has power (e.g. emergency lamp, indoor lamp, tall lamp etc.) to connect with the yellow B+ wire and insert it back to fuse box.

※ Location of B+ may differ depending on the vehicle.

※ Please connect to output side, or a fire could occur.

4

Connect the black GND terminal to a grounding source (e.g. metal component)

▤ 4-4. Camera Angle ▤

▶ The Lukas dash cam enables users to adjust preferred viewing angle easily while viewing the LCD screen.

▶ Adjust camera lens angle to display vehicle hood (bonnet) on approx. 40% of the LCD screen as shown below.

　※ Too low of a lens angle may hide traffic lights & too high of a lens angle may darken video quality.

▤ 4-5. Memory Card Usage ▤

- Video is recorded in 3min or 5min intervals for continuous recording, 30-second intervals for motion and event recording.
- The number of files and usage times below is calibrated to 70% continuous recording, and 30% motion recording.

1. SD card usage time

	Continuous recording			Motion detective recording		
	No. of files for front view	No. of files for rear view	Total usage time	No. of files for front view	No. of files for rear view	Total usage time
8G	22	22	Approx., 1h 06min	56	56	Approx., 28min
16G	43	43	Approx., 2h 09min	111	111	Approx., 55min 30sec
32G	89	89	Approx., 4h 27min	232	232	Approx., 1h 56min
64G	183	183	Approx., 9h 09min	471	471	Approx., 3h 55min 30sec
128G	368	368	Approx., 18h 24min	947	947	Approx., 7h 51min 30sec

2. microSD카드 사용시간

	8G	16G	32G	64G	128G
No. of files for front view	174	364	758	1536	3092
No. of files for rear view	174	364	758	1536	3092
Total usage time	Approx., 1h 17mic	Approx., 3h 02min	Approx. 6h 19min	Approx., 12h 48min	Approx. 25h 46min

※ Based on front view 6M/sec, rear view 4M/sec. (high definition in configuration setting)
※ Number of files is based on 3min.
※ Total recording time is calculated by considering front/rear view video as one video. (Videos are saved after they are separated into front/rear view)
※ Number of files and storage time may differ more or less during actual use.

5. Product Usage

▤ 5-1. Standard Operation Guide ▤

1. Start & Stop Recording

You can set power safety function conveniently by manipulating power switch on dash cam.

ON
ACC
OFF

- ON : supports recording during driving/parking (operates up to set voltage or time during parking)
- ACC : supports recording during driving (dash cam begins to operate when the engine is on and it stops operating when engine is off)
- OFF : power not supplied to dash cam
※ Check if memory card is in the device before turning the device on.
※ When booting proceeds after power is supplied, Lukas logo will be showed up on LCD screen.
※ After dash cam is booted, it will start recording after voice message "This is Lukas dash cam, drive safely".

2. Standard Recording Mode

	Continuous Recording	Motion Detection Recording	Event Recording	Emergency Recording
Storage Medium	SD card	SD card	SD card/microSD card	microSD card
Folder	AlwaysMovie	MotionMovie	AlwaysMovie / EventMovie	EventMovie
Storage Duration	3min / 5mion	30sec	30sec	30sec
Video	always	parking	always + event / event	event
Characteristics	Record continuously while driving	- Recordings when motion is detected with selection motion detection function. - Able to set motion detection sensitivity	- Record when impact takes place during driving or parking - Able to set G-sensor sensitivity	Record whenever you need to by pressing emergency recording button

※ If there is a microSD card inserted, videos from event recordings are saved onto the microSD card in the EventMovie folder.
   Continuous recordings will be saved in the AlwaysMovie folder of the SD card.
※ If there is no microSD card inserted, video from event recordings will not be saved. Only videos from continuous recording will be saved onto the SD card.

3. Video Playback
– Check video now playing : you can see the video now playing in real time after you boot dash cam.

              Dash Cam LCD : When you touch real-time video button on main menu, you can check video being recorded.

              APP : When you touch 'Lukas View' button on Lukas APP, you can check video being recorded. (When Wi-Fi is connected)

– Check recorded video : Dash Cam LCD : When you touch video playback button on main menu, you can watch recorded video.

              APP : When you touch 'Internal Storage' button on Lukas APP, you can check recorded video.

              PC : You can see on other players and Lukas dedicated viewer by connecting SD card/microSD card to PC.

4. Security LED operation

	During Continuous Recording	During Recording while Parking	Event/Motion taking Place
Front LED Status	Blue LED stays on continuously	Blue LED blinks slowly	Red LED blinks fast
Rear LED Status	Blue LED stays on continuously	Blue LED blinks slowly	Blue LED blinks fast

※ You can set LED to On/Off on Configuration setting 〉 additional function or APP/Viewer Setting. When LED is off, security LED does not operate.

5. Operating status LED operation

During Continuous Recording	During Recording while Parking	Event/Motion taking Place	ACC OFF	Entering power safety mode
Blue LED stays on continuously	Red LED blinks slowly	Red LED blinks fast	Blue LED blinks slowly	Blue LED blinks fast

※ Dash cam will be off after Blue LED blinks fast, when device is entering 'Power safety mode' by voltage setting or time.

6. Recording during driving
– Continuous recording : save video recorded during driving at 5-minute interval in AlwaysMovie folder

          ※ "Always" is displayed in lower part of the screen when the recorded video by continuous recording is playing.

– Event recording : recorded for 30 seconds in total – 10 seconds before/20 seconds after impact occurs – and saved in EventMovie folder.

– Emergency recording : when pressing emergency recording button for approx. 1 second, recording proceeds immediately with sound effect for 30 seconds and is saved in EventMovie folder.

    ※ Emergency recording cannot operate during event recording and event recording does not operate during emergency recording.
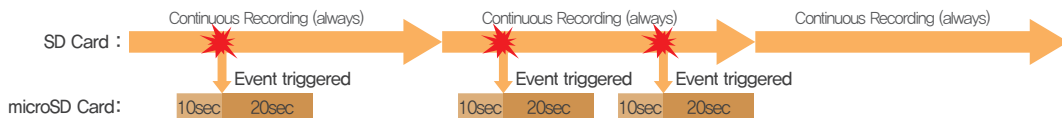
6. Recording During Parking

- Parking mode is active when the device power is ON.

  ※ Note that recording and the device itself will terminate power if the vehicles' battery drops below a predetermined voltage.

- How to change to parking mode The device can be programed with a set time to initiate the 'auto-conversation to parking mode' function.

  When the device converts to parking mode, a voice segment ("Switched to parking mode") is announced.

  ※ Automatic conversation to parking mode can be programed in the "Configuration Setting 〉 Basic Functions" of the Lukas viewer or on the Lukas mobile app : "LUKAS Setting 〉 Basic Functions".
  ※ As recoding stops and converts to parking or driving mode, less than 5 seconds of video may be lost.

_ Recording in parking mode : "Motion" LED segment will be displayed on lower part of the screen when saved video playing.

  ※ When converting from continuous, event, or manual recording mode to parking mode, each recorded file is terminate and converted into parking mode

- When selecting 'Use motion detection' in the configuration settings, video will be recorded for 30 seconds in total when motion is detected 10 seconds before / 20 seconds after. Files will be saved in the Motion Movie folder.

  ※ For efficient memory management only the rear/front camera that detects the motion will activate.
  ※ You can set the motion detection function on the Lukas Viewer : "Configuration Setting 〉 Motion Detection"or directly from the Lukas App : "LUKAS Setting 〉 Motion Detection".
  ※ RED LED will blink while motion recording is active.
  ※ Motion detection may fail when the vehicle is in extreme lighting conditions.
  ※ Recording time during parking mode may vary depending on the vehicles' battery voltage.
  ※ Motion detection or frame omission may occur depending on surrounding environment.
  ※ Motion recording may continue according to changes in the environment, the sensitivity must be set to in accordance with your parking environment (E.g. When parking in an alley or underground, frequent movements may interfere with motion recording if set on a high sensitivity.).

7. Driving Information Check

- Lukas dash cam can record up to approximately 1 million driving information points onto the SD card. After you have set the storage intervals for driving information on the configurations settings, the desired data points will then be saved at every programed interval.

▊ 5-2. Device Start ▊

※ After starting the car engine and turning on the power button on right
to Dash cam. the Dash cam power will be on. When booting is complete.
Dash cam will be automatically converted to recording during driving status
and real-time video will be shown on LCD screen.

1. Live View : video being recorded by camera is displayed on LCD screen.

   – Screen conversion : by touching the screen when rear view camera is
                              connected, it can be converted from front view ▶
                              rear view ▶ front/rear view left & right ▶
                              front/rear view up & down ▶ front/rear view PIP screen
                              ▶ rear/front PIP.
                              When rear view camera is not connected, only front view
                              screen is displayed. (Dash cam will be re-booted when
                              rear view camera connection cable is
                              separated/connected during recording.)

2. Home (main menu) : touching the home button on upper right, main menu
                        appears.

3. Wi-Fi : It shows Wi-Fi connection status and on/off the Wi-Fi
           ※ Green icon : Wi-Fi ON / Grey Icon: Wi-Fi off
           ※ By touching the Wi-Fi Icon, you can on/off the Wi-Fi

4. Parking Surveillance Notice :
  display the number of motion detection and event that take place during parking.
  ※ number of motion detection is displayed separately for front and rear view.
  ※ as event detection is recorded simultaneously for front and rear view,
    the number of event detection is displayed together.

Parking Surveillance Notice	
Start time	2015.07.16 21:57:00
Motion detection	**37**
Event detection	**3**
Finish time	2015.07.17 11:57:00

Event(shock) Detection Details

Start ├─────────┼──────┼──┤ Finish
2015.07.16 21:57:00   2015.07.17 11:57:00

※ When you touch the home button on live view video screen,
  the following menu will appear

1. Current Date & Time Display
2. Video Playback : able to check video recorded in continuous, event,
   and motion detection modes.
3. Live View : front/rear view video being recorded is displayed.
4. Configuration Setting : set video, basic functions, LCD, additional functions,
   audio and OBD Ⅱ function.
5. Card Format : format SD card and microSD card.
6. Time Setting : set date & time of dash cam.
   When time is changed, memory card format is necessary.
   Time can be set when there is no GPS.
7. User Guide : able to check user guide.
8. Display Front / Rear View Device Firmware Version
9. OBD Ⅱ : display OBD Ⅱ information (OBD Ⅱ is optional).
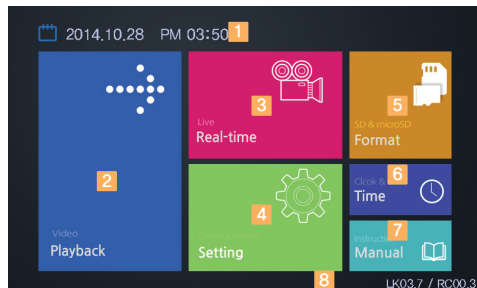
Normal (Type B)
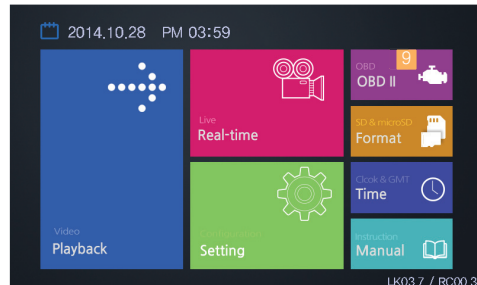

OBD Ⅱ Firmware (Type D)

▦ 5-3. Video Playback ▦

※ When you touch video playback button on main menu, the list of saved video will appear.

※ As front/rear view videos are not recorded during video playback, stop the car in a safe place before use.

※ Video recording starts automatically when video playback screen returns to menu screen.

※ File name is automatically generated in "Year/Month/Day/Time" format.

1. Video Play List ： display play list in sequential order
   When you touch the video name, the video will play immediately.
   ▲,▼ ： sorting in ascending/descending order
2. Mode Selection Button ： divided into always/event/motion detection recording modes.
3. Front/Rear View Icon ： icons to distinguish front/rear view video.
4. Move to Previous Screen ： move to the previous screen.

※ When you touch video name in playlist, the video will play on screen.

※ After the video starts playing, status bar will disappear automatically.
  If you re-touch the screen, the status bar will appear again.

1. Video playback screen ： recorded video will be played on LCD screen.
   When the currently playing video ends, the next video will be played.
2. File name display ： file name of the video now playing is displayed.
3. Playback progress bar ： display progress time of the video currently playing and the total time.
4. Player button ： able to play/pause the video now playing and select previous/next video.
5. Previous menu button ： move to the previous menu(video play list)

Note) video recording will be stopped when recorded video is being played.
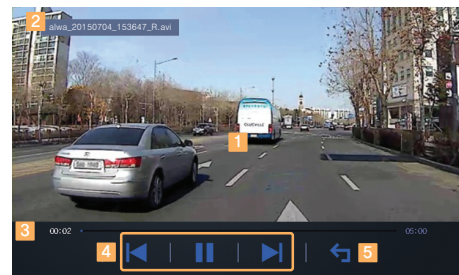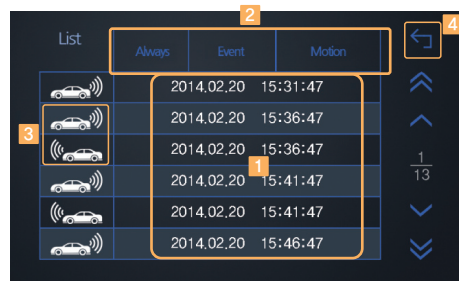
▤ 5-4. Live View ▤

※ Video being recorded by dash cam is displayed on LCD screen.

※ When you touch other parts than the home button, touch screen changes to
front view ▶ rear view ▶ front/rear view left & right ▶ front/rear view up & down
▶ front/rear view PIP screen ▶ rear/front PIP screen.

1. Home
2. Display Wi-Fi connection / Wi-Fi on/off button
3. Front / Rear view video screen display
4. PIP screen display
5. Driving date & time display
6. Display Recording Voice
7. GPS reception info : A : GPS received
V : no GPS reception
F : GPS power is not connected
8. Driving speed display
9. Mileage display
10. Vehicle voltage display(voltage supplied to dash cam)
※ Vehicle voltage display indicates voltage supplied to dash cam and
it can be different from the voltage supplied from vehicle (battery) due to loss of dash cam power cable.
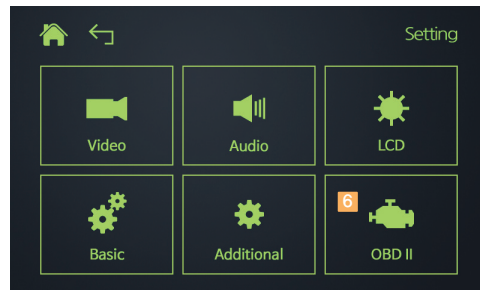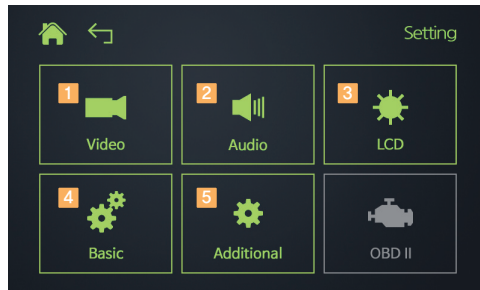
▤ 5-5. Setting ▤

※ When you select the Settings button on menu screen, the following screen will
be displayed.

1. Video : set front view video quality, rear view video quality, front view
camera brightness and rear view camera brightness, reverse
left & right for rear camera.
2. Audio : set recording, speaker, hourly alarm and voice guidance.
3. LCD : set screen stand-by time, screen brightness, screen protector and
touch compensation
4. Basic : set G-sensor, auto-conversion to parking mode, SD capacity,
front view motion detection and rear view motion detection,
set PIP position.
5. Additional : set power safety, LED and initialize configuration setting.
6. OBD : set functions related to OBD Ⅱ module.
※ OBD Ⅱ module can be purchased separately.

※ New settings are applied when you exit the configuration setting screen.

▓ 5-5-1. Setting - Video ▓

※ When you select the Video button on the settings screen, the following screen
   will be displayed.

※ You can change settings by selecting the icons on each screen.

1. Front View Image Quality : set front view image quality to highest, high, normal.

2. Rear View Image Quality : set rear view image quality to highest, high, normal.

3. Front Camera brightness : set front view camera brightness from 1-5 stages.

4. Rear Camera brightness : set rear view camera brightness from 1-5 stages.
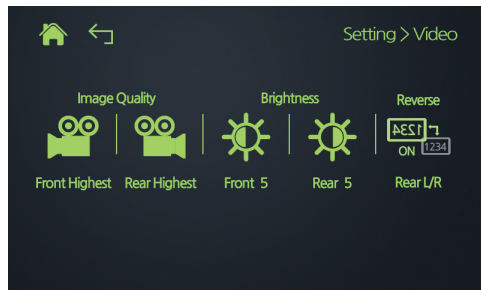
5. Reverse : Reverse L/R for Rear Camera

▤ 5-5-2. Setting - Audio ▤

※ When you select the Audio button on the settings screen,
the following screen will be displayed.

1. Voice recording : adjust sound volume of microphone recording.
2. Speaker setting : adjust sound and voice volume for speaker etc.
3. Hourly alarm : set function that tells time at every hour.
4. Voice guidance language : able to choose language for guidance.
(Korean, English, Russian, Chinese, Arabic,
French, Spanish, Japanese, Thai, Vietnamese,
German, Mongolian, Turkish, Italian, Hindi,
Czech, Cantonese, Portuguese,
Bahasa Indonesia and Bahasa Melayu)
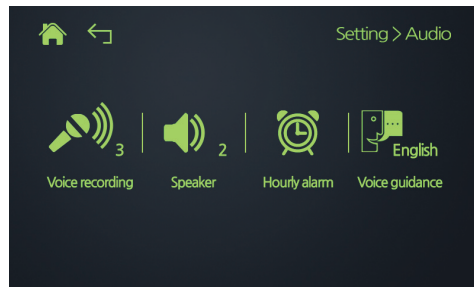
▤ 5-5-3. Setting - LCD Config. ▤

※ When you select the LCD configuration button on the settings screen,
   the following screen will be displayed.

  1. Screen Stand-by Time : set time during which LCD is turned on
   (screen saver : converted only when the function
   is set.) Set it to always, 15sec, 30sec, 60sec.
   When set to always, it will not be converted.
   (It is turned off automatically in the parking recording)

  2. Screen Saver : set screen saver to set/do not use.

    Screen saver can be set with the image that the user wants.
   → 1. Edit the image you want in 480x320 size
     2. Set the edited image file name and extension as screen.png
       (If file name and extension are different, it will not be recognized as
       screen saver image. Be sure to save it in screen.png)
     3. Save it in top level folder of SD card.
       (If you save it in other folders, it will not be applied to screen saver.)

  3. Screen Brightness : set LCD brightness from 1~3 stages.
  4. Night Brightness : When you set it on, it change LCD brightness automatically
   from at 8:00 PM till 6 AM.
  5. Touch Calibration : compensate touch panel coordinates.
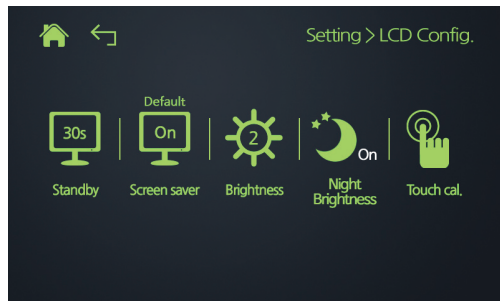
▓ 5-5-4. Setting - Basic ▓

※ When you select the Basic button on the settings screen, the following screen will be displayed.

1. G-sensor : able to set G-sensor(impact) according to user environment to setting during driving, setting during parking from 1~5 stages, setting by user.

2. Auto parking : set to do not use Auto-conversion to parking mode, 10sec, 30sec, 1min, 2min, 3min, 5min, 7min and 10min.

3. SD allocation : set ratio for SD card space where continuous/motion detection video will be stored.

4. Motion detection : able to set sensitivity of motion detection in parking mode.

5. Select PIP area : able to change position of the PIP area in Live view.
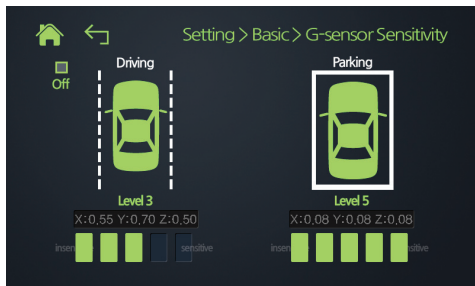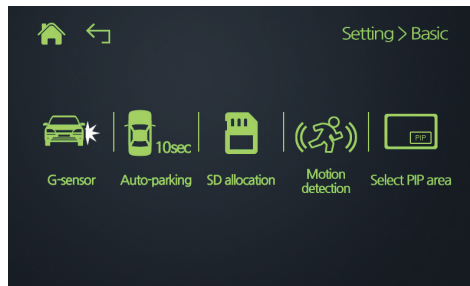
⟨ G-Sensor sensitivity Setting ⟩
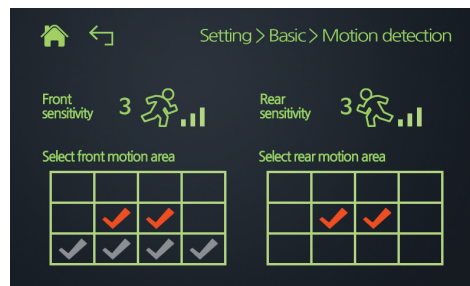
⟨ Motion detection ⟩

▤ 5-5-5. Setting - Additional ▤

※ When you select the Additional button on the settings screen, the following screen
   will be displayed.

   1. Continuous Power supply : set cut-off voltage or cut-off time to prevent battery
                                            discharge during parking mode
                                            (low voltage cut-off function)

     ※ When using external power other than your vehicle battery, set it to use
          external power.
        ※ When using external power(external battery), cut-off voltage and cut-off
          time will not operate, and use it after setting it to use external power.

   2. Security LED : set front/rear view Security LED to set/do not use.
   3. Use rear cam in parking mode : set Use rear cam in parking mode set
                                           /do not use.
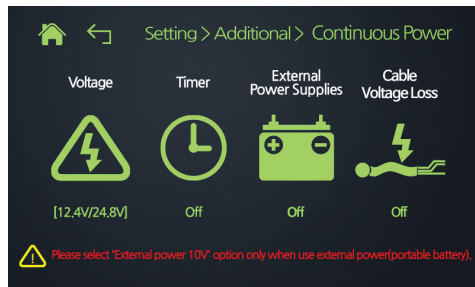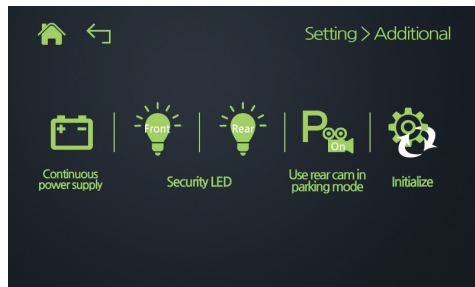   4. Initialize configuration setting : initialize configuration settings.

▤ 5-5-6. Setting – OBD II ▤

※ When you select the OBD II button on the settings screen, the following screen will be displayed.

    1. Cut-off Voltage : set cut-off voltage.

        ※ Cut-off voltage may have errors depending on vehicle model.
        ※ Be sure to use OBD II power supply when connecting OBD II.
        ※ Simultaneous power supply by OBD II and continuous power cable can cause problems.
        ※ When supplying power by continuous power cable and OBD II, be sure to contact sellers or manufacturer for checking.

    2. Eco Drive Setting : set Eco Drive according to the user environment.
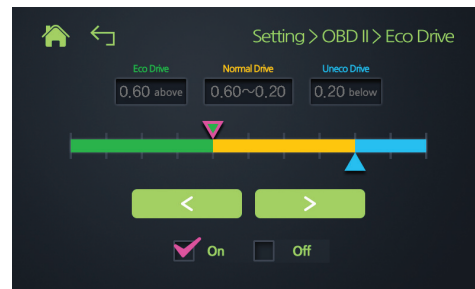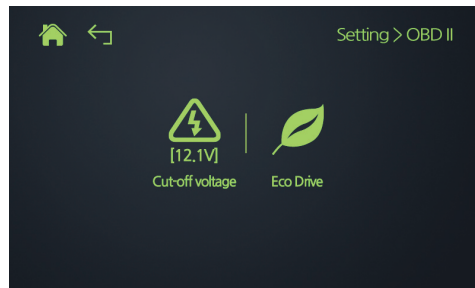
5-6. Card Format

※ When you select the Card Format button on the menu screen, the following
   screen will be displayed.
※ Formatting SD card once a week (8G), microSD card once a month (8G) is
   recommended.
※ Be sure to save important data in other storage media before you format the
   memory card.

1. SD Card : Formatting SD Card.
2. microSD Card : Formatting microSD Card.
3. Dual Card : Formatting both of SD and microSD Card at the same time.
4. Automatic formatting : Setting a automatic formatting cycle for SD Card and
                           microSD Card as every 1 week, 2 weeks, 3 weeks,
                           4 weeks or off.
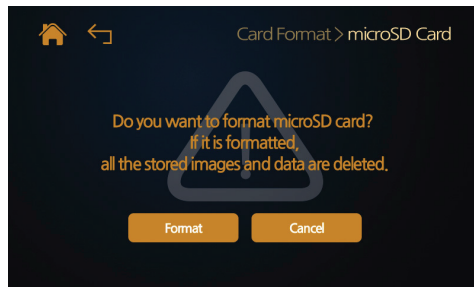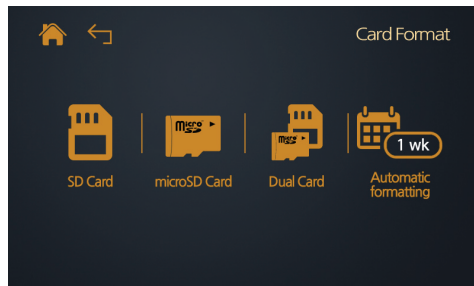
▤ 5-7. Time Setting ▤

※ When you select the Time Settings button on the menu screen, the following
   screen will be displayed.

※ Configuring the time setting is only necessary when device has no GPS module.
   Time setting will be automatically set when GPS module is installed.

※ When you change time, the memory card should be formatted.

  1. Time Setting : set time of the dash cam.

  2. GMT Setting : set GPS standard time.
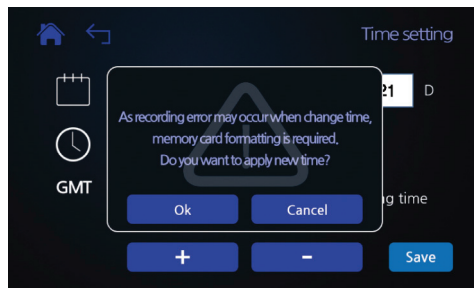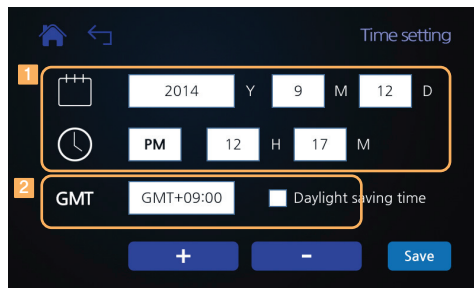
▤ 5-8. User Guide ▤

※ When you select the Manual button on the menu screen, the following screen will be displayed.

1. To look up the Manual on the screen.
   – For the next page, touch right side of the screen
   – For the previous page, touch left side of the screen.

2. The current page number
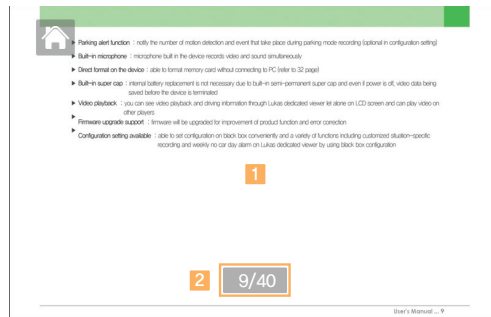
▓ 5-9. OBD Ⅱ ▓

※ When you select the OBD Ⅱ button on the menu screen, the following screen
   will be displayed.

1. RPM info
2. Accelerator (displayed between 0~99% depending on intensity)
3. Gear position
4. Current speed
5. Mileage
6. Left turn light
7. Brake status
8. Steering wheel turning angle – steering wheel turning angle displayed
   with numbers
9. Eco Drive info
10. Right turn light
11. Voltage supplied to OBD Ⅱ
    ※ Voltage supplied to OBD Ⅱ may differ from voltage supplied to vehicle (battery voltage).
12. OBD Ⅱ version info

▤ 5-10. Getting Started with the Lukas App ▤

※ Download the Lukas application on your smartphone. The Lukas app can be found on the Google Play Store and the App Store for iPhone.
  – The Lukas app can be used with Android 4.0 or later, iOS 5.0 or later.
  – The Lukas app may not be supported depending on the smartphone.
※ Turn the Wi-Fi button to On located at the bottom of the dash cam.
※ For playback of recorded videos using Wi-Fi, the reception may vary according to the data transfer rate.
※ The range of Wi-Fi reception may vary.
※ The path of recorded videos may vary depending on the smartphone.
※ Recorded videos will be saved as 'Normal video quality' regardless of configuration setting when Wi-Fi is connected.

[Download the Lukas App on Google Play Store] [Download the Lukas App on Apple App Store]

▤ 5-11. Connecting to the Lukas App ▤
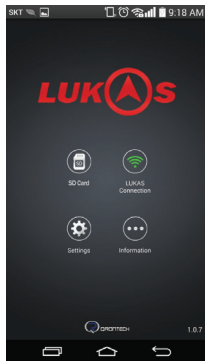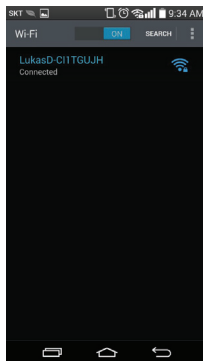
[Lukas app main menu] [Connect smartphone with Wi-Fi] [Enter password]
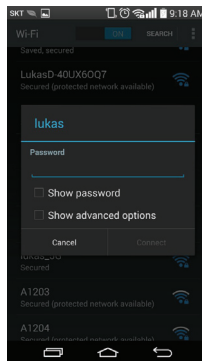
1. Select the Lukas Connection button on the main screen.
  ※ When the dash cam is connected with your smartphone, the Lukas Connection icon will turn green.
2. Select 'Lukas' on the Wi-Fi list.
3. Enter in the default password : '11111111'
※ For a stable connection, please remain within close proximity with your dash cam.
※ Change your password to prevent others from accessing your device.
※ Configure your device name and password on the Lukas Viewer program or Lukas app.

▓ 5-12-1. How to use Lukas App – SD Card ▓

※ You can view your recorded footage saved on the SD Card right from the Lukas App
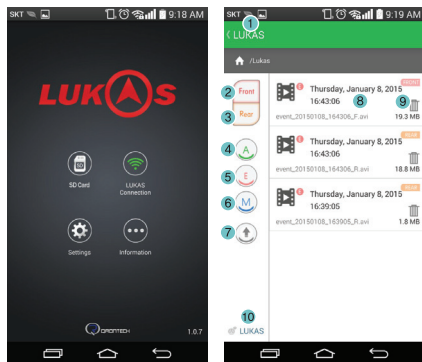
1. Navigation : Navigate to the Main Screen.
2. Front Camera : Display footage captured by the Front Camera.
3. Rear Camera : Display footage captures by the Rear Camera.
4. Always Video : Display footage captured in Always Recording mode.
5. Event Video : Display footage captured in Event Recoding mode.
6. Motion Detection Video : Display footage captured in Motion Detection mode.
7. Customize : Arrange order of footage by time sequence (ascending/descending).
8. Play : View footage file.
9. Delete : Delete footage file.
10. Wi–Fi : 'Navigate to 'LUKAS Connection'.

▤ 5-12-2. How to use Lukas App – LUKAS Connection ▤

※ Connect with your Lukas device to view captured footage. Green indicates a successful connect on the Main Screen
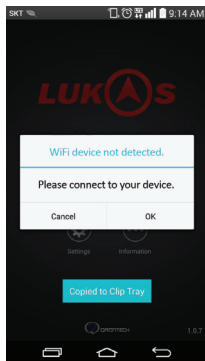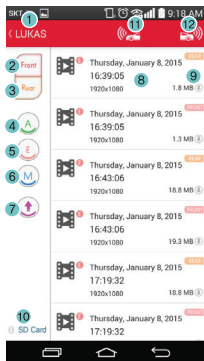
[Disconnect Wi-Fi]   [Wi-Fi Connection]

1. Navigation：Navigate to the Main Screen
2. Front Camera：Display footage captured by the Front Camera.
3. Rear Camera ：Display footage captures by the Rear Camera.
4. Always Video：Display footage captured in Always Recording mode.
5. Event Video：Display footage captured in Always Recording mode.
6. Motion Detection Video：Display footage captured in Motion Detection mode.
7. Customize Order：Arrange order of footage by time sequence (ascending/descending).
8. Play：View footage file
9. Download：Save footage file onto your Smartphone as a movie clip.
    ※ File path may vary depending on Smartphone and OS.
10. SD Card：Navigate to 'SD Card'.
11. Front Camera LIVE：View a live video stream from the Front Camera.
12. Rear Camera LIVE：View a live video stream from the Rear Camera.

▤ 5-12-3. How to use Lukas App - Configuration ▤

※ Configuration only available when Lukas device is connected to your Smartphone.
※ Menu items may vary depending on device model.
※ Keep device turn on while saving changed setting data
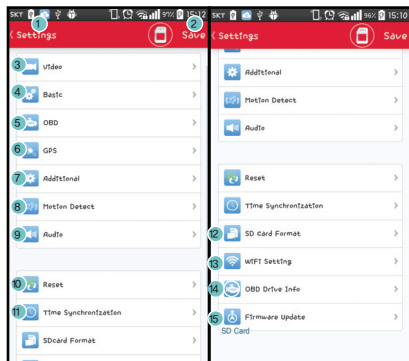
1. Navigation : Navigate to the Main Screen.
2. Save Changes : Changes will be saved and applied.
3. Video : Configure video settings.
4. Basic : Configure basic settings & functions.
5. OBD : Configure OBDII settings. (Only applicable to devices connected to OBDII module)
6. GPS : Configure GPS settings.
7. Additional : Additional settings and functions.
8. Motion Detection : Configure setting for Motion Detection.
9. Audio : Configure audio quality and settings.
10. LDC: Navigated to LCD Setting menu.
11. Reset : Reset all settings applied to device to default factory settings.
12. Time Synchronization : Synchronize device time with Smartphone.
13. SD Card Format : Format microSD / SD Card.
14. WiFi Settings : Verify changes to the Wifi network of the device.
15. OBD Driving Information : View the OBD driving screen.
    ※ Only applicable to devices connected to OBDII module
16. Firmware Update : Updates available for your device.

▤ 5-12-4. How to use Lukas App - Information ▤

1. Navigation : Navigate to the Main Screen.
2. Application Version : Displays current mobile app version.
3. Firmware Download : Download the latest firmware.
4. Firmware Version : Displays current firmware version of your device.
5. Call Service Center : Contact Lukas for more information.
6. YouTube : View our YouTube channel.
7. Lukas Homepage : Visit our homepage for more information.

▤ 5-13. How to Upgrade Firmware on Lukas App ▤

1. Connect to your Lukas device to view current firmware version. ('Information -〉 Dash Cam Firmware version')
2. Navigate to Firmware Download ('Information -〉 Firmware Download') after disconnecting Smartphone from Wi-Fi.
3. Download the latest firmware available (Charges may apply depending on carrier).
4. Ensure device and smartphone maintain a stable connection after connecting Smartphone from Wi-Fi again.
5. Upload firmware to your device ('Lukas Configuration -〉 Firmware Update').
6. Please wait until firmware has completely been installed, and device to restart.
※ Please do not manually restart your smartphone or dash cam while the firmware is being installed.

▤ 5-14. Lukas Viewer ▤

1. Program Installation

1 Connect the SD card to PC

➡

2 Click "Setup.exe." to install Lukas viewer

Setup.exe

➡

3 Double click the shortcut once installation is completed.
(Name may differ according to the product model.)

Lukas 9x70

※ Lukas Viewer can be found on the SD card(s) that come with your product.
   You can download the Lukas Viewer for the LK-7950 WD at any time from our website (www.lukashd.com).
※ Name of viewer icon may vary depending on OBDII compatibility.

Recommended PC specification for suing Lukas viewer	OS: Windows XP SP3, Vista (32Bit), WIN 8 (32/64bit) H/W: Quad core 2.8Ghz/ 4G RAM Web browser: Microsoft internet explorer 7.0 Direct X version: Direct X9.0 (JUNE2010) Others: Windows.NET Framework 4

※ For best results, please use the Lukas viewer recommended for your product model.
   There may be occasional display and sound cuts, as well as changes in play speed and other errors depending on computer specifications.

2. Viewer Screen Composition

GPS Info

Set time
Settings
Screenshot
Print video being played
Load file

File list

LUK△S   LK-9x70 WD

RECORD   INFORMATION

File list & event info
Front view dash cam display icon
Font view video file name :
alwa_20140219_221849_F.avi

Rear view dash cam display icon
Rear view video file name :
alwa_20140219_221849_R.avi

Type		Date	Time	FileNa
Always		2015-01-22	09:22:08	alwa_
Always		2015-01-22	09:25:08	alwa_
Always		2015-01-22	09:25:08	alwa_
Always		2015-01-22	09:28:08	alwa_
Always		2015-01-22	09:28:08	alwa_
Always		2015-01-22	09:31:08	alwa_
Always		2015-01-22	09:31:08	alwa_
Always		2015-01-22	09:34:08	alwa_
Always		2015-01-22	09:37:08	alwa_
Always		2015-01-22	09:37:08	alwa_
Always		2015-01-22	09:40:08	alwa_
Always		2015-01-22	09:40:08	alwa_
Always		2015-01-22	09:43:08	alwa_

0 Km/h | HDOP | 1.0
Satellite | 0

Main video play window

G-sensor graph
(acceleration)

X=+0.00   Y=+0.00   Z=+0.00

Sub video play window

Speed Size
1x   1.0x   LUKAS BLACK BOX

Rewind video by 10 seconds
Pause
Forward video by 10 seconds
Forward video by 10 seconds
Zoom in/Zoom out

Volume Control
View full screen
Convert Main/Sub video play window

※ GPS map information may not be displayed if PC is not connected to the Internet or the GPS reception is unstable.
※ Map synchronization is supported only with Internet Explorer 7.0 or above.
※ To take full advantage of Full HD resolution, play video in full screen.
※ Viewer image may be different when in sync with OBD II.

3. Settings

– User can change device settings (i.e. recording configuration, system configuration, additional functions, and time, etc.) to their preferences through 'Device Settings' on the Lukas Viewer program menu.

4. Video Playback Screen

2015/07/03 13:09:50 33Km/h A 2.7km/ /12.1V always /Lukas /LK9370/ H
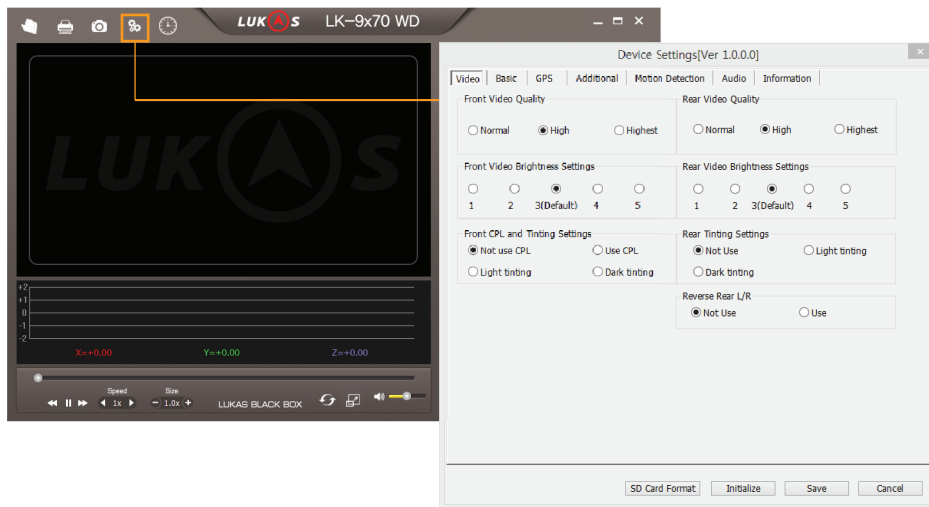
1   Date & Time

2   Driving Speed
     ※ Only with GPS or OBD ll

3   GPS Communication

4   Mileage
     ※ Only with GPS or OBD ll

5   Dash Cam Supply Voltage

6   Recording or Wi-Fi connection Mode

7   Vehicle Number (Max 8 digits)

8   Recording Resolution

9   Image Quality (video saving data speed/sec)
     ※ S : Best quality
     ※ H : Good quality
     ※ N : Normal quality

6. Specifications & Customer Service

≡ 6-1. Specifications ≡

Item	Specification	Remark
Camera	Front : Full HD dedicated 2.1M Effective Pixel SONY IMX322 Sensor, 1/2.9(inch) Rear : Full HD dedicated 2.1M Effective Pixel SONY IMX322 Sensor, 1/2.9(inch)	
Viewing Angle	Front : Diagonal(approx. 135)° Effective Angle: horizontal (approx. 107)°, vertical (approx. 55)° Rear : Diagonal(approx. 130)° Effective Angle: horizontal (approx. 105)°, vertical (approx. 54)°)	
Recording Resolution & Frame	Front : 1920×1080p(Full HD), 30fps Rear : 1920×1080p(Full HD), 24fps	
LCD Resolution & Size	Resolution(480x320) / Size : 3.5"(inch), Built-In Touch	
Wi-Fi	802.11b/g/n (2.4~2.4835 GHz)	Dongle Type
Video Compression	H.264(AVI format) / Codec profile : HIP(High profile)	
Gravity Sensor	Built-in 3-axis Impact sensor(impact, sudden brake, sudden start)	
GPS	Dual Band(GPS+Glonass)	Option
Storage Media	SD Card : SDHC / SDXC memory card (standard 8G, max. 256G) microSD : microSDHC / microSDXC (standard 8G, max. 256G)	
Player Program	General media player / Lukas viewer	
Audio	Built-In speaker, Microphone	
Power	DC 9V ~ 24V	
Low Voltage Cut-off	Able to set time & voltage, supports multi-booting	
Temperature	Operating : -30℃ ~ 80℃(-4℉~158℉), Storage : -30℃ ~ 90℃(-4℉~194℉)	
Size/Weight	Front : 130 X 140 X 39 (mm) , 174g / Rear : 50 X 26 X 31 (mm), 25g	Includes GPS, UV filter, Dongle

▤ Appendix ▤

1. How to remove device from rotating type mount bracket

5. Device is removed safely
   from mounting bracket.

2. Press the left handle of the
   mounting bracket.

1. Disconnect device from power cable

※ Note that if device is attempted to
be removed from bracket by force,
damage can be inflicted to mounting
bracket.

4. Turn the right side of the stand
   to separate.

3. Pull out the left side of the stand.

2. How to remove device from fixed type mounting bracket

1. Disconnect device from power cable.

2. Press the left handle of the mounting bracket.

3. Pull out the left side toward the stand.

4. Device is removed safely from mounting bracket.

※ If you do not press the left handle to pull out by force, damage can be inflicted.

3. How to install UV/CPL filter

▶ Turn the CPL/UV filter to the right until it is fixed in place.

Angle adjusting part

Part to be attached
CPL filter/Camera

▶ Adjust CPL/UV filter to the left/right to remove diffuse reflection.

※ Remove the UV filter before mounting CPL filter.

※ When mounting the CPL filter onto the dash cam, deterioration in nighttime picture quality(darkening video) can occur.
   You can record with brighter picture quality by adjusting brightness level in device configuration setting.

※ If the front windshield glass is solar coated, CPL filter installation is not recommended.
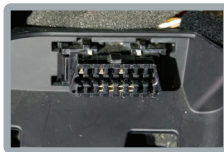
CPL filter before/after

Without CPL filter

With CPL filter

4. OBD II Installation

1. Locate OBD II connector in the vehicle.

2. Install the LK-750 OBD II firmly into the vehicle's OBD II connector arrayed holes.

3. Push LK-750 OBD II to OBD II connector to its end and fix it by pressing the white hook.

4. Connect LK-750 OBD II with cable gender.

5. Connect power cable of micro USB 5pin to the front camera

※ Ensure that you check if the car engine is off before connecting the dash cam to your car.
※ OBD II connector location may differ depending on vehicle.

5. Photo when installation is complete

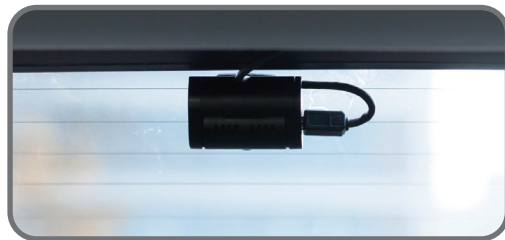After installing front view camera
※ Front view camera (dash cam main body) must be installed in a
  location that does not interfere with driving.

Front view LCD operation screen

After installing rear view camera

After installing rear view camera (enlarged)

Quality Assurance

Model Name		Product S/N			
Customer Name		Date of Purchase	MM	DD	YY
Customer Contact No.		Place of Purchase Purchase			

1. A standard 1–year warranty is provided from the date of purchase.
   However, a 6–month warranty is provided for accessories, including memory card.

2. This product has undergone strict quality control and inspection procedures.

3. Please provide all necessary information when making a warranty claim.   .

4. This user manual will not be re–issued with a warranty claim. Please retain this manual for future reference.

5. We are not responsible for any charges related to the installation or uninstallation of this product, regardless of warranty status.

▤ Certified Company Info. ▤

1. Certified company : Qrontech Co., Ltd.

2. Device name (model name) : Lukas Dash Camera(Dash cam)
   (LK–9370, LK–9370G, LK–9370D, LK–9370GD)

3. Certificate No. : MSIP–REM–QRN–FFWDL

4. Manufacturer/Manufacturing country : Qrontech Co., Ltd. /
   Rep. of Korea

Distributors, sellers and users must note that this device is an
electromagnetic device, and is meant as a vehicle accessory only.

CE Conformity European Marking EU

FC U.S. Federal Communications
Commission / Electromagnetic