

MBIZONE CO., LTD.

MACH TRUCK 5000 - 4CH MACH SEDAN 5000 - 4CH USER MANUAL



MACH TRUCK 5000 - 4CH



MACH SEDAN 5000 - 4CH

This product is a safe driving assistance device.

Use this product only for reference when investigating incidents or road accidents, because this product is not guaranteed to record all videos.

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Before Use

- Thank you for choosing our Mach Truck Dash Cam Series.
- Please carefully read this manual and use this dash cam with safety.
- This manual is subject to change without any notice.
- Some functions or features are subject to change with prior notice for product improvement.
- This dash cam may not record according to user's environment. The driving recordings are only for reference.
- Do not disassemble or repair. Turn off the dash cam and contact your shop to ask the problem.
- Do not force the dash cam and do not operate the dash cam during driving for your safety.
- Due to memory failure, the recording may stop. Check the recordings periodically.
- ADAS function may have some error. Use ADAS function only for your reference.

When Installs

- Do not remodel or cut the power cable. Use the power cable supplying by MBIZONE.
- Check the dash cam operation before and after installing camera, memory and monitors to the vehicle.
- Check the proper location and attach the dash cam.
- Connect the camera, memory and monitor after turning off the dash cam.
- Mount the dash cam firmly not to drop the dash cam.
- After completing installation, set the time and date and then start formatting.
- After completing installation, change the menu for your usage.

Caution

- Do not manipulate the dash cam during driving. It may cause the accident.
- Do not leave the dash cam at very high or low temperature in long term. It may cause malfunction or failure.
- The operating temperature range is -10C to 60C. Use the dash cam in the temperature range. .
- Do not use the dash cam during vehicle parked in long term.
- The vehicle may not start due to the leakage current from consumption of vehicle battery.
- Exceed sun tin may cause the quality degradation of the dash cam.
- Clean the camera lens without foreign substances like finger print.
- Do not touch the LCD panel by pointed one. It may cause the damage of the touch panel or mal-function.
- Do not disassemble randomly and force the shock to the dash cam by drop. It may cause the breakdown or failure.
- Use the accessories guaranteed by MBIZONE.

Standard Package

1. MACH TRUCK 5000 Standard Package

- ① Mach Truck 5000
- ② External HD IR Camera(550HDIR) + 5m cable
- ③ External HD IR Camera(550HDIR) + 5m cable
- ④ External HD IR Camera(550HDIR) + 20m cable
- ⑤ Hardwiring power cable
- ⑥ Bracket(with 3M adhesive tape)
- ⑦ Micro SD Memory Card 64GB (This memory will be pre-installed into the dash cam.)
- ⑧ Micro SD Reader
- ⑨ Quick Manual

2. MACH SEDAN 5000 Standard Package

- ① Mach Sedan 5000
- ② Sedan HD Camera(S550HDS) + 3m cable
- ③ Sedan HD Camera(S550HDS) + 3m cable
- ④ Interior rear HD Camera(200HDS) + 8m cable
- ⑤ Hardwiring power cable
- ⑥ Bracket(with 3M adhesive tape)
- ⑦ Micro SD Memory Card 64GB (The memory will be pre-installed into the dash cam.)
- ⑧ Micro SD Reader
- ⑨ Quick Manual

3. Optional

- ① 10m External HD camera cable
- ② 20m External HD camera cable
- ③ 2m CVBS Video cable
- ④ 1.5m Micro HDMI to HDMI cable
- ⑤ 3m Trigger cable (Left, Right, Rear Trigger cable)
- ⑥ DSM(Driver State Monitoring) device
- ⑦ Mini Digital Tachography (MINI D-TACHO)

(The function with Mini D-Tacho is disabled and it will be activated in the future.)

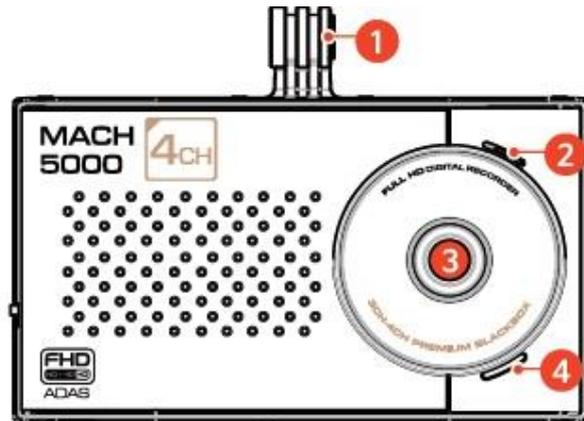
- ⑧ SSD or HDD

(The function with external hard drive is disabled and it will be activated in the future.)

- ⑨ 10.1 inch or 7 inch HDMI/CVBS Monitor
- ⑩ GPS Antenna

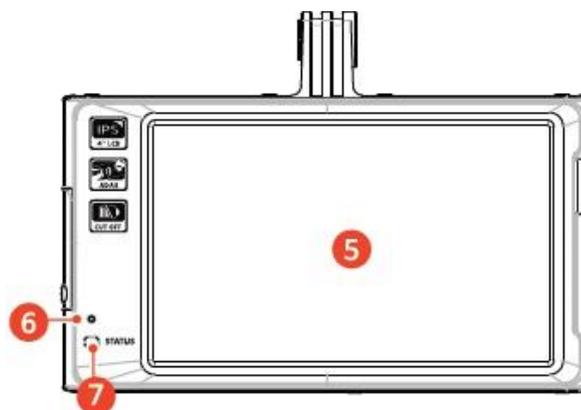
Product Overview

1. Front



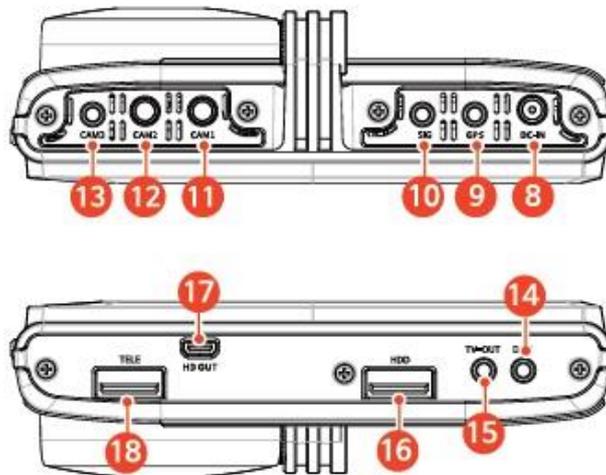
- 1) Mount Connector : Connect your bracket came with the dash cam.
- 2) Speaker Hole : Sound alerts and voice guide
- 3) Front camera lens : Shoot the forward footage
- 4) Security LED : Display the recording status.

2. Rear



- 5) Touch Screen : Touch the LCD to move the various function
- 6) MIC Hole : Record the voice.
- 7) Record Status LED : Display recording status to driver.

3. Top and Bottom



- 8) DC-IN port : Connect the DC power(12~24V) cable
- 9) GPS Port : Connect GPS antenna.
- 10) SIG Port : Connect trigger cable.

(The function with Mini D-Tacho using the port is disabled for further developing.)

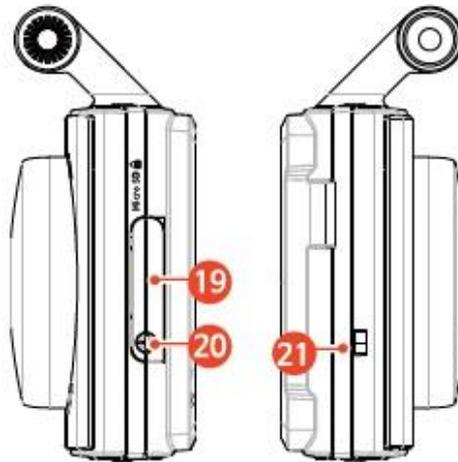
- 11) CAM 1 Port : Connect camera. (Recommended to mount on right side.)
- 12) CAM 2 Port : Connect camera. (Recommended to mount to left side.)
- 13) CAM 3 Port : Connect camera. (Recommended to mount rear side or blind spot.)
- 14) DSM Port: Connect the DSMS(Drive State Monitoring System).
- 15) TV OUT Port : Connect CVBS monitor or Navigation.
- 16) HDD USB Port : Connect the HDD or SSD.

(The function with external hard drive using the port is disabled for further developing.)

- 17) Micro HD OUT Port : Connect HDMI monitor.
- 18) TELE USB Port

(The function for telecommunication using the port is disabled for further developing.)

4. Left and Right



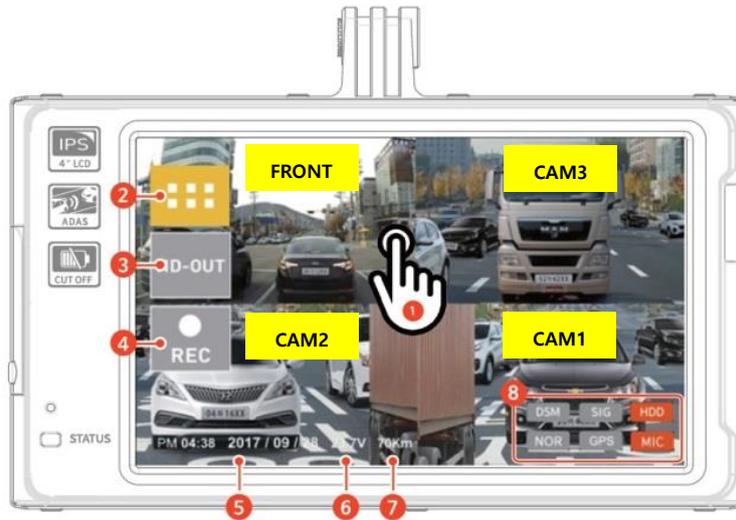
19) Micro SD card Slot : Insert Micro SD card.

20) Screw Hole for SD card cover : Insert a screw. (The special screw and the screw driver are optional.)

21) Power switch : Turn on or off the power.

Live Screen

1. LIVE SCREEN



- 1) Switch Display mode : By touching LCD, the display mode switches in the following order ;
4-way split screen(Front/Cam1/Cam2/Cam3) ▶ 2 cameras vertical split screen(Front/Cam3) ▶
2 cameras vertical split screen(Cam2/Cam1) ▶ Full screen of front camera ▶ Full screen of Cam3 ▶
Full screen of Cam2 ▶ Full screen of Cam1
- 2) Touch  to move to the main menu.
- 3) Touch  to display the live view to the monitor connected. LCD screen will be off.
- 4) Touch  to start manual(Emergency) recording.
- 5) Date/Time : Display current date and time. (The date and time will be synchronized automatically with GPS Antenna.)
- 6) Voltage : Display current vehicle's voltage.
- 7) Speed : Display vehicle's speed from GPS Antenna. (If no connected GPS, display "NONE".)
- 8) Record information : Display current record status of the dash cam as icons.
(Please refer to the details of the icons information.)

2. ICONS FOR RECORD STATUS

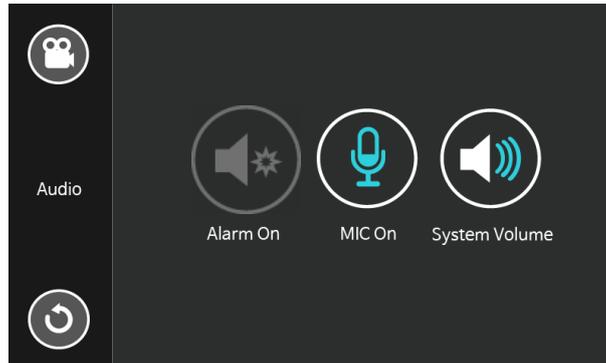
No.	Icon	Description
1		Use Driver Status Monitoring System.
		Do not use Driver Status Monitoring System.
2		Do not use any function in the signal port.
		Use Mini Digital Tach-graph. (Currently disabled.)
		Use Trigger function(Left/Right/Rear).
3		Record to the HDD/SSD. (Currently disabled.)
		Record to the Micro SD Card.
4		Normal recording mode.
		Normal Event / Manual / DSM Event recording mode.
5		GPS connected.
		GPS disconnected.
6		Turn on audio recording
		Turn off audio recording

3. LED SIGNAL FOR RECORD STATUS

Record Status	Security LED(Front)	Status LED(Rear)
Normal mode	Blue LED flickers	Blue LED light on
Parking mode	Blue LED flickers	Blue LED light on
Event mode	Blue LED flickers fastly	Red LED light on

Menu

1. AUDIO SETTING



(1) ALARM

- Turn on or off the alarm sound when the event modes(Normal Event, Parking Motion, Parking Event, Manual Rec, DSM Event) are activated.

▶ Default : Off

▶ Options : On and Off

(2) MIC

- Activate or deactivate the audio recording.

▶ Default : On

▶ Options : On and Off

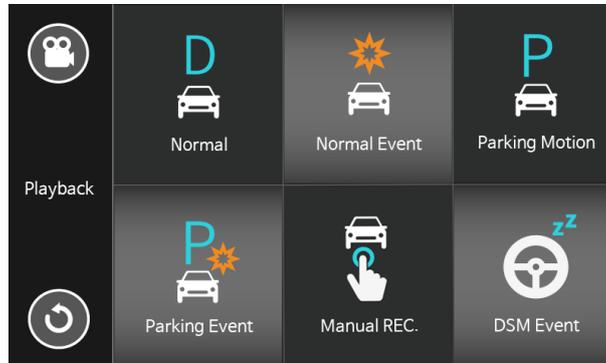
(3) SYSTEM VOLUME

- Control the volume of system guidance.

▶ Default : Level 2

▶ Options : Off, Level 1, Level2 and Level 3

2. PLAYBACK



(1) NORMAL

- The videos are recorded in 1 minute segments during driving.
- The video is stored in the Normal folder.

(2) NORMAL EVENT

- When the impact to the vehicle is detected, a video is recorded for 20 seconds.
- The video is recorded from 5 seconds before detection to 15 seconds after detection.
- The video is stored in the Normal Event folder.

(3) PARKING MOTION

- When the motion to the front camera is detected in parking mode, a video is recorded for 20 seconds.
- The video is recorded from 5 seconds before detection to 15 seconds after detection.
- The video is stored in the Parking Motion folder.

(4) PARK EVENT

- When the impact to the vehicle is detected in parking mode, a video is recorded for 20 seconds.
- The video is recorded from 5 seconds before detection to 15 seconds after detection.
- The video is stored in the Parking Event folder.

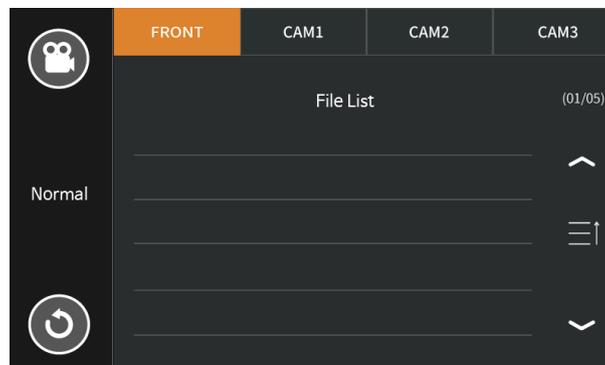
(5) MANUAL REC.

- When user touches the manual recording button on the LCD, a video is recorded for 20 seconds.
- The video is recorded from 5 seconds before touching to 15 seconds after touching.
- The video is stored in the Manual REC. folder.

(6) DSM EVENT

- User should connect the separate DSM(Driver State Monitoring) device to the dash cam.
- When DSM detects the driver's drowsiness and negligence in looking ahead, a video is recorded for 20 seconds.
- The video is recorded from 5 seconds before detection to 15 seconds after detection.
- The video is stored in the DSM Event folder.
- This function is only for recording the driver's drowsy driving situation.
- In order to use this function, please consult with MBIZONE in advance.

(7) FILE LIST

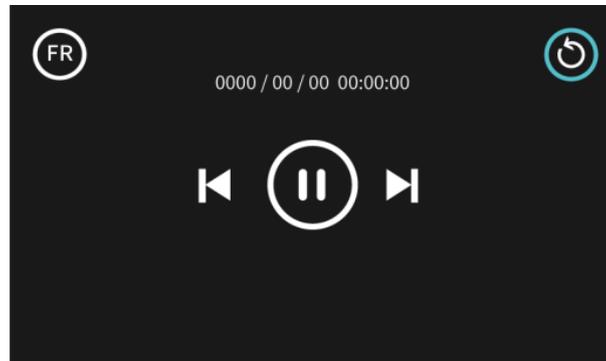


- Touch **FRONT**, the front camera videos are listed.
- Touch **CAM1**, the videos of the camera connected to CAM1 port are listed.
- Touch **CAM2**, the videos of the camera connected to CAM2 port are listed.
- Touch **CAM3**, the videos of the camera connected to CAM3 port are listed.
- The file name is composed of the recording start date and time, and camera name.

Example : 20200116_141501_FR

Recorded on January 16, 2020 02:15:01PM from Front camera.

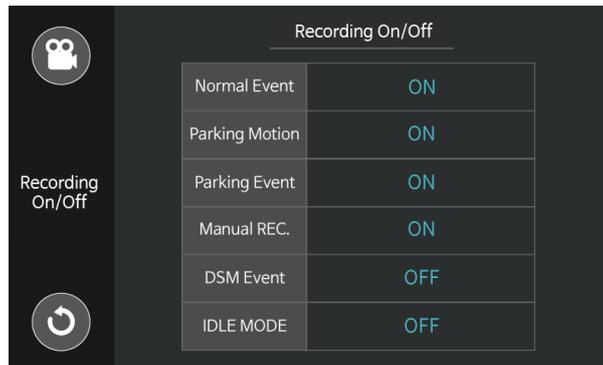
(8) PLAYBACK



- Touch , ,  or  on top left, the each cameras' video recorded at the same time is played.
- Touch  on top right to move back to the file list.
- Touch , ,  to play previous video, stop the video or play next video.

3. RECORDING CONFIGURATION

(1) RECORDING MODE



Recording On/Off	
Normal Event	ON
Parking Motion	ON
Parking Event	ON
Manual REC.	ON
DSM Event	OFF
IDLE MODE	OFF

- Turn on or off to activate or deactivate the each recording modes.
 - If user turn off the Normal Event mode, the normal event is not recorded.
 - The IDLE mode is to protect the dash cam against high temperature in parking mode. If user turn on the IDLE mode, the system will be off during parking mode.
- ▶ Default : Normal event, parking motion, parking event, manual REC. ON, DSM event, IDLE mode OFF
- ▶ Options : On and Off

(2) RECORDING CHANNEL SELECTION



- Select the channel number to record.
- Set  to record the video from front camera only.
- Set  to record the videos from front camera and the camera connected to CAM1 port.
- Set  to record the videos from front camera, and the cameras connected to CAM1 and CAM2 port.
- Set  to record the videos from front camera, and the cameras connected to CAM1, CAM2 and CAM3 port.

▶ Default : 4ch

▶ Options : 1ch, 2ch, 3ch and 4ch

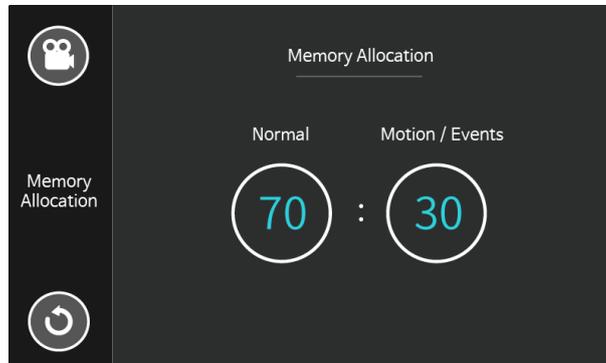
[Caution] All the data stored on the memory will be erased after setting change by formatting the memory.

■ EXTERNAL CAMERA PORT PER RECORDING CHANNELS

SETTING	CAMERA PORT	FILE FOLDER
1CH	-	FRONT
2CH	CAM1 PORT	FRON, CAM1
3CH	CAM1 PORT, CAM2 PORT	FRONT, CAM1, CAM2
4CH	CAM1 PORT, CAM2 PORT, CAM3 PORT	FRONT, CAM1, CAM2, CAM3

- Please connect the external camera(s) to the camera port(s) as above after setting the recording channels.

(3) MEMORY ALLOCATION



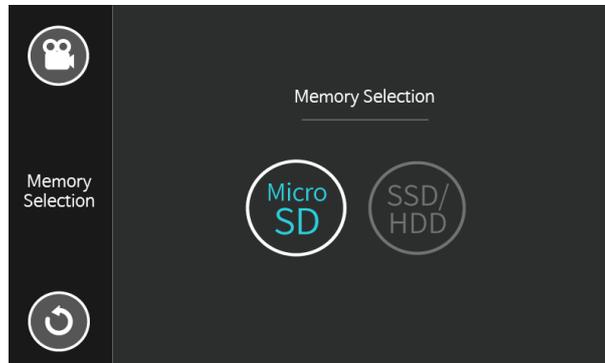
- Select memory allocation rate.
- Allocation rate is measured in the amount of memory allocated per each recording mode..
- "Normal" allocation rate is the amount for normal recording mode only.
- "Motion / Event" allocation rate is the amount for sum of normal event, parking motion, parking event, manual rec. and DSM event.
- Set 70:30 to allocate the 70% for normal mode and 30% for motion / event modes.
- For maximum rate of normal mode, set 90% of normal mode.

▶ Default : 70:30

▶ Option : 10:90, 20:80, 30:70, 40:60, 50:50, 60:40, 70:30, 80:20, 90:10

[Caution] All the data stored on the memory will be erased after setting change by formatting the memory.

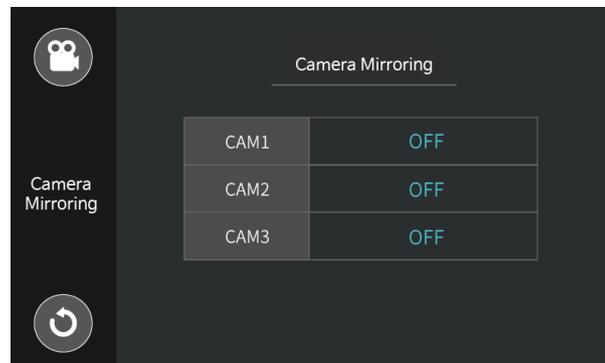
(4) MEMORY SELECTION



(The function with External Hard Drive is disabled and it will be activated in the future.)

- Select memory type to store the videos.
- Choose  to store the videos to Micro SD card.
- Choose  to store the videos to external hard drive.
- Please consult with MBIZONE to select the external hard drive guaranteed by MBIZONE.
- After changing the memory, the dash cam will start rebooting.
 - ▶ Default : Micro SD
 - ▶ Option : Micro SD and SSD/HDD

(5) CAMERA MIRROING



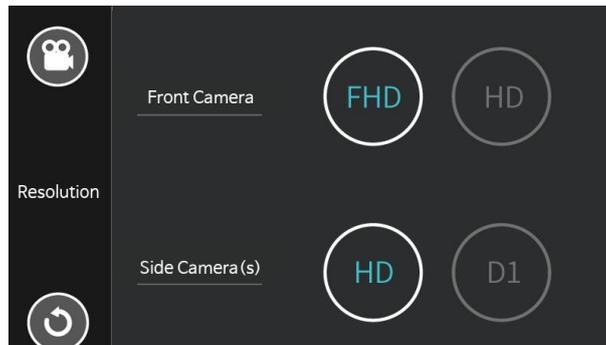
- Turn on or off to rotate the image horizontally. The same is applicable for both live view and recording.

▶ Default : OFF

▶ Option : ON or OFF

4. RECORDING QUALITY

(1) RESOLUTION



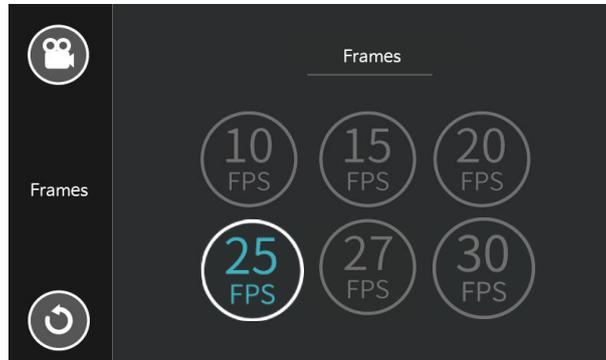
- Select the camera resolution for front camera and side(rear) camera(s).
- For front camera, choose the Full HD(1920 x 1080p) or HD(1280 x 720p).
- For side camera(s), choose the HD(1280 x 720p) or D1(720 x 480p).
- D1 camera(s) should be connected when set the D1 for side camera(s).
- Select the low resolution to extend recording time.

▶ Default : FHD(front), HD(side)

▶ Option : FHD and HD(front) and HD and D1(side)

[Caution] All the data stored on the memory will be erased after setting change by formatting the memory.

(2) FRAMES



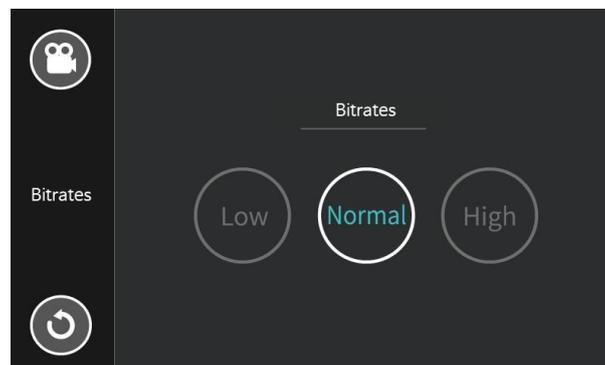
- Choose the FPS(Frame rate Per Second) for all cameras.

▶ Default : 25FPS

▶ Option : 10FPS, 15FPS, 20FPS, 25FPS, 27FPS and 30FPS

[Caution] All the data stored on the memory will be erased after setting change by formatting the memory.

(3) BITRATES



- Select the video recording bitrate for all cameras.

- The higher bitrate is recording the better video quality, but larger file size.

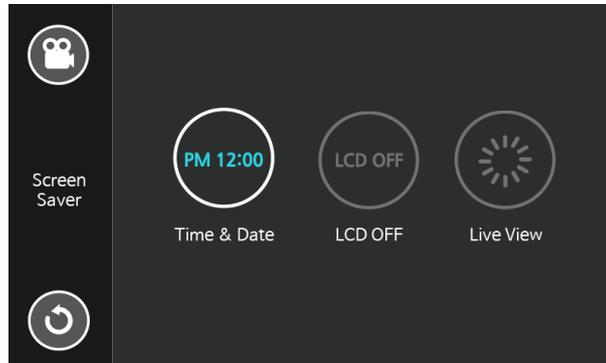
- The lower bitrate allows the recording time to extend.

▶ Default : Normal

▶ Option : Low, Normal and High

[Caution] All the data stored on the memory will be erased after setting change by formatting the memory.

5. SCREEN SAVER



- Select the screen display mode after 1 minute from live view screen.

- Set  to display current time and date on the LCD screen.

- Set  to turn off the LCD screen. The LCD screen will keep black screen.

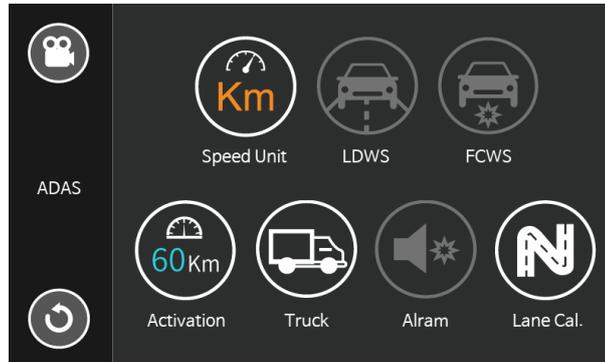
- Set  to keep live view on LCD screen. In this mode, the power consumption of the dash cam will increase.

▶ Default : Time&Date

▶ Option : Time&Date, LCD OFF and Live View

6. SAFE DRIVING DEVICE

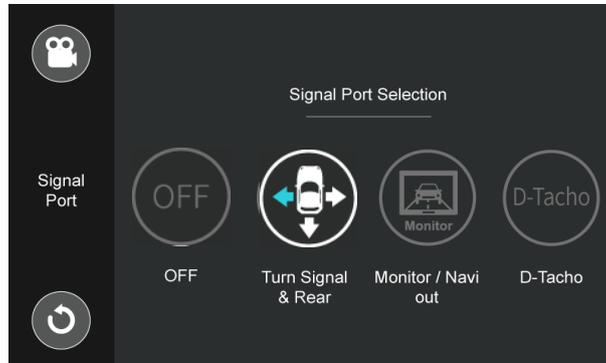
(1) ADAS



(The ADAS function is disabled and it will be activated in the future.)

- ADAS is safety camera alert system. When the front camera detects vehicle's lane departure or forward collision, the dash cam alerts by sound to the driver.
- Select speed unit for Km or Mile.
 - ▶ Default : Km ▶ Option : Km and Mile
- Activate or deactivate the LDWS(Lane departure warning system).
 - ▶ Default : Off ▶ Option : On and Off
- Activate or deactivate the FCWS(Forward collision waring system).
 - ▶ Default : Off ▶ Option : On and Off
- Select minimum speed to activate ADAS function.
 - ▶ Default : 60Km ▶ Option : 60Km, 70Km and 80Km
- Select vehicle type.
 - ▶ Default : Truck ▶ Option : Sedan, SUV and Truck
- Turn on or off the alarm sound.
 - ▶ Default : Off ▶ Option : On and Off
- Calibrate the vertical and horizontal line.

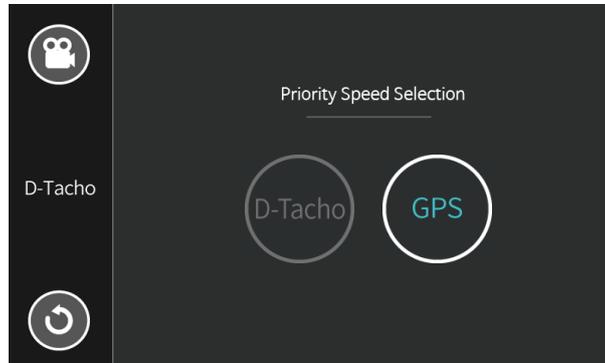
(2) SIGNAL PORT SELECTION



(The function with Mini D-Tacho is disabled and it will be activated in the future.)

- The signal port is used for trigger function or operating Mini D-Tacho.
 - Select  not to use the signal port.
 - Turn on  to use the trigger function.
 - Select external display device from monitor or navigation.
 - If selected navigation as external display device, the navigation screen will switch to camera view only when the trigger function is activated.
 - Select  to use Mini D-Tacho supplied by MBIZONE.
- . ▶ Default : Turn Signal & Rear on, Monitor out

(3) PRIORITY SPEED SELECTION



(The function with Mini D-Tacho is disabled and it will be activated in the future.)

- Select the vehicle speed from D-Tacho or GPS when connecting D-Tacho.

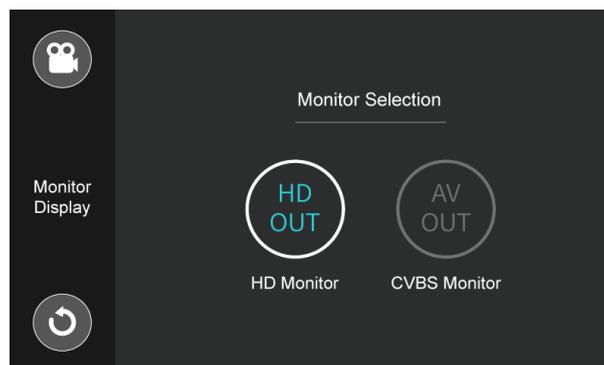
- Set  to use the speed from D-Tacho.

- Set  to use the speed by GPS antenna.

▶ Default : GPS

▶ Option : D-Tacho and GPS

(4) MONITOR SELECTION



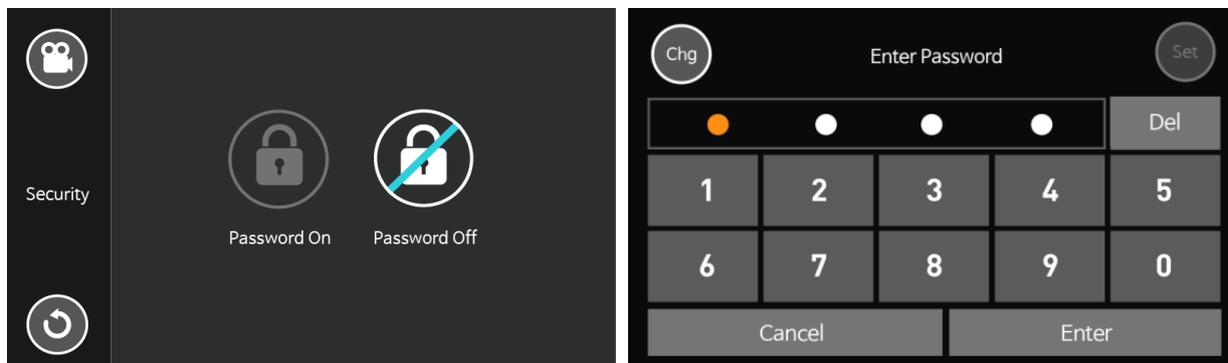
- Select the monitor type between HDMI monitor and CVBS monitor.

- Set  to display the live view to HDMI monitor connected to the dash cam.

- Set  to display the live view to CVBS monitor or even Navigation.

▶ Default : HD Monitor ▶ Option : HD Monitor and CVBS Monitor

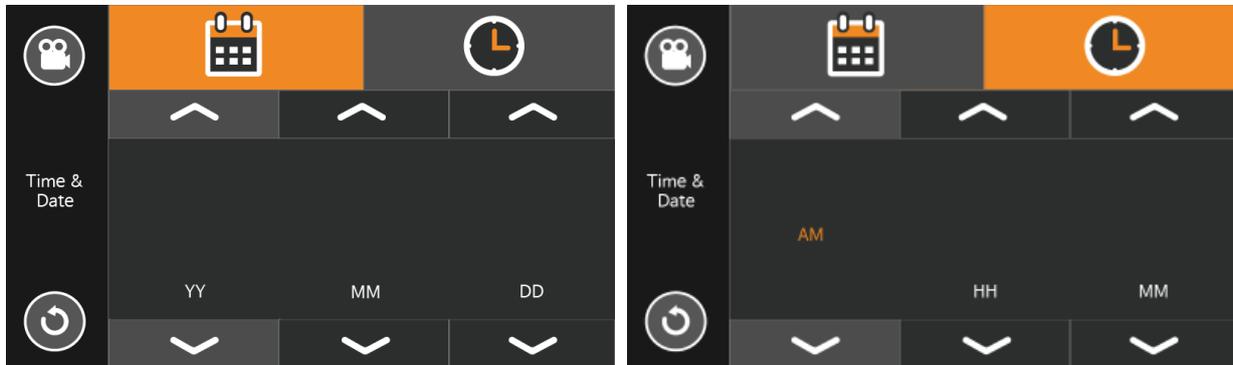
7. SECURITY



- Set  to use password for the security of this dash cam.
- If set the password, this dash cam permits to move the menu after authorizing by password.
- The password allows only 4 numbers for example "1111" or "1122".
 - ▶ Default : Password on
 - ▶ Option : Password on and off

8. SYSTEM

(1) TIME & DATE



- Set current time and date.
- The time and date will be synchronized when external GPS antenna is connected.

(2) LANGUAGE

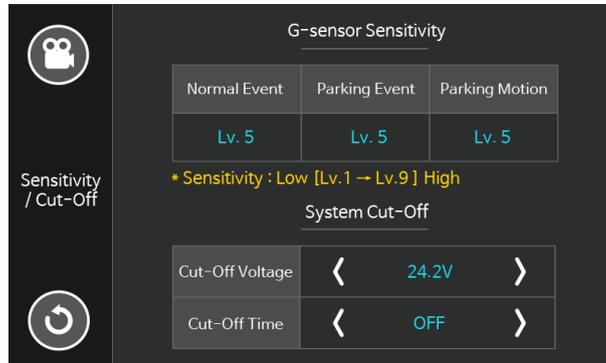


- Choose any language.
- After changing the language, the dash cam will start rebooting.

▶ Default : English

▶ Option : Korean, English and Japanese

(3) SENSITIVITY / CUT-OFF



- Set G-sensor(shock) sensitivity for normal and parking modes from level 1 to level 10.

▶ Default : Level 5

▶ Option : Level 1 ~ Level 10

- Set Motion sensitivity for parking modes from level 1 to level 10.

▶ Default : Level 5

▶ Option : Level 1 ~ Level 10

- Set cut-off voltage and time to prevent battery discharge during parking mode.

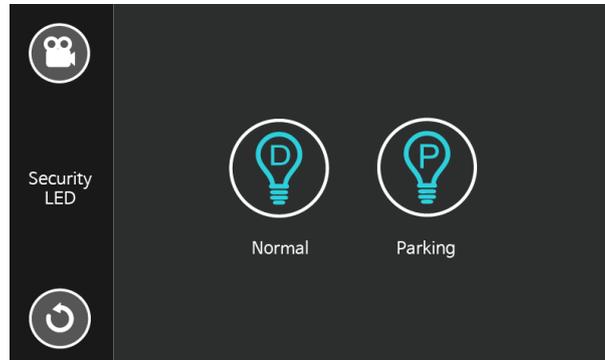
▶ Cut-off voltage default : 23.8V(11.9V)

▶ Option : Off, 23.0V(11.5V), 23.4V(11.7V), 23.8V(11.9V), 24.2V(12.1V), 24.6V(12.3V) and 25.0V(12.5V)

▶ Cut-off time default : Off

▶ Option : Off, 6H, 12H, 18H, 24H 48H and Immediately

(4) SECURITY LED



- Turn on or off the security LED on front of body and status LED on rear of body.

- Turn on or off the LEDs during normal mode.

▶ Default : On

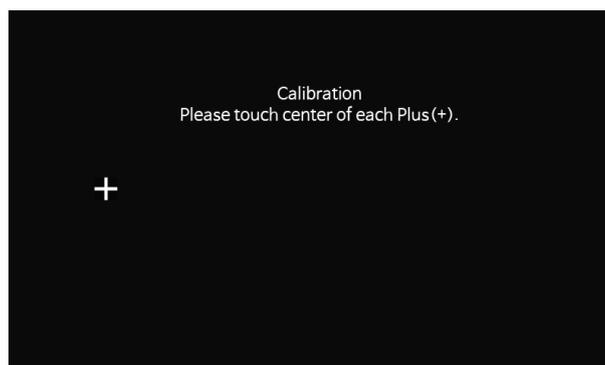
▶ Option : On and Off

- Turn on or off the LEDs during parking mode.

▶ Default : On

▶ Option : On and Off

(5) TOUCH CALIBRATION

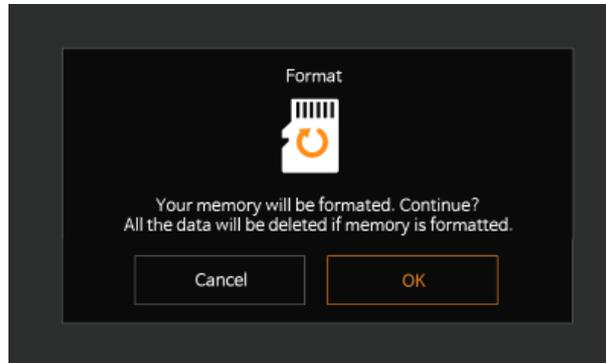


- Adjust calibration of touch screen according to the guide by touching the point of cross.

- The touching calibration is already set for any users.

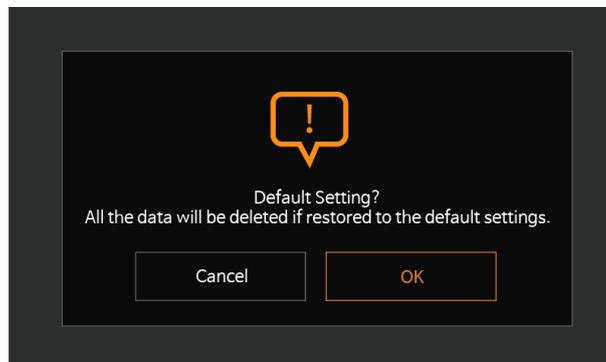
- Use the calibration only when wishing more sensitivity

(6) MEMORY FORMAT



- Memory formatting is to erase the videos recorded to the memory.
- The data or videos may have errors if turns off the dash cam or detaches the memory before completing formatting.
- Store any important data or videos separately before formatting.

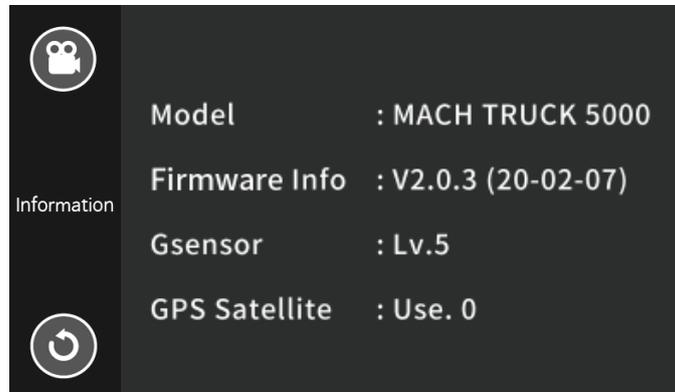
(7) SYSTEM INITIALIZATION



- System initialization is to return to the factory default settings.
- When proceeds system initialization, all settings excluding language and time are initialized.

[Caution] All the data stored on the memory will be erased after setting change by formatting the memory.

(8) SYSTEM INFORMATION

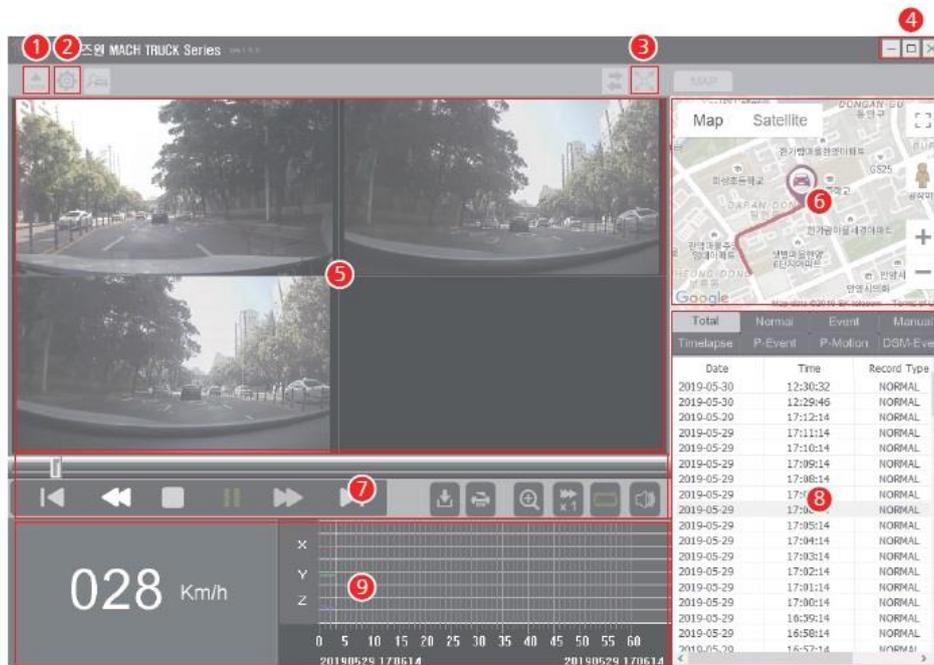


- The model name, firmware information, G-sensor level and GPS are displayed.

PC Viewer

This PC viewer is an application for viewing movies, GPS data and G-Sensor data recorded by Mach Truck 3800 and Mach Truck 5000. With this viewer, you can play your videos on the main screen while watching your vehicle's speed, position, G-Sensor Data on graphs and maps. You can also export the video file and picture captured. You can download this PC viewer from www.mbiz.co.kr.

(1) PC VIEWER



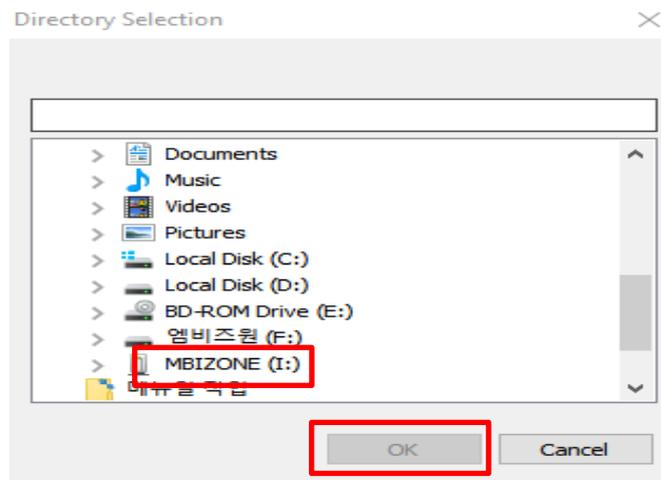
No.	Function	No.	Function
1	File open	6	Location and route
2	Set speed unit / Check Firmware version	7	Play bar, Export, Print, Fast play, Zoom, Volume
3	Full screen	8	File list
4	Hide window / Enlarge viewer / Close viewer	9	Speed, G-sensor data
5	Viewing screen		

(2) FILE OPEN

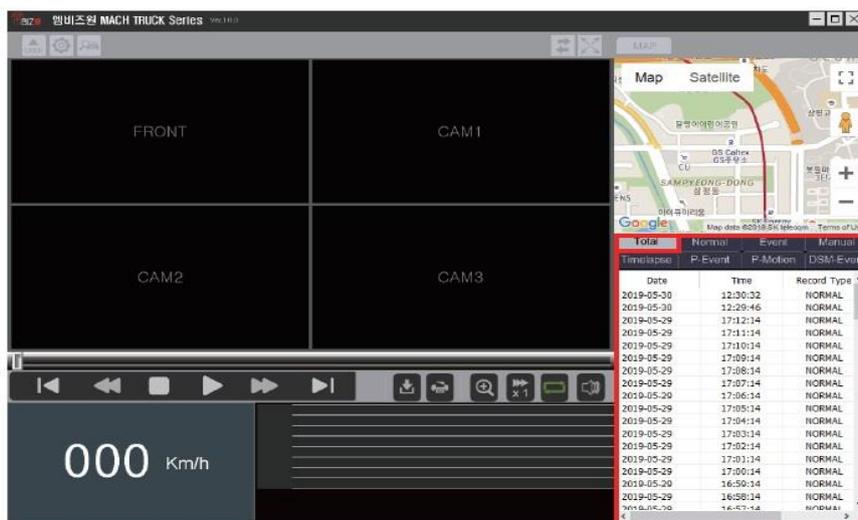
- Click the open icon.



- Select "MBIZONE" drive and click "OK" button.



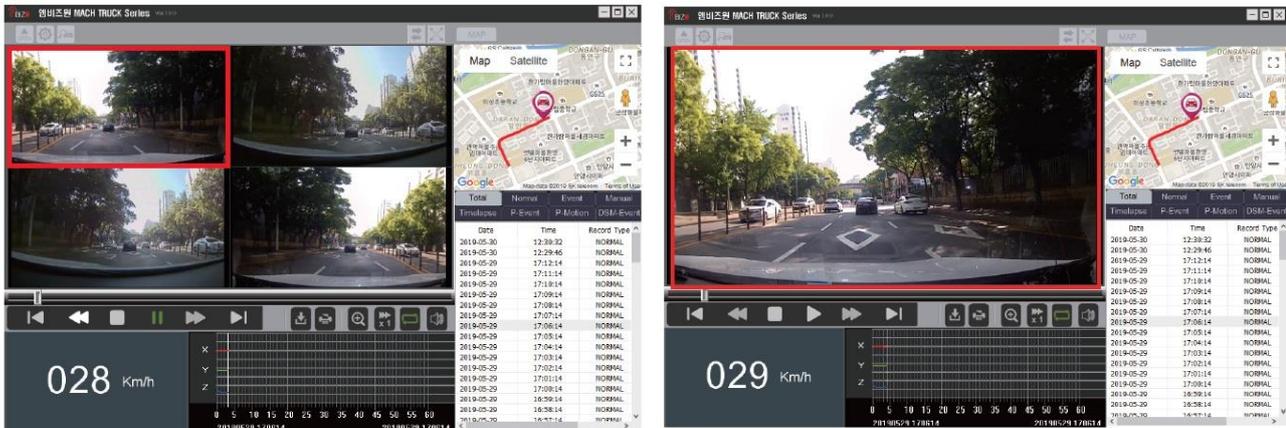
(3) PLAY VIDEO FILE



- Select any file from the list to load entire video play list in the memory card.

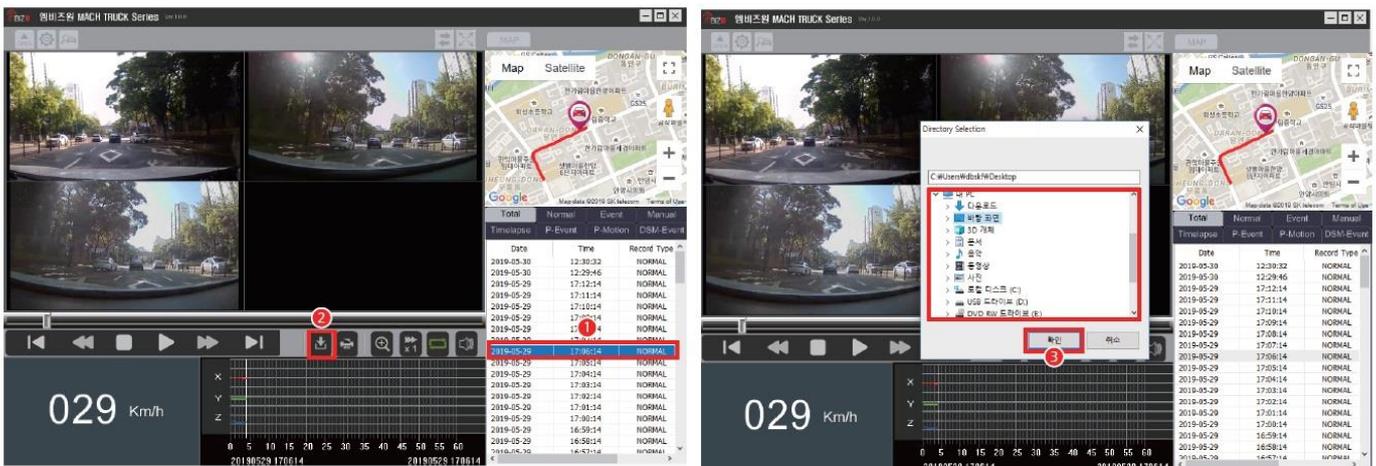
- Select appropriate folder(Normal, Event, Manual, P.Event, P.Motion, DSM Event) to see the play list for each recording mode.

(4) VIEW SCREEN



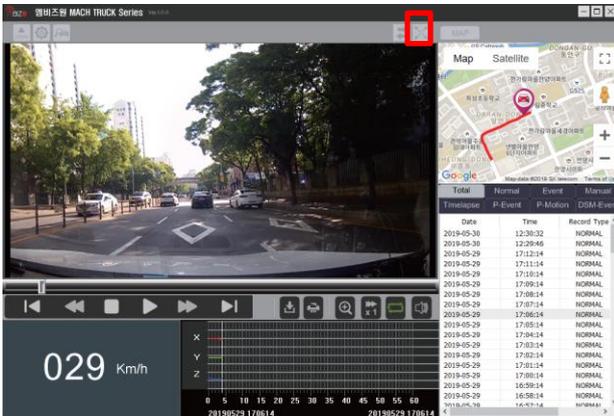
- Select a certain screen in 4-split screen to enlarge full screen.

(5) DOWNLOAD VIDEO



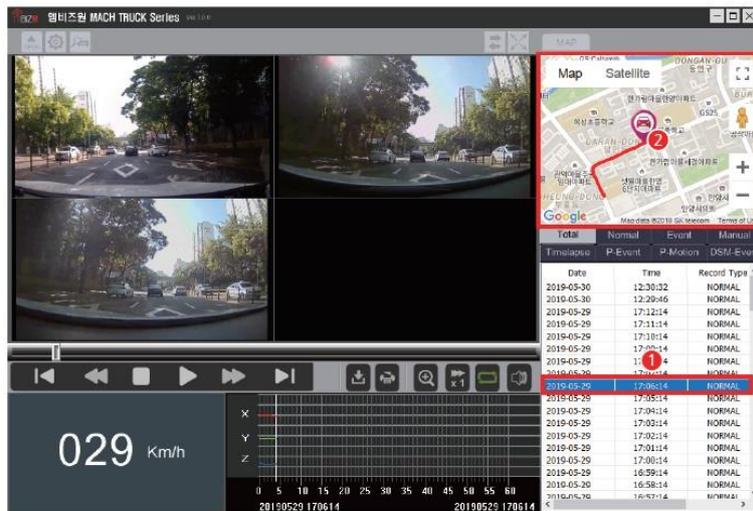
- ① Select the video file you want to download.
- ② Click the Download button.
- ③ Check the download location and click the OK button.
- ④ The video file is downloaded in the folder.

(6) FULL SCREEN



- Click the Full Screen button to see the video by maximum screen.

(7) MAP



- Select a certain video file.
- Check the location of the recorded video.
- It is enabled only if video is captured while connected to GPS antenna.

APPENDIX#1 [FIRMWARE UPDATE]

1. Power off the dash cam and separate memory from dash cam.
2. Insert the memory to PC.
3. Format the memory by Format program.
 - Download the format program from www.mbiz.co.kr and start format by 'SDFormatter-4.0k0'
4. Copy the firmware file 'MachTruck-5000.img' to the memory.
5. Insert the memory to the dash cam and turn on the power.
6. The dash cam will update firmware file automatically.
7. Once firmware update completed, the dash cam will start rebooting automatically.

- ▶ Format Program : MBIZONE homepage > Technical Support > Download > Firmware Download
- ▶ Latest Firmware : MBIZONE homepage > Technical Support > Download > Firmware Download

APPENDIX#2 [HDMI MONITOR OUTPUT]

- ▶ This function is to view the live images from the dash cam with live HDMI monitor output.
- ▶ It is designed for safe driving by monitoring the images of the blind spot (rear of the vehicle) in real time.
- ▶ If you use your own HDMI monitor on your hand, please check the cable specification as the dash cam requires Micro HDMI connector.
- ▶ Please refer to the follow steps to connect HDMI monitor.
 - ① Connect HDMI cable with HDMI monitor to HD OUT port.
 - ② Set HD OUT from Menu > Safe driving device > monitor selection and touch HD OUT button on LCD screen.
 - ③ Display live images of the dash cam with HDMI monitor while the LCD screen of dash cam is changed to black screen.



- ▶ Touch the center of LCD screen of dash cam to return to the display to LCD screen.



APPENDIX#3 [CVBS MONITOR / NAVIGATION OUTPUT]

- ▶ This function is to view the live images from the dash cam with live CVBS or Navigation monitor output.
- ▶ It is designed for safe driving by monitoring the images of the blind spot (rear of the vehicle) in real time.
- ▶ If you use your own CVBS monitor on your hand, please check the cable specification as the dash cam requires stereo jack type connector.
- ▶ Please refer to the follow steps to connect HDMI monitor.
 - ① Connect CVBS cable with CVBS monitor to TV OUT port.
 - ② Set AV OUT from Menu > Safe driving device > monitor selection and touch AV OUT button on LCD screen.
 - ③ Display live images of the dash cam with CVBS monitor while the LCD screen of dash cam is changed to black screen.



- ▶ Touch the center of LCD screen of dash cam to return to the display to LCD screen.



APPENDIX#4 [LEFT/RIGHT/REAR TRIGGER]

- ▶ This function is to view the live images of left, right or rear camera will automatically switch over the full screen when left or right turn signal is activated or reverse gear engaged.
- ▶ Check the settings of your dash cam before using the trigger function.
 - ① Activate Turn Signal & Rear : Menu > Safe Driving Device > Signal Port > Turn Signal & Rear
 - ② Select Monitor or Navi. : Menu > Safe Driving Device > Signal Port > Monitor or Navi.
 - ③ Select Monitor type between HDMI or CVBS : Menu > Safe Driving Device > HD out or AV out
- ▶ Check the colors of trigger wire and camera install location as below table.

■ CAMERA PORT



■ COLOR OF TRIGGER WIRE

CAM PORT	CAMERA LOCATION	WIRE COLOR	SIGNAL
CAM1	RIGHT OF VEHICLE	WHITE	WINK
CAM2	LEFT OF VEHICLE	YELLOW	WINK
CAM3	REAR OF VEHICLE	RED	ACC
-	-	BLACK	GND

- ▶ Connect the Signal cable(trigger wire) to the 'SIG' port on the dash cam.
- ▶ The colors of trigger wire are subject to changing without any prior notice.

APPENDIX#5 [SELECT MONITOR / NAVIGATION FOR TRIGGER FUNCTION]

- ▶ This function is to use your navigation with trigger function.
- ▶ If you select “Monitor” output for trigger function, the monitor displays live view and triggered view.
- ▶ If you select “Navi.” output for trigger function, the navigation displays map of navigation. But the navigation displays triggered view displays only when the trigger signal is input.

Display	Display in Normal	Display in Trigger signal input
Monitor	Live view of dash cam	Left, Right or Rear Cam output
Navigation	Map screen of Navigation	Left, Right or Rear Cam output

APPENDIX#6 [DRIVER STATE MONITORING SYSTEM]

- ▶ This function is to connect the dash cam with separate DSM device. If the DSM detects driver's drowsiness and negligence of looking ahead, the connected DSM will give the event signal to the dash cam. Then, the dash cam will record the situation in DSM event folder.
- ▶ The DSM device will be provided from MBIZONE. If you want other DSM device, please ask us in advance.

APPENDIX#7 [RECORDING FILE FOLD]

- ▶ In order to play the video, please connect Micro SD Card to your PC and find “MBIZONE” directory.
- ▶ If you select “MBIZONE” directory, you will see the following folders.

1. TOP FOLDERS

Name	Date modified	Type	Size
 DSM	2/20/2020 7:27 PM	File folder	
 EVENT	2/20/2020 7:27 PM	File folder	
 MANUAL	2/20/2020 7:27 PM	File folder	
 NORMAL	2/20/2020 7:27 PM	File folder	
 PARK_EVENT	2/20/2020 7:27 PM	File folder	
 PARK_MOTION	2/20/2020 7:27 PM	File folder	

- DSM Folder : Stored DSM event video files.
- EVENT Folder : Stored Normal Event video files.
- MANUAL Folder : Stored Manual REC. video files.
- NORMAL Folder : Stored Normal recording video files.
- PARK_EVENT Folder : Stored parking event video files.
- PARK_MOTION Folder : Stored parking motion video files.
- version : Check the model name and firmware version.

2. SUB FOLDER

Name	Date modified	Type	Size
 .GPS	2/20/2020 7:27 PM	File folder	
 .GSENSOR	2/20/2020 7:27 PM	File folder	
 CAM1	2/20/2020 7:27 PM	File folder	
 CAM2	2/20/2020 7:27 PM	File folder	
 CAM3	2/20/2020 7:27 PM	File folder	
 FRONT	2/20/2020 7:27 PM	File folder	

- GPS Folder : Stored GPS information in text file.
- GSENSOR Folder : Stored G-SENSOR information in text file.
- CAM1 Folder : Stored video files from CAM1 port.
- CAM2 Folder : Stored video files from CAM2 port.
- CAM3 Folder : Stored video files from CAM3 port.
- FRONT : Stored videos from front camera.

APPENDIX#8 [RECORDING TIME]

- ▶ The micro SD card 64GB is in the standard package.
- ▶ Please select memory capacity and settings for the purpose of use.

Channel	Memory	Bitrate	Recording Time
4 Channel FHD+HD+HD+HD	32GB	HIGH	1HR 48MIN
		NORMAL	2HR 3MIN
		LOW	4HR 16MIN
	64GB	HIGH	3HR 38MIN
		NORMAL	5HR 7MIN
		LOW	8HR 34MIN
	128GB	HIGH	7HR 17MIN
		NORMAL	10HR 16MIN
		LOW	17HR 9MIN
	256GB	HIGH	14HR 37MIN
		NORMAL	20HR 34MIN
		LOW	34HR 21MIN

- ▶ In order to increase the recording time, please refer to the below settings.
 - 1) Higher capacity of memory : 32GB → 64GB → 128GB → 256GB
 - 2) Lower bitrate : High → Normal → Low
 - 3) Lower camera definition : Front Cam FHD → HD / Side Cam HD → D1
 - 4) Higher normal recording allocation rate : 70:30 → 80:20 → 90:10
- ▶ Condition for Maximum of the normal recording time for 4 Channel :
 - Memory : 256GB / Bitrate : Low / Camera Resolution : Front HD, Side D1 / Memory Allocation : 90:10
 - Total Recording Time : About 53 hours (Normal recording : About 48 hours, Event Recording : About 5 hours)
- ▶ The recording time will be subject to changing without any prior notice for product improvement.

APPENDIX#9 [SPECIFICATION]

■ MACH TRUCK 5000 4CH(MT-5000 4CH)

Item	Specifications
Number of Channel	4 Channels
Image Sensor	Sony Starvis, 2.0Mega Pixels(Side 1.3Mega Pixels)
Storage	64GB Micro SD Card (Max. 512GB)
Camera Angle View	Front : 137°(H:116°,V:61°) / External : 126°(H:106°,V:66.5°)
Video Format	MP4
LCD Screen	4.0" IPS touch LCD
Recording Speed	25FPS (Selectable from 10FPS, 15FPS, 20FPS, 25FPS, 27FPS, 30FPS)
Image Resolution	Front : Full HD 1920 x 1080p (or HD 1280 x 720p)
	External : HD 1280 x 720p (or D1 640 x 480p)
Parking Mode	Support with Hard wiring power cable
Battery Protection	By Time cut-off and Low voltage cut-off
G-Sensor	3 axis adjustable G-sensor
GPS Receiver	Highly sensitive GPS / Optional
Recording Options	Normal(1min.) / Normal Event(20sec.) Parking Motion(20sec.) / Parking Event(20sec.) Manual REC(20sec.) / DSM Event(20sec.)
Monitor Output	Video output via HDMI / CVBS monitor
Trigger	Side(Left/Right) camera signal / Rear camera signal
LED Indicator	Security LED(Blue) / Status LED(Blue/Red)
Driver State Monitoring	Connectable with Driver State Monitoring System
Digital Tachograph Monitoring	Connectable with Mini D-Tacho for brakes, RPM, speed and turn signal
Temper Proof	Lock the Micro SD Card cover by special key
Operational Temp	-20°C ~ 70°C
Voltage Range	DC 12V / 24V (Max. 50V)
Dimension / Weight	115 x 65 x 25mm / 190g
Factory Warranty	1 Year