

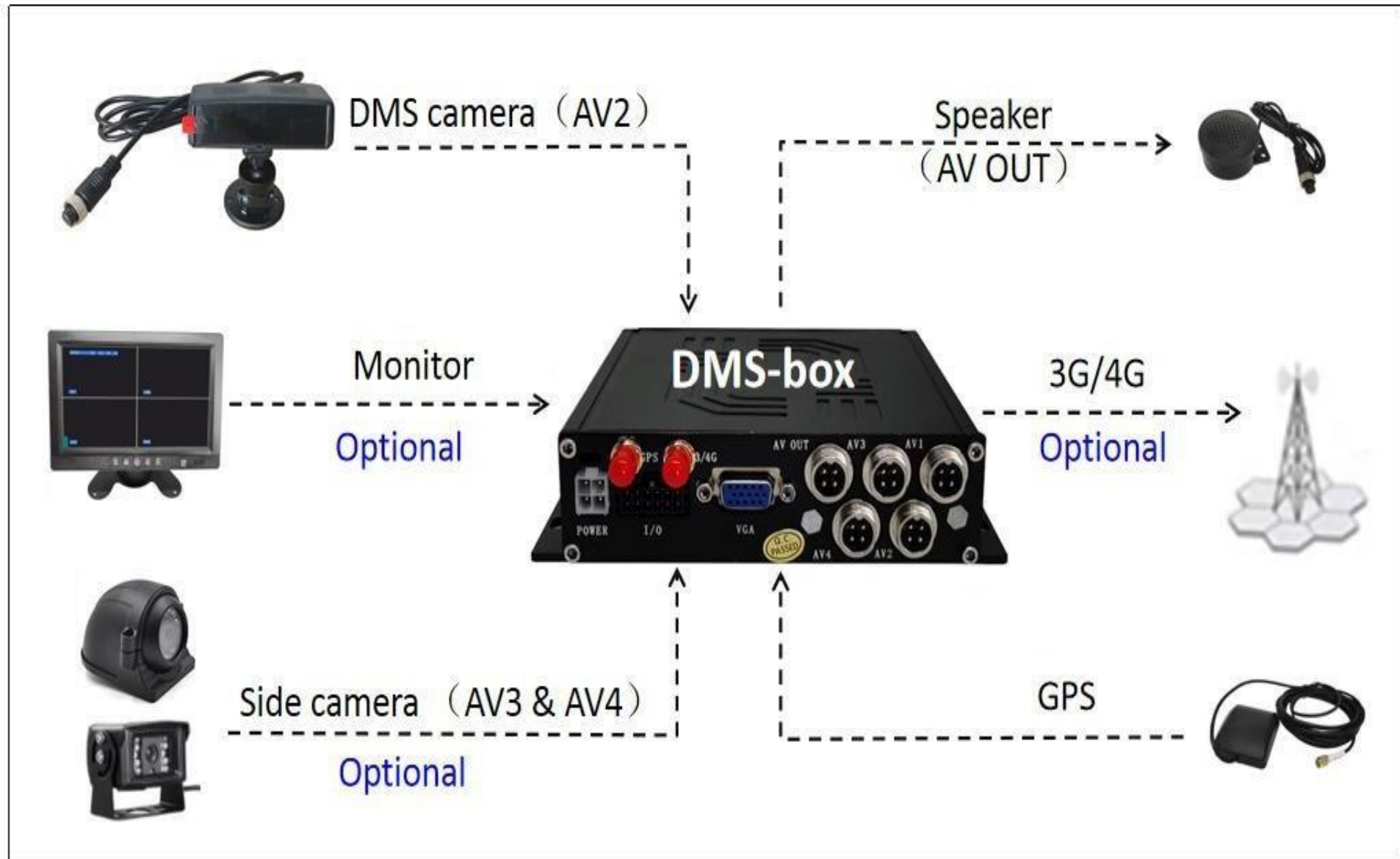
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Keep away from fatigue driving, Protect your life and properties

**Driver fatigue alarm system
with 4G MDVR
DSM-03/04**



Comp & Basics



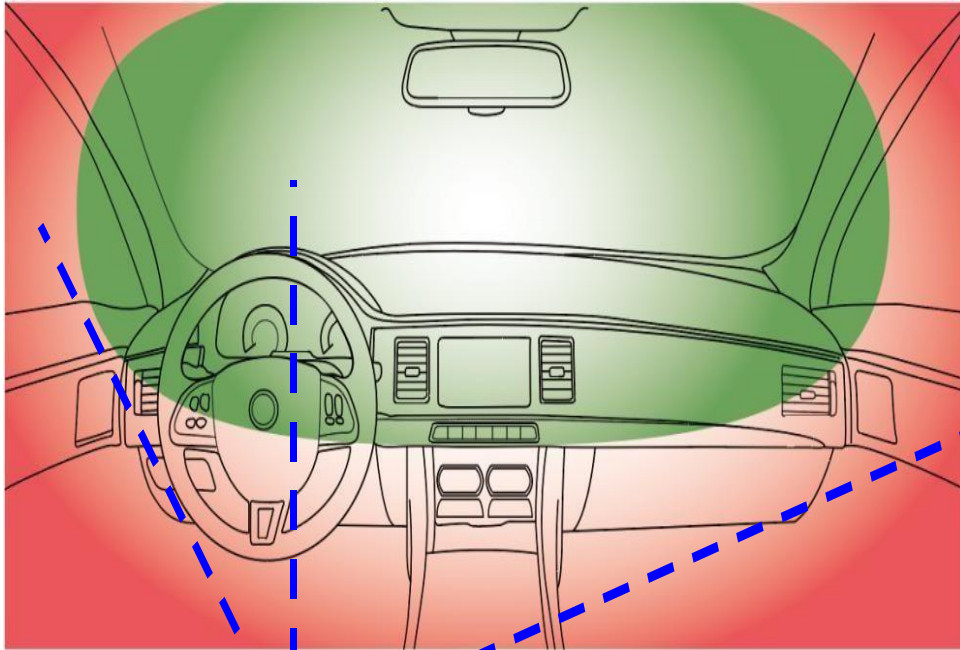
Key Features

1. fatigue, yawn, calling, smoking The eyelid closure, the mouth opening, smart phone and **LIGHTED cigarette** are detected during driving and the device will be triggered.
2. Distraction(e.g.: turning head left/right or up/down off the road, texting, eating/drinking) The alarm will be made when the gaze is beyond the safe zone shown in the following figures.

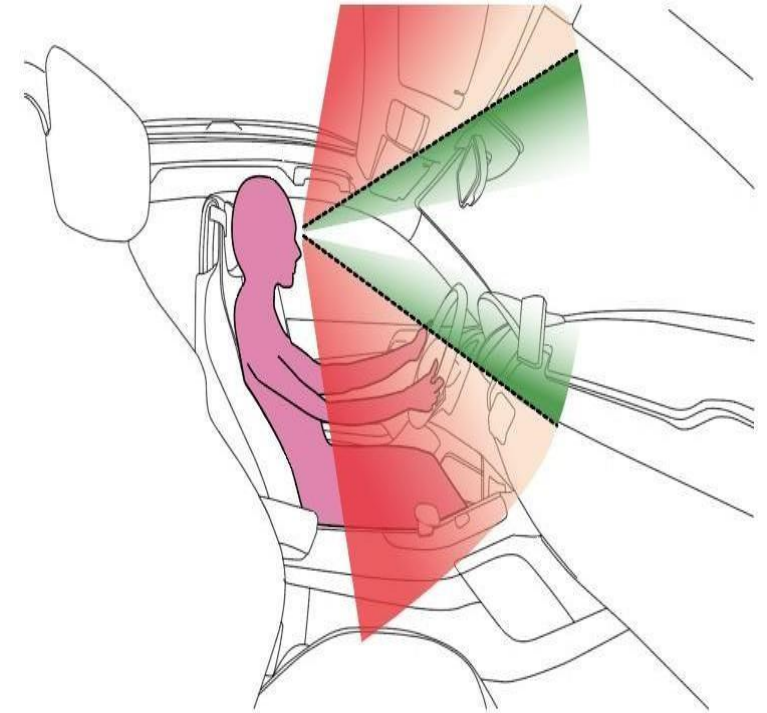


Monitor zone

Front View (gaze zone)

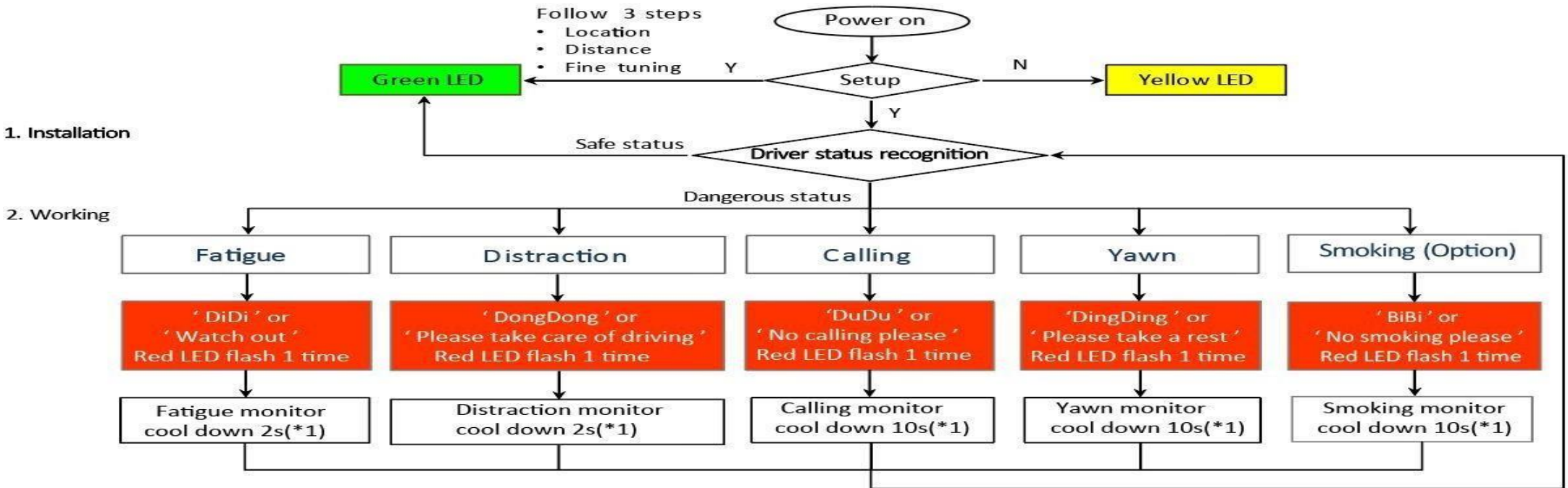


Side View (gaze zone)



1. Gaze zone: Green - Safe, Red - Unsafe.
2. If the gaze is at relatively stable off the green zone (e.g. reading smart phone when over 2s), the device will triggered.

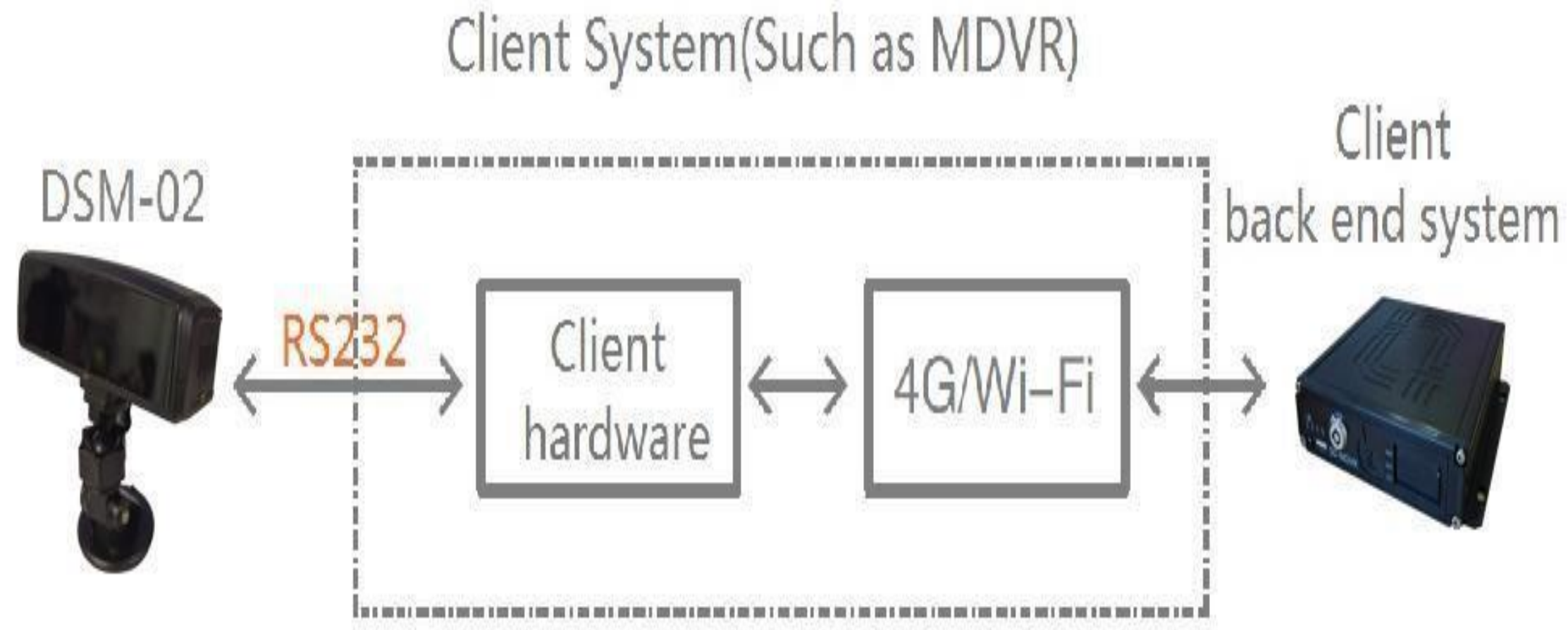
Work Flow



- (*1) Cool down means that the device doesn't alert about the same dangerous status. More description was shown in page 14.
- RS232 and GPIO trigger signal output (not shown) is always with alertin

Work with MDVR system

It is just a step away for the connection, and the following diagram shows the generic flowchart of DSM-02.



Spec & Standards of DSM camera

Model No.	DSM-02	
Face type	All, + Glasses	
Detection Scope	Face, Eye, Mouse, Phone, Cigarette & Head-pose	
Working Condition	Day and Night	
Working Distance	EFL 6mm lens: 50~85cm (20~33 inch)	
	EFL 8mm lens: 70~105cm (28~41 inch)	
Recognition Rate	Fatigue	96.5% @ naked eyes / 95.2%@glasses
	Distraction	96.4% @ all
	Calling(*)	91.6% @ all
	Yawning(*)	92.3% @ all
	Smoking(*)	91.2% @ all
Alarm Type	Speak voice, Buzz	
Input Power	DC 8~24V, 1A	
Status Output Interface	UART(TTL& RS232), GPIO	
Working Temperature	-20°C ~ +70°C	
Demension & Weight	93×50×37 mm & 623g	

Notes:

1. (*) This is the optional, based on customer requirements.
2. The device is designed by Leisure Auto Safety Technology Ltd., made in China.

Spec & Standards of MDVR

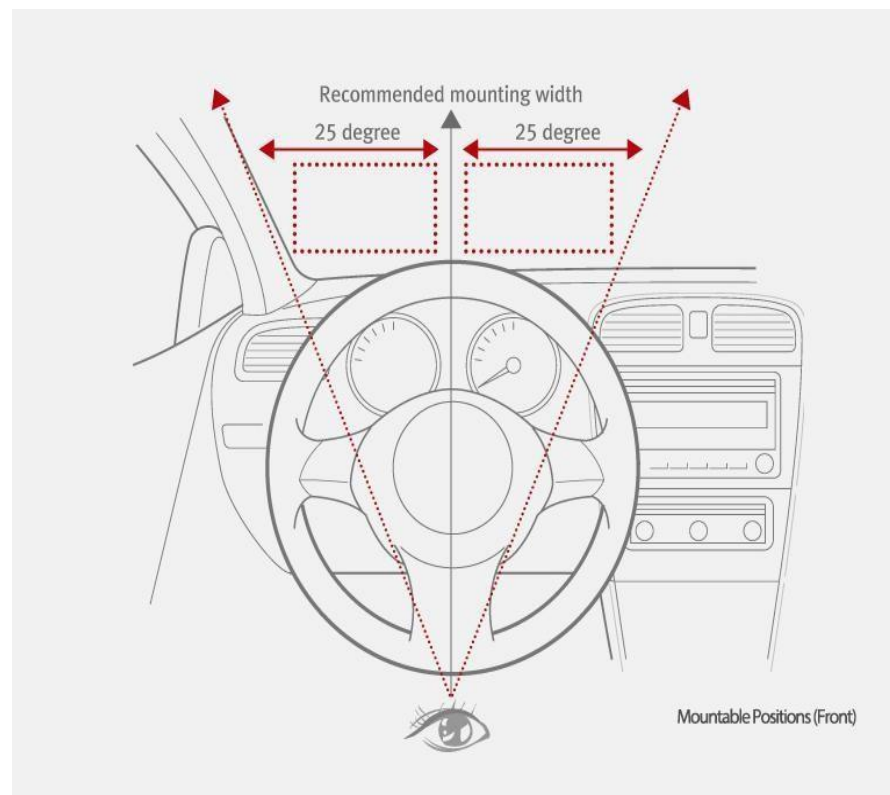
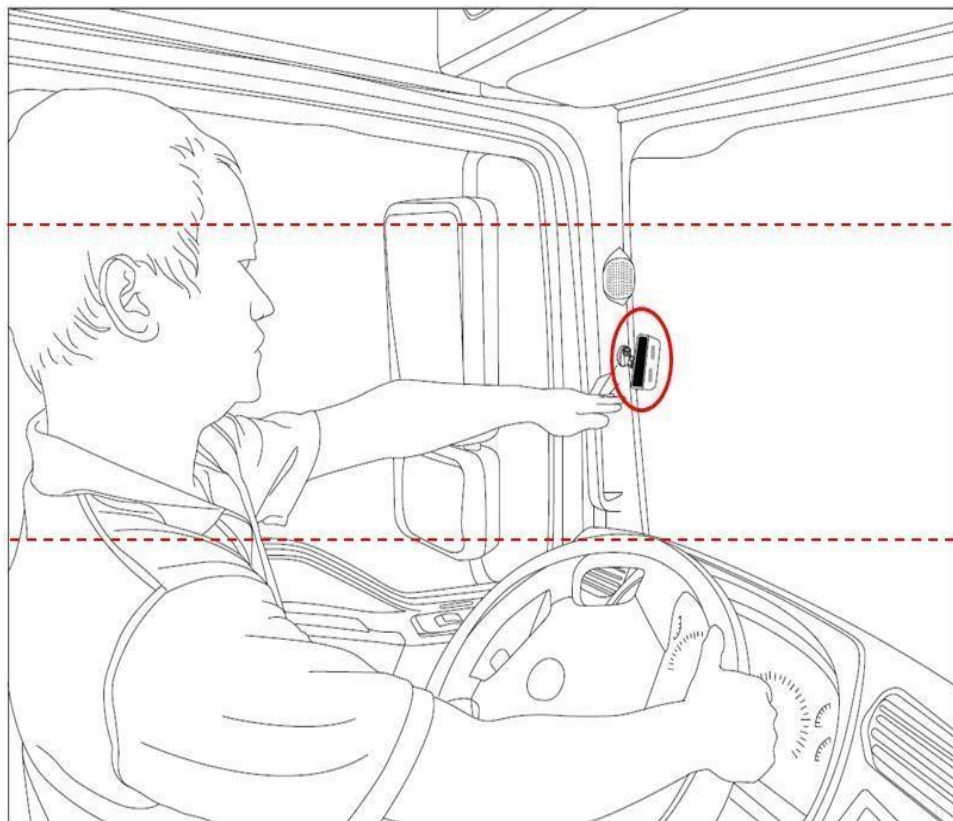
DMS-box integrated MDVR		
Function	DMS + MDVR + ADAS (optional) + 4G (optional)	
DMS - AV2 channel		
Work condition	Day and Night	
Face type	All, +Glasses	
Recognition rate	Fatigue (Bink)	93.6%
	Yawning (Open mouth)	95.1%
	Distraction (Turn head or absence)	95.8%
	Calling (Holding phone & speaking)	92.3%
	Smoking (Holding lighted cigarette)	92.7%
Output	Speak voice, text display in monitor	
	Image and video recording (Pre- 0~60s, Post-0~120s)	
MDVR - AV1, AV3, AV4 channel		
Input	3 channel AHD 1080p video + audio input	
Output	1 channel CVBS + 1 channel VGA + 1 chanel speaker	
Video	H.264/H.265, 720p/D1/HD1/CIF	
Storage	TF card, USB flash drive, max 256GB	
Positioning	Bulit-in locating module, GPS/GLONASS/GALILEO/BDS	
Wireless (Optional)	3G/4G , Wi-Fi(802.11a/b/2.4G)	
I/O port	USB 2.0, GPIO, IR, RS232(optional)	
Power in	8~36V, 2A	
General specification		
Operating Environment	-30℃ - +70℃, 8%~90%(No Condense)	
Language	English, Chinese	
Dimension (L×W×H)	155mm x 148mm x 34.5mm	
Weight (DMS-box)	480g	

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Installation

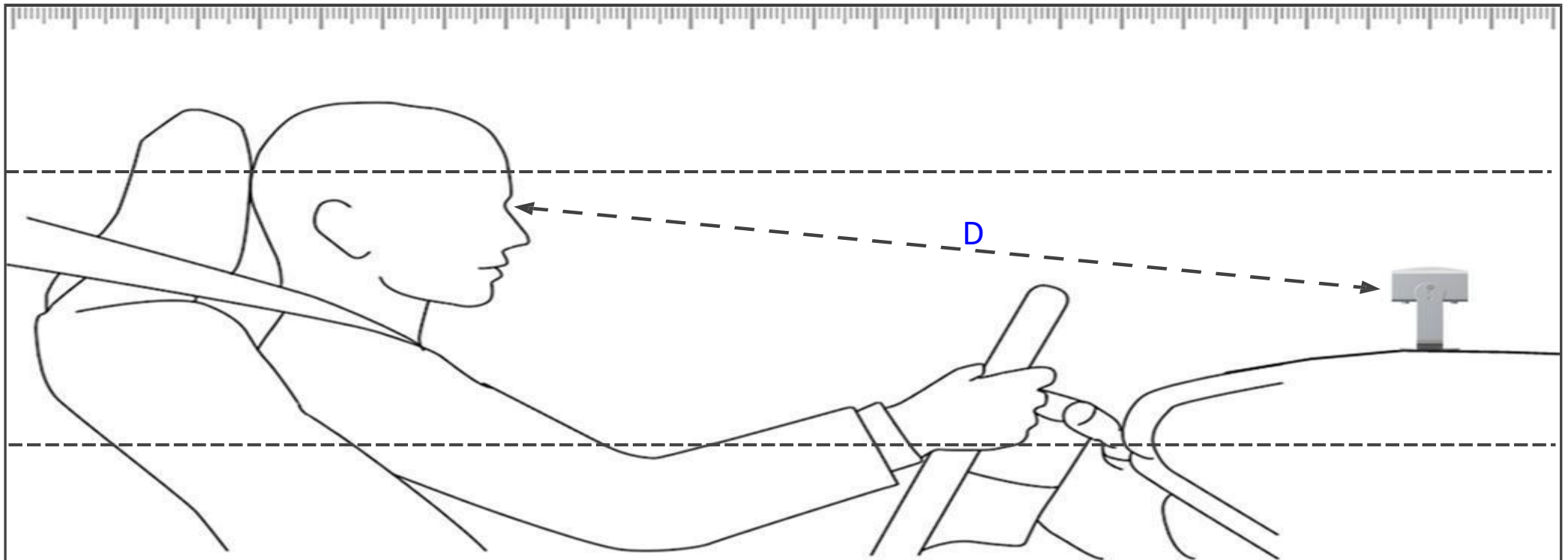
Step1: select the location



Note: DMS camera is installed on A-pillar vertically

Step 2: define the distance

1. The distance(D) between eye and device **MUST be within range** as the below: EFL 6mm lens: 50~85cm, 70cm is recommended (for truck & car)
EFL 8mm lens: 70~105cm, 90cm is recommended (for bus)
2. Make sure to position the device **between the forehead and armpit**, otherwise the performance of device will be significantly reduced.
If the dashboard of your vehicle is too low, you need to choose other higher bracket.



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Driver with Glasses? Sunglasses?

No problem!



DSM-02 adopt special filters to remove irregular sunlight reflection, catch the pupil status only.

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Drive at night, bad weather?

No problem

DSM-02 adopt Infra-Red LEDs ensure the system work even while drive at night or in other low light situations, this is a very important feature because most fatigue

driving accidents occur late at night or bad weather.



Application



Special Notes

1. APP calibration is necessary for getting the highest recognition rate of the device.
2. Some specially coated corrective lens (inc. much thicker ones) and/or sunglasses can reduce the recognition rate.
3. When hair blots out the eye, the device may make the alarming as fatigue function.
4. When the strong sunlight is straight on the device (from side windows) or on driver's face (from front windshield), the device may reduce the recognition rate.
5. Make sure that the power is not turned off during the firmware updating, or it may cause the boot fail. If the update progress failed, please retry to update it once again.
6. Not to disassemble, repair or modify the product, otherwise it may cause fire, electric shock, injury and other accidents. Please contact the after-sales service center for product repairing.
7. DSM-03/04's alarms will be saved in the SD card, or upload to the monitor center real time.
8. DSM-03's MDVR without 4G, DSM-04's MDVR with 4G module.