



深圳市龙桥科技发展有限公司

SHENZHEN DRAGON BRIDGE TECHNOLOGY LTD COMPANY

*Application :Rental cars, insurance cars, trucks, buses*

*Wireless Fleet management Solution Innovator*

*GSM/GPRS/GPS Tracker*

**Intelligent Video Terminal**

**V5-N**



**V1.0**

# Content

1. Product introduction .....	3
2. Features .....	3
3. Function Description .....	4
3.1 Vehicle monitoring .....	4
3.2 Video .....	4
3.3Storage .....	4
3.4 Call the police .....	4
3.5 Voice .....	5
3.6 Remote maintenance .....	5
3.7 Intercom .....	5
3.8 Intelligent AI .....	5
3.9 Advanced driver assistance features (ADAS) .....	5
3.10 Driver Status Monitoring Function (DSM) .....	6
4. Technical parameter .....	7
5. Product Image .....	9
5.1Product specification pictures .....	9
5.2 Hidden POWER key/indicator .....	10
5.3TF card/SIM card/USB location .....	11
5.4 Product physical map .....	12
5.5 Product wiring diagram .....	13
5.5.1. Host wiring harness connector and definition .....	13
5.5.2. Installation Harness Definition Instructions .....	13
6. Product configuration list .....	13

# 1. Product introduction

The intelligent driving recorder V5N is a 4G driving recorder with integrated high-definition video recording function. Road Transport Vehicle Satellite Positioning System Terminal Communication Protocol and Data Format", JT /T1076-2016 "Technical Requirements for Road Transport Vehicle Satellite Positioning System Vehicle Video Terminal", JT /T1078-2016 "Road Transport Vehicle Satellite Positioning System Vehicle Video Terminal Communication Protocol" and data format" technical standard design.

Using Linux system, it supports up to 4 in-car and out-of-car cameras, and real-time local audio and video recording. It supports dual TF card audio and video storage, 4G network real-time video transmission and Beidou/GPS positioning, and can have built-in active safety algorithms to realize safe driving warning function. It is widely used in the video surveillance industry of online car-hailing, taxis, city distribution logistics vehicles, and official vehicles.

# 2. Features

- Built-in positioning module and antenna, support GPS/Beidou dual-mode positioning;
- Built-in communication module and antenna, support 4G full Netcom communication, support SMS command function;
- Ultra-clear real-time video recording, integrated design of the host and 1-channel 1080P high-definition camera, and can be connected to 3-channel 720P high-definition camera;
- Maximum support 2TB\*2 TF card, which can store real-time video;
- Support ADAS (advanced driver assistance system), DSM (driver status monitoring) functions;
- Support face recognition, non-mask recognition and people counting functions;
- Have 1 USB interface, support driving record export function;
- Mobile phone WeChat function settings, video playback, download, real-time playback, etc., support historical track query.

## **3. Function Description**

### **3.1 Vehicle monitoring**

Support JT/T808 communication protocol/JT/T905 communication protocol, monitoring and positioning function, blind spot supplementary reporting function, trajectory storage function, base station assisted positioning, license plate, return interval, and overspeed threshold query and setting functions.

### **3.2 Video**

- 1) Using JT/T1078 video protocol, platform real-time video playback, remote historical video playback and download, flameout delay recording function;
- 2) Supports up to 4 channels of video capture, which can clearly capture the picture in front of the vehicle, the front and rear rows of the car, and the driver's status picture;
- 3) Ultra-clear real-time video recording, support AHD1080P, 720P high-definition camera.

### **3.3Storage**

- 1) It adopts dual TF card to store video circularly, special encrypted file format, and the video data superimposes information such as vehicle brand, location, longitude and latitude, vehicle speed, time and channel number;
- 2) Support remote retrieval and upload of video information through the platform;
- 3) Save audio and video data in a first-in, first-out manner.

### **3.4 Call the police**

Support overspeed alarm, timeout alarm, electronic fence, emergency alarm, camera failure alarm, storage medium failure alarm detection upload platform.

### 3.5 Voice

- 1) TTS text and voice broadcast function;
- 2) Support overspeed voice prompts, TF card insertion and removal voice prompts, active security alarms and other voice prompts.

### 3.6 Remote maintenance

- 1) Support OTA remote upgrade function;
- 2) Support remote debugging command setting and query through WeChat Assistant.

### 3.7 Intercom

With JT/T1078 two-way intercom function, G711A audio format.

### 3.8 Intelligent AI

- 1) Support face recognition function: face recognition check-in can be realized;
- 2) People counting: The number of people in the car is calculated and reported through the algorithm of the in-vehicle camera;
- 3) Recognition function of not wearing a mask: The terminal can detect whether the driver cooperates with a mask, if not wearing a mask, it will generate a voice prompt and report to the platform to alarm.

### 3.9 Advanced driver assistance features (ADAS)

Alert Type	Illustrate	Default enable condition	Remark
<b>Forward Collision Warning (FCW)</b>	Real-time monitoring of the distance between the vehicles ahead can warn the driver as early as 2.7 seconds before a collision is expected	Speed $\geq$ 30km/h	Optional

	to prevent rear-end collisions. Voice prompt: Collision hazard		
<b>Lane Departure Warning (LDW)</b>	Monitor the current lane markings and vehicle trajectory, and issue an alarm when it is about to deviate from the lane unintentionally, reminding the driver to keep driving in a safe lane. Voice prompt: Lane departure	Speed $\geq$ 30km/h	Optional
<b>Distance Monitoring and Warning (HMW)</b>	Displays the distance (in seconds) of the vehicle ahead, and warns when approaching a preset dangerous distance. Voice prompt: Be careful of the car ahead	Speed $\geq$ 30km/h	Optional

Note: 1) Can be used in most scenarios such as day, night, tunnel, rainy days (except extreme weather);

2) Support ADAS occlusion failure prompt.

### 3.10 Driver Status Monitoring Function (DSM)

Alert Type	illustrate	Default enable	Remark
<b>Fatigue driving warning</b>	Recognition of closed eyes and yawning states (classified as mild and severe)	Speed $\geq$ 30km/h	Optional
<b>distraction alert</b>	Voice prompt: please pay attention to danger	Speed $\geq$ 30km/h	Optional
<b>call alert</b>	Recognize persistent head-to-side and low/head-up	Speed $\geq$ 30km/h	Optional

<b>Smoking warning</b>	Voice prompt: Please pay attention to road conditions	Speed $\geq$ 30km/h	Optional
<b>Driver Change Tips</b>	Recognize phone call gestures	Speed $\geq$ 30km/h	Optional
<b>Invalidation prompt</b>	Voice prompt: please do not call	Speed $\geq$ 30km/h	Optional
	Recognize smoking posture	Speed $\geq$ 30km/h	Optional
<b>face recognition</b>	Voice prompt: please do not smoke		Optional

## 4. Technical parameter

Parameter classification	parameter item	Score indicator	Remark
Basic parameters	Exterior	The front camera and the host are integrated, and the others are independent cameras	The standard version is a 3-channel video version; The extended version is a 4-way video version.
	product type	4G DVR Car Video Terminal	
	network standard	4G full Netcom	
	Memory	256MB(Flash)+1GB(DDR)	
	front camera	1080P, MIPI Camera, 16:9 required, H:112°V:55°	
	in-car camera	AHD 720P, with light sensor/infrared night vision,	
	In-car DSM	AHD Camera, single pass, infrared	

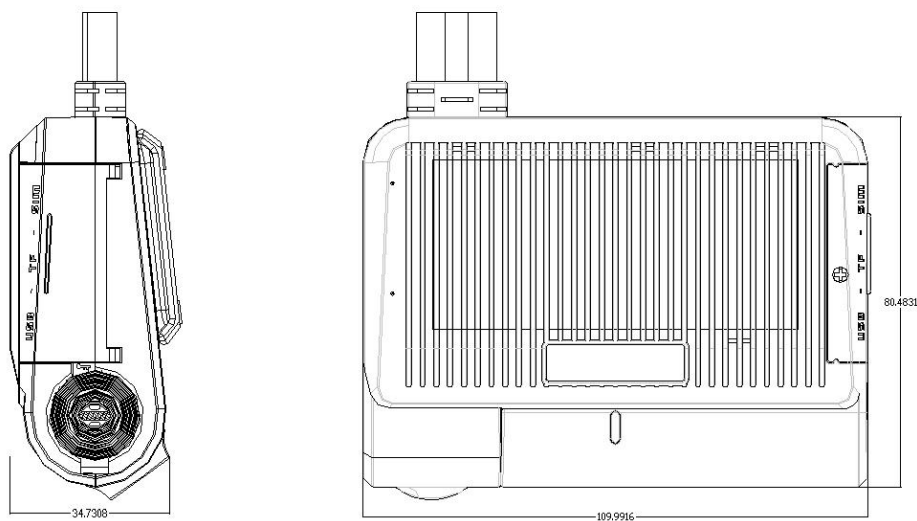
	camera	night vision, 16:9 required, H=60° V=42°	
<b>Hardware function</b>	GPS	Support: GPS+Beidou	
	WiFi	802.11b/g/n	
	trumpet	8 ohms 1.5 watts, 1 channel, with sound cavity	
	MIC	Built-in dual silicon microphone design	
	Accelerometer	3-axis accelerometer	
<b>Interface</b>	micro 5Pin USB	USB×1, data interface	
	BMW seat	8Pin power supply (5-way IO input, SOS*2)	
	5557-4	RS232×1	The standard version is 1 serial port; 2 serial ports can be customized.
	SIM card holder	Micro SIM	
	TF card holder	TF×2 (Card 1 and Card 2 support circular storage)	
<b>Power supply</b>	Power supply	Original car battery, 12V/24V power supply	
<b>Button indicator light</b>	Reset button	Multiplexing the Power button (hidden), long press the Power button for 8 seconds to reset	
	indicator light	2-color indicator	
	Alarm key function	Standard emergency alarm connector	
<b>Antenna</b>	GPS Antenna	Built-in ceramic antenna	
	4G antenna	FPC+IPEX transposon	
	WIFI antenna	FPC+IPEX transposon	
	4G~2TB, patented DXR streaming storage format		



<b>TF memory card</b>	Operating temperature	-20°C~70°C	
	storage temperature	-40°C~85°C	
	Static Protection	6KV contact, 10KV air	
	Vibration test	car vibration	
	Current consumption	When the working voltage is 12V, the current is from 500mA to 1A (depending on whether the algorithm is turned on, etc.) In flameout state: $\leq 3\text{mA}$	
	Other quality requirements	According to JT/T794 standard (including hard test, soft test, reliability, quality, etc.)	

## 5. Product Image

### 5.1 Product specification pictures



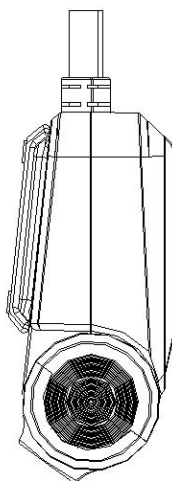


Figure 5.1 Specifications of the driving recorder

## 5.2 Hidden POWER key/indicator

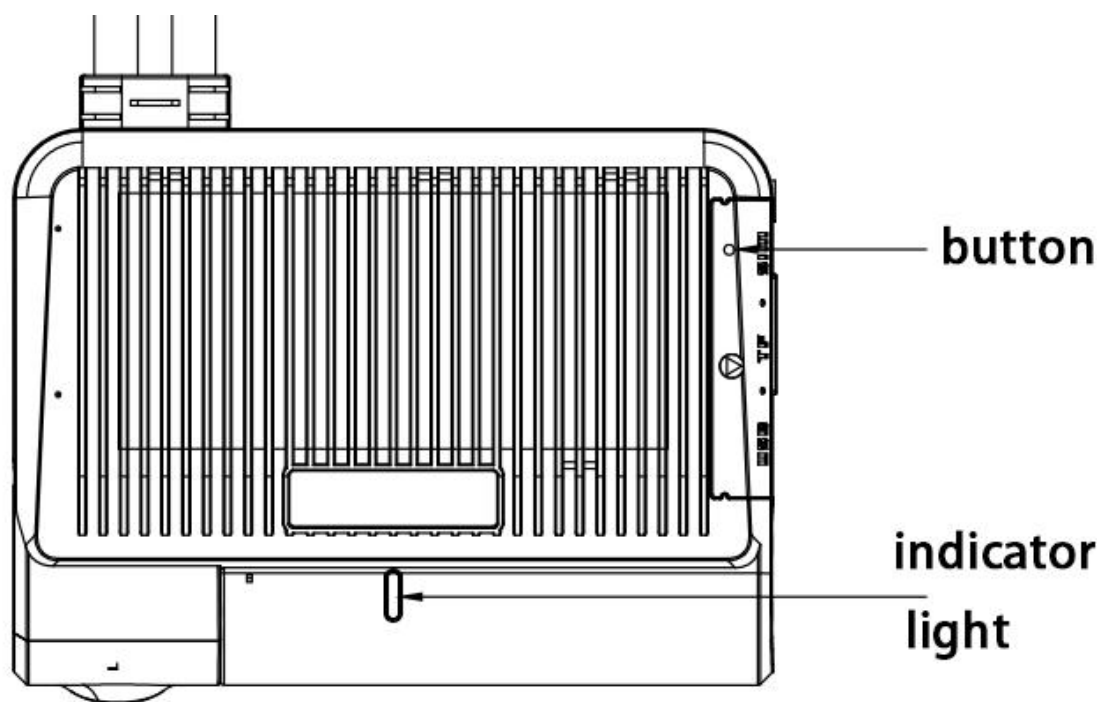


Figure 5.2 Front description of the driving recorder

- **Green light**

Equipment situation	light status
Before the program is ready	Always bright
during upgrade	On for 1 second, off for 4 seconds
update completed	\

camera lost	On for 0.1 seconds, off for 0.1 seconds, flashing 4 times at a time, flashing once every 4 seconds
SIM card missed	On for 1 second, off for 1 second
other status	Always off

- **Green light**

Equipment situation	light status
Before the program is ready	Always bright
during upgrade	On for 1 second, off for 4 seconds
update completed	\
The card is recording normally	On for 1 second, off for 1 second
Unrecorded card abnormal	On for 0.1 seconds, off for 0.1 seconds, flashing 4 times at a time, flashing once every 4 seconds
other status	Always bright

## 5.3TF card/SIM card/USB location

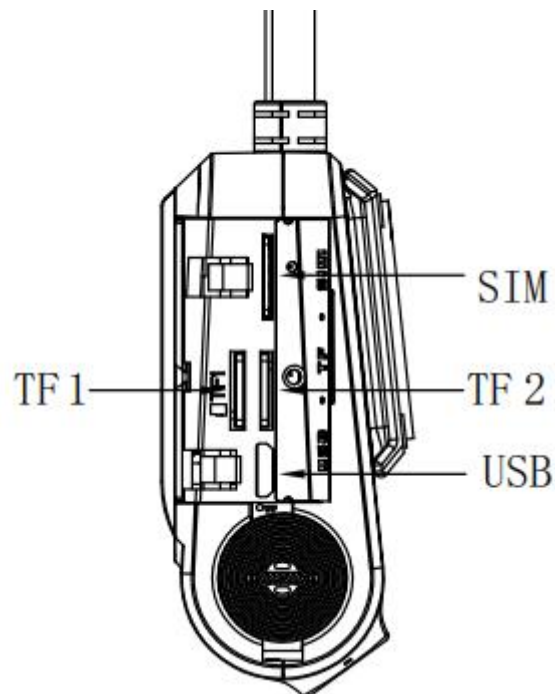


Figure 5.3 Side description of the driving recorder

## 5.4 Product physical map



5.4.1 Actual picture of driving recorder



Figure 5.4.2 DSM camera (left) and interior camera (right)

## 5.5 Product wiring diagram

### 5.5.1. Host wiring harness connector and definition

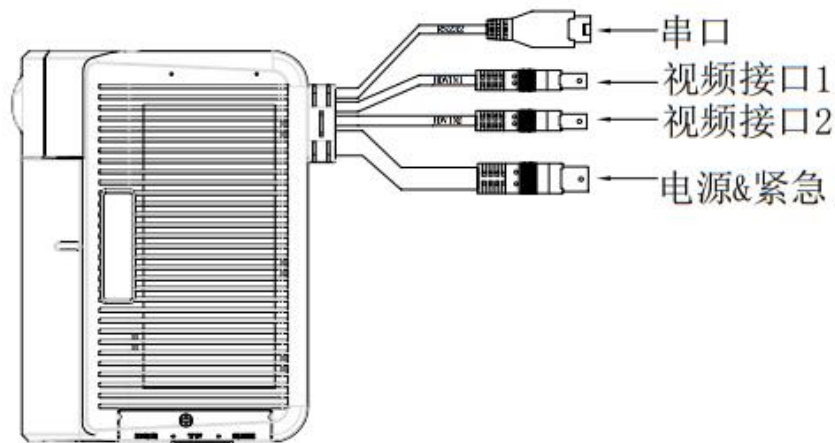



Figure 5.5.1 Description of the host wiring harness connector

(The fourth video channel can be customized)




### 5.5.2. Installation Harness Definition Instructions




Cable color/connector	Function
red	Positive power supply
black	Negative power supply
orange	Ignition Switch
	Connect the emergency button

Note: The installation wiring harness is docked with the host "power & emergency" connector

## 6. Product configuration list

Numbering	product name	Quantity/Set	describe	Product Image	Remark
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1	HD camera dash cam	1	<p>Main unit*1, detachable with 3M plastic base plate (with power supply A-line exterior camera), front road 1080P, interior camera AHD 720P with light sensing/infrared night vision; built-in positioning and communication antenna. The length of the cable is about 40mm; the total length of the in-car camera (including the cable) is about 30mm, and the two-way 720P camera interface is reserved and optional</p>		Standard
2	power cable	1	<p>12V power cord (with SOS button)*1, positive, negative, ACC. Line length is about 2m, SOS length is about 2m</p>		Standard
3	DSM camera	1	<p>Voltage 12V, 720P, AHD Camera, 4G, single pass, infrared night vision, 16:9 required, H=60° V=42°</p>		Optional

4	DSM extension cable	1	2m BMW head extension cable		Optional
5	Ordinary car camera	1	Voltage 12V, 720P, AHD Camera, 4G, single pass, infrared night vision, 16:9 required, H=115° V=53°		Optional
6	emergency button	1			Optional
7	manual	1	user's manual		Standard