


# Tektronix Technology System LLC

	Document name	Specification	Document no.	TK-11003Z
	Model no.	Tk1003z	Version no.	V1.0
	Making department	R&D	Effective date	Mar 20th, 2017

## Specification

**Product Name: SD Card Mobile DVR**


**Product Model: tk1003z**

**Version: V1.0**

### Revision History

Revision Date	Revised by	Version	Revision Content	Approved by
Mar 20th, 2017	Mr. Guo	V1.0	New proposed	

### Content


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## **1.Product Overview**

HS11X series SD Card Mobile DVR is a cost-effective, functional and extensible device which specially designed for vehicle video monitoring and remote control. It adopts high-speed processor and embedded Linux platform development, combined with the most advanced technology in IT field, such as H.264 video compression&decompression, network, and GPS. Using SD card as storage medium, which can realizes functions like video&audio record in 4ch CIF/HD1/D1/960H/720P AHD format, vehicle information record and GPS signal uploading. Working together with CMS

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can realize central monitoring of alarm linkage, remote management and playback analysis. It has simple outlook but with strong anti-vibration capability. It's functional, reliable and easy-installed.

## 2. Document Purpose

Establish clear technical data to help users know better about our products, and to be convenient for customers to analyze project requirements. Software designers, testers, engineers and sales could take this file as a guidance document.

## 3. Application Range

This specification apply to our HS11X series SD card mobile DVR, and can be used as a basis in production inspection and outgoing quality control. It is also applicable to contrast analysis of project technical requirements.

## 4. Reference Standard

Refer to below standards:

Electrical safety standard: GB/T 4776-2008, and other safety standard

- ★ Hardware implement AES/DES/3DES and other encryption-decryption algorithms
- ★ Digital watermark technology


## 5. Product Outlook



**Front Rear**


## 6. Specification Parameter

Specification Parameter		
Model		
System	Operation language	Chinese/English
	Operation interface	Graphic operation interface(OSD menu)
	Password security	Two-level administration: user password and administrator password

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Video	Video input	Support 4ch 720P AHD video input Support 2ch 720P AHD + 2ch 960H video input Support 4ch 960H/D1/CIF + 1ch 720P IPC video input Support 4ch 960H/D1/CIF + 1ch 1080P IPC video input Support 4ch CIF/HD1/D1/960H video input <span style="color: red;">Note: for 720P/1080P/960H video input, high speed SD card(&gt;80M/S) is required</span>
	Video output	1ch $\phi$ 3.5 Phone Jack video output(AV-OUT); 1ch HDMI output
	TV system	PAL: 100fps@AHD 720P, NTSC: 120fps@AHD 720P
	Image compression standard	H.264 main profile
	Video display	1ch/4ch display
Audio	Audio input	4ch audio input
	Audio output	1ch audio output
	Recording method	Synchronous recording in audio&video
Image processing&storage	Local record format	CIF/HD1/D1/960H/720P optional
	Video streaming standard	ISO14496-10
	Video bitrate	CIF: 1536Kbps ~ 128Kbps
		HD1: 2048Kbps ~ 400Kbps
		D1: 2048Kbps ~ 400Kbps
		960H: 2048Kbps ~ 400Kbps
		720P:4096Kbps—400Kbps
8 Grades optional. Highest: Grade 1; Lowest: Grade 8		
Audio bitrate	40Kbps	
Data storage	Support 2*SD card, up to 128GB for each	
Alarm	Alarm input	6ch alarm input
	Alarm output	2ch alarm output, highest output level: 12V
Communication interface	RS485 interface	Support 1*RS485 interface
	RS232 interface	Support 1*RS232 interface
	RJ45 Network interface	Support 1*RJ45 network interface used for connecting local network and communicating with server
	USB interface	Support 1*USB interface for software upgrading and record file copy
	MIC interface	Support 1*MIC interface for connecting microphone to realize intercom
Wireless communication	3G	Build-in 3G module optional (HSUPA /HSDPA /WCDMA /EVDO /TD-SCDMA)
	4G	Build-in 4G module optional (FDD-LTE/TDD-LTE)
	WIFI	Build-in WIFI module optional (2.4/5.8GHz)
GPS system	Support build-in GPS module; geographic coordinates and speed could be written into coding streaming and uploaded by wireless network	
G-sensor	Build-in G-Sensor	


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Matching software	Playback analysis in PC	Video playback in PC, and analyze vehicle info in files
	CMS	Video preview, GPS uploading, alarm uploading, commands issuing by monitoring center and parameter configuration could be realized by wireless network
Software upgrading	Upgrading maintenance	USB upgrading, SD card upgrading and CMS remote upgrading supported
Dimension	Dimension	147.50 x 162.50 x 50.00 mm

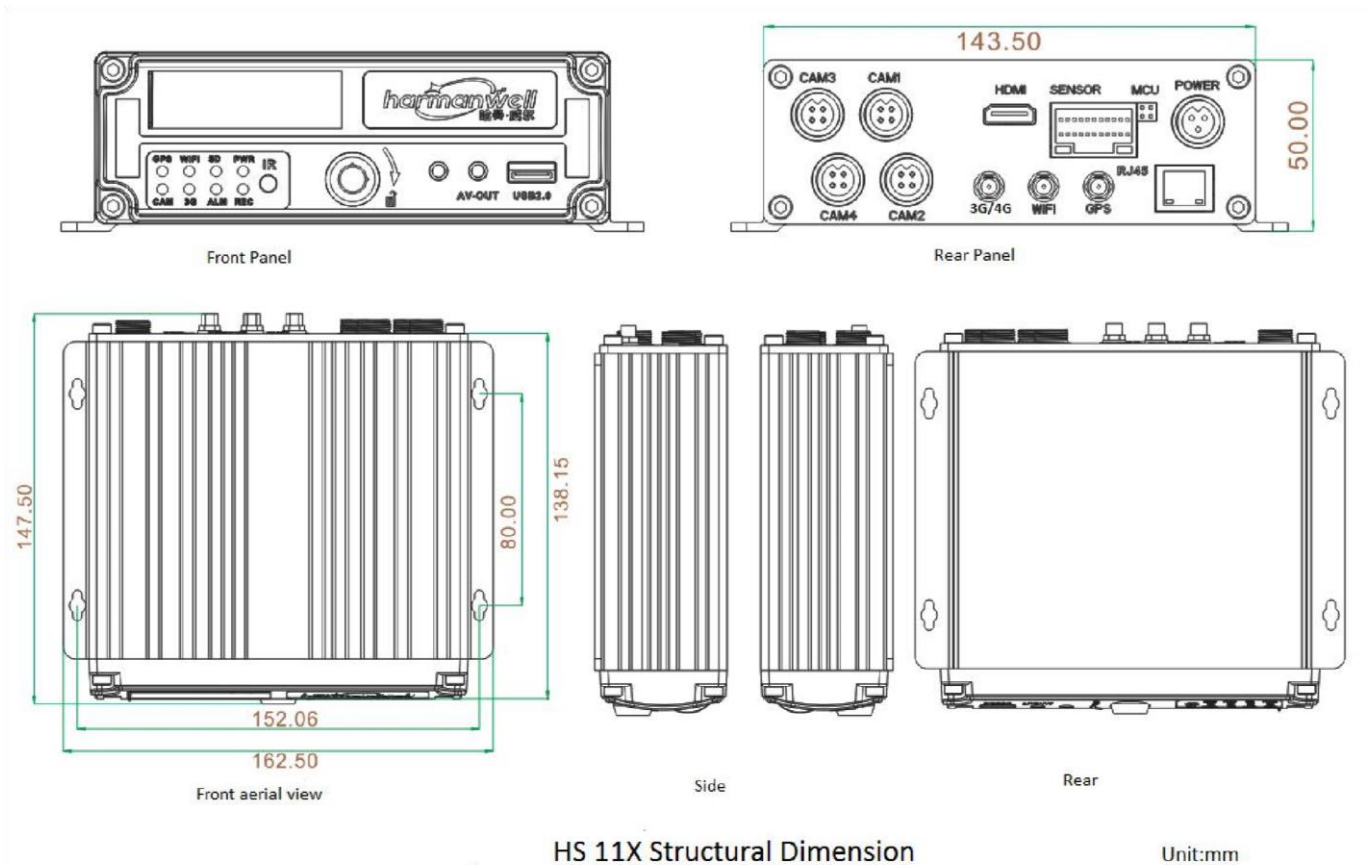
## 7. Electrical Parameter

<b>Electrical parameter</b>		
Power input	8—36V	Power input: +8V~+36V; always < 8V or >36V, auto power-off will start and enter into protect mode.
Power output	12V	Power output: 12V (+/-0.2V) ; max current 2A
ACC signal	≤4V	Car key close
	≥5V	Car key open
Video input impedance	75Ω	Input impedance for each channel is 75Ω
Video output voltage	2Vp-p	Output: 1*2Vp-p CVBS analog signal; input of display device should be matched with 75Ω impedance
I/O interface	0—4V	Low level alarm
	> 4V	High level alarm
Operating temperature	-40℃-80℃	Referring to excellent ventilation conditions


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## 8. Structural Dimension

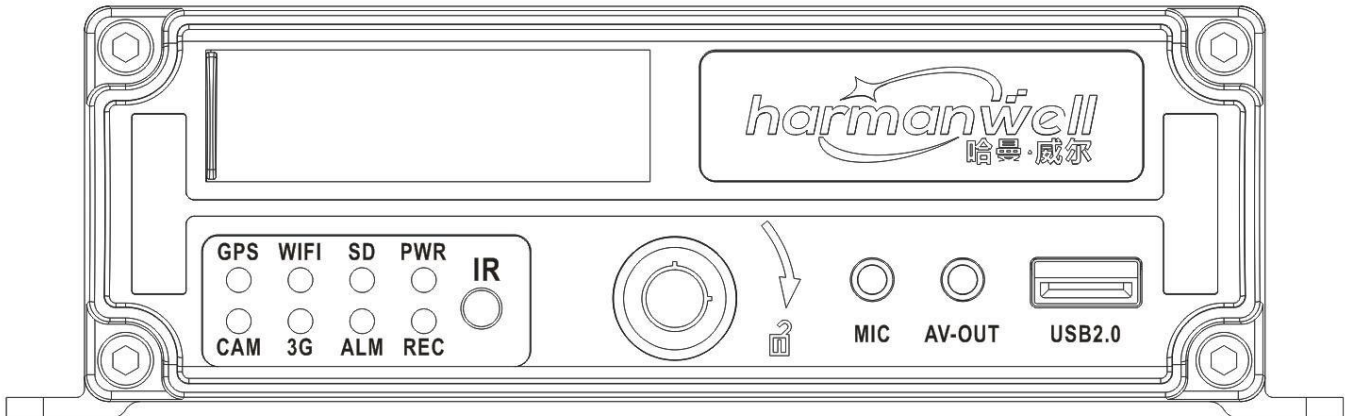


**Unit: mm**


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## 9. Lights and Interface Definition of Front Panel

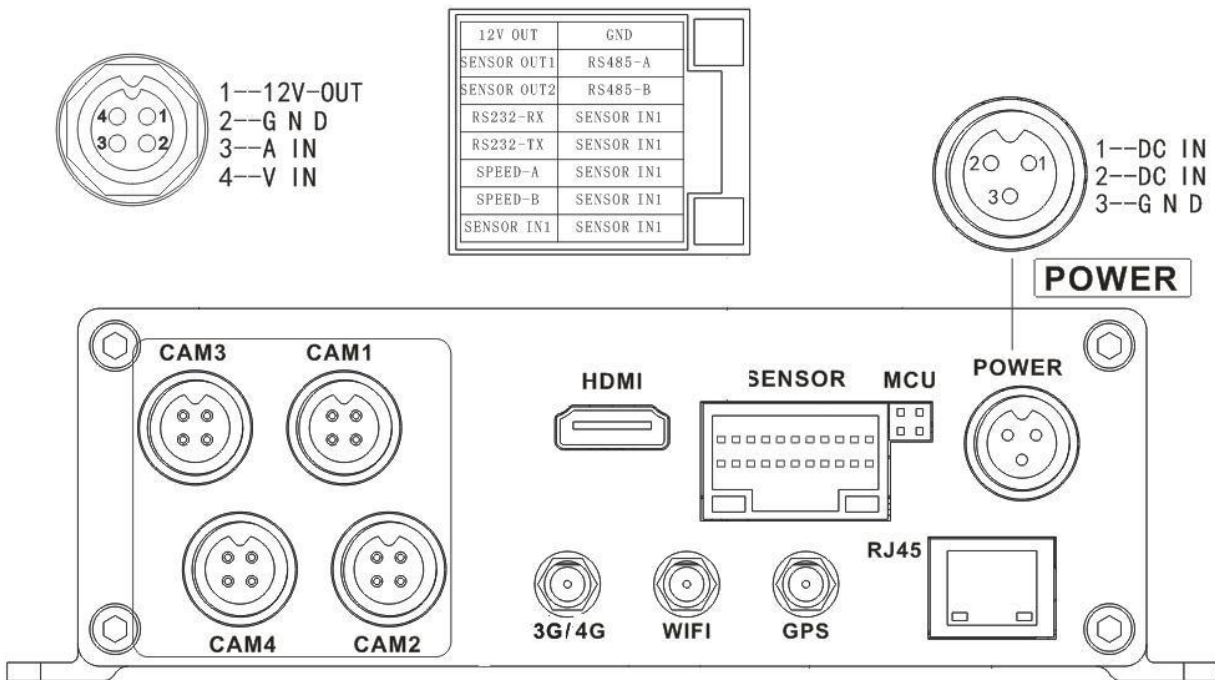


Port	Name	Description
Audio/Video output	AV-OUT	Analog Audio/Video output
Mic	Mic	Microphone
Led	SD	Light will be on when the SD card exists; flashing when recording
	REC	Light will be on when recording
	GPS	Light will be on when the GPS module exists, Light will be flashing when have GPS signal.
	POWER	Light will be on when the power supply can work normally
	ALARM	Light will be on when the machine is in abnormal situation
	CAM	Light will be on when the 4CH video have input signal, be off with no signal, flashing when have video loss.
	WIFI	Light will be on when the WIFI is ON
	3G	Light will be on when 3G communication module exists
IR	IR	Infrared sensor receiving remote control signal
The lock	LOCK	Lock: Device boot, No allow to take out the SD card. Un-Lock: Device off, SD card can be taken out.
USB2.0	USB2.0	Insert U-Disk, used for upgrade the device software and copy the device setting parameters.

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## 10. Interface Definition of Back Panel



**Description of MDVR back panel**


Port	Name	Description
Power	Power input interface	8V~36V wide voltage power input interface
GPS	GPS antenna interface	GPS Antenna interface
WIFI	WIFI antenna interface	Internal local area network WIFI antenna interface
3G/4G	3G/4G antenna interface	3G/4G antenna interface
CAM	Video input interface	Camera interface
SENSOR	Sensor alarm in/out interface; IO interface	Alarm input/output interface(high level>4V; low level<4V valid)
HDMI	HDMI interface	HDMI output to LCD display
MCU	MCU debugging interface	R&D debugging interface
RJ45	RJ45 network interface	Connecting with network cable to communicate with server and data copy

## 11. Selection Guide

**(1) Configuration Combination Table**

Option	Option					Option	Option				Communication Module Type	
GPS	×	√	√	√	√	BD	√	√	√	√	E	3G EVDO



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3G/4G	×	×	√	√	×	3G/4G	×	√	√	×	W	3G WCDMA
WIFI	×	×	×	√	√	WIFI	×	×	√	√	T	3G TD-WCDMA
Code	0	1	2	3	4	Code	5	6	7	8	F	4G TDD/FDD

**1. Example:**

HS110      First SD card MDVR, configure is 0, without any module  
 HS112-W    First SD card MDVR, configure is 2, with GPS, WCDMA module

Model	G-Sensor	GPS	3G WCDMA	4G TDD/FDD	WIFI
HS110	√	×	×	×	×
HS111	√	√	×	×	×
HS112-W	√	√	√	×	×
HS112-F	√	√	×	√	×
HS113-W	√	√	√	×	√
HS113--F	√	√	×	√	√
HS114	√	√	×	×	√

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## 12. Accessories



3G Antenna



GPS Antenna



WIFI Antenna



Alarm Cable



Aviation Extension Cable



Power Cable



Aviation Video Output Cable



HDMI Cable



Inner Six Angle

Remarks: All the above are optional accessories




SATA to USB HDD Data Line



Key

## 13. Attention

1. Please ensure the vehicle voltage is between 8V-36V before connecting, or will damage the MDVR.
2. Need to be insulated at the junction after link up the cable to prevent the short circuit occurred to burn the battery and the device.
3. The ACC line (the yellow one) of the power cable should be connected to the ACC switch line, or the device unable to achieve delay off function, which will cause the video loss.

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4. The vehicle must take power from the positive and negative of the car battery line directly, can not overlap the car wire shell as ground, otherwise it will have a negative pulse interference to the device normal running, power supply line must be more than 1.5mm caliber.