


# Tektronix Technology System LLC

	Document name	Specification	Document no.	TK-11001Z
	Model no.	Tk1001z	Version no.	V1.0
	Making department	R&D	Effective date	Nov. 24 <sup>th</sup> , 2016

## Specification

**Product Name: HDD Mobile DVR**

**Product Model: tk1001z**


**Version: V1.0**

### Revision History

Revision Date	Revised by	Version	Revision Content	Approved by
Nov. 24 <sup>th</sup> , 2016	Mr. Guo	V1.0	New proposed	

### Content

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## **1.Product Overview**

HD10X series HDD 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 HDD&SD card as storage medium, which can realizes functions like video&audio record in 4ch CIF/HD1/D1 format, vehicle information record and GPS signal uploading. Working together with CMS can realize central monitoring of alarm

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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 HD10X series HDD 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
Video	Video input	4ch composite video input
	Video output	1ch video output(V-OUT), 1ch composite video output(AV-OUT), 1ch CVBS video output(EXTENSION)
	TV system	PAL/NTSC

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	Image compression standard	H.264 Main profile,compression resource: 100FPS
	Video display	1ch/4ch display
Audio	Audio input	4ch audio input
	Audio output	1ch audio output(A-OUT), 1ch composite audio output(AV-OUT)
	Recording method	Synchronous recording in audio& video
Image processing&storage	Local record format	CIF/HD1/D1 optional
	Video streaming standard	ISO14496-10
	Video bitrate	CIF: 1536Kbps ~ 128Kbps,
		HD1: 2048Kbps ~ 400Kbps,
		D1: 2048Kbps ~ 400Kbps,
		8 Grades optional. Highest: Grade 1; Lowest: Grade 8
Audio bitrate	8KB/s	
Data storage	Support 1*2.5" SATA hard disk, up to 2TB; and 1*SD card, up to 128GB	
Alarm	Alarm input	6ch alarm input
	Alarm output	2ch alarm output, highest output level: 12V
Communication interface	RS485 interface	Support 2*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
Extension interface	Bus stop machine interface	Support connecting bus stop machine or control panel via extension interface
	Audio power amplifier	Support 2ch audio power amplifier output
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	
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, Hard disk upgrading, SD card upgrading and CMS remote upgrading supported
Dimension	Dimension	222.50 x 192.00 x 70.70 mm

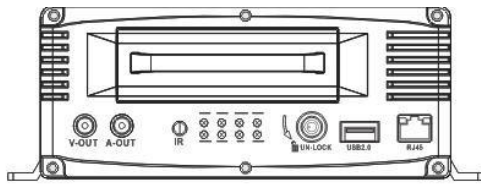
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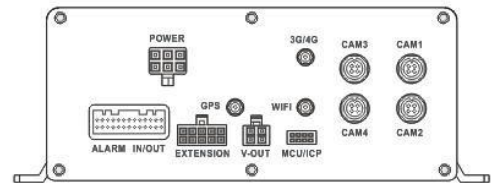
## 7. Electrical Parameter

Electrical parameter		
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
Hard disk interface	SATA	Compatible with common brands in the market, support up to 2TB.
Operating temperature	-40℃-80℃	Referring to excellent ventilation conditions

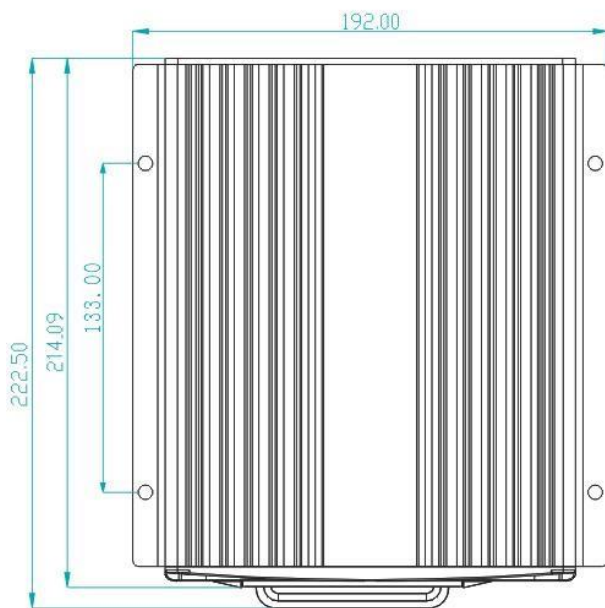
## 8. Structural Dimension



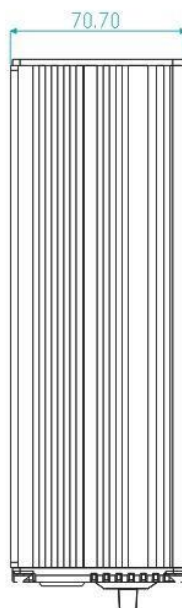
Front



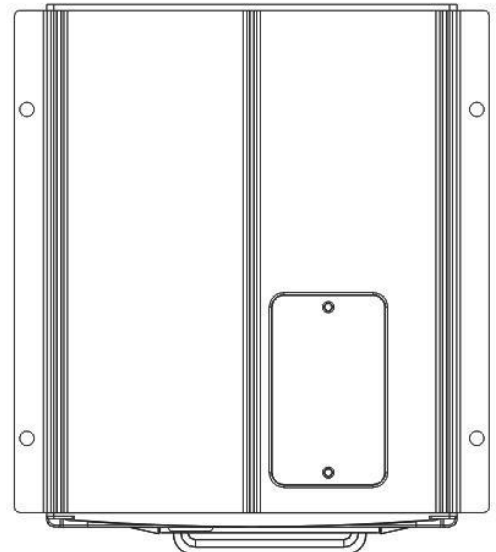
Rear




Front aerial view



Side

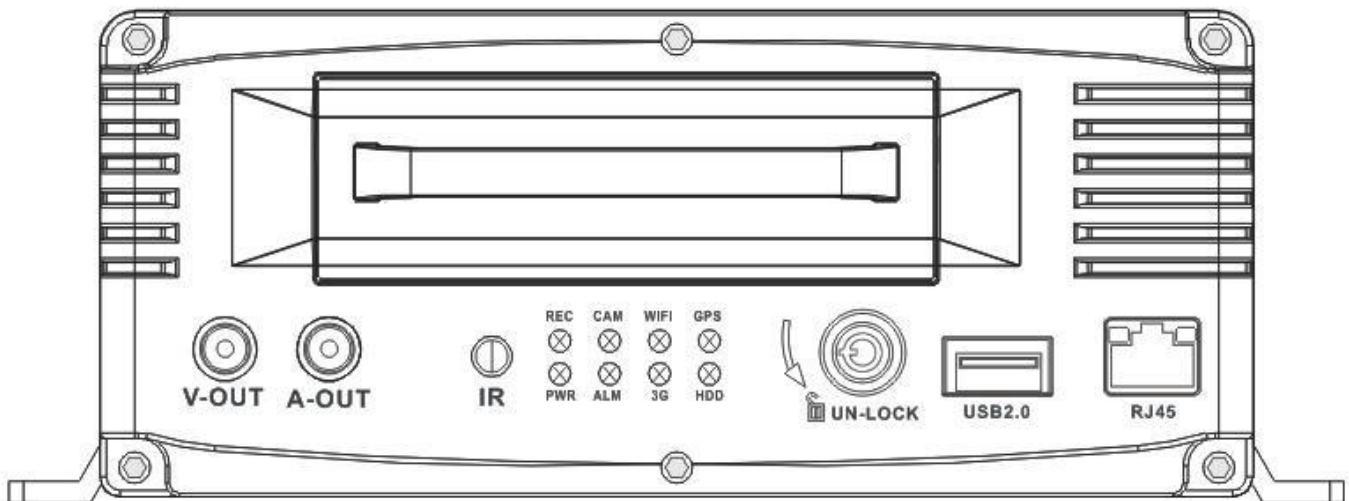


Rear


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## 9. Lights and Interface Definition of Front Panel

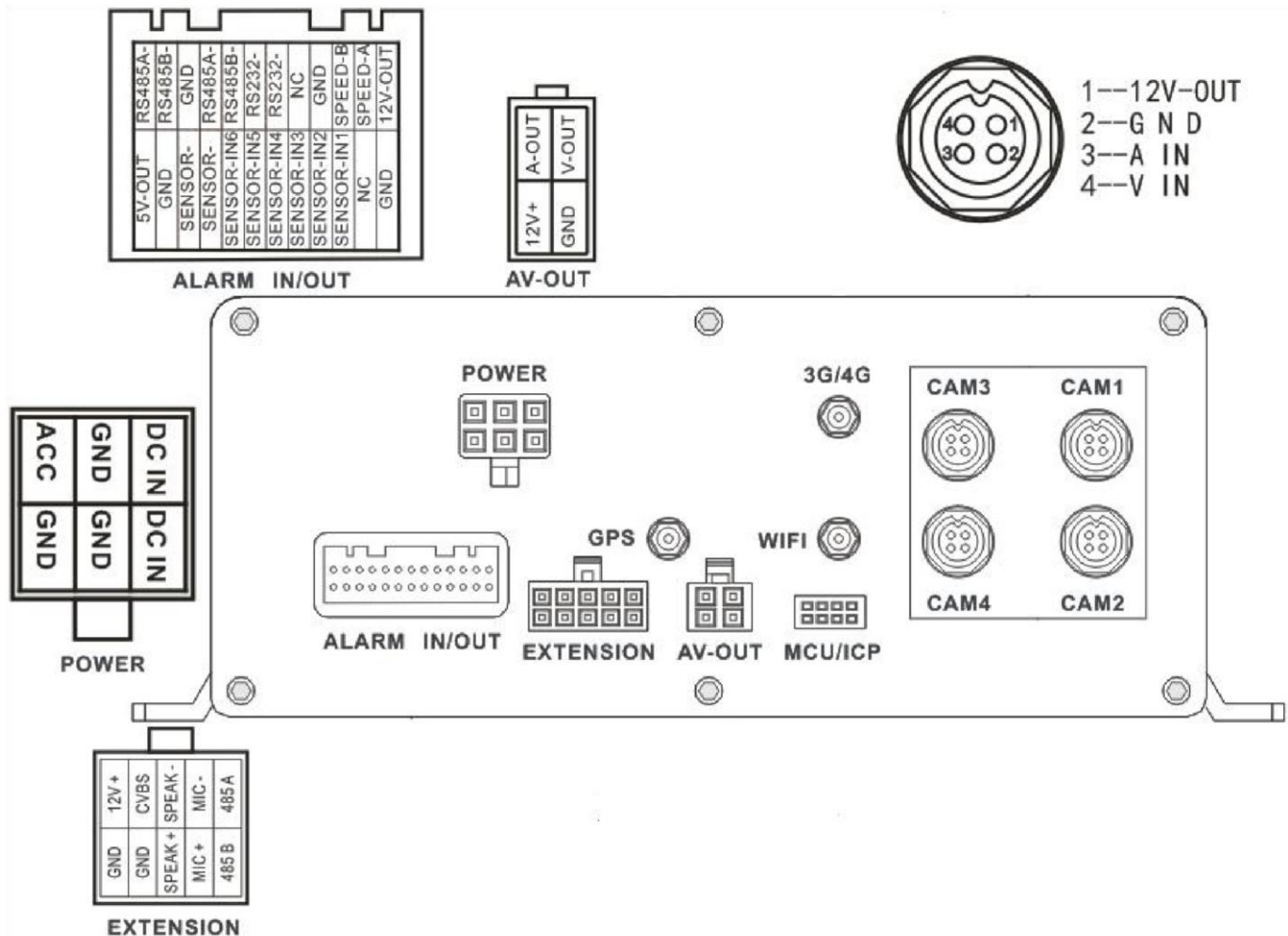


Port	Name	Description
Video output	V-OUT	Analog Video output
Audio output	A-OUT	Audio output
Led	HDD	Recording HDD indicator light, light will be on when the HDD exists
	REC	Light will be on when recording
	GPS	Light will be on when the GPS module exists, Light will be flashing when have GPS signal.
	PWR	Light will be on when the power supply can work normally
	ALM	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 HDD.
		Un-Lock: Device off, HDD can be taken out
USB2.0	USB2.0	Insert U-Disk, used for upgrade the device software and copy the device setting parameters.
Ethernet	RJ45	Light will be on when connect the RJ45 cable with network.

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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
ALARM IN/OUT	ALARM input/output and I/O interface	ALARM input/output interface(high level>4V、low level<4V valid)
EXTENSION	EXTENSION interface	Extension output interface,support connect the control panel、bus station screen.
AV-OUT	Audio/Video-OUT interface	Audio/Video-OUT interface,output to the display and speaker.
MCU/ICP	MCU/ICP debugging interface	R&D debugging interface

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## 11. Selection Guide

### (1) Configuration Combination Table

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

HD100 First HDD MDVR, configure is 0, without any module

HD102-W First HDD MDVR, configure is 2, with GPS, WCDMA module

Model	G-Sensor	GPS	3G WCDMA	4G TDD/FDD	WIFI
HD100	√	×	×	×	×
HD101	√	√	×	×	×
HD102-W	√	√	√	×	×
HD102-F	√	√	×	√	×
HD103-W	√	√	√	×	√
HD103-F	√	√	×	√	√
HD104	√	√	×	×	√



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## 12. Accessories



3G Antenna



GPS Antenna



WIFI Antenna



Alarm Cable



Aviation extension cable



Power cable



Aviation Video Output cable



AV-output cable



Inner six angle

Remarks: All the above are optional accessory



SATA to USB HDD Data line



Key



Remote control

## 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.
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.