



Features

- Dual processor, multi-thread system
- Fast and stable application performance
- Modular architecture and multiple watchdogs
- Smart power control when ignition off
- Remote request live stream any time
- Event triggered video recording
- HDD and SD card dual storage back up
- Up to +65 volt power surge protection
- Driver behavior and collision detection
- iButton, RFID and magnetic card reader for driver ID
- Over the air (OTA) firmware/configuration upload
- Jamming, antenna cut, power lost and low battery alerts

Specifications

Mechanical and Environmental		
Dimension (L x W x H)	250 x 175 x 80 mm (±2mm)	
Weight	2,190 g (without HDD, SD and accessories)	
Material	Aluminum case	
Operation Temperature	-20°C ~ +60°C (board temperature)	
Storage Temperature	-40°C ~ +85°C (board temperature)	
Electrical		
Battery	Battery Cell	1000 mAh prismatic Li-Ion
	Operation Temperature	-20°C ~ +60°C
	Storage Condition	-20°C ~ +35°C, low humidity and no corrosive gas
	Capacity	1,000 mAh
Power Supply Input	9 ~ 30 Vdc / 2A	



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IO Interface and Other	
Input	12 bit (0 ~ 36 V) analog input x 2
	Active high input x6 (IN2~7)
	Engine key input (ignition)
	Pulse counting 10 hz to 1 KHz, or active low input x2 (IN1 & IN8)
	Panic input (active low)
	Active low input x3
1-Wire®	iButton
	Digital thermometer (maximum 8 thermometers)
Output	Immobilizer
	Buzzer
	GPS out (NMEA protocol)
	Negative output x5 (200mA max.)
Power Supply Output	8.3~29.3Vdc (directly from main power supply input - 0.7v diode voltage drop) /0.5A max.
RS-232	5-wire RS-232 interface x3, 5V/200mA power supply on PIN 9
RS485	2P terminals x1
Mini USB	USB 2.0 high speed compatible slave interface (configuration)
USB	USB 2.0 high speed compatible slave interface (DVR configuration and back-up)
Hard Disk Tray	Removable SATA 2.5" HDD Caddy max. 1TB
SD Card Slot	SD class 8 or above, support up to 64G
SIM Slot	Full size SIM
3.5 mm Audio Port	Audio jack x2 (green: speaker, pink: microphone)
SMA Straight Jack	GPS and GSM/UMTS antennas
3-Axes Accelerometer	±16G (default)
Memory Backup	9 MB flash memory



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IR Receiver Window	Remote control	
Tracking System LED	1 st Red 	Power
	2 nd Red 	Back-up battery
	1 st Green 	GPS
	2 nd Green 	Cellular communication
Digital Video Recorder LED	Green 	Power in
	Red 	Recording
	Blue 	Network
	Orange 	GPS in
Digital Video Recorder		
Video Format	NTSC	PAL
Video Input	4 channel input	
Camera Power Output	Power supply 4 sets, 12V/250mA	
Video Output	1 channel RCA or raw cable output	
Audio Input	1 channel RCA or raw cable Input	
Audio Output	1 channel RCA	
Display Resolution	720 x 480	720 x 576
Recording Resolution	720P: 1280 x 720	
Recording Frame Rate	Max.30fps @CIF (real time recording) / channel	Max.25fps @CIF (real time recording) / channel
Playing Frame Rate	Max. 30fps @CIF (real time playback) / channel	Max. 25fps @CIF (real time playback) / channel
Compression Format	H.264 1 (min.) ~ 5 (max.)	
GPS		
Receiver Type	56-channel, GPS L1 C/A, SBAS: WAAS, EGNOS, MSAS	
Acquisition	Cold starts 29 secs, aided starts 5 secs, reacquisition 1 sec	
Sensitivity	Tracking & Nav. -162 dBm, cold starts -148 dBm, warm starts -148 dBm	
Accuracy	Autonomous 2.5 m, SBAS 2.0 m	
Operation Limits	Altitude 50,000 m, velocity 500 m/s, dynamics ≤ 4 g	



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Cellular Communication	
UMTS (WCDMA/FDD)/HSPA	800 / 850 / 900 / 1900 / 2100 MHz HSDPA Cat.8 / HSUPA Cat.6 data rates Downlink: max. 7.2 Mb/s Uplink: max. 5.76 Mb/s
GSM	850 / 900 / 1800 / 1900 MHz
GPRS	Class 12 data rates, CS1-CS4 - up to 85.6 kb/s
EDGE	EDGE Class 12 data rates, MCS1-9 - up to 237 kb/s
CSD	Up to 9.6 kb/s, V.110, non-transparent
SMS	PDU / Text mode
Key Features	Embedded TCP/IP, UDP/IP, HTTP/FTP protocols
	Network jamming Detection
	High quality voice support for hands-free operation

Accessories

Standard
Main power input I/O cable
GPS antenna
GSM/UMTS antenna
Camera cable
DVR control input cable
Remote control
RS485 cable
Infrared extension cable
Screws for HDD
Key for HDD/SIM/SD doors
Optional
USB cable (for configuration use)
Power output cable





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Digital input cable
Output cable
R232 cable with DB9 connector
Analog input cable
1 wire digital thermometer input cable
GPS output cable
RFID reader
Magnetic card reader
iButton probe
iButton tag & key fob
Buzzer
Fuel level sensor
Immobilizer relay
1-wire digital thermometer
Hands-free speaker and microphone
High sensitivity microphone
Vehicle video camera
Tyre pressure sensor receiver
Tyre pressure sensor (900 kpa max, for regular vehicles, must purchase at least a pair)
Tyre pressure sensor (1300 kpa max, for trucks/buses, must purchase at least a pair)
Tyre pressure sensor signal repeater (normally used for vehicles with more than 6 tyres)

NOTE:

1. Datasheets are updated as needed and as such, specifications are subject to change without notice.
2. All specifications are measured at an ambient temperature of 25°C, humidity<75%, and nominal input voltage.