

VT400

ADVANCED PLUG&PLAY OBD2 TELEMATICS TRACKER WITH DIAGNOSTIC

VT400 OBD2 4G Dongle Tracker is a new product bases on GSI product for car/vehicle telematics business, which combines GPS tracking technology, car ECU diagnostic and Wi-Fi hotspot telematics connect 3 in 1 IoT product, through the OBDII ECU interface getting car's data plus gps signal from satellite then uploads to gps tracking system and APPs via 4g network, display car GSI, health monitoring, historical route, accurate trips report, fuel consumption, driving behavior analysis, etc. It is a great telematics device for fleet management, UBI, rental and leasing, etc. business.

Compare with other OBDII trackers, more stable Quectel moduel chipet, stronger fire-proof&dust-proof case cover, better connection by gold plated connector 16pins, accuracy and applicable to actual application scenarios algorithm make VT400 has better performance in multiple use cases.



USE CASE



FLEET
MANAGEMENT



DRIVING
LOG-BOOK



CONNECTED
CAR



INSURANCE
TELEMATICS(UBI)



RENTAL AND
LEASING



Chips

MCU (Main chipset)	STM32F103RCT6
4G Communication module	Quectel module chipset
GPS Chip	AT655RS

GNSS

GNSS	GPS, BEIDOU, LBS, AGPS
Receiver	33 channels
Tracking sensitivity	-159 dBm
Acquisition sensitivity	-144 dBm
Accuracy	< 10 M
Hot start	< 2 S
Cold start	< 35 S

Cellular

Technology	LTE/WCDMA/GSM		
4G/3G/2G Frequency Bands (Can be customized)	Module Chip	Countries	Frequency Bands (MHz)
	EC200U-CN	China/India	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; GSM: B3/8
	EC200U-EU	Europe	LTE-FDD: B1/3/5/7/8/20/28A/30/40/41; LTE-TDD: B1/8; GSM: B/8
	EC25-AU	Australia/Latin America	LTE-FDD: B1/2/3/4/5/7/8/28/40; LTE-TDD: B1/2/5/8; GSM: B2/3/5/8
	EC25-AFXD	North America (AT&T/Verizon/T-Mobile)	LTE-FDD: B2/4/5/12/13/14/66/71; WCDMA: B2/4/5

Power

Input voltage range	12 – 30 V DC with overvoltage protection
Back-up battery	3.7 V 140 mAh Lithium-ion battery (Optional)

Operating environment

Temperature	Working temperature: -30°C - 75°C; Storage temperature: -20°C - 55°C
Electric Current	Working current (ACC ON): 55 mA; Sleep current (ACC ON): 1 ~ 2 mA
Working voltage	DC 8 V - 28 V
ESD test	Contact 8KV, Air discharge: 10KV

Interface

Connection	OBDII 16 pins standard socket
GNSS antenna	Internal high gain
LTE/GSM antenna	Internal high gain
USB	2.0 Micro-USB (Configuration only)
LED indication	3 status LED lights
SIM	Micro-SIM
Sensor	3 Axes accelerometer
Flash memory	16M bytes (14,000pieces backup data storage)

OBD Interface

Data	HS CAN, MS CAN, SW CAN, K-line
Data reading	ISO 9141-2 (5 baud init, 10.4 kbaud) ISO 14230-4 KWP (5 baud init, 10.4 kbaud) ISO 14230-4 KWP (fast init, 10.4 kbaud) ISO 15765-4 CAN (11 bit ID, 250 kbaud) ISO 15765-4 CAN (11 bit ID, 500 kbaud) ISO 15765-4 CAN (29 bit ID, 250 kbaud) ISO 15765-4 CAN (29 bit ID, 500 kbaud)

Physical specification

Dimensions	60 x 48 x 26mm
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Main Functions

Compatible Over 95% Cars	Compatible with more than 95% of mainstream brands and production after 2008
Real-time Tracking & Playback	Support GPS, Beidou, Glonass, Galileo multiple tracking methos, 3 months data playback
Low Power Consumption	Working cureent <50mA and sleep current <2mA, also with low power protection
Blind Area Data Re-upload	Store over 14,000 pieces data and re-upload to sever after reconnect with network
Multiple Smart Wake-up Algorithm	RTC, ignition on, towing away, vibration, call in, SMS multiple wake up alerts
OBD2 WiFi Hotspot (Wi-Fi Version)	Up to 8 WiFi hotspot network connections for passengers in the car
Engine Health Monitor	Power charging, throttle valve, idle speed, cooling water systems etc., analyze
Battery Voltage	Monitor cars' battery voltage too low or too high if reach threshold
Engine Status	Coolant temperature too llow/high, emission, airflow, RPM, etc., data collect and report
Mileage Analyse	Total, single trip, overspeed, high speed, middle speed, lower speed status mileages analyze
Fuel Consumption Analyse	Total, overspeed, high speed, middle speed, lower speed, idle status fuel consumption analyze
Driving Behavior Analyse	Rapid deceleration, acceleration, sharp turn, braking, speeding, lanes change, idling, etc.
Trip Report Analyse	Mileage, fuel consumption, driving behavior, alerts and all relevant data report and analysis
Emission System Checking	CO and CO2 emission status of automobile exhaust
23+ Kind of Alerts Notification	Plug in/out, over speed, vibration, circuit abnormal, battery under-charged, ECM fault, etc.
Read & Clear DTC Codes	Support more than 4,000 kind of car obd2 DTC codes of mainstream car brands after 2008
OTA Upgrade	Upgrade firmware remotely

FRAME & BLACK DIAGRAM

VT400 telematic OBDII are mainly composed of main control (MCU), communication module (4G module), GPS position module, car ECU reading and WIFI module.

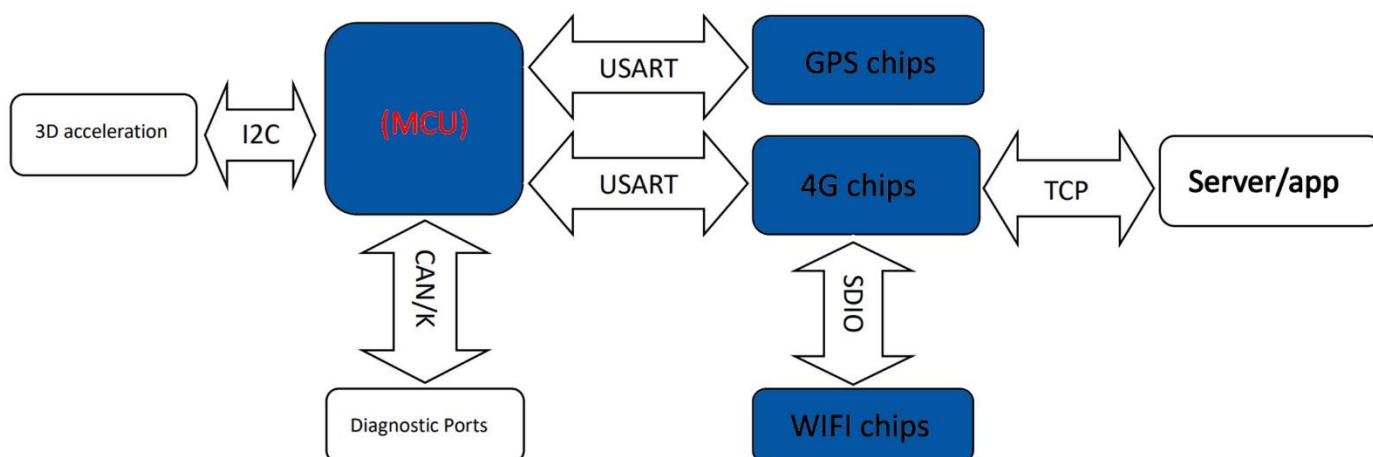
Master Control (MCU): Controls the work of the whole device, collects GPS positioning data, acceleration sensor data, car ECU data, etc. controls the communication module to connect to the server, opens and closes the WIFI module, collects and analyzes all kinds of data, and transmits the data to the platform through the communication module.

Communication module (GSM): sending and receiving data between platforms, hotspot output, etc.

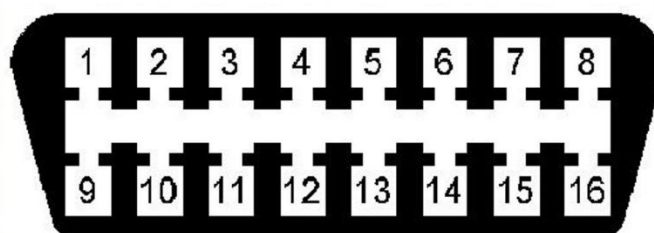
GPS Positioning Module (GPS): Receive the positioning information of the device, including longitude, latitude, speed, direction, number of GPS and other information.

Automobile ECU reading module (ECU): read the data of automobile ECU through CAN/K line interface according to OBDII protocol.

WIFI module (Wi-Fi version only): Provide WIFI for high-speed Internet access for users in the car, maximum able to access 8 devices at the same time.



CONNECTOR INTERFACE



1	GE single wire CAN-BUS	9	Manufacturer reserves
2	ISO 11519-4 (Bus+) (SAE J1850)	10	SO 11519-4 (Bus-) (SAE J1850)
3	Chrysler CCD-BUSinternet cable H wire	11	Chrysler CCD-BUS internet cable L wire
4	Chassis wire	12	Manufacturer reserves
5	Logic wire	13	Manufacturer reserves
6	ISO 15765-4; CAN-BUS High speed diagnosis wire (CAN H wire), 250/500 kbps/s	14	ISO 15765-4; CAN-BUS High speed diagnosis (CAN L wire), 250/500 kbps/s
7	ISO 9141-2/KWP2000 protocol (K wire)	15	ISO_L wire
8	Manufacturer reserves	16	Positive voltage

ADVANTAGE OF VT400

1. OBD II Port: gold plated VS galvanized alloy plated

VT400 OBD2 pins with gold plated, better conductivity and stronger port, other OBD2 devices is galvanized alloy plated.

2. Main chip: Quectel module chip VS self-developed chip

VT400 OBD2 uses Quectel module chipset, well-known brands, suitable for long-term continuous work, strong anti-interference ability, already passed CE, RoHS, FCC, PTCRB and others world mainstream certificates; Other OBD2 devices use self-developed single-chip microcomputer, poor performance under some strict environment like high temperature, humid, etc.

3. Upload logic: smart upload interval VS fixed upload interval

VT400 OBD2 upload interval is according to the curve of turn, speed and angle and so on, 2~30s flexible not fixed, automatic compensation and high speed compensation algorithm ensure smoother route path, other OBD2 device are fixed 10s no matter the curve, speed, angle.

4. Internal memory: extra flash memory VS CPU spare memory

VT400 OBD2 equipped 16M bytes extra flash memory, able to store over 14,000 pieces data in no signal area, but other OBD2 device only use CPU spare room to store no signal area data cache around 3,000 pieces data only.

5. RTC wake up: Gradually wakeup algorithm VS fixed wake up algorithm

VT400 OBD2 support 6-hours regular, calling, SMS, ignition on, vibration, towing wake up method during sleep mode. but during first 6 hours, 30 min, 60 min, 120 min, 360 min detects cars' battery voltage, if drop too much, and it will send alert, if consumption normal, will go into every 6 hours RTC. Avoid forgot turn off light causes car's battery exhaust in a night effectively. Other OBD2 not have this check.

6. More accuracy of mileages and fuel consumption analyse

Other OBD2 devices calculate mileages and fuel consumption by use GPS data, but VT400 OBD2 device try to get those data from cars' ECU first, only while unable fetch, it use GPS data to calculate mileages and fuel consumption.

7. More detailed trip analyse

Other OBD2 devices support total trip's mileage, fuel consumption, driving behavior, etc. data, but VT400 OBD2 not only provide those basic data but also provides more details like over speed, high speed, medium speed, low speed status mileage, fuel consumption, driving behavior data and each part percentage, perfect match UBI and fleet management giving score and rating requirement.

8. More driving behavior monitoring

Other OBD2 devices support harsh acceleration, harsh deceleration and sudden braking 3 kind of driving behavior, but besides these 3 kind of driving behaviors, VT400 OBD2 also support sharp turns, sharp lanes changes and fatigue driving 3 kind more.

9. More firmware upgrade methods

Other OBD2 devices support K-line upgrade and serial port upgrade two methods, but VT400 OBD2 also support OTA, very useful for fleet management cars upgrade.

