



D181 OMNI TBOX

Product Specifications



Product name: TBOX

Product model: D181 TBOX

Version: Version 0.1 20250321

Manufacturer:**Shenzhen Omni Intelligent** Technology Co., LTD



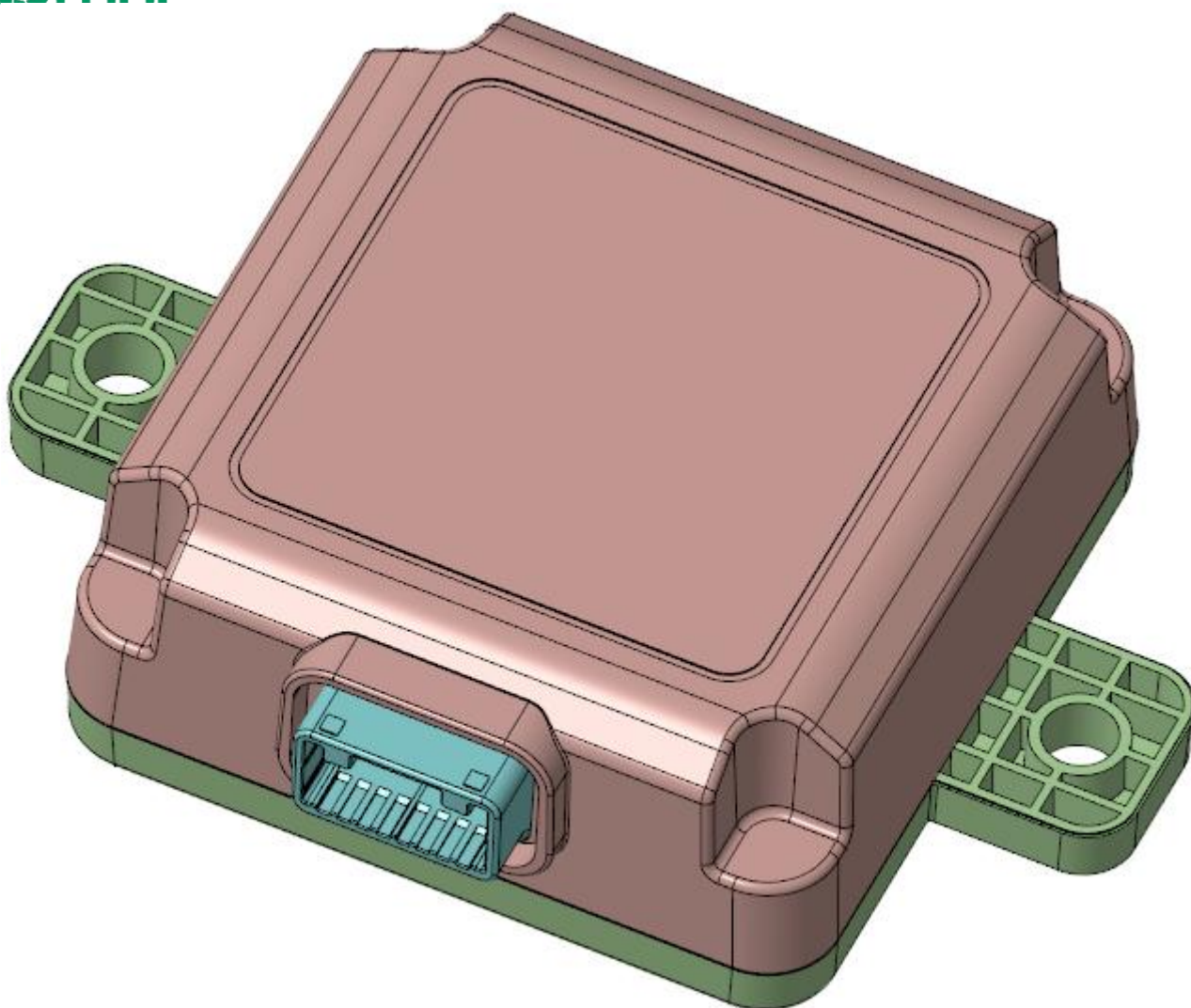
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1. Product overview

D181 T-BOX is an important component in the Internet of vehicles system. It is an intelligent terminal device that enables communication and data exchange between vehicles and the Internet (V2N) by connecting the on-board CAN bus and external cloud platform. The main functions of T-BOX include remote monitoring, vehicle positioning, driving data acquisition, fault diagnosis, remote control, etc



2.Product features

- Multi-mode high precision GPS positioning
- BLE5.2 communication
- 4G LTE-Cat1 communication
- High definition voice broadcast
- Wide operating voltage
- CAN vehicle communication

3.Technical parameters



Basic Features		
Serial number	Item	Specifications
1	External supply voltage	12-48V
2	Spare battery	1000mAH
4	Audio specifications	30mm speaker, 4 Euro 2W
5	Power consumption	TBD
6	Shell material	Lower shell zinc alloy + upper shell plastic
7	Installation methods	M6 screw *2+M6 gasket *2+M6 nut *2
8	Operating temperature	-20 C ~+60 C
9	External dimensions	125 * 92.5 * 35
10	SIM Card type	NANO SIM Card
11	Net weight	320g

BLE features		
Serial	Item	Specifications



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1	Bluetooth	BLE5.2
2	Maximum	+2 dBm
3	Receiver	-98 dBm
4	Frequency	2.4 Ghz
5	Antenna	Onboard antenna

GPS features (dual-band version)

Serial	Item	Specifications
1	Module	OMNI G22H
2	Voltage of	2.8 4.3 V
3	Receive frequency	GPS/QZSS: L1C/A, L5C BDS: B1I, B2a
4	Receiver sensitivity	Cold start: -148dBm Warm start: -155dBm Track: -162dBm
5	Startup time	30s cold start
6	Positioning	<5M(clear open area)

Us version communication module Specification (CAT 1)

Serial	Item	Specifications
1	Version	Us version
2	4G band	FDD-LTE B2/B4/B12



3	3G band	WCDMA B2/B5
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4.Function Brief

1、 Internet of Vehicles communication technology: As a kind of Internet of vehicles device, T-BOX's communication technology is very critical. It supports a variety of communication methods, such as mobile communication networks such as 3G and 4G, short-range communication technologies such as Bluetooth, and vehicle CAN bus.

2、 Positioning technology: The T-BOX has a built-in GPS module, which can obtain the positioning information of the vehicle through GPS technology and upload this information to the cloud. At the same time, T-BOX also supports positioning of different satellite systems such as GPS.

3、 Data acquisition and processing: T-BOX can collect vehicle driving data, such as speed, fuel consumption, mileage, door status, etc., and process and analyze these data to provide users with richer vehicle data information.

4、 Remote control technology: T-BOX device uses TCP communication protocol to connect to the cloud server (SIM card is required to open traffic), and can remotely start, remotely unlock, obtain power information, report positioning



information, report alarm information, heartbeat report, and obtain firmware information.

5、 Security technology: In the application of Internet of vehicles, security issues are particularly critical. T-BOX has a series of security technologies, such as data transmission encryption, identity authentication, tamper-proof, etc.

6、 BLE communication function: The device can use BLE to communicate with the mobile APP to realize the switch lock, obtain device information, OTA upgrade, etc.

7、 OTA upgrade technology: T-BOX supports OTA (Over The Air) upgrade technology, that is, upgrade its firmware through the cloud, so that it has more functions and performance.

8、 Voice broadcast: unlock, lock, vibration alarm, car shutdown, remote car search, etc. Voice content supports remote update.

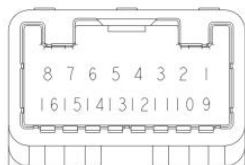
5.Interface Definition:



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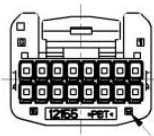
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Electrical end (3D picture of end face)



Harness end (3D picture of end face)

TE: 1318386-1



1318386-1

Connector detailed drawing

Interface matching conclusion

Pin function definition

Pin	Function description	Rated current	I_{max} (A)	Peak duration (ms)	Input/output	Function description	Signal type	Signal size	Use electrical end wire color (Lead mode required)	Terminal type (with electrical end)	Terminal manufacturer	Remark
1	CAN1-H	≤ 0.1	≤ 0.2	\		CAN1 Bus	Electric level	Or waveform				1 and 2 twisted
2	CAN1-L	≤ 0.1	≤ 0.2	\		CAN1 Bus	Electric level	2.5V				1 and 2 twisted
3	INPUT_D1	≤ 0.1	≤ 0.2	\	Input		Electric level	0-12V				Reserve
4	INPUT_D2	≤ 0.1	≤ 0.2	\	Input		Electric level	0-12V				Reserve
5	INPUT_AN1	≤ 0.1	≤ 0.2	\	Input	Analog current sig		0~36V				Reserved, current signal
6	INPUT_AN2	≤ 0.3	≤ 0.2	\	Input	Analog current sig		0~36V				Reserved, current signal
7	NC			\								
8	B+	≤ 2	≤ 3	\	Input	B+ Main loop power cable						
9	CAN2-H	≤ 0.1	≤ 0.2	\		CAN2 Bus	Electric level	2.5V				9 and 10 twisted
10	CAN2-L			\		CAN2 Bus	Electric level	2.5V				9 and 10 twisted
11	MOTO_IN	≤ 0.1	≤ 0.2	\	Input	Charge detection signal	PNM	0 to 12V				Reserve
12	NC			\								
13	NC			\								
14	NC			\								
15	ACC	≤ 0.1	≤ 0.3	\	Input	Power on		12V				
16	GND	≤ 2	≤ 3	\	Input	+ main circuit ground wire						

6.Warning

Federal Communications Commission (FCC) Statement. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received,

including interference that may cause undesired operation. Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning: Changes or modifications made to this device not expressly approved by

may void the FCC authorization to operate this device. Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

RF exposure statement:

The transmitter must not be colocated or operated in conjunction with any other antenna or transmitter. This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a Minimum distance of 20cm between the radiator and any part of your body.