EEBABCDE1 User Manual

Revision record:

Time	Version number	Reviewer	Content

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1.

Overview

1.1 Purpose

This document is the Ecarx DHU product specification, hereinafter referred to as DHU.

This document covers the complete set of basic functions that all EEBABCDE1 needs to implement.

1.2 Scope of application

This product is a vehicle-mounted product and is only suitable for Geely E245J1 models. Geely E5 cars.

2. Terms and abbreviations

Abbreviations	Original English	Chinese meaning
ACC OFF	ACC hardwire signal is low. (Crank, ACC hardwire signal is also low.)	
ACC ON	ACC hardwire signal is high.	
AC	Air Conditioning	
AM	Amplitude Modulation	
AMP	Amplifier	
APA	Assit	
AVM	All View Monitor	
BSD	Blind spot vehicle Discern System	
BLE	Bluetooth Low Energy	

BT	Bluetooth	
CAN	Controller Area Network	
CVBS	Composite Video Broadcast Signal	
DLNA	DIGITAL LIVING NETWORK ALLIANCE	
DVR	Digital Video Recorder	
ENT	Entertainment	
FM	frequency modulation	
GPS	Global Position System	
HMI	Human Machine Interface	
HUD	Head Up Display	
IHU	Infotainment Head Unit	
IME	Input Method Editor	
IPK	Instrument Pack	
LIN	Local Interconnect Network	
LVDS	Low Voltage Differential Signal	
MCU	Microcontroller Unit	
MIC	Microphone	
MMI	Multi-Media Infotainment	
PPM	Play Position Memory	
RSE	Rear Seat Entertainment	

RVC	Rear View Camera	
CPU	Central Processing Unit	
SVC	Surround View Camera	
SWC	Steering Wheel Control	
TCP	Transmission Control Protocol	
TTS	Text To Speech	
USB	Universal Serial Bus	
VR	Voice Recognition	
T-BOX	Telematics Box	
RRS	Reverse Radar System	
PAC	Parking Assist Control	
PEPS	Passive Entry/Passive Start	
BCM	Body Control Module	
E-CALL	Emergency Call	
B-CALL	Breakdown Call	

3. Product definition

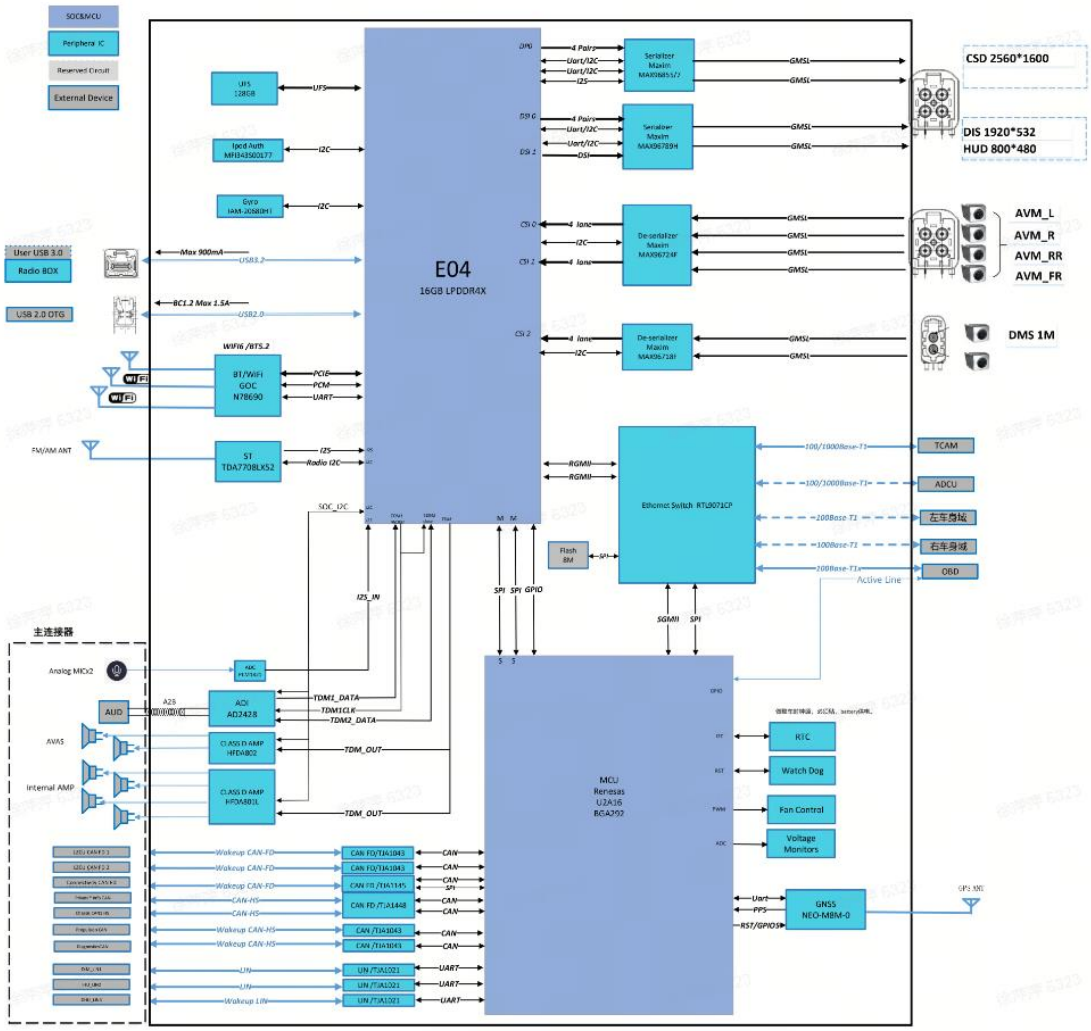
The car multimedia information entertainment system is mainly composed of DHU, front central control display assembly, radio antenna, Bluetooth antenna, speakers (bass, midrange, treble, bass, etc.), external power amplifier, microphone, switch buttons and various interfaces related to this system on the steering wheel.

DHU mainly realizes mobile phone mapping, audio reception, USB audio and video playback, clock display, Bluetooth phone, GPS navigation, information display,

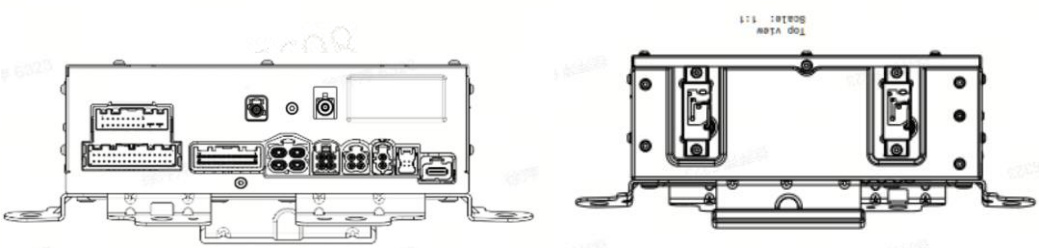
vehicle settings, voice control function requirements, reversing video/dynamic reversing auxiliary line/panoramic video/

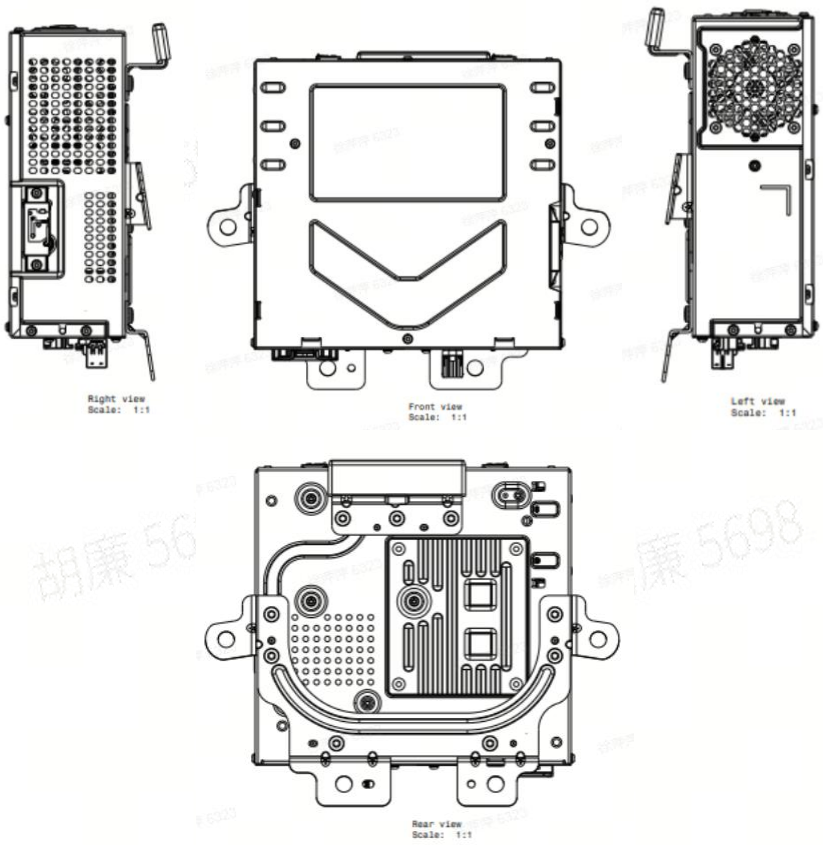
Reverse radar icon display, air conditioning information display and settings, etc.

3.1 System block diagram

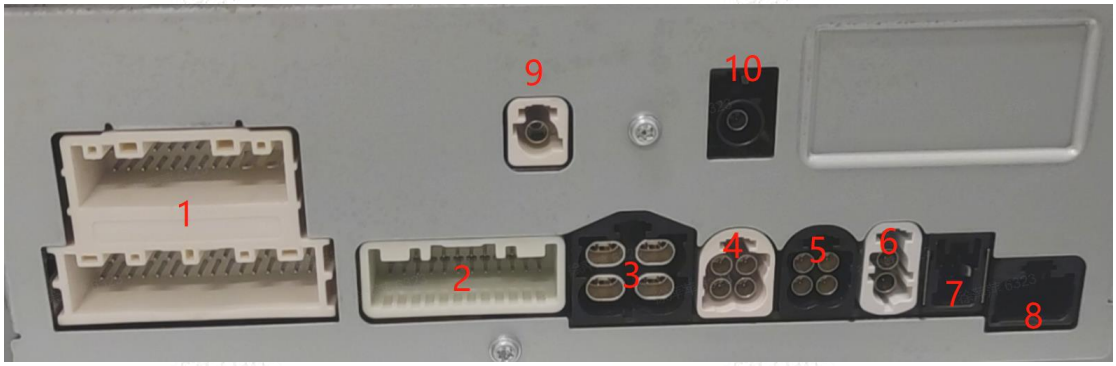


3.2 Structural design





3.2.1 Interface definition description



1.MAIN CONNECTOR 2.ISO 24PIN CONNECTOR 3.TCAM 4.CSD/DIS
5.CAMERA 6.DMS 7.USB2.0 8. DAB 9.GPS 10.FM

3.2.2 Product size

Size: 229mm*191.98mm * 85.94mm (including bracket)

Weight: 1600 ± 50g

3.2.3 Installation requirements

- The BT/WIFI antenna side needs to maintain a distance of at least 50mm from the metal parts of the car body.
- The connector side needs to have at least 50mm of operating space for wire harness bending.
- To ensure the heat dissipation path, please ensure a natural convection space of at least 35mm on both sides of the host. When the conditions cannot be met, please reserve a convection vent.
- In order to ensure the effect of heat dissipation fins, the angle between the Z'axis of the car system and the positive direction of the Z-axis of the car body should not exceed ± 90 °.
- The size of the host's heat dissipation hole is 2.6mm, and it has openings on three sides, which cannot prevent splashing. It is recommended to stay away from the air conditioning duct

4. Electrical characteristics

Temperature and humidity requirements

Temperature range:

Working temperature: -40 ℃~ 75 ℃

Storage temperature: -40 ℃~ 85 ℃

Low temperature storage: -40 ℃ storage for 24h

High temperature storage: 85 ℃ storage for 504h

Relative humidity: 5% to 80%

4.1 Product operating voltage and power consumption

Product operating voltage	Static power consumption	Normal power consumption
9V~16V	≤0.2mA	< 5A

5. Radio frequency

5.1 Bluetooth module

Supports Bluetooth v5.3, compatible with 1.X, 2.X + EDR, BT 3.X, BT4.0 and BT4.1, working frequency band is 2402-2480MHz, modulation method supports GFSK Pi/4-DQPSK, 8-DPSK, parameters are shown below:

Bluetooth (2402–2480 MHz): 12.82dBm
Bluetooth Low Energy (2402–2480 MHz): 6.87dBm

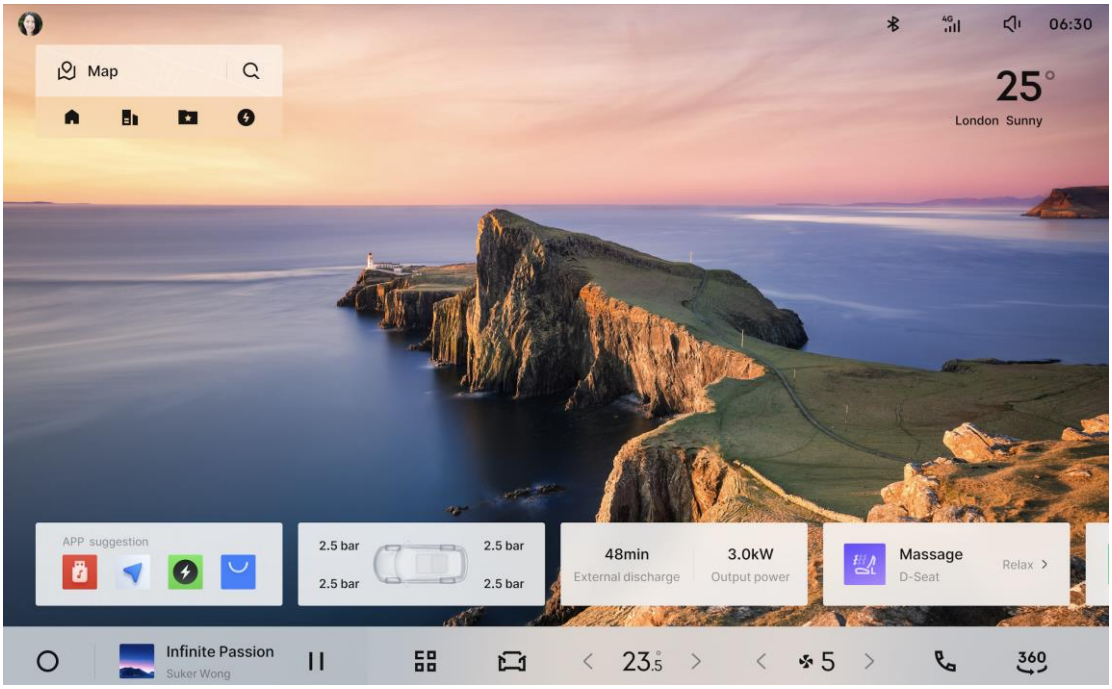
5.2 WIFI module

Dual-band, supports 2.4G and 5G; supports frequency band 2412-2484MHz; 5.18-5.825GHz; supports 802.11a/b/g/n/ac/ax protocol; modulation method supports CCK/BPSK/QPSK/16-QAM/64-QAM/256-QAM, see below for details:

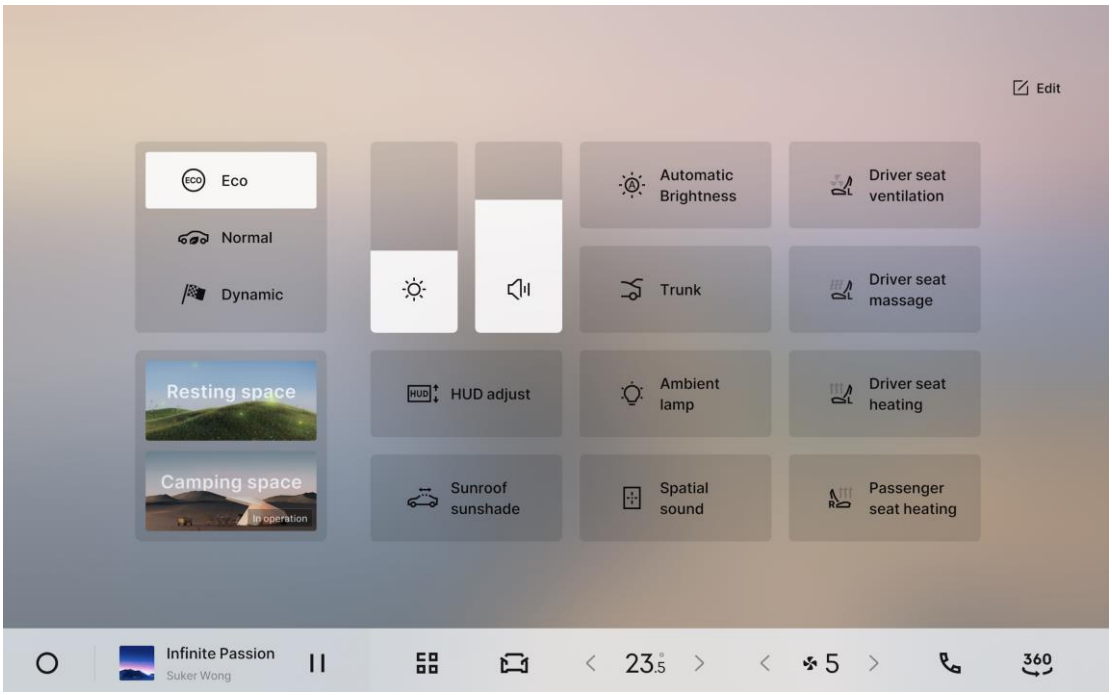
Wi-Fi 2.4 GHz (2412–2472 MHz): 14.22dBm
Wi-Fi 5 GHz (5180–5240 MHz): 15.33dBm
Wi-Fi 5 GHz (5745–5825 MHz): 13.92dBm

6. Operating instructions (desktop)

The desktop is a wallpaper desktop, which is divided into three parts: the status bar at the top, the wallpaper area in the middle, and the shortcut bar at the bottom. The middle area provides a widget for displaying weather information, displaying the weather conditions of the city where the current vehicle is located

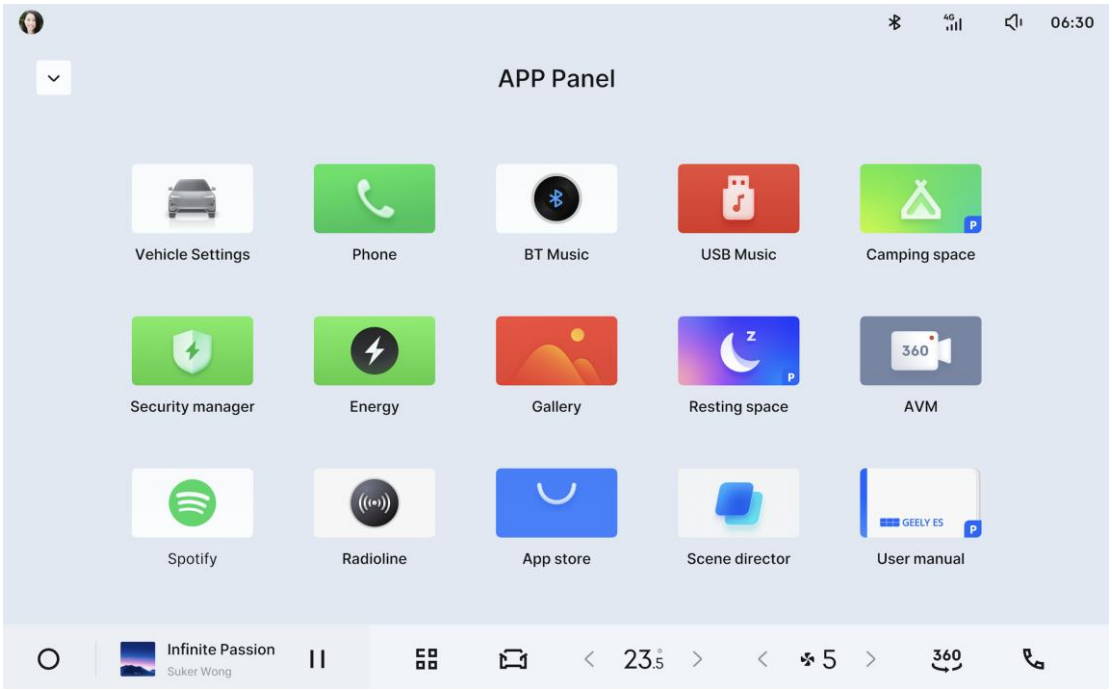


Swipe down from the top to drag out the Quick Center, which can easily activate common functions, including driving mode, screen brightness, volume, HUD display switch, trunk operation, seat ventilation and heating



Click on the application management in the bottom shortcut bar to see the rich variety of applications provided, such as camping space, Bluetooth phone, vehicle settings, Bluetooth music, USB music, security manager, energy management, Spotify, app store, etc

This device should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body



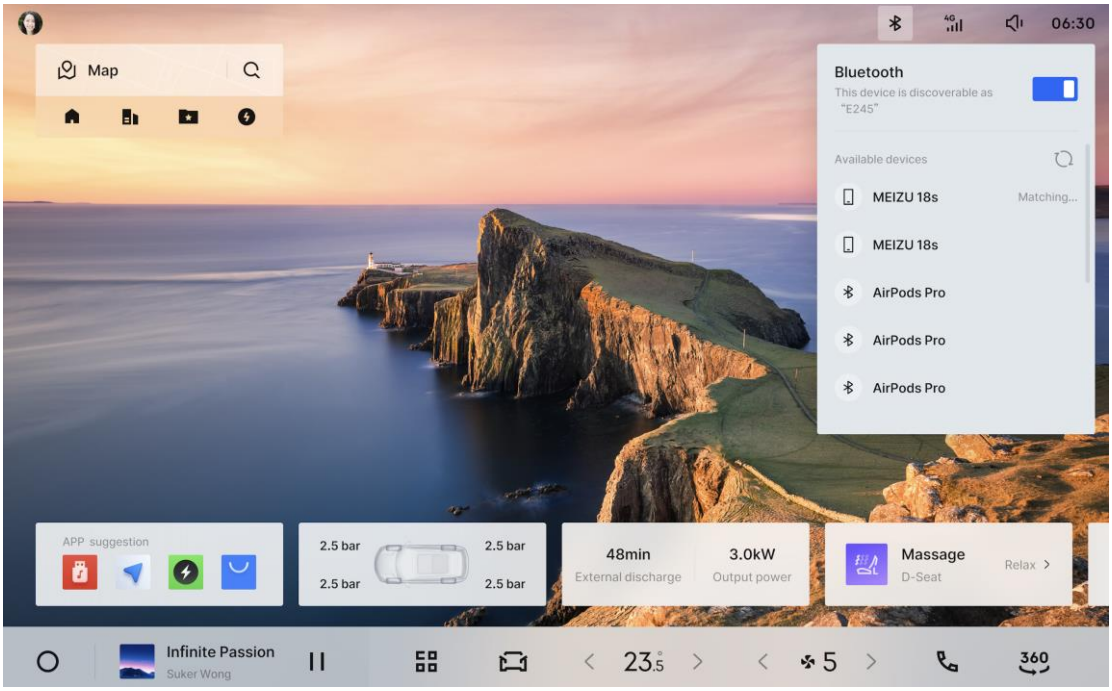
6.1 Power on

In the case of system shutdown, users can start the car by manually opening the door, remotely unlocking and starting, or inserting a charging and discharging gun when the vehicle is not locked.

6.2 Bluetooth connection

Click on the status bar [Bluetooth icon] - [Connect] - [Bluetooth] in order.

Turn on Bluetooth and turn on your phone's Bluetooth at the same time. Search for devices, find the device and click to connect.



Select the device from the available devices, and then click "Confirm" to connect

You will receive a paired message reminder on your phone.

Mobile terminal: Please confirm pairing.

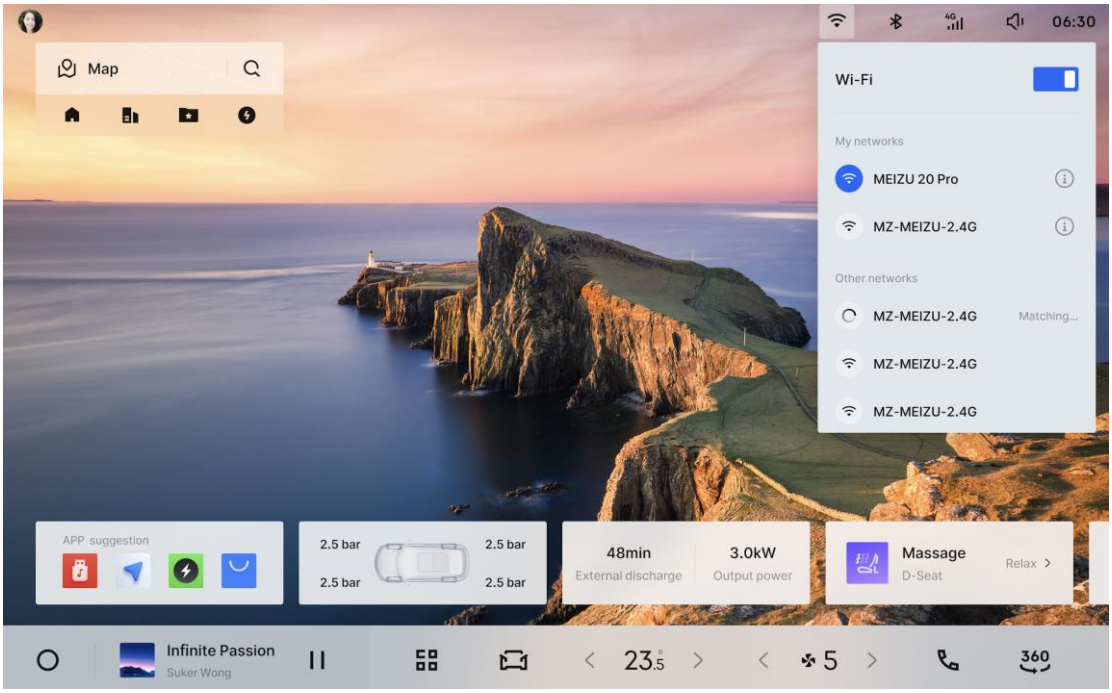
If the contacts cannot be synchronized, please click the corresponding Bluetooth name, unpair, and reconnect.

If you select Pairing Phone in, you will synchronize your connected Bluetooth contacts after successful pairing.

6.3 WIFI connection

Type "Status bar wifi icon" - "Connect" - "Wireless network" in order.

After turning on the wireless network, select the corresponding wifi to connect.



Complete WiFi connection after entering password

7. Warning

7.1 FCC Statement

Caution: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

RF Exposure Information:

The radiated output power of this device meets the limits of FCC/ISED radio frequency exposure limits. This device should be operated with a minimum separation distance of 20 cm between the equipment and a person's body.

7.2 ISED Statement

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

(1)This device may not cause interference.

(2)This device must accept any interference, including interference thatmay cause undesired operation of the device.

This equipment complies with Industry Canada radiation exposure limits set forth for an uncontrolled environment.

Le présentappareilestconformeaux CNR d‘IndustrieCanada applicablesaux appareilsradio exempts de licence. L’exploitationestautoriséeaux deuxconditions suivantes:

(1)l'appareilne doitpas produirede brouillage.

(2)l'utilisateurde l'appareildoitaccepter tout brouillageradioélectriquesubi,mêmesile brouillageestsusceptible d'encompromettrele fonctionnement.

The radiated output power of this device meets the limits of FCC/ISED radio frequency exposure limits. This device should be operated with a minimum separation distance of 20 cm between the equipment and a person’s body.

La puissance de sortie rayonnée de cet appareil est conforme aux limites de la FCC/ISED limites d’exposition aux fréquences radio. Cet appareil doit être utilisé avec une distance minimale de séparation de 20 cm entre l’appareil et le corps d’une personne.