

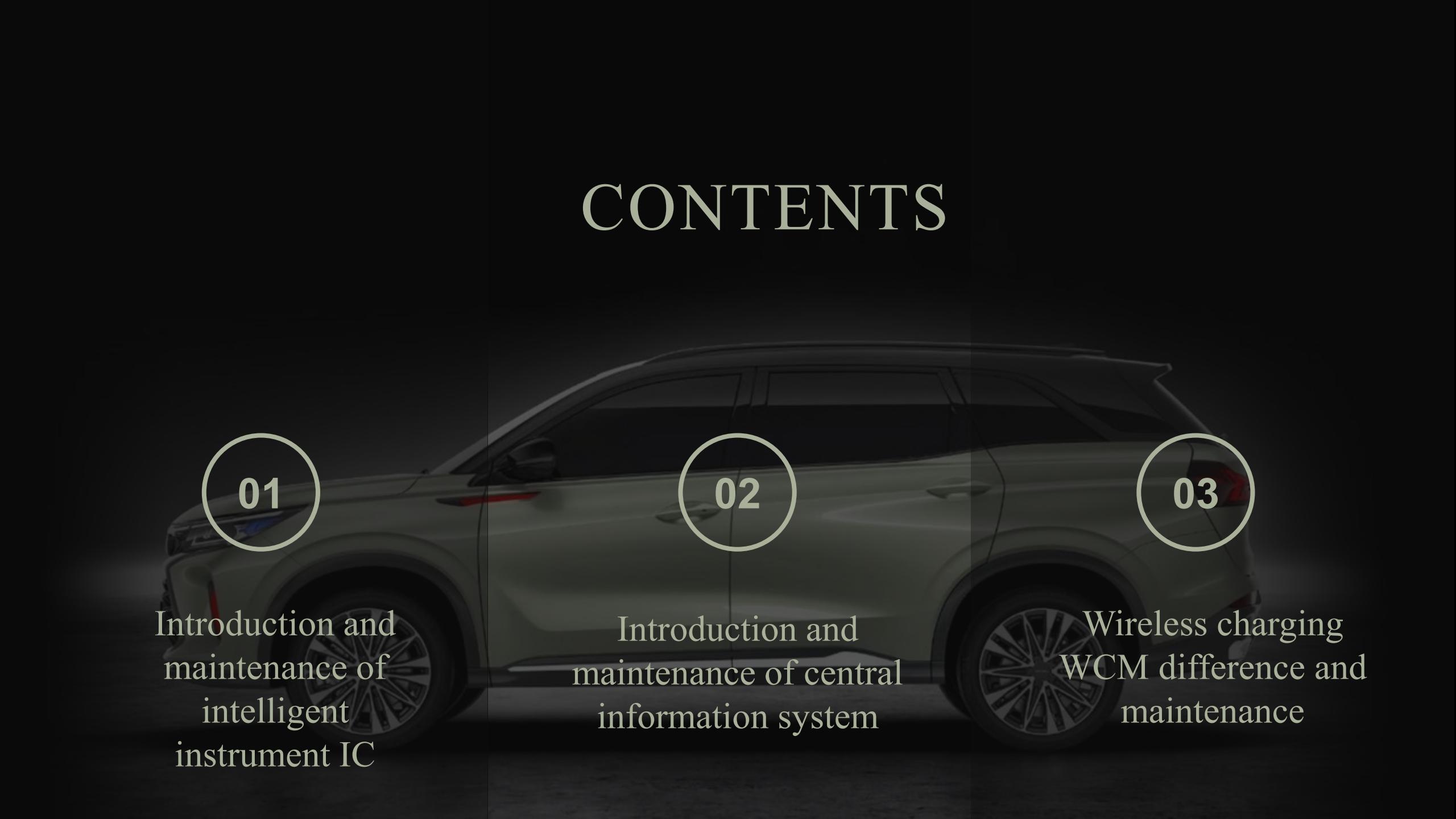


Training Courseware of New GLORY 580

Information System



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Course objectives

- Tell the function characteristics of the new 580 intelligent instrument
- Master the control principles of GLORY 580 intelligent instrument
- Master the fault diagnosis and maintenance method of GLORY580 intelligent instrument

1、Overview of integrated instrument

The new 580 is equipped with 7+12.3 dual-screen instrument:

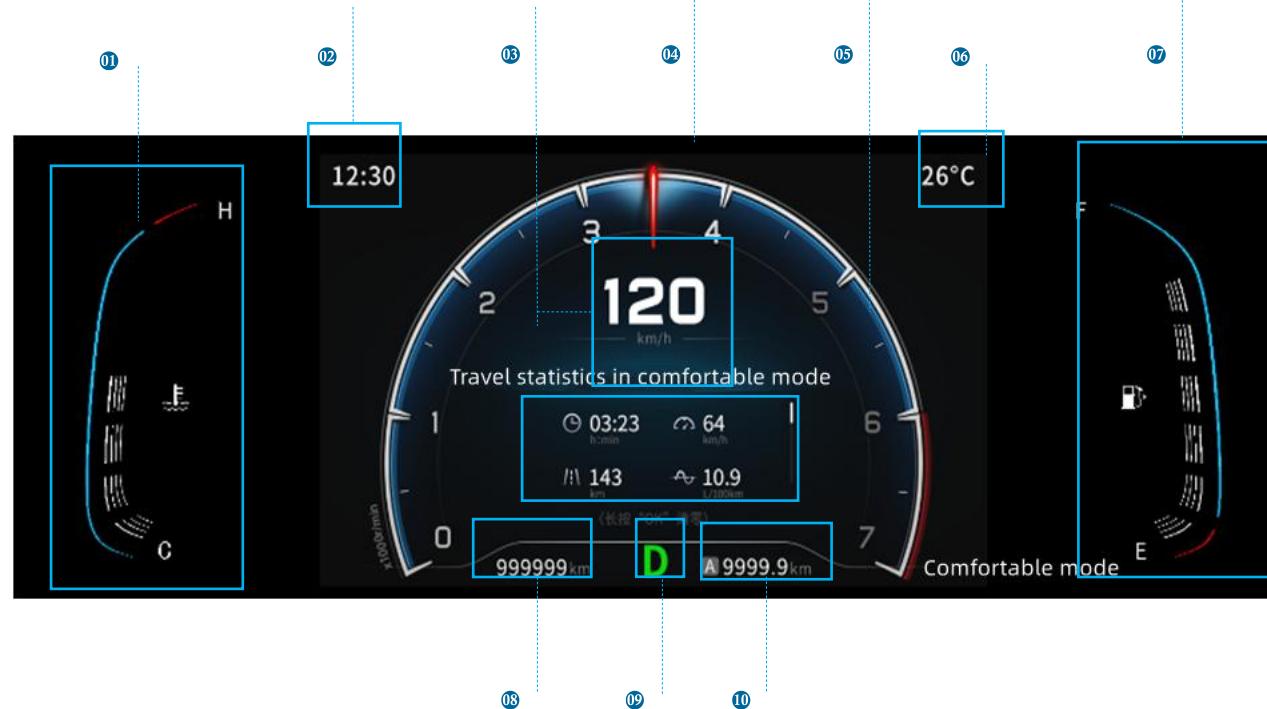
The integrated instrument receives signals from other ECUs, sensors and switches through the internal MCU to display various information about the current vehicle state. 7-inch LCD combination instrument LCD simulation

display speedometer, tachometer, driving computer (travel information, range, tire pressure, multimedia, driving information statistics, etc.), settings and other information; Water temperature gauges and fuel gauges are distributed on both sides and lit by LEDs. The vehicle speed receives CAN communication signal from ABS (ESP) -ECU, and the water temperature and speed receive CAN communication signal from engine ECU.



The Settings provide theme switch, mode switch, fatigue driving reminder, overspeed alarm reminder, brightness and other functional Settings.

1、Function overview of integrated instrument



No.	Function	No.	Function
1	Water-thermometer	6	Outside temperature
2	Time	7	Fuel meter
3	Speedometer	8	Total distance
4	Vehicle computer	9	Gear display
5	Tachometer	10	Mileage subtotal

2、Function self-check of warning lights on integrated instrument



3. Warning lights functions of Integrated instrument

NO.	Name	Sign	Color	Signal Sources
1	Brake system failure indication		Red	The light is normal on when brake fluid is too low, lights up when level is low, hard wire connection; EBD failure, indicator light, CAN signal;
2	Electronic handbrake system failure lamp		Yellow	CAN with wrong message or the electronic handbrake itself fails, the light is steady on, CAN signal.
3	Parking brake		Red	Electronic handbrake; When the electronic hand brake is pulled up, the light is on, light is flashing when the position is unknown, and when it's released, the light is off, CAN signal;
4	ABS indication		Yellow	When ABS fails, the indicator is normal on, CAN signal;
5	Charging indicator		Red	When the generator is faulty, the indicator light is normal on, hard wire connection;
6	Tire pressure indicator		Yellow	When the tire pressure system fails, the indicator light is normal on, CAN signal
7	Left turn indication		Green	When turning to the left, or opening the hazard alarm switch, the indicator light is on, CAN signal;

3. Warning lights functions of Integrated instrument

NO.	Name	Sign	Color	Signal Sources
8	Right turn indication		Green	When turning to the right, or opening the hazard alarm switch, the indicator light is on, CAN signal;
9	Seat belt unfastened indication		Red	The light is normal on when safety belt is not fastened, CAN signal;
10	Position light indication		Green	The indicator is normal on when position light/lamplet turns on, CAN signal;
11	High beam indication		Blue	The indicator is normal on when high beam light turns on, CAN signal;
12	ESP working/fault indicator		Yellow	When ESP is working, the indicator flashes, CAN signal. When the ESP system is faulty, the indicator is normal on, CAN signal.
13	ESP OFF indicator		Yellow	When ESP system is closed, the indicator light is on, CAN signal.
14	Cruise indicator		Green	When cruise opened, the indicator is on, CAN signal;
15	Gearbox fault indicator		Yellow	When the gearbox is faulty, the indicator light is on, CAN signal

3、Warning lights functions of Integrated instrument

16	Airbag fault indication		Red	Airbag system malfunction. CAN signal
17	Rear fog light indication		Yellow	The indicator is normal on when the rear fog light turns on, CAN signal;
18	Power steering failure indication		Yellow	When EPS is fault, the indicator is normal on, and flashing when fault diagnosis, CAN signal;
19	Engine failure indication		Yellow	When the engine management system is faulty, it is normal on, CAN signal;
20	Engine anti-theft indication		Red	When the serial number sent by the anti-theft key does not match that sent by the EMS, the anti-theft indicator is on; CAN signal
21	Oil pressure		Red	When the oil pressure is insufficient, the oil indicator is on, hard line signal.
22	Water temperature alarm		Red	When the engine coolant temperature rises to the alarm temperature, the alarm symbol flashes, CAN signal;
23	Fuel alarm		Yellow	When fuel surplus reaches alarm point, alarm symbol flashes. If the indicator is normal on, it indicates that the cable harness is improperly connected. Hard wire connection.

3. Warning lights functions of Integrated instrument

24	HDC indication		Yellow	When the HDC is faulty, the yellow indicator is on, CAN signals
25	Autohold turning on indicator		Green	AUTOHOLD function is working, CAN signal;
26	Autohold activation indicator		Green	AUTOHOLD function is actived, CAN signal;
27	Low beam lights		Green	The indicator is on when the low beam lights turn on, CAN signal
28	Turning off indicator of the backward pre-warning system		Yellow	Turning off indication of the backward pre-warning system
29	Fault indicator of the backward pre-warning system		Yellow	Fault indication of the backward pre-warning system CAN signal
30	GPF indicator		Yellow/Red	GPF indicator, state indicator of China VI particle catcher, CAN signal

3. Overview of steering wheel integrated switch

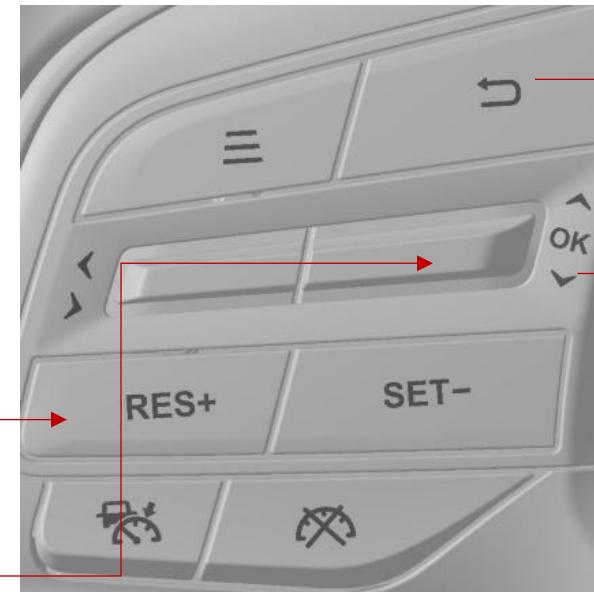
智能仪表IC

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1. Function overview of steering wheel integrated switch

In any interface, the first-level menu can be switched by pressing the screen selection key on the left side of the multi-functional steering wheel up and down. If do not operate in 2 seconds, the current content is selected by default, the menu bar is hidden, and the menu does not switch circulally.

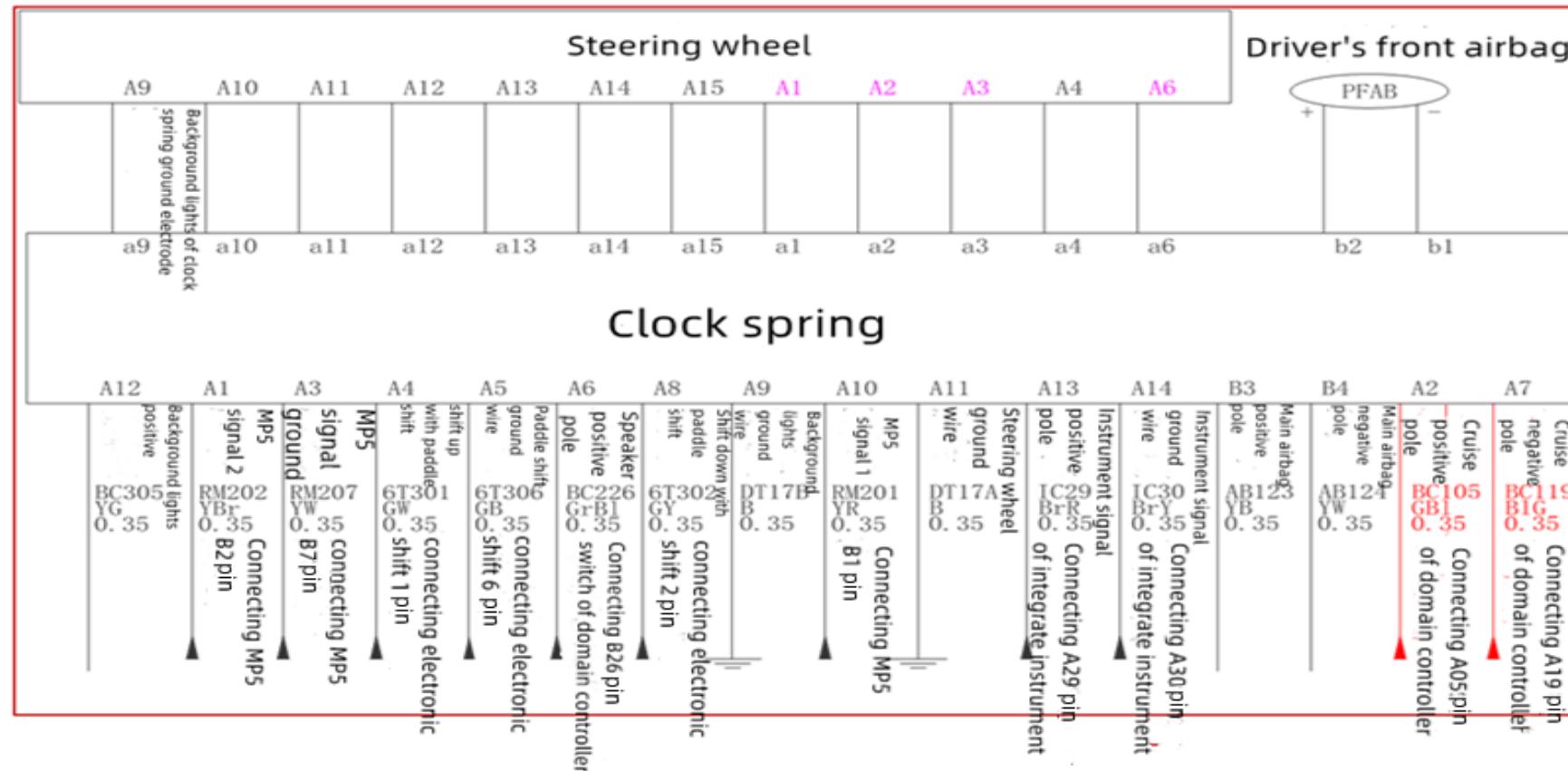
Pressing shortly the steering wheel OK button on the left side of the multi-functional steering wheel to confirm the selection, and pressing long to reset and clear part of the information.

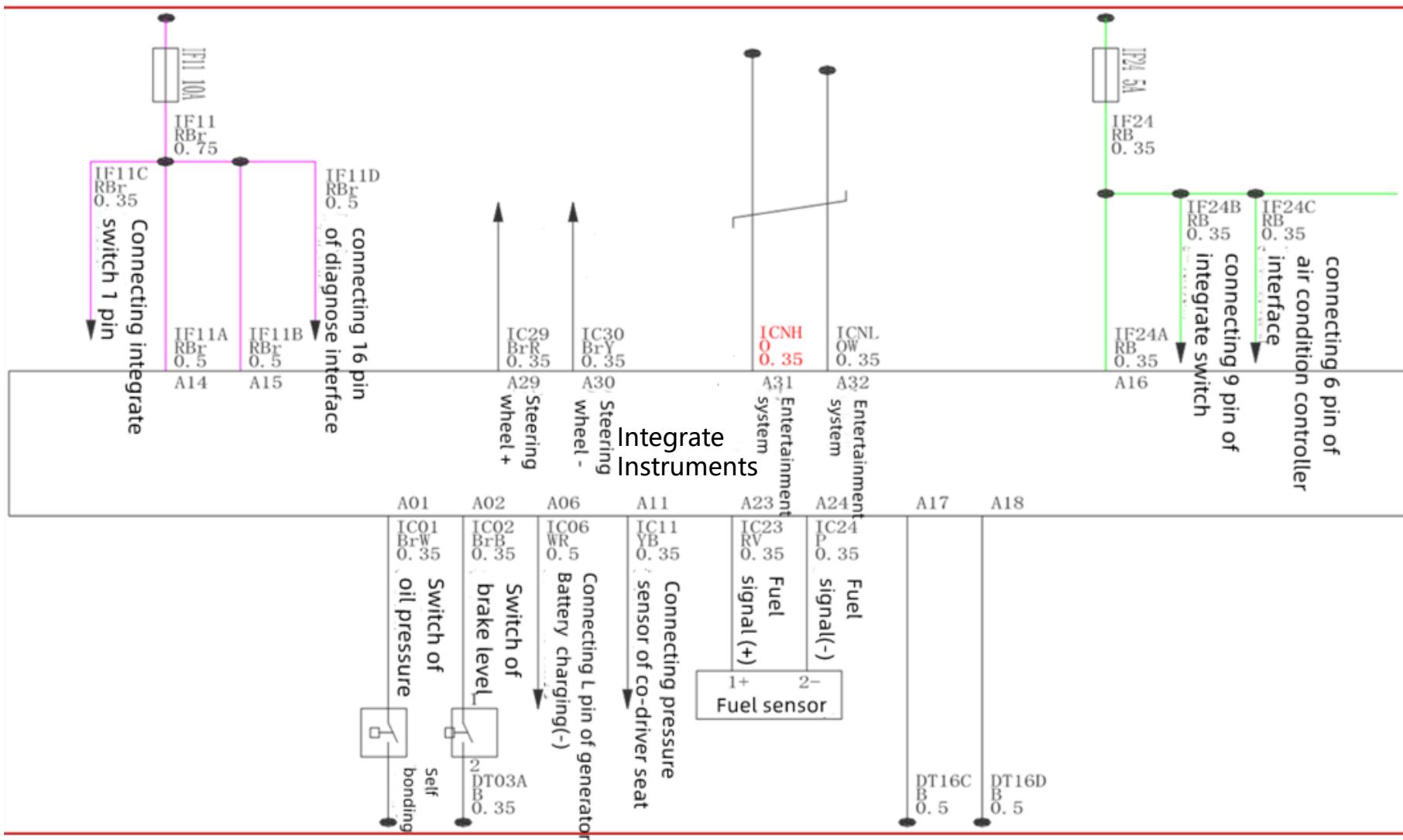


Pressing the back button on the left side of the multi-functional steering wheel to return to the upper level.

Under a first-level menu, the second-level menu can be switched by pressing the direction keys on the left side of the multi-functional steering wheel up and down. For example, under the driving computer interface, can switch to display travel A statistics, travel B statistics, current travel statistics, mileage, tire pressure, etc

2、 Steering wheel circuit diagram





4. Circuit diagram of integrated instrument system and pin definition

智能仪表IC

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Composite instrument connector definition

Pin parameters					
Main connector AMP 2-966658-1(Green)					
Pin	Function	Other requirements/remarks	Pin	Function	Other requirements/remarks
A1	Oil pressure (-)	Signal wire	A17	Ground (-)	
A2	Brake failure (-)	Signal wire	A18	Ground (-)	
A3			A19		
A4			A20	Pressure sensor of rear seat of main driver	Signal line, collecting resistance signal
A5			A21	Pressure sensor of rear middle seat	Signal line, collecting resistance signal
A6	Battery charging (-)	Signal wire	A22	Pressure sensor of rear seat of co-driver	Signal line, collecting resistance signal
A7	Seat belt in rear seat of main driver (-)	Signal wire	A23	Fuel signal (+)	Signal wire
A8	Rear middle seat belt (-)	Signal wire	A24	Fuel signal ground	Signal wire
A9	Seat belt in rear seat of co-driver (-)	Signal wire	A25	Hard line speed output	Signal wire
A10			A26		
A11	Pressure sensor of co-driver	Signal line, collecting resistance signal	A27		
A12			A28		
A13			A29	Steering wheel +	Collecting resistance signal
A14	Battery (+)	1A under normal use	A30	Steering wheel -	
A15	Battery (+)		A31	CAN_H	Signal wire
			A32	CAN_L	Signal wire

► 5、Fault code analysis of instrument system

智能仪表IC



DTC list

NO.	DTC value	DTC meaning	Fault attribute	The possible cause
1	C07688	Controller Bus Off	Network fault	Bus interference
2	C10087	Fail to communicate with EMS	Network fault	Poor contact/wire harness interference
3	C13187	Fail to communicate with EPS	Network fault	Poor contact/wire harness interference
4	C10187	Fail to communicate with TCU	Network fault	Poor contact/wire harness interference
5	C11D87	Lost communication with GW	Network fault	Poor contact/wire harness interference
6	C14087	Fail to communicate with BCM	Network fault	Poor contact/wire harness interference
7	C18687	Fail to communicate with RRM	Network fault	Poor contact/wire harness interference
8	C15187	Lost communication with ABM	Network fault	Poor contact/wire harness interference
9	C12887	Fail to communicate with EPB	Network fault	Poor contact/wire harness interference
10	C21287	Lost communication with ESCL	Network fault	Poor contact/wire harness interference
11	911717	Battery Voltage	Voltage fault	Power interference/wire harness damage
12	911716	Battery Voltage	Voltage fault	Power interference/wire harness damage
13	DA3087	Fail to communicate with WCM	Network fault	Poor contact/wire harness interference

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- 02 Multimedia System Display Function**
- 03 Multimedia System Structure and Function**
- 04 Multimedia System Circuit Diagram**
- 05 Multimedia System Fault Symptom and Fault Code List**



Course Objectives

- Understand IVI functions
- Master IVI circuit diagram analysis method
- Master IVI fault diagnosis methods

1. Multimedia system includes display function and function control

Multimedia MCU adopts 32-bit single-chip microcomputer as the main control unit of the system, which is mainly responsible for radio, audio DSP, power management, user input and output, I/O control, etc. The core CPU runs the Android 9 operating system.

The CPU is mainly responsible for functions such as multimedia player, Bluetooth, WiFi, navigation, and display drive.

The main functions of the product include FM/AM, USB multimedia audio and video playback, map navigation, bluetooth phone, Bluetooth music, WIFI function (dual-band), reverse radar, external DVR, built-in AVM, 4G Internet access, voice recognition, etc.



► 2、Functions displayed on multimedia system

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1、The functions displayed on the main screen of multimedia system.

The content displayed on the first main interface.



►2、Functions displayed on multimedia system

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1.1、The functions displayed on the main screen of multimedia system.

Panoramic parking displayed content



► 2. Functions displayed on multimedia system

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1.2. The functions displayed on the main screen of multimedia system.

The contents displayed on steering mode setting



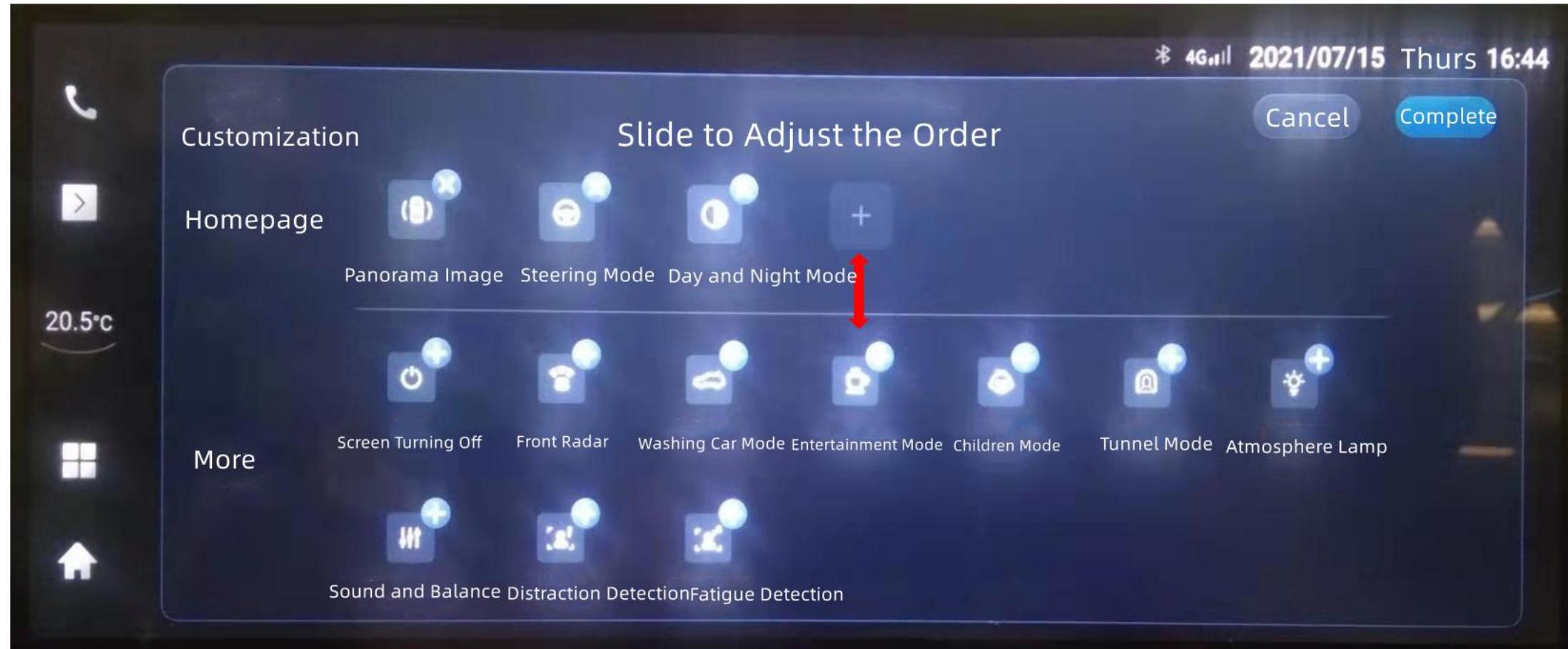
► 2. Functions displayed on multimedia system

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1.3、The functions displayed on the main screen of multimedia system.

Customization displayed contents



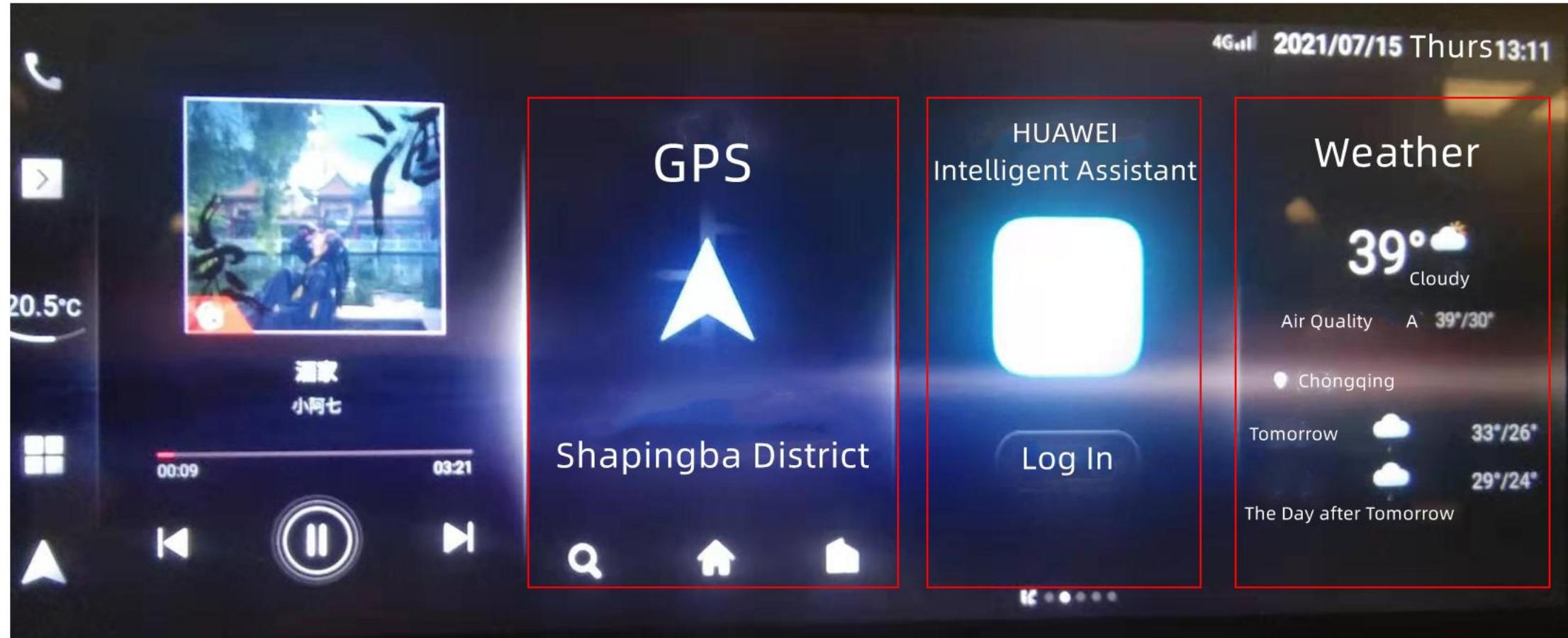
►2、Functions displayed on multimedia system

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2、The functions displayed on the main screen of multimedia system.

The content displayed on the second main interface



► 2、Functions displayed on multimedia system

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3、The functions displayed on the main screen of multimedia system.

The contents displayed on the third main interface.



► 2、Functions displayed on multimedia system 中央信息系统IVI



3.1、The functions displayed on the main screen of multimedia system.

Content displayed on navigation interface



► 2. Functions displayed on multimedia system

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3.2. The functions displayed on the main screen of multimedia system.

Content displayed on vehicle settings



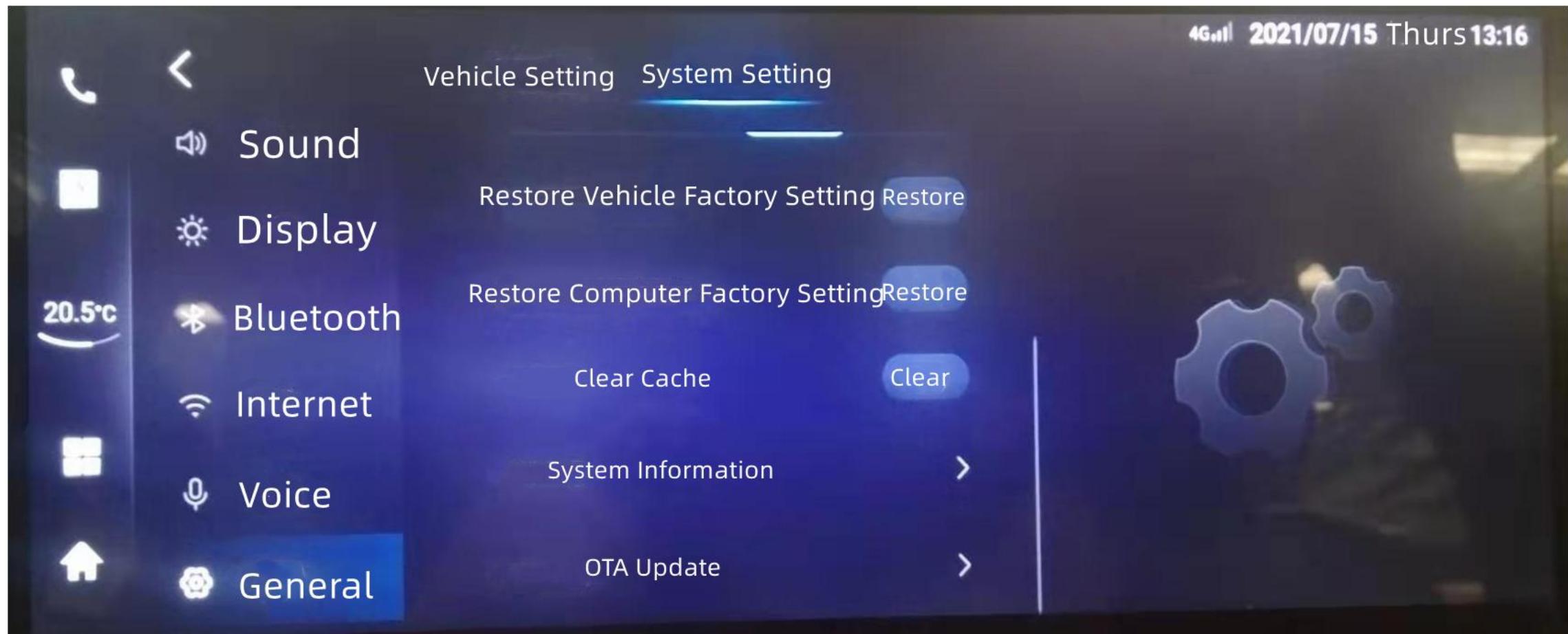
2. Functions displayed on multimedia system

中央信息系统IVI



3.3. The functions displayed on the main screen of multimedia system.

Content displayed on system settings.



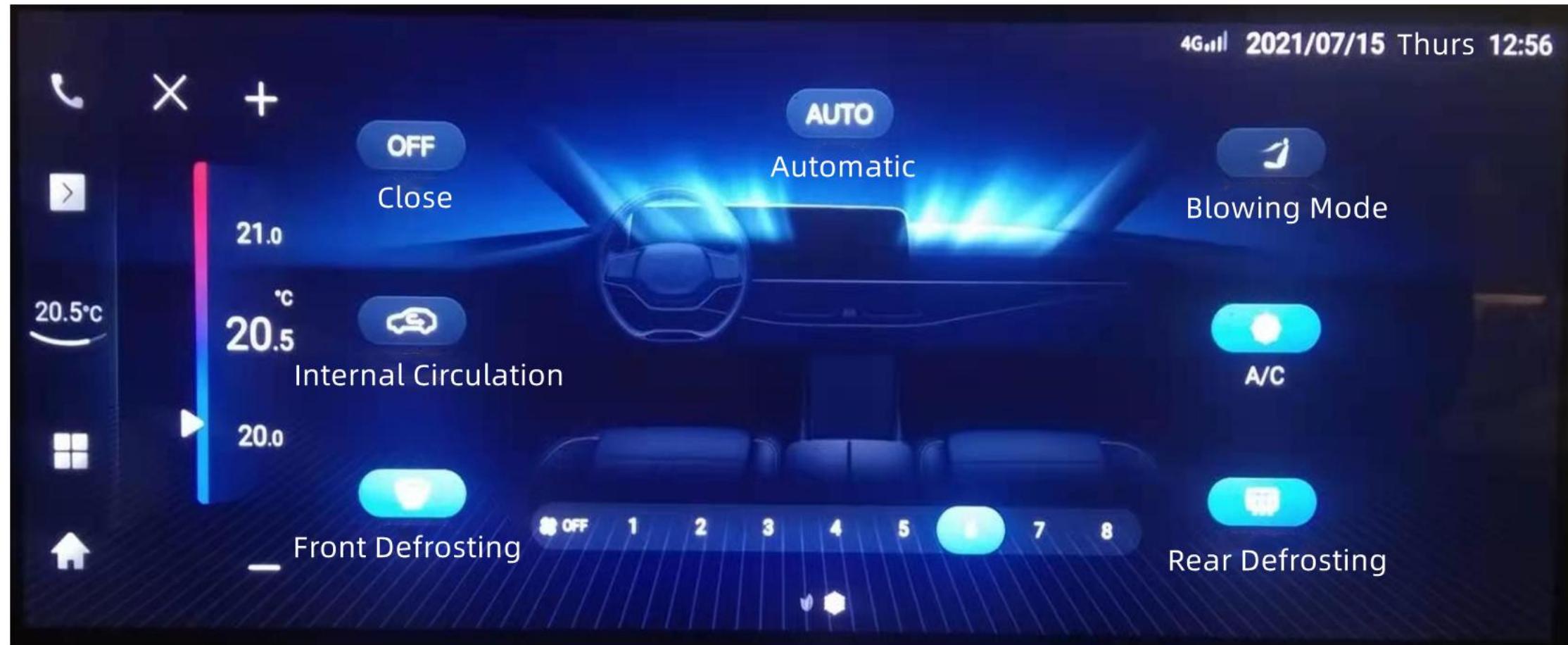
► 2. Functions displayed on multimedia system

中央信息系统IVI



3.4. The functions displayed on the main screen of multimedia system.

Content displayed on A/C setting



► 2. Functions displayed on multimedia system

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3.5. The functions displayed on the main screen of multimedia system.

The content displayed on ONE BUTTON TO PURIFY setting.



2. Functions displayed on multimedia system

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3.6、The functions displayed on the main screen of multimedia system.

Content displayed on multimedia setting

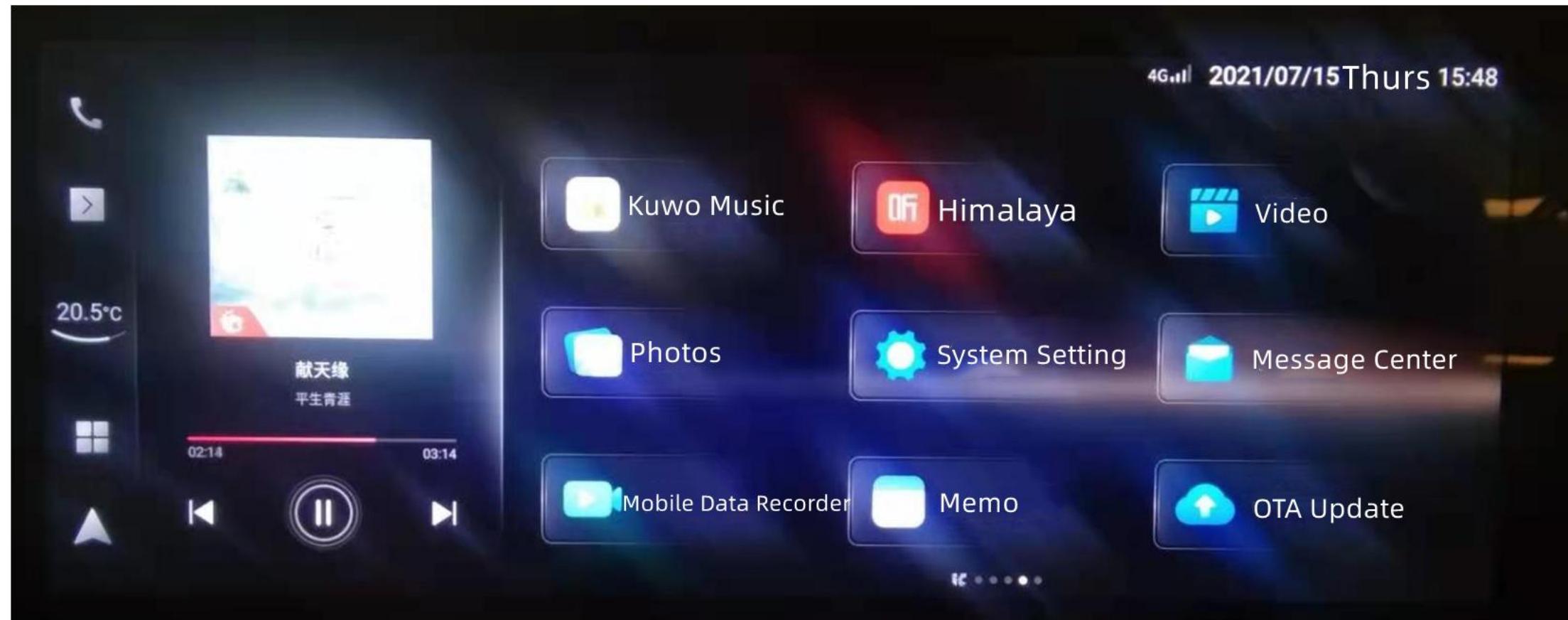


► 2. Functions displayed on multimedia system 中央信息系统IVI



4. The functions displayed on the main screen of multimedia system.

The content displayed on 4th main interface

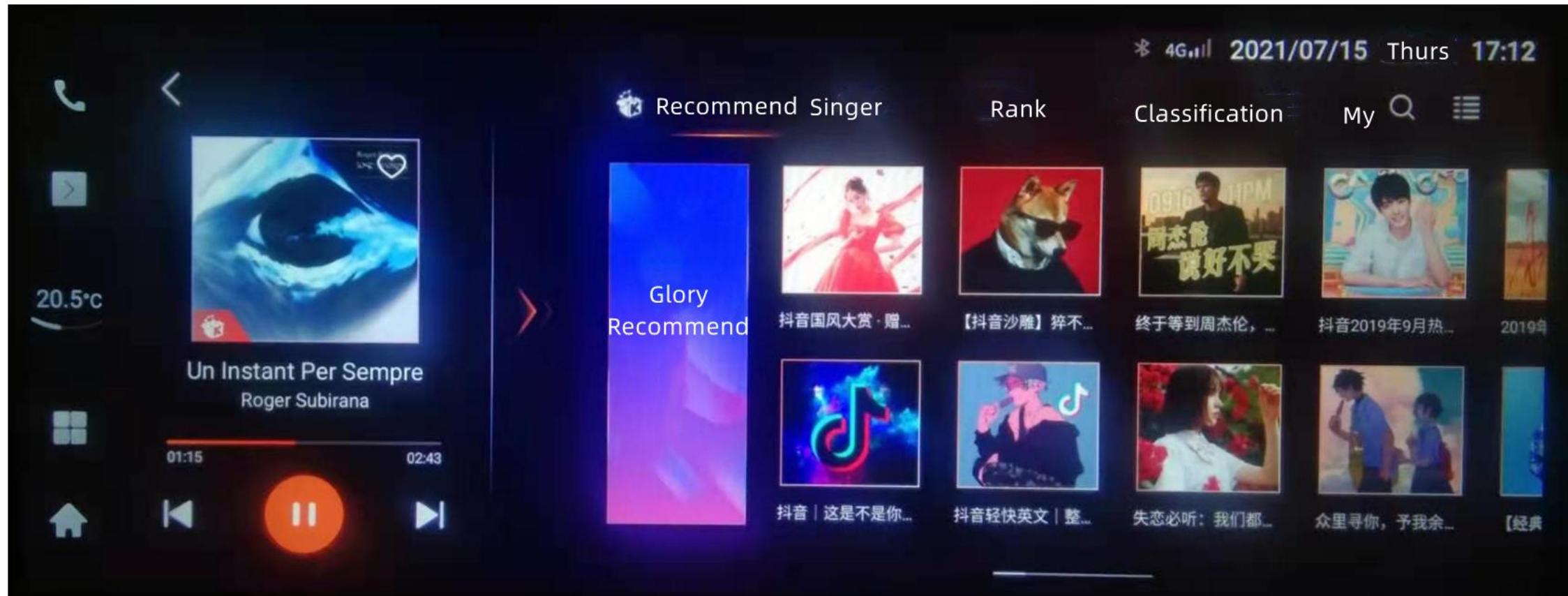


► 2. Functions displayed on multimedia system 中央信息系统IVI



4.1、The functions displayed on the main screen of multimedia system.

The content displayed on KUWO Music interface



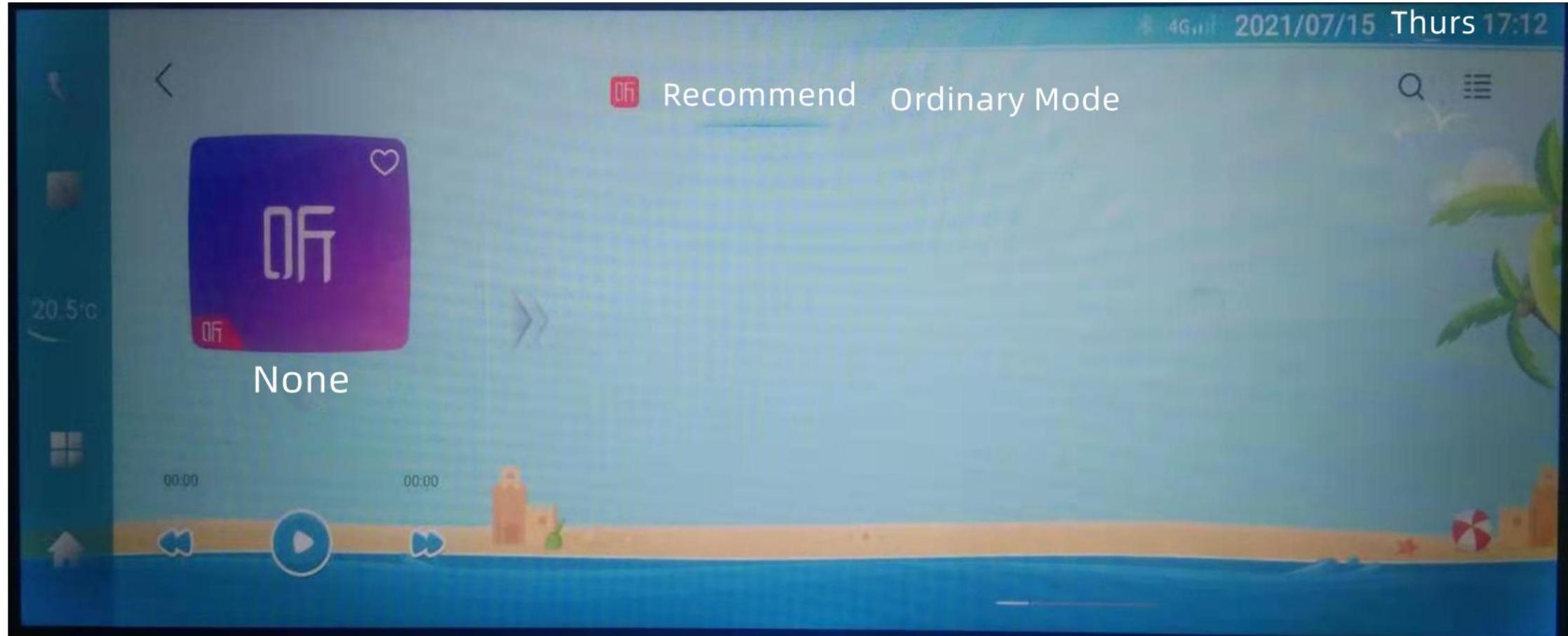
► 2. Functions displayed on multimedia system

中央信息系统IVI



4.2、The functions displayed on the main screen of multimedia system.

The content displayed on Himalaya interface



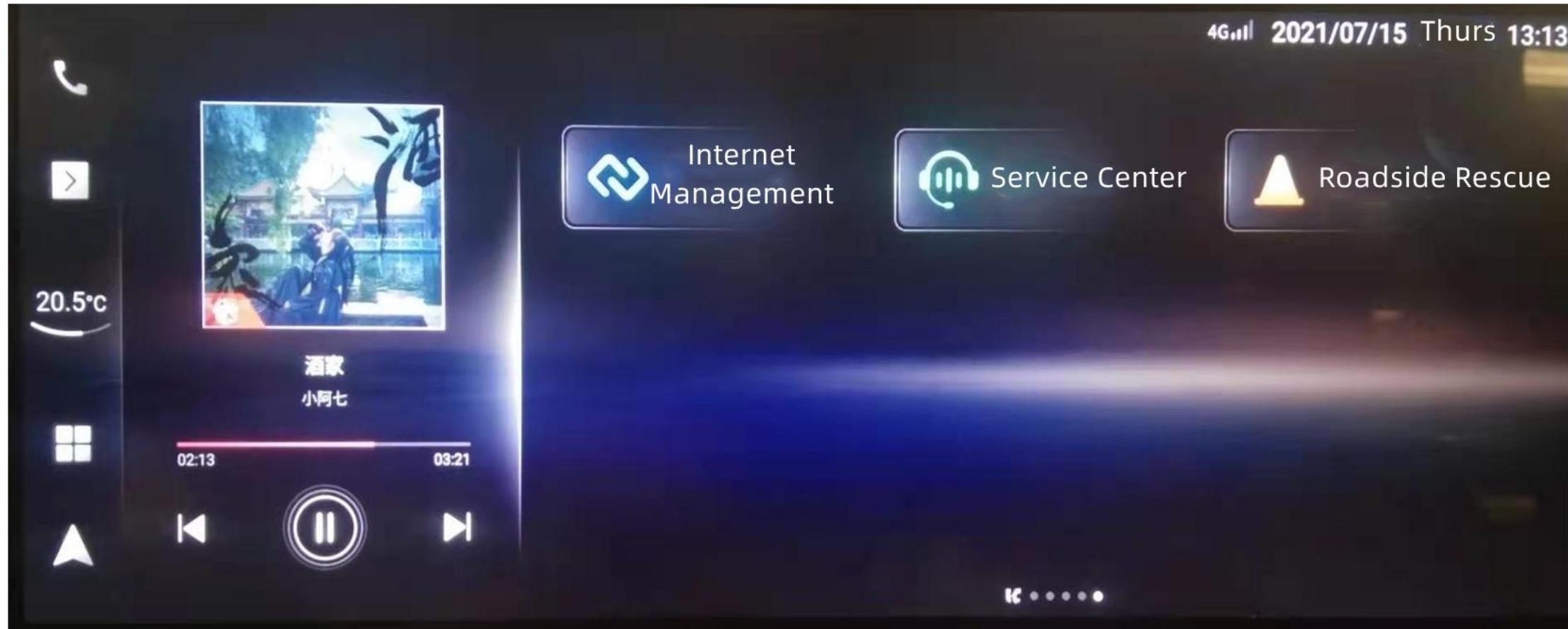
► 2、Functions displayed on multimedia system

中央信息系统IVI



5、The functions displayed on the main screen of multimedia system.

The content displayed on the 5th main interface



1、Structure of multimedia system

Multimedia system structure is mainly divided into 9 parts:

- 1) Host part
- 2) Display screen
- 3) Power supply and antenna
- 4) Vehicle data recorder
- 5) Microphone, USB input, face recognition part
- 6) Panoramic parking camera
- 7) Ultrasonic sensor part
- 8) Speaker part
- 9) Face recognition part



Host part



Microphone part



Vehicle data recorder



Display screen part



Sunlight rainfall sensor



Face recognition part

2. Functions of multimedia system components

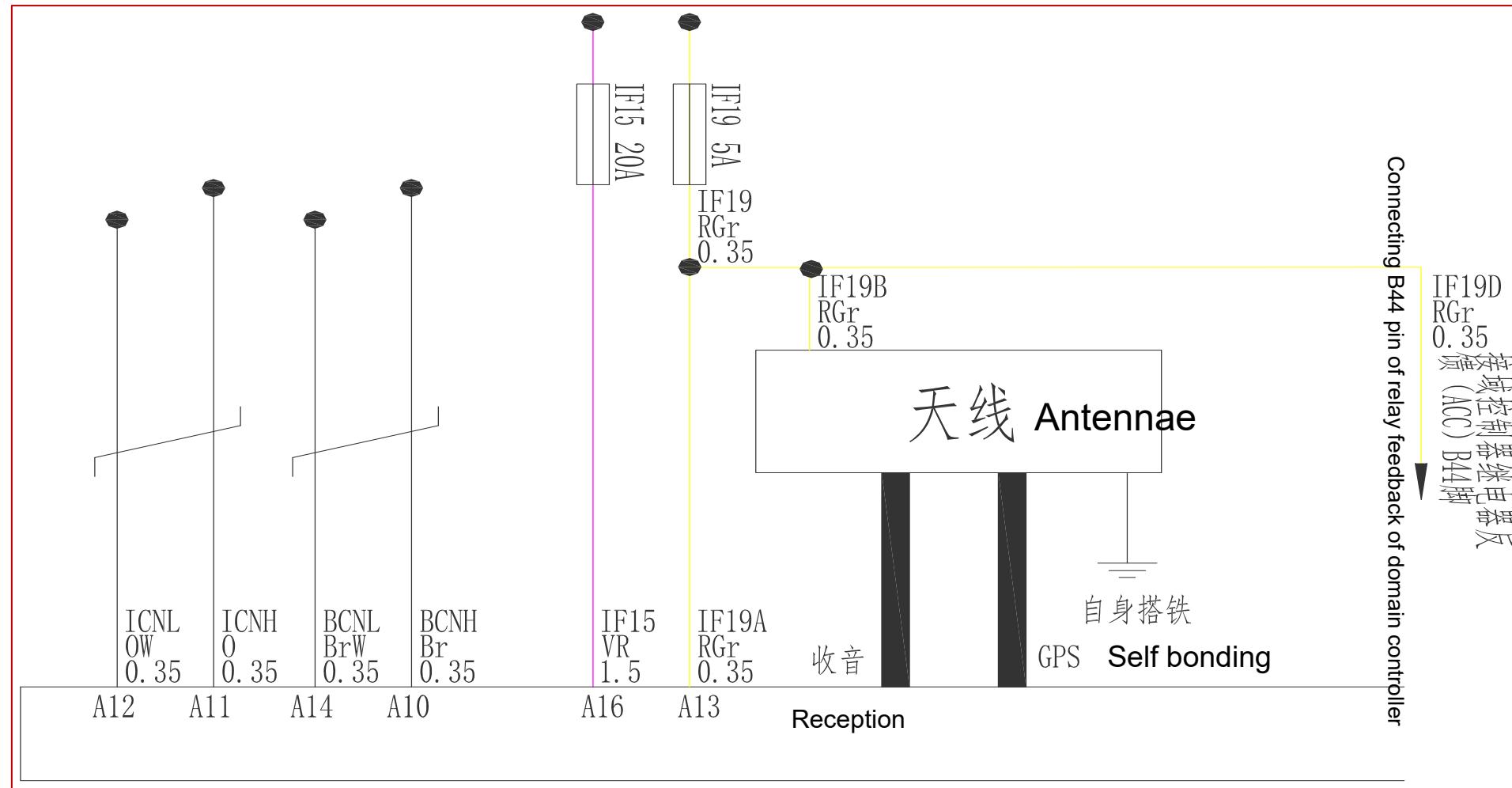
1. Host part: receiving the artificial signal and the signal of each sensor are processed and executed by the actuator.
2. Display screen: the display screen has two functions, one is information display; another is the touch-screen switch function;
3. Power supply and antenna part: provide power to the host part to make the host work, antenna is used to receive external information and signal amplification.
4. The part of vehicle data recorder: record the information in front of the vehicle through the camera and store the information, which can be displayed and played back through the display screen.
5. Microphone and USB input: receive microphone voice information for voice control; The USB port is used to transfer information files.
6. Panoramic parking camera: image acquisition is carried out through the front, rear and right cameras. After processing by the host, image information is displayed on the display screen according to requirements
7. Ultrasonic sensor part: through the ultrasonic sensor to measure the distance of obstacles, the signal is provided to the host, the host controls screen to display alarm information and buzzer alarm.
8. Speaker part: receive host audio voltage signal, and convert the audio voltage signal into audio through the speaker .
9. Face recognition part: face recognition system can collect face information to verify the driver's identity, and operate car entertainment preferences, navigation, atmosphere lights and other configurations. At the same time, it can evaluate the fatigue state of the driver according to blink frequency, yawn, nodding and other head movements, and identify dangerous movements such as phone calls, smoking, and timely warning drivers pay attention to driving safety.

► 4. Circuit diagram of multimedia system

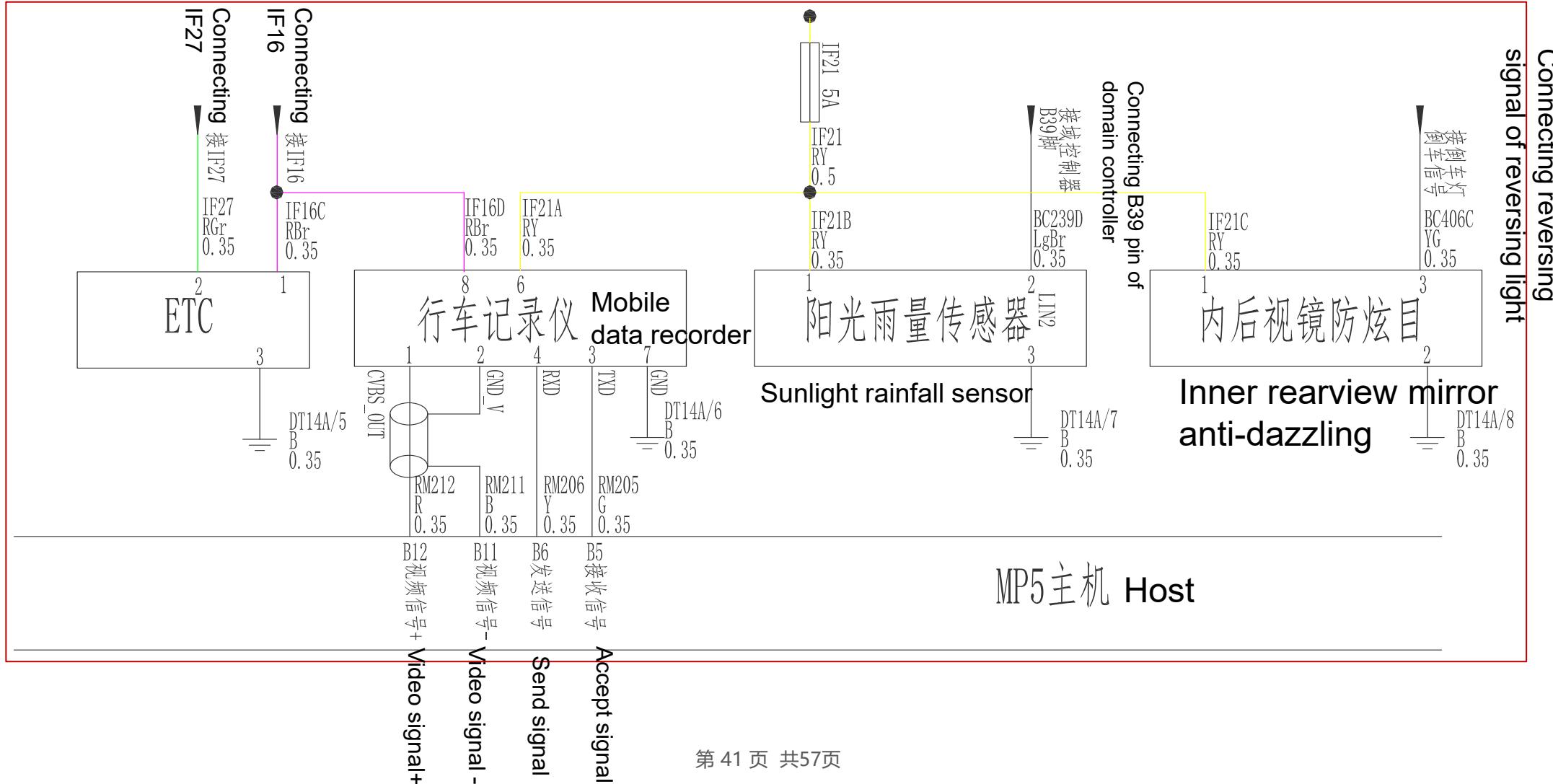
中央信息系统IVI

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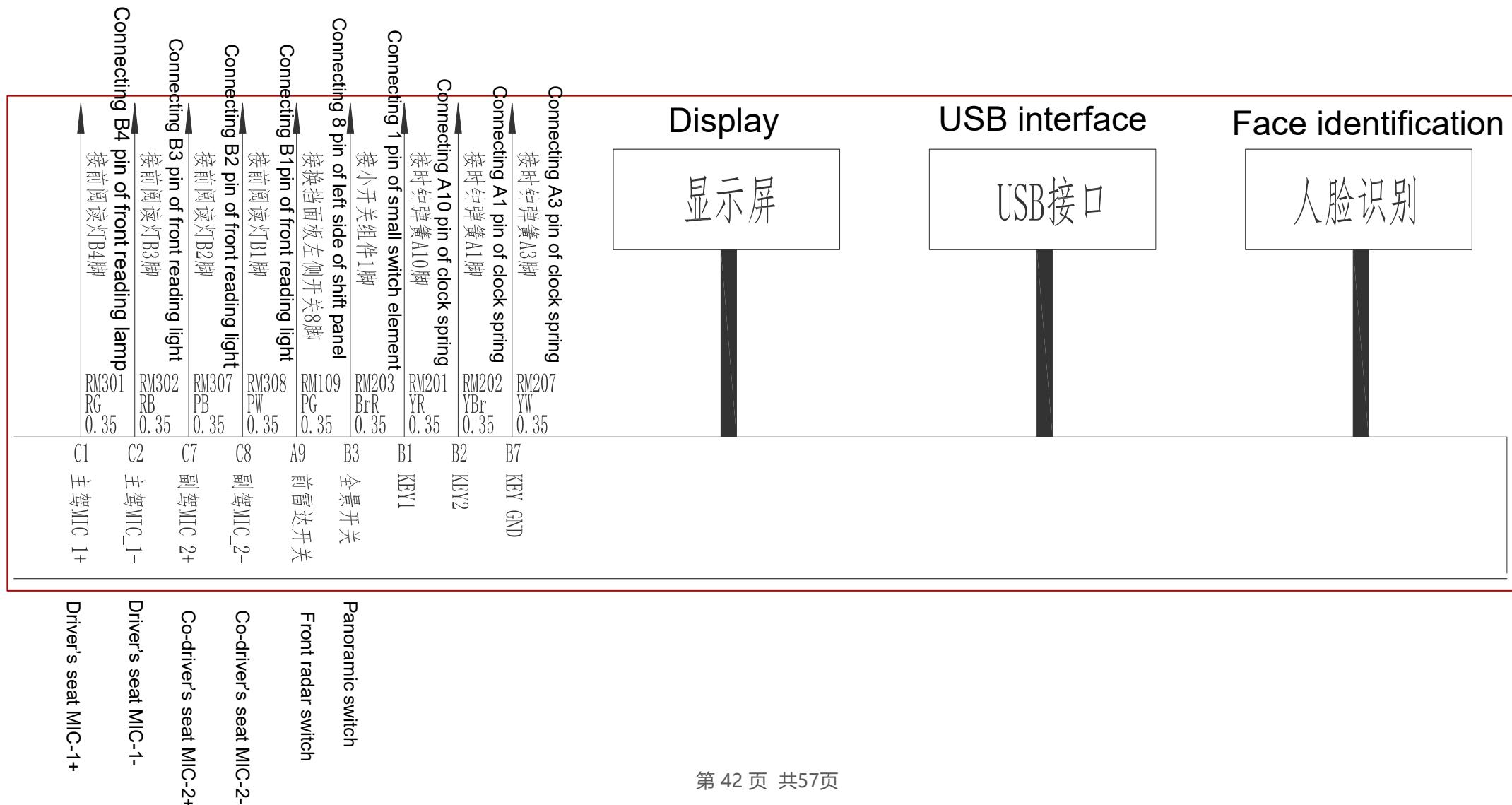
1. Power supply and antenna part circuit diagram



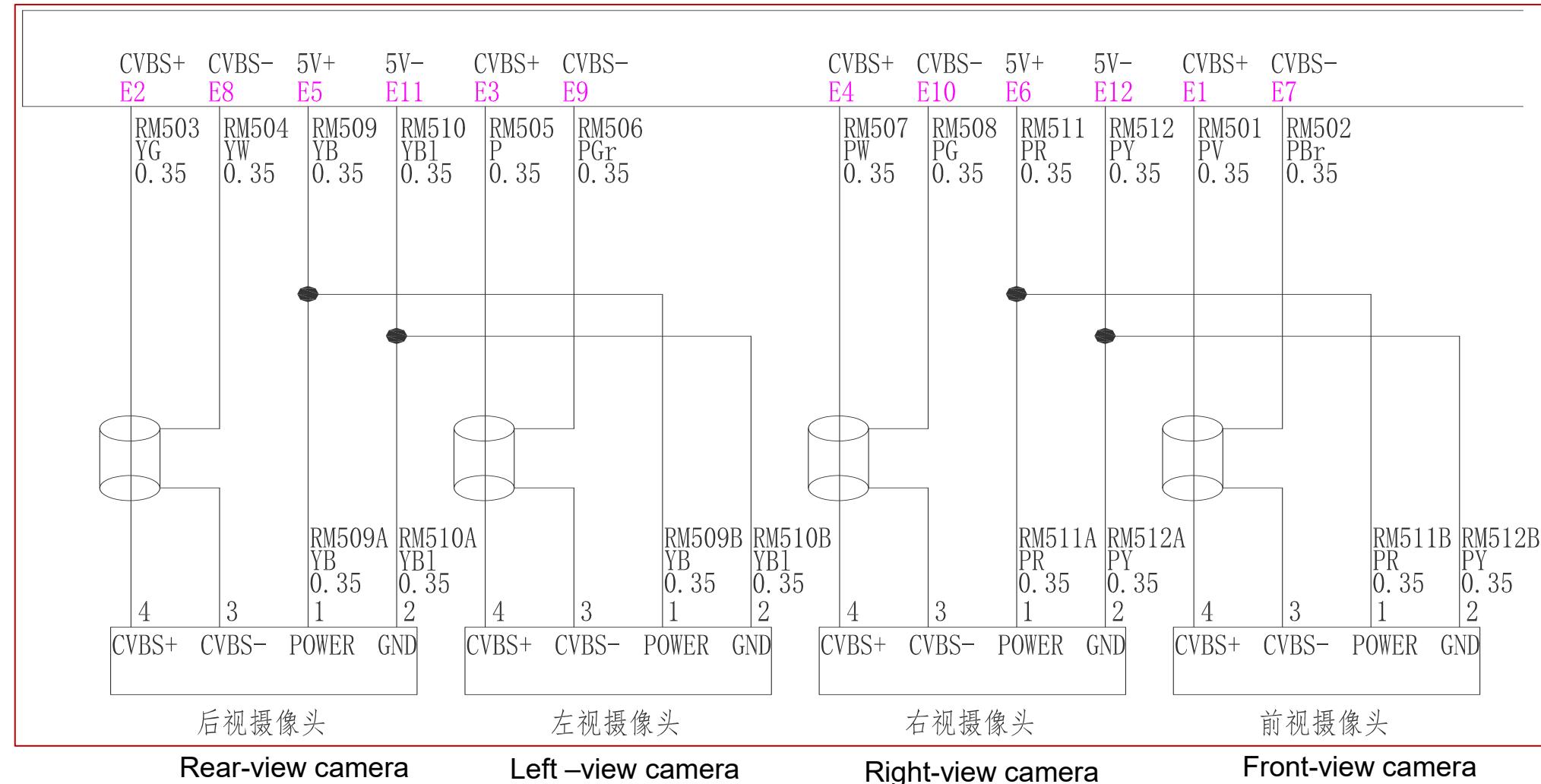
2. Circuit diagram of vehicle data recorder



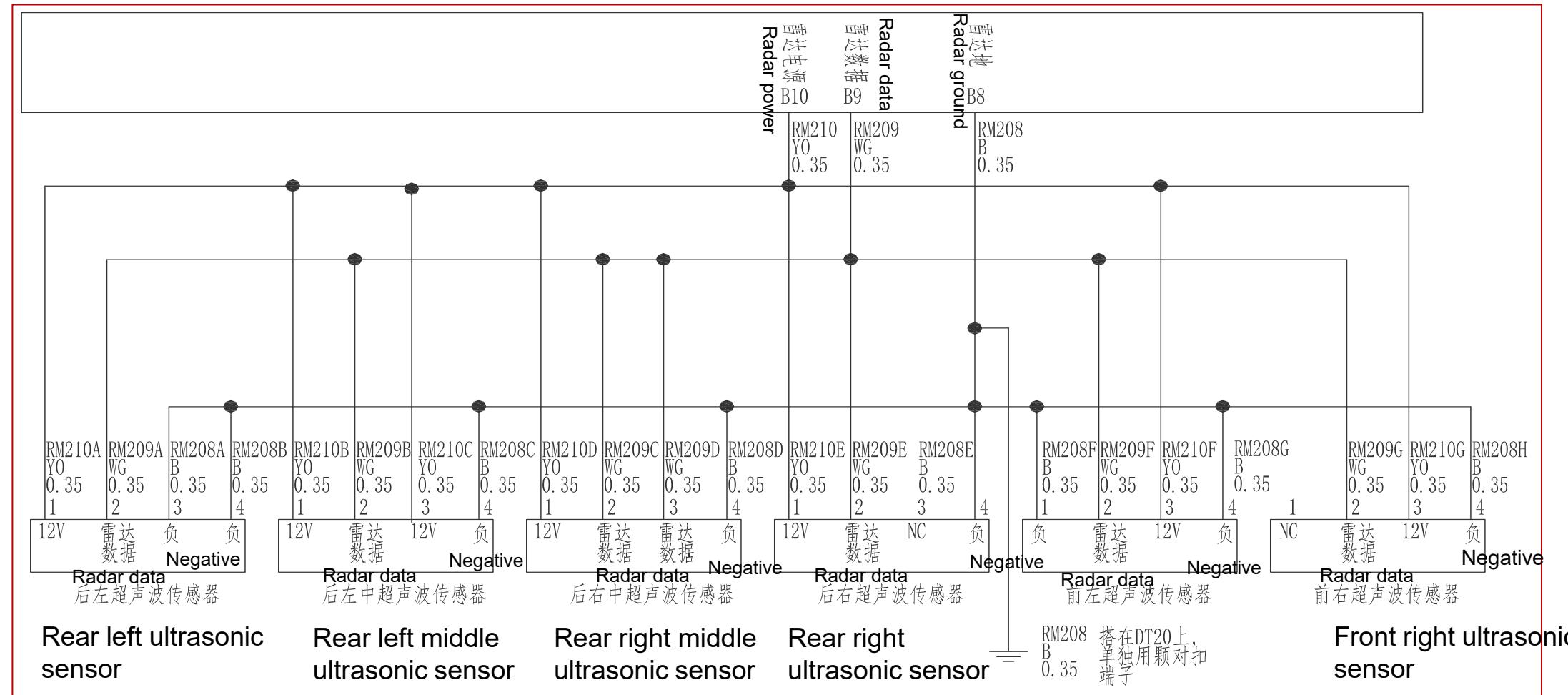
3、Circuit diagram of microphone, display screen, USB, face recognition parts



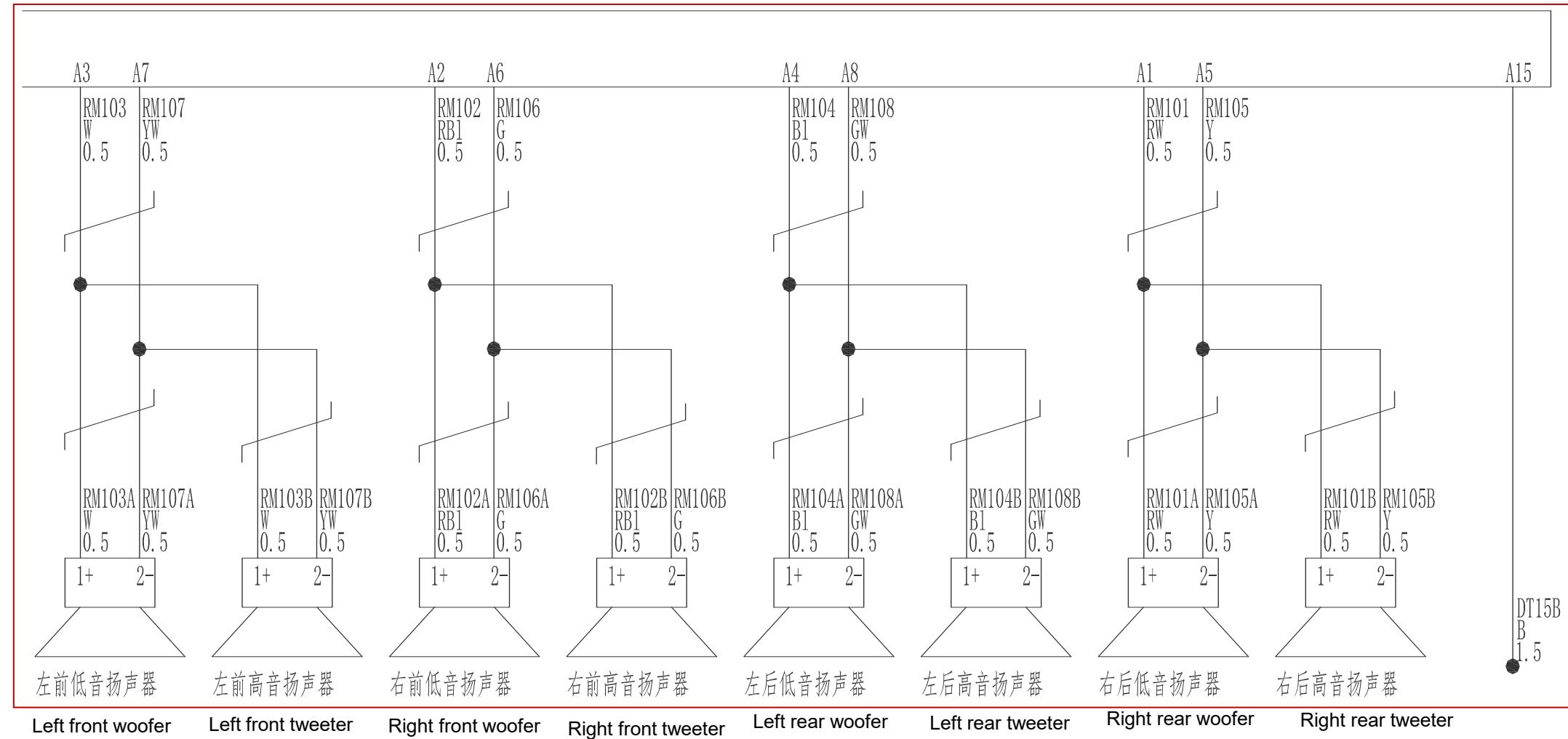
4. Circuit diagram of panoramic parking



5. Circuit diagram of front and rear ultrasonic radar



6. Circuit diagram of speaker



► 5. Multimedia system fault symptom and fault code list

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NO.	Fault Symptom	Suspicious Parts	Supplement
1	Multimedia cannot be opened / The screen turns black	Display screen	Judging by substitution
		Multimedia host fuse	Measuring the power supply voltage of the host
		Multimedia host	Judging by substitution
		Wire harness of display screen	Judging by substitution
		Wiring harness of multimedia host	Measure the power plug signal
2	Display screen crashes	Display screen	Judging by substitution
3	The screen blinks, then goes blank	Multimedia host	Judging by substitution
4	The touch fails	Display screen	Judging by substitution
5	The speaker has no sound	Multimedia host	Judging by substitution
		Display screen	Judging by substitution
		Multimedia host	Judging by substitution
		Speaker	Judging by measurement
		Speaker harness	Judging by measurement
6	Noise or poor sound quality	External power amplifier (configuration with external power amplifier)	Judging by measurement
		Audio settings of multimedia host	Restoring factory setting
		Speaker	Judging by measurement
		Speaker harness	Judging by measurement
		External power amplifier (configuration with external power amplifier)	Judging by measurement
6	Noise or poor sound quality	Speaker	Restoring factory setting
		Speaker harness	Judging by replacement
		External power amplifier (configuration with external power amplifier)	Judging by measurement
		Speaker	Judging by measurement
		External power amplifier (configuration with external power amplifier)	Comparing with the same model

5. Multimedia system fault symptom and fault code list

中央信息系统IVI



NO.	Fault Symptom	Suspicious Parts	Supplement
7	Steering wheel switch doesn't work	Steering wheel switch	Measure the voltage of the control pin at the power base
		Multimedia host	Judging by substitution
		Wire harness	Judging by measurement
8	GPS fails to locate	The test position has obstacle	Driving the car into open area
		Multimedia host	Judging by substitution
		GPS antenna and cable	Judging by substitution
9	The radio can't receive signal or signal is poor	Signal in test position is poor or there is interference signal	Compare with other vehicles
		Multimedia host	Judging by substitution
		Radio antenna	Judging by substitution
		Radio antenna amplifier	Judging by substitution
		Radio antenna cable	Judging by substitution+Judging by measurement
		There is interference in the car	Compare with the same model
10	The screen turns black when reversing	Multimedia host	Judging by substitution
		Reversing camera	Judging by substitution
		cable	Judging by substitution
11	Can't enter AVM	Multimedia host	Judging by substitution
		AVM switch	Judging by measurement
		cable	Judging by measurement

► 5. Multimedia system fault symptom and fault code list

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NO.	Fault Symptom	Suspicious Parts	Supplement
12	AVM has no picture or incomplete display of all four cameras	Multimedia host	Judging by substitution
		Camera	Judging by substitution
		Cable	Judging by substitution
13	4G has no signal (or poor)	Signal in test position is poor or there is interference signal	Comparing with the cell phone signal reference
		Multimedia host	Judging by substitution
		There is interference in the car	Compare with the same model
14	WIFI cannot connect the external hotspot	Signal in test position is poor or there is interference signal	Comparing with the cell phone signal reference
		Multimedia host	Judging by substitution
15	Bluetooth phones don't work well	Multimedia host	Judging by substitution
		Signal in test position is poor or there is interference signal	Comparing with the cell phone signal reference
		The mobile phone is far from the multimedia host	Testing with the phone in the car
		MIC and cable	Measurement+Judging by substitution
16	Low speech recognition rate	Multimedia host	Judging by substitution
		MIC and cable	Measurement+ Judging by substitution
		Excessive ambient noise	Testing in another environment
17	The DVR picture is stuck	DVR box (without card, etc.)	Checking+Judging by substitution
		Multimedia host	Judging by substitution

NO.	Fault Symptom	Suspicious Parts	Supplement
18	USB cannot play	Multimedia host	Judging by substitution
		Usb Disk Compatibility	Change to another brand USB disk
		Cable	Judging by substitution
19	USB can't charge the phone	Multimedia host	Judging by substitution
		Phone cable	Use the original charging cable of the mobile phone
		Vehicle cable	Judging by substitution
20	Abnormal radar display	Multimedia host	Judging by substitution
		Radar detector	Judging by substitution
		Cable	Judging by substitution
21	The DMS works abnormally	Multimedia host	Judging by substitution
		DMS camera	Judging by substitution
		DMS cable	Judging by substitution

DTC displayed code	DTC meaning	DTC displayed code	DTC meaning
B111716	The battery voltage is too low	U023587	Communication with MRR is lost
B111717	The battery voltage is too high	U1A3087	Communication with WCM is lost
U007688	CAN BUS OFF	U012287	Network communication with ESP is lost
U014087	Communication with BCM is lost	U015987	Network communication with APA is lost
U013187	Communication with EPS is lost	U020887	Network communication with DSM is lost
U010087	Communication with EMS is lost	U023087	Network communication with PLG is lost
U012887	Communication with EPB is lost	U010187	Network communication with TCU is lost
U023287	Communication with SRR_R1 is lost	U028887	Communication with MSC is lost
U015587	Communication with IC is lost	U015887	Communication with HUD is lost
U018487	Communication with DVR is lost	U014687	Communication with GW is lost

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- 02 System composition
and working principle**
- 03 Circuit diagram of
wireless charging system**
- 04 Fault code of wireless
charging system**



Course objectives

- Can tell the composition and working principle of GLORY 580 WCM

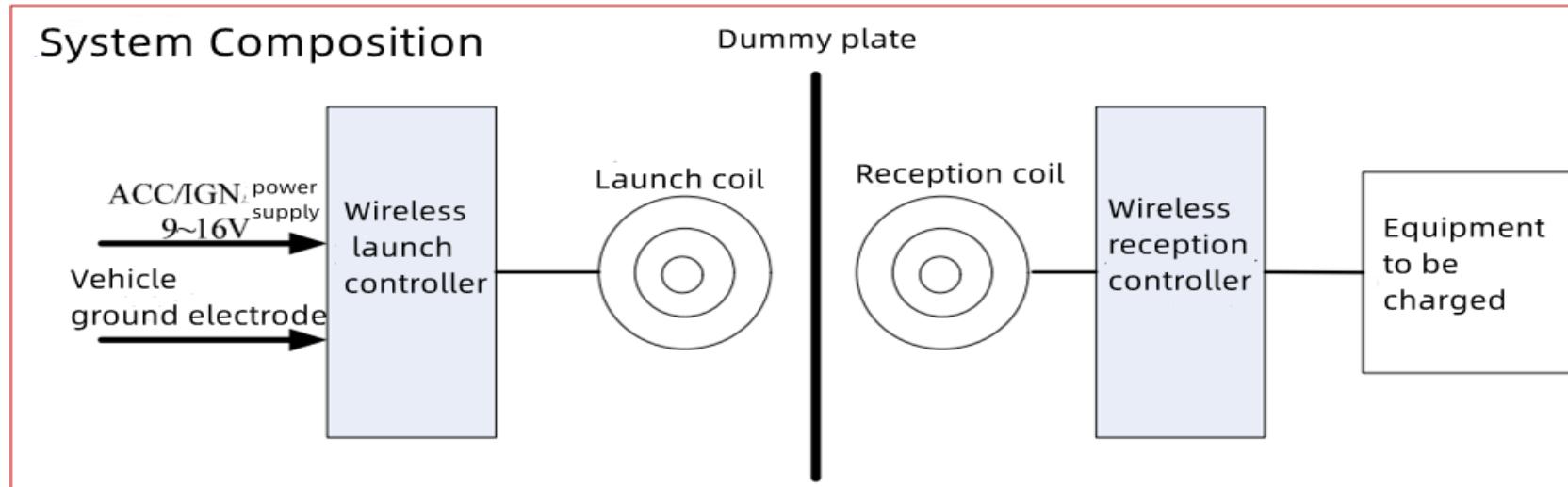
1. What is a wireless charging system

Vehicle-mounted wireless charging system uses electromagnetic induction principle to charge mobile phones and other handheld devices, and transmits energy through the magnetic field coupling of transmitting coil and receiving coil. There is respectively a coil in the sender and receiver end. And the sender coil is hidden in the car, converting 12V power supply into electromagnetic signals; The transmitting coil is attached to the phone. When alternating currents are applied to the transmitting coil, the transmitting coil will generate a changing magnetic field. The magnetic field lines generated by the transmitting coil pass through the nearby transmitting coil, forming mutual inductance and generating voltage on the receiving coil.

2. Significance of vehicle-mounted wireless charging system

- 1) Get rid of the winding of charging cable harness, making driving safer.
- 2) Stop worrying about finding a charger.
- 3) Intelligently stop charging function. The phone automatically stops charging when it is picked up, making the call safer.
- 4) Intelligently recover charging function. The phone automatically recharges after being placed on it, making it easier to use.

1. The composition of system

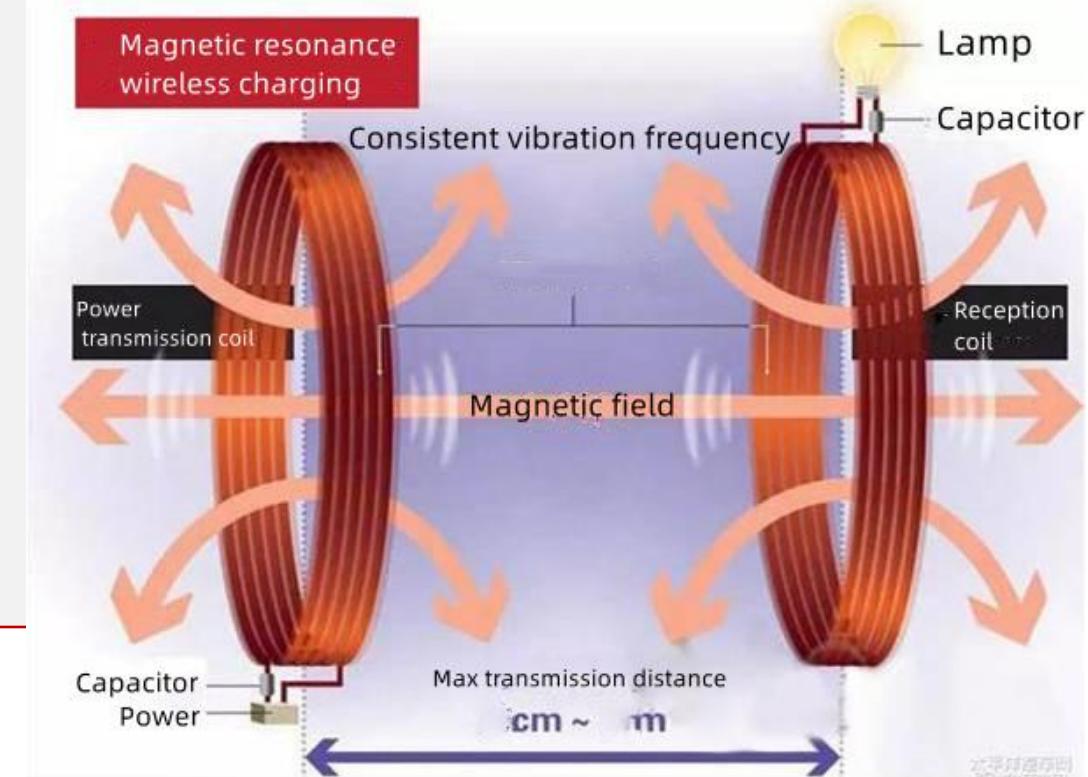


NO.	The name of system components	unit	Tips
1	Wireless charging transmitter (TX)	1	Including wireless transmitting circuit board, transmitting coil, 1 shell
2	Wireless charging receiver (RX)	1	Receiving coil
3	Mat	1	

2. The principle of magnetic resonance inductive wireless charging technology

Magnetic resonance type also known as the near field resonance type. It consists of energy transmitting device, and the energy receiver. When two devices are adjusted to the same frequency, or on a specific frequency resonance, they can exchange each other's energy, its principle is the same as the resonance principle of the sound. Coils of the same vibration frequency arranged in a magnetic field can supply power from one to the other

The resonance circuit can also bring resonance, one of the live one launches resonance circuit to generate a magnetic field, and another resonant receiving circuit. When the two resonant circuit vibration is the same, transmission of the radio conversion can be realized.

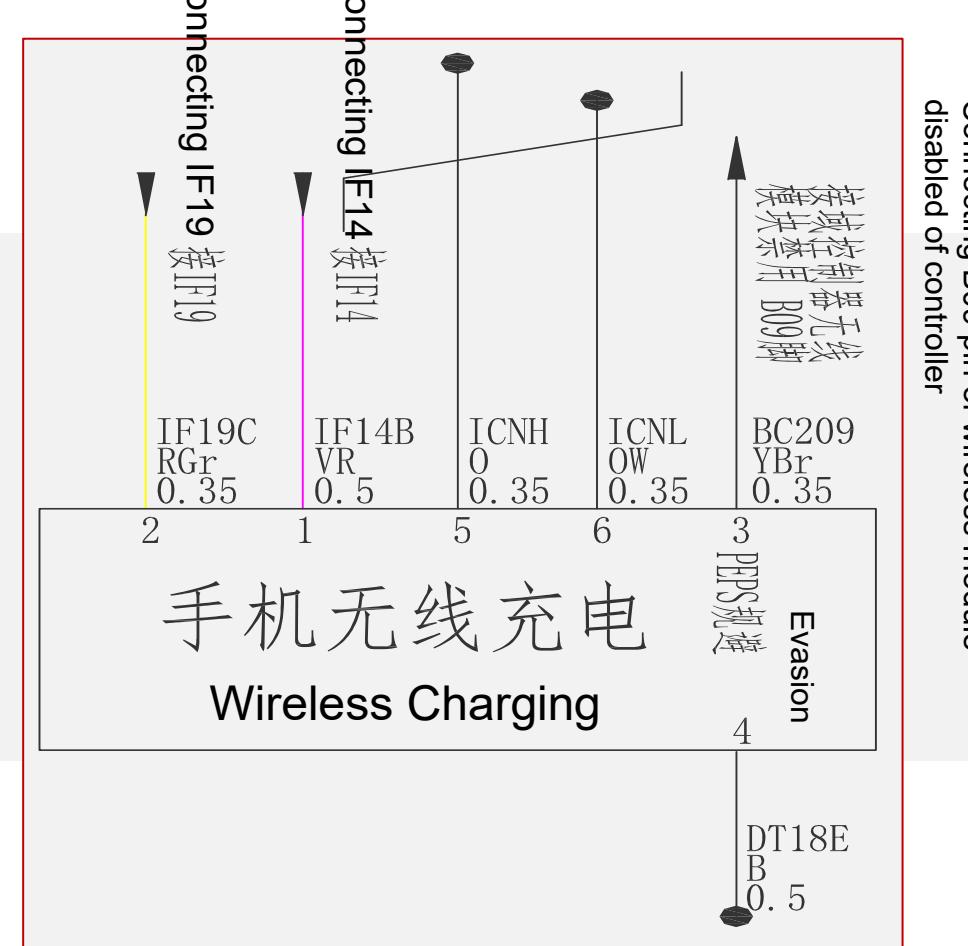


3. Circuit diagram of wireless charging system

无线充电WCM

东风小康
DFSK

Circuit diagram of wireless charging system



► 4. Fault codes of wireless charging system 无线充电WCM



Fault codes of wireless charging system

DTC displayed codes	DTC meaning
U007688	CAN bus error
B111716	The voltage of battery is too low
B111717	The voltage of battery is too high
B252000	The temperature is too high
B252001	With unknown objects
U014087	Lost communication with BCM
U014687	Lost communication with gateway



TANHKS

