

Model: 12-22ES,13-21IS/RC, 15-21NX

Car Multimedia Player

Author_____

Check_____

Aproved_____

Revision

Data	Record	Version	Author
2023-06-09	Initial Version	A0	Bo
2023-07-08	Revised PIN definition	A1	Bo
2023-08-10	Add FCC Warning	A2	Bo
2023-08-28	Add BT/WIFI connection manual	A3	Bo

FCC Warning

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.

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

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.

FCC RF exposure statement:

The equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance between 20cm the radiator your body.

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1、Summary

This is automotive aftermarket Multimedia Player. It's installed in the driver cabin by replacing the original monitor. All the original media functions will be reserved while sharing the car console devices, such as wheel keys, touchpad. Original Camera and aftermarket camera are supported.

2、Specification

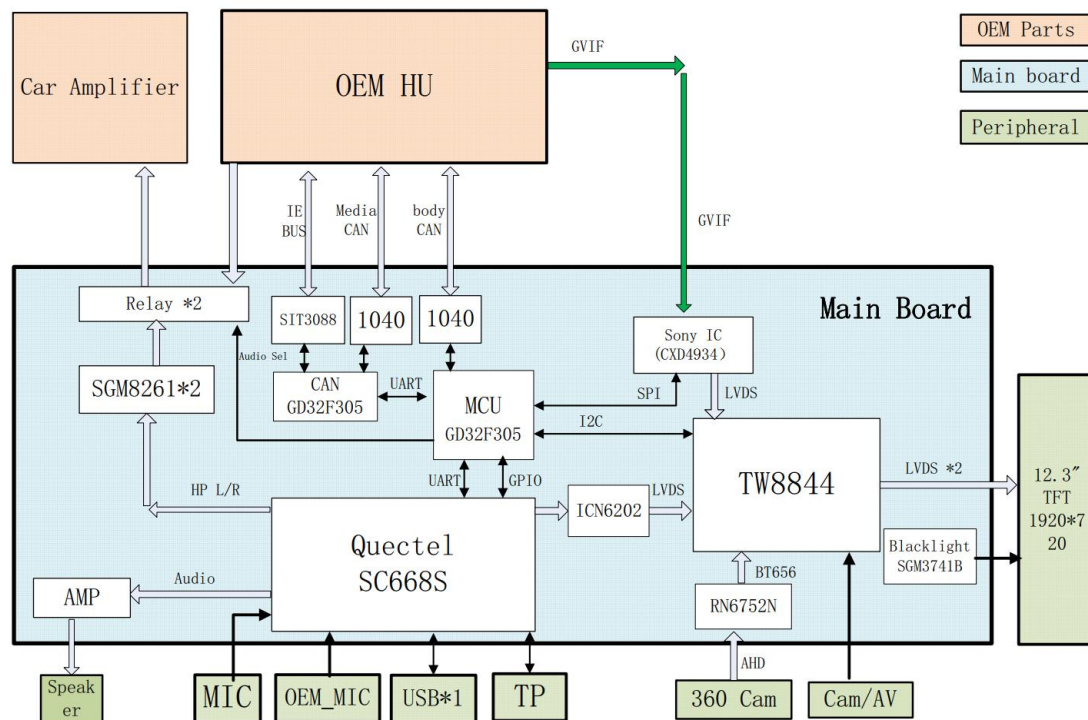
2.1、Operation Condition

Item	Description	Min	Typical	Max	Unit
L*W*H	Size	429.4*162*93mm, +/-2mm			mm
Vop	Voltage	--	12	16	VDC
Iop	Current	--	1.0	2.0	A
Ta	Temperature	-30	25	60	° C

2.2、Main Material

Name	Model/Spec	Note
CPU	QUALCOMM QCM6125, 4*A72@2.0G+4*A53@1.8G	
Dynamic Memory	LPDDR4X, 8G byte	
Storage	UFS, 128G byte	
TFT Panel	ZC123IA-DE, 12.3 寸, Resolution:1920*720	

2.3、Diagram



2.4、Functions and Parameter

1)Android System based on Quectel Smart 4G Module with QUALCOMM QCM6125 oct-core CPU inside.



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2) Original Wheel Keys

*Support original wheel keys, include: volume up, volume down, previous, Next, Mode, Speech, Pick up, Hang up. The product uses electrical switch as wheel keys transceiver to share the keys with original media system and android system.



3) Original Camera/trajectory

*Original Camera view aspect and trajectory setting

*Support aftermarket 360 panoramic camera.



4) Original Touchpad

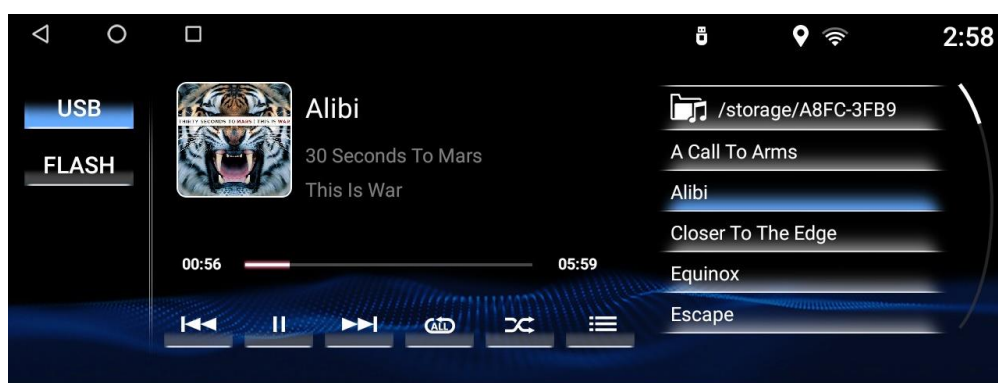
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- *Support original touchpad sharing between android system and original media system by using CAN transceiver.



5) Audio and Video

- *Built-in media player, support operation by touchpad.
- *Audio format: FLAC, AAC, MP3, WMA, WAV, M4A
- *Video format: AVI, MOV, MKV, MP4, MPEG1, MPEG2, FLV, 3GP, DIVX, KVCD, SVCD, VCD, M4V, Xvid, ASF, H.264 Video, F4V



6) USB Port

- *1 USB2.0 Type-A Port, support file explore, video and audio playback.
- *support FAT32 USB disk.

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*support CDP 1.2 charging, maximum charging current 1.5A.

8) WIFI

*Dual band WIFI: 2.4~2.4835GHz and 5.15~5.25GHz
and 5.725~5.85GHz

*Wireless protocol: IEEE 802.11a/b/g/n/ac

9) GPS

*Support GPS/GLONASS/BeiDou/Galileo/QZSS。

*Tracking sensitivity: -165dBm, acquisition sensitivity:
-148dBm.

*Accurate: 5m (Open Sky)

*Fix time: Cold start < 2min.

10) Bluetooth

*Built-in BT5.0 with profile A2DP, HFP, AVRCP

*Support interaction between Original Bluetooth and Android
System.

11) Mobile Network

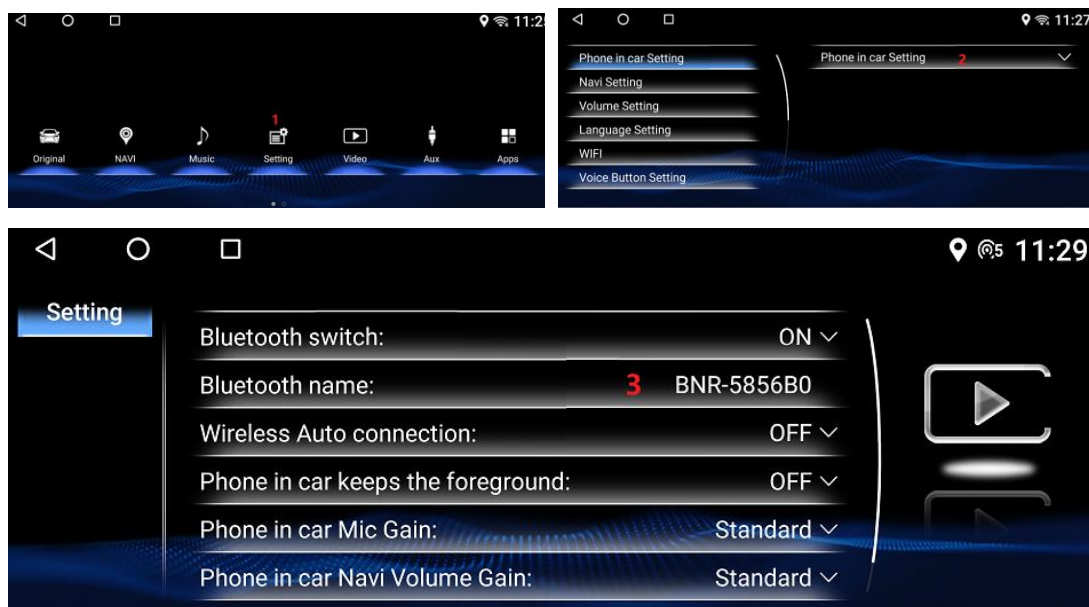
*4G LTE-FDD B2/B4/B5/B7/B13/B17

*4G LTE-TDD B41

3、Wireless Connection operation

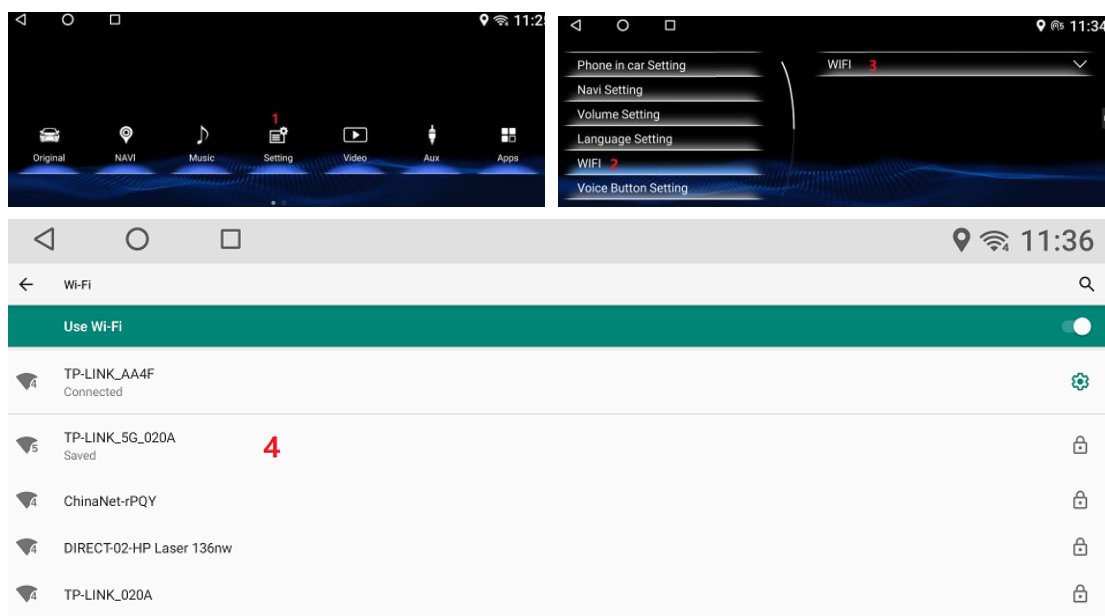
3.1 Bluetooth

Setting -> Phone in car Setting -> Find the Bluetooth in user Phone.



3.2 WIFI

Setting -> WIFI -> Connect the hotspot by click the name.



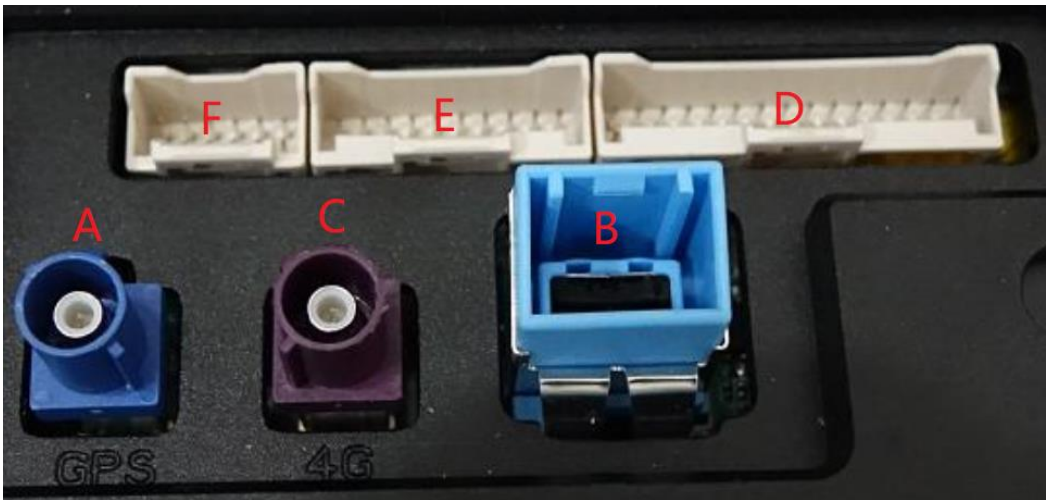
4、Appearance and Mechanical

(12-22ES)



L*W*H: 429.4*162*93mm

5、Connector PINs definition



5.1、Power/Network (D)

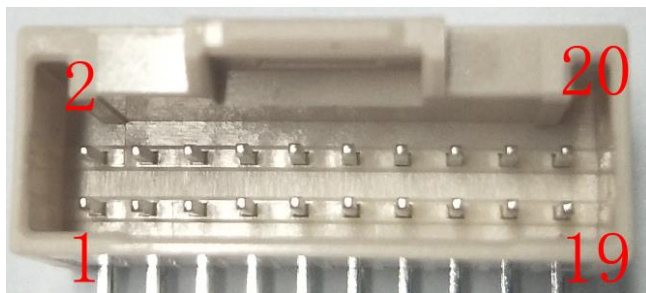


PIN	定义	功能
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D1	Spk_OUT-	Speaker output -
D2	Spk_OUT+	Speaker output +
D3	NC	No connect
D4	NC	No connect
D5	NC	No connect
D6	Audio_L	Audio output L
D7	Audio-gnd	Audio GND
D8	Audio_R	Audio output R
D9	AD1-IN	Wheel key 1 input
D10	AD2-IN	Wheel key 2 input
D11	AD1-OUT	Wheel key 1 output
D12	AD2-OUT	Wheel key 2 output
D13	BUS-	IE BUS -
D14	BUS+	IE BUS +
D15	NC	No connect
D16	NC	No connect
D17	CAN2-L-OUT	Touchpad CAN low
D18	CAN2-H-OUT	Touchpad CAN high
D19	CAN-L	Body CAN low
D20	CAN-H	Body CAN high
D21	CAN2-L	Media CAN low
D22	CAN2-H	Media CAN high
D23	CAM_PWR	OEM camera power output
D24	REVERSE	Reverse input
D25	Aux-det	AUX detection
D26	ACC	ACC signal
D27	GND	Ground
D28	B+	Battery
D29	GND	Ground
D30	B+	Battery

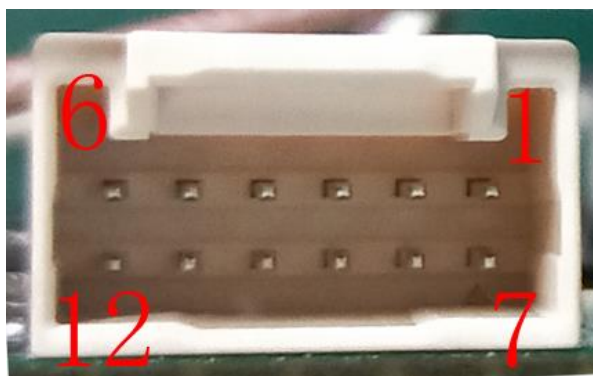
5.2、USB/AV (E)



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PIN	定义	功能
E1	NC	NC
E2	USB2_VCC	USB2 Power
E3	SIM-CLK	SIM Clock
E4	USB2_DM	USB2 data-
E5	SIM-DATA	SIM Data
E6	USB2_DP	USB2 data+
E7	GND	SIM GND
E8	GND	USB2 GND
E9	Camera	Camera signal
E10	Aux-V	AUX Video
E11	SIM-DET	SIM Detect
E12	Aux-GND	AUX GND
E13	OEM-360-ctl	OEM 360 Camera Control
E14	UART_RX	UART reserved for Radar, ambient light
E15	OEM-360-det	OEM 360 Camera detect
E16	UART_TX	UART reserved for Radar, ambient light
E17	SIM-VDD	SIM Power
E18	MIC+	MIC+
E19	SIM-RST	SIM reset
E20	MIC-	MIC-

5.3、360 Camera (F) ---Reserved



PIN	Definition	Function
F1	B+	Reserved
F2	UART_TX	Reserved
F3	UART_RX	Reserved
F4	GND	Reserved

F5	GND	Reserved
F6	Reverse	Reserved
F7	ACC	Reserved
F8	NC	
F9	NC	
F10	NC	
F11	CAM-GND	Reserved
F12	AHD-CAM	Reserved

5.4、GPS Antenna (A) ——Fakra Blue



5.5、Original Video Input (B)



5.6、4G Antenna(C) ——Fakra Pink



6、Accessory list

名称	Quantity
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Monitor	1PCS
Power wire	1PCS
USB Wire	1PCS
GPS Antenna wire	1PCS
4G Antenna wire	1PCS