

# Computing Makes Excellence

Fibocom Smart Wireless Solutions



# Fibocom Mobile Computing Module – SC138



SC138 is the first module that based on QCM6125 in wireless communication module industry.



High-end octa-core platform 4\*A73 2.0G + 4\*A53 1.8G CPU



Support multi-channel camera video recording







1080P @30fps video recording and playback;

- Support multi standard long-distance communication modes and short-distance wireless transmission technology like dual-band Wi-Fi/BT, and support GNSS wireless positioning technology.
- It has MIPI/USB/UART/SPI/I2C and other extension interfaces.

- It can be widely used in in-vehicle equipment, smart payment, smart robot, smart home, auto aftermarket and some other industries. It is an excellent solution for core system of global wireless smart products.

# Fibocom Mobile Computing Module - SQ808



-  Global certification, including regulations and mainstream operator certification;
-  Support up to FHD (1920x1080) @60fps display;
-  Dual ISP, single channel: support up to 13MP camera;
-  1080P @30fps video recording and playback;

- Rich multimedia for entertainment;
- Offer perfect wireless experience (4G/WiFi/BT);  
Support LTE Cat4, maximum downlink rate:  
150Mbps, cover all network standards,  
Voice/data, support VoLTE, DSDS, SMS/MMS;

- With smart operating system which is extensible;
- Pin-to-pin compatible with its series modules and easy to switch;
- Abundant general interfaces for wide range of applications;
- Rich "Open" resources (reference design/Android source code/guidance documents);
- Professional technical team offering efficient and comprehensive technical support;

# Software Resources



## Development guidelines Testing tools

- Bootloader
- Kernel
- Drivers
- HAL
- Frameworks
- APP



## Android source code

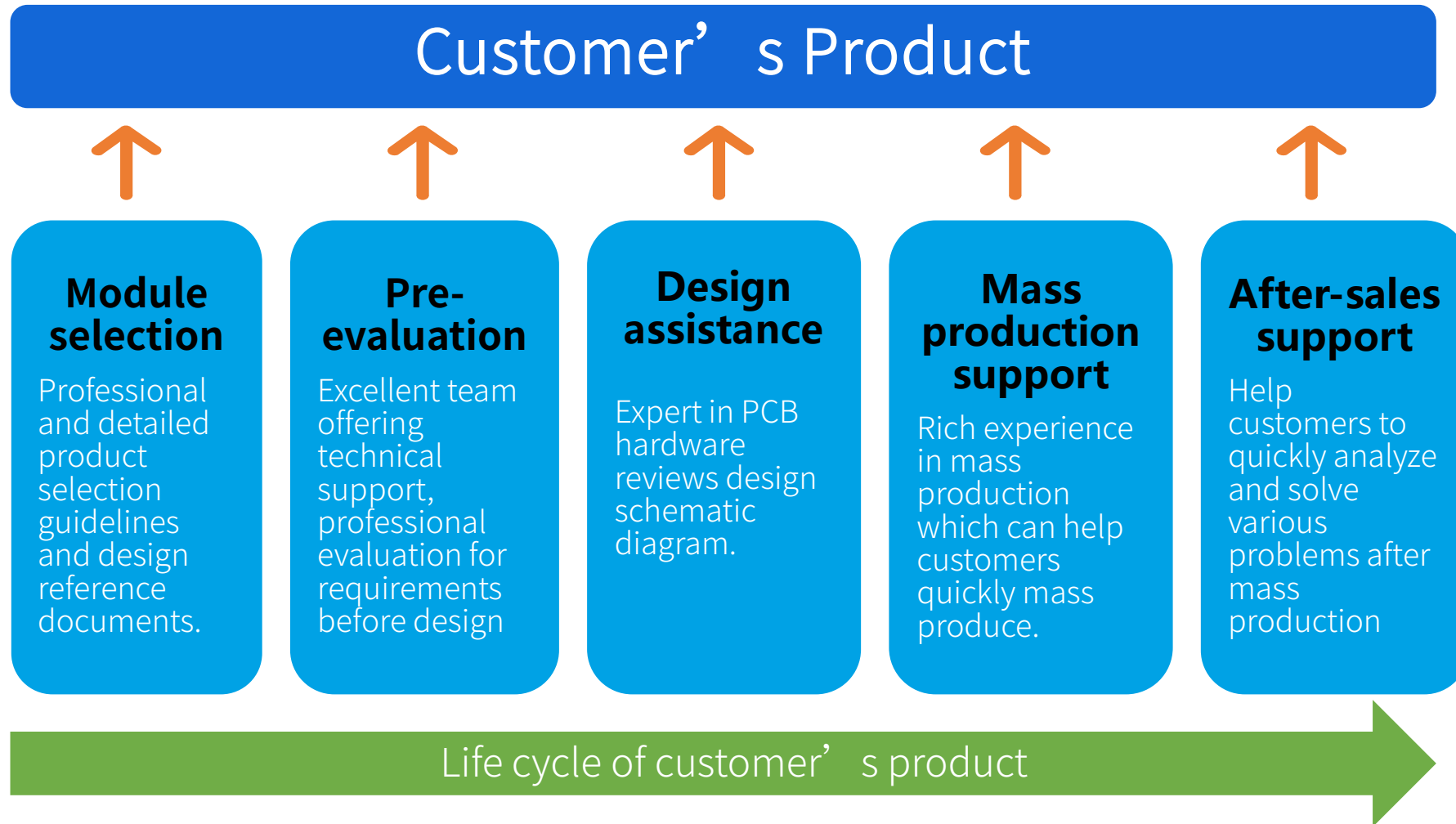
Software development  
guidelines  
Driver debugging guidelines  
MMITool  
Number writing tool  
Batch downloader  
Production test guidance



## Technical support On-site service

On-site technical support  
On-site joint debugging  
Online service  
Test service  
Professional AE/FAE team  
Environment description  
guidance

# Technical Support



# Fibocom Smart Wireless Solution - Smart Retailing



## POS

Scan code or smile to pay  
Smart shared device,  
Vending machine,



# Fibocom Smart Wireless Solution - Automobile



Car offering online hailing services/cruising taxi terminal devices:

- Multi-channel driving monitoring/DMS
- LCD/Audio
- BT/FM/GNSS
- Real-time stream pushing
- Sign-in/pricing/top light



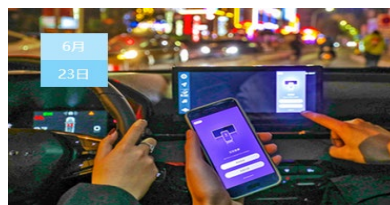
Vehicle rear-view mirror:

- Rear-view mirror
- OBD/TPMS
- Vehicle backup camera
- DVR
- DMS



Terminal devices of two kinds of buses and a kind of vehicle carrying dangerous goods (Tourist bus, category 3 and above passenger coach, special vehicles for transporting hazardous chemicals, fireworks and firecrackers, and explosives for civilian use)

- Telematics operation
- Warning during drowsy driving
- Positioning/navigation
- Multi-channel driving monitoring
- DMS



Automotive aftermarket

- Navigation
- ADAS
- Vehicle devices
- Vehicle backup camera/DVR
- BT/vehicle and mobile phone interconnection/entertainment system
- Front and rear row/center console display and LCD instrument cluster (dual screen)

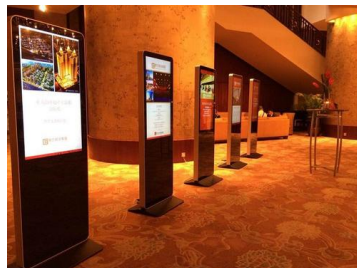


Public Transport Bus Validator:

- Positioning
- Driver attendance
- Telematics operation
- IC card/QR code payment
- Voice/advertising broadcasting



# Fibocom Smart Wireless Solution - Security



Advertising display:

- Advertisement
- Large screen/split screen
- Wireless interconnection
- Smart interaction
- Multimedia



Two-way radio/POC:

- PPT
- Private network/dual network
- Speech path
- Handheld
- Waterproof/shockproof/dustproof



Smart home gateway:

- Smart access control
- Connect with phone
- Wireless network connection
- Home control



Body worn video/smart security:

- Record law enforcement
- Compress video files
- Push stream via wireless network
- Watermark function
- Rotatable lens
- Security level



# Fibocom Smart Wireless Solution - Others



Smart Health Care

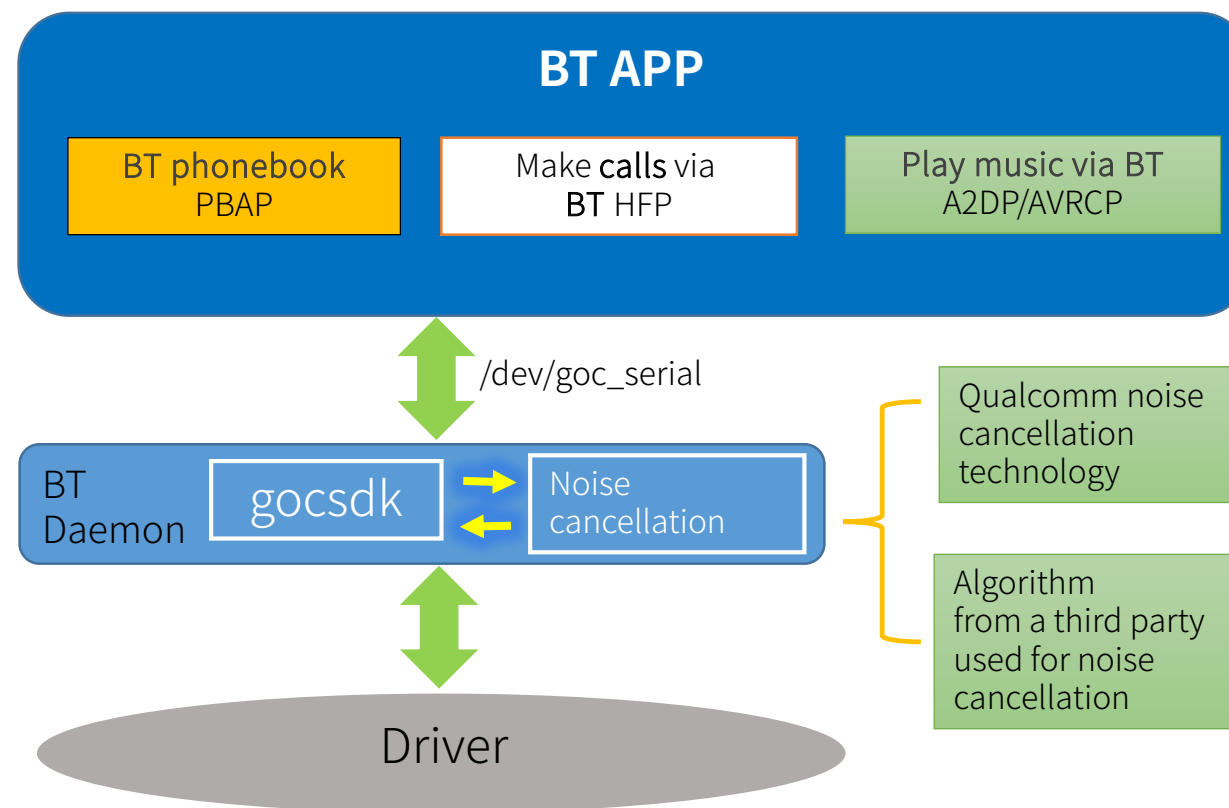
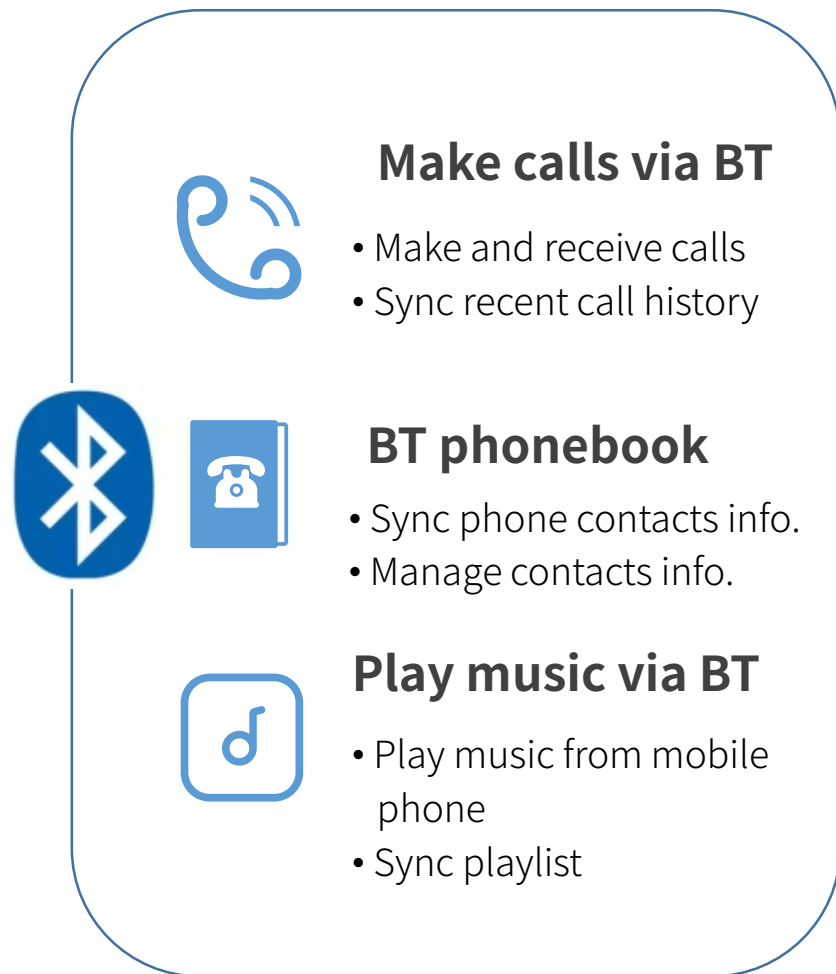


New Energy

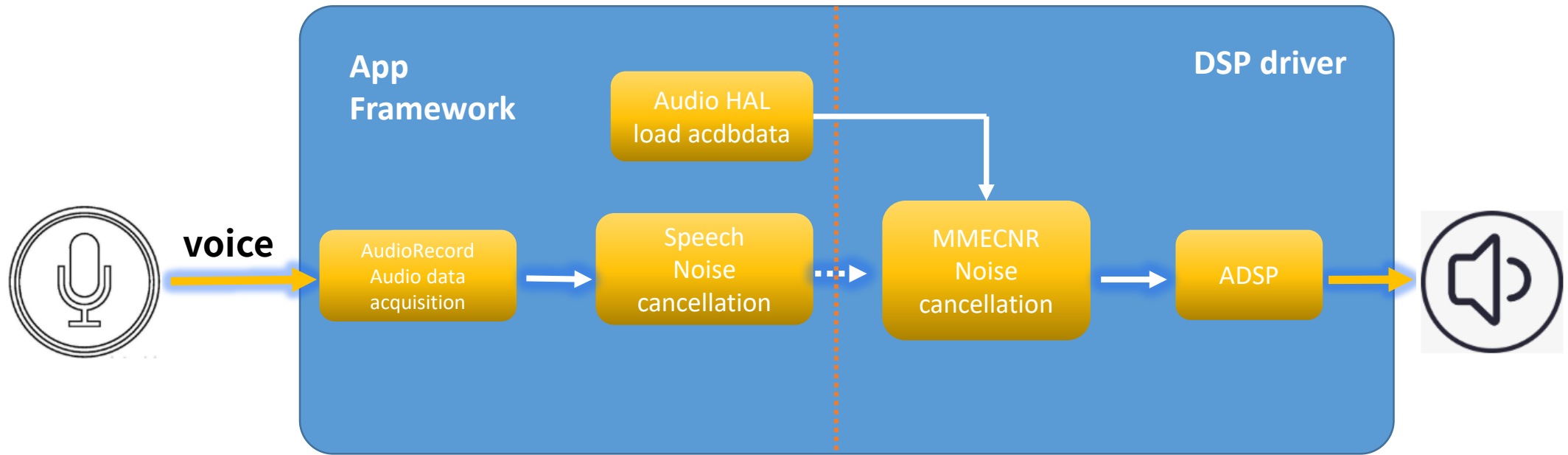


Industry 4.0

# Solution Introduction----BT



# Solution Introduction----BT



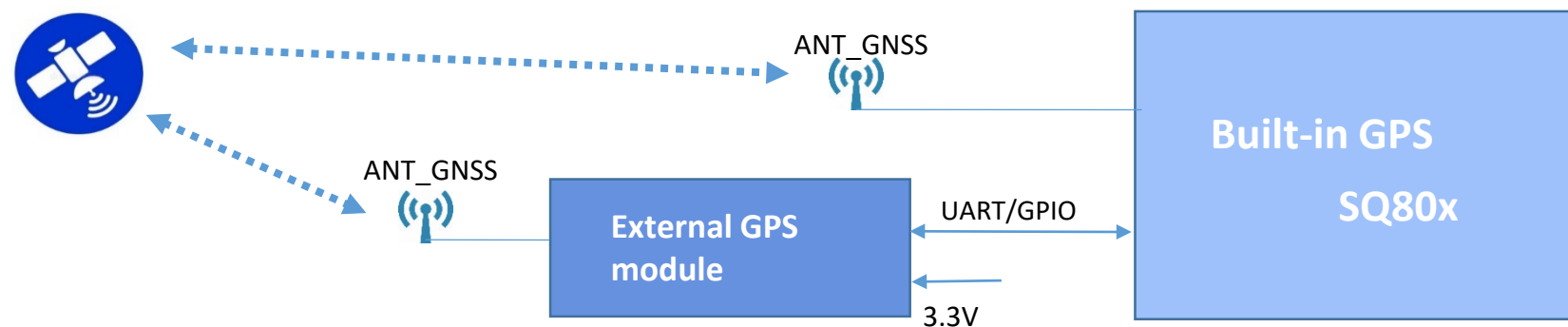
## MMECNC:

Multi-Mic Echo Cancellation and Noise Reduction Cancellation

## Speech:

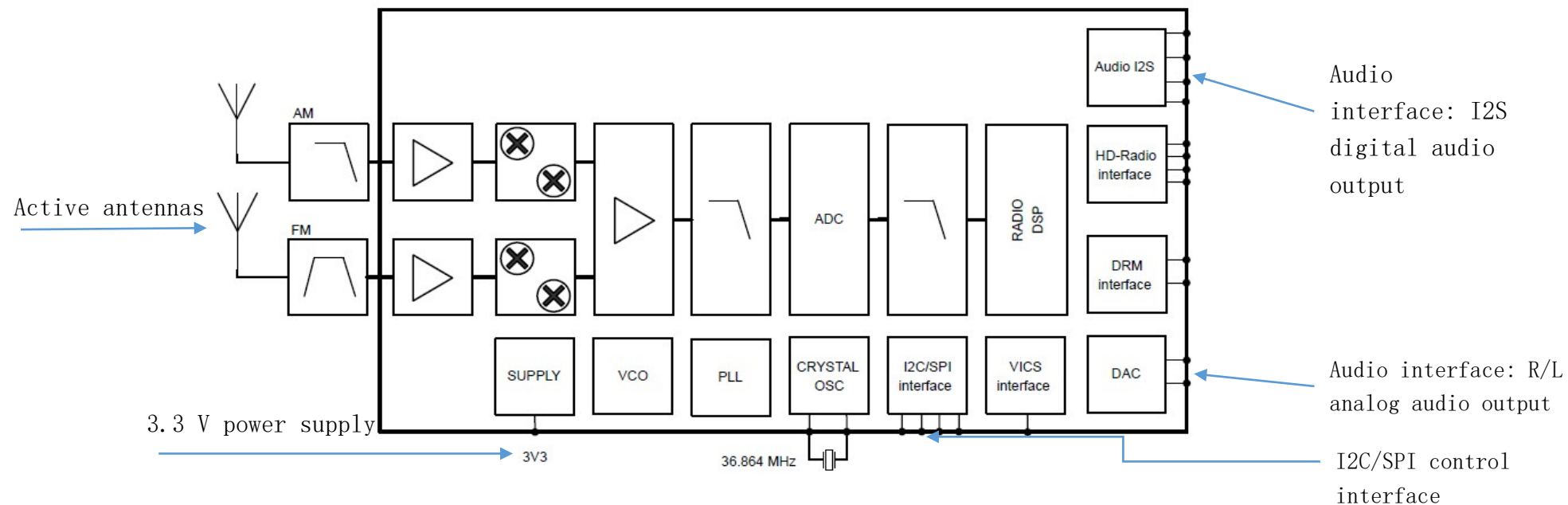
Algorithm used for noise cancellation from third party such as Aispeech and Iflytek

# Solution Introduction----Positioning/Navigation



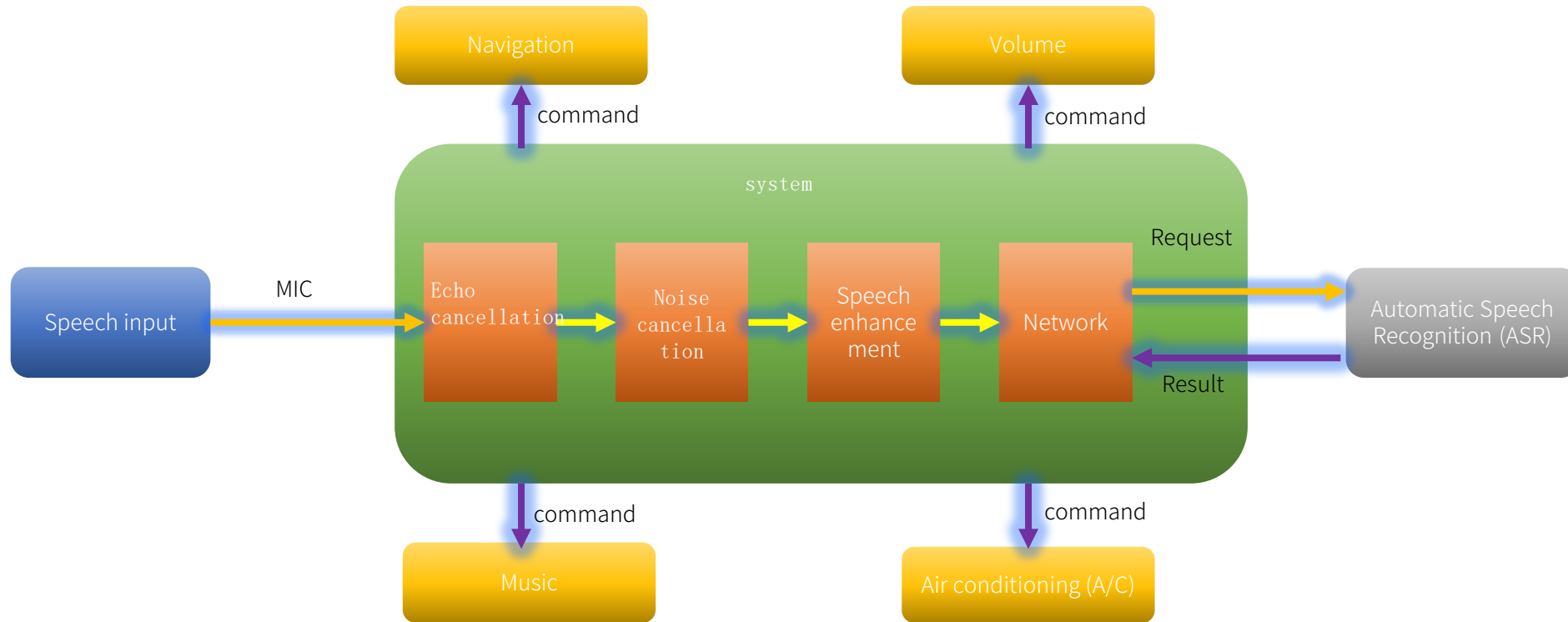
	Feature	GPS module inside SQ80x	External GPS module 1	External GPS module 2
System	Positioning system	GPS, GLONASS, BDS	GPS, QZSS、SBAS (WAAS, EGNOS, MSAS, GAGAN)	GPS, GLONASS, BDS GAILEO,QZSS,SBAS
Sensitivity	Tracking sensitivity	-157 dBm	-165 dBm	-166 dBm
	Capture sensitivity	-145 dBm	-148 dBm	-149 dBm
Positioning time	Cold start	40 S	23 S	27.5 S
	Warm start	35 S	2-3 S	< 1 S
	Hot start	3 S	< 1 S	< 1 S
Precision	Speed precision	0.1 m/s	0.1 m/s	0.1 m/s
	Positioning precision	2.38 m CEP50	3 m CEP50 without SA	2.5 m CEP50

# Solution Introduction----Radio



Modulation standard	AM (amplitude modulation)/FM (frequency modulation)
Frequency band	AM 522 - 1,620 KHz FM 87.5 - 108 MHz
Audio interface	analog audio output, I2S digital audio output
Control interface	I2C/SPI
Power supply	3.3 V
Classification	Radio module: simple design, easy to debug, large dimension Chipset solution: easy to layout because of small dimension

# Solution Introduction----Voice Control



- **Features:**

Control the applications of the vehicle by speech: answering and making calls, voice navigation, playing music, adjusting volume and A/C, etc..

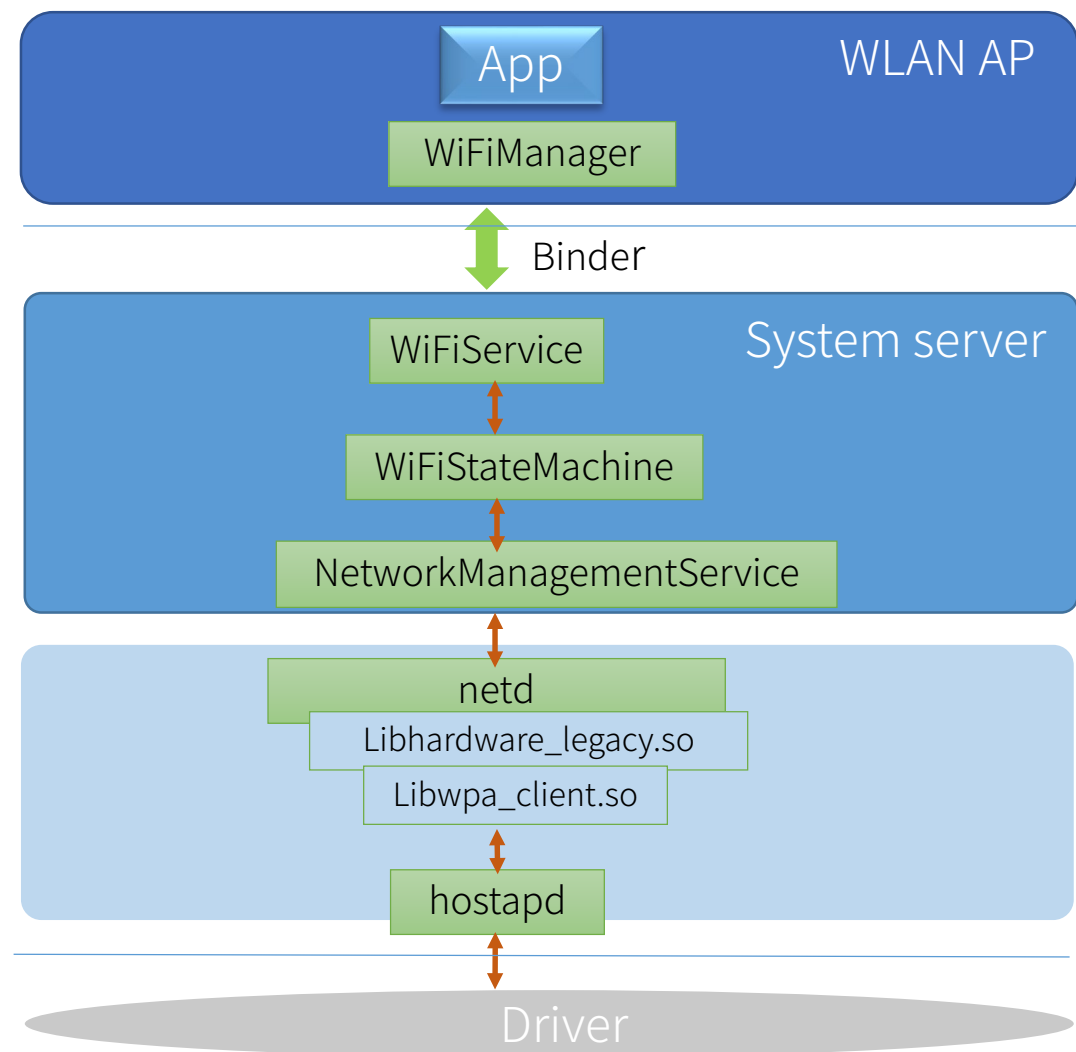
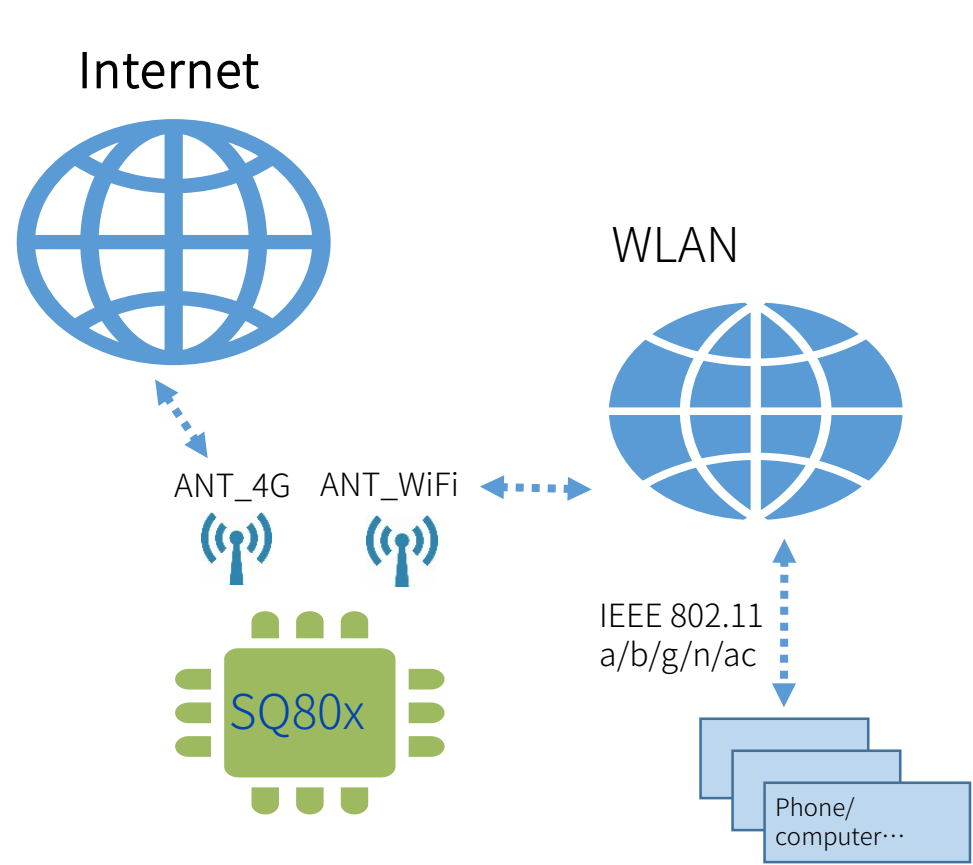
- **Classification:**

Keyword Spotting (KWS),  
start the application by pressing key

- **Merits:**

Easy to operate, give the driver a sense of high technology  
Improving driving safety because the driver don't need to move his/her hands off the steering wheel.

# Solution Introduction----Wi-Fi Hotspot





# Solution Introduction----Multimedia



# Solution Introduction----Vehicle and Mobile Phone Interconnection

## What is vehicle and mobile phone interconnection

After the mobile phone is connected to the vehicle central control system via USB, WiFi or BT, the mobile phone screen can be projected to the console display.

Driver can operate the mobile phone through the buttons on the console or voice commands.

## Functions

More concise and clear interfaces on the console.

Improve driving safety because drivers don't need to pick up the phone repeatedly.

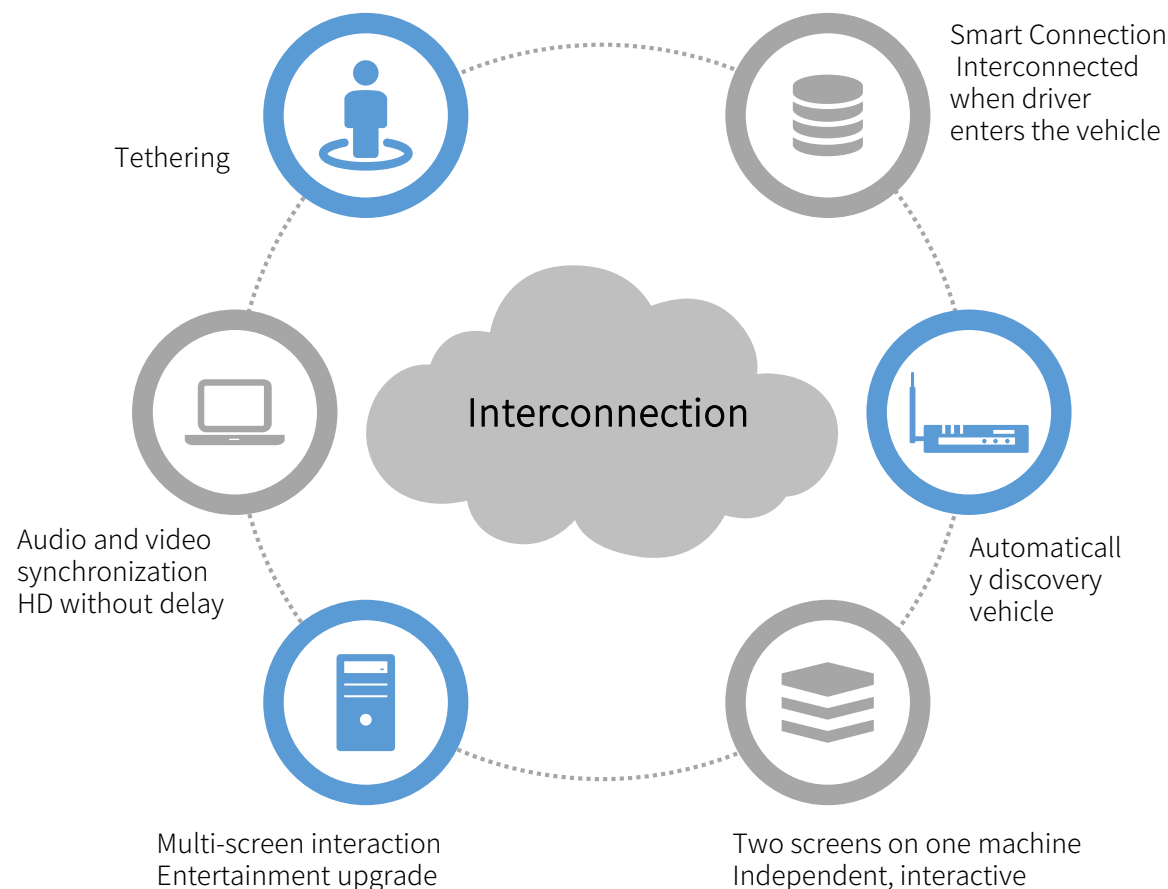
(They will get distracted if they pick up the phone repeatedly)



## Vehicle and Mobile Phone Interconnection



# Solution Introduction----Vehicle and Mobile Phone Interconnection



## 1. Smart Connection (interconnected when driver enters the vehicle)

Support Apple and Android phones, and start interconnection without delay with background connection technology

## 2. Automatically discovery vehicle

When the mobile phone recognizes a nearby vehicle that can be connected with, a notification will be pushed. If a vehicle that the mobile phone used to connected with is found, mobile phone will automatically connect it.

## 3. Two screens on one machine, independent, interactive

The driver can operate the phone screen and the console display via the phone at the same time, and the resolution of the console display can be automatically adapted. While the menus related to driving functions shows in the console display, the driver can operate other applications in the phone screen normally. Locking phone screen is supported.

## 4. Multi-screen interaction, entertainment upgrade

Support simultaneous display on the mobile phone, console display, LCD instrument cluster, co-driver display and rear pillow display. Offer lossless audio and get online video with excellent sound quality just in one click.

## 5. Audio and video synchronization, HD without delay

Audio and video are transmitted simultaneously although the driver don't connect the vehicle with the phone via BT. Offer high-definition video without delay (Direct connection via USB).

## 6. Tethering

The drive don't need to turn on the mobile phone hotspot. After connection, the drive can surf on the Internet in console display with mobile phone data, which is easy to operate and practical.


# Thank you.

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