Quectel EG912U-GL LTE Standard Module

Introduction

Build a Smarter World

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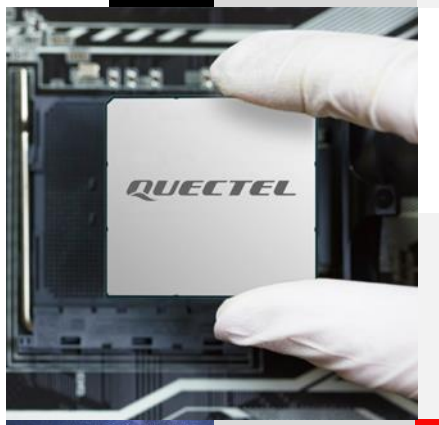
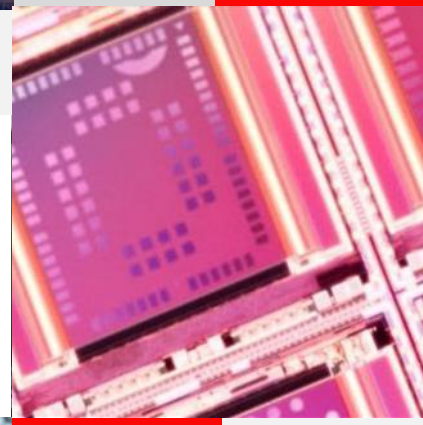
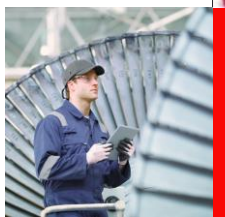






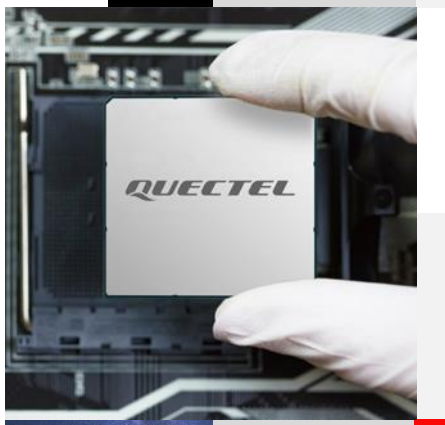
Module Highlights

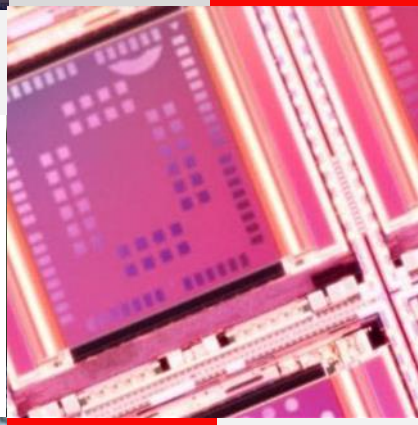
Specifications

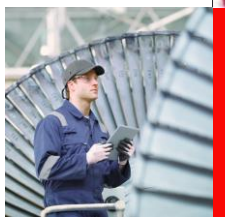
Enhanced Technologies

Typical Applications

Customer Support







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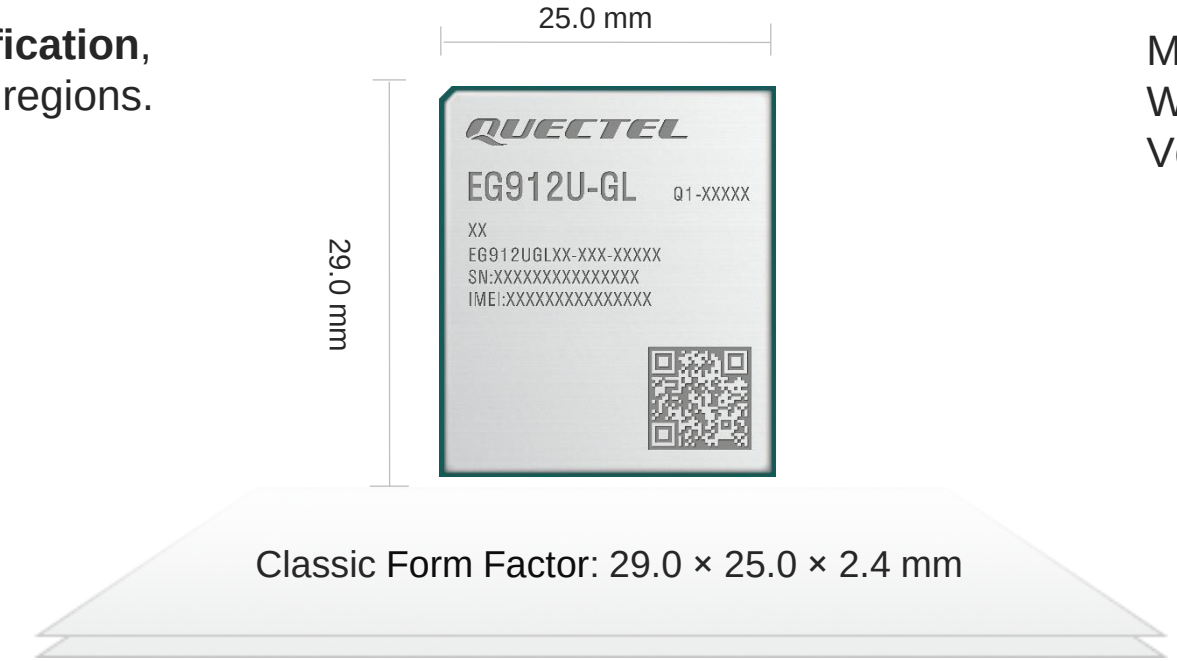
EG912U-GL

Worldwide certification, covering multiple regions.



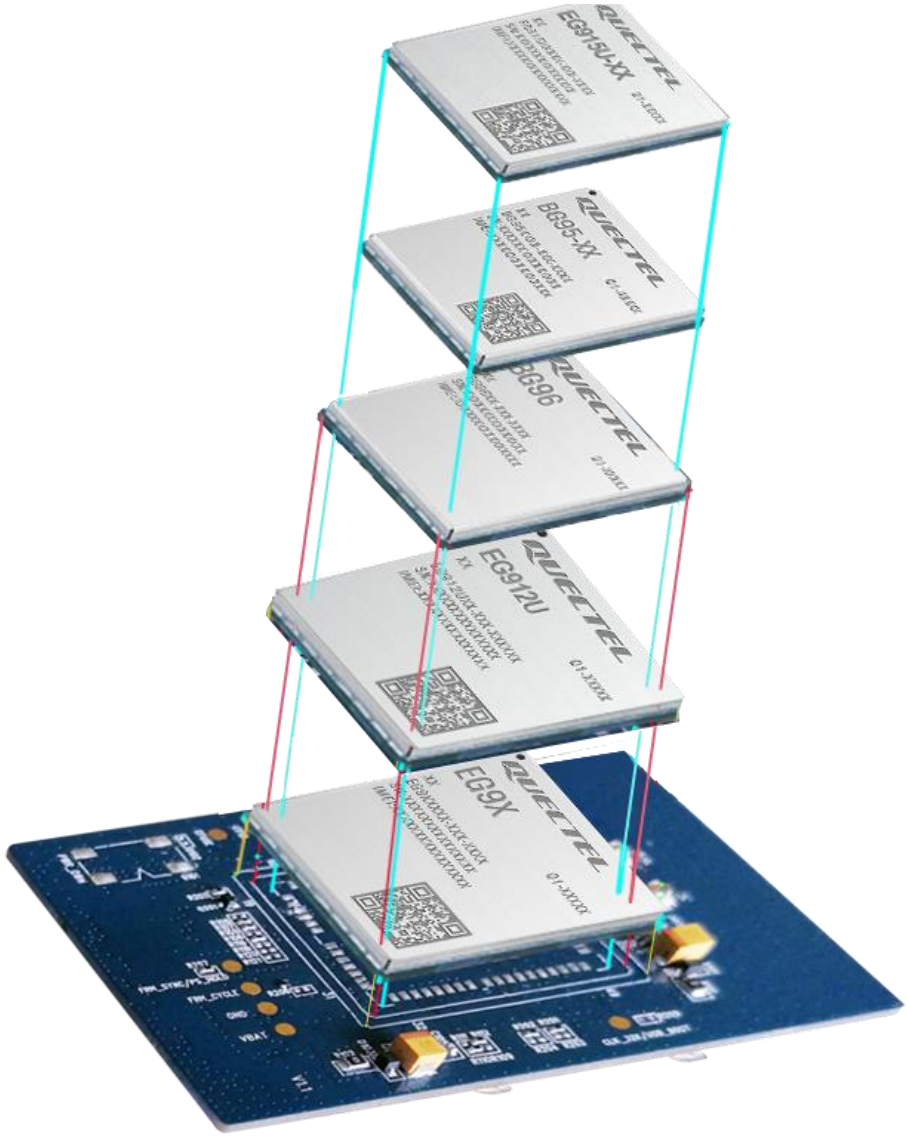
Multi functions, such as Wi-Fi Scan (Optional), VoLTE and DFOTA.

Chip platform: **UIS8910**
Mass production and excellent performance.

Compatible with BG95 series, BG96, EG915U series and EG9x series.

EG912U-GL Compatible Modules

Quectel LTE Standard **EG912U-GL** module is compatible with **BG95 series**, **BG96**, **EG915U series** and **EG9x series** modules.



EG912U-GL Highlights

Highlights	Description
Hardware Interfaces	USB 2.0/ PCM/ Analog Audio/ (U)SIM/ UART/ ADC/ I2C/ SPI/ LCM①/ Camera①/ RESET_N/ PWRKEY/ Antenna (Main Antenna, GNSS Antenna (Optional), Wi-Fi Scan/ Bluetooth Antenna (Optional))
USB Serial Driver	Windows 8/ 8.1/ 10/ 11, Linux 2.6–6.5, Android 4.x–13.x
GNSS Driver (Optional)	Android 4.x–13.x
RIL Driver	Android 4.x–13.x
USB RNDIS Driver	Windows 8/ 8.1/ 10/ 11, Linux 2.6–6.5
USB ECM Driver	Linux 2.6–6.5
Abundant Protocols	TCP/ UDP/ PPP/ NTP/ NITZ/ FTP/ HTTP/ PING/ CMUX/ HTTPS/ FTPS/ SSL/ FILE/ MQTT/ MMS/ SMTP/ SMTPS
Enhanced Features	DFOTA (Delta Firmware Upgrade Over-The-Air) (U)SIM card detection
SMS	Text and PDU mode Point-to-point MO and MT SMS cell broadcast SMS storage: ME & (U)SIM
QuecOpen®	No need for MCU in peripheral circuits
Audio②	Support 1 analog audio input and 1 analog audio output HR/ FR/ EFR/ AMR/ AMR-WB Support echo cancellation and noise suppression

①: Only supported in QuecOpen® solution.

②: In QuecOpen® solution, the module supports an extra headphone output channel.

Module Highlights

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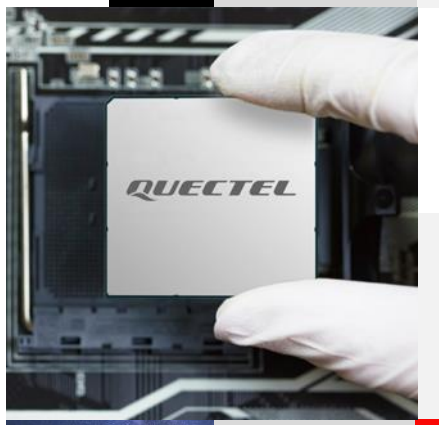

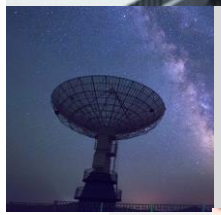

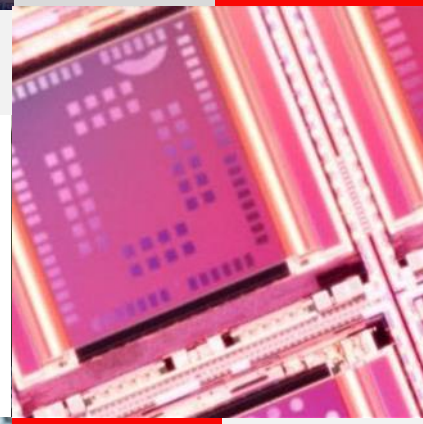

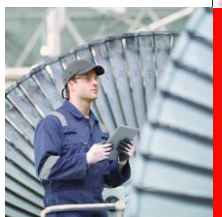

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EG912U-GL Specifications

29.0 mm × 25.0 mm × 2.4 mm
10 Mbps DL/ 5 Mbps UL

Module		**EG912U-GL**
Region		Global
Chipset		UIS8910
LTE	FDD Band	B1/ 2/ 3/ 4/ 5/ 7/ 8/ 12/ 13/ 17/ 18/ 19/ 20/ 25/ 26/ 28/ 66
	TDD Band	B34/ 38/ 39/ 40/ 41
UMTS	WCDMA Band	-
	TD-SCDMA Band	-
GSM		Quad-band
GNSS		Optional
Wi-Fi Scan		Optional
Bluetooth		Bluetooth 4.2 (BR/ EDR + BLE) (Optional)
DFOTA		Supported
Open Solution		QuecOpen®/ QuecPython®
Certification	**Carrier**	-
	Regulatory	CE/ FCC/ Anatel/ SRRC/ NAL/ CCC/ NCC/ RCM
	Others	WHQL
Project Stage		MP

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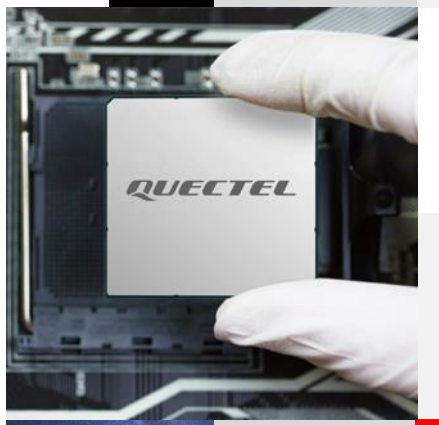

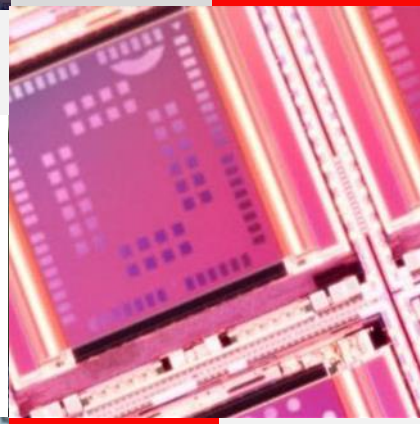

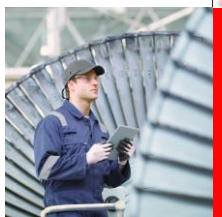

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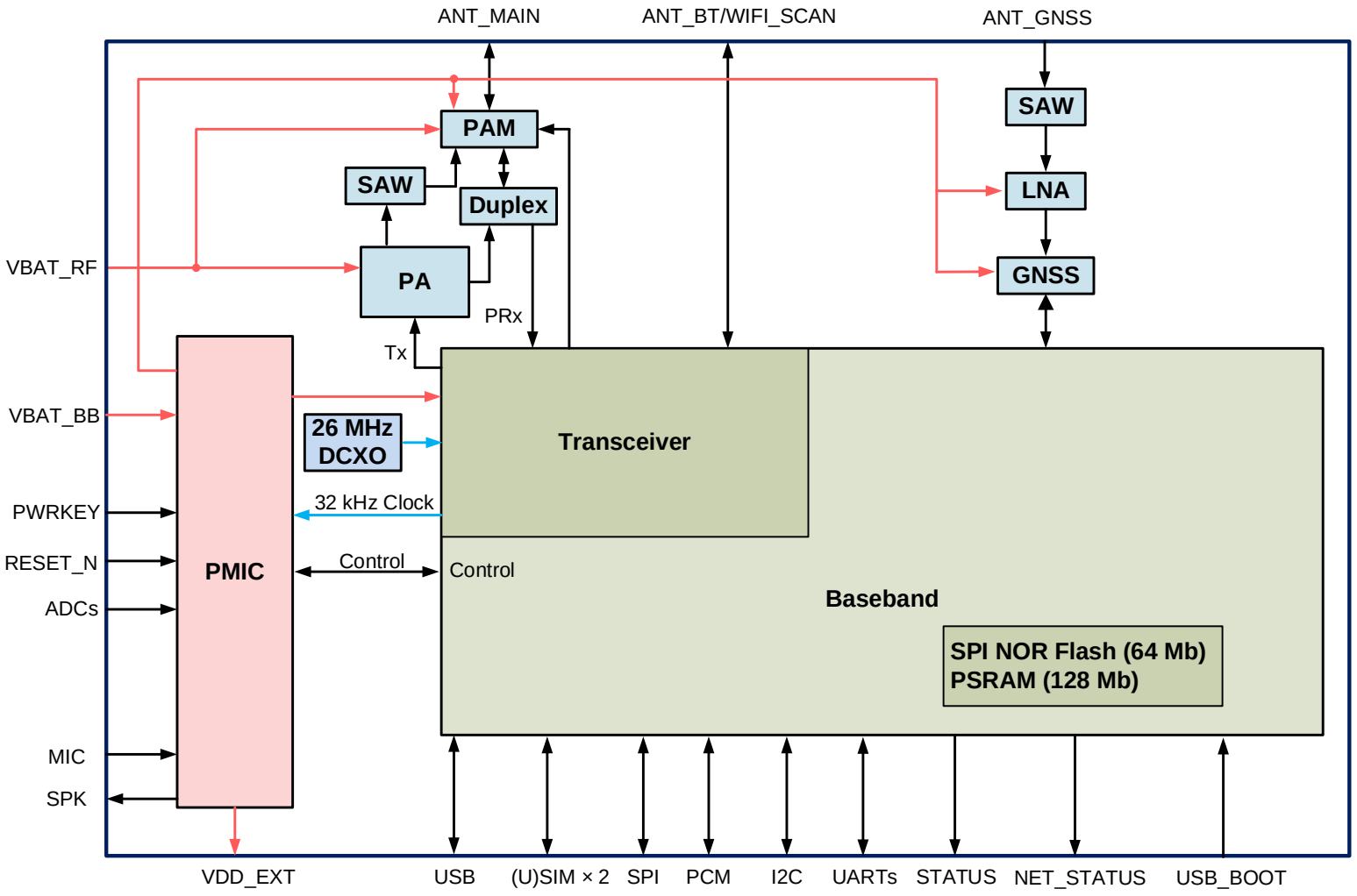
EG912U-GL Hardware Architecture



Software Advantages

USB Serial Driver

- Windows 8/ 8.1/ 10/ 11
- Linux 2.6–6.5
- Android 4.x–13.x

GNSS (Optional) & RIL & USB RNDIS & USB ECM Drivers

- GNSS Driver: Android 4.x–13.x
- RIL Driver: Android 4.x–13.x
- USB RNDIS Driver: Windows 8/ 8.1/ 10/ 11, Linux 2.6–6.5
- USB ECM Driver: Linux 2.6–6.5

Quality Guarantee

- Reliable network protocols
- Steady flash protection mechanism
- Superior audio algorithms

Flexible Applications

- (U)SIM card detection
- DTMF
- VoLTE
- GNSS (Optional)

Special Features

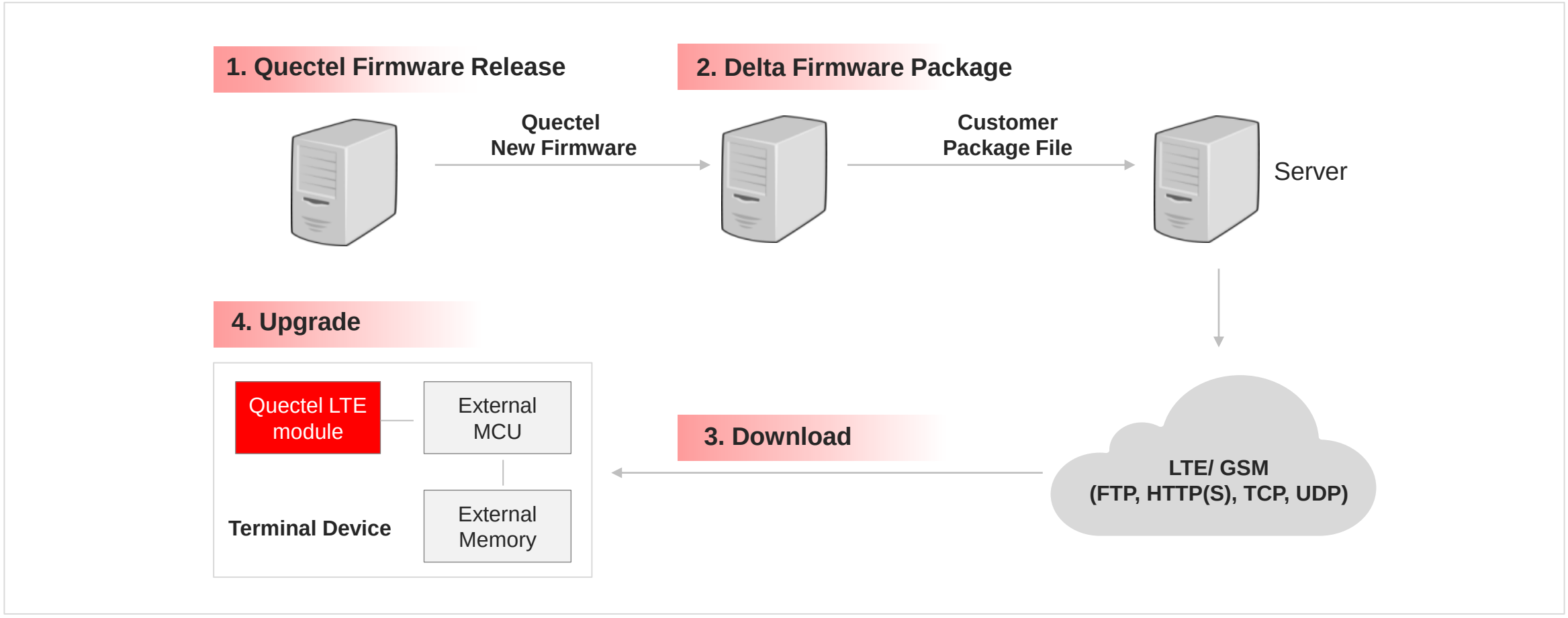
- QuecOpen®
- QuecPython®
- QuecLocator®

Enhanced AT Commands

- 3GPP TS 27.007 (GSM 07.07)
- 3GPP TS 27.005 (GSM 07.05 SMS)
- Quectel Enhanced AT Commands

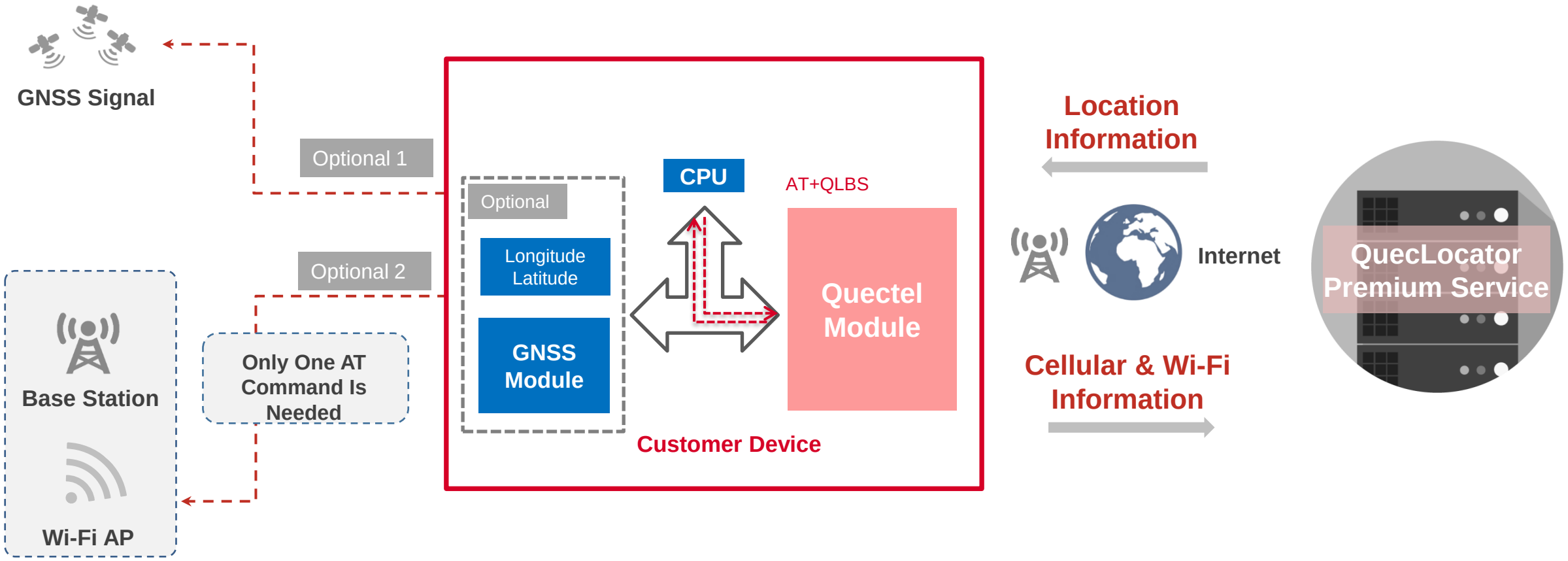
DFOTA (Delta Firmware Upgrade Over-The-Air)

Quick firmware upgrade through cellular networks owing to differential upgrade, delta firmware package, and fast download speed.



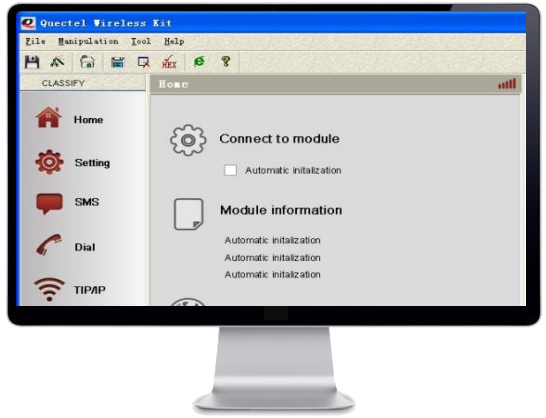
QuecLocator® Working Process

QuecLocator® is an easy and reliable positioning service providing secure and accurate positioning Anytime, Anywhere.



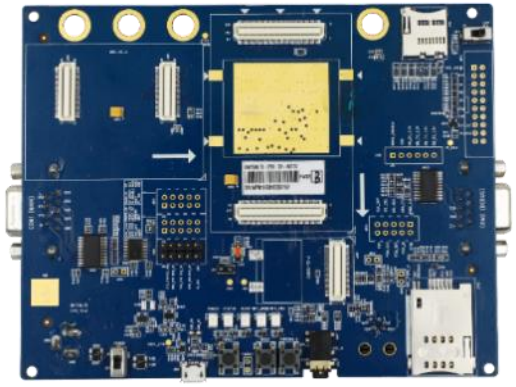
There is no need for extra GNSS modules when using QuecLocator®.

Support Package



Quectel provides a graphical user interface (GUI) tool QNavigator, which can help customers quickly test the functions of Quectel modules.

EVB Kit



LCC & LGA Module EVB

Module Highlights

Specifications

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Typical Applications

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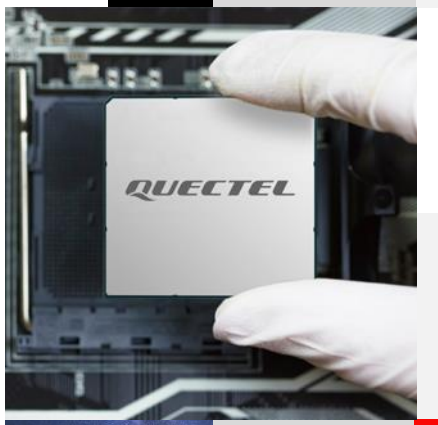

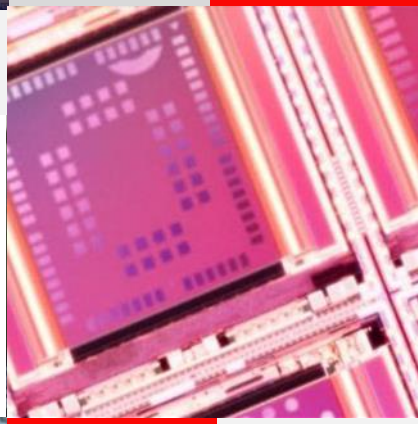

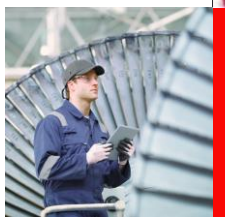

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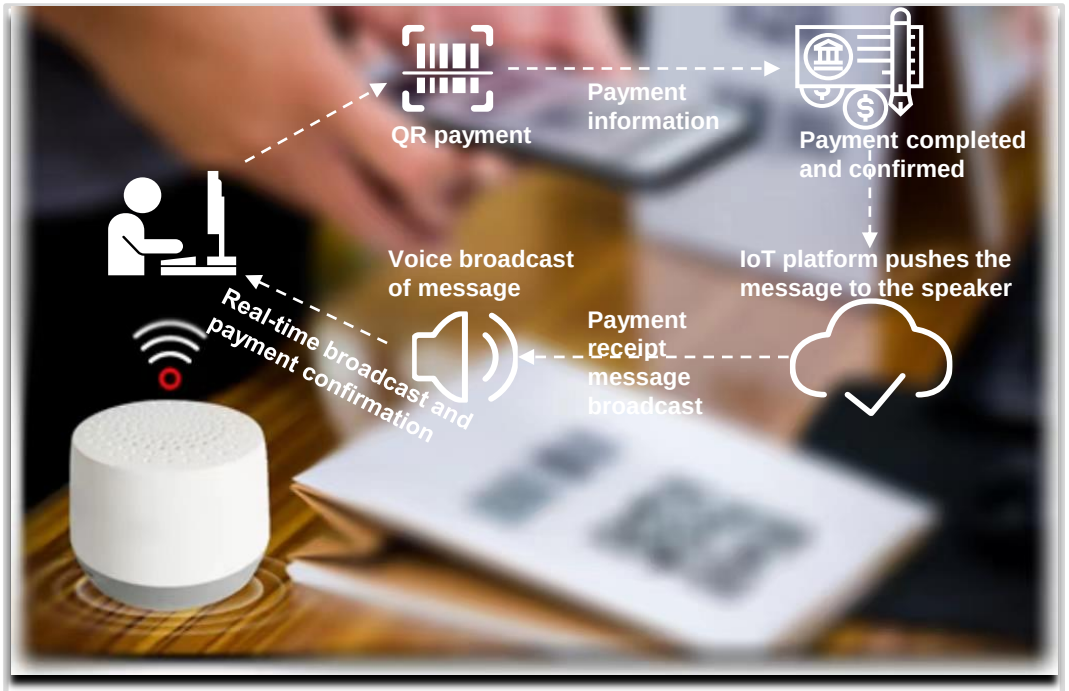
Cloud Speaker

A solution to the problem that QR payment receipt cannot be confirmed in time if the payment App is not running or the broadcast sound is inaudible.



- Chipsets inside modules are imbedded with an audio codec.
- A cropped version is adopted to save more RAM or ROM space.
- Virtual machine architecture and modular programming.

Long-lasting Battery Life

- 24-hour continuous broadcasting
- Low battery voice alert

Multiple IoT platforms

- Quectel IoT platform
- Alibaba cloud
- Tencent cloud

Human-like sound

- TTS, MP3, AMR are supported
- The sound is closer to a real person's voice

Applications

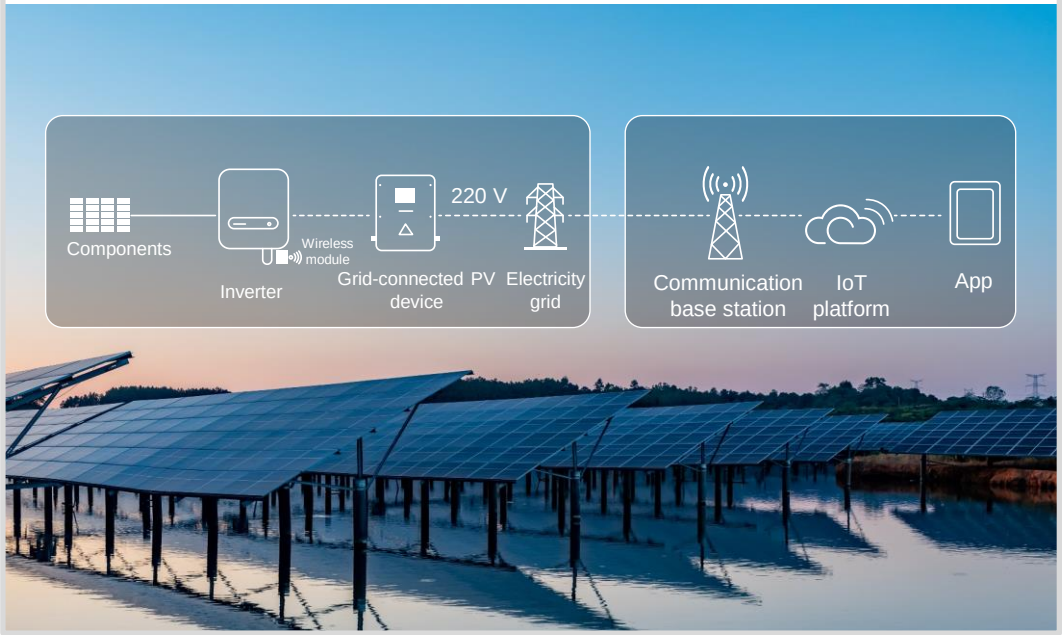
- Payment receipt broadcasting
- Voice broadcasting in station and airport
- Local radio in rural area

Photovoltaic (PV)

Challenges

- Wire Ethernet features higher wiring costs and inflexibility.
- Wi-Fi features a short transmission distance, poor stability and potential network security risk.
- 2G devices cannot connect to network as 2G is phasing out.

Solution

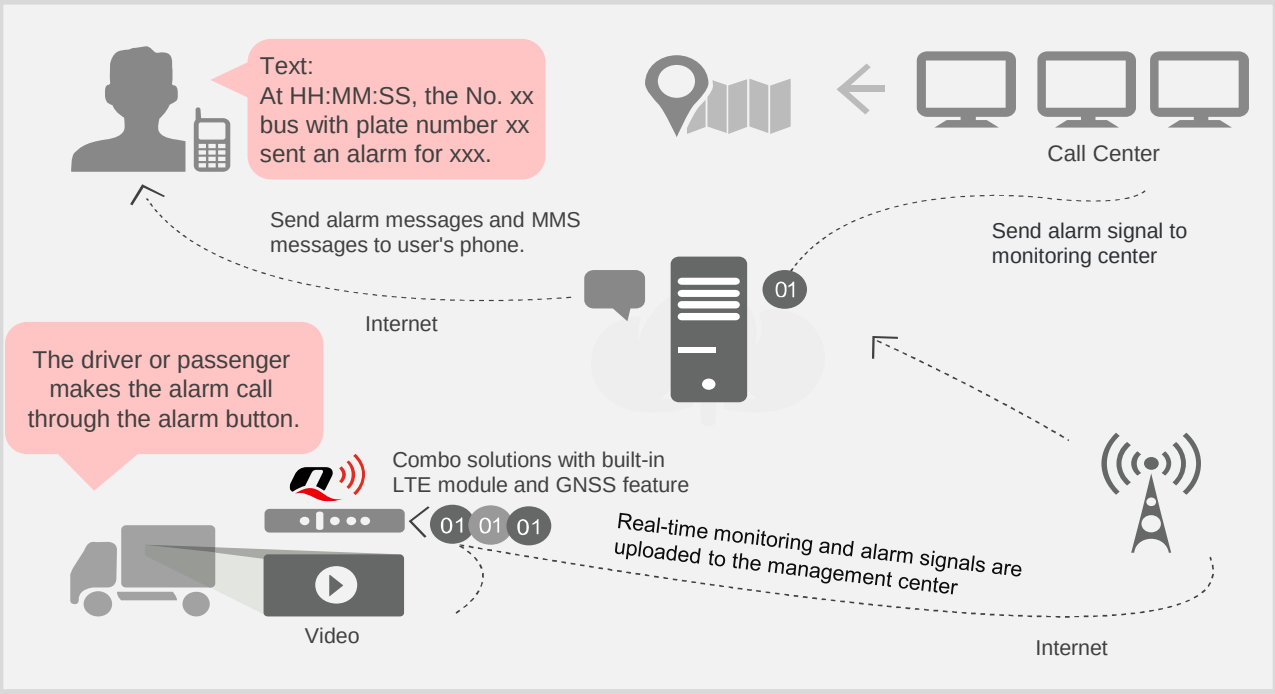


Solution Highlights

- 4G Cat 1 technology avoids the risks followed by carriers shutting down 2G/ 3G network.
- Through the module, the device data are collected and uploaded to the network server, so as to query, manage and maintain data anytime and anywhere.
- 4G Cat 1 series modules covering multiple chipsets and sizes satisfy the diverse demands of customers to market their terminal products in different areas around the world.
- The current 4G network can ensure the stable and long-term network coverage of PV power generation devices.
- LTE Cat 1 series modules are integrated with Bluetooth function, which makes it easier to maintain the electricity meter and terminal devices.

Tracker/ Vehicle OBD/ UBI

Vehicle Tracking/ Cargo Tracking/ Ship Tracking/ Fleet Management/ Item Tracking



Real-time tracking: item location and status as well as vehicle operation status

Multiple positioning: GPS/ BDS + LBS, etc.

Tracking query: Query vehicle behavior anytime and anywhere

Electronic fence: Automatic alarm for deviation from preset route

Emergency SOS

Solution Highlights

- Module variants meeting users' requirements for chipset, size, region and band
- Combo solutions that combine LTE, GNSS and other required functions

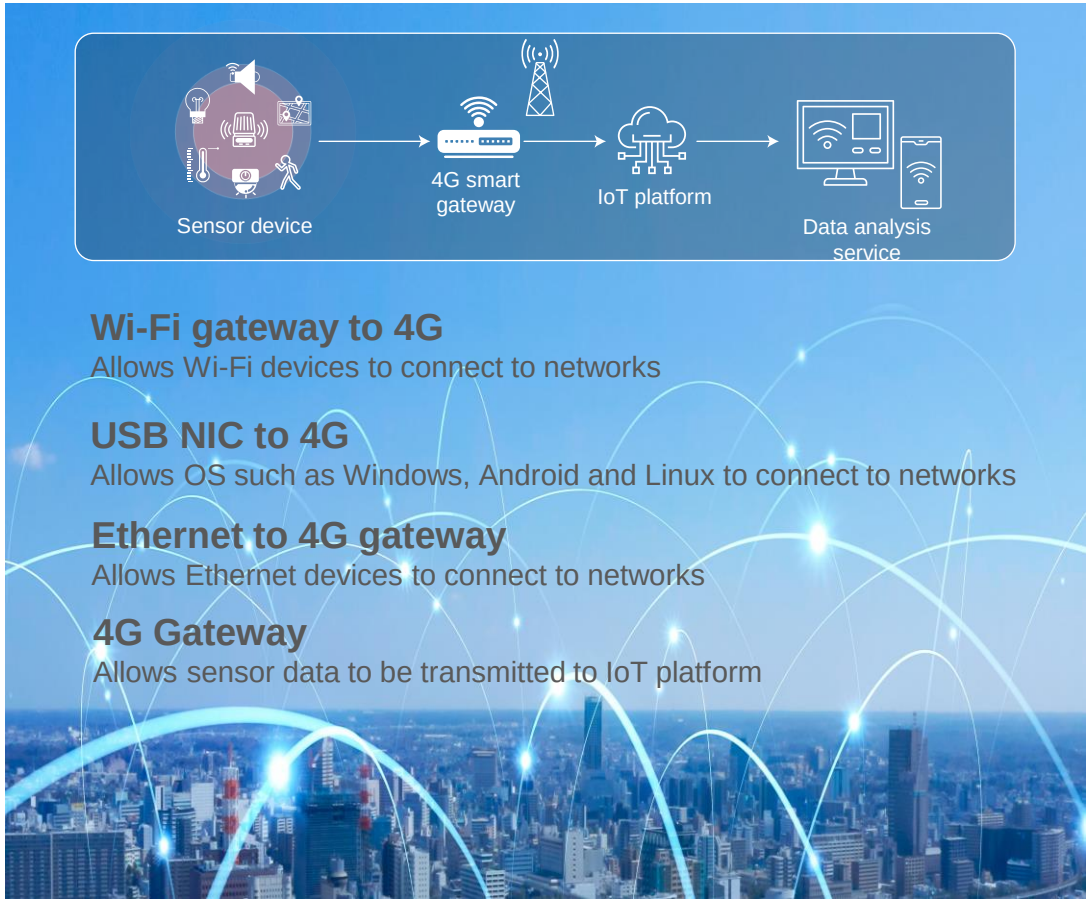
- Open solutions such as Linux, QuecPython® and FreeRTOS
- Complete example code for reference

Additional services including IoT platform and optimal antenna

LBS: location Based Services

4G Smart Gateway

Smart gateway allows non-cellular devices to connect to 4G networks.



Solution Highlights

Module variants meeting users' requirements for chipset, size, region and band

Rich hardware interfaces such as USB, Wi-Fi and Ethernet

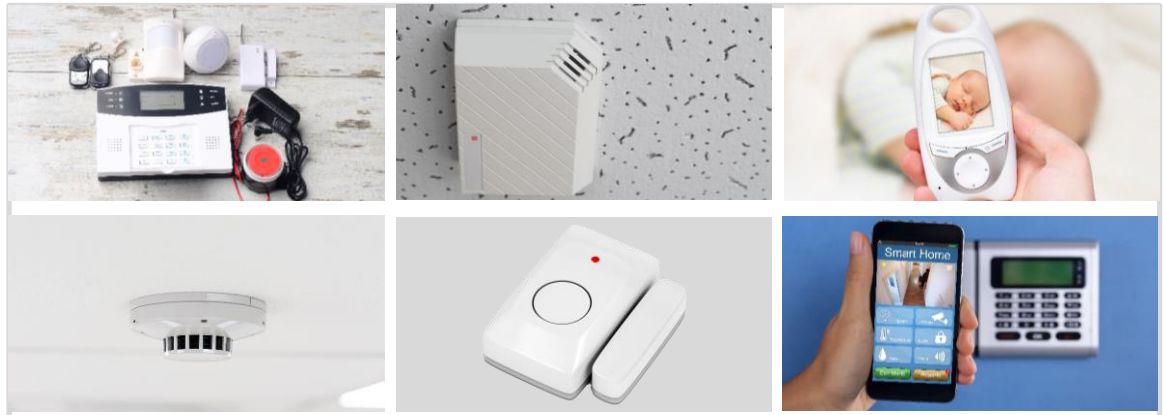
Various Open solutions：

- Linux
- QuecPython®
- FreeRTOS

- Sufficient example codes
- Socket programming supported in upper-layer application
- No need to focus on underlying interfaces
- Web configuration gateway

Various sensor data, collected to IoT gateway and transmitted to IoT platform via cellular network, are analyzed and managed intelligently.

Smart Safety



Connect to mobile network with cellular module and provide safe and reliable data connection and transfer.

Home smart safety

Home safety devices which connects to network via a cellular module, together with video recorder, door and window sensors and smog detectors, can realize remote recording and alarm functions. When abnormality is detected, users will be noticed instantly via message, call, or App, which improves home safety.

Commercial smart safety

With video recorder, invasion detectors and fire detectors connected, commercial sites can be safely monitored and guarded to protect commercial assets.

Solution Highlights

- Module variants meeting users' requirements for chipset, size, region and band
- LTE Cat 1 modules supporting PSM

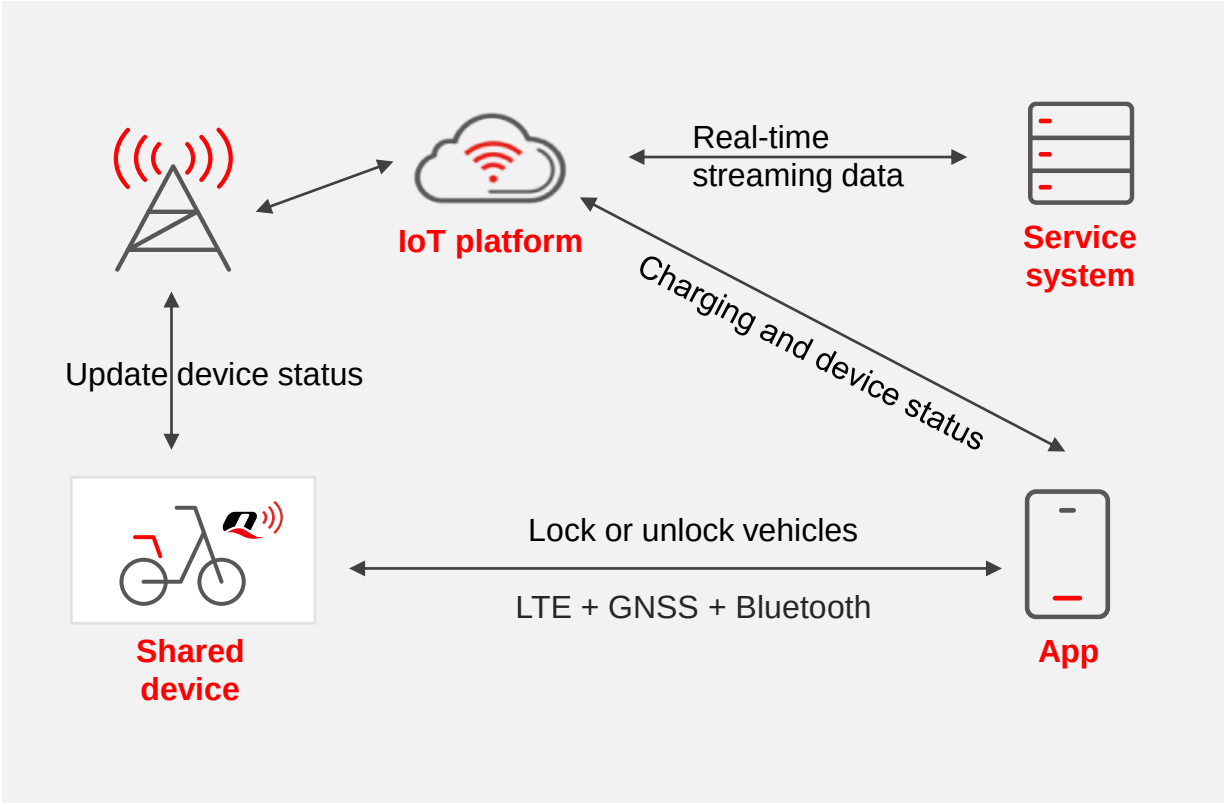
Support for safety functions related to system and software

PSM: Power Saving Mode

Sharing

Challenges

- Traditional public bicycles feature: fixed parking sites, high construction cost and low usage rate.
- Electrical, intelligent and shared travel methods improve travel efficiency.



Solution Highlights

- Suitable for shared bicycle, motorbike, scooter and other travel devices.
- GNSS function is applied for recording vehicle usage, and Bluetooth for locking or unlocking vehicles.
- An overall solution is provided.

A low-cost device operating mode that allows human-computer interaction in network transmission.

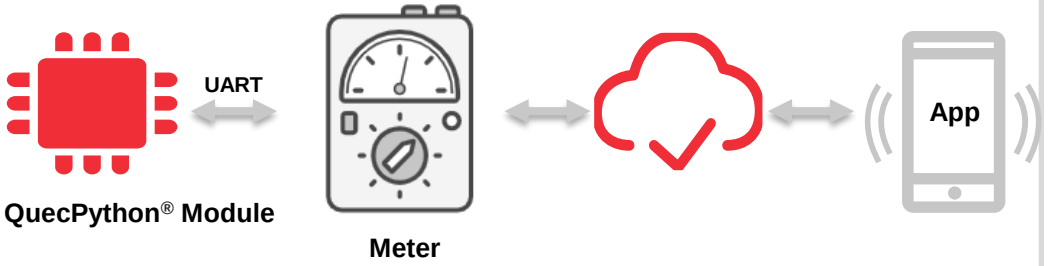
Shared bicycles have become an effective means to alleviate urban traffic congestion and the “last mile” problem.

Smart Meter

Challenges

- Traditional mechanical meter features a low measurement accuracy.
- Manual data calculation leads to high management cost.

Solutions



Solution Highlights

- Developed on QuecPython® language
- Rich third-party libraries
- Free from compilation

A set of codes can be widely used in the products based on various chipsets without modification.

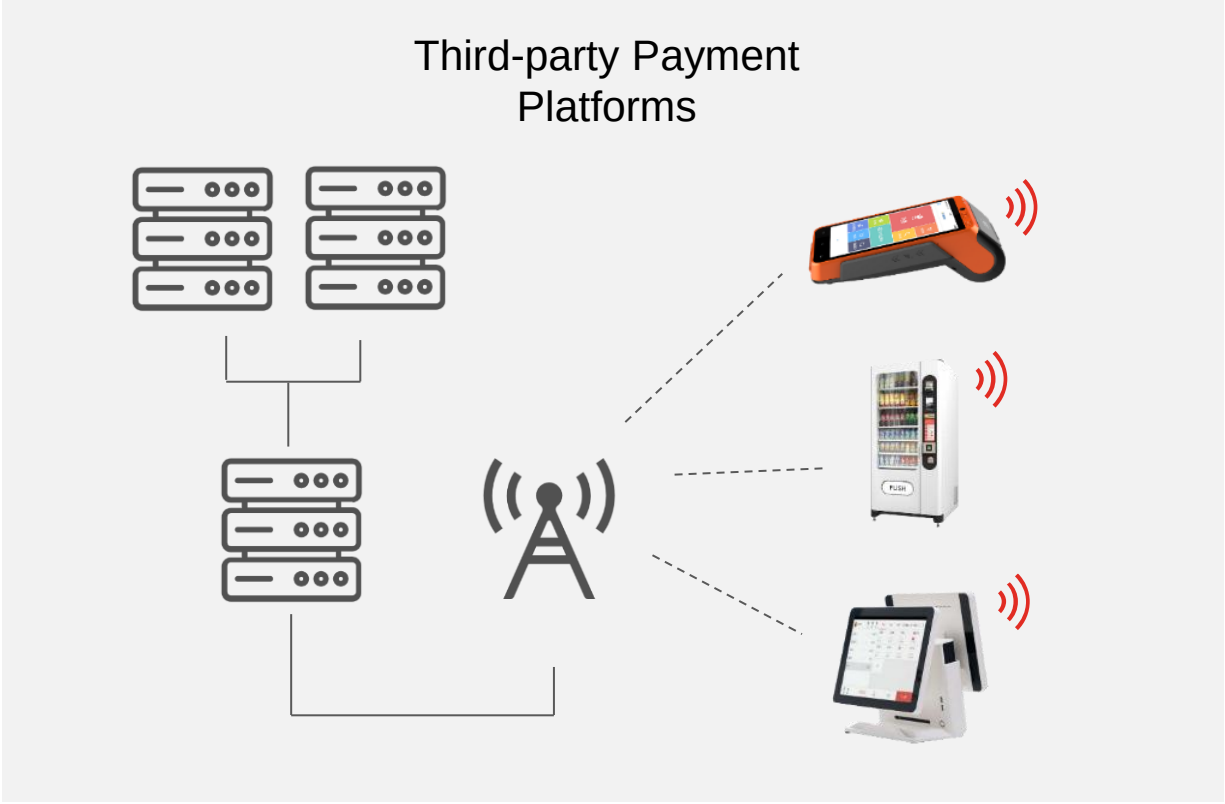
A brand-new meter reading mode

Multiple application scenarios to solve the problems in production and life:

- Smart power consumption
- Distributed energy resources
- Multifunctional community services

POS

- 2G/ 3G phaseout
- Over 100 million 2G/ 3G POS terminals still in use
- Wide use leads to a shorter average replacement time (2–3 years)



Solution Highlights

LTE standard solution can meet the demand of direct replacement of 2G/ 3G products.

LTE modules in Open solutions enhance their competitiveness by supporting code scanning, screen display and application.

Wireless payment has been an essential application of LTE Cat 1 technology which provides wider coverage, higher data rates, and greater cost advantages.

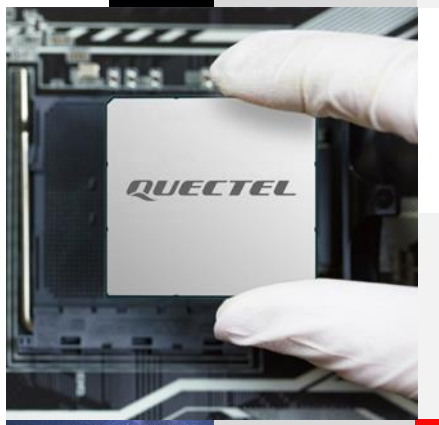
Module Highlights

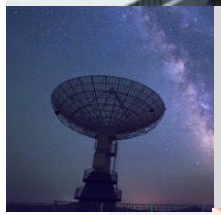
Specifications

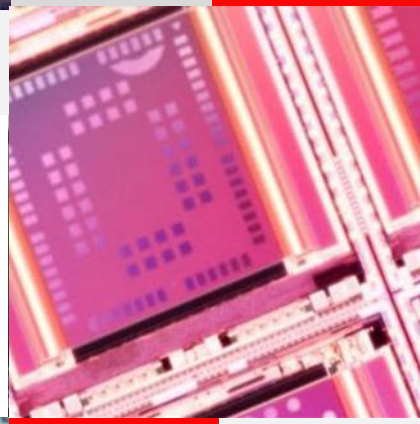
Enhanced Technologies

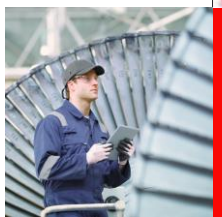
Typical Applications

Customer Support







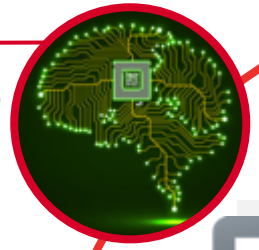


Build a Smarter World

360 Degree Support

1. System Evaluation

- Analyzing customer requirements
- Recommending the right module for the customer
- Evaluating antenna placement
- Designing antennas

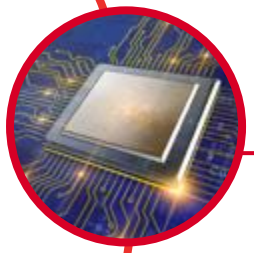


2. Design In

- Recommending referenced hardware designs
- Checking schematics and layouts
- Providing software design support

3. Prototype

- Providing design validation testing
- Recommending suppliers

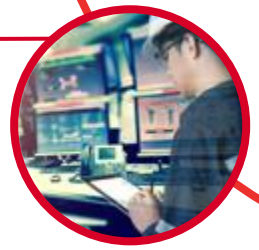


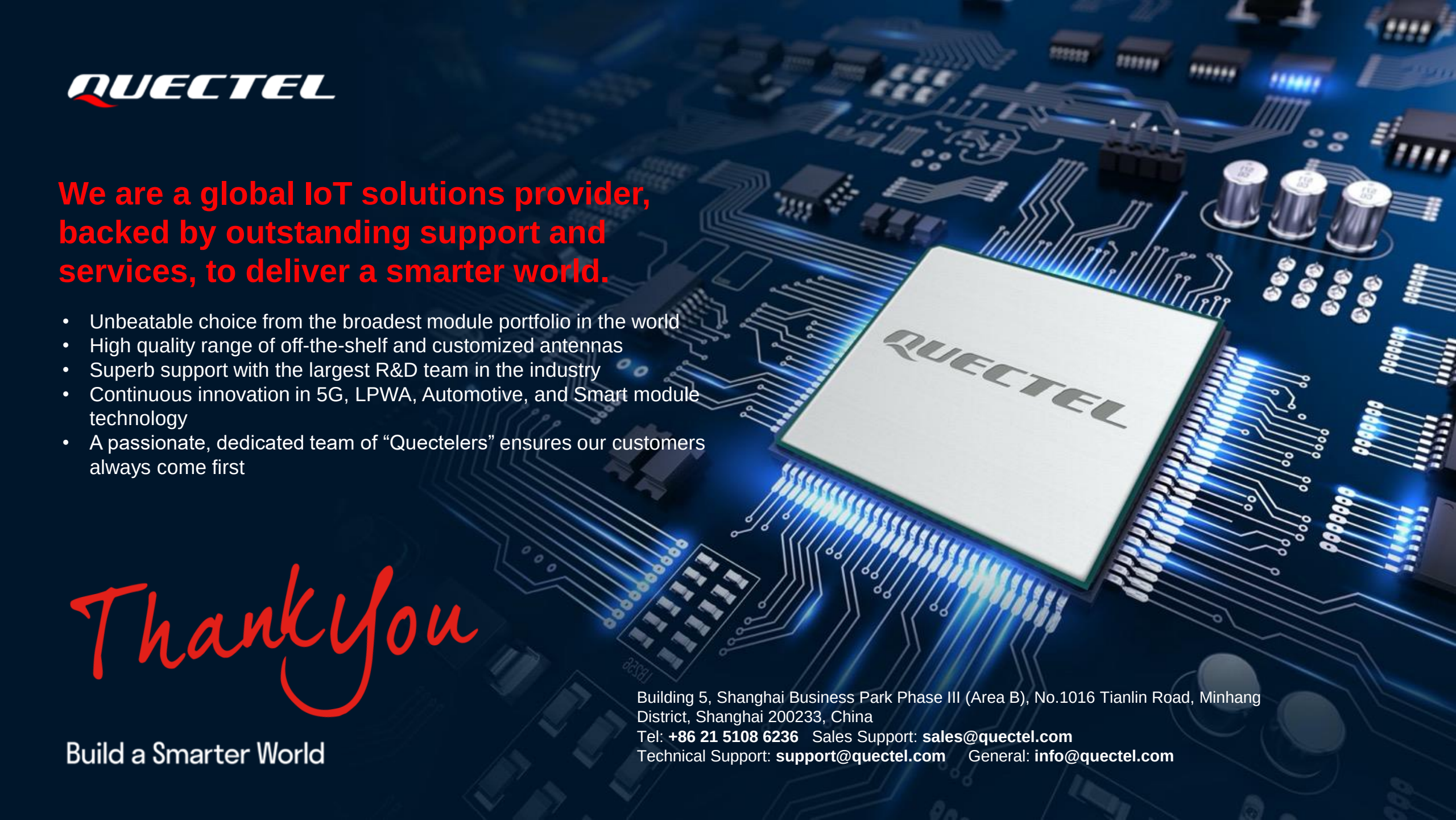
4. Testing Service

- RF testing
- Power consumption testing
- Audio testing
- Reliability & environmental testing
- ESD testing
- Certification testing
- Antenna debugging

5. Mass Production

- Providing assembly and testing guidelines
- Providing after-sales services





QUECTEL

We are a global IoT solutions provider, backed by outstanding support and services, to deliver a smarter world.

- Unbeatable choice from the broadest module portfolio in the world
- High quality range of off-the-shelf and customized antennas
- Superb support with the largest R&D team in the industry
- Continuous innovation in 5G, LPWA, Automotive, and Smart module technology
- A passionate, dedicated team of “Quectelers” ensures our customers always come first

Thank You

Build a Smarter World

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China
Tel: **+86 21 5108 6236** Sales Support: **sales@quectel.com**
Technical Support: **support@quectel.com** General: **info@quectel.com**