

# Quectel UMTS/HSPA(+) Module

## Product Overview

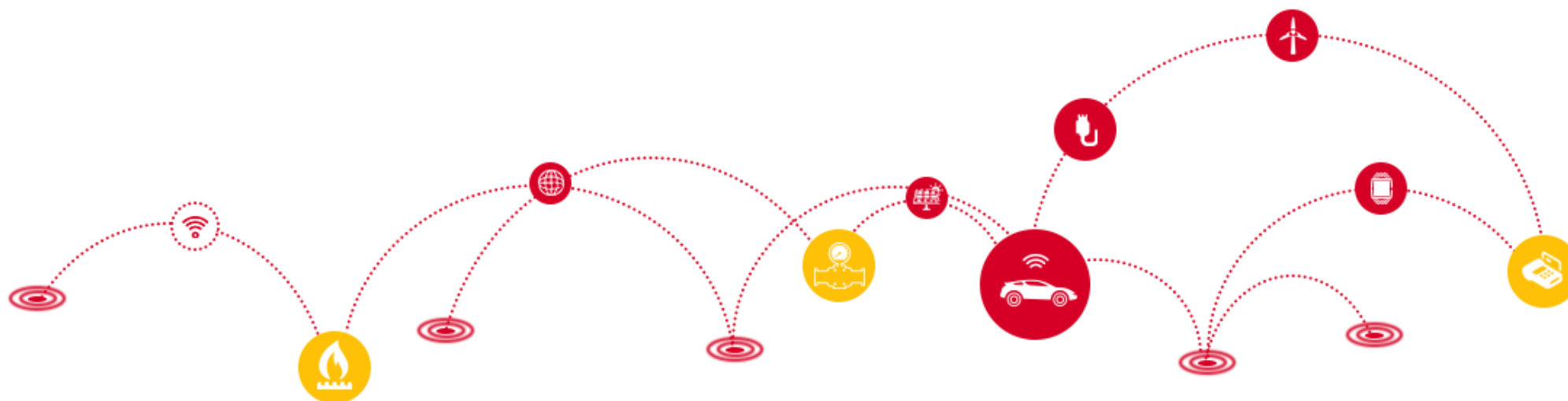
February, 2020

# Product Roadmap

Specifications

Technologies

Applications



# UMTS/HSPA(+) Modules Roadmap

## UC15



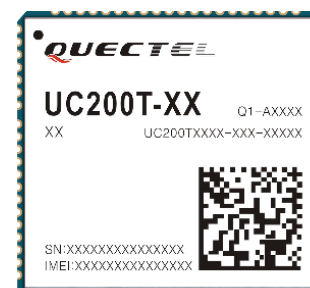
- QSC6270
- LCC Form Factor
- 29.0mm × 29.0mm × 2.5mm
- 3.6M DL/ 384K UL
- UC15-E/ -A/ -T

## UG96



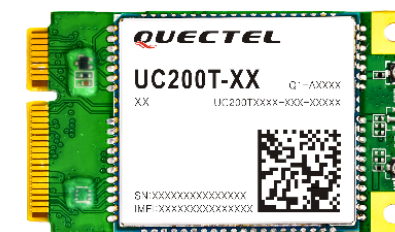
- XMM6250
- 26.5mm × 22.5mm × 2.2mm
- 7.2M DL/ 5.76M UL
- Global Version

## UC200T



- ASR1501
- LCC Form Factor
- 29.0mm × 32.0mm × 2.4mm
- 21M DL/ 5.76M UL
- UC200T-EM/ -GL

## UC200T Mini PCIe



- ASR1501
- 30.0mm × 51.0mm × 4.9mm
- 21M DL/ 5.76M UL
- UC200T Mini PCIe-EM/ -GL

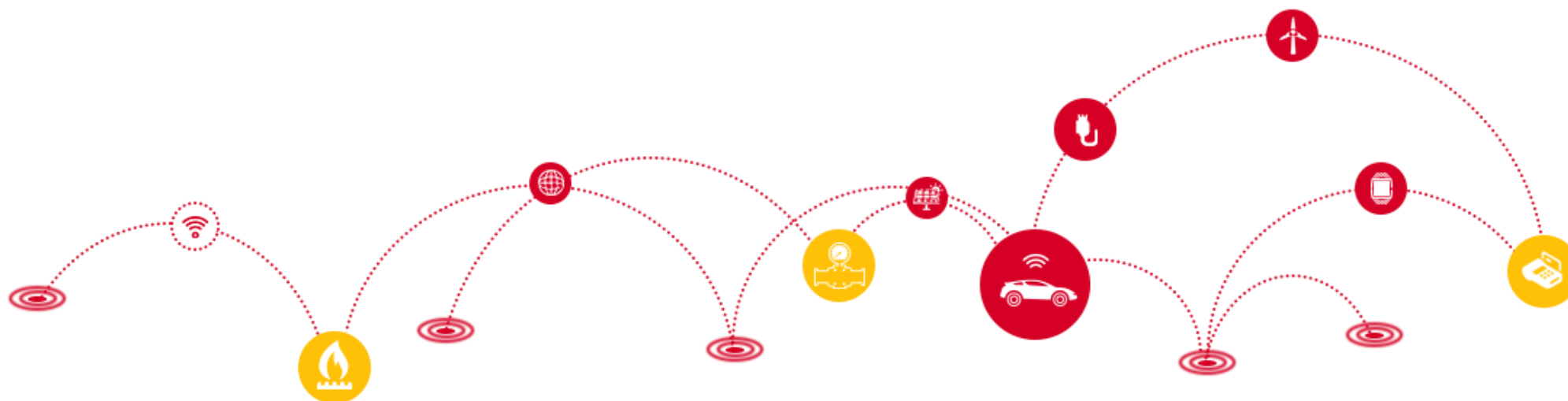


# Product Roadmap

## Specifications

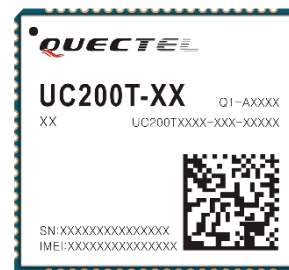
## Technologies

## Applications



# UC200T Specifications

## ■ UMTS/HSPA+ Module

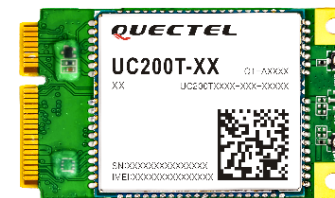


**29.0mm × 32.0mm × 2.4mm**  
**21Mbps (DL)/5.76Mbps (UL)**

Variant	UC200T-EM	UC200T-GL
Platform	ASR1501	ASR1501
Band	B1/B8 @UMTS 900/1800MHz @GSM	B1/B2/B5/B6/B8 @UMTS 850/900/1800/1900MHz @GSM
Area	Europe/Asia Pacific Region	Global
Supply Voltage	3.4~4.5V, Typ. 3.8V	
Interfaces	(U)SIM/ UART/ USB/ Audio Digital (PCM)/ RTC Backup/ ADC/ GPIO/ Antenna	
Protocols	TCP/ UDP/ PPP/ FTP/ HTTP/ NTP/ PING/ NITZ/ CMUX/ HTTPS/ FTPS/ SSL/ FILE/ MQTT/ SMTP*/ MMS*/ SMTPS*	
features	QuecFOTA®/ QuecLocator2.0/ QuecFile/ RIL Driver/ RNDIS Driver/ USB Serial Driver/ (U)SIM Card Detection/ ECM Driver	
Certification	Regulatory: CE/RCM	Regulatory: CE/RCM/Anatel*

*\* means under development*

# UC200T Mini PCIe Specifications



**30.0mm × 51.0mm × 4.9mm**  
**21Mbps (DL)/5.76Mbps (UL)**

## ■ UMTS/HSPA+ Module

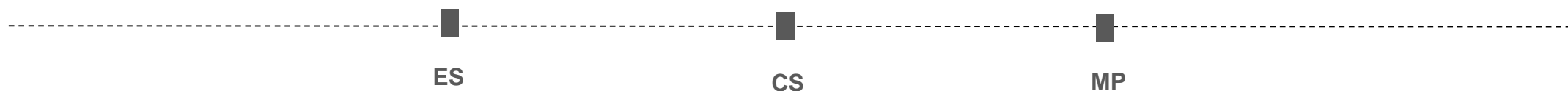
Variant	UC200T-EM Mini PCIe	UC200T-GL Mini PCIe
Platform	ASR1501	ASR1501
Band	B1/B8 @UMTS 900/1800MHz @GSM	B1/B2/B5/B6/B8 @UMTS 850/900/1800/1900MHz @GSM
Area	Europe/Asia Pacific Region	Global
Supply Voltage	3.0V~3.6V, Typ. 3.3V	
Interfaces	(U)SIM/ UART/ USB/ Audio Digital (PCM)/ RTC Backup/ ADC/ GPIO/ Antenna	
Protocols	TCP/ UDP/ PPP/ FTP/ HTTP/ NTP/ PING/ NITZ/ CMUX/ HTTPS/ FTPS/ SSL/ FILE/ MQTT/ SMTP*/ MMS*/ SMTPS*	
features	QuecFOTA®/ QuecLocator2.0/ QuecFile/ RIL Driver/ RNDIS Driver/ USB Serial Driver/ (U)SIM Card Detection/ ECM Driver	

*\* means under development*

# UC200T-EM Timeline

2019											
Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.

## Project Schedule



*ES: Engineering samples ready. Basic functions are available for customers' simple demo purpose.*

*CS: Commercial samples ready. Stable hardware design and quite stable software design. New software features can be added upon request.*

*MP: Hardware and software ready for mass production. For certification status, please refer to the "certification schedule".*

## Regulatory Certifications

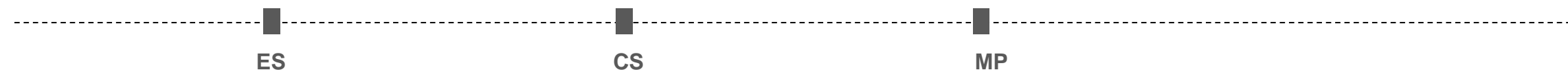
**CE/ RCM**



# UC200T-GL Timeline

2019									2020		
Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.

## Project Schedule



*ES: Engineering samples ready. Basic functions are available for customers' simple demo purpose.*

*CS: Commercial samples ready. Stable hardware design and quite stable software design. New software features can be added upon request.*

*MP: Hardware and software ready for mass production. For certification status, please refer to the "certification schedule".*

## Regulatory Certification Schedule

**CE/RCM completed**





# UG96 Specifications



**26.5mm × 22.5mm × 2.2mm**  
**7.2Mbps DL/ 5.76Mbps UL**

## ■ UMTS/HSPA Module

Variant	UG96
Platform	XMM6250
Band	B1/B2/B5/B6/B8 @UMTS 850/900/1800/1900 @GSM
Area	Global
Supply Voltage	3.3V~4.3V, Typ. 3.8V
Consumption	1.1mA @GSM sleep, DRX=9 1.7mA @UMTS sleep, DRX=9
Interfaces	(U)SIM/ UART/ USB/ Audio Digital (PCM)/ RTC Backup/Antenna
Protocols	TCP/ UDP/ PPP/ MMS/ HTTP/ HTTPS/ SMTP/ SMTPS/ FTP/ NTP/ NITZ/ PING/ SSL
Features	DTMF/ DFOTA/ RIL Driver/ MUX/ USB Serial Driver/ (U)SIM Card Detection
Certification	<b>Carrier:</b> Deutsche Telekom/ Telefonica <b>Regulatory:</b> GCF/ CE/ FCC/ PTCRB/ IC/ Anatel/ IFETEL/ CCC/ JATE/ TELEC/ RCM/ FAC/ ICASA

# UC15 Specifications



## ■ UMTS/HSDPA Modules

**29.0mm × 29.0mm × 2.5mm**  
**3.6M DL/ 384K UL**

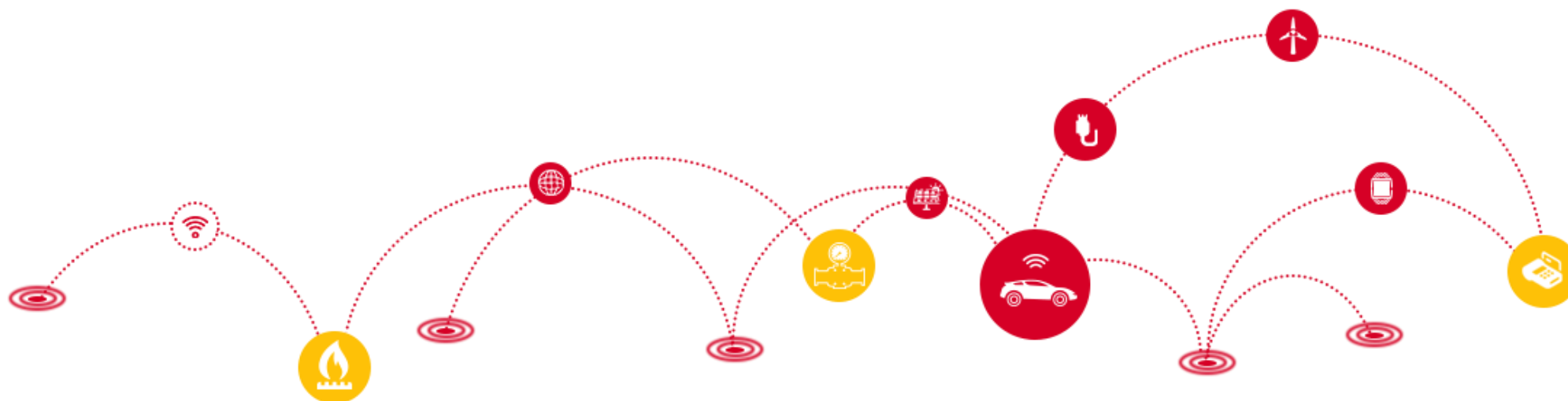
Variant	UC15-E	UC15-A	UC15-T
Platform	QSC6270		
Band	B1/B8 @UMTS 900/1800 @GSM	B2/B5 @UMTS 850/900/1800/1900 @GSM	B1/B5 @UMTS 850/900/1800/1900 @GSM
Area	EMEA	North America	Thailand
Supply Voltage	3.3V~4.3V, Typ. 3.8V		
Consumption	1.8mA @GSM sleep, DRX=9 1.7mA @UMTS sleep, DRX=9		
Interfaces	(U)SIM/ UART/ USB/ Audio Analog/ Audio Digital (PCM)/ ADC /GPIO /Antenna		
Protocols	TCP/ UDP/ PPP/ MMS/ FTP/ SMTP/ SMTPS/ HTTP/ HTTPS/ PING/ SSL		
Features	eCall/ DTMF/ QuecFOTA/ DFOTA/ Audio Playback/ Audio Recording/ QuecFile/ RIL Driver/ MUX/USB Serial Driver/ (U)SIM Card Detection		
Certification	<b>Regulatory:</b> GCF/ CE/ SRRC/ NAL/ CCC/ NCC/ OFCA/ FAC	<b>Carrier:</b> AT&T/ Rogers <b>Regulatory:</b> FCC/ PTCRB/ IC	<b>Regulatory:</b> RCM/ NBTC

# Product Roadmap

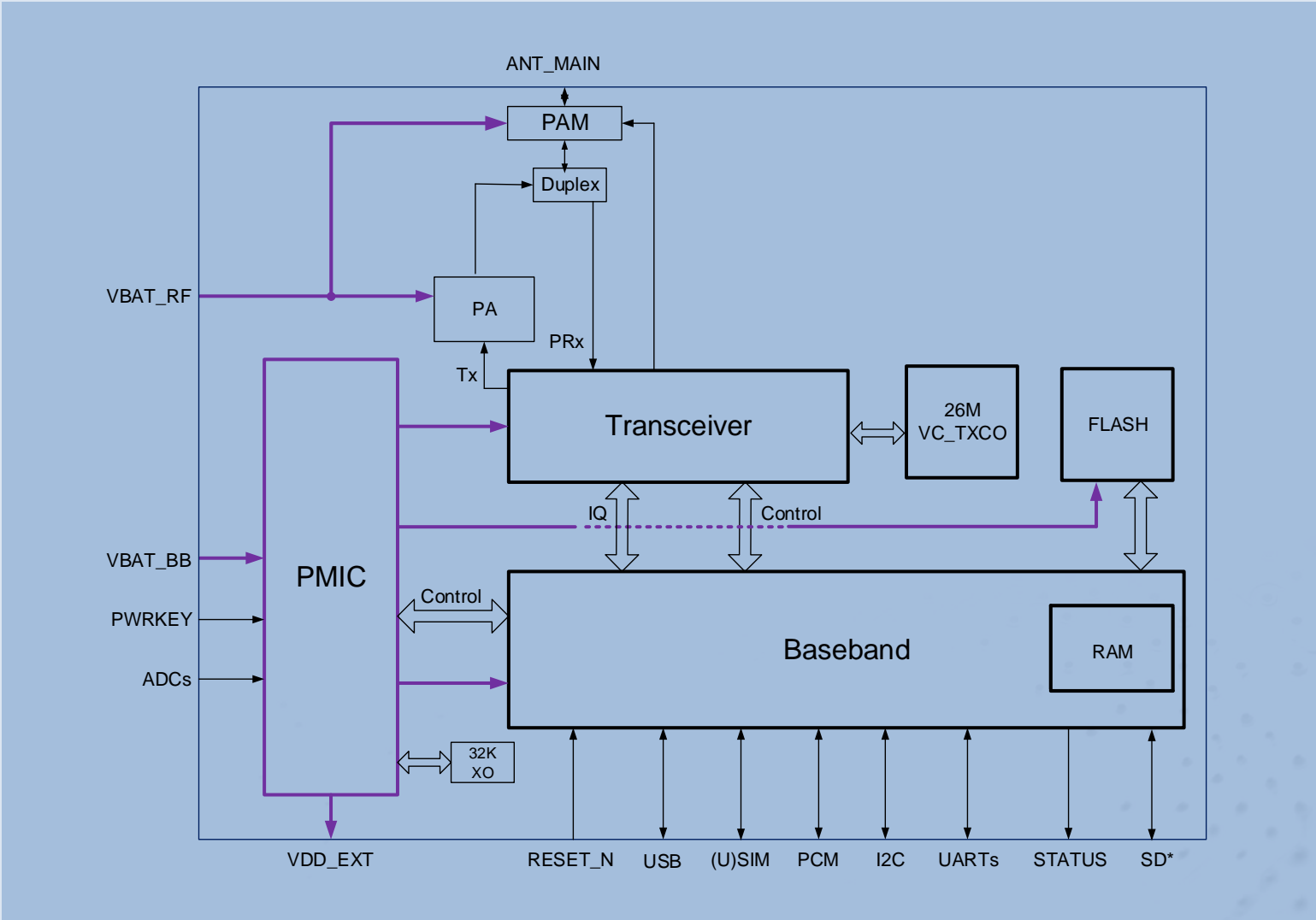
## Specifications

## **Technologies**

## Applications



# Hardware Architecture



Taking UC200T as an example.  
\*means under development.

# Software Advantages

## USB Serial Driver

- Windows 7/8/8.1/10
- Linux 2.6~5.4
- Android 4.x/5.x/6.x/7.x/8.x/9.x

## Quality Guarantee

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

## Special Features

- TTS
- QuecFile (UC15/ UC200T)
- DFOTA (UG96)

## NDIS & RIL Drivers

- RIL Driver:  
Android 4.x/5.x/6.x/7.x/8.x/9.x
- NDIS Driver:  
Windows 7/8/8.1/10  
Linux 2.6~5.4

## Flexible Applications

- eCall
- (U)SIM card detection
- DTMF

## Enhanced AT Commands

- Standard V.25ter AT commands
- 3GPP TS 27.007 (GSM 07.07)
- 3GPP TS 27.005 (GSM 07.05 SMS)
- TCP/IP stack AT commands
- STK ((U)SIM Application Toolkit)

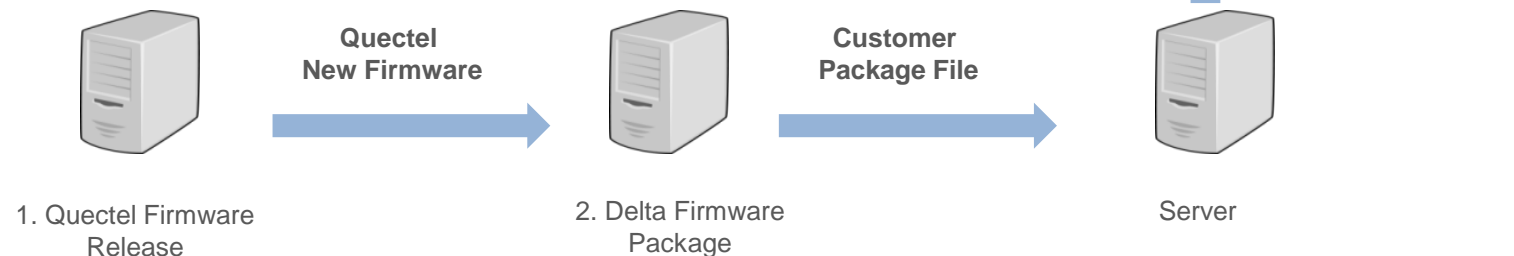
*\*means under development*

# DFOTA

DFOTA is an acronym for Delta Firmware Upgrade Over-The-Air. DFOTA technology enables mobile device manufacturers to remotely update software. New software can be delivered over the air, eliminating the need for users to bring the device to a service facility.

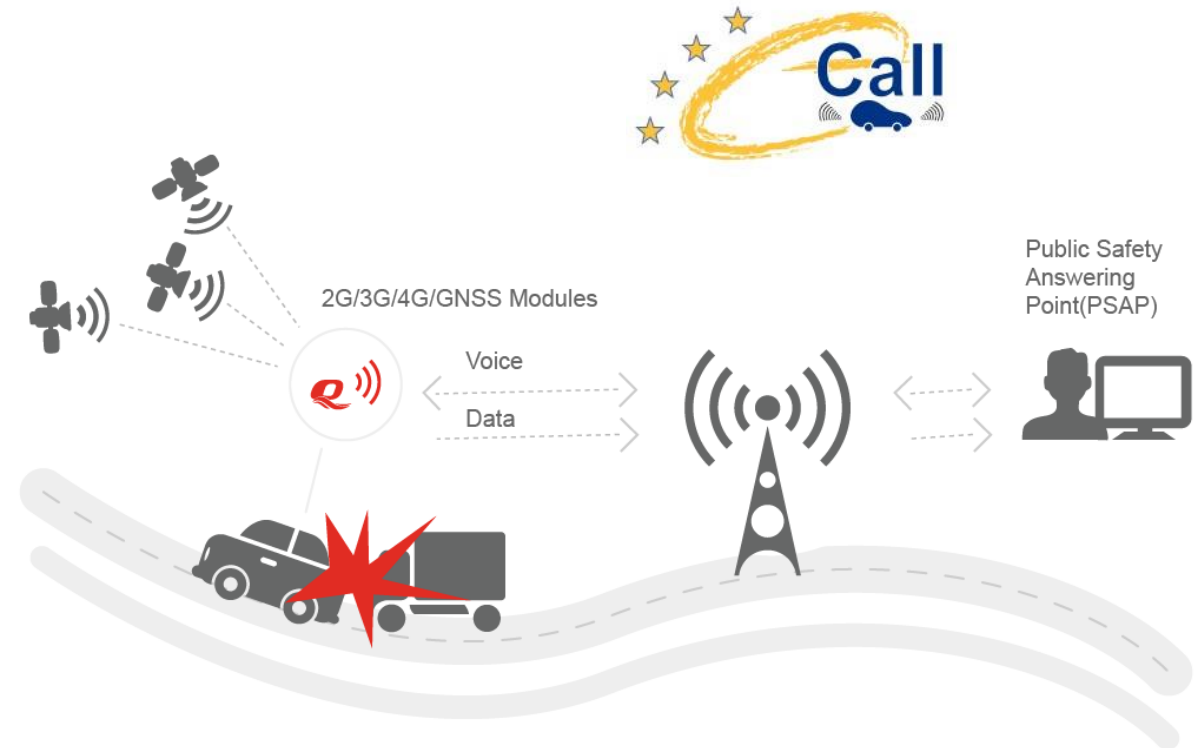
## Firmware Upgrade Procedure via DFOTA

- Get Delta Firmware Package
- Put Delta Package on Server
- Execute AT+QFOTADL Command
- Download and Upgrade Firmware Automatically



## eCall Function

Automatic Emergency Call (eCall) is a system that provides an automated message to the emergency services following a road crash, which includes the precise crash location, time, license plate number and the number of passengers. This system aims to reduce the time between when the crash occurs and when rescues are provided.

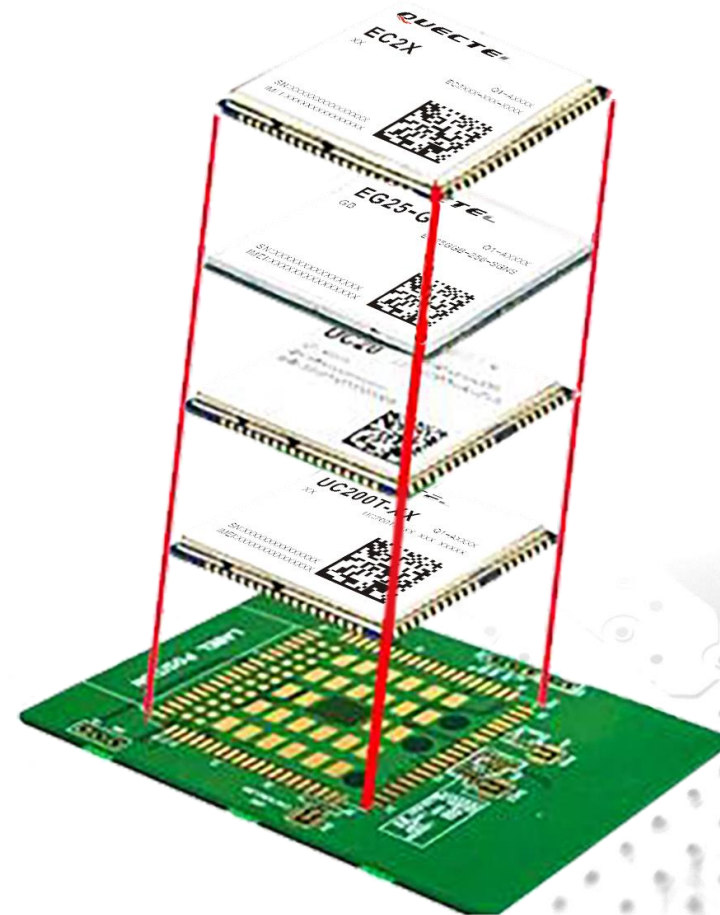


- Quectel supports eCall in its 2G/3G/4G/GNSS modules and has been working on eCall since late 2011.
- Quectel is well-experienced in eCall development and is capable of offering technical support and assistance for customers in eCall application development.

# UC200T Layout Compatibility

UC200T modules are compatible with  
Quectel LTE Standard modules  
**EC2x/EG25-G.**

Compatible design accommodates both  
**UC200T** and **EC2x/EG25-G** modules on the  
same PCB footprint.



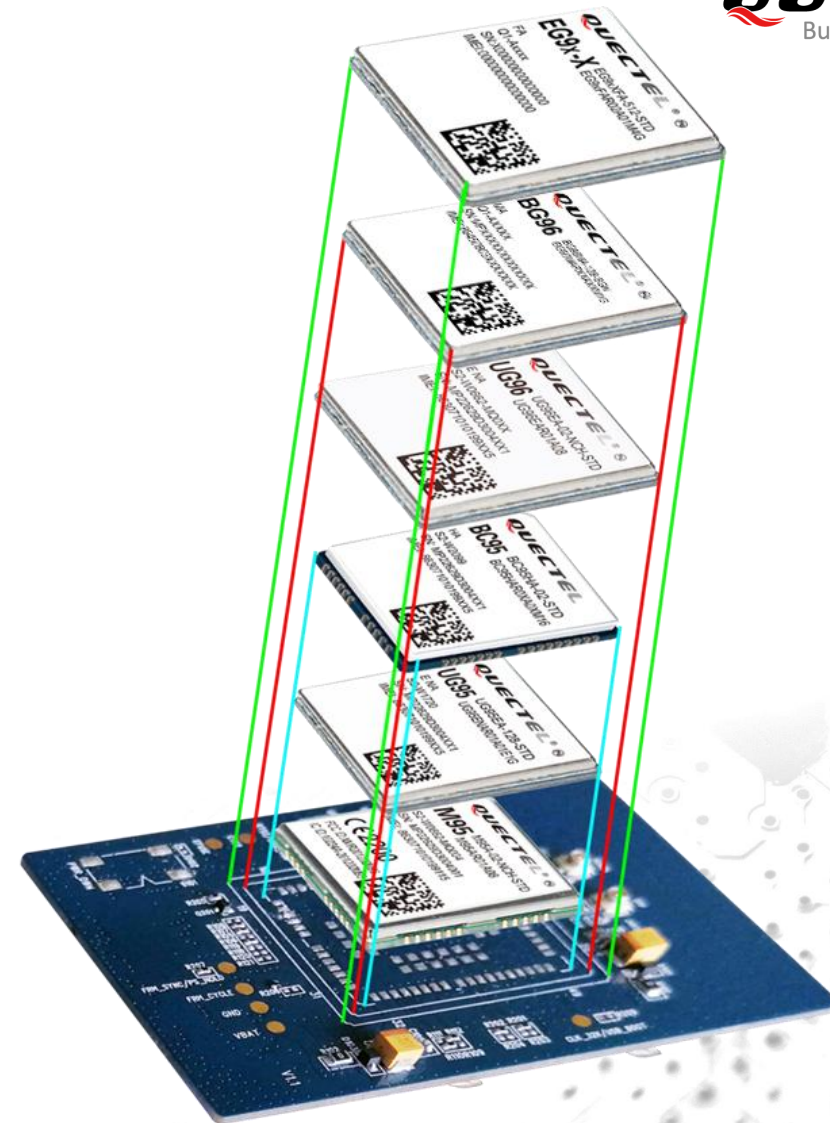
*NOTE: The compatibility diagram shown above is for illustration purpose only. The actual appearance of the modules may be different.*



# UG96 Layout Compatibility

UG96 modules are compatible with the following Quectel modules:

- *GSM/GPRS module M95*
- *LTE Cat 4/Cat 1 modules EG95/EG91*
- *LTE Cat NB2 module BC95-G*
- *LTE Cat M1/Cat NB1/EGPRS module BG96*



NOTE: The compatibility diagram shown above is for illustration purpose only. The actual appearance of the modules may be different.

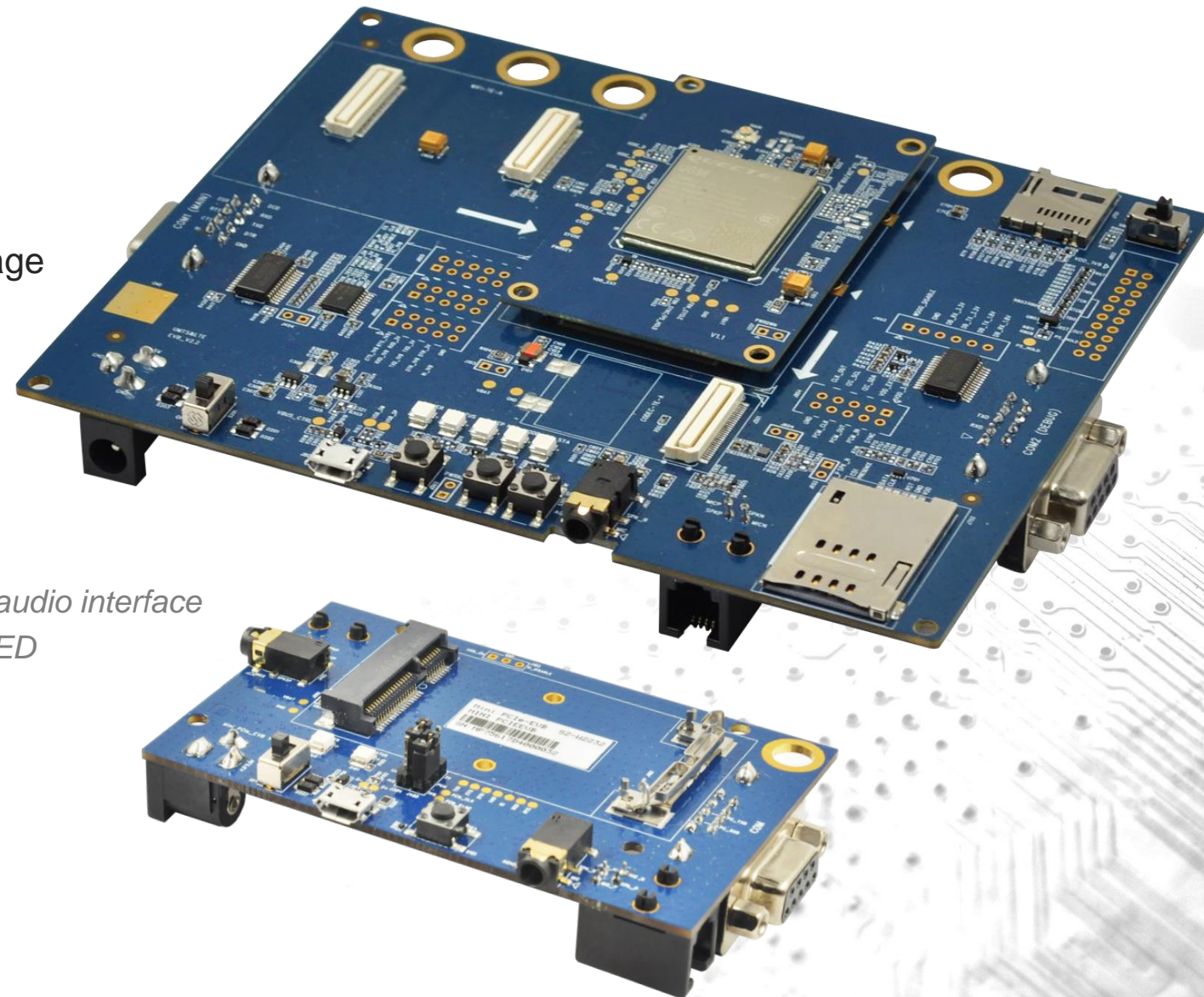
# Support Package (UG96/UC200T)

## Technical Materials Package

- Hardware & software specifications
- Application note package
- Debug tool, download tool, test tool, EVB package & USB drivers
- Approvals & test report package
- QNavigator

## Development Tool (UMTS&LTE EVB Kit)

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>▪ Interfaces<ul style="list-style-type: none"><li>a) RS-232 interfaces</li><li>b) USB interface</li><li>c) Power supply</li><li>d) Antenna interface</li><li>e) Handset interface</li><li>f) Earphone interface</li><li>g) Test points</li></ul></li></ul> | <ul style="list-style-type: none"><li>▪ Features<ul style="list-style-type: none"><li>a) Digital or analog audio interface</li><li>b) Network status LED</li><li>c) Power key</li><li>d) Reset key</li></ul></li></ul> |
|--|--|





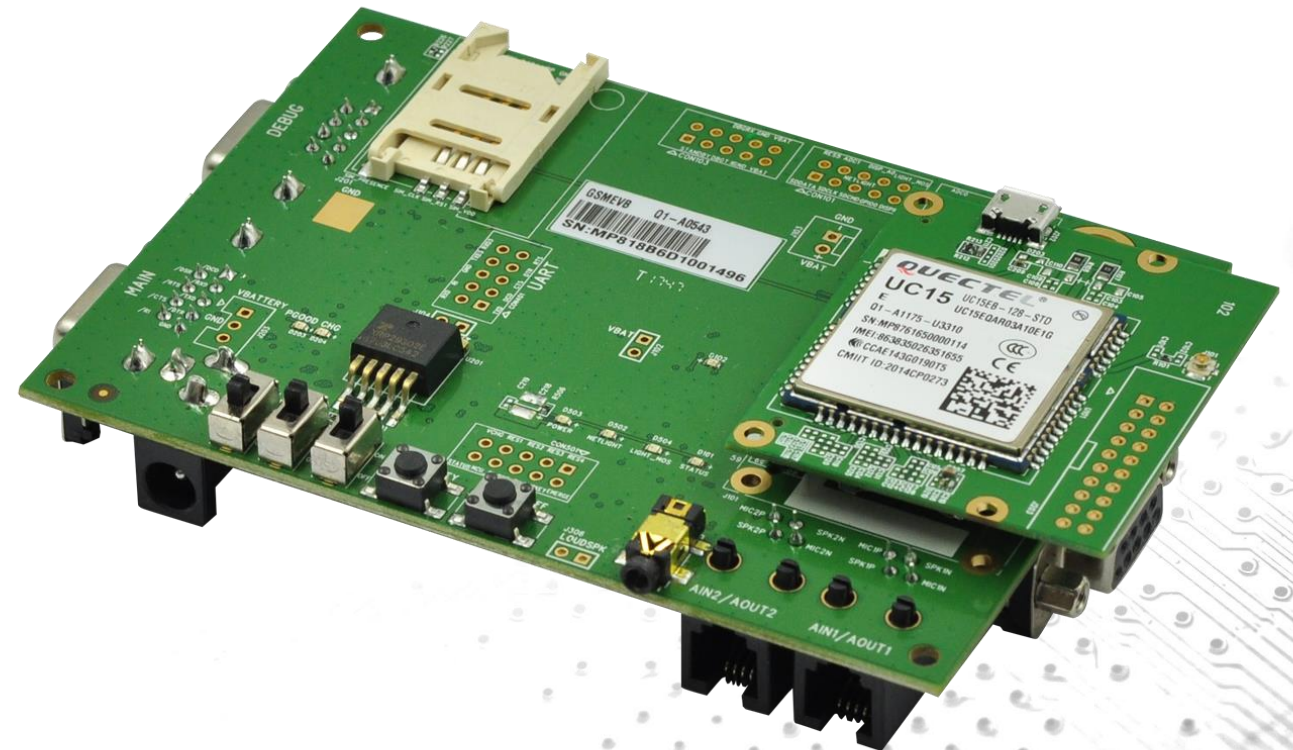
# Support Package (UC15)

## Technical Materials Package

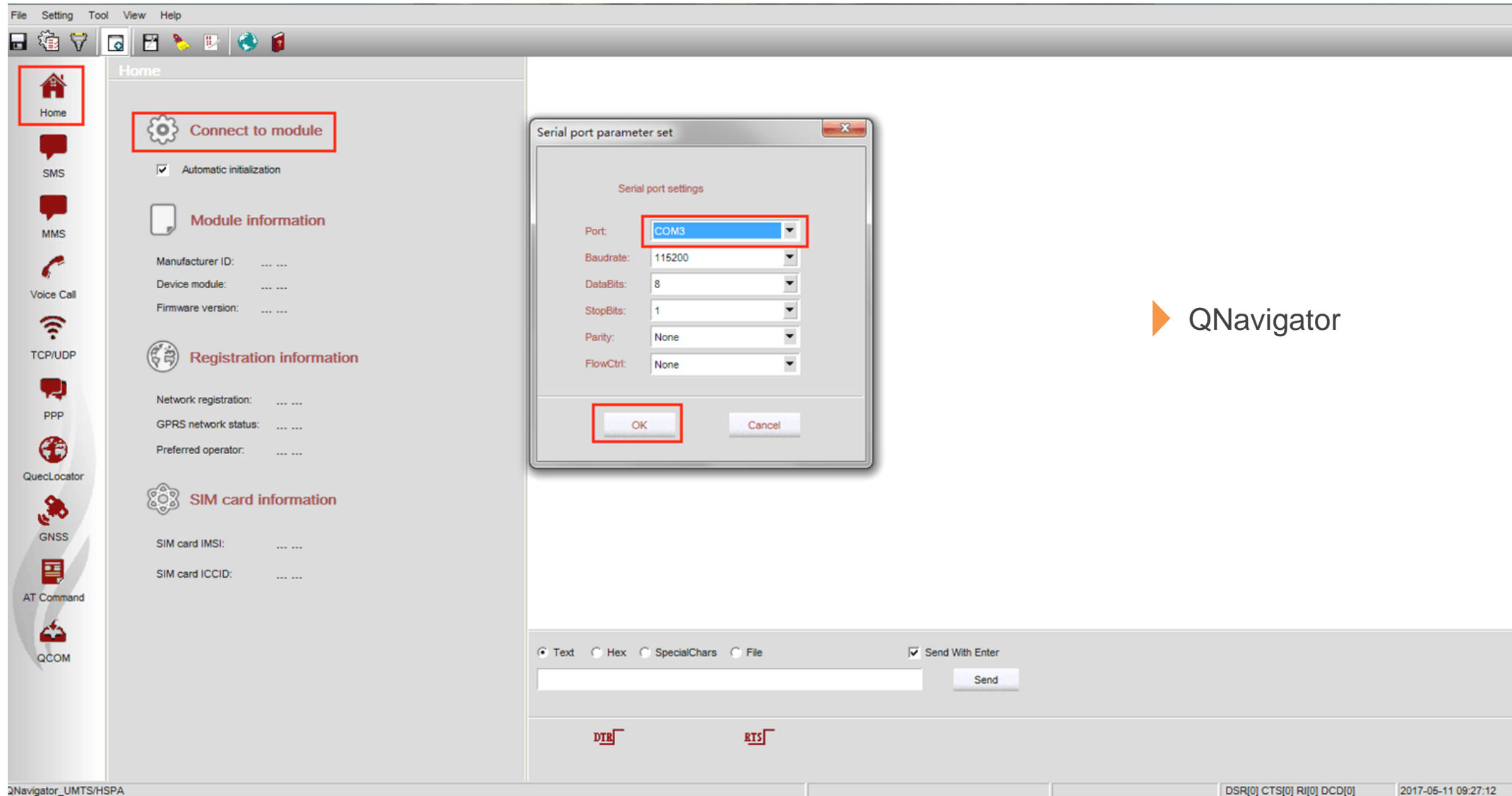
- Hardware & software specifications
- Application note package
- Debug tool, download tool, test tool, EVB package & USB drivers
- Approvals & test report package
- QNavigator

## Development Tool (GSM EVB Kit)

- |                         |                       |
|-------------------------|-----------------------|
| ▪ Interfaces            | ▪ Features            |
| a) RS-232 interfaces    | a) Network status LED |
| b) Debug UART interface | b) Power key          |
| c) Power supply         | c) Emergency off key  |
| d) Antenna interface    |                       |
| e) Handset interface    |                       |
| f) Earphone interface   |                       |
| g) Test points          |                       |



# Support Package - QNavigator



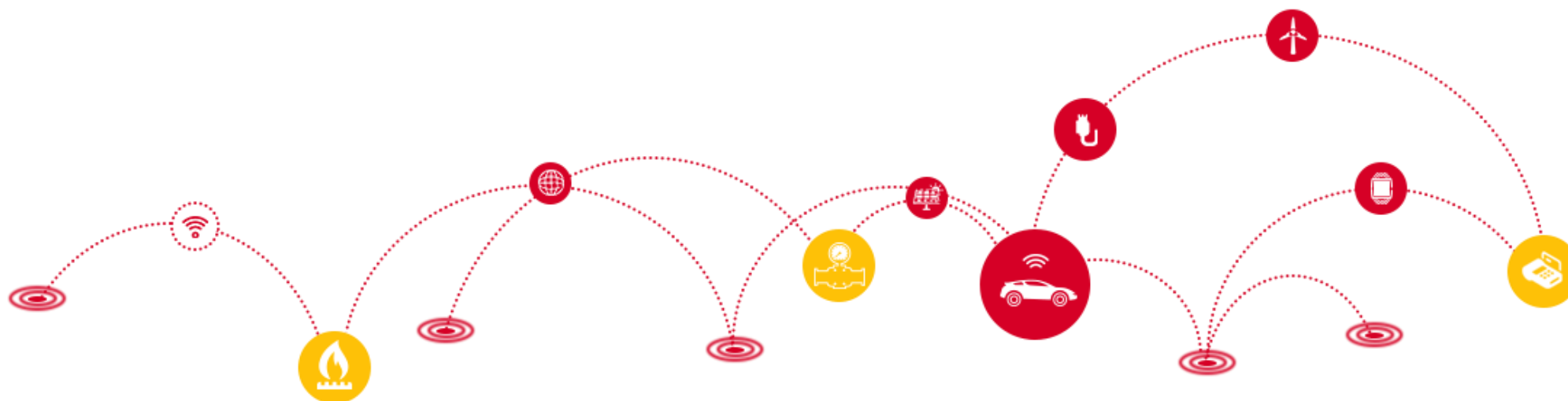
► QNavigator

# Product Roadmap

## Specifications

## Technologies

## Applications



# Target Applications



## Telematics & Transport

- Automotive OEM
- Vehicle Tracking
- Container Tracking
- Ship Tracking
- Fleet Management
- OBD
- DVR
- Insurance Box



## Energy

- Electricity Meter
- Gas Meter
- Water Meter
- Heat Meter
- Smart Grid
- Wind Turbines
- Solar Panel
- Charging Pile



## Payment

- Wireless POS
- Cash Register
- ATM
- Vending Machine
- Top-up Machine



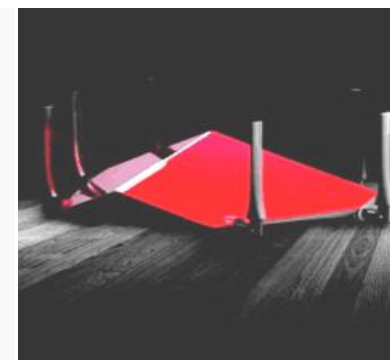
## Security

- Alarm
- Camera
- Video Surveillance
- Intrusion Detection
- Smoke Detector
- Asset Protection



## Smart City

- Street Lighting
- Sharing Economy
- Traffic Light
- Elevator
- Digital Signage
- Advertisement Display
- LED Lighting
- Garbage Bin Monitoring
- Parking



## Gateway

- DTU
- Consumer Router
- Industrial Router
- VOIP
- Server



## Industry

- Industrial PDA
- Rugged Tablet PC
- Pipeline Management
- UAV
- Robot
- Flow Meter
- Refrigerator
- Industrial Control
- Industrial Monitoring



## Life & Healthcare

- Personal Tracker
- Household Appliances
- Pet Tracker
- Wearables
- Elderly Monitoring
- Remote Medical Equipment
- Glucometer
- Blood Pressure Monitor
- Gambling Machine



## Agriculture & Environment

- Trail Camera
- Food Traceability
- Farm Machinery
- Irrigation
- Meteorological Station
- Wildlife Tracking
- Environment Monitoring
- Pollution Monitoring



# Thank you!

Building 5, Shanghai Business Park Phase III (Area B), No.1016  
Tianlin Road, Minhang District, Shanghai 200233, China  
Tel: +86-21-5108 6236 Email: [info@quectel.com](mailto:info@quectel.com)  
Website: [www.quectel.com](http://www.quectel.com)

 <https://www.linkedin.com/company/quectel-wireless-solutions>

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