



Quectel Products Portfolio **Overview**

February, 2020

Quectel M2M Cellular Portfolio

5G

2G-3G-4G-LPWA Migration

LPWA Module

5G Module



BC95N-N1

- MT2625
- Cat NB1
- Compatible with BC95-G
- 450MHz Supported



BG77

- MDM9205
- Cat M1/ NB2/ GNSS
- Super Compact Size
- Global Version



BG95 Series

- MDM9205
- Cat M1/NB2/EGPRS/GNSS
- Compatible with BG96
- Global Version



BG96

- MDM9206
- Cat M1/NB1/EGPRS/GNSS
- 37.5K DL/ 37.5K UL
- Global Version



BC92

- Cat NB2/GSM
- NB2: B3/B5/B8/B20/B28
- GSM: 850/900/1800/1900MHz
- Global Version



BC69

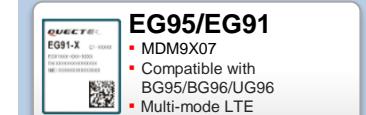
- Cat M1/ NB2
- LCC Package
- Compatible with M66
- MDM9205



- BC95-G: Boudica V150
- BC950V: Boudica V200
- Cat NB2 (NB-IoT)



- BC66: Cat NB1
- BC66-NA: Cat NB2
- Global Versions



EG95/EG91

- MDM9X07
- Compatible with BG95/BG96/UG96
- Multi-mode LTE
- Cat 4 (EG95)/ Cat 1 (EG91)

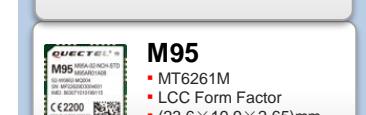


- BC68: Boudica V150
- BC680V: Boudica V200
- Cat NB2 (NB-IoT)



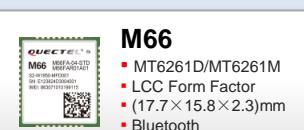
UG96

- XMM6250
- 7.2M DL/ 5.76M UL
- Global Version



M95

- MT6261M
- LCC Form Factor
- (23.6×19.9×2.65)mm
- Quad-band



M66

- MT6261D/MT6261M
- LCC Form Factor
- (17.7×15.8×2.3)mm
- Bluetooth



Q2' 20



RG500Q

- SDX55
- 5G NR Sub 6
- LTE/ 5G Dual Mode
- LGA Form Factor



RM500Q

- SDX55
- 5G NR Sub 6
- LTE/ 5G Dual Mode
- M.2 Form Factor



RG510Q

- SDX55
- 5G NR mmWave
- LTE/ 5G Dual Mode
- LGA Form Factor



RM510Q

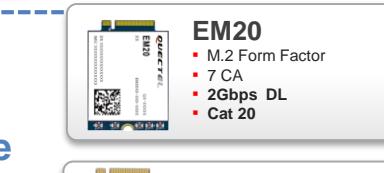
- SDX55
- 5G NR mmWave
- LTE/ 5G Dual Mode
- M.2 Form Factor



AG550Q

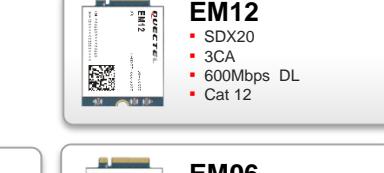
- SA151M
- Sub-6G
- 5G + Optional C-V2X
- Multi-Frequency GNSS

LTE-A Module



EM20

- M.2 Form Factor
- 7 CA
- 2Gbps DL
- Cat 20



EM12

- SDX20
- 3CA
- 600Mbps DL
- Cat 12



SC200R

- QC2150
- Quad-core A53 1.3GHz
- Cat 4, 150M DL/ 50M UL



SC66

- SDM660
- Octa-core Kryo 260
- Cat 6, 300M DL/ 50M UL
- 3GB LPDDR4X+32GB eMMC



SC600Y

- SDM450
- Octa-core A53 1.8GHz
- Cat 6, 300M DL/ 50M UL
- 2GB RAM+16GB ROM



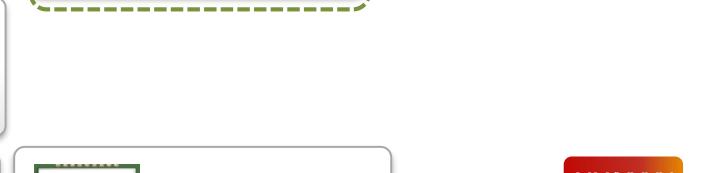
AG215S

- SA2150P
- C-V2X Application Processor
- LGA Form Factor



AG15

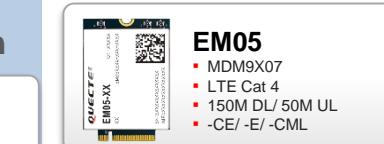
- MDM9150
- C-V2X PC5
- LGA Form Factor



AG35

- MDM9628
- Multi-mode LTE
- Cat 4, 150M DL/ 50M UL
- CE / E- / NA / LA / J

3G - 4G Migration



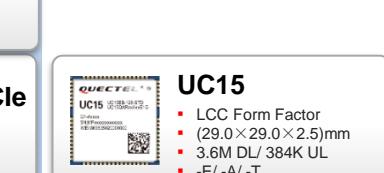
EM05

- MDM9X07
- LTE Cat 4
- 150M DL/ 50M UL
- CE / E- / -CML



EG25-G/ EG21-G Mini PCIe

- Mini PCIe Form Factor
- Up to 4×2 MIMO DL
- Cat 4, 150M DL/ 50M UL
- Cat 1, 10M DL/ 5M UL
- Global Version



EC25/ EC21/ EC20 R2.1 Mini PCIe

- MDM9X07
- Cat 4, 150M DL/ 50M UL
- Cat 1, 10M DL/ 5M UL



UC15

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



EG25-G/ EG21-G Mini PCIe

- Mini PCIe Form Factor
- Up to 4×2 MIMO DL
- Cat 4, 150M DL/ 50M UL
- Cat 1, 10M DL/ 5M UL
- Global Version



EC25/ EC21/ EC20 R2.1 Mini PCIe

- MDM9X07
- Cat 4, 150M DL/ 50M UL
- Cat 1, 10M DL/ 5M UL



UC200T Mini PCIe

- (30.0×51.0×4.9)mm
- 21M DL/ 5.76M UL
- EM/ -GL



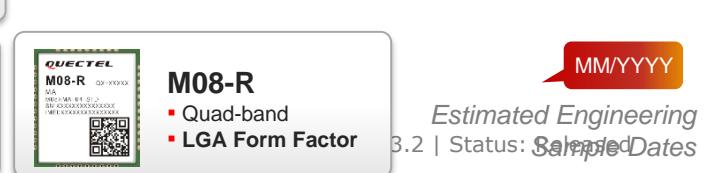
MC90

- MT2503D
- LCC Form Factor
- (25.6×15.0×2.3)mm
- GSM/ GPRS/ GNSS/ Wi-Fi



M89

- MT2621D
- Quad-band
- LGA Form Factor



M08-R

- Quad-band
- LGA Form Factor**

MM/YYYY

Estimated Engineering
Sample Dates

3.2 | Status: Selected

LTE Standard Modules

LTE-A & 5G Modules

Automotive Modules

Smart Modules

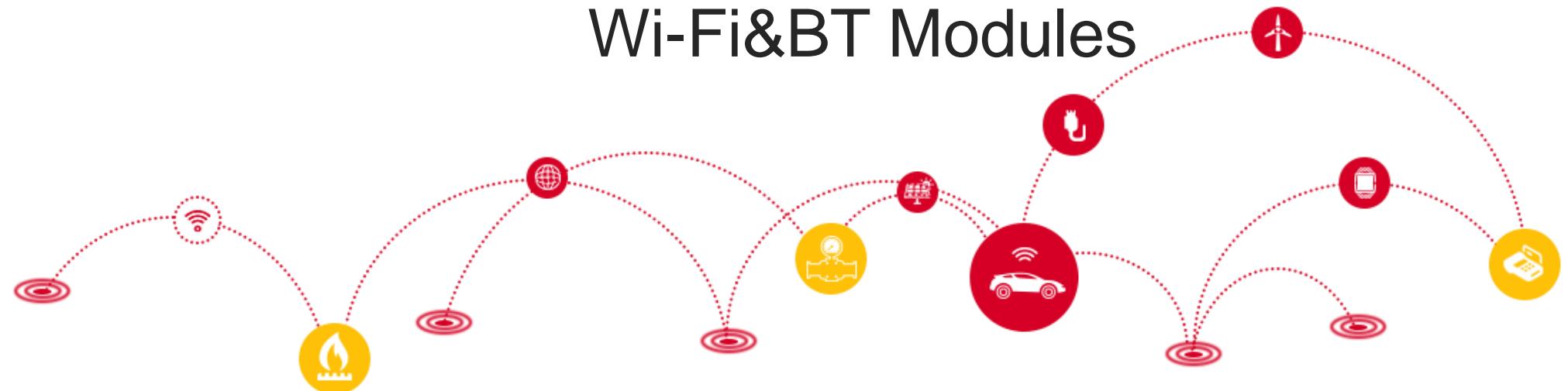
LPWA Modules

UMTS/HSPA(+) Modules

GSM/GPRS Modules

GNSS Modules

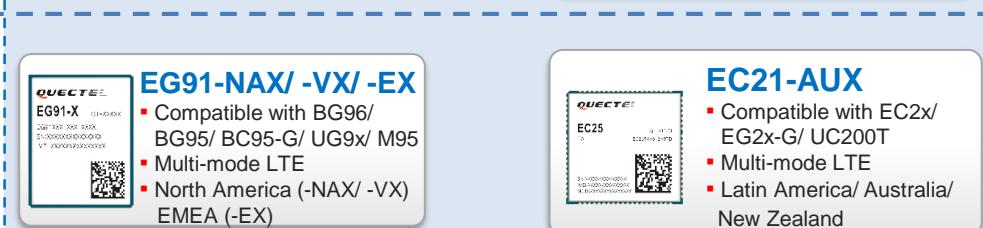
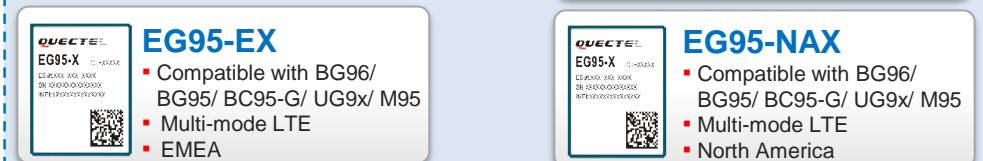
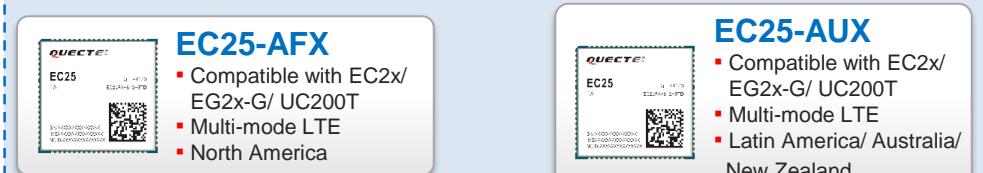
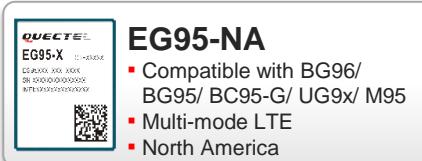
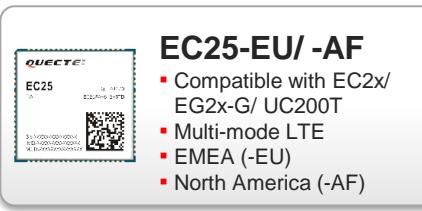
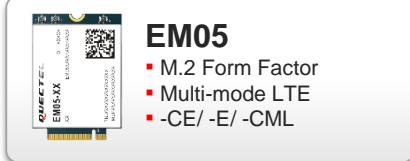
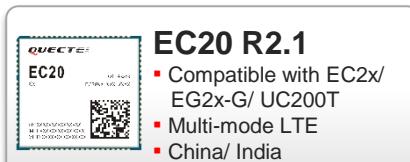
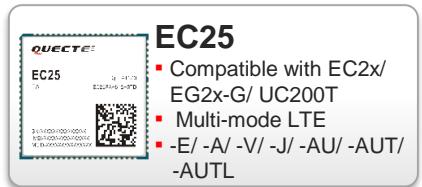
Wi-Fi&BT Modules



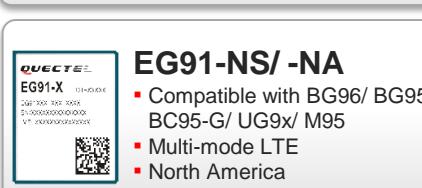
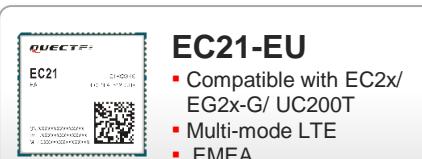
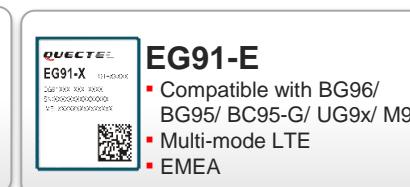
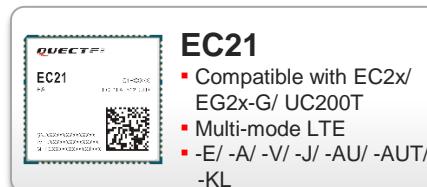
LTE Standard Modules Roadmap

Product Lifetime > 2025

Cat 4



Cat 1



MM/YYYY Estimated Engineering Sample Dates

2016

2017

2018

2019/2020

Feb. 2020

NEW

EC25-E/-A/-V/-J/-AUT/-AUTL/-AU/

EC20 R2.1 Specifications

■ Multi-mode LTE Cat 4 Module



QUECTEL®
Build a Smarter World

29.0mm × 32.0mm × 2.4mm
150M DL / 50M UL

Variant	EC25-E	EC25-A	EC25-V	EC25-J	EC25-AUT	EC25-AUTL	EC25-AU	EC20-CE R2.1
LTE	LTE-FDD	B1/ B3/ B5/ B7/ B8/ B20	B2/ B4/ B12	B4/ B13	B1/ B3/ B8/ B18/ B19/ B26	B1/ B3/ B5/ B7/ B28	B1/ B2 ^① / B3/ B4/ B5/ B7/ B8/ B28	B1/ B3/ B5/ B8
	LTE-TDD	B38/ B40/ B41	\	\	B41	\	\	B34/ B38/ B39/ B40/ B41
UMTS	WCDMA	B1/ B5/ B8	B2/ B4/ B5	\	B1/ B6/ B8/ B19	B1/ B5	\	B1/ B2/ B5/ B8
	TD-SCDMA	\	\	\	\	\	\	B34/ B39
EVDO/CDMA	\	\	\	\	\	\	\	BC0
GSM/EDGE	B3/ B8	\	\	\	\	\	Quad-band	B3/ B8
Embedded GNSS	Optional	Optional	Optional	Optional	Optional	\	Optional	Optional
Wi-Fi/BT Interface	Y	Y	Y	Y	Y	Y	Y	Y
Ethernet Interface	Y	Y	Y	Y	Y	Y	Y	Y
Region	EMEA/ Korea/ Thailand/ India	North America	Verizon	Japan	Australia	Australia	Latin America/ Australia/ New Zealand	China/ India
Certification	Carrier: Vodafone/ Deutsche Telekom/ SKT/ Telefónica/ LGU+*	Carrier: AT&T/ T-Mobile/ Rogers/ Telus	Carrier: Verizon	Carrier: NTT DOCOMO/ SoftBank/ KDDI	Regulatory: RCM	Regulatory: RCM	Carrier: Telstra*	
	Regulatory: GCF/ CE/ KC/ NCC/ RCM/ FAC/ NBTC/ ICASA	Regulatory: FCC/ IC/ PTCRB	Regulatory: GCF/ FCC	Regulatory: JATE/ TELEC	Others: WHQL	Others: WHQL	Regulatory: GCF/ FCC/ Anatel/ NCC/ RCM	Regulatory: SRRC/ NAL/ CCC
	Others: WHQL			Others: WHQL			Others: WHQL	Others: WHQL

"Y" means supported.

"*" means under development.

① means Rx-diversity is not supported.

EC25-E/-A/-V/-J/-AU Mini PCIe/ EC20 R2.1 Mini PCIe Specifications



30.0mm × 51.0mm × 4.9mm
150M DL / 50M UL

■ Multi-mode LTE Cat 4 Module

Variant	EC25-E Mini PCIe	EC25-A Mini PCIe	EC25-V Mini PCIe	EC25-J Mini PCIe	EC25-AU Mini PCIe	EC20-CE R2.1 Mini PCIe
LTE	LTE-FDD B1/ B3/ B5/ B7/ B8/ B20	B2/ B4/ B12	B4/ B13	B1/ B3/ B8/ B18/ B19/ B26	B1/ B2 ^① / B3/ B4/ B5/ B7/ B8/ B28	B1/ B3/ B5/ B8
	LTE-TDD B38/ B40/ B41	\	\	B41	B40	B34/ B38/ B39/ B40/ B41
UMTS	WCDMA B1/ B5/ B8	B2/ B4/ B5	\	B1/ B6/ B8/ B19	B1/ B2/ B5/ B8	B1/ B8
	TD-SCDMA \	\	\	\	\	B34/ B39
EVDO/CDMA	\	\	\	\	\	BC0
GSM/EDGE	B3/ B8	\	\	\	Quad-band	B3/ B8
Embedded GNSS	Optional	Optional	Optional	Optional	Optional	Optional
Region	EMEA/ Korea/ Thailand/ India	North America	Verizon	Japan	Latin America/ Australia/ New Zealand	China/ India
Certification	Carrier: Vodafone/ Deutsche Telekom/ SKT/ Telefónica/ LGU+*	Carrier: AT&T/ T-Mobile/ Rogers/ Telus	Carrier: Verizon	Carrier: NTT DOCOMO/ SoftBank/ KDDI	Carrier: Telstra*	Regulatory: SRRC/ NAL/ CCC Others: WHQL
	Regulatory: GCF/ CE/ KC/ NCC/ RCM/ FAC/ NBTC/ ICASA	Regulatory: FCC/ IC/ PTCRB	Regulatory: GCF/ FCC	Regulatory: JATE/ TELEC	Regulatory: GCF/ FCC/ Anatel/ NCC/ RCM	
	Others: WHQL	Others: WHQL	Others: WHQL	Others: WHQL	Others: WHQL	

EC25-AF/-AFX/-EU/-EUX/-MX/-AUX/ EG25-G Specifications

■ Multi-mode LTE Cat 4 Module



QUECTEL[®]
Build a Smarter World

**29.0mm × 32.0mm × 2.4mm
150M DL / 50M UL**

Variant	EC25-AF	EC25-AFX	EC25-EU	EC25-EUX	EC25-MX	EC25-AUX	EG25-G
LTE	LTE-FDD	B2/ B4/ B5/ B12/ B13/ B14/ B66/ B71	B2/ B4/ B5/ B12/ B13/ B14/ B66/ B71	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B7/ B8/ B20/ B28A	B2/ B4/ B5/ B7/ B28/ B66	B1/ B2 ^① / B3/ B4/ B5/ B7/ B8/ B28
	LTE-TDD	\	\	B38/ B40/ B41	B38/ B40/ B41	\	B40
UMTS	WCDMA	B2/ B4/ B5	B2/ B4/ B5	B1/ B8	B1/ B8	B2/ B4/ B5	B1/ B2/ B5/ B8/ B4
	TD-SCDMA	\	\	\	\	\	\
EVDO/CDMA	\	\	\	\	\	\	\
GSM/EDGE	\	\	B3/ B8	B3/ B8	\	Quad-band	Quad-band
Embedded GNSS	Optional	Optional	Optional	Optional	\	Optional	Optional
Wi-Fi/BT Interface	Y	\	Y	\	\	\	Y
Ethernet Interface	Y	Y	Y	Y	Y	Y	Y
Region	North America FirstNet	North America FirstNet	EMEA/ Thailand/ India	EMEA	Mexico	Latin America/ Australia/ New Zealand	Global
Certification	Carrier: Verizon/ AT&T/ T-Mobile/ U.S. Cellular/ Rogers/ Telus	Carrier: Verizon*/ AT&T*/ T-Mobile*/ U.S. Cellular*	Carrier: Deutsche Telekom/ British Telecom	Regulatory: GCF/ CE/ RCM/ NCC Regulatory: GCF/ CE/ NCC/ RCM Others: WHQL	Regulatory: FCC/ PTCRB/ IFETEL Others: WHQL	Regulatory: CE/ Anatel/ NCC/ RCM Others: WHQL	Carrier: Deutsche Telekom/ Verizon/ AT&T/ Sprint/ U.S. Cellular/ Telus/ T-Mobile*/ Rogers* Regulatory: GCF/ CE/ FCC/ PTCRB/ IC/ Anatel/ IFETEL/ SRRC/ NAL/ CCC/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC/ IMDA/ ICASA/ FAC* Others: WHQL
	Regulatory: GCF/ FCC/ PTCRB/ IC	Regulatory: GCF/ FCC/ PTCRB/ IC	Regulatory: GCF/ CE/ NCC/ RCM				
	Others: WHQL		Others: WHQL				

"Y" means supported.

"*" means under development.

^① means Rx-diversity is not supported.

EC25-AF/-AFX/-EU/-EUX/-MX/-AUX Mini PCIe/ EG25-G Mini PCIe Specifications

■ Multi-mode LTE Cat 4 Module



QUECTEL
Build a Smarter World

51.0mm x 30.0mm x 4.9mm
150M DL / 50M UL

Variant	EC25-AF Mini PCIe	EC25-AFX Mini PCIe	EC25-EU Mini PCIe	EC25-EUX Mini PCIe	EC25-MX Mini PCIe	EC25-AUX Mini PCIe	EG25-G Mini PCIe ^①
LTE	LTE-FDD	B2/ B4/ B5/ B12/ B13/ B14/ B66/ B71	B2/ B4/ B5/ B12/ B13/ B14/ B66/ B71	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B7/ B8/ B20/ B28A	B2/ B4/ B5/ B7/ B28/ B66	B1/ B2 ^② / B3/ B4/ B5/ B7/ B8/ B28
	LTE-TDD	\	\	B38/ B40/ B41	B38/ B40/ B41	\	B40
UMTS	WCDMA	B2/ B4/ B5	B2/ B4/ B5	B1/ B8	B1/ B8	B2/ B4/ B5	B1/ B2/ B5/ B8/ B4
	TD-SCDMA	\	\	\	\	\	\
EVDO/CDMA	\	\	\	\	\	\	\
GSM/EDGE	\	\	B3/ B8	B3/ B8	\	Quad-band	Quad-band
Embedded GNSS	Optional	Optional	Optional	Optional	\	Optional	Optional
Region	North America FirstNet	North America FirstNet	EMEA/ Thailand/ India	EMEA	Mexico	Latin America/ Australia/ New Zealand	Global
Certification							
Carrier: Verizon/ AT&T/ T-Mobile/ Rogers/Telus Carrier: Verizon*/ AT&T*/ T-Mobile*/ U.S. Cellular*							
Regulatory: GCF/ FCC/ PTCRB/ IC Regulatory: GCF/ CE/ NCC/ RCM Carrier: Deutsche Telekom* Regulatory: GCF/ CE/ RCM/ NCC Regulatory: FCC/ PTCRB/ IFETEL Regulatory: CE/ Anatel/ NCC/ RCM Carrier: Deutsche Telekom* Regulatory: GCF/ CE/ FCC/ PTCRB/ IC/ Anatel/ IFETEL Regulatory: GCF/ CE/ FCC/ PTCRB/ IC/ Anatel/ IFETEL/ SRRC/ NAL/ CCC/ KC/ NCC/ JATE/ TELEC/ RCM/ IMDA/ ICASA/ FAC*/ NBTC*							
Others: WHQL Others: WHQL Others: WHQL Others: WHQL Others: WHQL Others: WHQL Others: WHQL Others: WHQL							

^① means there are two types of EG25-G Mini PCIe, with or without (U)SIM card connector.

^② means Rx-diversity is not supported.

** means under development.

EC21/EG21-G Specifications

■ Multi-mode LTE Cat 1 Module



QUECTEL®
Build a Smarter World

29.0mm × 32.0mm × 2.4mm
10M DL / 5M UL

Variant	EC21-E	EC21-EU	EC21-EUX	EC21-A	EC21-V	EC21-AUT	EC21-AU	EC21-KL	EC21-J	EC21-AUX	EG21-G 2019, New	
LTE	LTE-FDD	B1/ B3/ B5/ B7/ B8/ B20	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B7/ B8/ B20/ B28A	B2/ B4/ B12	B4/ B13	B1/ B3/ B5/ B7/ B28	B1/ B2 ^① / B3/ B4/ B5/ B7/ B8/ B28	B1/ B3/ B5/ B7/ B8	B1/ B3/ B8/ B18/ B19/ B26	B1/ B2 ^① / B3/ B4/ B5/ B7/ B8/ B28	B1/ B2/ B3/ B4/ B5/ B7/ B18/ B20/ B25/ B26/ B28
	LTE-TDD	\	\	\	\	\	\	B40	\	\	B40	B38/ B39/ B40/ B41
UMTS	B1/ B5/ B8	B1/B8	B1/B8	B2/ B4/ B5	\	B1/ B5	B1/ B2/ B5/ B8	\	\	B1/ B2/ B5/ B8/ B4	B1/ B2/ B4/ B5/ B6/ B8/ B19	
GSM/EDGE	B3/ B8	B3/B8	B3/B8	\	\	\	Quad-band	\	\	Quad-band	Quad-band	
Embedded GNSS	Optional	Optional	Optional	Optional	Optional	Optional	Optional	\	\	Optional	Optional	
Wi-Fi/BT Interface	Y	Y	\	Y	Y	Y	Y	Y	Y	\	\	
Ethernet Interface	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Region	EMEA/ Thailand/ India	EMEA/ Thailand/ India	EMEA/ Thailand/ India	North America	Verizon	Australia	Latin America/ Australia/ New Zealand	Korea	Japan	Latin America/ Australia/ New Zealand	Global	
Certification	Carrier: Vodafone/ Deutsche Telekom/ Telefónica* Regulatory: GCF/ CE/ NCC/ RCM/ FAC Others: WHQL	Carrier: Deutsche Telekom	Regulatory: GCF/ CE/ NCC/ RCM* Others: WHQL	Carrier: AT&T/ T-Mobile/ U.S. Cellular/	Carrier: Verizon	Carrier: Telstra	Carrier: Telstra	Carrier: NTT	Carrier: DOCOMO/ KDDI	Regulatory: CE/ FCC/ Anatel/ NCC/ RCM	Carrier: Deutsche Telekom/ Sprint/ Verizon*/ AT&T*/ T-Mobile*	

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"*" means under development.

① means Rx-diversity is not supported.

EC21 Mini PCIe/ EG21-G Mini PCIe Specifications



QUECTEL
Build a Smarter World

30.0mm × 51.0mm × 4.9mm
10M DL/ 5M UL

■ Multi-mode LTE Cat 1 Module

Variant	EC21-E Mini PCIe	EC21-EU Mini PCIe	EC21-EUX Mini PCIe	EC21-A Mini PCIe	EC21-V Mini PCIe	EC21-AUT Mini PCIe	EC21-AU Mini PCIe	EC21-KL Mini PCIe	EC21-J Mini PCIe	EC21-AUX Mini PCIe	EG21-G Mini PCIe 2019, New	
LTE	LTE-FDD	B1/ B3/ B5/ B7/ B8/ B20	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B7/ B8/ B20/ B28A	B2/ B4/ B12	B4/ B13	B1/ B3/ B5/ B7/ B28	B1/ B2①/ B3/ B4/ B5/ B7/ B8/ B28	B1/ B3/ B5/ B7/ B8	B1/ B3/ B8/ B18/ B19/ B26	B1/ B2①/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B18/ B19/ B20/ B25/ B26/ B28	
	LTE-TDD	\	\	\	\	\	\	B40	\	\	B40	B38/ B39/ B40/ B41
UMTS	B1/ B5/ B8	B1/ B8	B1/ B8	B2/ B4/ B5	\	\	B1/ B5	B1/ B2/ B5/ B8	\	\	B1/ B2/ B5/ B8/ B4	B1/ B2/ B4/ B5/ B6/ B8/ B19
GSM/EDGE	B3/ B8	B3/B8	B3/B8	\	\	\	Quad-band	\	\	Quad-band	Quad-band	
Embedded GNSS	Optional	Optional	Optional	Optional	Optional	Optional	Optional	\	\	Optional	Optional	
Region	EMEA/ Korea/ Thailand/ India	EMEA/ Thailand/ India	EMEA/ Thailand/ India	North America	Verizon	Australia	Latin America/ Australia/ New Zealand	Korea	Japan	Latin America/ Australia/ New Zealand	Global	
Certification	Carrier: Vodafone/ Deutsche Telekom/ Telefónica* Regulatory: GCF/ CE/ NCC/ RCM Others: WHQL	Carrier: Deutsche Telekom* Regulatory: GCF/ CE/ NCC/ RCM* Others: WHQL	Regulatory: GCF/ CE*/ RCM* Others: WHQL	Carrier: AT&T/ T-Mobile/ Rogers/ Verizon Regulatory: GCF/ FCC Others: WHQL	Carrier: Telstra Regulatory: FCC/ IC/ Telus Regulatory: GCF/ RCM Others: WHQL	Carrier: Telstra Regulatory: Anatel/ NCC/ JATE/ GCF/ RCM Others: WHQL	Carrier: KT/ SKT Regulatory: KC TELEC/ RCM Others: WHQL	Carrier: DOCOMO/ KDDI Regulatory: JATE/ TELEC Others: WHQL	Carrier: NTT Regulatory: CE/ FCC/ RCM Others: WHQL	Regulatory: Anatel/ NCC/ RCM Others: WHQL	Carrier: Deutsche Telekom/ Verizon*/ AT&T*/ T-Mobile*/ Sprint* Regulatory: GCF/ CE/ FCC/ PTCRB/ IC/ Anatel/ IFETEL/ NCC/ JATE/ TELEC/ RCM/ ICASA Others: WHQL	

“*” means under development.

① means Rx-diversity is not supported.

EG95/EG91 Specifications

■ Multi-mode LTE Cat 4/Cat 1 Modules

Variant	EG95-E	EG91-E	EG95-EX 2019, New	EG91-EX 2019, New	EG95-NA	EG91-NA	EG95-NAX 2019, New	EG91-NAX 2019, New	EG91-NS 2019, New	EG91-VX 2019, New
Category	Cat 4	Cat 1	Cat 4	Cat 1	Cat 4	Cat 1	Cat 4	Cat 1	Cat 1	Cat 1
LTE	LTE-FDD	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B7/ B8/ B20/ B28	B1/ B3/ B7/ B8/ B20/ B28	B2/ B4/ B5/ B12/ B13	B2/ B4/ B5/ B12/ B13	B2/ B4/ B5/ B12/ B25/ B26	B2/ B4/ B5/ B12/ B13/ B25/ B26	B2/ B4/ B5/ B12/ B13/ B25/ B26
	LTE-TDD	\	\	\	\	\	\	\	\	\
UMTS	WCDMA	B1/ B8	B1/ B8	B1/ B8	B1/ B8	B2/ B4/ B5	B2/ B4/ B5	B2/ B4/ B5	B2/ B4/ B5	\
	TD-SCDMA	\	\	\	\	\	\	\	\	\
EVDO/CDMA	\	\	\	\	\	\	\	\	\	\
GSM/EDGE	B3/ B8	B3/ B8	B3/B8	B3/B8	\	\	\	\	\	\
GNSS	\	\	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Wi-Fi/BT Interface	\	\	\	\	\	\	\	\	\	\
Ethernet Interface	\	\	\	\	\	\	\	\	\	\
Region	EMEA	EMEA	EMEA	EMEA	North America	North America	North America	North America	North America	North America
Certification	Carrier: Deutsche Telekom				Carrier: Verizon/ AT&T/ T-Mobile/ U.S. Cellular/ Rogers/ Telus	Carrier: Verizon/ AT&T/ T-Mobile/ U.S. Cellular/ Rogers/ Telus	Carrier: Verizon*/ AT&T*/ T-Mobile*/ Sprint*/ U.S. Cellular*	Carrier: Verizon*/ AT&T*/ T-Mobile*/ Sprint*/ U.S. Cellular*	Carrier: Verizon/ AT&T/ Sprint/ T-Mobile*	Carrier: Verizon*
	Regulatory: GCF/ CE/ RCM/ FAC	Regulatory: GCF/ CE/ RCM	Regulatory: GCF/ CE/ RCM	Others: Anatel/ FAC	Others: WHQL	Regulatory: GCF/ FCC/ PTCRB/ IC	Regulatory: GCF/ FCC/ PTCRB/ IC	Regulatory: GCF/ FCC/ PTCRB/ IC	Regulatory: GCF/ FCC/ PTCRB/ IC	Regulatory: GCF/ FCC/ PTCRB/ IC



EM05 Specifications

■ Multi-mode LTE Cat 4 Module



42mm × 30mm × 2.3mm
150M DL / 50M UL

Variant	EM05-CE	EM05-E	EM05-CML
LTE	LTE-FDD B1/ B3/ B5/ B8	B1/ B3/ B7/ B8/ B20/ B28	\
	LTE-TDD B38/ B39/ B40/ B41	B38/ B41	B38/ B39/ B40/ B41
UMTS	WCDMA B1/ B8	B1/ B8	\
	TD-SCDMA \	\	\
EVDO/CDMA	BC0	\	\
GNSS	Optional	Optional	Optional
Wi-Fi/BT Interface	\	\	\
Ethernet Interface	\	\	\
Region	China/ Thailand/ India	Europe/ Australia/ New Zealand	China (CMCC)
Certification	Regulatory: SRRC/ NAL/ CCC	Regulatory: CE/ RCM	Regulatory: SRRC/ NAL/ CCC

Support Package - Technical Materials & EVB Kit

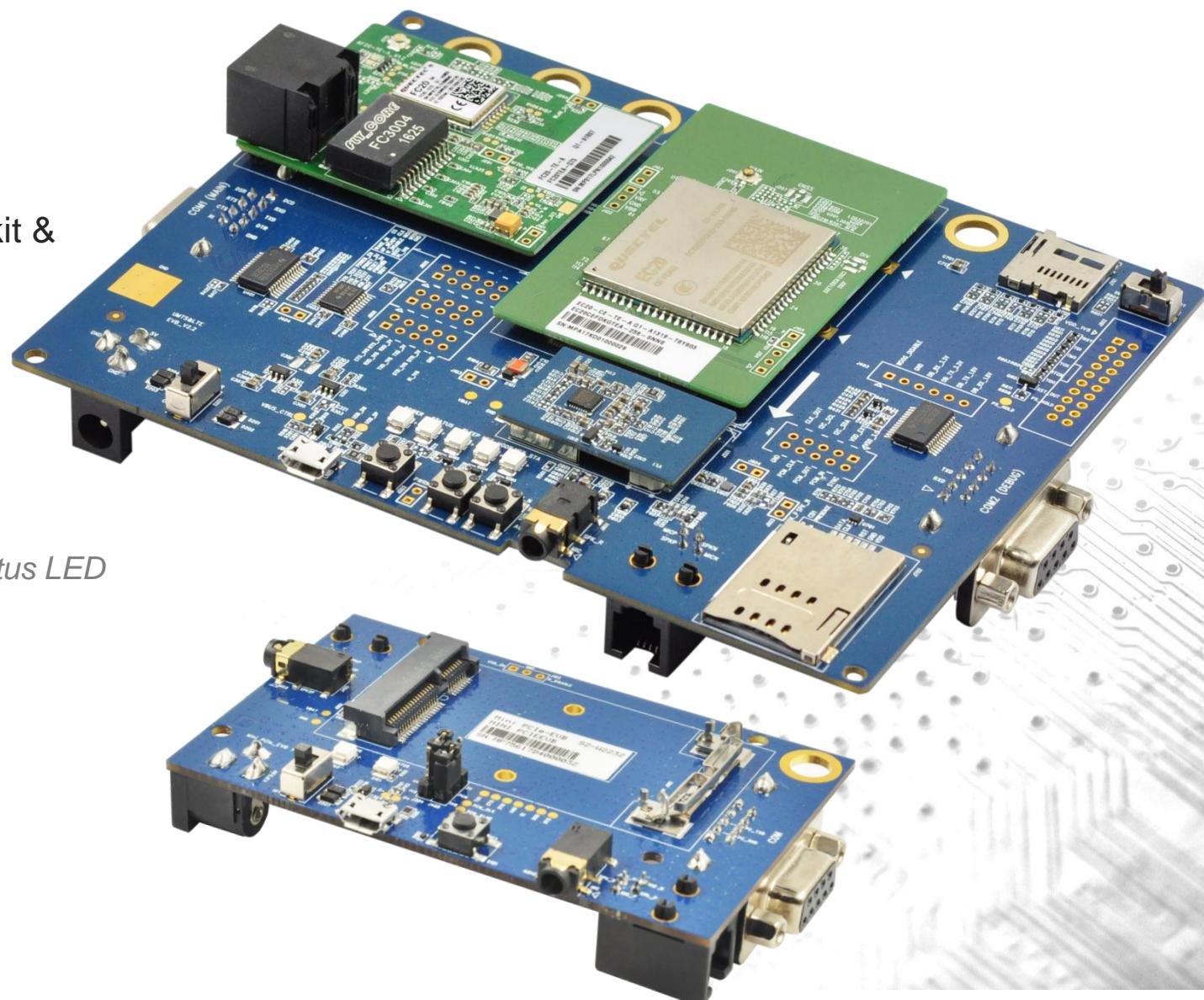


Technical Materials Package

- Hardware & software documents
- Debug tools, download tools, test tools, EVB kit & USB drivers
- Approvals & test reports
- QNavigator

Development Tool (UMTS<E EVB Kit)

- Connectors
 - a) Power supply connectors
 - b) USB connector
 - c) UART connectors
 - d) (U)SIM card connector
 - e) SD card connector
 - f) Digital and audio connectors
- Auxiliaries
 - a) Network status LED
 - b) Power key
 - c) Reset key
 - d) Test points



LTE Standard Modules

LTE-A & 5G Modules

Automotive Modules

Smart Modules

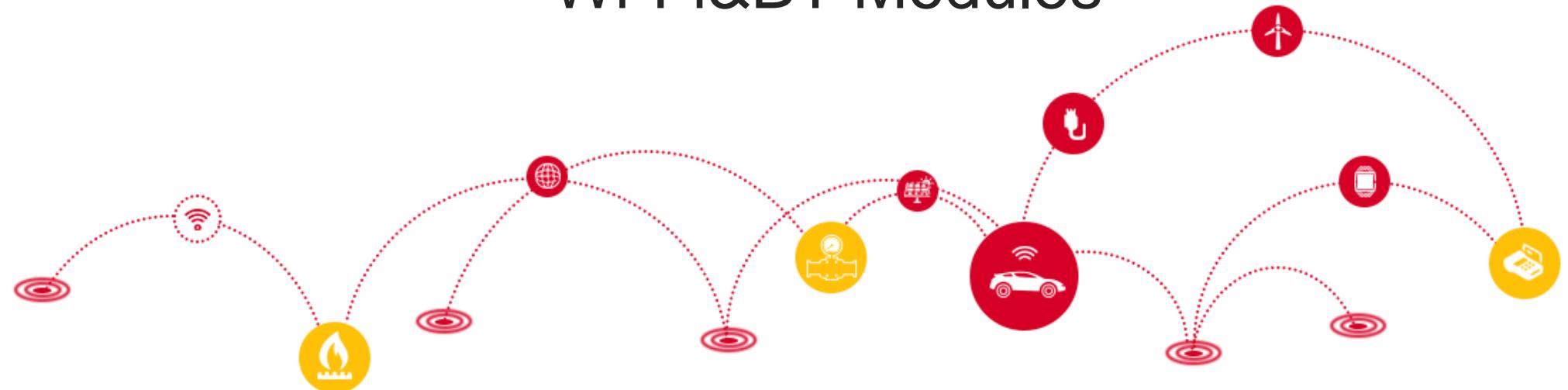
LPWA Modules

UMTS/HSPA(+) Modules

GSM/GPRS Modules

GNSS Modules

Wi-Fi&BT Modules



LTE-A/ LTE-A Pro/ 5G Roadmap



5G mmWave



RG510Q

Q1'20

- LGA Form Factor
- 5G NR mmWave
- LTE/ 5G Dual-Mode



RM510Q

Q4'19

- M.2 Form Factor
- 5G NR mmWave
- LTE/ 5G Dual-Mode

5G Sub-6



RG500Q

Q3'19

- LGA Form Factor
- 5G NR Sub-6GHz
- LTE/ 5G Dual-Mode



RM500Q

Q4'19

- M.2 Form Factor
- 5G NR Sub-6GHz
- LTE/ 5G Dual-Mode

Cat 18/ Cat 20



EG18

- LGA Form Factor
- 5CA, 4×4 MIMO
- Cat 18



EM20

- M.2 Form Factor
- 7CA
- Cat 20

Cat 12



EG12

- LGA Form Factor
- 3CA
- Cat 12



EM12

- M.2 Form Factor
- 3CA
- Cat 12

Cat 6



EG06

- LGA Form Factor
- LTE with CA
- Cat 6



EP06

- Mini PCIe Form Factor
- LTE with CA
- Cat 6



EM06

- M.2 Form Factor
- LTE with CA
- Cat 6

Qx/YY

*Estimated Engineering
Sample Dates*

EG06 Specifications



QUECTEL
Build a Smarter World

■ Multi-Mode LTE-A Module

37.0mm x 39.5mm x 2.8mm
LTE Cat 6, 300M DL/ 50M UL

Variant	EG06-E	EG06-A	EG06-AUTL
Category	6	6	6
LTE-FDD	B1/B3/B5/B7/B8/B20/B28/B32 ^①	B2/B4/B5/B7/B12/B13/B25/B26/ B29 ^① /B30/B66	B3/B7/B28
LTE-TDD	B38/B40/B41	\	\
LTE 2×CA	B1+B1/B5/B8/B20/B28; B3+B3/B5/B7/B8/B20/B28; B7+B5/B7/B8/B20/B28; B20+B32 ^① ; B38+B38; B40+B40; B41+B41	B2+B2/B5/B12/B13/B29 ^① ; B4+B4/B5/B12/B13/B29 ^① ; B7+B5/B7/B12/B26; B25+B5/B12/B25/B26; B30+B5/B12/B29 ^① ; B66+B5/B12/B13/B29 ^① /B66	B3+B3/B7/B28; B7+B7/B28
UMTS	WCDMA	B1/B3/B5/B8	B2/B4/B5
Embedded GNSS	Y	Y	Y
VoLTE (Voice over LTE)	Y	Y	Y
USB 2.0 Interface	Y	Y	Y
Region	EMEA/ APAC ^② / Brazil	North America/ Mexico	Australia
Certification	Carrier: Deutsche Telekom/ Telstra Regulatory: GCF/ CE/ KC/ RCM	Carrier: Verizon/ AT&T/ U.S. Cellular Regulatory: GCF/ FCC/ PTCRB/ IC	Carrier: Telstra Regulatory: GCF/ RCM

"Y" means supported.

"*" means under development.

^① means LTE-FDD B29 and B32 support Rx only, and in 2×CA they are only for secondary component carrier.

^② means excluding Japan and CMCC.

EP06 Specifications

■ Multi-Mode LTE-A Module



30.0mm x 51.0mm x 4.3mm
LTE Cat 6, 300M DL/ 50M UL

Variant	EP06-E	EP06-A
Category	6	6
LTE	<p>LTE-FDD</p> <p>B1/B3/B5/B7/B8/B20/B28/B32^①</p> <p>LTE-TDD</p> <p>B38/B40/B41</p> <p>2×CA</p> <p>B1+B1/B5/B8/B20/B28; B3+B3/B5/B7/B8/B20/B28; B7+B5/B7/B8/B20/B28; B20+B32^①; B38+B38; B40+B40; B41+B41</p>	<p>B2/B4/B5/B7/B12/B13/B25/B26/B29^①/B30/B66</p> <p>\</p> <p>B2+B2/B5/B12/B13/B29^①; B4+B4/B5/B12/B13/B29^①; B7+B5/B7/B12/B26; B25+B5/B12/B25/B26; B30+B5/B12/B29^①; B66+B5/B12/B13/B29^①/B66</p>
UMTS	WCDMA	B1/B3/B5/B8
Embedded GNSS	Y	Y
USB 2.0 Interface	Y	Y
Region	EMEA/ APAC ^② / Brazil	North America/ Mexico
Certification	<p>Carrier: Telstra/ Deutsche Telekom</p> <p>Regulatory: GCF/ CE/ NCC/ RCM/ ICASA</p>	<p>Carrier: Verizon/ AT&T/ Sprint/ Rogers/ Telus/ Bell^③</p> <p>Regulatory: GCF/ FCC/ PTCRB/ IC</p>

"Y" means supported.

"*" means under development.

^①means LTE-FDD B29 and B32 support receiving only, and are only for secondary component carrier in 2×CA.

^②means excluding Japan and CMCC.

^③means TBD.

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EM06 Specifications

■ Multi-Mode LTE-A Module



42.0mm x 30.0mm x 2.3mm
LTE Cat 6, 300M DL/ 50M UL

Variant	EM06-E	EM06-A	EM06-J
Category	6	6	6
LTE-FDD	B1/B3/B5/B7/B8/B20/B28/B32 ^①	B2/B4/B5/B7/B12/B13/B25/B26/B29 ^① / B30/ B66	B1/B3/B8/B18/B19/B26/B28
LTE-TDD	B38/B40/B41	B41	B41
LTE	B1+B1/B5/B8/B20/B28; B3+B3/B5/B7/B8/B20/B28; B7+B5/B7/B8/B20/B28; B20+B32 ^① ;	B2+B2/B5/B12/B13/B29 ^① ; B4+B4/B5/B12/B13/B29 ^① ;	B1+B1/B8/B18/B19/B26/B28; B3+B3/B8/B18/B19/B26/B28;
	B38+B38; B40+B40; B41+B41	B5+B5/B7/B25/B30/B66; B7+B7/B12/B26; B12+B12/B25/B30/B66; B13+B66; B25+B25/B26; B30+B29; B66+B29/B66; B41+B41	B41+B41
2×CA			
UMTS	WCDMA	B1/B3/B5/B8	B2/B4/B5
Embedded GNSS	Y	Y	Y
eSIM	Y	Y	Y
USB 2.0 Interface	Y	Y	Y
Region	EMEA/ APAC ^② / Brazil	North America/ Mexico	Japan
Certification	Carrier: Telstra/ Deutsche Telekom	Carrier: Verizon/ AT&T/ Sprint	Carrier: KDDI
	Regulatory: GCF/ CE/ NCC/ RCM/ ICASA	Regulatory: GCF/ FCC/ PTCRB/ IC	Regulatory: JATE/ TELEC
	Others: WHQL	Others: WHQL	Others: WHQL

"Y" means supported.

^① means LTE-FDD B29 and B32 support receiving only, and are only for secondary component carrier in 2×CA.

^② means excluding Japan and CMCC.

EM12 Specifications

■ Multi-Mode LTE-A Module



QUECTEL®
Build a Smarter World

30.0mm x 42.0mm x 2.3mm
LTE Cat 12, 600M DL/ 150M UL

Variant	EM12-G
Category	DL/UL: 12/13
LTE-FDD	B1/B2/B3/B4/B5/B7/B8/B9/B12/B13/B14/B17/B18/B19/B20/B21/B25/B26/B28/B29 ^① /B30/B32 ^① /B66
LTE-TDD	B38/39/B40/B41
DL 2×CA	B1+B3/B5/B18/B19/B20/B21/B26; B2+B2/B4/B5/B12/B13/B17/B29 ^① /B30/B66; B3+B3/B5/B7/B8/B19/B20/B28; B4+B4/B5/B12/B13/B17/B29 ^① /B30; B5+B7/B25/B30/B66; B7+B7/B20/B28; B12+B25/B30; B13+B66; B20+B32 ^① ; B25+B25/B26/B41; B29+B30; B38+B38; B40+B40; B41+B41; B66+B66
LTE	DL inter-band 3CA: B1+B3+B7; B1+B3+B19; B1+B3+B20; B1+B19+B21; B2+B4+B5; B2+B4+B13; B2+B5+B30; B2+B12+B30; B2+B29+B30; B3+B7+B20; B3+B7+B28; B4+B5+B30; DL 3×CA B4+B12+B30; B4+B29+B30; B5+B66+B2; B13+B66+B2
	DL 2 contiguous plus inter-band 3CA: B2+B2+B5; B2+B2+B13; B3+B3+B7; B3+B7+B7; B3+B3+B20; B4+B4+B5; B4+B4+B13; B5+B66+B66; B13+B66+B66; B66+B66+B2; B66+B66+B66
	DL 256QAM Y
	UL 2×CA B3+B3; B41+B41
	UL 64QAM Y
UMTS	WCDMA B1/B2/B3/B4/B5/B8/B19
Embedded GNSS	Y
PCIe Interface	Optional
USB 3.0 Interface	Y
Region	Global
Certification	Carrier: Verizon/ AT&T/ Telstra/ Telefónica* Regulatory: GCF/ CE/ FCC/ PTCRB/ IC/ NCC/ JATE/ TELEC/ RCM/ ICASA Others: WHQL

"Y" means supported.

"*" means under development.

^①means LTE-FDD B29 and B32 support Rx only, and in 2×CA they are only for secondary component carrier.

EG12 Specifications

■ Multi-Mode LTE-A Module



**37.0mm x 39.5mm x 2.8mm
LTE Cat 12, 600M DL/ 100M UL**

Variant	EG12-GT	EG12-EA	EG12-NA
LTE	Category	12	12
	LTE-FDD	\	B2/B4/B5/B7/B12/B13/B14/B25/B26/B29/B30/B66/B71
	LTE-TDD	B42/B43/B48	B38/B40/B41
	DL 2×CA	B42+B42; B48+B48	Intra-band and Inter-band
	DL 3×CA	B42+B42+B42; B48+B48+B48	Intra-band and Inter-band
	DL 256QAM	Y	Y
	DL 4×4 MIMO	B42/B48	B2/B4/B7/B25/B66
	UL 2×CA	B42+B42	Intra-band contiguous
	UMTS	WCDMA	B2/B4/B5
	Embedded GNSS	Y	Y
PCIe Interface	PCIe Interface	Y	Y
	USB 3.0 Interface	Y	Y
	Region	Global TDD 3.5G Operators	North America
	Certification	Regulatory: FCC*	Carrier: Telstra ^② Regulatory: CE/ RCM/ GCF ^② Carrier: Verizon ^② / AT&T ^② Regulatory: FCC*/ IC ^② / GCF ^② / PTCRB ^②

"Y" means supported.

① means excluding Japan and CMCC.

② means TBD.

EG18 Specifications

■ Multi-Mode LTE-A Pro Module



**37.0mm x 39.5mm x 2.8mm
LTE Cat 18, 1.2G DL/ 150M UL**

Variant	EG18-EA	EG18-NA
Category	DL/UL: 18/13	DL/UL: 18/13
LTE	LTE-FDD	B1/B3/B5/B7/B8/B20/B28
	LTE-TDD	B38/B40/B41
	DL 2×CA	Intra-band and Inter-band
	DL 3×CA	Intra-band and Inter-band
	DL 4×CA	Intra-band and Inter-band
	DL 5×CA	Intra-band and Inter-band within 4 bands
	DL 4×4 MIMO	B1/B3/B7
	DL 256QAM	Y
	UL 2×CA	Intra-band contiguous
	UL 64QAM	Y
UMTS	WCDMA	B1/B3/B5/B8
Embedded GNSS	Y	Y
PCIe Interface	Y	Y
USB 3.0 Interface	Y	Y
Region	EMEA/ APAC ^① / Brazil	North America
Certification	Carrier: Telstra Regulatory: CE/ RCM/ GCF*	Carrier: Verizon*/ AT&T*/ T-Mobile* Regulatory: GCF*/ FCC*/ PTCRB*/ IC*

"Y" means supported.

^① means excluding Japan and CMCC.

"*" means under development.

EM18 Specifications (Preliminary)

■ Multi-Mode LTE-A Pro Module



QUECTEL[®]
Build a Smarter World

30.0mm x 42.0mm x 2.3mm
LTE Cat 18, 1.2 Gbps DL/150Mbps UL

Variant	EM18-G
Category	DL/UL: 18 /13
LTE	LTE-FDD
	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66
	LTE-TDD
	B38/39/B40/B41/B42/B43/B46(LAA)/B48(CBRS)
	DL CA
	5xCA @ 4 x 4 MIMO with 3 inter-band
UMTS	DL 256QAM
	Y
	UL 2×CA
PCle Interface	2 intra-band
	UL 64QAM
WCDMA	Y
Embedded GNSS	B1/B2/B3/B5/B8
PCIe Interface	Y
USB 3.0 Interface	Y
Dual (U)SIM Card	Y
Region	Global
Certification	Carrier: Vodafone*/ Verizon*/ AT&T*/ NTT DOCOMO*/ SoftBank*/ KDDI*/ Telstra*/ Orange ^① Regulatory: GCF*/ CE*/ FCC*/ PTCRB*/ IC*/ JATE*/ TELEC*/ RCM*

"Y" means supported.

"*" means under development.

① means TBD.

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EM20 Specifications (Preliminary)

■ Multi-Mode LTE-A Pro Module



QUECTEL®
Build a Smarter World

30.0mm x 42.0mm x 2.3mm
LTE Cat 20, 2.0Gbps DL/150Mbps UL

Variant	EM20-G	
Category	DL/UL: 20 /13	
LTE	LTE-FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66
	LTE-TDD	B38/39/B40/B41/B42/B43/B46(LAA)/B48(CBRS)
	DL CA	7xCA @ 2 x 2 MIMO with 5 inter-band 5xCA @ 4 x 4 MIMO with 3 inter-band
	DL 256QAM	Y
	UL 2×CA	2 intra-band
	UL 64QAM	Y
UMTS	WCDMA	B1/B2/B3/B5/B8
Embedded GNSS	Y	
PCIe Interface	Y	
USB 3.0 Interface	Y	
Dual (U)SIM Card	Y	
Region	Global	

“Y” means supported.
“*” means under development.
① means TBD.

RG500Q Specifications (Preliminary)

■ LTE/5G Dual-Mode Module



QUECTEL
Build a Smarter World

41.0mm x 44.0mm x 2.8mm (Approx.)
5G Sub-6GHz LGA Module

Variant	RG500Q-EA	RG500Q-NA (Planning)
5G NR	5G NR	3GPP Release 15 NSA/SA operation, Sub-6G
	Sub-6GHz Bands	n41/n77/n78/n79
	DL 4×4 MIMO	n41/n77/n78/n79
LTE	LTE Category	Cat 12 and higher
	LTE Bands	B1/B3/B5/B7/B8/B18/B19/B20/B26/B28/B32/B34/B38/B39/B40/B41/B42
	DL 4×4 MIMO	B1/B3/B7/B38/B40/B41/B42
	Embedded GNSS	Y
PCIe 3.0 Interface	Y	Y
USB 3.1 Interface	Y	Y
RGMII Interface	Y	Y
Region	APAC/ EMEA	North America
Certification	Carrier: TBD Regulatory: CE/ RCM (TBD)	Carrier: TBD Regulatory: FCC/GCF/PTCRB (TBD)

RM500Q Specifications (Preliminary)



52.0mm x 30.0mm x 2.3mm (Approx.)
5G Sub-6GHz M.2 Module

LTE/5G Dual-Mode Module

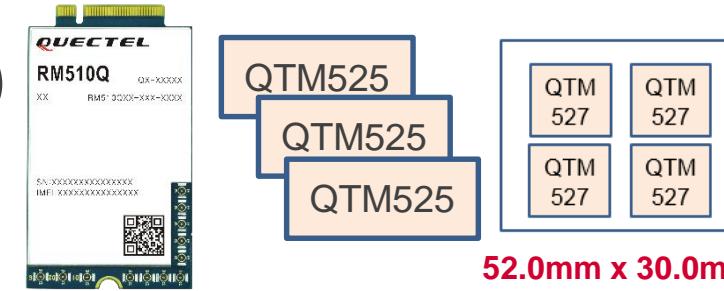
Variant	RM500Q-GL	
5G NR	5G NR	3GPP Release 15 NSA/SA operation, Sub-6GHz
	Sub-6GHz Bands	n1/n2/n3/n5/n7/n8/n12/n20/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79
	DL 4×4 MIMO	n1/n2/n3/n7/n38/n40/n41/n48/n66/n77/n78/n79
LTE	LTE Category	Cat 16
	LTE Bands	B1/B2/B3/B4(B66)/B5(B18/B19/B26)/B7/B8/B9/B12(B17)/B13/B14/B20/B25/B26/B28/B29/B30/B32/B34/B38/B39/B40/B41/B42/B46(LAA)/B48/B71
	DL 4×4 MIMO	B1/B2/B3/B4/B7/B25/B30/B38/B39/B40/B41/B42/B48/B66
Embedded GNSS	Y	
PCIe 3.0 Interface	Y	
USB 3.1 Interface	Y	
External eSIM	Y	
Region	Global	
Certification	Carrier: TBD Regulatory* : GCF*/ CE*/ FCC*/ PTCRB*/ IC*/ SRRC*/ NAL*/ CCC*/ RCM*	

NOTE: "*" means under development.

RM510Q Specifications (Preliminary)



■ 5G Sub-6GHz +mmWave Module



52.0mm x 30.0mm x 2.3mm (Approx.)

Variant	RM510Q-GL
5G NR	5G NR 3GPP Release 15 NSA/SA operation, Sub-6GHz, mmWave
	Sub-6GHz Bands n1/n2/n3/n5/n7/n8/n12/n20/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79
	mmWave Bands n257/n258/n260/n261
	DL 4×4 MIMO n1/n2/n3/n7/n38/n40/n41/n48/n66/n77/n78/n79
LTE	LTE Category Cat 20
LTE	LTE Bands B1/B2/B3/B4(B66)/B5(B18/B19/B26)/B7/B8/B9/B12(B17)/B13/B14/B20/B25/B26/B28/B29/B30/B32/B34/B38/B39/B40/B41/B42/B46(LAA)/B48/B71
	DL 4×4 MIMO B1/B2/B3/B4/B7/B25/B30/B38/B39/B40/B41/B42/B48/B66
Embedded GNSS	Y
PCIe 3.0 Interface	Y
USB 2.0 Interface	Y
External eSIM	Y
Region	Global
Certification	Carrier: TBD Regulatory: FCC/IC/GCF/PTCRB (TBD)

NOTE: The dimensions of RM510Q is TBD.

RG510Q Specifications (Preliminary)



■ 5G Sub-6GHz+mmWave Module



Variant	RG510Q-NA
5G NR	5G NR 3GPP Release 15 NSA/SA operation, Sub-6G
	mmWave Bands n260/n261
	Sub-6GHz Bands n41/n71
	DL 4×4 MIMO n41
LTE	LTE Category Cat 20
LTE	LTE Bands B2/B4/B5/B7/B12/B13/B14/B25/B26/B29/B30/B41/B66/B71
	DL 4×4 MIMO B2/B4/B25/B30/B41/B66
Embedded GNSS	Y
PCIe 3.0 Interface	Y
USB 3.1 Interface	Y
RGMII	Y
Region	North America
Certification	Carrier: TBD
	Regulatory: GCF/ FCC/IC/ PTCRB (TBD)

LTE Standard Modules

LTE-A & 5G Modules

Automotive Modules

Smart Modules

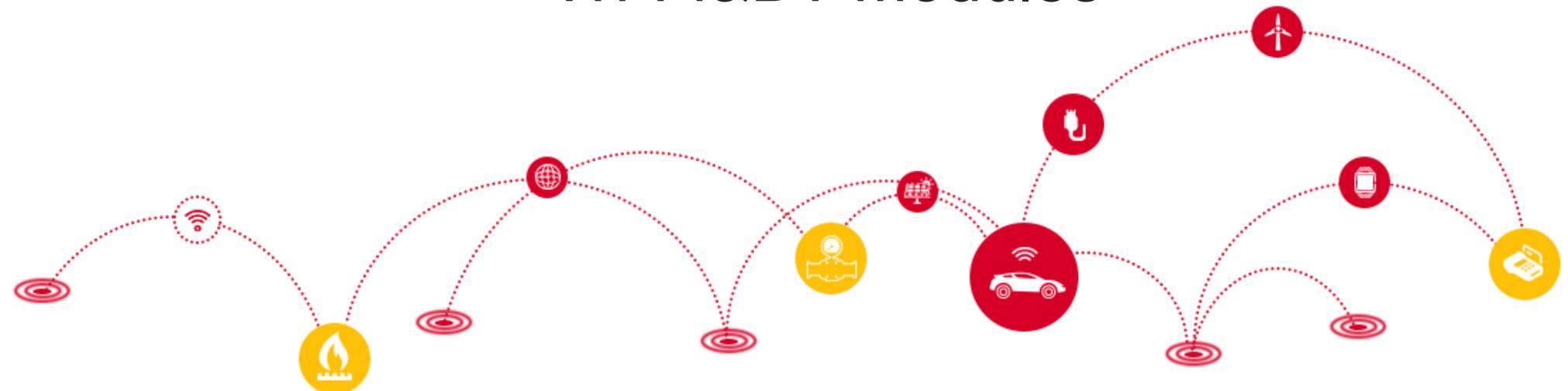
LPWA Modules

UMTS/HSPA(+) Modules

GSM/GPRS Modules

GNSS Modules

Wi-Fi&BT Modules



Automotive Modules Roadmap



LTE Cat 4
AG35
MDM9628



- Automotive Grade
- Multi-mode LTE
- 150M DL/ 50M UL
- GNSS
- -CE/ -E/ -NA/ -LA/ -J
- LGA Form Factor

C-V2X
AG15
MDM9150



- Automotive Grade
- C-V2X PC5
- GNSS
- LGA Form Factor

LTE-A up to Cat 16
C-V2X (Optional)
AG520R
SA415M



- Automotive Grade
- Multi-mode LTE
- LTE-A up to Cat 16
- Integrate C-V2X ^{Optional}
- Multi-Frequency GNSS ^{Optional}
- -CN/ -NA*/ -EU* /-JP * /-LA*
- LGA Form Factor

5G
C-V2X (Optional)
AG550Q
SA515M



- Automotive Grade
- 5G NR Sub-6G
- 4G/3G/2G fallback
- DSDA ^{Optional}
- Integrate C-V2X ^{Optional}
- Multi-Frequency GNSS
- -CN*/ -NA*/ -EU* /-JP* /-LA*
- LGA Form Factor

C-V2X AP module
AG215S
SA2150P



- Automotive Grade
- Qualcomm SA2150P
- C-V2X SDK integrated
- C-V2X ITS integrated
- HSM integrated

Qx' xx

Estimated Engineering Sample Dates

2017

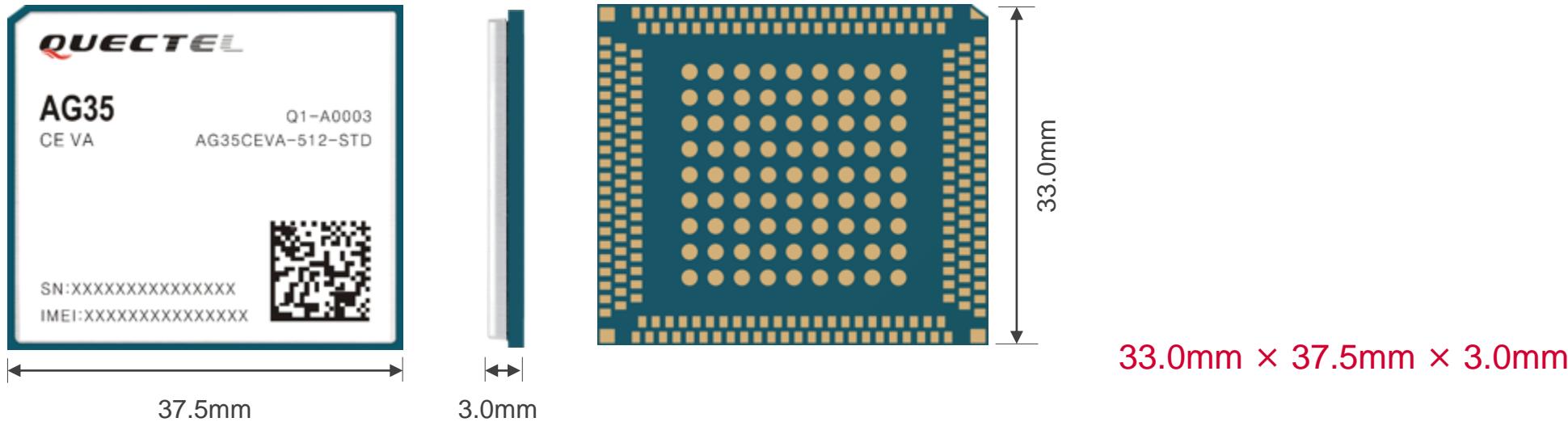
2018

2019

2020

Automotive Module AG35 Highlights

Multi-Mode LTE Cat 4 Module (MDM9628)



- Qualcomm MDM9628 chipset solution dedicated for automotive applications
- Ideal for automotive applications with IATF 16949 requirement
- Wide operation temperature range (-40°C to +85°C) and support eCall under +95°C^{NOTE}
- Automotive quality processes (PPAP, 8D, DFMEA, PFMEA...)
- Excellent EMC/ESD protection ensures great robustness even in harsh environments
- Compact SMT form factor ideal for integration in slim and size-constrained automotive solutions
- Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment

NOTE: +95 °C eCall application is supported through proper customer system designs, and it may lead to module lifetime shortened.

AG35 Specifications



QUECTEL®
Build a Smarter World

■ Multi-Mode LTE Cat 4 Module

33.0mm × 37.5mm × 3.0mm
150M DL / 50M UL

Variant	AG35-CE	AG35-E	AG35-NA	AG35-LA	AG35-J
LTE	FDD-LTE	B1/B3/B5/B8	B1/B3/B5/B7/B8/B20/B28	B2/B4/B5/B7/B12(B17)/B13	B1/B2/B3/B4/B5/B7/B8/B28
	TDD-LTE	B34/B38/B39/B40/B41	B38/B40	\	\ B41
UMTS	WCDMA	B1/B8	B1/B5/B8	B2/B4/B5	B1/B2/B3/B4/B5/B8 B1/B3/B5/B6/B8/B19
	TD-SCDMA	B34/B39	\	\	\
EVDO/CDMA	BC0 ^①	\	\	\	\
GSM	900/1800MHz	900/1800MHz	850/1900MHz	850/900/1800/1900MHz	\
Embedded GNSS	Y	Y	Y	Y	Y
Dead Reckoning	Optional	Optional	Optional	Optional	Optional
PPE (RTK)	Optional	\	\	\	\
Wi-Fi/BT Interface	Y	Y	Y	Y	Y
Region	China	EMEA, Korea, Australia, India, Southeast Asia	North America	Latin America	Japan
Certification	Regulatory: SRRC/ NAL/ CCC	Carrier: KT*/ STK*/ LGU+* Regulatory: GCF/ CE/ FCC/ KC/ RCM	Carrier: AT&T/ Rogers/ Verizon*/ T-Mobile* Regulatory: GCF/ FCC/ PTCRB/ IC	Regulatory: CE/ FCC/ Anatel/ RCM	Carrier: NTT DOCOMO* Regulatory: JATE/ TELEC

"Y" means supported.

* means under development.

① means the band is optional.

AG35 Key Features

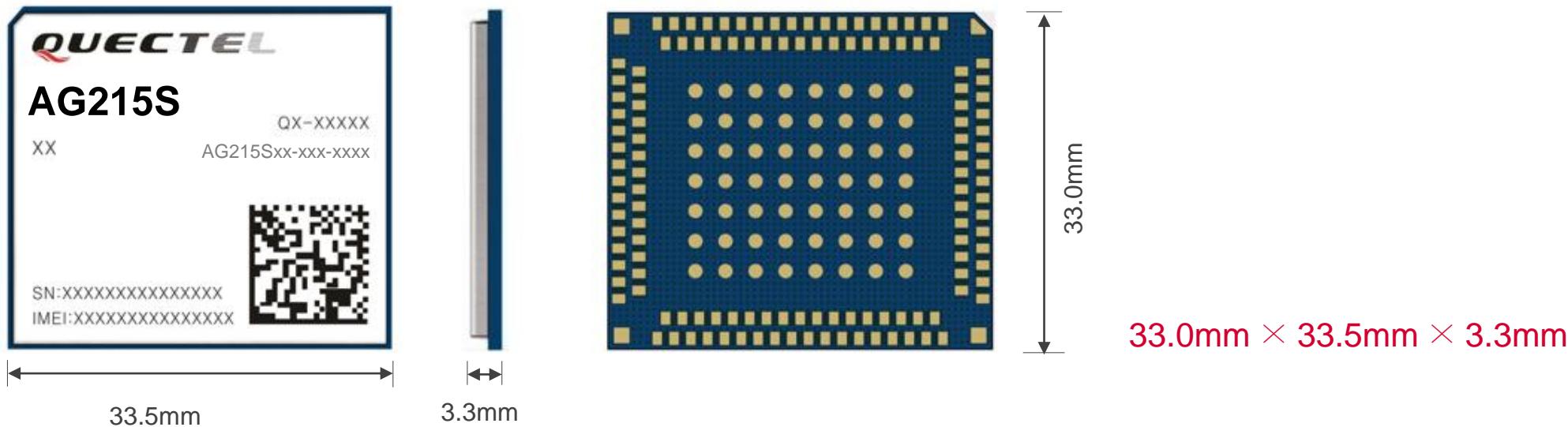


Item	Description	
Chipset	Enhanced processes compliant with the key testing items required by AEC-Q100	
	Application processor <ul style="list-style-type: none">- ARM Cortex A7 up to 1.2 GHz with 256kB L2 cache- ARM Cortex A7 - primary boot processor	
	Modem processor <ul style="list-style-type: none">- QDSP6 processor at up to 691MHz (Turbo)	
	RPM processor <ul style="list-style-type: none">- ARM Cortex M3 up to 100 MHz	
Memory	Embedded Nand+DDRAM <ul style="list-style-type: none">- NAND: 512MB- DDRAM: 256MB	
	Available for customers <ul style="list-style-type: none">- NAND: > 120MB- DDRAM: > 100MB	
Interfaces	USB 2.0, HSIC, UART, I2C, PCM, SGMII, SDIO, (U)SIM, ADC, SPI, GPIOs	
Enhanced Features	Wi-Fi + BT* eCall, QuecOpen® (Open Linux), Multi-APN ERA-GLONASS*	
	Secure Boot, TrustZone/TPM*, Code/user data backup for higher security	
	Temperature management	
	Embedded codec (<i>Optional</i>)	
	ESD/ EMI protection through internal specific circuits and components	
Data Speed	LTE: LTE-FDD: Max 150 Mbps (DL), Max 50 Mbps (UL) UMTS: DC-HSDPA: Max 42 Mbps HSUPA: Max 5.76 Mbps	LTE-TDD: Max 130 Mbps (DL), Max 30 Mbps (UL) WCDMA: Max 384Kbps (DL/UL)
	TD-SCDMA: Max 4.2 Mbps (DL), Max 2.2 Mbps (UL)	
	CDMA2000: EVDO: Max 3.1 Mbps (DL), Max 1.8 Mbps (UL)	1X Advanced: Max 307.2Kbps (DL/UL)
	GSM: EDGE: Max 296Kbps (DL), Max 236.8Kbps (UL)	GPRS: Max 107Kbps (DL), Max 85.6Kbps (UL)

* means under development

Automotive EAP Module AG215S Highlights

AP Module Dedicated for C-V2X (SA2150P)



- Qualcomm SA2150P chipset dedicated for the C-V2X Application Processor
- Automotive quality processes (PPAP, 8D, DFMEA, PFMEA...)
- IATF 16949 compliant Application Processor to host ITS stack and applications
- Optimized communication performance with Quectel AG520R/AG550Q
- Hardware Crypto Engine embedded to fulfill powerful ECDSA verification capability
- Support global and China national security algorithms
- Additional HSM/SE integrated, and optional ITS stack integrated
- Wide operation temperature range (-40°C to +85°C)
- Extremely high reliability thanks to automotive grade testing standard

EAP: External Application Processor

Rev.: V3.2 | Status: Released

C-V2X AP Module AG215S Specifications



Automotive Grade C-V2X Application Processor Module



33.0mm × 33.5mm × 3.3mm

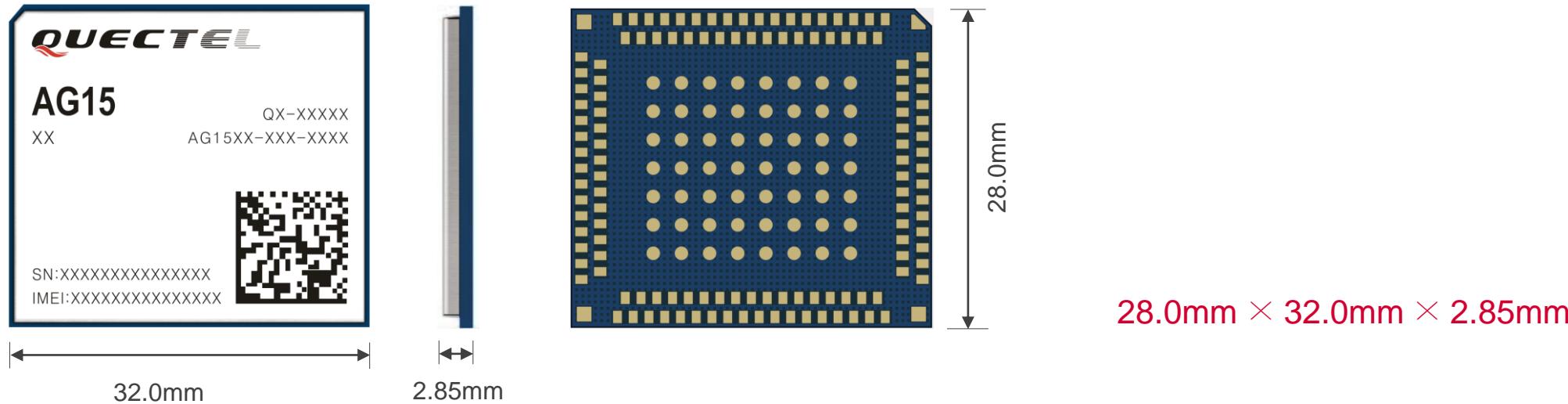
Features	AG215S
Processors	<ul style="list-style-type: none">64-bit ARM Cortex-A53 Microprocessor Cores1.4 GHz Dual-Core Processor (Quad-Core Processor Optional)
Interfaces	PCIe Gen2, USB 3.0/2.0, RGMII 1 Gbps, UART, SPI, I2C, 1PPS (Input), ADC
Embedded ECDSA Hardware Engine	Support NIST p-384, NIST p-256, Brainpool p-384, Brainpool p-256, SM2 256 bit Curves
Scalable ECDSA Capability	Up to 2500TPS through embedded engine and CPU (based on NIST p-256 and SM2)
Hardware Crypto Engine Embedded	<ul style="list-style-type: none">Secret key generation and storage, and digital signature and verificationAdditional 2000TPS ECDSA capability (based on NIST p-256 and SM2)
Region	Global
Certification	TBD

* means under development

Automotive C-V2X Module AG15 Highlights



Support C-V2X PC5 Direct Communications (MDM9150)



- Qualcomm MDM9150 chipset solution dedicated for C-V2X (V2V, V2I, V2P) applications
- Designed to meet IATF 16949 requirements
- Wide operation temperature range (-40°C to +85°C)
- Automotive quality processes (PPAP, 8D, DFMEA, PFMEA...)
- Extremely high reliability thanks to automotive grade testing standard
- Excellent EMC/ESD protection ensures great robustness even in harsh environments
- Compact SMT form factor ideal for integration in slim and size-constrained automotive solutions
- Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment

C-V2X Module AG15 Specifications



Qualcomm MDM9150 C-V2X Chipset solution
based on 3GPP Rel.14 for PC5-based
direct communications



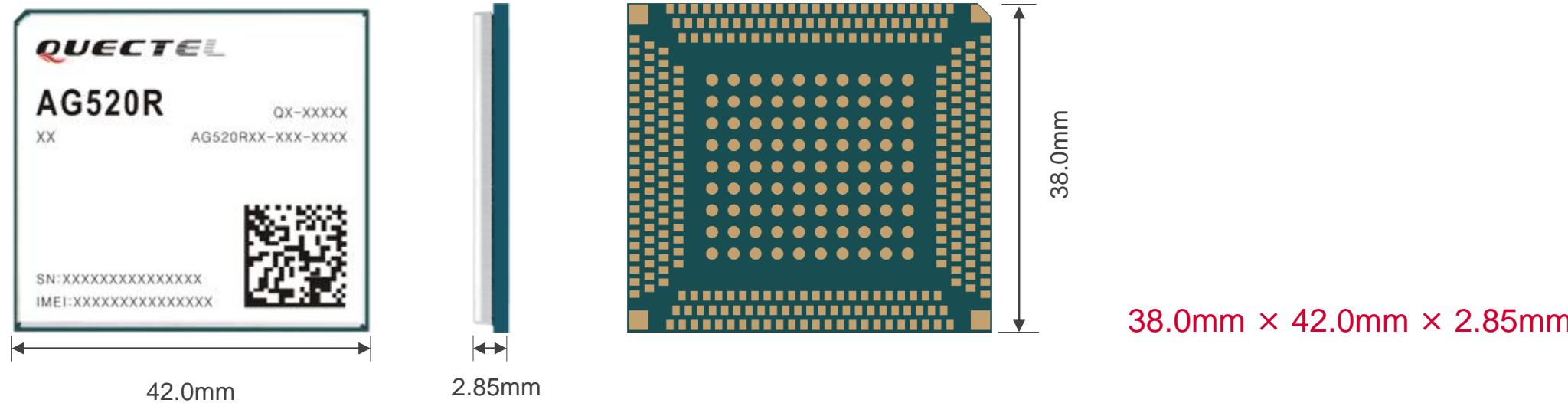
28.0mm × 32.0mm × 2.85mm

Features	AG15
Frequency	5.8GHz & 5.9GHz
Embedded GNSS	GPS, GLONASS, BeiDou, Galileo, QZSS
Interfaces	PCIe, USB 3.0/2.0, SPI, I2C, UART, GPIO, ADC, DR_SYNC
Dead Reckoning	QDR3 (Share the same IMU with MDM9628)
Enhanced Features	PACE (Position Assisted Clock Estimator), TUNC (Time Uncertainty Constraint)
Region	Global
Certification	TBD

Automotive Module AG520R Highlights



Multi-Mode Automotive Module up to LTE Cat 16 + Optional C-V2X (SA415M)



- AEC-Q100 qualified Qualcomm SA415M chipset solution dedicated for automotive and optional C-V2X applications
- Ideal for automotive applications with IATF 16949 requirement
- Wide operation temperature range (-40°C to +85°C) and support eCall under +95°C
- Automotive quality processes (PPAP, 8D, DFMEA, PFMEA...)
- Excellent EMC/ESD protection ensures great robustness even in harsh environments
- Compact SMT form factor ideal for integration in slim and size-constrained automotive solutions
- Multi-frequency GNSS receiver available for applications requiring fast and accurate fixes in any environment

AG520R Specifications



■ Multi-Mode LTE up to Cat 16 + Optional C-V2X

Variant	AG520R-CN	AG520R-EU*	AG520R-NA*	AG520R-JP*	AG520R-LA*
LTE	FDD-LTE	B1/B3/B5/B7/B8	B1/B3/B5/B7/B8/B20/B28/B32	B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B29/B30/B66/B71	B1/B3/B5/B8/B9/B11/B18/B19/B21/B28
	TDD-LTE	B34/B38/B39/B40/B41	B38/B40/B41	\	B41
UMTS	WCDMA	B1/B8	B1/B3/B5/B8	B2/B4/B5	B1/B3/B5/B8/B9/B19
	TD-SCDMA	\	\	\	\
GSM	900/1800MHz	900/1800MHz	\	\	850/900/1800/1900MHz
C-V2X <small>Optional</small>	B47	B47	B47	TBD	B47
MF-GNSS <small>Optional</small>	L1+L5	L1+L5	L1+L5	L1+L5	L1+L5
Dead Reckoning <small>Optional</small>	QDR 3.0	QDR 3.0	QDR 3.0	QDR 3.0	QDR 3.0
PPE (RTK)	Optional	Planning	Planning	TBD	\
Ethernet <small>Optional</small>	RGMII	RGMII	RGMII	RGMII	RGMII
Wi-Fi/BT Interface	Y	Y	Y	Y	Y
Region	China	EMEA, Korea, Brazil, India, Australia	North America	Japan	Latin America
Certification	TBD	TBD	TBD	TBD	TBD

"Y" means supported.

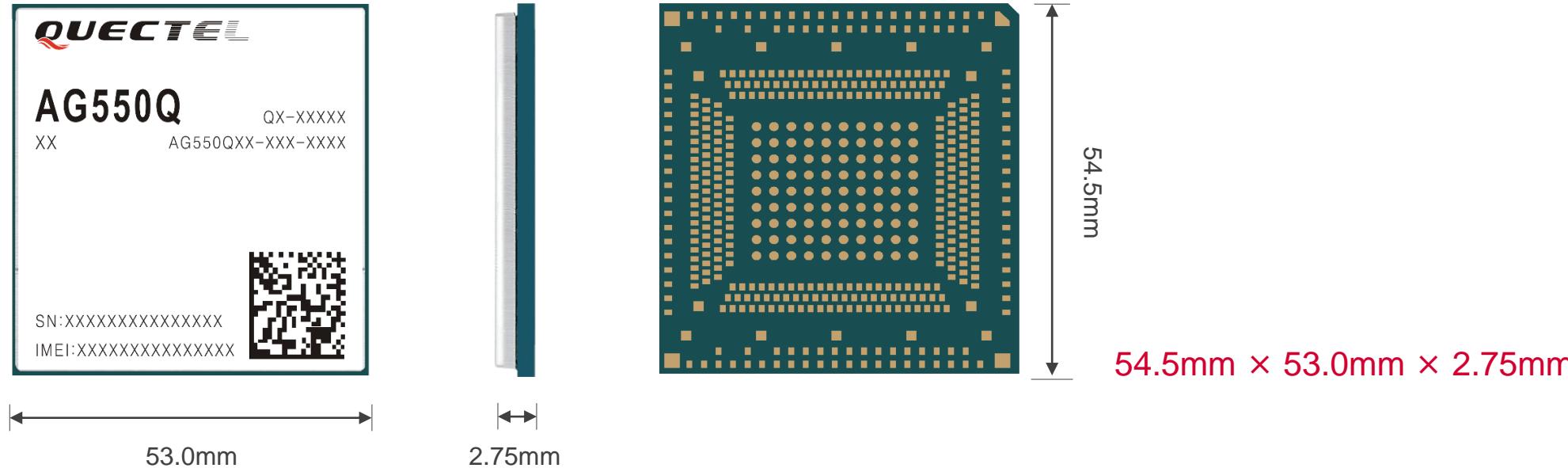
* means under development.

AG520R Key Features

Item	Description		
4G Category	Max up to Cat 16		
Apps Processor	ARM Cortex A7 at 1.5GHz; 256 KB L2		
C-V2X <small>Optional</small>	PC5 Mode 4 (direct communication), uu mode		
Embedded GNSS	GPS/ GLONASS/ BeiDou/ Galileo Enhanced Automotive MF-GNSS (L1+L5) <small>Optional</small>		
QDR <small>Optional</small>	QDR3 (external IMU is required)		
Interface	PCIe, USB 2.0/3.0, RGMII, SDIO, SPI, I2C, I2S, PCM, UARTs, GPIOs, 1PPS, Wi-Fi interface, BT interface		
Antenna Interfaces	<ul style="list-style-type: none">• 4 × main antenna interfaces for LTE Cat 16 (4×4 MIMO)• 2 × C-V2X antenna interfaces• 1 × GNSS antenna interface		
Data Speed	LTE:	LTE-FDD: Max 1 Gbps (DL), Max 75 Mbps (UL)	LTE-TDD: Max 880 Mbps (DL), Max 45 Mbps (UL)
	UMTS:	DC-HSDPA: Max 42 Mbps	HSUPA: Max 5.76 Mbps
			WCDMA: Max 384Kbps (DL/UL)
	GSM:	EDGE: Max 296Kbps (DL), Max 236.8Kbps (UL)	GPRS: Max 107Kbps (DL), Max 85.6Kbps (UL)
	C-V2X:	Tx: Max 30 Mbps, Rx Max 30 Mbps	

Automotive Module AG550Q Highlights

Automotive Grade 5G Module + Optional C-V2X/ DSDA (SA515M)



- AEC-Q100 qualified Qualcomm SA515M chipset solution dedicated for automotive 5G NR and optional C-V2X applications
- Ideal for automotive applications with IATF 16949 requirement
- Wide operation temperature range (-40°C to +85°C) and support eCall under +95°C
- Automotive quality processes (PPAP, 8D, DFMEA, PFMEA...)
- Excellent EMC/ESD protection ensures great robustness even in harsh environments
- Compact SMT form factor ideal for integration in slim and size-constrained automotive solutions
- Multi-frequency GNSS receiver available for applications requiring fast and accurate fixes in any environment

AG550Q Specifications

■ Automotive Grade 5G Module + Optional C-V2X



54.5mm × 53.0mm × 2.75mm

Variant	AG550Q-CN*	AG550Q-EU*	AG550Q-NA*	AG550Q-ROW (Planning)
5G NR	5G FDD \	n1/n3/n8/n20/n28	n2/n5/n66/n71	\
	5G TDD n41/n78/n79	n78	n41/n78	n77/n78/n79
LTE	FDD-LTE B1/B3/B5/B7/B8	B1/B3/B5/B7/B8/B20/B28/B32 ^①	B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B28/B29 ^① /B30/B66/B71	B1/B3/B5/B7/B8/B11/B18/B19/B20/B21/B26/B32 ^①
	TDD-LTE B34/B38/B39/B40/B41	B38/B40/B41	B41	B38/B39/B40/B41
UMTS	WCDMA B1/B8	B1/B3/B5/B8	B2/B4/B5	B1/B2/B3/B4/B5/B8
	TD-SCDMA \	\	\	\
GSM	900/1800MHz	900/1800MHz	\	900/1800/MHz
C-V2X <small>Optional</small>	B47	B47	B47	B47
DSDA <small>Optional</small>	LTE	LTE	LTE	LTE
MF-GNSS <small>Optional</small>	L1+L2+L5	L1+L2+L5	L1+L2+L5	L1+L2+L5
Dead Reckoning <small>Optional</small>	QDR 3.0	QDR 3.0	QDR 3.0	QDR 3.0
PPE (RTK)	Optional	Planning	Planning	TBD
Ethernet <small>Optional</small>	RGMII	RGMII	RGMII	RGMII
Wi-Fi/BT Interface	Y	Y	Y	Y
Region	China	EMEA, Korea, Australia, India, Southeast Asia	North America	Latin America, Japan
Certification	TBD	TBD	TBD	TBD

^① LTE-FDD B29/B32 supports Rx Only

"Y" means supported.

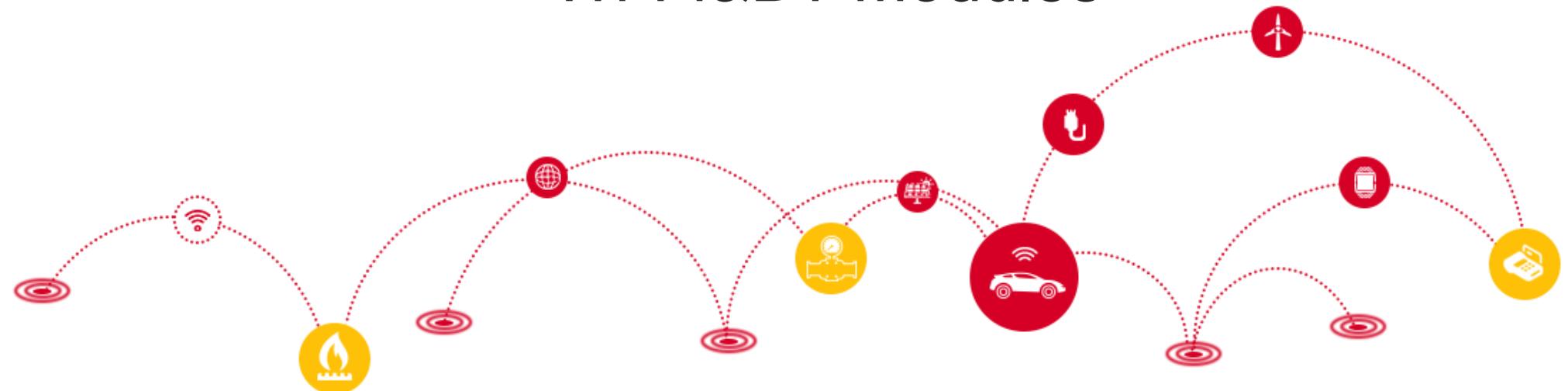
* means under development.

AG550Q Key Features

Features	AG550Q
5G NR	3GPP Release 15 NSA/SA operation, Sub-6G
4G Category	LTE Cat 19, 3G/2G fallback
Apps Processor	Cortex A7 at 1.5GHz; 256 KB L2
C-V2X <small>Optional</small>	PC5 Mode 4 (direct communication), uu mode
DSDA <small>Optional</small>	Dual SIM Dual Activation
Embedded GNSS	GPS/ GLONASS/ BeiDou/ Galileo Enhanced Automotive MF-GNSS (L1/L2/L5) <small>Optional</small>
QDR <small>Optional</small>	QDR3 (external IMU required)
Interface	PCIe 3.0, USB 2.0/3.1, RGMII, SDIO, SPI, I2C, I2S, UART, PCM, ADC, (U)SIM, 1PPS, GPIOs
Antenna Interfaces	<ul style="list-style-type: none">• 4 × 5G/4G antenna interfaces (4×4 MIMO)• 2 × antenna interfaces for DSDA (2×2 MIMO)• 2 × C-V2X antenna interfaces (2×2 MIMO)• 1 × GNSS antenna interface
Data Speed	5G NR: Max 1.77 Gbps (DL), Max 490 Mbps (UL)
	LTE: LTE-FDD: Max 1.6 Gbps (DL), Max 150 Mbps (UL)
	UMTS: DC-HSDPA: Max 42 Mbps
	TD-SCDMA: Max 4.2 Mbps (DL), Max 2.2 Mbps (UL)
	GSM: EDGE: Max 296Kbps (DL), Max 236.8Kbps (UL)
	C-V2X: Tx: Max 48 Mbps, Rx Max 48 Mbps
LTE-TDD: Max 1.16 Gbps (DL), Max 45 Mbps (UL)	
HSUPA: Max 5.76 Mbps	
WCDMA: Max 384Kbps (DL/UL)	
GPRS: Max 107Kbps (DL), Max 85.6Kbps (UL)	

LTE Standard Modules
LTE-A & 5G Modules
Automotive Modules
Smart Modules

LPWA Modules
UMTS/HSPA(+) Modules
GSM/GPRS Modules
GNSS Modules
Wi-Fi&BT Modules



Smart Module Roadmap



LTE Cat 4
SC20
Snapdragon
MSM8909



- Multi-mode LTE
- Quad-core A7 1.1GHz
- HD Display
- Camera 8MP
- Cat 4, 150M DL/ 50M UL
- LCC+LGA Form Factor

LTE Cat 4
SC200R
Snapdragon
QCM2150



- Multi-mode LTE
- Quad-core A53 1.3GHz
- HD+ Display
- Dual cameras 13MP (8M+8M)
- Cat 4, 150M DL/ 50M UL
- LCC+LGA Form Factor

LTE Cat 6
SC600Y
Snapdragon
SDM450



- Multi-mode LTE
- Octa-core A53 (1.8GHz) /64 bit
- 2GB LPDDR3+16GB eMMC
- WUXGA Display
- Camera 21MP
- Cat 6, 300M DL/ 50M UL
- LCC+LGA Form Factor

LTE Cat 6
SC600T
Snapdragon
MSM8953



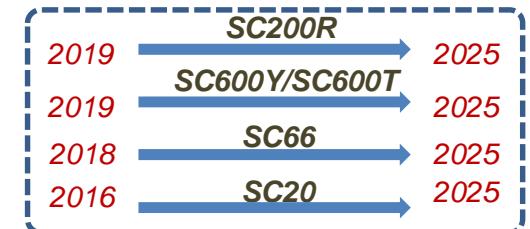
- Multi-mode LTE
- Octa-core Kryo 260(2.2GHz+1.84GHz) /64 bit
- 3GB LPDDR4X+32GB eMMC
- WQXGA Display
- Camera 24 MP at 30 fps ZSL
- Video 4K@30fps
- **Snapdragon Neural Processing Engine inside**
- Cat 6, 300M DL/ 50M UL
- LCC+LGA Form Factor

LTE Cat 6
SC66
Snapdragon
SDM660



- Multi-mode LTE
- Octa-core Kryo 260(2.2GHz+1.84GHz) /64 bit
- 3GB LPDDR4X+32GB eMMC
- WQXGA Display
- Camera 24 MP at 30 fps ZSL
- Video 4K@30fps
- **Snapdragon Neural Processing Engine inside**
- Cat 6, 300M DL/ 50M UL
- LCC+LGA Form Factor

Smart Module Life Cycle



.....2025

SC20 Specifications

Variant	SC20-E/EL ^⑤	SC20-A/AL ^⑤	SC20-J/JL ^⑥	SC20-AU/AUL ^⑤	SC20-CE/CEL ^⑤	SC20-W/WL ^⑤
LTE	LTE-FDD	B1/ B3/ B5/ B7/ B8/ B20	B2/ B4/ B5/ B7/ B12/ B13/ B25/ B26	B1/ B3/ B8/ B18/ B19/ B26	B1/ B3/ B5/ B7/ B8/ B28	B1/ B3/ B5/ B8
	LTE-TDD	B38/ B40/ B41	\	B41	B40	B38/ B39/ B40/ B41
UMTS	WCDMA	B1/ B5/ B8	B1/ B2/ B4/ B5/ B8	B1/ B6/ B8/ B19	B1/ B2/ B5/ B8	B1/ B8
	TD-SCDMA	\	\	\	\	B34/ B39
EVDO/CDMA	\	\	\	\	BC0	\
GSM/EDGE	Quad-band	850/ 1900MHz	\	Quad-band	900/ 1800MHz	\
Embedded GNSS	Y	Y	Y	Y	Y	\
Wi-Fi/BT	Y	Y	Y	Y	Y	Y
Region	EMEA/ Korea/ Thailand/ India	America	Japan	Australia/ Brazil	China (CMCC, CUCC)	Global
Certification	Regulatory: GCF/ CE/ KC/ NBTC	Carrier: Verizon/ AT&T/ T-Mobile ^③ / Sprint ^④ / Rogers/ Telus ^③ Regulatory: GCF/ FCC/ PTCRB/ IC	Carrier: NTT DOCOMO Regulatory: JATE/ TELEC	Carrier: Telstra Regulatory: GCF/ CE/ Anatel/ NCC/ RCM	Regulatory: SRRC/ NAL/ CCC	Regulatory: CE/ FCC/ IC/ Anatel/ JATE/ TELEC/ RCM

"Y" means supported.

^① Rx-diversity is not supported on LTE B2/B5 for SC20-EU.

^② LTE B41 for SC20-EU is optional and not certified by GCF.

^③ T-Mobile/ Telus for Data Only version has been done and that for Voice version is TBD.

^④ TBD

^⑤ SC20-EL/-AL/-JL/-AUL/-CEL/-WL are modules with Yocto Linux OS inside



SC20 Features

Item	Description
CPU	<ul style="list-style-type: none">MSM8909, Quad-core A7, up to 1.1GHz
Memory	<ul style="list-style-type: none">1GB LPDDR3 + 8GB eMMC2GB LPDDR3 + 16GB eMMC
OS	<ul style="list-style-type: none">Android 7.1/ 8.1 supported by SC20-E/-A/-J/-AU/-CE/-WYocto Linux(Kernel 3.18) supported only by SC20-EL/-AL/-JL/-AUL/-CEL/-WL
WLAN	<ul style="list-style-type: none">2.4G/5G, 802.11 a/b/g/n150Mbps, STA/AP/P2P
BT	<ul style="list-style-type: none">BT 2.1 + EDR/3.0/4.1 LE (BT4.2 available on Android 7.0)Support a maximum of 10 ACL/BEL/SCO links
GNSS	<ul style="list-style-type: none">GPS/BeiDou/GLONASS, or GPS/BeiDou/Galileo
Modem	<ul style="list-style-type: none">3GPP Release 10 compliant

SC20 Interfaces

Item	Description
LCM	<ul style="list-style-type: none">• 4-lane MIPI_DSI, 1.5Gbps/lane, HD (720P) @60fps• Support MIPI to RGB, MIPI to LVDS and MIPI to HDMI
Camera	<ul style="list-style-type: none">• 4-lane MIPI_CSI, 1.5Gbps/lane, 1 ISP, Bayer/YUV format
Touch panel	<ul style="list-style-type: none">• Capacitive-screen, I2C controls
Audio	<p>Analog channels:</p> <ul style="list-style-type: none">• Two inputs: MIC1, MIC2• Three outputs: speaker, earpiece, headphone
Video	<ul style="list-style-type: none">• Encode: 720P (H.264) @30fps; WVGA (MPEG-4/VP8) @30fps• Decode: 1080P (H.264/MPEG-4/VP8/H.265/DivX4/5/6) @30fps; WVGA (H.263) @30fps
USB 2.0 Device	<ul style="list-style-type: none">• High Speed, 480Mbps• Support USB 2.0 OTG, USB OTG+Charge and USB to Ethernet functions
(U)SIM	<ul style="list-style-type: none">• 2, support 1.8/3V (U)SIM cards, with (U)SIM card detection function; DSDS supported
UART	<ul style="list-style-type: none">• 2, support up to 4Mbps with Hardware Flow Control
SDIO	<ul style="list-style-type: none">• SD 3.0, 4 bit SDIO
I2C/SPI/ADC/GPIO	<ul style="list-style-type: none">• Supported
PWRKEY	<ul style="list-style-type: none">• Supported
Antenna	<ul style="list-style-type: none">• 4 pads (for main antenna, diversity antenna, GNSS antenna and BT/Wi-Fi antenna, respectively)

SC20 Support Package

QUECTEL[®]
Build a Smarter World



Evaluation Board

Interfaces

- Serial port
- Antenna interface
- Micro-USB interface

Accessories

- Micro-USB cable
- USB to RS232 converter cable
- RF cables
- Power adapter
- Earphone
- Antennas
- USB flash drive

SC200R Specifications



Variant	SC200R-EM*	SC200R-NA*	SC200R-JP*	SC200R-CE	SC200R-WF*
LTE	LTE-FDD B1/ B2/ B3/ B4/ B5/ B7/ B8/ B20/ B28	B2/ B4/ B5/ B7/ B12/ B13/ B14/ B17/ B25/ B26/ B66/ B71	B1/ B3/ B5/ B8/ B11/ B18/ B19/ B21/ B26/ B28	B1/ B3/ B5/ B8	\
	LTE-TDD B38/ B39/ B40/ B41	B41	B41	B34/ B38/ B39/ B40/ B41	\
UMTS	WCDMA B1/ B2/ B4/ B5/ B8	B2/ B4/ B5	B1/ B6/ B8/ B19	B1/ B8	\
CDMA	\	\	\	BC0	\
GSM/EDGE	850/900/1800/1900MHz	\	\	900/ 1800MHz	\
Embedded GNSS	Y	Y	Y	Y	\
Wi-Fi/BT	Y	Y	Y	Y	Y
Region	EMEA/ India/ Korea/ South Asia/ Latin America/ Australia/ New Zealand/ South Africa	North America	Japan	China	Global
Certification	Carrier: Telstra* Regulatory: GCF*/ CE*/ RCM*	Carrier: Verizon*/ AT&T* Regulatory: GCF*/ FCC*/ PTCRB*/ IC*	Carrier: NTT DOMOCO* Regulatory: JATE*/ TELEC*	Regulatory: SRRC ^① / NAL ^① / CCC*	TBD

"Y" means supported.

"*" means under development.

^①TBD

SC200R Features

Item	Description
CPU	<ul style="list-style-type: none">• QCM2150, Quad-core ARM Cortex-A53 64-bit CPU @1.3GHz
GPU	<ul style="list-style-type: none">• Qualcomm® Adreno™ 308 graphics processing unit (GPU) with 64-bit addressing
Memory	<ul style="list-style-type: none">• 1GB LPDDR3 + 8GB eMMC• 2GB LPDDR3 + 16GB eMMC
OS	<ul style="list-style-type: none">• Android 10.0
Battery Charge	<ul style="list-style-type: none">• Supported
WLAN	<ul style="list-style-type: none">• 2.4G/5GHz, 802.11 a/b/g/n, 150Mbps, STA/AP/P2P
BT	<ul style="list-style-type: none">• BT 2.1 + EDR/3.0/4.1 LE /BT4.2• Support a maximum of 10 ACL/BEL/SCO links
GNSS	<ul style="list-style-type: none">• GPS/ BeiDou/ GLONASS/ Galileo
Modem	<ul style="list-style-type: none">• 3GPP Release 10

SC200R Interfaces

Item	Description
LCM	<ul style="list-style-type: none">• 4-lane MIPI_DSI; HD+ (1440*720) @60fps• Wi-Fi display: 1080P 30fps (UBWC)
Camera	<ul style="list-style-type: none">• 2 groups of 4-lane MIPI_CSI, up to 2.1Gbps per lane• Up to 13MP with dual ISP
Touch panel	<ul style="list-style-type: none">• Capacitive-screen, I2C controls
Audio	<p>Analog channels:</p> <ul style="list-style-type: none">• Three inputs: MIC1, MIC2 and MIC3 (including one Noise-cancelling Microphone)• Three outputs: speaker, earpiece, headphone
Video	<ul style="list-style-type: none">• Video encoding :1080p @30fps(H.264)• Video decoding :1080p @30fps(H.264, HEVC, and VP8)• Video encoding and decoding: 1080p @30fps + 720p@30fps For HEVC playback, concurrency is 720p at 30 fps decode + 720p at 30 fps encode
USB	<ul style="list-style-type: none">• USB 2.0,USB OTG + Charge
(U)SIM	<ul style="list-style-type: none">• 2, support 1.8/3V (U)SIM cards, with (U)SIM card detection function; DSDS supported
UART	<ul style="list-style-type: none">• 2, support up to 4Mbps with Hardware Flow Control
SDIO	<ul style="list-style-type: none">• SD 3.0, 4 bit SDIO
I2C/SPI/PWM/ADC/GPIO/PWRKEY	<ul style="list-style-type: none">• Supported
Antenna	<ul style="list-style-type: none">• 4 pads (for main antenna, diversity antenna, GNSS antenna and BT/Wi-Fi antenna, respectively)



Evaluation Board

Interfaces

- Serial port
- Antenna interface
- Micro-USB interface

Accessories

- Micro-USB cable
- USB to RS232 converter cable
- Antennas
- Power adapter

SC600Y/SC600T Specifications



Variant	SC600Y-EM/SC600T-EM	SC600Y-NA/SC600T-NA	SC600Y-JP/SC600T-JP	SC600Y-WF/SC600T-WF
LTE	LTE-FDD B1/B2/B3/B4/B5/B7/B8/B20/B28	B2/ B4/ B5/ B7/ B12/ B13/ B14/ B17/ B25/ B26/ B66/ B71	B1/ B3/ B5/ B8/ B11/ B18/ B19/ B21/ B26/ B28	\
	LTE-TDD B38/ B39/ B40/ B41	B41	B41	\
UMTS	WCDMA B1/ B2/ B4/ B5/ B8	B2/ B4/ B5	B1/ B6/ B8/ B19	\
	TD-SCDMA \	\	\	\
CDMA	\	\	\	\
GSM/EDGE	850/900/1800/1900MHz	\	\	\
Embedded GNSS	Y	Y	Y	\
Wi-Fi/BT	Y	Y	Y	Y
Region	EMEA/ India/ Korea// South Asia/ Latin America/ Australia/ New Zealand/ South Africa	North America	Japan	Global
Certification	Carrier: Telstra* Regulatory: CE/ NCC/ RCM/ GCF	Carrier: AT&T/ T-Mobile/ Verizon* Regulatory: GCF/ FCC/ PTCEB/ IC	Carrier: KDDI/ NTT DOCOMO* Regulatory: JATE/ TELEC	Regulatory: CE/ FCC/ IC/ JATE/ TELEC/ RCM

"Y" means supported.

"*" means under development.

SC600Y/SC600T Features

Item	Description
CPU	<ul style="list-style-type: none"> • SC600Y: SDM450, Octa-core ARM Cortex-A53 64-bit CPU @1.8GHz • SC600T: MSM8953, Octa-core ARM Cortex-A53 64-bit CPU @2.0GHz
GPU	<ul style="list-style-type: none"> • Qualcomm® Adreno™ 506 graphics processing unit (GPU) with 64-bit addressing
Memory	<ul style="list-style-type: none"> • 2GB LPDDR3 + 16GB eMMC (default) • 4GB LPDDR3 + 64GB eMMC (optional)
OS	<ul style="list-style-type: none"> • Android 9.0/ 10.0
WLAN	<ul style="list-style-type: none"> • 2.4G/5GHz, 802.11 a/b/g/n/ac, 433Mbps, STA/AP/P2P
BT	<ul style="list-style-type: none"> • BT2.1+EDR/ 3.0/ 4.1LE/ 4.2LE • Support a maximum of 10 ACL/BEL/SCO links
GNSS	<ul style="list-style-type: none"> • GPS/ BeiDou/ GLONASS, or GPS/ BeiDou/ Galileo
Modem	<ul style="list-style-type: none"> • Partial 3GPP Release 10 compliant

SC600Y/SC600T Interfaces

Item	Description
LCM	<ul style="list-style-type: none">Support dual LCDs for independent display: dual 4-lane MIPI_DSI; WUXGA (1920*1200) @60fpsWi-Fi display: 1080P 30fps (UBWC)
Camera	<ul style="list-style-type: none">3 groups of 4-lane MIPI_CSI, up to 2.1Gbps per laneSupport three cameras (4-lane + 4-lane + 4-lane) or four cameras (4-lane + 4-lane + 2-lane + 1-lane)Up to 21MP with dual ISP @SC600YUp to 24MP with dual ISP @SC600T
Touch panel	<ul style="list-style-type: none">2, Capacitive-screen, I2C controls
Audio	<p>Analog channels:</p> <ul style="list-style-type: none">Two inputs: MIC1, MIC2Three outputs: speaker, earpiece, headphone
Video	<ul style="list-style-type: none">Video encoding and decoding: up to 1080P @60fps @SC600YVideo encoding and decoding: up to 4K at 30fps @SC600T <p>Encoder HFR: 720P @120ps; 60Mbps; Maximum 972000 macro block/s; 1080P @60fps decode+1080P @30fps encode</p>
USB	<ul style="list-style-type: none">USB 3.0 and 2.0 Compliant, Type-C, USB OTG + Charge
(U)SIM	<ul style="list-style-type: none">2, support 1.8/3V (U)SIM cards, with (U)SIM card detection function; DSDS supported
UART	<ul style="list-style-type: none">3, support 4Mbps with hardware flow control
SDIO	<ul style="list-style-type: none">SD 3.0, 4 bit SDIO
I2C/SPI/PWM/ADC/GPIO/PWRKEY	<ul style="list-style-type: none">Supported
Antenna	<ul style="list-style-type: none">4 pads (for main antenna, diversity antenna, GNSS antenna and BT/Wi-Fi antenna, respectively)

SC66 Specifications



Variant	SC66-E	SC66-A	SC66-J	SC66-CE	SC66-MW
LTE	LTE-FDD B1/ B2/ B3/ B4/ B5/ B7/ B8/ B20/ B28(A+B)	B2/ B4/ B5/ B7/ B12/ B13/ B14/ B17/ B25/ B26/ B66/ B71	B1/ B3/ B5/ B8/ B11/ B18/ B19/ B21/ B26/ B28(A+B)	B1/ B3/ B5/ B8/	\
	LTE-TDD B38/ B39/ B40/ B41 ^①	B41 ^①	B41 ^②	B34/ B38/ B39/ B40/ B41 ^②	\
UMTS	WCDMA B1/ B2/ B4/ B5/ B8	B2/ B4/ B5	B1/ B6/ B8/ B19	B1/ B8	\
	TD-SCDMA \	\	\	B34/ B39	\
EVDO/CDMA	\	\	\	BC0	\
GSM/EDGE	B2/ B3/ B5/ B8	\	\	B3/ B8	\
Embedded GNSS	Y	Y	Y	\	\
Wi-Fi/BT	Y (MIMO supported)	Y (MIMO supported)	Y (MIMO supported)	Y (MIMO is not supported)	Y (MIMO supported)
Region	Europe/ India/ Korea/ South Asia/ Latin America/ Australia/ South Africa	North America	Japan	China	Global
Certification	Carrier: Telstra ^③ Regulatory: GCF/ CE/ NCC/ RCM/ Anatel ^③ / KC ^③	Carrier: Verizon*/ AT&T* Regulatory: GCF/ FCC/ IC/ PTCRB	Carrier: NTT DOCOMO ^③ Regulatory: JATE/ TELEC	Regulatory: SRRC/ NAL/ CCC	Regulatory: CE/ FCC/ IC/ RCM

"Y" means supported.

"*" means under development.

^① Only 200MHz bandwidth is supported.

^② Only 120MHz bandwidth is supported.

^③ means TBD

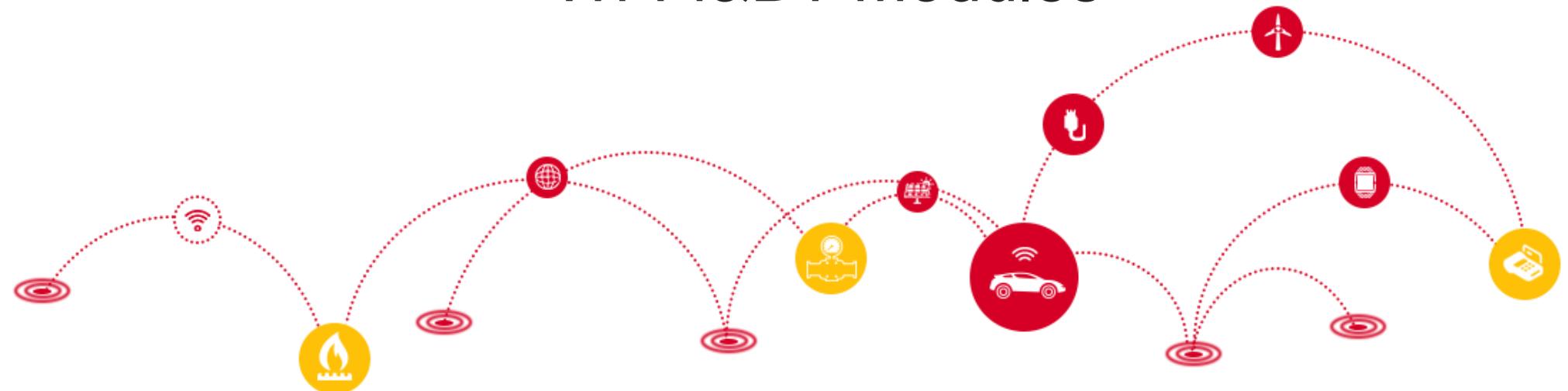
SC66 Features

Item	Description
CPU	<ul style="list-style-type: none">SDM660, Customized 64-bit ARM v8.0-compliant AP (Kryo260 CPU)KryoGold Quad high-performance cores targeting 2.2GHz, L2 - 1MBKryoSilver Quad low-power cores targeting 1.843GHz, L2 - 1MB
GPU	<ul style="list-style-type: none">Qualcomm® Adreno 512 at 650MHz, OpenGL ES3.1 + AEP, DX12_FL12, Vulkan, OpenCL2.0 FP, RenderScript
Memory	<ul style="list-style-type: none">3GB LPDDR4X + 32GB eMMC4GB LPDDR4X + 64GB eMMC
WLAN/BT	<ul style="list-style-type: none">2.4G/5GHz, 802.11 a/b/g/n/ac;Bluetooth 5.0;2×2 MIMO Wi-Fi (except SC66-CE)
Video	<ul style="list-style-type: none">Decoder: 4K@30fps; H.264, VP8, VP9 and HEVCEncoder: 4K@30fps; HEVC, H264, VP8 and MPEG-4
GNSS	<ul style="list-style-type: none">GPS, GLONASS, BeiDou, Galileo
Modem	<ul style="list-style-type: none">3GPP Release 12 compliant (parts of Release 13 features are supported)
OS	<ul style="list-style-type: none">Android 9.0/ 10.0
AI Engine	<ul style="list-style-type: none">Vector DSP, CPU and GPU work together, providing neural network SDK, supporting Caffe/Caffe2/Tensorflow
USB	<ul style="list-style-type: none">Dual USB, 3.1x1, 2.0x1
LCM	<ul style="list-style-type: none">2560×1600 @60fps primary display4k @30fps over DPDual MIPI DSIWi-Fi display: 1080P @30fps

LTE Standard Modules
LTE-A & 5G Modules
Automotive Modules
Smart Modules

LPWA Modules

UMTS/HSPA(+) Modules
GSM/GPRS Modules
GNSS Modules
Wi-Fi&BT Modules



Quectel LPWA Modules Summary (MP 1)



Module	BG96	BG95-M3	BG77
Timeline	MP in Jan. 2018	MP in Jan. 2020	MP in Feb, 2020
Chipset	Qualcomm MDM9206	Qualcomm MDM9205	Qualcomm MDM9205
Mode	Cat M1/ Cat NB1/ EGPRS/ GNSS	Cat M1/ Cat NB2/ EGPRS/ GNSS	Cat M1/ Cat NB2/ GNSS
LTE Band	1/2/3/4/5/8/12(17)/13/18/19/20/25 ^① 26*/28/39 <i>(B39 for Cat M1 only)</i>	1/2/3/4/5/8/12/13/14 ^② /18/19/20/ 25/26/27 ^② /28/31/66/71 ^③ /85	1/2/3/4/5/8/12/13/14 ^② /18/19/20/ 25/26/27 ^② / 28/66/71 ^③ /85*
Compatibility	EG91/ UG95/ UG96/ BG95	BG96/ EG91/ UG95/ UG96/ M95	----
Highlight	<ul style="list-style-type: none"> Robust quality 30+ global certifications 	<ul style="list-style-type: none"> Low power consumption 1119 kbps UL (Cat M1) 3.3–4.3 V power supply VoLTE for Cat M1/ CS voice for GSM eSIM 	<ul style="list-style-type: none"> Super compact size (14.9 × 12.9 × 1.7) mm 2.6–4.8 V power supply
Certification	Carrier: Vodafone/ Deutsche Telekom/ Telefónica/ Verizon/ AT&T/ T-Mobile/ Sprint/ U.S. Cellular/ Rogers/ Telus/ SKT/ LGU+/ NTT DOCOMO/ SoftBank/ KDDI/ Telstra Regulatory: GCF/ CE/ FCC/ PTCRB/ IC/ Anatel/ IFETEL/ CCC/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC/ IMDA	<i>All major global carriers</i>	<i>All major global carriers</i>
Promotion Recommendations	<ul style="list-style-type: none"> Quality sensitive customers Asset tracking 	<ul style="list-style-type: none"> Quality sensitive customers Asset tracking 	<ul style="list-style-type: none"> Smart wearables Size-sensitive applications

^{“*”} means under development.

^① LTE B25 supported on BG96 with R1.2 hardware version.

^② Cat M1 bands only ^③ Cat NB2 Bands Only

Quectel LPWA Modules Summary (MP 2)



Module	BC66	BC92
Timeline	MP in Dec. 2018	MP in Feb. 2020
Chipset	MTK MT2625	UNISOC RDA8909B
Mode	Cat NB1	Cat NB2/ GSM
LTE Band	1/2/3/4/5/8/12/13/17/18/19/20/25/28/66/26*	3/5/8/20/28
Compatibility	M66/ BC68	BC95-G/ M95
Highlight	<ul style="list-style-type: none"> • Cost efficiency • Small size • 2.1–3.63 V power supply • eSIM 	<ul style="list-style-type: none"> • GSM voice call* • Built-in ADC temperature detection* • Low power design • DFOTA
Certification	<p>Carrier: Vodafone/ Deutsche Telekom/ AT&T/ T-Mobile/ SoftBank/ Telefonica*/ Verizon*/ Sprint*/ LGU+*/ NTT DOCOMO*/ Telstra*</p> <p>Regulatory: GCF/ CE/ FCC/ PTCRB/ IC/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC/ IMDA</p> <p>Others: ATEX*</p>	<p>Carrier: Vodafone*/ MTN*/ Vodacom</p> <p>Regulatory: GCF*/ CE/ RCM/ ICASA*</p>
Promotion Recommendations	<ul style="list-style-type: none"> • Smart metering/ smoke detector/ tracker • Cost-sensitive customers 	<ul style="list-style-type: none"> • Smart wristband/ smart watch/ student card/ bike sharing/ tracker/ parking/ truck

“*” means under development/planning or ongoing

Quectel LPWA Modules Summary (MP 3)



Module	BC95-G	BC68
Timeline	MP in Jun. 2018	MP in Jun. 2018
Chipset	Hisilicon Hi2115	Hisilicon Hi2115
Mode	Cat NB2	Cat NB2
LTE Band	1/3/5/8/20/28	1/3/5/8/20/28
Compatibility	M95	M66/ BC66
Highlight	<ul style="list-style-type: none"> • Good robustness • Proprietary DFOTA 	<ul style="list-style-type: none"> • Good robustness • Proprietary DFOTA
Certification	Carrier: Vodafone/ Deutsche Telekom/ Telefónica/ KT/ LGU+/ SoftBank/ Telstra Regulatory: GCF/ CE/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC/ IMDA Others: ATEX*	Carrier: Vodafone/ Deutsche Telekom/ Telefónica/ SoftBank/ Telstra Regulatory: GCF/ CE/ NCC/ JATE/ TELEC/ RCM/ IMDA Others: ATEX
Promotion Recommendations	<ul style="list-style-type: none"> • Smart metering/ smoke detector • Customers with high requirements on product maturity 	<ul style="list-style-type: none"> • Smart metering/ smoke detector • Customers with high requirements on product maturity

“**” means under development.

① LTE B25 supported on BG96 with R1.2 hardware version.

Quectel LPWA Modules Summary (Under Development 1)



Module	BG95 Series (excl. BG95-M3)	BG600L-M3
Timeline	BG95-M1: • ES: Jul. 2019 • CS: Feb. 2020	• ES: Feb. 2020 • CS: Apr. 2020
Chipset	Qualcomm MDM9205	Qualcomm MDM9205
Mode	Cat M1/ Cat NB2/ EGPRS/ GNSS/ Wi-Fi	Cat M1/ Cat NB2/ EGPRS/ GNSS
LTE Band	1/2/3/4/5/8/12/13/14 ^① /18/19/20/ 25/26/27 ^① /28/31/66/71 ^② /72/73/85	1/2/3/4/5/8/12/13/14 ^① /17/18/B19/20/ 25/26/27 ^① / 28/66/71 ^② /85
Compatibility	BG96/ EG91/ UG95/ UG96/ M95	MC60
Highlight	<ul style="list-style-type: none"> • Low power consumption • 1119 kbps UL (Cat M1) • 2.6–4.8 V or 3.3–4.3 V power supply • VoLTE for Cat M1/ CS voice for GSM • eSIM • Wi-Fi positioning 	<ul style="list-style-type: none"> • Compact size • VoLTE for Cat M1/ CS voice for GSM • 1119 kbps UL (Cat M1) • 3.3–4.3 V power supply
Certification Plan (depend on customer demands)	<i>All major global carriers</i>	<i>All major global carriers</i>
Promotion Recommendations	<ul style="list-style-type: none"> • Quality sensitive customers • Asset tracking 	<ul style="list-style-type: none"> • Quality sensitive customers • Asset tracking

“” means under development*

① Cat M1 bands only

② Cat NB2 Bands Only

Quectel LPWA Modules Summary (Under Development 2)



Module	BC66-NA	BC950N-N1	BC65
Timeline	<ul style="list-style-type: none"> ES: Jun. 2019 CS: Oct. 2019 	<ul style="list-style-type: none"> ES: Dec. 2019 CS: May 2020 	<ul style="list-style-type: none"> ES: Mar. 2020 CS: May 2020
Chipset	MTK MT2625	MTK MT2625	UNISOC RDA8908A
Mode	Cat NB2	Cat NB1 (450MHz supported) / BLE 5.0 (optional)	Cat NB2
LTE Band	1/2/3/4/5/8/12/13/17/18/19/20/25/28/66/26*/ 71/85	1/2/3/4/5/8/12/13/17/18/19/20/25/26/ 28/66/31	1*/3/5/8/20/28
Compatibility	M66/ BC68/ BC66	BC95-G	BC66/ BC68/ M66
Highlight	<ul style="list-style-type: none"> Cost efficiency Small size 2.1–3.63 V power supply eSIM 	<ul style="list-style-type: none"> Support 450MHz (Band 31) BLE 5.0 (optional) Low power consumption Cost efficiency 	<ul style="list-style-type: none"> Built-in ADC temperature detection* QuecOpen® * Low power design DFOTA
Certification Plan (depend on customer demands)	Carrier: Vodafone/ T-Mobile/ Deutsche Telekom*/ Verizon*/ AT&T*/ Telstra* Regulatory: GCF/ CE/ FCC/ PTCRB/ IC/ JATE/ TELEC/ RCM/ KC*/ NCC*/ NBTC*/ IMDA* Others: ATEX*	Regulatory*: GCF/ CE/ RCM	Regulatory*: CE/ RCM
Promotion Recommendations	<ul style="list-style-type: none"> Smart metering/ smoke detector/ tracker Cost-sensitive customers 	<ul style="list-style-type: none"> Electric/ water/ gas meter Smart home/ agriculture/ city Detector/ tracker Cost-sensitive customers 	Smart wristband/ smart watch/ student card/ bike sharing/ tracker/ parking/ truck

“*” means under development/planning or ongoing

BG96 Highlights



Highlight	Description
Multi Modes	Cat M1/ Cat NB1/ EGPRS
Global Bands	<ul style="list-style-type: none">Cat M1/NB1: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25^①/B26*/B28/B39 (B39 for Cat M1 only)EGPRS: 850/900/1800/1900 MHz
Low Power Consumption	Approx. 10µA in PSM mode
Mobility	Movable application (TX3.0)
Extended Power Supply Range	3.3–4.3 V, 3.8 V typ.
GNSS (Optional)	GPS, GLONASS, BeiDou/Compass, Galileo, QZSS
VoLTE	PCM digital audio interface
QuecOpen®	ARM A7 Processor, with 3MB Flash and 3MB RAM available for users
QuecLocator®*	Location based on base station cell information
Compatibility	Soldering footprint completely compatible with Quectel UG95/UG96/BC95

** means under development.

① LTE B25 supported on BG96 with R1.2 hardware version.

Cat M1/Cat NB1/EGPRS



26.5 mm × 22.5 mm × 2.3 mm

Package: 102-pin LGA

Supply Voltage: 3.3–4.3 V, 3.8 V Typ.

Data Rate:

- LTE Cat M1: Max. 375 kbps (DL), Max. 375 kbps (UL) (Half Duplex)
- LTE Cat NB1: Max. 32 kbps (DL), Max. 70 kbps (UL)
- EGPRS: Max. 296 kbps (DL), Max. 236.8 kbps(UL)
- GPRS: Max. 107 kbps (DL), Max. 85.6 kbps (UL)

Protocols: PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/MQTT

Functions: Data/VoLTE/GNSS/DFOTA/NITZ/PING

Interfaces: (U)SIM/UART/USB/I2C/PCM/ADC/GPIO/Antenna

Power Consumption (Typical): 10 µA @PSM

BG96 Specifications 2

■ LPWA Cat M1/Cat NB1/EGPRS Module



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26.5 mm × 22.5 mm × 2.3 mm
Cat M1: 375 kbps DL/375 kbps UL
Cat NB1: 32 kbps DL/70 kbps UL

Items	Description
Cat M1	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25 ^① /B26*/B28 LTE TDD: B39
Cat NB1	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25 ^① /B26*/B28
EGPRS	850/900/1800/1900 MHz
GNSS	Optional
Region	Global
Certification	Carrier: Vodafone/ Deutsche Telekom/ Telefónica/ Verizon/ AT&T/ T-Mobile/ Sprint/ U.S. Cellular/ Rogers/ Telus/ SKT/ LGU+/ NTT DOCOMO/ SoftBank/ KDDI/ Telstra Regulatory: GCF/ CE/ FCC/ PTCRB/ IC/ Anatel/ IFETEL/ CCC/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC/ IMDA

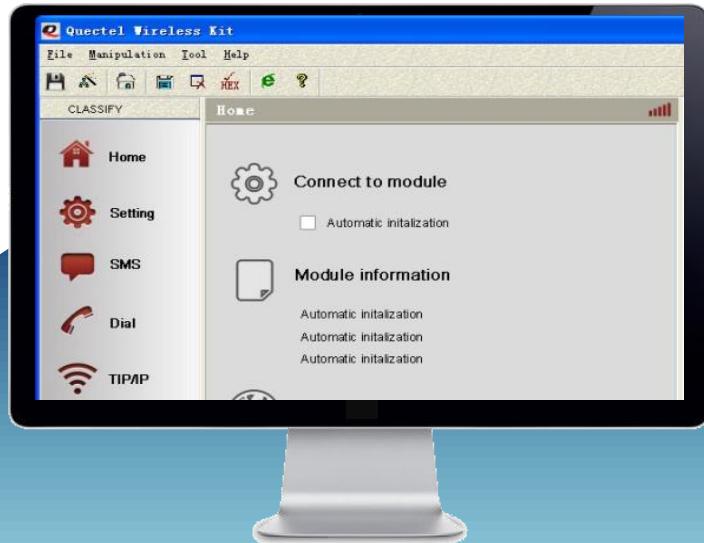
“*” means under development.

^① LTE B25 supported on BG96 with R1.2 hardware version.

BG96 Support Package



eMTC & UMTS & LTE EVB Kit



Quectel offers a GUI tool named **QNavigator**. It can help customers quickly test Quectel module's functionality.



BG95 Series



Model	Mode	Bands	Target Carrier Certifications	Status	ES Available
BG95-M1	Cat M1 Only	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26/B27/B28/B66/B85	All major global carriers	On-going	Jun. 2019
BG95-M2	Cat M1/ Cat NB2	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14 ^① /B18/B19/B20/B25/B26/B27 ^① /B28/B66/B71 ^② /B85	All major global carriers	On-going	Jul. 2019
BG95-M3	Cat M1/ Cat NB2/ EGPRS	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14 ^① /B18/B19/B20/B25/B26/B27 ^① /B28/B66/B71 ^② /B85 EGPRS: 850/900/1800/1900MHz	All major global carriers	On-going	Aug. 2019
BG95-N1	Cat NB2 Only	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66/B71/B85	All major global carriers	On-going	Nov. 2019
BG95-M4	Cat M1/ Cat NB2 (450MHz Supported)	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14 ^① /B18/B19/B20/B25/B26/B27 ^① /B28/ B31 /B66/ B72 / B73 [*] /B85	Major carriers in Europe and Latin America	On-going	Feb. 2020
BG95-M5	Cat M1/ Cat NB2/ EGPRS (Power Class 3)	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14 ^① /B18/B19/B20/B25/B26/B27 ^① /B28/B66/B71*/B85 EGPRS: 850/900/1800/1900MHz	Based on market demand	On-going	Feb. 2020
BG95-MF	Cat M1/ Cat NB2 (Wi-Fi Positioning)	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14 ^① /B18/B19/B20/B25/B26/B27 ^① /B28/B66/B71 ^② /B85 Wi-Fi (Positioning Only): 2.4GHz	Based on market demand	<i>Planning</i>	Apr. 2020

* means under development

^① Cat M1 bands only ^② Cat NB2 bands only

BG95 Series



Model	Mode	Bands	Target Carrier Certifications	Status
BG95-M1	Cat M1 Only	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26/B27/B28/B66/B85	All major global carriers	CS
BG95-M2	Cat M1/ Cat NB2	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14 ^① /B18/B19/B20/B25/B26/B27 ^① /B28/B66/B71 ^② /B85	All major global carriers	CS
BG95-M3	Cat M1/ Cat NB2/ EGPRS	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14 ^① /B18/B19/B20/B25/B26/B27 ^① /B28/B66/B71 ^② /B85 EGPRS: 850/900/1800/1900 MHz	All major global carriers	MP
BG95-N1	Cat NB2 Only	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66/B71/B85	All major global carriers	ES
BG95-M4	Cat M1/ Cat NB2 (450MHz Supported)	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14 ^① /B18/B19/B20/B25/B26/B27 ^① /B28/ B31/B66/B72/B73/B85	Major carriers in Europe and Latin America	ES
BG95-M5	Cat M1/ Cat NB2/ EGPRS (Power Class 3)	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14 ^① /B18/B19/B20/B25/B26/B27 ^① /B28/B66/B71/B85 EGPRS: 850/900/1800/1900 MHz	All major global carriers	ES
BG95-MF	Cat M1/ Cat NB2 (Wi-Fi Positioning)	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14 ^① /B18/B19/B20/B25/B26/B27 ^① /B28/B66/B71 ^② /B85 Wi-Fi (Positioning Only): 2.4 GHz	Based on market demand	<i>Planning</i>

^① Cat M1 bands only

^② Cat NB2 bands only

BG95 Highlights

Highlight	Description
Multi Modes	Cat M1/ Cat NB2/ EGPRS
Rich Product Variants	Support Power Class 3/ Power Class 5 (21 dBm)/ 450 MHz/ Wi-Fi Positioning/ Mini PCIe
Global Bands	<ul style="list-style-type: none">LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14^①/B18/B19/B20/B25/B26/B27^①/B28/B31/B66/B71^②/B72/B73/B85EGPRS: 850/900/1800/1900 MHz
Low Power Consumption	BG95-M3: Approx. 3.9 µA in PSM mode (USB and UART disconnected)
Mobility	Movable application with handover support (Cat M1 only)
PSM Wake-up	Support T3412 expiration and real-time hardware pin wake-up
Extended Power Supply Range ^③	2.6–4.8 V, 3.3 V Typ. (BG95-M1/-M2/-N1) 3.3–4.3 V, 3.8 V Typ. (BG95-M3/-M5) 3.8 V Typ. (BG95-M4)
GNSS (Optional)	GPS, GLONASS, BeiDou, Galileo, QZSS
Voice*	<ul style="list-style-type: none">VoLTE for Cat M1CS voice for GSM
QuecOpen®	Integrated ARM Cortex A7 processor supporting ThreadX
Security*	Comprehensive set of hardware-based security features
Compatibility	Soldering footprint compatible with Quectel BG96/M95
Special Features	SoftSIM/ nuSIM; AWS/ Azure

* means under development

LTE-FDD B31/B72/B73 for BG95-M4 supports Power Class 2.

① Cat M1 bands only ② Cat NB2 Bands Only

③ please refer to the hardware design manual for more specific requirements on power supply voltage

Cat M1/Cat NB2/EGPRS



23.6 mm × 19.9 mm × 2.2 mm

Package: 102-pin LGA

Supply Voltage^①: 2.6–4.8 V, 3.3 V Typ. (BG95-M1/-M2/-N1)
3.3–4.3 V, 3.8 V Typ. (BG95-M3/-M5)
3.8 V Typ. (BG95-M4)

Data Rate:

- LTE Cat M1: Max. 588 kbps (DL), Max. 1119 kbps (UL) (Half Duplex)
- LTE Cat NB2: Max. 127 kbps (DL), Max. 158.5 kbps (UL)
- EGPRS: Max. 296 kbps (DL), Max. 236.8 kbps(UL)
- GPRS: Max. 107 kbps (DL), Max. 85.6 kbps (UL)

Protocols: PPP/ TCP/ UDP/ SSL/ TLS/ FTP(S)/ HTTP(S)/ MQTT/ LwM2M/ CoAP

Functions: Data/ VoLTE*/ GNSS/ DFOTA/ NITZ/ PING/ Jamming Detection*/ Triangle Location

Interfaces: (U)SIM/ eSIM^②/ UART/ USB/ I2C*/ PCM*/ ADC/ GPIO/ GRFC/ Antenna

Power Consumption (Typical): 3.9 µA @ PSM (USB and UART disconnected), BG95-M3

* means under development

① please refer to the hardware design manual for more specific requirements on power supply voltage.

② eSIM is reserved and not included by default.

BG95 Specifications 2

■ LTE Cat M1/Cat NB2/EGPRS Module



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23.6 mm × 19.9 mm × 2.2 mm

**Cat M1: 588 kbps DL/1119 kbps UL
Cat NB2: 127 kbps DL/158.5 kbps UL**

Items	BG95-M1	BG95-M2	BG95-M3	BG95-N1	BG95-M4	BG95-M5	BG95-MF (Planning)	
Cat M1	LTE FDD	B1/B2/B3/B4/B5/B8/ B12/B13/B14/B18/ B19/B20/B25/B26/B 27/B28/B66/B85	B1/B2/B3/B4/B5/B8/ B12/B13/B14/B18/ B19/B20/B25/B26/B 27/B28/B66/B85	B1/B2/B3/B4/B5/B8/ B12/B13/B14/B18/ B19/B20/B25/B26/ B27/B28/B66/B85	/	B1/B2/B3/B4/B5/B8/ B12/B13/B14/B18/ B19/B20/B25/B26/ B27/B28/B31/B66/B72/ B73/B85	B1/B2/B3/B4/B5/B8/ B12/B13/B14/B18/ B19/B20/B25/B26/ B27/B28/B66/B85	B1/B2/B3/B4/B5/B8/ B12/B13/B14/B18/ B19/B20/B25/B26/ B27/B28/B66/B85
Cat NB2	LTE FDD	/	B1/B2/B3/B4/B5/B8/ B12/B13/B18/B19/ B20/B25/B26/B28/B 66/B71/B85	B1/B2/B3/B4/B5/B8/ B12/B13/B18/B19/ B20/B25/B26/B28/ B66/B71/B85	B1/B2/B3/B4/B5/B8/ B12/B13/B18/B19/ B20/B25/B26/B28/ B66/B71/B85	B1/B2/B3/B4/B5/B8/ B12/B13/B18/B19/ B20/B25/B26/B28/ B31/B66/B72/B73/B85	B1/B2/B3/B4/B5/B8/ B12/B13/B18/B19/ B20/B25/B26/B28/ B66/B71/B85	
EGPRS	/	/	850/900/1800/1900MHz	/	/	850/900/1800/1900 MHz	/	
Wi-Fi (For Positioning Only)	/	/	/	/	/	/	2.4 GHz	
GNSS	Optional	Optional	Optional	Optional	Optional	Optional	Optional	
Certification	All major global carriers/ depend on customers' requirements	All major global carriers/ depend on customers' requirements	All major global carriers/ depend on customers' requirements	All major global carriers/ depend on customers' requirements	Major carriers in Europe and Latin America	All major global carriers/ depend on customers' requirements	TBD	

“*” means under development

BG77 Highlights

Highlight	Description
Super Compact Size	14.9 mm × 12.9 mm × 1.7 mm
Dual-Mode	LTE Cat M1/ Cat NB2
Power Class	Support Power Class 5 (21 dBm)
Global Bands	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14 ⁽¹⁾ /B18/B19/B20/B25/B26/B27 ⁽¹⁾ /B28/B66/B71 ⁽²⁾ /B85*
Low Power Consumption	Approx. 3.2 µA in PSM mode
Mobility	Movable application with handover support (Cat M1 only)
PSM Wake-up	Support T3412 expiration and real-time hardware pin wake-up
Extended Power Supply Range ⁽³⁾	2.6–4.8 V, 3.3 V typ.
GNSS (Optional)	GPS, GLONASS, BeiDou, Galileo, QZSS
Voice*	VoLTE (For Cat M1 Only)
QuecOpen®	Integrated ARM Cortex A7 processor supporting ThreadX
Security*	Comprehensive set of hardware-based security features
Special Features	SoftSIM

* means under development

⁽¹⁾ Cat M1 bands only ⁽²⁾ Cat NB2 bands only

⁽³⁾ please refer to the hardware design manual for more specific requirements on power supply voltage

Cat M1/Cat NB2



14.9 mm × 12.9 mm × 1.7 mm

Super Compact Size: 14.9 mm × 12.9 mm × 1.7 mm

Package: 94-pin LGA

Supply Voltage ^①: 2.6–4.8 V, 3.3 V Typ.

Data Rate:

- LTE Cat M1: Max. 588 kbps (DL), Max. 1119 kbps (UL) (Half Duplex)
- LTE Cat NB2: Max. 127 kbps (DL), Max. 158.5 kbps (UL)

Protocols: PPP/ TCP/ UDP/ SSL/ TLS/ FTP(S)/ HTTP(S)/ MQTT/ LwM2M/ CoAP

Functions: Data/ VoLTE*/ GNSS/ DFOTA/ NITZ/ PING/ Jamming Detection*/ Triangle Location

Interfaces: (U)SIM/ UART/ USB/ I2C*/ PCM*/ ADC/ GPIO/ GRFC/ Antenna

Power Consumption (Typical): 3.2 µA @ PSM (USB and UART disconnected)

* means under development

① please refer to the hardware design manual for more specific requirements on power supply voltage.

BG77 Specifications 2

■ LTE Cat M1/Cat NB2 Module



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14.9 mm × 12.9 mm × 1.7 mm
Cat M1: 588 kbps DL/1119 kbps UL
Cat NB2: 127 kbps DL/158.5 kbps UL

Items	BG77
Cat M1	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26/B27/B28/B66/B85*
Cat NB2	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66/B71/B85*
EGPRS	/
GNSS	Optional
Certification	All major global carriers

“” means under development*

BG600L-M3 Highlights



Highlight	Description
Multi Modes	Cat M1/ Cat NB2/ EGPRS
Global Bands	<ul style="list-style-type: none">LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14^①/B18/B19/B20/B25/B26/B27^①/B28/B66/B71^②/B85EGPRS: 850/900/1800/1900MHz
Power Class	Support Power Class 5 (21 dBm)
Low Power Consumption	TBD in PSM mode
Mobility	Movable application with handover support (Cat M1 only)
PSM Wake-up	Support T3412 expiration and real-time hardware pin wake-up
Extended Power Supply Range	3.3–4.3 V, 3.8 V typ.
GNSS* (Optional)	GPS, GLONASS, BeiDou, Galileo, QZSS
Voice*	VoLTE (For Cat M1 Only), CS voice for GSM
QuecOpen®*	Integrated ARM Cortex A7 processor supporting ThreadX
Security*	Comprehensive set of hardware-based security features
Compatibility	Compatible with Quectel MC60

* means under development

^① Cat M1 bands only

^② Cat NB2 bands only

Cat M1/Cat NB2/EGPRS



18.7 mm × 16.0 mm × 2.1 mm

Small Size: 18.7 mm × 16.0 mm × 2.1 mm

Package: 68-pin LGA

Supply Voltage: 3.3–4.3 V, 3.8 V Typ.

Data Rate:

- LTE Cat M1: Max. 588 kbps (DL), Max. 1119 kbps (UL) (Half Duplex)
- LTE Cat NB2: Max. 127 kbps (DL), Max. 158.5 kbps (UL)

Protocols*: PPP/ TCP/ UDP/ SSL/ TLS/ FTP(S)/ HTTP(S)/ MQTT/ CoAP

Functions*: Data/ VoLTE/ GNSS/ DFOTA/ NITZ/ PING/ Jamming Detection/ Triangle Location

Interfaces: (U)SIM/ UART/ USB/ I2C*/ PCM*/ ADC/ GPIO*/ GRFC*/ Antenna

Power Consumption (Typical): TBD @ PSM

* means under development

BG600L-M3 Specifications 2

■ LTE Cat M1/Cat NB2/EGPRS Module



18.7 mm × 16.0 mm × 2.1 mm
Cat M1: 588 kbps DL/1119 kbps UL
Cat NB2: 127 kbps DL/158.5 kbps UL

Items	BG600L-M3
Cat M1	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26/B27/B28/B66/B85
Cat NB2	LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66/B71/B85
EGPRS	850/900/1800/1900 MHz
GNSS*	Optional
Certification	All major global carriers/ depend on customers' requirements

* means under development

BC66 Highlights



LTE Cat NB1
25.5 kbps DL / 62.5 kbps UL

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Highlight	Description
Global Bands	B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B26*/B28/B66
Rich Hardware Interfaces	USB/ UART/ SPI ^① / I2S ^① / I2C ^① / USIM/ ADC/ NETLIGHT/ PSM_EINT/ PWRKEY/ RESET
Abundant Protocols	UDP/ TCP/ LwM2M/ MQTT/ SNTP/ DTLS/ TLS/ PPP*/ CoAP*/ HTTP*/ HTTPS*
Special Features	QuecOpen®, DFOTA, eSIM ^②
Low Power Consumption	3.5 µA (PSM), 0.24 mA (eDRX), 0.35 mA (DRX), 110 mA (Active, 23dBm) <small>Average Value</small>
QuecLocator®*	Location based on base station cell information
Power Supply Feature	Low power supply voltage (2.1–3.63 V, 3.3 V typ.)
Wake-up Feature	Specialized PSM_EINT for module wake-up via external interrupt
Compatibility	Compatible with Quectel GSM module M66 and Quectel NB-IoT module BC68/ BC66-NA/ BC65

* means under development.

① means supported only on QuecOpen® version.

② eSIM is reserved and not included by default.

BC66 Main Interfaces

Interface	Description
USB	1
USIM	1
UART	3 (Main/Debug/Auxiliary UART)
PSM_EINT	1 (wake up device via external interrupt)
ADC	1 (10 bits)
RESET	1
PWRKEY	1
NETLIGHT	1
Antenna Pad	1
SPI	1 (for QuecOpen [®] version only)
I2C	1 (for QuecOpen [®] version only)
I2S	1 (for QuecOpen [®] version only)
GPIO	Configurable (for QuecOpen [®] version only)

BC66 Main Functions



Function	Description
Protocols	UDP/ TCP/ LwM2M/ MQTT/ SNTP/ DTLS/ TLS/ PPP*/ CoAP*/ HTTP*/ HTTPS*
SMS*	Text and PDU mode
DFOTA	Delta firmware upgrade over-the-air
eSIM	Supported ^①
QuecOpen®	<ul style="list-style-type: none">ROM: 200 KB for APP image binRAM: 400 KB (100 KB static memory and 300 KB dynamic memory)

* means under development.

① eSIM is reserved and not included by default. If needed, a different OC will be provided.

BC66 Highlights



LTE Cat NB1
25.5 kbps DL / 62.5 kbps UL

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Highlight	Description
Global Bands	B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B26*/B28/B66
Rich Hardware Interfaces	USB/ UART/ SPI ^① / I2S ^① / I2C ^① / USIM/ ADC/ NETLIGHT/ PSM_EINT/ PWRKEY/ RESET
Abundant Protocols	UDP/ TCP/ LwM2M/ MQTT/ SNTP/ DTLS/ TLS/ PPP*/ CoAP*/ HTTP*/ HTTPS*
Special Features	QuecOpen®, DFOTA, eSIM ^②
Low Power Consumption	3.5 µA (PSM), 0.24 mA (eDRX), 0.35 mA (DRX), 110 mA (Active, 23dBm) <small>Average Value</small>
QuecLocator®*	Location based on base station cell information
Power Supply Feature	Low power supply voltage (2.1–3.63 V, 3.3 V typ.)
Wake-up Feature	Specialized PSM_EINT for module wake-up via external interrupt
Compatibility	Compatible with Quectel GSM module M66 and Quectel NB-IoT module BC68/ BC66-NA/ BC65

* means under development.

① means supported only on QuecOpen® version.

② eSIM is reserved and not included by default.

BC66 Main Interfaces

Interface	Description
USB	1
USIM	1
UART	3 (Main/Debug/Auxiliary UART)
PSM_EINT	1 (wake up device via external interrupt)
ADC	1 (10 bits)
RESET	1
PWRKEY	1
NETLIGHT	1
Antenna Pad	1
SPI	1 (for QuecOpen [®] version only)
I2C	1 (for QuecOpen [®] version only)
I2S	1 (for QuecOpen [®] version only)
GPIO	Configurable (for QuecOpen [®] version only)

BC66 Main Functions



Function	Description
Protocols	UDP/ TCP/ LwM2M/ MQTT/ SNTP/ DTLS/ TLS/ PPP*/ CoAP*/ HTTP*/ HTTPS*
SMS*	Text and PDU mode
DFOTA	Delta firmware upgrade over-the-air
eSIM	Supported ^①
QuecOpen®	<ul style="list-style-type: none">ROM: 200 KB for APP image binRAM: 400 KB (100 KB static memory and 300 KB dynamic memory)

* means under development.

① eSIM is reserved and not included by default. If needed, a different OC will be provided.

BC66 Development Schedule

2018		2019			2020	
Q4	Q1	Q2	Q3	Q4	Q1	Q2
MP (I)		MP (II)		MP (III)	MP (IV)	MP (V)
Version: BC66NBR01A06		Version: BC66NBR01A07		Version: BC66NBR01A10	Version: BC66NBR02A02 SBK	Version: BC66NBR03A0x
<ul style="list-style-type: none"> • TCP/IP • UDP • LwM2M • MQTT • DFOTA • QuecOpen® 		<ul style="list-style-type: none"> • Platform optimization and issue fix • Add T-Mobile LwM2M new request 		<ul style="list-style-type: none"> • SSL/TLS • MQTTS • SMS* • LwM2M optimization • Platform optimization and issue fix 	<ul style="list-style-type: none"> • SSL/TLS • Softbank customization requirements • Platform optimization and issue fix 	<ul style="list-style-type: none"> • SMS • HTTP(S) • CoAP • Platform optimization and issue fix
Completed: Vodafone/ Deutsche Telekom/ PTCRB		Completed: T-Mobile		Completed: T-Mobile MR	Completed: SoftBank	Plan for: AT&T MR/ T-Mobile MR/ Telstra MR

The timeline will be adjusted according to the actual development status.

BC66 Timeline (1)

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

Project Stage

BC66 MP

Carrier Certification Schedule

Vodafone/ Deutsche Telekom/ AT&T/ T-Mobile/ SoftBank

Completed

Telefónica

Start

Complete (Planned)

Verizon



Sprint



NTT DOCOMO



Telstra



LGU+



TBD



TBD

BC66 Timeline (2)

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

Project Stage

BC66 MP

Regulatory/Other Certification Schedule

GCF/ CE/ FCC/ PTCRB/ IC/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC/ IMDA

Completed

ATEX

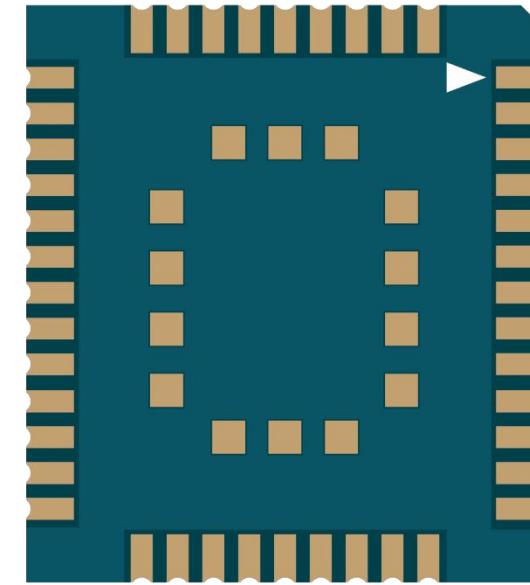
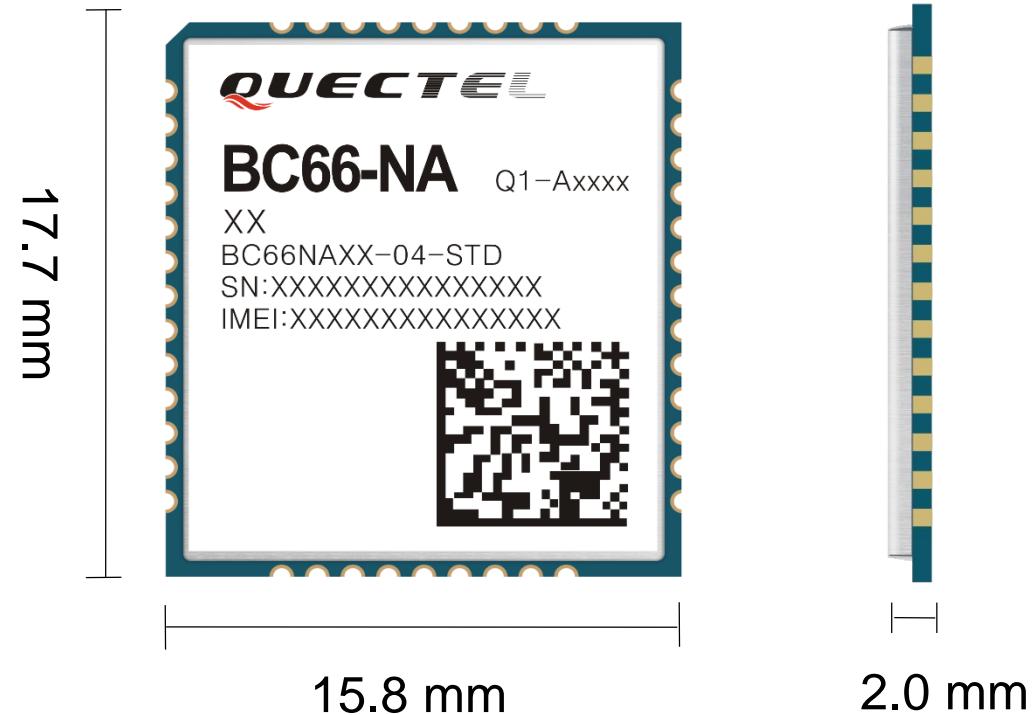
Start

Complete (Planned)

BC66-NA Mechanical Dimensions

Multi-Band Cat NB2 Module (MTK MT2625)

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Length: 17.7 mm (± 0.15 mm)
Width: 15.8 mm (± 0.15 mm)
Height: 2.0 mm (± 0.2 mm)
Weight: Approx. 1.2 g

BC66-NA Highlights



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LTE Cat NB2
103 kbps DL/151 kbps UL

Highlight	Description
Global Bands	B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B26*/B28/B66/B71/B85
Rich Hardware Interfaces	USB/ UART/ SPI ^① / I2S ^① / I2C ^① / USIM/ ADC/ NETLIGHT/ PSM_EINT/ PWRKEY/ RESET
Abundant Protocols	UDP/ TCP/ LwM2M/ MQTT/ SNTP/ DTLS/ TLS/ PPP*/ CoAP*/ HTTP*/ HTTPS*
Special Features	QuecOpen®, DFOTA, ECID OTDOA, eSIM ^②
Low Power Consumption	3.5 µA (PSM), 0.13 mA (eDRX), 0.25 mA (DRX), 95 mA (Active, 23dBm) <small>Average Value</small>
QuecLocator®*	Location based on base station cell information
Power Supply Feature	Low power supply voltage (2.1–3.63 V, 3.3 V typ.)
Wake-up Feature	Specialized PSM_EINT for module wake-up via external interrupt
Compatibility	Compatible with Quectel GSM module M66 and Quectel NB-IoT module BC68/ BC66/ BC65

* means under development.

① means supported only on QuecOpen® version.

② eSIM is reserved and not included by default.

BC66-NA Main Interfaces

Interface	Description
USB	1
USIM	1
UART	3 (Main/Debug/Auxiliary UART)
PSM_EINT	1 (wake up device via external interrupt)
ADC	1 (10 bits)
RESET	1
PWRKEY	1
NETLIGHT	1
Antenna Pad	1
SPI	1 (for QuecOpen [®] version only)
I2C	1 (for QuecOpen [®] version only)
I2S	1 (for QuecOpen [®] version only)
GPIO	Configurable (for QuecOpen [®] version only)

BC66-NA Main Functions

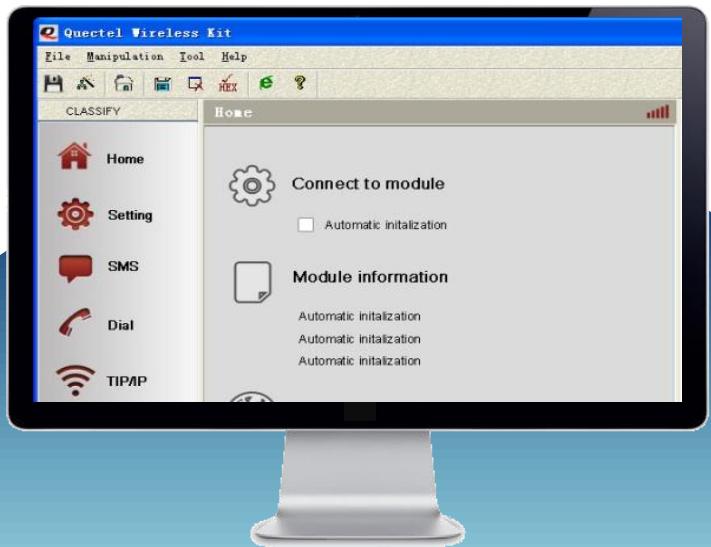


Function	Description
Protocols	UDP/ TCP/ LwM2M/ MQTT/ SNTP/ DTLS/ TLS/ PPP*/ CoAP*/ HTTP*/ HTTPS*
SMS*	Text and PDU mode
OTDOA*	Observed Time Difference of Arrival
DFOTA	Delta firmware upgrade over-the-air
eSIM	Supported ^①
QuecOpen®	<ul style="list-style-type: none">ROM: 200KB for APP image binRAM: 400KB (100KB static memory and 300KB dynamic memory)

* means under development.

① eSIM is reserved and not included by default. If needed, a different OC will be provided.

BC66/BC66-NA Support Package



Quectel offers a GUI tool named **QNavigator**. It can help customers quickly test Quectel module's functionality.

TE-B Kit



BC950N-N1 Highlights



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Highlight	Description
LTE Cat NB1 with Band 31	B1/ B2/ B3/ B4/ B5/ B8/ B12/ B13/ B17/ B18/ B19/ B20/ B25/ B26/ B28/ B66/ B31 (450 MHz supported)
Hardware Platform	<ul style="list-style-type: none">• 78MHz ARM® Cortex®-M4• Embedded 32 Mbits Flash + Embedded 32 Mbits PSRAM
BT Function*	BLE 5.0 (Optional)
Rich Hardware Interfaces	UART/ USIM/ PSM_EINT/ PWRKEY/ RESET/ ADC/ NETLIGHT/ USB
Abundant Internet Protocols	UDP/ TCP/ SNTP/ LwM2M/ MQTT/ MQTT(s)*/ TLS*/ CoAP(s)*/ HTTP(s)*/ PPP*
Enhanced Features	QuecOpen®, DFOTA
Compatibility	Compatible with Quectel NB-IoT module BC95-G

“*” means under development.

BC950N-N1 Main Interfaces

Interfaces	Description
USIM	1
UART	4
USB	1
PSM_EINT	1 (wake up device via external interrupt)
ADC	1 (10 bits)
RESET	1
PWRKEY	1
NETLIGHT	1
Antennas	2 (main antenna and BT* antenna)
I2C	1 (for QuecOpen [®] version only)
SPI	1 (for QuecOpen [®] version only)
GPIO	Configurable (for QuecOpen [®] version only)

^{“*”} means under development.

BC950N-N1 Main Functions



Function	Description
Protocols	UDP/TCP/SNTP/LwM2M/MQTT/MQTT(s)*/TLS*/ CoAP(s)*/ HTTP(s)*/PPP*
SMS*	Text and PDU modes
DFOTA	Delta Firmware Upgrade Over-The-Air

“*” means under development.

BC65 Highlights



LTE Cat NB1:
Max 25.5kbps (DL)/ 62.5kbps (UL)
LTE Cat NB2:
Max.127kbps (DL)/158.5kbps (UL)

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Build a Smarter World

Highlight	Description
Global Bands	B1*/B3/B5/B8/B20/B28
Data Rate	<ul style="list-style-type: none">LTE Cat NB1: Max. 25.5kbps (DL)/ 62.5kbps (UL)LTE Cat NB2: Max.127kbps (DL)/158.5kbps (UL)
Rich Hardware Interfaces	UART/USIM/PSM_EINT/ADC*/RESET/PWRKEY/RI*/NETLIGHT/Antenna/SPI ^{①*} /PWM ^{①*} /I2C ^{①*} /DCD ^{①*} /GPIO ^{①*}
Abundant Protocols	UDP/TCP/LwM2M*/SNTP/FTP*/MQTT/CoAP*/PPP/TLS*/DTLS*/HTTP*
eSIM Supported	eSIM ^② reserved to support customization
Power Supply Feature	Supply Voltage: 3.2V~4.2V, 3.8V Typ.
Wake-up Feature	Specialized PSM_EINT for module wake-up via external interrupt
Special Features	<ul style="list-style-type: none">Built-in ADC temperature detection*QuecOpen[®]*Low power designDFOTA
Compatibility	Compatible with Quectel GSM module M66 and Quectel NB-IoT module BC66/BC68

* means under development.

① means supported only on QuecOpen[®] version.

② eSIM is reserved but not included by default.

BC65 Main Interfaces

Interface	Description
USIM	1
UART	3 (Main/Debug/Auxiliary UART)
PSM_EINT	1 (wake up device via external interrupt)
ADC*	1 (10 bits)
RESET	1
PWRKEY	1
RI*	1
NETLIGHT	1
Antenna	1
SPI*	1 (for QuecOpen® version only)
PWM*	1 (for QuecOpen® version only)
DCD*	1 (for QuecOpen® version only)
I2C*	1 (for QuecOpen® version only)
GPIO*	Configurable (for QuecOpen® version only)

* means under development.

BC65 Main Functions



Function	Description
Protocols	UDP/TCP/LwM2M*/SNTP/FTP*/MQTT/CoAP*/PPP/TLS*/DTLS*/HTTP*
SMS*	Text and PDU mode
DFOTA	Delta Firmware Upgrade Over-The-Air
eSIM	Supported ^①
Power Supply	Range: 3.4V~4.2V Typical: 3.8V

* means under development.

① eSIM is reserved but not included by default. If needed, a different OC will be provided.

BC92 Highlights



LTE Cat NB2/GSM

LTE Cat NB1: Max. 25.5kbps (DL)/ 62.5kbps (UL)

LTE Cat NB2: Max. 127kbps (DL)/ 158.5kbps (UL)

GSM: Max. 85.6kbps (DL)/ 85.6kbps (UL)



Highlight	Description
Global Bands / Dual Mode	<ul style="list-style-type: none">LTE Cat NB2: B3/ B5/ B8/ B20/ B28GSM: 850/ 900/ 1800/ 1900MHz
Data Rate	<ul style="list-style-type: none">LTE Cat NB1: Max. 25.5kbps (DL)/ 62.5kbps (UL)LTE Cat NB2: Max. 127kbps (DL)/ 158.5kbps (UL)GSM: Max. 85.6kbps (DL)/ 85.6kbps (UL)
Rich Hardware Interfaces	UART/ USIM/ ADC*/ NETLIGHT/ PSM_EINT/ PWRKEY/ RI/ RESET/ Audio*/ Antenna
Abundant Protocols	UDP/ TCP/ LwM2M/ SNTP/ PPP/ MQTT/ CoAP*/ HTTP*/ HTTPS*/ FTP*
Power Supply Feature	Supply Voltage: 3.4V~4.2V, 3.8V Typ.
Wake-up Feature	Specialized PSM_EINT for module wake-up via external interrupt
QuecLocator®	Location based on base station cell information
Special Features	<ul style="list-style-type: none">GSM voice call*Built-in ADC temperature detection*Low power designDFOTA
Compatibility	Compatible with Quectel GSM module M95 and Quectel NB-IoT module BC95-G and Quectel LPWA BG95 module

* means under development.

BC92 Main Interfaces



Interface	Description
USIM	2 (USIM1 supports NB-IoT/GSM, USIM2* only supports GSM)
UART	2 (Main, Debug)
PSM_EINT	1 (External Wake-up pin)
ADC*	1 (10 bits)
RESET	1
PWRKEY	1
RI	1
NETLIGHT	1
Antenna	1
Audio*	3 (1 MIC differential input, 1 SPK differential output and 1 LOUDSPK differential output)

* means under development.

BC92 Main Functions



Function	Description
Protocols	UDP/ TCP/ LwM2M/ SNTP/ PPP/ MQTT/ CoAP*/ HTTP*/ HTTPS*/ FTP*
SMS*	Text and PDU mode
DFOTA	Delta Firmware Upgrade Over-The-Air
Power Supply	Range: 3.4V~4.2V Typical: 3.8V
Voice Call*	GSM voice call

* means under development.

LTE Cat NB2 (NB-IoT) BC95-G/BC68 Specifications



23.6mm x 19.9mm x 2.2mm
LTE Cat NB2



17.7mm x 15.8mm x 2.0mm
LTE Cat NB2

Module	BC95-G	BC68
LTE	B1/B3/B8/B5/B20/B28 @LTE-FDD	B1/B3/B8/B5/B20/B28 @LTE-FDD
Supply Voltage	3.1V~4.2V, 3.6V Typ.	3.1V~4.2V, 3.6V Typ.
Dimension	23.6mm x 19.9mm x 2.2mm	17.7mm x 15.8mm x 2.0mm
Region	Global	Global
Certification	Carrier: Vodafone/ Deutsche Telekom/ Telefónica/ KT/ LGU+/ SoftBank/ Telstra Regulatory: GCF/ CE/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC /IMDA Others: ATEX*	Carrier: Vodafone/ Deutsche Telekom/ Telefónica/ SoftBank/ Telstra Regulatory: GCF/ CE/ NCC/ JATE/ TELEC/ RCM/ IMDA Others: ATEX

** means under development.

BC95-G/BC68 Features



Item	BC95-G/ BC68	
Chipset	Boudica 150 (Hi2115)	
Band	Multi band (698MHz-960MHz, 1695MHz-2180MHz) B1/B3/B8/B5/B20/B28	
LCC Package	<ul style="list-style-type: none">BC95-G: 23.6mm x 19.9mm x 2.2mmBC68: 17.7mm x 15.8mm x 2.0mm	
Data Rate	Single Tone	DL: 25.2kbps; UL: 15.625kbps
	Multi Tone	DL: 25.2kbps; UL: 54kbps
	Extended TBS/2 HARQ	DL: 125kbps; UL: 150kbps
Protocols	IPv4/IPv6/UDP/CoAP/LwM2M/Non-IP/DTLS/TCP/MQTT	
Power Consumption (Typical)	<ul style="list-style-type: none">3µA @PSM0.5mA @Idle Mode, DRX=2.56s, ECL0250mA @Tx, 23dBm (B1/B3)220mA @Tx, 23dBm (B8/B5/B20)280mA @Tx, 23dBm (B28)130mA @Tx, 12dBm (B1/B3/B8/B5/B20/B28)70mA @Tx, 0dBm (B1/B3/B8/B5/B20/B28)60mA @Rx	

BC95-G/BC68 Enhanced Features



Feature	Description
NB-IoT Network	Cat NB1 / Cat NB2
Global Bands	B1 / B3 / B5 / B8 / B20 / B28
Low Power Consumption	PSM and eDRX features realize ultra-low power consumption and extended battery life; 3µA @PSM; 0.5mA @Idle Mode, DRX=2.56s, ECL0; Max 220mA @Tx, 23dBm; 60mA @Rx
Abundant Protocols	IPv4 / IPv6 / UDP / CoAP / LwM2M / Non-IP / DTLS / TCP / MQTT
Special Features	DFOTA (proprietary algorithm), QuecOpen®, eSIM
Security	TEE Security, Digital Signature*
Compatibility	Compatible with various other Quectel modules in packaging
Extensive Experience	Over 10 million shipments, five-hundred-customer foundation; Customers can deploy commercial products more quickly and stably. Millions of terminals have been functioning well with Quectel NB-IoT modules, and such applications includes smart meters, trackers and smart NB-IoT white goods, etc.

“” means under development.*

BC95-G/BC68 Baseline Features



B300 (3GPP Rel-13) Software Functions:

- **R01A0x:**
TCP/ UDP/ SMS/ Non-IP/ NITZ/ PING/ DNS/ DFOTA/ LwM2M/ DTLS/ Basic CoAP/ MQTT
- **QuecOpen[®]**

B500 (3GPP Rel-14) New Features:

- Cat-NB2
- New Power Class
- OTDOA
- Multi PRB (Non-anchor)
- Extended TBS / 2 HARQ
- Mobility Enhancement

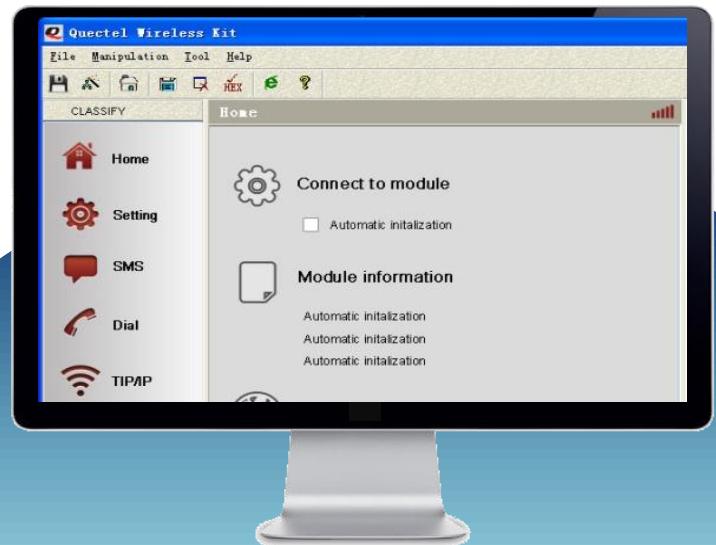
Software Functions:

- **R02A0x:**
TCP/ UDP/ SMS/ Non-IP/ NITZ/ PING/ DNS/ DFOTA/ LwM2M/ DTLS/ Basic CoAP/ MQTT

BC95-G/BC68 Support Package



EVB Kit

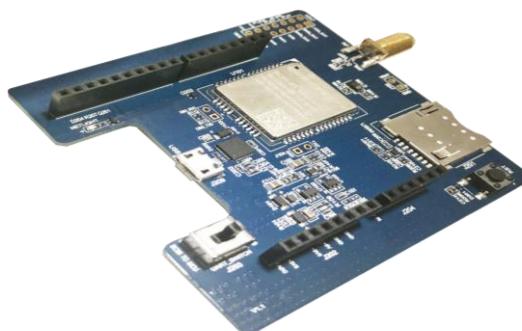


Quectel offers a GUI tool named **Qnavigator** to help customers quickly test Quectel module's functionality.



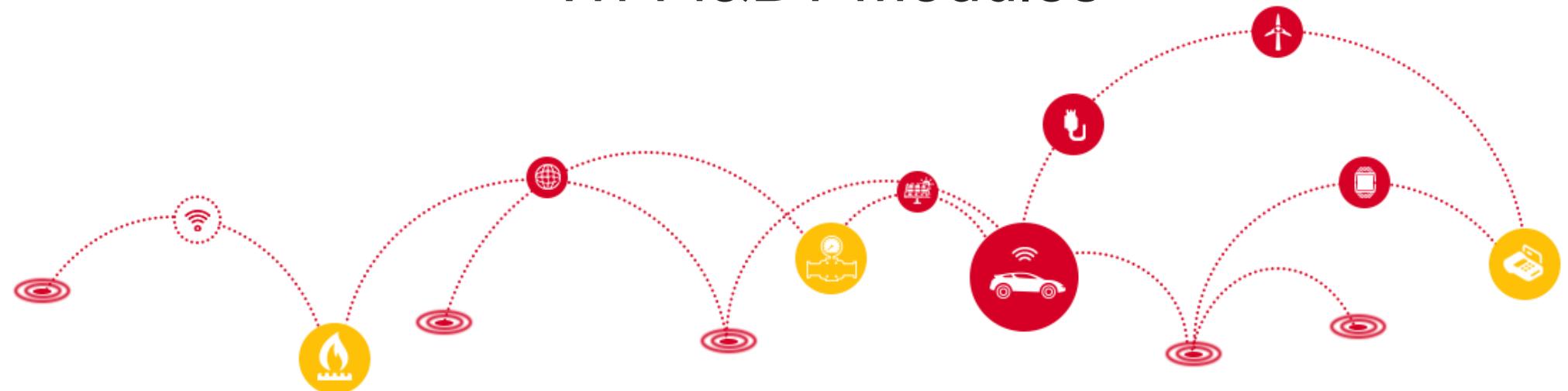
TE-B

(USB interface for power supply and debugging & Arduino interface)



LTE Standard Modules
LTE-A & 5G Modules
Automotive Modules
Smart Modules

LPWA Modules
UMTS/HSPA(+) Modules
GSM/GPRS Modules
GNSS Modules
Wi-Fi&BT Modules



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

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2015

2019

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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

■ UMTS/HSPA+ Module



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

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 Mini PCIe Specifications

■ UMTS/HSPA+ Module



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

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

UG96 Specifications

■ UMTS/HSPA Module



QUECTEL[®]
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**26.5mm × 22.5mm × 2.2mm
7.2Mbps DL / 5.76Mbps UL**

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	Carrier: Deutsche Telekom/ Telefonica Regulatory: GCF/ CE/ FCC/ PTCRB/ IC/ Anatel/ IFETEL/ CCC/ JATE/ TELEC/ RCM/ FAC/ ICASA

UC15 Specifications



QUECTEL[®]
Build a Smarter World

■ 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/ SMTSP/ 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	Regulatory: GCF/ CE/ SRRC/ NAL/ CCC/ NCC/ OFCA/ FAC	Carrier: AT&T/ Rogers Regulatory: FCC/ PTCRB/ IC	Regulatory: RCM/ NBTC

Support Package (UG96/UC200T)

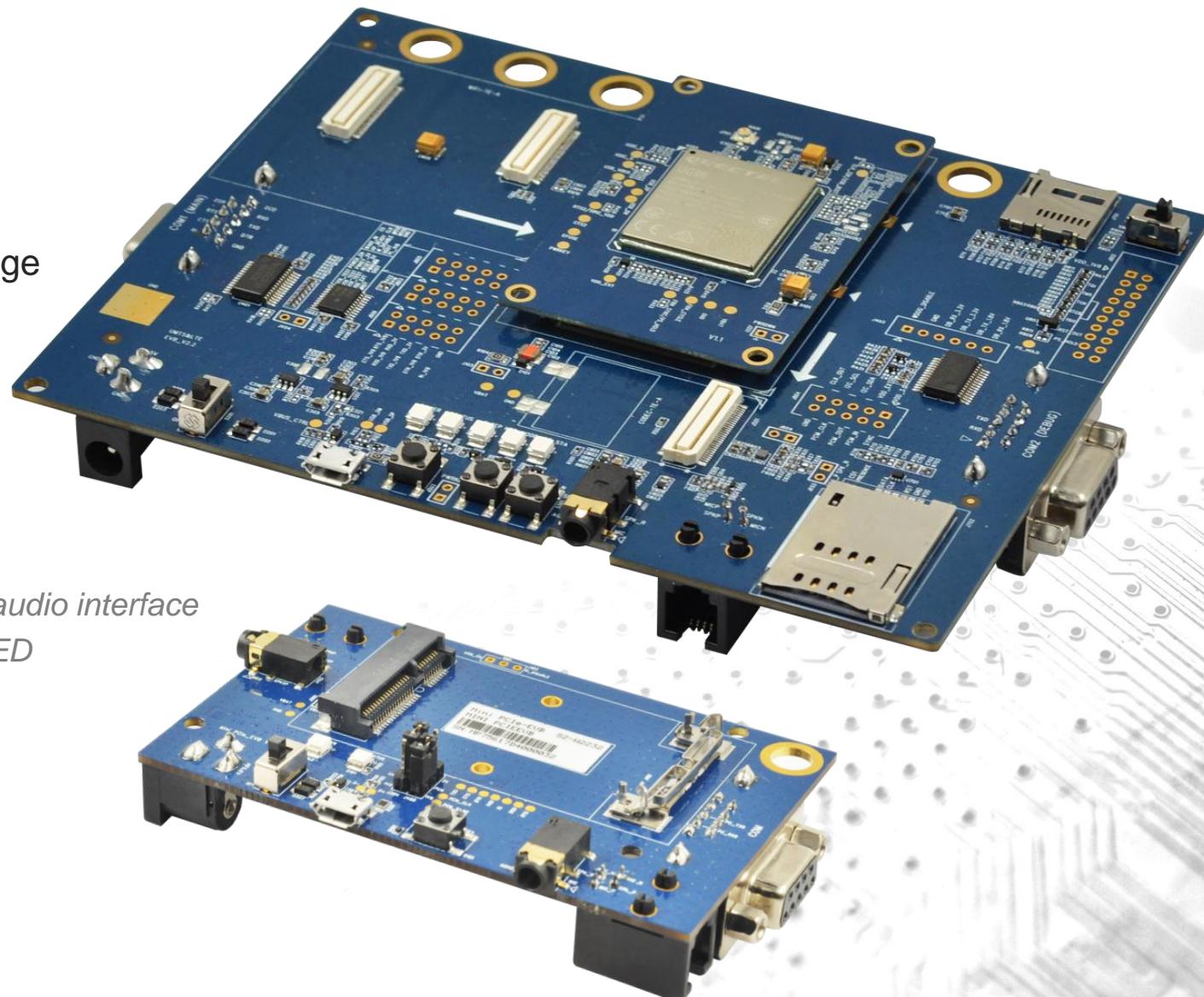


Technical Materials Package

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

Development Tool (UMTS<E EVB Kit)

- Interfaces
 - a) RS-232 interfaces
 - b) USB interface
 - c) Power supply
 - d) Antenna interface
 - e) Handset interface
 - f) Earphone interface
 - g) Test points
- Features
 - a) Digital or analog audio interface
 - b) Network status LED
 - c) Power key
 - d) Reset key



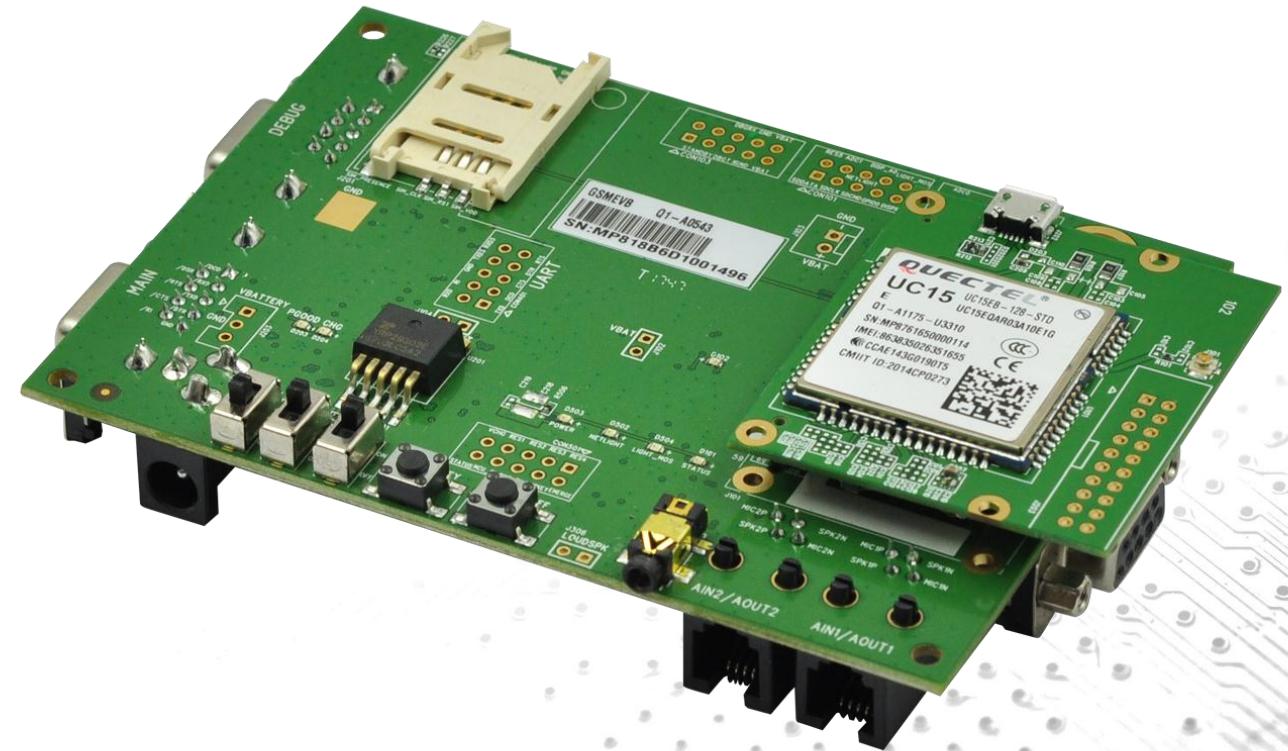
Support Package (UC15)

Technical Materials Package

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

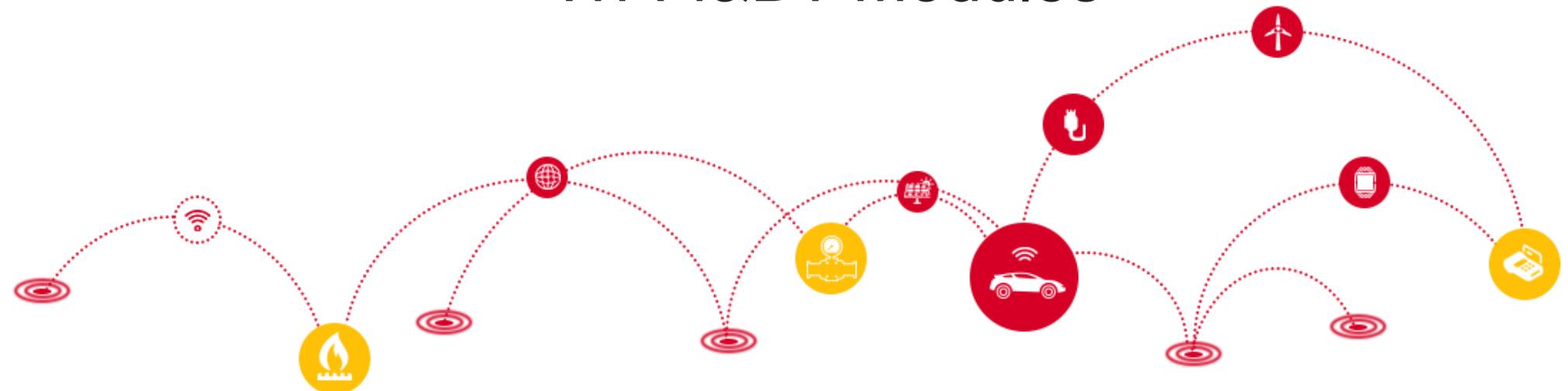
Development Tool (GSM EVB Kit)

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

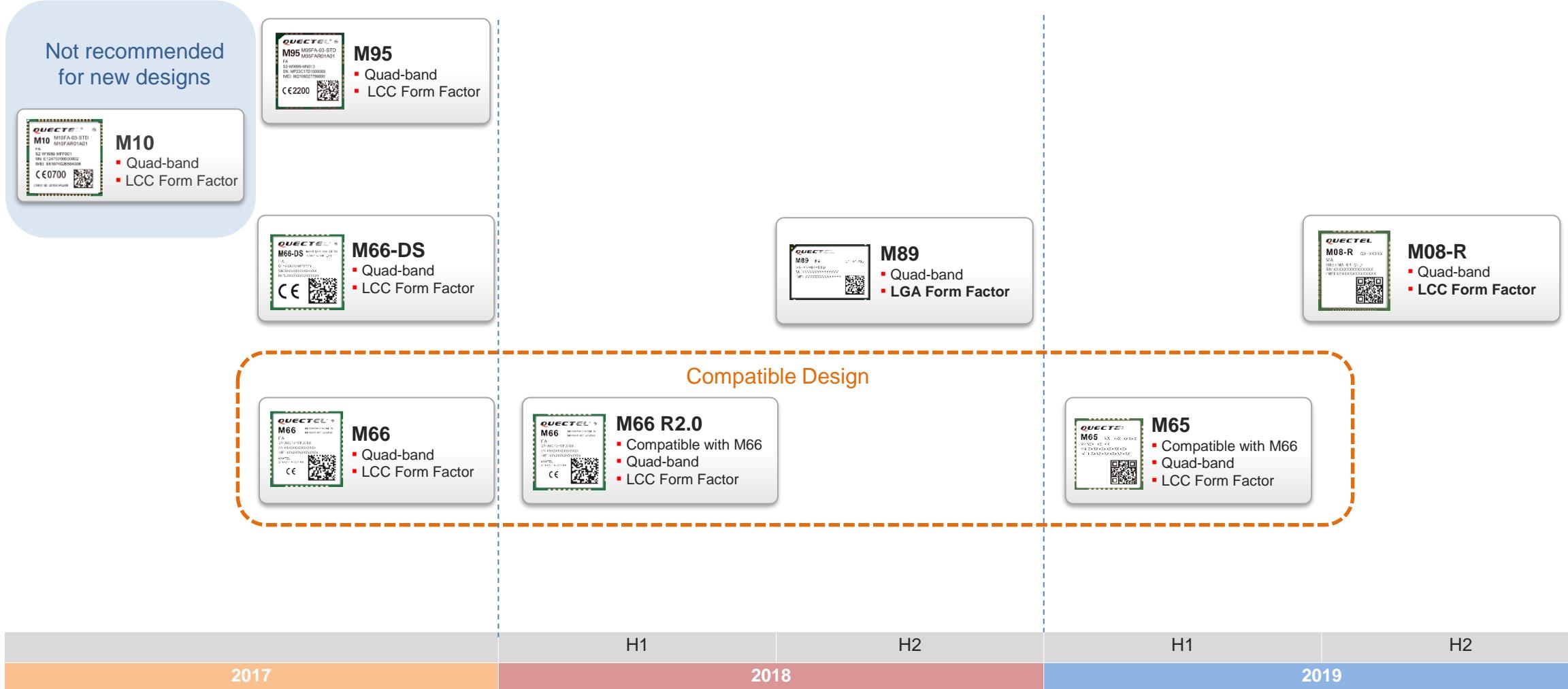


LTE Standard Modules
LTE-A & 5G Modules
Automotive Modules
Smart Modules

LPWA Modules
UMTS/HSPA(+) Modules
GSM/GPRS Modules
GNSS Modules
Wi-Fi&BT Modules



GSM Modules Roadmap



M89 Specifications



18.8mm × 26.7mm × 2.3mm
GPRS Multi-slot Class 12
85.6kbps DL/ 85.6kbps UL

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Model	M89
Quad-Band	850/ 900/ 1800/ 1900MHz
Dimension	18.8mm × 26.7mm × 2.3mm
Data Rate	85.6kbps DL/ 85.6kbps UL
Supply Voltage	3.3V~4.6V, 4.0V Typ.
Consumption	3.0mA @DRX=5 3.0mA @DRX=9
SMS/Voice	Supported
Interfaces	(U)SIM/ UART/ Audio/ RTC/ GPIO/ Antenna
Protocols	TCP/ UDP/ PPP/ FTP/ HTTP(S)/ POP3/ SMTP(S)/ USSD/ QNTP/ QPING/ SSL
Features	eCall DTMF Audio Play/ Audio Recording QuecFOTA® QuecFile CMUX SSL
Certification	Regulatory: CE/ Anatel

M08-R Specifications



17.6mm × 15.7mm × 2.4mm

GPRS Multi-slot Class 12

85.6kbps DL/ 85.6kbps UL

QUECTEL[®]
Build a Smarter World

Model	M08-R
Quad-Band	850/900/1800/1900MHz
Dimension	17.6mm × 15.7mm × 2.4mm
Data Rate	85.6kbps DL/ 85.6kbps UL
Supply Voltage	3.45V~4.25V, Typ. 4.0V
Consumption	1.3mA ^① @DRX=5 1.2mA ^① @DRX=9
SMS/Voice	Supported
Interfaces	(U)SIM/ UART/ RTC/ Audio/ GSM Antenna
Protocols	TCP/ UDP/ PPP/ HTTP/ NTP/ PING/ TTS/ FTP/ SSL/ HTTPS/ MQTT/ IPv6*
Features	Audio Playing/ Audio Recording QuecCell QuecFOTA® DFOTA QuecFile CMUX QuecOpen® QuecLocator®
Certification	Regulatory: CE

“*” means under development.

① means average value, for reference only.

M66/M66-DS/M66 R2.0/M65 Specifications



17.7mm × 15.8mm × 2.3mm

GPRS Multi-slot Class 12

85.6kbps DL / 85.6kbps UL

QUECTEL®
Build a Smarter World

Model	M66	M66-DS	M66 R2.0	M65
Platform	MT6261D	MT6261D	MT6261M	RDA8955L
Quad-band	850/ 900/ 1800/ 1900MHz	850/ 900/ 1800/ 1900MHz	850/ 900/ 1800/ 1900MHz	850/ 900/ 1800/ 1900MHz
Supply Voltage	3.3V~4.6V, 4.0V Typ.	3.3V~4.6V, 4.0V Typ.	3.3V~4.6V, 4.0V Typ.	3.45V~4.25V, 4.0V Typ.
Consumption	1.3mA @DRX=5 1.2mA @DRX=9	1.3mA @DRX=5 1.2mA @DRX=9	1.3mA @DRX=5 1.2mA @DRX=9	1.2mA @DRX=5 1.1mA @DRX=9
SMS/Voice	SMS & Voice	SMS & Voice	SMS & Voice	SMS & Voice
Interfaces	(U)SIM/ UART/ PCM/ RTC/ Audio/ GSM & BT Antenna/ SD	(U)SIM/ UART/ PCM/ RTC/ Audio/ GSM & BT Antenna/ SD/ ADC	(U)SIM/ UART/ PCM/ RTC/ Audio/ GSM Antenna	(U)SIM/ UART/ RTC/ Audio/ ADC/ GSM Antenna
Protocols	TCP/ UDP/ PPP/ FTP/ HTTP/ SMTP/ CMUX/ SSL	TCP/ UDP/ PPP/ FTP/ HTTP/ SMTP/ CMUX/ SSL	TCP/ UDP/ PPP/ FTP/ HTTP(S)/ SMTP/ CMUX/ SSL/ MQTT	TCP/ UDP/ PPP/ HTTP/ NTP/ PING/ FTP/ SSL*/ MQTT*/ HTTPS*/ IPv6*
Features	eCall DTMF Audio Play/ Audio Recording QuecFOTA® QuecCell QuecFile QuecOpen® BT 3.0 (SPP/ HFP)	eCall DTMF Audio Play/ Audio Recording QuecFOTA® QuecCell QuecFile QuecOpen® BT 3.0 (SPP/ HFP) DSDS	eCall DTMF Audio Play/ Audio Recording QuecFOTA® QuecCell QuecFile QuecOpen® BT 3.0 (SPP/ HFP)	DTMF* QuecOpen®* Audio Play/ Audio Recording QuecCell QuecFOTA® QuecLocator®* QuecFile CMUX
Certification	Carrier: Vodafone/ Deutsche Telekom Regulatory: GCF/ CE/ UCRF/ FCC/ Anatel/ FAC/ ICASA Others: BT SIG	Carrier: Deutsche Telekom Regulatory: CE	Regulatory: CE	Regulatory: CE

M95/M10 Specifications



QUECTEL®
Build a Smarter World

Model	M95	M10	Not recommended for new designs
Platform	MT6261M	MT6261M (OC: M10FA-03-STD) MT6261A (OC: M10FA-16-CPU)	
Quad-band	850/ 900/ 1800/ 1900MHz	850/ 900/ 1800/ 1900MHz	
Dimensions	23.6mm × 19.9mm × 2.65mm	29.0mm × 29.0mm × 3.6mm	
Data Rate	85.6kbps DL/ 85.6kbps UL	85.6kbps DL/ 85.6kbps UL	
Supply Voltage	3.3V~4.6V, 4.0V Typ.	3.3V~4.6V, 4.0V Typ.	
Consumption	1.3mA @DRX=5 1.2mA @DRX=9	1.3mA @DRX=5 1.2mA @DRX=9	
SMS/Voice	SMS & Voice	SMS & Voice	
Interfaces	(U)SIM/ UART/ RTC/ Antenna/ Audio/ PCM	(U)SIM/ UART/ Audio/ RTC/ Antenna/ GPIOs/ SD	
Protocols	PPP/ TCP/ UDP/ FTP/ HTTP/ SMTP/ CMUX/ SSL/ MQTT	PPP/ TCP/ UDP/ HTTP/ FTP/ MMS/ SMTP/ CMUX	
Features	eCall QuecFOTA® DTMF Dual SIM Audio Play/ Audio Recording QuecCell	eCall QuecFOTA® DTMF CMUX QuecOpen® (For OC M10FA-16-CPU only)	
Certification	Carrier: Vodafone/ Telenor/ Rogers Regulatory: GCF/ CE/ UCRF/ FCC/ PTCRB/ IC/ Anatel/ NCC/ RCM/ ICASA Others: ATEX	Regulatory: CE/ IC/ SRRC/ NAL	

MC60 Specifications

Multi-constellation GNSS	GPS+GLONASS+Galileo^①		Quad-band	850/ 900/ 1800/ 1900MHz
Channel Number	33 tracking channels 99 acquisition channels 210 PRN channels		GPRS Multi-slot Class	Class 12
SBAS	WAAS, EGNOS, MSAS, GAGAN		GPRS Mobile Station	Class B
Horizontal Position Accuracy	Autonomous	<2.5m CEP	Compliant to GSM Phase 2/2+	Class 4 (2W @850/900MHz) Class 1 (1W @1800/1900MHz)
Velocity Accuracy	Without Aid	<0.1m/s	Supply Voltage Range	3.3V~4.6V, 4.0V Typ.
Acceleration Accuracy	Without Aid	0.1m/s ²	Low Power Consumption	1.2mA @DRX=5
Timing Accuracy	1PPS	10ns	BT4.0 Current Consumption (Modem Off)	1.26mA @Advertising 1.35mA @Connection
TTFF @-130dBm with QuecFastFix Online	Cold Start	<4.5s	Operation Temperature	-40°C ~ +85°C
	Cold Start	<15s	Dimensions	18.7mm × 16.0mm × 2.1mm
TTFF @-130dBm with EASY™	Warm Start	<5s	Weight	Approx. 1.3g
	Hot Start	<1s	Control via AT Commands	GSM 07.07, 07.05 and other enhanced AT commands
	Cold Start	<35s	Speech Codec Modes	Half Rate (HR) Enhanced Full Rate (EFR) Full Rate (FR) Adaptive Multi-Rate (AMR)
TTFF @-130dBm without EASY™	Warm Start	<30s	Echo Arithmetic	Echo Cancellation Echo Suppression Noise Reduction
	Hot Start	<1s	Bluetooth	BT3.0 BT4.0 Optional GATT/ PXP*/ FMP*/ SPP/ HFP-AG
	Acquisition	-149dBm	(U)SIM	3.0V/1.8V
Sensitivity	Tracking	-167dBm	UART	×4
	Re-acquisition	-161dBm		

^① Galileo is disabled by default. It can be enabled by PMTK command.

“*” means under development.

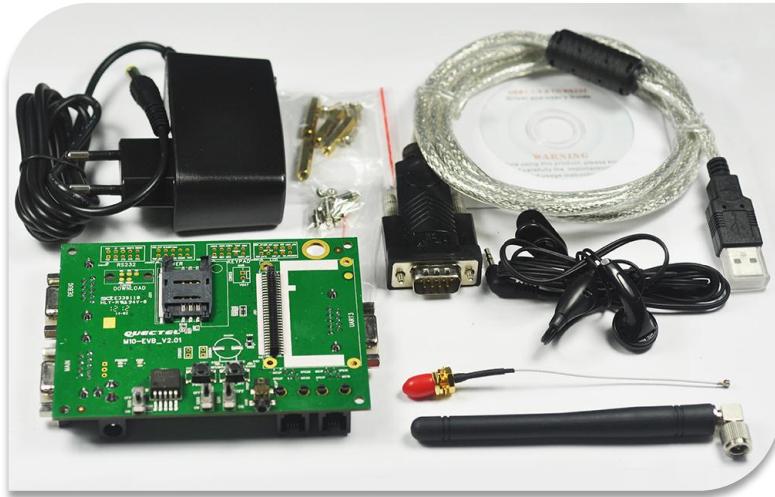
MC90 Specifications

Multi-constellation GNSS	GPS+GLONASS+Galileo^①	
Channel Number	33 tracking channels 99 acquisition channels 210 PRN channels	
SBAS	WAAS, EGNOS, MSAS, GAGAN	
Horizontal Position Accuracy	Autonomous	<2.5m CEP
Velocity Accuracy	Without Aid	<0.1m/s
Acceleration Accuracy	Without Aid	0.1m/s ²
Timing Accuracy	1PPS	10ns
TTFF @-130dBm with QuecFastFix Online	Cold Start	<4.5s
TTFF @-130dBm with EASY™	Cold Start	<15s
	Warm Start	<5s
	Hot Start	<1s
TTFF @-130dBm without EASY™	Cold Start	<35s
	Warm Start	<30s
	Hot Start	<1s
Sensitivity	Acquisition	-149dBm
	Tracking	-167dBm
	Re-acquisition	-161dBm
Quad-band	850/ 900/ 1800/ 1900MHz	
GPRS Multi-slot Class	Class 12	
GPRS Mobile Station	Class B	
Compliant to GSM Phase 2/2+	Class 4 (2W @850/900MHz) Class 1 (1W @1800/1900MHz)	
Supply Voltage Range	3.3V~4.3V, 4.0V Typ.	
Low Power Consumption	1.2mA @DRX=5	
Wi-Fi Current Consumption (Wi-Fi part only)	0.4mA	
Operation Temperature	-40°C ~ +85°C	
Dimensions	25.6mm × 15.0mm × 2.3mm	
Weight	Approx. 1.4g	
Control via AT Commands	GSM 07.07, 07.05 and other enhanced AT commands	
Speech Codec Modes	Half Rate (HR)	Enhanced Full Rate (EFR)
	Full Rate (FR)	Adaptive Multi-Rate (AMR)
Echo Arithmetic	Echo Cancellation Echo Suppression Noise Reduction	
WLAN Protocol	2.4GHz, IEEE 802.11 b/g/n	
(U)SIM	3.0V/1.8V	
UART	×4	

^① Galileo is disabled by default. It can be enabled by PMTK command.

GSM Support Package

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Technical Materials Package GSM-EVB Kit

- Specification
- Hardware Design
- AT Commands Manual
- Footprint&Part in PADS and Protel Formats
- GSM EVB/ TE-A User Guide
- GNSS AGPS Application Note
- GNSS Protocol Specification
- Reference Design
- BLE AT Commands
- BT AT Commands
- Wi-Fi Application Note



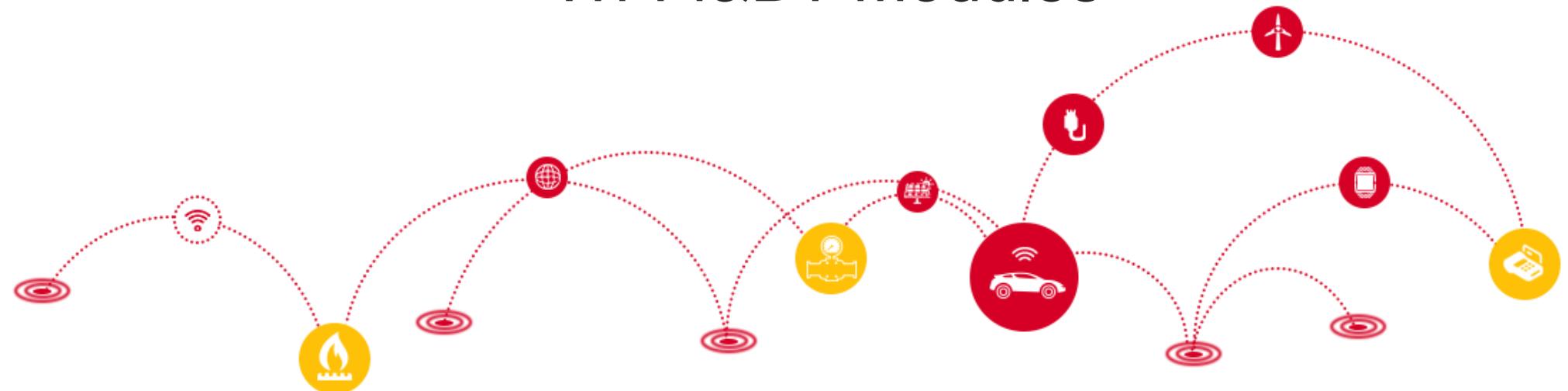
MCx0-TE-A Kit

- MC60-TE-A/ MC90-TE-A
- GNSS Antenna
- RF Cable for GNSS Antenna Connection
- USB Flash Drive

- Accessories
 - GSM EVB
 - 5V DC Power Supply
 - GSM Antenna
 - USB Data Cable
 - USB-UART Converter Cable
 - RF Cable for Antenna Connection
 - Disk
- Interfaces
 - RS-232 Interfaces
 - Power Supply
 - Antenna Interface
 - Debug UART Interface
 - Handset Interface
 - Earphone Interface
- Feature
 - Network Status LED
 - Power Key
 - Emergency Off Key

LTE Standard Modules
LTE-A & 5G Modules
Automotive Modules
Smart Modules

LPWA Modules
UMTS/HSPA(+) Modules
GSM/GPRS Modules
GNSS Modules
Wi-Fi&BT Modules



GNSS Modules Roadmap



GPS Only	L70 series L70/ L70-R/ L70-RL			
GNSS	L76 series L76-LB/ L76-L/ L76	L26-DR series ADR/ UDR versions	L26-T	L26-P
Multi-band GNSS	L26 series L26-LB	LC79D series LC79D (A) – Standalone mode LC79D (B) – Host mode	LG69T series AA/ AF/ AP/ AB versions	LG69T series AA/ AF/ AP/ AB versions
Automotive Grade		L26-DR series ADRA version	LG69T	L26-T
Integrated Antenna	L8x series L80/ L80-R / L86/ LC86L			
Standard GNSS	GNSS+DR	Timing	High Precision (cm level)	

GNSS Modules Summary – L7x Series

Module Series	Dimensions (mm)	Chipset Supplier	Chipset	GNSS	Multi-band GNSS	Precision	Auto Grade	Applications
L70/ L70-R	10.1 × 9.7 × 2.5	Airoha	MT3339/7			2.5 m		GPS tracker
L76-LB	10.1 × 9.7 × 2.5	Airoha	AG3331	●		2.5 m		GNSS tracker/ smart city
L7x series	L76/ L76-L	10.1 × 9.7 × 2.5	Airoha	MT3333	●	2.5 m		GNSS tracker
L76K	10.1 × 9.7 × 2.0	Zhongke Microelectronics	AT6558R	●		2.5 m		GNSS tracker
LC79D	10.1 × 9.7 × 2.4	Broadcom	BCM47755	●	●	1 m		GNSS tracker / two and four wheels accurate vehicles / sharing mobility/ POS for police officers/ delivery robots

GNSS Modules Summary – L26 Series

Module Series	Dimensions (mm)	Chipset Supplier	Chipset	GNSS	Multi-band GNSS	Precision	Auto Grade	Applications
L26 series	L26-LB	Airoha	AG3331	●		2.5m		DVR/ T-BOX/ GNSS tracker
	L26-T	ST	Teseo III	●		2m	●	Timing system (dedicated firmware)
	L26-DR	ST	Teseo III	●		1~2 m	●	T-BOX/ OBD/ automotive navigation system/ car sharing
	L26-P	ST	Teseo III	●		< 1 m		T-BOX/ car sharing

GNSS Modules Summary – GNSS with Integrated Antenna

Module Series	Dimensions (mm)	Chipset Supplier	Chipset	GNSS	Multi-band GNSS	Precision	Auto Grade	Applications
L80/ L80-R	16.0 × 16.0 × 6.45	Airoha	MT3339/7			2.5 m		GPS tracker/ T-BOX
L86	18.4 × 18.4 × 6.45	Airoha	MT3333	●		2.5 m		GNSS tracker/ T-BOX
L8x series	LC86L	16.0 × 16.0 × 6.45	Airoha	AG3331	●	2.5 m		GNSS tracker/ T-BOX/ smart city
	L89	26.4 × 18.4 × 6.8	ST	Teseo III	●	●	2.5 m	AIS 140 devices
L89H	26.4 × 18.4 × 6.8	Airoha	AG3335	●	●	1 m		AIS 140 devices
L96	L96	14.0 × 9.6 × 2.0	Airoha	MT3333	●		2.5 m	Wearable devices

GNSS Modules Summary – High Precision GNSS



Module Series	Dimensions (mm)	Chipset Supplier	Chipset	GNSS	Multi-band GNSS	Precision	Auto Grade	Applications
L7x series	LC79D	10.1 × 9.7 × 2.4	Broadcom	BCM47755	●	●	1 m	GNSS tracker / two and four wheels accurate vehicles / sharing mobility/ POS for police officers/ delivery robots
L26 series	L26-T	12.2 × 16.0 × 2.3	ST	Teseo III	●	< 1 m	●	Timing system
	L26-P	12.2 × 16.0 × 2.3	ST	Teseo III	●	< 1 m	●	T-BOX/ car sharing
LG69T	LG69T	22.0 × 17.0 × 2.4	ST	Teseo V	●	●	cm	ADAS/ autonomous driving/ precision agriculture/ robotic lawn mower/ robot

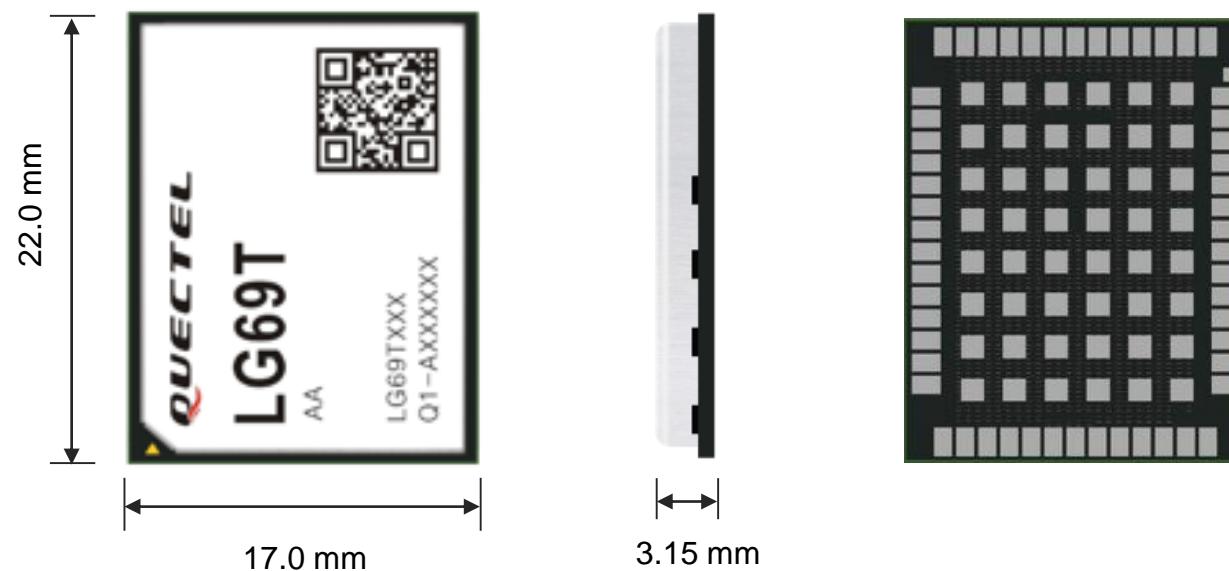
LG69T GNSS Module Overview



LG69T is a series automotive grade, dual-band, high precision GNSS modules based on the fifth generation platform of ST.

The module includes four variants:

- LG69T (AA) features raw data output and has to work with an external application processor.
- LG69T (AF) features dual-band standalone positioning and DR function.
- LG69T (AP) integrates RTK and DR, and therefore outputs high precision results.
- LG69T (AB) is ASILB compliant and supports raw data output.



LG69T series are distinguished from each other with different OCs (ordering codes).

LG69T Series

Dual-Band Automotive Grade GNSS Modules

Automotive Grade

LG69T (AA)

Raw Data Output



- ST Teseo V
- L1+L5 Dual-Band GNSS
- GNSS Raw Data Output
- Sensor Raw Data Output
- Base station(under plan, no IMU inside)
- Automotive Grade

Automotive Grade

LG69T (AF)

DR Integrated



- ST Teseo V
- L1+L5 Dual-Band GNSS
- DR Integrated
- Automotive Grade

Automotive Grade

LG69T (AP)

RTK+DR Integrated



- ST Teseo V
- L1+L5 Dual-Band GNSS
- High Performance MCU Embedded
- RTK+DR Integrated for High Precision Positioning (cm level)
- GNSS Raw Data Output
- Sensor Raw Data Output
- Automotive Grade

Standard Automotive Grade

Automotive Grade

LG69T (AB)

ASIL B Compliant



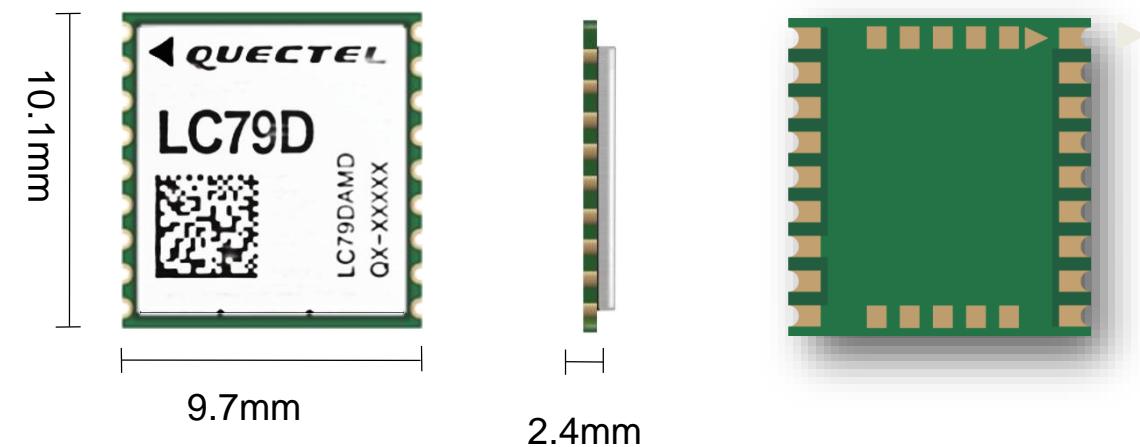
- ST Teseo App
- L1+L5 Dual-Band GNSS
- GNSS Raw Data Output
- Automotive Grade
- ASIL B Compliant

ASILB Grade

LG69T series are distinguished from each other with different OCs (ordering codes).

LC79D GNSS Module Overview

- ◆ 28-pin LCC package
- ◆ L1+L5 dual band
- ◆ Support searching and tracking GPS L1 C/A, GPS L5, GLONASS L1, Galileo E1/E5a, IRNSS L5, BeiDou B1I and QZSS L1/L5 satellites simultaneously
- ◆ High sensitivity: -163 dBm @ Tracking
- ◆ Default baud rate: 115200 bps
- ◆ Power supply voltage: 1.7~1.9 V, typ. 1.8 V
- ◆ Integrated LNA
- ◆ Dual-SAW integrated for more effective anti-jamming capability
- ◆ Quectel proprietary SDK commands are supported
- ◆ Support standalone or host mode
- ◆ Dead Reckoning supported (based on dedicated firmware versions)



GPS Module Specifications



L70 GPS Module



10.1mm × 9.7mm × 2.5mm
MT3339

- 18-pin LCC package
- GPS, QZSS
- High sensitivity: -165dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 2.8V to 4.3V, 3.3V typ.
- Low power consumption:
 - 12 mA (GPS)@Tracking mode
 - 18 mA (GPS)@Acquisition mode
 - 7 µA @Backup mode
- AGPS function: EASY™ technology, EPO
- Multiple power saving modes (AlwaysLocate™/ Periodic mode/ Standby mode/ Backup mode)
- FLP mode: only 5mA in static receiving
- Support SDK commands

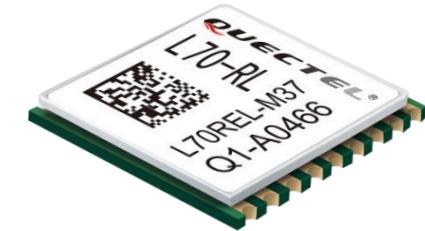
L70-R GPS Module



10.1mm × 9.7mm × 2.5mm
MT3337

- 18-pin LCC package
- GPS, QZSS
- High sensitivity: -165dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 2.8V to 4.3V, 3.3V typ.
- Low power consumption:
 - 13 mA(GPS)@Tracking mode
 - 16 mA(GPS)@Acquisition mode
 - 8 µA @Backup mode
- AGPS function: EASY™ technology, EPO
- Multiple power saving modes (Standby mode/ Backup mode)

L70-RL GPS Module



10.1mm × 9.7mm × 2.5mm
MT3337

- 18-pin LCC package
- GPS, QZSS
- High sensitivity: -167dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 2.8V to 4.3V, 3.3V typ.
- Low power consumption:
 - 18 mA(GPS) @ Tracking mode
 - 21 mA(GPS) @ Acquisition mode
 - 8 µA @ Backup mode
- AGPS function: EASY™ technology, EPO
- Integrated LNA
- Multiple power saving modes (Standby mode/ Backup mode)

GNSS Module Specifications (1)

L76 GNSS Module



10.1mm x 9.7mm x 2.5mm
MT3333

- 18-pin LCC package
- GPS, GLONASS, Galileo and QZSS
- High sensitivity: -165dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 2.8V to 4.3V, 3.3V typ.
- Low power consumption:
 - 18 mA (GPS+GLONASS) @ Tracking mode
 - 25 mA (GPS+GLONASS) @ Acquisition mode
 - 7 µA @ Backup mode
- AGPS function: EASY™ technology, EPO
- Multiple power saving modes (AlwaysLocate™/ Periodic mode/ Standby mode/ Backup mode)
- LOCUS, built-in logger solution
- Support SDK commands

L76-L GNSS Module



10.1mm x 9.7mm x 2.5mm
MT3333

- 18-pin LCC package
- GPS, GLONASS, Galileo and QZSS
- High sensitivity: -167dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 2.8V to 4.3V, 3.3V typ.
- Low power consumption:
 - 22 mA (GPS+GLONASS) @ Tracking mode
 - 29 mA (GPS+GLONASS) @ Acquisition mode
 - 7 µA @ Backup mode
- AGPS function: EASY™ technology, EPO
- Integrated LNA
- Multiple power saving modes (AlwaysLocate™/ Periodic mode/ Standby mode/ Backup mode)
- LOCUS, built-in logger solution
- Support SDK commands

L76-LB GNSS Module



10.1mm x 9.7mm x 2.5mm
AG3331

- 18-pin LCC package
- GPS, GLONASS and QZSS
- High sensitivity: -165dBm @ Tracking
- Default baud rate: 9600 bps
- Voltage 2.8V to 4.3V, 3.3V typ.
- Low power consumption:
 - 30.3 mA (GPS+GLONASS) @ Tracking mode
 - 31.6 mA (GPS+GLONASS) @ Acquisition mode
 - 7 µA @ Backup mode
- AGPS function: EASY™/ EPO
- Multiple power saving modes: Periodic mode/ Standby mode/ Backup mode

L26-LB GNSS Module



12.2mm x 16.0mm x 2.3mm
AG3331

- 24-pin LCC package
- GPS, GLONASS and QZSS
- High sensitivity: -165dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 2.8V to 4.3 V, 3.3V typ.
- Low power consumption:
 - 28.0 mA (GPS+GLONASS) @ Tracking mode
 - 30.3 mA (GPS+GLONASS) @ Acquisition mode
 - 8.8 µA @ Backup mode
- AGPS function: EASY™/ EPO
- Integrated LNA
- Multiple power saving modes: Periodic mode/ Standby mode/ Backup mode
- Short-circuit protection / detection for active antenna
- Support SDK commands

GNSS Module Specifications (2)

L26 GNSS Module



12.2mm x 16.0mm x 2.4mm
MT3333

- 24-pin LCC package
- GPS, GLONASS, Galileo and QZSS
- High Sensitivity: -167dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 2.8V to 4.3 V, 3.3V typ.
- Low power consumption:
 - 21 mA (GPS+GLONASS) @ Tracking mode
 - 29 mA (GPS+GLONASS) @ Acquisition mode
 - 7 µA @ Backup mode
- AGPS function: EASY™ technology, EPO
- Integrated LNA
- Multiple power saving modes (AlwaysLocate™/ Periodic mode/ Standby mode/ Backup mode)
- LOCUS, built-in logger solution
- Short-circuit protection / detection for active antenna
- Support SDK commands

L26-DR GNSS Module



12.2mm x 16.0mm x 2.3mm
Teseo III

- 24-pin LCC package
- GPS, BeiDou, GLONASS, Galileo and QZSS
- High Sensitivity: -162dBm @ Tracking
- Default baud rate: 115200bps
- Voltage 3.0 V to 3.6 V, 3.3V typ.
- Low power consumption
 - 58 mA (GPS) @ Tracking mode
 - 72 mA (GPS) @ Acquisition mode
- Integrated LNA
- Support DR (Dead Reckoning)
- Support AGPS
- Sensor integrated
- Sensor raw data output
- Host wake up function
- Short-circuit protection / detection for active antenna
- Qualified with AEC-Q100

L26-T GNSS Module



12.2mm x 16.0mm x 2.3mm
Teseo III

- 24-pin LCC package
- GPS, BeiDou, GLONASS, Galileo and QZSS
- High Sensitivity: -162dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 3.0 V to 3.6 V, 3.3V typ.
- Low power consumption
 - 51 mA (GPS) @ Tracking mode
 - 64 mA (GPS) @ Acquisition mode
- Integrated LNA
- Support Timing
- Support raw data output ([separate firmware](#))
- Support AGPS
- Short-circuit protection / detection for active antenna

L26-P* GNSS Module



12.2mm x 16.0mm x 2.3mm
Teseo III

- 24-pin LCC package
- GPS, BeiDou, GLONASS, Galileo and QZSS
- Default baud rate: 115200bps
- Voltage 3.0 V to 3.6 V, 3.3V typ.
- Low power consumption
 - 52 mA (GPS) @ Tracking mode
 - 65 mA (GPS) @ Acquisition mode
- Integrated LNA
- Support GNSS raw data and sensor raw data output
- Support AGPS
- Short-circuit protection / detection for active antenna

GNSS Module (with Integrated Antenna) Specifications (1)

L80 GPS Module



16.0mm × 16.0mm × 6.45mm
MT3339

- 12-pin LCC package
- GPS, QZSS
- Patch antenna (15.0mm × 15.0mm × 4.0mm) on the top of module
- High sensitivity: -165dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 3.0V to 4.3V, 3.3V typ.
- Low power consumption
20 mA(GPS) @ Tracking mode
25 mA(GPS) @ Acquisition mode
7 µA @ Backup mode
- Short-circuit protection / detection for active antenna
- Active antenna switching function
- Integrated LNA
- Large size of pins (Length=1.5mm; Width=1.0mm)
- AGPS function: EASY™ technology, EPO
- Multiple power saving modes (AlwaysLocate™/ Periodic mode/ Standby mode/ Backup mode)
- FLP mode: only 50% power consumption of normal mode
- LOCUS, built-in logger solution
- Support SDK commands

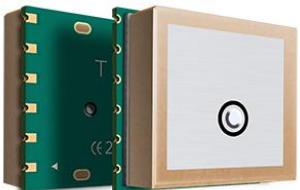
L86 GNSS Module



18.4mm × 18.4mm × 6.45mm
MT3333

- 12-pin LCC package
- GPS, GLONASS, Galileo and QZSS
- Patch antenna (18.4mm × 18.4mm × 4.0mm) on the top of module
- High sensitivity: -167dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 3.0V to 4.3V, 3.3V typ.
- Low power consumption
26 mA (GLONASS+GPS) @ Tracking mode
30 mA (GLONASS+GPS) @ Acquisition mode
7 µA @ Backup mode
- Short-circuit protection / detection for active antenna
- Active antenna switching function
- Integrated LNA
- Large size of pins (Length=1.5mm; Width=1.0mm)
- AGPS function: EASY™ technology, EPO
- Multiple power saving modes (AlwaysLocate™/ Periodic mode/ Standby mode/ Backup mode)
- LOCUS, built-in logger solution
- Support SDK commands

L80-R GPS Module



16.0mm × 16.0mm × 6.45mm
MT3337

- 12-pin LCC package
- GPS, QZSS
- Patch antenna (15.0mm × 15.0mm × 4.0mm) on the top of module
- High sensitivity: -165dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 3.0V to 4.3V, 3.3V typ.
- Low power consumption
20 mA(GPS) @ Tracking mode
25 mA(GPS) @ Acquisition mode
7 µA @ Backup mode
- Integrated LNA
- Large size of pins (Length=1.5mm; Width=1.0mm)
- AGPS function: EASY™ technology, EPO
- Multiple power saving modes (Standby mode/ Backup mode)

L96 GNSS Module



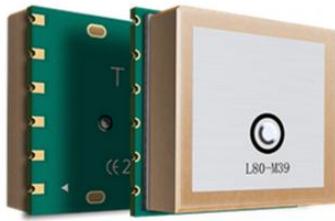
14.0mm × 9.6mm × 2.0mm
MT3333

- 31-pin LCC package
- GPS, GLONASS, BeiDou, Galileo (RLM supported) and QZSS
- Chip antenna embedded on the top of module
- High sensitivity: -165dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 2.8V to 4.3V, 3.3V typ.
- Low power consumption
20 mA (GLONASS+GPS) @ Tracking mode
25 mA (GLONASS+GPS) @ Acquisition mode
7 µA @ Backup mode
- Integrated LNA
- AGPS function: EASY™ technology, EPO
- Multiple power saving modes (AlwaysLocate™/ Periodic mode/ Standby mode/ Backup mode)
- LOCUS, built-in logger solution
- Support SDK commands
- Dual SAW filters integrated for noise cancellation

GNSS Module (with Integrated Antenna) Specifications (2)

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LC86L* GNSS Module



16.0mm x 16.0mm x 6.45mm

AG3331

- 12-pin LCC package
- GPS, BeiDou, GLONASS (optional) and QZSS
- Patch antenna (15.0mm x 15.0mm x 4.0mm) on the top of module
- High sensitivity: -165dBm @Tracking
- Default baud rate: 9600bps
- Voltage 3.0V to 4.3V, 3.3V typ.
- Low power consumption
 - TBD @ Tracking mode
 - TBD @ Acquisition mode
 - TBD @ Backup mode
- Short-circuit protection / detection for active antenna
- Active antenna switching function
- Integrated LNA
- Large size of pins (Length=1.5mm; Width=1.0mm)
- AGNSS function: EASY™ technology, EPO
- Multiple power saving modes (Periodic mode/ Standby mode/ Backup mode)
- FLP mode: only 50% power consumption of normal mode
- LOCUS, built-in logger solution
- Support SDK commands

Dual-band GNSS Module Specifications

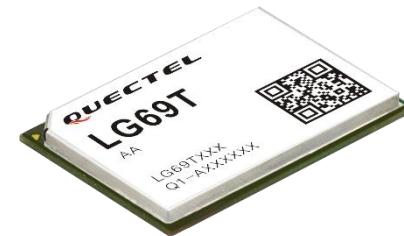
LC79D Dual-band GNSS Module



10.1mm × 9.7mm × 2.4mm
BCM47755

- 28 pins with LCC+LGA
- Dual band GNSS module (L1, L5)
- GPS L1 C/A, GPS L5, GLONASS L1, Galileo E1/E5a, IRNSS L5, BeiDou B1 and QZSS L1/L5 work simultaneously
- High sensitivity: -163dBm @ Tracking
- Default baud rate: 115200bps
- Voltage 1.7V~1.9V, typical 1.8V
- Low power consumption
43 mA @ Tracking mode
47 mA @ Acquisition mode
- Integrated LNA
- Power saving mode: Sleep mode
- Support SDK commands
- Dual modes: standalone mode and host based mode

LG69T* Dual-band GNSS Module



22.0mm × 17.0mm × 2.4mm
Teseo V

- 54 pins with LGA
- Dual band GNSS module (L1, L5)
- GPS L1/L5, Galileo E1/E5a, IRNSS L5, BeiDou B1C/B2a and QZSS L1/L5 work simultaneously
- High sensitivity: -161dBm ^(①) @ Tracking
- Default baud rate: 115200bps
- Voltage 3.0V~3.6V, typical 3.3V
- Low power consumption
TBD @ Tracking mode
TBD @ Acquisition mode
- Power saving mode: Backup mode
- Support SDK commands*
- Automotive grade

L89 IRNSS Module



26.4mm × 18.4mm × 6.8mm
Teseo III

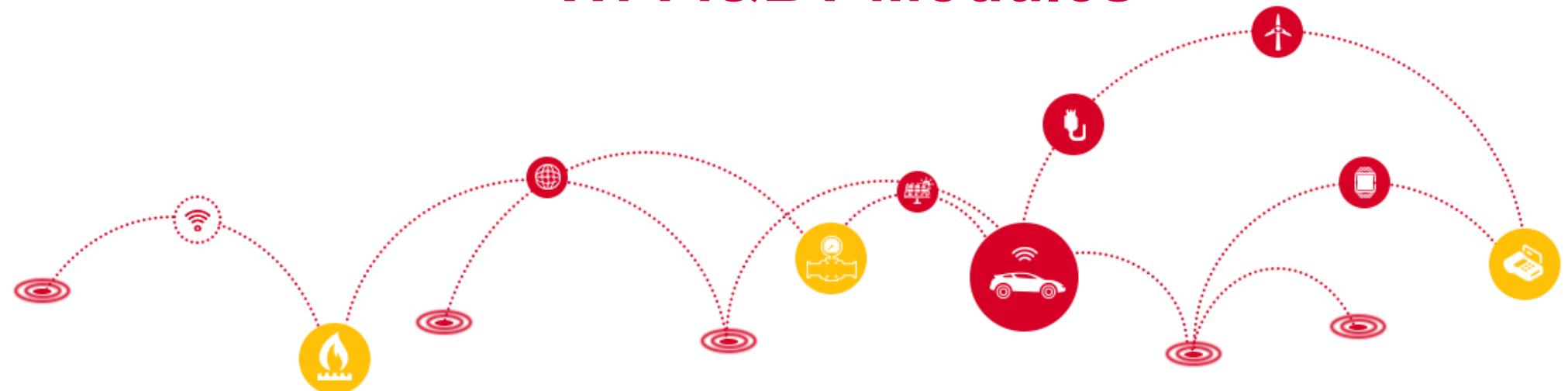
- 16 pins with LCC
- GPS, Galileo, IRNSS/QZSS
- IRNSS module, AIS140 compliance
- Dual antenna embedded: patch antenna (18.4mm × 18.4 mm × 4.0mm) for L1 band, chip antenna for L5 band
- High sensitivity: -163dBm @ Tracking
- Default baud rate: 9600bps
- Voltage 3.1V to 4.3V, 3.3V typ.
- Low power consumption
95 mA (GPS+Galileo+IRNSS) @ Tracking mode
99 mA (GPS+Galileo+IRNSS) @ Acquisition mode
- Short-circuit protection / detection for active antenna
- Active antenna switching function
- Integrated LNA
- Large size of pins (Length=1.5mm; Width=1.0mm)
- Support AGPS
- Power saving mode: Backup mode
- Support SDK commands*
- Pin-to-pin compatible with L80 and L86

“*” means under development.

^(①) means preliminary data for reference only.

LTE Standard Modules
LTE-A & 5G Modules
Automotive Modules
Smart Modules

LPWA Modules
UMTS/HSPA(+) Modules
GSM/GPRS Modules
GNSS Modules
Wi-Fi&BT Modules



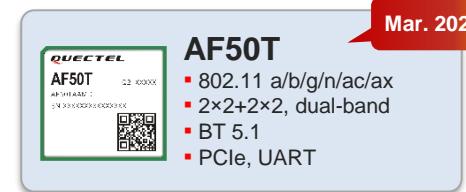
Wi-Fi/BT Modules Roadmap



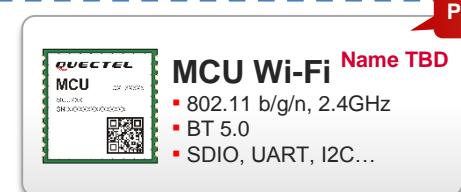
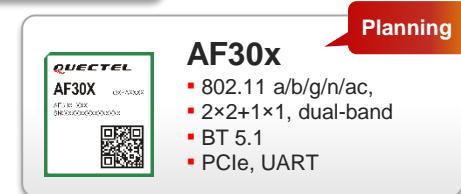
Hosted Wi-Fi
(Industrial Grade)



Hosted Wi-Fi
(Automotive Grade)



MCU Wi-Fi



MM/YYYY Estimated Engineering Sample Dates

2017

2018

2019

2020

Wi-Fi/BT Modules Specifications



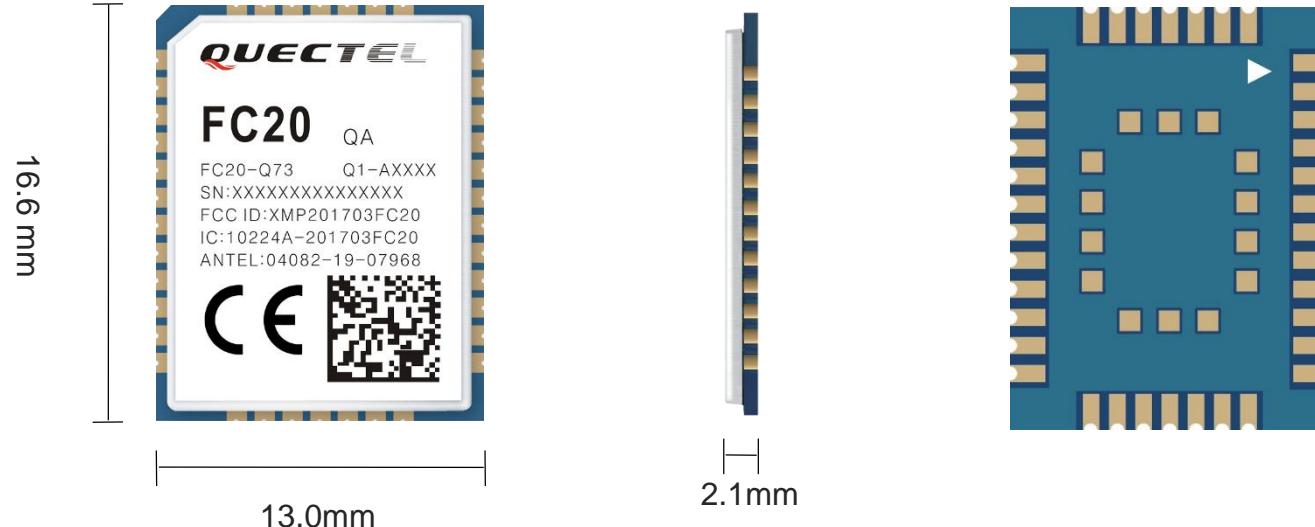
Feature	FC20	FC20-N	AF20	FC30R	FG50V	AF50T	AF30x*	MCU Wi-Fi*①
Chipset	Qualcomm QCA1023	Qualcomm QCA1023	Qualcomm QCA6564A	Realtek RTL8189EM	Qualcomm QCA6391	Qualcomm QCA6696	TBD	TBD
WLAN Protocol	802.11 a/b/g/n/ac	802.11 b/g/n	802.11 a/b/g/n/ac	802.11 b/g/n	802.11 a/b/g/n/ac/ax	802.11 a/b/g/n/ac/ax	802.11 a/b/g/n/ac	802.11 b/g/n/
Wi-Fi Bands	2.4GHz/5GHz	2.4GHz	2.4GHz/5GHz	2.4GHz	2.4GHz/5GHz	2.4GHz/ 5GHz	TBD	2.4GHz
BT Protocol	BT 4.2	BT 4.2	BT 4.2	/	BT 5.1	BT 5.1	BT 5.1	TBD
Dimensions (mm)	16.6 × 13.0 × 2.1	16.6 × 13.0 × 2.1	17.2 × 15.2 × 2.26	12.0 × 12.0 × 2.1	19.5 × 21.5 × 2.1	19.5 × 21.5 × 2.3	TBD	TBD
Working Mode	AP/STA	AP/STA	AP/STA	AP/STA	AP/STA	AP/STA	TBD	TBD
Power Supply Voltage (V)	3.14V~3.46V, 3.3V Typ.	1.71V~1.89V, 1.8V Typ.	3.14V~3.46V, 3.3V Typ.	3.0V~3.6V, 3.3V Typ.	VDD_CORE_VL: 0.9~1.0, 0.95 Typ. VDD_CORE_VM: 1.28~1.42, 1.35 Typ. VDD_CORE_VH: 1.85~2.05, 1.95 Typ. VDD_RF: 3.3~4.25, 3.85 Typ.	VDD_CORE_VL: 0.9~1.0, 0.95 Typ. VDD_CORE_VM: 1.28~1.42, 1.35 Typ. VDD_CORE_VH: 1.85~2.05, 1.95 Typ. VDD_RF: 3.3~4.25, 3.85 Typ.	TBD	TBD
I/O Pins Supply Voltage Range (V)	1.71V~1.89V, 1.8V Typ.	1.71V~1.89V, 1.8V Typ.	1.71V~1.89V, 1.8V Typ.	1.75V~1.89V, 1.8V Typ.	1.7~1.9, 1.8 Typ.	1.7~1.9, 1.8 Typ.	TBD	TBD
Matched Cellular Module(s)	EC25&EC21& EC20 R2.1& EG2x-G	EC25&EC21& EC20 R2.1& EG2x-G	AG35	EC25&EC21& EC20 R2.1& EG2x-G	RG500Q	AG550Q/AG520R	TBD	TBD

“*” means under development.

①The module name of MCU Wi-Fi needs to be determined.

FC20 Highlights

Industrial Wi-Fi/BT Module (QCA1023)



Length: 16.6mm ($\pm 0.15\text{mm}$)
Width: 13.0mm ($\pm 0.15\text{mm}$)
Height: 2.1mm ($\pm 0.20\text{mm}$)
Weight: Approx. 0.81g

- Based on Qualcomm QCA1023 chipset solution for industrial Wi-Fi and BT applications
- Designed for working with Quectel LTE Standard modules
- 1×1 device supporting 802.11 a/b/g/n/ac BT 4.2 and 2.4GHz/5GHz dual-band
- Operate in soft-AP or station mode
- Wide operation temperature range (-40°C to +85°C)
- Excellent co-existence with Quectel LTE Standard modules
- Excellent EMC/ESD protection ensures great robustness even in harsh environments
- Compact SMT form factor ideal for integration in slim and size-constrained solutions

FC20/FC20-N Specifications



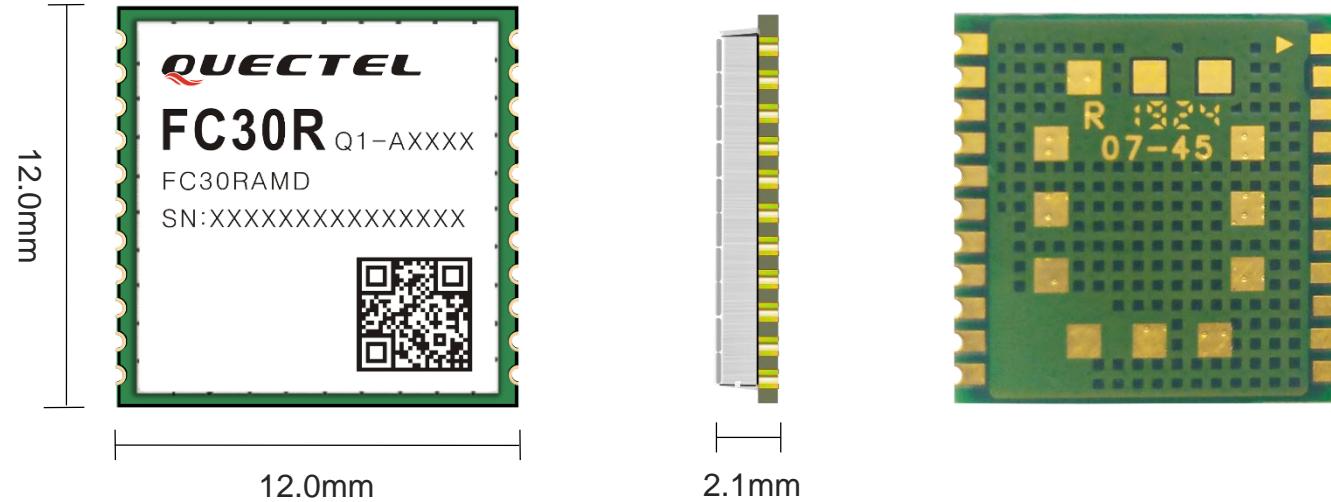
Feature	FC20	FC20-N
WLAN Protocol	802.11 a/b/g/n/ac	802.11 b/g/n
Wi-Fi Bands	2.4GHz, 5GHz	2.4GHz
Wi-Fi Modulation	BPSK, QPSK, CCK, 16QAM, 64QAM, 256QAM	BPSK, QPSK, CCK, 16QAM, 64QAM
BT Protocol	BT 4.2	BT 4.2
Dimension	16.6mm × 13.0mm × 2.1mm	16.6mm × 13.0mm × 2.1mm
Working Mode	AP/ STA	AP/ STA
Interfaces	SDIO 3.0×1, BT_UART×1, DBG_TXD×1, 32KHz_IN×1, Wi-Fi&BT Antenna×1	SDIO 3.0×1, BT_UART×1, DBG_TXD×1, 32KHz_IN×1, Wi-Fi&BT Antenna×1
Power Supply Voltage Range	3.14V~3.46V, 3.3V Typ.	3.14V~3.46V, 3.3V Typ.
I/O Pins Supply Voltage Range	1.71V~1.89V, 1.8V Typ.	1.71V~1.89V, 1.8V Typ.
Security	WEP/ TKIP/ AES/ WPA-PSK/ WPA2-PSK	WEP/ TKIP/ AES/ WPA-PSK/ WPA2-PSK
Extended Temperature Range	-40°C to +85°C	-40°C to +85°C
Region	Global	Global
Certification	Regulatory: CE/ FCC/ IC/ Anatel/ JATE/ TELEC	Regulatory: CE/ FCC/ IC/ Anatel/ JATE/ TELEC

“*” means under development.

① FC20/FC20-N must work with EC20CE_FASG, EC25-AF and EC25G/ EG21-G to provide Wi-Fi/BT function, other matched modules are under development.

FC30R Highlights

Industrial Wi-Fi/BT Module (RTL8189EM)



Length: 12.0mm ($\pm 0.15\text{mm}$)
Width: 12.0mm ($\pm 0.15\text{mm}$)
Height: 2.1mm ($\pm 0.20\text{mm}$)
Weight: Approx. 0.57g

- Realtek RTL8189EM chipset solution for industrial Wi-Fi applications
- Designed for working with Quectel LTE Standard modules
- 1 x 1 device supporting 802.11 b/g/n and 2.4GHz
- Cost-effective Wi-Fi only solution
- Wide operation temperature range (-30°C to +85°C)
- Excellent EMC/ESD protection ensures great robustness even in harsh environments
- Compact SMT form factor ideal for integration in slim and size-constrained solutions

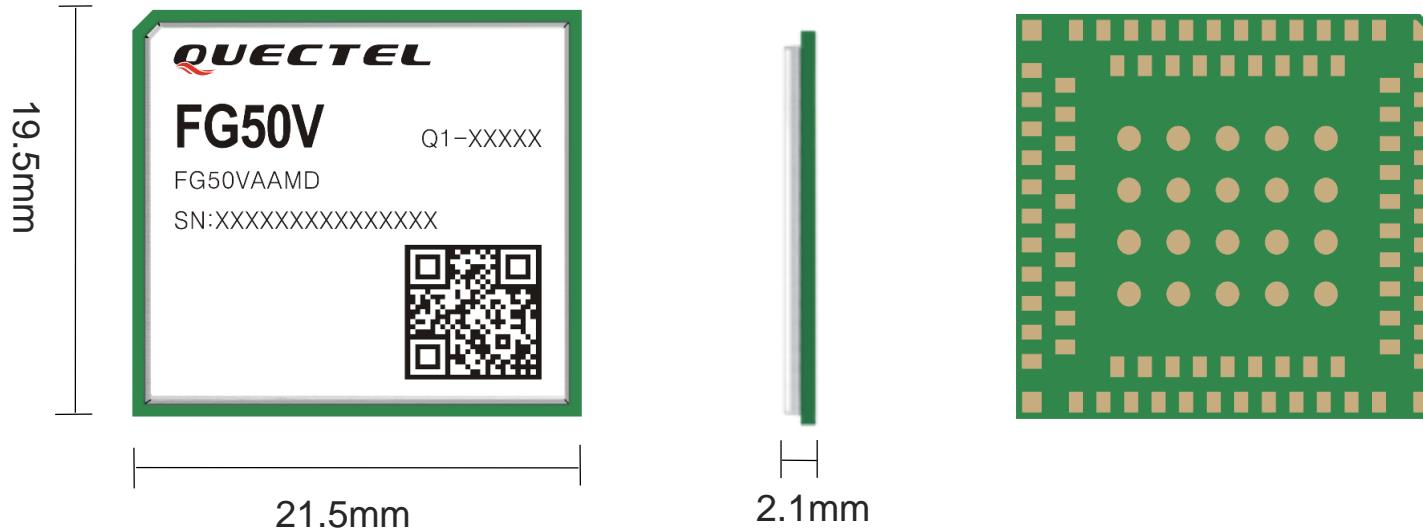
FC30R Specifications

P/N	FC30R
WLAN Protocol	802.11 b/g/n
Wi-Fi Bands	2.4GHz
Wi-Fi Modulation	BPSK, QPSK, CCK, 16QAM, 64QAM
Module Size	12.0mm × 12.0mm × 2.1mm
Work Mode	AP/STA*
VBAT	3.0V~3.6V, 3.3V Typ.
Interface	SDIO 3.0×1, Wi-Fi×1
V I/O	1.75V~1.89V, 1.8V Typ.
Security	TKIP/ AES/ WPA-PSK/ WPA2-PSK
Extended Temperature Range	-30°C to +85°C
Region	Global
Certification	Regulatory: CE*/ FCC*/ IC*/ Anatel*/ JATE*/ TELEC*

“*” means under development/planning.

FG50V Highlights

Industrial Wi-Fi/BT Module (QCA6391)



Length: 19.5mm ($\pm 0.20\text{mm}$)
Width: 21.5mm ($\pm 0.20\text{mm}$)
Height: 2.1mm ($\pm 0.20\text{mm}$)

- Qualcomm QCA6391 chipset solution for industrial Wi-Fi/BT applications
- Design for working with Quectel 5G module
- 2×2+2×2 device supporting 802.11 a/b/g/n/ac/ax and 2.4GHz/5GHz dual-band
- Operate in soft-AP and station mode and support BT 5.1
- Wide operation temperature range (-40°C to +85°C)
- Excellent EMC/ESD protection ensures great robustness even in harsh environments
- Compact SMT form factor ideal for integration in slim and size-constrained solutions

FG50V Specifications



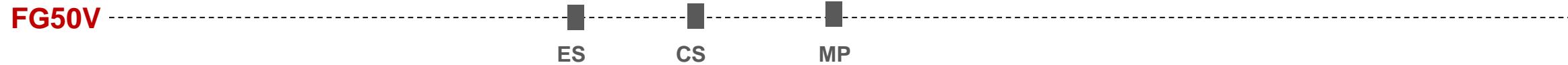
P/N	FG50V
Chip	QCA6391
WLAN Protocol	802.11 a/b/g/n/ac/ax, 2×2+2×2, dual MAC
Wi-Fi Bands	2.4GHz/ 5GHz
Wi-Fi Modulation	BPSK, QPSK, CCK, 16QAM, 64QAM, 256QAM, 1024QAM
BT Protocol	BT 5.1
Module Size	19.5mm × 21.5mm × 2.1mm
Work Mode	AP/STA
VBAT	VDD_RF, VDD_CORE_VL, VDD_CORE_VM, VDD_CORE_VH, VDD_IO
Interface	PCIe, WLAN_EN, UART, PCM, BT_EN, GPIOs
Security	WPA3
Operation Temperature Range	-40°C to +85°C
Region	Global
Certification	Regulatory: FCC*/ IC*/ CE*/ TELEC*/ JATE*/ Anatel*

“*” means under planning.

FG50V Timeline

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

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.

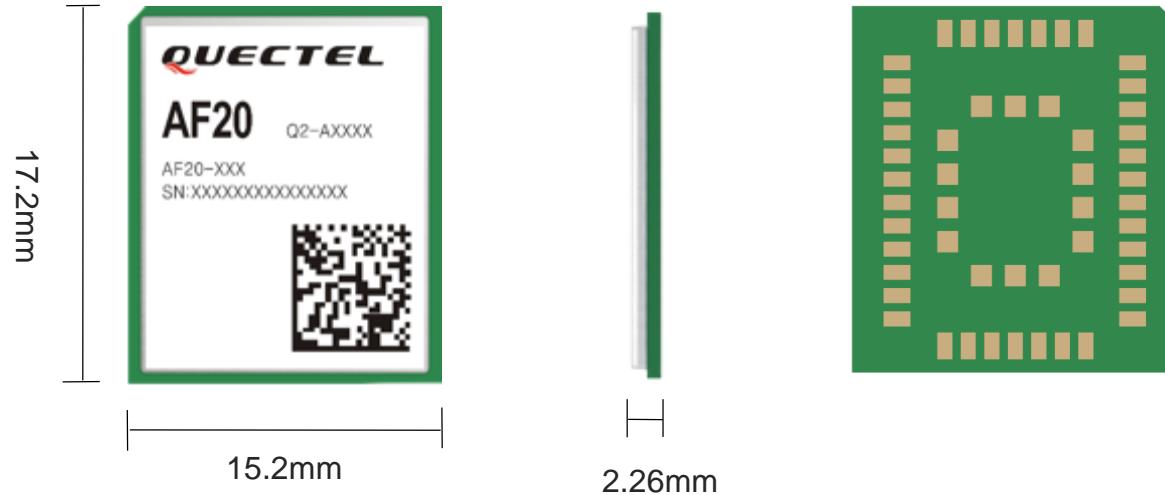
MP: Hardware and software ready for mass production. For certification status, please refer to the "certification schedule".

Regulatory Certification Schedule



AF20 Highlights

Automotive Wi-Fi/BT Module (QCA6564A)



Length: 17.2mm ($\pm 0.15\text{mm}$)
Width: 15.2mm ($\pm 0.15\text{mm}$)
Height: 2.26mm ($\pm 0.20\text{mm}$)
Weight: 1.26g

- Qualcomm QCA6564A chipset solution dedicated for automotive applications
- Designed for working with Quectel AG35 module
- 1×1 device supporting 802.11 a/b/g/n/ac and 2.4GHz/5GHz dual-band
- Operate in soft-AP or station mode and support BT 4.2
- Ideal for automotive applications with IATF 16949 requirement
- Automotive quality processes (PPAP, 8D, DFMEA, PFMEA...)
- Wide operation temperature range (-40°C to +85°C)
- Excellent EMC/ESD protection ensures great robustness even in harsh environments
- Compact SMT form factor ideal for integration in slim and size-constrained automotive solutions

AF20 Specifications

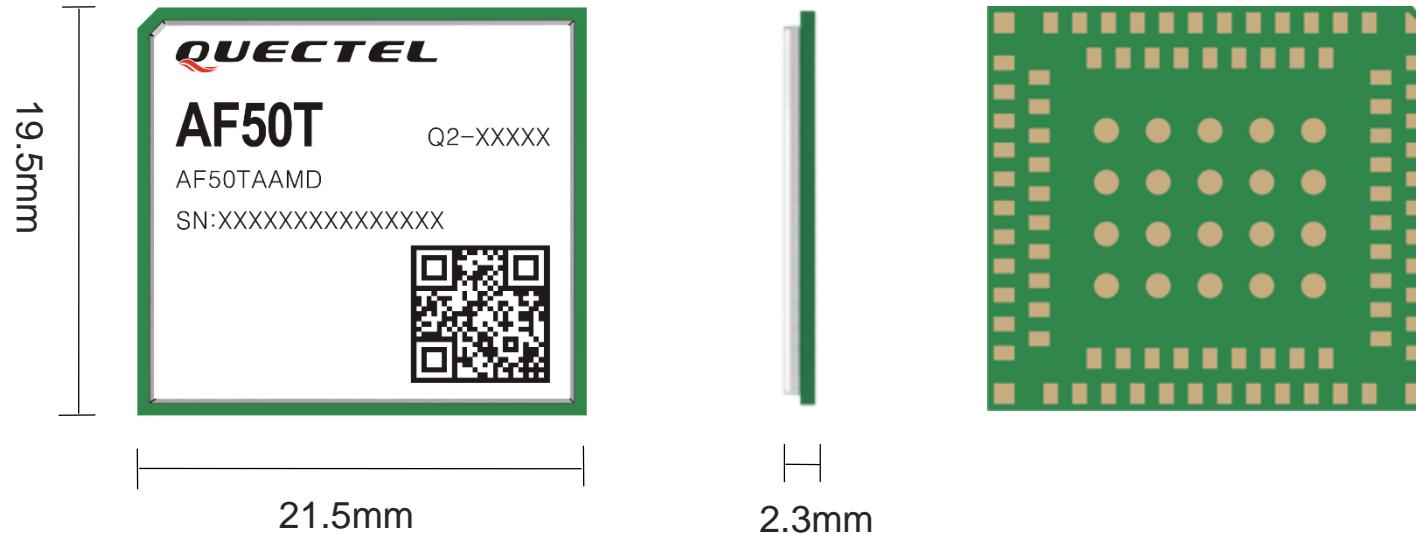


Item	AF20
Chip	QCA6564A
WLAN Protocol	802.11 a/b/g/n/ac, 1x1
Wi-Fi Bands	2.4GHz/ 5GHz
Wi-Fi Modulation	BPSK, QPSK, CCK, 16QAM, 64QAM, 256QAM
BT Protocol	BT 4.2
Work Mode	AP/ STA
Power Supply	3.14V~3.46V, 3.3V Typ.
Interface	SDIO 3.0×1, LTE_UART×1, 32KHz_IN×1, Wi-Fi/BT×1
I/O Port Power Domain	1.71V~1.89V, 1.8V Typ.
Security	WEP/ TKIP/ AES/ WPA-PSK/ WPA2-PSK
Extended Temperature Range	-40°C to +85°C
Region	Global
Certification	Regulatory: FCC*/ IC*/ CE*/ TELEC*/ JATE*/ Anatel*

“*” means under planning.

AF50T Highlights

Automotive Wi-Fi/BT Module (QCA6696)



Length: 19.5mm ($\pm 0.20\text{mm}$)
Width: 21.5mm ($\pm 0.20\text{mm}$)
Height: 2.3mm ($\pm 0.20\text{mm}$)

- Qualcomm QCA6696 chipset solution dedicated for automotive applications
- Designed for working with Quectel AG550Q/AG520R module
- Support 802.11 a/b/g/n/ac/ax Wi-Fi and Dual-Band Simultaneous (DBS) with dual-MAC
- Operate in soft-AP and station mode and support BT 5.1
- Ideal for automotive applications with IATF 16949 requirement
- Automotive quality processes (PPAP, 8D, DFMEA, PFMEA...)
- Wide operation temperature range (-40°C to +85°C)
- Excellent EMC/ESD protection ensures great robustness even in harsh environments
- Compact SMT form factor ideal for integration in slim and size-constrained automotive solutions

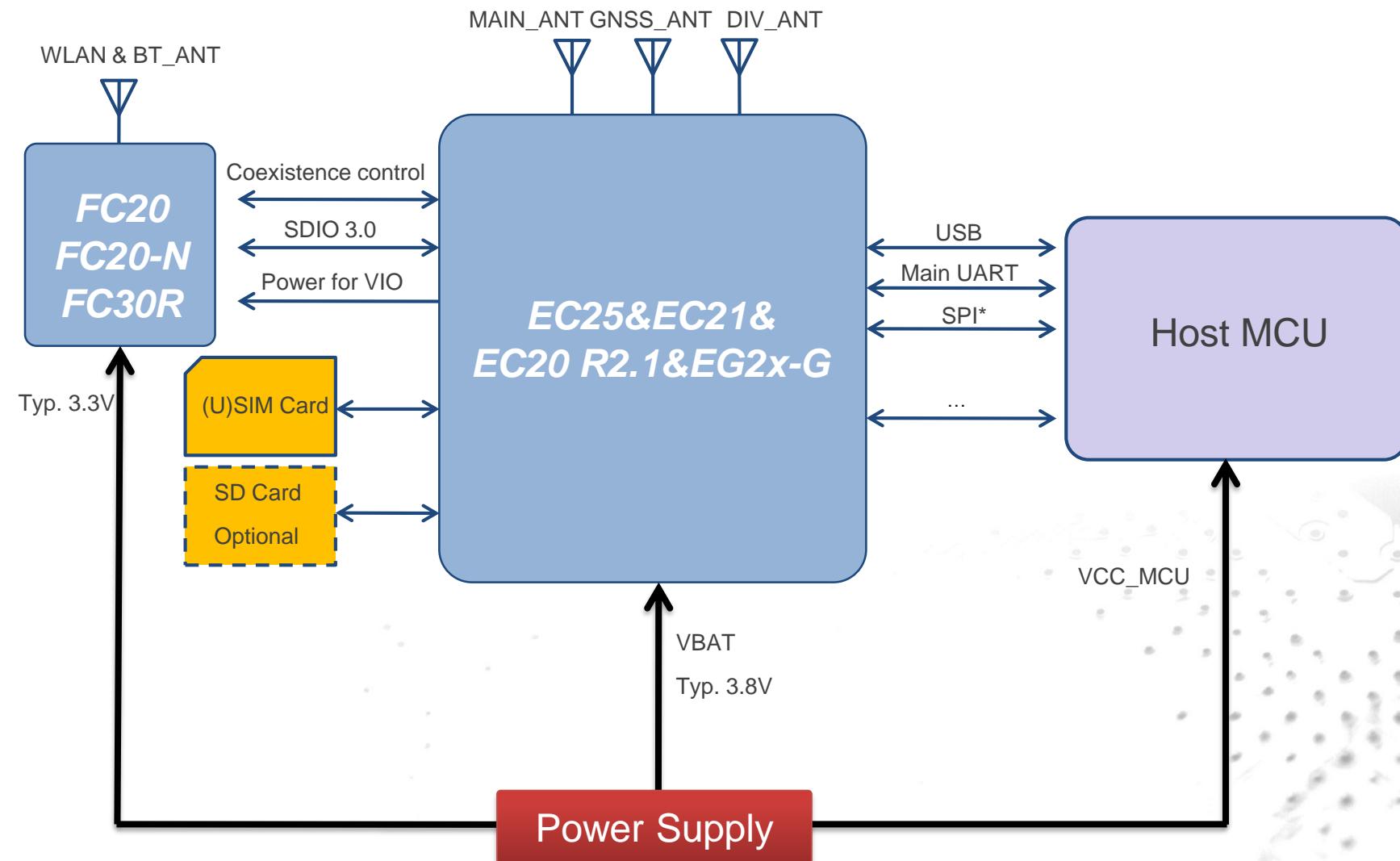
AF50T Specifications



Item	AF50T
Chip	QCA6696
WLAN Protocol	802.11 a/b/g/n/ac/ax, 2×2+2×2, dual MAC
Wi-Fi Bands	2.4GHz/ 5GHz
Wi-Fi Modulation	DBPSK, DQPSK, CCK, BPSK, QPSK, QAM, MU-MIMO-OFDMA
BT Protocol	BT 5.1
Work Mode	AP/ STA
Power Supply	VDD_RF, VDD_CORE_VL, VDD_CORE_VM, VDD_CORE_VH, VDD_IO
Interfaces	PCIe, WLAN_EN, UART, PCM, BT_EN, GPIOs
Security	WPA3
Extended Temperature Range	-40°C to +85°C
Region	Global
Certification	FCC*/ IC*/ CE*/ TELEC*/ JATE*/ Anatel*

“” means under planning.*

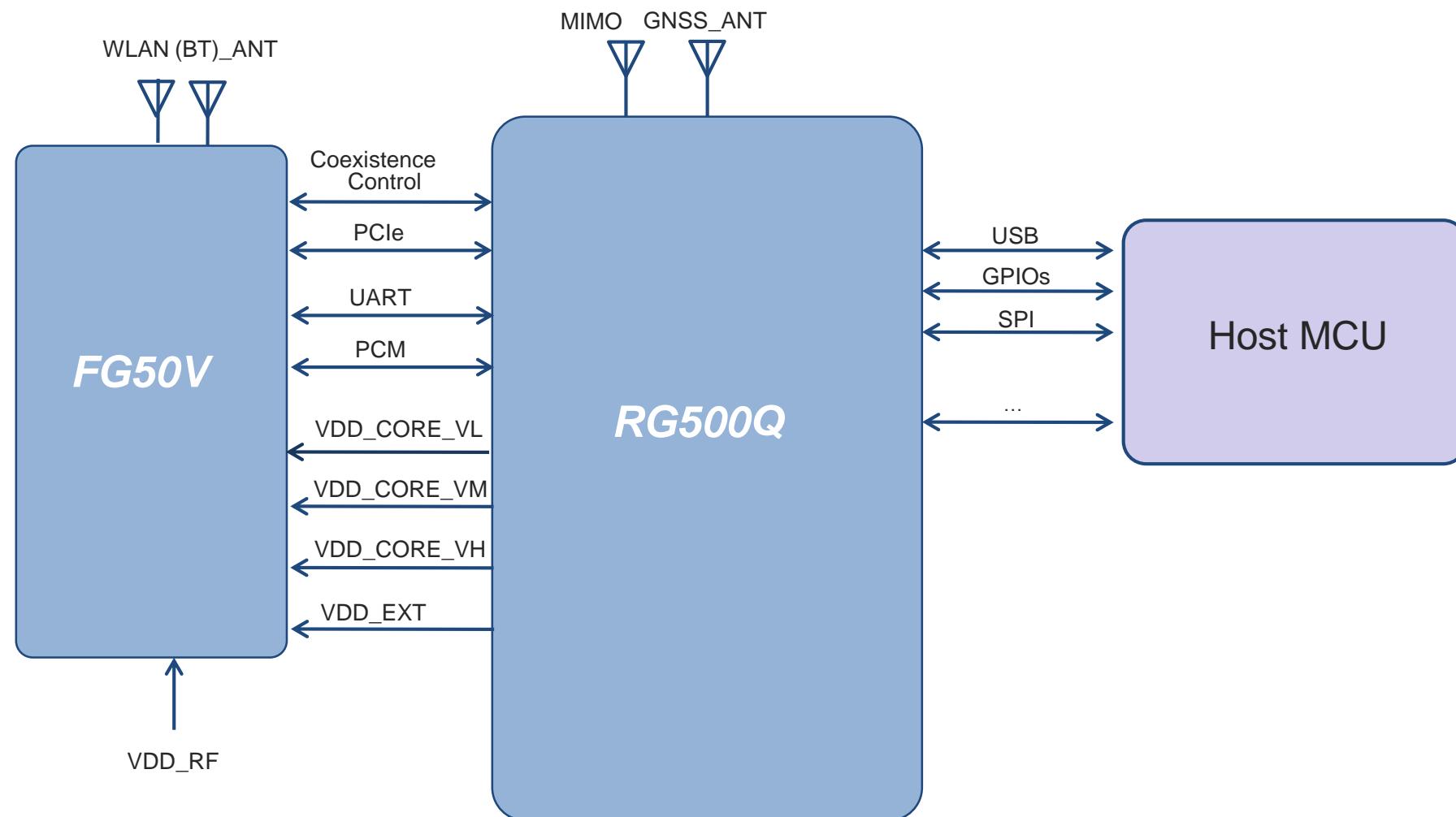
EC2x + FC20/FC30R Solution



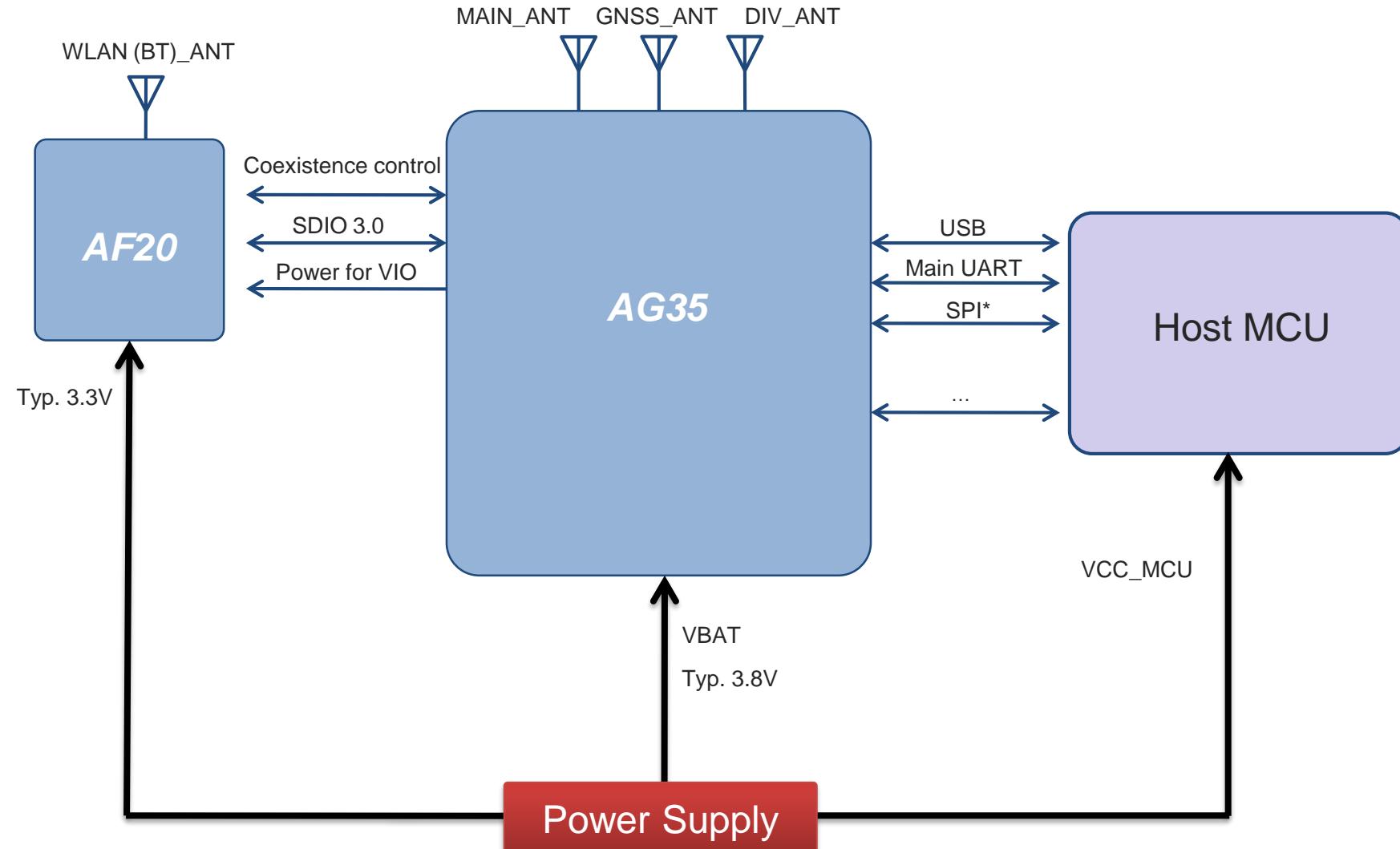
“” means under development.*

RG500Q + FG50V Solution

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Build a Smarter World

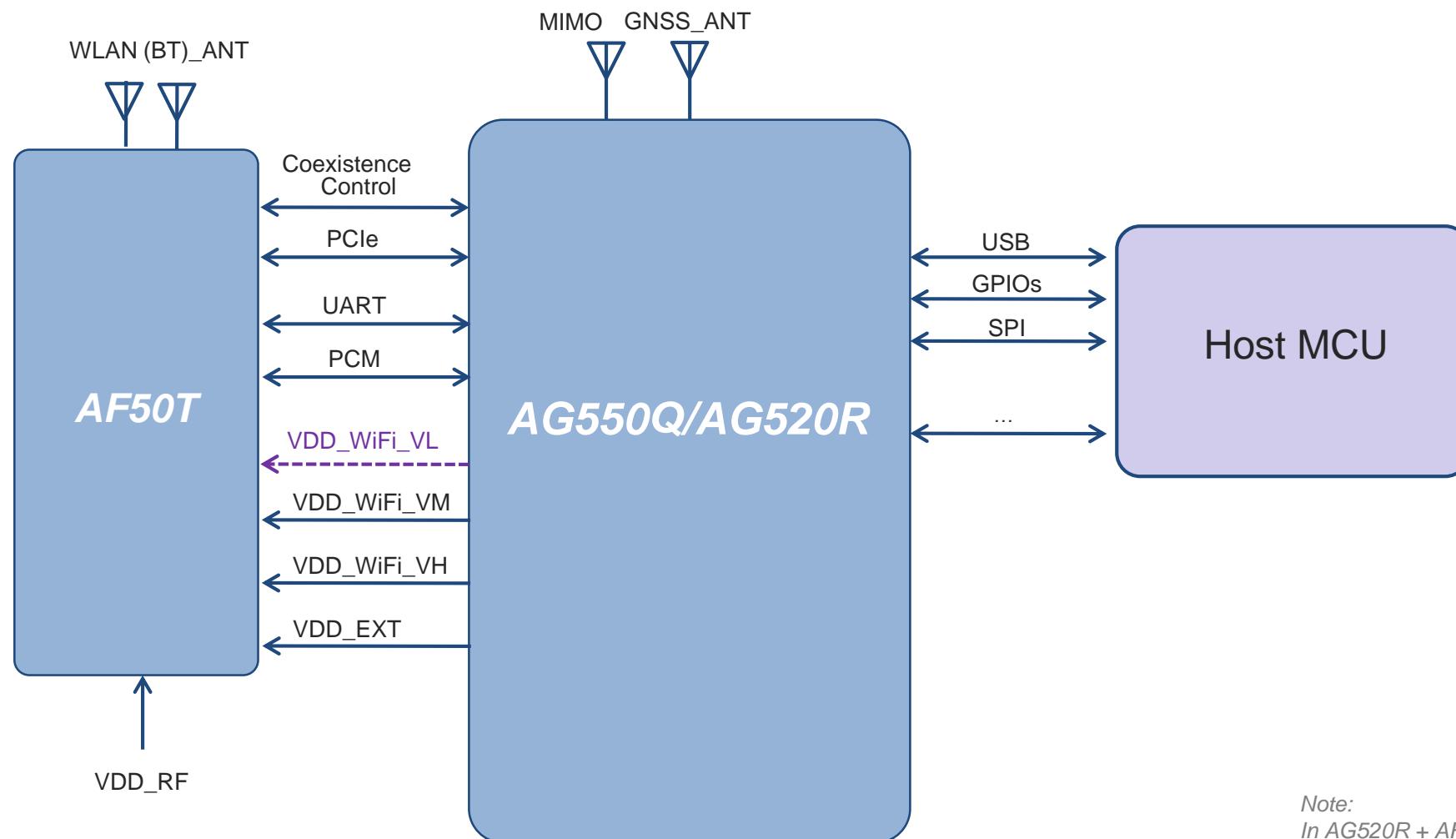


AG35 + AF20 Solution



“” means under development.*

AG550Q/AG520R + AF50T Solution



Global IoT Deployment



**Quectel modules are sold to
more than 150 countries.**



Thank you!

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