



Quectel LTE Standard Module

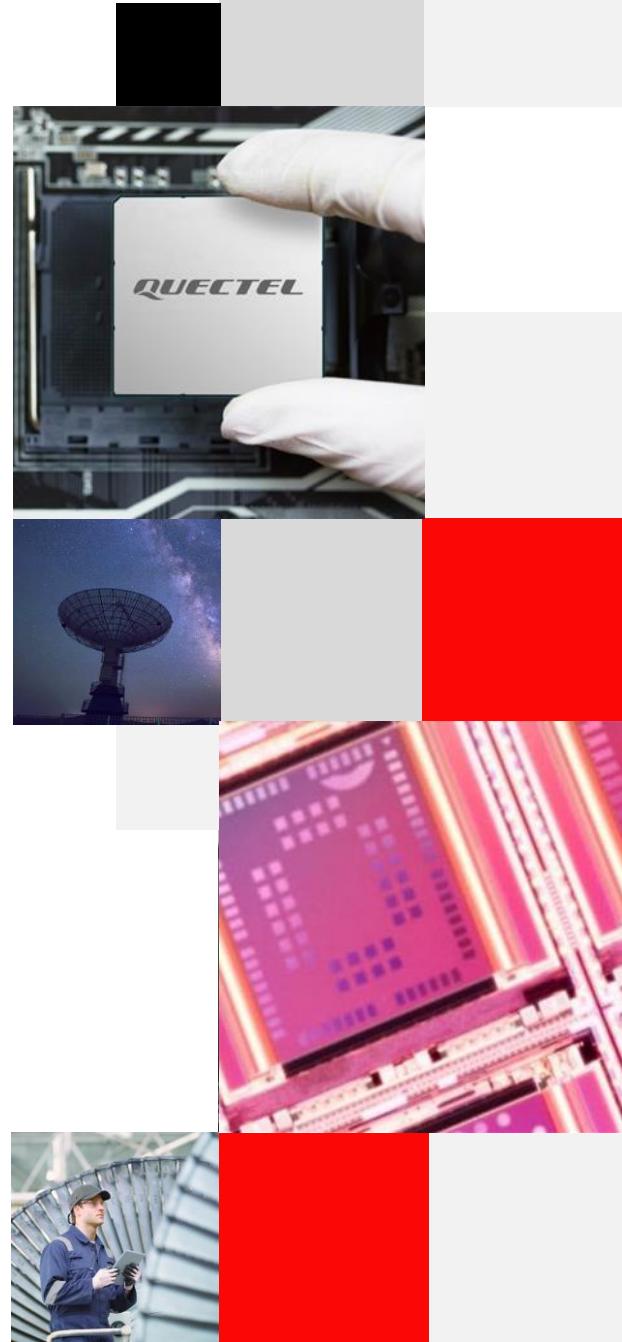
Product Overview

Build a Smarter World



Duty of Confidentiality

The Receiving Party shall keep confidential all documentation and information provided by Quectel, except when the specific permission has been granted by Quectel. The Receiving Party shall not access or use Quectel's documentation and information for any purpose except as expressly provided herein. Furthermore, the Receiving Party shall not disclose any of the Quectel's documentation and information to any third party without the prior written consent by Quectel. For any noncompliance to the above requirements, unauthorized use, or other illegal or malicious use of the documentation and information, Quectel will reserve the right to take legal action.

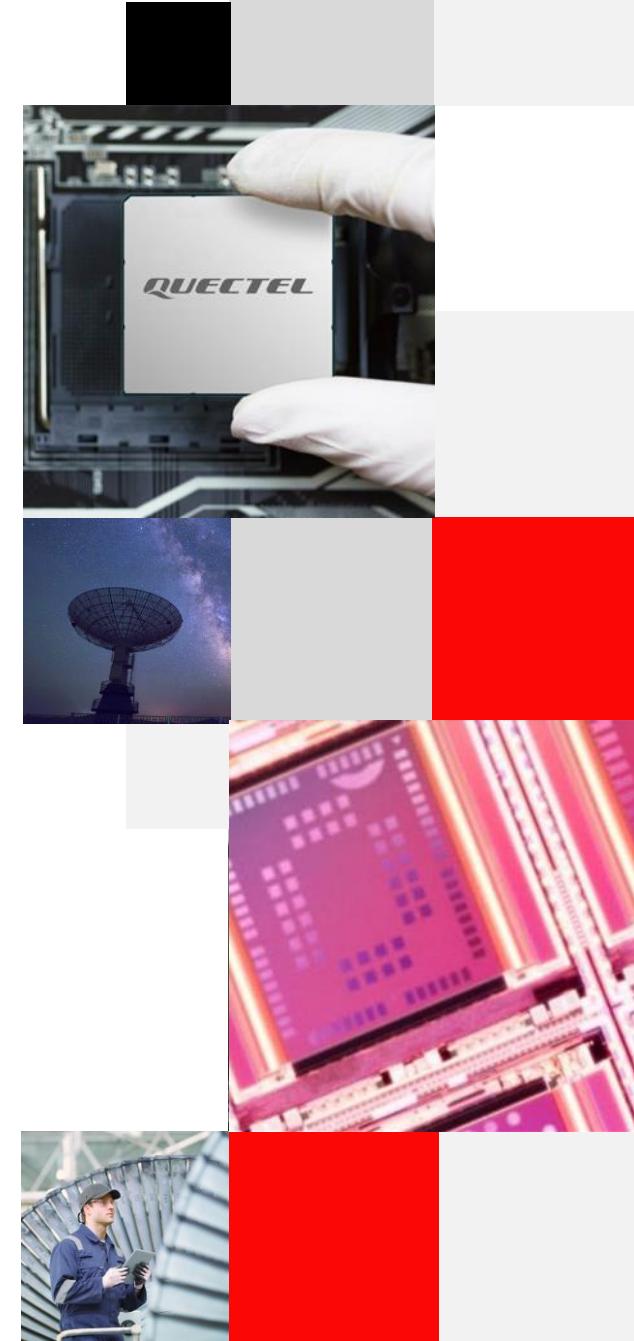




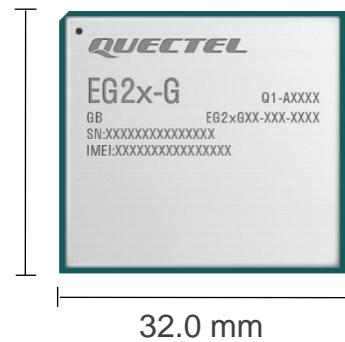
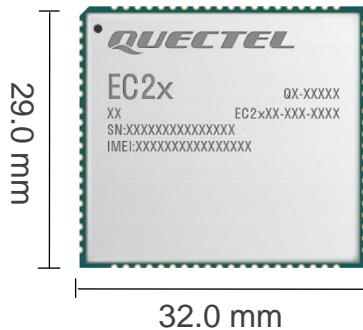
LTE Standard Roadmap

Specifications
Technologies
Applications

Build a Smarter World

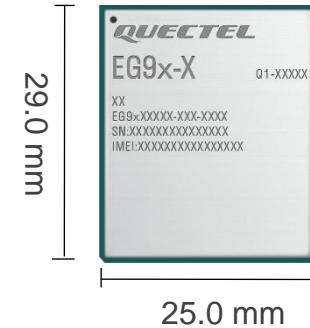
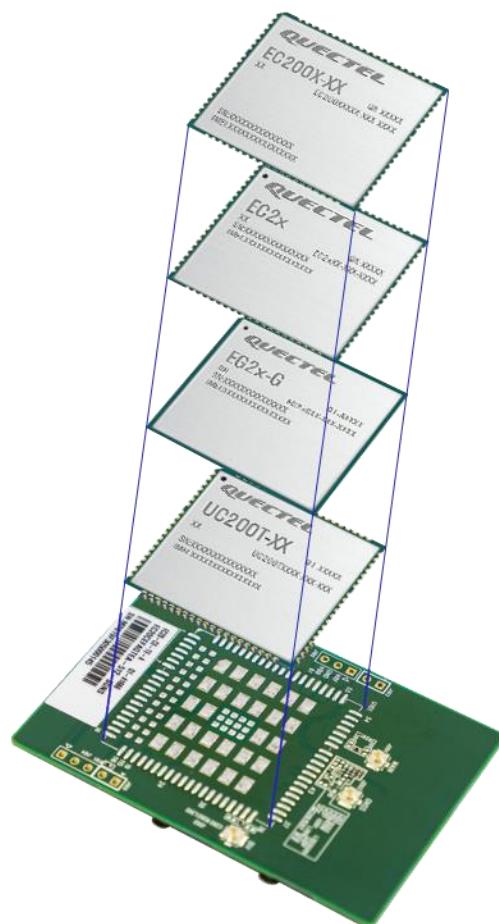


Form Factor of LTE Standard Modules



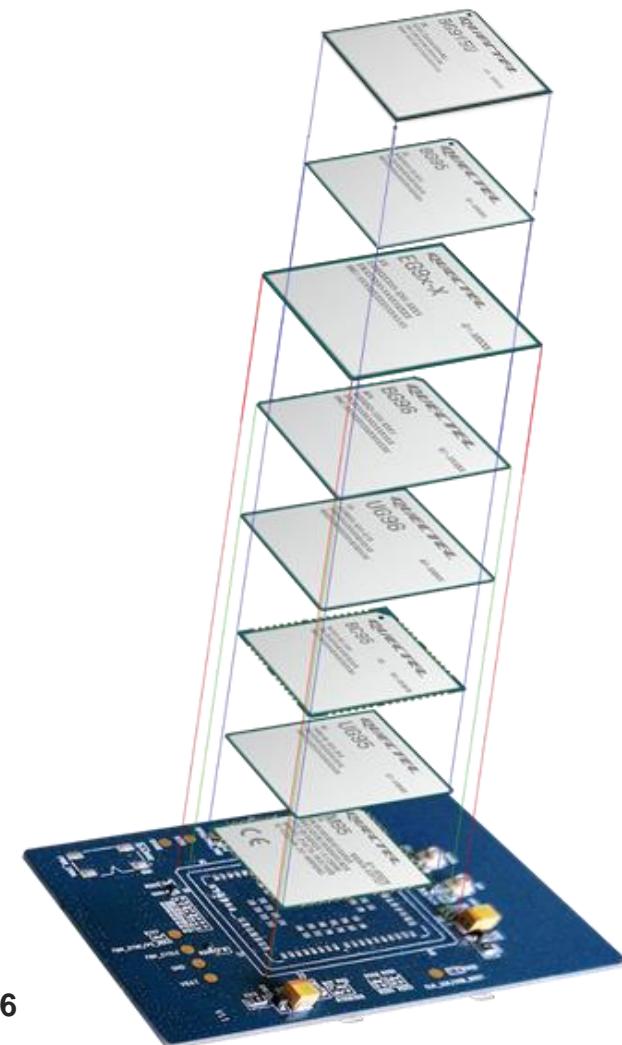
EC2x Series & EG2x-G are compatible with:

- LTE Cat 1 **EC200S Series/ EC200U Series**
 - UMTS/HSPA+ module **UC200T Series**



EG9x Series are compatible with:

- GSM/GPRS module **M95**
 - UMTS/HSPA modules **UG95/UG96**
 - LTE Cat NB2 module **BC95-G**
 - LTE Cat M1/Cat NB1/EGPRS module **BG96/BG95 Series**
 - LTE Cat 1 **EG915U Series**



LTE Standard Modules Roadmap



Product Lifetime > 2025

Cat 4

Qualcomm



EC20/EC25 series
 -A/ -V/ -AF/
 -AFX/ -AFXD/
 -MX/ -AU/ -AUX/
 -EU/ -EUX/ -E/ -J/
 EC20-CE



EG25-G

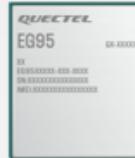


EC200A series
 -CN*/ -EU*/ -AU*



EC25 series/ EC20-CE/
 EG25-G Mini PCIe

EG9x/ EG91xx Series



EG95 series
 -NA/ -NAX/
 -NAXD/
 -AUX/ -E/ -EX

EM05 Series



EM05-CE/ -E/ -G

ASR

Cat 1

Qualcomm



EC21 series
 -A/ -V/ -AUT/
 -AU/ -AUX/ -E/
 -EU/ -EUX/
 -KL/ -J



EG21-G



EC21 series/
 EG21-G Mini PCIe



EG91 series
 -NA/ -NAX/
 -NAXD/ -VX/ -AUX/
 -E/ -EX

ASR

Unisoc



EC200S series
 -EU/ -EN



EC200U series
 -CN/ -EU

-A/ -AF/ -AFX/ -AFXD/ -NA/ -NAX/
 -NAXD/ -VX (North America)
 -AU/ -AUX (Latin America/ Australia/
 New Zealand)
 -LA (Latin America)
 -AUT (Australia)
 -CE/ -CN (China/ India)
 -E (EMEA/ Korea/ Thailand/ India)
 -EN (EMEA/ APAC)
 -EU/ -EUX (EMEA/ APAC/ Thailand)
 -EX (EMEA)
 -G (Global)
 -J (Japan)
 -KL (Korea)
 -MX (Mexico)
 -V (Verizon)



EG915U series
 -EU/ -LA/ -CN*

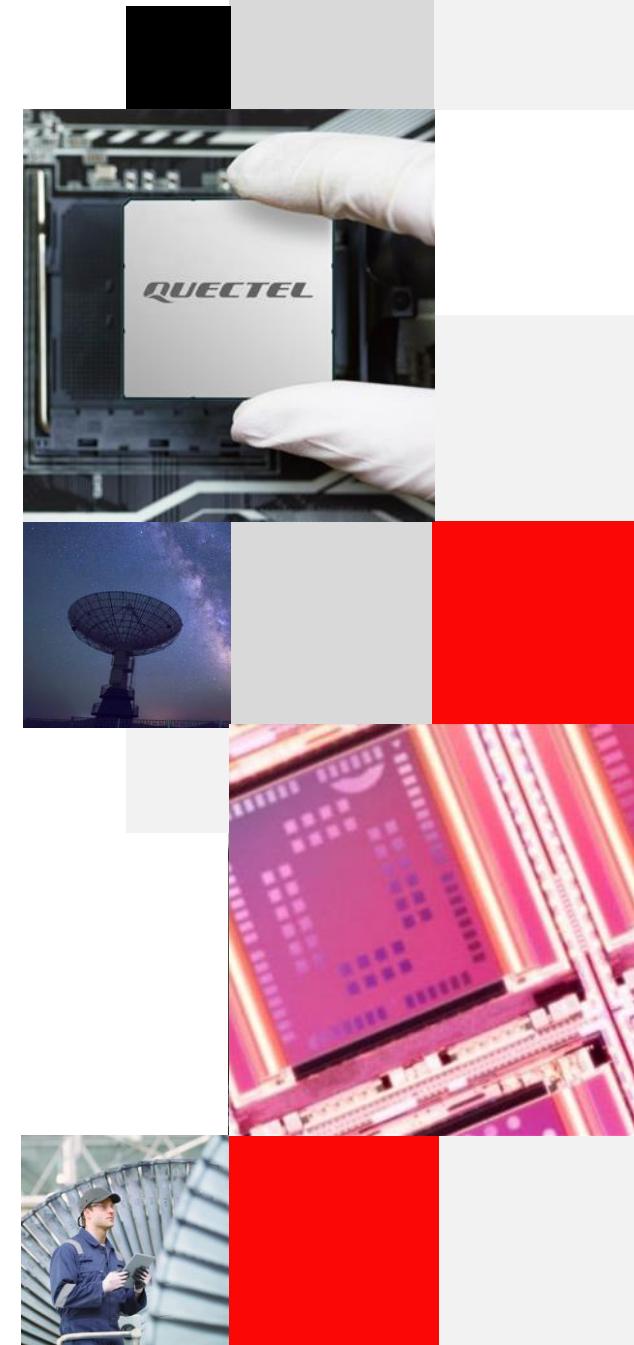


LTE Standard Roadmap

Specifications

Technologies
Applications

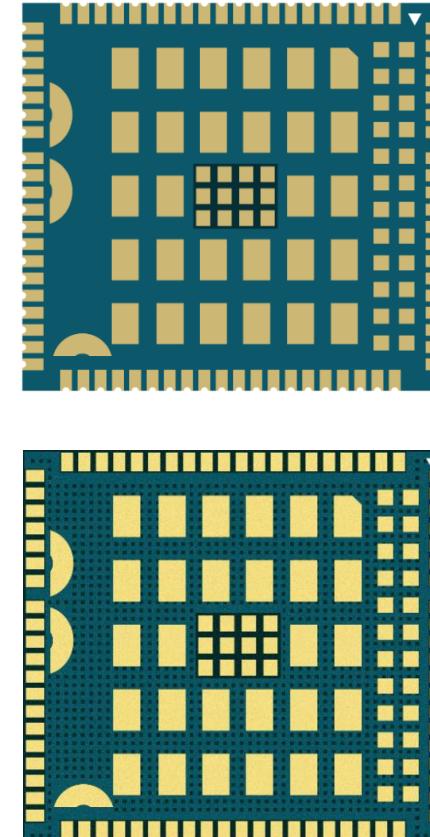
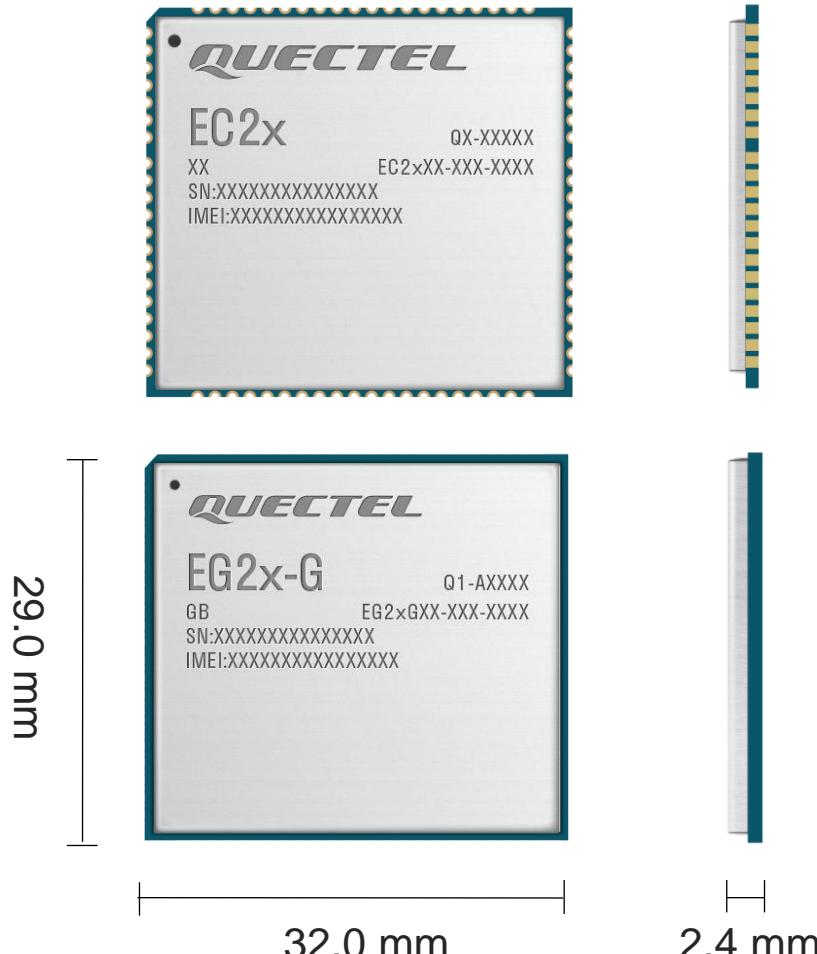
Build a Smarter World



EC2x/EG2x-G Series Mechanical Dimensions



Multi-mode LTE Module (MDM9x07)



Length: 29.0 mm (± 0.15 mm)
Width: 32.0 mm (± 0.15 mm)
Height: 2.4 mm (± 0.2 mm)
Weight: Approx. 4.9 g (EC25/EC21/EG2x-G)
Approx. 5.3 g (EC20-CE)

EC25-A/-V/-AF/-AFX/-AFXD/-MX/-AU/-AUX Specifications



■ Multi-mode LTE Cat 4 Module

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

Variant	EC25-A	EC25-V	EC25-AF	EC25-AFX	EC25-AFXD (Data-only)	EC25-MX	EC25-AU	EC25-AUX
LTE	LTE-FDD	B2/ B4/ B12	B4/ B13	B2/ B4/ B5/ B12/ B13/ B14/ B66/ B71	B2/ B4/ B5/ B12/ B13/ B14/ B66/ B71	B2/ B4/ B5/ B12/ B13/ B14/ B66/ B71	B1/ B2 ^① / B3/ B4/ B5/ B7/ B8/ B28	B1/ B2 ^① / B3/ B4/ B5/ B7/ B8/ B28
	LTE-TDD	-	-	-	-	-	B40	B40
UMTS	WCDMA	B2/ B4/ B5	-	B2/ B4/ B5	B2/ B4/ B5	B2/ B4/ B5	B1/ B2/ B5/ B8	B1/ B2/ B5/ B8/ B4
	TD-SCDMA	-	-	-	-	-	-	-
EVDO/CDMA	-	-	-	-	-	-	-	-
GSM/EDGE	-	-	-	-	-	-	Quad-band	Quad-band
Embedded GNSS	Optional	Optional	Optional	Optional	Optional	-	Optional	Optional
Wi-Fi/Bluetooth Interface	Y	Y	Y	-	-	-	Y	-
Ethernet Interface	Y	Y	Y	Y	Y	Y	Y	Y
Region	North America	Verizon	North America	North America	North America	Mexico	Latin America/ Australia/ New Zealand	Latin America/ Australia/ New Zealand
Certification	Carrier: AT&T/ T-Mobile/ Rogers/ Telus Regulatory: PTCRB/ FCC/ IC Others: WHQL	Carrier: Verizon Regulatory: GCF/ FCC Others: WHQL	Carrier: Verizon/ AT&T (FirstNet)/ T-Mobile/ U.S. Cellular/ Rogers/ Telus Regulatory: GCF/ PTCRB/ FCC/ IC Others: WHQL	Carrier: Verizon/ AT&T (FirstNet)/ U.S. Cellular Regulatory: GCF/ PTCRB/ FCC/ IC Others: WHQL	Carrier: Verizon/ AT&T (FirstNet)/ T-Mobile Regulatory: GCF/ PTCRB/ FCC Others: WHQL	Regulatory: PTCRB/ FCC/ IFETEL Others: WHQL	Carrier: Telstra Regulatory: GCF/ FCC/ Anatel/ NCC/ RCM Others: WHQL	Regulatory: CE/ FCC/ Anatel/ NCC/ RCM/ ICASA Others: WHQL

"Y" means supported.

"-" means unsupported.

^① means Rx-diversity is not supported.

EC25-A/-V/-AF/-AFX/-AFXD/-MX/-AU/-AUX Mini PCIe Specifications

30.0 mm x 51.0 mm x 4.9 mm

150 Mbps DL / 50 Mbps UL

■ Multi-mode LTE Cat 4 Module

Variant		EC25-A Mini PCIe	EC25-V Mini PCIe	EC25-AF Mini PCIe	EC25-AFX Mini PCIe	EC25-AFXD Mini PCIe (Data-only)	EC25-MX Mini PCIe	EC25-AU Mini PCIe	EC25-AUX Mini PCIe
LTE	LTE-FDD	B2/ B4/ B12	B4/ B13	B2/ B4/ B5/ B12/ B13/ B14/ B66/ B71	B2/ B4/ B5/ B12/ B13/ B14/ B66/ B71	B2/ B4/ B5/ B12/ B13/ B14/ B66/ B71	B2/ B4/ B5/ B7/ B28/ B66	B1/ B2 ^① / B3/ B4/ B5/ B7/ B8/ B28	B1/ B2 ^② / B3/ B4/ B5/ B7/ B8/ B28
	LTE-TDD	-	-	-	-	-	-	B40	B40
UMTS	WCDMA	B2/ B4/ B5	-	B2/ B4/ B5	B2/ B4/ B5	B2/ B4/ B5	B2/ B4/ B5	B1/ B2/ B5/ B8	B1/ B2/ B5/ B8/ B4
	TD-SCDMA	-	-	-	-	-	-	-	-
EVDO/CDMA		-	-	-	-	-	-	-	-
GSM/EDGE		-	-	-	-	-	-	Quad-band	Quad-band
Embedded GNSS		Optional	Optional	Optional	Optional	Optional	-	Optional	Optional
Region		North America	Verizon	North America	North America	North America	Mexico	Latin America/ Australia/ New Zealand	Latin America/ Australia/ New Zealand
Certification		Carrier: AT&T/ T-Mobile/ Rogers/ Telus Regulatory: PTCRB/ FCC/ IC Others: WHQL	Carrier: Verizon Regulatory: GCF/ FCC Others: WHQL	Carrier: Verizon/ AT&T (FirstNet)/ T-Mobile/ U.S. Cellular/ Rogers/ Telus Regulatory: GCF/ PTCRB/ FCC/ IC Others: WHQL	Carrier: Verizon/ AT&T (FirstNet)/ U.S. Cellular Regulatory: GCF/ PTCRB/ FCC/ IC Others: WHQL	Carrier: Verizon/ AT&T (FirstNet) ^② / T-Mobile ^② Regulatory: GCF/ PTCRB/ FCC Others: WHQL	Regulatory: FCC/ PTCRB/ IFETEL Others: WHQL	Carrier: Telstra Regulatory: GCF/ FCC/ Anatel/ NCC/ RCM Others: WHQL	Regulatory: CE/ FCC/ Anatel/ NCC/ RCM/ ICASA Others: WHQL

"- " means unsupported.

① means Rx-diversity is not supported.

② means the certification of the Mini PCIe terminal device can use the corresponding certification of the LCC module.

EC25-EU/-EUX/-E/-J/EC20-CE/EG25-G Specifications

29.0 mm × 32.0 mm × 2.4 mm

150 Mbps DL / 50 Mbps UL

■ Multi-mode LTE Cat 4 Module

Variant	EC25-EU	EC25-EUX	EC25-E	EC25-J	EC20-CE	EG25-G
LTE	LTE-FDD	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B5/ B7/ B8/ B20	B1/ B3/ B8/ B18/ B19/ B26	B1/ B3/ B5/ B8
	LTE-TDD	B38/ B40/ B41	B38/ B40/ B41	B38/ B40/ B41	B41	B34/ B38/ B39/ B40/ B41
UMTS	WCDMA	B1/ B8	B1/ B8	B1/ B5/ B8	B1/ B6/ B8/ B19	B1/ B8
	TD-SCDMA	-	-	-	-	B34/ B39
EVDO/CDMA		-	-	-	BC0	-
GSM/EDGE		B3/ B8	B3/ B8	B3/ B8	B3/ B8	Quad-band
Embedded GNSS		Optional	Optional	Optional	Optional	Optional
Wi-Fi/Bluetooth Interface		Y	-	Y	Y	Y
Ethernet Interface		Y	Y	Y	Y	Y
Region		EMEA/ Thailand	EMEA/ Thailand	EMEA/ Korea/ Thailand/ India	Japan	China/ India
Certification		Carrier: Deutsche Telekom/ British Telecom Regulatory: GCF/ CE/ NCC/ RCM Others: WHQL	Carrier: Vodafone/ Deutsche Telekom/ British Telecom/ KT/ SKT/ Telefónica/ LGU+ Regulatory: GCF/ CE/ NCC/ RCM/ FAC/ NBTC/ ICASA Others: WHQL	Carrier: NTT DOCOMO/ SoftBank/ KDDI Regulatory: JATE/ TELEC Others: WHQL	Regulatory: SRRC/ NAL/ CCC Others: WHQL	Carrier: Deutsche Telekom/ Verizon/ AT&T/ T-Mobile/ Sprint/ U.S. Cellular/ Telus/ Rogers* Regulatory: GCF/ CE/ PTCRB/ FCC/ IC// Anatel/ IFETEL/ SRRC/ NAL/ CCC/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC/ IMDA/ ICASA/ FAC* Others: WHQL

"Y" means supported.

"-" means unsupported.

"**" means under development/ongoing.

① means Rx-diversity is not supported.

EC25-EU/-EUX/-E/-J/EC20-CE/EG25-G Mini PCIe Specifications

■ Multi-mode LTE Cat 4 Module

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

Variant		EC25-EU Mini PCIe	EC25-EUX Mini PCIe	EC25-E Mini PCIe	EC25-J Mini PCIe	EC20-CE Mini PCIe	EG25-G Mini PCIe ^①
LTE	LTE-FDD	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B5/ B7/ B8/ B20	B1/ B3/ B8/ B18/ B19/ B26	B1/ B3/ B5/ B8	B1/ B2/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B18/ B19/ B20/ B25/ B26/ B28
	LTE-TDD	B38/ B40/ B41	B38/ B40/ B41	B38/ B40/ B41	B41	B34/ B38/ B39/ B40/ B41	B38/ B39/ B40/ B41
UMTS	WCDMA	B1/ B8	B1/ B8	B1/ B5/ B8	B1/ B6/ B8/ B19	B1/ B8	B1/ B2/ B4/ B5/ B6/ B8/ B19
	TD-SCDMA	-	-	-	-	B34/ B39	-
EVDO/CDMA		-	-	-	-	BC0	-
GSM/EDGE		B3/ B8	B3/ B8	B3/ B8	-	B3/ B8	Quad-band
Embedded GNSS		Optional	Optional	Optional	Optional	Optional	Optional
Region		EMEA/ Thailand	EMEA/ Thailand	EMEA/ Korea/ Thailand/ India	Japan	China/ India	Global
Certification		Carrier: Deutsche Telekom Regulatory: GCF/ CE/ NCC/ RCM Others: WHQL	Carrier: Vodafone/ Deutsche Telekom/ Deutsche Telekom Regulatory: GCF/ CE/ NCC/ RCM Others: WHQL	Carrier: Vodafone/ Deutsche Telekom/ British Telecom/ SKT/ Telefónica/ LGU+ Regulatory: GCF/ CE/ KC/ NCC/ RCM/ FAC/ NBTC/ ICASA Others: WHQL	Carrier: NTT DOCOMO/ SoftBank/ KDDI Regulatory: JATE/ TELEC Others: WHQL	Regulatory: SRRC/ NAL/ CCC Others: WHQL	Carrier: Deutsche Telekom/ Verizon/ AT&T/ U.S. Cellular/ Telus/ T-Mobile*/ Rogers* Regulatory: GCF/ CE/ PTCRB/ FCC/ IC/ Anatel/ IFETEL/ SRRC/ NAL/ CCC/ KC/ NCC/ JATE/ TELEC/ RCM/ IMDA/ ICASA/ FAC*/ NBTC* 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/ongoing.

⁻ means unsupported.

EC21 Series/EG21-G Specifications

■ Multi-mode LTE Cat 1 Module

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

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

"Y" means supported.

"-" means unsupported.

"**" means under development/ongoing.

① means Rx-diversity is not supported.

EC21 Series/EG21-G Mini PCIe Specifications



**30.0 mm x 51.0 mm x 4.9 mm
10 Mbps DL / 5 Mbps UL**

■ Multi-mode LTE Cat 1 Module

Variant		EC21-A Mini PCIe	EC21-V Mini PCIe	EC21-AUT Mini PCIe	EC21-AU Mini PCIe	EC21-AUX Mini PCIe	EC21-E Mini PCIe	EC21-EU Mini PCIe	EC21-EUX Mini PCIe	EC21-KL Mini PCIe	EC21-J Mini PCIe	EG21-G Mini PCIe
LTE	LTE-FDD	B2/ B4/ B12	B4/ B13	B1/ B3/ B5/ B7/ B28	B1/ B2 ^① / B3/ B4/ B5/ B7/ B8/ B28	B1/ B2 ^① / B3/ B4/ B5/ B7/ B8/ B28	B1/ B3/ B5/ B7/ B8/ B20	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B5/ B7/ B8	B1/ B3/ B8/ B18/ B19/ B26	B1/ B2/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B18/ B19/ B20/ B25/ B26/ B28
	LTE-TDD	-	-	-	B40	B40	-	-	-	-	-	B38/ B39/ B40/ B41
UMTS	WCDMA	B2/ B4/ B5	-	B1/ B5	B1/ B2/ B5/ B8	B1/ B2/ B5/ B8/ B4	B1/ B5/ B8	B1/ B8	B1/ B8	-	-	B1/ B2/ B4/ B5/ B6/ B8/ B19
	TD-SCDMA	-	-	-	-	-	-	-	-	-	-	-
EVDO/CDMA		-	-	-	-	-	-	-	-	-	-	-
GSM/EDGE		-	-	-	Quad-band	Quad-band	B3/ B8	B3/B8	B3/B8	-	-	Quad-band
Embedded GNSS		Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	-	-	Optional
Region		North America	Verizon	Australia	Latin America/ Australia/ New Zealand	Latin America/ Australia/ New Zealand	EMEA/ Korea/ Thailand/ India	EMEA/ Thailand	EMEA/ Thailand	Korea	Japan	Global
Certification		Carrier: AT&T/ T-Mobile/ Rogers/ Telus Regulatory: GCF/ FCC Others: WHQL	Carrier: Verizon	Carrier: Telstra	Carrier: Telstra	Regulatory: FCC/ IC/ Anatel/ NCC/ JATE/ RCM/ ICASA	Regulatory: CE/ FCC/ Anatel/ NCC/ JATE/ RCM/ ICASA	Carrier: Vodafone/ Deutsche Telekom/ Telefónica*	Carrier: Deutsche Telekom	Carrier: KT/ SKT/ LGU+	Carrier: NTT DOCOMO/ KDDI	Carrier: Deutsche Telekom/ Verizon/ AT&T/ T-Mobile*
		Regulatory: GCF/ RCM Others: WHQL	Regulatory: GCF/ RCM Others: WHQL	Regulatory: CE/ RCM Others: WHQL	Regulatory: GCF/ CE/ NCC/ RCM Others: WHQL	Regulatory: GCF/ CE/ NCC/ RCM Others: WHQL	Regulatory: GCF/ CE/ NCC/ RCM Others: WHQL	Regulatory: GCF/ CE/ NCC/ RCM Others: WHQL	Regulatory: GCF/ CE/ NCC/ RCM Others: WHQL	Regulatory: GCF/ CE/ NCC/ RCM Others: WHQL	Regulatory: GCF/ CE/ FCC/ PTCRB/ IC/ Anatel/ IFETEL/ NCC/ JATE/ TELEC/ RCM/ ICASA Others: WHQL	

^{“*”} means under development/ongoing.

“-” means unsupported.

^① means Rx-diversity is not supported.

EC25-E Timeline

2020/2021

Project Stage

EC25-E

MP

Carrier Certification

Vodafone/ Deutsche Telekom/ British Telecom/ KT/ SKT/ Telefónica/ LGU+



Regulatory Certification

GCF/ CE/ KC/ NCC/ RCM/ FAC/ NBTC/ ICASA



Others

WHQL

EC25-AF (Data+Voice) Timeline

2019/2020

Project Stage

EC25-AF (OC: EC25AFFA-512-SGAS)

MP

Carrier Certification

Verizon/ AT&T (FirstNet)/ T-Mobile/ U.S. Cellular/ Rogers/ Telus



Regulatory Certification

GCF/ PTCRB/ FCC/ IC



Others

WHQL

EC25-AF (Data-only) Timeline

2019/2020

Project Stage

EC25-AF (OC: EC25AFFD-512-SGAS)

MP

Carrier Certification

Verizon/ AT&T (FirstNet)/ T-Mobile/ U.S. Cellular/ Rogers/ Telus

verizon[✓]

 **AT&T**

 **T-Mobile**

 **U.S. Cellular**

 **ROGERS**

 **TELUS**

Regulatory Certification

GCF/ PTCRB/ FCC/ IC

 **GCF**
Global Certification Forum

 **PTCRB**

 **FCC**

 **Industry
Canada**

Others

WHQL

EC25-AFX Timeline

2019/2020

Project Stage



Carrier Certification

Verizon/ AT&T (FirstNet)/ U.S. Cellular



Regulatory Certification

GCF/ PTCRB/ FCC/ IC



Others

WHQL

EC25-AFXD (Data-only) Timeline

2019/2020

Project Stage



Carrier Certification

Verizon/ AT&T (FirstNet)/ T-Mobile



Regulatory Certification

GCF/ PTCRB/ FCC



Others

WHQL

EC25-MX Timeline

2019/2020

Project Stage

EC25-MX MP

Regulatory Certification

PTCRB^①/ FCC/ IFETEL



Others

WHQL

^① The PTCRB is not full certificate, and is only for authentication and ciphering cases.

EC25-AUX/EC21-AUX Timeline

2020

Project Stage

EC25-AUX/EC21-AUX 

Regulatory Certification

CE/ FCC/ Anatel/ NCC/ RCM/ ICASA



Others

WHQL

EC25-EUX Timeline

2020/2021

Project Stage



Carrier Certification

Vodafone/ Deutsche Telekom



Regulatory Certification

GCF/ CE/ NCC/ RCM



Others

WHQL

EC21-EUX Timeline

2020

Project Stage

EC21-EUX 

Regulatory Certification

GCF/ CE/ RCM



Others

WHQL

EC21-KL Timeline

2020/2021

Project Stage



Carrier Certification

KT/ SKT/ LGU+



Regulatory Certification

KC



Others

WHQL

EG25-G (Data+Voice) Timeline

2019

Project Stage

EG25-G (OC: EG25GGB-256-SGNS)

MP

Carrier Certification

Deutsche Telekom/ Verizon/ AT&T/ T-Mobile/ Sprint/ U.S. Cellular/ Telus Completed

Rogers TBD

Regulatory Certification

GCF/ CE/ PTCRB/ FCC/ IC/ Anatel/ IFETEL/ SRRC/ NAL/ CCC/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC/ IMDA/ ICASA Completed

FAC TBD

Others

WHQL

EG25-G (Data-only) Timeline

2019

Project Stage

EG25-G (OC: EG25GGD-256-SGNS)

MP

Carrier Certification

Verizon/ AT&T/ T-Mobile



Regulatory Certification

GCF/ CE/ PTCRB/ FCC/ IC/ Anatel/ IFETEL/ SRRC/ NAL/ CCC/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC/ IMDA/ ICASA Completed

FAC TBD

Others

WHQL

EG21-G Timeline

2019/2020

Project Stage

EG21-G MP

Carrier Certification

Deutsche Telekom/ Verizon/ AT&T/ Sprint/ U.S. Cellular/ T-Mobile/ Telus



Regulatory Certification

CCC/ GCF/ CE/ PTCRB/ FCC/ IC/ Anatel/ IFETEL/ KC/ NCC/ JATE/ TELEC/ RCM/ ICASA

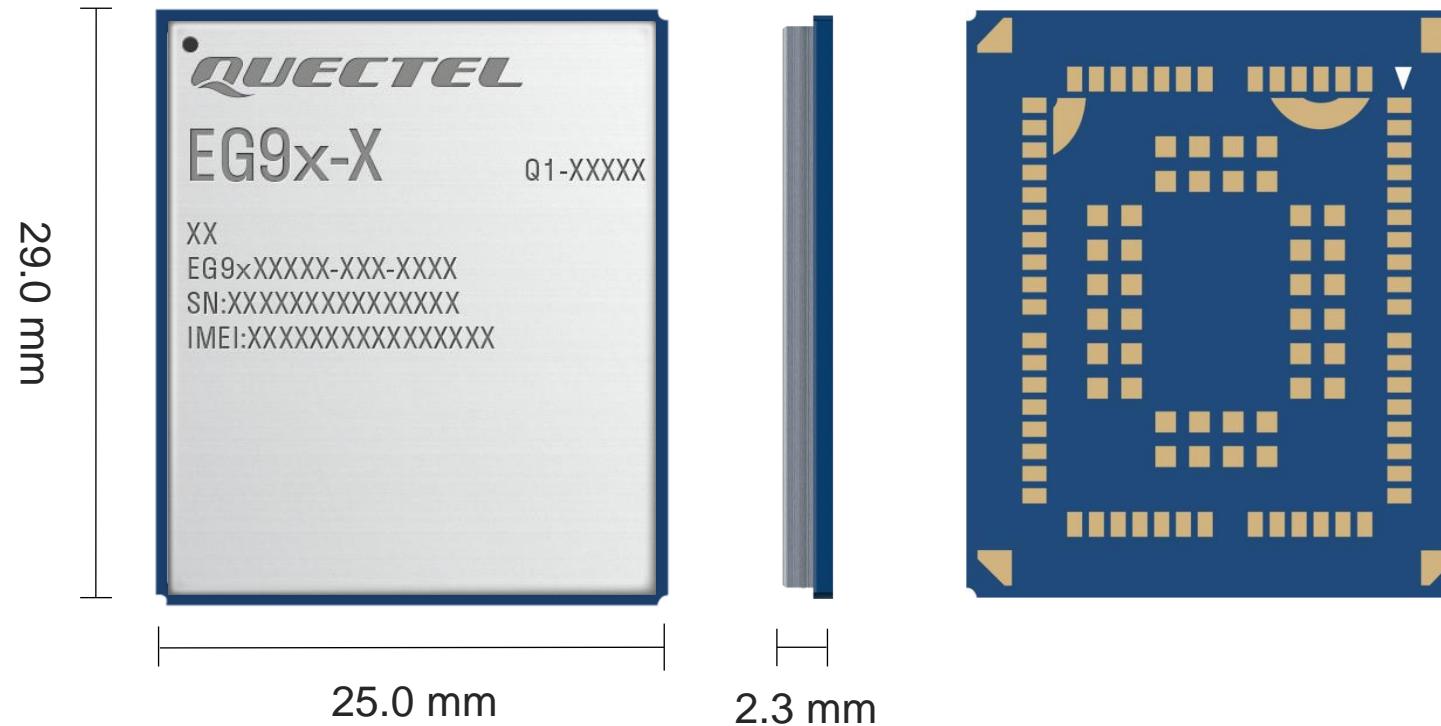


Others

WHQL

EG95/EG91 Series Mechanical Dimensions

Multi-mode LTE Module (MDM9x07)



Length: 29.0 mm (± 0.15 mm)
Width: 25.0 mm (± 0.15 mm)
Height: 2.3 mm (± 0.2 mm)
Weight: Approx. 3.8 g

EG95 Series Specifications

■ Multi-mode LTE Cat 4 Module

29.0 mm × 25.0 mm × 2.3 mm
150 Mbps DL / 50 Mbps UL

Variant		EG95-NA	EG95-NAX	EG95-NAXD (Data-only)	EG95-AUX	EG95-E	EG95-EX
LTE	LTE-FDD	B2/ B4/ B5/ B12/ B13	B2/ B4/ B5/ B12/ B13/ B25/ B26	B2/ B4/ B5/ B12/ B13/ B25/ B26	B1/ B2/ B3/ B4/ B5/ B7/ B8/ B28/ B66	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B7/ B8/ B20/ B28
	LTE-TDD	-	-	-	-	-	-
UMTS	WCDMA	B2/ B4/ B5	B2/ B4/ B5	B2/ B4/ B5	B1/ B2/ B5/ B8	B1/ B8	B1/ B8
	TD-SCDMA	-	-	-	-	-	-
EVDO/CDMA		-	-	-	-	-	-
GSM/EDGE		-	-	-	Quad-band	B3/ B8	B3/B8
Embedded GNSS		Optional	Optional	Optional	Optional	-	Optional
Wi-Fi/Bluetooth Interface		-	-	-	-	-	-
Ethernet Interface		-	-	-	-	-	-
Region		North America	North America	North America	Latin America/ Australia/ New Zealand	EMEA	EMEA
Certification		Carrier: Verizon/ AT&T/ T-Mobile/ U.S. Cellular/ Rogers/ Telus Regulatory: GCF/ PTCRB/ FCC/ IC Others: WHQL	Carrier: AT&T/ Sprint/ Verizon Regulatory: GCF/ PTCRB/ FCC/ IC Others: WHQL	Carrier: Verizon/ AT&T/ T-Mobile/ Sprint Regulatory: GCF/ PTCRB/ FCC/ IC Others: WHQL	Regulatory: GCF/ CE/ RCM/ Anatel Others: WHQL	Regulatory: GCF/ CE/ RCM/ FAC Others: WHQL	Regulatory: GCF/ CE/ RCM Others: WHQL

"-" means unsupported.

EG91 Series Specifications

■ Multi-mode LTE Cat 1 Module

29.0 mm × 25.0 mm × 2.3 mm
10 Mbps DL / 5 Mbps UL

Variant		EG91-NA	EG91-NAX	EG91-NAXD (Data-only)	EG91-VX	EG91-AUX	EG91-E	EG91-EX
LTE	LTE-FDD	B2/ B4/ B5/ B12/ B13	B2/ B4/ B5/ B12/ B13/ B25/ B26	B2/ B4/ B5/ B12/ B13/ B25/ B26	B4/ B13	B1/ B2/ B3/ B4/ B5/ B7/ B8/ B28/ B66	B1/ B3/ B7/ B8/ B20/ B28A	B1/ B3/ B7/ B8/ B20/ B28
	LTE-TDD	-	-	-	-	-	-	-
UMTS	WCDMA	B2/ B4/ B5	B2/ B4/ B5	B2/ B4/ B5	-	B1/ B2/ B5/ B8	B1/ B8	B1/ B8
	TD-SCDMA	-	-	-	-	-	-	-
EVDO/CDMA		-	-	-	-	-	-	-
GSM/EDGE		-	-	-	-	Quad-band	B3/ B8	B3/B8
Embedded GNSS	Optional	Optional	Optional	Optional	Optional	Optional	-	Optional
Wi-Fi/Bluetooth Interface	-	-	-	-	-	-	-	-
Ethernet Interface	-	-	-	-	-	-	-	-
Region	North America	North America	North America	North America	Latin America/ Australia/ New Zealand	EMEA	EMEA	
Certification	Carrier: Verizon/ AT&T/ T-Mobile/ U.S. Cellular/ Rogers/ Telus Regulatory: GCF/ PTCRB/ FCC/ IC Others: WHQL	Carrier: Verizon/ AT&T/ Sprint Regulatory: GCF/ PTCRB/ FCC/ IC Others: WHQL	Carrier: Verizon/ AT&T/ T-Mobile/ Sprint Regulatory: GCF/ PTCRB/ FCC/ IC Others: WHQL	Carrier: Verizon Regulatory: GCF/ FCC Others: WHQL	Regulatory: CE/ FCC/ Anatel/ RCM Others: WHQL	Carrier: Deutsche Telekom Regulatory: GCF/ CE/ RCM/ Anatel/ FAC Others: WHQL	Regulatory: GCF/ CE/ NCC/ RCM Others: WHQL	

"-" means unsupported.

EG95-NA/EG91-NA Timeline

2019

Project Stage

EG95-NA/EG91-NA

MP

Carrier Certification

Verizon/ AT&T/ T-Mobile/ U.S. Cellular/ Rogers/ Telus



Regulatory Certification

GCF/ PTCRB/ FCC/ IC



Others

WHQL

EG95-NAX Timeline

2019/2020

Project Stage



Carrier Certification

Verizon/ AT&T/ Sprint



Regulatory Certification

GCF/ PTCRB/ FCC/ IC



Others

WHQL

EG91-NAX Timeline

2019/2020

Project Stage

EG91-NAX 

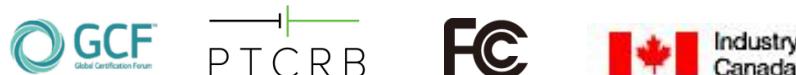
Carrier Certification

Verizon/ AT&T/ Sprint



Regulatory Certification

GCF/ PTCRB/ FCC/ IC



Others

WHQL

EG95-NAXD (Data-only) Timeline

2021

Project Stage

EG95-NAXD

MP

Carrier Certification

Verizon/ AT&T/ T-Mobile/ Sprint



Regulatory Certification

GCF/ PTCRB/ FCC/ IC



Others

WHQL

EG91-NAXD (Data-only) Timeline

2019/2020

Project Stage

EG91-NAXD MP

Carrier Certification

Verizon/ AT&T/ T-Mobile/ Sprint



Regulatory Certification

GCF/ PTCRB/ FCC/ IC



Others

WHQL

EG95-AUX/EG91-AUX Timeline

2020/2021

Project Stage

EG95-AUX/EG91-AUX 

Regulatory Certification

CE/ FCC/ RCM/ Anatel



Others

WHQL

EG95-EX Timeline

2019/2020

Project Stage

EG95-EX MP

Regulatory Certification

GCF/ CE/ RCM



Others

WHQL

EG91-EX Timeline

2019/2020

Project Stage

EG91-EX MP

Regulatory Certification

GCF/ CE/ NCC/ RCM



Others

WHQL

EG91-VX Timeline

2019/2020

Project Stage

MP
EG91-VX

Carrier Certification

Verizon

verizon[✓]

Regulatory Certification

GCF/ FCC

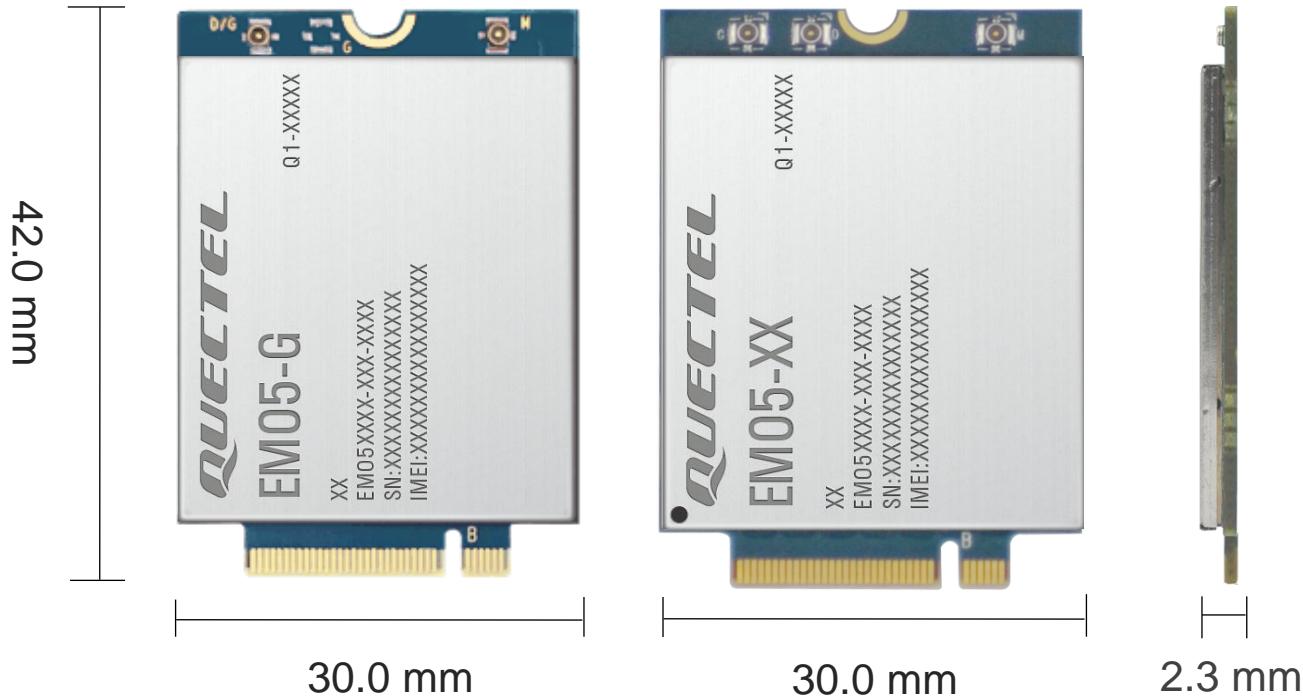


Others

WHQL

EM05 Series Mechanical Dimensions

Multi-mode LTE Module (MDM9x07)



Length: 42.0 mm (± 0.15 mm)
Width: 30.0 mm (± 0.15 mm)
Height: 2.3 mm (± 0.2 mm)
Weight: Approx. 6.0 g

EM05 Series Specifications

■ Multi-mode LTE Cat 4 Module

42 mm × 30 mm × 2.3 mm
150 Mbps DL / 50 Mbps UL

Variant	EM05-CE	EM05-E	EM05-G
LTE	LTE-FDD B1/ B3/ B5/ B8	B1/ B3/ B7/ B8/ B20/ B28	B1/ B2/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B14/ B18/ B19/ B20/ B25/ B26/ B28/ B66/ B71
	LTE-TDD B38/ B39/ B40/ B41	B38/ B41	B38/ B39/ B40/ B41
UMTS	WCDMA B1/ B8	B1/ B8	B1/ B2/ B4/ B5/ B6/ B8/ B19
	TD-SCDMA -	-	-
EVDO/CDMA	BC0	-	-
Embedded GNSS	Optional	Optional	Optional
Wi-Fi/Bluetooth Interface	-	-	-
Ethernet Interface	-	-	-
Region	China/ Thailand/ India	Europe/ Australia/ New Zealand	Global
Certification	Regulatory: SRRC/ NAL/ CCC	Regulatory: CE/ RCM/ NCC/ ICASA	Carrier: AT&T/ T-Mobile/ Vodafone/ EE/ Swisscom/ NTT DOCOMO/ KDDI/ China Telecom/ China Mobile/ China Unicom/ Verizon*/ SoftBank*/ Telstra* Regulatory: SRRC/ NAL/ CCC/ GCF/ CE/ PTCRB/ FCC/ IC/ Anatel/ KC/ NCC/ JATE/ TELEC/ RCM

EM05-E Timeline

2020

Project Stage

EM05-E MP

Regulatory Certification

CE/ RCM/ NCC/ ICASA



Others

WHQL

EM05-G Timeline

2021												2022						
Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.		

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".

Carrier Certification

AT&T/ T-Mobile/ Vodafone/ EE/ Swisscom/ NTT DOCOMO/ KDDI/ China Telecom/ China Mobile/ China Unicom Completed

Verizon

Start

Complete (Planned)

SoftBank



Telstra

TBD

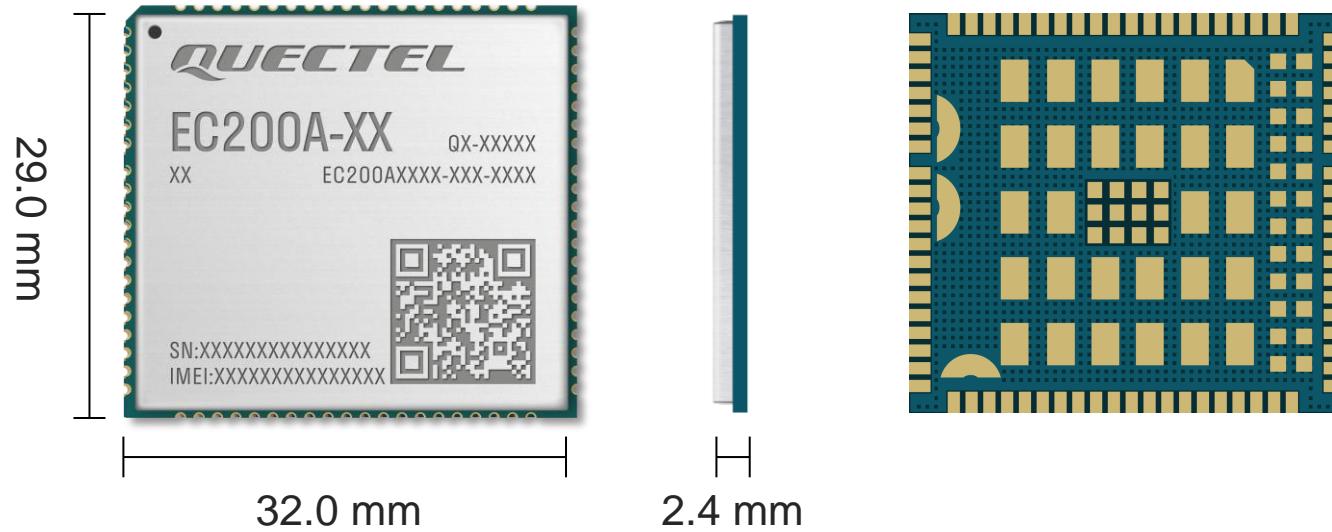
Regulatory Certification

SRRC/ NAL/ CCC/ GCF/ CE/ PTCRB/ FCC/ IC/ Anatel/ KC/ NCC/ JATE/ TELEC/ RCM



EC200A Series Mechanical Dimensions

Multi-mode LTE Module



Length: 29.0 mm (± 0.15 mm)
Width: 32.0 mm (± 0.15 mm)
Height: 2.4 mm (± 0.2 mm)
Weight: Approx. 4.4 g

EC200A Series Specifications



■ Multi-mode LTE Cat 4 Module

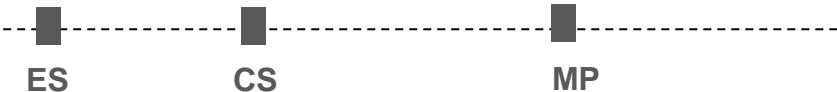
29.0 mm × 32.0 mm × 2.4 mm
150 Mbps DL / 50 Mbps UL

Variant		EC200A-CN*	EC200A-EU*	EC200A-AU*
LTE	LTE-FDD	B1/ B3/ B5/ B8	B1/B3/B5/B7/B8/B20/B28	B1/ B2/ B3/ B4/ B5/ B7/ B8/ B28/ B66
	LTE-TDD	B34/ B38/ B39/ B40/ B41	B38/ B40/ B41	B40
UMTS	WCDMA	B1/ B5/ B8	B1/ B5/ B8	B1/ B2/ B4/ B5/ B8
	TD-SCDMA	-	-	-
EVDO/CDMA		-	-	-
GSM/EDGE		B3/ B8	B3/ B8	B2/ B3/ B5/ B8
QuecLocator®		Y	Y	Y
VoLTE		Y*	Y*	Y*
WLAN Interface		Y (QuecOpen® only)	-	-
DFOTA		Y	Y*	Y*
Power Supply		3.4~4.5 V, typ. 3.8 V	3.4~4.5 V, typ. 3.8 V	3.4~4.5 V, typ. 3.8 V
Region		China/ India	EMEA	Latin America/ Australia/ New Zealand
Certification		Regulatory: SRRC*/ NAL*/ CCC*	Regulatory: CE*/ RCM*/ UKCA*	Regulatory: FCC*/ Anatel*

EC200A-CN* Timeline

2021												2022		
Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	

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

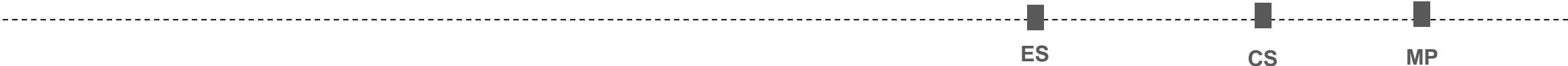
CE/ SRRC/ NAL



EC200A-AU* Timeline

2021												2022		
Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	

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

FCC/ Anatel



“*” 表示正在开发中/进行中。

EC200A-EU* Timeline

2021												2022		
Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	

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".

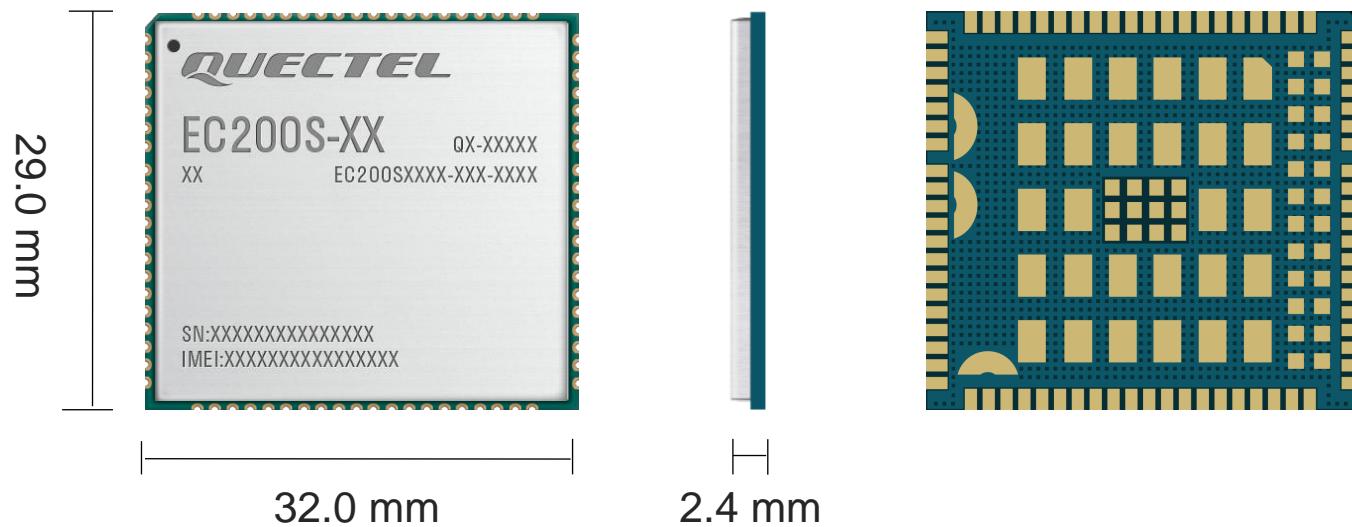
Regulatory Certification



“*” 表示正在开发中/进行中。

EC200S Series Mechanical Dimensions

Multi-Mode LTE Module



Length: 29.0 mm (± 0.15 mm)
Width: 32.0 mm (± 0.15 mm)
Height: 2.4 mm (± 0.2 mm)
Weight: Approx. 4.3 g

EC200S Series Specifications

■ Multi-Mode LTE Cat 1 Module

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

Variant		EC200S-EU	EC200S-EN
LTE	LTE-FDD	B1/ B3/ B5/ B7/ B8/ B20/ B28	B1/ B3/ B5/ B7/ B8/ B20/ B28/ B31/ B72
	LTE-TDD	B38/ B40/ B41	-
UMTS	WCDMA	-	-
	TD-SCDMA	-	-
EVDO/CDMA		-	-
GSM/EDGE		B2/ B3/ B5/ B8	B3/ B8
GNSS		-	-
QuecLocator®		Y	Y
Analog Audio		Y	Y
Wi-Fi Scan		Y	-
VoLTE		Y*	Y
DFOTA		Y	Y
Power Supply		3.4–4.5 V, typ. 3.8 V	3.4–4.5 V, typ. 3.8 V
Region		EMEA/ APAC	EMEA/ APAC
Certification		Regulatory: CE/ RCM	Regulatory: CE/ RCM

"Y" means supported.

"-" means unsupported.

"*" means under development.

EC200S Series Mini PCIe Specifications

■ Multi-Mode LTE Cat 1 Module

30.0 mm × 51.0 mm × 4.9 mm
10M DL / 5M UL

Variant	EC200S-EU Mini PCIe	EC200S-EN Mini PCIe
LTE	LTE-FDD B1/ B3/ B5/ B7/ B8/ B20/ B28	B1/ B3/ B5/ B7/ B8/ B20/ B28/ B31/ B71  
	LTE-TDD B38/ B40/ B41	-
GSM/EDGE	B2/ B3/ B5/ B8	B3/ B8
GNSS	-	-
QuecLocator®	Y	Y
Audio	PCM × 1	PCM × 1
Wi-Fi Scan	Optional	-
VoLTE*	Y	Y
Power Supply	3.0–3.6 V, typ. 3.3 V	3.0–3.6 V, typ. 3.3 V
Region	EMEA/ APAC	EMEA/ APAC
Certification	Regulatory: CE/ RCM	Regulatory: CE/ RCM

"Y" means supported.

"-" means unsupported.

"*" means under development.

Version: 4.2 | Status: Released

EC200S-EU Timeline

2020/2021

Project Stage

EC200S-EU 

Regulatory Certification

CE/ RCM



Others

WHQL

EC200S-EN Timeline

2020/2021

Project Stage



Regulatory Certification

CE/ RCM

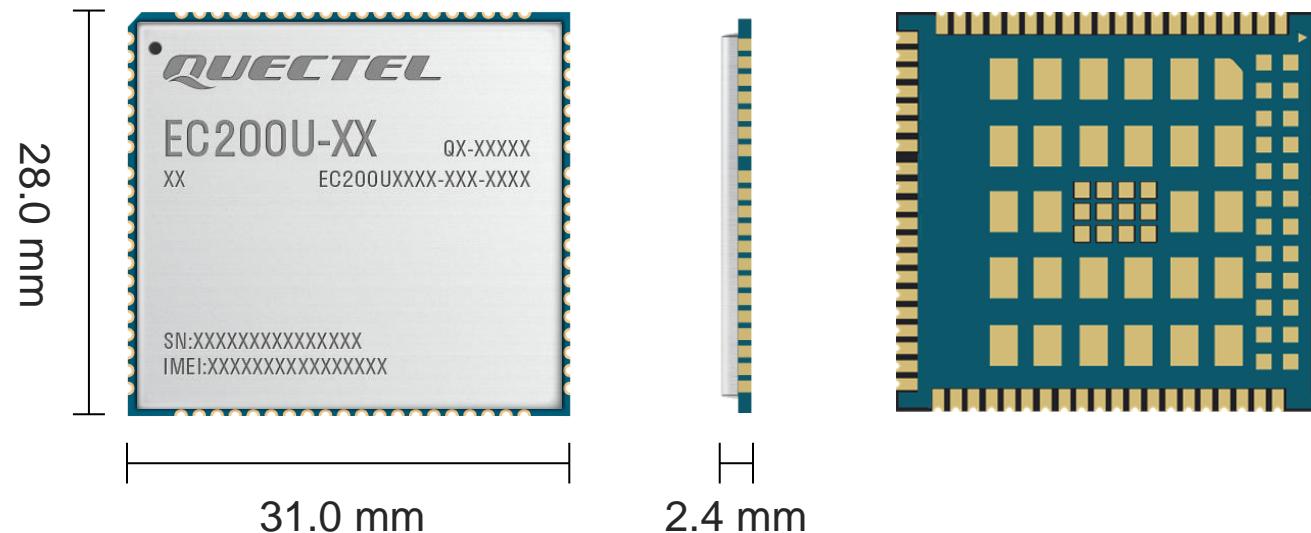


Others

WHQL

EC200U Series Mechanical Dimensions

Multi-Mode LTE Module



Length: 28.0 mm (± 0.15 mm)
Width: 31.0 mm (± 0.15 mm)
Height: 2.4 mm (± 0.2 mm)
Weight: Approx. 4.3 g

EC200U Series Specifications



■ Multi-Mode LTE Cat 1 Module

28.0 mm × 31.0 mm × 2.4 mm
10 Mbps DL / 5 Mbps UL

Variant		EC200U-CN	EC200U-EU
LTE	LTE-FDD	B1/ B3/ B5/ B8	B1/ B3/ B5/ B7/ B8/ B20/ B28
	LTE-TDD	B34/ B38/ B39/ B40/ B41	B38/ B40/ B41
UMTS	WCDMA	-	-
	TD-SCDMA	-	-
EVDO/CDMA		-	
GSM/EDGE		B3/ B8	B2/ B3/ B5/ B8
GNSS		Optional	Optional
QuecLocator®		Y	Y
Analog Audio		Y	Y
Wi-Fi Scan		Optional	Optional
Bluetooth		Optional	Optional
VoLTE		Y	Y*
FOTA		Y	Y
Power Supply		3.3–4.3 V, typ. 3.8 V	3.3–4.3 V, typ. 3.8 V
Region		China/India	EMEA
Certification		Regulatory: SRRC/ NAL/ CCC	Regulatory: CE/ RCM

"Y" means supported.

"—" means unsupported.

"**" means under development.

EC200U-CN Timeline

2020/2021

Project Stage



Carrier Certification

China Unicom/ China Mobile



Regulatory Certification

SRRC/ NAL/ CCC



Others

WHQL

EC200U-EU Timeline

2021

Project Stage

EC200U-EU MP

Regulatory Certification

CE/ RCM

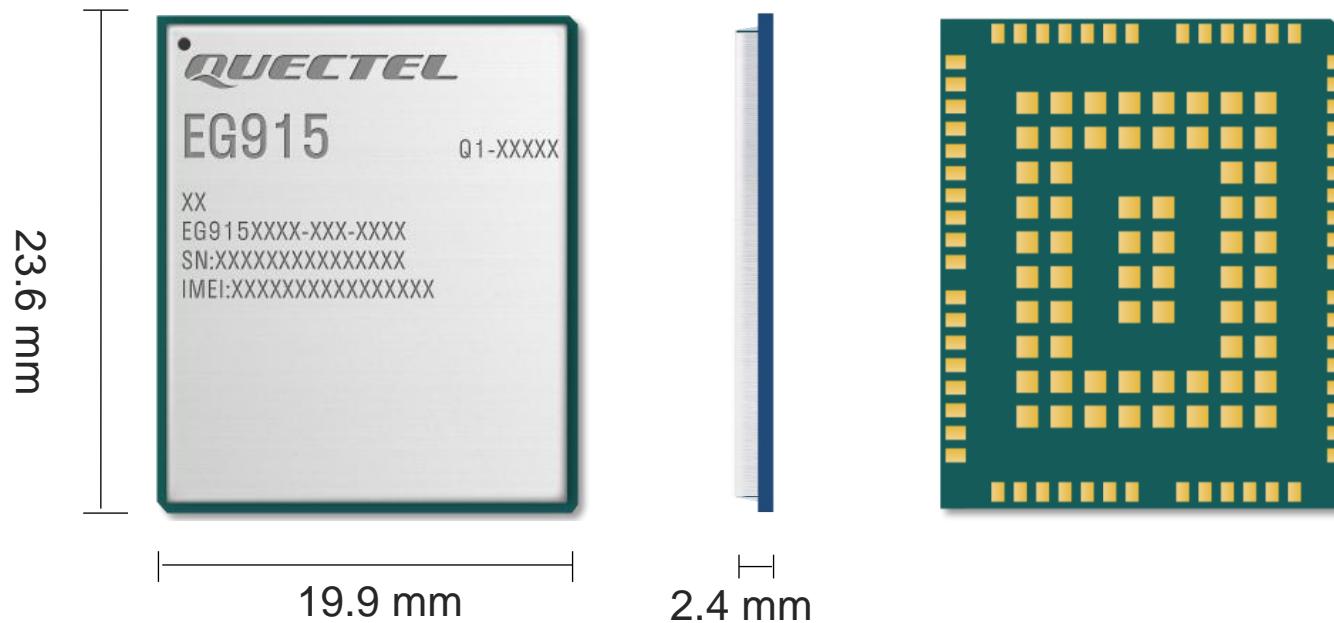


Others

WHQL

EG915U Series Mechanical Dimensions

Multi-Mode LTE Module



Length: 23.6 mm (± 0.15 mm)
Width: 19.9 mm (± 0.15 mm)
Height: 2.4 mm (± 0.2 mm)
Weight: Approx. 2.5 g

EG915U Series Specifications

■ Multi-Mode LTE Cat 1 Module

23.6 mm × 19.9 mm × 2.4 mm
10 Mbps DL/ 5 Mbps UL

Variant	EG915U-EU	EG915U-LA	EG915U-CN*
LTE	LTE-FDD	B1/B3/B5/B7/B8/B20/B28	B2/B3/B4/B5/B7/B8/B28/B66
	LTE-TDD	-	-
UMTS	WCDMA	-	-
	TD-SCDMA	-	-
EVDO/CDMA	-	-	-
GSM/EDGE	B2/B3/B5/B8	B2/B3/B5/B8	B3/B8
GNSS	-	-	-
QuecLocator®	Y	Y	Y
Analog Audio	Y	Y	Y
Wi-Fi Scan	Optional	Optional	Optional
Bluetooth	Optional	Optional	Optional
VoLTE	Y*	Y*	Y
DFOTA	Y	Y	Y
Power Supply	3.3–4.3 V, typ. 3.8 V	3.3–4.3 V, typ. 3.8 V	3.3–4.3 V, typ. 3.8 V
Region	EMEA/ Brazil/ Australia/ New Zealand	Latin America	China/ India
Certification	Regulatory: GCF*/ CE*/ RCM*/ Anatel*	Regulatory: FCC*/ Anatel*	-

"Y" means supported.

"-" means unsupported.

"**" means under development/ongoing.

EG915U-EU Timeline

2021												2022		
Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	

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

GCF/ Anatel



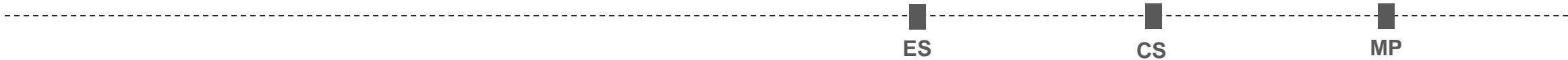
CE/ RCM



EG915U-LA Timeline

2021												2022		
Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	

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

FCC



Anatel



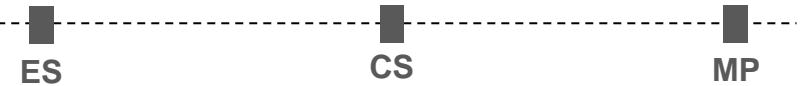
EG915U-CN* Timeline



2021												2022		
Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	

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".



"*" means under development/ongoing.

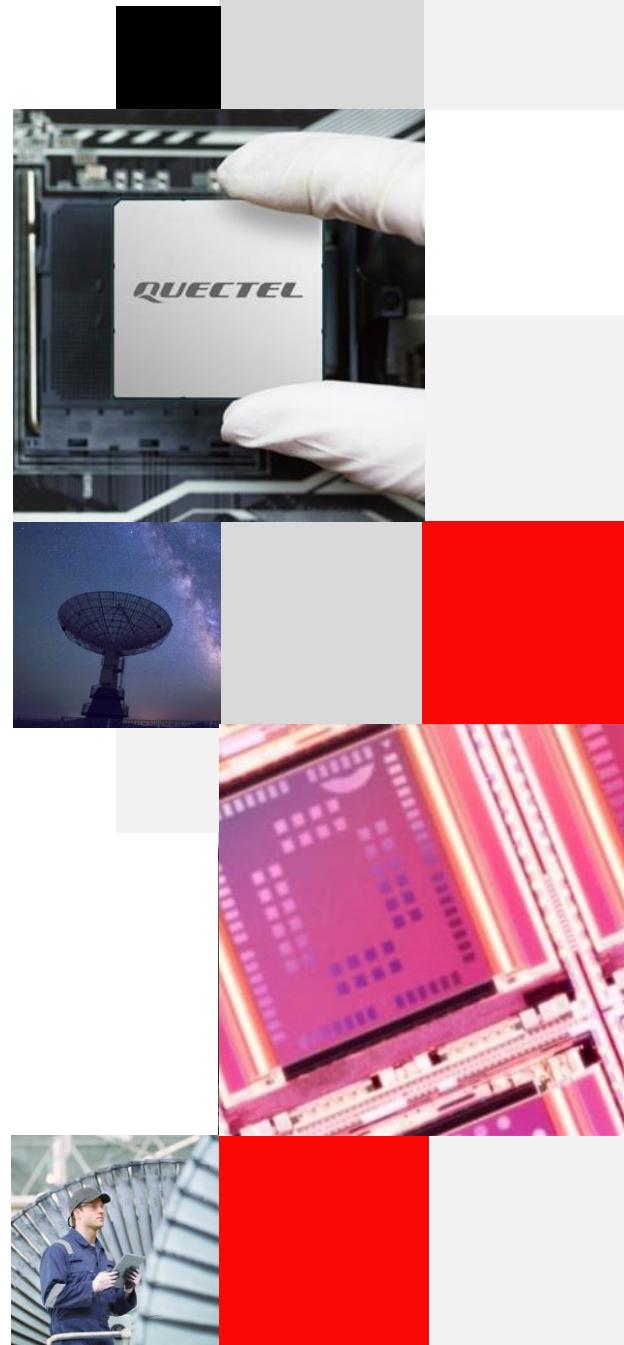


LTE Standard Roadmap
Specifications

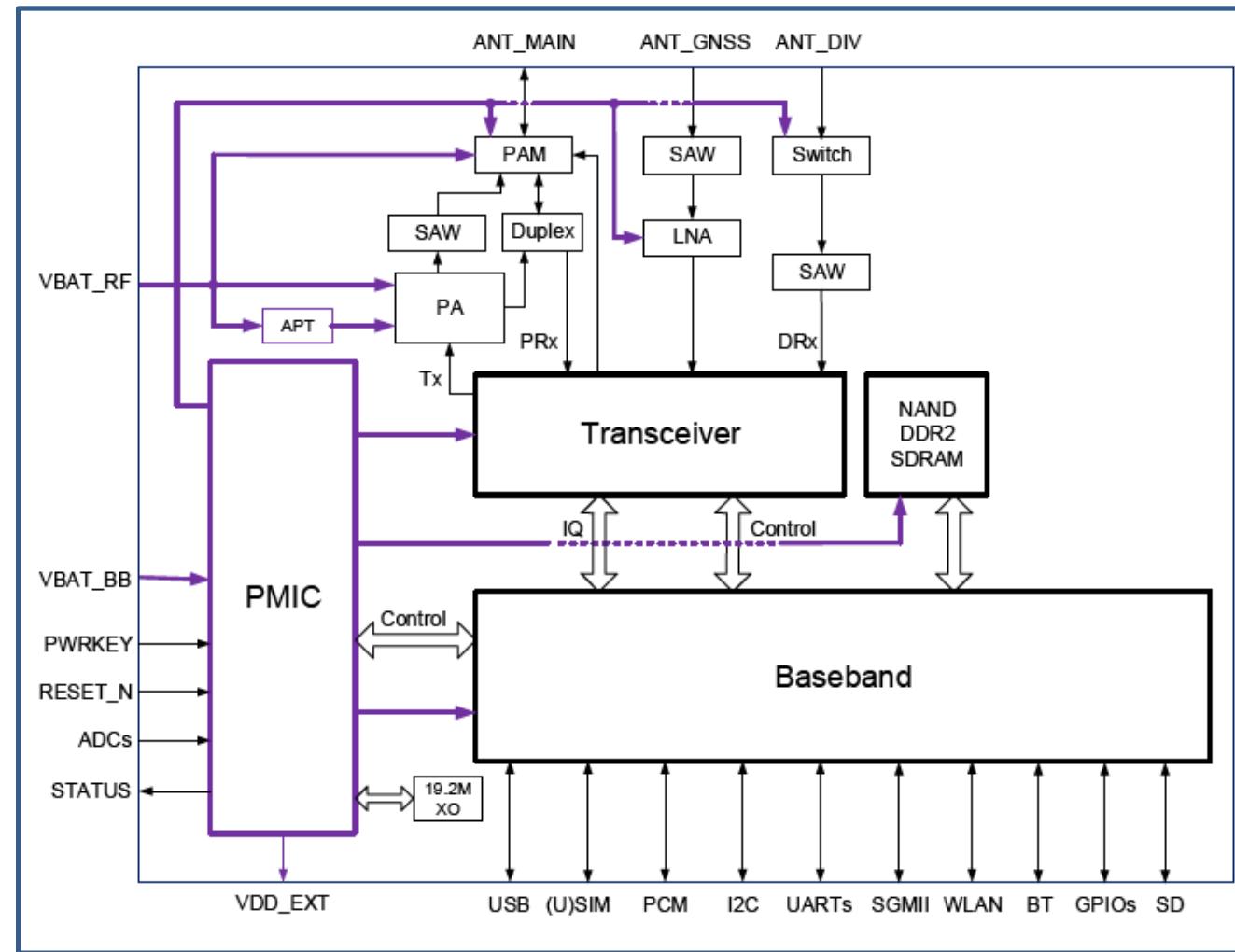
Technologies

Applications

Build a Smarter World



Hardware Architecture



The block diagram is for reference only and varies among different modules.

Software Advantages

- **USB Serial Driver:**
Windows 7/8/8.1/10, Linux 2.6~5.12,
Android 4.x~11.x
- **GNSS Driver:**
Android 4.x~11.x
- **RIL Driver:**
Android 4.x~11.x
- **USB NDIS Driver:**
Windows 7/8/8.1/10
- **USB MBIM Driver:**
Windows 8/8.1/10, Linux 3.18~5.12
- **USB GobiNet Driver:**
Linux 2.6~5.12
- **USB QMI_WWAN Driver:**
Linux 3.4~5.12
- **USB ECM Driver:**
Linux 2.6~5.12
- **USB NCM Driver:**
Linux 3.4~5.12

Quality Guarantee

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

Special Features

- QuecOpen®^①
- QuecLocator®
- LwM2M
- eMBMs
- Secure Boot*

Flexible Applications

- (U)SIM card detection
- DTMF

Enhanced AT Commands

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

“*” means under development/ongoing.

^① means QuecOpen® function is optional.

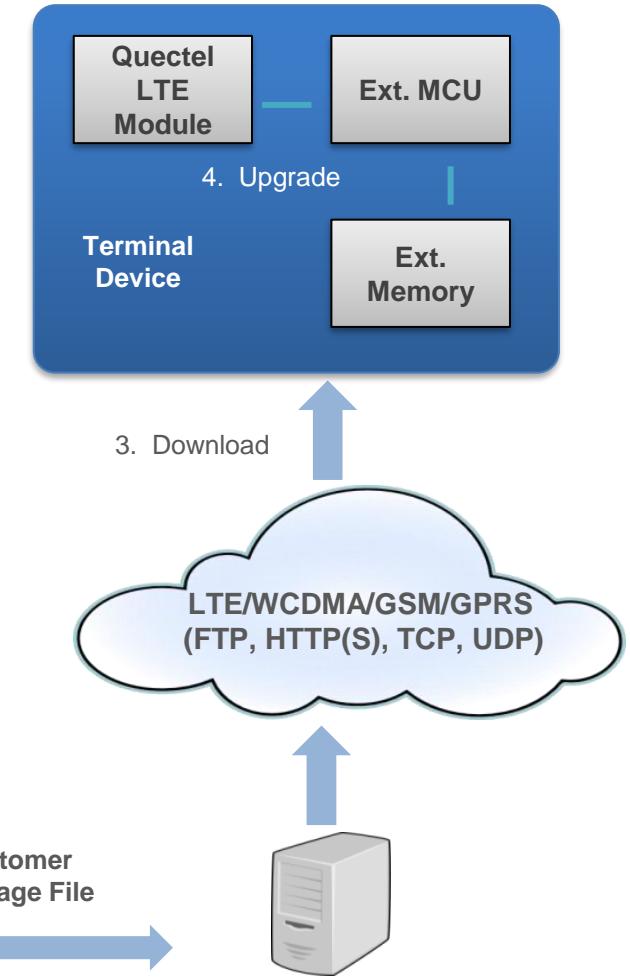
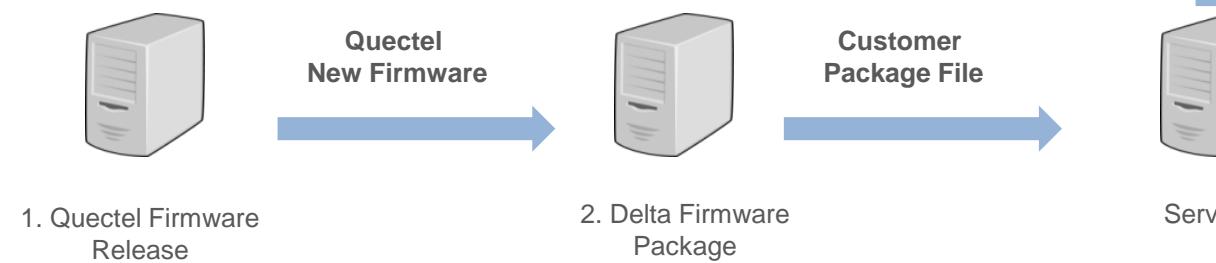
DFOTA

DFOTA refers to Delta Firmware Upgrade Over-The-Air, which enables customers to upgrade firmware wirelessly.

In DFOTA, a delta firmware package, which only contains the differences between the source and the target firmware versions, occupies small memory. Thus the firmware can be upgraded quickly over LTE/WCDMA/GSM/GPRS networks, eliminating the need for users to bring the device to a service facility.

Firmware Upgrade Process via DFOTA

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

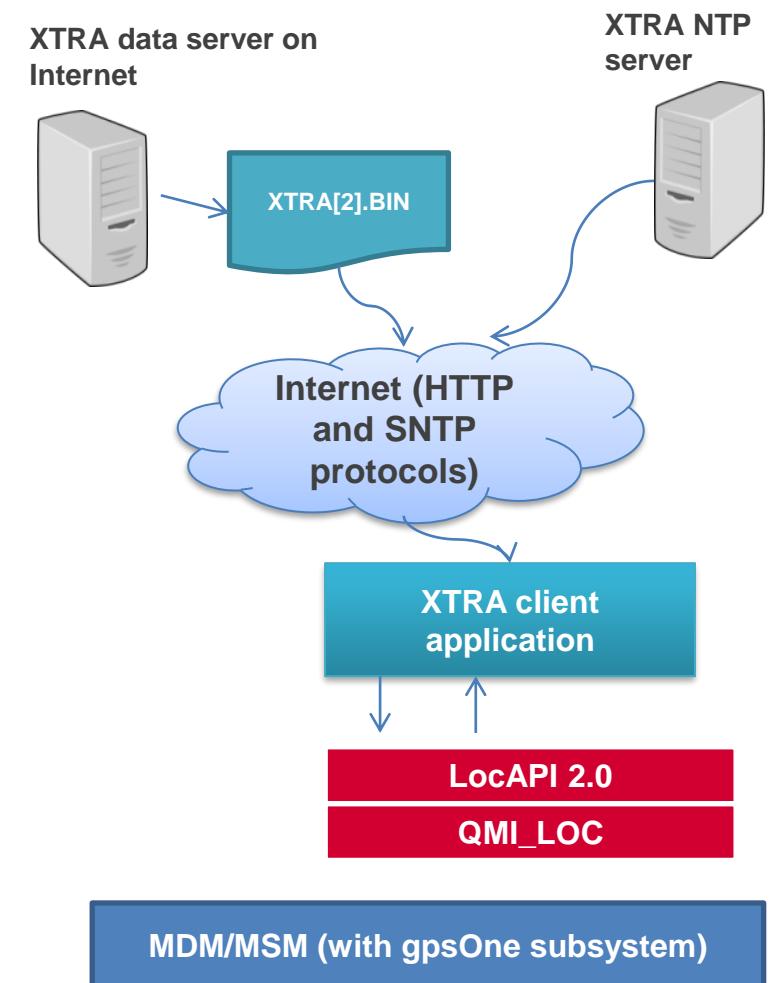


Qualcomm gpsOne Gen8

gpsOneXTRA Assistance Technology

Qualcomm's new gpsOneXTRA Assistance technology provides enhanced operation by enabling users to download a small assistance data file through a brief Internet access session.

This technology delivers more accurate positioning with greater sensitivity than otherwise possible with standalone GPS receivers, especially in challenging areas such as indoors and in dense urban canyons.



GNSS Performance of EC2x/EG9x/EG2x-G/EM05 Series

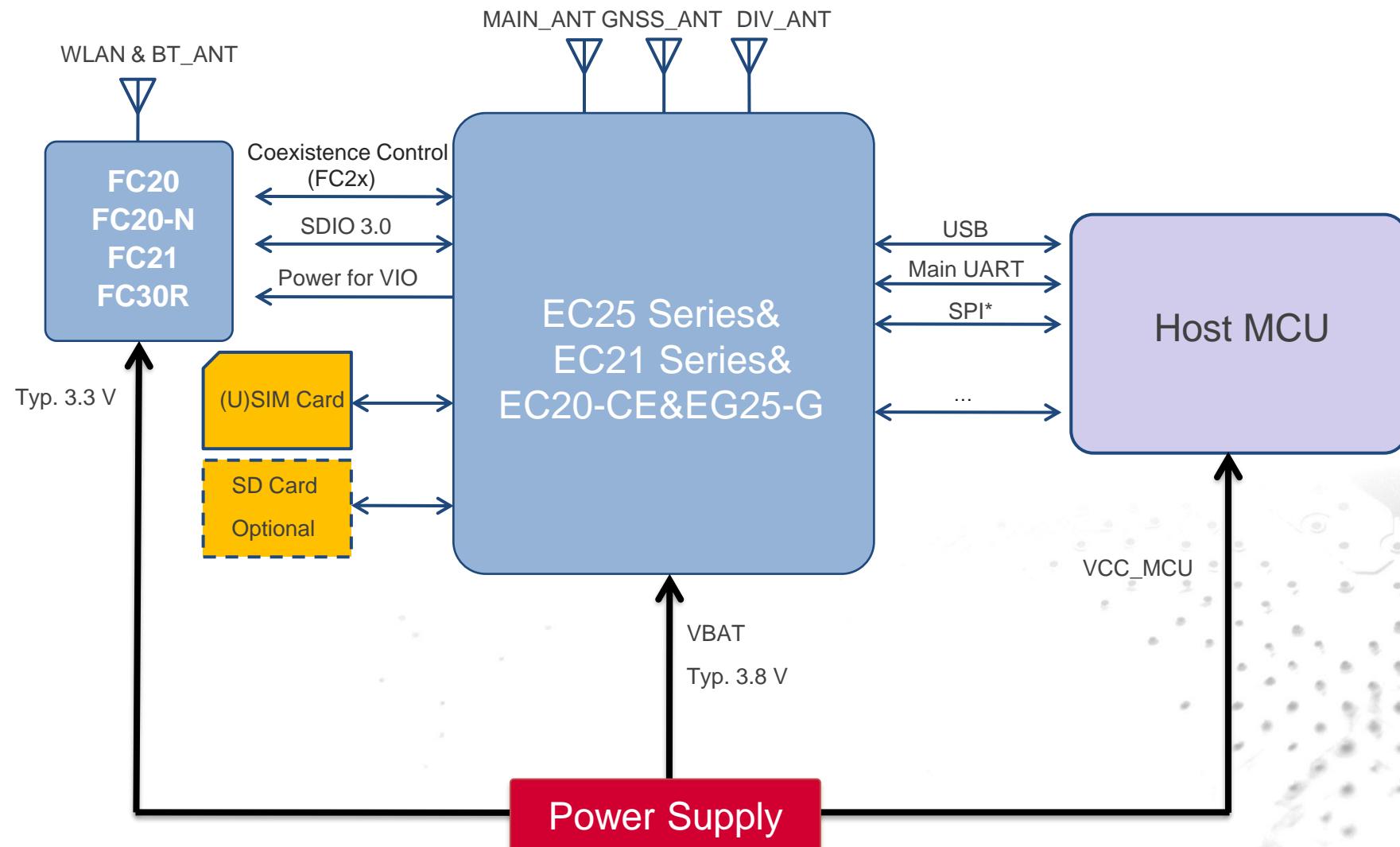
Module		EC25 Series/ EC21 Series/ EC20-CE	EG91 Series	EG95 Series	EG25-G	EG21-G	EM05 Series
GNSS		GPS, GLONASS, BeiDou/Compass, Galileo, QZSS					
Sensitivity (GNSS)	Cold start	-146 dBm					
	Reacquisition	-158 dBm	-157 dBm	-157 dBm	-156 dBm	-157 dBm	-157 dBm
	Tracking	-157 dBm					
TTFF (GNSS)	Cold start @open sky	Autonomous	35 s				
		XTRA enabled	18 s	12 s	12 s	15 s	12 s
	Warm start @open sky	Autonomous	26 s	26 s	26 s	28 s	28 s
		XTRA enabled	2.2 s	3.7 s	3.8 s	3 s	2.2 s
	Hot start @open sky	Autonomous	2 s	2 s	2 s	2 s	2 s
		XTRA enabled	1.5 s	3.4 s	3.2 s	1.6 s	1.8 s
SVs	Total number of SVs available	55	55	55	55	55	55
Accuracy (GNSS)	CEP-50	< 2.5 m					

NOTE: GNSS function is supported only on selected EC2x/EG9x/EG2x-G/EM05 series models.

GNSS Performance of EC200U Series

Module	EC200U Series		
GNSS	GPS, BeiDou		
Sensitivity (GNSS)	Cold start		-146 dBm
	Reacquisition		-159 dBm
	Tracking		-160 dBm
TTFF (GNSS)	Cold start @open sky	Autonomous	30 s
		AGPS enabled	8 s
	Warm start @open sky	Autonomous	28 s
		AGPS enabled	2 s
	Hot start @open sky	Autonomous	2 s
		AGPS enabled	1.5 s
SVs	Total number of SVs available		30
Accuracy (GNSS)	CEP-50		< 2.5 m

LTE + Wi-Fi & Bluetooth Solution



NOTE: “*” means under development/ongoing.

Wi-Fi & Bluetooth Module Features

Feature	FC20/FC21	FC30R
Dimensions	16.6 mm × 13.0 mm × 2.05 mm	12.0 mm × 12.0 mm × 2.1 mm
Package	LCC	LCC
Function	Wi-Fi 2.4 GHz/ 5 GHz + Bluetooth 5.0	Wi-Fi 2.4 GHz
Wi-Fi Mode	AP only STA only AP + STA AP + AP	AP only STA only
Supply Voltage	3.3 V + 1.8 V	3.3 V + 1.8 V
Interface	SDIO 3.0	SDIO 3.0
WLAN Technology	802.11a/b/g/n/ac	802.11b/g/n
Antenna	Wi-Fi & Bluetooth	Wi-Fi
AP (Access Point)	Max. 16/ Typ. 10	Max. 16/ Typ. 10
Operating Temperature Range	-40 °C to +85 °C	-30 °C to +85 °C

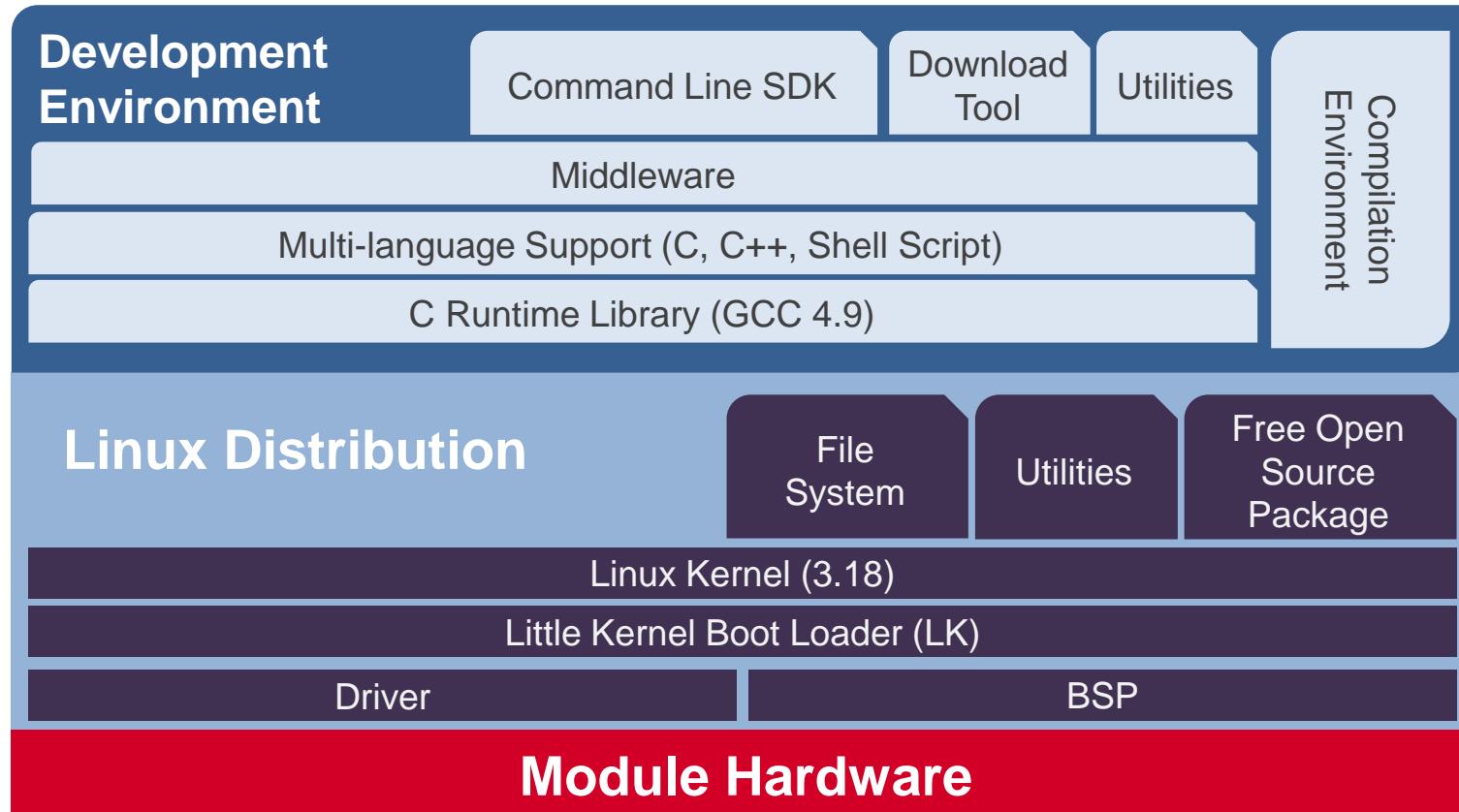
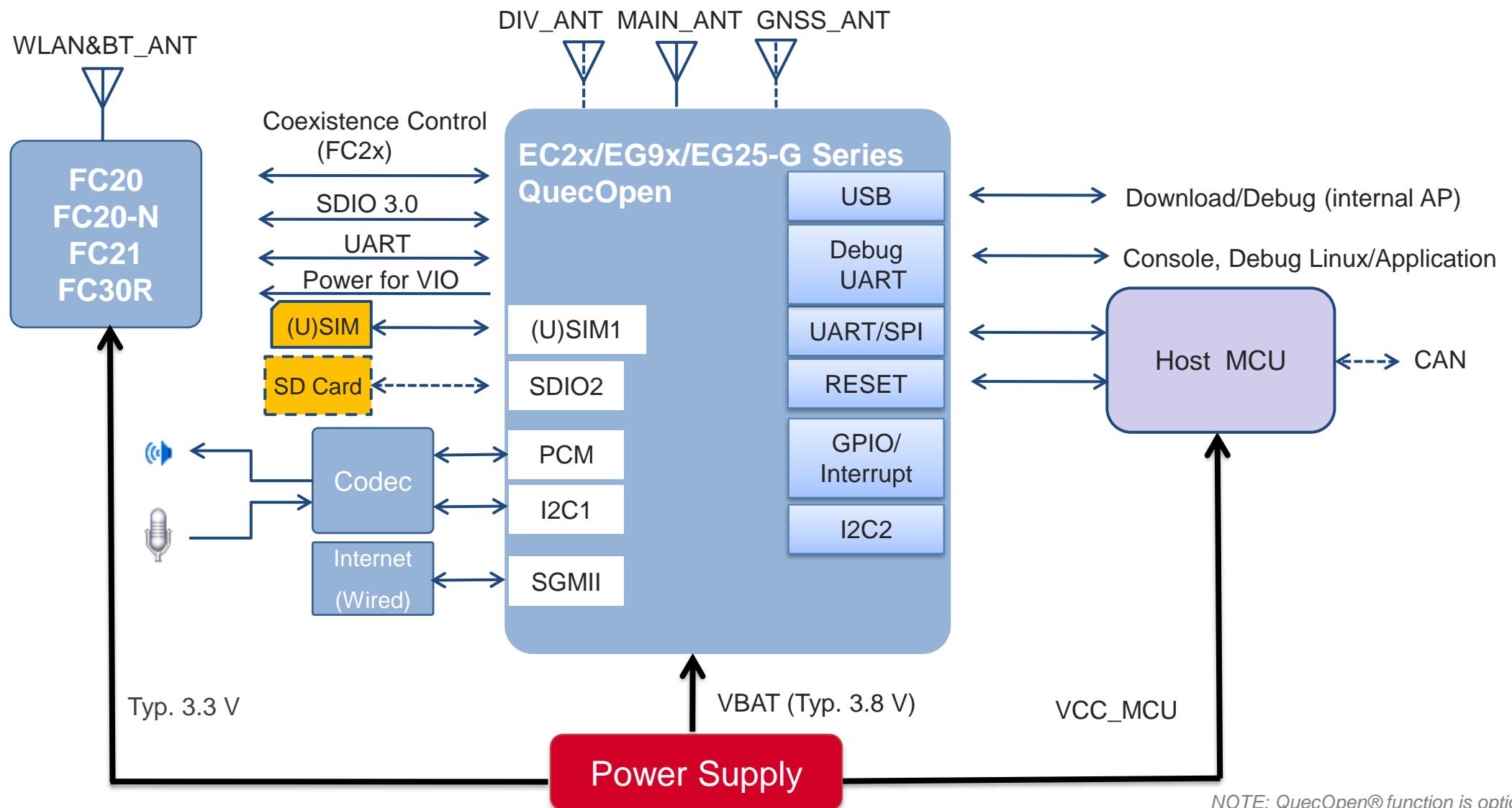


Figure: Framework of QuecOpen®

NOTE: QuecOpen® function is optional.

QuecOpen® - Typical Router Solution

QUECTEL



Support Package - Technical Materials & EVB Kit

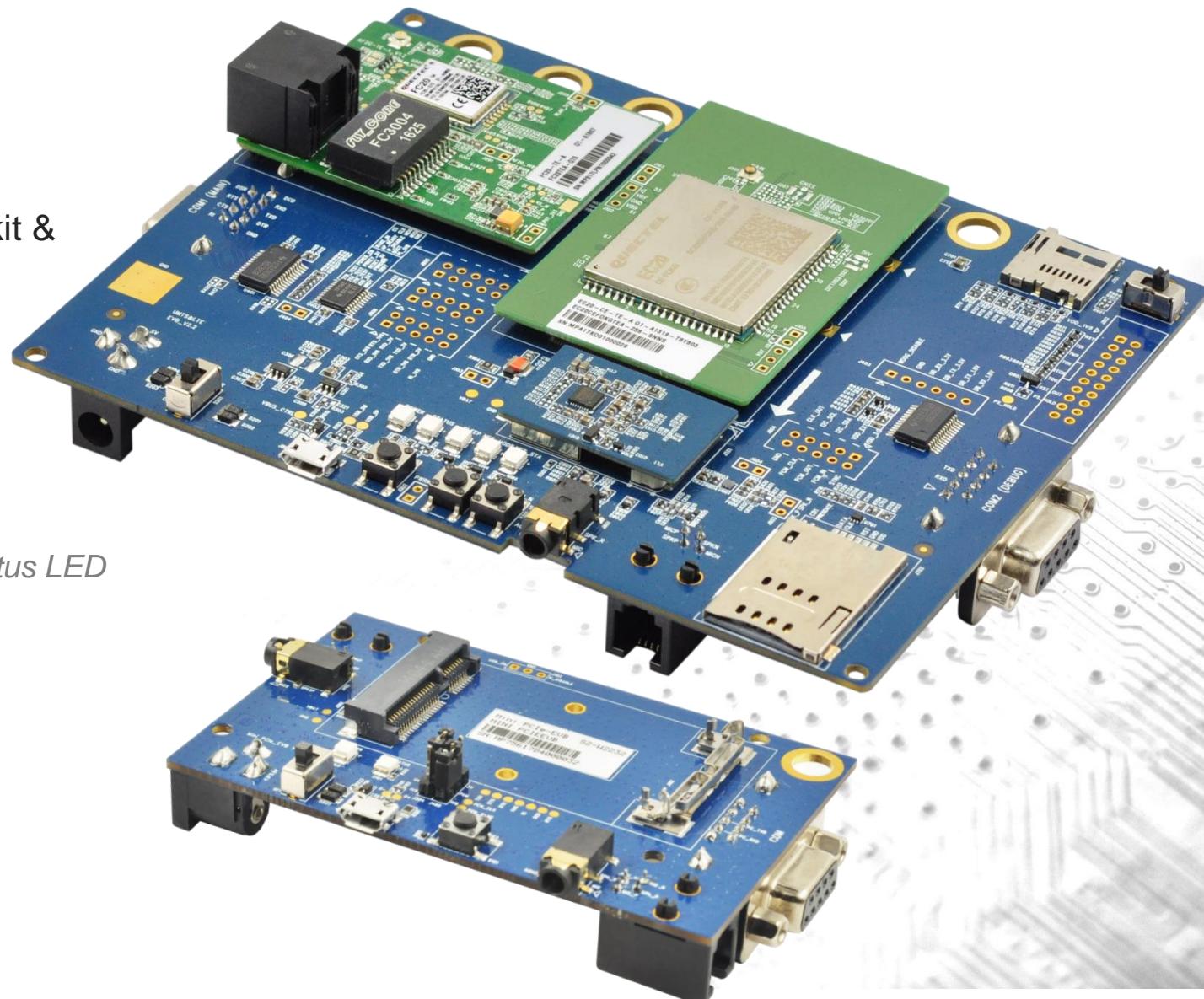


Technical Materials Package

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

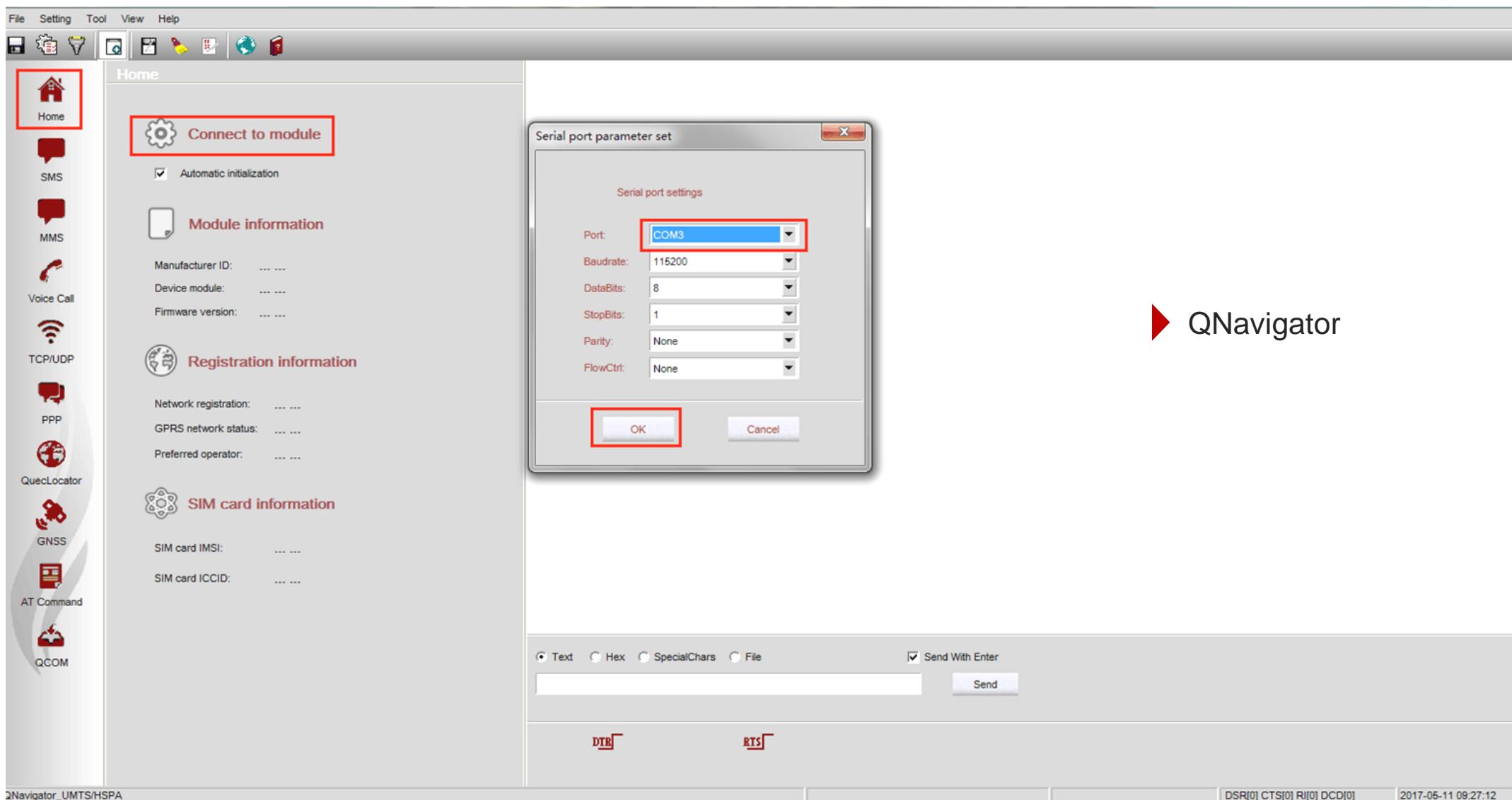
Development Tool (UMTS<E EVB Kit)

- 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



Support Package - QNavigator

QUECTEL

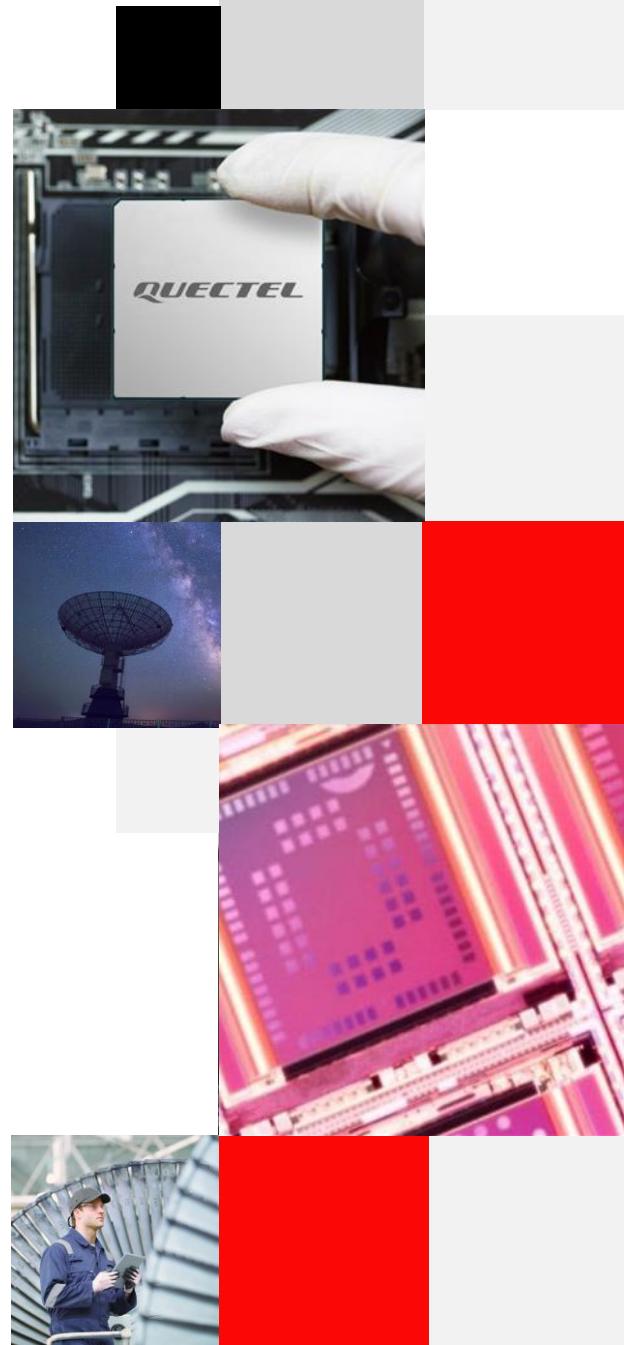


► QNavigator



LTE Standard Roadmap
Specifications
Technologies
Applications

Build a Smarter World



Target Applications



Telematics & Transport

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



Energy

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



Payment

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



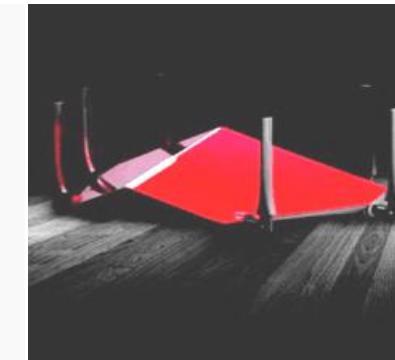
Security

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



Smart City

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



Gateway

- DTU
- Consumer Router
- Industrial Router
- VoIP
- Server
- Wi-Fi Hotspot



Industry

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



Life & Healthcare

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



Agriculture & Environment

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



The number one cellular module vendor in the world and a leading GNSS module supplier

- Unbeatable choice from the broadest module portfolio in the world
- The highest quality products for the best possible prices
- Superb support with the largest R&D team in the industry
- Continuous innovation – first to market with 5G, LPWA, CV2X, snapdragon
- A passionate, dedicated team of “Quectelers” ensure our customers always come first

Thank You

Build a Smarter World

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

