



Build a Smarter World

The Leading Global Supplier of

IoT&M2M Modules

For more information contact
us at www.quectel.com

LTE

5G

LTE-M

NB-IoT

Wi-Fi

About Quectel Wireless Solutions

Quectel's passion for a smarter world drives us to accelerate IoT innovation. A highly customer-centric organization, we create superior cellular and GNSS modules and antennas backed by outstanding support and services. Our growing global team of over 3,000 professionals, the largest in the IoT modules industry worldwide, ensures we are first to market and continue to set the pace of development. Listed on the Shanghai Stock Exchange (603236.SS), our international leadership is devoted to advancing IoT across the globe.

For more information visit: www.quectel.com or find us on Linked In, Twitter and Facebook.

GNSS

**UMTS/
HSPA(+)**

C-V2X

Antenna

LPWA

**GSM/
GPRS**

Quectel's IoT Vertical Framework



Telematics and Transport

Automotive OEM
Vehicle Tracking
Asset Tracking
Ship Tracking
Fleet Management
OBD
Vehicle Digital Video Recorders (DVR)
Special Purpose Vehicles (SPV)
Usage-Based Insurance (UBI)



Energy

Electricity Meters
Gas Meters
Water Meters
Heat Meters
Smart Grids
Wind Turbines
Solar Panels
Charging Piles



Payment

Wireless POS
Cash Registers
ATMs
Vending Machines
Top-up Machines



Safety

Alarms
Intrusion Detection
Smoke Detectors
Gas Detectors
Motion Sensors
Asset Protection



Smart Cities

Street Lighting
Traffic Lights
Sharing Economy
Smart Elevators
Smart Parking
Parking Meters
Toll Collection Systems
Digital Signage
Smart Bins
Outdoor LED Lighting



Gateways

DTUs
Consumer Routers
Industrial Routers
VOIP
Wi-Fi Hotspots



Industry

Industrial PDAs/ Scanners
Industrial PCs
Rugged Tablet PCs
Pipeline Monitoring
Robots
Flowmeters
Unmanned Aerial Vehicles (UAV)
Industrial Refrigerators
Indoor Air Monitoring
Water Valves/ Pump Controls



Life & Healthcare

Personal Trackers
Pet Trackers
Wearables
Home Automation
Elderly Monitoring
Remote Medical Equipment
Glucometers
Blood Pressure Monitors
Recreational Machines
Patient Monitoring Laptops



Agriculture & Environment

Trail Cameras
Food Traceability
Farmland Monitoring
Farm Machinery Management
Meteorological Stations
Wildlife Tracking
Irrigation
Environmental Monitoring

Quectel 5G NR Module Family

Product	RG500Q-EA	RG502Q-EA	RG501Q-EU
			
Form Factor	LGA	LGA	LGA
Dimensions (mm)	41.0 × 44.0 × 2.75	41.0 × 44.0 × 2.75	41.0 × 44.0 × 2.75
5G	Sub-6 GHz	Sub-6 GHz	Sub-6 GHz
Frequency Bands (MHz)	5G NR: n41/n77/n78/n79/n1/n3/n5/n7/n8/n20/n28/n38/n40 LTE-FDD: B1/B3/B5/B7/B8/B18/B19/B20/B26/B28/B32 LTE-TDD: B34/B38/39/B40/B41/B42/B43 WCDMA: B1/B3/B5/B6/B8/B19	5G NR: n41/n77/n78/n79/n1/n3/n5/n7/n8/n20/n28/n38/n40 LTE-FDD: B1/B3/B5/B7/B8/B18/B19/B20/B26/B28/B32 LTE-TDD: B34/B38/39/B40/B41/B42/B43 WCDMA: B1/B3/B5/B6/B8/B19	5G NR Bands: n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n77/n78 LTE bands: LTE-FDD: B1/B3/B5/B7/B8/ B20/B28/B32 LTE-TDD: B38/B40/B41/B42/B43 WCDMA Bands: B1/B5/B8
Region	EMEA/ APAC	EMEA/ APAC	EMEA/ Oceania/ Brazil
Weight (approx.) g	11	11	11
Operating Temperature	-30°C ~ +75°C	-30°C ~ +75°C	-30°C ~ +75°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Control via AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands
Data Transmission¹			
5G	5G SA Sub-6: Max. 2.1Gbps (DL)/ Max. 900Mbps (UL) 5G NSA Sub-6: Max. 2.5Gbps (DL)/ Max. 600/650Mbps (UL) ²	5G SA Sub-6: Max. 4.2Gbps (DL)/ Max. 900Mbps (UL) 5G NSA Sub-6: Max. 5.0Gbps (DL)/ Max. 600/650Mbps (UL) ²	5G SA Sub-6: Max. 2.1Gbps (DL)/ Max. 900Mbps (UL) 5G NSA Sub-6: Max. 3.3Gbps (DL)/ Max. 600/650Mbps (UL) ²
LTE	LTE-FDD: Max. 1Gbps (DL)/ Max. 200Mbps (UL)	LTE-FDD: Max. 2Gbps (DL)/ Max. 200Mbps (UL)	LTE-FDD: Max. 2Gbps (DL)/ Max. 200Mbps (UL)
UMTS	WCDMA: Max. 42Mbps (DL)/ Max. 5.76Mbps (UL)	WCDMA: Max. 42Mbps (DL)/ Max. 5.76Mbps (UL)	WCDMA: Max. 42 Mbps (DL)/ Max. 5.76Mbps (UL)
SMS	•	•	•
Protocols	TCP/UDP/FTP/HTTP/HTTPS/PING/SMS	TCP/UDP/FTP/HTTP/HTTPS/PING/SMS	TCP/UDP/FTP/HTTP/HTTPS/PING/SMS
Interfaces			
(U)SIM	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V
UART	× 3	× 3	× 3
USB	2.0/3.0/3.1	2.0/3.0/3.1	2.0/3.0/3.1
PCIe	PCIe Gen3 × 2 Lane	PCIe Gen3 × 2Lane	PCIe Gen3 × 2 Lane
RGMI	•	•	•
PCM	•	•	•
I2C	× 1	× 1	× 1
SPI	•	•	•
GPIO	•	•	•
ADC	× 2	× 2	× 2
SD Card	•	•	•
RESET_N	•	•	•
Antenna	Cellular: 6 + 2 (n79), GNSS: × 1	Cellular: 6 + 2 (n79), GNSS: × 1	Cellular: × 4 + 2 (Optional), GNSS: × 1
Enhanced Features			
MIMO	4 × 4 DL	4 × 4 DL	4 × 4 DL
Digital Audio	•	•	•
VoLTE	Optional	Optional	Optional
DTMF	Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency
DFOTA	Delta Firmware over the Air	Delta Firmware over the Air	Delta Firmware over the Air
GNSS	GPS/ GLONASS/ BeiDou/ Galileo	GPS/ GLONASS/ BeiDou/ Galileo	GPS/ GLONASS/ BeiDou/ Galileo
(U)SIM Card Detection	•	•	•
Electrical Features			
Supply Voltage Range	3.3V~4.3V, 3.8V Typ.	3.3V~4.3V, 3.8V Typ.	3.3V~4.3V, 3.8V Typ.
Power Consumption	0.033mA @ Power off 1.45mA @ Sleep, Typ. 20.1mA @ Idle	0.033mA @ Power off 1.45mA @ Sleep, Typ. 20.1mA @ Idle	0.045mA @Power off 2.0mA @Sleep, Typ. 30mA @Idle
Software Features			
USB Serial Driver	Windows 7/8/8.1/10, Linux 2.6~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 7/8/8.1/10, Linux 2.6~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 7/8/8.1/10, Linux 2.6~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10
GNSS Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10
RIL Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10
NDIS Driver	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10
MBIM Driver	Windows 7/8/8.1/10, Linux 3.18~5.8	Windows 7/8/8.1/10, Linux 3.18~5.8	Windows 10, Linux 3.18~5.8
Gobinet Driver	Linux 2.6~5.8	Linux 2.6~5.8	Linux 2.6~5.8
QMI_WWAN Driver	Linux 3.4~5.8	Linux 3.4~5.8	Linux 3.4~5.8
PCIe Driver	Windows 10, Linux 3.10~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 10, Linux 3.10~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 10, Linux 3.10~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10
Certifications	LQU+/ Telstra+/ China Telecom/ China Mobile/ China Unicom / CE/ SRRC/ NAL/ CCC/ KC/ RCM/JATE/TELEC/ SKT	CE/ RCM	CE/RCM/GCF
Recommended Applications	Industrial Router, Industrial PDA, Rugged Tablet PC and Digital Signage		

Note 1: means the data transmission is theoretical data rate and depends on network condition.

Note 2: 600 Mbps is the typical value; while 650 Mbps is the theoretical data rate when the UL 256QAM of both LTE and 5G NR are enabled (LTE UL 256QAM in EN-DC is disabled by default and has not been deployed by operators, and it is not fully tested).

* Under development

Quectel 5G NR Module Family

Product	RM500Q-GL	RM502Q-GL	RM500Q-AE	RM502Q-AE
				
Form Factor	M.2	M.2	M.2	M.2
Dimensions (mm)	52.0 × 30.0 × 2.3	52.0 × 30.0 × 2.3	52.0 × 30.0 × 2.3	52.0 × 30.0 × 2.3
5G	Sub-6 GHz	Sub-6 GHz	Sub-6 GHz	Sub-6 GHz
Frequency Bands (MHz)	5G NR: n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48*/n66/n71/n77/n78/n79 LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE-TDD: B34/B38/39/B40/B41/B42/B43/B48; LAA: B46 WCDMA: B1/B2/B3/B4/B5/B6/B8/B19	5G NR: n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48*/n66/n71/n77/n78 LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE-TDD: B34/B38/39/B40/B41/B42/B43/B48; LAA: B46 WCDMA: B1/B2/B3/B4/B5/B6/B8/B19	5G NR: n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48*/n66/n71/n77/n78/n79 LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12(B17)/B13/B14/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE-TDD: B34/B38/39/B40/B41/B42/B43/B48 LAA: B46 (only support 2 × 2 MIMO) WCDMA: B1/B2/B3/B4/B5/B6/B8/B19	5G NR: n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48*/n66/n71/n77/n78/n79 LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12(B17)/B13/B14/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE-TDD: B34/B38/39/B40/B41/B42/B43/B48 LAA: B46 (only support 2 × 2 MIMO) WCDMA: B1/B2/B3/B4/B5/B6/B8/B19
Region	Global (except for US)	Global (except for US, China, JP)	Global (except for China)	Global (except for China)
Weight (approx.) g	9	9	8.7	8.7
Operating Temperature	-30°C ~ +70°C	-30°C ~ +70°C	-30°C ~ +70°C	-30°C ~ +70°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Control via AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands
Data Transmission ¹				
5G	5G SA Sub-6: Max. 2.1Gbps (DL)/ Max. 900Mbps (UL) 5G NSA Sub-6: Max. 2.5Gbps (DL)/ Max. 600/650Mbps (UL) ²	5G SA Sub-6: Max. 4.2Gbps (DL)/ Max. 900Mbps (UL) 5G NSA Sub-6: Max. 5.0Gbps (DL)/ Max. 600/650Mbps (UL) ²	5G SA Sub-6: Max. 2.1Gbps (DL)/ Max. 450Mbps (UL) 5G NSA Sub-6: Max. 2.5Gbps (DL)/ Max. 600/650Mbps (UL) ²	5G SA Sub-6: Max. 4.2Gbps (DL)/ Max. 450Mbps (UL) 5G NSA Sub-6: Max. 5.0Gbps (DL)/ Max. 600/650Mbps (UL) ²
LTE	LTE-FDD: Max. 1Gbps (DL)/ Max. 200Mbps (UL)	LTE-FDD: Max. 2Gbps (DL)/ Max. 200Mbps (UL)	LTE-FDD: Max. 1Gbps (DL)/ Max. 200Mbps (UL)	LTE-FDD: Max. 2Gbps (DL)/ Max. 200Mbps (UL)
UMTS	WCDMA: Max. 42Mbps (DL)/ Max. 5.76Mbps (UL)	WCDMA: Max. 42Mbps (DL)/ Max. 5.76Mbps (UL)	WCDMA: Max. 42Mbps (DL)/ Max. 5.76Mbps (UL)	WCDMA: Max. 42Mbps (DL)/ Max. 5.76Mbps (UL)
SMS	•	•	•	•
Protocols	TCP/UDP/FTP/HTTP/HTTPS/PING/SMS	TCP/UDP/FTP/HTTP/HTTPS/PING/SMS	TCP/UDP/FTP/HTTP/HTTPS/PING/SMS	TCP/UDP/FTP/HTTP/HTTPS/PING/SMS
Interfaces				
(U)SIM	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V	× 1, 1.8V/ 3.0V	× 1, 1.8V/ 3.0V
USB	2.0/3.0/3.1	2.0/3.0/3.1	2.0/3.0/3.1	2.0/3.0/3.1
PCIe	PCIe Gen3 × 1 Lane	PCIe Gen3 × 1 Lane	PCIe Gen3 × 1 Lane	PCIe Gen3 × 1 Lane
PCM	× 1	× 1	× 1	× 1
GPIO	•	•	•	•
RESET_N	•	•	•	•
Antenna	Cellular: × 4, GNSS: × 1	Cellular: × 4, GNSS: × 1	Cellular: × 4, GNSS: × 1	Cellular: × 4, GNSS: × 1
Enhanced Features				
MIMO	DL: 4 × 4, UL: 2 × 2	DL: 4 × 4, UL: 2 × 2	DL: 4 × 4, UL: 2 × 2 (Only N41)	DL: 4 × 4, UL: 2 × 2 (Only N41)
Digital Audio	•	•	•	•
VoLTE	Optional	Optional	Optional	Optional
DTMF	Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency
DFOTA	Delta Firmware over the Air	Delta Firmware over the Air	Delta Firmware over the Air	Delta Firmware over the Air
GNSS	GPS/ GLONASS/ BeiDou/ Galileo	GPS/ GLONASS/ BeiDou/ Galileo	GPS/ GLONASS/ BeiDou/ Galileo	GPS/ GLONASS/ BeiDou/ Galileo
(U)SIM Card Detection	•	•	•	•
Electrical Features				
Supply Voltage Range	3.135~4.4V, 3.7V Typ.	3.135~4.4V, 3.7V Typ.	3.135~4.4V 3.7V Typ.	3.135~4.4V 3.7V Typ.
Power Consumption	70μA @Power off 5mA @Sleep, Typ. 39mA, USB 2.0 @Idle 64mA, USB 3.0 @Idle	72μA @Power off 6mA @Sleep, Typ. 42mA, USB 2.0 @Idle 65mA, USB 3.0 @Idle	80μA @Power off 4.2mA @Sleep, Typ. 39mA, USB 2.0 @Idle 54.5mA, USB 3.0 @Idle	80μA @Power off 4.2mA @Sleep, Typ. 39mA, USB 2.0 @Idle 54.5mA, USB 3.0 @Idle
Software Features				
USB Serial Driver	Windows 7/8/8.1/10, Linux 2.6~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 7/8/8.1/10, Linux 2.6~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 7/8/8.1/10, Linux 2.6~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 7/8/8.1/10, Linux 2.6~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10
GNSS Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10
RIL Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10
NDIS Driver	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10
MBIM Driver	Windows 10, Linux 3.18~5.8	Windows 10, Linux 3.18~5.8	Windows 10, Linux 3.18~5.8	Windows 10, Linux 3.18~5.8
Gobinet Driver	Linux 2.6~5.8	Linux 2.6~5.8	Linux 2.6~5.8	Linux 2.6~5.8
QMI_WWAN Driver	Linux 3.4~5.8	Linux 3.4~5.8	Linux 3.4~5.8	Linux 3.4~5.8
PCIe Driver	Windows 10, Linux 3.10~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 10, Linux 3.10~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 10, Linux 3.10~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 10, Linux 3.10~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10
Certifications	CE/RCM/CCC/SRRC/NAL/KC/GCF/KTL/LGU+/SKT	CE/RCM/FCC/IC/GCF/PTCRB	CE/RCM/FCC/IC/GCF/PTCRB/T-mobile*/AT&T/ Verizon*/Telstra*/JATE/TELEC/NCC/Deutsche Telecom*	CE/RCM/FCC/IC/GCF/PTCRB/T-mobile*/AT&T/ Verizon*/Telstra*/JATE/TELEC/Deutsche Telecom*
Recommended Applications	Industrial Router, Industrial PDA, Rugged Tablet PC and Digital Signage			

Note 1: means the data transmission is theoretical data rate and depends on network condition.

Note 2: 600 Mbps is the typical value; while 650 Mbps is the theoretical data rate when the UL 256QAM of both LTE and 5G NR are enabled (LTE UL 256QAM in EN-DC is disabled by default and has not been deployed by operators, and it is not fully tested).

* Under development

Quectel 5G NR Module

Product	RM510Q-GL
	
Form Factor	M.2
Dimensions (mm)	52.0 × 30.0 × 2.3
5G	Sub-6 GHz/ mmWave
Frequency Bands (MHz)	5G NR: n1/n2/n3/n5/n7/n8/n12/n20/n25/n28/n38/n40/n41/n48/n66/n71/n77/n78/n79/n257/n258/n260/n261 LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12(B17)/B13/B14/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE-TDD: B34/B38/39/B40/B41/B42/B43/B48 LAA: B46 WCDMA: B1/B2/B3/B4/B5/B6/B8/B19
Region	Global
Weight (approx.) g	9.1
Operating Temperature	-30°C ~ +70°C
Extended Temperature	-40°C ~ +85°C
Control via AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands
Data Transmission¹	
5G	5G SA Sub-6: Max. 4.2Gbps (DL)/ Max. 450Mbps (UL) 5G NSA Sub-6: Max. 5.0Gbps (DL)/ Max. 600/650Mbps (UL) ² 5G NSA mmWave: Max. 7.5Gbps (DL)/ Max. 2.9Gbps (UL)
LTE	LTE-FDD: Max. 2Gbps (DL)/ Max. 200Mbps (UL)
UMTS	WCDMA: Max. 42Mbps (DL)/ Max. 5.76Mbps (UL)
SMS	•
Protocols	TCP/UDP/FTP/HTTP/HTTPS/PING/SMS
Interfaces	
(U)SIM	× 1, 1.8V/ 3.0V
USB	2.0/3.0/3.1
PCIe	PCIe Gen3 × 1 Lane
PCM	•
GPIO	•
RESET_N	•
Antenna	Cellular: × 4, GNSS: × 1; mmWave IF *4 pairs
Enhanced Features	
MIMO	Sub-6: DL 4 × 4, UL 2 × 2 (Only n41) mmWave: DL 2 × 2, UL 2 × 2
Digital Audio	•
VoLTE	Optional
DTMF	Dual-tone Multi-frequency
DFOTA	Delta Firmware over the Air
GNSS	GPS/ GLONASS/ BeiDou/ Galileo
(U)SIM Card Detection	•
Electrical Features	
Supply Voltage Range	3.135~4.4V, 3.7V Typ.
Power Consumption	80 μA @ Power down 4.2 mA @ Sleep 39 mA @ USB 2.0, Idle 54.5 mA @ USB 3.0, Idle
Software Features	
USB Serial Driver	Windows 7/8/8.1/10, Linux 2.6~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10
GNSS Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10
RIL Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10
NDIS Driver	Windows 7/8/8.1/10
MBIM Driver	Windows 10, Linux 3.18~5.8
Gobinet Driver	Linux 2.6~5.8
QMI_WWAN Driver	Linux 3.4~5.8
PCIe Driver	Windows 10, Linux 3.10~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10
Certifications	FCC/IC/CE/PTCRB/CE/RCM
Recommended Applications	Industrial Router, Industrial PDA, Rugged Tablet PC and Digital Signage

Note 1: means the data transmission is theoretical data rate and depends on network condition.
Note 2: 600 Mbps is the typical value; while 650 Mbps is the theoretical data rate when the UL 256QAM of both LTE and 5G NR are enabled (LTE UL 256QAM in EN-DC is disabled by default and has not been deployed by operators, and it is not fully tested).

* Under development

Quectel 5G NR Module Family

Product	RG520N-EU	RG520N-NA	RG520F-EU	RG520F-NA
				
Form Factor	LGA	LGA	LGA	LGA
Dimensions (mm)	41.0 × 44.0 × 2.75	41.0 × 44.0 × 2.75	45.0 × 48.0 × 2.85 (approx.)	45.0 × 48.0 × 2.85 (approx.)
5G	Sub-6 GHz	Sub-6 GHz	Sub-6 GHz	Sub-6 GHz
Frequency Bands (MHz)	5G NR: n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n75/n76/n77/n78 LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 LTE-TDD: B38/B40/B41/B42/B43 WCDMA: B1/B5/B8	5G NR: n2/n5/n7/n12/n13/n14/n25/n26/n29/n30/n38/n41/n48/n66/n70/n71/n77/n78 LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B29/B30/B66/B71 LTE-TDD: B38/B41/B42/B43/B48 LAA: B46	5G NR: n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n75/n76/n77/n78 LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 LTE-TDD: B38/B40/B41/B42/B43 WCDMA: B1/B5/B8	5G NR: n2/n5/n7/n12/n13/n14/n25/n26/n29/n30/n38/n41/n48/n66/n70/n71/n77/n78/n257/n258/n260/n261 LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B29/B30/B66/B71 LTE-TDD: B38/B41/B42/B43/B48 LAA: B46
Region	EMEA/Oceania/Brazil	North America	EMEA/Oceania/Brazil	North America
Weight (approx.) g	TBD	TBD	TBD	TBD
Operating Temperature	-30°C ~ +75°C	-30°C ~ +75°C	-30°C ~ +75°C	-30°C ~ +75°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Control via AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands
Data Transmission ¹				
5G	5G SA Sub-6: Max. 2.4 Gbps (DL)/ Max. 900 Mbps (UL) 5G NSA Sub-6: Max. 3.2 Gbps (DL)/ Max. 600 Mbps (UL)	5G SA Sub-6: Max. 2.4 Gbps (DL)/ Max. 900 Mbps (UL) 5G NSA Sub-6: Max. 3.2 Gbps (DL)/ Max. 600 Mbps (UL)	5G SA Sub-6: Max. 6.0 Gbps (DL)/ Max. 900 Mbps (UL) 5G NSA Sub-6: Max. 4.8 Gbps (DL)/ Max. 525 Mbps (UL)	5G SA Sub-6: Max. 6.0 Gbps (DL)/ Max. 900 Mbps (UL) 5G NSA Sub-6: Max. 4.8 Gbps (DL)/ Max. 525 Mbps (UL)
LTE	LTE-FDD: Max. 1.6 Gbps (DL)/ Max. 200 Mbps (UL)	LTE-FDD: Max. 1.6 Gbps (DL)/Max. 200 Mbps (UL)	LTE-FDD: Max. 2.0 Gbps (DL)/Max. 200 Mbps (UL)	LTE-FDD: Max. 2.0 Gbps (DL)/Max. 200 Mbps (UL)
UMTS	WCDMA: Max. 42 Mbps (DL)/ Max. 5.76 Mbps (UL)	/	WCDMA: Max. 42 Mbps (DL)/ Max. 5.76 Mbps (UL)	/
SMS	•	•	•	•
Protocols	TCP/UDP/FTP/HTTP/HTTPS /PING/SMS	TCP/UDP/FTP/HTTP/HTTPS /PING/SMS	TCP/UDP/FTP/HTTP/HTTPS /PING/SMS	TCP/UDP/FTP/HTTP/HTTPS /PING/SMS
Interfaces				
(U)SIM	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V
UART	× 3	× 3	× 3	× 3
USB	2.0/3.0/3.1	2.0/3.0/3.1	2.0/3.0/3.1	2.0/3.0/3.1
PCIe	Gen3 × 2Lane Gen4 × 1Lane (optional)	Gen3 × 2Lane Gen4 × 1Lane (optional)	Gen3 × 2Lane Gen4 × 1Lane (optional)	Gen3 × 2Lane Gen4 × 1Lane (optional)
PCM	•	•	•	•
I2C	× 1	× 1	× 1	× 1
SPI	•	•	•	•
GPIO	•	•	•	•
ADC	× 2	× 2	× 2	× 2
SD Card	•	•	•	•
RESET_N	•	•	•	•
Antenna	Cellular: 4 + 2 (optional), GNSS: × 1	Cellular: 4, GNSS: × 1	Cellular: 4 + 2 (optional), GNSS: × 1	Cellular: 4, GNSS: × 1
Enhanced Features				
MIMO	4 × 4 DL, UL 2 × 2	4 × 4 DL, UL 2 × 2	DL 4 × 4 , UL 2 × 2	DL 4 × 4 , UL 2 × 2
Digital Audio	•	•	•	•
VoLTE	Optional	Optional	Optional	Optional
DTMF	Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency
DFOTA	Delta Firmware over the Air	Delta Firmware over the Air	Delta Firmware over the Air	Delta Firmware over the Air
GNSS	GPS/ GLONASS/ BeiDou/ Galileo	GPS/ GLONASS/ BeiDou/ Galileo	GPS/ GLONASS/ BeiDou/ Galileo	GPS/ GLONASS/ BeiDou/ Galileo
(U)SIM Card Detection	•	•	•	•
Electrical Features				
Supply Voltage Range	3.3–4.4V, 3.8V Typ.	3.3–4.4V, 3.8V Typ.	3.3–4.4V, 3.8V Typ.	3.3–4.4V, 3.8V Typ.
Power Consumption	TBD	TBD	TBD	TBD
Software Features				
USB Serial Driver	Windows 7/8/8.1/10, Linux 3.18–5.12, Android 4.x–11.x	Windows 7/8/8.1/10, Linux 3.18–5.12, Android 4.x–11.x	Windows 7/8/8.1/10, Linux 3.18–5.12, Android 4.x–11.x	Windows 7/8/8.1/10, Linux 3.18–5.12, Android 4.x–11.x
GNSS Driver	Android 4.x–11.x	Android 4.x–11.x	Android 4.x–11.x	Android 4.x–11.x
RIL Driver	Android 4.x–11.x	Android 4.x–11.x	Android 4.x–11.x	Android 4.x–11.x
NDIS Driver	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10
MBIM Driver	Windows 7/8/8.1/10, Linux 3.18–5.12	Windows 7/8/8.1/10, Linux 3.18–5.12	Windows 7/8/8.1/10, Linux 3.18–5.12	Windows 7/8/8.1/10, Linux 3.18–5.12
Gobinet Driver	Linux 2.6–5.12	Linux 2.6–5.12	Linux 2.6–5.12	Linux 2.6–5.12
QMI_WWAN Driver	Linux 3.4–5.12	Linux 3.4–5.12	Linux 3.4–5.12	Linux 3.4–5.12
PCIe Driver	Windows 10, Linux 3.10–5.8, Android 4.x–11.x	Windows 10, Linux 3.10–5.8, Android 4.x–11.x	Windows 10, Linux 3.10–5.8, Android 4.x–11.x	Windows 10, Linux 3.10–5.8, Android 4.x–11.x
Certifications	CE* / RoHS*	FCC* / IC*	GCF* / CE* / RoHS*	GCF* / PTCRB* / FCC* / IC*
Recommended Applications	Industrial Router, Industrial PDA, Rugged Tablet PC and Digital Signage		Industrial Router, Industrial PDA, Rugged Tablet PC and Digital Signage	

Note 1: means the data transmission is theoretical data rate and depends on network condition.

* Under development

Quectel 5G NR Module Family

Product	RM520N-GL	RM530N-GL
		
Form Factor	M.2	M.2
Dimensions (mm)	52.0 × 30.0 × 2.3	52.0 × 30.0 × 2.3
5G	Sub-6 GHz	Sub-6 GHz/mmWave
Frequency Bands (MHz)	5G NR: n1/n2/n3/n5/n7/n8/n12/n13/n14/n20/n25/n26/n28/n29/n30/n38/n40/n41/n48/n66/n70/n71/n75/n76/n77/n78/n79 LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE-TDD: B34/B38/B39/B40/B41/B42/B43/B48; LAA: B46 WCDMA: B1/B2/B4/B5/B8/B19	5G NR: n1/n2/n3/n5/n7/n8/n12/n13/n14/n20/n25/n26/n28/n29/n30/n38/n40/n41/n48/n66/n70/n71/n75/n76/n77/n78/n79/n257/n258/n260/n261 LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE-TDD: B34/B38/B39/B40/B41/B42/B43/B48; LAA: B46 WCDMA: B1/B2/B4/B5/B8/B19
Region	Global	Global
Weight (approx.) g	TBD	TBD
Operating Temperature	-30°C ~ +70°C	-30°C ~ +70°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C
Control via AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands
Data Transmission¹		
5G	5G SA Sub-6: Max. 2.4Gbps (DL)/ Max. 900Mbps (UL) 5G NSA Sub-6: Max. 3.2Gbps (DL)/ Max. 600Mbps (UL)	5G SA Sub-6: Max. 2.4Gbps (DL)/ Max. 900Mbps (UL) 5G NSA Sub-6: Max. 3.2Gbps (DL)/ Max. 600Mbps (UL) 5G NSA mmWave: Max. 4.0Gbps (DL)/ Max. 1.4Gbps (UL)
LTE	LTE-FDD: Max. 1.6Gbps (DL)/Max. 200Mbps (UL)	LTE-FDD: Max. 1.6Gbps (DL)/Max. 200Mbps (UL)
UMTS	WCDMA: Max. 42Mbps (DL)/Max. 5.76Mbps (UL)	WCDMA: Max. 42Mbps (DL)/Max. 5.76Mbps (UL)
SMS	•	•
Protocols	TCP/UDP/FTP/HTTP/HTTPS /PING/SMS	TCP/UDP/FTP/HTTP/HTTPS /PING/SMS
Interfaces		
(U)SIM	× 2	× 2
USB	2.0/3.0/3.1	2.0/3.0/3.1
PCIe	PCIe 4.0	PCIe 4.0
Antenna	Sub-6/GNSS × 4	Sub-6/GNSS × 4, mmWave × 2
Enhanced Features		
MIMO	Sub-6: DL 4 × 4, UL 2 × 2	Sub-6: DL 4 × 4, UL 2 × 2 mmWave: DL 2 × 2, UL 2 × 2
Digital Audio	•	•
VoLTE	Optional	Optional
DTMF	Dual-tone Multi-frequency	Dual-tone Multi-frequency
DFOTA	Delta Firmware over the Air	Delta Firmware over the Air
GNSS	GPS/ GLONASS/ BeiDou/ Galileo	GPS/ GLONASS/ BeiDou/ Galileo
(U)SIM Card Detection	•	•
Electrical Features		
Supply Voltage Range	3.135~4.4V, 3.7V Typ.	3.135~4.4V, 3.7V Typ.
Power Consumption	TBD	TBD
Software Features		
USB Serial Driver	Windows 7/8/8.1/10, Linux 2.6~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 7/8/8.1/10, Linux 2.6~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10
GNSS Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10
RIL Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10
NDIS Driver	Windows 7/8/8.1/10	Windows 7/8/8.1/10
MBIM Driver	Windows 10, Linux 3.18~5.8	Windows 10, Linux 3.18~5.8
Gobinet Driver	Linux 2.6~5.8	Linux 2.6~5.8
QMI_WWAN Driver	Linux 3.4~5.8	Linux 3.4~5.8
PCIe Driver	Windows 10, Linux 3.10~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 10, Linux 3.10~5.8, Android 4.x/5.x/6.x/7.x/8.x/9.x/10
Certifications	GCFC*/CE*/PTCRB*/FCC*/IC*/JATE*/TELEC*/RCM*	GCFC*/CE*/PTCRB*/FCC*/IC*/JATE*/TELEC*/RCM*
Recommended Applications	Industrial Router, Industrial PDA, Rugged Tablet PC and Digital Signage	

Note 1: means the data transmission is theoretical data rate and depends on network condition.

* Under development

Quectel 5G NR Module Family

Product	RG500L-EU	RG500L-NA
		
Form Factor	LGA	LGA
Dimensions (mm)	41.0 × 44.0 × 2.75	41.0 × 44.0 × 2.75
5G	Sub-6 GHz	Sub-6 GHz
Frequency Bands (MHz)	5G NR: n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n77/n78 LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 LTE-TDD: B38/B40/B41/B42/B43 WCDMA: B1/B5/B8	5G NR Bands: n2/n5/n7/n12/n25/n41/n48/n66/n71/n77/n78; LTE Bands: LTE-FDD: B2/B4/B5/B7/B12(B17)/B13/B14/B25/B26/B29/B30/B66/B71; LTE-TDD: B41/B42/B43/B48; LAA: B46; WCDMA: B2/B4/B5
Region	EMEA/ Oceania/ Brazil	NA
Weight (approx.) g	13±0.3	TBD
Operating Temperature	-30°C ~ +70°C	-30°C ~ +70°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C
Control via AT Commands	3GPP Rel-15 and Quectel Enhanced AT Commands	3GPP Rel-15 and Quectel Enhanced AT Commands
Data Transmission¹		
5G	5G SA Sub-6: Max. 4.67 Gbps(DL)/Max. 2.5 Gbps (UL) 5G NSA Sub-6: Max. 3.74 Gbps(DL)/Max. 1.46 Gbps (UL)	5G SA Sub-6: Max. 4.67 Gbps(DL)/Max. 2.5 Gbps (UL) 5G NSA Sub-6: Max. 3.74 Gbps(DL)/Max. 1.46 Gbps (UL)
LTE	LTE-FDD: Max 1.4 Gbps(DL)/ Max. 211 Mbps(UL)	LTE-FDD: Max 1.4 Gbps(DL)/ Max. 211 Mbps(UL)
UMTS	WCDMA: Max. 42Mbps (DL)/Max. 5.76Mbps (UL)	WCDMA: Max. 42Mbps (DL)/ Max. 5.76Mbps(UL)
SMS	•	•
Protocols	MMS*/HTTPS*/SMTP*/TCP*/UDP*/FTP*/HTTP*/PING*/FTPS*/SMTPS*/SSL*/NTP*	HTTPS/SMTP*/TCP/UDP/FTP/HTTP/PING/FTPS/SMTPS*/SSL/NTP
Interfaces		
(U)SIM	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V
UART	/	× 2
USB	2.0/3.0/3.1 ²	2.0/3.0/3.1 ²
PCIe	PCIe Gen3 × 1 Lane	PCIe Gen3 × 1 Lane
RGMI	/	/
PCM	•	•
I2C	/	× 1
SPI	/	•
GPIO	•	•
ADC	/	× 3
SD Card	/	•
RESET_N	•	•
Antenna	Main, Diversity and GNSS	Main, Diversity and GNSS
Enhanced Features		
MIMO	4 × 4 DL	4 × 4 DL
Digital Audio	•	•
VoLTE	Optional	Optional
DTMF	Dual-tone Multi-frequency	Dual-tone Multi-frequency
FOTA	Delta Firmware over the Air	Delta Firmware over the Air
GNSS	GPS/ GLONASS/ BeiDou/ Galileo	GPS/ GLONASS/ BeiDou/ Galileo
(U)SIM Card Detection	•	•
Electrical Features		
Supply Voltage Range	3.15~4.4V, 3.8V Typ.	3.3~4.4V, 3.8V Typ.
Power Consumption	70μA @Power off 6.5mA @Sleep, Typ. TBD @idle	TBD @Power off TBD@Sleep, Typ. TBD @idle
Software Features		
USB Serial Driver	Windows 7/8/10, Linux 2.6~5.4, Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Windows 7/8/10, Linux 2.6~5.14, Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x
GNSS Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x
RIL Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10	Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x
Certifications	GCF*/CE/RCM Operator:TBD	GCF*/ FCC*/ IC*/ PTCRB*
Recommended Applications	Industrial Router, CPE, MiFi, Home gateway	Industrial Router, Industrial PDA, Rugged Tablet PC and Digital Signage

Note 1: means the data transmission is theoretical data rate and depends on network condition.
Note 2: USB 3.1 only supports 5 Gbps.

* Under development

Quectel LTE-A Module Family

Product		EP06	EG06	EG060V	EG060K-EA	EG065K-NA
						
Form Factor		Mini PCIe	LGA	LGA	LGA	LGA
Dimensions (mm)		51.0 × 30.0 × 4.0	37.0 × 39.5 × 2.8	37.0 × 39.5 × 3.05	37.0 × 39.5 × 2.8	28.0 × 31.0 × 2.4
4G		LTE Cat 6	LTE Cat 6	LTE Cat 6	LTE Cat 6	LTE Cat 6
Frequency Bands (MHz)	-E (EMEA/Australia/Brazil)	LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 ¹ ; LTE-TDD: B38/B40/B41 Up to 2 × CA: B1+B1/B5/B8/B20/B28; B3+B3/B5/B7/B8/B20/B28; B7+B5/B7/B8/B20/B28; B20+B32; B38+B38; B40+B40; B41+B41; WCDMA: B1/B3/B5/B8	LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 ¹ ; LTE-TDD: B38/B40/B41; Up to 2 × CA: B1+B1/B5/B8/B20/B28; B3+B3/B5/B7/B8/B20/B28; B7+B5/B7/B8/B20/B28; B20+B32; B38+B38; B40+B40; B41+B41; WCDMA: B1/B3/B5/B8	/	/	/
	-EA (EMEA/Australia/Brazil)	/	LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 ¹ ; LTE-TDD: B38/B40/B41 Up to 2 × CA: B1+B1/B3/B5/B7/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 WCDMA: B1/B3/B5/B8	LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 2 × CA: B1+B1/B3/B5/B8/B20/B28; B3+B3/B5/B7/B8/B20/B28; B7+B5/B7/B8/B20/B28; B38+B38; B40+B40; B41+B41 WCDMA: B1/B5/B8	LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 ¹ ; LTE-TDD: B38/B40/B41 Up to 2 × CA: B1+B1/B3/B5/B7/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 WCDMA: B1/B3/B5/B8	/
	-A (North America)	LTE-FDD: B2/B4/B5/B7/B12/B13/B25/B26/B29 ¹ /B30/B66; Up to 2 × CA: B2+B2/B5/B12/B13/B29; B4+B4/B5/B12/B13/B29; B7+B5/B7/B12/B26; B25+B5/B12/B25/B26; B30+B5/B12/B29; B66+B5/B12/B13/B29/B66; WCDMA: B2/B4/B5	LTE-FDD: B2/B4/B5/B7/B12/B13/B25/B26/B29 ¹ /B30/B66; Up to 2 × CA: B2+B2/B5/B12/B13/B29; B4+B4/B5/B12/B13/B29; B7+B5/B7/B12/B26; B25+B5/B12/B25/B26; B30+B5/B12/B29; B66+B5/B12/B13/B29/B66; WCDMA: B2/B4/B5	/	/	LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B25/B26/B30/B66 WCDMA: B2/B4/B5
	-AULT (Australia)	/	LTE-FDD: B3/B7/B28; Up to 2×CA: B3+B3/B7/B28; B7+B7/B28	/	/	/
Weight (approx.) g		10.1	9.1	6.7	9.1	5.3
Operating Temperature		-35°C ~ +75°C	-35°C ~ +75°C	-20°C ~ +55°C	-30°C ~ +75 °C	-30 °C ~ +75 °C
Extended Temperature		-40°C ~ +85°C	-40°C ~ +85°C	-25°C ~ +60°C	-40°C ~ +85°C	-40 °C ~ +85 °C
Control via AT Commands		3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands
Data Transmission						
LTE	LTE	LTE-FDD: Max. 300Mbps (DL)/Max. 50Mbps (UL); LTE-TDD: Max. 226Mbps (DL)/Max. 28Mbps (UL)	LTE-FDD: Max. 300Mbps (DL)/Max. 50Mbps (UL); LTE-TDD: Max. 226Mbps (DL)/Max. 28Mbps (UL)	LTE-FDD: Max. 300Mbps (DL)/Max. 50Mbps (UL); LTE-TDD: Max. 220Mbps (DL)/Max. 30Mbps (UL)	LTE-FDD: Max. 300Mbps (DL)/Max. 50Mbps (UL); LTE-TDD: Max. 226Mbps (DL)/Max. 28Mbps (UL)	LTE-FDD: Max. 300Mbps (DL)/Max. 50Mbps (UL)
	UMTS	DC-HSDPA: Max. 42Mbps (DL)/HSPA: Max. 5.76Mbps (UL) WCDMA: Max. 384Kbps (DL)/Max. 384Kbps (UL)	DC-HSDPA: Max. 42Mbps (DL)/HSPA: Max. 5.76Mbps (UL) WCDMA: Max. 384Kbps (DL)/Max. 384Kbps (UL)	DC-HSDPA*: Max. 42Mbps; HSDPA: Max. 21Mbps; HSPA: Max. 5.76Mbps; WCDMA: Max. 384Kbps (DL)/Max. 384Kbps (UL)	DC-HSDPA: Max. 42Mbps (DL)/HSPA: Max. 5.76Mbps (UL) WCDMA: Max. 384Kbps (DL)/Max. 384Kbps (UL)	DC-HSDPA: Max. 42Mbps (DL)/HSPA: Max. 5.76Mbps (UL) WCDMA*: Max. 384Kbps (DL)/Max. 384Kbps (UL)
	SMS	•	•	•	•	•
Protocols		TCP/UDP/FTP/HTTP/HTTPS/PING/SMS	TCP/UDP/FTP/HTTP/HTTPS/PING/SMS	TCP/PPP/FTP/HTTP/SMTP*/MMS*/POP3/SSL/HTTPS/SMTPS*	QMI/MBIM/NITZ/HTTP/HTTPS/FTP/LwM2M*/PING*	QMI/MBIM/NITZ/HTTP/HTTPS/FTP/LWM2M*/PING*
Interfaces						
USB		2.0/3.0, Slave Mode	2.0/3.0, Supports Master* and Slave Modes	2.0, Support Slave and Master* Modes	2.0/3.0, Supports Master* and Slave Modes	2.0/3.0, Supports Master* and Slave Modes
PCM		•	•	•	•	•
I2S		/	/	/	× 1	× 1
SPI		/	/	/	× 1	× 1
SDIO		/	/	/	× 1	× 1
RFFE		/	/	/	/	× 1
GRFC		/	/	/	/	× 4
I2C		× 1	× 1	× 1	× 1	× 2
(U)SIM		× 2, 1.8V/ 3.0V	1.8V/ 3.0V	× 1, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V
eSIM		/	/	/	Optional	/
GPIO		× 4	× 2	× 2	× 3	× 3
UART		/	× 3	× 2	× 3	× 3
ADC		/	× 2	× 2	× 2	× 2
RESET_N		•	•	•	•	× 1
PCIe		/	Optional	Optional	Optional	Optional
Antenna		× 3	× 3	Main, Diversity	Main, Diversity and GNSS	× 2(Main Antenna); × 2(Diversity Antennas)
Enhanced Features						
MIMO		2 × 2, 4 × 2, DL	2 × 2, 4 × 2, DL	2 × 2, 4 × 2, DL	2 × 2, 4 × 2, DL	2 × 2, 4 × 2, DL
eCall		Emergency Service*	Emergency Service*	Emergency Service	Emergency Service	Emergency Service*
Digital Audio		•	•	•	•	Optional
VoLTE		Optional	Optional	Optional	Optional	Optional
DTMF		Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency*
DFOTA		Delta Firmware over the Air	Delta Firmware over the Air	/	Delta Firmware over the Air	Delta Firmware over the Air
FOTA		•	•	Firmware over the Air	•	/
GNSS		GPS/GLONASS/BeiDou/Galileo/QZSS	GPS/GLONASS/BeiDou/Galileo/QZSS	/	GPS/GLONASS/BeiDou/Galileo/QZSS	/
(U)SIM Card Detection		•	•	•	•	•
Electrical Features						
Supply Voltage Range		3.1~4.4 V, 3.3 V Typ.	3.3~4.3 V, 3.8V Typ.	3.3~4.3V 3.8V Typ.	3.3~4.4V 3.8V Typ.	3.3~4.5V, 3.8V Typ.
Power Consumption		3.3mA@Sleep, Typ. 32.1mA@Idle	10µA@Power off; 1.5mA@LTE Sleep(PF=128); 1.5mA@LTE Sleep (PF=64); 18mA@Idle	10µA@Power off; 3.7mA@Sleep (PF=128); 5.0mA@Sleep (PF=64) 30mA@Idle	TBD@Power off; TBD@Sleep (PF=128); TBD@Sleep (PF=64) TBD@Idle	24 µA @ Power off; 2.1 mA @ Sleep (PF = 128); 2.8 mA @ Sleep (PF = 64) 9.2mA @ Idle
Software Features						
USB Serial Driver		Windows 7/8/8.1/10, Linux 2.6/3.x/4.1~4.15, Android 4.x/5.x/6.x/7.x/8.x/9.x	Windows 7/8/8.1/10, Linux 2.6/3.x/4.1~4.15, Android 4.x/5.x/6.x/7.x/8.x/9.x	Windows 7/8/8.1/10 Linux 2.6~5.9 Android 4.x~10.x	Windows 7/8/8.1/10, WinCE 5.0/6.0/7.0*, Linux 2.6/3.x/4.1~4.14, Android 4.x/5.x/6.x/7.x/8.x	Windows 7/8/8.1/10 Linux 2.6~5.12, Android 4.x~11.x
RIL Driver		Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x~10.x	Android 4.x/5.x/6.x/7.x/8.x	Android 4.x~11.x
NDIS Driver		Windows 7/8/8.1/10	Windows 7/8/8.1/10	/	Windows 7/8/8.1/10	Windows 7/8/8.1/10
RNDIS Driver		/	/	Windows 7/8/8.1/10; Linux 2.6~5.9	/	/
ECM Driver		Linux 2.6/3.x/4.1~4.14	Linux 2.6/3.x/4.1~4.14	Linux 2.6~5.9	Linux 2.6 or later	Linux 2.6~5.12
Gobinet Driver		Linux 2.6/3.x/4.x/5.x	Linux 2.6/3.x/4.x/5.x	/	Linux 2.6 or later	Linux 2.6~5.12
QMI_WWAN Driver		Linux 3.x (3.4 or later)/4.x/5.x	Linux 3.x (3.4 or later)/4.x/5.x	/	Linux 3.4 or later	Linux 3.4~5.12
Certifications		Telstra/ Deutsche Telekom/ GCF/ CE/ NCC/ RCM/ FCC/ IC/ CCC/ PTCRB/ AT&T/ Verizon/ Telus/ Sprint/ Rogers/ Bell (TBD)/ ICASA	Deutsche Telekom/ Telstra/ GCF/ CE/ KC/ RCM/ FCC/ CCC/ PTCRB/ IC/ AT&T/ Verizon/ USCC/ British Telekom	CE/NCC	CE*/RCM*	GCF*/FCC*/IC*/PTCRB*/IFETEL*/AT&T*/ Firstnet*/ Verizon*/Telus*
Recommended Applications		Industrial Router, Industrial PDA, Rugged Tablet PC and Digital Signage		Router, MIFI, home gateway, set-top box, PDA, tablet PC and digital signage		Police body camera, Routers (including MIFis), home gateways, set-top boxes, PDAs, tablet PCs, digital signage

Note 1: B32 is only for secondary component carrier.
Note 2: B29 is only for secondary component carrier.

* Under development

Quectel LTE-A Module Family

Product		EG12	EG120K-EA	EG18	EG512R-EA
					
Form Factor		LGA	LGA	LGA	LGA
Dimensions (mm)		37.0 × 39.5 × 2.8	37.0 × 39.5 × 2.8	37.0 × 39.5 × 2.8	38.0 × 42.0 × 2.65
4G		LTE Cat 12	LTE Cat 12	LTE Cat 18	LTE Cat 12
Frequency Bands (MHz)	-EA (EMEA/ Australia/ Brazil)	LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 Up to 3 × CA: Intra-band and Inter-band WCDMA: B1/B3/B5/B8	LTE-FDD: B1/B3/B5/B7/B8/B20/B28/ B32(Optional) LTE-TDD: B38/B40/B41/B42(Optional) / B43(Optional) Up to 3 × CA: Intra-band and Inter-band WCDMA: B1/B3/B5/B8	LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 Up to 3 × CA: Intra-band and Inter-band WCDMA: B1/B3/B5/B8	LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 LTE-TDD: B38/B41/B42/B43 Up to 3 × CA: Intra-band and Inter-band WCDMA: B1/B3/B5/B8
	-NA (North America)	LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B25/B26/ B29/B30/B66/B71 LTE-TDD: B41 Up to 3 × CA: Intra-band and Inter-band WCDMA Bands: B2/B4/B5	/	LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/ B26/B29/B30/B66/B71 LTE-TDD: B41 Up to 5 × CA: Intra-band and Inter-band WCDMA Bands: B2/B4/B5	/
Weight (approx.) g		9	9.1	9	8.7
Operating Temperature		-30°C ~ +75°C	-30°C ~ +75°C	-30°C ~ +75°C	-30°C ~ +75°C
Extended Temperature		-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Control via AT Commands		3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands
Data Transmission					
LTE		LTE-FDD: Max. 600Mbps (DL)/ Max. 150Mbps (UL) LTE-TDD: Max. 430Mbps (DL)/ Max. 90Mbps (UL) DC-HSDPA: Max. 42Mbps (DL)/ HSUPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL)/ Max. 384Kbps (UL)	LTE-FDD: Max. 600Mbps (DL)/ Max. 150Mbps (UL) LTE-TDD: Max. 430Mbps (DL)/ Max. 90Mbps (UL) DC-HSDPA: Max. 42Mbps (DL)/ HSUPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL)/ Max. 384Kbps (UL)	LTE-FDD: Max. 1.2Gbps (DL)/ Max. 150Mbps (UL) LTE-TDD: Max. 573Mbps (DL)/ Max. 90Mbps (UL) DC-HSDPA: Max. 42Mbps (DL)/ HSUPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL)/ Max. 384Kbps (UL)	LTE-FDD: Max. 600Mbps (DL)/ Max. 75Mbps (UL) LTE-TDD: Max. 310Mbps (DL)/ Max. 90Mbps (UL) WCDMA: Max. 42Mbps (DL)/ Max. 5.76Mbps (UL)
UMTS					
SMS		•	•	•	•
Protocols		TCP/ UDP/ FTP/ HTTP/ HTTPS/ PING/ SMS	QMI/MBIM/NITZ/HTTP/HTTPS/FTP/LwM2M*/PING*	TCP/ UDP/ FTP/ HTTP/ HTTPS / PING/ SMS	TCP/ UDP/ FTP/ HTTP/ HTTPS/ PING/ SMS
Interfaces					
USB		2.0/3.0, Slave Mode	2.0/3.0, Supports Master* and Slave Modes	2.0/3.0, Slave Mode	2.0/3.0, Slave Mode
PCM		•	× 1	•	•
I2C		× 1	× 1	× 1	× 1
(U)SIM		× 2, 1.8V/ 3.0V	1.8V/ 3.0V	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V
eSIM		/	Optional	/	× 1/ built-in eSIM (optional)
GPIO		× 2	× 3	× 2	•
UART		× 3	× 2	× 3	*
ADC		× 2	•	× 2	× 2
SPI		× 1 (Optional)	× 1	× 1 (Optional)	•
SD Card		•	•	•	*
RESET_N		•	•	•	•
PCIe		Optional	Optional	Optional	PCIe Gen2 × 1 Lane
RGMI		/	/	/	•
Antenna		Main, Diversity and GNSS	Main, Diversity and GNSS	Main, Diversity and GNSS	Main, Diversity and GNSS
Enhanced Features					
MIMO		2 × 2, 4 × 2, 4 × 4, DL	2 × 2, 4 × 2, 4 × 4 DL	2 × 2, 4 × 2, 4 × 4 DL	2 × 2, 4 × 2, 4 × 4 DL
eCall		•	Emergency Service*	•	/
BT4.0		/	/	/	/
Digital Audio		•	•	•	•
VoLTE		Optional	Optional	Optional	Optional
DTMF		Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency
DFOTA		Delta Firmware over the Air	Delta Firmware over the Air	Delta Firmware over the Air	Delta Firmware over the Air
GNSS		GPS/ GLONASS/ BeiDou/ Galileo/ QZSS	GPS/ GLONASS/ BeiDou/ Galileo/ QZSS	GPS/ GLONASS/ BeiDou/ Galileo/ QZSS	GPS/ GLONASS/ BeiDou/ Galileo
(U)SIM Card Detection		•	•	•	•
Electrical Features					
Supply Voltage Range		3.3~4.3 V, 3.8 V Typ.	3.3~4.3 V, 3.8V Typ.	3.3~4.3 V, 3.8 V Typ.	3.3V~4.3V, 3.8V Typ.
Power Consumption		20μA @Power off 1.83mA @Sleep, Typ. 9.41mA @Idle	TBD @Power off / TBD @LTE Sleep(PF=128) TBD @LTE Sleep(PF=64) TBD @Idle	20μA @Power off 1.81mA @Sleep, Typ. 9.38mA @Idle	TBD @Power off TBD @Sleep, Typ. TBD @Idle
Software Features					
USB Serial Driver		Windows 7/8/8.1/10, Linux 2.6/3.x/4.x/5.x, Android 4.x/5.x/6.x/7.x/8.x/9.x	Windows 7/8/8.1/10, WinCE 5.0/6.0/7.0*, Linux 2.6/3.x/4.1~4.14, Android 4.x/5.x/6.x/7.x/8.x	Windows 7/8/8.1/10, Linux 2.6/3.x/4.x/5.x, Android 4.x/5.x/6.x/7.x/8.x/9.x	Windows 7/8/8.1/10, Linux 2.6~5.4, Android 4.x/5.x/6.x/7.x/8.x/9.x/10
GNSS Driver		/	/	/	Android 4.x/5.x/6.x/7.x/8.x/9.x/10
RIL Driver		Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x/10
NDIS Driver		Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10
MBIM Driver		/	Windows 10; Linux 3.18~5.4	/	Windows 7/8/8.1/10, Linux 3.18~5.4
Gobinet Driver		Linux 2.6/3.x/4.x/5.x	Linux 2.6/3.x/4.x/5.x	Linux 2.6/3.x/4.x/5.x	Linux 2.6~5.4
QMI_WWAN Driver		Linux 3.x (3.4 or later)/4.x/5.x	Linux 3.x (3.4 or later)/4.x/5.x	Linux 3.x (3.4 or later)/4.x/5.x	Linux 3.4~5.4
PCIe Driver		/	/	/	Windows 10, Linux 2.6~5.4, Android 4.x/5.x/6.x/7.x/8.x/9.x/10
Certifications		CE/ RCM	TBD	CE/ RCM/ FCC/ IC/ GCF/ PTCRB/ AT&T*/ Verizon*/ Telstra/ USCC*	CE/ RCM
Recommended Applications		Industrial Router, Industrial PDA, Rugged Tablet PC and Digital Signage	Router, MIFI, home gateway, set-top box, PDA, tablet PC and digital signage	Industrial Router, Industrial PDA, Rugged Tablet PC and Digital Signage	

Note 1: LTE-FDD B17 is supported through MFBI+B12.

* Under development

Quectel M.2 Module Family

Product		EM05	EM06	EM060K-GL
				
Form Factor		M.2	M.2	M.2
Dimensions (mm)		42.0 × 30.0 × 2.3	42.0 × 30.0 × 2.3	42.0 × 30.0 × 2.3
4G		LTE Cat 4	LTE Cat 6	LTE Cat 6
Frequency Bands (MHz)	-GL (Global)	/	/	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29 ² /B30/B32 ¹ /B66/B71 LTE-TDD: B34/B38/B39/B40/B41/B42/B43/B46 ¹ (LAA)/B48 (CBRS) Up to 2 × CA: B2+B2/B5/B12/B13/B29 ³ ; B4+B4/B5/B12/B13/B29 ³ ; 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; WCDMA: B1/B2/B3/B4/B5/B6/B8/B19
	-A (NA)	/	LTE-FDD: B2/B4/B5/B7/B12/B13/B25/B26/B29 ² /B30/B66 LTE-TDD: B41 Up to 2 × CA: B2+B2/B5/B12/B13/B29 ³ ; B4+B4/B5/B12/B13/B29 ³ ; 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; WCDMA: B2/B4/B5	/
	-E (EMEA/ Australia/New Zealand)	LTE-FDD: B1/B3/B7/B8/B20/B28; LTE-TDD: B38/B41 WCDMA: B1/B8	LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 ¹ LTE-TDD: B38/B40/B41 Up to 2 × CA: B1+B1/B5/B8/B20/B28; B3+B3/B5/B7/B8/B20/B28; B7+B5/B7/B8/B20/B28; B20+B32 ² ; B38+B38; B40+B40; B41+B41; WCDMA: B1/B3/B5/B8	/
	-J (Japan)	/	LTE-FDD: B1/B3/B8/B18/B19/B26/B28; LTE-TDD: B41 Up to 2 × CA: B1+B1/B8/B18/B19/B26/B28; B3+B3/B8/B18/B19/B26/B28; B41+B41; WCDMA: B1/B3/B6/B8/B19	/
	-G (Global)	LTE: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B18/B19/B20/B25/B26/B28/B66/B71/B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B6/B8/B19	/	/
	-CE (China/Thailand/India)	LTE-FDD: B1/B3/B5/B8; LTE-TDD: B38/B39/B40/B41; WCDMA: B1/B8; EVDO/CDMA: BCD	/	/
Weight (approx.) g		6.0	6.5	TBD
Operating Temperature		-30°C ~ +70°C	-30°C ~ +70°C	-25°C ~ +75°C
Extended Temperature		-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Control via AT Commands		3GPP TS 27.005, 3GPP TS 27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands
Data Transmission				
LTE		LTE-FDD: Max. 150Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 130Mbps (DL)/ Max. 30Mbps (UL)	LTE-FDD: Max. 300Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 226Mbps (DL)/ Max. 28Mbps (UL)	LTE-FDD: Max. 300Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 226Mbps (DL)/ Max. 28Mbps (UL)
UMTS		DC-HSDPA: Max. 42Mbps (DL)/ HSUPA: Max. 5.76Mbps (UL) WCDMA: Max. 384Kbps (DL)/ Max. 384Kbps (UL)	DC-HSDPA: Max. 42Mbps (DL)/ HSUPA: Max. 5.76Mbps (UL) WCDMA: Max. 384Kbps (DL)/ Max. 384Kbps (UL)	DC-HSDPA: Max. 42Mbps (DL)/ HSUPA: Max. 5.76Mbps (UL) WCDMA: Max. 384Kbps (DL)/ Max. 384Kbps (UL)
SMS		•	•	•
CDMA2000		EVDO: Max. 3.1Mbps (DL)/ Max. 1.8Mbps (UL) 1X Advanced: Max. 307.2Kbps (DL)/ Max. 307.2Kbps (UL)	/	
Protocols		TCP/ UDP/ PPP/ FTP/ HTTP/ NTP/ PING/ QMI/ NITZ/ SMTP/ MMS/ FTPS/ SMTPS/ SSL/FILE	TCP/UDP/FTP/HTTP/HTTPS /PING/SMS	QMI/MBIM/NITZ/HTTP/HTTPS/FTP/LwM2M*/PING*
Interfaces				
USB		2.0 Hi-Speed	2.0/3.0*, Slave Mode	2.0/3.0*, Slave Mode
PCM		•	•	•
I2C		× 1	× 1	× 1
(U)SIM		1.8V/ 3.0V	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V
eSIM		/	/	× 1/ built-in eSIM (optional)
GPIO		× 1	× 11	MIPI interface
RESET_N		•	•	•
PCIe		/	Optional	Optional
Antenna		Main, Diversity and GNSS	Main, Diversity and GNSS	Main, Diversity and GNSS
Enhanced Features				
MIMO		DL MIMO, support Rx-diversity Antenna	2 × 2, 4 × 2, DL	2 × 2, 4 × 2, DL
eCall*		/	Emergency Service	Emergency Service
Digital Audio		•	•	•
VoLTE		/	Optional	Optional
DTMF		/	Dual-tone Multi-frequency	Dual-tone Multi-frequency
DFOTA		•	Delta Firmware over the Air	Delta Firmware over the Air
GNSS		Optional	GPS/ GLONASS/ BeiDou/ Galileo/ QZSS	GPS/ GLONASS/ BeiDou/ Galileo/ QZSS
(U)SIM Card Detection		•	•	•
Electrical Features				
Supply Voltage Range		3.135V~4.4V, 3.3V Typ.	3.135~4.4V, 3.7V Typ.	3.135~4.4V, 3.7V Typ.
Power Consumption		5μA @Power off/ 3.3mA(PF=128) @LTE Sleep/ 20mA @Idle	50μA @Power off 4.1mA @Sleep, Typ. 22.1mA @Idle	TBD@Power off TBD @Sleep, Typ. TBD @Idle
Software Features				
USB Serial Driver		Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x	Windows 7/8/8.1/10, Linux 2.6/3.x/4.1~4.15, Android 4.x/5.x/6.x/7.x/8.x/9.x	Windows 7/8/8.1/10, WinCE 5.0/6.0/7.0*, Linux 2.6/3.x/4.1~4.14, Android 4.x/5.x/6.x/7.x/8.x
GNSS Driver		Android 4.x/5.x/6.x/7.x/8.x/9.x	/	/
RIL Driver		Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x
MBIM Driver		Windows 8/8.1/10, Linux 3.18~5.4	Windows 8/8.1/10	Windows 10
NDIS Driver		Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10
Gobinet Driver		Linux 2.6~5.4	Linux 2.6/3.x/4.x/5.x	Linux 2.6/3.x/4.x/5.x
QMI_WWAN Driver		Linux 3.4~5.4	Linux 3.x (3.4 or later)/4.x/5.x	Linux 3.x (3.4 or later)/4.x/5.x
Certifications		CCC/ SRRC/ NAL/ CE/ RCM/ FCC/ PTCRB/ GCF	GCF/ CE/ NCC/ RCM/ ICASA/ FCC/ PTCRB/ IC/ WHQL/ Verizon/ AT&T/ Telstra/ Deutsche Telekom/ KDDI/ JATE/ TELECOM/ Sprint/ KC	TBD
Recommended Applications		Consumer laptops, Industrial laptops, Industrial routers, Industrial PDAs, rugged tablet PCs and digital signage.		

Note 1: B32 is only for secondary component carrier, B46 is only for secondary component carrier.

Note 2: B29 is only for secondary component carrier.

Note 3: means LTE-FDD B29 and B32 support receiving only, and are only for secondary component carrier in 2×CA.

* Under development

Quectel M.2 Module Family

Product		EM12	EM120K-GL	EM120R-GL	EM121R-GL	EM160R-GL	
							
Form Factor		M.2	M.2	M.2	M.2	M.2	
Dimensions (mm)		42.0 × 30.0 × 2.3	42.0 × 30.0 × 2.3	42.0 × 30.0 × 2.3	42.0 × 30.0 × 2.3	42.0 × 30.0 × 2.3	
4G		LTE Cat 12	LTE Cat 12	LTE Cat 12	LTE Cat 12	LTE Cat 16	
Frequency Bands (MHz)	-G (Global)	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/B66	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29 ¹ /B30/B32 ¹ /B66/B71	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29 ¹ /B30/B32 ¹ /B66	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29 ¹ /B30/B32 ¹ /B66;	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29 ¹ /B30/B32 ¹ /B66	
		LTE-TDD: B38/B39/B40/B41	LTE-TDD: B34/B38/B39/B40/B41/B42/B43/B46 ² (LAA)/B48 (CBRS)	LTE-TDD: B38/B39/B40/B41/B42/B43/B46 ² /B48(CBRS)	LTE-TDD: B38/B39/B40/B41/B42/B43/B46 ² /B48(CBRS);	LTE-TDD: B38/B39/B40/B41/B42/B43/B46 ² /B48(CBRS)	
Up to 3 × CA: Intra-band and Inter-band, B1+3+5/7/8/19/20/28, B2+4+5, B2+4+13, B2+5+30, B2+12+30, etc		Up to 3 × CA: Intra-band and Inter-band	Up to 3 × CA: Intra-band and Inter-band	Up to 3 × CA: Intra-band and Inter-band	Up to 5 × CA: Intra-band and Inter-band		
WCDMA: B1/B2/B3/B4/B5/B8/B9/B19		WCDMA: B1/B2/B3/B4/B5/B6/B8/B19	WCDMA: B1/B2/B3/B4/B5/B6/B8/B19	WCDMA: B1/B2/B3/B4/B5/B6/B8/B19	WCDMA: B1/B2/B3/B4/B5/B6/B8/B19		
Weight (approx.) g		6.0	TBD	6.8	6.8	6.8	
Operating Temperature		-30°C ~ +70°C, -10°C ~ +65°C (Only for UL CA test)	-25°C ~ +75°C	-25°C ~ +75°C	-25°C ~ +75°C	-25°C ~ +75°C	
Extended Temperature		-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	
Control via AT Commands		3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	3GPP TS27.007 and Quectel Enhanced AT Commands	
Data Transmission							
LTE		LTE-FDD: Max. 600Mbps (DL)/ Max. 150Mbps (UL) LTE-TDD: Max. 408Mbps (DL)/ Max. 90Mbps (UL)	LTE-FDD: Max. 600Mbps (DL)/ Max. 150Mbps (UL) LTE-TDD: Max. 408Mbps (DL), Max. 90Mbps (UL)	LTE-FDD: Max. 600Mbps (DL)/ Max. 150Mbps (UL) LTE-TDD: Max. 408Mbps (DL), Max. 90Mbps (UL)	LTE-FDD: Max. 600Mbps (DL)/ Max. 150Mbps (UL) LTE-TDD: Max. 408Mbps (DL), Max. 90Mbps (UL)	LTE-FDD: Max. 1.0Gbps (DL)/ Max. 150Mbps (UL) LTE-TDD: Max. 880Mbps (DL)/ Max. 90Mbps (UL)	
		DC-HSDPA: Max. 42Mbps (DL)/ HSUPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL)/ Max. 384Kbps (UL)	DC-HSDPA: Max. 42Mbps (DL)/ HSUPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL)/ Max. 384Kbps (UL)	DC-HSDPA: Max. 42Mbps (DL)/ HSUPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL)/ Max. 384Kbps (UL)	DC-HSDPA: Max. 42Mbps (DL)/ HSUPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL)/ Max. 384Kbps (UL)	DC-HSDPA: Max. 42Mbps (DL)/ HSUPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL)/ Max. 384Kbps (UL)	
UMTS							
SMS		•	•	•	•	•	
Protocols		TCP/UDP/FTP/HTTP/HTTPS /PING/SMS	QMI/MBIM/NITZ/HTTP/HTTPS/FTP/ LwM2M ³ /PING ⁴	TCP/UDP/FTP/HTTP/HTTPS /PING/SMS	TCP/UDP/FTP/HTTP/HTTPS /PING/SMS	TCP/UDP/FTP/HTTP/HTTPS /PING/SMS	
Interfaces							
USB		2.0/3.0, Slave Mode	2.0/3.0, Slave Mode	2.0/3.0, Slave Mode	2.0/3.0, Slave Mode	2.0/3.0, Slave Mode	
PCM		•	•	•	•	•	
I2C		× 1	/	/	/	/	
(U)SIM		× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V	× 2, 1.8V/ 3.0V	
eSIM		/	× 1/ built-in eSIM (optional)	× 1/ built-in eSIM (optional)	× 1/ built-in eSIM (optional)	× 1/ built-in eSIM (optional)	
GPIO		× 11	MIPI interface	MIPI interface	MIPI interface	MIPI interface	
RESET_N		•	•	•	•	•	
PCIe		Optional	Optional	PCIe Gen2 × 1 Lane	PCIe Gen2 × 1 Lane	PCIe Gen2 × 1 Lane	
Antenna		Main, Diversity and GNSS	Main, Diversity and GNSS	Main, Diversity and GNSS	Main, Diversity and GNSS	Main, Diversity and GNSS, MIMO × 2	
Enhanced Features							
MIMO		4 × 2, 2 × 2, DL	2 × 2, 4 × 2 DL	2 × 2, 4 × 2 DL	2 × 2, 4 × 2 DL	2 × 2, 4 × 2, 4 × 4 DL	
eCall*		Emergency Service	Emergency Service	Emergency Service	Emergency Service	Emergency Service	
Digital Audio		•	•	•	•	•	
VoLTE		Optional	Optional	/	/	/	
DTMF		Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency	Dual-tone Multi-frequency	
DFOTA		Delta Firmware over the Air	Delta Firmware over the Air	Delta Firmware over the Air	Delta Firmware over the Air	Delta Firmware over the Air	
GNSS		GPS/ GLONASS/ BeiDou/ Galileo/ QZSS	GPS/ GLONASS/ BeiDou/ Galileo/ QZSS	GPS/ GLONASS/ BeiDou/ Galileo/ QZSS	GPS/ GLONASS/ BeiDou/ Galileo/ QZSS	GPS/ GLONASS/ BeiDou/ Galileo/ QZSS	
(U)SIM Card Detection		•	•	•	•	•	
Electrical Features							
Supply Voltage Range		3.135~4.4V, 3.7V Typ.	3.135~4.4V 3.7V Typ.	3.135~4.4V 3.7V Typ.	3.135~4.4V 3.7V Typ.	3.135~4.4V, 3.7V Typ.	
Power Consumption		56µA @Power off 3.7mA @Sleep, Typ. 10.3mA @Idle	USB Mode TBD @ Power down TBD @ Sleep (AT+CFUN=0, USB Suspend) TBD @ Idle (PF = 64, USB Active)	USB Mode 66 µA @ Power down 1.84 mA @ Sleep (AT+CFUN=0, USB Suspend) 24.48 mA @ Idle (PF = 64, USB Active) PCIe Only Mode 66 µA @ Power down 2.35 mA @ Sleep (AT+CFUN=0, Modem standby) 15.05 mA @ Idle (PF = 64, PCIe Active)	USB Mode 66 µA @ Power down 1.84 mA @ Sleep (AT+CFUN=0, USB Suspend) 24.48 mA @ Idle (PF = 64, USB Active) PCIe Only Mode 66 µA @ Power down 2.35 mA @ Sleep (AT+CFUN=0, Modem standby) 15.05 mA @ Idle (PF = 64, PCIe Active)	USB Mode 66 µA @ Power down 1.78 mA @ Sleep (AT+CFUN=0, USB Suspend) 24.75 mA @ Idle (PF = 64, USB Active) PCIe Only Mode 66 µA @ Power down 2.38 mA @ Sleep (AT+CFUN=0, Modem standby) 15.38 mA @ Idle (PF = 64, PCIe Active)	
Software Features							
USB Serial Driver		Windows 7/8/8.1/10, Linux 2.6/3.x/4.1~4.15, Android 4.x/5.x/6.x/7.x/8.x/9.x	Windows 7/8/8.1/10, Linux 2.6/3.x/4.x/5.x, Android 4.x/5.x/6.x/7.x/8.x/9.x	Windows 7/8/8.1/10, Linux 2.6/3.x/4.x/5.x, Android 4.x/5.x/6.x/7.x/8.x/9.x	Windows 7/8/8.1/10, Linux 2.6/3.x/4.x/5.x, Android 4.x/5.x/6.x/7.x/8.x/9.x	Windows 7/8/8.1/10, Linux 2.6/3.x/4.x/5.x, Android 4.x/5.x/6.x/7.x/8.x/9.x	
RIL Driver		Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x/5.x/6.x/7.x/8.x/9.x	
NDIS Driver		Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10	Windows 7/8/8.1/10	
Gobinet Driver		Linux 2.6/3.x/4.x/5.x	Linux 2.6/3.x/4.x/5.x	Linux 2.6/3.x/4.x/5.x	Linux 2.6/3.x/4.x/5.x	Linux 2.6/3.x/4.x/5.x	
QMI_WWAN Driver		Linux 3.x (3.4 or later)/4.x/5.x	Linux 3.x (3.4 or later)/4.x/5.x	Linux 3.x (3.4 or later)/4.x/5.x	Linux 3.x (3.4 or later)/4.x/5.x	Linux 3.x (3.4 or later)/4.x/5.x	
PCIe Driver		/	Linux 3.x/4.x/5.x	Linux 3.x/4.x/5.x	Linux 3.x/4.x/5.x	Linux 3.x/4.x/5.x	
Certifications		CE/ FCC/ IC/ NCC/ RCM/ ICASA/JETE/ TELEC/ GCF/ PTCRB/ Telstra/ AT&T/ Verizon/ Telefonica/ Vodafone/ Deutsche Telekom/ British Telecom/ Docomo/ WHQL	TBD	GCF/CE/PTCRB/FCC/IC/ANATEL/IFETEL/ SRRC/ NAL/ CCC/NCC/KC/JATE/ TELEC/ RCM/ICASA/Vodafone/ British Telecom/Swisscom/Verizon/ AT&T/ T-Mobile/ Sprint/China Mobile/ China Unicom/NTT DOCOMO/ SoftBank ³ / KDDI/Telstra ⁴	GCF/CE/PTCRB/FCC/IC/ RCM/Verizon/AT&T	GCF/CE/PTCRB/FCC/IC/ANATEL/IFETEL/ SRRC/ NAL/ CCC/NCC/KC/JATE/ TELEC/ RCM/ICASA/Vodafone/ British Telecom/Swisscom/Verizon/ AT&T/ T-Mobile/ Sprint/China Mobile/ China Unicom/NTT DOCOMO/ SoftBank ³ / KDDI/Telstra ⁴	
Recommended Applications		Consumer laptops, Industrial laptops, Industrial routers, Industrial PDAs, rugged tablet PCs and digital signage.					

Note 1: B32 is only for secondary component carrier.

Note 2: B29 is only for secondary component carrier.

Note 3: B46 is only for secondary component carrier.

Note 4: Currently, SoftBank certification is only supported for PC applications.

* Under development

Quectel LTE Module Family

Product	EC21/EC21 Mini PCIe	EC25/EC25 Mini PCIe	EC20 R2.1/EC20 R2.1 Mini PCIe
			
Form Factor	LCC (EC21), Mini PCIe (EC21 Mini PCIe)	LCC (EC25), Mini PCIe (EC25 Mini PCIe)	LCC (EC20 R2.1), Mini PCIe (EC20 R2.1 Mini PCIe)
Dimensions (mm)	32.0 × 29.0 × 2.4 (EC21) 51.0 × 30.0 × 4.9 (EC21 Mini PCIe)	32.0 × 29.0 × 2.4 (EC25) 51.0 × 30.0 × 4.9 (EC25 Mini PCIe)	32.0 × 29.0 × 2.4 (EC20 R2.1) 51.0 × 30.0 × 4.9 (EC20 R2.1 Mini PCIe)
LTE Category	LTE Cat 1	LTE Cat 4	LTE Cat 4
-CE (China/India)	/	/	
-E (EMEA/Korea/Thailand/India)	-E (EMEA/Thailand/India) LTE-FDD: B1/B3/B5/B7/B8/B20 WCDMA: B1/B5/B8; GSM: B3/B8	-E (EMEA/Korea/Thailand/India) LTE-FDD: B1/B3/B5/B7/B8/B20; LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8; GSM: B3/B8	/
-EU (EMEA/Thailand)	LTE-FDD: B1/B3/B7/B8/B20/B28A WCDMA: B1/B8; GSM: B3/B8	LTE-FDD: B1/B3/B7/B8/B20/B28A LTE-TDD: B38/B40/B41; WCDMA: B1/B8; GSM: B3/B8	/
-EUX (EMEA/Thailand)	LTE-FDD: B1/B3/B7/B8/B20/B28A WCDMA: B1/B8; GSM: B3/B8	LTE-FDD: B1/B3/B7/B8/B20/B28A LTE-TDD: B38/B40/B41; WCDMA: B1/B8; GSM: B3/B8	/
-V (Verizon)	LTE-FDD: B4/B13	LTE-FDD: B4/B13	/
-A (AT&T/T-Mobile/Canada)	LTE-FDD: B2/B4/B12; WCDMA: B2/B4/B5	LTE-FDD: B2/B4/B12; WCDMA: B2/B4/B5	/
-AF (AT&T/Verizon/T-mobile)	/	LTE-FDD: B2/B4/B5/B12/B13/B14/B66/B71; WCDMA: B2/B4/B5	/
-AFX (AT&T/Verizon)	/	LTE-FDD: B2/B4/B5/B12/B13/B14/B66/B71; WCDMA: B2/B4/B5	/
-AFXD (AT&T/Verizon/T-mobile)	/	LTE-FDD: B2/B4/B5/B12/B13/B14/B66/B71; WCDMA: B2/B4/B5	/
-MX (Mexico)	/	LTE-FDD: B2/B4/B5/B7/B28/B66; WCDMA: B2/B4/B5	/
-AU (Latin America/ANZ)	LTE-FDD: B1/B2*/B3/B4/B5/B7/B8/B28; LTE-FDD: B40; WCDMA: B1/B2/B5/B8; GSM: B2/B3/B5/B8	LTE-FDD: B1/B2*/B3/B4/B5/B7/B8/B28; LTE-TDD: B40; WCDMA: B1/B2/B5/B8; GSM: B2/B3/B5/B8	/
-AUX (Latin America/ANZ)	LTE-FDD: B1/B2*/B3/B4/B5/B7/B8/B28; LTE-TDD: B40; WCDMA: B1/B2/B4/B5/B8; GSM: B2/B3/B5/B8	LTE-FDD: B1/B2*/B3/B4/B5/B7/B8/B28; LTE-TDD: B40; WCDMA: B1/B2/B4/B5/B8; GSM: B2/B3/B5/B8	/
-AUT (Australia) ¹	LTE-FDD: B1/B3/B5/B7/B28; WCDMA: B1/B5	/	/
-J (Japan)	LTE-FDD: B1/B3/B8/B18/B19/B26	LTE-FDD: B1/B3/B8/B18/B19/B26; LTE-TDD: B41; WCDMA: B1/B6/B8/B19	/
-KL (Korea)	LTE-FDD: B1/B3/B5/B7/B8	/	/
Weight (approx.) g	4.9 (EC21); 9.8 (EC21 Mini PCIe)	4.9 (EC25); 9.8 (EC25 Mini PCIe)	5.3 (EC20 R2.1); 10.6 (EC20 R2.1 Mini PCIe)
Operating Temperature	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C
Extended Temperature	-40°C ~ +85°C (EC21); -40°C ~ +80°C (EC21 Mini PCIe)	-40°C ~ +85°C (EC25); -40°C ~ +80°C (EC25 Mini PCIe)	-40°C ~ +85°C (EC20 R2.1); -40°C ~ +80°C (EC20 R2.1 Mini PCIe)
Data Transmission			
LTE data rate (Mbps)	LTE-FDD: Max. 10 (DL) / Max. 5 (UL); LTE-TDD: Max. 8.96 (DL) / Max. 3.1 (UL)	LTE-FDD: Max. 150 (DL) / Max. 50 (UL); LTE-TDD: Max. 130 (DL) / Max. 30 (UL)	LTE-FDD: Max. 150 (DL) / Max. 50 (UL) LTE-TDD: Max. 130 (DL) / Max. 30 (UL)
DC-HSPA+ data rate (Mbps)	Max. 42 (DL) / Max. 5.76 (UL)	Max. 42 (DL) / Max. 5.76 (UL)	Max. 42 (DL) / Max. 5.76 (UL)
WCDMA data rate (Kbps)	Max. 384 (DL) / Max. 384 (UL)	Max. 384 (DL) / Max. 384 (UL)	Max. 384 (DL) / Max. 384 (UL)
TD-SCDMA data rate (Mbps)	/	/	Max. 4.2 (DL) / Max. 2.2 (UL)
EVDO data rate (Mbps)	/	/	Max. 3.1 (DL) / Max. 1.8 (UL)
CDMA2000 data rate (Kbps)	/	/	Max. 307.2 (DL) / Max. 307.2 (UL)
EDGE data rate (Kbps)	Max. 296 (DL) / Max. 236.8 (UL)	Max. 296 (DL) / Max. 236.8 (UL)	Max. 296 (DL) / Max. 236.8 (UL)
GPRS data rate (Kbps)	Max. 107 (DL) / Max. 85.6 (UL)	Max. 107 (DL) / Max. 85.6 (UL)	Max. 107 (DL) / Max. 85.6 (UL)
SMS	•	•	•
CSD	•	•	•
Protocols	TCP/ UDP/ PPP/ FTP/ HTTP/ NTP/ PING/ QMI/ HTTPS/ SMTP/ MMS*/ FTPS*/ SMTPS/ SSL	TCP/ UDP/ PPP/ FTP/ HTTP/ NTP/ PING/ QMI/ HTTPS/ SMTP/ MMS*/ FTPS*/ SMTPS/ SSL	TCP/ UDP/ PPP/ FTP/ HTTP/ NTP/ PING/ QMI/ NITZ/ CMUX/ HTTPS/ SMTP/ MMS/ FTPS/ SMTPS/ SSL/ FILE
Interfaces			
(U)SIM	1.8V/ 3.0V	1.8V/ 3.0V	1.8V/ 3.0V
UART	2 (EC21); 1 (EC21 Mini PCIe)	2 (EC25); 1 (EC25 Mini PCIe)	2 (EC20 R2.1); 1 (EC20 R2.1 Mini PCIe)
USB	USB 2.0 (Hi-Speed)	USB 2.0 (Hi-Speed)	USB 2.0 (Hi-Speed)
IIC	•	•	• (EC20 R2.1); Optional (EC20 R2.1 Mini PCIe)
Audio Digital (PCM)	Optional	Optional	• (EC20 R2.1); Optional (EC20 R2.1 Mini PCIe)
SD	• (EC21)	• (EC25)	• (EC20 R2.1)
ADC	× 2, 15bits (EC21)	× 2, 15bits (EC25)	× 2, 15bits (EC20 R2.1)
SGMII	• (EC21)	• (EC25)	• (EC20 R2.1)
GPIO	• (Only Supported on QuecOpen [®])	• (Only Supported on QuecOpen [®])	/
Antenna	Pads for Primary, Rx-diversity and GNSS	Pads for Primary, Rx-diversity and GNSS	Pads for Primary, Rx-diversity and GNSS
Enhanced Features			
DTMF	•	•	•
DFOTA	•	•	•
QMI/RmNet	•	•	•
Audio Playback/Audio Recording	Optional	Optional	Optional
QuecFile	•	•	• (EC20 R2.1)
USB Serial Driver	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x
GNSS Driver	Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x	Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x	Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x
RIL Driver	Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x	Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x	Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x
NDIS Driver	Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10
MBIM Driver	Windows 8/ 8.1/ 10, Linux 3.8~5.4	Windows 8/ 8.1/ 10, Linux 3.8~5.4	Windows 8/ 8.1/ 10, Linux 3.8~5.4
GobiNet Driver	Linux 2.6~5.4	Linux 2.6~5.4	Linux 2.6~5.4
QMI_WWAN Driver	Linux 3.4~5.4	Linux 3.4~5.4	Linux 3.4~5.4
(U)SIM Card Detection	•	•	•
GNSS	Optional	Optional	Optional
Firmware Update	Via USB/DFOTA	Via USB/DFOTA	Via USB/DFOTA
Electrical Features			
Supply Voltage Range	3.3V~4.3V, 3.8V Typ. (EC21); 3.0V~3.6V, 3.3V Typ. (EC21 Mini PCIe)	3.3V~4.3V, 3.8V Typ. (EC25); 3.0V~3.6V, 3.3V Typ. (EC25 Mini PCIe)	3.3V~4.3 V, 3.8V Typ. (EC20 R2.1) 3.0V~3.6 V, 3.3V Typ. (EC20 R2.1 Mini PCIe)
Power Consumption	20μA @Power off/ 3mA @Sleep, Typ. / 22mA @Idle (EC21); 3.5mA @Sleep, Typ. / 34mA @Idle (EC21 Mini PCIe)	20μA @Power off/ 3mA @Sleep, Typ. / 22mA @Idle (EC25); 3.6mA @Sleep, Typ. / 35mA @Idle (EC25 Mini PCIe)	11μA @Power off/ 1.5mA @Sleep (PF=256), Typ. / 20mA @Idle (EC20 R2.1) ; 4mA @Sleep (PF=128), 3.7mA @Sleep (PF=256), Typ. / 30mA @Idle (EC20 R2.1 Mini PCIe)
Certifications	Carrier Certification: Vodafone/ Deutsche Telekom/ British Telecom/ Telefónica/ Verizon/ AT&T/ T-Mobile/ U.S. Cellular/ Rogers/ SKT/ NTT DCOMO/ KDDI/ Telstra/ LGU+ Regulatory Certification: GCF/ CE/ FCC/ PTCRB/ IC/ ANATEL/ KC/ NCC/ JATE/ TELEC/ RCM/ FAC Others: WHQL	Carrier Certification: Vodafone/ Deutsche Telekom/ British Telecom/ Telefónica/ Verizon/ AT&T/ T-Mobile/ U.S. Cellular/ Rogers/ Telus/ NTT DCOMO/ SoftBank/ KDDI/ Bell* SKT/ LGU+/ Telstra/ KT Regulatory Certification: GCF/ CE/ FCC/ PTCRB/ IC/ ANATEL/ KC/ NCC/ JATE/ TELEC/ RCM/ FAC/ NBTC/ ICASA/ IFETEL Others: WHQL	Regulatory Certification: NAL/ SRRC/ CCC (China)
Recommended Applications	Telematics, Smart Metering, Mobile POS Terminal, Gateway, Safety, Tracking and Tracing, Remote Maintenance and Control, Networking, Mobile Computing, Healthcare, etc.		

Note 1: Inapplicable to Mini PCIe.

Note 2: Rx-diversity not supported.

GNSS antenna not supported on EC21-KL/EC25-MX.

EC25-AFXD and EC25-AFXD Mini PCIe are requested for data only device.

* Under development

Quectel LTE Module Family

Product		EG21-G/EG21-G Mini PCIe	EG25-G/ EG25-G Mini PCIe
			
Form Factor		LGA (EG21-G) Mini PCIe (EG21-G Mini PCIe)	LGA (EG25-G) Mini PCIe (EG25-G Mini PCIe)
Dimensions (mm)		32.0 × 29.0 × 2.4 (EG21-G) 51.0 × 30.0 × 4.9 (EG21-G Mini PCIe)	32.0 × 29.0 × 2.4 (EG25-G) 51.0 × 30.0 × 4.9 (EG25-G Mini PCIe)
LTE Category		LTE Cat 1	LTE Cat 4
Frequency Bands (MHz)	-G (Global)	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28 LTE-TDD: B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B6/B8/B19 GSM: B2/B3/B5/B8	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28 LTE-TDD: B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B6/B8/B19 GSM: B2/B3/B5/B8
Weight (approx.) g		4.9 (EG21-G), 9.8 (EG21-G Mini PCIe)	4.9 (EG25-G), 9.8 (EG25-G Mini PCIe)
Operating Temperature		-35°C ~ +75°C	-35°C ~ +75°C
Extended Temperature		-40°C ~ +85°C (EG21-G) -40°C ~ +80°C (EG21-G Mini PCIe)	-40°C ~ +85°C (EG25-G) -40°C ~ +80°C (EG25-G Mini PCIe)
Data Transmission			
LTE data rate (Mbps)		LTE-FDD: Max. 10Mbps (DL)/Max. 5Mbps (UL) LTE-TDD: Max. 8.96Mbps (DL)/Max. 3.1Mbps (UL)	LTE-FDD: Max. 150 (DL)/ Max. 50 (UL) LTE-TDD: Max. 130 (DL)/ Max. 30(UL)
DC-HSPA+ data rate (Mbps)		Max. 42 (DL)/ Max. 5.76 (UL)	Max. 42 (DL)/ Max. 5.76 (UL)
WCDMA data rate (Kbps)		Max. 384 (DL)/ Max. 384 (UL)	Max. 384 (DL)/ Max. 384 (UL)
EDGE data rate (Kbps)		Max. 296 (DL)/Max. 236.8 (UL)	Max. 296 (DL)/Max. 236.8 (UL)
GPRS data rate (Kbps)		Max. 107 (DL)/ Max. 85.6 (UL)	Max. 107 (DL)/ Max. 85.6 (UL)
SMS		•	•
Protocols		TCP/ UDP/ PPP/ FTP/ HTTP/ NTP/ PING/ QMI/NITZ/CMUX/ HTTPS/ SMTP/ MMS*/ FTPS*/ SMTPS/ SSL/ FILE	TCP/ UDP/ PPP/ FTP/ HTTP/ NTP/ PING/ QMI/NITZ/CMUX/ HTTPS/ SMTP/ MMS*/ FTPS*/ SMTPS/ SSL/ FILE
Interfaces			
(U)SIM		1.8V/ 3.0V	1.8V/ 3.0V
UART		2 (EG21-G), 1 (EG21-G Mini PCIe)	2 (EG25-G), 1 (EG25-G Mini PCIe)
USB		USB 2.0 (Hi-Speed)	USB 2.0 (Hi-Speed)
IIC		•	•
Audio Digital (PCM)		Optional	Optional
SD		•(EG21-G)	•(EG25-G)
ADC		× 2, 15bits (EG21-G)	× 2, 15bits (EG25-G)
GPIO		• (Only Supported on QuecOpen*)	• (Only Supported on QuecOpen*)
Antenna		Pads for Primary, Rx-diversity and GNSS	Pads for Primary, Rx-diversity and GNSS
Enhanced Features			
DTMF		•	•
DFOTA		•	•
QMI/ RmNet		•	•
Audio Playback/Audio Recording		Optional	Optional
USB Serial Driver		Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/9.x
GNSS Driver		Android 4.x/ 5.x/ 6.x/ 7.x/8.x/9.x	Android 4.x/ 5.x/ 6.x/ 7.x/8.x/9.x
RIL Driver		Android 4.x/ 5.x/ 6.x/ 7.x/8.x/9.x	Android 4.x/ 5.x/ 6.x/ 7.x/8.x/9.x
NDIS Driver		Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10
MBIM Driver		Windows 8/ 8.1/ 10, Linux 3.8~5.4	Windows 8/ 8.1/ 10, Linux 3.8~5.4
GobiNet Driver		Linux 2.6~5.4	Linux 2.6~5.4
QMI_WWAN Driver		Linux 3.4~5.4	Linux 3.4~5.4
(U)SIM Card Detection		•	•
(U)SIM Card Connector		Optional (EG21-G Mini PCIe)	Optional (EG25-G Mini PCIe)
GNSS		Optional	Optional
Firmware Update		Via USB/DFOTA	Via USB/DFOTA
Electrical Features			
Supply Voltage Range		3.3V~4.3 V, 3.8V Typ. (EG21-G) 3.0V~3.6 V, 3.3V Typ. (EG21-G Mini PCIe)	3.3V~4.3 V, 3.8V Typ. (EG25-G) 3.0V~3.6 V, 3.3V Typ. (EG25-G Mini PCIe)
Power Consumption		13µA@Power off, 1.7mA@Sleep, Typ., 22mA@Idle (EG21-G)	13µA@Power off, 1.7mA@Sleep, Typ., 22mA@Idle (EG25-G) 1.7mA@Sleep, Typ. / 25mA @Idle (EG25-G Mini PCIe)
Certifications		Carrier Certification: Verizon/ AT&T/ T-Mobile/ Deutsche Telekom/ Sprint/U.S.Cellular/ Telus Regulatory Certification: CE/ FCC/ IC/ RCM/ PTCRB/ GCF/ ANATEL/ JATE/ TELEC/ NCC/ ICASA/ IFETEL/ KC Others: WHQL	Carrier Certification: Deutsche Telekom/ Verizon/ AT&T/ Sprint/ U.S. Cellular/ Telus/ T-Mobile/ Rogers* Regulatory Certification: SRRC/ NAL/ CCC/ GCF/ CE/ FCC/ PTCRB/ IC/ ANATEL/ IFETEL/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC/ ICASA/ IMDA/ FAC* Others: WHQL
Recommended Applications		Telematics, Smart Metering, Mobile POS Terminal, Gateway, Safety, Tracking and Tracing, Remote Maintenance and Control, Networking, Mobile Computing, Healthcare, etc.	

* Under development

Quectel LTE Module Family

Product		EG91	EG95
			
Form Factor		LGA	LGA
Dimensions (mm)		25.0 × 29.0 × 2.25	25.0 × 29.0 × 2.25
LTE Category		LTE Cat 1	LTE Cat 4
Frequency Bands (MHz)	-E (Europe)	LTE-FDD: B1/B3/B7/B8/B20/B28A; WCDMA: B1/B8; GSM: B3/B8	LTE-FDD: B1/B3/B7/B8/B20/B28A; WCDMA: B1/B8; GSM: B3/B8
	-EX (Europe)	LTE-FDD: B1/B3/B7/B8/B20/B28 WCDMA: B1/B8; GSM: B3/B8	LTE-FDD: B1/B3/B7/B8/B20/B28; WCDMA: B1/B8; GSM: B3/B8
	-NAXD (North America)	LTE-FDD: B2/B4/B5/B12/B13/B25/B26; WCDMA: B2/B4/B5	LTE-FDD: B2/B4/B5/B12/B13/B25/B26; WCDMA: B2/B4/B5
	-NAX (North America)	LTE-FDD: B2/B4/B5/B12/B13/B25/B26; WCDMA: B2/B4/B5	LTE-FDD: B2/B4/B5/B12/B13/B25/B26; WCDMA: B2/B4/B5
	-NA (North America)	LTE-FDD: B2/B4/B5/B12/B13; WCDMA: B2/B4/B5	LTE-FDD: B2/B4/B5/B12/B13; WCDMA: B2/B4/B5
	-VX (Verizon)	LTE-FDD: B4/B13	/
	-AUX (Latin America/ANZ)	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66; WCDMA: B1/B2/B5/B8 GSM: B2/B3/B5/B8	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66; WCDMA: B1/B2/B5/B8 GSM: B2/B3/B5/B8
Weight (approx.) g		3.8	3.8
Operating Temperature		-35°C ~ +75°C	-35°C ~ +75°C
Extended Temperature		-40°C ~ +85°C	-40°C ~ +85°C
Data Transmission			
LTE data rate (Mbps)		Max. 10 (DL)/ Max. 5 (UL)	Max. 150 (DL)/ Max. 50 (UL)
DC-HSPA+ data rate (Mbps)		Max. 42 (DL)/Max. 5.76 (UL)	Max. 42 (DL)/ Max. 5.76 (UL)
WCDMA data rate (Kbps)		Max. 384 (DL)/Max. 384 (UL)	Max. 384 (DL)/ Max. 384 (UL)
EDGE data rate (Kbps)		Max. 296 (DL)/Max. 236.8 (UL)	Max. 296 (DL)/Max. 236.8 (UL)
GPRS data rate (Kbps)		Max. 107(DL)/Max. 85.6 (UL)	Max. 107 (DL)/ Max. 85.6 (UL)
SMS		•	•
Protocols		TCP/ UDP/ PPP/ FTP/ HTTP/ NTP/ PING/ QMI/ CMUX/ HTTPS/ SMTP/ MMS*/ FTPS*/ SMTPS/ SSL/ FILE	TCP/ UDP/ PPP/ FTP/ HTTP/ NTP/ PING/ QMI/ CMUX/ HTTPS/ SMTP/ MMS*/ FTPS*/ SMTPS/ SSL/ FILE
Interfaces			
(U)SIM		1.8V/ 3.0V	1.8V/ 3.0V
UART		2	2
USB		USB 2.0 (Hi-Speed)	USB 2.0 (Hi-Speed)
IIC		•	•
Audio Digital (PCM)		Optional	Optional
SPI		•	•
SGMII		/	/
GPIO		• (Only Supported on QuecOpen [®])	• (Only Supported on QuecOpen [®])
Antenna		Pads for Primary, Rx-diversity and GNSS ¹	Pads for Primary, Rx-diversity and GNSS ¹
Enhanced Features			
EG911 (for North America)		•	•
DTMF		•	•
DFOTA		•	•
QMI/ RmNet		•	•
Audio Playback/Audio Recording		Optional	Optional
QuecFile		•	•
USB Serial Driver		Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4, Android 4.x/ 5.x/ 6.x/ 7.x/ 9.x
GNSS Driver		Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x	Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x
RIL Driver		Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x	Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x
NDIS Driver		Windows 7/ 8/ 8.1/ 10	Windows 7/ 8/ 8.1/ 10
MBIM Driver		Windows 8/ 8.1/ 10, Linux 3.8~5.4	Windows 8/ 8.1/ 10, Linux 3.8~5.4
GobiNet Driver		Linux 2.6~5.4	Linux 2.6~5.4
QMI_ WWAN Driver		Linux 3.4~5.4	Linux 3.4~5.4
(U)SIM Card Detection		•	•
GNSS ¹		Optional	Optional
Firmware Update		Via USB/DFOTA	Via USB/DFOTA
Electrical Features			
Supply Voltage Range		3.3V~4.3 V, 3.8V Typ.	3.3V~4.3 V, 3.8V Typ.
Power Consumption		15µA@Power off, 2.6mA@Sleep, Typ., 21mA@Idle	15µA@Power off, 2.6mA@Sleep, Typ., 21mA@Idle
Certifications		Carrier Certification: Deutsche Telekom/ Verizon/ AT&T/ U.S. Cellular/ T-Mobile/ Sprint/ Rogers/ Telus Regulatory Certification: GCF/ CE/ FCC/ PTCRB/ IC/ ANATEL/ FAC/ NCC/ RCM Others: WHQL	Carrier Certification: Deutsche Telekom/ Verizon/ AT&T/ U.S. Cellular/ T-Mobile/ Rogers/ Telus/ Sprint Regulatory Certification: GCF/ CE/ FCC/ PTCRB/ IC/ FAC Others: WHQL
Recommended Applications		Telematics, Smart Metering, Mobile POS Terminal, Gateway, Safety, Tracking and Tracing, Remote Maintenance and Control, Networking, Mobile Computing, Healthcare, etc.	

Note1: GNSS antenna not supported on EG91-E/EG95-E.
EG91-AUX does not support Rx-diversity.
EG91-NAXD and EG95-NAXD are requested for data only device.

* Under development

Quectel LTE Module Family

Product		EC200S	EC200A
			
Form Factor		LCC	LCC
Dimensions (mm)		32.0 × 29.0 × 2.4	32.0 × 29.0 × 2.4
LTE Category		LTE Cat 1	LTE Cat 4
Frequency Bands (MHz)	-CN (China/India)	/	LTE-FDD: B1/B3/B5/B8; LTE-TDD: B34/B38/B39/B40/B41; WCDMA: B1/B5/B8; GSM: B3/B8
	-EU (EMEA/APAC)	LTE-FDD: B1/B3/B5/B7/B8/B20/B28; LTE-TDD: B38/B40/B41; GSM: B2/B3/B5/B8	LTE-FDD: B1/B3/B5/B7/B8/B20/B28; LTE-TDD: B38/B40/B41; WCDMA: B1/B5/B8; GSM: B3/B8
	-EN (EMEA/APAC)	LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B31/B72; GSM: B3/B8	/
	-AU (LATAM/ANZ)	/	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66; LTE-TDD: B40; WCDMA: B1/B2/B4/B5/B8; GSM: B2/B3/B5/B8
Weight (approx.) g		4.3	4.5
Operating Temperature		-35°C ~ +75°C	-35°C ~ +75°C
Extended Temperature		-40°C ~ +85°C	-40°C ~ +85°C
Data Transmission			
LTE data rate (Mbps)		LTE-FDD: Max. 10 (DL) / Max. 5 (UL) LTE-TDD: Max. 7.5 (DL) / Max. 1 (UL)	LTE-FDD: Max. 150Mbps (DL) / Max. 50Mbps (UL) LTE-TDD: Max. 130Mbps (DL) / Max. 30Mbps (UL)
DC-HSPA+ data rate (Mbps)		/	Max. 21 (DL) / Max. 5.76 (UL)
WCDMA data rate (Kbps)		/	Max. 384 (DL) / Max. 384 (UL)
EDGE data rate (Kbps)		Max. 236.8 (DL) / Max. 236.8 (UL)	Max. 236.8Kbps (DL) / Max. 236.8Kbps (UL)
GPRS data rate (Kbps)		Max. 85.6 (DL) / Max. 85.6 (UL)	Max. 85.6 Kbps (DL) / Max. 85.6 Kbps (UL)
SMS		•	
Protocols		TCP/ UDP/ PPP/ NTP/ NITZ/ FTP/ HTTP/ PING/ CMUX/ HTTPS/ FTPS/ SSL/ FILE/ MQTT/ MMS/ SMTP/ SMTPS	TCP/ UDP/ PPP/ NTP/ NITZ/ FTP/ HTTP/ PING/ CMUX/ HTTPS/ FTPS/ SSL/ FILE/ MQTT/ MMS/ SMTP/ SMTPS
Interfaces			
(U)SIM		1.8V/ 3.0V	1.8V/ 3.0V
USB		2.0 Hi-Speed	2.0 Hi-Speed
PCIe		•	
PCM		•	•
I2C		× 1	× 1
GPIO		NA	NA
RESET_N		•	•
Antenna		Main × 1	Main, 4G Diversity
Enhanced Features			
MIMO		/	DL MIMO, support Rx-diversity Antenna
Digital Audio		•	•
VoLTE		•	•
DTMF		•	•
DFOTA		•	•
GNSS		• (Optional)	NA
(U)SIM Card Detection		•	•
Electrical Features			
Supply Voltage Range		3.4V~4.5V, 3.8V Typ.	3.4V~4.5V, 3.8V Typ.
Power Consumption		15 µA @ Power off Mode 1.1 mA @ LTE Sleep Mode (PF = 128) 0.9 mA @ LTE Sleep Mode (PF = 256) 16.5 mA @ Idle Mode	11 µA @ Power off 1.5mA @ LTE Sleep (PF=128) 1.2mA @ LTE Sleep (PF=256) 33 mA @ Idle
Software Features			
USB Serial Driver		Windows 7/8/8.1/10, Linux 2.6~5.10, Android 4.x~10.x	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.12, Android 4.x~11.x
GNSS Driver		Android 4.x~10.x	NA
RIL Driver		Android 4.x~10.x	Android 4.x~11.x
Certifications		CCC/ SRRC/ NAL/ CE/ RCM	CCC/ SRRC/ NAL/ CE/ UKCA*/RCM*/FCC*/Anatel*
Recommended Applications		Consumer laptops, Industrial laptops, Industrial routers, Industrial PDAs, rugged tablet PC and digital signage.	

* Under development

Quectel LTE Module Family

Product		EC200U	EG915U
			
Form Factor		LCC	LGA
Dimensions (mm)		31.0 × 28.0 × 2.4	23.6 × 19.9 × 2.4
LTE Category		LTE Cat 1	LTE Cat 1
Frequency Bands (MHz)	-CN (China/India)	LTE-FDD: B1/B3/B5/B8; LTE-TDD: B34/B38/B39/B40/B41; GSM: B3/B8	LTE-FDD: B1/B3/B5/B8; LTE-TDD: B34/B38/B39/B40/B41; GSM: B3/B8
	-EU (Europe)	/	LTE-FDD: B1/B3/B5/B7/B8/B20/B28 GSM: B2/B3/B5/B8
	-EU (EMEA/APAC/ANZ)	LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 GSM: B2/B3/B5/B8	/
	-LA (Latin America)	/	LTE-FDD: B2/B3/B4/B5/B7/B8/B28/B66 GSM: B2/B3/B5/B8
Weight (approx.) g		4.1	2.48
Operating Temperature		-35°C ~ +75°C	-35°C ~ +75°C
Extended Temperature		-40°C ~ +85°C	-40°C ~ +85°C
Data Transmission			
LTE data rate (Mbps)		Max. 10 (DL)/ Max. 5 (UL)	Max. 10 (DL)/ Max. 5 (UL)
DC-HSPA+ data rate (Mbps)		/	/
WCDMA data rate (Kbps)		/	/
EDGE data rate (Kbps)		/	/
GPRS data rate (Kbps)		Max. 85.6 (DL)/ Max. 85.6 (UL)	Max. 85.6 (DL)/ Max. 85.6 (UL)
SMS		•	•
Protocols		TCP/UDP/PPP/NITZ/PING/FILE/MQTT/NTP/HTTP/HTTPS/SSL/FTP/FTPS/CMUX/MMS	TCP/UDP/PPP/FTP/HTTP/NTP/PING/QMI/NITZ/CMUX/HTTPS/SMTP/MMS/FTPS/SMTPS/SSL/FILE
Interfaces			
(U)SIM		1.8V/ 3.0V	1.8V/ 3.0V
UART		3	3
USB		2.0 Hi-Speed	2.0 Hi-Speed
I2C		2	1
Audio Digital		•	•
GPIO		/	1
RESET_N		•	/
SGMII		/	/
SD		•	*
Antenna		Main Antenna, GNSS Antenna, Wi-Fi Scan/Bluetooth Antenna	Main Antenna, Wi-Fi Scan/Bluetooth Antenna
Enhanced Features			
MIMO		/	/
Digital Audio (PCM)		•	•
VoLTE		•	•
DTMF		*	•
DFOTA		•	•
Audio Playback/Audio Recording		/	•
QuecFile		•	•
GNSS		•(Optional)	•(Optional)
(U)SIM Card Detection		•	•
Firmware Update		•(USB or FOTA)	USB or FOTA
Electrical Features			
Supply Voltage Range		3.3V~4.3 V, 3.8V Typ.	3.3V~4.3 V, 3.8V Typ.
Power Consumption		30μA @Power off Mode/ 1.35mA @LTE Sleep Mode(PF=256), Typ/ 13mA @Idle Mode	30 μA @ power off 1.3 mA @ sleep 13 mA @ idle
Software Features			
USB Serial Driver		Windows 7/8/8.1/10, Linux 2.6~5.12, Android 4.x~11.x	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	Android 4.x~11.x
Certifications		NAL/ SRRC/ CCC/ CE/ RCM	CE*/RCM*/GCF*/Anatel*
Recommended Applications		POS/POC/ETC, shared equipment, data card, energy control and monitoring, Safety and protection, and industrial PDA.	

* Under development

Quectel Smart Module Family

Product		SC20	SC20 Linux	SC200R
				
Form Factor		LCC+LGA	LCC+LGA	LCC+LGA
Dimensions (mm)		40.5 × 40.5 × 2.8	40.5 × 40.5 × 2.8	40.5 × 40.5 × 2.8
LTE Feature		LTE Cat 4 3GPP E-UTRA Release 10 Compliant, Support DL MIMO 2 × 2	LTE Cat 4 3GPP E-UTRA Release 10 Compliant, Support DL MIMO 2 × 2	LTE Cat 4 3GPP E-UTRA Release 10 Compliant, Support DL MIMO 2 × 2
Frequency Bands (MHz)	-CE (China)	LTE-FDD: B1/B3/B5/B8; LTE-TDD: B38/B39/B40/B41 WCDMA: B1/B8; TD-SCDMA: B34/B39; CDMA: BCO GSM: 900/1800MHz	-CEL (China) LTE-FDD: B1/B3/B5/B8; LTE-TDD: B38/B39/B40/B41 WCDMA: B1/B8; TD-SCDMA: B34/B39; CDMA: BCO GSM: 900/1800MHz	LTE-FDD: B1/B3/B5/B8; LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B8; CDMA: BCO; GSM: 900/1800MHz
	-E/EM (EMEA/Africa/Southeast Asia/Australia/South America)	-E (EMEA/Korea/Thailand/India) LTE-FDD: B1/B3/B5/B7/B8/B20; LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8; GSM: 850/900/1800/1900MHz	-EL (EMEA/Korea/Thailand/India) LTE-FDD: B1/B3/B5/B7/B8/B20; LTE-TDD: B38/B40 WCDMA: B1/B5/B8; GSM: 850/900/1800/1900MHz	-EM (EMEA/Africa/Southeast Asia/Australia/South America) LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41; WCDMA: B1/B2/B4/B5/B8 GSM: 850/900/1800/1900MHz
	-A /NA (North America)	-A (North America) LTE-FDD: B2/B4/B5/B7/B12/B13/B25/B26 WCDMA: B1/B2/B4/B5/B8; GSM: 850/1900MHz	-AL (North America) LTE-FDD: B2/B4/B5/B7/B12/B13/B25/B26 WCDMA: B1/B2/B4/B5/B8; GSM: 850/1900MHz	-NA (North America) LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B66/B71 LTE-TDD: B41; WCDMA: B2/B4/B5
	-AU (ANZ/Brazil)	LTE-FDD: B1/B3/B5/B7/B8/B28; LTE-TDD: B40 WCDMA: B1/B2/B5/B8; GSM: 850/900/1800/1900MHz	-AUL (ANZ/Brazil) LTE-FDD: B1/B3/B5/B7/B8/B28; LTE-TDD: B40 WCDMA: B1/B2/B5/B8; GSM: 850/900/1800/1900MHz	/
	-J/JP ¹ (Japan)	-J (Japan) LTE-FDD: B1/B3/B8/B18/B19/B26; LTE-TDD: B41 WCDMA: B1/B6/B8/B19	-JL (Japan) LTE-FDD: B1/B3/B8/B18/B19/B26; LTE-TDD: B41 WCDMA: B1/B6/B8/B19	-JP ¹ (Japan) LTE-FDD: B1/B3/B5/B8/B11/B18/B19/B21/B26/B28 LTE-TDD: B41; WCDMA: B1/B6/B8/B19
	-W/WF* (Global)	-W (Wi-Fi) Only Wi-Fi & BT	-WL (Wi-Fi) Only Wi-Fi & BT	-WF* (Global) Only Wi-Fi & BT
CPU		MSM8909, ARM Cortex-A7 microprocessor cores (quad-core) up to 1.1GHz	MSM8909, ARM Cortex-A7 microprocessor cores (quad-core) up to 1.1GHz	QCM2150, Quad-core ARM Cortex-A53 64-bit CPU @ 1.3GHz
GPU		Adreno™ 304	Adreno™ 304	Adreno™ 308
Memory		8GB eMMC+1GB LPDDR3; 16GB eMMC+2GB LPDDR3	8GB eMMC+1GB LPDDR3	8GB eMMC+1GB LPDDR3; 16GB eMMC+2GB LPDDR3
Operating System		Android 7.1/8.1	Yocto Linux OS(Kernel 3.18)	Android 10
Supply Voltage Range		3.5V ~ 4.2V, 3.8V Typ.	3.5V ~ 4.2V, 3.8V Typ.	3.55V ~ 4.2V, 3.8V Typ.
Weight (approx.) g		9.8	9.8	10.2
Operating Temperature		-35 °C ~ +75 °C	-35 °C ~ +75 °C	-35 °C ~ +75 °C
Data Transmission				
LTE (Mbps)		LTE-FDD: Max. 150Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 130Mbps (DL)/ Max. 30Mbps (UL)	LTE-FDD: Max. 150Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 130Mbps (DL)/ Max. 30Mbps (UL)	LTE-FDD: Max. 150Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 130Mbps (DL)/ Max. 30Mbps (UL)
UMTS		DC-HSDPA: Max. 42Mbps (DL) HSUPA: Max. 5.76Mbps (UL) WCDMA: Max. 384Kbps (DL/UL)	DC-HSDPA: Max. 42Mbps (DL) HSUPA: Max. 5.76Mbps (UL) WCDMA: Max. 384Kbps (DL/UL)	DC-HSDPA: Max. 42Mbps (DL) HSUPA: Max. 5.76Mbps (UL) WCDMA: Max. 384Kbps (DL/UL)
TD-SCDMA		Max. 4.2Mbps (DL)/ Max. 2.2Mbps (UL)	Max. 4.2Mbps (DL)/ Max. 2.2Mbps (UL)	/
CDMA2000		EVDO: Max. 3.1Mbps (DL)/ Max. 1.8Mbps (UL) , 1X Advanced: Max. 307.2Kbps (DL/UL)	EVDO: Max. 3.1Mbps (DL)/ Max. 1.8Mbps (UL) , 1X Advanced: Max. 307.2Kbps (DL/UL)	EVDO: Max. 3.1Mbps (DL)/ Max. 1.8Mbps (UL) , 1X Advanced: Max. 307.2Kbps (DL/UL)
GSM		EDGE: Max. 296Kbps (DL)/ 236.8Kbps (UL) , GPRS: Max. 107Kbps (DL)/ 85.6Kbps (UL)	EDGE: Max. 296Kbps (DL)/ 236.8Kbps (UL) , GPRS: Max. 107Kbps (DL)/ 85.6Kbps (UL)	EDGE: Max. 296Kbps (DL)/ 236.8Kbps (UL) , GPRS: Max. 107Kbps (DL)/ 85.6Kbps (UL)
Interfaces				
LCM		4-lane MIPI_DSI, up to 1.5Gbps/lane HD (720P) @60fps	4-lane MIPI_DSI, up to 1.5Gbps/lane HD (720P) @60fps	4-lane MIPI_DS, HD+ (1440*720) @60fps
Camera		Use MIPI_CSI, up to 1.5Gbps/lane Support two Cameras: 2-lane MIPI_CSI for Rear Camera, up to 8MP 1-lane MIPI_CSI for Front Camera, up to 2MP	Use MIPI_CSI, up to 1.5Gbps/lane Support two Cameras: 2-lane MIPI_CSI for Rear Camera, up to 8MP 1-lane MIPI_CSI for Front Camera, up to 2MP	2 groups of 4-lane MIPI_CSI, up to 2.1Gbps per lane; Up to 13MP with dual ISP
Touch Panel		Capacitive Touch Panel	Capacitive Touch Panel	Capacitive Touch Panel
Audio		2 analog audio inputs and 3 analog audio outputs	2 analog audio inputs and 3 analog audio outputs	3 analog audio inputs and 3 analog audio outputs
Video		Encode: 30fps 720P (H.264), 30fps WVGA (MPEG-4/VP8) Decode: 30fps 1080P (H.264/MPEG-4/VP8/H.265 DivX4/5/6), 30fps WVGA (H.263)	Encode: 30fps 720P (H.264), 30fps WVGA (MPEG-4/VP8) Decode: 30fps 1080P (H.264/MPEG-4/VP8/H.265 DivX4/5/6), 30fps WVGA (H.263)	Video encoding: 1080p @30fps(H.264) Video decoding: 1080p @30fps(H.264, HEVC, and VP8) Video concurrency: 1080p @30fps decode+720p@30fps encode
USB		× 1 USB 2.0 Compliant, Support USB OTG	× 1 USB 2.0 Compliant, Support USB OTG	× 1 USB 2.0 Compliant, Support USB OTG
I2C		× 3	× 3	× 4
(U)SIM		× 2 (1.8V/2.95V)	× 2 (1.8V/2.95V)	× 2 (1.8V/2.95V)
UART		× 2 Support 4Mbps with Hardware Flow Control	× 2 Support 4Mbps with Hardware Flow Control	× 3 Support 4Mbps, One of them supports Hardware Flow Control
SD Card		× 1 (3.0, 4-bit SDIO)	× 1 (3.0, 4-bit SDIO)	× 1 (3.0, 4-bit SDIO)
PWRKEY		1.8V, Pulled-up Internally	1.8V, Pulled-up Internally	1.8V, Pulled-up Internally
SPI		× 1	× 1	× 3 Can be multiplexed into UART/I2S/GPIO respectively
ADC		× 1 General purpose ADC interfaces	× 1 General purpose ADC interfaces	× 1 General purpose ADC interfaces
GPIO		× 25	× 25	× 35
PWM		× 1	× 1	× 1
Motor Driver		× 1	× 1	× 1
Flash Driver		/	/	/
WLED Sink		/	/	/
Antenna		4 Solder Pads for Main/Rx-diversity/ GNSS/Wi-Fi&BT Antenna, Respectively	4 Solder Pads for Main/Rx-diversity/ GNSS/Wi-Fi&BT Antenna, Respectively	4 Solder Pads for Main/Rx-diversity/ GNSS/Wi-Fi&BT Antenna, Respectively
Enhanced Features				
BT		BT 2.1 EDR/ 3.0 HS/ 4.2 LE	BT 2.1 EDR/ 3.0 HS/ 4.2 LE	BT 2.1 EDR/ 3.0 HS/ 4.2 LE
WLAN		2.4G/5G, 802.11 a/b/g/n	2.4G/5G, 802.11 a/b/g/n	2.4G/5G, 802.11 a/b/g/n
GNSS		GPS/ GLONASS/ BeiDou or GPS/ Galileo/ BeiDou	GPS/ GLONASS/ BeiDou or GPS/ Galileo/ BeiDou	GPS/ GLONASS/ BeiDou or GPS/ Galileo/ BeiDou
Charge Function		Build-in Charge IC	Build-in Charge IC	Build-in Charge IC
Dual LCD		Only support single LCD Display	Only support single LCD Display	Only support single LCD Display
DSDS		Support Dual SIM Dual Standby	Support Dual SIM Dual Standby	Support Dual SIM Dual Standby
Firmware Upgrade		Firmware Upgrade via USB	Firmware Upgrade via USB	Firmware Upgrade via USB
Certifications		CE/ GCF/ RCM/ FCC/ IC/ PTCRB/ AT&T/ Verizon/ Telstra/ T-Mobile/ Telus/ JATE/ TELECOM/ KDDI/ NTT-DOCOMO/ CCC/ SRRC/ NAL/ NCC/ KC/ Softbank	CE/ GCF/ RCM/ FCC/ IC/ PTCRB/ AT&T/ Verizon/ Telstra/ T-Mobile/ Telus/ JATE/ TELECOM/ CCC/ SRRC/ NAL/ NCC/ KC*	GCF/ CE/ RCM/ FCC/ PTCRB/ AT&T/ Verizon/ Telstra/ IC/ JATE/ TELECOM/ CCC
Recommended Applications		Telematics, Mobile POS Terminal, Gateway, Safety, Networking, Mobile Computing, etc.		

Note1: TBD.
SC20-E LTE-TDD B41 does not support full-frequency and the bandwidth of it is 2555-2655MHz.

* Under development

Quectel Smart Module Family

Product		SC200L	SC200E
			
Form Factor		LCC+LGA	LCC+LGA
Dimensions (mm)		40.5 × 40.5 × 2.85	40.5 × 40.5 × 2.85mm
LTE Feature		LTE Cat 4 3GPP E-UTRA Release 10 Compliant, Support DL MIMO 2 × 2	LTE Cat 4(SC200E-CE/EM) LTE Cat 6(SC200E-NA)
Frequency Bands(MHz)	-CE (China)	LTE-FDD: B1/B3/B5/B8; LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B8; GSM: 900/1800MHz	-CE*/CN*(China) LTE-FDD: B1/B3/B5/B8; LTE-TDD: B34/B38/B39/B40/B41 (140M); WCDMA: B1/B8 CDMA: BCO; GSM: 900/1800MHz
	-EU/EM (EMEA/Africa/ South America/Korea/ South Asia/Latin America/Australia/India/ New Zealand/South Africa)	-EU (EMEA/Africa/Southeast Asia/South America) LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41; WCDMA: B1//B5/B8 GSM: 900/1800MHz	-EM* (EMEA/Korea/South Asia/Latin America/Australia/India/New Zealand/South Africa) LTE-FDD: B1/B2/B3/B4/B5/B7/B8/ B20/B28(A+B); LTE-TDD: B38/B40/B41 (200M) WCDMA: B1/B2/B4/B5/B8; GSM: 850/900/1800/1900MHz
	-AU (ANZ/Brazil)	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28 LTE-TDD: B38; WCDMA: B1/B2/B4/B5/B8 GSM: 850/900/1800/1900 MHz	
	-NA* (North America)	/	-NA* (North America) LTE-FDD: B2/B4/B5/B7/B12/B13/B14/ B17/B25/B26/B66/B71; LTE-TDD: B41 (200M)
	-JP ¹ (Japan)	/	-JP ¹ (Japan) LTE-FDD: B1/B3/B5/B8/B11/B18/B19/ B21/B26/B28(A+B); LTE-TDD: B41 (120M) WCDMA: B1/B6/B8/B19
	-MW/WF (Global)	/	-WF* (Wi-Fi) 2.4G & 5G Wi-Fi, 2.4G BT
	CPU	SL8541E, Quad-core ARM Cortex-A53 64-bit CPU @ 1.4 GHz	QCM2290, Quad-core ARM Cortex-A53 64-bit CPU @ 2.0 GHz
GPU		ARM mali820	Qualcomm® Adreno™ 702 Graphics Processing Unit (GPU) with 64-bit addressing
Memory		1 GB LPDDR3 + 8 GB eMMC 2 GB LPDDR3 + 16 GB eMMC	32GB eMMC + 2GB LPDDR4X (Default) 32GB eMMC + 3GB LPDDR4X (Optional)
Operating System		Android 10.0	Android 11/12
Supply Voltage Range		3.55V ~ 4.2V, 3.8V Typ.	3.5V ~ 4.4V, 3.8V Typ.
Weight (approx.) g		10	/
Operating Temperature		-35 °C ~ +75 °C	-35 °C ~ +75 °C
Data Transmission			
LTE (Mbps)		LTE-FDD: Max. 150Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 130Mbps (DL)/ Max. 30Mbps (UL)	Cat 6*: LTE-FDD: Max. 300 (DL)/ Max. 75 (UL) LTE-TDD: Max. 265 (DL)/ Max. 45 (UL) Cat 4: LTE-FDD: Max. 150 (DL)/ Max. 50 (UL) LTE-TDD: Max. 130 (DL)/ Max. 30 (UL) DC-HSDPA: Max. 42Mbps (DL) DC-HSUPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL/UL)
UMTS		DC-HSDPA: Max. 42Mbps (DL) HSUPA: Max. 5.76Mbps (UL) WCDMA: Max. 384Kbps (DL/UL)	DC-HSDPA: Max. 42Mbps (DL) DC-HSUPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL/UL)
CDMA2000		EVDO: Max. 3.1Mbps (DL)/ Max. 1.8Mbps (UL) , 1X Advanced: Max. 307.2Kbps (DL/UL)	EVDO: Max. 3.1Mbps (DL)/ 1.8Mbps (UL) 1X Advanced: Max. 307.2Kbps (DL/UL)
GSM		EDGE: Max. 296Kbps (DL)/ 236.8Kbps (UL) , GPRS: Max. 107Kbps (DL)/ 85.6Kbps (UL)	EDGE: Max. 296Kbps (DL)/ 236.8Kbps (UL) GPRS: Max. 107Kbps (DL)/ 85.6Kbps (UL)
Interfaces			
LCM		4-lane MIPI_DSI, HD+ (1440 × 720) @ 60 fps	1 group of 4-lane MIPI DSI, HD+ (1680 × 720) @ 60 fps
Camera		2 groups of MIPI_CSI (2-lane + 1-lane), up to 1.5 Gbps/lane 1 × ISP, 8 MP for rear camera (2-lane) and 2 MP for front camera (1-lane)	2 groups of 4-lane MIPI CSI, up to 2.5 Gbps/lane Support 2 or 3 cameras, up to 25 MP @ 30 fps with dual ISP
Touch Panel		Capacitive touch panel, I2C controls	Capacitive Touch Panel
Audio		Analog channels: 3 inputs: MIC1, MIC2, MIC3 (MIC1 & MIC3 can support dual-microphone noise-canceling) 3 outputs: speaker, earpiece, headphone	3 analog inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC) 3 analog outputs: Line Out, earpiece, headphone
Video		Encoder: 1080P (H.264) @ 30 fps; WVGA (MPEG-4/VP8) @ 30 fps Decoder: 1080P (H.264/MPEG-4/VP8/H.265/DivX4/5/6) @ 30 fps; WVGA (H.263) @ 30 fps × 2	Encode: 30fps 1080P H.264/265 Decode: 30fps 1080P H.264/265
USB		USB1 supports USB OTG, does not support USB hub, up to 480 Mbps USB2 only supports USB Host mode, supports USB hub, up to 100 Mbps	× 1, compliant with USB 2.0/ 3.1, supports USB OTG, charge, etc.
I2C		× 4	× 6
(U)SIM		× 2, support 1.8/2.95 V (U)SIM cards, with (U)SIM card detection function, DSDS supported	× 2 (1.8V/2.95V)
UART		× 2, up to 3.25 Mbps, UART0 supports hardware flow control	× 4, up to 4 Mbps, supports hardware flow control
SDIO		/	× 1 (3.0, 4-bit SDIO)
SD Card		× 1, SD 3.0, 4-bit SDIO	/
PWRKEY		Internally pulled up to VBAT	1.2V, Pulled-up Internally
SPI		× 1, multiplexed from GPIOs	× 3
ADC		× 1	× 1, general-purpose ADC interface
GPIO		× 25	24 (Dedicated), 69 (Max.)
PWM		× 1	× 1
Motor Driver		× 1	× 1
Flashlight Driver		/	/
WLED Sink		/	/
Antenna		× 4, Main/Rx-diversity/GNSS/Wi-Fi & Bluetooth antenna respectively	× 4, Main/Rx-diversity/GNSS/Wi-Fi & Bluetooth antenna interface respectively (SC200E-WF: × 1, Wi-Fi & Bluetooth antenna interface)
Enhanced Features			
BT		Bluetooth 2.1 EDR/3.0 HS/4.2 LE/5.0 LE Support a maximum of 10 ACL/BEL/SCO links	2.1 EDR/3.0 HS/4.2 LE/5.0 LE
WLAN		2.4&5 GHz, 802.11a/b/g/n/ac	2.4/5 GHz 802.11a/b/g/n/ac
GNSS		GPS/GLONASS or GPS/BeiDou	GPS/BeiDou/GLONASS/Galileo/QZSS/SBAS
Charge Function		Build-in Charge IC	Build-in Charge IC & Fuel Gauge Qualcomm Quick Charge technology
Dual LCD		Only support single LCD Display	Only support single LCD Display
DSDS		Support Dual SIM Dual Standby	Support Dual SIM Dual Standby
Firmware Upgrade		Firmware Upgrade via USB or OTA	Firmware Upgrade via USB and OTA
Certifications		GCF*/CE*/Anatel*/CCC/SRRC*/NAL*	CCC*/SRRC*/NAL*/CE*/UKCA*/RCM*/GCF*/KC*/ANATEL*/FCC*/IC*/PTCRB*/NCC*/NBTC*/JATEL*/TELEC*/Telstra*/AT&T*/Verizon*/T-Mobile*
Recommended Applications		Telematics, Mobile POS Terminal, Gateway, Safety, Networking, Mobile Computing, etc.	Telematics, Mobile POS Terminal, Gateway, Safety, Networking, Mobile Computing, etc.

Note 1: planning.
SC200L can't be promote to US, Canada, Australia, New Zealand, Japan, South Korea or Taiwan region.

* Under development

Quectel Smart Module Family

Product	SC600Y	SC600T	SC606T
			
Form Factor	LCC+LGA	LCC+LGA	LCC+LGA
Dimensions (mm)	43.0 × 44 × 2.85	43.0 × 44 × 2.85	43.0 × 44 × 2.85
LTE Feature	LTE Cat 6 3GPP E-UTRA Release 10 Compliant, Support DL MIMO 2 × 2	LTE Cat 6 3GPP E-UTRA Release 10 Compliant, Support DL MIMO 2 × 2	LTE Cat 6 3GPP E-UTRA Release 10 Compliant, Support DL MIMO 2 × 2
Frequency Bands (MHz)	-EM (EMEA/ India/ Korea/ South Asia/ Latin America/ Australia/ ANZ/ South Africa)	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B20/B28 LTE-TDD: B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B8 GSM: 850/900/1800/1900MHz	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 WCDMA: B1/B2/B4/B5/B8 GSM: 850/900/1800/1900MHz
	-NA (North America)	LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B66/B71 LTE-TDD: B41; WCDMA: B2/B4/B5	LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B66/B71 LTE-TDD: B41; WCDMA: B2/B4/B5
	-JP (Japan)	LTE-FDD: B1/B3/B5/B8/B11/B18/B19/B21/B26/B28 LTE-TDD: B41 WCDMA: B1/B6/B8/B19	/
	-WF (Global)	Only Wi-Fi & BT	Only Wi-Fi & BT
CPU	SDM450 , Octa-core ARM Cortex-A53 64-bit CPU @1.8GHz	MSM8953, Octa-core ARM Cortex-A53 64-bit CPU @2.0GHz	MSM8953, Octa-core ARM Cortex-A53 64-bit CPU @2.0GHz
GPU	Adreno™ 506 with 64-bit addressing	Adreno™ 506 with 64-bit addressing	Adreno™ 506 with 64-bit addressing
Memory	16GB eMMC+2GB LPDDR3	16GB eMMC+2GB LPDDR3	16GB eMMC+2GB LPDDR3
Operating System	Android 9/10	Android 9/10	Yocto Linux OS(Kernel 3.18)
Supply Voltage Range	3.55V ~ 4.4V, 3.8V Typ.	3.55V ~ 4.4V, 3.8V Typ.	3.55V ~ 4.4V, 3.8V Typ.
Weight (approx.) g	13.0	13.0	13
Operating Temperature	-35 °C ~ +75 °C	-35 °C ~ +75 °C	-35 °C ~ +75 °C
Data Transmission			
LTE (Mbps)	Cat 6*: LTE-FDD: Max. 300Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 265Mbps (DL)/ Max. 35Mbps (UL) Cat 4: LTE-FDD: Max. 150Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 130Mbps (DL)/ Max. 30Mbps (UL)	Cat 6*: LTE-FDD: Max. 300Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 265Mbps (DL)/ Max. 35Mbps (UL) Cat 4: LTE-FDD: Max. 150Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 130Mbps (DL)/ Max. 30Mbps (UL)	Cat 6*: LTE-FDD: Max. 300Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 265Mbps (DL)/ Max. 35Mbps (UL) Cat 4: LTE-FDD: Max. 150Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 130Mbps (DL)/ Max. 30Mbps (UL)
UMTS	DC-HSDPA: Max. 42Mbps (DL) DC-HSPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL/UL)	DC-HSDPA: Max. 42Mbps (DL) DC-HSPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL/UL)	DC-HSDPA: Max. 42Mbps (DL) DC-HSPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL/UL)
GSM	EDGE: Max. 296Kbps (DL)/ 236.8Kbps (UL) GPRS: Max. 107Kbps (DL)/ 85.6Kbps (UL)	EDGE: Max. 296Kbps (DL)/ 236.8Kbps (UL) GPRS: Max. 107Kbps (DL)/ 85.6Kbps (UL)	EDGE: Max. 296Kbps (DL)/ 236.8Kbps (UL) GPRS: Max. 107Kbps (DL)/ 85.6Kbps (UL)
Interfaces			
LCM	4-lane MIPI_DSI0 + 4-lane MIPI_DSI1 WUXGA (1920×1200) @60fps	4-lane MIPI_DSI0 + 4-lane MIPI_DSI1 WUXGA (1920×1200) @60fps	4-lane MIPI_DSI0 + 4-lane MIPI_DSI1 WUXGA (1920×1200) @60fps
Camera	3 Groups of 4-lane MIPI_CSI, up to 2.1Gbps/lane, Support 3 or 4 Cameras, Up to 21MP with Dual ISPs	3 Groups of 4-lane MIPI_CSI, up to 2.1Gbps/lane, Support 3 or 4 Cameras, Up to 24MP with Dual ISPs	3 Groups of 4-lane MIPI_CSI, up to 2.1Gbps/lane, Support 3 or 4 Cameras, Up to 24MP with Dual ISPs
Touch Panel	Capacitive Touch Panel	Capacitive Touch Panel	Capacitive Touch Panel
Audio	Speaker, Earpiece, Headphone, and 3 MICs for Analog Audio Support One Noise-canceling MIC	Speaker, Earpiece, Headphone, and 3 MICs for Analog Audio Support One Noise-canceling MIC	Speaker, Earpiece, Headphone, and 3 MICs for Analog Audio Support One Noise-canceling MIC
Video	Video encoding and decoding: 1080P at 60fps Wi-Fi Video encoding and decoding: 1080P at 30fps	Video encoding and decoding: Support recording and playback of 4k videos at 30fps Wi-Fi Video encoding and decoding: 1080P at 30fps	Video encoding and decoding: Support recording and playback of 4k videos at 30fps Wi-Fi Video encoding and decoding: 1080P at 30fps
USB	× 1 USB 3.0 and 2.0 Compliant, Support USB OTG	× 1 USB 3.0 and 2.0 Compliant, Support USB OTG	× 1 USB 3.0 and 2.0 Compliant, Support USB OTG
I2C	× 5	× 5	× 5
(U)SIM	× 2 (1.8V/2.95V)	× 2 (1.8V/2.95V)	× 2 (1.8V/2.95V)
UART	× 4 Support 4Mbps with Hardware Flow Control	× 4 Support 4Mbps with Hardware Flow Control	× 4 Support 4Mbps with Hardware Flow Control
SDIO	× 1 (3.0, 4-bit SDIO)	× 1 (3.0, 4-bit SDIO)	× 1 (3.0, 4-bit SDIO)
PWRKEY	1.8V, Pulled-up Internally	1.8V, Pulled-up Internally	1.8V, Pulled-up Internally
SPI	× 2 Can be Multiplexed into UART and I2S Respectively, and I2S Supports Both Tx and Rx	× 2 Can be Multiplexed into UART and I2S Respectively, and I2S Supports Both Tx and Rx	× 2 Can be Multiplexed into UART and I2S Respectively, and I2S Supports Both Tx and Rx
ADC	× 2 General purpose ADC interfaces	× 2 General purpose ADC interfaces	× 2 General purpose ADC interfaces
GPIO	× 19	× 19	× 19
PWM	× 2	× 2	×1
Motor Driver	× 1	× 1	/
Flashlight Driver	× 2	× 2	/
WLED Sink	× 4	× 4	/
Antenna	4 Solder Pads for Main/Rx-diversity/ GNSS/Wi-Fi&BT Antenna,Respectively	4 Solder Pads for Main/Rx-diversity/ GNSS/Wi-Fi&BT Antenna, Respectively	4 Solder Pads for Main/Rx-diversity/ GNSS/Wi-Fi&BT Antenna, Respectively
Enhanced Features			
BT	BT 2.1 EDR/ 3.0 HS/ 4.2 LE	BT 2.1 EDR/ 3.0 HS/ 4.2 LE	BT 2.1 EDR/ 3.0 HS/ 4.2 LE
WLAN	2.4G/5G, 802.11 a/b/g/n/ac	2.4G/5G, 802.11 a/b/g/n/ac	2.4G/5G, 802.11 a/b/g/n/ac
GNSS	GPS/ GLONASS/ BeiDou or GPS/ Galileo/ BeiDou	GPS/ GLONASS/ BeiDou or GPS/ Galileo/ BeiDou	GPS/ GLONASS/ BeiDou or GPS/ Galileo/ BeiDou
Charge Function	Build-in Charge IC & Fuel Gauge Qualcomm Quick Charge 3.0 technology	Build-in Charge IC & Fuel Gauge Qualcomm Quick Charge 3.0 technology	Build-in Charge IC & Fuel Gauge Qualcomm Quick Charge 3.0 technology
Dual LCD	Support Dual LCDs for Independent Display	Support Dual LCDs for Independent Display	Support Dual LCDs for Independent Display
DSDS	Support Dual SIM Dual Standby	Support Dual SIM Dual Standby	Support Dual SIM Dual Standby
Firmware Upgrade	Firmware Upgrade via USB	Firmware Upgrade via USB	Firmware Upgrade via USB
Certifications	CE/ RCM/ GCF/ NCC/ Telstra/ FCC/ IC/ PTCRB/ AT&T/ Verizon/ T-Mobile / JATE/ TELEC / KDDI / NTT DOCOMO/ IFETEL/ ANATEL/ KC	CE/ RCM/ GCF/ NCC/ Telstra/ FCC/ IC/ PTCRB/ AT&T/ Verizon/ T-Mobile / JATE/ TELEC / KDDI / NTT DOCOMO/ IFETEL/ ANATEL/ KC	CE/ RCM/ GCF/ FCC/ IC/ PTCRB/ AT&T/ Verizon
Recommended Applications	Telematics, Mobile POS Terminal, Gateway, Safety, Networking, Mobile Computing, etc.		

* Under development

Quectel Smart Module Family

Product		SC66
		
Form Factor		LCC+LGA
Dimensions(mm)		43.0 × 44.0 × 2.85
LTE Feature		LTE Cat 6
Frequency Bands (MHz)	-CE (China)	LTE-FDD: B1/B3/B5/B8; LTE-TDD: B34/B38/B39/B40/B41; WCDMA: B1/B8 TD-SCDMA: B34/B39; CDMA: BC0; GSM: 900/1800MHz
	-E (EMEA/ Korea/ Thailand/ India)	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B20/B28 (A+B); LTE-TDD: B38/B39/B40/B41 (200M) WCDMA: B1/B2/B4/B5/B8; GSM: 850/900/1800/1900MHz
	-A (North America)	LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B66/B71; LTE-TDD: B41(200M) WCDMA: B2/B4/B5
	-J (Japan)	LTE-FDD: B1/B3/B5/B8/B11/B18/B19 B21/B26/ B28 (A+B); LTE-TDD: B41(120M) WCDMA: B1/B6/B8/B19
	-MW/WF (Global)	-MW (Wi-Fi) 2 × 2 Wi-Fi MIMO & BT
CPU		SDM660, Customized 64-bit ARM v8.0-compliant AP (Kryo260 CPU) Kryo Gold Quad high-performance cores targeting 2.2GHz, L2 - 1MB Kryo Silver Quad low-power cores targeting 1.843GHz, L2 - 1MB
GPU		Qualcomm® Adreno 512 at 650MHz
Memory		32GB eMMC + 3GB LPDDR4X (Default) 64GB eMMC + 4GB LPDDR4X (Optional)
Operating System		Android 9/10
Supply Voltage Range		3.55V ~ 4.4V, 4V Typ.
Weight (approx.) g		12.0
Operating Temperature		-35 °C ~ +75 °C
Data Transmission		
LTE (Mbps)		Cat 6*: LTE-FDD: Max. 300 (DL)/ Max. 50 (UL) LTE-TDD: Max. 265 (DL)/ Max. 30 (UL) Cat 4: LTE-FDD: Max. 150 (DL)/ Max. 50 (UL) LTE-TDD: Max. 130 (DL)/ Max. 30 (UL)
UMTS		DC-HSDPA: Max. 42Mbps (DL) DC-HSPA: Max. 11.2Mbps (UL) WCDMA: Max. 384Kbps (DL/UL)
TD-SCDMA		Max. 4.2Mbps (DL)/2.2Mbps (UL)
CDMA2000		EVDO: Max. 3.1Mbps (DL)/ 1.8Mbps (UL) 1X Advanced: Max. 307.2Kbps (DL/UL)
GSM		EDGE: Max. 296Kbps (DL)/ 236.8Kbps (UL) GPRS: Max. 107Kbps (DL)/ 85.6Kbps (UL)
Interfaces		
LCM		2560×1600 @60fps primary display + 4k@30fps over DP Dual MIPI DSI
Camera		4-lane MIPI_CSIx3, up to 2.1Gbps/Lane, Support 3 or 4 Cameras, Up to 24MP with Dual ISPs
Touch Panel		Capacitive Touch Panel
Audio		Speaker, Earpiece, Headphone, and 3 MICs for Analog Audio Support One Noise-canceling MIC
Video		Encoding: 4K(HEVC/H264/VP8)@30FPS Decoding: 4K(HEVC/H264/VP8/VP9)@30FPS
USB		× 2, Compliant with USB3.1 and 2.0 specifications, with transmission rates up to 5Gbps on USB3.1 and 480Mbps on USB2.0
I2C		× 5
(U)SIM		× 2 (1.8V/2.95V)
UART		× 4, (one group Support 4Mbps with Hardware Flow Control)
SDIO		× 1 (3.0, 4-bit SDIO)
PWRKEY		1.8V, Pulled-up Internally
SPI		× 1, only support master mode
ADC		× 2 General purpose ADC interfaces
GPIO		× 22
PWM		× 1
Motor Driver		/
Flashlight Driver		/
WLED Sink		/
Antenna		Main antenna, Rx-diversity antenna, GNSS antenna, Wi-Fi/BT antenna and WIFI_MIMO antenna interfaces (SC66-CE and SC66-W do not support MIMO Wi-Fi)
Enhanced Features		
BT		BT 2.1 EDR/ 3.0 HS/ 4.2 LE/ 5.0 LE
WLAN		2.4G/5G, 802.11a/b/g/n/ac
GNSS		GPS/ GLONASS/ BeiDou/ Galileo/ QZSS/ SBAS
Charge Function		Build-in Charge IC & Fuel Gauge Qualcomm Quick Charge technology
Dual LCD		Support Dual LCDs for Independent Display
DSDS		Support Dual SIM Dual Standby
Firmware Upgrade		A/B OTA Firmware Upgrade via USB
Certifications		CE/ GCF/ FCC/ PTCRB/ NCC/ AT&T/ Verizon/ RCM/ IC/ JATE/ TELEC/ CCC/ SRRC/ NAL/ KC/ UKCA
Recommended Applications		Telematics, Mobile POS Terminal, Gateway, Safety, Networking, Mobile Computing, etc.

* Under development

Quectel Smart Module Family

Product	SA800U	SG865W
		
Form Factor	B2B Connector	LGA
Dimensions(mm)	60.0 × 37.0 × 6.55	60.0 × 37.0 × 6.55
LTE Feature	/	/
Frequency Bands (MHz)	- MW/WF (Global)	- WF (Wi-Fi) 2 × 2 Wi-Fi MIMO & BT
CPU	SDA845, Qualcomm® Kryo™ 385 64-bit Processor (Octa-core) CPU Quad high-performance Kryo cores at 2.649 GHz Quad low-power Kryo cores at 1.766 GHz	QCS8250, 64-bit application processors (Kryo 585) with 4 MB L3 cache: 1 × Kryo 585 Gold prime core Fmax at 2.842 GHz – with 512 KB L2 cache 3 × Kryo 585 Gold cores Fmax at 2.419 GHz – with 256 KB L2 cache per core 4 × Kryo 585 Silver cores Fmax at 1.805 GHz – with 128 KB L2 cache per core
GPU	Qualcomm® Adreno™ 630	Adreno 650 at 587 MHz– 4K 60 fps UI or 2 × 2K 60 fps UI
Memory	64GB UFS + 4GB LPDDR4X	64GB UFS + 8GB LPDDR5
Operating System	Android 9/10	Android 10
Supply Voltage Range	3.55V ~ 4.4V, 3.8V Typ.	3.55V ~ 4.4V, 3.8V Typ.
Weight (approx.) g	15.0	TBD
Operating Temperature	-35 °C ~ +75 °C	-35 °C ~ +75 °C
Data Transmission		
LTE (Mbps)	/	/
UMTS	/	/
TD-SCDMA	/	/
CDMA2000	/	/
GSM	/	/
Interfaces		
LCM	Supports 2 groups of 4-lane MIPI_DSI Dual independent display 3840 × 2440 @ 60 fps for primary display + 4K @60 fps over DP	2 × 4-lane MIPI_DSI 5040 × 2160 @ 60 fps with 8-lane MIPI 2 × (2560 × 2560 @ 60 fps with 4-lane MIPI) 2 × 4K @ 60 fps over DP (MST Mode) Wi-Fi display: 4K @ 60 fps
Camera	3 groups of 4-lane + 1 group of 2-lane MIPI_CSI, up to 2.5 Gbps/lane 2 Full ISPs + 1 Lite ISP Supports 3 cameras of 16 MP + 16 MP + 2 MP working simultaneously Supports single camera of up to 32 MP	2 × Full ISP + 2 × Lite ISP 2 × Front-end input: 25 MP (4:3) or 18 MP (16:9 aspect ratio) 2 × Front-end input: mono/YUV interface
Touch Panel	Capacitive Touch Panel	Capacitive Touch Panel
Audio	QCELP, EVS, EVRC, EVRC-B, EVRC-WB, G.709, G.729 A/AB, AMR-NB, AMR-WB, GSM-EFR, GSM-FR, GSM-HR	QCELP, EVS, EVRC, EVRC-B, EVRC-WB, G.709, G.729 A/AB
Video	4K @ 60 fps H.264/265 encoding + decoding Supports HDR	Video coding: 8K @ 30 fps Video decoding: 8K @ 60 fps 2 × USB 3.1 with Type-C USB1 supports USB OTG and DisplayPort V1.4 USB2 only supports USB host mode
USB	× 2, USB 3.1, one of which supports Type-C with DisplayPort	
I2C	× 15	× 4
(U)SIM	/	/
UART	× 13, Supports up to 4 Mbps and hardware flow control	× 4
SDIO	× 1 (SD 3.0, 4-bit SDIO)	× 1, SD 3.0
PWRKEY	PWRKEY, VOL_UP, VOL_DOWN, HOME_KEY	Internally pulled up
SPI	× 15	× 4, only support master mode
ADC	× 2	× 4, general-purpose ADC interfaces
GPIO	× 109	× 16
PWM	× 2	/
Motor Driver	× 1	× 1
Flashlight Driver	× 3	3 high-current flash LED drivers, which support both flash and torch modes Up to 1.5 A in total for FLASH_LED1/FLASH_LED2 in flash mode Up to 0.75 A for FLASH_LED3 in flash mode
WLED Sink	not support	not support
Antenna	Wi-Fi/BT, Wi-Fi MIMO, BT*, FM*	Wi-Fi/BT, Wi-Fi MIMO, BT*, FM*
Enhanced Features		
BT	BT 2.1 EDR/ 3.0 HS/ 4.2 LE/ 5.0 LE	BT 2.1 EDR/ 3.0 HS/ 4.2 LE/ 5.0 LE
WLAN	2.4G/5G, 802.11a/b/g/n/ac	2.4G/5G, 802.11a/b/g/n/ac/ax
GNSS	/	/
Charge Function	Build-in Charge IC & Fuel Gauge Qualcomm Quick Charge technology	Used for battery voltage detection, fuel gauge, battery temperature detection
Dual LCD	Support Dual LCDs for Independent Display	Support Dual LCDs for Independent Display
DSDS	/	/
Firmware Upgrade	A/B OTA Firmware Upgrade via USB	A/B OTA Firmware Upgrade via USB
Certifications	KC	TBD
Recommended Applications	Smart cash registers, smart home gateways, smart robots, smart wearables, Safety, PDA & tablets, vending machines, delivery lockers, police and law enforcement equipment, in-car video streaming and entertainment systems, etc.	Smart cash registers, smart home gateways, smart robots, smart wearables, Safety, PDA & tablets, vending machines, delivery lockers, police and law enforcement equipment, in-car video streaming and entertainment systems, etc.

* Under development

Quectel LPWA Module Family

Product	BG96	BG95 Series ¹
		
Form Factor	LGA	LGA
Dimensions (mm)	26.5 × 22.5 × 2.3	23.6 × 19.9 × 2.2
RAT	LTE Cat M1/ NB1/ EGPRS	LTE Cat M1/Cat NB2/EGPRS
Frequency Bands (MHz)	LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26*/B28 EGPRS: 850/900/1800/1900MHz	LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26(Cat M1 Only)/ B27 (Cat M1 Only)/B28/B31/B66/B71 (Cat NB2 Only)/B72/B73/B85 EGPRS: 850/900/1800/1900MHz
Weight (approx.) g	3.1	2.15
Operating Temperature	-35°C ~ +75°C	-35°C ~ +75°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C
Data Transmission		
LTE Cat M1 data rate (Kbps)	Max. 375 (DL), Max. 375 (UL)	Max. 588 (DL), Max. 1119 (UL)
LTE Cat NB1 data rate (Kbps)	Max. 32 (DL), Max. 70 (UL)	Max. 32 (DL), Max. 70 (UL)
LTE Cat NB2 data rate (Kbps)	/	Max. 127 (DL), Max. 158.5 (UL)
EDGE data rate (Kbps)	Max. 296 (DL), Max. 236.8 (UL)	Max. 296 (DL), Max. 236.8 (UL)
GPRS data rate (Kbps)	Max. 107 (DL), Max. 85.6 (UL)	Max. 107 (DL), Max. 85.6 (UL)
SMS	•	Point-to-point M0 and MT; Text and PDU Mode; SMS Cell Broadcast
Protocols	PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/NITZ/PING/MQTT(S)/LwM2M/CoAP(S)/IPv6/DNS/NTP	PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/NITZ/PING/MQTT(S)/MQTT-SN/LwM2M/CoAP(S)/IPv6/DNS/NTP
Interfaces		
(U)SIM	1.8V/ 3V	1.8V
UART	× 3 (MAIN, DEBUG, NMEA)	× 3 (MAIN, DEBUG, NMEA)
USB	USB 2.0 × 1	USB 2.0 × 1
I2C	I2C ² × 1	I2C ² × 1
ADC	ADC × 2	ADC × 1
GPIO	GPIO × 2 (I2C and NMEA can be re-configured as GPIO)	GPIO ³ × 9
RESET	RESET × 1	RESET × 1
PCM	PCM ² × 1	PCM ² × 1
Antenna	Primary, GNSS	Antenna ¹ ; 2 (for Main Antenna and GNSS Antenna, respectively)
Enhanced Features		
QuecoOpen ⁴	Simplifies the Development of Embedded Applications	Simplifies the Development of Embedded Applications
DFOTA	•	•
GNSS/RIL Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x	Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x
NDIS	Windows 7/8/8.1/10	/
USB Serial Driver	Windows 7/8/8.1/10 Linux 2.6 or later; Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x	Windows 7/8/8.1/10, Linux 2.6~5.12, Android 4.x/5.x/6.x/7.x/ 8.x/9.x/10.x/11.x
SIM Detection	•	•
GNSS	Optional	Optional
Firmware Update	via USB Interface	via USB Interface
Electrical Features		
Supply Voltage Range	3.3 ~ 4.3V, 3.8V Typ.	3.8V Typ. /3.3V Typ. ⁵
Power Consumption	10μA@ PSM	3.9μA@PSM ⁶
Max Output Power	Power Class 3 23dBm @ LTE Bands	Power Class5 21dBm @ LTE Bands / Power Class3 23dBm@ LTE Bands ⁷ / Power Class 2 26dBm@ LTE B31/72/73 of BG95-M4
Certifications	Vodafone / Deutsche Telekom/ Telefónica/ Verizon/ AT&T/ T-Mobile/ Sprint/ Telus/ Rogers/ SKT/LGU+/ NTT DOCOMO/ SoftBank/KDDI/ Telstra/ GCF/ CE/FCC/ PTCRB/ IC/ IFETEL/ CCC/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC/ IMDA/ ICASA/ U.S._Cellular	China Telecom*/ China Mobile*/ China Unicom*/ Vodafone/ Deutsche Telekom/ Verizon/ AT&T/ T-Mobile/ Sprint/SKT/ NTT DOCOMO/ SoftBank*/ KDDI/ Telstra/ SRRG*/ NAL*/ CGC/ GCF/ CE/ FCC/ PTCRB/ IC/ ANATEL/ KC/ NCC/ JATE/ TELEC/ RCM/ NBTC*/IMDA/ RoHS/ ATEX*/ PEN/ KT/UCCA/ LGU+/Telefónica/U.S.Cellular/Telus/Orange/Rogers
Recommended Applications	Gas Detector, Soil PH Tester, Optical Sensor, Machinery Alarm System, Irrigation Controller, Elevator, Asset Tracking Electronics, Person/ Pet Tracking, Water/ Gas Metering, Smart Parking System, Fire Hydrant, Smoke Alarm, Smart Bin, Street Lighting	

Note 1: For different variants, please refer to the BG95 specification.

Note 2: For Voice Call Only.

Note 3: BG95-MF provides 7 GPIO Interfaces, please refer to HD for details.

Note 4: BG95-MF provides 3 antenna interfaces, please refer to HD for details.

Note 5: For the supply Voltage of different Variants, please refer to the BG95 Hardware Design document.

Note 6: For the power consumption of different variants, please refer to the BG95 Hardware Design document.

Note 7: For the max output power of different variant, please refer to BG95 Hardware Design document.

* Under development

Quectel LPWA Module Family

Product	BG600L-M3	BG77	BG770A-GL
			
Form Factor	LGA	LGA	LGA
Dimensions (mm)	18.7 × 16.0 × 2.1	14.9 × 12.9 × 1.7	14.9 × 12.9 × 1.9
RAT	LTE Cat M1/Cat NB2/EGPRS	LTE Cat M1/Cat NB2	LTE Cat M1/Cat NB1/NB2*
Frequency Bands (MHz)	LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26 (Cat M1 Only)/B27 (Cat M1 Only)/B28/B66/B71 (Cat NB2 Only)/B85 EGPRS: 850/900/1800/1900MHz	LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26 (Cat M1 Only)/B27 (Cat M1 Only)/B28/B66/B71 (Cat NB2 Only)/B85*	LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B17 (Cat NB1/NB2* Only)/B18/B19/B20/B25/B26 (Cat M1 Only)/B27 (Cat M1 Only)/B28/B66
Weight (approx.) g	1.25	0.73	0.85
Operating Temperature	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Data Transmission			
LTE Cat M1 data rate (Kbps)	Max. 588 (DL), Max. 1119 (UL)	Max. 588 (DL), Max. 1119 (UL)	Max. 588 (DL), Max. 1119 (UL)
LTE Cat NB1 data rate (Kbps)	Max. 32 (DL), Max. 70 (UL)	Max. 32 (DL), Max. 70 (UL)	Max. 32 (DL), Max. 70 (UL)
LTE Cat NB2 data rate (Kbps)	Max. 127 (DL), Max. 158.5 (UL)	Max. 127 (DL), Max. 158.5 (UL)	Max. 127 (DL), Max. 158.5 (UL)
EDGE data rate (Kbps)	Max. 296 (DL), Max. 236.8 (UL)	/	/
GPRS data rate (Kbps)	Max. 107 (DL), Max. 85.6 (UL)	/	/
SMS	Point-to-point MO and MT; SMS Cell Broadcast; Text and PDU Mode	Point-to-point MO and MT; SMS Cell Broadcast; Text and PDU Mode	Point-to-point MO and MT; SMS Cell Broadcast; Text and PDU Mode
Protocols	PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/NITZ/PING/MQTT(S)/MQTT-SN/LwM2M/CoAP(S)/IPv6/DNS/ NTP	PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/NITZ/PING/MQTT(S)/MQTT-SN/LwM2M/CoAP(S)/IPv6/DNS/ NTP	TCP/ PPP/ UDP/ SSL/ MQTT/ FTP(S) / HTTP(S) / LwM2M/ IPv4/ IPv6/ TLS/ DTLS/CoAP/ NITZ
Interfaces			
(U)SIM	1.8V	1.8V	1.8V
UART	× 3 (MAIN, DEBUG, NMEA)	× 3 (MAIN, DEBUG, NMEA)	× 3 (MAIN, DEBUG, AUX)
USB	USB 2.0 × 1	USB 2.0 × 1	USB 2.0 × 1 (FS Only)
I2C	I2C ¹ × 1	I2C ¹ × 1	I2C* × 1
ADC	ADC × 1	ADC × 2	ADC × 2
GPIO	GPIO × 6	GPIO × 7	GPIO × 7
RESET	RESET × 1	RESET × 1	RESET × 1
PCM	PCM ¹ × 1	PCM ¹ × 1	PCM* × 1
Antenna	2 (for Main Antenna and GNSS Antenna, respectively)	2 (for Main Antenna and GNSS Antenna, respectively)	2 (for Main Antenna and GNSS Antenna, respectively)
Enhanced Features			
QuecOpen [®]	Simplifies the Development of Embedded Applications	Simplifies the Development of Embedded Applications	Simplifies the Development of Embedded Applications*
DFOTA	•	•	•
GNSS/RIL Driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x	Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x	/
USB Serial Driver	Windows 7/8/8.1/10, Linux 2.6~5.12, Android 4.x/5.x/6.x/7.x/ 8.x/9.x/10.x/11.x	Windows 7/8/8.1/10, Linux 2.6~5.12, Android 4.x/5.x/6.x/7.x/ 8.x/9.x/10.x/11.x	/
SIM Detection	•	•	•
GNSS	Optional	Optional	GPS, GLONASS
RAI	/	/	/
Firmware Update	via USB Interface	via USB Interface	via UART/USB*/DFOTA
Electrical Features			
Supply Voltage Range	3.3V~4.3V, 3.8V Typ.	2.6V~4.8V, 3.3V Typ. ²	VBAT_BB: 2.2~4.35 V, Typ. 3.3 V VBAT_RF: 3.1~4.2 V, Typ. 3.3 V
Power Consumption	4.0μA@PSM	3.44μA@PSM	1.4μA@PSM
Max Output Power	Power Class 5 21dBm @ LTE Bands	Power Class 5 21dBm @ LTE Bands	Power Class 3 23dBm @ LTE Bands
Certifications	Vodafone/ Deutsche Telekom/ Telefónica*/ Verizon*/ AT&T/ T-Mobile/ Sprint/ DCC*/ GCF/ CE/ FCC/ RCM/ PTCRB/ IC/ RoHS / ANATEL	China Telecom*/ China Mobile*/ China Unicom*/ Vodafone/ Deutsche Telekom/ Verizon/ AT&T/ T-Mobile/ Sprint/ SRRC*/ NAL*/ CCC*/ GCF/ CE/ FCC/ PTCRB/ IC/ KC*/ NCC/ JATE/ TELEC/ RCM/ NBTC*/ Telus/ USCC RoHS	FCC/CE/IC/RCM/KC/TELEC*/JATE*/Deutsche Telekom/SKT*/ Vodafone*/PTCRB/GCF/AT&T*/Verizon*/ RoHS
Recommended Applications	Gas Detector, Soil PH Tester, Optical Sensor, Machinery Alarm System, Fire Hydrant, Smoke Alarm, Smart Bin, Street Lighting	System, Irrigation Controller, Elevator, Asset Tracking Electronics, Person/ Pet Tracking, Water/ Gas Metering, Smart Parking	

Note 1: For Voice Call Only.

Note 2: please refer to the hardware design manual for more specific requirements on the minimum power supply voltage.

* Under development

Quectel LPWA Module Family

Product	BC95-G ¹	BC68 ¹	BC66	BC66-NA	BC660K-GL	BC65	BC92
							
Form Factor	LCC	LCC	LCC	LCC	LCC	LCC	LCC
Dimensions (mm)	19.9 × 23.6 × 2.2	15.8 × 17.7 × 2.0	15.8 × 17.7 × 2.0	15.8 × 17.7 × 2.0	15.8 × 17.7 × 2.0	17.7 × 15.8 × 2.2	23.6 × 19.9 × 2.2
RAT	LTE Cat NB2	LTE Cat NB2	LTE Cat NB1	LTE Cat NB2	LTE Cat NB2	LTE Cat NB2	LTE Cat NB2/GSM
Frequency Bands (MHz)	B1 @H-FDD: 2100MHz; B3 @H-FDD: 1800MHz; B5 @H-FDD: 850MHz; B8 @H-FDD: 900MHz; B20 @H-FDD: 800MHz; B28 @H-FDD: 700MHz;	B1 @H-FDD: 2100MHz; B3 @H-FDD: 1800MHz; B5 @H-FDD: 850MHz; B8 @H-FDD: 900MHz; B20 @H-FDD: 800MHz; B28 @H-FDD: 700MHz;	LTE Cat NB1: B1/B2/B3/B4/B5/B8/B12/ B13/B17/B18/B19/B20/ B25/B28/B66/B71/B85/ B26*	LTE Cat NB2: B1/B2/B3/B4/B5/B8/B12/ B13/B17/B18/B19/B20/ B25/B28/B66/B71/B85/ B26*	LTE Cat NB2: B1/B2/B3/B4/B5/B8/B12/ B13/B17/B18/B19/B20/ B25/B28/B66/B70/B85	LTE Cat NB2: B1*/B3/B5/B8/B20/B28	LTE Cat NB2: B3/B5/B8/B20/B28 GSM: 850/900/1800/1900MHz
Weight (approx.) g	1.8±0.2	1.1±0.2	1.2±0.2	1.2±0.2	1.0±0.2	1.2±0.2	1.8±0.1
Operating Temperature	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C	-25°C ~ +75°C	-25°C ~ +75°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Data Transmission							
LTE Cat NB1 data rate (Kbps)	Single Tone: 25.2 (DL) / 15.625 (UL) Multi-Tone: 25.2 (DL) / 54 (UL)	Single Tone: 25.2(DL)/ 15.625 (UL) Multi-Tone: 25.2(DL)/ 54 (UL)	Single Tone: 25.5 (DL) / 16.7 (UL) Multi-Tone: 25.5 (DL) / 62.5 (UL)	Single Tone: 25.5 (DL) / 16.7 (UL) Multi-Tone: 25.5 (DL) / 62.5 (UL)	Single-tone: 25.5 (DL) / 16.7 (UL) Multi-Tone: 127 (DL) / 158.5 (UL)	Single-Tone: Max. 25.5 (DL)/16.7 (UL) Multi-Tone: Max. 25.5 (DL)/62.5 (UL)	Single-Tone: Max. 25.5 (DL)/16.7 (UL) Multi-Tone: Max. 25.5 (DL)/62.5 (UL)
LTE Cat NB2 data rate (Kbps)	Extended TBS/2 HARQ: 125 (DL)/150 (UL)	Extended TBS/2 HARQ: 125 (DL)/150 (UL)	/	Max. 127 (DL)/158.5 (UL)	Max. 127 (DL)/158.5 (UL)	Max. 127 (DL)/ 158.5 (UL)	Max. 127 (DL)/158.5 (UL)
GPRS data rate (Kbps)	/	/	/	/	/	/	GPRS Class 12: Max. 85.6 (DL)/85.6 (UL)
SMS	•	•	•	•	•	•	•
Protocols	IPv4/IPv6/UDP/CoAP/ LwM2M/Non-IP/DTLS/TCP/ MQTT	IPv4/IPv6/UDP/CoAP/ LwM2M/Non-IP/DTLS /TCP/ MQTT	UDP/TCP/LwM2M/MQTT/ SNTP/PPP*/CoAP*/TLS/ DTLS/HTTP*/HTTPS*	UDP/TCP/LwM2M/MQTT/ SNTP/PPP*/CoAP*/TLS/ DTLS/HTTP*/HTTPS*	UDP/TCP/PING/LwM2M*/ SNTP/MQTT/MQTTs/SSL/TLS	UDP/TCP/SNTP/MQTT/CoAP*/ PPP/TLS/DTLS	UDP/TCP/SNTP/PPP/MQTT/ CoAP*/HTTP*/HTTPS*/FTP
Interfaces							
(U)SIM	× 1 Supports 1.8V/ 3.0V USIM Card	× 1 Supports 1.8V/ 3.0V USIM Card	1.8V	1.8V	1.8/3.0V	1.8V/3.0V	1.8V/3.0V
UART	× 2	× 2	× 3 (MAIN, DEBUG, AUX)	× 3 (MAIN, DEBUG, AUX)	UART × 2 (for QuecOpen [®] version, × 3)	× 3 (MAIN, DEBUG, AUX)	× 2 (MAIN, DEBUG)
I2C	× 2 (QuecOpen Version Only)	× 1 (QuecOpen Version Only)	× 1 (QuecOpen Version Only)	× 1 (QuecOpen Version Only)	× 1* (QuecOpen Version only)	/	/
ADC	× 1, 10bits (QuecOpen Version Only)	× 1, 10bits (QuecOpen Version Only)	× 1	× 1	ADC × 1 (for QuecOpen [®] version, × 2)	× 1	× 1
GPIO	Config (QuecOpen Version Only)	Config (QuecOpen Version Only)	Config (QuecOpen Version Only)	Config (QuecOpen Version Only)	GPIO × 4 (for QuecOpen [®] version, × 13)	/	/
RESET	× 1	× 1	× 1	× 1	× 1	× 1	× 1
SPI	× 2 (QuecOpen Version Only)	× 1 (QuecOpen Version Only)	× 1 (QuecOpen Version Only)	× 1 (QuecOpen Version Only)	SPI* × 1 (for QuecOpen [®] version only)	/	/
PSM_EINT	Config (QuecOpen Version Only)	Config (QuecOpen Version Only)	× 1	× 1	PSM_ENIT × 1 (for QuecOpen [®] version, × 2)	× 1	× 1
I2S	/	/	× 1 (QuecOpen Version Only)	× 1 (QuecOpen Version Only)	/	/	/
NETLIGHT	/	/	/	/	× 1	/	/
Antenna	Pads for Primary	Pads for Primary	Primary	Primary	Primary	Primary	Primary
Enhanced Features							
QuecOpen [®]	•	•	•	•	•	/	/
DFOTA	•	•	•	•	•	•	•
Firmware Update	via UART/ DFOTA	via UART/ DFOTA	via UART/ DFOTA	via UART/ DFOTA	via UART/ DFOTA	via UART/ DFOTA	via UART/ DFOTA
RAI	•	•	•	•	•	•	•
Location Based Service	ECID, OTDOA	ECID, OTDOA	/	ECID*, OTDOA*	/	ECID, OTDOA	ECID, OTDOA
eSIM*	o	/	o	o	o	o	/
Electrical Features							
Supply Voltage Range	3.1~4.2V, 3.6V Typ.	3.1~4.2V, 3.6V Typ.	2.1V~3.63V, 3.3V Typ.	2.1V~3.63V, 3.3V Typ.	2.2~4.3 V, 3.3 V Typ.	3.2V~4.2V, 3.8V Typ.	3.4V~4.2V, 3.8V Typ.
Power Consumption	3μA @PSM 0.5mA @Idle Mode, DRX=2.56s, ECLO 250mA @Tx, 23dBm (B1/ B3) 220mA @Tx, 23dBm (B8/B5/B20) 280mA @Tx, 23dBm (B28) 60mA @Rx	3μA @PSM 0.5mA @Idle Mode, DRX=2.56s, ECLO 250mA @Tx, 23dBm (B1/ B3) 220mA @Tx, 23dBm (B8/B5/B20) 280mA @Tx, 23dBm (B28) 60mA @Rx	3.5μA@ PSM	3.6μA@ PSM	800 nA @ PSM	4μA @PSM	4μA @PSM
Certifications	CE/ GCF/ RCM/ NCC/ JATE/ TELEC/ KC/ NBTC/ Vodafone Global / Deutsche Telekom / Telstra / Softbank/ KT/ Telefonica/ LGU+ / ATEX/ IMDA/ ANATEL/ FAC	CE/ GCF/ RCM/ NCC/ JATE/ TELEC/ IMDA / Deutsche Telekom/ Vodafone/ Telstra / ATEX/ Softbank/ KC/ Telefonica/ TIM/ Altice-MEO/FAC	NCC/ IC/ CE/ RCM/ GCF/ FCC/ PTCRB/ JATE/ TELEC/ KC/ NBTC/ T-Mobile/ Altice/ TIM(Telecom Italia)/ Vodafone/ ATEX/ IMDA/ AT&T/ LGU+*/ Softbank/ Telstra/ Telefonica/ Deutsche Telekom/ Altice-MEO/ Verizon*	NCC*/ IC/ CE/ RCM/ GCF/ FCC/ PTCRB/ JATE/ TELEC/ KC/ NBTC*/ T-Mobile/ Vodafone/ ATEX*/ IMDA*/ AT&T*/ LGU+*/ Softbank*/ Telstra*/ Telefonica*/ Deutsche Telekom/ Verizon*	CE/RCM/FCC/IC/PTCRB*/ GCF*/AT&T*/Verison*/DT/ Vodafone*/KC*/LGU+*/KT*	CE/ RCM	CE/ RCM/ GCF/ Vodafone/ MTN/ ICASA/ Vodacom
Recommended Applications	Gas Detector, Soil PH Tester, Optical Sensor, Machinery Alarm System, Irrigation Controller, Elevator, Asset Tracking, Electronics, Person/Pet Tracking, Water/Gas Metering, Smart Parking System, Fire Hydrant, Smoke Alarm, Smart Bin, Street Lighting						

Note 1: The EOL has already been released.

o & * Under development

Quectel LPWA Module Family

Product	BC95-GV	BC68-GV
		
Form Factor	LCC	LCC
Dimensions (mm)	19.9 × 23.6 × 2.2	15.8 × 17.7 × 2.0
RAT	LTE Cat NB2	LTE Cat NB2
Frequency Bands (MHz)	B1 @H-FDD: 2100MHz; B3 @H-FDD: 1800MHz; B5 @H-FDD: 850MHz; B8 @H-FDD: 900MHz; B20 @H-FDD: 800MHz; B28 @H-FDD: 700MHz;	B1 @H-FDD: 2100MHz; B3 @H-FDD: 1800MHz; B5 @H-FDD: 850MHz; B8 @H-FDD: 900MHz; B20 @H-FDD: 800MHz; B28 @H-FDD: 700MHz;
Weight (approx.) g	1.5±0.2	1.0±0.2
Operating Temperature	-35°C ~ +75°C	-35°C ~ +75°C
Extended Temperature	-40°C ~ +85°C	-40°C ~ +85°C
Data Transmission		
LTE Cat NB1 data rate (Kbps)	Single Tone: 25.2 (DL) / 15.625 (UL) Multi Tone: 25.2 (DL) / 54 (UL)	Single Tone: 25.2(DL)/ 15.625 (UL) Multi Tone: 25.2(DL)/ 54 (UL)
LTE Cat NB2 data rate (Kbps)	Extended TBS/2 HARQ : 125 (DL)/150 (UL)	Extended TBS/2 HARQ : 125 (DL)/150 (UL)
SMS	•	•
Protocols	IPv4/ IPv6/ UDP/ TCP/ Non-IP/ CoAP/ LwM2M/ DTLS/ MQTT/ HTTP* / DNS/ TLS*/ MQTTS*	IPv4/ IPv6/ UDP/ TCP/ Non-IP/ CoAP/ LwM2M/ DTLS/ MQTT/ HTTP* / DNS/ TLS*/ MQTTS*
Interfaces		
(U)SIM	× 1 Supports 1.8V/ 3.0V	× 1 Supports 1.8V/ 3.0V
UART	× 2 (QuecOpen®* Version: × 3)	× 2 (QuecOpen®* Version: × 3)
I2C	Max. × 4 (QuecOpen®* Version Only)	Max. × 3 (QuecOpen®* Version Only)
ADC	× 2 (QuecOpen®* Version: × 4)	× 2 (QuecOpen®* Version: × 3)
GPIO	Config (QuecOpen®* Version Only)	Config (QuecOpen®* Version Only)
SPI	× 2 (QuecOpen®* Version Only)	× 2 (QuecOpen®* Version Only)
PWM	× 2 (QuecOpen®* Version Only)	× 2 (QuecOpen®* Version Only)
RI	× 1	× 1
RESET_N	× 1	× 1
NETLIGHT	× 1	× 1
WAKEUP_OUT	× 1	× 1
Antenna	Pads for Primary	Pads for Primary
Enhanced Features		
QuecOpen®	•	•
DFOTA	•	•
BLE 5.0	•	•
Firmware Update	via UART/DFOTA/DOFTA Over BLE	via UART/DFOTA/DOFTA Over BLE
RAI	•	•
Location Based Service	ECID, OTDOA	ECID, OTDOA
eSIM*	○	○
Electrical Features		
Supply Voltage Range	2.1~4.2 V, typical 3.0/3.6 V	2.1~4.2 V, typical 3.0/3.6 V
Power Consumption	2 µA @ PSM 0.23 mA @ Idle Mode, DRX = 2.56 s, ECLO 310 mA @ Tx, 23 dBm (B1/B3) 210 mA @ Tx, 23 dBm (B5/B8/B20) 210 mA @ Tx, 23 dBm (B28) 75 mA @ Tx, 12 dBm (B1/B3/B5/B8/B20/B28) 45 mA @ Tx, 0 dBm (B1/B3/B5/B8/B20/B28) 23 mA @ Rx	2 µA @ PSM 0.23 mA @ Idle Mode, DRX = 2.56 s, ECLO 310 mA @ Tx, 23 dBm (B1/B3) 210 mA @ Tx, 23 dBm (B5/B8/B20) 210 mA @ Tx, 23 dBm (B28) 75 mA @ Tx, 12 dBm (B1/B3/B5/B8/B20/B28) 45 mA @ Tx, 0 dBm (B1/B3/B5/B8/B20/B28) 23 mA @ Rx
Certifications	CE*/ GCF*/ RCM*/ NCC*/ JATE*/ TELEC*/ KC*/ NBTC*/ Vodafone*/ Global* / Deutsche Telekom* / Telstra* / Softbank*/ KT*/ Telefónica*/ LGU+*/ ATEX*/ IMDA*/ ANATEL*/ FAC*	CE*/ GCF*/ RCM*/ NCC*/ JATE*/ TELEC*/ IMDA* / Deutsche Telekom*/ Vodafone*/ Telstra* / ATEX*/ Softbank*/ KC*/ Telefónica*/ TIM*/ Altice-MEO*/ FAC*
Recommended Applications	Gas Detector, Soil PH Tester, Optical Sensor, Machinery Alarm System, Irrigation Controller, Elevator, Asset Tracking Electronics, Person/ Pet Tracking, Water/ Gas Metering, Smart Parking System, Fire Hydrant, Smoke Alarm, Smart Bin, Street Lighting	

* Under development

Quectel Automotive Module Family

Product	AG35
	
Form Factor	LGA
Dimensions (mm)	33.0 × 37.5 × 3.0
4G	LTE Cat 4
Frequency Bands (MHz)	-E (EMEA/Korea/Australia/India/Southeast Asia)
	-CN (China)
	-EU (EMEA/Australia/Korea/India/Southeast Asia)
	-CE (China/India)
	-NA (North America)
	-J (Japan)
	-JP
-LA (Latin America)	
Weight (approx.) g	8.1
Operating Temperature	-40°C ~ +85°C
Data Transmission	
LTE data rate	LTE-FDD: Max. 150Mbps (DL)/ Max. 50Mbps (UL) LTE-TDD: Max. 130Mbps (DL)/ Max. 30Mbps (UL)
DC-HSPA+ data rate (Mbps)	Max. 42 (DL)/ Max. 5.76 (UL)
WCDMA data rate (Kbps)	Max. 384 (DL)/ Max. 384 (UL)
TD-SCDMA data rate (Mbps)	Max. 4.2 (DL)/ Max. 2.2 (UL)
EDGE data rate (Kbps)	Max. 296 (DL)/ Max. 236.8 (UL)
GPRS data rate (Kbps)	Max. 107 (DL)/ Max. 85.6 (UL)
C-V2X data rate (Mbps)	/
SMS	Point-to-point MO/MT, SMS Cell Broadcast, Text and PDU Mode
Protocols	TCP/UDP/PPP/PING/FTP(S)/HTTP(S)/SMTP/SSL/TLS/MMS/NTP/FILE/QMI
Interfaces	
(U)SIM	× 1 (Support 1.8V/ 3V USIM/ SIM Cards)
USIM	/
UART	× 3 (for Main UART/ BT/ Debug Functions)
HSIC	× 1
USB	USB 2.0 × 1 (with High Speed up to 480Mbps)
IIC	× 2 (1 for PCM)
SGMII	× 1
SDIO	× 2 for Wi-Fi and eMMC
SPI	SPI > 1 (for QuecOpen Version Only)
I2S/PCM	/
I2C	/
RGMI	/
Audio Digital (PCM)	× 1
ADC	× 3, 15bits
PCIe	/
GPIO	GPIO >15 (for QuecOpen Version Only)
JTAG/QDSS	/
RESET	/
Antenna	Main, Rx-diversity and GNSS
Enhanced Features	
QuecOpen [®] (Open Linux)	•
PCIe for WLAN Function	/
UART/PCM for Bluetooth Function	/
Gigabit Ethernet	/
eCall	•
Era Glonass	•
Multi-APN	•
Temperature Management	•
DFOTA	•
eSIM (eUICC)	/
(U)SIM Detection	/
Voice over USB (USB Audio)	•
QDR	Optional
PPE (RTK)	Optional (Support only in China)
GNSS	GPS/ GLONASS/ Beidou/ Galileo/ QZSS
ESD/EMI Protection	/
C-V2X	/
QDR 3.0 (External IMU Required)	/
Multi-Frequency GNSS (L1/L5)	/
Advanced Security Feature	
TrustZone	•
Secure Boot	•
SE-Linux	/
Code/User Data Backup	•
Software Features	
RIL Driver/ GNSS Driver	Android 4.x~9.x
RNDIS Driver	Windows 7/ 8/ 8.1/ 10, Linux 2.6~5.4
ECM Driver/ Gobinet Driver	Linux 2.6~5.4
QMI_WWAN Driver	Linux 3.4~5.4
USB Serial Driver	Windows 7/8/8.1/10, Linux 2.6~5.4, Android 4.x~9.x
Electrical Features	
Supply Voltage Range	3.3V~4.3V, 3.8V Typ.
Power Consumption	20μA @Power off/ 1.9mA @LTE Sleep, PF=128/1.6mA @LTE Sleep, PF=256/ 22mA @Idle, Typ.
Certifications	
CCC/ SRRC/ NAL/ GCF/ CE/ FCC/ KC/ RCM/ ANATEL/ KT/ STK* LGU+*/ PTCRB/ IC/ AT&T/ Rogers/ T-Mobile/ Verizon/ JATE/ TELEC/NTT DOCOMO	
Recommended Applications	
Automotive	

Note 1: n1/n3/n28 for AG55xQ-CN supports SA only.
Note 2: LTE-FDD B29/B30/B32 supports Rx only.

Product		AG55xQ
		
Form Factor		LGA
Dimensions (mm)		54.5 × 53.0 × 3.45
5G		Sub-6G
4G		LTE Cat 19
Frequency Bands (MHz)	-CN (China)	5G-FDD: n1 ¹ /n3 ¹ /n28 ¹ ; 5G-TDD: n41/n78/n79; LTE-FDD: B1/B3/B5/B7/B8; LTE-TDD: B34/B38/B39/B40/B41; WCDMA: B1/B8; GSM: 900/1800 MHz; C-V2X: B47 (For AG550Q/AG553Q Series)
	-EU (EMEA/Australia, Korea/India/Southeast Asia/Latin America excl. Mexico)	5G-FDD: n1/n3/n8/n20/n28; 5G-TDD: n41/n78; LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B20/B28/B32; LTE-TDD: B38/B40/B41/B42; WCDMA: B1/B3/B5/B6/B8; GSM: 900/1800/850/1900 MHz; C-V2X: B47 (For AG550Q/AG553Q Series)
	-NA (North America/Mexico)	5G-FDD: n2/n5/n25/n66/n71; 5G-TDD: n41/n48/n77/n78; LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B28/B29 ² /B30 ² /B66/B71; LTE-TDD: B41/B48; WCDMA: B2/B4/B5; GSM: 1900 MHz; C-V2X: B47 (For AG550Q/AG553Q Series)
	-JP* (Japan)	5G-FDD: n1/n3; 5G-TDD: n77/n78/n79; LTE-FDD: B1/B3/B5/B7/B8/B9/B11/B19/B21/B28; LTE-TDD: B41; WCDMA: B1/B3/B5/B8/B9/B19; C-V2X: B47 (For AG550Q/AG553Q Series)
Weight (approx.) g		21
Operating Temperature		-40°C ~ +85°C (eCall: +95°C)
Data Transmission		
5G SA		Max. 2.0Gbps (DL)/450Mbps (UL)
5G NSA		Max. 2.4Gbps (DL)/550Mbps (UL)
LTE FDD Data Rate		Max. 1.6Gbps (DL)/ Max. 200Mbps (UL)
LTE TDD Data Rate		Max. 1.4Gbps (DL)/ Max. 120Mbps (UL)
DC-HSDPA/HSUPA Data Rate(Mbps)		Max. 42 (DL)/ Max. 5.76 (UL)
WCDMA Data Rate (Kbps)		Max. 384 (DL)/ Max. 384 (UL)
EDGE Data Rate (Kbps)		Max. 296 (DL)/ Max. 236.8 (UL)
GPRS Data Rate (Kbps)		Max. 107 (DL)/ Max. 85.6 (UL)
C-V2X Data Rate (Mbps)		Max. 48 (Tx)/ Max. 48(Rx)
SMS		Point-to-point MO and MT; SMS Cell Broadcast; Text and PDU Mode
Protocols		TCP/UDP/PPP/PING/FTP(S)/HTTP(S)/SMTP/SSL/TLS/MMS/NTP/DTMF*/FILE/QMI
Interfaces		
(U)SIM		× 2 (Support 1.8V/ 3V USIM/ SIM Cards)
UART		× 3 (Main/Debug/BT UART)
USB 2.0/3.1		× 1
PCIe 3.0		× 1
IIC		× 1
IIS		× 1
RGMII		× 1
SDIO		× 1 (for eMMC)
SPI		× 2
Audio Digital (PCM)		× 1
ADC		× 2 (15-bit)
GPIO		× 15 (For QuecOpen® version only)
RESET_N		× 1 (Reset the module)
Antenna		Main × 1; Diversity × 1; MIMO 3 × 1; MIMO 4 × 1; C-V2X × 2; GNSS × 1; DSDA × 2
Enhanced Features		
QuecOpen® (Open Linux)		•
eCall		•
DFOTA		•
eSIM (eUICC)		Optional
(U)SIM Detection		•
Temperature Management		•
GNSS		GPS/ GLONASS/ BeiDou/ Galileo/ QZSS
ESD/EMI Protection		Realized through Internal Specific Circuits and Components (Electrostatic Discharge Conforms to ±12KV air discharge and ±8KV of contact discharge)
Gigabit Ethernet		Optional
C-V2X TDD B47		Optional
DSDA (Dual SIM Dual Activation)		Optional
QDR 3.0 (External IMU Required)		Optional
RTK/PPE		Optional
Dual-Frequency GNSS (L1+L5)		Optional
UART Interface for BT Function		Optional
Advanced Security Feature		
TrustZone/ TPM*		•
Secure Boot		•
SE-Linux		•
Software Features		
USB ECM Driver		Linux 2.6~5.12
USB RNDIS Driver		Windows 7/8/8.1/10, Linux 2.6~5.12
USB GobiNet Driver		Linux 2.6~5.12
USB QMI_WWAN Driver		Linux 3.4~5.12
USB Serial Driver		Windows 7/8/8.1/10, Linux 2.6~5.12
Electrical Features		
Supply Voltage Range		VBAT_BB/VBAT_RF: 3.3V~4.3V (3.8V Typ.) ; VBAT_C-V2X: 4.75V~5.25V (5.0V Typ.)
Power Consumption		0.04mA @Power off; 1.4mA @Sleep(Typ.); 25.0mA @Idle
Certifications		
Recommended Applications		Automotive

* Under development

Product	AG52xR (x=1, 2)
	
Form Factor	LGA
Dimensions (mm)	38.0 × 42.0 × 2.65
4.5G	-CN Cat 6; -EU/NA/JP Cat 12, Cat 16, Cat 9, Cat 6 as option
Frequency Bands (MHz)	-CN (China) LTE: B1/B3/B5/B7/B8/B34/B38/B39/B40/B41; UMTS: B1/B8; CDMA(Optional): BCD; GSM: 1800MHz/900MHz -EU (EMEA/Australia/Korea/India/Southeast Asia) LTE: B1/B3/B5/B7/B8/B20/B28/B32(DL)/B38/B40/B41; UMTS: B1/B3/B5/B8; GSM: 1800MHz/900MHz -NA (North America) LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B25/B26/B29/B30*/B66/B71 -JP LTE-FDD: B1/B3/B5/B8/B9/B11/B18/B19/B21/B28; LTE-TDD: B41; WCDMA: B1/B3/B5/B8/B9/B19
Weight (approx.) g	9.23
Operating Temperature	-40°C ~ +85°C (eCall: +95°C)
Data Transmission	
LTE data rate	AG521R series LTE Cat 16: LTE-FDD: Max. 1.0Gbps (DL)/150Mbps (UL), LTE-TDD: Max. 716Mbps (DL)/90Mbps (UL) LTE Cat 12: LTE-FDD: Max. 600Mbps (DL)/150Mbps (UL), LTE-TDD: Max. 410Mbps (DL)/90Mbps (UL) LTE Cat 6: LTE-FDD: Max. 300Mbps (DL)/50Mbps (UL), LTE-TDD: Max. 226Mbps (DL)/28Mbps (UL) AG520R series LTE Cat 16: LTE-FDD: Max. 1.0Gbps (DL)/75Mbps (UL), LTE-TDD: Max. 716Mbps (DL)/45Mbps (UL) LTE Cat 12: LTE-FDD: Max. 600Mbps (DL)/75Mbps (UL), LTE-TDD: Max. 410Mbps (DL)/45Mbps (UL) LTE Cat 6: LTE-FDD: Max. 300Mbps (DL)/50Mbps (UL), LTE-TDD: Max. 226Mbps (DL)/28Mbps (UL)
DC-HSPA+ data rate (Mbps)	Max. 42 (DL)/ Max. 5.76 (UL)
WCDMA data rate (Kbps)	Max. 384 (DL)/ Max. 384 (UL)
TD-SCDMA data rate (Mbps)	/
EDGE data rate (Kbps)	Max. 296 (DL)/ Max. 236.8 (UL)
GPRS data rate (Kbps)	Max. 107 (DL)/ Max. 85.6 (UL)
C-V2X data rate (Mbps)	Max. 30 (Tx)/ Max. 30(Rx)
SMS	Point-to-point MO and MT, SMS Cell Broadcast, Text and PDU Mode
Protocols	TCP/UDP/PPP/PING/FTP(S)/HTTP(S)/SMTP/SSL/TLS/MMS/NTP/DTMF*/FILE/QMI
Interfaces	
(U)SIM	/
USIM	× 1 (default), × 2 (optional)
UART	3 × UARTs
HSIC	/
USB	× 1
IIC	/
SGMII	/
SDIO	× 1 (eMMC)
SPI	× 1
I2S/PCM	× 1 I2S, × 1 PCM
I2C	× 1
RGMI	× 1
Audio Digital (PCM)	/
ADC	× 2
PCIe	× 1
GPIO	× 8 (Only Open)
JTAG/QDSS	Yes
RESET	Yes
Antenna	5 (2 × 2 MIMO), Reserve for 7 antennas(4 × 4 MIMO) as option
Enhanced Features	
QuecOpen™ (Open Linux)	•
PCIe for WLAN Function	•
UART/PCM for Bluetooth Function	•
Gigabit Ethernet	Optional
eCall	•
Era Glonass	/
Multi-APN	•
Temperature Management	•
DFOTA	•
eSIM (eUICC)	Optional
(U)SIM Detection	•
Voice over USB (USB Audio)	/
QDR	Optional
PPE (RTK)	Optional
GNSS	GPS/ GLONASS/ BeiDou/ Galileo/ QZSS
ESD/EMI Protection	Realized through Internal Specific Circuits and Components (Electrostatic Discharge Conforms to ±10KV air discharge and ±6KV of contact discharge)
C-V2X	Optional
QDR 3.0 (External IMU Required)	Optional
Multi-Frequency GNSS (L1/L5)	Optional
Advanced Security Feature	
TrustZone	TrustZone*/ TPM*: •
Secure Boot	Secure Boot*: •
SE-Linux	•
Code/User Data Backup	•
Software Features	
RIL Driver/ GNSS Driver	Android 4.x~11.x
RNDIS Driver	Windows 7/8/8.1/10, Linux 2.6~5.12
ECM Driver/ Gobinet Driver	Linux 2.6~5.12
QMI_WWAN Driver	Linux 3.4~5.12
USB Serial Driver	Windows 7/8/8.1/10, Linux 2.6~5.12, Android 4.x~11.x
Electrical Features	
Supply Voltage Range	VBAT_BB/VBAT_RF: 3.3V~4.3V (3.8V Typ.) , VBAT_C-V2X: 4.75V~5.25V (5.0V Typ.)
Power Consumption	0.021mA@Power off/ 2.03mA@LTE Sleep, PF=128/1.61mA @LTE Sleep, PF=256; 15.9mA@Idle, PF=64/27.2mA@Idle, PF=64, USB Active
Certifications	CCC/ SRRC/ NAL/ FCC/ IC/ PTCRB/ GCF/ CE*/ RCM*/ Verizon*/ AT&T/ T-Mobile
Recommended Applications	Automotive

Note 1: LTE-FDD B29, B30 and B32 support Rx only.

* Under development

Quectel C-V2X Module

Product	AG15
	
Form Factor	LGA
Dimensions (mm)	32.0 × 28.0 × 2.85
C-V2X TDD	B47 for Global B46D for Japan (optional)
Weight (approx.) g	5.735
Operating Temperature	-40 °C ~ +85 °C
Data Transmission	
LTE data rate (Mbps)	C-V2X TDD: Max. 26 (TX)/Max. 26 (RX)
Protocols	QMI (Qualcomm MSM Interface)
Interfaces	
UART	× 2
USB	USB2.0/3.0×1
PCIe	× 2 (1 for PCM)
SPI	× 1
I2C	× 2 for Wi-Fi and eMMC
1PPS	× 1
ADC	× 2
GPIO	× 4
Antenna	Main, Rx-diversity and GNSS
Enhanced Features	
High Security	•
Secure Boot*	•
SELinux*	•
ESD/EMI Protection	•
Realized through Internal Specific Circuits and Components	•
Software Features	
USB Serial Driver	•
Windows 7/8/8.1/10, Windows CE 5.0/6.0/7.0*	•
Linux 2.6/3.x/4.1~4.14	•
Android 4.x/5.x/6.x/7.x/8.x	•
PCIe Driver	•
Protocol	QMI (Qualcomm MSM Interface)
Electrical Features	
Output Power	Class 3 (23dBm±2dB) for C-V2X
Supply Voltage	VBAT_BB: 3.3V~4.3V, 3.8V Typ. VBAT_RF: 4.75V~5.25V, 5.0V Typ.
Power Consumption	80μA@PowerOff
Sensitivity	C-V2X TDD B47: -96dBm C-V2X TDD B46D: -96dBm
Certifications	TBD
Recommended Applications	Automotive

Quectel Application Processor Module

Product	AG215S
	
Form Factor	LGA
Dimensions (mm)	33.0 × 33.5 × 3.3
Weight (approx.) g	7.07
Operating Temperature	-40 °C ~ +85 °C
Application Processor Module	Automotive Grade Application Processor for C-V2X and Telematics
Interfaces	
SDIO	•
PCIe	PCIe Gen2*
USB	USB 3.0*1 and USB2.0*1
RGMII	RGMII up to 1 Gbps
UART	•
SPI	•
I2C	•
1PPS (Input),	•
ADC	•
Enhanced Features	
Powerful Cores	64-bit ARM Cortex-A53 Microprocessor Cores, 1.4 GHz Dual-Core Processor (Quad-Core Processor Optional), Optimized communication performance with Quectel AG520R/ AG550Q/AG553Q, Dedicated AP for ITS stack and applications
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(Optional)	Secret key generation and storage, digital signature and verification, Up to 2000TPS ECDSA capability (based on NIST p-256 and SM2)

* Under development

Quectel Wi-Fi & BT Module Family

Product	AF20	AF50T	AF51Y	FC20	FC21
					
Dimensions (mm)	17.2 × 15.2 × 2.26	19.5 × 21.5 × 2.3	19.5 × 21.5 × 2.5	16.6 × 13.0 × 2.05	16.6 × 13.0 × 2.05
Operating Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Weight (approx.) g	1.26	2.1	2.32	0.81	TBD
General Features					
Function	Wi-Fi 2.4GHz + 5GHz & BT 5.0	Wi-Fi 2.4GHz + 5GHz & BT 5.2	Wi-Fi 2.4GHz + 5GHz & BT 5.2	Wi-Fi 2.4GHz+5GHz & BT 5.0	Wi-Fi 2.4GHz + 5GHz & BT 5.0
WLAN Standard	IEEE 802.11a/b/g/n/ac	IEEE 802.11a/b/g/n/ac/ax	IEEE 802.11a/b/g/n/ac	IEEE 802.11a/b/g/n/ac	IEEE 802.11a/b/g/n/ac
BT Standard	BT 5.0	BT 5.2	BT 5.2	BT 5.0	BT 5.0
Modulation Mode	CCK/ BPSK/ QPSK/ 16QAM/ 64QAM/ 256QAM	BPSK/ QPSK/ CCK/ 16QAM/ 64QAM/ 256QAM/ 1024QAM	CCK/BPSK/QPSK/16-QAM/ 64-QAM/ 256-QAM	CCK/ BPSK/ QPSK/ 16QAM/ 64QAM/ 256QAM	BPSK/ QPSK/ CCK/ 16QAM/ 64QAM/ 256QAM
Encryption Mode	WEP/ TKIP/ AES/ WPA-PSK/ WPA2-PSK	WPA3	WPA3	WEP/ TKIP/ AES/ WPA-PSK/ WPA2-PSK	WEP/ TKIP/ AES/ WPA-PSK/ WPA2-PSK
AP (Max Access Point)	16	32	32	16	16
Operator Mode	AP/ STA	AP/ STA	AP/ STA	AP/ STA	AP/ STA
I/O Interfaces					
PCIe	/	1 (PCIe 2.0)	1 (PCIe 2.0)	/	/
SDIO	1 (SDIO 3.0)	/	/	1 (SDIO 3.0)	1 (SDIO 3.0)
UART	1	1	1	1	1
PCM	1	1	1	1	1
Antenna	1 (Wi-Fi & BT Antenna)	2 × Wi-Fi Ant with shared BT Ant, independant BT Ant is optional	2X Wi-Fi Ant, 1X BT Ant	1 (Wi-Fi & BT Antenna)	1 (Wi-Fi & BT Antenna)
Electrical Characteristics					
Supply Voltage Range	3.14 ~3.46V, 3.3V Typ. 1.71 ~ 1.89V, 1.8V Typ.	Core Supply Voltage : 0.95V, 1.35V, 1.95V; I/O Supply Voltage : 1.8V; RF Supply Voltage : 3.85V	PA Supply Voltage: 2.2V I/O Supply Voltage: 1.8V Core Supply Voltage: 1.8V	Power Supply Voltage: 3.14 ~3.46V, 3.3V Typ. I/O Power Supply Voltage: 1.71 ~ 3.46V, 1.8/3.3V Typ.	Power Supply Voltage: 3.14 ~3.46V, 3.3V Typ. I/O Power Supply Voltage: 1.71 ~ 3.46V, 1.8/3.3V Typ.
Power Consumption	TBD	TBD	TBD	0μA @OFF State, 3.3V WLAN Supply Voltage 554μA @OFF State, 1.8V I/O Pins Supply Voltage 66mA @Idle, 3.3V WLAN Supply Voltage 6.5mA @Idle, 1.8V I/O Pins Supply Voltage	OFF State(Wi-Fi is disabled): 0μA @3.3V WLAN power supply 179μA @ 1.8V I/O Pins power supply Idle(Wi-Fi is enabled without any device connected): 31mA @3.3V WLAN power supply 2.8mA @ 1.8V I/O Pins power supply
Data Transmission					
802.11a	Max. 54Mbps	Max. 54Mbps	Max. 54Mbps	Max. 54Mbps	Max. 54Mbps
802.11b	Max. 11Mbps	Max. 11Mbps	Max. 11Mbps	Max. 11Mbps	Max. 11Mbps
802.11g	Max. 54Mbps	Max. 54Mbps	Max. 54Mbps	Max. 54Mbps	Max. 54Mbps
802.11n	Max. 150Mbps	Max. 600Mbps	Max. 300Mbps	Max. 150Mbps	Max. 150Mbps
802.11ac	Max. 433Mbps	Max. 866Mbps	Max. 866Mbps	Max. 433Mbps	Max. 433Mbps
802.11ax	/	Max. 1774.5Mbps	/	/	/
BLE	Max. 1Mbps	Max. 2Mbps	Max. 2Mbps	Max. 1Mbps	Max. 1Mbps
Recommended Applications	Automotive	Automotive	Automotive	Telematics, Smart Metering, Mobile POS Terminal, Gateway, Safety, Tracking and Tracing, Remote Maintenance and Control, Networking, Mobile Computing, Healthcare, etc.	

AF20 can work with Quectel AG35 module to provide Wi-Fi/BT function.
 FC20 can work with Quectel EC20 R2.0/EC20 R2.1/EC21/EC25 modules to provide Wi-Fi/BT function.
 FC21* can work with Quectel EC20 R2.0/EC20 R2.1/EC21/EC25 modules to provide Wi-Fi/BT function.
 AF50T can work with Quectel AG520R and AG550Q module to provide Wi-Fi/BT function.

* Under development

Quectel Wi-Fi & BT Module Family

Product	FC30R	FG50V*	FC62E*/FC64E*	FC65E*/FC66E*	HC06U	FC41D	FC80A
							
Dimensions (mm)	12.0 × 12.0 × 2.1	19.5 × 21.5 × 2.1	18 × 19.9 × 2.1	18 × 19.9 × 2.1	16.5 × 13.3 × 2.3	20 × 18 × 2.6	15 × 13 × 2.2
Operating Temperature	-30°C ~ +85°C (FC30R)	-30°C ~ +85°C	-30°C ~ +85°C	-30°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-30°C ~ +75°C
Weight (approx.) g	0.57	1.95	1.62	1.62	0.85	1.05	0.86
General Features							
Function	Wi-Fi 2.4GHz	Wi-Fi 2.4GHz + 5GHz & BT 5.1	Wi-Fi 2.4GHz + 5GHz & BT 5.1	Wi-Fi 2.4GHz + 5GHz + 6GHz & BT 5.1	BT 5.0	WIFI 2.4G+BT 5.2	Wi-Fi 2.4GHz + 5GHz + BT 5.0
WLAN Standard	802.11b/g/n	IEEE 802.11a/b/g/n/ac/ax	IEEE 802.11a/b/g/n/ac/ax	IEEE 802.11a/b/g/n/ac/ax	/	802.11b/g/n	802.11a/b/g/n/ac
BT Standard	/	BT 5.1	BT 5.1	BT 5.1	BLE 5.0	BT 5.2	BT 5.0
Modulation Mode	BPSK/ QPSK/ CCK/ 16QAM/ 64QAM	BPSK/ QPSK/ CCK/ 16QAM/ 64QAM/ 256QAM/ 1024QAM	DBPSK/ DQPSK/ CCK/ BPSK/ QPSK/ QAM	DBPSK/ DQPSK/ CCK/ BPSK/ QPSK/ QAM	/	BPSK/ QPSK/ CCK/ 16QAM/ 64QAM	BPSK/ QPSK/ CCK/ 16QAM/ 64QAM/ 256QAM
Encryption Mode	TKIP/ AES/ WPA-PSK/ WPA2-PSK	WPA3	WPA3	WPA3	SMP	WPA3	WPA3
AP (Max Access Point)	16	32	32	32	/	TBD	TBD
Operator Mode	AP/ STA	AP/ STA	AP/ STA	AP/ STA	/	AP/ STA	AP/ STA
I/O Interfaces							
PCIe	/	1 (PCIe 2.0)	1 (PCIe 3.0)	1 (PCIe 3.0)	/	/	/
SDIO	1 (SDIO 3.0)	/	/	/	/	/	1
UART	/	1	1	1	1	1	1
PCM	/	1	1	1	/	/	1
Antenna	1 (Wi-Fi Antenna)	2 × Wi-Fi Ant with shared BT Ant, independent BT ant is optional	2 × Wi-Fi Ant with shared BT Ant, independent BT ant is optional	2 × Wi-Fi Ant with shared BT Ant, independent BT ant is optional	× 1 (Built-in ceramic antenna, Built-out Pin antenna)	× 1 (Built-out Pin antenna, IPEX antenna, PCB antenna)	2 X Wi-Fi Ant with shared BT Ant
Electrical Characteristics							
Supply Voltage Range	3.0 ~ 3.6V, 3.3V Typ. 1.75 ~ 1.89V, 1.8V Typ.	Core Supply Voltage : 0.95V, 1.35V, 1.95V; I/O Supply Voltage: 1.8V; RF Supply Voltage: 3.85V	Core Supply Voltage: 0.95, 1.35, 1.95, 1.8, 2.2, 3.3(Optional) I/O Supply Voltage: 1.8V;	Core Supply Voltage: 0.95, 1.35, 1.95, 1.8, 2.2, 3.3(Optional) I/O Supply Voltage: 1.8V;	I/O Supply Voltage: 3.3V Power Supply Voltage: 3.3V	Power Supply Voltage: 3.3V	Power Supply Voltage: 3.2V-4.5V I/O Supply Voltage: 1.7V-3.6V, Typ. 1.8V/3.3V
Power Consumption	OFF State: 31 μA @ VDD3V3 power supply 1 μA @ VDD, SDIO power supply Idle (no connection): 60 mA @ VDD3V3 power supply 2 mA @ VDD, SDIO power supply	TBD	TBD	TBD	TBD	TBD	TBD
Data Transmission							
802.11a	/	Max. 54Mbps	Max. 54Mbps	Max. 54Mbps	/	/	Max. 54Mbps
802.11b	Max. 11Mbps	Max. 11Mbps	Max. 11Mbps	Max. 11Mbps	/	Max. 11Mbps	Max. 11Mbps
802.11g	Max. 54Mbps	Max. 54Mbps	Max. 54Mbps	Max. 54Mbps	/	Max. 54Mbps	Max. 54Mbps
802.11n	Max. 150Mbps	Max. 600Mbps	Max. 600 Mbps	Max. 600 Mbps	/	Max. 72Mbps	Max. 300Mbps
802.11ac	/	Max. 866Mbps	Max. 866 Mbps	Max. 1732 Mbps	/	/	Max. 866Mbps
802.11ax	/	Max. 1774.5Mbps	Max. 1174.5 Mbps	Max. 2400 Mbps	/	/	/
BLE	/	Max. 2Mbps	Max. 2Mbps	Max. 2Mbps	Max. 1Mbps	Max. 1Mbps	Max. 2Mbps
Recommended Applications	Telematics, Smart Metering, Mobile POS Terminal, Gateway, Safety, Tracking and Tracing, Remote Maintenance and Control, Networking, Mobile Computing, Healthcare, etc.	CPE, MIFI, OTT, Smart TV	CPE, MIFI, OTT, Smart TV	CPE, MIFI, OTT, Smart TV	low-power data transmission, keyboard, mouse, remote control, sports and leisure equipment, mobile phone accessories and consumer electronics products	Smart home, industrial control	Smart home, industrial control

FC30R can work with Quectel EC20 R2.1/EC21/EC25 module to provide Wi-Fi/BT function.
FG50V* can work with Quectel RG5000 module to provide Wi-Fi/BT function.

* Under development

Quectel UMTS/HSPA(+) Module Family

Product		UG96	UG89	UC200T/ UC200T Mini PCIe
				
Form Factor		LGA	LGA	LCC
Dimensions (mm)		22.5 × 26.5 × 2.2	27.6 × 25.4 × 2.35	32.0 × 29.0 × 2.4 (UC200T) 30.0 × 51.0 × 4.9 (UC200T Mini PCIe)
3G		UMTS/HSPA	UMTS/HSPA+	UMTS/HSPA+
Frequency Bands (MHz)	-EM (Europe & Middle East)	/	/	UMTS: B1/B8; GSM: 900/1800MHz
	-G (Global)	UMTS: 800/850/900/1900/2100; GSM: 850/900/1800/1900	/	/
	-GL (Global)	/	UMTS: B1/B2/B5/B8; GSM: 850/900/1800/1900MHz	UMTS: B1/B2/B5/B8; GSM: 850/900/1800/1900MHz
Weight (approx.) g		3.1	3.77	4.3 (UC200T)
Operating Temperature		-35 °C ~ +75 °C	Operating Temperature*: -35°C ~ +75°C	Operating Temperature*: -35°C ~ +75°C
Extended Temperature		-40 °C ~ +85 °C	Extended Temperature*: -40°C ~ +85°C	Extended Temperature*: -40°C ~ +85°C
Data Transmission				
HSPA data rate (Mbps)		7.2 (DL)/ 5.76 (UL)	Max. 21 (DL)/ Max. 5.76 (UL)	Max. 21 (DL)/ Max. 5.76 (UL)
UMTS data rate (Kbps)		384 (DL)/ 384 (UL)	Max. 384 (DL/UL)	Max. 384 (DL/UL)
GPRS data rate (Kbps)		85.6 (DL)/ 85.6 (UL)	Max. 85.6 (DL/UL)	Max. 85.6 (DL/UL)
EDGE data rate (Kbps)		296 (DL)/ 236.8 (UL)	Max. 236.8 (DL/UL)	Max. 236.8 (DL/UL)
SMS		•	•	•
CSD		•	•	•
Protocols		TCP/UDP/PPP/MMS/HTTP/HTTPS/SMTP/SMTPS/FTP/ NTP/NITZ/PING/SSL	TCP/UDP/PPP/NTP/NITZ/FTP/HTTP/PING/CMUX/HTTPS/FTPS/SSL/ FILE/MQTT/SMTP/MMS/SMTPS	TCP/UDP/PPP/NTP/NITZ/FTP/HTTP/PING/CMUX/HTTPS/FTPS/SSL/ FILE/MQTT/SMTP/MMS/SMTPS
Interfaces				
SIM		1.8V/ 3V	1.8V/ 3V	1.8V/ 3V
UART		1	2	2
USB		2.0 Hi-Speed	2.0 Hi-Speed	2.0 Hi-Speed
Audio Digital (PCM)		Optional ¹	Optional ¹	•
RTC Backup		•	•	•
ADC		/	× 2, 12bits	× 2, 12bits
Antenna		Pads for Primary	Pads for Primary	Pads for Primary
SIM Card Holder		/	/	Optional
Enhanced Features				
eCall		○	/	/
DTMF		•	○	○
QuecFOTA [®]		/	•	•
DFOTA		•	/	/
Audio Playback/ Audio Recording		○	/	/
QuecFile		/	/	/
RIL Driver		Android 4.x/5.x/6.x/7.x/8.x/9.x	Android 4.x-11.x	Android 4.x-11.x
NDIS		/	Windows 7/8/8.1/10	Windows 7/8/8.1/10
USB Serial Driver		Windows 7/8/8.1/10 Windows CE5.0/6.0/7.0* Linux 2.6/3.x/4.1~4.15 Android 4.x/5.x/6.x/7.x/8.x/9.x	Windows 7/8/8.1/10 Linux 2.6~5.12 Android 4.x-11.x	Windows 7/8/8.1/10 Linux 2.6~5.12 Android 4.x-11.x
SIM Detection		•	•	•
Firmware Update		via USB/ UART Interface	via USB/ UART Interface	via USB/ UART Interface
Electrical Features				
Supply Voltage Range		3.3~4.3V, 3.8V Typ.	3.3~4.5V, 3.8V Typ.	3.4V~4.5V, 3.8V Typ. (UC200T) 3.0~3.6V, 3.3V Typ. (UC200T Mini PCIe)
Power Consumption		1.1mA@GSM sleep, DRX=9 1.7mA@UMTS sleep, DRX=9	17µA @Power Off 1.8mA @GSM Sleep, DRX=5 3.0mA @WCDMA Sleep, PF=128 35mA @Idle	17µA @Power Off 1.8mA @GSM Sleep, DRX=5 3.0mA @WCDMA Sleep, PF=128 35mA @Idle
Certifications		CE/ FCC/ GCF/ PTCRB/ ANATEL/ RCM/ IFETEL/ Movistar/ ICASA/ JATE/ TELEC/ DoC ² / Telefonica / Deutsche Telekom/IC/RCM	CE/ FCC/ GCF/ PTCRB/ ANATEL/ RCM/ IFETEL	CE/ ANATEL/ RCM
Recommended Applications		Telematics, Smart Metering, Mobile POS Terminal, Gateway, Safety, Tracking and Tracing, Remote Maintenance and Control, Networking, Mobile Computing, Healthcare, etc.		

Note 1: Only Supported in Telematics Version.
Note 2: Only Support Russia.

○ & * Under development

Quectel GSM/GPRS Module Family

Product	M66	M66-DS	M65	M08-R	M89
					
Form Factor	LCC	LCC	LCC	LCC	LGA
Dimensions (mm)	15.8 × 17.7 × 2.3	15.8 × 17.7 × 2.3	15.8 × 17.7 × 2.3	15.7 × 17.6 × 2.4	18.8 × 27.6 × 2.3
Frequency Range (MHz)	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900
Weight (approx.) g	1.3	1.3	1.1	1.18	2.15
Operating Temperature	-35 °C ~ +75 °C	-35 °C ~ +75 °C	-35 °C ~ +75 °C	-35 °C ~ +75 °C	-35 °C ~ +75 °C
Extended Temperature	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C
Data Transmission					
GPRS Multi-slot Class	12, 1-12 configurable	12, 1-12 configurable	12, 1-12 configurable	12, 1-12 configurable	12, 1-12 configurable
Data Rate (kbps)	85.6 (DL & UL)	85.6 (DL & UL)	85.6 (DL & UL)	85.6 (DL & UL)	85.6 (DL & UL)
SMS	•	•	•	/	•
Protocols	TCP/ UDP/ PPP/ HTTP/ FTP/ SMTP/ Ping/ NTP/ NITZ/ MMS Sending/ SSL	TCP/ UDP/ PPP/ HTTP/ FTP/ SMTP/ Ping/ NTP/ NITZ/ MMS Sending/ SSL	TCP/ UDP/ PPP/ HTTP/ FTP/ Ping/ NTP/ NITZ/ SSL/ IPV6*	TCP/ UDP/ PPP/ HTTP/ NTP/ Ping/ TTS/ FTP/ SSL/ MQTT/ HTTPS/ IPV6*	TCP/ UDP/ PPP/ HTTP/ FTP/ SMTP/ Ping/ NTP/ NITZ/ MMS Sending/ SSL
Specifications for Voice					
Speech Codec Modes	HR/ FR/ EFR/ AMR	HR/ FR/ EFR/ AMR	HR/ FR/ EFR/ AMR	HR/ FR/ EFR/ AMR	HR/ FR/ EFR/ AMR
Echo Arithmetic	Echo cancellation Echo suppression Noise reduction	Echo cancellation Echo suppression Noise reduction	Echo cancellation Echo suppression Noise reduction	Echo cancellation Echo suppression Noise reduction	Echo cancellation Echo suppression Noise reduction
Interfaces					
SIM	1.8V/ 3V	1.8V/ 3V	1.8V/ 3V	1.8V/ 3V	1.8V/ 3V
Audio Analog	1 input/ 2 outputs	1 input/ 2 outputs	1 input/ 2 outputs	1 input/ 1 output	1 input/ 2 outputs
Audio Digital (PCM)	•	•	/	/	/
RTC Backup	•	•	•	•	•
UART	3	3	3	3	2
ADC	× 1, 10bit	× 1, 10bit	× 1, 10bit	× 1, 10bit	× 1, 10bit
SD Card Interface	•	•	/	/	/
GPIO	/	/	/	/	•
Temperature Detection	/	•	/	/	/
Enhanced Features					
eCall	•	•	/	/	•
Jamming Detection	•	•	/	•	•
DTMF	•	•	o	/	•
Audio Playback/ Audio Recording	•	•	•	•	•
Dual-SIM	/	•	/	/	/
QuecFOTA®	•	•	DFOTA	DFOTA	•
QuecCell	•	•	•	•	•
QuecFile	•	•	•	•	•
QuecOpen®	•	•	o	•	/
RIL for Android	•	•	•	•	•
MUX	•	•	•	•	• (Scan Only)
Bluetooth	•	•	/	/	/
Electrical Features					
Power Supply	3.3 ~ 4.6V	3.3 ~ 4.6V	3.45 ~ 4.25V	3.45 ~ 4.25V	3.3 ~ 4.6V
Low Power Consumption	1.3mA @DRX=5 1.2mA @DRX=9	1.3mA @DRX=5 1.2mA @DRX=9	1.2mA @DRX=5 1.1mA @DRX=9	1.3mA @DRX=5 1.2mA @DRX=9	2.8mA @DRX=5 2.7mA @DRX=9
Certifications	CE/ ANATEL/ ICASA	CE	CE	CE	CE/ ANATEL
Recommended Applications	Telematics, Smart Metering, Mobile POS Terminal, Gateway, Safety, Tracking and Tracing, Remote Maintenance and Control, Mobile Computing, Healthcare, etc.				

o & * Under development

Quectel GSM/GPRS Module Family

Product	M95	M95-R	MC60/ MC60E	MC90
				
Form Factor	LCC	LCC	LCC	LCC
Dimensions (mm)	19.9 × 23.6 × 2.65	19.9 × 23.6 × 2.65	16.0 × 18.7 × 2.1	15.0 × 25.6 × 2.3
Frequency Range (MHz)	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900
Weight (approx.) g	3.0	3.0	1.3	1.4
Operating Temperature	-35 °C ~ +75 °C	-35 °C ~ +75 °C	-35 °C ~ +75 °C	-35 °C ~ +75 °C
Extended Temperature	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C
Data Transmission				
GPRS Multi-slot Class	12, 1-12 configurable	12, 1-12 configurable	12, 1-12 configurable	12, 1-12 configurable
Data Rate (kbps)	85.6 (DL & UL)	85.6 (DL & UL)	85.6 (DL & UL)	85.6 (DL & UL)
SMS	•	•	•	•
Protocols	TCP/ UDP/ PPP/ MQTT/ HTTP/ FTP/ SMTP/ PING/ NTP/ NITZ/ MMS Sending/ SSL	TCP/ UDP/ PPP/ MQTT/ HTTP/ FTP/ PING/ NTP/ NITZ/ SSL	TCP/ UDP/ PPP/HTTP/ FTP/ SSL/ PING/ NTP/ NITZ/ SMS/MQTT	TCP/ UDP/ PPP/HTTP/ FTP/ SSL/ PING/ NTP/ NITZ/ SMS/MQTT
Specifications for Voice				
Speech Codec Modes	HR/ FR/ EFR/ AMR	HR/ FR/ EFR/ AMR	HR/ FR/ EFR/ AMR	HR/ FR/ EFR/ AMR
Echo Arithmetic	Echo cancellation Echo suppression Noise reduction	Echo cancellation Echo suppression Noise reduction	Echo cancellation Echo suppression Noise reduction	Echo cancellation Echo suppression Noise reduction
Interfaces				
SIM	1.8V/ 3V	1.8V/ 3V	1.8V/ 3V	1.8V/ 3V
Audio Analog	2 inputs/ 2 outputs	2 inputs/ 2 outputs	1 input/ 2 outputs	1 input/ 2 outputs
Audio Digital (PCM)	•	•	•	•
RTC Backup	•	•	•	•
UART	2	2	4	4
ADC	/	/	× 1, 10bit	× 1, 10bit
SD Card Interface	/	/	•	/
GPIO	/	/	•	•
Temperature Detection	•	/	•	•
Enhanced Features				
eCall	•	/	•	•
Jamming Detection	•	/	•	•
DTMF	•	•	•	•
Audio Playback/ Audio Recording	•	•	•	•
Dual-SIM	•	/	•	•
QuecFOTA®	•	•	•	•
QuecCell	•	•	•	•
QuecFile	/	/	•/○	•
QuecOpen®	/	/	•	•
RIL for Android	•	•	•	•
MUX	•	•	•	•
Bluetooth	/	/	BT 3.0 (MC60) BT 3.0/ BT4.0 (MC60E)	/
Wi-Fi	/	/	/	• (only Scan)
GNSS	/	/	BEIDOU/ GPS/ GLONASS/Galileo/ QZSS	BEIDOU/ GPS/ GLONASS/Galileo/ QZSS
Electrical Features				
Power Supply	3.3 ~ 4.6V	3.45 ~ 4.25V	3.3 ~ 4.6V	3.3 ~ 4.3V
Low Power Consumption	1.3mA @DRX=5 1.2mA @DRX=9	1.4mA @DRX=5 1.3mA @DRX=9	1.2mA @DRX=5 0.8mA @DRX=9	1.2mA @DRX=5 0.8mA @DRX=9
Certifications	CE/ GCF/ Vodafone/ PTCRB/ FCC/ IC/ ANATEL/ Rogers/ RCM/ NCC/ TELCEL/ UCRF/ ICASA	CE*	CE/ FCC/ ANATEL/ ICASA/ GCF	CE
Recommended Applications	Telematics, Smart Metering, Mobile POS Terminal, Gateway, Safety, Tracking and Tracing, Remote Maintenance and Control, Mobile Computing, Healthcare, etc.			

○ & * Under development

Quectel GNSS Module Family

	Standalone Positioning/ Timing Modules					
Product	L26	L26-LB	L26-ADR	L26-UDR	L26-T	LC98S
	Compatible					
						
GNSS	GPS/ GLONASS/ Galileo/ BeiDou/QZSS	GPS/ GLONASS/BeiDou/ QZSS	GPS/ Galileo/ GLONASS/ BeiDou/ QZSS	GPS/ Galileo/ GLONASS/ BeiDou/ QZSS	GPS/ Galileo/ GLONASS/ BeiDou/ QZSS	GPS/ BeiDou/ GLONASS/ Galileo/ QZSS
Form Factor	LCC	LCC	LCC	LCC	LCC	LCC
Dimensions (mm)	16.0 × 12.2 × 2.4	16.0 × 12.2 × 2.3	16.0 × 12.2 × 2.3	16.0 × 12.2 × 2.3	16.0 × 12.2 × 2.3	22.4 × 17.0 × 3.1
Weight (approx.) g	1.0	1.0	0.9	0.9	0.9	1.68
Operating Temperature	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C
Storage Temperature	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C
General Features						
Working Mode			4wheels-ADR	4wheels-UDR	Timing Static Mode	Timing Static ModeW
Chip Solution	MT3333	AG3331	Teseo III	Teseo III	Teseo III	Teseo III
L1 Band Receiver (C/A Code) Channel Number	33 Track/ 99 Acq	33 Track/ 99 Acq	48 Track/2 Fast Acq	48 Track/2 Fast Acq	48 Track/2 Fast Acq	48 Track/2 Fast Acq
L1 Band Receiver (C/A Code) SBAS	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN
A-GNSS	Supported	Supported	Supported	Supported	Supported	Supported
Sensitivity	Autonomous Acquisition	-148dBm	-149dBm	-145dBm	-147dBm	-146dBm ²
	Reacquisition	-160dBm	-161dBm	-152dBm	-154dBm	-155dBm ²
	Tracking	-167dBm	-167dBm	-162dBm	-162dBm	-161dBm ²
TTFF (Time To First Fix)	Cold Start	<35s, Autonomous <15s, With EASY™	<32s, Autonomous <15s, With EASY™	<32s, Autonomous	<32s, Autonomous	<26s, Autonomous
	Warm Start	<30s, Autonomous <5s, With EASY™	<28s, Autonomous <8s, With EASY™	<25s, Autonomous	<25s, Autonomous	<19s, Autonomous
	Hot Start	<1s	<1s	<2s	<2s	<3s
Position Accuracy(autonomous)	<2.5m CEP	<2.5m CEP	<1.5m CEP	<1.5m CEP	<1.5m CEP	<1.5m CEP
Velocity Accuracy(without aid)	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s
Maximum Acceleration Accuracy (without aid)	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²
Timing Accuracy (1σ)	<100ns	<100ns	<100ns	<100ns	≤6.8ns	≤6.8ns
Max Update Rate	10Hz	10Hz	1Hz	10Hz	10Hz	10Hz
Baud Rate (default)	9600bps	Baud Rate (default) ¹ : 9600bps/115200bps	115200bps	115200bps	9600bps	115200bps
Geo-fence	•	•	/	/	•	/
Jamming Detection	•	•	/	•	•	•
Anti-jamming	•	•	/	/	/	•
Built-in LNA	•	•	•	•	•	•
Electrical Data						
Power Supply	2.8V to 4.3V	2.8V to 4.3V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V
I/O Voltage	2.7V to 2.9V	2.7V to 2.9V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V
Power Consumption (Acquisition)	29mA (GPS+GLONASS) 26mA (GPS)	31mA (GPS+GLONASS)	72mA (GPS) 79mA (GPS+GLONASS+Galileo)	84mA (GPS+GLONASS+Galileo)	64mA (GPS) 71mA (GPS+GLONASS+Galileo)	76mA (GPS + GLONASS)
Power Consumption (Tracking)	21mA (GPS+GLONASS) 18mA (GPS)	27mA (GPS+GLONASS)	58mA (GPS) 74mA (GPS+GLONASS+Galileo)	81mA (GPS+GLONASS+Galileo)	51mA (GPS) 67mA (GPS+GLONASS+Galileo)	78mA (GPS + GLONASS)
Power Consumption (Backup/Low Power mode)	7μA	8μA	17μA	13μA	9μA	TBD
Interfaces						
UART	•	•	•	•	•	•
IIC (NMEA)	/	•	/	/	/	*
Reset	•	•	•	•	•	•
Time Pulse	•	•	•	•	•	•
Antenna						
Short-Circuit Protection & Open-Circuit Detection	•	•	•	•	•	•
Antenna Type	Active or passive	Active or passive	Active or passive	Active or passive	Active or passive	Active or passive
Antenna Power	External or internal	External or internal	External or internal	External or internal	External or internal	External or internal
Certifications						
CE	CE	CE	CE	CE	CE	CE
Recommended Applications	Vehicle Tracker, Asset Tracker, Industrial PDA		Automotive tracking , OBD	Automotive tracking , OBD	High-precision timing	High-precision timing for base stations

Note 1: The default baud rate is different for different firmware versions.
Note 2: Demonstrated with a good external LNA.

* Under development

Quectel GNSS Module Family

	Standalone Modules					
Product	LG77L(A)	LG77L(B) ²	LG77L(C) ²	L70-R ² /L70-RL ²	L76 ² /L76B ² /L76-L ²	L76-LB ²
	Compatible			Compatible		
						
GNSS	GPS/ BeiDou/QZSS/GLONASS	GPS/ BeiDou/QZSS/GLONASS	GPS/GLONASS/Galileo/BeiDou/QZSS	GPS/ QZSS	GPS/GLONASS/Galileo/BeiDou/QZSS	GPS/BeiDou/QZSS/GLONASS
Form Factor	LCC	LCC	LCC	LCC	LCC	LCC
Dimensions (mm)	7.0 × 7.0 × 2.0	7.0 × 7.0 × 2.0	7.0 × 7.0 × 2.0	9.7 × 10.1 × 2.5	9.7 × 10.1 × 2.5	9.7 × 10.1 × 2.5
Weight (approx.) g	0.2	0.2	0.2	0.6	0.6	0.5
Operating Temperature	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C
Storage Temperature	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C
General Features						
Chip Solution	AG3331	AG3331	MT3333	MT3337	MT3333	AG3331
L1 Band Receiver (C/A Code) Channel Number	33 Track/ 99 Acq	33 Track/ 99 Acq	33 Track/ 99 Acq	22 Track/ 66 Acq.	33 Track/ 99 Acq.	33 Track/ 99 Acq.
L1 Band Receiver (C/A Code) SBAS	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN
A-GNSS	Supported	Supported	Supported	Supported	Supported	Supported
Sensitivity	Autonomous Acquisition	-147dBm	-147dBm	-148dBm (L70-R) -149dBm (L70-RL)	-148dBm (L76/ L76B) -149dBm (L76-L)	-149dBm
	Reacquisition	-156dBm	-156dBm	-160dBm (L70-R) -161dBm (L70-RL)	-160dBm (L76/ L76B) -161dBm (L76-L)	-161dBm
	Tracking	-158dBm	-158dBm	-165dBm (L70-R) -167dBm (L70-RL)	-165dBm (L76/ L76B) -167dBm (L76-L)	-167dBm
TTFF (Time To First Fix)	Cold Start	<26s, Autonomous <14s, With EASY™	<26s, Autonomous <17s, With EASY™	<35s, Autonomous <15s, With EASY™	<35s, Autonomous <15s, With EASY™	<32s, Autonomous <15s, With EASY™
	Warm Start	<24s, Autonomous <4s, With EASY™	<24s, Autonomous <4s, With EASY™	<30s, Autonomous <5s, With EASY™	<30s, Autonomous <5s, With EASY™	<28s, Autonomous <8s, With EASY™
	Hot Start	<2s	<2s	<1s	<1s	<1s
Position Accuracy (autonomous)	<2.5m CEP	<2.5m CEP	<2.5m CEP	<2.5m CEP	<2.5m CEP	<2.5m CEP
Velocity Accuracy (without aid)	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s
Maximum Acceleration Accuracy (without aid)	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²
Timing Accuracy (1σ)	<100ns	<100ns	<100ns	<100ns	<100ns	<100ns
Max Update Rate	10Hz	10Hz	10Hz	5Hz (L70-R/ L70-RL)	10Hz	10Hz
Baud Rate(default)	9600bps	9600bps	9600bps	9600bps	9600bps	Baud Rate (default) ¹ : 9600bps/115200bps
Geo-fence	•	•	•	/	•	•
Jamming Detection	•	•	•	•	•	•
Anti-jamming	•	•	•	•	•	•
Built-in LNA	/	/	/	Supported by L70-RL	Supported by L76-L	/
Electrical Data						
Power Supply	2.8V to 4.3V	2.8V to 4.3V	2.8V to 4.3V	2.8V to 4.3V	2.8V to 4.3V	2.8V to 4.3V
I/O Voltage	1.7V to 1.9V/ 2.7V to 2.9V	1.7V to 1.9V/ 2.7V to 2.9V	1.7V to 1.9V/ 2.7V to 2.9V	2.7V to 2.9V	2.7V to 2.9V	2.7V to 2.9V L76LB(L): 1.7V to 1.9V
Power Consumption (Acquisition)	25mA (GPS+GLONASS)	25mA (GPS+GLONASS)	24mA (GPS+GLONASS)	16mA (L70-R) 21mA (L70-RL)	25mA (GPS+GLONASS)/ 21mA (GPS) (L76) 23mA (GPS+BeiDou) (L76B) 29mA (GPS+GLONASS) (L76-L)	31mA (GPS+GLONASS)
Power Consumption (Tracking)	24mA(GPS+GLONASS)	24mA(GPS+GLONASS)	23.0mA (GPS+GLONASS)	13mA (L70-R) 18mA (L70-RL)	18mA (GPS+GLONASS)/ 15mA (GPS) (L76) 18mA (GPS+BeiDou) (L76B) 22mA (GPS+GLONASS) (L76-L)	27mA (GPS+GLONASS)
Power Consumption (Backup/Low power mode)	6μA	6μA	6μA	8μA (L70-R/ L70-RL)	7μA	8μA
Interfaces						
UART	•	•	•	•	•	•
IIC (NMEA)	•	•	•		Supported by L76-L	•
CAN	/	/	/	/	/	/
Reset	•	•	•	•	•	•
Time Pulse	•	•	•	•	•	•
Antenna						
Short-Circuit Protection & Open-Circuit Detection	•	•	•	/	/	/
Antenna Type	Active or passive	Active or passive	Active or passive	Active or passive	Active or passive	Active or passive
Antenna Power	External	External	External	External or internal	External or internal	External or internal
Certifications						
CE	CE	CE	CE	CE	CE	CE
Recommended Applications						
Vehicle Tracker, Asset Tracker, Safety, Industrial PDA or PND, Digital Camera, etc.						

Note 1: The default baud rate is different for different firmware versions.
Note 2: Integrated RTC .

* Under development

Quectel GNSS Module Family

Dual Band Precision Modules						
Product	LC79D(A)	LC79D(C) *	LC79H(AL) *	LC29D(B) *	LC29D(C) ¹	LC29H*(AA)
	Compatible			Compatible		
						
GNSS	GPS L1 L5 Galileo E1 E5 QZSS L1 L5 IRNSS L5 GLONASS L1 BeiDou B1	GPS L1 L5 Galileo E1 E5 QZSS L1 L5 IRNSS L5 GLONASS L1 BeiDou B1	GPS L1 Galileo E1 QZSS L1 GPS L5 Galileo E5 QZSS L5 BeiDou B1 BeiDou B2a GLONASS L1	GPS L1 L5 Galileo E1 E5 QZSS L1 L5 IRNSS L5 GLONASS L1 BeiDou B1 B2a	GPS L1 L5 Galileo E1 E5 QZSS L1 L5 IRNSS L5 GLONASS L1 BeiDou B1	GPS L1 Galileo E1 QZSS L1 GPS L5 Galileo E5 QZSS L5 BeiDou B1 BeiDou B2a GLONASS L1
Form Factor	LCC+LGA	LCC+LGA	LCC	LCC	LCC	LCC
Dimensions (mm)	9.7 × 10.1 × 2.4	9.7 × 10.1 × 2.4	10.1 × 9.7 × 2.4	16.0 × 12.2 × 2.4	16.0 × 12.2 × 2.4	16.0 × 12.2 × 2.4
Weight (approx.) g	0.42	0.42	0.28	0.9	0.9	0.9
Operating Temperature	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C
Storage Temperature	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C
General Features						
working mode	standard mode	2wheels-ADR/ 4wheels-ADR/ 4wheels-UDR mode	standard mode	DR+RTK mode	2wheels-ADR mode	standard mode
Chip Solution	BCM47755B1	BCM47755B1	AG3335M	BCM47765	BCM47755	AG3335M
L1 Band Receiver (C/A Code) Channel Number	32 channels	32 channels	135 channels	48 channels	32 channels	135 channels
L1 Band Receiver (C/A Code) SBAS	Support (Only support GAGAN)*	Support (Only support GAGAN)*	WAAS, EGNOS, MSAS* and GAGAN	*	*	WAAS, EGNOS, MSAS* and GAGAN
A-GNSS	Supported	Supported	Supported	Supported	Supported	Supported
Sensitivity	Autonomous Acquisition	-147dBm	-147 dBm	-148dBm	-148dBm	-147 dBm
	Reacquisition	-158dBm	-158dBm	-157dBm	-157dBm	-162 dBm
	Tracking	-163dBm	-163dBm	-162dBm	-163dBm	-165 dBm
TTFF (Time To First Fix)	Cold Start	<34s, Autonomous	<34s, Autonomous	<34s, Autonomous	<34s, Autonomous	<28s, Autonomous
	Warm Start	<30s, Autonomous	<30s, Autonomous	<30s, Autonomous	<30s, Autonomous	<15s, With EASY™
	Hot Start	<2s	<2s	<1 s	<2s	<20s, Autonomous
Position Accuracy (autonomous)	<1.2m CEP	<1.2m CEP	1.0m CEP	Autonomous: < 1.0 m CEP	<1.2m CEP	<3s, With EASY™
Position Accuracy (RTK)	/	/	0.1m/s	<0.5m	/	0.1m/s
Velocity Accuracy (without aid)	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s
Velocity Accuracy (RTK)	/	/	/	TBD	/	/
Convergence Time (RTK)	/	/	/	TBD	/	/
Maximum Acceleration Accuracy (without aid)	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²
Timing Accuracy (1σ)	<34.9ns	<34.9ns	<100ns	TBD	TBD	<100ns
Max Update Rate	1Hz	5Hz	10Hz	10Hz	10Hz	10Hz
Baud Rate(default)	115200bps	115200bps	115200bps	115200bps	115200bps	115200bps
Geo-fence	•	•	•	*	*	•
Jamming Detection	/	/	•	/	/	•
Anti-jamming	/	/	/	/	/	/
Built-in LNA	•	•	•	•	•	•
Electrical Data						
Power Supply	1.7V to 1.9V	1.7V to 1.9V	1.7-1.9V	2.7V to 3.6V	2.7V to 3.6V	3.1-3.6V
I/O Voltage	1.7V to 1.9V	1.7V to 1.9V	1.8V	2.7V to 3.6V	2.7V to 3.6V	2.8V
Power Consumption (Acquisition)	47mA (GPS+ BeiDou+GLONASS+ Galileo+QZSS+ IRNSS)	47mA (GPS+ BeiDou+GLONASS+ Galileo+QZSS+ IRNSS)	TBD	50mA*	53mA	30mA
Power Consumption (Tracking)	43mA (GPS+ BeiDou+GLONASS+ Galileo+QZSS+ IRNSS)	43mA (GPS+ BeiDou+GLONASS+ Galileo+QZSS+ IRNSS)	TBD	37mA*	39mA	43mA
Power Consumption (Backup/Low power mode)			51μA			51μA
Interfaces						
UART	•	•	•	•	•	•
IIC (NMEA)	/	• (work in master mode)	•	/	/	•
CAN	/	/	/	/	/	/
Reset	•	•	•	•	*	•
Time Pulse	•	•	•	•	•	•
Antenna						
Short-Circuit Protection & Open-Circuit Detection	/	/	/	/	/	/
Antenna Type	Active or passive	Active or passive	Active or passive	Active or passive	Active or passive	Active or passive
Antenna Power	External or internal	External or internal	External or internal	External or internal	External or internal	External or internal
Certifications	CE	CE	CE*	CE*	CE	CE*
Recommended Applications	Shared mobility , delivery robots , GIS					

Note 1: This module also supports SPI.

* Under development

Quectel GNSS Module Family

	Dual Band Precision Modules								
Product	LG69T(AA)*	LG69T(AD)*	LG69T(AB)*	LG69T(AI)*	LG69T(AJ)*	LG69T(AK)*	LG69T(AQ)*	LG69T(AM)*	LG69T(AS)*
									
GNSS	GPS/QZSS: L1 C/A; L5 Galileo: E1; E5a BeiDou: B1; B2a	GPS/QZSS: L1 C/A; L5 Galileo: E1; E5a BeiDou: B1; B2a	GPS/QZSS: L1 C/A; L2C Galileo: E1; E5b BeiDou: B1; B2I GLONASS: L1	GPS/QZSS: L1 C/A; L2 or L5 Galileo: E1; E5b or E5a BeiDou: B1; B2I or B2a GLONASS: L1	GPS/QZSS: L1 C/A; L5 Galileo: E1; E5a BeiDou: B1; B2a	GPS/QZSS: L1 C/A; L5 Galileo: E1; E5a BeiDou: B1; B2a L-band	GPS: L1 C/A; L5 Galileo: E1; E5a BeiDou: B1; B2a	GPS: L1 C/A; L5 Galileo: E1; E5a BeiDou: B1; B2a	GPS/QZSS: L1 C/A; L5 Galileo: E1; E5a BeiDou: B1; B2a
Form Factor	LGA	LGA	LGA	LGA	LGA	LGA	LGA	LGA	LGA
Dimensions (mm)	22.0 × 17.0 × 3.15	22.0 × 17.0 × 3.15	22.0 × 17.0 × 3.3	22.0 × 17.0 × 3.3	22.0 × 17.0 × 3.3	22.0 × 17.0 × 3.3	22.0 × 17.0 × 3.15	22.0 × 17.0 × 3.15	22.0 × 17.0 × 3.15
Weight (approx.) g	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Operating Temperature	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C to +105 °C	-40 °C to +105 °C	-40 °C to +105 °C	-40 °C to +105 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C
Storage Temperature	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C to +105 °C	-40 °C to +105 °C	-40 °C to +105 °C	-40 °C to +105 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C
General Features									
Working Mode	DR*/Raw	PVT/Raw	Raw	Raw	Raw	Raw	DR*+RTK*	RTK*	Base station
Chip Solution	TESEO V	TESEO V	TESEO APP	TESEO V	TESEO V	TESEO V	TESEO V	TESEO V	TESEO V
L1 Band Receiver (C/A Code) Channel Number	80 Tracking Channels 4 Fast Acquisition Channels	80 Tracking Channels 4 Fast Acquisition Channels	80 Tracking Channels 4 Fast Acquisition Channels	80 Tracking Channels 4 Fast Acquisition Channels	80 Tracking Channels 4 Fast Acquisition Channels	80 Tracking Channels 4 Fast Acquisition Channels	80 Tracking Channels 4 Fast Acquisition Channels	80 Tracking Channels 4 Fast Acquisition Channels	80 Tracking Channels 4 Fast Acquisition Channels
L1 Band Receiver (C/A Code) SBAS	*	*	/	/	/	/	/	/	/
A-GNSS	*	*	/	/	/	/	/	/	/
Sensitivity	Autonomous Acquisition	-145dBm	-145dBm	TBD	-145dBm	-145dBm	TBD	-145dBm	-145dBm
	Reacquisition	-153dBm	-153dBm	TBD	-152dBm	-152dBm	TBD	-153dBm	-153dBm
	Tracking	-160dBm	-160dBm	TBD	-159dBm	-159dBm	TBD	-160dBm	-160dBm
TTFF (Time To First Fix)	Cold Start	<36s	<36s	<36s	<35s	<35s	<36s	<36s	<36s
	Warm Start	<30s	<30s	<30s	<30s	<30s	<30s	<30s	<30s
	Hot Start	<3s	<3s	<3s	<3s	<3s	<3s	<3s	<3s
Position Accuracy (autonomous)	<1.0m CEP	<1.0m CEP	<1.0m CEP	<1.0m CEP	<1.0m CEP	<1.0m CEP	<1.0m CEP	<1.0m CEP	<1.0m CEP
Position Accuracy (RTK)	/	/	/	/	/	/	<0.2m CEP	<0.2m CEP	/
Velocity Accuracy (without aid)	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s
Velocity Accuracy (RTK)	/	/	/	/	/	/	/	/	/
Convergence Time (RTK)	/	/	/	/	/	/	<10s	<10s	/
Maximum Acceleration Accuracy (without aid)	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²
Timing Accuracy (1σ)	<100ns	<100ns	<100ns	<100ns	<100ns	<100ns	<100ns	<100ns	<100ns
Max Update Rate	RAW: 10Hz; IMU: 100Hz; PVT: 1Hz	RAW: 10Hz; PVT: 1Hz	RAW: 10Hz	RAW: 10Hz	RAW: 10Hz; IMU: 100Hz	RAW: 10Hz	PVT: 10Hz; IMU: 100Hz	PVT: 10Hz	RAW: 1Hz
Baud Rate(default)	460800bps	115200bps	460800bps	460800bps	460800bps	460800bps	460800bps	460800bps	460800bps
Geo-fence	/	/	/	/	/	/	/	/	/
Jamming Detection	/	/	/	/	/	/	/	/	/
Anti-jamming	/	/	/	/	/	/	/	/	/
Built-in LNA	•	•	•	•	•	/	•	•	•
Electrical Data									
Power Supply	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V
I/O Voltage	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V
Power Consumption (Acquisition)	TBD	221 mA (Typ.)	TBD	295 mA (Typ.)	245 mA (Typ.)	TBD	TBD	TBD	TBD
Power Consumption (Tracking)	TBD	218 mA (Typ.)	TBD	295 mA (Typ.)	245 mA (Typ.)	TBD	TBD	TBD	TBD
Power Consumption (Backup/Low power mode)	TBD	48μA(Typ.)	TBD	55μA(Typ.)	55μA(Typ.)	TBD	TBD	TBD	TBD
Interfaces									
UART	•	•	•	•	•	•	•	•	•
IIC (NMEA)	/	/	/	/	/	/	/	/	/
CAN	/	/	/	/	/	/	/	/	/
Reset	•	•	•	•	•	•	•	•	•
Time Pulse	•	•	•	•	•	•	•	•	•
Antenna									
Short-Circuit Protection & Open-Circuit Detection	/	/	/	/	/	/	/	/	/
Antenna Type	Active	Active	Active	Active	Active	Active	Active	Active	Active
Antenna Power	External or internal	External or internal	External or internal	External or internal	External or internal	External or internal	External or internal	External or internal	External or internal
Certifications	CE*	CE*	CE*	CE*	CE*	CE*	CE*	CE*	CE*
Recommended Applications	Automotive , High precision navigation , Delivery robots								

* Under development

Quectel GNSS Module Family

		Antenna Modules				
Product		L80/ L80-R	LC86L (A)	LC86L (C)	L86	L89 R2.0
		Compatible				
						
						
GNSS		GPS/QZSS	GLONASS/GPS/ BeiDou/QZSS	GPS/GLONASS/Galileo/BeiDou/QZSS	GPS/ GLONASS/BeiDou/Galileo/QZSS	GPS/ GLONASS/ BeiDou/ Galileo/IRNSS/QZSS
Form Factor		LCC	LCC	LCC	LCC	LCC
Dimensions (mm) ¹		16.0 × 16.0 × 6.45	16.0 × 16.0 × 6.95	16.0 × 16.0 × 6.95	18.4 × 18.4 × 6.45	18.4 × 26.4 × 6.8
Weight (approx.) g		6.0	6.0	6	7.6	8.2
Operating Temperature		-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C
Storage Temperature		-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C	-40 °C ~ +90 °C
General Features						
Chip Solution		MT3339 (L80) MT3337 (L80-R)	AG3331	MT3333	MT3333	AG3335
L1 Band Receiver (C/A Code) Channel Number		22 Track/ 66 Acq	33 Track/ 99 Acq	33 Track/ 99 Acq	33 Track/ 99 Acq	33 Track/ 99 Acq
L1 Band Receiver (C/A Code) SBAS		WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN
A-GNSS		Supported	Supported	Supported	Supported	Supported
Sensitivity	Autonomous Acquisition	-148dBm	-148dBm	-148dBm	-149dBm	-147dBm
	Reacquisition	-160dBm	-161dBm	-162dBm	-161dBm	-157dBm
	Tracking	-165dBm	-166dBm	-166dBm	-167dBm	-165dBm
TTFF (Time To First Fix)	Cold Start	<35s, Autonomous <15s, With EASY™	<35s, Autonomous <15s, With EASY™	<35s, Autonomous <15s, With EASY™	<35s, Autonomous <15s, With EASY™	<35s, Autonomous <15s, With EASY™
	Warm Start	<30s, Autonomous <5s, With EASY™	<30s, Autonomous <5s, With EASY™	<30s, Autonomous <5s, With EASY™	<30s, Autonomous <5s, With EASY™	<25s, Autonomous <5s, With EASY™
	Hot Start	<1s	<2s	<2s	<1s	<1s
Position Accuracy(autonomous)		<2.5m CEP	<2.5m CEP	<2.5m CEP	<2.5m CEP	<1.8m CEP
Velocity Accuracy(without aid)		<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s
Maximum Acceleration Accuracy (without aid)		<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²
Timing Accuracy (1σ)		<100ns	<100ns	<100ns	<100ns	<100ns
Max Update Rate		10Hz (L80) 5Hz (L80-R)	10Hz	10Hz	10Hz	1Hz
Baud Rate(default)		9600bps	9600bps	9600bps	9600bps	9600bps
Geo-fence		• (Supported by L80)	•	•	•	•
Jamming Detection		•	•	•	•	•
Anti-jamming		•	•	•	•	•
Built-in LNA		•	•	•	•	•
Electrical Data						
Power Supply		3.0V to 4.3V	2.8V to 4.3V	2.8V to 4.3V	3.0V to 4.3V	3.1V to 4.3V
I/O Voltage		2.7V to 2.9V	2.7V to 2.9V	2.7V to 2.9V	2.7V to 2.9V	3.0 V
Power Consumption (Acquisition)		25mA	32mA (GPS+GLONASS)	32mA (GPS+GLONASS)	30mA (GPS+GLONASS)	32mA
Power Consumption (Tracking)		20mA	31mA (GPS+GLONASS)	30mA (GPS+GLONASS)	26mA (GPS+GLONASS)	32mA
Power Consumption (Backup)		7μA	6μA	7μA	7μA	32μA
Interfaces						
UART		•	•	•	•	•
IIC (NMEA)		/	/	/	/	/
Reset		•	•	•	•	•
Time Pulse		•	•	•	•	•
Antenna						
Short-Circuit Protection & Open-Circuit Detection		Supported by L80	•	•	•	/
Antenna Automatic Switch		Supported by L80	•	•	•	/
Antenna Type		Embedded patch antenna or external active antenna	Embedded patch antenna or external active antenna	Embedded patch antenna or external active antenna	Embedded patch antenna or external active antenna	Embedded patch antenna and chip antenna, external active antenna
Antenna Power		Internal	Internal	Internal	Internal	External
Certifications		CE	CE	CE	CE	/
Recommended Applications		Vehicle or Asset Tracker, DVR, Connected PND & PDA, Safety, Digital Camera, etc.				(Dedicated for India market) standard tracking

Note 1: Please refer to the design document for footprint size.

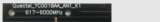
* Under development

5G Antennas

Product	YE0001BA	YE0003AA	YE0007AA	YE0025AA
				
Frequency Bands (MHz)	600-6000	699-5000	600-6000	698-960,1710-5000
Technology	5G	5G	5G	5G
Cable Length (mm)	n/a	n/a	n/a	n/a
Connector Type	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)
Mounting Type	Terminal	Terminal	Terminal	Terminal
Dimensions (mm)	221 × 26.95 × 13.5	190 × Ø 16	152.4 × 21.79 × 14.49	199 × 22
Matched Quectel Modules	5G/4G/3G/2G/LPWA			

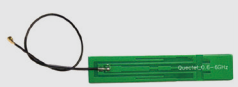
Product	YE0027AA	YE0028AA	YE0037AA	YXH001AA
				
Frequency Bands (MHz)	699-5000	700-2700, 3300-5000	700-5000	700-960, 1710-2690, 3300-5000
Technology	5G	5G	5G	5G
Cable Length (mm)	3000 (RG58)	1500	1000	1000 (RG195)
Connector Type	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)
Mounting Type	Magnetic	Magnetic	Magnetic	Magnetic
Dimensions (mm)	221 × Ø 61	234 × Ø 60, 1.5 DS	88 × Ø 30, LMR100	285 × 45
Matched Quectel Modules	5G/4G/3G/2G/LPWA			

Product	YF0002AA	YF0002BA	YF0002CA	YF0002DA
				
Frequency Bands (MHz)	700-960, 1710-2700, 3300-5000	1710-2700, 3300-5000	1710-2700, 3300-5000	700-960, 1710-2700, 3300-5000
Technology	5G	5G	5G	5G
Cable Length (mm)	n/a	n/a	n/a	n/a
Connector Type	Spring contact	Spring contact	Spring contact	Spring contact
Mounting Type	Screw	Screw	Screw	Screw
Dimensions (mm)	60.1 × 12.25 × 10.1	41.25 × 10.1 × 10.1	37.25 × 9.6 × 10.1	50.25 × 20.1 × 10.1
Matched Quectel Modules	5G/4G/3G/2G/LPWA			

Product	YF0017AA	YF0017BA	YF0020AA	YC0018BA
				
Frequency Bands (MHz)	1500-6000	1100-6000	600-6000	617-5925
Technology	5G	5G	5G	5G
Cable Length (mm)	193 ±3	193 ±3	184 ±3	n/a
Connector Type	IPEX IV	IPEX IV	IPEX IV	n/a
Mounting Type	Adhesive	Adhesive	Adhesive	SMT
Dimensions (mm)	49 × 13 × 0.13	49 × 13 × 0.13	90.15 × 15.2 × 0.13	42 × 7 × 3
Matched Quectel Modules	5G/4G/3G/2G/LPWA			

The parameters shall be subject to the Specification.

5G Antennas

Product	YP0009AA	YP0009BA	YP0009CA
			
Frequency Bands (MHz)	1500-6000	1100-6000	600-6000
Technology	5G	5G	5G
Cable Length (mm)	193 ±3	193 ±3	188 ±3
Connector Type	IPEX IV	IPEX IV	IPEX IV
Mounting Type	Adhesive	Adhesive	Adhesive
Dimensions (mm)	49 × 13 × 0.85	49 × 13 × 0.85	78.5 × 14.2 × 0.85
Matched Quectel Modules	5G/4G/3G/2G/LPWA		

Cellular(4G&3G&2G) Antennas

Product	YC0003AA	YC0001AA	YC0017BA	YC0002AA
				
Frequency Bands (MHz)	698-960, 1695-2200, 2300-2700	698-960, 1710-2690	698-960, 1710-3800	698-960, 1710-2690
Technology	LTE (4G)	LTE (4G)	LTE (4G)	LTE (4G)
Cable Length (mm)	n/a	n/a	n/a	n/a
Connector Type	n/a	n/a	n/a	n/a
Mounting Type	SMD	SMD	SMD	SMD
Dimensions (mm)	40 × 7 × 3	35.0 × 8.5 × 3.0	26 × 8 × 3	42 × 10 × 3
Matched Quectel Modules	4G/3G/2G/LPWA			

Product	YF0022AA	YF0007BA	YFCA002AA	YF0006AA	YF0006DA	YF0028AA
						
Frequency Bands (MHz)	700-2690	600-960, 1427.9-1495.9, 1710-2170, 2300-2700	700-2690	690-960, 1710-2170, 2300-2690	690-960, 1710-2170, 2300-2690	698-3000
Technology	LTE (4G)	LTE (4G)	LTE (4G)	LTE (4G)	LTE (4G)	LTE (4G)
Cable Length (mm)	75 ±3	75 ±3	75 ±3	30 ±3	75±3	150 ±2
Connector Type	RF1	RF1	RF1	U.FL Generation I	IPEX I	IPEX I
Mounting Type	Adhesive	Adhesive	Adhesive	Adhesive	Adhesive	Adhesive
Dimensions (mm)	40 × 15 × 1.6	50 × 25 × 0.85	30 × 20 × 0.13	50 × 25 × 0.13	50 × 25 × 0.13	96 × 21 × 0.2
Matched Quectel Modules	4G/3G/2G/LPWA					

Product	YECT002AA	YECT003AA	YE0009AA	YCN001AA
				
Frequency Bands (MHz)	700-960, 1710-2690	698-960, 1710-2700	824-2700	700-2700
Technology	LTE (4G)	LTE (4G)	LTE (4G)	LTE (4G)
Cable Length (mm)	n/a	n/a	n/a	n/a
Connector Type	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)
Mounting Type	Terminal	Terminal	Terminal	Terminal
Dimensions (mm)	196.2 × 16 × 13	113 × Φ 10	190 × 16	144 × Φ 13
Matched Quectel Modules	4G/3G/2G/LPWA			

The parameters shall be subject to the Specification.

Cellular(4G&3G&2G) Antennas

Product	YE0006AA	YE0010AA	YB0010AA	YB0016AA	YE0012AA	YE0021AA	YE0029AA
							
Frequency Bands (MHz)	700-2700	698-2700	698-960, 1710-2690	698-960, 1710-2700	824-960, 1710-2690	690-960, 1710-2690	700-2700
Technology	LTE (4G)	LTE (4G)	LTE (4G)	LTE (4G)	LTE (4G)	LTE (4G)	LTE (4G)
Cable Length (mm)	1500	1000 ±30	2000 ±30	3000 ±50 (LMR200)	250 ±10	1500 ±30	3000 ±50 (LMR100)
Connector Type	SMA Male (center pin)	SMA Male (center pin)	SMA Male	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)
Mounting Type	Magnetic	Adhesive	Magnetic	Screw	Adhesive	Magnetic	Magnetic
Dimensions (mm)	318 × Φ 30, RG174	152 × 18 × 5.9	Φ 84 × 81.5 × 16	54 × 91	116.5 × 21.7 × 5.6	112 × 29.8	88 × Φ 30
Matched Quectel Modules	4G/3G/2G/LPWA						

Product	YDX001AA	YE0002AA	YE0013AA	YGL001AA
				
Frequency Bands (MHz)	824-2690	699-2700	700-2700	700-960, 1710-2690
Technology	LTE (4G)	LTE (4G)	LTE (4G)	LTE (4G)
Cable Length (mm)	n/a	n/a	n/a	n/a
Connector Type	SMA Male (center pin)	RP-SMA Male (center receptacle)	SMA Male (center pin)	SMA Male (center pin)
Mounting Type	Terminal	Terminal	Terminal	Terminal
Dimensions (mm)	208 × Φ 12	174.6 × 19.2	115.4 × 17.5 × Φ 10.2	196.2 × 16 × 13
Matched Quectel Modules	4G/3G/2G/LPWA			

Product	YE0008AA	YE0011AA	YKL001CA
			
Frequency Bands (MHz)	824-960, 1710-2170	824-960, 1710-2170	NB: 800-1000, 1700-1900
Technology	2G/3G/NB-IoT	2G/3G/NB-IoT	3G/NB-IoT/2G
Cable Length (mm)	n/a	n/a	310 ±10
Connector Type	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)
Mounting Type	Terminal	Terminal	Screw
Dimensions (mm)	52 × Φ 10	50 × Φ 10	50 × 48
Matched Quectel Modules	LPWA/3G/2G module series		

GPS&GNSS Antennas

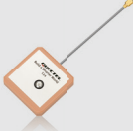
Product	YC0013AA	YCGA001AA	YCGA002AA	YG0038AA
				
Frequency Bands (MHz)	1559-1606	1559-1606	1559-1606	1559-1606
Technology	GNSS	GNSS L1	GNSS L1	GNSS L1
Cable Length (mm)	n/a	n/a	n/a	n/a
Connector Type	n/a	n/a	n/a	n/a
Mounting Type	SMD	Pin Mounting	Pin Mounting	Pin Mounting
Dimensions (mm)	3.2 × 1.6 × 0.6	10 × 10 × 4	12 × 12 × 4	13 × 13 × 4
Matched Quectel Modules	GNSS L1 module series			

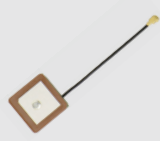
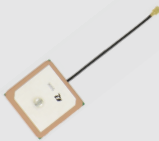
The parameters shall be subject to the Specification.

GPS&GNSS Antennas

Product	YG0043AA	YG0046AA	YG0005AA	YG0062AA
				
Frequency Bands (MHz)	1559-1606	1559-1606	1559-1606	1559-1606
Technology	GNSS L1	GNSS L1	GNSS L1	GNSS L1
Cable Length (mm)	n/a	n/a	n/a	n/a
Connector Type	n/a	n/a	n/a	n/a
Mounting Type	Pin Mounting	Pin Mounting	Pin Mounting	Pin Mounting
Dimensions (mm)	15 × 15 × 4	18 × 18 × 2	18 × 18 × 4	25 × 25 × 4
Matched Quectel Modules	GNSS L1 module series			

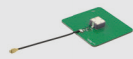
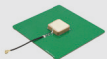
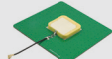
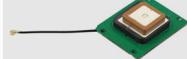
Product	YCGO004AA	YCGO005AA	YCGO006AA	YCGO007AA
				
Frequency Bands (MHz)	1559-1606	1559-1606	1559-1606	1559-1606
Technology	GNSS L1 (passive)	GNSS L1 (passive)	GNSS L1 (passive)	GNSS L1 (passive)
Cable Length (mm)	50±2	50±2	50±2	50±2
Connector Type	IPEX I	IPEX I	IPEX I	IPEX I
Mounting Type	Cable Mounting	Cable Mounting	Cable Mounting	Cable Mounting
Dimensions (mm)	10 × 10 × 6.5	15 × 15 × 6.5	18 × 18 × 6.5	25 × 25 × 6.5
Matched Quectel Modules	GNSS L1 module series			

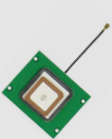
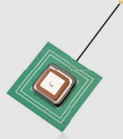
Product	YG0034AA	YG0021AA	YG0032AA	YG0015AA
				
Frequency Bands (MHz)	1559-1606	1560-1605	Beidou: 1561 ±5 ; GPS: 1575 ±5	1559-1606
Technology	GNSS L1 (active)	GNSS L1 & B1 & G1 (active)	GNSS L1 & B1 & G1 (active)	GNSS L1 (active)
Cable Length (mm)	35±2	42 ±3	55	55 ±3
Connector Type	IPEX I	IPEX I	IPEX I	IPEX I
Mounting Type	Cable Mounting	Cable Mounting	Cable Mounting	Cable Mounting
Dimensions (mm)	13 × 13 × 6.8	18.4 × 18.4 × 8.86	18 × 18 × 6.6	25 × 25 × 8.25
Matched Quectel Modules	GNSS L1 module series			

Product	YCGO008AA	YCGO009AA	YCGO010AA	YCGO011AA
				
Frequency Bands (MHz)	1559-1606	1559-1606	1559-1606	1559-1606
Technology	GNSS L1 (active)	GNSS L1 (active)	GNSS L1 (active)	GNSS L1 (active)
Cable Length (mm)	50±3	50±2	50±3	50±3
Connector Type	IPEX I	IPEX I	IPEX I	IPEX I
Mounting Type	Cable Mounting	Cable Mounting	Cable Mounting	Cable Mounting
Dimensions (mm)	10 × 10 × 6.5	15 × 15 × 6.5	18 × 18 × 6.5	25 × 25 × 6.5
Matched Quectel Modules	GNSS L1 module series			

The parameters shall be subject to the Specification.

GPS/GNSS Antennas

Product	YCGS004AA	YCGS005AA	YCGS006AA	YAT001AA	YAT001BA	YBS00A1AA
						
Frequency Bands (MHz)	1560-1606	1560-1606	1560-1606	1176, 1575	1176, 1575	1176, 1575
Technology	GNSS L1&G1	GNSS L1&G1	GNSS L1&G1	GNSS L1&L5	GNSS L1&L5	GNSS L1&L5
Cable Length (mm)	n/a	n/a	n/a	n/a	n/a	n/a
Connector Type	n/a	n/a	n/a	n/a	n/a	n/a
Mounting Type	SMD	SMD	SMD	Cable Mounting	Cable Mounting	Cable Mounting
Dimensions (mm)	9 × 9 × 4	18 × 18 × 4	25 × 25 × 4	25 × 25 × 4 & 18 × 18 × 4	25 × 25 × 2 & 18 × 18 × 2	40 × 40 × 4 & 45 × 45 × 6
Matched Quectel Modules	GNSS L1 modules series			GNSS L1/L5 modules series		

Product	YAT001CA	YG0030AA	YC0008AA	YFGA001AA	YFGA002AA	YFGA004AA
						
Frequency Bands (MHz)	1176, 1575	1176, 1575	1173, 1575	1160-1270, 1560-1605	1559-1609	1160-1270, 1560-1605
Technology	GNSS L1 & L5 (active)	GNSS L1 & L5 (passive)	GNSS L1 & L5 (passive)	GNSS L1 & 2 & L5 & L6	GNSS L1	GNSS L1&2&L5&L6
Cable Length (mm)	40 ±2	100 ±2	n/a	100	100	100
Connector Type	IPEX I	IPEX I	n/a	IPEX I	IPEX I	IPEX I
Mounting Type	Cable Mounting	Cable Mounting	SMD	Adhesive	Adhesive	Adhesive
Dimensions (mm)	25 × 25 × 2 & 18 × 18 × 4	52 × 52 × 9.9	30 × 5 × 5	74.56 × 24.5 × 0.25	61.15 × 11.24	43 × 24 × 0.12
Matched Quectel Modules	GNSS L1/L5 module series				GNSS L1 modules series	GNSS L1/L5 modules

Product	YG0035AA	YLY001CA	YB0017AA	YG0028AA
				
Frequency Bands (MHz)	1561, 1575	1568 ±10	GPS L1/L5, BD B1/B2, GLONASS L1	1561-1602, 1166-1186
Technology	GNSS L1 & B1 & G1 (active)	GNSS L1 & B1 & G1 (active)	GNSS L1 & L5 (active)	GNSS L1 & L5 (active)
Cable Length (mm)	3000 ±20	2000	L = 3000	3000 (RG174)
Connector Type	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)
Mounting Type	Magnetic	Magnetic	Magnetic	Magnetic
Dimensions (mm)	50.3 × 38.4 × 17.1	45.5 × 38 × 13.5	61.5 × 56.5 × 23	Φ 54 × 38
Matched Quectel Modules	GNSS L1 module series		GNSS L1/L5 module series	

Wi-Fi&Bluetooth Antennas

Product	YC0009AA	YC0010AA	YEW001AA
			
Frequency Bands (MHz)	2400-2500	2400-2500	2400-2500
Technology	Wi-Fi (Bluetooth)	Wi-Fi (Bluetooth)	Wi-Fi (Bluetooth)
Cable Length (mm)	n/a	n/a	RG174 L = 1500
Connector Type	n/a	n/a	SMA Male (center pin)
Mounting Type	SMD	SMD	Magnetic
Dimensions (mm)	3.2 × 1.6 × 0.5	5.2 × 2.0 × 1.2	Φ 30 × 77.4
Matched Quectel Modules	FC30R		

The parameters shall be subject to the Specification.

Wi-Fi&Bluetooth Antennas

Product	YF0011AA	YF0026AA	YF0027AA	YF0029AA
				
Frequency Bands (MHz)	2400-2500, 5150-5850	2400-2500, 4900-5850, 5925-7125	2400-2500, 4900-5850, 5925-7125	2410-2490, 4920-5925
Technology	Wi-Fi (Bluetooth)	Wi-Fi (Bluetooth)	Wi-Fi (Bluetooth)	Wi-Fi (Bluetooth)
Cable Length (mm)	44 ±13	100 ±2	100 ±2	100 ±2
Connector Type	IPEX I (U.FL Generation I)	IPEX I (U.FL Generation I)	IPEX I (U.FL Generation I)	IPEX I (U.FL Generation I)
Mounting Type	Adhesive	Adhesive	Adhesive	Adhesive
Dimensions (mm)	38.9 × 9 × 0.12	28.9 × 11 × 0.2	42 × 7 × 0.2	30 × 30 × 0.25
Matched Quectel Modules	All Wi-Fi/BT modules (Except Wi-Fi 6E)	All Wi-Fi/BT modules		All Wi-Fi/BT modules (Except Wi-Fi 6E)

Product	YE0031AA	YE0032AA	YE0038AA	YEW004AA	YEW001AA
					
Frequency Bands (MHz)	2.4-2.5 GHz, 5.15-5.85 GHz	2.4-2.5 GHz, 5.15-5.85 GHz	2400-2500, 5150-5850	2400-2500, 5150-7150	2400-2500, 5150-5850
Technology	Wi-Fi (Bluetooth)	Wi-Fi (Bluetooth)	Wi-Fi (Bluetooth)	Wi-Fi 6 (Bluetooth)	Wi-Fi 6 (Bluetooth)
Cable Length (mm)	n/a	n/a	n/a	n/a	n/a
Connector Type	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)
Mounting Type	Terminal	Terminal	Terminal	Terminal	Terminal
Dimensions (mm)	52 ±2	50 ±2	195 × 13	109 × Ø 10	200 × 13
Matched Quectel Modules	All Wi-Fi/BT modules (Except Wi-Fi 6E)			All Wi-Fi/BT modules	All Wi-Fi/BT modules (Except Wi-Fi 6E)

Combo

Product	YB0007xx	YB0008AA	YB0009AA	YB0014AA
				
Frequency Bands (MHz)	700-960, 1710-2690, 3300-5000	4G MAIN: 698-960, 1710-2690; GNSS: 1575.42 ±5, 1561.098 ±5; 4G DIV: 1710-2690;	4G: 824-960, 1710-2690; GPS, BD: 1575.42 ±10, 1561 ±10	LTE Main & Div: 698-960, 1700-2700; GNSS: 1561-1571; 1602-1606
Technology	5G	Main LTE & DIV; LTE & GNSS	LTE & GNSS	LTE (4G)
Cable Length (mm)	500 ±30	300 ±10	310 ±10	3000 (RG174)
Connector Type	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)
Mounting Type	Screw	Adhesive	Screw	Screw
Dimensions (mm)	Ø 120 × 43	Ø 84 × 17.5	33 × 48	81 × 27.5
Matched Quectel Modules	5G/4G/3G/2G/LPWA	All 4G/3G/2G modules & GNSS L1 modules		

Product	YB0015AA	YK001AA	YB0032AA	YB0033AA	YB0022AA
					
Frequency Bands (MHz)	LTE: 698-960, 1700-2700; Wi-Fi, BT: 2400-2500; GNSS: 1561 ±5, 1575 ±5	BT: 2400-2500; 4G: 824-960; 1710-2690; GPS, BD: 1575.42 ±10, 1561 ±10	700-960, 1700-2700	LTE Main & Div: 700-960, 1700-2700 ; GNSS: 1559-1610 MHz (active)	LTE Main & Div: 700-2700 ; Wi-Fi: 2400-5850 ; GNSS: 1561/1575.42/1602
Technology	LTE/GPS & BD/Wi-Fi	LTE (4G)	Main LTE&DIV LTE	Main LTE&DIV LTE&GNSS	Main LTE&DIV LTE&GNSS&Wi-Fi1&Wi-Fi2
Cable Length (mm)	300 ±20 (RG174)	310 ±10	2000	2000	1000
Connector Type	SMA Male (center pin)	SMA Male (center pin)	SMA Male (Center Pin)	SMA Male (Center Pin)	FME Female Connector
Mounting Type	Screw	Screw	Screw	Screw	Screw
Dimensions (mm)	54 × 91	33 × 48	Ø 120 × 43	Ø 120 × 43	Ø 120 × 43
Matched Quectel Modules	4G/3G/2G modules & GNSS L1 modules & 2.4G Wifi modules		4G/3G/2G/LPWA modules	4G/3G/2G/LPWA modules&GNSS L1 modules	4G/3G/2G/LPWA modules&GNSS L1 modules & All Wi-Fi/BT modules (Except Wi-Fi 6E)

The parameters shall be subject to the Specification.

Product	YB0031AA	YEMA003AA	YEMA004AA	YEWN004AA
				
Frequency Bands (MHz)	LTE: 698-960; 1710-2690; GNSS: 1575.42 ±5, 1561.098 ±5	LTE: 700-2700; Wi-Fi: 2400-5850 1561/1575.42/1602	4G: 698-960, 1710-2690 Wi-Fi & Bluetooth: 2400-2500	2400-2500, 5150-5850
Technology	LTE & GNSS	LTE&GNSS	LTE&Wi-Fi	Wi-Fi&Wi-Fi
Cable Length (mm)	RG174 L=300	3000	900	300
Connector Type	SMA Male (center pin)	4G: FAKRA D GNSS: FAKRA C	SMA Male (Center Pin)	SMA Male (Center Pin)
Mounting Type	Adhesive	Adhesive	Screw	Screw
Dimensions (mm)	Φ 84 × 17.5	Φ 84 × 17.5	Φ 81 × 14.5	Φ 46 × 15
Matched Quectel Modules	All 4G/3G/2G modules & GNSS L1 modules	4G/3G/2G/LPWA modules&GNSS L1 modules	4G/3G/2G/LPWA modules& 2.4G WiFi modules	All WiFi/BT Modules Series (Except Wi-Fi 6E)

ISM

Product	YE0019AA	YE0039BA	YEIM001AA
			
Frequency Bands (MHz)	450-470	430-470, 790-960	465-475
Technology	ISM	ISM	ISM
Cable Length (mm)	/	75	2000(RG174)
Connector Type	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)
Mounting Type	Terminal	Adhesive	Magnet
Dimensions (mm)	109 × 10	117 × 21.81 × 5.47	Φ 30 × 131

Cable Assembly

Product	YM0003AA	YM0003AB	YM0013AA
			
External/Patch/Embedded	Embedded	Embedded	Embedded
Frequency Bands (MHz)	0-6000	0-6000	0-6000
Technology	LTE(4G)	LTE(4G)	LTE(4G)
Form Factor	Cable assembly	Cable assembly	Cable assembly
Cable Length (mm)	100	200	300
Connector Type	SMA-female to IPEX I	RP-SMA-female to IPEX I	SMA-female to IPEX I
Mounting Type	Screw	Screw	Screw
Dimensions (mm)	100	200	300
Matched Quectel Modules	All modules (5G excluded)		

Product	YM0004AA	YM0005AA	YSAN001AA
			
External/Patch/Embedded	Embedded	Embedded	Embedded
Frequency Bands (MHz)	0-6000	0-6000	0-6000
Technology	5G	5G	5G
Form Factor	Cable assembly	Cable assembly	Cable assembly
Cable Length (mm)	100	150	300
Connector Type	SMA-female to IPEX IV	SMA-female to IPEX IV	SMA-female to IPEX IV
Mounting Type	Screw	Screw	Screw
Dimensions (mm)	100	150	300
Matched Quectel Modules	All 5G modules (RM50xQ Series, RG50xQ Series)		

The parameters shall be subject to the Specification.

Europe

Czech Republic: Prague
Denmark: Copenhagen
France: Sophia Antipolis/Paris/Nice/Toulouse
Germany: Berlin/Munich/Stuttgart/Tripstadt
Italy: Milan/Turriaco
Poland: Gdynia/Wroclaw/Nedza/Warsaw
Romania: Timisoara

Russia: Moscow/St. Petersburg
Slovenia: Ljubljana/Sencur
Spain: Barcelona/Granada
Sweden: Stockholm/Sollentuna
The Netherlands: Eindhoven
Turkey: Istanbul
UK: London/Birmingham/Oxford
Ukraine: Kiev

North America

Canada:
 Toronto/Mississauga, ON
 Vancouver, B.C

United States:
 Alpharetta, GA
 Chicago, IL
 Houston/San Marcos/Round Rock, TX
 Orange County/San Diego/Silicon Valley/Scotts Valley/Irvine, CA
 Point Roberts, WA



China
 Shanghai Headquarters

Israel / Africa

Israel: Tel Aviv
South Africa: Johannesburg/Gauteng

Asia Pacific

Australia: Sydney/Melbourne
India: Mumbai/Bangalore/Delhi/Hyderabad
Indonesia: Jakarta/Bandung
Japan: Tokyo/Yokohama
Korea: Seoul

Philippines: Manila/Pasay City
Singapore
Thailand: Bangkok/Samutprakarn
Vietnam: HoChiMinh City/Hanoi

Latin America

Argentina: Buenos Aires
Brazil: Sao Paulo
Mexico: Mexico City/San Nicolas De Los Garza

50+ sales offices, 6 R&D centers globally
 90+ distributors
 Serving 6000+ customers
 Modules are sold to 150+ countries and regions

Overseas

Africa
 Email: africa-sales@quectel.com

ANZ
 Email: anz-sales@quectel.com

Benelux
 Email: benelux-sales@quectel.com

Brazil
 Email: brazil-sales@quectel.com

CIS
 Email: cis-sales@quectel.com

DACH
 Email: dach-sales@quectel.com

East-Europe
 Email: east-europe-sales@quectel.com

France
 Email: france-sales@quectel.com

Iberia
 Email: iberia-sales@quectel.com

India
 Email: india-sales@quectel.com

Israel
 Email: israel-sales@quectel.com

Italy
 Email: italy-sales@quectel.com

Japan
 Email: japan-sales@quectel.com

Korea
 Email: korea-sales@quectel.com

Latin America
 Email: latinamerica-sales@quectel.com

Middle East
 Email: middleeast-sales@quectel.com

Nordic
 Email: nordic-sales@quectel.com

North America
 Email: northamerica-sales@quectel.com

S.E.A
 Email: sea-sales@quectel.com

South East Europe
 Email: see-sales@quectel.com

Turkey
 Email: turkey-sales@quectel.com

UK&Ireland
 Email: uk-sales@quectel.com

Headquarters

Building 5, Shanghai Business Park Phase III (Area B),
 No.1016 Tianlin Road, Minhang District, Shanghai 200233, China
 Tel: +86 21 5108 6236

Hefei R&D Center

Building 1-C, China Speech Valley Area A, 3335 Xiyu Road,
 High-tech Zone, Hefei, Anhui 230088, China
 Tel: +86 551 6586 9386

Canada R&D Center

10551 Shellbridge Way, Richmond, British Columbia,
 BC V6X 2W9, Canada
 Tel: +1 604 370 8741

Shanghai R&D Center

Building 13, Shanghai Business Park Phase III (Area B),
 No.1036 Tianlin Road, Minhang District, Shanghai 200233, China
 Tel: +86 21 5108 6236

Foshan R&D Center

Floor 9-10, Building 2, Sanshan Science and Technology Innovation Center,
 No. 12 Gangkou Road, Sanshan New City, Guicheng Street, Nanhai District, Foshan,
 Guangdong 528000, China
 Tel: +86 757 6663 6236

Serbia R&D Center

Regus, GTC 19 Avenue, 38-40 Vladimira Popovica Street,
 New Belgrade 11070, Serbia

Guilin R&D Center

Floor 4, Building 9, Guilin Electric Valley, Chaoyang Road, Qixing District, Guilin, Guangxi 541004 China

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Quectel:](#)

[LG69TAAMD](#) [LG69TAPMD](#)