QUECTEL

Build a smarter world

Global IoT solutions provider

IoT modules and antenna catalogue

For more information contact us at
www.quectel.com

About Quectel Wireless Solutions

Quectel's passion for a smarter world drives us to accelerate IoT innovation. A highly customer-centric organization, we are a global IoT solutions provider backed by outstanding support and services. Our growing global team of 5,600 professionals sets the pace for innovation in cellular, GNSS, Wi-Fi and Bluetooth modules as well as antennas and services.

With regional offices and support across the globe, our international leadership is devoted to advancing IoT and helping build a smarter world.

For more information, please visit: www.quectel.com, LinkedIn, Facebook, and X (formerly known as Twitter).

An extensive IoT products and services portfolio, providing the full solution

Cellular

- 5G
- 4G
- LPWA
- 3G/ 2G

Automotive

- 5G/ 4G
- C-V2X
- GNSS
- Cockpit/ IVI
- Wi-Fi & Bluetooth

Smart

- 5G
- 4G
- Edge compute

Wi-Fi & Bluetooth

- Wi-Fi 7
- Wi-Fi 6E
- Wi-Fi 6
- Wi-Fi 5
- Wi-Fi 4
- BT 5.x
- Sub-G (LoRa/HaLow)

GNSS

- DR positioning
- RTK positioning
- Fusion positioning
- Timing
- Multiple frequency localization
- Single frequency localization
- Integrated antenna
- IMU

Satellite

- 5G NTN
- Proprietary

Antenna

- Embedded antennas
- External antennas
- Cables & accessories
- Automotive antennas
- mmWave antennas

Services

- Antenna (consultation, design, evaluation and testing)
- Certification & testing
- RTK Correction Services

Contents

Quectel's IoT vertical framework

Intelligent transportation

IoV
CVI
Vehicle tracking
Asset tracking
Ship tracking
Fleet management
OBD
DVR
UBI auto insurance

Smart energy

Electricity meters
Gas meters
Water meters
Thermal meters
Smart grid
Wind generators
Solar power generation
Charging piles

Payment

Wireless POS
Cash registers
ATM
Vending machines
Top-up machines

Smart city

Street lighting
Traffic lights
Sharing economy
Elevator monitoring
Smart parking
Parking meters
Toll collection systems
Digital indicators
Advertising boards
Smart bins
LED landscape lighting controls

Wireless gateways

DTUs
Consumers routers
Industrial routers
VOIP
Servers
Wi-Fi hotspots

Intelligent agriculture & environmental monitoring

Food traceability
Farmland monitoring
Farm irrigation
Farm management
Meteorological stations
Environmental monitoring
Wildlife protection

Intelligent industry

Industrial PDAs/ scanners
Industrial PCs
Industrial computers
Pipeline monitoring
Robots
Flow meters
Industrial refrigeration
Indoor air detection
Water valves/ Pump controls

Smart life & healthcare

Personal trackers
Pet trackers
Wearables
Gaming consoles
Mobile PCs
Home automation
Elderly monitoring
Patient monitoring
Glucometers
Blood pressure monitors
Remote medical equipment

Smart safety

Alarms
Intrusion detectors
Smoke detectors
Gas detectors
Motion sensors
Asset protection

5G NR modules

Product		RG650V	RG650E*	RG651E*	RM550V-GL*	RM551E-GL*
						
Form factor		LGA	LGA	LGA	M.2	M.2
Dimensions (mm)		46.0 × 53.0 × 3.05	46.0 × 53.0 × 3.05	46.0 × 53.0 × 3.05	52.0 × 30.0 × 2.3	52.0 × 30.0 × 2.3
5G		Sub-6 GHz	Sub-6 GHz	Sub-6 GHz & mmWave	Sub-6 GHz	Sub-6 GHz & mmWave
Frequency bands (MHz)	-EU(EMEA/ APAC/ Brazil)	5G NR: n1/3/5/7/8/20/26/28/38/40/41/71[1]/75/76*/77/78; LTE-FDD: B1/3/5/7/8/20/28/32/71[1]; LTE-TDD: B38/40/41/42/43; WCDMA: B1/5/8	5G NR: n1/3/5/7/8/20/26/28/38/40/41/67/71[1]/75/76*/77/78; LTE-FDD: B1/3/5/7/8/20/28/32/71[1]; LTE-TDD: B38/40/41/42/43; WCDMA: B1/5/8	/	/	/
	-NA (North America)	5G NR: n2/5/7/12/13*/14/25/26/29*/30/38/41/48*/66/70*/71/77/78; LTE-FDD: B2/4/5/7/12/13/17/14/25/26/29/30/66/71; LTE-TDD: B38/41/42/43/48	5G NR: n2/5/7/12/13/14/25/26/29/30/38/41/48/66/70*/71/77/78; LTE-FDD: B2/4/5/7/12/13/17/14/25/26/29/30/66/71; LTE-TDD: B38/41/42/43/48	5G NR: n2/5/7/12/13/14/25/26/29/30/38/41/48/66/70/71/77/78/257/258/260/261; LTE-FDD: B2/4/5/7/12/13/17/14/25/26/29/30/66/71; LTE-TDD: B38/41/42/43/48	/	/
	-GL (Global)	/	/	/	5G NR: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/29(Rx)/30/38/40/41/48/66/70/71/75/76/77/78/79; LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/30/32/66/71; LTE-TDD: B34/38/39/40/41/42/43/48; WCDMA: B1/2/4/5/8/19	5G NR: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/29(Rx)/30/38/40/41/48/53/66/70/71/75/76/77/78/79/91/92/93/94/257/258/260/261; LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/30/32/66/70/71; LTE-TDD: B34/38/39/40/41/42/43/48/53; LAA: B46(Rx) WCDMA: B1/2/4/5/8/19;
Weight (approx.) (g)		17.8	17.8	TBD	8.5	8.73
Operating temperature		-30°C ~ +75°C	-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	-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 (Max.)						
5G SA Sub-6		4.67 Gbps (DL)/1.25 Gbps (UL)	7.01 Gbps (DL)/1.25 Gbps (UL)	7.01 Gbps (DL)/1.25 Gbps (UL)	4.67 Gbps (DL)/1.25 Gbps (UL)	7.01 Gbps (DL)/1.25 Gbps (UL)
5G NSA Sub-6		4.52 Gbps (DL)/730 Mbps (UL)	5.47 Gbps (DL)/730 Mbps (UL)	5.47 Gbps (DL)/730 Mbps (UL)	4.52 Gbps (DL)/730 Mbps (UL)	5.47 Gbps (DL)/730 Mbps (UL)
5G SA mmWave		/	/	8.61 Gbps (DL)/3.54 Gbps (UL)	/	/
5G NSA mmWave		/	/	9.41 Gbps (DL)/3.66 Gbps (UL)	/	9.41 Gbps (DL)/3.66 Gbps (UL)
5G TDD + mmWave		/	/	10.95 Gbps (DL)/4.79 Gbps (UL)	/	/
5G FDD + mmWave		/	/	9.54 Gbps (DL)/3.79 Gbps (UL)	/	/
LTE		LTE-FDD: 2.0 Gbps (DL)/211 Mbps (UL)	LTE-FDD: 2.0 Gbps (DL)/211 Mbps (UL)	LTE-FDD: 2.0 Gbps (DL)/200 Mbps (UL)	LTE: 2.0 Gbps (DL)/211 Mbps (UL)	LTE: 2.0 Gbps (DL)/211 Mbps (UL)
UMTS(Mbps)		WCDMA: 42 (DL)/5.76 (UL)(RG650V-EU)	WCDMA: 42 (DL)/5.76 (UL)(RG650E-EU)	/	WCDMA: 42 (DL)/5.76 (UL)	WCDMA: 42 (DL)/5.76 (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	TCP/UDP/FTP/HTTP/HTTPS/PING/SMS
Interfaces						
(U)SIM		1.8/ 3.0 V × 1; 1.8 V × 1(eSIM external)	1.8/ 3.0 V × 1; 1.8 V × 1(eSIM external)	1.8/ 3.0 V × 1; 1.8 V × 1(eSIM external)	1.8/3.0 V × 2(eSIM optional)	1.8/3.0 V × 2(eSIM optional)
UART		× 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	2.0/3.0/3.1
PCIe		2-Lane × 2, 1-Lane × 1	2-Lane × 2, 1-Lane × 1	2-Lane × 2, 1-Lane × 1	1-Lane × 1	1-Lane × 1
PCM		× 2	× 2	× 2	/	/
I2C		× 2	× 2	× 2	/	/
SPI		× 2	× 2	× 2	/	/
GPIO		•	•	•	•	•
ADC		•	•	•	/	/
SD card		/	/	/	/	/
RESET_N		•	•	•	•	•
Antenna		Sub-6 GHz: × 8 ; GNSS: × 1	Sub-6 GHz: × 8 ; GNSS: × 1	Sub-6 GHz: × 8 ; GNSS: × 1; mmWave: × 8	Sub-6 GHz: × 4; GNSS: × 2	Sub-6 : × 4; GNSS: × 2; mmWave: × 3
Enhanced features						
MIMO		Sub-6: DL 4 × 4 , UL 2 × 2	Sub-6: DL 4 × 4 , UL 2 × 2	Sub-6: DL 4 × 4 , UL 2 × 2 mmWave: DL 2 × 2 , UL 2 × 2	Sub-6: DL 4 × 4 , UL 2 × 2	Sub-6: DL 4 × 4 , UL 2 × 2
Voice		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	Delta Firmware over the Air
GNSS		Optional	Optional	Optional	Optional	Optional
(U)SIM card detection		•	•	•	•	•
Electrical features						
Supply voltage range		3.3 V ~ 4.4 V, typ. 3.8 V	3.3 V ~ 4.4 V, typ. 3.8 V	3.3 V ~ 4.4 V, typ. 3.8 V	3.135 V ~ 4.4 V, typ. 3.7 V	3.135 V ~ 4.4 V, typ. 3.7 V
Power consumption		0.22 mA @ Power off 2.7 mA @ Sleep	TBD	TBD	TBD	TBD
Software features						
USB serial driver		Windows 8.1/10/11, Linux 2.6 ~ 6.7, Android 4.x ~ 13.x	Windows 8.1/10/11, Linux 2.6 ~ 6.7, Android 4.x ~ 13.x	Windows 8.1/10/11, Linux 2.6 ~ 6.7, Android 4.x ~ 13.x	Windows 8.1/10/11, Linux 2.6 ~ 6.7, Android 4.x ~ 13.x	Windows 8.1/10/11, Linux 2.6 ~ 6.7, Android 4.x ~ 13.x
GNSS driver		Android 4.x ~ 13	Android 4.x ~ 13	Android 4.x ~ 13	Android 4.x ~ 13	Android 4.x ~ 13
RIL driver		Android 4.x ~ 13	Android 4.x ~ 13	Android 4.x ~ 13	Android 4.x ~ 13	Android 4.x ~ 13
NDIS driver*		Windows 8.1/10/11	Windows 8.1/10/11	Windows 8.1/10/11	Windows 8.1/10/11	Windows 8.1/10/11
MBIM driver		Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18 ~ 6.7	Windows 8.1/10/11, Linux 3.18 ~ 6.7
Gobinet driver*		Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6 ~ 6.7
QMI_WWAN driver		Linux 3.4~6.7	Linux 3.4~6.7	Linux 3.4~6.7	Linux 3.4~6.7	Linux 3.4 ~ 6.7
PCIe driver		Linux 3.10~6.7	Linux 3.10~6.7	Linux 3.10~6.7	Linux 3.10~6.7	Linux 3.10 ~ 6.7
Certifications[2]		CE/RCM/GCF/Verizon/AT&T/T-Mobile/PTCRB/FCC/IC/Dish*	GCF*/CE*/ RCM*/FCC*/IC*/PTCRB*/Verizon*/AT&T*/T-Mobile*	Quectel will provide technical support for customer to certify RG651E-NA based device directly	CE*/RCM*/PTCRB*/FCC*/IC*	Quectel will provide technical support for customer to certify RM551E-GL based device directly
Recommended applications		Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage

Note 1: Optional.
Note 2: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

5G NR modules

Product		RG520N	RG520F	RG525F	RG530F
					
Form factor		LGA	LGA	LGA	LGA
Dimensions (mm)		41.0 × 44.0 × 2.75	41.0 × 44.0 × 2.75	48.0 × 45.0 × 2.85	48.0 × 45.0 × 2.85
5G		Sub-6 GHz	Sub-6 GHz	Sub-6 GHz	Sub-6 GHz & mmWave
Frequency bands (MHz)	-EU(EMEA/ APAC[1]/ Brazil)	5G NR: n1/3/5/7/8/20/28/38/40/41/75/76/77/78; LTE-FDD: B1/3/5/7/8/20/28/32; LTE-TDD: B38/40/41/42/43; WCDMA: B1/5/8	5G NR: n1/3/5/7/8/20/28/38/40/41/75/76/77/78; LTE-FDD: B1/3/5/7/8/20/28/32; LTE-TDD: B38/40/41/42/43; WCDMA: B1/5/8	/	5G NR: n1/3/5/7/8/20/28/38/40/41/75/76/77/78/257/258/260/261; LTE-FDD: B1/3/5/7/8/20/28/32; LTE-TDD: B38/40/41/42/43; WCDMA: B1/5/8
	-EB(EMEA/ APAC[1]/ Brazil)	5G NR: n1/3/5/7/8/20/28/38/40/41/71/75/76/77/78; LTE-FDD: B1/3/5/7/8/20/28/32/71; LTE-TDD: B38/40/41/42/43/71; WCDMA: B1/5/8	5G NR: n1/3/5/7/8/20/28/38/40/41/71/75/76/77/78; LTE-FDD: B1/3/5/7/8/20/28/32/71; LTE-TDD: B38/40/41/42/43; WCDMA: B1/5/8	/	/
	-GT(Europe)	5G NR: n48/77/78; LTE-TDD: B42/43/48	/	/	/
	-NA (North America)	5G NR: n2/5/7/12/13/14/25/26/29/30/38/41/48/66/70/71/77/78; LTE-FDD: B2/4/5/7/12/13/14/17/25/26/29/30/66/71; LTE-TDD: B38/41/42/43/48; LAA: B46	5G NR: 2/5/7/12/13/14/25/26/29/30/38/41/48/66/70/71/77/78; LTE-FDD: B2/4/5/7/12/13/14/17/25/26/29/30/66/71; LTE-TDD: B38/41/42/43/48; LAA: B46	5G NR: n2/5/7/12/13/14/25/26/29/30/38/41/48[2]/66/70/71/77[2]/78[2]; LTE-FDD: B2/4/5/7/12/13/14/17/25/26/29/30/66/71; LTE-TDD: B38/41/42/43/48; LAA: B46	5G NR: n2/5/7/12/13/14/25/26/29/30/38/41/48/66/70/71/77/78/257/258/260/261; LTE-FDD: B2/4/5/7/12/13/14/17/25/26/29/30/66/71; LTE-TDD: B38/41/42/43/48; LAA: B46
	-LA (Latin America)	5G NR: n2/5/7/8/28/40/66/78; LTE-FDD: B2/4/5/7/8/26/28/66; LTE-TDD: B40/42; WCDMA: B2/4/5	/	/	/
Weight (approx.) (g)		11	11	14.1	14.1
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 (Max.)[3]					
5G SA Sub-6		2.4 Gbps (DL)/900 Mbps (UL)	4.0 Gbps (DL)/900 Mbps (UL)	4.0 Gbps (DL)/900 Mbps (UL)	4.0 Gbps (DL)/900 Mbps (UL)
5G NSA Sub-6		3.4 Gbps (DL)/550 Mbps (UL)	4.0 Gbps (DL)/550 Mbps (UL)	4.0 Gbps (DL)/550 Mbps (UL)	4.0 Gbps (DL)/550 Mbps (UL)
5G NSA mmWave		/	/	/	8.8 Gbps (DL)/2.6Gbps (UL)
5G TDD + mmWave		/	/	/	8.0 Gbps(DL)/3.4Gbps (UL)
5G FDD + mmWave		/	/	/	8.9 Gbps (DL)/2.7Gbps (UL)
LTE		LTE-FDD: 1.6 Gbps (DL)/200 Mbps (UL)	LTE-FDD: 2.0 Gbps (DL)/200 Mbps (UL)	LTE-FDD: 2.0 Gbps (DL)/200 Mbps (UL)	LTE-FDD: 2.0 Gbps (DL)/200 Mbps (UL)
UMTS (Mbps)		WCDMA: 42 (DL)/5.76 (UL) (RG520N-EU/RG520N-EB/RG520N-LA)	WCDMA: 42 (DL)/5.76 (UL)(RG520F-EU/RG520F-EB)	/	WCDMA: 42 (DL)/5.76 (UL) (RG530F-EU)
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, 1.8 V/2.95 V	× 2, 1.8 V/2.95 V	× 2, 1.8 V/ 2.95 V	× 2, 1.8 V/2.95 V
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	Gen3 × 2Lane	Gen3 × 2Lane	Gen3 × 2Lane
PCM		•	•	•	•
I2C		× 1	× 1	× 1	× 1
SPI		•	•	•	•
GPIO		•	•	•	•
ADC		× 2	× 2	× 2	× 2
SD card		•	•	•	•
RESET_N		•	•	•	•
Antenna		Cellular: 4, GNSS: × 1(RG520N-EB/RG520N-NA/RG520N-GT/RG520N-LA); Cellular: 4 + 2 (optional), GNSS: × 1(RG520N-EU)	Cellular: 4 + 2 (optional), GNSS: × 1 (RG520F-EU); Cellular: 4, GNSS: × 1 (RG520F-NA)	Cellular: sub6G: 8, GNSS: × 1	Cellular: sub6G x 4 + 2(optional), mmWave x 8, GNSS: × 1(RG530F-EU); Cellular: sub6G x 4, mmWave x 8, GNSS: × 1(RG530F-NA)
Enhanced features					
MIMO		Sub-6: DL 4 × 4, UL 2 x 2	Sub-6: DL 4 x 4, UL 2 x 2	Sub-6: DL 4 x 4 , UL 2 x 2	Sub-6: DL 4 x 4, UL 2 x 2; mmWave: DL 2 x 2, UL 2 x 2
Voice		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/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS
(U)SIM card detection		•	•	•	•
Electrical features					
Supply voltage range		3.3 V ~ 4.4 V, typ. 3.8 V	3.3 V ~ 4.4 V, typ. 3.8 V	3.3 V ~ 4.4 V, typ. 3.8 V	3.3 V ~ 4.4 V, typ. 3.8 V
Power consumption		0.142 mA @ power off, 2.6 mA @ sleep (typ.)[4] (RG520N-EU/RG520N-EB/ RG520N-GT/RG520N-NA); TBD(RG520N-LA)	0.142 mA @ power off, 2.6 mA @ sleep (typ.)[4]	104 μA @ Power off, 5.78 mA @ Sleep, 43.31 mA @ USB 2.0, Idle, 63.74 mA @ USB 3.0, Idle (RG525F-NA)	110μA @Power off, 3.96mA@Sleep, 33.5mA@USB2.0, Idle, 50.58mA@USB3.0, Idle
Software features					
USB serial driver		Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~ 13	Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~ 13	Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~ 13	Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~ 13
GNSS driver/ RIL driver		Android 4.x ~ 13	Android 4.x ~ 13	Android 4.x ~ 13	Android 4.x ~ 13
NDIS driver		/	/	/	/
MBIM driver*		Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7
Gobinet driver		Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6~6.7
QMI_WWAN driver		Linux 3.4~6.7	Linux 3.4~6.7	Linux 3.4~6.7	Linux 3.4~6.7
PCIe driver		Windows 10/11, Linux 3.10~6.7	Windows 10/11, Linux 3.10~6.7	Windows 10/11, Linux 3.10~6.7	Windows 10/11, Linux 3.10~6.7
Certifications[4]		Telstra/GCF/CE/RCM/Anatel/Verizon/T-Mobile/AT&T/PTCRB/FCC/IC	CE/RCM/UKCA/GCF/FCC/PTCRB	Rogers/GCF/PTCRB/FCC/IC/T-Mobile	Quectel will provide technical support for customer to certify RG530F based device directly
Recommended applications		Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage

Note 1: Excl. China/Japan.
Note 2: n48/77/78 support 8RX.
Note 3: means the data transmission is theoretical data rate and depends on network conditions.
Note 4: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

5G NR modules

Product		RM520N	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)	-GL (Global)	5G NR: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/29/30/38/40/41/48/66/70/71/75/76/77/78/79; LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/30/32/66/71; LTE-TDD: B34/38/39/40/41/42/43/48; LAA: B46; WCDMA: B1/2/4/5/8/19	5G NR: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/29/30/38/40/41/48/66/70/71/75/76/77/78/79/257/258/260/261; LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/30/32/66/71; LTE-TDD: B34/38/39/40/41/42/43/48; LAA: B46; WCDMA: B1/2/4/5/8/19
	-EU(EMEA/ APAC[1]/ Brazil)	5G NR: n1/3/5/7/8/20/28/38/40/41/71/75/76/77/78; LTE-FDD: B1/3/5/7/8/20/28/32/71; LTE-TDD: B38/40/41/42/43; WCDMA: B1/5/8	/
Weight (approx.) (g)		8.7	8.8
Operating temperature		-30°C ~ +75°C	-30°C ~ +75°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 transmission (Max.)[2]			
5G SA Sub-6		2.4 Gbps (DL)/900 Mbps (UL)	2.4 Gbps (DL)/900 Mbps (UL)
5G NSA Sub-6		3.4 Gbps (DL)/550 Mbps (UL)	3.4 Gbps (DL)/550 Mbps (UL)
5G NSA mmWave		/	4.0 Gbps (DL)/1.4 Gbps (UL)
LTE		LTE-FDD: 1.6 Gbps (DL)/200 Mbps (UL)	LTE-FDD: 1.6 Gbps (DL)/200 Mbps (UL)
UMTS(Mbps)		WCDMA: 42 (DL)/5.76 (UL)	WCDMA: 42 (DL)/5.76 (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 3.0	PCIe 3.0
Antenna		Sub-6/GNSS x 4(RM520N-CN/RM520N-GL); Sub-6/GNSS: 4+1(optional)(RM520N-EU)	Sub-6/GNSS x 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
Voice		Optional[3]	Optional
DTMF		Dual-tone Multi-frequency	Dual-tone Multi-frequency
DFOTA		Delta Firmware over the Air	Delta Firmware over the Air
GNSS		GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS
(U)SIM card detection		•	•
Electrical features			
Supply voltage range		3.135 V ~ 4.4 V, typ. 3.7 V	3.135 V ~ 4.4 V, typ. 3.7 V
Power consumption		195 μA @ Power off; 4.7 mA @ Sleep; 40mA @ USB 2.0, Idle; 60 mA @ USB 3.0, Idle	173μA@Power off; 5.1mA@Sleep; 51mA@USB2.0, Idle; 69.4mA@USB3.0, Idle
Software features			
USB serial driver		Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~ 13	Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~ 13
GNSS driver		Android 4.x ~ 13	Android 4.x ~ 13
RIL driver		Android 4.x ~ 13	Android 4.x ~ 13
NDIS driver		Windows 8.1/10/11	Windows 8.1/10/11
MBIM driver		Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7
Gobinet driver		Linux 2.6~6.7	Linux 2.6~6.7
QMI_WWAN driver		Linux 3.4~6.7	Linux 3.4~6.7
PCIe driver		Windows 10/11, Linux 3.10~6.7	Windows 10/11, Linux 3.10~6.7
Certifications[3]		T-Mobile/Verizon/AT&T/NTT DOCOMO/Deutsche Telekom/Telefónica/Telstra/KT/GCF/PTCRB/CE/Anatel/CCC/RCM/IC/FCC/JATE/TELEC/KC/NCC/SRRC	Quectel will provide technical support for customer to certify RM530N-GL based device directly
Recommended applications		Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage

Note 1: Excl. China/Japan.
Note 2: means the data transmission is theoretical data rate and depends on network conditions.
Note 3: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

5G NR modules

Product	RG500Q-EA/RG502Q-EA	RG500Q-EU/RG501Q-EU/RG502Q-EU	RG500Q-GT/RG502Q-GT
			
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: n41/77/78/79/1/3/5/7/8/20/28/38/40; LTE-FDD: B1/3/5/7/8/18/19/20/26/28/32; LTE-TDD: B34/38/39/40/41/42/43; WCDMA: B1/3/5/6/8/19	5G NR: n1/3/5/7/8/20/28/38/40/41/77/78; LTE-FDD: B1/3/5/7/8/20/28/32; LTE-TDD: B38/40/41/42/43; WCDMA: B1/5/8	5G NR: n78; LTE-TDD: B42/43
Region	EMEA/ APAC	EMEA/APAC(exclude China)/Brazil	Global TDD Network
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 transmission (Max.)[1]			
5G SA Sub-6	2.1 Gbps (DL)/900 Mbps (UL)(RG500Q-EA); 4.2 Gbps (DL)/900 Mbps (UL) (RG502Q-EA)	2.1 Gbps (DL)/900Mbps (UL)(RG500Q-EU/RG501Q-EU); 4.2 Gbps (DL)/900Mbps (UL)(RG502Q-EU)	2.1 Gbps (DL)/900 Mbps (UL)(RG500Q-GT); 4.2 Gbps (DL)/900 Mbps (UL)(RG502Q-GT)
5G NSA Sub-6	2.5 Gbps (DL)/600/650 Mbps (UL)[2](RG500Q-EA); 5.0 Gbps (DL)/600/650 Mbps (UL)[2] (RG502Q-EA)	2.5 Gbps (DL)/600/650 Mbps (UL)[2] (RG500Q-EU); 3.3 Gbps (DL)/600/650 Mbps (UL)[2] (RG501Q-EU); 5.0 Gbps (DL)/600/650 Mbps (UL)[2] (RG502Q-EU)	/
LTE	LTE-FDD: 1 Gbps (DL)/200 Mbps (UL)(RG500Q-EA); LTE-FDD: 2 Gbps (DL)/200 Mbps (UL) (RG502Q-EA)	LTE-FDD: 1 Gbps (DL)/200 Mbps (UL)(RG500Q-EU); LTE-FDD: 2 Gbps (DL)/200 Mbps (UL)(RG501Q-EU/RG502Q-EU)	LTE-TDD: 700 Mbps (DL)/116 Mbps (UL)(RG500Q-GT); LTE-TDD: 1.2 Gbps (DL)/116 Mbps (UL)(RG502Q-GT)
UMTS(Mbps)	WCDMA: 42 (DL)/5.76 (UL)	WCDMA: 42 (DL)/5.76 (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, 1.8 V/2.95 V	× 2, 1.8 V/2.95 V	× 2, 1.8 V/2.95 V
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 × 2 Lane	PCIe Gen3 × 2 Lane
RGMII	•	•	•
PCM	•	•	•
I2C	× 1	× 1	× 1
SPI	•	•	•
GPIO	•	•	•
ADC	× 2	× 2	× 2
SD card	•	•	•
RESET_N	•	•	•
Antenna	Cellular: 6 + 2 (n79), GNSS: × 1	Cellular: 4+2(B32), GNSS: x 1	Cellular: 4
Enhanced features			
MIMO	4 × 4 DL	4 × 4 DL	4 × 4 DL
Voice	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/BDS/Galileo	GPS/GLONASS/BDS/Galileo	/
(U)SIM card detection	•	•	•
Electrical features			
Supply voltage range	3.3 V ~ 4.3 V, typ. 3.8 V	3.3 V ~ 4.3 V, typ. 3.8 V	3.3 V ~ 4.3 V, typ. 3.8 V
Power consumption	0.045 mA @ Power off 1.5 mA @ Sleep, Typ. 25 mA @ Idle	0.045 mA @Power off 1.5 mA @Sleep, Typ. 25 mA @Idle	0.045 mA @Power off 1.5 mA @Sleep, Typ. 25 mA @Idle
Software features			
USB serial driver	Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~ 13	Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~ 13	Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~ 13
GNSS driver	Android 4.x ~ 13	Android 4.x ~ 13	Android 4.x ~ 13
RIL driver	Android 4.x ~ 13	Android 4.x ~ 13	Android 4.x ~ 13
NDIS driver	Windows 8.1/10/11	Windows 8.1/10/11	Windows 8.1/10/11
MBIM driver	Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7
Gobinet driver	Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6~6.7
QMI_WWAN driver	Linux 3.4~6.7	Linux 3.4~6.7	Linux 3.4~6.7
PCIe driver	Windows 10/11, Linux 3.10~6.7	Windows 10/11, Linux 3.10~6.7	Windows 10/11, Linux 3.10~6.7
Certifications[3]	China Telecom/China Mobile/China Unicom/KT/SKT/LGU+/CCC/SRRC/NAL/CE/RCM/KC/JATE/TELEC	CE/RCM/GCF	CE
Recommended applications	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs 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).
Note 3: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

5G NR modules

Product	RM500Q-AE/RM502Q-AE/RM505Q-AE	RM500Q-GL	RM510Q-GL
			
Form factor	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
5G	Sub-6 GHz	Sub-6 GHz	Sub-6 GHz/ mmWave
Frequency bands (MHz)	5G NR: n1/2/3/5/7/8/12/20/25/28/38/40/41/48/66/71/77/78/79; LTE-FDD: B1/2/3/4/5/7/8/12(17)/13/14/18/19/20/25/26/28/29/30/32/66/71; LTE-TDD: B34/38/39/40/41/42/43/48; LAA: B46[3]; WCDMA: B1/2/3/4/5/6/8/19	5G NR: n1/2/3/5/7/8/12/20/25/28/38/40/41/48*/66/71/77/78/79; LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/30/32/66/71; LTE-TDD: B34/38/39/40/41/42/43/48; LAA: B46; WCDMA: B1/2/3/4/5/6/8/19;	5G NR: n1/2/3/5/7/8/12/20/25/28/38/40/41/48/66/71/77/78/79/257/258/260/261; LTE-FDD: B1/2/3/4/5/7/8/12(17)/13/14/18/19/20/25/26/28/29/30/32/66/71; LTE-TDD: B34/38/39/40/41/42/43/48; LAA: B46; WCDMA: B1/2/3/4/5/6/8/19
Region	Global (except for China)	Global (except for US)	Global
Weight (approx.) (g)	8.7	9	9.1
Operating temperature	-30°C ~ +70°C	-30°C ~ +75°C	-30°C ~ +70°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 transmission (Max.)[1]			
5G SA Sub-6	2.1Gbps (DL)/450Mbps (UL)(RM500Q-AE/RM505Q-AE); 4.2 Gbps (DL)/450 Mbps (UL)(RM502Q-AE)	2.1 Gbps (DL)/900 Mbps (UL)	4.2 Gbps (DL)/450 Mbps (UL)
5G NSA Sub-6	2.5Gbps (DL)/650Mbps (UL)(RM500Q-AE/RM505Q-AE); 5 Gbps (DL)/650 Mbps (UL)(RM502Q-AE)	2.5 Gbps (DL)/600/650 Mbps (UL)[2]	5.0 Gbps (DL)/600/650 Mbps (UL)[2]
5G NSA mmWave	/	/	7.5 Gbps (DL)/2.9 Gbps (UL)
LTE	LTE-FDD: 1 Gbps (DL)/200 Mbps (UL)(RM500Q-AE/RM505Q-AE); LTE-FDD: 2 Gbps (DL)/200 Mbps (UL)(RM502Q-AE)	LTE-FDD: 1 Gbps (DL)/200 Mbps (UL)	LTE-FDD: 2 Gbps (DL)/200 Mbps (UL)
UMTS(Mbps)	WCDMA: 42 (DL)/5.76 (UL)	WCDMA: 42 (DL)/5.76 (UL)	WCDMA: 42 (DL)/5.76 (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	x 1, 1.8 V/3.0 V(RM500Q-AE/RM502Q-AE) x 2, 1,8 V/3.0 V(RM505Q-AE)	× 2, 1.8 V/ 3.0 V	× 1, 1.8 V/ 3.0 V
USB	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
PCM	x 1	× 1	× 1
GPIO	•	•	•
RESET_N	•	•	•
Antenna	Cellular: × 4, GNSS: × 1	Cellular: × 4, GNSS: × 1	Cellular: × 4, GNSS: × 1; mmWave IF *4 pairs
Enhanced features			
MIMO	DL: 4 × 4, UL: 2 × 2(Only n41)	DL: 4 × 4, UL: 2 × 2	Sub-6: DL 4 × 4, UL 2 × 2 (Only n41); mmWave: DL 2 × 2, UL 2 × 2
Voice	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	3.135 V ~ 4.4 V, typ. 3.7 V	3.135 V ~ 4.4 V, typ. 3.7 V	3.135 V ~ 4.4 V, typ. 3.7 V
Power consumption	82 μA @Power off 4.2 mA @Sleep, Typ. 32 mA, USB 2.0 @Idle 55 mA, USB 3.0 @Idle	70 μA @Power off 4.0 mA @Sleep, Typ. 32 mA, USB 2.0 @Idle 54 mA, USB 3.0 @Idle	82 μA @ Power off 5.11 mA @ Sleep 39 mA @ USB 2.0, Idle 54.5 mA @ USB 3.0, Idle
Software features			
USB serial driver	Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~ 13	Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~ 13	Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~ 13
GNSS driver	Android 4.x ~ 13	Android 4.x ~ 13	Android 4.x ~ 13
RIL driver	Android 4.x ~ 13	Android 4.x ~ 13	Android 4.x ~ 13
NDIS driver	Windows 8.1/10/11	Windows 8.1/10/11	Windows 8.1/10/11
MBIM driver	Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7
Gobinet driver	Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6~6.7
QMI_WWAN driver	Linux 3.4~6.7	Linux 3.4~6.7	Linux 3.4~6.7
PCIe driver	Windows 10/11, Linux 3.10~6.7	Windows 10/11, Linux 3.10~6.7	Windows 10/11, Linux 3.10~6.7
Certifications[4]	Deutsche Telecom/Verizon/ AT&T/T-Mobile/Telus/Telstra/CE/RCM/GCF/PTCRB/FCC/IC/JATE/TELEC/NCC	China Telecom/China Mobile/China Unicom/Deutsche Telecom/KT/SKT/LGU+/CE/RCM/GCF/KC/CCC/SRRC/NAL	CE/RCM/GCF/PTCRB/FCC/IC/
Recommended applications	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage

Note 1: means the data transmission is theoretical data rate and depends on network conditions.
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.
Note 3: RM500Q-AE/RM505Q-AE: only support 2 × 2 MIMO.
Note 4: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

5G NR modules

Product		RG500L	RG600L-EU	RG600L-JP
				
Form factor		LGA	LGA	LGA
Dimensions (mm)		41.0 × 44.0 × 2.75	44.0 × 53.0 × 2.95	44.0 × 53.0 × 2.95
5G		Sub-6 GHz	Sub-6 GHz	Sub-6 GHz
Frequency bands (MHz)	-EU (EMEA/Oceania/Brazil)	5G NR: n1/3/5/7/8/20/28/38/40/41/77/78; LTE-FDD: B1/3/5/7/8/20/28/32; LTE-TDD: B38/40/41/42/43; WCDMA: B1/5/8	RG600L-EUAA: 5G NR: n1/3/5/7/8/20/28/38/40/41/75/76/77/78; LTE-FDD: B1/3/5/7/8/20/28/32; LTE-TDD: B38/40/41/42/43; WCDMA: B1/5/8 RG600L-EUAB: 5G NR: n1/3/5/7/8/20/28/38/40/41/71/77/78; LTE FDD: B1/3/5/7/8/20/28/71; LTE TDD: B38/40/41/42/43; WCDMA: B1/5/8	/
	-NA (North America)	5G NR: n2/5/7/12/25/38/41/48/66/71/77/78; LTE-FDD: B2/4/5/7/12/13/14/17/25/26/29/30/66/71; LTE-TDD: B38/41/42/43/48; LAA: B46	/	/
	-AR (India)	5G: n1/3/5/8/40/78; LTE-FDD: B1/3/5/8; LTE-TDD: B40	/	/
	-JIO (India)	5G: n78	/	/
	-JP (Japan)	/	/	5G NR: n1/3/28/38/41/77/78/79; LTE-FDD: B1/3/5/8/12/17/18/19/21/26/28; LTE-TDD: B38/41/42
Weight (approx.) (g)		13(RG500L-EU/RG500L-NA/RG500L-AR); 10.91(RG500L-JIO)	16.56	15.14
Operating temperature		-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
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 transmission (Max.)[1]				
5G SA Sub-6		4.67 Gbps(DL)/1.25 Gbps(UL)	4.67 Gbps(DL)/1.25 Gbps(UL)	4.67 Gbps(DL)/1.25 Gbps(UL)
5G NSA Sub-6		4.67 Gbps(DL)/825 Mbps(UL)(RG500L-EU/RG500L-NA), 3.75 Gbps (DL)/725 Mbps(UL) (RG500L-AR)	4.67 Gbps(DL)/836 Mbps(UL)	4.67 Gbps(DL)/836 Mbps(UL)
LTE		LTE-FDD: 1.6 Gbps(DL)/211 Mbps(UL)(RG500L-EU/RG500L-NA/RG500L-AR)	LTE-FDD: 1.6 Gbps(DL)/211 Mbps(UL)	LTE-FDD: 1.6 Gbps(DL)/211 Mbps(UL)
UMTS(Mbps)		WCDMA: 42 (DL)/5.76 (UL)(RG500L-EU/RG500L-NA)	WCDMA: 42.2(DL)/11.5(UL)	/
SMS		•	•	•
Protocols		HTTPS/TCP/UDP/FTP/HTTP/PING/FTPS/SSL/NTP	HTTPS/TCP/UDP/FTP/HTTP/PING/FTPS/SSL/NTP	HTTPS/TCP/UDP/FTP/HTTP/PING/FTPS/SSL/NTP
Interfaces				
(U)SIM		× 2(Dual SIM single standby)	× 2(Dual SIM single standby)	× 2(Dual SIM single standby)
UART		× 3(including 1 Bluetooth UART)	× 3(including 1 Bluetooth UART)	× 3(including 1 Bluetooth UART)
USB		× 1(USB 2.0/3.0)	× 1(USB 2.0/3.0)	× 1(USB 2.0/3.0)
PCIe		PCIe 3 × 4(RG500L-EU/RG500L-NA); PCIe 3 × 2(RG500L-AR); PCIe 3 × 1(RG500L-JIO)	PCIe 3 × 2	PCIe 3 × 2
SGMII		× 2	× 2	× 2
PCM		•	•	•
I2C		× 1	× 4	× 4
SPI		× 2(RG500L-EU/RG500L-NA/RG500L-AR); × 1(RG500L-JIO)	× 2	× 2
GPIO		•	•	•
ADC		× 3(RG500L-EU/RG500L-NA/RG500L-AR); × 2(RG500L-JIO)	× 3	× 3
SD card		•	•	•
RESET_N		•	•	•
Antenna		Cellular: × 8, GNSS: × 1(RG500L-EU/RG500L-NA); Cellular: × 8, (RG500L-AR); Cellular: × 4, (RG500L-JIO)	Cellular: × 8	Cellular: × 8
Enhanced features				
MIMO		DL: 4 × 4, UL: 2 × 2	DL: 4 × 4, UL: 2 × 2	DL: 4 × 4, UL: 2 × 2
Voice		Optional	Optional	Optional
DTMF		•	•	•
FOTA		•	•	•
GNSS		GPS/BDS/GLONASS/Galileo, L1 only(RG500L-NA); GPS/BDS/GLONASS/Galileo, L1 + L5(RG500L-EU)	/	/
(U)SIM card detection		•	•	•
Electrical features				
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8 V	3.3 V ~ 4.3 V, typ. 3.8 V	3.3 V ~ 4.3 V, typ. 3.8 V
Power consumption		80 μA @Power off 6.5 mA @Sleep 125 mA @Idle (USB active)	100 μA @Power off 6.5 mA @Sleep 125 mA @Idle (USB active)	TBD
Software features				
USB serial driver		Linux 3.18~6.5	Linux 3.18~6.5	Linux 3.18~6.5
GNSS driver		/	/	/
RIL driver		/	/	/
RNDIS driver		/	/	/
Certifications[2]		GCF/CE/RCM/FCC/IC	GCF/CE/RCM	JATE*/TELEC*
Recommended applications		Wireless routers, CPE, MiFi, industrial routers, home gateways, etc.	Wireless routers, CPE, MiFi, industrial routers, home gateways, etc.	Wireless routers, CPE, MiFi, industrial routers, home gateways, etc.

Note 1: means the data transmission is theoretical data rate and depends on network conditions.
Note 2: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

5G NR modules

Product		RG620T	RG620T-SBK
			
Form factor		LGA	LGA
Dimensions (mm)		44.0 × 53.0 × 2.95	44.0 × 53.0 × 2.95
5G		Sub-6 GHz	Sub-6 GHz
Frequency bands (MHz)	-EU (EMEA/Oceania/Brazil)	5G NR: n1/3/5/7/8/20/28/38/40/41/71(optional)/75/76/77/78/79(optional); LTE-TDD: B38/40/41/42/43; LTE-FDD: B1/3/5/7/8/20/28/32/71(optional); LAA: B46(optional);WCDMA: B1/5/8	/
	-NA (North America)	5G NR: n2/5/7/12/13/14/25/26/29/30/38/41/48/66/70/71/77/78; LTE-TDD: B38/41/42/43/48; LTE-FDD: B2/4/5/7/12/13/14/17/25/26/29/30/66/70/71; LAA: B46	/
	-SBK(Japan)	/	5G NR: n3/28/77/79; LTE-FDD: B1/8; LTE-TDD: B41/42
	-EP(EMEA)	5G NR: n1/3/7/8/28/78; LTE-FDD: B1/3/7/8/28; LTE-TDD: B40	/
Weight (approx.) (g)		16.82(RG620T-EU/RG620T-NA); 16.61(RG620T-EP)	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 transmission (Max.)[1]			
5G SA Sub-6		7.01 Gbps(DL)/2.5 Gbps(UL)	7.01 Gbps(DL)/2.5 Gbps(UL)
5G NSA Sub-6		5.67 Gbps(DL)/1.46 Gbps(UL)	/
LTE		LTE-FDD: 1.6 Gbps(DL)/211 Mbps(UL)	LTE-FDD: 1.6 Gbps(DL)/211 Mbps(UL)
UMTS(Mbps)		WCDMA: 42.2(DL)/11.5(UL) (RG620T-EU)	/
SMS		•	•
Protocols		HTTPS/TCP/UDP/FTP/HTTP/PING/FTPS/SSL/NTP	HTTPS/TCP/UDP/FTP/HTTP/PING/FTPS/SSL/NTP
Interfaces			
(U)SIM		× 2 (Dual SIM single standby)	× 2
UART		× 3	× 3
USB		× 1(USB 2.0/3.2)	× 1(USB 2.0/3.2)
PCIe		PCIe 4 × 1, PCIe 3 × 2	PCIe 4 × 1, PCIe 3 × 1
UXSGMII		× 2	× 2
I2C		× 2	× 1
SPI		× 3	× 2
GPIO		•	•
ADC		× 7	× 4
SD card		•	/
RESET_N		•	•
Antenna		Cellular: × 8, GNSS(optional): × 1(RG620T-EU); Cellular: × 8, GNSS: × 1(RG620T-NA/RG620T-EP)	Cellular : × 6, GNSS: × 1 (RG620T-SBK)
Enhanced features			
MIMO		DL: 4 × 4, UL: 2 × 2	DL: 4 × 4, UL: 2 × 2
Voice		Optional	Optional
DTMF		•	Dual-tone Multi-frequency
FOTA		•	•
GNSS		GPS/BDS/GLONASS/Galileo/QZSS, L1 + L5 (optional)(RG620T-EU); GPS/BDS/GLONASS/Galileo/QZSS, L1 + L5 (RG620T-EP/RG620T-NA)	GPS/BDS/GLONASS/Galileo/QZSS, L1
(U)SIM card detection		•	•
Electrical features			
Supply voltage range		3.3 V ~ 4.4 V, typ. 3.8 V	3.3 V ~ 4.4 V, typ. 3.8 V
Power consumption		135 μA @Power off 6 mA @Sleep 145 mA @Idle (USB active)	135 μA @ Power down 4 mA @ Sleep 160 mA @ Idle (USB connected)
Software features			
USB serial driver		Linux 3.18~6.5	Linux 3.18~6.5
GNSS driver		/	/
RIL driver		/	/
RNDIS driver		/	/
Certifications[2]		CE/RCM/GCF/FCC/IC/PTCRB/AT&T/T-Mobile/Verizon*	JATA/TELEC
Recommended applications		Industrial routers, CPE, home gateways, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, CPE, MiFi, home gateways, industrial PDAs, rugged tablet PCs and digital signage

Note 1: means the data transmission is theoretical data rate and depends on network conditions.
Note 2: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

5G NR modules

Product		RG500U	RM500U
			
Form factor		LGA	M.2
Dimensions (mm)		41.0 × 44.0 × 2.85	52.0 × 30.0 × 2.3(RM500U-CNV); 52.0 × 30.0 × 3.75(RM500U-EA)
5G		Sub-6 GHz	Sub-6 GHz
Frequency bands (MHz)	-CN(EMEA/APAC)	5G NR: n1/28/41/77/78/79; LTE-FDD: B1/2/3/5/7/8/20/28; LTE-TDD: B34/38/39/40/41; WCDMA: B1/2/5/8	/
	-EA(EMEA/APAC/Latin America)	5G NR: n1/3/5/7/8/20/28/38/40/41/66/71*/77/78; LTE-FDD: B1/2/3/4/5/7/8/20/28A/28B/66; LTE-TDD: B38/40/41; WCDMA: B1/2/5/8	5G NR: n1/3/5/7/8/20/28/38/40/41/66/77/78; LTE-FDD: B1/2/3/4/5/7/8/20/28/66; LTE-TDD: B38/40/41; WCDMA: B1/2/5/8
	-EB(EMEA/APAC/Latin America)	5G NR: n1/3/5/7/8/20/28/38/40/41/66/77/78; LTE-FDD: B1/2/3/4/5/7/8/20/28/66; LTE-TDD: B38/40/41; WCDMA: B1/2/5/8	/
	-LA(Latin America)	5G NR: n2/5/7/8/28/38/40/66/71/78; LTE-FDD: B2/4/5/7/8/26/28/66/71; LTE-TDD: B38/40; WCDMA: B2/4/5	/
	-CNV(EMEA/APAC)	/	5G NR: n1/3/5/8/28A/41/77[1]/78/79; LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/5[1]/8
Weight (approx.) (g)		13(RG500U-CN/RG500U-EA); 12.5(RG500U-EB); 12.2(RG500U-LA)	9.2(RM500U-EA); 8.8(RM500U-CNV)
Operating temperature		-30° C ~ +75° C	-30° C ~ +75° 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 transmission (Max.)[2]			
5G SA Sub-6		2 Gbps (DL)/1 Gbps (UL)	2 Gbps (DL)/1 Gbps (UL)
5G NSA Sub-6		2.2 Gbps (DL)/575 Mbps (UL) (RG500U-CN); 2.6 Gbps (DL)/650 Mbps (UL)(RG500U-EA/RG500U-EB/RG500U-LA)	2.6Gbps(DL)/650Mbps (UL)(RM500U-EA); 2.2 Gbps (DL)/575 Mbps (UL)(RM500U-CNV)
LTE(Mbps)		LTE-FDD: 600 (DL)/150 (UL)	LTE-FDD: 600 (DL)/150 (UL)
UMTS(Mbps)		WCDMA: 42.2 (DL)/11 (UL)	WCDMA: 42.2 (DL)/11 (UL)
SMS		•	•
Protocols		TCP/UDP/PPP/FTP/HTTP/HTTPS/FTPS/SSL/NTP	TCP/UDP/PPP/FTP/HTTP/HTTPS/FTPS/SSL/NTP
Interfaces			
(U)SIM		× 2, 1.8 V/ 3.0 V	× 2, 1.8 V/3.0 V
USB		2.0/3.0	2.0/3.0
PCIe		PCIe Gen2 × 1 Lane	PCIe Gen2 × 1 Lane
PCM		•	•
GPIO		•	•
RESET_N		•	•
Antenna		Cellular: × 4(RG500U-CN/RG500U-EB); Cellular: × 6(RG500U-EA/RG500U-LA)	Cellular: × 4
Enhanced features			
MIMO		DL 4 × 4 MIMO: n1/41/77/78/79, UL 2 × 2 MIMO: n41/77/78/79, DL 2 × 2 MIMO: n28 & LTE (RG500U-CN); DL 4 × 4 MIMO: n1/3/7/38/40/41/77/78/79[1], UL 2 × 2 MIMO: n38/40/41/77/78/79[1], DL 2 × 2 MIMO: n5[1]/8/20/28/66[1]/71*& LTE (RG500U-EA); DL 4 × 4 MIMO: n1/3/7/28/38/40/41/66/77/78, UL 2 × 2 MIMO: n38/40/41/77/78, DL 2 × 2 MIMO: n5/8/20 & LTE (RG500U-EB); DL 4 × 4 MIMO: n2/7/28/38/40/66/78, UL 2 × 2 MIMO: n38/40/78, DL 2 × 2 MIMO: n5/8/71 & LTE (RG500U-LA);	DL 4 × 4 MIMO: n1/3/7/28/66/38/40/41/77/78, UL 2 × 2 MIMO: n38/40/41/77/78, DL 2 × 2 MIMO: n5/8/20 & LTE (RM500U-EA); DL 4 × 4 MIMO: n1/28A/41/77/78/79, UL 2 × 2 MIMO: n41/77/78/79, DL 2 × 2 MIMO: n3/5/8 (RM500U-CNV)
Voice		Optional	Optional
DTMF		Dual-tone Multi-frequency	Dual-tone Multi-frequency
DFOTA		Delta Firmware over the Air	Delta Firmware over the Air
GNSS		/	/
(U)SIM card detection		•	•
Electrical features			
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8 V	3.3 V ~ 4.4 V, typ. 3.7 V
Power consumption		70 μA @ Power off; 3.5 mA @ Sleep; 68 mA @ USB 3.0, idle(RG500U-CN); 86 μA @ Power off; 4.4 mA @ Sleep; 56 mA @ USB 2.0, idle; 70 mA @ USB 3.0, idle(RG500U-EA); 88 μA @ Power off; 5.0 mA @ Sleep; 56 mA @ USB 2.0, idle; 70 mA @ USB 3.0, idle(RG500U-EB); 82 μA @ Power off; 5.0 mA @ Sleep; 60 mA @ USB 2.0, idle; 73 mA @ USB 3.0, idle(RG500U-LA)	99 μA @ Power off; 4.8 mA @ Sleep; 62 mA @USB 2.0, idle; 75.5 mA @ USB 3.0, idle(RM500U-EA); 78 μA @ Power off; 5.1 mA @ Sleep; 57 mA @USB 2.0, idle; 71 mA @ USB 3.0, idle(RM500U-CNV)
Software features			
USB serial driver		Windows 7*/8/8.1/10/11, Linux 2.6~6.5, Android 4.x~13.x	Windows 7*/8/8.1/10/11, Linux 2.6~6.5, Android 4.x~13.x
GNSS driver		/	/
RIL driver		Android 4.x~13.x	Android 4.x~13.x
RNDIS driver		Windows 7*/8/8.1/10/11, Linux 2.6~6.5	Windows 7*/8/8.1/10/11, Linux 2.6~6.5
MBIM driver		/	/
ECM driver		Linux 2.6~6.5	Linux 2.6~6.5
NCM driver		Linux 2.6~6.5	Linux 2.6~6.5
PCIe driver		Linux 3.10~6.5	Linux 3.10~6.5
Certifications[3]		China Telecom/China Mobile*/China Unicom*/CCC/SRRC/NAL/GCF/CE/RCM/FCC	China Telecom*/China Mobile*/China Unicom*/CCC/SRRC/NAL/CE/RCM
Recommended applications		Wireless routers, CPE, industrial routers, home gateways, etc. (RG500U-CN/RG500U-EA); used in vertical industries such as smart energy, internet of vehicles, industrial internet, telemedicine, smart education, high-definition video, smart city, and home entertainment (RG500U-EB/RG500U-LA);	Wireless routers, CPE, industrial routers, home gateways, etc. (RM500U-CNV) industrial routers, home gateways, set-top boxes, industrial PDAs and digital labels (RM500U-EA)

Note 1: OC optional.
Note 2: means the data transmission is theoretical data rate and depends on network conditions.
Note 3: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

5G NR modules

Product		RG200U-CN	RG200U-CN Mini PCIe
			
Form factor		LGA	Mini PCIe
Dimensions (mm)		41.0 × 30.0× 2.85	50.95 × 30.7 × 5.3
5G		Sub-6 GHz	Sub-6 GHz
Frequency bands (MHz)	-CN(EMEA/APAC)	5G NR: n1[1]/3[1]/5[1]/8[1]/28[1]/41/77[1]/78/79[1]; LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/8	5G NR: n1[1]/3[1]/5[1]/8[1]/28[1]/41/77[1]/78/79[1]; LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/8
	-EA(EMEA/APAC/Latin America)	/	/
	-CNV(EMEA/APAC)	/	/
Weight (approx.) (g)		8.2	13.4
Operating temperature		-30° C ~ +75° C	-30° C ~ +75° 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 transmission (Max.)[2]			
5G SA Sub-6		2 Gbps (DL)/1 Gbps (UL)	2 Gbps (DL)/1 Gbps (UL)
5G NSA Sub-6		2.2 Gbps (DL)/575 Mbps (UL)	2.2 Gbps (DL)/575 Mbps (UL)
LTE(Mbps)		LTE-FDD: 600 (DL)/150 (UL)	LTE-FDD: 600 (DL)/150 (UL)
UMTS(Mbps)		WCDMA: 42.2 (DL)/11 (UL)	WCDMA: 42.2 (DL)/11 (UL)
SMS		•	•
Protocols		TCP/UDP/PPP/FTP/HTTP/HTTPS/FTPS/SSL/NTP	TCP/UDP/PPP/FTP/HTTP/HTTPS/FTPS/SSL/NTP
Interfaces			
(U)SIM		× 2, 1.8 V/ 3.0 V	× 2, 1.8 V/ 3.0 V
USB		2.0/3.0	2.0/3.0
PCIe		PCIe Gen2 × 1 Lane	/
PCM		•	•
GPIO		•	•
RESET_N		•	•
Antenna		Cellular: × 4	Cellular: × 4
Enhanced features			
MIMO		DL 4 × 4 MIMO: n1/41/77/78/79[1], UL 2 × 2 MIMO: n77/78/79[1], DL 2 × 2 MIMO: n3[1]/5/8/28 & LTE	DL 4 × 4 MIMO: n1/41/77/78/79[1], UL 2 × 2 MIMO: n77/78/79[1], DL 2 × 2 MIMO: n3[1]/5/8/28 & LTE
Voice		Optional	Optional
DTMF		Dual-tone Multi-frequency	/
DFOTA		Delta Firmware over the Air	Delta Firmware over the Air
GNSS		/	/
(U)SIM card detection		•	•
Electrical features			
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8 V	3.3 V ~ 4.4 V, typ. 3.8 V
Power consumption		80 μA @ Power off 3.3 mA @ Sleep, Typical 58.5 mA @ USB 2.0, idle 73.0mA @ USB 3.0, idle	3.5 mA @ Sleep, Typical 54 mA @ USB 2.0, idle 73 mA @ USB 3.0, idle
Software features			
USB serial driver		Windows 7*/8/8.1/10/11, Linux 2.6~6.5, Android 4.x~13.x	Windows 7*/8/8.1/10/11 Linux 2.6~6.5 Android 4.x~13.x
GNSS driver		/	/
RIL driver		Android 4.x~13.x	Android 4.x~13.x
RNDIS driver		Windows 7*/8/8.1/10/11, Linux 2.6~6.5	Windows 7*/8/8.1/10/11, Linux 2.6~6.5
MBIM driver		/	/
ECM driver		Linux 2.6~6.5	Linux 2.6~6.5
NCM driver		Linux 2.6~6.5	Linux 2.6~6.5
PCIe driver		Linux 3.10~6.5	Linux 3.10~6.5
Certifications[3]		China Telecom/China Mobile*/China Unicom*/CCC/SRRC/NAL	China Telecom/China Mobile*/China Unicom*/CCC/SRRC/NAL
Recommended applications		Wireless routers, CPE, industrial routers, home gateways, etc.	Wireless routers, CPE, industrial routers, home gateways, etc.

Note 1: OC optional.
Note 2: means the data transmission is theoretical data rate and depends on network conditions.
Note 3: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

5G RedCap modules

Product		RG255C	RG255C M.2	RG255C Mini PCIe	RM255C-GL*
					
Form factor		LGA	M.2	Mini PCIe	M.2
Dimensions (mm)		29.0 × 32.0 × 2.4	30.0 × 42.0 × 3.25	30.0 × 50.95 × 4.95	42.0 × 30.0 × 2.3
5G		5G RedCap	5G RedCap	5G RedCap	5G RedCap
Frequency bands (MHz)	-NA*(North America)	5G: n2/5/7/12/13/14/25/26/30/38/41/48/66/70/71/77/78; LTE-FDD: B2/4/5/7/12/13/14/17/25/26/30/66/71; LTE-TDD: B38/41/42/43/48	/	/	/
	-EU*(EMEA/APAC[1]/Brazil)	5G: n1/3/5/7/8/20/28/38/40/41/77/78; LTE-FDD: B1/3/5/7/8/20/28/71; LTE-TDD: B38/40/41/42/43	/	/	/
	-GL(Global)	5G SA: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/30/38/40/41/48/66/70/71/77/78/79; LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/30/66/70/71; LTE-TDD: B34/38/39/40/41/42/43/48	5G SA: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/30/38/40/41/48/66/70/71/77/78/79; LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/30/66/71; LTE-TDD: B34/38/39/40/41/42/43/48	5G SA: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/30/38/40/41/48/66/70/71/77/78/79; LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/30/66/71; LTE-TDD: B34/38/39/40/41/42/43/48	5G SA: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/30/38/40/41/48/66/70/71/77/78; LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/30/66/71; LTE-TDD: B34/38/39/40/41/42/43/48
Weight (approx.) (g)		5.2	8.4	11	6.0
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 (Max.)					
5G(Mbps)		223 (DL)/123 (UL)	223 (DL)/123 (UL)	223 (DL)/123 (UL)	223 (DL)/123 (UL)
LTE(Mbps)		195 (DL)/105 (UL)	195 (DL)/105 (UL)	195 (DL)/105 (UL)	195 (DL)/105 (UL)
UMTS(Mbps)		/	/	/	/
SMS		Support SGS, IMS and NAS SMS	Support SGS, IMS and NAS SMS	Support SGS, IMS and NAS SMS	Support SGS, IMS and NAS SMS
Protocols		TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/MQTT(S)/SMTP(S)/NTP/PING/NITZ/LwM2M protocols	TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/MQTT(S)/SMTP(S)/NTP/PING/NITZ/LwM2M protocols	TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/MQTT(S)/SMTP(S)/NTP/PING/NITZ/LwM2M protocols	TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/MQTT(S)/SMTP(S)/NTP/PING/NITZ/LwM2M protocols
Interfaces					
(U)SIM		× 2	× 2	× 2	× 2
UART		× 2	/	× 1	/
USB		2.0	2.0	2.0	2.0
PCIe		PCIe Gen2 × 1 Lane	PCIe Gen2 × 1 Lane	/	PCIe Gen2 × 1 Lane
PCM		•	•	•	•
GPIO		•	/	/	/
RESET_N		•	•	•	•
Antenna		Cellular: × 2, GNSS: × 1	Cellular: × 2, GNSS: × 1	Cellular: × 2, GNSS: × 1	Cellular: × 2, GNSS: × 1(Optional)
Enhanced features					
MIMO		/	/	/	/
Voice		Optional	Optional	Optional	/
DTMF		•	•	•	•
DFOTA		•	•	•	•
GNSS		GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS
(U)SIM card detection		•	•	•	•
Electrical features					
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8 V	3.135 V ~ 4.4 V, typ. 3.7 V	3.0 V ~ 3.6 V, typ. 3.3 V	3.135 V ~ 4.4 V, typ. 3.7 V
Power consumption		0.05 mA@Power off, 1.8 mA@ Sleep, Typical (RG255C-GL) TBD(RG255C-NA*/RG255C-EU*)	0.13 mA@Power off, 3 mA@ Sleep, Typical	4 mA@ Sleep, Typical	TBD
Software features					
USB serial driver		Windows 8.1/10/11, linux 2.6~6.7, Android 4.x~ 13	Windows 8.1/10/11, linux 2.6~6.7, Android 4.x~ 13	Windows 8.1/10/11, linux 2.6~6.7, Android 4.x~ 13	Windows 8.1/10/11, linux 2.6~6.7, Android 4.x~ 13
GNSS driver		Android 4.x~ 13	Android 4.x~ 13	Android 4.x~ 13	Android 4.x~ 13
RIL driver		Android 4.x~ 13	Android 4.x~ 13	Android 4.x~ 13	Android 4.x~ 13
NDIS driver		Windows 8.1/10/11	Windows 8.1/10/11	Windows 8.1/10/11	Windows 8.1/10/11
MBIM driver		Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7	Windows 8.1/10/11, Linux 3.18~6.7
Gobinet driver		Linux 2.6~ 6.7	Linux 2.6~ 6.7	Linux 2.6~ 6.7	Linux 2.6~ 6.7
QMI_WWAN driver		Linux 3.4~ 6.7	Linux 3.4~ 6.7	Linux 3.4~ 6.7	Linux 3.4~ 6.7
PCIe driver		Windows 10/11, Linux 3.10- 6.7	Windows 10/11, Linux 3.10- 6.7	Windows 10/11, Linux 3.10- 6.7	Windows 10/11, Linux 3.10- 6.7
Certifications[2]		FCC/IC/PTCRB/CE/RCM/GCF/Verizon*/AT&T*/T-Mobile*	CE/RCM/FCC/IC; (GCF/PTCRB/Verizon*/AT&T*/T-Mobile* refer to RG255C-GL)	CE/RCM/FCC/IC; (GCF/PTCRB/Verizon*/AT&T*/T-Mobile* refer to RG255C-GL)	FCC*/IC*/CE*/RCM*/GCF*/PTCRB*/AT&T*/Verizon*/T-Mobile*
Recommended applications		Industrial routers, industrial PDAs, rugged tablet PCs, wearable devices and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs, wearable devices and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs, wearable devices and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs, wearable devices and digital signage

Note 1: Excl. China/Japan.
Note 2: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

5G RedCap modules

Product		RG255AA-CN	RG255AA-CN M.2
			
Form factor		LGA	M.2
Dimensions (mm)		29.0 × 32.0 × 2.4	30.0 × 52.0 × 3.25
5G		5G RedCap	5G RedCap
Frequency bands (MHz)	-CN(China)	5G SA: n1/3/5/8/28/40/41/78/79; LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41	5G SA: n1/3/5/8/28/40/41/78/79; LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41
Weight (approx.) (g)		4.7	/
Operating temperature		-35°C ~ +75°C	-35°C ~ +75°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 transmission (Max.)			
5G(Mbps)		226 (DL)/120 (UL)	226 (DL)/120 (UL)
LTE(Mbps)		150 (DL)/50 (UL)	150 (DL)/50 (UL)
UMTS(Mbps)		/	/
SMS		*	*
Protocols		TCP/UDP/PPP/FTP/HTTP/HTTPS/FTPS/SSL/NTP	TCP/UDP/PPP/FTP/HTTP/HTTPS/FTPS/SSL/NTP
Interfaces			
(U)SIM		× 2	× 2
UART		× 2	/
USB		× 1	× 1
PCIe		× 1	× 1
PCM		× 1	× 1
GPIO		•	•
RESET_N		•	•
Antenna		Cellular: × 2	Cellular: × 2
Enhanced features			
MIMO		DL: 2 × 2, UL: 1 × 1	DL: 2 × 2, UL: 1 × 1
Voice		•	•
DTMF		•	•
DFOTA		•	•
GNSS		/	/
(U)SIM card detection		•	•
Electrical features			
Supply voltage range		3.4 V ~ 4.3 V, typ. 3.8 V	3.4 V ~ 4.3 V, typ. 3.8 V
Power consumption		TBD	TBD
Software features			
USB serial driver		Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~13.x	Windows 8.1/10/11, Linux 2.6~6.7, Android 4.x ~13.x
RIL driver		Android 4.x ~13.x	Android 4.x ~13.x
USB RNDIS driver		Windows 8.1/10/11, Linux 2.6~6.7	Windows 8.1/10/11, Linux 2.6~6.7
USB ECM driver		Linux 2.6~6.7	Linux 2.6~6.7
Certifications		CCC*/SRRC*/NAL*	CCC*/SRRC*/NAL*
Recommended applications		CPE, MiFi, electric power	Cloud computer

* Planning/ Under development/ In progress
• Supported

5G RedCap modules

Product	RG255G*	RG255G M.2*	RG255G Mini PCIe*
			
Form factor	LGA	M.2	Mini PCIe
Dimensions (mm)	29.0 × 32.0 × 2.4	30.0 × 42.0 × 3.25	30.0 × 50.95 × 4.95
5G	5G RedCap	5G RedCap	5G RedCap
Frequency bands (MHz) -NA*(North America)	5G SA: n2/5/7/12/13/14/25/26/30/38/41/48/66/71/77/78; LTE-FDD: B2/4/5/7/12/13/14/17/25/26/30/66/71; LTE-TDD: 38/41/42/43/48	/	/
Frequency bands (MHz) -EU*(EMEA/APAC/Brazil)	5G SA: n1/3/5/7/8/20/28/38/40/41/77/78; LTE-FDD: B1/3/5/8/20/28/71; LTE-TDD: B38/40/41/42/43	/	/
Frequency bands (MHz) -CN*(China)	5G SA: n1/5/8/28/41/78/79(optinal); LTE-FDD: B1/3/5/8; LTE-TDD: B38/39/40/41	/	/
Frequency bands (MHz) -GL*(Global)	5G SA: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/30/38/40/41/48/66/71/77/78/79(optinal); LTE-FDD: B1/2/3/4/5/7/8/12(17)/13/14/18/19/20/25/26/28/30/66/71; LTE-TDD: 34/38/39/40/41/42/43/48	5G SA: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/30/38/40/41/48/66/71/77/78/79(optinal); LTE-FDD: B1/2/3/4/5/7/8/12(17)/13/14/18/19/20/25/26/28/30/66/71; LTE-TDD: 34/38/39/40/41/42/43/48	5G SA: n1/2/3/5/7/8/12/13/14/18/20/25/26/28/30/38/40/41/48/66/71/77/78/79(optinal); LTE-FDD: B1/2/3/4/5/7/8/12(17)/13/14/18/19/20/25/26/28/30/66/71; LTE-TDD: 34/38/39/40/41/42/43/48
Weight (approx.) (g)	4.85	TBD	TBD
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 transmission (Max.)			
5G(Mbps)	227 (DL)/122 (UL)	227 (DL)/122 (UL)	227 (DL)/122 (UL)
LTE(Mbps)	150 (DL)/75 (UL)	150 (DL)/75 (UL)	150 (DL)/75 (UL)
SMS	•	•	•
Interfaces			
(U)SIM	× 2	× 2	× 1
UART	× 2	× 2	× 2
USB	USB 2.0 × 1	USB 2.0 × 1	USB 2.0 × 1
PCIe	PCIe 1.0* × 1	PCIe 1.0* × 1	/
PCM	× 1	× 1	× 1
I2C*	× 1	/	× 1
SPI*	× 1	/	/
GPIO	•	•	•
ADC	× 2	/	/
RESET_N	•	•	•
Antenna	Cellular × 2	/	/
Enhanced features			
MIMO	DL: 2 × 2, UL: 1 × 1	DL: 2 × 2, UL: 1 × 1	DL: 2 × 2, UL: 1 × 1
FOTA*	•	•	•
GNSS	•	•	•
(U)SIM Card Detection*	•	•	•
Electrical features			
Supply voltage range	3.3 V ~ 4.3 V, typ. 3.8 V	3.135 V ~ 4.4 V, typ. 3.7 V	3.0 V ~ 3.6 V, typ. 3.3 V
Power consumption	0.06 mA@ Power Off, 1.89 mA@ sleep(Typical)	TBD	TBD
Software features			
USB serial driver	Windows 8.1/10/11; Linux 2.6~6.7; Android 4.x~13.x	/	/
RIL driver*	•	•	•
Certifications[1]	FCC*/ IC*/ PTCRB* /CE*/ RCM*/ GCF* /CCC*/NAL*	/	/
Recommended applications	Industrial routers, industrial PDAs, rugged tablet PCs, wearable devices and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs, wearable devices and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs, wearable devices and digital signage

Note 1: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

LTE-A modules

Product		EG060K	EG065K
			
Form factor		LGA	LGA
Dimensions (mm)		37.0 × 39.5 × 2.8	28.0 × 31.0 × 2.4
4G		LTE Cat 6	LTE Cat 6
Frequency bands (MHz)	-E (EMEA/ Australia/ Brazil)	/	/
	-EA (EMEA/ Australia/ Brazil)	LTE-FDD: B1/3/5/7/8/20/28/32[1]; LTE-TDD: B38/40/41/42(optional)/43(optional); Up to 2 × CA: B1+B1/3/5/7/8/20/28; B3+B3/5/7/8/20/28; B7+B5/7/8/20/28; B20+B32[1]; B38+B38; B40+B40; B41+B41 WCDMA: B1/3/5/8	LTE-FDD: B1/2/3/4/5/7/8/20/28; LTE-TDD: B40; WCDMA*: B1/2/3/4/5/8
	-NA(North America)	LTE-FDD: B2/4/5/7/12/13/14/25/26/29/30/66/71; LTE-TDD: B41/48	LTE-FDD: B2/4/5/7/12/13/14/25/26/30/66
	-GT(Global)	LTE-TDD: B40/41/42/43/48	/
	-JP(Japan)	LTE-FDD: B1/3/5/8/18/19/26/28; LTE-TDD: B41; WCDMA: B1/3/5/6/8/9/19	/
	-LA(Latin America)	LTE-FDD: B2/4/5/7/8/25/28/66; LTE-TDD: B42/B43; WCDMA: B2/B4/B5/B8	/
Weight (approx.) (g)		9.1	5.3
Operating temperature		-30°C ~ +75°C	-30°C ~ +75°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 transmission (Max.)			
LTE(Mbps)		LTE-FDD: 300 (DL)/50 (UL); LTE-TDD: 226 (DL)/28 (UL)	LTE-FDD: 300 (DL)/75 (UL)
UMTS		DC-HSDPA: 42 Mbps (DL)/HSUPA: 5.76 Mbps (UL) WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL)/HSUPA: 5.76 Mbps (UL); WCDMA*: 384 Kbps (DL/UL) (EG065K-EA)
SMS		•	•
Protocols		QMI/MBIM/NITZ/HTTP/HTTPS/FTP/LwM2M*/PING*	QMI/MBIM/NITZ/HTTP/HTTPS/FTP/LwM2M*/PING*
Interfaces			
USB		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		TBD	× 1
GRFC		TBD	× 4
I2C		× 1	× 1
(U)SIM		× 2, 1.8 V/ 3.0 V	× 2, 1.8 V/ 3.0 V
eSIM		Optional	/
GPIO		× 3	× 5
UART		× 3	× 2
ADC		× 2	× 1
RESET_N		•	× 1
PCIe		Optional	Optional
Antenna		Main, Diversity and GNSS	× 2(Main antenna); × 2(Diversity antennas)
Enhanced features			
MIMO		2 × 2, 4 × 2, 4 × 4 DL	2 × 2, 4 × 2 DL
eCall		Emergency services	Emergency services*
Voice		Optional	Optional
DTMF		Dual-tone Multi-frequency	Dual-tone Multi-frequency*
DFOTA		Delta Firmware over the Air	Delta Firmware over the Air
FOTA		•	/
GNSS		GPS/GLONASS/BeiDou/Galileo/QZSS	/
(U)SIM card detection		•	•
Electrical features			
Supply voltage range		3.3 V ~ 4.4 V, typ. 3.8 V	3.3 V ~ 4.5 V, typ. 3.8 V
Power consumption		20 μA @Power off 2.47 mA @LTE sleep(PF=128) 4.18 mA@LTE sleep(PF=64) 38.8 mA@Idle	26 μA @ Power off, 3.1 mA @ Sleep (PF = 128), 4.0 mA @ Sleep (PF = 64), 12.8 mA @ Idle (EG065K-NA); 26 μA @ Power off, 2.7 mA @ Sleep (PF = 128), 3.4 mA @ Sleep (PF = 64), 12.6 mA @ Idle (EG065K-EA)
Software features			
USB serial driver		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*/8/8.1/10/11, Linux 2.6~5.18, Android 4.x~12.x
RIL driver		Android 4.x/5.x/6.x/7.x/8.x	RIL driver*: Android 4.x~12.x
NDIS driver		Windows 7*/8/8.1/10	Windows 7*/8/8.1/10/11
RNDIS driver		/	/
ECM driver		Linux 2.6 or later	ECM driver*: Linux 2.6~5.18
Gobinet driver		Linux 2.6 or later	Linux 2.6~5.18
QMI_WWAN driver		Linux 3.4 or later	Linux 3.4~5.18
Certifications[2]		CE/RCM/Verizon/AT&T/T-Mobile/GCF/PTCRB/FCC/IC	British Telecom/Telefónica/Telstra/Deutsche Telekom/GCF/CE/RCM/Anatel/JATE/TELEC/KC/AT&T/ Firstnet/Verizon/Telus/PTCRB/FCC/IC
Recommended applications		Routers, home gateways, set-top boxes, PDAs, tablet PCs and digital signage	Routers, home gateways, set-top boxes, PDAs, tablet PCs and digital signage

Note 1: B32 is only for secondary component carrier.
Note 2: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

LTE-A modules

Product		EG060W-EA
		
Form factor		LGA
Dimensions (mm)		37.0 × 39.5 x 3.05
4G		LTE Cat 6
Frequency bands (MHz)	-EA (EMEA/ APAC[1])	LTE-FDD: B1/3/5/7/8/20/28/32; LTE-TDD: B38/40/41/42[2]/43[2]; 2 × CA: B1+B1/3/5/7/8/20/28/38[2]/40[2]/41[2]/42[2]/43[2]; B3+B3/5/7/8/20/28/38[2]/40[2]/41[2]/42[2]/43[2]; B5+B5[2]/7/38[2]/40/41; B7+B7/8/20/28/32[2]/42[2]; B8+B8[2]/32[2]/38[2]/40/41/42[2]; B20+B32/38/40/41[2]/42[2]/43[2]; B28+B28[2]/32[2]/38[2]/40/41/B42[2]; B38+B38; B40+B40; B41+B41; B42+B42[2]; B43+B43[2]; WCDMA: B1/3[2]/5/8
Weight (approx.) (g)		8.2
Operating temperature		-20°C ~ +70°C
Extended temperature		-25°C ~ +75°C
Control via AT commands		3GPP TS27.007 and Quectel Enhanced AT Commands
Data transmission (Max.)		
LTE(Mbps)		LTE-FDD: 300(DL)/50(UL) LTE-TDD: 220(DL)/30(UL)
UMTS		DC-HSDPA: 42 Mbps(DL) HSUPA: 5.76 Mbps (UL) WCDMA: 384 Kbps(DL/UL)
SMS		•
Protocols		TCP/PPP/UDP/FTP*/HTTP/SSL/HTTPS/NTP*/PING/MMS*/SMTPS*/FTPS*/SMTP*
Interfaces		
USB		2.0/3.0, Supports master* and Slave modes
PCM		× 1
SPI		× 1
SDIO		× 1
I2C		× 1
(U)SIM		× 1
RGMII		× 1
UART		× 2
ADC		× 2
RESET_N		× 1
PCIe		× 2
Antenna		× 2
Enhanced features		
MIMO		•
eCall		•
Voice		•
DTMF		•
DFOTA		/
FOTA		•
GNSS		/
(U)SIM card detection		•
Electrical features		
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8 V
Power consumption		56 μA @ Power off; 5.42 mA @ Sleep; 58.63 mA @ Idle
Software features		
USB serial driver		Windows 7*/8/8.1/10/11, Linux 2.6~6.5, Android 4.x~13.x
RIL driver		Android 4.x~13.x
NDIS driver		/
RNDIS driver		Windows 7*/8/8.1/10/11, Linux 2.6~6.5
ECM driver		Linux 2.6~6.5
Gobinet driver		/
QMI_WWAN driver		/
Certifications		CE
Recommended applications		Routers, home gateways, set-top boxes, PDAs, tablet PCs and digital signage

Note 1: Excl. China/Japan.
Note 2: Optional.

* Planning/ Under development/ In progress
• Supported

LTE-A modules

Product		EG120K	EG12	EG18
				
Form factor		LGA	LGA	LGA
Dimensions (mm)		37.0 × 39.5 × 2.8	37.0 × 39.5 × 2.8	37.0 × 39.5 × 2.8
4G		LTE Cat 12	LTE Cat 12	LTE Cat 18
Frequency bands (MHz)	-GT (Global)	/	LTE-TDD: B42/43/48	/
	-EA (EMEA/ Australia/ Brazil)	LTE-FDD: B1/3/5/7/8/20/28/32(optional); LTE-TDD: B38/40/41/42(optional)/43(optional); Up to 3 × CA: Intra-band and Inter-band; WCDMA: B1/3/5/8	LTE-FDD: B1/3/5/7/8/20/28; LTE-TDD: B38/40/41; Up to 3 × CA: Intra-band and Inter-band ; WCDMA: B1/3/5/8	LTE-FDD: B1/3/5/7/8/20/28; LTE-TDD: B38/40/41; Up to 3 × CA: Intra-band and Inter-band; WCDMA: B1/3/5/8
	-NA (North America)	-NA(North America) LTE-FDD: B2/4/5/7/12/13/14/25/26/29/30/66/71; LTE-TDD: B41/48	/	LTE-FDD: B2/4/5/7/12/13/14/17[1]/25/26/29/30/66/71; LTE-TDD: B41; Up to 5 × CA: Intra-band and Inter-band; WCDMA: B2/4/5
	-LA* (Latin America) (planning)	LTE-FDD: B2/4/5/7/8/25/28/66; LTE-TDD: B42/43; WCDMA: B2/4/5/8	/	/
	-JP(Japan)	LTE-FDD: B1/3/5/8/18/19/26/28; LTE-TDD: B41; WCDMA: B1/3/5/6/8/9/19	/	/
Weight (approx.) (g)		9.1	9	9
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 transmission (Max.)				
LTE		LTE-FDD: 600 Mbps (DL)/150 Mbps(UL); LTE-TDD: 430 Mbps (DL)/90 Mbps (UL)	LTE-FDD: 600 Mbps (DL)/150 Mbps(UL); LTE-TDD: 430 Mbps (DL)/90 Mbps(UL)	LTE-FDD: 1.2 Gbps (DL)/150 Mbps (UL); LTE-TDD: 573 Mbps (DL)/90 Mbps (UL)
UMTS		DC-HSDPA: 42 Mbps (DL)/HSUPA: 11.2 Mbps (UL) WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL)/HSUPA: 11.2 Mbps (UL) WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL)/HSUPA: 11.2 Mbps (UL) WCDMA: 384 Kbps (DL/UL)
SMS		•	•	•
Protocols		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, Supports master* and Slave modes	2.0/3.0, Slave mode	2.0/3.0, Slave mode
PCM		× 1	•	•
I2C		× 1	× 1	× 1
(U)SIM		1.8 V/ 3.0 V	× 2, 1.8 V/ 3.0 V	× 2, 1.8 V/ 3.0 V
eSIM		Optional	/	/
GPIO		× 3	× 2	× 2
UART		× 2	× 3	× 3
ADC		•	× 2	× 2
SPI		× 1	× 1 (optional)	× 1 (optional)
SD card		•	•	•
RESET_N		•	•	•
PCIe		Optional	Optional	Optional
RGMII		/	/	/
Antenna		Main, Diversity and GNSS	Main, Diversity and GNSS	Main, Diversity and GNSS
Enhanced features				
MIMO		2 × 2, 4 × 2, 4 x 4 DL	2 × 2, 4 × 2, 4 × 4 DL	2 × 2, 4 × 2, 4 × 4 DL
eCall		Emergency services*	•	•
Voice		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/QZSS	GPS/GLONASS/BeiDou/Galileo/QZSS	GPS/GLONASS/BeiDou/Galileo/QZSS
(U)SIM card detection		•	•	•
Electrical features				
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8 V	3.3 V ~ 4.3 V, typ. 3.8 V	3.3 V ~ 4.3 V, typ. 3.8 V
Power consumption		20 μA @Power off 2.14 mA @LTE sleep(PF=128) 3.55 mA@LTE sleep(PF=64) 37.4 mA@Idle	20 μA @Power off 1.83 mA @Sleep, Typ. 9.41 mA @Idle	20 μA @Power off 1.81 mA @Sleep, Typ. 9.38 mA @Idle
Software features				
USB serial driver		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 2.6/3.x/4.x/5.x, Android 4.x/5.x/6.x/7.x/8.x/9.x
GNSS driver		/	/	/
RIL driver		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
NDIS driver		Windows 7*/8/8.1/10	Windows: 7*/8/8.1/10	Windows 7*/8/8.1/10
MBIM driver		Windows 7*/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
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
PCIe driver		/	/	/
Certifications[2]		CE/RCM/Verizon/AT&T/T-Mobile/GCF/PTCRB/FCC/IC	FCC/GCF/CE/RCM	Telstra/GCF/CE/RCM/Verizon/AT&T/T-Mobile/PTCRB/FCC/IC/ USCC
Recommended applications		Routers, home gateways, set-top boxes, PDAs, tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage	Industrial routers, industrial PDAs, rugged tablet PCs and digital signage

Note 1: LTE-FDD B17 is supported through MFBI+B12.
Note 2: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

LTE-A modules

Product		EM05	EM060K
			
Form factor		M.2	M.2
Dimensions (mm)		30.0 × 42.0 × 2.3	30.0 × 42.0 × 2.3
4G		LTE Cat 4	LTE Cat 6
Frequency bands (MHz)	-G/GL (Global)	-G(Global) LTE: B1/2/3/4/5/7/8/12/13/14/18/19/20/25/26/28/66/71/38/39/40/41; WCDMA: B1/2/4/5/6/8/19	-GL(Global) LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29[2]/30/32[1]/66/71; LTE-TDD: B34/38/39/40/41/42/43/46[1] (LAA)/48 (CBRS); Up to 2 ×CA: B2+B2/5/12/13/29[3];B4+B4/5/12/13/29[3]; B5+B5/7/25/30/66; B7+B7/12/26; B12+B12/25/30/66; B13+B66; B25+B25/26; B30+B29; B66+B29/66; B41+B41; WCDMA: B1/2/3/4/5/6/8/19
	-E (EMEA/ Australia/New Zealand	LTE-FDD: B1/3/7/8/20/28; LTE-TDD: B38/41; WCDMA: B1/8	/
	-EA (EMEA/ Australia/New Zealand)	/	LTE-FDD: B1/3/5/7/8/20/28/32/71[4]; LTE-TDD: 38/40/41/42[4]/43[4]; WCDMA: B1/3/5/8
	-A (North America)	/	-NA (North America) LTE-FDD: B2/4/5/7/12/13/14/17/25/26/29/30/66/71; LTE-TDD: B41/42/43/48
	-J (Japan)	/	/
	-CN (China/Thailand/ India)	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/5/8; EVDO/CDMA: BC0	/
Weight (approx.) (g)		6.0	6.2
Operating temperature		-30°C ~ +70°C	-25°C ~ +75°C
Extended temperature		-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
Data transmission (Max.)			
LTE(Mbps)		LTE-FDD: 150 (DL)/50 (UL); LTE-TDD: 130 (DL)/30 (UL)	LTE-FDD: 300 (DL)/50 (UL); LTE-TDD: 226 (DL)/28 (UL)
UMTS		DC-HSDPA: 42 Mbps (DL)/HSUPA: 5.76 Mbps (UL) WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL)/HSUPA: 5.76 Mbps (UL) WCDMA: 384 Kbps (DL/UL)
SMS		•	•
CDMA2000		EVDO: 3.1 Mbps (DL)/1.8 Mbps (UL) 1X Advanced: 307.2 Kbps (DL)/307.2 Kbps (UL)	/
Protocols		TCP/UDP/PPP/FTP/HTTP/NTP/PING/QMI/NITZ/SMTP/MMS/FTPS/SMTPS/SSL/FILE	QMI/MBIM/NITZ/HTTP/HTTPS/FTP/LwM2M*/PING*
Interfaces			
USB		2.0 hi-speed	2.0/3.0*, Slave mode
PCM		•	•
I2C		× 1	× 1
(U)SIM		1.8 V/ 3.0 V	× 2, 1.8 V/ 3.0 V
eSIM		/	× 1/ built-in eSIM (optional)
GPIO		× 1	MIPI interface
RESET_N		•	•
PCIe		/	Optional
Antenna		Main, Diversity and GNSS	Main, Diversity and GNSS
Enhanced features			
MIMO		DL MIMO, support Rx-diversity antenna	2 × 2, 4 × 2 DL
eCall*		/	Emergency services
Voice		•[4]	Optional
DTMF		/	Dual-tone Multi-frequency
DFOTA		•	Delta Firmware over the Air
GNSS		Optional	GPS/ GLONASS/ BeiDou/ Galileo/ QZSS
FOTA		/	/
(U)SIM card detection		•	•
Electrical features			
Supply voltage range		3.135 V ~ 4.4 V, typ. 3.3 V	3.135 V ~ 4.4 V, typ. 3.7 V
Power consumption		5 μA @Power off/3.3 mA(PF=128) @LTE sleep/ 20 mA @Idle	0.07μA@Power off; 1.80mA @Sleep, Typ. ; 40 mA @Idle (EM060K-NA) 0.07 mA@Power off; 3.47 mA @Sleep, Typ. ; 38 mA @Idle(EM060K-GL) 0.07μA@Power off ; 1.86mA@Sleep, Typ. ; 38mA@Idle (EM060K-EA)
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, 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/10.x
MBIM driver		Windows 8/8.1/10, Linux3.18~5.4	Windows 10
NDIS driver		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
QMI_WWAN driver		Linux 3.4~5.4	Linux 3.x (3.4 or later)/4.x/5.x
Certifications[5]		CCC/SRRC/NAL/CE/GCF/PTCRB/FCC/RCM	Verizon/AT&T/T-Mobile/NTT DOCOMO/KDDI/Vadafone/British Telecom/Orange/Deutsche Telekom/Telstra/Telefónica/Telus/GCF/PTCRB/NCC/CE/RCM/FCC/IC/JATE/TELEC/Anatel
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 support receiving only, and is only for secondary component carrier in 2×CA.
Note 4: Optional.
Note 5: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

LTE-A modules

Product		EM120K-GL	EM12-G	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/GL (Global)	LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29[2]/30/32[1]/66/71; LTE-TDD: 34/38/39/40/41/42/43/46[3] (LAA)/48 (CBRS); Up to 3 × CA: Intra-band and Inter-band; WCDMA: B1/2/3/4/5/6/8/19	LTE-FDD: B1/2/3/4/5/7/8/9/12/13/14/17/18/19/20/21/25/26/28/29[2]/30/32/66; LTE-TDD: B38/39/40/41; 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; WCDMA: B1/2/3/4/5/8/9/19	LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29[2]/30/32[1]/66; LTE-TDD: B38/39/40/41/42/43/46[3]/48(CBRS); Up to 3 × CA: Intra-band and Inter-band; WCDMA: B1/2/3/4/5/6/8/19	LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29[2]/30/32[1]/66; LTE-TDD: B38/39/40/41/42/43/46[3]/48(CBRS); Up to 3 × CA: Intra-band and Inter-band; WCDMA: B1/2/3/4/5/6/8/19	LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29[2]/30/32[1]/66; LTE-TDD: B38/39/40/41/42/43/46[3]/48(CBRS); Up to 5 × CA: Intra-band and Inter-band; WCDMA: B1/2/3/4/5/6/8/19
Weight (approx.) (g)		6.2	6.0	6.8	6.8	6.8
Operating temperature		-25°C ~ +75°C	-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
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 (Max.)						
LTE		LTE-FDD: 600 Mbps (DL)/ 150 Mbps (UL); LTE-TDD: 408 Mbps (DL)/ 90 Mbps (UL)	LTE-FDD: 600 Mbps (DL)/ 150 Mbps (UL); LTE-TDD: 430 Mbps (DL)/ 90 Mbps (UL)	LTE-FDD: 600 Mbps (DL)/ 150 Mbps (UL); LTE-TDD: 408 Mbps (DL)/ 90 Mbps (UL)	LTE-FDD: 600 Mbps (DL)/ 150 Mbps (UL); LTE-TDD: 408 Mbps (DL)/ 90 Mbps (UL)	LTE-FDD: 1.0 Gbps (DL)/ 150 Mbps (UL); LTE-TDD: 880 Mbps (DL)/ 90 Mbps (UL)
UMTS		DC-HSDPA: 42 Mbps (DL)/ HSUPA: 11.2 Mbps (UL) WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL)/ HSUPA: 5.76 Mbps (UL) WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL)/ HSUPA: 11.2 Mbps (UL) WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL)/ HSUPA: 11.2 Mbps (UL) WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL)/ HSUPA: 11.2 Mbps (UL) WCDMA: 384 Kbps (DL/UL)
SMS		•	•	•	•	•
Protocols		QMI/MBIM/NITZ/HTTP/HTTPS/FTP/ LwM2M*/PING*	QMI/MBIM/NITZ/HTTP/HTTPS/FTP/ LwM2M/PING	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, 1.8 V/ 3.0 V	× 2, 1.8 V/ 3.0 V	× 2, 1.8 V/ 3.0 V	× 2, 1.8 V/ 3.0 V	× 2, 1.8 V/ 3.0 V
eSIM		× 1/ built-in eSIM (optional)	external eSIM supported	× 1/ built-in eSIM (optional)	× 1/ built-in eSIM (optional)	x 1/ built-in eSIM (optional)
GPIO		MIPI interface	Optional	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		2 × 2, 4 × 2 DL	4× 2, 2 × 2 DL	2 × 2, 4 × 2 DL	2 × 2, 4 × 2 DL	2 × 2, 4 × 2, 4 × 4 DL
eCall*		Emergency services	Emergency services	Emergency services	Emergency services	Emergency services
Voice		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	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 V ~ 4.4 V, typ. 3.7 V	3.135 V ~ 4.4 V, typ. 3.7 V	3.135 V ~ 4.4 V, typ. 3.7 V	3.135 V ~ 4.4 V, typ. 3.7 V	3.135 V ~ 4.4 V, typ. 3.7 V
Power consumption		61 μA@Power off 2.58 mA @Sleep (AT+CFUN=0, USB Suspend) 17.35 mA @Idle(PF=64, USB Active)	56 μA@Power off 2.53 mA@Sleep(AT+CFUN=0, USB disconnected), 19.32 mA@Idle(PF=64, USB Active)	USB mode 66 μA @ Power off 1.84 mA @ Sleep (AT+CFUN=0, USB Suspend) 24.48 mA @ Idle (PF = 64, USB Active); PCIe only mode 66 μA @ Power off 2.35 mA @ Sleep (AT+CFUN=0, Modem standby) 15.05 mA @ Idle (PF = 64, PCIe Active)	USB mode 66 μA @ Power off 1.84 mA @ Sleep (AT+CFUN=0, USB Suspend) 24.48 mA @ Idle (PF = 64, USB Active); PCIe only mode 66 μA @ Power off 2.35 mA @ Sleep (AT+CFUN=0, Modem standby) 15.05 mA @ Idle (PF = 64, PCIe Active)	USB mode 66 μA @ Power off 1.78 mA @ Sleep (AT+CFUN=0, USB Suspend) 24.75 mA @ Idle (PF = 64, USB Active); PCIe only mode 66 μA @ Power off 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.x/5.x, Android 4.x/5.x/6.x/7.x/8.x/9.x	Windows: 7*/8/8.1/10/11 Linux: 2.6~5.X Android 4.x~12.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~12.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*/8/8.1/10/11	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		Verizon/AT&T/T-Mobile/Telstra/NTT DOCOMO/SoftBank/KDDI/CE/GCF/ PTCRB/FCC/IC/RCM/JATE/TELEC/NCC	Vodafone/TIM/Deutsche Telekom/ British Telecom/Telefónica/ Verizon/AT&T/T-Mobile/Sprint/ Rogers/Telus/Telstra/NTT DOCOMO/ SoftBank[4]/KDDI/CE/UKCA/GCF/PTCRB/ FCC/IC/Anatel/RCM/KC/JETE/TELEC/ ICASA/NCC/WHQL	Vodafone/Swisscom/British Telecom/Verizon/AT&T/ T-Mobile/ Sprint/Telstra/NTT DOCOMO/ SoftBank[4]/KDDI/China Mobile/China Unicom/CE/GCF/PTCRB/FCC/IC/ Anatel/IFETEL/RCM/KC/JATE/TELEC/ ICASA/NCC/CCC/SRRC/NAL	Verizon/AT&T/CE/GCF/PTCRB/FCC/IC/ RCM	Vodafone/Swisscom/British Telecom/Verizon/AT&T/ T-Mobile/ Sprint/Telstra/NTT DOCOMO/ SoftBank[4]/KDDI/China Mobile/China Unicom/CE/GCF/PTCRB/FCC/IC/ Anatel/IFETEL/RCM/KC/JATE/TELEC/ ICASA/NCC/CCC/SRRC/NAL
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.

* Planning/ Under development/ In progress
• Supported

LTE modules

Product		EC21/EC21 Mini PCIe	EC25/EC25 Mini PCIe	EC20-CE/EC20-CE Mini PCIe
				
Form factor		LCC (EC21); Mini PCIe (EC21 Mini PCIe)	LCC (EC25); Mini PCIe (EC25 Mini PCIe)	LCC (EC20-CE); Mini PCIe (EC20-CE Mini PCIe)
Dimensions (mm)		29.0 × 32.0 × 2.4 (EC21); 30.0 × 51.0 × 4.9 (EC21 Mini PCIe)	29.0 × 32.0 × 2.4 (EC25); 30.0 × 51.0 × 4.9 (EC25 Mini PCIe)	29.0 × 32.0 × 2.4 (EC20-CE); 30.0 × 51.0 × 4.9 (EC20-CE Mini PCIe)
LTE category		LTE Cat 1	LTE Cat 4	LTE Cat 4
Frequency bands(MHz)	-CE (China/India)	/	/	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/8; TD-SCDMA: B34/39; EVDO/CDMA: BC0; GSM: B3/8
	-E (EMEA/South Korea/ Thailand/India)	(EMEA/Thailand/India) LTE-FDD: B1/3/5/7/8/20; WCDMA: B1/5/8; GSM: B3/8	(EMEA/South Korea/Thailand/India) LTE-FDD: B1/3/5/7/8/20; LTE-TDD: B38/40/41; WCDMA: B1/5/8; GSM: B3/8	/
	-EM (EMEA)	/	LTE-FDD: B1/3/5/7/8/20/28; LTE-TDD: B38/40/41; WCDMA: B1/5/8; GSM/EDGE: B3/8	/
	-EU (EMEA/Thailand)	LTE-FDD: B1/3/7/8/20/28A; WCDMA: B1/8; GSM: B3/8	LTE-FDD: B1/3/7/8/20/28A; LTE-TDD: B38/40/41; WCDMA: B1/8 ; GSM: B3/8	/
	-EUX (EMEA/Thailand)	LTE-FDD: B1/3/7/8/20/28A; WCDMA: B1/8; GSM: B3/8	LTE-FDD: B1/3/7/8/20/28A; LTE-TDD: B38/40/41; WCDMA: B1/8 ; GSM: B3/8	/
	-V (Verizon)	LTE-FDD: B4/13	LTE-FDD: B4/13	/
	-A (AT&T/T-Mobile/Canada)	LTE-FDD: B2/4/12; WCDMA: B2/4/5	LTE-FDD: B2/4/12; WCDMA: B2/4/5	/
	-ADL(AT&T/T-Mobile)	/	LTE-FDD: B2/4/12	/
	-AF(AT&T/Verizon/T-Mobile)	/	LTE-FDD: B2/4/5/12/13/14/66/71; WCDMA: B2/4/5	/
	-AFDL (AT&T/Verizon/ T-Mobile)	/	LTE-FDD: B2/4/5/12/13/14/66/71	/
	-AFX (AT&T/Verizon)	/	LTE-FDD: B2/4/5/12/13/14/66/71; WCDMA: B2/4/5	/
	-AFXD (AT&T/Verizon/ T-Mobile)	/	LTE-FDD: B2/4/5/12/13/14/66/71; WCDMA: B2/4/5	/
	-AU (Latin America/ANZ)	LTE-FDD: B1/2[2]/3/4/5/7/8/28; LTE-FDD: B40; WCDMA: B1/2/5/8; GSM: B2/3/5/8	LTE-FDD: B1/2[2]/3/4/5/7/8/28; LTE-TDD: B40; WCDMA: B1/2/5/8; GSM: B2/3/5/8	/
	-AUX (Latin America/ANZ)	LTE-FDD: B1/2[2]/3/4/5/7/8/28; LTE-TDD: B40; WCDMA: B1/2/4/5/8; GSM: B2/3/5/8	LTE-FDD: B1/2[2]/3/4/5/7/8/28; LTE-TDD: B40; WCDMA: B1/2/4/5/8 ; GSM: B2/3/5/8	/
	-AUT (Australia)[1]	LTE-FDD: B1/3/5/7/28; WCDMA: B1/5	/	/
	-J (Japan)	LTE-FDD: B1/3/8/18/19/26	LTE-FDD: B1/3/8/18/19/26; LTE-TDD: B41; WCDMA: B1/6/8/19	/
	-KL (Korea)	LTE-FDD: B1/3/5/7/8	/	/
	-IN (India)	LTE-FDD: B1/3/5/8/40/41	/	/
Weight (approx.) (g)		4.9 (EC21); 9.8 (EC21 Mini PCIe)	4.9 (EC25); 9.8 (EC25 Mini PCIe)	5.3 (EC20-CE); 10.6 (EC20-CE 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-CE); –40°C ~ +80°C (EC20-CE Mini PCIe)
Data transmission (Max.)				
LTE data rates (Mbps)		LTE-FDD: 10 (DL)/5 (UL); LTE-TDD: 8.96 (DL)/3.1 (UL)	LTE-FDD: 150 (DL)/50 (UL); LTE-TDD: 130 (DL)/30 (UL)	LTE-FDD: 150 (DL)/50 (UL) ; LTE-TDD: 130 (DL)/30 (UL)
DC-HSPA+ data rates (Mbps)		42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)
WCDMA data rates (Kbps)		384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)
TD-SCDMA data rates (Mbps)		/	/	4.2 (DL)/2.2 (UL)
EVDO data rates (Mbps)		/	/	3.1 (DL)/1.8 (UL)
CDMA2000 data rates (Kbps)		/	/	307.2 (DL)/307.2(UL)
EDGE data rates (Kbps)		296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)
GPRS data rates (Kbps)		107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)	107 (DL)/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	× 1	× 1
UART		× 2 (EC21); × 1 (EC21 Mini PCIe)	× 2 (EC25); × 1 (EC25 Mini PCIe)	× 2 (EC20-CE); × 1 (EC20-CE Mini PCIe)
USB		× 1	× 1	× 1
I2C		× 1	× 1	× 1 (EC20-CE); × 1 (EC20-CE Mini PCIe optional)
Audio digital (PCM)		× 1	× 1	× 1 (optional)
SDIO		× 2 (EC21 optional)	× 2 (EC25 optional)	× 2 (EC20-CE optional)
ADC		× 2, 15bits (EC21)	× 2, 15bits (EC25)	× 2, 15bits (EC20-CE)
SGMII		× 1(EC21)	× 1 (EC25)	× 1 (EC20-CE)
Antenna		× 1 Main, × 1 Rx-diversity, × 1 GNSS (optional)	× 1 Main, × 1 Rx-diversity, × 1 GNSS (optional)	× 1 Main, × 1 Rx-diversity (optional), × 1 GNSS (optional)
Enhanced features				
GNSS		Optional	Optional	Optional
Wi-Fi scan		/	/	/
BlueTooth		/	/	/
DTMF		•	•	•
DFOTA		•	•	•
QMI/ RmNet		•	•	•
Audio playback/Audio recording		Optional	Optional	Optional
QuecFile		•	•	• (EC20-CE)
USB serial driver		Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x
GNSS driver		Android 4.x~13.x	Android 4.x~13.x	Android 4.x~13.x
RIL driver		Android 4.x~13.x	Android 4.x~13.x	Android 4.x~13.x
RNDIS driver		Windows 7/8/8.1/10/11, Linux 2.6~6.7	Windows 7/8/8.1/10/11, Linux 2.6~6.7	Windows 7/8/8.1/10/11, Linux 2.6~6.7
ECM driver		Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6~6.7
MBIM driver		Windows 7/8/8.1/10/11, Linux 3.18~6.7	Windows 7/8/8.1/10/11, Linux 3.18~6.7	Windows 7/8/8.1/10/11, Linux 3.18~6.7
GobiNet driver		Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6~6.7
QMI_WWAN driver		Linux 3.4~6.7	Linux 3.4~6.7	Linux 3.4~6.7
(U)SIM card detection		•	•	•
Firmware update		Via USB/DFOTA	Via USB/DFOTA	Via USB/DFOTA
Electrical features				
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8 V (EC21); 3.0 V ~ 3.6 V, typ. 3.3 V (EC21 Mini PCIe)	3.3 V ~ 4.3 V, typ. 3.8 V (EC25); 3.0 V ~ 3.6 V, typ. 3.3 V (EC25 Mini PCIe)	3.3 V ~ 4.3 V, typ. 3.8 V (EC20-CE); 3.0 V ~ 3.6 V, typ. 3.3 V (EC20-CE Mini PCIe)
Power consumption		20 μA @Power off/ 3 mA @Sleep, Typ. / 22 mA @Idle (EC21); 3.5 mA @Sleep, Typ. / 34 mA @Idle (EC21 Mini PCIe)	20 μA @Power off/ 3 mA @Sleep, Typ. / 22 mA @Idle (EC25); 3.6 mA @Sleep, Typ. / 35 mA @Idle (EC25 Mini PCIe)	11 μA @Power off/ 1.5 mA @Sleep (PF=256), Typ. / 20 mA @Idle (EC20-CE); 4 mA @Sleep (PF=128), 3.7 mA@Sleep (PF=256), Typ. / 30 mA @Idle (EC20-CE Mini PCIe)
Certifications[3]		Carrier Certification: Vodafone/Deutsche Telekom/ British Telecom/Verizon/AT&T/T-Mobile/U.S. Cellular/ Rogers/Telstra[4]/Spark/NTT DOCOMO/KDDI/KT/SKT/LGU+; Regulatory Certification: CE/GCF/UKCA/RCM/NCC/KC/FCC/ PTCRB/IC/Anatel/JATE/TELEC; Others: WHQL	Carrier Certification: Vodafone/Deutsche Telekom/British Telecom/Orange/ Telefónica/KT/SKT/LGU+/Verizon/AT&T/T-Mobile/Rogers/Telus/U.S. Cellular/ Telstra/NTT DOCOMO/SoftBank/KDDI/Bell*/Spark; Regulatory Certification: GCF/CE/UKCA/KC/NCC/RCM/NBTC/ICASA/FCC/PTCRB/IC/ Anatel/JATE/TELEC; Others: WHQL	Regulatory Certification: NAL/SRRC/CCC (China)
Recommended applications		Telematics, smart metering, mobile POS terminals, gateways, 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.
Note 3: May depend on modules' variant.
Note 4: Data only.
GNSS antenna not supported on EC21-KL.
EC25-ADL/EC25-AFDL/EC25-AFXD/EC25-ADL Mini PCIe/EC25-AFDL Mini PCIe/EC25-AFXD Mini PCIe are requested for data only device.

* Planning/ Under development/ In progress
• Supported

LTE modules

Product		EG21-G/EG21-G Mini PCIe/EG21-GL/EG21-GL Mini PCIe	EG25-G/EG25-G Mini PCIe/EG25-GL/EG25-GL Mini PCIe
			
Form factor		LGA (EG21-G/GL); Mini PCIe (EG21-G Mini PCIe/EG21-GL Mini PCIe)	LGA (EG25-G/GL); Mini PCIe (EG25-G Mini PCIe/EG25-GL Mini PCIe)
Dimensions (mm)		29.0 × 32.0 × 2.4 (EG21-G/GL); 30.0 × 51.0 × 4.9 (EG21-G Mini PCIe/EG21-GL Mini PCIe)	29.0 × 32.0 × 2.4 (EG25-G/GL); 30.0 × 51.0 × 4.9 (EG25-G Mini PCIe/EG25-GL Mini PCIe)
LTE category		LTE Cat 1	LTE Cat 4
Frequency bands (MHz)	-G (Global)	LTE-FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28; LTE-TDD: B38/39/40/41; WCDMA: B1/2/4/5/6/8/19; GSM: B2/3/5/8	LTE-FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28; LTE-TDD: B38/39/40/41; WCDMA: B1/2/4/5/6/8/19; GSM: B2/3/5/8
	-GL (Global)	LTE-FDD B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66; LTE-TDD B34/38/39/40/41; WCDMA B1/2/4/5/6/8/19; TD-SCDMA-GSM/EDGE: B2/3/5/8	LTE-FDD B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66; LTE-TDD B34/38/39/40/41; WCDMA B1/2/4/5/6/8/19; TD-SCDMA-GSM/EDGE: B2/3/5/8
Weight (approx.) (g)		4.9 (EG21-G/GL); 9.8 (EG21-G Mini PCIe/EG21-GL Mini PCIe)	4.9 (EG25-G/GL); 9.8 (EG25-G Mini PCIe/EG25-GL Mini PCIe)
Operating temperature		–35°C ~ +75°C	–35°C ~ +75°C
Extended temperature		–40°C ~ +85°C (EG21-G/GL); –40°C ~ +80°C (EG21-G Mini PCIe/EG21-GL Mini PCIe)	–40°C ~ +85°C (EG25-G/GL); –40°C ~ +80°C (EG25-G Mini PCIe/EG25-GL Mini PCIe)
Data transmission (Max.)			
LTE data rates (Mbps)		LTE-FDD: 10 (DL)/5 (UL); LTE-TDD: 8.96 (DL)/3.1 (UL)	LTE-FDD: 150 (DL)/50 (UL); LTE-TDD: 130 (DL)/30(UL)
DC-HSPA+ data rates (Mbps)		42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)
WCDMA data rates (Kbps)		384 (DL)/384 (UL)	384 (DL)/384 (UL)
EDGE data rates (Kbps)		296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)
GPRS data rates (Kbps)		107 (DL)/85.6 (UL)	107 (DL)/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	× 1
UART		× 2 (EG21-G/GL); × 1 (EG21-G Mini PCIe/EG21-GL Mini PCIe)	× 2 (EG25-G/GL); × 1 (EG25-G Mini PCIe/EG25-GL Mini PCIe)
USB		× 1	× 1
I2C		× 1 (EG21-G/GL); × 1 (EG21-G Mini PCIe/EG21-GL Mini PCIe optional)	× 1 (EG25-G/GL); × 1 (EG25-G Mini PCIe/EG25-GL Mini PCIe optional)
Audio digital (PCM)		× 1 (optional)	× 1 (optional)
SDIO		× 2 (EG21-G/GL optional)	× 2 (EG25-G/GL optional)
ADC		× 2, 15bits (EG21-G/GL)	× 2, 15bits (EG25-G/GL)
Antenna		× 1 Main, × 1 Rx-diversity, × 1 GNSS (optional)	× 1 Main, × 1 Rx-diversity, × 1 GNSS (optional)
Enhanced features			
GNSS		Optional	Optional
Wi-Fi scan		/	/
BlueTooth		/	/
DTMF		•	•
DFOTA		•	•
QMI/ RmNet		•	•
Audio playback/Audio recording		Optional	Optional
USB serial driver		Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 7/8/8.1/10/11, Linux 2.6~6.7. Android 4.x~13.x
GNSS driver		Android 4.x~13.x	Android 4.x~13.x
RIL driver		Android 4.x~13.x	Android 4.x~13.x
NDIS driver		Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11
MBIM driver		Windows 7/8/8.1/10/11, Linux 3.18~6.7	Windows 7/8/8.1/10/11, Linux 3.18~6.7
GobiNet driver		Linux 2.6~6.7	Linux 2.6~6.7
QMI_WWAN driver		Linux 3.4~6.7	Linux 3.4~6.7
(U)SIM card detection		•	•
(U)SIM card connector		Optional (EG21-G Mini PCIe/EG21-GL Mini PCIe)	Optional (EG25-G Mini PCIe/EG25-GL Mini PCIe)
Firmware update		Via USB/DFOTA	Via USB/DFOTA
Electrical features			
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8 V (EG21-G/GL); 3.0 V ~ 3.6 V, typ. 3.3 V (EG21-G Mini PCIe/EG21-GL Mini PCIe)	3.3 V ~ 4.3 V, typ. 3.8 V (EG25-G/GL); 3.0 V ~ 3.6 V, typ. 3.3 V (EG25-G Mini PCIe/EG25-GL Mini PCIe)
Power consumption		13 μA@Power off/1.8 mA@Sleep, Typ. /22 mA@Idle (EG21-G); 12 μA@Power off/1.3 mA@Sleep, Typ. /15.4 mA@Idle (EG21-GL); 2.8 mA @Sleep, Typ. / 35 mA @Idle (EG21-G Mini PCIe); 2.3 mA @Sleep, Typ. / 22.4 mA @Idle (EG21-GL Mini PCIe)	15 μA@Power off/1.8 mA@Sleep, Typ. /22 mA@Idle (EG25-G); 7 μA@Power off/1.3 mA@Sleep, Typ. /15.7 mA@Idle (EG25-GL); 3.3 mA @Sleep, Typ. / 35 mA @Idle (EG25-G Mini PCIe); 2.4 mA @Sleep, Typ. / 22.3 mA @Idle (EG25-GL Mini PCIe)
Certifications[1]		Carrier Certification: Deutsche Telekom/Verizon/AT&T/Sprint/U.S. Cellular/T-Mobile/Telus; Regulatory Certification: GCF/CE/FCC/PTCRB/IC/Anatel/IFETEL/KC/NCC/JATE/TELEC/RCM/ICASA; Others: WHQL	Carrier Certification: Deutsche Telekom/Verizon/AT&T/T-Mobile/Sprint/U.S. Cellular/Telus/ Rogers*; Regulatory Certification: GCF/CE/PTCRB/FCC/IC/Anatel/IFETEL/SRRC/NAL/CCC/KC/NCC/JATE/ TELEC/RCM/NBTC/IMDA/ICASA; Others: WHQL
Recommended applications		Telematics, smart metering, mobile POS terminals, gateways, safety, tracking and tracing, remote maintenance and control, networking, mobile computing, healthcare, etc.	

Note 1: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

LTE modules

Product		EG91	EG95	EG950A
				
Form factor		LGA	LGA	LGA
Dimensions (mm)		29.0 × 25.0 × 2.45	29.0 × 25.0 × 2.45	29.0 × 25.0 × 2.4
LTE category		LTE Cat 1	LTE Cat 4	LTE Cat 4
Frequency bands (MHz)	-E (Europe)	LTE-FDD: B1/3/7/8/20/28A; WCDMA: B1/8; GSM: B3/8	LTE-FDD: B1/3/7/8/20/28A; WCDMA: B1/8; GSM: B3/8	/
	-EX (Europe)	LTE-FDD: B1/3/7/8/20/28; WCDMA: B1/8; GSM: B3/8	LTE-FDD: B1/3/7/8/20/28; WCDMA: B1/8; GSM: B3/8	/
	-EL (Europe/Asia-Pacific)	/	/	LTE-FDD: B1/3/5/7/8/20/28; WCDMA: B1/5/8
	-NAXD (North America)	LTE-FDD: B2/4/5/12/13/25/26; WCDMA: B2/4/5	LTE-FDD: B2/4/5/12/13/25/26; WCDMA: B2/4/5	/
	-NAX (North America)	LTE-FDD: B2/4/5/12/13/25/26; WCDMA: B2/4/5	LTE-FDD: B2/4/5/12/13/25/26; WCDMA: B2/4/5	/
	-NA (North America)	LTE-FDD: B2/4/5/12/13; WCDMA: B2/4/5	LTE-FDD: B2/4/5/12/13; WCDMA: B2/4/5	/
	-VX (Verizon)	LTE-FDD: B4/13	/	/
	-AUX (Latin America/ANZ)	LTE-FDD: B1/2/3/4/5/7/8/28/66; WCDMA: B1/2/5/8; GSM: B2/3/5/8	LTE-FDD: B1/2/3/4/5/7/8/28/66; WCDMA: B1/2/5/8; GSM: B2/3/5/8	/
	-JP (Japan)	LTE-FDD: B1/3/8/18/19/26	LTE-FDD: B1/3/8/18/19/26; LTE-TDD: B41	/
	-LA(Latin America)	/	/	LTE-FDD: B1/2/3/4/5/7/8/28/66; WCDMA: B1/2/4/5/8
	-ENL (Europe/Asia Pacific/ Australia/New Zealand/ Latin America)	/	/	LTE-FDD: B1/2/3/4/5/7/8/20/28/31/66/72/87; LTE-TDD: B38/40/41; WCDMA: B1/2/4/5/8
Weight (approx.) (g)		3.8	3.8	3.74
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 (Max.)				
LTE data rates (Mbps)		10 (DL)/5 (UL)	150 (DL)/50 (UL)	150 (DL)/50 (UL)
DC-HSPA+ data rates (Mbps)		42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)	21 (DL)/5.76 (UL)
WCDMA data rates (Kbps)		384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)
EDGE data rates (Kbps)		296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)	/
GPRS data rates (Kbps)		107(DL)/85.6 (UL)	107 (DL)/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	TCP/UDP/PPP/NTP/NITZ/FTP/HTTP/PING/CMUX/HTTPS/FTPS/SSL/ FILE/MQTT/MMS/SMTP/SMTPS
Interfaces				
(U)SIM		× 2	× 2	× 1
UART		× 2	× 2	× 2
USB		× 1	× 1	× 1
I2C		× 1	× 1	× 1
Audio digital (PCM)		× 1	× 1	× 1
SPI		× 1	× 1	× 1
RESET_N		× 1	× 1	× 1
SDIO		/	/	× 1
ADC		× 1	× 1	× 2
Antenna		× 1 Main, × 1 Rx-diversity, × 1 GNSS (optional)[1]	× 1 Main, × 1 Rx-diversity, × 1 GNSS (optional)[1]	× 1 Main, × 1 Rx-diversity, × 1 GNSS (optional)
Enhanced features				
GNSS[1]		Optional	Optional	Optional
Wi-Fi scan		/	/	/
BlueTooth		/	/	/
E911 (for North America)		•	•	/
Digital audio/VoLTE		Optional	Optional	•
DTMF		•	•	/
DFOTA		•	•	•
QMI/ RmNet		•	•	/
Audio playback/Audio recording		Optional	Optional	•
QuecFile		•	•	•
USB serial driver		Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x
GNSS driver		Android 4.x~13.x	Android 4.x~13.x	Android 4.x~13.x
RIL driver		Android 4.x~13.x	Android 4.x~13.x	Android 4.x~13.x
NDIS driver		Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11
MBIM driver		Windows 7/8/8.1/10/11, Linux 3.18~6.7	Windows 7/8/8.1/10/11, Linux 3.18~6.7	/
GobiNet driver		Linux 2.6~6.7	Linux 2.6~6.7	/
QMI_WWAN driver		Linux 3.4~6.7	Linux 3.4~6.7	/
(U)SIM card detection		•	•	•
Firmware update		Via USB/DFOTA	Via USB/DFOTA	Via USB/DFOTA
Electrical features				
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8 V	3.3 V ~ 4.3 V, typ. 3.8 V	3.4 V ~ 4.5 V, typ. 3.8 V
Power consumption		15 μA@Power off/2.6 mA@Sleep, Typ./21 mA@Idle	15 μA@Power off/2.6 mA@Sleep, Typ. /21 mA@Idle	11 μA @Power off mode /1.1 mA @LTE sleep mode (PF=256), Typ /18 mA @ Idle mode
Certifications[2]		Carrier Certification: Deutsche Telekom/Telstra[3]/Verizon/ AT&T/T-Mobile/Sprint/Rogers/Telus/U.S. Cellular/NTT DOCOMO/ KDDI/SoftBank*; Regulatory Certification: GCF/CE/UKCA/RCM/Anatel/NCC/ PTCRB/FCC/IC/JATE/TELEC; Others: WHQL	Carrier certification: Deutsche Telekom/Telstra[3]/Verizon/ AT&T/T-Mobile/Sprint/Rogers/Telus/U.S. Cellular/NTT DOCOMO/ KDDI/SoftBank*; Regulatory certification: GCF/CE/UKCA/PTCRB/FCC/IC/JATE/ TELEC; Others: WHQL	Regulatory: CE/RCM/UKCA
Recommended applications		Telematics, smart metering, mobile POS terminals, gateways, safety, tracking and tracing, remote maintenance and control, networking, mobile computing, healthcare, etc.		Wildlife cameras

Note 1: GNSS antenna not supported on EG91-E/EG95-E.
Note 2: May depend on modules' variant.
Note 3: EG91-AUX/EG95-AUX (Data Only).
EG91-AUX does not support Rx-diversity.
EG91-NAXD and EG95-NAXD are requested for data only device.

* Planning/ Under development/ In progress
• Supported

Product		EG915Q/EG915Q-NA Mini PCIe	EG916Q
			
Form factor		LGA(EG915Q); Mini PCIe(EG915Q-NA Mini PCIe)	LGA
Dimensions (mm)		23.6 × 19.9 × 2.4(EG915Q); 51.0 × 30.0 × 4.9(EG915Q-NA Mini PCIe)	26.5 × 22.5 × 2.4
LTE category		LTE Cat 1 bis	LTE Cat 1 bis
Frequency bands (MHz)	-AF (North America)	LTE-FDD: B2/4/5/12/13/14/66/71	/
	-NA (North America)	LTE-FDD: B2/4/5/12/13/66	/
	-EU (Europe)	/	/
	-JP (Japan)	LTE-FDD: B1/3/8/18/19/26/28	/
	-GL (Global)	/	LTE-FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66; LTE-TDD: B34/38/39/40/41
Weight (approx.) (g)		2.3 (EG915Q); 7.1 (EG915Q-NA Mini PCIe)	2.6
Operating temperature		-35°C ~ +75°C	-35°C ~ +75°C
Extended temperature		-40°C ~ +85°C (EG915Q); -40°C ~ +80°C(EG915Q-NA Mini PCIe)	-40°C ~ +85°C
Data transmission (Max.)			
LTE data rates (Mbps)		10 (DL)/5 (UL)	10 (DL)/5 (UL)
DC-HSPA+ data rates (Mbps)		/	/
WCDMA data rates (Kbps)		/	/
EDGE data rates (Kbps)		/	/
GPRS data rates (Kbps)		/	/
SMS		•	•
Protocols		TCP/UDP/NTP/NITZ/FTP/HTTP/PING/HTTPS/FTPS/SSL/MQTT/CMUX/PPP/FILE/MMS*/SMTP/SMTPS	TCP/UDP/NTP/NITZ/FTP/HTTP/PING/HTTPS/FTPS/SSL/MQTT/CMUX/PPP/FILE/SMTP/SMTPS/MMS*
Interfaces			
USIM		× 2[1] (EG915Q); × 1(EG915Q-NA Mini PCIe)	× 2[1](1.8/ 3.0 V)
UART		× 3[2] (optional) (EG915Q); × 2(EG915Q-NA Mini PCIe)	× 4[3](optional)
USB		× 1	× 1
I2C		× 1	× 1
Audio digital (PCM)		× 1	× 1
SDIO		/	/
ADC		× 2(EG915Q)	× 2
Antenna		× 1 Main, × 1 GNSS (optional)	× 1 Main, × 1 GNSS (optional)
Enhanced features			
GNSS		Optional	Optional
Wi-Fi scan		•	•
BlueTooth		/	/
DTMF		/	/
DFOTA		•	•
QMI/ RmNet		/	/
Audio playback/Audio recording		•	•
QuecFile		•	•
USB serial driver		Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x
GNSS driver		Android 4.x~13.x	Android 4.x~13.x
RIL driver		Android 4.x~13.x	Android 4.x~13.x
RNDIS driver		Windows 7/8/8.1/10/11, Linux 2.6~6.7	Windows 7/8/8.1/10/11, Linux 2.6~6.7
MBIM driver		/	/
GobiNet driver		/	/
QMI_WWAN driver		/	/
(U)SIM card detection		•	•
Firmware update		Via USB/DFOTA	Via USB/DFOTA
Electrical features			
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8 V (EG915Q); 3.0~3.6 V, typ.3.3 V(EG915Q-NA Mini PCIe)	3.3 V ~ 4.3 V, typ. 3.8 V
Power consumption		0.4 μA @ Power off mode / 54 μA @ Sleep mode (AT+CFUN = 0, USB disconnected) /130 μA @ Sleep mode (AT+CFUN = 4, USB disconnected) / 4.55 mA @ Idle mode (PF = 64, USB disconnected) / 28.22 mA @ Idle mode (PF = 64, USB connected) (EG915Q); TBD(EG915Q-NA Mini PCIe)	0.4 μA @ Power off 45 μA @ Sleep Mode (AT+CFUN = 0, USB Disconnected) 0.125 mA @ Sleep Mode (AT+CFUN = 4, USB Disconnected) 4.56 mA @ Idle Mode (PF = 64, USB Disconnected) 25.8 mA @ Idle Mode (PF = 64, USB Connected)
Certifications[4]		Carrier Certification: Verizon/AT&T/T-Mobile/Telus/NTT DOCOMO*/KDDI*/SoftBank*; Regulatory Certification: FCC/IC/GCF/PTCRB/JATE/TELEC; Others: WHQL	Carrier Certification: Verizon/AT&T/T-Mobile; Regulatory Certification: CCC/CE/GCF/PTCRB/FCC/IC/RCM/KC/Anatel/JATE/TELEC; Others: WHQL
Recommended applications		Asset management, commercial telematics, payment, RMAC (remote monitoring and control), safety and automation, smart metering and smart grid (EG915Q); IoT gateways, industrial PCs etc.(EG915Q-NA Mini PCIe)	Asset management, commercial telematics, payment, RMAC (remote monitoring and control), smart safety and automation, smart metering and smart grid

Note 1: Both USIM1 and USIM2 interfaces support 1.8 V USIM cards only, when the USIM2 interface is enabled.
Note 2: The third GNSS serial port is optional.
Note 3: GNSS UART, GNSS Debug UART and GNSS antenna interfaces are optional.
Note 4: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

LTE modules

Product		EG800Q	EG800K
			
Form factor		LGA	LGA
Dimensions (mm)		17.7 × 15.8 × 2.4	17.7 × 15.8 × 2.4
LTE category		LTE Cat 1 bis	LTE Cat 1 bis
Frequency bands(MHz)	-CN (China/India)	/	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41
	-NA (North America)	LTE-FDD: B2/4/5/12/13/66	/
	-EU (Europe)	LTE-FDD: B1/3/5/7/8/20/28	-EU(Europe/ New Zealand/ Australia) LTE-FDD: B1/3/5/7/8/20/28
	-LA (Latin America)	/	LTE-FDD: B2/3/4/5/7/8/28/66
Weight (approx.) (g)		2.0	1.37
Operating temperature		-35°C ~ +75°C	-35°C ~ +75°C
Extended temperature		-40°C ~ +85°C	-40°C ~ +85°C
Data transmission (Max.)			
LTE data rates (Mbps)		10 (DL)/5 (UL)	10 (DL)/5 (UL)
DC-HSPA+ data rates (Mbps)		/	/
WCDMA data rates (Kbps)		/	/
EDGE data rates (Kbps)		/	/
GPRS data rates (Kbps)		/	/
SMS		•	Optional (EG800K-CN)
Protocols		TCP/UDP/NTP/NITZ/FTP/HTTP/PING/HTTPS/FTPS/SSL/MQTT/CMUX/PPP/FILE/MMS*/SMTP/SMTPS	TCP/UDP/PPP[1]/NTP/NITZ/FTP[1]/HTTP[1]/PING/HTTPS[1]/FTPS[1]/FILE[1]/SSL/MQTT
Interfaces			
USIM		× 1	× 1
UART		× 3[2]	× 3[3]
USB		× 1	× 1
I2C		× 1	× 1[4]
Audio digital (PCM)		× 1	/
SDIO		/	/
ADC		× 2	× 2
Antenna		× 1 Main	× 1 Main, × 1 GNSS (optional)
Enhanced features			
GNSS		/	Optional
Wi-Fi scan		•	Optional
BlueTooth		/	/
DTMF		/	/
DFOTA		•	•
Audio playback/Audio recording		•	/
QuecFile		•	Optional
USB serial driver		Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x
GNSS driver		/	/
RIL driver		Android 4.x~13.x	Android 4.x~13.x
RNDIS driver		Windows 7/8/8.1/10/11, Linux 2.6~6.7	Windows 7/8/8.1/10/11, Linux 2.6~6.7
ECM driver		Linux 2.6~6.7	Linux 2.6~6.7
(U)SIM card detection		•	•
Firmware update		Via USB/DFOTA	Via USB/DFOTA
Electrical features			
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8 V	3.4 V ~ 4.3 V, typ. 3.8 V
Power consumption		50 μA @ Power off mode 0.06 mA @ Sleep mode (AT+CFUN=0, USB disconnected) 0.16 mA @ Sleep mode (AT+CFUN=4, USB disconnected) 4.50 mA @ Idle mode (PF=64, USB disconnected) 22.30 mA @ Idle mode (PF=64, USB connected)	6.15μA @ Power off mode /0.82mA @ LTE-FDD Sleep mode (PF = 128)/0.72mA @ LTE-FDD Sleep mode (PF = 256)/7.98mA @ LTE-TDD Idle mode(PF = 64 USB disconnected)/19.46mA @ LTE-TDD Idle mode(PF = 64 USB connected) (EG800K-CN); 7.47μA @ Power 0ff mode/0.64mA @ LTE-FDD Sleep mode(PF = 128)/0.56mA @ LTE-FDD Sleep mode(PF = 256)/7.82mA @ LTE-TDD Idle mode(PF = 64 USB disconnected)/19.66mA @ LTE-TDD Idle mode(PF = 64 USB connected) (EG800K-EU); 7.68 μA @ Power 0ff mode/0.73 mA @ LTE-FDD Sleep mode (PF = 128)/0.64 mA @ LTE-FDD Sleep mode(PF = 256)/7.43 mA @ LTE-FDD Idle mode(PF = 64, USB disconnected)/19 mA @ LTE-FDD Idle mode(PF = 64, USB connected) (EG800K-LA)
Certifications[5]		Carrier Certification: Verizon/AT&T/T-Mobile/Deutsche Telekom/Spark; Regulatory Certification: GCF/PTCRB/FCC/IC/CE/UKCA/RCM/Anatel; Others: WHQL	Regulatory Certification: CCC/SRRC/NAL/CE/RCM/FCC/Anatel
Recommended applications		Asset management, commercial telematics, payment, RMAC (remote monitoring and control), safety and automation, smart metering and smart grid	Cloud speakers, trackers, POS, data cards, smart safety, industrial PDAs etc.

Note 1: The PPP, FTP, HTTP, HTTPS, FTPS and FILE protocols are optional.
Note 2: The third auxiliary serial port is under development.
Note 3: Indicates that only QuecOpen® supports the third auxiliary serial port.
Note 4: The QuecOpen® solution can support two I2C interfaces.
Note 5: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

LTE modules

Product		EC200U/EC200U Mini PCIe	EC200A/EC200A Mini PCIe	EC200A-XXV1
				
Form factor		LCC (EC200U); Mini PCIe-C (EC200U-CN Mini PCIe-C); Mini PCIe (EC200U-EU/-AU Mini PCIe)	LCC (EC200A); Mini PCIe (EC200A Mini PCIe); Mini PCIe-C (EC200A-CN Mini PCIe-C)	LCC
Dimensions (mm)		28.0 × 31.0 × 2.4 (EC200U); 30.0 × 51.0 × 3.4 (EC200U-CN Mini PCIe-C); 30.0 × 51.0 × 4.9 (EC200U-EU/-AU Mini PCIe)	29.0 × 32.0 × 2.4 (EC200A); 30.0 × 51.0 × 4.9 (EC200A Mini PCIe); 30.0 × 51.0 × 3.5 (EC200A-CN Mini PCIe-C)	29.0 × 32.0 × 2.4
LTE category		LTE Cat 1	LTE Cat 4	LTE Cat 4
Frequency bands (MHz)	-CN (China/India)	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; GSM: B3/8	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/5/8; GSM:B3/8	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/5/8; GSM: B3/8
	-EU (Europe/Asia-Pacific)	LTE-FDD: B1/3/5/7/8/20/28; LTE-TDD: B38/40/41; GSM: B2/3/5/8	LTE-FDD: B1/3/5/7/8/20/28; LTE-TDD: B38/40/41; WCDMA: B1/5/8; GSM: B3/8	LTE-FDD: B1/3/5/7/8/20/28; LTE-TDD: B38/40/41; WCDMA: B1/5/8; GSM: B3/8
	-EN (EMEA/APAC)	/	/	/
	-EL (Europe/Asia-Pacific)	/	LTE-FDD: B1/3/5/7/8/20/28; LTE-TDD: B38/40/41; WCDMA: B1/5/8	LTE-FDD: B1/3/5/7/8/20/28; LTE-TDD: B38/40/41; WCDMA: B1/5/8
	-AU (Australia/New Zealand/Latin America)	LTE-FDD: B1/2/3/4/5/7/8/28/66; LTE-TDD: B38/40/41; GSM: B2/3/5/8	LTE-FDD: B1/2/3/4/5/7/8/28/66; LTE-TDD: B40; WCDMA: B1/2/4/5/8; GSM: B2/3/5/8	LTE-FDD: B1/2/3/4/5/7/8/28/66; LTE-TDD: B40; WCDMA: B1/2/4/5/8; GSM: B2/3/5/8
Weight (approx.) (g)		4.1 (EC200U); 7.2 (EC200U-CN Mini PCIe-C); 9.25 (EC200U-EU/-AU Mini PCIe)	4.3 (EC200A); 9.7 (EC200A Mini PCIe); 8.5 (EC200A Mini PCIe-C)	4.2
Operating temperature		-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C
Extended temperature		-40°C ~ +85°C (EC200U); -40°C ~ +80°C (EC200U-CN Mini PCIe-C/EC200U-EU/-AU Mini PCIe)	-40°C ~ +85°C (EC200A); -40°C ~ +80°C (EC200A Mini PCIe/EC200A-CN Mini PCIe-C)	-40°C ~ +85°C
Data transmission (Max.)				
LTE data rates (Mbps)		10 (DL)/5 (UL) (EC200U); LTE-FDD: 10 (DL)/5 (UL), LTE-TDD: 8.96 (DL)/3.1(UL)(EC200U-CN Mini PCIe-C, EC200U-EU/-AU Mini PCIe)	LTE-FDD: 150 (DL)/50 (UL); LTE-TDD: 130 (DL)/30 (UL)	LTE-FDD: 150 (DL)/50 (UL); LTE-TDD: 130 (DL)/30 (UL)
DC-HSPA+ data rates (Mbps)		/	21 (DL)/5.76 (UL)	21 (DL)/5.76 (UL)
WCDMA data rates (Kbps)		/	384 (DL)/384 (UL)	384 (DL)/384 (UL)
EDGE data rates (Kbps)		/	236.8 (DL)/236.8 (UL)	236.8 (DL)/236.8 (UL)
GPRS data rates (Kbps)		85.6 (DL)/85.6 (UL)	85.6 (DL)/85.6 (UL)	85.6 (DL)/85.6 (UL)
SMS		•	•	*
CSD		/	•	*
Protocols		TCP/UDP/PPP/FTP/HTTP/NTP/PING/NITZ/CMUX/HTTPS/SMTP/MMS/FTPS/SMTPS/SSL/FILE (EC200U); TCP/UDP/PPP/NITZ/PING/FILE/MQTT/NTP/HTTP/HTTPS/SSL/FTP/FTPS/CMUX/MMS(EC200U-CN Mini PCIe-C, EC200U-EU/-AU Mini PCIe)	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/MMS
Interfaces				
(U)SIM		× 1	× 1	× 1
UART		× 3 (EC200U); × 1 (EC200U-CN Mini PCIe-C, EC200U-EU/-AU Mini PCIe)	× 2 (EC200A); × 1 (EC200A Mini PCIe/EC200A-CN Mini PCIe-C)	× 2
USB		× 1	× 1	× 1
I2C		× 2 (EC200U); × 1 (EC200U-EU/-AU Mini PCIe)	× 1	× 1
Audio digital (PCM)		× 1 (EC200U/EC200U-EU/-AU Mini PCIe)	× 1	/
SDIO		× 1[1]	× 2	× 2*
ADC		× 3 (EC200U)	× 2, 12bits (EC200A)	× 2*
Antenna		× 1 Main, × 1 GNSS (optional), × 1 Wi-Fi scan/ Bluetooth (optional) (EC200U) × 1 Main, × 1 GNSS (optional)(EC200U-CN Mini PCIe-C/ EC200U-EU/-AU Mini PCIe)	× 1 Main, × 1 Rx-diversity (optional), × 1 GNSS (optional)	× 1 Main, × 1 Rx-diversity
Enhanced features				
GNSS		Optional	Optional	/
Wi-Fi scan		Optional	/	/
BlueTooth		Optional	/	/
Digital audio		•	•	/
VoLTE		•	•	/
DTMF		•	•	/
DFOTA		•	•	•
Audio playback/Audio recording		•	•	/
QuecFile		• (only support ufs)	•	•
USB serial driver		Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x
GNSS driver		Android 4.x~13.x	Android 4.x~13.x	/
RIL driver		Android 4.x~13.x	Android 4.x~13.x	Android 4.x~13.x
RNDIS driver		Windows 7/8/8.1/10/11, Linux 2.6~6.7	Windows 7/8/8.1/10/11, Linux 2.6~6.7	Windows 8/8.1/10/11, Linux 2.6~6.7
ECM driver		Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6~6.7
(U)SIM card detection		•	•	•
Firmware update		• (USB or DFOTA)(EC200U); Via USB/DFOTA (EC200U-CN Mini PCIe-C, EC200U-EU/-AU Mini PCIe)	Via USB/DFOTA	Via USB/DFOTA
Electrical features				
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8 V (EC200U/EC200U-CN Mini PCIe-C); 3.0 V ~ 3.6 V, typ. 3.3 V (EC200U-EU/-AU Mini PCIe)	3.4 V ~ 4.5 V, typ. 3.8 V (EC200A/EC200A Mini PCIe-C); 3.0 V ~ 3.6 V, typ. 3.3 V (EC200A Mini PCIe)	3.4 V ~ 4.3 V, typ. 3.8 V
Power consumption		30 μA @Power off mode/1.35 mA @LTE sleep mode(PF=256), Typ/13 mA @Idle mode(EC200U) 4.13 mA @ LTE sleep (PF = 128)/3.94 mA @ LTE sleep (PF = 256)/29 mA @ Idle (PF = 64, USB connection)/18 mA @ Idle (PF = 64, USB disconnection)(EC200U-CN Mini PCIe-C); 4.54 mA @ LTE sleep (PF = 128)/4.31 mA @ LTE sleep (PF = 256)/ 37.17 mA @ Idle (PF = 64, USB connection)/22.40 mA @ Idle (PF = 64, USB disconnection)(EC200U-EU/-AU Mini PCIe)	11 μA @Power off mode/1.1 mA @LTE sleep mode(PF=256), Typ/18 mA @Idle mode(EC200A); 19 μA @Power off mode, Typ/27.6 mA @LTE sleep mode (EC200A Mini PCIe); 1.59 mA@LTE sleep(PF=256)/28.6 mA@Idle(PF=64)(EC200A Mini PCIe-C)	8.05 μA @Power off mode/2.7 mA @LTE sleep mode(PF=128), Typ/2.4 mA @LTE sleep mode(PF=256), Typ/22.1 mA @Idle mode
Certifications[2]		Carrier Certification: KT; Regulatory Certification: CCC/SRRC/NAL/CE/RCM/KC/FCC/Anatel	Regulatory Certification: CCC/SRRC/NAL/CE/UKCA/RCM/KC/NCC/FCC/Anatal	Regulatory Certification: NAL/SRRC/CCC/CE/RCM/FCC*/Anatal*
Recommended applications		POS/POC/ETC, shared equipment, data cards, energy control and monitoring, safety and protection, industrial PDAs.	Automotive aftermarket, transportation, green energy, wireless payment, safety, smart cities, mobile gateways, smart industry, tracking, medical monitoring, agriculture and environmental monitoring.	

Note 1: Only QuecOpen® version support.
Note 2: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

LTE modules

Product		EG915U	EG912U	EG915N	EG912N	EG915K
						
Form factor		LGA	LGA	LGA	LGA	LGA
Dimensions (mm)		23.6 × 19.9 × 2.4	29.0 × 25.0 × 2.4	23.6 × 19.9 × 2.4	29.0 × 25.0 × 2.4	23.6 × 19.9 × 2.4
LTE category		LTE Cat 1	LTE Cat 1	LTE Cat 1	LTE Cat 1	LTE Cat 1 bis
Frequency bands (MHz)	-CN (China/India)	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; GSM: B3/8	/	/	/	/
	-EU (Europe)	LTE-FDD: B1/3/5/7/8/20/28; GSM: B2/3/5/8	/	LTE-FDD: B1/3/7/8/20; GSM: B3/8	/	LTE-FDD: B1/3/5/7/8/20/28; LTE-TDD: B38/40/41
	-EN (Europe)	/	/	/	LTE-FDD: B1/3/5/7/8/20/28/31/72; GSM: B3/8	/
	-EAL(Europe/APAC/Latin)	/	LTE-FDD: B1/2/3/4/5/7/8/20/28/66; LTE-TDD: 38/40/41; GSM: B2/3/5/8	/	/	/
	-EA (Europe/Asia)	/	/	LTE-FDD: B1/3/7/8/20/28; GSM: B3/8	/	/
	-GL(Global)	/	LTE-FDD: B1/2/3/4/5/7/8/12/13/17/ 18/19/20/25/26/28/66; LTE-TDD: B34/38/39/40/41 GSM: B2/3/5/8	/	/	/
	-LA (Latin America)	LTE-FDD: B2/3/4/5/7/8/28/66; GSM: B2/3/5/8	/	LTE-FDD: B2/3/4/5/7/8/28/66; GSM: B2/3/5/8	/	/
Weight (approx.) (g)		2.48	3.67	2.46	3.5	2.3
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 (Max.)						
LTE data rates (Mbps)		10 (DL)/5 (UL)	10 (DL)/5 (UL)	10 (DL)/5 (UL)	10 (DL)/5 (UL)	10 (DL)/5 (UL)
DC-HSPA+ data rates (Mbps)		/	/	/	/	/
WCDMA data rates (Kbps)		/	/	/	/	/
EDGE data rates (Kbps)		/	/	236.8 (DL)/236.8 (UL)	236.8 (DL)/236.8 (UL)	/
GPRS data rates (Kbps)		85.6 (DL)/85.6 (UL)	85.6 (DL)/85.6 (UL)	85.6 (DL)/85.6 (UL)	85.6 (DL)/85.6 (UL)	/
SMS		•	•	•	•	/
Protocols		TCP/UDP/PPP/FTP/HTTP/NTP/PING/ NITZ/CMUX/HTTPS/SMTP/MMS/FTPS/ SMTPS/SSL/FILE	TCP/UDP/PPP/FTP/HTTP/NTP/PING/ NITZ/CMUX/HTTPS/SMTP/MMS/FTPS/ SMTPS/SSL/FILE	TCP/UDP/PPP/NTP/NITZ/FTP/HTTP/ PING/CMUX/HTTPS/FTPS/SSL/FILE/ MQTT/MMS/SMTP/SMTPS	TCP/UDP/PPP/NITZ/PING/MQTT/NTP/ HTTP/HTTPS/ SSL/FTP/SMTPS/SMTP	TCP/UDP/NTP/NITZ/MQTT/SSL/PPP/ PING/FTP/HTTP/HTTPS/FTPS
Interfaces						
(U)SIM		× 2	× 2	× 2	× 2	× 1
UART		× 3	× 3	× 3	× 2	× 3 (main, debug and auxiliary*)
USB		× 1	× 1	× 1	× 1	× 1
I2C		× 1	× 1	× 1	× 1	× 1[1]
Audio digital (PCM)		× 1	× 1	× 1	× 1	/
SDIO		× 1[1]	× 1[1]	/	/	/
ADC		× 2	× 2	× 2 (optional)	× 2	× 2
Antenna		× 1 Main, × 1 Wi-Fi scan/Bluetooth (optional)	× 1 Main, × 1 GNSS (optional), × 1 Wi-Fi scan/Bluetooth (optional)	× 1 Main, × 1 GNSS (optional)	× 1 Main	× 1 Main, × 1 GNSS (optional)
Enhanced features						
GNSS		/	Optional	Optional	/	Optional
Wi-Fi scan		Optional	Optional	•	•	Optional
BlueTooth		Optional	Optional	/	/	/
VoLTE		•	•	•	•	/
DTMF		•	•	•	•	/
DFOTA		•	•	•	•	•
Audio playback/Audio recording		•	•	•	•	/
QuecFile		• (only support ufs)	• (only support ufs)	•	•	•
USB serial driver		Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 7/8/8.1/10/11, Linux 2.6~6.7, Android 4.x~13.x	Windows 7/8/8.1/10, Linux 2.6~5.15, Android 4.x~12.x
GNSS driver		Android 4.x~13.x	Android 4.x~13.x	Android 4.x~13.x	/	Android 4.x~12.x
RIL driver		Android 4.x~13.x	Android 4.x~13.x	Android 4.x~13.x	Android 4.x~13.x	Android 4.x~12.x
RNDIS driver		Windows 7/8/8.1/10/11, Linux 2.6~6.7	Windows 7/8/8.1/10/11, Linux 2.6~6.7	Windows 7/8/8.1/10/11, Linux 2.6~6.7	Windows 7/8/8.1/10/11, Linux 2.6~6.7	Windows 7/8/8.1/10, Linux 2.6~5.15
ECM driver		Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6~6.7	Linux 2.6~5.15
(U)SIM card detection		•	•	•	•	•
Firmware update		Via USB/DFOTA	Via USB/DFOTA	Via USB/DFOTA	Via USB/DFOTA	Via USB/DFOTA
Electrical features						
Supply voltage range		3.3 V ~ 4.3 V, typ. 3.8V	3.3 V ~ 4.3 V, typ. 3.8 V	3.4 V ~ 4.5 V, typ. 3.8 V	3.3 V ~ 4.3 V, typ. 3.8 V	3.4 V ~ 4.5 V, typ. 3.8 V
Power consumption		30 μA @ power off/1.3 mA @ sleep/13 mA @ idle	34 μA@ Power off 1.7 mA @ LTE sleep (PF = 128) 1.5 mA @ LTE sleep (PF = 256) 30 mA @ Idle (PF = 64, USB connected) 14 mA @ Idle (PF = 64, USB disconnected)	24 μA@Power off/1.4mA@Sleep, Typ./20.97 mA@Idle	30 μA@Power off mode 1.28 mA@LTE sleep mode (PF = 128) 1.19 mA@LTE sleep mode (PF = 256) 20.65 mA @Idle mode (PF = 64, USB Disconnect) 29.83 mA @ Idle mode (PF = 64, USB Active)	9.58μA@ Power off 0.86 mA @LTE-FDD Sleep (PF = 128 USB Disconnected) 0.77 mA @LTE-FDD Sleep (PF = 256 USB Disconnected) 9.71 mA @LTE-TDD Idle (PF = 64, USB Disconnected) 19.57 mA @LTE-TDD Idle (PF = 64, USB2.0 Active)
Certifications[2]		Regulatory Certification: GCF/CE/RCM/Anatel/UKCA/NCC/FCC	Regulatory Certification: CCC/SRRC/NAL/NCC/CE/FCC/IC/Anatel/RCM/KC/TELEC	Regulatory Certification: CE/RCM/UKCA/FCC/Anatel	Regulatory Certification: CE	CE*/RCM*
Recommended applications		POS/POC/ETC, shared equipment, data cards, energy control and monitoring, safety and protection, industrial PDAs.		Telematics, smart metering, mobile POS terminals, gateways, safety, tracking and tracing, remote maintenace and control, networking, mobile computing, healthcare.	POS/POC/ETC, shared equipment, data cards, energy control and monitoring, safety and protection, industrial PDAs.	Asset management , commercial telematics, payment , RMAC, smart safety and automation and smart metering.

Note 1: Only QuecOpen® version support.
Note 2: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

Product		SC20 (Android)	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/CEL (China)	-CE (China) LTE-FDD: B1/3/5/8; LTE-TDD: B38/39/40/41; WCDMA: B1/8; TD-SCDMA: B34/39; CDMA: BC0; GSM: 900/1800MHz	-CEL (China) LTE-FDD: B1/3/5/8; LTE-TDD: B38/39/40/41; WCDMA: B1/8; TD-SCDMA: B34/39; CDMA: BC0; GSM: 900/1800MHz	-CE (China) LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/8; CDMA: BC0; GSM: 900/1800MHz
	-E/EL/EM(EMEA/Korea/ Thailand/India/Vietnam/ Africa/Southeast Asia/ Australia/South America)	-E (EMEA/Korea/Thailand/India/Vietnam) LTE-FDD: B1/3/5/7/8/20; LTE-TDD: B38/40/41; WCDMA: B1/5/8; GSM: 850/900/1800/1900MHz	-EL (EMEA/Korea/Thailand/India/Vietnam) LTE-FDD: B1/3/5/7/8/20; LTE-TDD: B38/40/41; WCDMA: B1/5/8; GSM: 850/900/1800/1900MHz	-EM (EMEA/Africa/Southeast Asia/Australia/South America) LTE-FDD: B1/2/3/4/5/7/8/20/28; LTE-TDD: B38/40/41; WCDMA: B1/2/4/5/8; GSM: 850/900/1800/1900MHz
	-A/AL/NA(North America)	-A (North America) LTE-FDD: B2/4/5/7/12/13/25/26 ; WCDMA: B1/2/4/5/8; GSM: 850/1900MHz	-AL (North America) LTE-FDD: B2/4/5/7/12/13/25/26; WCDMA: B1/2/4/5/8; GSM: 850/1900MHz	-NA (North America) LTE-FDD: B2/4/5/7/12/13/14/17/25/26/66/71; LTE-TDD: B41; WCDMA: B2/4/5
	-AU/AUL(ANZ/Brazil)	-AU (ANZ/Brazil) LTE-FDD: B1/3/5/7/8/28; LTE-TDD: B40; WCDMA: B1/2/5/8; GSM: 850/900/1800/1900MHz	-AUL (ANZ/Brazil) LTE-FDD: B1/3/5/7/8/28; LTE-TDD: B40; WCDMA: B1/2/5/8; GSM: 850/900/1800/1900MHz	/
	-J/JL/JP[1] (Japan)	-J (Japan) LTE-FDD: B1/3/8/18/19/26; LTE-TDD: B41; WCDMA: B1/6/8/19	-JL (Japan) LTE-FDD: B1/3/8/18/19/26; LTE-TDD: B41; WCDMA: B1/6/8/19	-JP[1] (Japan) LTE-FDD: B1/3/5/8/11/18/19/21/26/28; LTE-TDD: B41; WCDMA: B1/6/8/19
	-W/WL/WF* (Global)	-W (Wi-Fi) Only Wi-Fi & BT	-WL (Wi-Fi) Only Wi-Fi & BT	-WF (Global) Only Wi-Fi & BT
CPU		Qualcomm MSM8909 ARM Coretex 4 x A7@ 1.1GHz	Qualcomm MSM8909 ARM Coretex 4 x A7@ 1.1GHz	Qualcomm QCM2150 ARM Coretex 4 x A53@ 1.3GHz
NPU		/	/	/
GPU		Qualcomm® Adreno™ 304 Graphics Processing Unit (GPU), up to 409.6 MHz	Qualcomm® Adreno™ 304 Graphics Processing Unit (GPU), up to 409.6 MHz	Qualcomm® Adreno™ 308 Graphics Processing Unit (GPU) with 64-bit addressing, up to 485 MHz
Memory		1 GB LPDDR3 + 8 GB eMMC; 2 GB LPDDR3 + 16 GB eMMC	1GB LPDDR3+ 8GB eMMC	1 GB LPDDR3 + 8 GB eMMC; 2 GB LPDDR3 + 16 GB eMMC
Operating system		Android 7.1/ 8.1 in SC20-E/-A/-J/-AU/-CE/-W	Yocto Linux (Kernel 3.18) in SC20-EL/-AL/-JL/-AUL/-WL	Android 10
Supply voltage range		3.5 V ~ 4.2 V, typ. 3.8 V	3.5 V ~ 4.2 V, typ. 3.8 V	3.55 V ~ 4.2 V, typ. 3.8 V
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 (Max.)				
LTE (Mbps)		LTE-FDD: 150 (DL)/50(UL) LTE-TDD: 130 (DL)/30 (UL)	LTE-FDD: 150 (DL)/50 (UL) LTE-TDD: 130 (DL)/30 (UL)	LTE-FDD: 150 (DL)/50 (UL) LTE-TDD: 130 (DL)/30 (UL)
UMTS		DC-HSDPA: 42 Mbps (DL); HSUPA: 5.76 Mbps (UL); WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL); HSUPA: 5.76 Mbps (UL); WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL); HSUPA: 5.76 Mbps (UL); WCDMA: 384 Kbps (DL/UL)
TD-SCDMA(Mbps)		4.2 (DL)/2.2 (UL)	4.2 (DL)/2.2 (UL)	/
CDMA2000		EVDO: 3.1 Mbps (DL)/1.8 Mbps (UL); 1× Advanced: 307.2 Kbps (DL/UL)	EVDO: 3.1 Mbps (DL)/1.8 Mbps (UL); 1× Advanced: 307.2 Kbps (DL/UL)	EVDO: 3.1 Mbps (DL)/1.8 Mbps(UL); 1× Advanced: 307.2 Kbps (DL/UL)
GSM(Kbps)		EDGE: 296 (DL)/236.8 (UL); GPRS: 107 (DL)/85.6 (UL)	EDGE: 296 (DL)/236.8 (UL); GPRS: 107 (DL)/85.6 (UL)	EDGE: 296 (DL)/236.8 (UL) ; GPRS: 107 (DL)/85.6 (UL)
Interfaces				
LCM		4-lane MIPI_DSI, 1.5 Gbps/lane, HD (1280 x 720) @ 60 fps	4-lane MIPI_DSI, 1.5 Gbps/lane, HD (1280 x 720) @ 60 fps	4-lane MIPI_DSI, HD+ (1440 × 720) @ 60 fps; Wi-Fi display: 1080P @ 30 fps (UBWC)
Camera		2-lane rear camera and 1-lane front camera or 4-lane rear camera only; MIPI_CSI, 1.5 Gbps/ lane, up to 8 MP, Bayer/ YUV format	2-lane rear camera and 1-lane front camera or 4-lane rear camera only; MIPI_CSI, 1.5 Gbps/ lane, up to 8 MP, Bayer/ YUV format	2 groups of 4-lane MIPI_CSI, up to 2.1 Gbps/ lane, 2 × ISP; Support 2 or 3 cameras, up to 13 MP with dual ISP
Touch panel		Capacitive touchscreen, I2C controls	Capacitive touchscreen, I2C controls	Capacitive touch panel, I2C controls
Audio		Analog channels: Two inputs: MIC1, MIC2; Three outputs: speaker, earpiece, headphone	Analog channels: Two inputs: MIC1, MIC2; Three outputs: speaker, earpiece, headphone	Analog channels: 3 inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC); 3 outputs: speaker, earpiece, headphone
Video		Encode: 720P (H.264) @ 30 fps; WVGA (MPEG-4/ VP8) @ 30 fps Decode: 1080P (H.264/ MPEG-4/ VP8/H.265/ DivX4/5/6) @ 30 fps; WVGA (H.263) @ 30 fps	Encode: 720P (H.264) @ 30 fps; WVGA (MPEG-4/ VP8) @ 30 fps Decode: 1080P (H.264/ MPEG-4/ VP8/H.265/ DivX4/5/6) @ 30 fps; WVGA (H.263) @ 30 fps	Encode: 1080P (H.264) @ 30 fps; WVGA (MPEG-4/ VP8) @ 30 fps Decode: 1080P (H.264/MPEG-4/VP8/H.265/ DivX4/5/6) @ 30 fps; WVGA (H.263) @ 30 fps
USB		× 1, USB 2.0, supports USB OTG, High Speed 480 Mbps	× 1, USB 2.0, supports USB OTG, High Speed 480 Mbps	× 1, USB 2.0, supports USB OTG
I2C		Supported	Supported	Supported
(U)SIM		× 2, Support 1.8/ 3 V (U)SIM cards, with (U)SIM card detection function, DSDS supported	× 2, Support 1.8/ 3 V (U)SIM cards, with (U)SIM card detection function, DSDS supported	× 2, Support 1.8/ 2.95 V (U)SIM cards, with (U)SIM card detection function, DSDS supported
UART		× 2, Support up to 4 Mbps with hardware flow control	× 2, Support up to 4 Mbps with hardware flow control	× 3, Support 4Mbps, One of them supports Hardware Flow Control
SD card		× 1, SD 3.0, 4-bit SDIO	× 1, SD 3.0, 4-bit SDIO	× 1, SD 3.0, 4-bit SDIO
PWRKEY/ SPI/ ADC/ GPIO		Supported	Supported	Supported
PWM/ Motor driver		× 1	× 1	× 1
Antenna		× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth	× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth	× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth
Enhanced features				
BT		Bluetooth 2.1 EDR/3.0 HS/4.2 LE; Support a maximum of 10 ACL/BEL/SCO links	Bluetooth 2.1 EDR/3.0 HS/4.2 LE; Support a maximum of 10 ACL/BEL/SCO links	Bluetooth 2.1 EDR/3.0 HS/4.2 LE; Support a maximum of 10 ACL/BEL/SCO links
Wi-Fi		2.4 & 5 GHz; 802.11a/b/g/n ; 150 Mbps; STA/AP/P2P(SC20-CE only support 2.4GHz)	2.4 & 5 GHz; 802.11a/ b/ g/ n; 150 Mbps; STA/AP/P2P	2.4 & 5 GHz, 802.11a/b/g/n; 150 Mbps; STA/AP/ P2P
GNSS		GNSS[2]: GPS/BDS/GLONASS	GNSS[2]: GPS/BDS/GLONASS	GNSS[3]: GPS/BDS/GLONASS or GPS/BDS/Galileo
Charge function		Build-in Charge IC	Build-in Charge IC	Build-in Charge IC
Dual LCDs		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 or OTA	Firmware upgrade via USB or OTA	Firmware upgrade via USB or OTA
Certifications[4]		Carrier Certification: Verizon/AT&T/T-Mobile*/Rogers/Telus*/ Telstra/NTT-DOCOMO/SoftBank/KDDI; Regulatory Certification: CCC/SRRC/NAL/GCF/CE/KC/PTCRB/ FCC/IC/Anatel/NCC/RCM/JATE/TELEC	Carrier Certification: Verizon/AT&T/T-Mobile*/Telus*/Telstra* Regulatory Certification: CCC*/SRRC*/NAL*/CE/GCF/RCM/ PTCRB/FCC/IC/Anatel/NCC*/JATE/TELEC/Rogers/KC*	Carrier Certification: Telstra/Verizon/AT&T; Regulatory Certification: CCC/SRRC/GCF/CE/RCM/KC/PTCRB/ FCC/IC/JATE*/TELEC*
Recommended applications		Smart POS, gateways, robots, wearables, safety, PDAs & tablets, vending machines, delivery lockers, telematics, mobile computing, video streaming and entertainment systems, etc.		

Note 1: TBD.
Note 2: GNSS is not supported on SC20-W/ -WL.
Note 3: GNSS is not supported on SC200R-WF.
Note 4: May depend on modules' variant.
SC20-E LTE-TDD B41 does not support full-frequency and the bandwith of it is 2555-2655MHz.

* Planning/ Under development/ In progress

Smart modules

Product		SG368Z
		
Form factor		LGA
Dimensions(mm)		46.0 × 42.0 × 3.15
Frequency bands (MHz)	-WF(Global)	/
	-AP(Global)	/
CPU		RK3568, Quad-core ARM Cortex-A55 CPU @ 2.0 GHz
NPU		1 Tops
GPU		ARM Mali-G52
Memory		Commercial grade: LP4/ LP4x, standard 2 GB + 32 GB (4 GB + 32 GB optional) Industrial grade: LP4/ LP4x, standard 2 GB + 16 GB (4 GB + 32 GB optional)
Operating system		Linux (Kernel 4.19/ 5.10*)/ Android 13/ OpenWrt
Supply voltage range		3.3 V ~ 3.5 V, typ. 3.4 V
Weight (approx.) (g)		WF:13.1; AP:12.8
Operating temperature		WF: Commercial grade: -10°C ~ +75°C, Industrial grade: -40°C ~ +85°C; AP: Commercial grade: -25°C ~ +75°C, Industrial grade: -40°C ~ +85°C
Data transmission (Max.)		
LTE (Mbps)		/
UMTS		/
TD-SCDMA		/
CDMA2000		/
GSM		/
Interfaces		
LCM		1 ×HDMI 2.0: Max.(4096 ×2160) @ 60 Hz 8-lane MIPI DSI 1.2: Max.(2048 ×1536) @ 60 Hz or 8-laneLVDS:Max.(1920 ×1080) @ 60 Hz 2 ×4-lane MIPI DSI 1.2: Max.(1920 ×1080) @ 60 Hz 4-lane eDP 1.3: Max.(2560 ×1600) @ 60 Hz 4-lane LVDS: Max.(1280 ×800) @ 60 Hz LCDC RGB parallel display interface supports Max. 24 bits RGB*: Max.(1920 ×1080) @ 60 Hz
Camera		1 ×4-lane MIPI CSI 8M or 2 ×2-lane, up to 2.5 Gbps/ lane Supports DVP* (BT.656/ 1120) analog camera
Touch panel		Supported
Audio		Loudspeaker, earpiece, analog microphones and digital audio
Video		Encoding: 1080p @ 60 fps Decoding: 4K @ 60 fps H.264 AVC/ MVC Main10 Profile yuv400/ yuv420/ yuv422 @ L5.1, H.265 HEVC/ MVC Main10 Profile yuv420 @ L5.1, H.264/ AVC BP/ MP/ HP @ level4.2, H.265/ HEVC MP @ level4.1
USB		×4, compliant with USB 3.0/ 2.0 USB0: supports USB 2.0/ USB 3.0, supports USB HOST/ USB OTG USB1: supports USB 2.0/ USB 3.0, only supports USB HOST USB2: only supports USB 2.0, only supports USB HOST USB3: only supports USB 2.0, only supports USB HOST
I2C		Max. ×5
UART		Max. ×8 (SG368Z-WF); Max. ×10 (SG368Z-AP)
SD card		× 1, SD 3.0
PWRKEY		× 1
SPI		Max. ×4, supports both master and slave modes
ADC		×5, general-purpose ADC interfaces
GPIO		Max. ×107 (SG368Z-WF); Max. ×128 (SG368Z-AP)
PWM		Max. ×14 (SG368Z-WF); Max. ×16 (SG368Z-AP)
Motor driver		× 1
Flashlight driver		3 high-current flash LED drivers, which support both flash and torch modes
WLED Sink		/
Antenna		× 1, Wi-Fi & Bluetooth (SG368Z-WF)
Enhanced features		
BT		Bluetooth 4.2(BR/ EDR + BLE)
WLAN		2.4 & 5 GHz, Wi-Fi 5, 802.11a/b/g/n/ac
GNSS		/
Charge function		Supported
Dual LCDs		Supported
Firmware upgrade		Via USB
Certifications		/
Recommended applications		IoT gateways, smart commercial displays, industrial device terminals, smart hospitals, vehicle consoles and automotive NVR.

* Planning/ Under development/ In progress

Smart modules

Product		SC200L	SC200E	SC206E
				
Form factor		LCC+LGA	LCC+LGA	LCC+LGA
Dimensions (mm)		40.5 × 40.5 × 2.85	40.5 × 40.5 × 2.85	40.5 × 40.5 × 2.85
LTE feature		LTE Cat 4 3GPP E-UTRA Release 10 Compliant, Support DL MIMO 2 × 2	LTE Cat 4(SC200E-CE/EM/NA/JP/WF/GL)	LTE Cat 4(SC206E-EM/NA)
Frequency bands(MHz)	-CE (China)	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/8; GSM: 900/1800MHz	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41(140M); WCDMA: B1/8; CDMA: BC0; GSM: 900/1800MHz	/
	-EU/EM (EMEA/Africa/ South America/Korea/ South Asia/Latin America/Australia/India/ New Zealand/South Africa)	-EU (EMEA/South Africa/southeast Asia/India/Latin America) LTE-FDD: B1/3/5/7/8/20/28; LTE-TDD: B38/40/41; WCDMA: B1/5/8; GSM: 900/1800MHz	-EM(EMEA/Korea/South Asia/Latin America/India/Australia/ New Zealand/ South Africa) LTE-FDD: B1/2/3/4/5/7/8/20/28(A+B); LTE-TDD: B38/40/41 (200M); WCDMA: B1/2/4/5/8; GSM: 850/900/1800/1900MHz	-EM(EMEA/Korea/South Asia/Latin America/India/ Australia/ New Zealand/South Africa) LTE-FDD: B1/2/3/4/5/7/8/20/28(A+B); LTE-TDD: B38/40/41 (200M); WCDMA: B1/2/4/5/8; GSM: 850/900/1800/1900MHz
	-AU (ANZ/Brazil)	LTE-FDD: B1/2/3/4/5/7/8/28; LTE-TDD: B38 ; WCDMA: B1/2/4/5/8; GSM: 850/900/1800/1900 MHz	/	/
	-GL (Global)	/	LTE-FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/66/ 71; LTE-TDD: B34/38/39/40/41; WCDMA: B1/2/4/5/6/8/19; GSM: 850/900/1800/1900MHz	/
	-NA (North America)	/	LTE-FDD: B2/4/5/7/12/13/14/17/25/26/66/71; LTE-TDD: B41(200M)	LTE-FDD: B2/4/5/7/12/13/14/17/25/26/66/71; LTE-TDD: B41(200M)
	-JP (Japan)	/	LTE-FDD: B1/3/5/8/11/18/19/21/26/28; LTE-TDD: B41(200M); WCDMA: B1/6/8/19	/
	-WF(Global)	-WF(Wi-Fi)2.4G & 5G Wi-Fi, 2.4G BT	-WF (Wi-Fi) 2.4G & 5G Wi-Fi, 2.4G BT	-WF (Wi-Fi) 2.4G & 5G Wi-Fi, 2.4G BT
CPU		Unisoc SL8541E ARM Coretex 4 x A53@ 1.4GHz	QCM2290, Quad-core ARM Cortex-A53 64-bit CPU @ 2.0 GHz	QCM2290, Quad-core ARM Cortex-A53 64-bit CPU @ 2.0 GHz
NPU		/	/	/
GPU		ARM Mali-T820 as 3D graphics accelerator, up to 680 MHz	Qualcomm® Adreno™ 702 Graphics Processing Unit (GPU) with 64-bit addressing	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; 32GB eMMC + 3GB LPDDR4X	32GB eMMC + 2GB LPDDR4X
Operating system		Android 10	Android 12/13*/14*	Yocto Linux (Kernel 5.4)*
Supply voltage range		3.55 V ~ 4.2 V, typ. 3.8 V	3.55 V ~ 4.4 V, typ. 3.8 V	3.55 V ~ 4.4 V, typ. 3.8 V
Weight (approx.) (g)		10	10.3	10.3
Operating temperature		-30°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C
Data transmission (Max.)				
LTE (Mbps)		LTE-FDD: 150 (DL)/50 (UL) LTE-TDD: 130 (DL)/30 (UL)	Cat 4: LTE-FDD: 150 (DL)/50 (UL) LTE-TDD: 130 (DL)/30 (UL)	Cat 4: LTE-FDD: 150 (DL)/50 (UL) LTE-TDD: 130 (DL)/30 (UL)
UMTS		DC-HSDPA: 42 Mbps (DL); HSUPA: 5.76 Mbps (UL) WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL); DC-HSUPA: 5.76 Mbps (UL) WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL); DC-HSUPA: 5.76 Mbps (UL) WCDMA: 384 Kbps (DL/UL)
CDMA2000		EVDO: 3.1 Mbps (DL)/1.8 Mbps (UL) , 1X Advanced: 307.2 Kbps (DL/UL)	EVDO: 3.1 Mbps (DL)/1.8 Mbps (UL) 1X Advanced: 307.2 Kbps (DL/UL)	EVDO: 3.1 Mbps (DL)/1.8 Mbps (UL) 1X Advanced: 307.2 Kbps (DL/UL)
GSM(Kbps)		EDGE: 296 (DL)/236.8 (UL) , GPRS: 107 (DL)/85.6 (UL)	EDGE: 296 (DL)/236.8 (UL) GPRS: 107 (DL)/85.6 (UL)	EDGE: 296 (DL)/236.8 (UL) GPRS: 107 (DL)/85.6 (UL)
Interfaces				
LCM		4-lane MIPI_DSI, HD+ (1440 × 720) @ 60 fps	1 group of 4-lane MIPI DSI, HD+ (1680 × 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 2 or 3 cameras supported, up to 25 MP or 13 MP + 13 MP with dual ISP	2 groups of 4-lane MIPI CSI, up to 2.5 Gbps/lane 2 or 3 cameras supported, up to 25 MP or 13 MP + 13 MP with dual ISP
Touch panel		Capacitive touch panel, I2C controls	Capacitive touch panel	Capacitive touch panel
Audio		Analog channels: 3 inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC); 3 outputs: speaker, earpiece, headphone	3 analog inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC); 3 analog outputs: Line Out, earpiece, headphone	3 analog inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC); 3 analog outputs: Line Out, earpiece, headphone
Video		Encode: 1080P (H.264) @ 30 fps; WVGA (MPEG-4/VP8) @ 30 fps Decode: 1080P (H.264/MPEG-4/VP8/H.265/DivX4/5/6) @ 30 fps; WVGA (H.263) @ 30 fps	Encoder: 1080P 8-bit H.264/H.265(HEVC) @ 30 fps Decoder: 1080P 8-bit H.264/H.265(HEVC)/VP9 @ 30 fps	Encoder: 1080P 8-bit H.264/H.265(HEVC) @ 30 fps; Decoder: 1080P 8-bit H.264/H.265(HEVC)/VP9 @ 30 fps
USB		× 2, USB 2.0 USB1 supports USB OTG, does not support USB hub; up to 480 Mbps; USB2 supports USB host mode and USB hub; up to 100 Mbps	× 1, compliant with USB 2.0/ 3.1, supports USB OTG, charge, etc.	× 1, compliant with USB 2.0/ 3.1, supports USB OTG, charge, etc.
I2C		Supported	× 4	× 4
(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)	× 2 (1.8V/2.95V)
UART		× 2, up to 3.25 Mbps, UART0 supports hardware flow control	× 3, up to 4 Mbps, supports hardware flow control	× 3, up to 4 Mbps, supports hardware flow control
SDIO		/	× 1 (3.0, 4-bit SDIO)	× 1 (3.0, 4-bit SDIO)
SD card		× 1, SD 3.0, 4-bit SDIO	× 1, SD 3.0, 4-bit SDIO	× 1, SD 3.0, 4-bit SDIO
PWRKEY		Supported	Pulled up internally to 1.1 V	Pulled up internally to 1.1 V
SPI		Supported	× 1 (multiplexed)	× 1 (multiplexed)
ADC		Supported	× 1, general-purpose ADC interface	× 1, general-purpose ADC interface
GPIO		Supported	× 33	× 33
PWM		× 1	× 1	× 1
Motor driver		× 1	× 1	× 1
Antenna		× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth	× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth (SC200E-WF: × 1, Wi-Fi & Bluetooth)	× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth (SC206E-WF: × 1, Wi-Fi & Bluetooth)
Enhanced features				
BT		Bluetooth 2.1 EDR/3.0 HS/4.2 LE/5.0 LE; Support a maximum of 10 ACL/EL/SCO links	2.1 EDR/3.0 HS/4.2 LE/5.0 LE	2.1 EDR/3.0 HS/4.2 LE/5.0 LE
Wi-Fi		2.4 & 5 GHz, 802.11a/b/g/n/ac; 433 Mbps; STA/AP/P2P	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/BDS	GPS/BeiDou/GLONASS/Galileo/QZSS/SBAS	GPS/BeiDou/GLONASS/Galileo/QZSS/SBAS
Charge function		Build-in Charge IC	Build-in Charge IC & Fuel Gauge Qualcomm Quick Charge technology	Build-in Charge IC & Fuel Gauge Qualcomm Quick charge technology
Dual LCDs		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 or OTA	Firmware upgrade via USB and OTA	Firmware upgrade via USB and OTA
Certifications[1]		CCC/SRRC*/NAL*/CE/GCF/RCM/Anatel	Verizon/AT&T/T-Mobile/KDDI*/CCC/SRRC/NAL/CE/UKCA/RCM/ GCF/KC/Anatel/FCC/IC/PTCRB/JATE/TELEC/DCM/NBTC/NCC	Verizon/AT&T/T-Mobile/CE/UKCA/RCM/GCF/KC/Anatel/FCC/IC/ PTCRB/JATE/TELEC
Recommended applications		Smart POS, smart home gateways, smart robots, smart wearables, safety, PDAs & tablets, vending machines, delivery lockers, telematics, mobile computing, in-car video streaming and entertainment systems, etc.	Telematics, mobile POS terminals, gateways, safety, net-working, mobile computing, etc.	Telematics, mobile POS terminals, gateways, safety, net-working, mobile computing, etc.

Note 1: May depend on modules' variant.
SC200L can't be promote to US, Canada, Australia, New Zealand, Japan or South Korea.

* Planning/ Under development/ In progress

Smart modules

Product	SC600Y	SC680A	SC686A
			
Form factor	LCC+LGA	LCC+LGA	LCC+LGA
Dimensions (mm)	43.0 × 44.0 × 2.85	43.0 × 44.0 × 2.85	43.0 × 44.0 × 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: B1/2/3/4/5/7/8/20/28; LTE-TDD: B38/39/40/41; WCDMA: B1/2/4/5/8; GSM: 850/900/1800/1900MHz	-EM (EMEA/ India/ Korea/ South Asia/ Latin America/ Australia/ ANZ/ South Africa) LTE-FDD: B1/2/3/4/5/7/8/20/28; LTE-TDD: B38/40/41; WCDMA: B1/2/4/5/8; GSM: 850/900/1800/1900MHz	-EM (EMEA/ India/ Korea/ South Asia/ Latin America/ Australia/ ANZ/ South Africa) LTE-FDD: B1/2/3/4/5/7/8/20/28; LTE-TDD: B38/40/41; WCDMA: B1/2/4/5/8; GSM: 850/900/1800/1900MHz
Frequency bands(MHz) -NA (North America)	LTE-FDD: B2/4/5/7/12/13/14/17/25/26/66/71; LTE-TDD: B41; WCDMA: B2/4/5	-NA (North America) LTE-FDD: B2/4/5/7/12/13/14/17/25/26/66/71; LTE-TDD: B41	-NA (North America) LTE-FDD: B2/4/5/7/12/13/14/17/25/26/66/71; LTE-TDD: B41
Frequency bands(MHz) -JP (Japan)	LTE-FDD: B1/3/5/8/11/18/19/21/26/28; LTE-TDD: B41; WCDMA: B1/6/8/19	-JP[1] (Japan) LTE-FDD: B1/3/5/8/11/18/19/21/26/28; LTE-TDD: B41; WCDMA: B1/6/8/19	/
Frequency bands(MHz) -WF (Global)	Only Wi-Fi & BT	-WF (Global) Only Wi-Fi & BT	-WF (Global) Only Wi-Fi & BT
CPU	Qualcomm SDM450 ARM Coretex 8 x A53@ 1.8 GHz	Qualcomm QCM4290 ARM Coretex technology 4 x Kryo 260@ 2.0 GHz + 4 x Kryo 260@ 1.8 GHz	Qualcomm QCM4290 ARM Coretex technology 4 x Kryo 260@ 2.0 GHz + 4 x Kryo 260@ 1.8 GHz
NPU	/	1.1 TOPS	1.1 TOPS
GPU	Qualcomm® Adreno™ 506 graphics processing unit (GPU) with 64-bit addressing	Qualcomm® Kryo™ 610 graphics processing unit (GPU) at 950 MHz	Qualcomm® Kryo™ 610 graphics processing unit (GPU) at 950 MHz
Memory	2GB LPDDR3 + 16GB eMMC	64 GB UFS + 4 GB LPDDR4X (Default) 32 GB eMMC + 3 GB LPDDR4X (optional)	2GB LPDDR4X +16GB eMMC
Operating system	Android 9/10	Android 12/13/14[1]	Linux
Supply voltage range	3.55 V ~ 4.4 V, typ. 3.8 V	3.55 V ~ 4.4 V, typ. 3.8 V	3.55 V ~ 4.4 V, typ. 3.8 V
Weight (approx.) (g)	13.0	11.8	11.8
Operating temperature	-35°C ~ +75°C	-35°C ~ +75°C	-35°C ~ +75°C
Data transmission (Max.)			
LTE (Mbps)	Cat 6: LTE-FDD: 300 (DL)/50 (UL); LTE-TDD: 265 (DL)/35 (UL) Cat 4: LTE-FDD: 150 (DL)/50 (UL); LTE-TDD: 130 (DL)/30 (UL)	Cat 6: LTE-FDD: 300 (DL)/50 (UL); LTE-TDD: 265 (DL)/35 (UL) Cat 4: LTE-FDD: 150 (DL)/50 (UL); LTE-TDD: 130 (DL)/30 (UL)	Cat 6: LTE-FDD: 300 (DL)/50 (UL); LTE-TDD: 265 (DL)/35 (UL) Cat 4: LTE-FDD: 150 (DL)/50 (UL); LTE-TDD: 130 (DL)/30 (UL)
UMTS	DC-HSDPA: 42 Mbps (DL); DC-HSUPA: 11.2 Mbps (UL); WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL); DC-HSUPA: 11.2 Mbps (UL); WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL); DC-HSUPA: 11.2 Mbps (UL); WCDMA: 384 Kbps (DL/UL)
GSM(Kbps)	EDGE: 296 (DL)/236.8 (UL); GPRS: 107 (DL)/85.6 (UL)	EDGE: 296 (DL)/236.8 (UL); GPRS: 107 (DL)/85.6 (UL)	EDGE: 296 (DL)/236.8 (UL); GPRS: 107 (DL)/85.6 (UL)
Interfaces			
LCM	2 x 4-lane MIPI_DSI; WUXGA (1920 × 1200) @ 60 fps for primary display and FHD (1920 × 1080) @ 60 fps for secondary display; Wi-Fi display: 1080P @ 30 fps (UBWC)	4-lane MIPI_DSI; DSI D-PHY 1.2; Split link supported; FHD+ (1080 × 2520) aspect ratio, up to 10 bpc; QSEED4, 4 L, Q-SYNC, SVI, CABL, and FOSS	4-lane MIPI_DSI; DSI D-PHY 1.2; Split link supported; FHD+ (1080 × 2520) aspect ratio, up to 10 bpc; QSEED4, 4 L, Q-SYNC, SVI, CABL, and FOSS
Camera	3 groups of 4-lane MIPI_CSI, up to 2.1 Gbps per lane. 2 × ISP; Support three cameras (4-lane + 4-lane + 4-lane) or four cameras (4-lane + 4-lane + 2-lane + 1-lane); Up to 21 MP with dual ISP	3 × ISP, (13 MP + 13 MP) or (25 MP + 5 MP) at 30 fps or (16 MP + 16 MP) @ 24 fps; 3 groups of 4-lane MIPI_CSI, up to 2.1 Gbps/ lane; Support 3 or 4 cameras, up to 25 MP with dual ISP	3 × ISP, (13 MP + 13 MP) or (25 MP + 5 MP) at 30 fps or (16 MP + 16 MP) @ 24 fps; 3 groups of 4-lane MIPI_CSI, up to 2.1 Gbps/ lane; Support 3 or 4 cameras, up to 25 MP with dual ISP
Touch panel	× 2, Capacitive touchscreen, I2C controls	Capacitive touch panel, I2C controls	Capacitive touch panel, I2C controls
Audio	Analog channels: Three inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC); Three outputs: speaker, earpiece, headphone	Analog channels: 3 inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC); 3 outputs: speaker, earpiece, headphone	Analog channels: 3 inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC); 3 outputs: speaker, earpiece, headphone
Video	Encode and Decode: Up to 1080P @ 60 fps High frame rate encoder; 720P @ 120 fps; 60 Mbps; Maximum 972000 macro block/s; 1080P @ 60 fps decode + 1080P @ 30 fps encode;	Encode: 1080p60 8 bit HEVC (H.265); 1080p60 8 bit H.264 Decode: 1080p60 8 bit HEVC (H.265), VP9; 1080p60 8 bit H.264	Encode: 1080p60 8 bit HEVC (H.265); 1080p60 8 bit H.264 Decode: 1080p60 8 bit HEVC (H.265), VP9; 1080p60 8 bit H.264
USB	× 1, USB 2.0/3.0 (Type-C), USB OTG + Charge	× 1, USB 2.0/3.1 (Type-C)	× 1, USB 2.0/3.1 (Type-C)
I2C	Supported	× 5	× 5
(U)SIM	× 2, Support 1.8/ 2.95 V (U)SIM cards, with (U)SIM card detection function, DSDS supported	× 2, Support 1.8/ 2.95 V (U)SIM cards, with (U)SIM card detection function, DSDS supported	× 2, Support 1.8/ 2.95 V (U)SIM cards, with (U)SIM card detection function, DSDS supported
UART	×4, up to 4 Mbps, two of them support hardware flow control	× 4 (supports 115200 bps hardware flow control)	× 4 (supports 115200 bps hardware flow control)
SD card	SD 3.0, 4-bit SDIO	× 1, SD 3.0, 4-bit SDIO	× 1, SD 3.0, 4-bit SDIO
PWRKEY	Supported	Pulled up internally to 1.8 V	Pulled up internally to 1.8 V
SPI	Supported	× 3	× 3
ADC	Supported	× 2	× 2
GPIO	Supported	× 21	× 21
PWM	× 2	× 2	× 2
Motor driver	× 1	× 1	× 1
Flashlight driver	× 2	× 2	× 2
WLED Sink	× 4	× 4	× 4
Antenna	× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth	× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth	× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth
Enhanced features			
BT	Bluetooth 2.1 EDR/3.0 HS/4.2 LE; Support a maximum of 10 ACL/BEL/SCO links	Bluetooth 2.1 EDR/3.0 HS/4.2 LE/5.1 LE	Bluetooth 2.1 EDR/3.0 HS/4.2 LE/5.1 LE
Wi-Fi	2.4 & 5 GHz, 802.11a/b/g/n/ac; 433 Mbps, STA/AP/P2P	2.4 & 5 GHz, 802.11a/b/g/n/ac/ax-ready	2.4 & 5 GHz, 802.11a/b/g/n/ac/ax-ready
GNSS	GNSS[2]: GPS/BDS/GLONASS or GPS/BDS/Galileo	GNSS[3]: GPS/BDS/GLONASS/Galileo/NavIC/QZSS/SBAS; L1	GNSS[3]: GPS/BDS/GLONASS/Galileo/NavIC/QZSS/SBAS; L1
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 LCDs	support independent display for 2 LCDs	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 or OTA	Firmware upgrade via USB or OTA	Firmware upgrade via USB or OTA
Certifications[4]	Telstra/Verizon/AT&T/T-Mobile/NTT DOCOMO/KDDI/GCF/CE/RCM/Anatel/KC/NCC/PTCRB/FCC/IC/IFETEL/JATE/TELEC	Telstra*/Verizon/AT&T/T-Mobile/NTT DOCOMO/KDDI/CE/GCF/UKCA/RCM/KC/FCC/IC/PTCRB/IFETEL*/JATE/TELEC/NCC*	Verizon/AT&T/T-Mobile/CE/GCF/UKCA/RCM/KC/FCC/IC/PTCRB/JATE/TELEC
Recommended applications	Smart POS, smart home gateways, smart robots, smart wearables, safety, PDAs & tablets, vending machines, delivery lockers, telematics, mobile computing, in-car video streaming and entertainment systems, etc.		

Note 1: TBD.
Note 2: GNSS is not supported on SC600Y-WF.
Note 3: GNSS is not supported on SC680A-WF.
Note 4: May depend on modules' variant.

* Planning/ Under development/ In progress

Smart modules

Product		SG520B	SC200K
			
Form factor		LGA	LCC+LGA
Dimensions (mm)		42.5 × 56.5 × 2.95	40.5 × 40.5 × 2.85
5G feature		3GPP Release 16, DL 4 × 4MIMO, (SG520B-EM)UL 2 × 2MIMO	/
LTE feature		LTE Cat 15 3GPP Release 16, DL 4 × 4 MIMO(DL)	LTE Cat 4 3GPP E-UTRA Release 12 Compliant, Support DL MIMO 2 × 2
Frequency bands(MHz)	-CE (China)	/	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/8; GSM: 900/1800MHz
	-CN(China/India)	5G SA/NSA: n1/3/5/8/28/41/78/79; LTE: B1/3/5/8/34/38/39/40/41; WCDMA: B1/5/8	/
	-EM(EMEA/Korea/South Africa/Latin America/ Australia/India/ New Zealand /India)	5G SA/NSA: n1/3/5/7/8/20/28/38/40/41/77/78/79; LTE: B1/2/3/4/5/7/8/12/17/18/19/20/26/28/32/34/38/39/40/41/42; WCDMA: B1/2/4/5/6/8/19; GSM/EDGE: B2/3/5/8	/
	-WF(Global)	/	only Wi-Fi & BT
CPU		QCM4490, octa-core 2 × A78 @ 2.4 GHz 6 × A55 @ 2 GHz	Unisoc UIS8581E ARM Coretex 4 x A55@ 1.6 GHz + 4 x A55@ 1.2GHz
NPU		/	/
GPU		Qualcomm® Adreno™ 613	PowerVR Fentale GE8322
Memory		4 GB LPDDR4X + 64 GB UFS (Default)	2 GB LPDDR4X + 32 GB eMMC; 3 GB LPDDR4X + 32 GB eMMC; 4 GB LPDDR4X + 64 GB eMMC
Operating system		Android 13/14[1]/15[1]/16[1]	Android 10
Supply voltage range		3.55 V ~ 4.4 V, typ. 4.0 V	3.55 V ~ 4.2 V, typ. 3.8 V
Weight (approx.) (g)		17.4	10.5
Operating temperature		-35°C ~ +75°C	-30°C ~ +75°C
Data transmission (Max.)			
5G		SG520B-CN: 5G SA: 2.1 Gbps (DL)/450 Mbps (UL) 5G NSA: 2.3 Gbps (DL)/550 Mbps (UL) SG520B-EM: 5G SA: 2.1 Gbps (DL)/900 Mbps (UL) 5G NSA: 2.5 Gbps (DL)/550 Mbps (UL)	/
LTE		0.8 Gbps (DL)/200 Mbps (UL)	Cat 4: LTE FDD: 150 Mbps (DL)/50 Mbps (UL) LTE TDD: 130 Mbps (DL)/30 Mbps (UL)
UMTS		DC-HSPA+: 42 Mbps (DL)/5.7 Mbps (UL) WCDMA: 384 kbps (DL)/384 kbps (UL)	DC-HSDPA: 42 Mbps (DL) DC-HSUPA: 11.2 Mbps (DL) WCDMA: 384 Kbps (DL)/384 Kbps (UL)
GSM(Kbps)		EDGE: SG520B-EM: 296 (DL)/236.8 (UL) GPRS: SG520B-EM: 107 (DL)/85.6 (UL)	EDGE: 296 (DL)/236.8 (UL) GPRS: 107 (DL)/85.6 (UL)
Interfaces			
LCM		FHD+ @ 60/ 90/ 120 Hz	4-lane MIPI_DSI, FHD+ (2160 × 1080) @ 60 fps
Camera		3x MIPI CSI, 2x ISP: 25 MP @ 30 pfs, 16 + 16 MP @ 30 fps, 25 MP @ 30 fps ZSL, 64 MP NZSL	2 groups of 4-lane MIPI_CSI, Support 2 or 3 cameras, up to 16 MP with dual ISP
Touch panel		Capacitive touch panel	Capacitive touch panel, I2C controls
Audio		Needs external audio codec	Analog channels: 3 inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC); 3 outputs: speaker, earpiece, headphone
Video		Encode: 1080p (H.264/ H.265) @ 60 fps Decode: 1080p (H.264/ H.265) @ 60 fps	Encode: 1080P (H.264) @ 30 fps; WVGA (MPEG-4/ VP8) @ 30 fps; Decode: 1080P (H.264/ MPEG-4/ VP8/ H.265/ DivX4/ 5/ 6) @ 30 fps; WVGA (H.263) @ 30 fps
USB		Supports USB 3.1 Gen 1	× 2, USB 2.0 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
I2C		× 8	Supported
(U)SIM		× 2 (1.8/ 2.95 V)	× 2, Support 1.8/ 2.95 V (U)SIM cards, with (U)SIM card detection function, DSDS supported
UART		× 2	× 3, up to 3 Mbps, one of them supports hardware flow control
SD card		× 1, SDIO 3.0, supports 4-bit SDIO	× 1, SD 3.0, 4-bit SDIO
PWRKEY		1.8 V, pulled up internally	Supported
SPI		× 1	Supported
ADC		× 6, general-purpose ADC interfaces	Supported
GPIO		× 56	Supported
PWM		× 2	× 1
Motor driver		× 1	/
Flashlight driver		× 1	/
Antenna		× 8, cellular : × 5, Wi-Fi & Bluetooth: × 1, Wi-Fi MIMO: × 1, GNSS: × 1	× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth
Enhanced features			
BT		Bluetooth 5.2	Bluetooth 2.1 EDR/3.0 HS/4.2 LE/5.0 LE
Wi-Fi		2.4 & 5 & 6 GHz 802.11a/b/g/n/ac/ax Supports DBS, 2 × 2 MU-MIMO	2.4 & 5 GHz, 802.11a/b/g/n/ac
GNSS		GPS/GLONASS/BDS/Galileo/NavIC/QZSS/SBAS; L1	GPS/GLONASS or GPS/BDS
Charge function		Build-in Charge IC & Fuel Gauge Qualcomm Quick Charge technology	Built-in charging function
Dual LCDs		/	Only supports single LDC display
DSDS		Supports dual card dual standby	Supports dual card dual standby
Firmware upgrade		Firmware upgrade via USB or OTA	Firmware upgrade via USB or OTA
Certifications[2]		CCC/SRRC/NAL/GCF*/CE*/RCM*/UKCA*	CCC/SRRC/NAL
Recommended applications		Smart POS, smart home gateways, smart robots, smart wearables, safety, PDAs & tablets, vending machines, delivery lockers, telematics, mobile computing, in-car video streaming and entertainment systems, etc.	

Note 1: TBD.
Note 2: May depend on modules' variant.
SC200K can't be promote to US, Canada, Australia, New Zealand, Japan or South Korea .

* Planning/ Under development/ In progress

Smart modules

Product		SC600T	SC606T
			
Form factor		LCC+LGA	LCC+LGA
Dimensions (mm)		43.0 × 44.0 × 2.85	43.0 × 44.0 × 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
Frequency bands(MHz)	-EM (EMEA/ India/ Korea/ South Asia/ Latin America/ Australia/ ANZ/ South Africa)	LTE-FDD: B1/2/3/4/5/7/8/20/28; LTE-TDD: B38/39/40/41; WCDMA: B1/2/4/5/8; GSM: 850/900/1800/1900MHz	LTE-FDD: B1/2/3/4/5/7/8/20/28; LTE-TDD: B38/40/41; WCDMA: B1/2/4/5/8; GSM: 850/900/1800/1900MHz
	-NA (North America)	LTE-FDD: B2/4/5/7/12/13/14/17/25/26/66/71; LTE-TDD: B41; WCDMA: B2/4/5	LTE-FDD: B2/4/5/7/12/13/14/17/25/26/66/71; LTE-TDD: B41; WCDMA: B2/4/5
	-JP (Japan)	LTE-FDD: B1/3/5/8/11/18/19/21/26/28; LTE-TDD: B41; WCDMA: B1/6/8/19	/
	-WF (Global)	Only Wi-Fi & BT	Only Wi-Fi & BT
CPU		Qualcomm MSM8953 ARM Coretex 8 x A53@ 2.0 GHz	Qualcomm MSM8953 ARM Coretex 8 x A53@ 2.0 GHz
NPU		/	/
GPU		Qualcomm® Adreno™ 506 graphics processing unit (GPU) with 64-bit addressing	Qualcomm® Adreno™ 506 graphics processing unit (GPU) with 64-bit addressing
Memory		2GB LPDDR3 + 16GB eMMC	2GB LPDDR3 + 16GB eMMC
Operating system		Android 9/10	Yocto Linux (kernel 4.9)
Supply voltage range		3.55 V ~ 4.4 V, typ. 3.8 V	3.55 V ~ 4.4 V, typ. 3.8 V
Weight (approx.) (g)		13.0	13.0
Operating temperature		-35°C ~ +75°C	-35°C ~ +75°C
Data transmission (Max.)			
LTE (Mbps)		Cat 6: LTE-FDD: 300 (DL)/50 (UL); LTE-TDD: 265 (DL)/35 (UL) Cat 4: LTE-FDD: 150 (DL)/50 (UL); LTE-TDD: 130 (DL)/30 (UL)	Cat 6: LTE-FDD: 300 (DL)/50 (UL); LTE-TDD: 265 (DL)/35 (UL) Cat 4: LTE-FDD: 150 (DL)/50 (UL); LTE-TDD: 130 (DL)/30 (UL)
UMTS		DC-HSDPA: 42 Mbps (DL); DC-HSUPA: 11.2 Mbps (UL); WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL); DC-HSUPA: 11.2 Mbps (UL); WCDMA: 384 Kbps (DL/UL)
GSM(Kbps)		EDGE: 296 (DL)/236.8 (UL); GPRS: 107 (DL)/85.6 (UL)	EDGE: 296 (DL)/236.8 (UL); GPRS: 107 (DL)/85.6 (UL)
Interfaces			
LCM		2 x 4-lane MIPI_DSI; WUXGA (1920 × 1200) @ 60 fps for primary display and FHD (1920 × 1080) @ 60 fps for secondary display; Wi-Fi display: 1080P @ 30 fps (UBWC)	2 x 4-lane MIPI_DSI; WUXGA (1920 × 1200) @ 60 fps for primary display and FHD (1920 × 1080) @ 60 fps for secondary display; Wi-Fi display: 1080P @ 30 fps (UBWC)
Camera		3 groups of 4-lane MIPI_CSI, up to 2.1 Gbps per lane. 2 × ISP; Support three cameras (4-lane + 4-lane + 4-lane) or four cameras (4-lane + 4-lane + 2-lane + 1-lane); Up to 24 MP with dual ISP	3 groups of 4-lane MIPI_CSI, up to 2.1 Gbps per lane. 2 × ISP; Support three cameras (4-lane + 4-lane + 4-lane) or four cameras (4-lane + 4-lane + 2-lane + 1-lane); Up to 24 MP with dual ISP
Touch panel		× 2, Capacitive touchscreen, I2C controls	× 2, Capacitive touchscreen, I2C controls
Audio		Analog channels: Three inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC); Three outputs: speaker, earpiece, headphone	Analog channels: Three inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC); Three outputs: speaker, earpiece, headphone
Video		Encode and Decode: Up to 4K @ 30 fps; High frame rate encode: 720P @ 120 fps; 60 Mbps; Maximum 972000 macro block/s; 1080P @ 60 fps Decode + 1080P @ 30 fps Encode	Encode and Decode: Up to 4K @ 30 fps; High frame rate encode: 720P @ 120 fps; 60 Mbps; Maximum 972000 macro block/s; 1080P @ 60 fps Decode + 1080P @ 30 fps Encode
USB		× 1, USB 2.0/3.0 (Type-C), USB OTG + Charge	× 1, USB 2.0/3.0 (Type-C), USB OTG + Charge
I2C		Supported	Supported
(U)SIM		× 2, supports 1.8/ 2.95 V (U)SIM cards, with (U)SIM card detection function, DSDS supported	× 2, supports 1.8/ 2.95 V (U)SIM cards, with (U)SIM card detection function, DSDS supported
UART		× 4, up to 4 Mbps, two of them support hardware flow control	× 4, up to 4 Mbps, two of them support hardware flow control
SD card		SD 3.0, 4-bit SDIO	SD 3.0, 4-bit SDIO
PWRKEY		Supported	Supported
SPI		Supported	Supported
ADC		Supported	Supported
GPIO		Supported	Supported
PWM		× 2	× 2
Motor driver		× 1	/
Flashlight driver		× 2	/
WLED Sink		× 4	/
Antenna		× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth	× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth
Enhanced features			
BT		Bluetooth 2.1 EDR/ 3.0 HS/ 4.2 LE; Support a maximum of 10 ACL/ EL/ SCO links	Bluetooth 2.1 EDR/3.0 HS/4.2 LE; Support a maximum of 10 ACL/EL/SCO links
Wi-Fi		2.4 & 5 GHz, 802.11a/b/g/n/ac; 433 Mbps, STA/AP/P2P	2.4 & 5 GHz, 802.11a/b/g/n/ac; 433 Mbps, STA/AP/P2P
GNSS		GNSS[1]: GPS/BDS/GLONASS or GPS/BDS/Galileo	GNSS[2]: GPS/BDS/GLONASS or GPS/BDS/Galileo
Charge function		Build-in Charge IC & Fuel Gauge Qualcomm Quick Charge 3.0 technology	/
Dual LCDs		Supports independent display for 2 LCDs	Supports independent display for 2 LCDs
DSDS		Supports dual SIM dual standby	Supports dual SIM dual standby
Firmware upgrade		Firmware upgrade via USB or OTA	Firmware upgrade via USB or OTA
Certifications[3]		Telstra/Verizon/AT&T/T-Mobile/NTT DOCOMO/KDDI/CE/RCM/GCF/Anatel/KC/NCC/PTCRB/FCC/IC/IFETEL/JATE/TELEC	Verizon/AT&T/CE/RCM/GCF/PTCRB/FCC/IC
Recommended applications		Smart POS, smart home gateways, smart robots, smart wearables, safety, PDAs & tablets, vending machines, delivery lockers, telematics, mobile computing, in-car video streaming and entertainment systems, etc.	

Note 1: GNSS is not supported on SC600T-WF.
Note 2: GNSS is not supported on SC606T-WF.
Note 3: May depend on modules' variant.

* Planning/ Under development/ In progress

Product		SC66	SC668S
			
Form factor		LCC+LGA	LCC+LGA
Dimensions(mm)		43.0 × 44.0 × 2.85	43.0 × 44.0 × 2.85
5G feature		/	/
LTE feature		LTE Cat 6	LTE Cat 4
Frequency bands(MHz)	-CE/CN (China)	-CE(China) LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41(120M); WCDMA: B1/8; TD-SCDMA: B34/39; CDMA: BC0; GSM: 900/1800MHz	-CN(China) LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/8; CDMA: BC0; GSM: 900/1800MHz
	-E/EM (EMEA/Europe/ India/Korea/South Asia/ Latin America/Australia/ South Africa)	-E(Europe/India/Korea/South Asia/Latin America/Australia/South Africa) LTE-FDD: B1/2/3/4/5/7/8/20/28 (A+B); LTE-TDD: B38/39/40/41(200M); WCDMA: B1/2/4/5/8; GSM: 850/900/1800/1900MHz	-EM (Europe/ India/ Korea/ South Asia/ Latin America/ Australia/ South Africa) LTE-FDD: B1/2/3/4/5/7/8/20/28; LTE-TDD: B38/39/40/41(200M); WCDMA: B1/2/4/5/8; GSM: GSM850/EGSM900/DCS1800/PCS1900
	-A/NA (North America)	-A(North America) LTE-FDD: B2/4/5/7/12/13/14/17/25/26/66/71; LTE-TDD: B41(200M); WCDMA: B2/4/5	-NA (North America) LTE-FDD:B2/4/5/7/12/13/14/17/25/26/66/71; LTE-TDD: B41
	-J (Japan)	LTE-FDD: B1/3/5/8/11/18/19/21/26/28 (A+B); LTE-TDD: B41(120M); WCDMA: B1/6/8/19	/
	-MW/WF (Global)	-MW (Wi-Fi) only Wi-Fi & BT	-WF Only Wi-Fi/BT
CPU		Qualcomm SDM660 ARM Coretex technology 4 x Kryo260 Gold@2.2 GHz + 4 x Kryo260 Silver@1.843 GHz	QCM6125 Kryo Gold: high-performance quad-core processor @ 2.0 GHz; Kryo Silver: low-power quad-core processor @ 1.8 GHz
NPU		/	1.1 TOPS
GPU		Qualcomm® Adreno 512 @ 650 MHz, OpenGL ES3.1 + AEP, DX12_FL12, Vulkan, OpenCL2.0 FP, RenderScript	Qualcomm high-performance Adreno™ 610 graphics engine
Memory		3 GB LPDDR4X + 32 GB eMMC; 4 GB LPDDR4X + 64 GB eMMC	32GB eMMC+3GB LPDDR4X ; 64GB eMMC+4GB LPDDR4X; 128GB UFS+8GB LPDDR4X
Operating system		Android 9/10	Android 10/11/13
Supply voltage range		3.55 V ~ 4.4 V, typ. 4.0 V	3.55 V ~ 4.4 V, typ. 3.8 V
Weight (approx.) (g)		12.0	12.0
Operating temperature		-35°C ~ +75°C	-35°C ~ +75°C
Data transmission (Max.)			
5G		/	/
LTE (Mbps)		Cat 6*: LTE-FDD: 300 (DL)/50 (UL); LTE-TDD: 265 (DL)/30 (UL) Cat 4: LTE-FDD: 150 (DL)/50 (UL); LTE-TDD: 130 (DL)/30 (UL)	Cat 4: LTE-FDD: 150 (DL)/50 (UL); LTE-TDD: 130 (DL)/30 (UL)
UMTS		DC-HSDPA: 42 Mbps (DL); DC-HSUPA: 5.76 Mbps (UL); WCDMA: 384 Kbps (DL/UL)	DC-HSDPA: 42 Mbps (DL); DC-HSUPA: 5.76 Mbps (UL); WCDMA: 384 Kbps (DL/UL)
TD-SCDMA(Mbps)		4.2 (DL)/2.2 (UL)	/
CDMA2000		EVDO: 3.1 Mbps (DL)/1.8 Mbps (UL); 1X Advanced: 307.2 Kbps (DL/UL)	EVDO : 3.1 Mbps (DL)/1.8 Mbps (UL) 1X Advanced: 307.2 Kbps (DL/UL)
GSM(Kbps)		EDGE: 296 (DL)/236.8 (UL) ; GPRS: 107 (DL)/85.6 (UL)	EDGE: 296 (DL)/236.8 (UL); GPRS: 107 (DL)/85.6 (UL)
Interfaces			
LCM		2 × 4-lane MIPI DSI Default: MIPI_DSI (2560 × 1600 @ 60 fps) + DP over USB Type-C (4096 × 2160 @ 30 fps) ; Optional: MIPI_DSI0 (1920 × 1080 @ 60 fps) + MIPI_DSI1 (1920 × 1080 @ 60 fps) ; Wi-Fi display: 1080P @ 30 fps	4-lane MIPI DSI, supports up to 1920 × 1200 @ 60 fps or 1080 × 2520 @ 60 fps
Camera		3 × 4-lane CSIs (4/ 4/ 4 or 4/ 4/ 2/ 1) D-PHY 1.2 @ 2.1 Gbps/ lane, or 3 × 3-lane C-PHY 1.0 at 17 Gbps (2.5 G symbols per trio per second); 2 × ISP: 16 MP (30 fps ZSL) @ 1 × ISP + 16 MP (30 fps ZSL) @ 1 × ISP; Max. 24 MP (30 fps ZSL) @ 2 × ISP	3 groups of 4-lane MIPI CSI, up to 2.1 Gbps per lane; Each group of 4-lane can be divided into (2-lane + 1-lane), supports up to 6 cameras, supports 2 concurrently working cameras; Dual-ISP, supports up to (16 MP + 16 MP) or up to 24 MP
Touch panel		Capacitive touch panel, I2C controls	Capacitive touch panel
Audio		Analog channels: 3 inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC); 3 outputs: speaker, earpiece, headphone	Analog audio: speakers, handsets, headphones, 3-way microphones
Video		Decode: 4K @ 30 fps; H.264, VP8, VP9 and HEVC; Encode: 4K @ 30 fps; HEVC, H264, VP8 and MPEG-4	Encode: 4K @ 30 fps; HEVC/ H.264/ VP8 Decode: 4K @ 30 fps; HEVC/ H.264/ VP8/ VP9 1080P @ 30 fps, MPEG-2
USB		× 2 ; USB 3.1, supports DP over Type-C, compatible with USB 2.0; USB 2.0, only supports USB Host mode	× 1, supports USB 3.1 Type-C interface, compatible with USB 2.0
I2C		Supported	× 2
(U)SIM		× 2, supports 1.8/ 2.95 V (U)SIM cards, with (U)SIM card detection function, DSDS supported	× 2; supports 1.8/ 2.95 V (U)SIM cards; supports (U)SIM card hot swap detection and dual-SIM dual-standby
UART		× 3, Up to 3 Mbps, one of them is used for debugging only	× 3 (Debug UART: 2-wire serial port, specialized for debugging use; UART03: 2-wire serial port; UART00: 4-wire serial port, supports RTS and CTS hardware flow control with maximum data rate of 4 Mbps)
SD card		× 1, SD 3.0, 4-bit SDIO	× 1 (3.0, 4-bit SDIO)
PWRKEY		Supported	Supported
SPI		Supported	Supported
ADC/ GPIO		Supported	Supported
PWM		× 1	× 1
Motor driver		/	/
Flashlight driver		/	/
Antenna		× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth	× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth (SC668S-WF: × 1, Wi-Fi & Bluetooth)
Enhanced features			
BT		Bluetooth 2.1 EDR/3.0 HS/4.2 LE/5.0 LE;	BT2.1+EDR/3.0/4.1 LE/4.2 BLE/5.0
Wi-Fi		Wi-Fi[1]: 2.4 & 5 GHz, 802.11a/b/g/n/ac; 2 × 2 MIMO Wi-Fi	2.4G/5G, 802.11a/b/g/n/ac
GNSS		GNSS[2]: GPS/GLONASS/BDS/Galileo/QZSS/SBAS	GPS/GLONASS/BeiDou/Galileo/QZSS
Charge function		Build-in Charge IC & Fuel Gauge Qualcomm Quick Charge technology	Need external third-party charging chips and meters
Dual LCDs		Supports independent display for 2 LCDs	Supports dual screen display, 1920 × 1200 or 1080 × 2520 (MIPI screen) 1920 × 1080 (DP screen)
DSDS		Supports dual SIM dual standby	Supports dual-SIM dual-standby
Firmware upgrade		Firmware upgrade via USB or OTA	Firmware upgrade via USB or OTA
Certifications[3]		Verizon/AT&T/CCC/SRRC/NAL/CE/GCF/UKCA/KC/NCC/RCM/PTCRB/FCC/IC/JATE/TELEC	Verizon/AT&T/T-Mobile*/CCC/SRRC/NAL/CE/RCM/UKCA/GCF/KC/PTCRB/FCC/IC/JATE/TELEC
Recommended applications		Smart POS, smart home gateways, smart robots, smart wearables, safety, PDAs & tablets, vending machines, delivery lockers, telematics, mobile computing, in-car video streaming and entertainment systems, etc.	

Note 1: 2 × 2 MIMO Wi-Fi is not supported on SC66-CE.
Note 2: GNSS is not supported on SC66-MW.
Note 3: May depend on modules' variant.

* Planning/ Under development/ In progress

Smart modules

Product		SC696S	SG560D
			
Form factor		LCC+LGA	LGA
Dimensions(mm)		43.0 × 44.0 × 2.85	42.5 × 56.5 × 2.95
5G feature		/	3GPP Release 15, DL 4 × 4 MIMO/UL 2 × 2 MIMO
LTE feature		LTE Cat 4	LTE Cat 15, 3GPP Release 15, DL MIMO 4 × 4
Frequency bands(MHz)	-CE (China)	/	5G SA/NSA: n1/3/5/8/28/41/78/79; LTE: B1/3/5/8/34/38/39/40/41; WCDMA: B1/5/8
	-EM (EMEA/Europe/India/ Korea/South Asia/Latin America/Australia/South Africa)	-EM (Europe/ India/ Korea/ South Asia/ Latin America/ Australia/ South Africa) LTE-FDD: B1/2/3/4/5/7/8/20/28; LTE-TDD: B38/39/40/41(200M); WCDMA: B1/2/4/5/8; GSM: GSM850/EGSM900/DCS1800/PCS1900	-EM (EMEA) 5G SA/NSA: n1/3/5/7/8/20/28/38/40/41/77/78/79; LTE: B1/2/3/4/5/7/8/12/17/18/19/20/26/28/32/34/38/39/40/41/42; WCDMA: B1/2/4/5/6/8/19; GSM: B2/3/5/8
	-NA (North America)	LTE-FDD:B2/4/5/7/12/13/14/17/25/26/66/71; LTE-TDD: B41	-NA[1] (North America) 5G SA/NSA: n2/5/7/12/13/14/25/26/29/30/38/41/48/66/70/71/77/78; LTE: B2/4/5/7/12/13/14/17/25/26/29/30/38/41/42/43/46/48/66/71
	-J (Japan)	/	/
	-WF (Global)	Only Wi-Fi/BT	-WF(Wi-Fi) only Wi-Fi & BT
CPU		QCM6125 Kryo Gold: high-performance quad-core processor @ 2.0 GHz; Kryo Silver: low-power quad-core processor @ 1.8 GHz	Qualcomm QCM6490 ARM Coretex technology 1 x Kryo670 Goldplus@ 2.7 GHz + 3 x Kryo670 Gold@ 2.4GHz + 4 x Kryo670 Silver@ 1.9GHz
NPU		1.1 TOPS	12 TOPS
GPU		Qualcomm high-performance Adreno™ 610 graphics engine	Qualcomm® Adreno™ 643 @ 812 MHz
Memory		16 GB eMMC + 2 GB LPDDR4X	4 GB LPDDR4X + 64 GB UFS
Operating system		Linux	Andriod 12/13/14(TBD)/15(TBD)
Supply voltage range		3.55 V ~ 4.4 V, typ. 3.8 V	3.55 V ~ 4.4 V, typ. 4.0 V
Weight (approx.) (g)		12.0	17.5
Operating temperature		-35°C ~ +75°C	-35°C ~ +75°C
Data transmission (Max.)			
5G		/	SG560D-CE: 5G SA: 2.1 Gbps (DL)/450 Mbps (UL); 5G NSA: 2.5 Gbps (DL)/550 Mbps (UL) SG560D-EM: 5G SA: 2.1 Gbps (DL)/900 Mbps (UL); 5G NSA: 2.5 Gbps (DL)/650 Mbps (UL)
LTE		Cat 4: LTE-FDD: 150 Mbps(DL)/50 Mbps (UL); LTE-TDD: 130 Mbps(DL)/30 Mbps (UL)	Cat18: 1.2 Gbps(DL)/200 Mbps(UL)
UMTS		DC-HSDPA: 42 Mbps (DL); DC-HSUPA: 5.76 Mbps (UL); WCDMA: 384 Kbps (DL/UL)	DC-HSPA+: 42 Mbps (DL)/5.76 Mbps (UL); WCDMA: 384 Kbps (DL)/384 Kbps(UL)
TD-SCDMA		/	/
CDMA2000		EVDO : 3.1 Mbps (DL)/1.8 Mbps (UL) 1X Advanced: 307.2 Kbps (DL/UL)	/
GSM(Kbps)		EDGE: 296 (DL)/236.8 (UL); GPRS: 107 (DL)/85.6 (UL)	SG560D-EM: EDGE: 296 (DL)/236.8 (UL); GPRS: 107 (DL)/85.6 (UL)
Interfaces			
LCM		4-lane MIPI DSI, supports up to 1920 × 1200 @ 60 fps or 1080 × 2520 @ 60 fps	1 × 4-lane MIPI_DSI, support up to 2.5 Gbps/ lane, 1200 × 2520 @ 144 fps; 1 × DP over Type C, support up to 4K (3840 × 2160) @ 60 fps; Support Wi-Fi Miracast 4K @ 60fps
Camera		3 groups of 4-lane MIPI CSI, up to 2.1 Gbps per lane; Each group of 4-lane can be divided into (2-lane + 1-lane), supports up to 6 cameras, supports 2 concurrently working cameras; Dual-ISP, supports up to (16 MP + 16 MP) or up to 24 MP	4 × 4-lane MIPI_CSI, Supports up to 2.5 Gbps/ lane; 3 × ISP, 3 × 27 MP @ 24 fps; or 3 × 22MP @ 30 fps ; or 36 MP + 27 MP @24 fps; or 36MP + 22MP @ 30 fps; or Max. 1×64 MP @ 30 fps
Touch panel		Capacitive touch panel	Capacitive touchscreen, I2C controls
Audio		Analog audio: speakers, handsets, headphones, 3-way microphones	Needs external audio codec
Video		Encode: 4K @ 30 fps; HEVC/ H.264/ VP8 Decode: 4K @ 30 fps; HEVC/ H.264/ VP8/ VP9 1080P @ 30 fps, MPEG-2	Encode: 4K (H.264/ H.265) @ 30 fps Decode: 4K (H.264/ H.265/ VP9) @ 60 fps
USB		× 1, supports USB 3.1 Type-C interface, compatible with USB 2.0	× 2, USB 3.1 Type-C with DisplayPort 1.4, compatible with USB 2.0; USB 2.0 Host
I2C		× 2	Supported
(U)SIM		× 2; supports 1.8/ 2.95 V (U)SIM cards; supports (U)SIM card hot swap detection and dual-SIM dual-standby	× 2, Support 1.8/ 2.95 V (U)SIM cards, with (U)SIM card detection function; Support DSDS
UART		× 3 (Debug UART: 2-wire serial port, specialized for debugging use; UART03: 2-wire serial port; UART00: 4-wire serial port, supports RTS and CTS hardware flow control with maximum data rate of 4 Mbps)	× 3, supports 4 Mbps with Hardware Flow Control
SD card		× 1 (3.0, 4-bit SDIO)	× 1, SD 3.0, 4-bit SDIO
PWRKEY		Supported	Supported
SPI		Supported	Supported
ADC/ GPIO		Supported	Supported
PWM		× 1	× 1
Motor driver		/	× 1
Flashlight driver		/	× 1
Antenna		× 4, Main, Rx-diversity, GNSS, Wi-Fi & Bluetooth (SC696S-WF: × 1, Wi-Fi & Bluetooth)	× 8, cellular : × 5, Wi-Fi & Bluetooth: × 1, Wi-Fi MIMO: × 1, GNSS: × 1
Enhanced features			
BT		BT2.1+EDR/3.0/4.1 LE/4.2 BLE/5.0	Bluetooth 2.1 EDR/3.0 HS/4.2 LE/5.2 LE
Wi-Fi		2.4G/5G, 802.11a/b/g/n/ac	2.4 & 5 & 6 GHz, 802.11a/b/g/n/ac/ax; Wi-Fi 6E, 2 × 2 MU-MIMO, DBS
GNSS		GPS/GLONASS/BeiDou/Galileo/QZSS	GNSS[2]: GPS/GLONASS/BDS/NavIC/Galileo/QZSS/SBAS; L1 + L5
Charge function		Need external third-party charging chips and meters	Build-in Charge IC & Fuel Gauge Qualcomm Quick Charge technology
Dual LCDs		Supports dual screen display, 1920 × 1200 or 1080 × 2520 (MIPI screen) 1920 × 1080 (DP screen)	/
DSDS		Supports dual-SIM dual-standby	Supports dual SIM dual standby
Firmware upgrade		Firmware upgrade via USB or OTA	Firmware upgrade via USB or OTA
Certifications[3]		Verizon*/AT&T/CE/RCM/GCF/FCC/IC/PTCRB	Verizon*/AT&T*/T-Mobile*/UKCA/CCC/SRRC/NAL/CE/RCM/GCF/PTCRB*/FCC/IC
Recommended applications		Smart POS, smart home gateways, smart robots, smart wearables, safety, PDAs & tablets, vending machines, delivery lockers, telematics, mobile computing, in-car video streaming and entertainment systems, etc.	

Note 1: TBD.
Note 2: GNSS is not supported on SG560D-WF.
Note 3: May depend on modules' variant.

* Planning/ Under development/ In progress

Smart modules

Product		SG865W	SG885G-WF
			
Form factor		LGA	/
Dimensions(mm)		46.0 × 42.0 × 2.95	49.0 × 51.0 × 4.25
Frequency bands (MHz)	-WF(Global)	- WF* (Wi-Fi) only Wi-Fi & BT	/
	-AP(Global)	/	/
CPU		Qualcomm QCS8250 ARM Coretex technology 1 x Kryo585 Goldprime@ 2.842 GHz + 3 x Kryo585 Gold@2.419 GHz + 4 x Kryo585 Silver@ 1.805GHz	Kryo™
NPU		NPU230, 11 TOPS	Dual eNPU V3, 48 TOPS
GPU		Adreno 650 at 587 MHz- 4K 60 fps UI or 2 × 2K 60 fps UI	Adreno™ 740
Memory		8 GB LPDDR5 + 64 GB UFS 2.1	8 GB LPDDR5X + 128 GB UFS 4.0 12 GB LPDDR5X + 256 GB UFS 4.0 16 GB LPDDR5X + 256 GB UFS 4.0 16 GB LPDDR5X + 512 GB UFS 4.0
Operating system		Android 10	Android 13*
Supply voltage range		3.55 V ~ 4.4 V, typ. 3.8 V	3.55 V ~ 4.4 V, typ. 3.8 V
Weight (approx.) (g)		TBD	18.6
Operating temperature		-35°C ~ +75°C	-30°C ~ +75°C
Data transmission (Max.)			
LTE (Mbps)		/	/
UMTS		/	/
TD-SCDMA		/	/
CDMA2000		/	/
GSM		/	/
Interfaces			
LCM		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	2 × 4-lane MIPI DSI
Camera		6 × 4-lane MIPI CSI; 2 × Full ISP + 2 × Lite ISP; 2 × Front-end input: 25 MP (4:3 aspect ratio) or 18 MP (16:9 aspect ratio); 2 × Front-end input: Mono/ YUV interface; Max. 64 MP @ 30 fps ZSL @ 2 × ISP	6 × 4-lane MIPI CSI
Touch panel		Capacitive-screen, I2C controls	Supported
Audio		Needs external audio codec	SWR, Digital microphone, MI2S interfaces, HIFI I2S
Video		Encode: 4K @ 120 fps; 8K @ 30 fps; Decode: 4K @ 240 fps; 8K @ 60 fps; H.264 High Profile, H.265 Main 10 Profile, VP8, HDR 10-bit video playback (HLG, HDR10), HDR 10-bit capture (HLG)	Encoder: 4K @ 120 fps; 8K @ 30 fps Decoder: 4K @ 240 fps; 8K @ 60 fps Native encode support for H.265 Main 10, H.265 Main, H.264 high formats Native decode support for H.265 Main 10, H.265 Main, H.264 High, and VP9 profile 2
USB		2 × USB 3.1, compatible wsplayPor× 2; USB 3.1, compatible with USB 2.0, one of them supports DisplayPort v1.4	× 1, both USB 3.1/ 2.0 are compliant
I2C		Supported	× 10
UART		× 3, Up to 3 Mbps, one of them is used for debugging only	× 1, debug UART
SD card		× 1, SD 3.0, 4-bit SDIO	× 1, SD 3.0
PWRKEY		Supported	× 1
SPI		Supported	× 5
ADC		Supported	× 2 General-purpose ADC interfaces
GPIO		Supported	Supported
PWM		/	Supported
Motor driver		× 1	× 1
Flashlight driver		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	3 high-current flash LED drivers, which support both flash and torch modes
WLED Sink		/	/
Antenna		× 2, Wi-Fi & Bluetooth, Wi-Fi MIMO	× 2, Wi-Fi & Bluetooth, Wi-Fi MIMO
Enhanced features			
BT		Bluetooth 2.1 EDR/3.0 HS/4.2 LE/5.1 LE	Bluetooth 5.3 (BR/EDR + BLE)
WLAN		2.4 & 5 GHz, 2 × 2 MIMO, 802.11a/b/g/n/ac/ax, Wi-Fi 6, DBS	2.4 & 5 & 6GHz, Wi-Fi 7, 802.11a/b/g/n/ac/ax/be, 2 × 2 Wi-Fi MIMO
GNSS		NA, can be supported by using Quectel 4G/5G/GNSS modules	/
Charge function		Used for battery voltage detection, fuel gauge, battery temperature detection	Supported
Dual LCDs		support independent display for 2 LCDs	Supported*
Firmware upgrade		Firmware upgrade via USB or OTA	Via USB
Certifications		TBD	/
Recommended applications		Infotainment, live video, robotics, gaming, VR, 3D scanners, gym equipment, virtual coin mining diggers, ARM based computers and servers, etc.	Infotainment, live video, robotics, gaming, VR, 3D scanners, gym equipment, virtual coin mining diggers, ARM based computers and servers, etc.

* Planning/ Under development/ In progress

LPWA modules

Product	BG96	BG95 Series[1]	BG95xA-GL Series	BG950S-GL
				
Form factor	LGA	LGA	LGA	LGA
Dimensions (mm)	26.5 × 22.5 × 2.3	23.6 × 19.9 × 2.2	23.6 × 19.9 × 2.2 (BG950A-GL/BG951A-GL/ BG952A-GL/BG953A-GL/BG955A-GL)	23.6 × 19.9 × 2.2
RAT	LTE Cat M1/NB1/EGPRS	LTE Cat M1/Cat NB2/EGPRS	LTE Cat M1/Cat NB1/NB2; LTE Cat M1/NB1/NB2/GPRS (BG955A-GL)	Cat-M & NB IoT
Frequency bands (MHz)	LTE-FDD: B1/2/3/4/5/8/12/13/18/19/20/26*/ 28; EGPRS: 850/900/1800/1900MHz	LTE-FDD: B1/2/3/4/5/8/12/13/18/19/20/25/26 (Cat M1 Only)/27 (Cat M1 Only)/28/31/66/71 (Cat NB2 Only)/72/73/85/86[2](Cat NB2 only)/ 87[2]/88[2]; EGPRS: 850/900/1800/1900MHz	LTE-FDD: B1/2/3/4/5/8/12/13/17(Cat NB1/ NB2 Only)/18/19/20/25/26(Cat M1 Only)/27 (Cat M1 Only)/28/66 (BG950A-GL/BG951A-GL/ BG952A-GL/BG953A-GL); LTE-FDD: B1/2/3/4/5/8/12/13/17(Cat NB1/NB2 Only)/18/19/20/25/26(Cat M1 Only)/27 (Cat M1 Only)/28/66; GPRS: 850/900/1800/ 1900MHz(BG955A-GL)	Cat M1: B1/2/3/4/5/8/12/13/18/19/20/25/26/ 27/28/66/71 ; Cat NB2: B1/2/3/4/5/8/12/13/17/18/19/20/ 25/26/28/66/71/85
Weight (approx.) (g)	3.1	2.15	2.15 (BG950A-GL/BG951A-GL/BG952A-GL/ BG953A-GL); 2.05 (BG955A-GL)	2.31
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 (Max.)				
LTE Cat M1 data rates (Kbps)	375 (DL)/375 (UL)	588 (DL)/1119 (UL)	588 (DL)/1119 (UL)	Cat M1*: 588 (DL)/1119 (UL)
LTE Cat NB1 data rates (Kbps)	32 (DL)/70 (UL)	32 (DL)/70 (UL)	27.2 (DL)/62.5 (UL)	27.2 (DL)/62.5 (UL)
LTE Cat NB2 data rates (Kbps)	/	127 (DL)/158.5 (UL)	127 (DL)/158.5 (UL)	Cat NB2*: 127 (DL)/158 (UL)
EDGE data rates (Kbps)	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)	/	/
GPRS data rates (Kbps)	107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)	85.6 (DL)/42.8 (UL)(BG955A-GL)	/
SMS	•	Point-to-point MO and MT; Text and PDU mode; SMS cell broadcast	Point-to-point MO and MT; Text and PDU mode; SMS cell broadcast	Point-to-Point MO and MT; SMS cell broadcast; Text and PDU mode; SMS storage: ME by default
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	PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/NITZ/ PING/MQTT/LwM2M	TCP/PPP*/UDP/SSL*/MQTT/FTP(S)*/HTTP(S)/ LwM2M*/IPv4/IPv6*/TLS*/DTLS*/PING*/CoAP/ NITZ*
Interfaces				
(U)SIM	1.8 V/ 3 V	1.8 V	1.8 V	× 1 (Supports 1.8 V only)
UART	× 3 (MAIN, DEBUG, NMEA)	× 3 (MAIN, DEBUG, NMEA)	× 3 (MAIN, DEBUG, GNSS)(BG950A-GL/BG951A-GL/BG953A-GL/BG955A-GL); × 2 (BG952A-GL)	× 2
USB	USB 2.0 × 1	USB 2.0 × 1	USB 2.0 × 1	/
I2C	I2C[3] × 1	I2C[3] × 1	I2C* × 2 (BG952A-GL)	/
ADC	ADC × 2	ADC × 1	ADC × 2	× 2
GPIO	GPIO × 2 (I2C and NMEA can be re-configured as GPIO)	GPIO[4] × 9	GPIO × 9 (BG950A-GL/BG951A-GL/BG953A-GL/ BG955A-GL); GPIO Max. × 15 (BG952A-GL)	× 9
RESET	RESET × 1	RESET × 1	RESET × 1	× 1
PCM	PCM[3] × 1	PCM[3] × 1	/	/
Antenna	Primary, GNSS	Antenna[5]: 2 (for main antenna and GNSS antenna, respectively)	2 (for main antenna and GNSS antenna, respectively)	× 2 (Main Antenna: × 1; GNSS Antenna*: × 2)
Enhanced features				
QuecOpen*	Simplifies the Development of embedded applications	Simplifies the Development of embedded applications	Simplifies the Development of embedded applications (BG952A-GL)	/
iSIM	/	/	• (BG953A-GL)	/
DFOTA	•	•	•	•
GNSS/RIL driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x/12.x	Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x/12.x	/	•
NDIS	Windows 7/8/8.1/10/11	/	/	/
USB serial driver	Windows 7/8/8.1/10/11, Linux 2.6 or later, Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x/12.x	Windows 7/8/8.1/10/11, Linux 2.6~5.15, Android 4.x/5.x/6.x/7.x/ 8.x/9.x/10.x/11.x/ 12.x	/	/
SIM detection	•	•	•	•
GNSS	Optional	Optional	GPS, GLONASS(BG950A-GL/BG952A-GL/BG953A-GL/BG955A-GL); GPS/GLONASS/Galileo/Beidou/QZSS, LTE & GNSS concurrency (BG951A-GL);	•
Firmware update	via USB Interface	via USB Interface	via UART/USB*/DFOTA	•
Electrical features				
Supply voltage range	3.3 V ~ 4.3 V, typ. 3.8 V	typ. 3.8 V / typ. 3.3 V [6]	2.2 V ~ 4.35 V, typ. 3.3 V . (BG950A-GL/BG951A-GL/BG952A-GL/BG953A-GL); 3.3 V ~ 4.3 V, typ. 3.8 V (BG955A-GL)	VBAT_BB/ VBAT_RF: 2.2 V ~ 4.35 V, typ. 3.3 V
Power consumption	10 μA@PSM	3.9 μA@PSM[7]	1.5 μA@ PSM	Power Saving Mode: 1.35 μA; Sleep Mode @ QSCLK=2: Cat M1: 0.6 mA @ DRX = 1.28 s; 18 μA @ e-I-DRX = 40.96 s; PTW = 1.28 s; DRX = 1.28 s; 12 μA @ e-I-DRX = 81.92 s; PTW = 1.28 s; DRX = 1.28 s;
Max output power	Power class 3 23dBm @ LTE bands	Power class5 21dBm @ LTE bands / Power class3 23dBm@ LTE bands[8] / Power class 2 26dBm@ LTE B31/72/73 of BG95-M4/Power class 2 26dBm@LTE B31/72/73 and Power class 3 23dBm@other LTE bands of BG95-M9	Power class 3 23dBm @ LTE bands	Power class 3 23dBm @ LTE bands
Certifications[9]	Vodafone/Deutsche Telekom/Telefónica/ Verizon/AT&T/T-Mobile/U.S._Cellular/Rogers/ Telus/Telstra/SKT/LGU+/NTT DOCOMO/ SoftBank/KDDI/CE/GCF/PTCRB/FCC/IC/IFETEL/ RCM/KC/JATE/TELEC/NBTC/IMDA/ICASA/NCC/CCC	Vodafone/Deutsche Telekom/Telefónica/ Verizon/AT&T/T-Mobile/U.S.Celluar/Orange/ Rogers/Telus/Telstra/KT/SKT/LGU+/NTT DOCOMO/SoftBank*/KDDI/CE/UKCA/GCF/PTCRB/ FCC/IC/Anatel/IFETEL/RCM/KC/JATE/TELEC/ NBTC*/IMDA/NCC/RoHS/ATEX/PEN/CCC	Vodafone /Deutsche Telekom/Verizon/AT&T/ T-Mobile/Telus/Telstra/KT/SKT*/LGU+/NTT DOCOMO*/KDDI*/CE/GCF/PTCRB/FCC/IC/RCM/KC/ JATE/TELEC	GCF*/CE/PTCRB*/FCC/IC/RCM
Recommended applications	Gas detectors, soil PH testers, optical sensors, machinery alarm systems, irrigation controllers, elevators, asset tracking electronics, pet tracking, water/gas metering, smart parking systems, fire hydrants, smoke alarms, smart bins, street lighting			Tracker, metering, smart health

Note 1: For different variants, please refer to the BG95 specification.
Note 2: BG95-M9 support B86/B87/B88.
Note 3: For Voice Call only.
Note 4: BG95-MF provides 7 GPIO Interfaces, please refer to HD for details.
Note 5: BG95-MF provides 3 antenna interfaces, please refer to HD for details.
Note 6: For the supply voltage of different variants, please refer to the BG95 Hardware Design document.
Note 7: For the power consumption of different variants, please refer to the BG95 Hardware Design document.
Note 8: For the max output power of different variant, please refer to BG95 Hardware Design document.
Note 9: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

LPWA modules

Product	BG600L-M3	BG77	BG77xA-GL Series
			
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: B1/2/3/4/5/8/12/13/18/19/20/25/26(Cat M1 Only)/ 27 (Cat M1 Only)/28/66/71 (Cat NB2 Only)/85; EGPRS: 850/900/1800/1900MHz	LTE-FDD: B1/2/3/4/5/8/12/13/18/19/20/25/26(Cat M1 Only)/ 27 (Cat M1 Only)/28/66/71 (Cat NB2 Only)/85*	LTE-FDD: B1/2/3/4/5/8/12/13/17 (Cat NB1/NB2 Only)/18/19/ 20/25/26 (Cat M1 Only)/27 (Cat M1 Only)/28/66
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 (Max.)			
LTE Cat M1 data rates (Kbps)	588 (DL)/1119 (UL)	588 (DL)/1119 (UL)	588 (DL)/1119 (UL)
LTE Cat NB1 data rates (Kbps)	32 (DL)/70 (UL)	32 (DL)/70 (UL)	27.2 (DL)/62.5 (UL)
LTE Cat NB2 data rates (Kbps)	127 (DL)/158.5 (UL)	127 (DL)/158.5 (UL)	127 (DL)/158.5 (UL)
EDGE data rates (Kbps)	296 (DL)/236.8 (UL)	/	/
GPRS data rates (Kbps)	107 (DL)/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(BG770A-GL/BG772A-GL); PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/NITZ/PING/MQTT/LwM2M (BG773A-GL)
Interfaces			
(U)SIM	1.8 V	1.8 V	1.8 V
UART	× 3 (MAIN, DEBUG, NMEA)	× 3 (MAIN, DEBUG, NMEA)	× 3 (MAIN, DEBUG, AUX) (BG770A-GL); × 3 (MAIN, DEBUG, GNSS) (BG772A-GL/BG773A-GL)
USB	USB 2.0 × 1	USB 2.0 × 1	USB 2.0 × 1
I2C	I2C[1] × 1	I2C[1] × 1	I2C* × 2(BG772A-GL)
ADC	ADC × 1	ADC × 2	ADC × 2
GPIO	GPIO × 6	GPIO × 7	GPIO × 7(BG770A-GL/BG773A-GL); GPIO Max. × 15 (BG772A-GL)
RESET	RESET × 1	RESET × 1	RESET × 1
PCM	PCM[1] × 1	PCM[1] × 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 (BG772A-GL)
iSIM	/	/	•(BG773A-GL)
DFOTA	•	•	•
GNSS/RIL driver	Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x/12.x	Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x/12.x	/
USB serial driver	Windows 7/8/8.1/10/11, Linux 2.6~5.15, Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x/12.x	Windows 7/8/9/10/11, Linux 2.6~5.15, Android 4.x/5.x/6.x/7.x/8.x/9.x/10.x/11.x/12.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	3.3 V ~ 4.3 V, typ. 3.8 V	2.6 V ~ 4.8 V, typ. 3.3 V[2]	VBAT_BB: 2.2 V ~ 4.35 V, typ. 3.3 V VBAT_RF: 3.1 V ~ 4.2 V, typ. 3.3 V
Power consumption	4.0 μA@PSM	3.44 μA@PSM	1.4 μA@PSM
Max output power	Power class 5 21dBm @ LTE bands	Power class 5 21dBm @ LTE bands	Power class 3 23dBm @ LTE bands
Certifications[3]	Vodafone/Deutsche Telekom/Telefónica*/Verizon*/AT&T*/ T-Mobile/CE/UKCA/GCF/PTCRB/FCC/IC/Anatel/RCM/RoHS	Vodafone/Deutsche Telekom/Verizon/AT&T/T-Mobile/Telus/ CE/UKCA/GCF/PTCRB/FCC/IC/RCM/KC*/JATE/TELEC/NBTC*/NCC/ USCC/RoHS	Vodafone/Deutsche Telekom/Verizon/AT&T/T-Mobile/ Orange/Telus/Telstra/KT/SKT/LGU+/NTT DOCOMO/Softbank*/ KDDI/CE/GCF/PTCRB/FCC/IC/RCM/KC/JATE/TELEC/ICASA/RoHS
Recommended applications	Gas detectors, soil PH testers, optical sensors, machinery alarm systems, irrigation controllers, elevators, asset tracking electronics, pet tracking, water/gas metering, smart parking systems, fire hydrants, smoke alarms, smart bins, street lighting		

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.
Note 3: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

LPWA modules

Product	BC660K-GL	BC950K-GL
		
Form factor	LCC	LCC
Dimensions (mm)	17.7 × 15.8 × 2.0	23.6 × 19.9 × 2.2
RAT	LTE Cat NB2	LTE Cat NB2
Frequency bands (MHz)	B1/2/3/4/5/8/12/13/17/18/19/20/25/28/66/70/85	B1/2/3/4/5/8/12/13/17/18/19/20/25/28/66/70/85
Weight (approx.) (g)	1.0±0.2	1.6±0.2
Operating temperature	-35°C ~ +75°C	-35°C ~ +75°C
Extended temperature	-40°C ~ +85°C	-40°C ~ +85°C
Data transmission (Max.)		
LTE Cat NB1 data rates (Kbps)	Single-tone: 25.5(DL)/16.7(UL) Multi-tone: 127(DL)/158.5(UL)	Single-tone: 25.5(DL)/16.7(UL) Multi-tone: 127(DL)/158.5(UL)
LTE Cat NB2 data rates (Kbps)	127 (DL)/158.5 (UL)	127 (DL)/158.5 (UL)
GPRS data rates (Kbps)	/	/
SMS	Text mode	Text mode
Protocols	UDP/TCP/PING/LwM2M/SNTP/COAP/COAPS/HTTP/HTTPS*/MQTT/MQTTS/SSL/TLS	UDP/TCP/PING/LwM2M/SNTP/COAP/COAPS/HTTP/HTTPS*/MQTT/MQTTS/SSL/TLS
Interfaces		
(U)SIM	× 1(1.8V/3.0V)	× 1(1.8V/3.0V)
UART	UART × 2 (for QuecOpen® version, × 3)	× 2 (QuecOpen®* version, × 3, only one port for debug)
I2C	× 1 (for QuecOpen® version only)	× 1 (for QuecOpen®* only, multiplexed with other pins)
ADC	× 1 (for QuecOpen® version, × 2)	× 1 (QuecOpen®* version, ×4)
GPIO	× 4 (for QuecOpen® version, × 16)	Configurable (for QuecOpen®* only, multiplexed with other pins)
RESET(RESET_N)	× 1	× 1
SPI	× 1 (for QuecOpen® version only)	× 1 (for QuecOpen®* version only, multiplexed with other pins)
PWM	× 1 (for QuecOpen® version only)	× 1 (for QuecOpen®* version only, multiplexed with other pins)
RI	× 1	× 1
PSM_EINT	× 1 (for QuecOpen® version, × 2)	× 1 (for QuecOpen®* version, × 5)
I2S	/	/
NETLIGHT	× 1	× 1
WAKEUP_OUT	/	/
Antenna	× 1	× 1
Enhanced features		
QuecOpen®	•	•
DFOTA	•	•
BLE 5.0	/	/
Firmware update	via UART/DFOTA	via UART/DFOTA
RAI	•	•
Location based services	/	/
eSIM*	Optional	Optional
Electrical features		
Supply voltage range	2.2 V ~ 4.3 V, typ. 3.3 V	2.2 V ~ 4.3 V, typ. 3.6 V
Power consumption	800 nA @ PSM	800 nA @ PSM
Certifications	Vodafone/Deutsche Telekom/Telefónica/Orange/Verizon/AT&T/T-Mobile/Telstra/Optus/Spark/KT/LGU+/CE/GCF/PTCRB/FCC/IC/Anatel/RCM/KC/JATE/TELEC/NBTC/IMDA/ICASA/NCC	Vodafone*/Deutsche Telekom*/Telefónica*/Telstra*/KT*/LGU+*/CE/GCF/Anatel*/RCM/KC/NBTC*/IMDA*/ICASA*
Recommended Applications	Gas detectors, soil PH testers, optical sensors, machinery alarm systems, irrigation controllers, elevators, asset tracking, electronics, pet tracking, water/gas metering, smart parking systems, fire hydrants, smoke alarms, smart bins, street lighting	

* Planning/ Under development/ In progress
• Supported

Product	BC680Z-EU	BC65	BC92	BC95-GR
				
Form factor	LCC	LCC	LCC	LCC
Dimensions (mm)	17.7 × 15.8 × 2.2	17.7 × 15.8 × 2.2	23.6 × 19.9 × 2.2	23.6 × 19.9 × 2.2
RAT	3GPP Rel-14, Cat NB2	LTE Cat NB2	LTE Cat NB2/GSM	LTE Cat NB2
Frequency bands (MHz)	B3/5/8/20/28	LTE Cat NB2: B1*/3/5/8/20/28	LTE Cat NB2: B3/5/8/20/28; GSM: 850/900/1800/1900MHz	B3/5/8/20/28
Weight (approx.) (g)	1.12 ±0.2	1.2±0.2	1.8±0.1	1.6 ±0.2
Operating temperature	-35°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
Data transmission (Max.)				
LTE Cat NB1 data rates (Kbps)	/	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: 25.5 (DL)/62.5 (UL)
LTE Cat NB2 data rates (Kbps)	126.5 (DL)/158.5 (UL)	127 (DL)/158.5 (UL)	127 (DL)/158.5 (UL)	127 (DL)/158.5 (UL)
GPRS data rates (Kbps)	/	/	GPRS Class 12: 85.6 (DL)/85.6 (UL)	/
SMS	•	•	•	/
Protocols	UDP/TCP/LwM2M/SNTP/IPv4/IPv6/NITZ/PING	UDP/TCP/SNTP/MQTT/CoAP/PPP/TLS/DTLS/ CoAPS/HTTP/HTTPS	UDP/TCP/SNTP/PPP/MQTT/CoAP/HTTP/HTTPS/FTP/ CoAPS	UDP/TCP/SNTP/MQTT/CoAP*/PPP/TLS/DTLS/HTTP/ HTTPS/SMS/DFOTA
Interfaces				
(U)SIM	× 1	× 1	× 1	× 1
UART	× 2	× 3 (MAIN, DEBUG, AUX)	× 2 (MAIN, DEBUG)	× 3 (MAIN, DEBUG, AUX)
I2C	× 2(Open only)	/	/	/
ADC	× 1	× 1	× 1	× 1
GPIO	*(Open only)	/	/	/
RESET(RESET_N)	× 1	× 1	× 1	× 1
SPI	× 2(Open only)	/	/	/
PWM	× 1(Open only)	/	/	/
RI	RI*: × 1	× 1	× 1	× 1
PSM_EINT	× 1	× 1	× 1	× 1
I2S	/	/	/	/
NET_STATUS(NETLIGHT)	× 1*	/	/	× 1
WAKEUP_OUT	/	/	/	× 1
Antenna	× 2	× 1	× 1	× 1
Enhanced features				
QuecOpen®	•	/	/	*
DFOTA	•	•	•	•
BLE 5.0	/	/	/	/
Firmware update	via UART/DFOTA	via UART/DFOTA	via UART/DFOTA	•
RAI	•	•	•	•
Location based services	Supports GNSS	ECID, OTDOA	ECID, OTDOA	ECID, OTDOA
eSIM*	/	Optional	Optional	Optional
Electrical features				
Supply voltage range	2.2 V ~ 4.5 V	3.2 V ~ 4.2 V, typ. 3.8 V	3.4 V ~ 4.2 V, typ. 3.8 V	3.2 V ~ 4.2 V, typ. 3.6 V
Power consumption	2.8 μA @ PSM, 0.19 mA @ DRX in sleep mode, DRX = 2.56 s, ECL0, 0.11 mA @ eDRX in sleep mode, eDRX=10.24s, ECL0	4 μA @PSM	4 μA @PSM	3.8 μA @PSM 1.2 mA @ Idle, DRX = 2.56 s, ECL 0
Certifications[1]	Vodafone/Telefónica/CE/GCF/Anatel/RCM	Vodafone/Deutsche Telekom/Telefónica/CE/ GCF/RCM	Vodafone/Deutsche Telekom/Vodacom/CE/ GCF/Anatel/RCM/ICASA/MTN	CE/RCM
Recommended applications	Gas detectors, soil PH testers, optical sensors, machinery alarm systems, irrigation controllers, elevators, asset tracking, electronics, pet tracking, water/gas metering, smart parking systems, fire hydrants, smoke alarms, smart bins, street lighting			

Note 1: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

Satellite modules

Product	CC200A-LB	CC660D-LS
		
Form factor	LCC + LGA	LCC + LGA
Dimensions (mm)	38.0 × 37.0 × 3.35	17.7 × 15.8 × 2.0
RAT	IDP	NTN
Frequency bands (MHz)	UL: 1626.5-1660.5 MHz; 1668-1675 MHz DL: 1518-1559 MHz	B255: UL: 1626.5-1660.5 MHz; DL: 1525-1559 MHz B256 : UL: 1980-2010 MHz; DL: 2170-2200 MHz B23: UL: 2000-2020 MHz; DL: 2180-2200 MHz
Weight (approx.) (g)	9.4±0.2	1.2 ±0.2
Operating temperature	-35°C ~ +75°C	-35°C ~ +75°C
Extended temperature	-40°C ~ +85°C	-40°C ~ +85°C
Data transmission		
Satellite band	L-Band	L-Band (B255)/ S-Band (256/23)
GNSS	GPS L1/GLONASS L1/Galileo E1/BDS B1	/
Protocols	IDP	IPv4/UDP/NIDD/DNS
Interfaces		
(U)SIM	/	× 1
UART	× 2	× 3
USB	/	× 1
I2C	× 1*	/
ADC	× 2	× 1
GPIO	× 2	/
RESET(RESET_N)	× 1	× 1
RI	/	× 1*
PSM_EINT	/	× 1
NET_STATUS	× 1*	× 1*
WAKEUP_IN	× 1	/
Antenna	× 1	× 1
Enhanced features		
Firmware update	via UART/DFOTA*	via UART/DFOTA*
RAI	/	•
eSIM*	/	/
Electrical features		
Supply voltage range	Voltage range: 5.5 V ~ 6.5 V, typ. 6.0 V	2.2 V ~ 3.6 V, typ. 3.3 V
Power consumption	Satellite data reception: 162.6 mA Satellite data transmission: 1.69 A GNSS mode: 35.95 mA Deep Sleep mode: 190μA	3.4 μA @ Deep Sleep[1] 293 mA @ TX, 23 dBm (B255) 278 mA @ TX, 23 dBm (B256) 272 mA @ TX, 23 dBm (B23) 34 mA @ TX, 0 dBm (B255) 36 mA @ TX, 0 dBm (B256) 36 mA @ TX, 0 dBm (B23)
Certifications	Regulatory: CE/FCC/IC/RCM Satellite: Inmarsat Type Approval	Skylo/CE/FCC/IC/RCM/Spark
Recommended applications	Vehicle tracking, asset tracking, chassis tracking, container tracking, oil & gas pipeline monitoring, mining, smart grid, vessel connection, maritime buoys, heavy equipment monitoring, construction fleet management, smart agriculture, environmemtal monitoring	

Product	BG95-S5	BG770A-SN
		
Form factor	LGA	LGA
Dimensions (mm)	23.6 × 19.9 × 2.2	14.9 × 12.9 × 1.9
RAT	IoT-NTN/LTE Cat M1/Cat NB2/EGPRS	IoT-NTN/LTE Cat M1/Cat NB2
Frequency bands (MHz)	IoT-NTN: L-Band (B255)/ S-Band (B256/23); Cat M1: B1/2/3/4/5/8/12/13/18/19/20/25/26/27/28/66/85; Cat NB2: B1/2/3/4/5/8/12/13/18/19/20/25/28/66/71/85; EGPRS: GSM 850/EGSM 900/DCS 1800/PCS 1900	Cat M1: B1/2/3/4/5/8/12/13/18/19/20/25/26/27/28/66; Cat NB2: B1/2/3/4/5/8/12/13/17/18/19/20/25/28/66; IoT-NTN: L-Band(255)/S-Band (256/23)
Weight (approx.) (g)	2.15	0.8
Operating temperature	-35°C ~ +75°C	-35°C ~ +75°C
Extended temperature	-40°C ~ +85°C	-40°C ~ +85°C
Data transmission (Max.)		
LTE Cat M1 data rate (Kbps)	588 (DL)/1119 (UL)	Cat M1: 588 (DL)/1119 (UL)
LTE Cat NB1 data rate (Kbps)	32 (DL)/70 (UL)	27.2 (DL)/62.5 (UL)
LTE Cat NB2 data rate (Kbps)	127 (DL)/158.5 (UL)	127 (DL)/158 (UL)
EDGE data rate (Kbps)	296 (DL)/236.8 (UL)	/
GPRS data rate (Kbps)	107 (DL)/85.6 (UL)	/
SMS	SMS[2]: Point-to-point MO and MT; Text and PDU mode; SMS cell broadcast	Point-to-point MO and MT; SMS Cell Broadcast; Text and PDU Mode
Protocols	PPP/TCP[3]/UDP/SSL[3]/TLS[3]/FTP(S)[3]/HTTP(S)[3]/NITZ/NTP/PING/MQTT[3]/LwM2M[3]/CoAP[3]/IPv6[3]	PPP/TCP[3]/UDP/SSL[3]/DTLS/FTP(S)[3]/HTTP(S)[3]/NITZ/PING/NIDD/MQTT[3]/NTP/LwM2M[3]/CoAP
Interfaces		
(U)SIM	× 1	•
UART	× 3	•
USB	× 1	•
I2C	× 1	/
GPIO	× 9	•
PCM	× 1	/
GRFC	× 2	•
Antenna	× 2	•
Enhanced features		
iSIM	/	•
DFOTA[4]	•	•
GNSS/RIL driver	•	•
USB serial driver	•	•
SIM detection	•	•
GNSS	•	•
RAI	•	•
Firmware update	•	•
Electrical features		
Supply voltage range	3.3 V ~ 4.3 V, typ. 3.8V	VBAT_BB: 2.2 V–4.35 V, typ. 3.3 V VBAT_RF: 3.1 V–4.2 V, typ. 3.3 V
Power consumption	Power consumption @PSM (μA) :4.4; Power consumption @ LTE Cat M (mA): Sleep Mode: 1.58 @ DRX = 1.28 s, 0.82 @ e-I-DRX = 81.92 s; Idle Mode: 13.78 @ DRX = 1.28 s, 13.28 @ e-I-DRX = 81.92 s; Active mode: 216 @ 23 dBm, GNSS off; Power consumption @ LTE Cat NB (mA): Sleep Mode: 1.56 @ DRX = 1.28 s, 0.83 @ e-I-DRX = 81.92 s; Idle Mode: 13.73 @ DRX = 1.28 s, 13.35 @ e-I-DRX = 81.92 s; Active mode: 189 @ 23 dBm, GNSS off; Power consumption @ IoT-NTN (mA): Sleep Mode: 2.19 @ DRX = 1.28 s, 0.9 @ e-I-DRX = 81.92 s; Idle Mode: 14.46 @ DRX = 1.28 s, 13.34 @ e-I-DRX = 81.92 s; Active mode: 54 @ 24 dBm, GNSS off	Power Saving Mode: 1.4 μA; Sleep Mode: Cat M1: 1.1 mA @ DRX = 1.28 s; 0.06 mA @ e-I-DRX = 40.96 s; PTW = 1.28 s; DRX = 1.28 s; 0.05 mA @ e-I-DRX = 81.92 s; PTW = 1.28 s; DRX = 1.28 s; Cat NB1: 2.2 mA @ DRX = 1.28 s; 0.16 mA @ e-I-DRX = 40.96 s; PTW = 2.56 s; DRX = 1.28 s; 0.12 mA @ e-I-DRX = 81.92 s; PTW = 2.56 s; DRX = 1.28 s
Max output power	Power class 3 23dBm	Power class 3 23dBm
Certifications	Skylo/Verizon*/AT&T*/CE/GCF*/FCC/PTRCB*/IC/RCM	Skylo*/CE/PTCRB*/GCF*/FCC/RCM
Recommended applications	Vehicle tracking, asset tracking, chassis tracking, container tracking, oil & gas pipeline monitoring, mining, smart grid, vessel connection, maritime buoys, heavy equipment monitoring, construction fleet management, smart agriculture, environmemtal monitoring	

Note 1: Reference data provided by the baseband chip platform.
Note 2: SMS is not supported under IoT-NTN.
Note 3: Currently, due to NTN operator network limitations, those functions are not tested and verified under skylo real network.
Note 4: It is supported only on cellular networks, but not on NTN networks.

* Planning/ Under development/ In progress
• Supported

Automotive 5G modules

Product		AG55xQ	AG57xQ
			
Form factor		LGA	LGA
Dimensions (mm)		54.5 × 53.0 × 3.45	54.5 × 53.0 × 3.45
5G		Sub-6G	Sub-6G
4G		LTE Cat 19	LTE Cat 16
Frequency bands (MHz)	-CN (China)	5G-FDD: n1[1]/3[1]/28[1]; 5G-TDD: n41/78/79; LTE-FDD: B1/3/5/7/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/8; GSM: 900/1800 MHz; C-V2X: B47 (For AG550Q/AG553Q Series)	5G-FDD: n1/3/28A[3]; 5G-TDD: n41/77/78/79[4]; LTE-FDD: B1/3/5/7/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/8; GSM: 900/1800MHz
	-EU (EMEA/Australia, Korea/India/ Southeast Asia/Latin America exl. Mexico)	5G-FDD: n1/3/8/20/28; 5G-TDD: n41/78; LTE-FDD: B1/2/3/4/5/7/8/20/28/32[2]; LTE-TDD: B38/40/41/42; WCDMA: B1/3/5/6/8; GSM: 900/1800/850/1900 MHz; C-V2X: B47 (For AG550Q/AG553Q Series)	5G-FDD: n1/3/5[4]or n71[4]/8/20/28A; 5G-TDD: n38[4]/40[4]/41/78; LTE-FDD: B1/3/5[4]or B71[4]/7/8/20/28A/32[2]; LTE-TDD: B38/40/41/42[4]; WCDMA: B1/3/5[4]/8; GSM: 900/1800MHz
	-NA (North America/ Mexico)	5G-FDD: n2/5/25/66/71; 5G-TDD: n41/48/77/78; LTE-FDD: B2/4/5/7/12/13/14/17/25/26/28/29[2]/30[2]/66/71; LTE-TDD: B41/48; WCDMA: B2/4/5; GSM: 1900 MHz; C-V2X: B47 (For AG550Q/AG553Q Series)	5G-FDD: n2/5/12/25/66/71; 5G-TDD: n41/78; LTE-FDD: B2/4/5/7/12/13/14/17/25/26/29[2]/30[2]/66/71; LTE-TDD: N41; WCDMA: B41
	-ROW (Japan, Latin America)	/	5G-FDD: n1/3/28; 5G-TDD: n41/77/78/79[4]; LTE-FDD: B1/2/3/4/5/7/8/9/11[4]/18/19/21/26/28; WCDMA: B1/3/5/6/7/8/9/19; GSM: 900/1800/850/1900MHz
	-JP* (Japan)	5G-FDD: n1/3; 5G-TDD: n77/78/79; LTE-FDD: B1/3/5/7/8/9/11/19/21/28; LTE-TDD: B41; WCDMA: B1/3/5/8/9/19; C-V2X: B47 (For AG550Q/AG553Q Series)	/
Weight (approx.) (g)		21	TBD
Operating temperature		-40°C ~ +85°C (eCall: +95°C)	-40°C ~ +85°C (eCall: +95°C)
Data transmission (Max.)			
5G SA		2.0 Gbps (DL)/450 Mbps (UL)	2.0 Gbps (DL)/450 Mbps (UL)
5G NSA		2.4 Gbps (DL)/550 Mbps (UL)	2.2 Gbps (DL)/550 Mbps (UL)
LTE FDD data rates		1.6 Gbps (DL)/200 Mbps (UL)	800 Mbps (DL)/200 Mbps (UL)
LTE TDD data rates		1.4 Gbps (DL)/120 Mbps (UL)	500 Mbps (DL)/120 Mbps (UL)
DC-HSDPA/HSUPA data rates(Mbps)		42 (DL)/5.76 (UL)	42 Mbps/5.76 Mbps
WCDMA data rates (Kbps)		384 (DL)/384 (UL)	384 kbps (DL)/384 kbps (UL)
EDGE data rates (Kbps)		296 (DL)/236.8 (UL)	296 kbps (DL)/236.8 kbps (UL)
GPRS data rates (Kbps)		107 (DL)/85.6 (UL)	107 kbps (DL)/85.6 kbps (UL)
C-V2X data rates (Mbps)		48 (Tx)/48(Rx)	48 Mbps (Tx)/48 Mbps (Rx)
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
Protocols		TCP/UDP/PPP/PING/FTP(S)/HTTP(S)/SMTP/SSL/TLS/MMS/NTP/DTMF*/FILE/QMI	TCP/UDP/PPP/PING/FTP(S)/HTTP(S)/SMTP/SSL/TLS/MMS/NTP/FILE/QMI
Interfaces			
(U)SIM		× 2 (supports 1.8 V/ 3 V USIM/ SIM Cards)	×2
UART		× 3 (Main/Debug/BT UART)	×3 (Main/Debug/BT UART)
USB 2.0/3.1		× 1	×1
PCIe 3.0		× 1	×1
IIC		× 1	×1
IIS		× 1	×1
RGMII		× 1	×1
SDIO		× 1 (for eMMC)	×1 (for eMMC/SD)
SPI		× 2	×2
Audio digital (PCM)		× 1	×1
ADC		× 2 (15-bit)	×2 (15-bit)
GPIO		× 15 (For QuecOpen® version only)	×15 (For QuecOpen® version only)
RESET_N		× 1 (Reset the module)	×1 (Reset the module)
Antenna		Main × 1; Diversity × 1; MIMO 3 × 1; MIMO 4 × 1; C-V2X × 2; GNSS × 1; DSDA × 2	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	Optional
(U)SIM detection		•	•
Temperature management		•	•
GNSS		GPS/ GLONASS/ BeiDou/ Galileo /QZSS	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)	Realized through internal specific circuits and components
Gigabit ethernet		Optional	Optional
C-V2X TDD B47		Optional	Optional
DSDA (Dual SIM dual activation)		Optional	Optional
QDR 3.0 (External IMU required)		Optional	Optional
RTK/PPE		Optional	Optional
Multi-Frequency GNSS (L1/L5)		Optional	Optional
UART interface for BT function		Optional	Optional
Advanced security features			
TrustZone/ TPM*		•	•
Secure boot		•	•
SE-Linux		•	•
Software features			
RIL driver		/	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
USB ECM driver		Linux 2.6~5.12	Linux 2.6~5.0
USB RNDIS driver		Windows 7/8/8.1/10, Linux 2.6~5.12	Windows 7/8/8.1/10, Linux 2.6~5.0
USB GobiNet driver		Linux 2.6~5.12	Linux 2.6~5.0, Android 4.x/5.x/6.x/7.x/8.x/9.x
USB QMI_WWAN driver		Linux 3.4~5.12	Linux 3.4~5.0, Android 4.x/5.x/6.x/7.x/8.x/9.x
USB serial driver		Windows 7/8/8.1/10, Linux 2.6~5.12	Windows 7/8/8.1/10, Linux 2.6~5.0, Android 4.x/5.x/6.x/7.x/8.x/9.x
Electrical features			
Supply voltage range		VBAT_BB/VBAT_RF: 3.3 V ~ 4.3 V (typ. 3.8 V) ; VBAT_C-V2X: 4.75 V ~ 5.25 V (typ. 5.0 V)	VBAT_BB/VBAT_RF: 3.3 V ~ 4.3 V (typ. 3.8 V) VBAT_C-V2X: 4.75 V ~ 5.25 V (typ. 5.0 V)
Power consumption		0.04 mA @Power off; 1.4 mA @Sleep(Typ.); 25.0 mA @Idle	TBD @Power off, TBD @Sleep, Typ., TBD @Idle
Certifications[5]		CCC/SRRC/NAL/CE(AG551Q-EU)/RCM(AG551Q-EU)/GCF*/PTCRB*/FCC*/IC*/KC*/JATE*/TELEC*/AT&T*	CCC*/SRRC*/NAL*/CE*/GCF*/PTCRB*/FCC*/IC*/RCM*/KC*/JATE*/TELEC*/AT&T*
Recommended applications		Automotive	Automotive

Note 1: n1/n3/n28 for AG55xQ-CN supports SA only.
Note 2: LTE-FDD B29/B30/B32 supports Rx only.
Note 3: n28A supports Tx: 703~733 MHz, Rx:758~788 MHz.
Note 4: Optional.
Note 5: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

Automotive 5G modules

Product		AG56xN
		
Form factor		LGA
Dimensions (mm)		45.0 × 46.9 × 3.25
5G		Sub-6G
4G		LTE Cat 18
Frequency bands (MHz)	-CN (China)	5G-FDD: n1/3/5/8/28A[1]; 5G-TDD: n41/77/78/79; LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/5/8; GSM: 900/1800MHz
	-EU (EMEA/ Korea/ Australia/ India/ Southeast Asia)	5G-FDD: n1/3/7/8/20/28A[1]; 5G-TDD: n77/78; LTE-FDD: B1/3/5/7/8/20/28A[1]; LTE-TDD: B38/40/41; WCDMA: B1/3/5/8; GSM: 850/900/1800MHz
	-NA (North America)	5G-FDD: n2/5/12/66; 5G-TDD: n77/78; LTE-FDD: B2/4/5/12/29[2]/66
	-ROW (Japan/ Latin America/ Brazil/ Mexico/...)	5G-FDD: n28; 5G-TDD: n77/78/79; LTE-FDD: B1/3/19/21/28; WCDMA: B1/3
Weight (approx.) (g)		16
Operating temperature		-40°C ~ +85°C (eCall: +95°C)
Data transmission (Max.)		
5G SA		4.0 Gbps (DL)/450 Mbps (UL)
5G NSA		2.2 Gbps (DL)/480 Mbps (UL)
LTE FDD data rates		Cat18: 1.4 Gbps (DL)/200 Mbps (UL) Cat6: 300 Mbps (DL)/50 Mbps (UL)
LTE TDD data rates		Cat18: 1.4 Gbps (DL)/200 Mbps (UL) Cat6: 300 Mbps (DL)/50 Mbps (UL)
DC-HSDPA/HSUPA data rates (Mbps)		42 (DL)/5.76 (UL)
WCDMA data rates (Kbps)		384 (DL)/384 (UL)
EDGE data rates (Kbps)		296 (DL)/236.8 (UL)
GPRS data rates (Kbps)		107 (DL)/85.6 (UL)
C-V2X data rates (Mbps)		/
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
Interfaces		
(U)SIM		× 2
UART		× 4
USB 2.0/3.1		× 1
PCIe 3.0		× 1
IIC		× 2
IIS		× 1
RGMII		× 1
SGMII		× 1
SDIO		× 1
SPI		× 3
Audio digital (PCM)		× 1
ADC		× 6
GPIO		× 24
RESET_N		× 1
Antenna		Main × 1; Diversity × 1; MIMO 3 × 1; MIMO 4 × 1; GNSS × 1
Enhanced features		
QuecOpen® (Open Linux)		•
eCall		•
Dual/ AB system*		•
eSIM (eUICC)		•
(U)SIM detection		•
Temperature management		•
GNSS		GPS/ GLONASS/ BeiDou/ Galileo
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		/
RTK/ ADR		Optional
Multi-Frequency GNSS (L1/L5)		Optional
UART interface for BT function		Optional
Advanced security features		
TrustZone/ TPM*		•
Secure boot		•
SE-Linux		•
Software features		
RIL driver		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
RNDIS		Windows 7/8/8.1/10, Linux 2.6~5.0
ECM		Linux 2.6~5.0
Gobinet		Linux 2.6~5.0, Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x
QMI_WWAN driver		Linux 3.4~5.0, Android 4.x/5.x/6.x/7.x/8.x/9.x
USB serial driver		Windows 7/8/8.1/10, Linux 2.6~5.0, Android 4.x/5.x/6.x/7.x/8.x/9.x
Electrical features		
Supply voltage range		VBAT_BB/VBAT_RF: 3.3 V ~ 4.3 V (typ. 3.8 V)
Power consumption		TBD @Power off TBD @Sleep, Typ. TBD @Idle
Certifications[3]		CCC/SRRC/NAL/CE*/GCF*/RCM*/PTCRB/FCC/IC/KC*/JATE/TELEC/AT&T/DOCOMO
Recommended applications		Automotive

Note 1: 5G FDD n28A supports Tx at 703–733 MHz and Rx at 758–788 MHz.
Note 2: LTE-FDD B29 supports Rx only.
Note 3: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

Automotive LTE-A modules

Product		AG52xR (x=0, 1, 5, 9)
		
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: B1/3/5/7/8/34/38/39/40/41; UMTS: B1/8; CDMA(Optional): BC0; GSM: 1800MHz/900MHz
	-EU(EMEA/ Korea/ Brazil/ India/ Australia)	LTE: B1/3/5/7/8/20/28/32(DL)/38/40/41; UMTS: B1/3/5/8; GSM: 1800MHz/900MHz
	-NA(North America)	LTE-FDD: B2/4/5/7/12/13/14/25/26/29[1]/30*[1]/66/71
	-JP(Japan)	LTE-FDD: B1/3/5/8/9/11/18/19/21/28; LTE-TDD: B41; WCDMA: B1/3/5/8/9/19
	-GL(Global)	LTE-FDD: B1/2/3/4/5/7/8/9/11/12/13/18/19/20/21/25/26/28/29[1]/30[1 2]/32[1]/66/71; LTE-TDD: B34/38/39/40/41; WCDMA: B1/2/3/4/5/6/8/19; GSM: 850/900/1800/1900MHz
Weight (approx.) (g)		9.23
Operating temperature		-40°C ~ +85°C (eCall: +95°C)
Data transmission (Max.)		
LTE data rates (Mbps)		AG521R series/AG525R series: LTE Cat 12: LTE-FDD: 600 (DL)/150 (UL), LTE-TDD: 410 (DL)/90 (UL) LTE Cat 6: LTE-FDD: 300 (DL)/50 (UL), LTE-TDD: 226 (DL)/28 (UL) AG520R series: LTE Cat 12: LTE-FDD: 600 (DL)/75 (UL), LTE-TDD: 410 (DL)/45 (UL) LTE Cat 6: LTE-FDD: 300 (DL)/50 (UL), LTE-TDD: 226 (DL)/28 (UL)
DC-HSPA+ data rates (Mbps)		42 (DL)/5.76 (UL)
WCDMA data rates (Kbps)		384 (DL)/384 (UL)
TD-SCDMA data rates (Mbps)		/
EDGE data rates (Kbps)		296 (DL)/236.8 (UL)
GPRS data rates (Kbps)		107 (DL)/85.6 (UL)
C-V2X data rates (Mbps)		30 (Tx)/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
USB		× 1
SDIO		× 1 (eMMC)
SPI		× 1
I2S/ PCM		× 1 I2S, × 1 PCM
I2C		× 1
RGMII		× 1
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		•
Multi-APN		•
Temperature management		•
DFOTA		•
eSIM (eUICC)		Optional
(U)SIM detection		•
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 features		
TrustZone		TrustZone*/ TPM*: •
Secure boot		Secure Boot*: •
SE-Linux		•
Code/User data backup		•
Software features		
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
Electrical features		
Supply voltage range		VBAT_BB/VBAT_RF: 3.3 V ~ 4.3 V (typ. 3.8 V) , VBAT_C-V2X: 4.75 V ~ 5.25 V (typ. 5.0 V)
Power consumption		0.021 mA@Power off/ 2.03 mA@LTE sleep, PF=128/1.61 mA @LTE sleep, PF=256; 15.9 mA@Idle, PF=64/27.2 mA@Idle, PF=64, USB Active
Certifications[3]		CCC/SRRC/NAL/CE/RCM/GCF/PTCRB/FCC/IC/UKCA/IFETEL/KC/NCC/JATE/TELEC/Verizon/AT&T/T-Mobile/Telus/KT/NTT DOCOMO/Telstra
Recommended applications		Automotive

Note 1: LTE-FDD B29, B30 and B32 support Rx only.
Note 2: LTE-FDD B30 is subject to carrier's deployment.
Note 3: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

Automotive LTE-A modules

Product		AG519M
		
Form factor		LGA
Dimensions (mm)		38.0 × 42.0 × 3.05
4G		LTE Cat 6
Frequency bands (MHz)	-CN (China/India)	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/8; GSM: 900/1800MHz
	-EU (EMEA/ Korea/ Australia/Southeast Asia/ Brazil)	LTE-FDD: B1/3/5/7/8/20/28; LTE-TDD: B38/41; WCDMA: B1/5/8; GSM: 900/1800MHz
	-NA (North America/ Mexico/Latin America)	LTE-FDD: B2/4/5/7/12/13/17/28; WCDMA: B2/4/5; GSM: 850/1900MHz
	-JP (Japan)	LTE-FDD: B1/3/5/7/8/9/11/19/21/28; LTE-TDD: B41; WCDMA:B1/3/5/8/9/19
Weight (approx.) (g)		10
Operating temperature		-40°C ~ +85°C (eCall: +95°C)
Data transmission (Max.)		
LTE FDD data rates (Mbps)		300 (DL)/50 (UL)
LTE TDD data rates (Mbps)		240 (DL)/30 (UL)
DC-HSDPA/HSUPA data rates (Mbps)		42 (DL)/5.76 (UL)
WCDMA data rates (Kbps)		384 (DL)/384 (UL)
EDGE data rates (Kbps)		236.8 (DL)/236.8 (UL)
GPRS data rates (Kbps)		85.6 (DL)/85.6 (UL)
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
Interfaces		
(U)SIM		× 2
UART		× 3
USB 2.0/3.1		× 1
PCIe/USB 3.0 (PCIe by default)		× 1
IIC		× 2
RGMII		× 1
SDIO		× 1
SPI		× 3
ADC		× 3
GPIO		× 15
RESET_N		× 1
Antenna		Main × 1; Diversity × 1; Wi-Fi/BT × 1; GNSS × 1
Enhanced features		
QuecOpen® (Open Linux)		•
eCall		•
Dual/AB system*		•
eSIM (eUICC)		•
(U)SIM detection		•
Temperature management		•
GNSS		GPS/ GLONASS/ BeiDou/ Galileo
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
RTK/ADR		Optional
Multi-Frequency GNSS (L1/L5)		Optional
UART interface for BT function		Optional
Advanced security features		
TrustZone/ TPM*		•
Secure boot		•
SE-Linux		•
Software features		
RIL driver		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
RNDIS		Windows 7/8/8.1/10, Linux 2.6~5.0
ECM		Linux 2.6~5.0
Gobinet		Linux 2.6~5.0, Android 4.x/ 5.x/ 6.x/ 7.x/ 8.x/ 9.x
QMI_WWAN driver		Linux 3.4~5.0, Android 4.x/5.x/6.x/7.x/8.x/9.x
USB serial driver		Windows 7/8/8.1/10, Linux 2.6~5.0, Android 4.x/5.x/6.x/7.x/8.x/9.x
Electrical features		
Supply voltage range		VBAT_BB/VBAT_RF: 3.8 V ~ 4.3 V (typ. 4.0 V)
Power consumption		TBD @Power off TBD @Sleep, Typ. TBD @Idle
Certifications[1]		CCC/SRRC/NAL/CE*/GCF*/PTCRB*/FCC*/IC*/RCM*/KC*/JATE*/TELEC*/AT&T*
Recommended applications		Automotive

Note 1: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

Automotive LTE modules

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)	LTE-FDD: B1/3/5/7/8/20/28; LTE-TDD: B38/40; WCDMA: B1/5/8; GSM: B3/8
	-CE (China/India)	LTE-FDD: B1/3/5/8; LTE-TDD: B34/38/39/40/41; WCDMA: B1/8; TD-SCDMA: B34/39; CDMA2000 1X/EVDO(Optional): BC0; GSM: B3/8
	-NA (North America)	LTE-FDD: B2/4/5/7/12(B17)/13; WCDMA: B2/4/5; GSM: B2/5
	-J (Japan)	LTE-FDD: B1/3/5/8/9/19/21/28; LTE-TDD: B41; WCDMA: B1/3/5/6/8/19
	-LA (Latin America)	LTE-FDD: B1/2/3/4/5/7/8/28; WCDMA: B1/2/3/4/5/8; GSM: B2/3/5/8
Weight (approx.) (g)		8.1
Operating temperature		-35°C ~ +75°C
Extended temperature		-40°C ~ +85°C
Data transmission (Max.)		
LTE data rates (Mbps)		LTE-FDD: 150 (DL)/50 (UL) ; LTE-TDD: 130 (DL)/30 (UL)
DC-HSPA+ data rates (Mbps)		42 (DL)/5.76 (UL)
WCDMA data rates (Kbps)		384 (DL)/384 (UL)
TD-SCDMA data rates (Mbps)		4.2 (DL)/2.2 (UL)
EDGE data rates (Kbps)		296 (DL)/236.8 (UL)
GPRS data rates (Kbps)		107 (DL)/85.6 (UL)
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 1.8 V/ 3 V USIM/ SIM Cards)
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)
Audio digital (PCM)		× 1
ADC		× 3, 15bits
GPIO		GPIO >15 (for QuecOpen® Version only)
Antenna		Main, Rx-diversity and GNSS
Enhanced features		
QuecOpen® (Open Linux)		•
eCall		•
Era glonass		•
Multi-APN		•
Temperature management		•
DFOTA		Optional
Voice over USB (USB Audio)		•
QDR		Optional
PPE (RTK)		Optional (Support only in China)
GNSS		GPS/GLONASS/Beidou/Galileo/QZSS
Advanced security features		
TrustZone		•
Secure boot		•
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		3.3 V ~ 4.3 V, typ. 3.8 V
Power consumption		20 μA @Power off/ 1.9 mA @LTE sleep, PF=128/1.6 mA @LTE sleep, PF=256/ 22 mA @Idle, Typ.
Certifications[1]		KT/STK*/Verizon/AT&T/T-Mobile/Rogers/NTT DOCOMO/LGU+*/GCF/CE/FCC/KC/RCM/CCC/SRRC/NAL/PTCRB/IC/JATE/TELEC/Anatel
Recommended applications		Automotive

Note 1: May depend on modules' variant.

* Planning/ Under development/ In progress
• Supported

Automotive C-V2X modules

Product	AG15	AG18
		
Form factor	LGA	LGA
Dimensions (mm)	28.0 × 32.0 × 2.85	28.0 × 32.0 × 2.85
C-V2X TDD	B47 for Global	B47
	B46D for Japan (optional)	B47
Frequency bands (MHz) -(Global)	/	B47
Weight (approx.) (g)	5.735	TBD
Operating temperature	-35°C ~ +75°C	-35°C ~ +75°C
Data transmission (Max.)		
LTE data rates (Mbps)	C-V2X TDD: 26 (TX)/26 (RX)	/
Interfaces		
UART	× 2	×2
USB	USB2.0/3.0×1	×1 (USB 3.0/ 2.0)
PCIe	× 1	×1
SPI	× 1	×1
I2C	× 2	×1
1PPS	× 1	×1
ADC	× 2	×2
GPIO	× 4	×4
Antenna	Main/Rx-diversity/GNSS antenna Interfaces	× 3 (C-V2X (× 2) and GNSS antenna Interfaces)
Enhanced features		
High security	•	*
Secure boot	•	•
SELinux*	•	*
ESD/EMI protection	•	/
QDR(optional)	/	•
PPE(RTK)(optional)	/	*
Temperature management	/	•
DFOTA	/	•
GNSS	•	•
Code/User data back up	/	•
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	/	•
PCIe driver	•	TBD
Protocol	QMI (Qualcomm MSM Interface)	/
Electrical features		
Output power	Class 3 (23dBm±2dB) for C-V2X	Class 3 (23dBm±2dB) for C-V2X
Supply voltage	VBAT_BB: 3.3 V ~ 4.3 V, typ. 3.8 V VBAT_RF: 4.75 V ~ 5.25 V, typ. 5.0 V	VBAT_BB: 3.3 V ~ 4.3 V, typ. 3.8 V VBAT_RF: 4.75 V ~ 5.25 V, typ. 5.0 V
Power consumption	80 μA@PowerOff	TBD
Sensitivity	C-V2X TDD B47: -96dBm ; C-V2X TDD B46D: -96dBm	2RX: -97.5dBm SISO: TBD
Certifications	SRRC	SRRC*, CE*
Recommended applications	Automotive	V-BOX, T-BOX

Product	AG215S
	
Form factor	LGA
Dimensions (mm)	AG215S-CN/ -GL: 33.5 × 33.0 × 3.25 ; AG215S-GLR: 33.5 × 35.0 × 3.25
Weight (approx.) (g)	7.07
Operating temperature	-40°C ~ +85°C
Application processor module	Based on 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	Supports 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)	Secure key generation and storage, digital signature and verification, Up to 2000TPS ECSDA capability (based on NIST p-256 and SM2)

* Planning/ Under development/ In progress
• Supported

Automotive Wi-Fi & Bluetooth modules

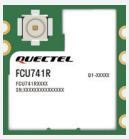
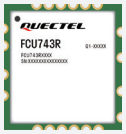
	Automotive RF Wi-Fi & Bluetooth modules			
Product	**AF20**	**AF50T**	**AF51Y**	**AF55C**
				
Frequency bands	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz
MIMO	/	2 × 2 + 2 × 2, Dual MAC, support DBS	2 × 2 + 1 × 1, Dual MAC	2 × 2
WLAN standard	IEEE 802.11a/b/g/n/ac	IEEE 802.11a/b/g/n/ac/ax	IEEE 802.11a/b/g/n/ac	IEEE 802.11a/b/g/n/ac/ax
BT standard	BT 5.0	BT 5.2	BT 5.2	BT 5.2
Form factor	LGA	LGA	LGA	LGA
Dimensions (mm)	17.2 × 15.2 × 2.26	19.5 × 21.5 × 2.3	19.5 × 21.5 × 2.5	19.5 × 21.5 × 2.85
Operating temperature	-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	2.7
General features				
Modulation mode	CCK/BPSK/QPSK/16QAM/64QAM/256QAM	CCK/BPSK/QPSK/16QAM/64QAM/256QAM/ 1024QAM	CCK/BPSK/QPSK/16QAM/64QAM/256QAM	CCK/BPSK/QPSK/16QAM/64QAM/256QAM/1024 QAM
Encryption mode	WEP/TKIP/AES/WPA-PSK/WPA2-PSK	WPA3	WPA3	WPA3
AP (max access point)	16	32	32	16
Operator mode	AP/STA	AP/STA	AP/STA	AP/STA
I/O interfaces				
PCIe	/	× 1(PCIe 2.0)	× 1(PCIe 2.0)	× 1(PCIe 2.0)
SDIO	× 1(SDIO 3.0)	/	/	× 1(optional)
UART	× 1	× 1	× 1	× 1
PCM	× 1	× 1	× 1	× 1
Wi-Fi antenna	/	× 1(ANT_Wi-Fi1)	× 1(ANT_Wi-Fi1)	× 1(ANT_Wi-Fi1)
BT antenna	/	× 1(ANT_BT) (optional)	× 1(ANT_BT)(optional)	× 1(ANT_BT)(optional)
Wi-Fi/BT antenna	× 1(ANT_Wi-Fi1/BT)	× 1(ANT_Wi-Fi0/BT)	× 1(ANT_Wi-Fi0/BT)	× 1(ANT_Wi-Fi0/BT)
Electrical characteristics				
Supply voltage range	Core supply voltage : 3.3 V; I/O supply voltage : 1.8 V	Core supply voltage : 0.95 V, 1.35 V, 1.95 V; I/O supply voltage : 1.8 V; RF supply voltage : 3.85 V	PA supply voltage: 2.2 V; I/O supply voltage: 1.8 V; Core supply voltage: 1.8 V	Core supply voltage: 3.3 V; I/O supply voltage: 1.8 V
Physical rate (max.)				
802.11a	54 Mbps	54 Mbps	54 Mbps	54 Mbps
802.11b	11 Mbps	11 Mbps	11 Mbps	11 Mbps
802.11g	54 Mbps	54 Mbps	54 Mbps	54 Mbps
802.11n	135 Mbps	600 Mbps	300 Mbps	600 Mbps
802.11ac	433 Mbps	866 Mbps	866 Mbps	866 Mbps
802.11ax	/	1774.5 Mbps	/	1.2 Gbps
BLE	1 Mbps	2 Mbps	2 Mbps	2 Mbps
Recommended applications	Automotive	Automotive	Automotive	Automotive

AF20 can work with Quectel AG35 module to provide Wi-Fi/BT function.
AF50T/AF51Y can work with Quectel AG52xR and AG55xQ module to provide Wi-Fi/BT function.

Automotive Wi-Fi & Bluetooth modules

	Automotive RF Wi-Fi & Bluetooth modules					
Product	**AH20C**	**AF31G**	**AF66T**	**AF67E**	**AF68E**	**AF61Y**
						
Frequency bands	2.4 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz/6 GHz	2.4 GHz/5 GHz
MIMO	/	2 × 2 MIMO	2 × 2 + 2 × 2, Dual MAC, support BDS	2 × 2 MIMO, dual MAC	2 × 2 + 2 × 2, Dual MAC, support BDS	2 × 2 + 1 × 1, Dual MAC
WLAN standard	/	IEEE 802.11 a/b/g/n/ac	IEEE 802.11 a/b/g/n/ac/ax	IEEE 802.11a/b/g/n/ac/ax	IEEE 802.11a/b/g/n/ac/ax	IEEE 802.11a/b/g/n/ac
BT standard	BT 5.2	BT 5.0	BT 5.2	BT 5.3	BT 5.3	BT 5.2
Form factor	LGA	LGA	LGA	LGA	LGA	LGA
Dimensions (mm)	13.0 × 13.0 × 2.45	23.0 × 23.0 × 3.0	23.0 × 23.0 × 3.0	23.0 × 23.0 × 3.0	23.0 × 23.0 × 3.0	23.0 × 23.0 × 3.0
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
Weight (approx.) (g)	0.71	3.11	3.36	TBD	TBD	3.58
General features						
Modulation mode	GFSK/π/4-DQPSK/8-DPSK/ Gaussia	CCK/DSSS/OFDM/BPSK/QPSK/ QAM	Wi-Fi: DSSS/CCK/OFDM/OFDMA/ BPSK/QPSK/QAM, BT: GFSK/ Π/4 DQPSK/8DPSK	BPSK/QPSK/CCK/16QAM/ 64QAM/256QAM/1024QAM	CCK/BPSK/QPSK/16QAM/ 64QAM/256QAM/1024QAM/ 4096QAM	CCK/BPSK/QPSK/16QAM/ 64QAM/256QAM
Encryption mode	/	WPA 3	WPA 3	WPA3	WPA 3	WPA 3
AP (max access point)	/	10	32	32	32	32
Operator mode	/	AP/STA	AP/STA	AP/STA	AP/STA	AP/STA
I/O interfaces						
PCIe	/	× 1	× 1	× 1(PCIe 2.0)	PCIe Gen3	× 1(PCIe 2.0)
SDIO	/	/	/	/	/	/
UART	× 1	× 1	× 1	x 1	× 1	× 1
PCM	× 1	× 1	× 1	x 1	× 1	× 1
Wi-Fi antenna	/	× 1(ANT_Wi-Fi1)	× 1(ANT_Wi-Fi1)	× 1(ANT_Wi-Fi1)	× 1(ANT_Wi-Fi1)	× 1(ANT_Wi-Fi1)
BT antenna	× 1(ANT_BT)	/	× 1(ANT_BT)(optional)	× 1(ANT_BT)(optional)	× 1(ANT_BT) (optional)	× 1(ANT_BT)(optional)
Wi-Fi/BT antenna	/	× 1(ANT_Wi-FiO/BT)	× 1(ANT_Wi-FiO/BT)	× 1(ANT_Wi-FiO/BT)	× 1(ANT_Wi-FiO/BT)	× 1(ANT_Wi-FiO/BT)
Electrical characteristics						
Supply voltage range	Core supply voltage: 3.3 V; I/O supply voltage: 1.8 V	VDD_RF: 3.14 V ~ 3.46 V, typ. 3.3 V; VDD_IO: 1.71 V ~ 1.89 V, typ. 1.8 V	VDD_RF: 3.3 V ~ 4.25 V, typ. 3.85 V; VDD_CORE: 1.90 V, 1. 35 V, 0.95 V; VDD_IO: 1.71 V ~ 1.89 V, typ. 1.8 V	VDD_PA_A: 3.14 V ~ 4.25 V, typ. 3.3 V VDD_PA_B: 1.71 V ~ 2.1 V, typ. 1.8 V VDD_CORE: 1.90 V, 1. 35 V, 0.95 V VDD_IO: 1.71 V ~ 1.89 V, typ. 1.8 V	VDD_PA_A: 3.8 V; VDD_PA_B: 1.8 V; VDD_CORE: 1.90 V, 1. 35 V, 0.95 V	PA supply voltage: 2.2V; I/O supply voltage: 1.8 V; Core supply voltage: 1.8 V
Physical rate (max.)						
802.11a	/	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps
802.11b	/	11 Mbps	11 Mbps	11 Mbps	11 Mbps	11 Mbps
802.11g	/	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps
802.11n	/	300 Mbps	300 Mbps	300 Mbps	600 Mbps	600 Mbps
802.11ac	/	866 Mbps	866 Mbps	866 Mbps	866 Mbps	866 Mbps
802.11ax	/	/	2G : 573.5 Mbps, 5G : 1200 Mbps	1440 Mbps	3.6 Gbps	/
BLE	1Mbps	1Mbps	2 Mbps	2 Mbps	2 Mbps	2 Mbps
Recommended applications	Automotive	Automotive	Automotive	Automotive	Automotive	Automotive

RF Wi-Fi & Bluetooth modules

	Wi-Fi 4					
Product	**FC30R**	**FC909A**	**FCS940R**	**FCS945R**	**FCU741R**	**FCU743R**
						
Frequency bands	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz
MIMO	1 × 1	1 × 1	1 × 1	1 × 1	1 × 1	1 × 1
WLAN standard	IEEE 802.11b/g/n	IEEE 802.11b/g/n	IEEE 802.11b/g/n	IEEE 802.11a/b/g/n	IEEE 802.11a/b/g/n	IEEE 802.11a/b/g/n
BT standard	/	BT 5.2	BT 5.0	BT 5.2	/	BT 5.2
Form factor	LCC	LCC	LCC	LCC	LCC	LCC
Dimensions (mm)	12.0 × 12.0 × 2.1	12.0 × 12.0 × 1.95	12.0 × 12.0 × 2.0	12.0 × 12.0 × 2.15	13.0 × 12.2 × 2.25	13.0 × 12.2 × 2.0
Operating temperature	-40°C ~ +85°C	-30°C ~ +85°C	0°C ~ +70°C or -20°C ~ +80°C	-20°C~ +70°C (-40°C ~ +85°C Optional)	-20°C ~ +70°C	-20°C ~ +70°C
Weight (approx.) (g)	0.58	0.6	0.53	0.62	0.68	0.56
General features						
Modulation mode	BPSK/QPSK/CCK/16QAM/ 64QAM	DSSS/OFDM/DBPSK/DQPSK/ CCK/BPSK/QPSK/16QAM/ 64QAM	OFDM/CCK/BPSK/QPSK/16QAM/ 64QAM	CCK/BPSK/QPSK/DQPSK/ 16QAM/64QAM	CCK/DBPSK/DQPSK/BPSK/ QPSK/16QAM/64QAM	CCK/DBPSK/DQPSK/BPSK/ QPSK/16QAM/64QAM
Encryption mode	WPA3	WPA3	WPA3	WPA3	WPA3	WPA3
I/O interfaces						
PCIe	/	/	/	/	/	/
SDIO	× 1 (SDIO 3.0)	× 1 (SDIO 2.0)	× 1 (SDIO 2.0)	× 1 (SDIO 2.0)	/	/
USB	/	/	/	/	× 1	× 1 (USB2.0)
SPI	/	/	/	/	/	/
UART	/	× 1	× 1	× 1	/	/
PCM	/	× 1	× 1	× 1	/	/
Wi-Fi antenna	× 1 (ANT_Wi-Fi1)	/	/	/	× 1 (ANT_Wi-Fi1)	/
BT antenna	/	/	/	× 1 (ANT_BT) (optional)	/	/
Wi-Fi/BT antenna	/	× 1 (ANT_Wi-FiO/BT)	× 1 (ANT_Wi-FiO/BT)	× 1 (ANT_Wi-Fi/BT)	/	× 1 (ANT_Wi-FiO/BT)
Electrical characteristics						
Supply voltage range	VBAT: 3.0 V ~ 3 .6 V, typ. 3.3 V; VDDIO: 1.75 V ~ 1.89 V, typ. 1.8 V	VBAT: 3.0 V ~ 4.8 V, typ. 3.3 V; VDDIO: 1.71 V ~ 3.63 V, typ. 1.8/3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V; VDDIO: 1.62 V ~ 3.6 V, typ. 1.8/3.3 V	VBAT: 3.0 V~3.6 V, typ. 3.3 V; VDD_IO: 1.62 V ~ 1.98 V, typ. 1.8 V, 3.0 V ~ 3.6 V, typ. 3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V
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	Max. current at Tx mode: 300 mA @ VBAT 0.7 mA @ VIO	Max. current at Tx mode: 364.6 mA @ VBAT 26.6 mA @ VDDIO	Max. current at Tx mode: 335 mA @ VBAT 0.3 mA @ VDD_IO	Max. current at Tx mode: 400 mA @ VBAT	Max. current consumption at 802.11b/g/a/n mode: 410.2 mA @ 3.3 V
Physical rate (max.)						
802.11a	/	/	/	54 Mbps	54 Mbps	54 Mbps
802.11b	11 Mbps	11 Mbps	11 Mbps	11 Mbps	11 Mbps	11 Mbps
802.11g	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps
802.11n	150 Mbps	72 Mbps	150 Mbps	150 Mbps	150 Mbps	150 Mbps
802.11ac	/	/	/	/	/	/
802.11ax	/	/	/	/	/	/
Certifications	SRRC/CE/FCC/IC/RCM/KC*/JATE/ TELEC	SRRC/CE/FCC/IC	SRRC/CE/FCC/IC/RCM/KC*/ JATE*/TELEC*	SRRC/CE/FCC/IC/RCM/KC/JATE*/ TELEC*	SRRC/CE/FCC/IC/RCM/KC*/JATE/ TELEC	SRRC/CE/FCC/IC/RCM/KC*/ JATE*/TELEC*
Recommended applications	Telematics, smart metering, mobile POS terminals, gateways, safety, tracking and tracing, remote maintenance and control, networking, mobile computing, healthcare, etc.	OTT, smart speakers, projectors, POS, IPC	IPC, printers, POS, speakers, display etc.	Printers, POS, attendance machines, vacuum cleaners, smart speakers, digital signage, set-top boxes/IPTV, smart home control screens etc.	Printers, POS, attendance machines, vacuum cleaners, smart speakers, digital signage, set-top boxes/IPTV, smart home control screens etc.	Video transmission, printers, POS, attendance machines, vacuum cleaners, smart speakers, digital signage, set-top boxes/IPTV, smart home control screens, etc.

FC30R can work with Quectel EC20-CE/EC21/EC25/EC200A module to provide Wi-Fi/BT function.

* Planning/ Under development/ In progress

RF Wi-Fi & Bluetooth modules

	Wi-Fi 5								
Product	**FC20**	**FC21**	**FC900E**	**FC905A**	**FCS950R**	**FC906A**	**FC80A**	**FCS850R**	**FCS850R-B**
									
Frequency bands	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz+5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz
MIMO	1 × 1	1 × 1	1 × 1	1 × 1	1 × 1	1 × 1	2 × 2 or 1 × 1 + 1 × 1 in RSDB (Real Simultaneous Dual Band) mode	2 × 2	2 × 2
WLAN standard	IEEE 802.11a/b/g/n/ac	IEEE 802.11a/b/g/n/ac	IEEE 802.11a/b/g/n/ac	IEEE 802.11a/b/g/n/ac	IEEE 802.11a/b/g/n/ac	IEEE 802.11a/b/g/n/ac	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 5.0	BT 5.0	BT 5.0	BT 4.2	BT 5.4	BT 5.1	BT 5.0	BT 5.0
Form factor	LCC	LCC	LCC	LCC	LCC	LCC	LCC	LCC	LCC
Dimensions (mm)	16.6 × 13.0 × 2.05	16.6 × 13.0 × 2.05	12.0 × 12.0 × 2.05	12.0 × 12.0 × 1.55	12.0 × 12.0 × 2.35	12.0 × 12.0 × 1.55	15.0 × 13.0 × 2.2	15.0 × 13.0 × 2.3	15.0 × 13.0 × 2.3
Operating temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-30°C ~ +85°C	-20°C~ +70°C (-40°C ~ +85°C Optional)	-20°C ~ +70°C	-40°C ~ +85°C	-20°C ~ +70°C	-20°C ~ +70°C
Weight (approx.) (g)	0.81	0.73	0.53	0.6	0.58	0.5	0.86	0.79	0.79
General features									
Modulation mode	DSSS/CCK/BPSK/QPSK/DBPSK/DQPSK/16QAM/64QAM/256QAM	DSSS/CCK/BPSK/QPSK/DBPSK/DQPSK/16QAM/64QAM/256QAM	BPSK/QPSK/CCK/16QAM/64QAM/256QAM	DSSS/CCK/BPSK/QPSK/DBPSK/DQPSK/16QAM/64QAM/256QAM	DBPSK/DQPSK/CCK/BPSK/QPSK/16QAM/64QAM/256QAM	DSSS/CCK/BPSK/QPSK/16QAM/64QAM/256QAM	BPSK/QPSK/CCK/16QAM/64QAM/256QAM	DBPSK/DQPSK/BPSK/QPSK/CCK/16QAM/64QAM/256QAM	DBPSK/DQPSK/BPSK/QPSK/CCK/16QAM/64QAM/256QAM
Encryption mode	WPA3	WPA3	WEP/TKIP/AES/WPA-PSK/WPA2-PSK	WPA3	WPA3	WPA3	WPA3	WPA3	WPA3
I/O interfaces									
PCIe	/	/	/	/	/	/	/	/	/
SDIO	× 1 (SDIO 3.0)	× 1 (SDIO 3.0)	× 1 (SDIO 3.0)	× 1 (SDIO 3.0)	× 1 (SDIO 3.0)	× 1 (SDIO 3.0) (optional)[1]	× 1 (SDIO 3.0)	× 1 (SDIO 3.0)	× 1 (SDIO 3.0)
USB	/	/	/	/	/	× 1 (USB2.0) (optional)[1]	/	/	/
SPI	/	/	/	/	/	/	/	/	/
UART	× 1	× 1	× 1	× 1	× 1	× 1 (optional)	× 1	× 1	× 1
PCM	× 1	× 1	× 1	× 1	× 1	× 1	× 1	× 1	× 1
Wi-Fi antenna	/	/	/	/	/	/	× 1 (ANT_Wi-Fi1) × 1 (ANT_Wi-Fi0)	× 1 (ANT_Wi-Fi1)	× 1 (ANT_Wi-Fi1) × 1 (ANT_Wi-Fi0)
BT antenna	/	/	/	/	/	/	/	/	× 1 (ANT_BT)
Wi-Fi/BT antenna	× 1 (ANT_Wi-Fi0/BT)	× 1 (ANT_Wi-Fi0/BT)	× 1 (ANT_Wi-Fi0/BT)	× 1 (ANT_Wi-Fi0/BT)	× 1 (ANT_Wi-Fi0/BT)	× 1 (ANT_Wi-Fi0/BT)	× 1 (ANT_Wi-Fi0/BT)	× 1 (ANT_Wi-Fi0/BT)	/
Electrical characteristics									
Supply voltage range	VBAT: 3.14 V ~ 3 .46 V, typ. 3.3 V; VDDIO: 1.71 V ~ 3.46 V, typ. 1.8 V/3.3 V	VBAT: 3.14 V ~ 3 .46 V, typ. 3.3 V; VDDIO: 1.71 V ~ 3.46 V, typ. 1.8 V/3.3 V	VBAT: 3.14 V ~ 3.46 V, typ. 3.3 V; VDDIO: 1.71V ~ 3.46 V, typ. 1.8V/3.3 V	VBAT: 3.13 V ~ 4.8 V, typ. 3.6 V; VDDIO: 1.71 V ~ 3.63 V, typ. 1.8V/3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V; VDDIO: 1.62 V ~ 3.6 V, typ. 1.8V/3.3 V	VBAT: 3.2 V ~ 4.8 V, typ. 3.6 V; VDD_IO: 1.62 V ~ 3.63 V, typ. 1.8V/ 3.3 V	VBAT: 3.2 V ~ 4.5 V, typ. 3.3 V; VDDIO: 1.7 V ~ 3.6 V, typ. 1.8V/3.3 V	VBAT: 3.1 V ~ 3.6 V, typ. 3.3 V; VDDIO: 1.7 V ~ 3.6 V, typ. 1.8V/3.3 V	VBAT: 3.1V ~ 3.6 V, typ. 3.3 V; VDDIO: 1.7 V ~ 3.6 V, typ. 1.8V/3.3 V
Power consumption	OFF State (Wi-Fi is disabled): 2 μA @3.3 V WLAN power supply 554 μA @1.8 V I/O Pins power supply Idle (Wi-Fi is enabled without any device connected): 66 mA @3.3 V WLAN power supply 6.5 mA @1.8 V I/O Pins power supply	OFF State (Wi-Fi is disabled): 0 μA @3.3 V WLAN power supply 179 μA @1.8 V I/O Pins power supply Idle (Wi-Fi is enabled without any device connected): 31 mA @3.3 V WLAN power supply 2.8 mA @1.8 V I/O Pins power supply	Max. current at Tx mode: 404.7mA @ VBAT 6.61 mA @ VIO	Max. current at Tx mode: 380 mA @ VBAT 0.7 mA @ VIO	Max. current at 802.11n/ac MIMO Tx mode: 375 mA @ 3.3 V 0.85 mA @ 1.8 V	Max. current at Tx mode: 315 mA @ VBAT 0.18 mA @ VIO	Max. current at Tx mode: 627 mA @ VBAT 0.7 mA @ VIO	Max. current at 802.11n/ac MIMO Tx mode: 389.83 mA @ 3.3 V 16.26 μA @ 1.8 V	Max. current at 802.11n/ac MIMO Tx mode: 389.83 mA @ 3.3 V 16.26 μA @ 1.8 V
Physical rate (max.)									
802.11a	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps
802.11b	11 Mbps	11 Mbps	11 Mbps	11 Mbps	11 Mbps	11 Mbps	11 Mbps	11 Mbps	11 Mbps
802.11g	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps
802.11n	150 Mbps	150 Mbps	150 Mbps	150 Mbps	150 Mbps	150 Mbps	300 Mbps	300 Mbps	300 Mbps
802.11ac	433 Mbps	433 Mbps	433 Mbps	433.3 Mbps	433.3 Mbps	433.3 Mbps	866 Mbps	866.7Mbps	866.7Mbps
802.11ax	/	/	/	/	/	/	/	/	/
Certifications	SRRC/CE/FCC/IC/Anatel/RCM/KC/JATE/TELEC	SRRC/CE/FCC/IC/RCM/JATE/TELEC	SRRC/CE/FCC/IC/RCM/UKCA	SRRC/CE/FCC/IC/JATE/TELEC	SRRC/CE/FCC/IC/RCM/KC*/JATE*/TELEC*	SRRC/CE/FCC/IC/RCM	SRRC/CE/FCC/IC/KC/JATE/TELEC	SRRC/CE/FCC/IC/RCM/KC*/TELEC*/JATE*	SRRC/CE/FCC/IC/RCM/KC*/TELEC*/JATE*
Recommended applications	Telematics, smart metering, mobile POS terminals, gateways, safety, tracking and tracing, remote maintenance and control, networking, mobile computing, healthcare, etc.		Various industrial and commercial applications inc: smart speakers, set-top boxes, POS machines etc	Various commercial/industrial applications e.g. POS machines and speaker boxes	POS, hoovers, printers etc.	Smart homes, industrial applications	Smart homes, industrial controls	Set-top boxes, smart speakers, digital signage, VR/AR, smart gateways, conference terminals, intelligent projectors, cloud computing etc.	

Note 1: The module can support SDIO interface or USB interface, but they cannot be utilized simultaneously. You can choose the corresponding module model according to the actual application. For details, please contact Quectel technical support.
FC20 can work with Quectel EC20 R2.0/EC20-CE/EC21/EC25 modules to provide Wi-Fi/BT function.
FC21 can work with Quectel EC20 R2.0/EC20-CE/EC21/EC25 modules to provide Wi-Fi/BT function.

* Planning/ Under development/ In progress

RF Wi-Fi & Bluetooth modules

	Wi-Fi 6							
Product	**FC62E*/FC64E**	**FC06E**	**FCE863R**	**FCS866R**	**FGS060N**	**FGS061N**	**FCU865R**	**FCS962N-LP**
								
Frequency bands	2.4 GHz/5 GHz (FC62E*) ; 2.4 GHz + 5 GHz (FC64E)	2.4 GHz + 5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz	2.4 GHz/5 GHz
MIMO	2 × 2 (FC64E support DBS, FC62E* not support DBS)	2 × 2 + 2 × 2	2 × 2	2 × 2	1 × 1	1 × 1	/	1 × 1
WLAN standard	IEEE 802.11a/b/g/n/ ac/ax	IEEE 802.11a/b/g/n/ ac/ax	IEEE 802.11a/b/g/n/ ac/ax	IEEE 802.11a/b/g/n/ ac/ax	IEEE 802.11a/b/g/n/ ac/ax	IEEE 802.11a/b/g/n/ ac/ax	IEEE 802.11a/b/g/n/ ac/ax	IEEE 802.11a/b/g/n/ ac/ax
BT standard	BT 5.2	BT 5.2	BT 5.2	BT 5.2	BT 5.2	BT 5.2	BT 5.3	BT 5.4
Form factor	LCC	LCC	LCC	LCC	LGA	LGA	LCC	LCC
Dimensions (mm)	18.0 × 19.9 × 2.1	25.5 × 22.0 × 2.25	15.0 × 13.0 × 2.0	15.0 × 13.0 × 2.0	14.0 × 13.0 × 2.0	14.0 × 13.0 × 2.0	15.0 × 13.0 × 2.0	12.0 × 12.0 × 1.55
Operating temperature	-30°C ~ +75°C	-30°C~+75°C	-20°C ~ +70°C (-40°C ~ +85°C Optional)	-20°C ~ +70°C	-40°C ~ +85°C	-40°C ~ +85°C	-20°C ~ +70°C	-40°C ~ +85°C
Weight (approx.) (g)	1.63	2.27	0.93	0.79	0.7	0.7	0.82	0.49
General features								
Modulation mode	DBPSK/DQPSK/CCK/ BPSK/QPSK/QAM	DBPSK/DQPSK/CCK/ BPSK/QPSK/QAM	DBPSK/DQPSK/CCK/ BPSK/QPSK/16QAM/ 64QAM/256QAM/ 1024QAM/OFDMA/ MU-MIMO	DBPSK/DQPSK/CCK/ BPSK/QPSK/16QAM/ 64QAM/256QAM/ 1024QAM/OFDMA/ MU-MIMO	DSSS/OFDM/DBPSK/ DQPSK/CCK/BPSK/ QPSK/16QAM/64QAM/ 256QAM/1024QAM	DSSS/OFDM/DBPSK/ DQPSK/CCK/BPSK/ QPSK/16QAM/64QAM/ 256QAM/1024QAM	DBPSK/DQPSK/CCK/ BPSK/QPSK/16QAM/ 64QAM/256QAM/ 1024QAM/OFDMA	DSSS/CCK/BPSK/QPSK/ DBPSK/DQPSK/16QAM/ 64QAM/256QAM/ 1024QAM
Encryption mode	WPA3	WPA3	WPA3	WPA3	WPA3	WPA3	WPA3	WPA3
I/O interfaces								
PCIe	× 1 (PCIe 3.0)	× 1 (PCIe 3.0)	× 1 (PCIe 1.1)	/	/	/	/	/
SDIO	/	/	/	× 1 (SDIO 3.0)	× 1 (SDIO 3.0)	× 1 (SDIO 3.0)	/	SDIO 3.0
USB	/	/	/	/	/	/	USB 2.0	/
SPI	/	/	/	/	× 1	/	/	/
UART	× 1	× 1	× 1	× 1	× 1	× 1	/	× 1
PCM	× 1	× 1	× 1	× 1	× 1	× 1	/	× 1
Wi-Fi antenna	× 1 (ANT_Wi-Fi1)	× 1 (ANT_Wi-Fi1) × 1 (ANT_Wi-Fi0)	× 1 (ANT_Wi-Fi0)	× 1 (ANT_Wi-Fi0)	/	/	/	/
BT antenna	/	× 1 (ANT_BT)	× 1 (ANT_BT) (Optional)	× 1 (ANT_BT) (Optional)	/	/	/	/
Wi-Fi/BT antenna	× 1 (ANT_Wi-Fi0/BT)	/	× 1 (ANT_Wi-Fi1/BT) (Optional)	× 1 (ANT_Wi-Fi1/BT) (Optional)	/	× 1 (ANT_Wi-Fi/BT)	× 1 (ANT_Wi-Fi0/BT)	× 1 (ANT_Wi-Fi0/BT)
Wi-Fi/BT/Thread antenna	/	/	/	/	× 1 (ANT_Wi-Fi/BT/ Thread)	/	/	/
Electrical characteristics								
Supply voltage range	Core Supply Voltage: 0.95, 1.35, 1.95, 1.8, 2.2, 3.3(Optional); I/O Supply Voltage: 1.8 V;	VDD_CORE_VL: 0.95 V; VDD_CORE_VM: 1.35 V; VDD_CORE_VH: 1.95 V; VDD_FEM: 5 V/ 3.3 V	VBAT: 3.1V ~ 3.6 V, typ. 3.3 V VDD_IO: 1.7 V ~ 3.6 V, typ. 1.8/3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V VDDIO: 1.62 V ~ 3.6 V, typ. 1.8/3.3 V	VBAT_3V3: 3.14 V ~ 3.46 V, typ. 3.3 V; VBAT_1V8: 1.71V ~ 1.89 V, typ. 1.8 V	VBAT_3V3: 3.14 V ~ 3.46 V, typ. 3.3 V VBAT_1V8: 1.71 V ~ 1.89 V, typ. 1.8 V	VBAT: 3.0~3.6 V, typ. 3.3 V	VBAT: 3.2 V ~ 4.8 V, typ. 3.3 V VDD_IO: 1.62 V ~ 1.98 V, typ. 1.8 V
Power consumption	TBD	Max. current at non-signaling mode (DBS): 490 mA @ 0.95 V 320 mA @ 1.35 V 8 mA @ 1.8 V 151 mA @ 1.95 V 1350 mA @ 5 V	Max. current at 802.11n/ac/ax MIMO Tx mode: 406.92 mA @ 3.3 V 393.82 µA @ 1.8 V	Max. current at 802.11n/ac/ax MIMO Tx mode: 292.29 mA @ 3.3 V 62.74 µA @ 1.8 V	Max. current at Tx mode: 368 mA @ VBAT_3V3 300 mA @ VBAT_1V8	Max. current at Tx mode: 300 mA @ VBAT_3V3 400 mA @ VBAT_1V8	Max. current at 802.11a non-signaling Tx mode: 406.98 mA	Maximum current consumption in transmit mode: 350mA @VBAT 5mA @VDDIO
Physical rate (max.)								
802.11a	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps
802.11b	11 Mbps	11 Mbps	11 Mbps	11 Mbps	11 Mbps	11 Mbps	11 Mbps	11 Mbps
802.11g	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps	54 Mbps
802.11n	600 Mbps	300 Mbps	300 Mbps	300 Mbps	150 Mbps	150 Mbps	150 Mbps	72.2 Mbps
802.11ac	866 Mbps	866 Mbps	867 Mbps	867 Mbps	433.3 Mbps	433.3 Mbps	433 Mbps	86.7 Mbps
802.11ax	1200 Mbps(FC62E*); 1774.5 Mbps (FC64E)	1774.5 Mbps	1201Mbps	1201Mbps	600.4 Mbps	600.4 Mbps	600 Mbps	143.4 Mbps
802.11be	/	/	/	/	/	/	/	/
Certifications	FC62E*: SRRC*/CE*/ FCC*/IC*/RCM*/KC*; FC64E: SRRC/CE/FCC/ IC/RCM/KC/JATE/TELEC	SRRC/CE/FCC/IC/RCM/ KC/UKCA	SRRC/CE/FCC/IC/RCM/ KC*/JATE*/TELEC	SRRC/CE/FCC/IC/RCM/ KC/JATE*/TELEC*	CE/FCC/IC/RCM	CE/FCC/IC/RCM/SRRC	SRRC*/CE*/RCM*/ FCC*/IC*/JATE*/TELEC*/ KC*	SRRC*/CE*/FCC*/IC*/ RCM*
Recommended applications	CPE, OTT, smart TVs	CPE, MiFi, OTT	Set-top boxes, smart speakers, digital signage, VR/AR, smart gateways, conference terminals, intelligent projectors, cloud computing etc		Smart homes and industrial applications	Smart homes and industrial applications	IPTV, NVR, projectors, traffic recorder	Network cameras, video doorbells, smart homes, smart glasses, smart door locks, smart speakers, smart lighting, and household appliances, etc.

* Planning/ Under development/ In progress

RF Wi-Fi & Bluetooth modules

	Wi-Fi 6E		Wi-Fi 7	
Product	**FC65E*/FC66E**	**FC66E-B**	**FGE573Q**	**FGE576Q**
				
Frequency bands	2.4 GHz/5 GHz/6 GHz (FC65E*) ; 2.4 GHz + 5 GHz/6GHz (FC66E)	2.4 GHz + 5 GHz/6GHz (FC66E-B)	2.4 GHz/5 GHz/6 GHz	2.4 GHz/5 GHz/6 GHz
MIMO	2 × 2 (FC66E support DBS, FC65E* not support DBS)	2 × 2 (FC66E-B support DBS)	2 × 2	2 × 2 (support DBS)
WLAN standard	IEEE 802.11a/b/g/n/ac/ax	IEEE 802.11a/b/g/n/ac/ax	IEEE 802.11a/b/g/n/ac/ax/be	IEEE 802.11a/b/g/n/ac/ax/be
BT standard	BT 5.2	BT 5.2	BT 5.3	BT 5.3
Form factor	LCC	LCC	LGA	LGA
Dimensions (mm)	18.0 × 19.9 × 2.1	18.0 × 19.9 × 2.1	16.0 × 20.0 × 1.8	16.0 × 20.0 × 1.8
Operating temperature	-30°C ~ +75°C	-30°C ~ +75°C	-20°C~+70°C	-20°C~+70°C
Weight (approx.) (g)	1.63	1.6	TBD	1.25
General features				
Modulation mode	DBPSK/DQPSK/CCK/BPSK/QPSK/QAM	DBPSK/DQPSK/CCK/BPSK/QPSK/QAM	DBPSK/DQPSK/CCK/BPSK/QPSK/QAM	DBPSK/DQPSK/CCK/BPSK/QPSK/QAM
Encryption mode	WPA3	WPA3	WPA3	WPA3
I/O interfaces				
PCIe	× 1 (PCIe 3.0)	× 1 (PCIe 3.0)	× 1 (for Wi-Fi)	× 1 (for Wi-Fi)
SDIO	/	/	/	/
USB	/	/	× 1 (for Bluetooth)	× 1 (for Bluetooth)
SPI	/	/	/	/
UART	× 1	× 1	× 1 (for Bluetooth)	× 1 (for Bluetooth)
PCM	× 1	× 1	× 1 (for Bluetooth)	× 1 (for Bluetooth)
Wi-Fi antenna	× 1 (ANT_Wi-Fi1)	× 1 (ANT_Wi-Fi1) × 1 (ANT_Wi-Fi0)	/	/
BT antenna	/	× 1 (ANT_BT)	/	/
Wi-Fi/BT antenna	× 1 (ANT_Wi-Fi0/BT)	/	× 1 (ANT_Wi-Fi1/BT) × 1 (ANT_Wi-Fi0/BT)	× 1 (ANT_Wi-Fi1/BT) × 1 (ANT_Wi-Fi0/BT)
Wi-Fi/BT/Thread antenna	/	/	/	/
Electrical characteristics				
Supply voltage range	Core Supply Voltage: 0.95, 1.35, 1.95, 1.8, 2.2, 3.3(Optional); I/O Supply Voltage: 1.8 V;	VDD_CORE_VL: 1.0 V; VDD_CORE_VM: 1.8 V; VDD_CORE_VH: 2.0 V; VDD_RF: 2.0 V; I/O Supply Voltage: 1.8 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V
Power consumption	TBD	TBD	Max. current at Tx mode: TBD @ VBAT	Max. current at Tx mode: TBD @ VBAT
Physical rate (max.)				
802.11a	54 Mbps	54 Mbps	54 Mbps	54 Mbps
802.11b	11 Mbps	11 Mbps	11 Mbps	11 Mbps
802.11g	54 Mbps	54 Mbps	54 Mbps	54 Mbps
802.11n	600 Mbps	600 Mbps	600 Mbps	600 Mbps
802.11ac	1732 Mbps	1732 Mbps	1732 Mbps	1732 Mbps
802.11ax	2400 Mbps (FC65E*); 3000 Mbps (FC66E)	3000 Mbps	2400 Mbps	3000 Mbps
802.11be	/	/	2900 Mbps	3600 Mbps
Certifications	FC65E*: SRRC/CE/FCC/IC/RCM/KC; FC66E: SRRC/CE/FCC/IC/RCM/KC/JATE/TELEC	SRRC/CE/FCC/IC/RCM/KC/JATE/TELEC	SRRC*/CE*/FCC*/IC*/RCM*/KC*/TELEC*	SRRC/CE/RCM/FCC/IC/KC*/TELEC*
Recommended applications	CPE, OTT, smart TVs	CPE, MiFi, OTT, smart TVs	Cloud gaming, 8K A/V streaming, AR/VR, industrial IoT and telemedicine	

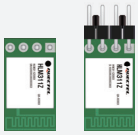
* Planning/ Under development/ In progress

	Wi-Fi 4						
Product	**FC41D**	**FCM100D**	**FCM740D**	**FLM040D**	**FLM140D**	**FLM240D**	**FLM340D**
							
Microcontroller (MCU)	ARM968 (120 MHz)	ARM968 (120 MHz)	ARM968 (120 MHz)	ARM968 (120 MHz)	ARM968 (120 MHz)	ARM968 (120 MHz)	ARM968 (120 MHz)
ChipSet	BK7231M	BK7231M	BK7231M	BK7231M	BK7231M	BK7231M	BK7231M
Frequency bands	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz
WLAN standard	IEEE 802.11 b/g/n	IEEE 802.11 b/g/n	IEEE 802.11 b/g/n	IEEE 802.11 b/g/n	IEEE 802.11 b/g/n	IEEE 802.11 b/g/n	IEEE 802.11 b/g/n
BT standard	BLE 5.2	BLE 5.2	BLE 5.2	BLE 5.2	BLE 5.2	BLE 5.2	BLE 5.2
Form factor	LCC	LCC	LCC+ DIP	DIP	DIP	DIP+LCC	DIP
Dimensions (mm)	20.0 × 18.0 × 2.6	24.0 × 16.0 × 2.6	20.3 × 15.8 × 2.7	15.0 × 16.8 × 1.85	17.91 × 14.99 × 2.8	17.3 × 15 × 2.8	12.7 × 8.5 × 2.6
Operating temperature	-40°C ~ +85°C	-40°C ~ +85°C/ -40°C ~ +105°C	-40°C ~ +105°C	-40°C ~ +105°C	-40°C ~ +85°C	-40° C ~ +105° C	-40°C ~ +105°C
Weight (approx.) (g)	1.51	1.55	1.06	0.55	0.83	0.85	0.32
General features							
RAM	256KB	256KB	256KB	256KB	256KB	256KB	256KB
PSRAM	/	/	/	/	/	/	/
Flash	2MB/ 4MB	2MB/ 4MB	2MB/ 4MB	2MB/ 4MB	2MB/ 4MB	2MB/ 4MB	2MB/ 4MB
Codec	/	/	/	/	/	/	/
Modulation mode	PSK/QPSK/CCK/16QAM/ 64QAM	PSK/QPSK/CCK/16QAM/ 64QAM	PSK/QPSK/CCK/16QAM/ 64QAM	PSK/QPSK/CCK/16QAM/ 64QAM	PSK/QPSK/CCK/16QAM/ 64QAM	PSK/QPSK/CCK/16QAM/ 64QAM	PSK/QPSK/CCK/16QAM/ 64QAM
Encryption mode	WPA-PSK/WPA2-PSK/ WPA3-SAE	WPA-PSK/WPA2-PSK/ WPA3-SAE	WPA-PSK/WPA2-PSK/ WPA3-SAE	WPA-PSK/WPA2-PSK/ WPA3-SAE	WPA-PSK/WPA2-PSK/ WPA3-SAE	WPA-PSK/WPA2-PSK/ WPA3-SAE	WPA-PSK/WPA2-PSK/ WPA3-SAE
Working mode	STA/AP	STA/AP	STA/AP	STA/AP	STA/AP	STA/AP	STA/AP
Protocols	TCP/UDP/MQTT/HTTP/HTTPS/ MQTTS	TCP/UDP/MQTT/HTTP/HTTPS/ MQTTS	TCP/UDP/MQTT/HTTP/HTTPS/ MQTTS	TCP/UDP/MQTT/HTTP/HTTPS/ MQTTS	TCP/UDP/MQTT/HTTP/HTTPS/ MQTTS	TCP/UDP/MQTT/HTTP/HTTPS/ MQTTS	TCP/UDP/MQTT/HTTP/HTTPS/ MQTTS
I/O interfaces							
GPIO	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support
UART	× 2	× 2	× 2	/	× 1	/	/
SDIO	/	/	/	/	/	/	/
SPI	QuecOpen® support	/	QuecOpen® support	/	/	/	/
USB	/	/	/	/	/	/	/
I2C	QuecOpen® support	QuecOpen® support	QuecOpen® support	/	/	/	/
I2S	/	/	/	/	/	/	/
ADC	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support
PWM	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support
DAC	/	/	/	/	/	/	/
PCM	/	/	/	/	/	/	/
Audio in	/	/	/	/	/	/	/
Audio out	/	/	/	/	/	/	/
LCD	/	/	/	/	/	/	/
EMAC	/	/	/	/	/	/	/
JTAG	/	/	/	/	/	/	/
SWD	/	/	/	/	/	/	/
Antenna	× 1(RF coaxial connector, external antenna pin, PCB antenna) (optional)	× 1(RF coaxial connector, external antenna pin, PCB antenna) (optional)	× 1 (RF coaxial connector, PCB antenna) (optional)	× 1(Ceramic antenna)	× 1(PCB antenna)	× 1 (RF coaxial connector, PCB antenna) (optional)	× 1(external antenna pin)
Electrical characteristics							
Supply voltage range	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V
Power consumption	IDLE: 23.27 mA	IDLE: 23.27 mA	IDLE: 24.94 mA	IDLE: 24.21 mA	IDLE: 24.14 mA	IDLE: 24.14 mA	IDLE: 23.27 mA
Certification	SRRC/CE/FCC/IC/ANATEL/ RCM/KC/TELEC/BQB	SRRC/CE/FCC/IC/ANATEL/ RCM/TELEC	SRRC/CE/FCC/IC/RCM	SRRC/CE/FCC/IC/RCM/UKCA	SRRC/CE/FCC/IC/RCM/UKCA	SRRC/CE/FCC/IC/RCM	SRRC/CE/FCC/IC/RCM
Recommended applications	Smart homes, industrial controls	Smart homes, industrial controls	Smart homes, industrial controls	Smart homes, industrial controls	Smart homes, industrial controls	Smart homes, industrial controls	Smart homes, industrial controls

MCU Wi-Fi & Bluetooth modules

	Wi-Fi 6	
Product	**FCM360W**	**FLM263D**
		
Microcontroller (MCU)	RISC processor (240 MHz)	RISC-V (320 MHz)
ChipSet	ECR6600-A40D	BK7235
Frequency bands	2.4 GHz	2.4 GHz
WLAN standard	IEEE 802.11 b/g/n/ax	IEEE 802.11 b/g/n/ax
BT standard	BLE 5.1	BLE 5.2
Form factor	LCC	DIP
Dimensions (mm)	25.5 × 18.0 × 3.2	17.3 × 15 × 2.8
Operating temperature	-40°C ~ +85°C/ -40°C ~ +105°C (optional)	-40°C ~ +105°C
Weight (approx.) (g)	1.65	0.85
General features		
RAM	512KB	512 KB
PSRAM	/	/
Flash	4MB/8MB	4MB
Codec	/	/
Modulation mode	PSK/QPSK/CCK/16QAM/64QAM	DSSS/CCK/BPSK/QPSK/16QAM/64QAM
Encryption mode	WPA-PSK/WPA2-PSK/WPA3-SAE	WPA-PSK/WPA2-PSK/WPA3-SAE
Working mode	STA/AP	STA/AP
Protocols	TCP/UDP/MQTT/HTTP/HTTPS/MQTTS	Wi-Fi: TCP/UDP/MQQT BLE: ATT/GATT/HID/HCI/SPP
I/O interfaces		
GPIO	QuecOpen® support	QuecOpen®support
UART	× 3	× 2
SDIO	/	/
SPI	QuecOpen® support	QuecOpen®support
USB	/	/
I2C	QuecOpen® support	QuecOpen®support
I2S	QuecOpen® support	QuecOpen®support
ADC	QuecOpen® support	QuecOpen®support
PWM	QuecOpen® support	QuecOpen®support
DAC	/	/
PCM	/	/
Audio in	/	/
Audio out	/	/
LCD	/	/
EMAC	/	/
JTAG	/	/
SWD	/	/
Antenna	× 1 (RF coaxial connector, external antenna pin, PCB antenna) (optional)	× 1 (RF coaxial connector, PCB antenna) (optional)
Electrical characteristics		
Supply voltage range	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V
Power consumption	IDLE: 34.24 mA	IDLE: 23.02 mA
Certification	SRRC/CE/FCC/IC/RCM/UKCA	SRRC/CE/FCC/IC/RCM/UKCA
Recommended applications	Smart homes, industrial controls	Smart homes, industrial IoT

MCU Bluetooth modules

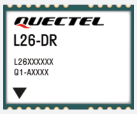
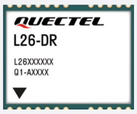
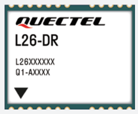
Product	HCM111Z	HLM311Z	HCM010S	HCM010S-E	HCM511S	HCM511S-E
						
Microcontroller (MCU)	ARM Cortex-M3 (48 MHz)	ARM Cortex-M3 (up to 48 MHz)	ARM Cortex-M33 (80 MHz)	ARM Cortex-M33	ARM Cortex-M33(76.8 MHz)	ARM Cortex-M33(76.8 MHz)
ChipSet	FR8016HA	FR8012HAQ-J	EFR32BG21	EFR32BG21	EFR32BG22	EFR32BG22
Frequency bands	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz
WLAN standard	/	/	/	/	/	/
BT standard	BLE 5.3	BLE 5.0	BLE 5.4	BLE 5.4	BLE 5.4	BLE 5.4
Form factor	LCC	DIP	LCC	LCC	LCC	LCC
Dimensions (mm)	15.0 × 12.0 × 2.25	18.0 × 10.16 × 8.5 (L-type); 24.78 × 10.0 × 5.0 (I-type)	20.0 × 15.6 × 2.35	20.0 × 15.6 × 2.4	16.6 × 11.2 × 2.1	16.6 × 11.2 × 2.1
Operating temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +105°C	-40°C ~ +105°C	-40°C ~ +85°C	-40°C ~ +85°C
Weight (approx.) (g)	0.62	0.82(L-type); 0.94(I-type)	1.14	0.98	0.57	0.62
General features						
RAM	48 KB	48 KB	64 KB	64 KB	32 KB	32 KB
PSRAM	/	/	/	/	/	/
Flash	512 KB	512 KB	768 KB	768 KB	352 KB/512 KB	352 KB/512 KB
Codec	/	/	/	/	/	/
Modulation mode	GFSK	GFSK	GFSK	GFSK	GFSK	GFSK
Encryption mode	/	TRNG/AES128 ECB	AES128/256, SHA-1, SHA-2 (up to 256 bits), ECC (up to 256 bits), ECDSA (up to 256 bits), ECDH, J-Pak, TRNG, secure boot	AES128/256, SHA-1, SHA-2 (up to 256 bits), ECC (up to 256 bits), ECDSA (up to 256 bits), ECDH, J-Pak, TRNG, secure boot	AES128/192/256, SHA-1, SHA-2, ECC, ECDSA, ECDH, TRNG, secure boot	AES128/192/256, SHA-1, SHA-2, ECC, ECDSA, ECDH, TRNG, secure boot
Working mode	Server/Client/Server + Client	Server	Server/Client/Server + Client	Server/Client/Server + Client	Server/Client/Server + Client	Server/ Client/ Server + Client
Protocols	ATT/GATT/HCI/HID	BLE: ATT/GATT/HCI	ATT/GATT/HID/HCI	ATT/GATT/HID/HCI	ATT/GATT/HID/HCI	ATT/GATT/HID/HCI
I/O interfaces						
GPIO	QuecOpen® support	/	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support
UART	× 1	× 1	× 3	× 3	QuecOpen® support	QuecOpen® support
SDIO	/	/	/	/	/	/
SPI	QuecOpen® support	/	QuecOpen® support	QuecOpen® support	/	/
USB	/	/	/	/	/	/
I2C	QuecOpen® support	/	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support
I2S	/	/	QuecOpen® support	QuecOpen® support	/	/
ADC	QuecOpen® support	/	QuecOpen® support	QuecOpen® support	/	/
PWM	QuecOpen® support	/	QuecOpen® support	QuecOpen® support	/	/
DAC	/	/	/	/	/	/
PCM	/	/	/	/	/	/
Audio in	/	/	/	/	/	/
Audio out	/	/	/	/	/	/
LCD	/	/	/	/	/	/
EMAC	/	/	/	/	/	/
JTAG	/	/	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support
SWD	/	/	QuecOpen® support	QuecOpen® support	QuecOpen® support	QuecOpen® support
Antenna	× 1 (RF coaxial connector, external antenna pin, PCB antenna) (Optional)	× 1(PCB antenna)	× 1(PCB antenna)	× 1 (RF coaxial connector, PCB antenna, pin antenna interface*) (Optional)	× 1 (PCB antenna)	× 1 (RF coaxial connector, pin antenna (optional))
Electrical characteristics						
Supply voltage range	VBAT: 1.8 V ~ 4.3 V, typ. 3.3 V	VBAT: 1.8 V ~ 4.3 V, typ. 3.3 V	VBAT: 1.71 V ~ 3.8 V, typ. 3.3 V	VBAT: 1.71 V ~ 3.8 V, typ. 3.3 V	VBAT: 1.71 V ~ 3.8 V, typ. 3.3 V	VBAT: 1.71 V ~ 3.8 V, typ. 3.3 V
Power consumption	IDLE: 5.487 mA	IDLE: 5.53 mA	IDLE: 6.443 mA	IDLE: 6.402 mA	IDLE: 1.918mA	TBD
Certification	SRRC/CE/FCC/IC/RCM/KC/BQB	SRRC/CE/FCC/IC/RCM/BQB	SRRC/CE/FCC/IC/RCM	SRRC/CE*/RCM*/FCC*/IC*	SRRC/CE/FCC/IC/RCM/BQB	SRRC/CE/FCC/IC/RCM/BQB
Recommended applications	Smart homes, industrial controls	Smart homes, Industrial controls	Smart homes, industrial controls	Smart homes, industrial controls	Suitable for asset tags and beacons, portable medical devices, Bluetooth mesh network low-power nodes, battery powered sensing products, etc	

* Planning/ Under development/ In progress

Sub-GHz modules

	Wi-Fi HaLow		Sub-1 GHz	
Product	**FGH100M***	**FGH100M-J***	**KG100S**	**KG200Z**
				
Processor or microcontroller	/	/	ARM Cortex®-M33 (up to 80 MHz)	ARM Cortex-M4
ChipSet	/	/	EFR32BG21*	STM32WLE5JCI6
Frequency bands	850 ~ 950 MHz	920.5 ~ 928.1 MHz	863M ~ 928M & 2.4G	470~510 MHz, 862~928 MHz LoRa
Form factor	LGA	LGA	LGA	LGA
Dimensions (mm)	13.0 × 13.0 × 2.2	13.0 × 13.0 × 2.2	15.0 × 15.0 × 2.25	12.0 × 12.0 × 1.8
Operating temperature	-30°C~+85°C	-30°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Weight (approx.) (g)	0.72	0.70	0.94	0.56
General features				
RAM	/	/	96KB	64 KB
PSRAM	/	/	/	/
Flash	/	/	1 MB	256 KB
Modulation mode	OFDM/BPSK/QPSK/16QAM/64QAM	OFDM/BPSK/QPSK/16QAM/64QAM	FSK, GFSK, Sub-1 GHz CSS	LoRa/(G)FSK/(G)MSK/BPSK
Encryption mode	AES/SHA-256/SHA-384/SHA-512/WPA3	AES/SHA-256/SHA-384/SHA-512/WPA3	/	AES Hardware Encryption
I/O interfaces				
GPIO	/	/	Amazon Sidewalk SDK	QuecOpen® support
PCIe	/	/	/	/
SDIO	× 1(SDIO2.0)	× 1(SDIO2.0)	/	/
SPI	× 1	× 1	Amazon Sidewalk SDK	QuecOpen® support
UART	/	/	× 1	QuecOpen® support
USART	/	/	/	QuecOpen® support
USB	/	/	/	/
Jlink	/	/	× 1	× 1
I2C	/	/	Amazon Sidewalk SDK	QuecOpen® support
PCM	/	/	/	/
SWD	/	/	/	QuecOpen® support
JTAG	/	/	/	/
Antenna	× 1 (Wi-Fi antenna)	× 1 (Wi-Fi antenna)	× 2 (Sub-1 GHz CSS x 1 , BLE x 1)	× 1 (Sub-1 GHz CSS x 1)
Electrical characteristics				
Supply voltage range	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V; VDDIO: 1.8 V ~ 3.6 V, typ. 3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3 V; VDDIO: 1.8 V ~ 3.6 V, typ. 3.3 V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3V	VBAT: 3.0 V ~ 3.6 V, typ. 3.3V
Power consumption	TBD	TBD	IDLE: 0.6mA	IDLE: 4.7μA
Certification	CE/FCC/IC/RCM	TELEC	CE/FCC/IC/BQB	CE/FCC/IC/Anatel* /RCM
Recommended applications	IPC, industrial automation, mobile devices, POS, smart building, home automation	IPC, industrial automation, mobile devices, POS, smart building, home automation	Smart homes, industrial controls	Smart homes, industrial controls

* Planning/ Under development/ In progress

	DR and high precision GNSS							
Product	**L26-ADR**	**L26-UDR**	**L26-DR(AA)**	**LC29H(BA)**	**LC29H(CA)**	**LC29H(DA)**	**LC29H(EA)**	**LC29H(BS)**
								
GNSS	GPS: L1 C/A GLONASS: L1 Galileo: E1 BDS: B1I QZSS: L1 C/A	GPS: L1 C/A GLONASS: L1 Galileo: E1 BDS: B1I QZSS: L1 C/A	GPS: L1 C/A; GLONASS: L1; Galileo: E1; BDS: B1I; QZSS: L1 C/A	GPS/QZSS: L1 C/A, L5; GLONASS: L1; Galileo: E1, E5a; BDS: B1I, B2a	GPS/QZSS: L1 C/A, L5; GLONASS: L1; Galileo: E1, E5a; BDS: B1I, B2a	GPS/QZSS: L1 C/A, L5; GLONASS: L1; Galileo: E1, E5a; BDS: B1I, B2a	GPS/QZSS: L1 C/A, L5; GLONASS: L1; Galileo: E1, E5a; BDS: B1I, B2a	GPS/QZSS: L1 C/A, L5; GLONASS: L1; Galileo: E1, E5a; BDS: B1I, B2a
Form factor	LCC	LCC	LCC	LCC	LCC	LCC	LCC	LCC
Dimensions (mm)	12.2 × 16.0 × 2.3	12.2 × 16.0 × 2.3	12.2 × 16.0 ×2.3	12.2 × 16.0 × 2.5	12.2 × 16.0 × 2.5	12.2 × 16.0 × 2.5	12.2 × 16.0 × 2.5	12.2 × 16.0 × 2.5
Weight (approx.) (g)	0.9	0.9	0.9	0.9	0.9	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	-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	-40°C ~ +90°C	-40°C ~ +90°C
General features								
Working mode	4wheels-ADR	4wheels-UDR	PVT	DR+RTK	DR	1Hz RTK	10Hz RTK+Heading[1]	RTK base station
Chip solution	Teseo III	Teseo III	Teseo III	AG3335A/T	AG3335A/T	AG3335A/T	AG3335AA/B	AG3335M
L1 band receiver (C/A code) channel number	48 Track/2 Fast Acq	48 Track/2 Fast Acq	48 Track/2 Fast Acq	Tracking and acquisition total: 135	Tracking and acquisition total: 135	Tracking and acquisition total: 135	Tracking and acquisition total: 135	Tracking and acquisition total: 135
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	Developing	/
A-GNSS	Supported	Supported	Supported	Supported	Supported	Supported	Supported	/
Sensitivity — Autonomous acquisition	-145 dBm	-145 dBm	-145 dBm	-147 dBm	-147 dBm	-147 dBm	-147 dBm	-147 dBm
Sensitivity — Reacquisition	-152 dBm	-152 dBm	-152 dBm	-157 dBm	-157 dBm	-157 dBm	-157 dBm	-157 dBm
Sensitivity — tracking	-162 dBm	-162 dBm	-162 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm	-165 dBm
TTFF (time to first fix) — Cold start	32 s, Autonomous	32 s, Autonomous	32 s, Autonomous	26 s	26 s	26 s	26 s	/
TTFF (time to first fix) — Warm start	25 s, Autonomous	25 s, Autonomous	27 s, Autonomous	16 s	16 s	16 s	16 s	/
TTFF (time to first fix) — Hot start	2 s	2 s	2 s	1 s	1 s	1 s	1 s	/
Position accuracy (autonomous)	1.5 m CEP	1.5 m CEP	1.5 m CEP	Autonomous: 1 m	Autonomous: 1 m	Autonomous: 1 m	Autonomous: 1 m	/
Position accuracy (RTK)	/	/	/	RTK: < 0.1 m + 1 ppm	/	RTK: 1 cm + 1 ppm	RTK: 1 cm + 1 ppm	/
Velocity accuracy (without aid)	0.1m/s	0.1m/s	0.1m/s	0.03 m/s	0.03 m/s	0.03 m/s	0.03 m/s	/
Convergence time (RTK)	/	/	/	RTK: < 10 s	/	RTK: < 10 s	RTK: < 10 s	/
Maximum acceleration accuracy (without aid)	0.1 m/s²	0.1 m/s²	0.1 m/s²	/	/	/	/	/
Accuracy of 1PPS signal (RMS)	50 ns	50 ns	50 ns	20 ns	20 ns	20 ns	20 ns	20 ns
Max update rate	10 Hz	10 Hz	10 Hz	GNSS : 1 Hz IMU : 100 Hz(MAX)	GNSS : 1 Hz IMU : 100 Hz(MAX)	GNSS: 1 Hz RTK: 1 Hz	GNSS: 1Hz RTK: 1~10Hz	1 Hz
Baud rate (default)	115200 bps	115200 bps	115200 bps	115200 bps	115200 bps	115200 bps	460800 bps	115200 bps
Geo-fence	/	/	/	•	•	•	•	•
Jamming detection	/	•	/	•	•	•	•	/
Anti-jamming	/	/	/	/	/	/	/	/
Built-in LNA	•	•	•	•	•	•	•	•
Electrical data								
Power supply (VCC)	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V, typ. 3.3 V	3.1 V ~ 3.6 V	3.1 V ~ 3.6 V	3.1 V ~ 3.6 V	3.1 V ~ 3.6 V	3.1 V ~ 3.6 V
I/O voltage	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	Same as VCC	2.8 V	2.8 V	2.8 V	2.8 V	2.8 V
Power consumption (acquisition)	81 mA	84 mA	81 mA	32 mA	30 mA	30 mA	30 mA	24 mA
Power consumption (tracking)	80 mA	81 mA	80 mA	32 mA	30 mA	30 mA	30 mA	24 mA
Power consumption (backup)	8 µA	8 µA	8 µA	25 µA	25 µA	25 µA	25 µA	25 µA
Interfaces								
UART	•	•	•	Adjustable: 9600–3000000 bps Default: 115200 bps	Adjustable: 9600–3000000 bps Default: 115200 bps	Adjustable: 9600–3000000 bps Default: 115200 bps	Adjustable: 9600–3000000 bps Default: 460800 bps	Adjustable: 9600–3000000 bps Default: 115200 bps
I2C (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	Active or passive	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
Certifications	CE	CE	CE	CE	CE	CE	CE	CE
Recommended applications	Automotive tracking, OBD	Automotive tracking, OBD	Automotive tracking, OBD	Trackers, high-precision navigation, delivery robots	Trackers, high-precision navigation, delivery robots	Trackers, high-precision navigation, delivery robots	Trackers, high-precision navigation, delivery robots	Trackers, high-precision navigation, delivery robots

Note 1: Heading function need 2pcs LC29H (EA) work together.

• Supported

GNSS modules

		DR and high precision GNSS	
Product		**LG290P**	**LG580P**
			
GNSS		GPS: L1 C/A, L1C*, L5, L2C; GLONASS: L1, L2; Galileo: E1, E5a, E5b, E6; BDS: B1I, B1C, B2a, B2b, B2I, B3I; NavIC: L5; QZSS: L1 C/A, L1C*, L5, L2C; SBAS: L1	GPS: L1 C/A, L2C, L5 GLONASS: L1*, L2* Galileo: E1, E5a, E5b, E6* BDS: B1I, B1C, B2I, B2a, B2b, B3I* QZSS: L1 C/A, L2C, L5, L6* NavIC: L5 SBAS: L1
Form factor		LGA	LGA
Dimensions (mm)		12.2 × 16.0 × 2.6	21.0 × 16.0 × 2.6
Weight (approx.) (g)		0.9	1.4
Operating temperature		-40°C ~ +85°C	-40°C ~ +85°C
Storage temperature		-40°C ~ +90°C	-40°C ~ +90°C
General features			
Working mode		RTK	RTK+Heading
Chip solution		KT5030	KT5030
L1 band receiver (C/A code) channel number		Tracking 1040	Tracking 1040
L1 band receiver (C/A code) SBAS		WAAS/EGNOS/BDSBAS/MSAS/GAGAN/SDCM	WASS/EGNOS/BDSBAS/MSAS/GAGAN/SDCM
A-GNSS		*	*
Sensitivity	Autonomous acquisition	-145dBm	-145dBm
	Reacquisition	-155 dBm	-155 dBm
	tracking	-160 dBm	-160 dBm
TTFF (time to first fix)	Cold start	28 s	28 s
	Warm start	28 s	28 s
	Hot start	1.7 s	1.7 s
Position accuracy		Autonomous: 0.7 m CEP RTK: 0.8 cm + 1 ppm	Autonomous: 0.7 m CEP RTK: 0.8 cm + 1 ppm
Velocity accuracy (without aid)		0.03 m/s	0.03 m/s
Convergence time (RTK)		5 s	5 s
Accuracy of 1PPS signal (1σ)		5 ns	5 ns
Max update rate		20 Hz	20 Hz*
Baud rate (default)		460800 bps	460800 bps
Geo-fence		•	•
Jamming detection		*	*
Anti-jamming		*	*
Built-in LNA		/	/
Electrical data			
Power supply (VCC)		3.0 V ~ 3.6 V, typ. 3.3 V	3.0 V ~ 3.6 V, typ. 3.3 V
I/O voltage		3.3 V	3.3 V
Power consumption (acquisition)		99 mA	99 mA
Power consumption (tracking)		99 mA	99 mA
Power consumption (backup)		12 μA	12 μA
Interfaces			
UART		•	•
I2C (NMEA)		*	*
Reset		•	•
Time pulse		•	•
Antenna			
Short-circuit protection & open-circuit detection		•	\
Antenna type		Active	Active
Antenna power		External	External
Certifications		CE	CE*
Recommended applications		Intelligent robots, precision agriculture, surveying and mapping, automatic driving, etc.	Intelligent robots, precision agriculture, surveying and mapping, automatic driving, etc.

* Planning/ Under development/ In progress
• Supported

GNSS modules

		DR and high precision GNSS								
Product		**LG69T(AA)**	**LG69T(AD)**	**LG69T(AB)***	**LG69T(AM)**	**LG69T(AJ)**	**LG69T(AF)**	**LG69T(AI)**	**LG69T(AP)**	**LG69T(AR)**
		Compatible								
										
GNSS		GPS/QZSS: L1 C/A; L5 Galileo: E1; E5a BDS: B1I; B2a	GPS/QZSS: L1 C/A; L5 Galileo: E1; E5a BDS: B1I; B2a	GPS/QZSS: L1 C/A; L2C or L5 Galileo: E1; E5b or E5a BDS: B1I; B2I or B2a GLONASS: L1 or L2	GPS/QZSS: L1 C/A; L5 Galileo: E1; E5a BDS: B1I; B2a	GPS/QZSS: L1 C/A; L5 Galileo: E1; E5a BDS: B1I; B2a	GPS: L1 C/A; L5 Galileo: E1; E5a BDS: B1I; B2a QZSS: L1 C/A; L5	GPS/QZSS: L1 C/A; L2C or L5 Galileo: E1; E5b or E5a BDS: B1I; B2I or B2a GLONASS: L1 or L2	GPS/QZSS: L1 C/A; L5 Galileo: E1; E5a BDS: B1I; B2a	GPS/QZSS: L1 C/A; L5 Galileo: E1; E5a BDS: B1I; B2a
Form factor		LGA	LGA	LGA	LGA	LGA	LGA	LGA	LGA	LGA
Dimensions (mm)		22.0 × 17.0 × 3.1	22.0 × 17.0 × 3.1	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 × 3.3	22.0 × 17.0 × 3.3	22.0 × 17.0 × 3.3
Weight (approx.) (g)		1.9	1.9	2.7	2.6	2.5	2.7	2.7	2.7	2.4
Operating temperature		-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +105°C	-40°C ~ +85°C	-40°C ~ +105°C	-40°C ~ +105°C	-40°C ~ +105°C	-40°C ~ +85°C	-40°C ~ +105°C
Storage temperature		-40°C ~ +95°C	-40°C ~ +95°C	-40°C ~ +105°C	-40°C ~ +95°C	-40°C ~ +105°C	-40°C ~ +105°C	-40°C ~ +105°C	-40°C ~ +95°C	-40°C ~ +105°C
General features										
Working mode		Raw	PVT/Raw	Raw	RTK+Heading[1]	RAW	DR & IMU	RAW	DR+RTK+Heading[1]	Raw
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	-145 dBm	-145 dBm	-144 dBm*	-145 dBm	-145 dBm	-145 dBm	-145 dBm	-145 dBm	-145 dBm
	Reacquisition	-153 dBm	-153 dBm	-153 dBm*	-153 dBm	-153 dBm	-153 dBm	-153 dBm	-153 dBm	-153 dBm
	Tracking	-160 dBm	-160 dBm	-159 dBm*	-160 dBm	-160 dBm	-160 dBm	-160 dBm	-160 dBm	-160 dBm
TTFF (time to first fix)	Cold start	36 s	36 s	36 s*	36 s	36 s	36s	36 s	36 s	36 s
	Warm start	30 s	30 s	30 s*	30 s	30 s	30s	30 s	30 s	30 s
	Hot start	3 s	3 s	3 s*	3 s	3 s	3s	3 s	3 s	3 s
Position accuracy (autonomous)		1.0 m CEP	1.0 m CEP	1.0 m CEP	1.0 m CEP	1.0 m CEP	1.0m CEP	1.0 m CEP	1.0 m CEP	1.0 m CEP
Position accuracy (RTK)		cm [2]	cm [2]	cm [2]	0.01 m+ppm CEP	cm [2]	/	cm [2]	0.01 m+ppm CEP	cm [2]
Velocity accuracy (without aid)		0.1 m/s	0.1 m/s	0.1 m/s	0.1 m/s	0.1 m/s	0.1m/s	0.1 m/s	0.1 m/s	0.1 m/s
Convergence time (RTK)		/	/	/	<10 s	/	/	/	<10 s	/
Maximum acceleration accuracy (without aid)		0.1 m/s²	0.1 m/s²	0.1 m/s²	0.1 m/s²	0.1 m/s²	0.1m/s²	0.1 m/s²	0.1 m/s²	0.1 m/s²
Accuracy of 1PPS signal (RMS)		50 ns	50 ns	50 ns	50 ns	50 ns	50ns	50 ns	50 ns	50 ns
Max update rate		RAW: 10 Hz IMU: 100 Hz	RAW: 10 Hz PVT: 1 Hz	RAW: 10 Hz	PVT: 10 Hz	RAW: 10 Hz IMU: 100 Hz	PVT:10 Hz IMU: 100 Hz	RAW: 10 Hz	PVT: 10 Hz IMU raw data: 100 Hz	RAW: 10 Hz
Baud rate(default)		460800 bps	460800 bps	460800 bps	460800 bps	460800 bps	460800 bps	460800 bps	460800 bps	460800 bps
Geo-fence		/	/	/	•	/	•	/	•	/
Jamming detection		•	•	•	*	•	•	•	*	•
Built-in LNA		•	•	/	•	•	•	•	•	•
Electrical data										
Power supply (VCC)		3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V
I/O voltage		3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V
Power consumption (acquisition)		242 mA	235 mA	VCC: 55 mA, VCC_CORE: 230 mA	330 mA	245 mA	275 mA	295 mA	360 mA	245 mA
Power consumption (tracking)		237 mA	232 mA	VCC: 55 mA, VCC_CORE: 225 mA	335 mA	245 mA	274 mA	295 mA	360 mA	245 mA
Power consumption (backup)		55 µA	55 µA	55µA	55 µA	55 µA	55 µA	55 µA	55 µA	55 µA
Interfaces										
UART		•	•	•	•	•	•	•	•	•
Reset		•	•	•	•	•	•	•	•	•
Time pulse		•	•	•	•	•	•	•	•	•
Antenna										
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/ASIL-B	CE	/	CE	/	CE	/
Recommended applications		Automotive, high-precision navigation, delivery robots	Automotive, high-precision navigation, delivery robots	Automotive, high-precision navigation, delivery robots	Automotive, high-precision navigation, delivery robots	Automotive, high-precision navigation, delivery robots	Automotive, high-precision navigation, delivery robots	Automotive, high-precision navigation, delivery robots	Automotive, high-precision navigation, delivery robots	Automotive, high-precision navigation, delivery robots

Note 1: Heading function need LG69T(AP) and LG69T(AM) work together.
Note 2: Depending on external precision positioning engine.

* Planning/ Under development/ In progress
• Supported

GNSS modules

		GNSS positioning and orientation
Product		**LC02H(BA)**
		
GNSS		GPS/GLONASS/Galileo/BDS/QZSS
Form factor		LCC
Dimensions (mm)		24.0 × 22.0 × 2.55
Weight (approx.) (g)		2.5
Operating temperature		-40°C ~ +85°C
Storage temperature		-40°C ~ +90°C
General features		
Chip solution		AG3335M
L1 band receiver (C/A code) channel number		75
L1 band receiver (C/A code) SBAS		•*: WAAS/EGNOS/MSAS/GAGAN
A-GNSS		Supported
Sensitivity	Autonomous acquisition	-148 dBm
	Reacquisition	-160 dBm
	Tracking	-165 dBm
Orientation accuracy		Heading angle accuracy: 0.2°/m (1 m Baseline) Tilt angle accuracy: 0.3° Roll angle accuracy: 0.3°
TTFF (time to first fix)	Cold start	28 s, Autonomous
	Warm start	22 s, Autonomous
	Hot start	1 s
Position accuracy (autonomous)		Horizontal: 1.5 m CEP Vertical: 3.5 m CEP
Velocity accuracy (without aid)		/
Maximum acceleration accuracy (without aid)		/
Accuracy of 1PPS signal (RMS)		/
Max update rate		1 Hz
Baud rate(default)		115200 bps
Geo-fence		•
Jamming detection		•
Anti-jamming		•
Built-in LNA		•
Electrical data		
Power supply (VCC)		3.1 V ~ 3.6 V, typ. 3.3 V
I/O voltage		2.8 V
Power consumption (acquisition)		83 mA
Power consumption (tracking)		83 mA
Power consumption (backup)		50 μA
Interfaces		
UART		•
I2C (NMEA)		*
Reset		•
Time pulse		•
Antenna		
Short-circuit protection & open-circuit detection		/
Antenna type		Active or passive
Antenna power		Internal
Certifications		CE*
Recommended applications		Communication station antennas, precision agriculture, construction machinery attitude control, vehicle/ship positioning & orientation, etc.

* Planning/ Under development/ In progress
• Supported

		Timing			
Product		**L26-T**	**LC29T**	**LC98S**	**LC26G-T**
					
GNSS		GPS/Galileo/GLONASS/BDS/QZSS	GPS/Galileo/GLONASS/BDS/QZSS	GPS/BDS/GLONASS/Galileo/QZSS	GPS/GLONASS/Galileo/BDS/QZSS
Form factor		LCC	LCC	LCC	LCC
Dimensions (mm)		12.2 × 16.0 × 2.3	12.2 × 16.0 × 3.1	22.4 × 17.0 × 2.6	12.2 × 16.0 × 2.4
Weight (approx.) (g)		0.9	1.1	1.68	0.85
Operating temperature		-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
General features					
Working mode		Timing static mode	Timing static mode	Timing static mode	Timing static mode
Chip solution		Teseo III	Teseo V	Teseo III	AG3352
L1 band receiver (C/A code) channel number		48 Track/2 Fast Acq	80 Track/4 Fast Acq	48 Track/2 Fast Acq	47 Track
L1 band receiver (C/A code) SBAS		WAAS/EGNOS/MSAS/GAGAN	WAAS/EGNOS/MSAS/GAGAN	WAAS/EGNOS/MSAS/GAGAN	WAAS/EGNOS/MSAS/GAGAN
A-GNSS		Supported	Supported	Supported	Supported
Sensitivity	Autonomous acquisition	-147 dBm	-145 dBm[1]	-146 dBm[1]	-148 dBm[1]
	Reacquisition	-153 dBm	-153 dBm[1]	-155 dBm[1]	-160 dBm[1]
	Tracking	-162 dBm	-161 dBm[1]	-161 dBm[1]	-165 dBm[1]
TTFF (time to first fix)	Cold start	32 s, Autonomous	35 s, Autonomous	29 s, Autonomous	28 s, Autonomous
	Warm start	30 s, Autonomous	24 s, Autonomous	28 s, Autonomous	25 s, Autonomous
	Hot start	2 s	2 s, Autonomous	2 s	1 s
Position accuracy(autonomous)		1.5 m CEP	1.5 m CEP	1.5 m CEP	1.5 m CEP
1PPS timing accuracy(1σ)		< 13.6 (±6.8) ns	< 13.6 (±6.8) ns	< 13.6 (±6.8) ns	≤ 16(±8) ns
Frequency reference		/	10 MHz	/	/
Max update rate		5 Hz	10 Hz	10 Hz	1 Hz
Baud rate (default)		9600/115200 bps	115200 bps	115200 bps	115200 bps
Geo-fence		/	/	/	•
Jamming detection		•	•	•	•
Anti-jamming		/	/	/	•
Built-in LNA		•	•	/	•
Electrical data					
Power supply (VCC)		3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	1.75 V ~ 1.98 V, typ. 1.8 V
I/O voltage		typ. 3.3 V	3.0 V ~ 3.6 V	3.0 V ~ 3.6 V	1.8 V
Power consumption (acquisition)		80 mA (GPS+GLONASS+Galileo)	222 mA (GPS+BDS+GLONASS+Galileo+QZSS)	78 mA (GPS + GLONASS)	36 mA
Power consumption (tracking)		73 mA (GPS+GLONASS+Galileo)	232 mA (GPS+BDS+GLONASS+Galileo+QZSS)	74 mA (GPS + GLONASS)	36 mA
Power consumption (backup)		7 μA	55 μA	/	13 μA
Interfaces					
UART		•	•	•	•
I2C (NMEA)		/	*	*	•
Reset		•	•	•	•
Time pulse		•	•	•	•
Antenna					
Short-circuit protection & open-circuit detection		•	•	•	•
Antenna type		Active or passive	Active	Active or passive	Active or passive
Antenna power		External or internal	External or internal	External or internal	Internal
Certifications		CE	/	CE	CE
Recommended applications		High-precision timing	High-precision timing for base stations	High-precision timing for base stations	High-precision timing: financial services, power synchronization, communication base stations, railway dispatching

Note 1: Demonstrated with a good external LNA.

* Planning/ Under development/ In progress
• Supported

GNSS modules

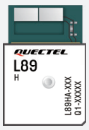
	Standard precision GNSS - single band								
Product	**LG77L(IC)**	**L76-L**	**LC760Z(00)**	**LC76G(AB)**	**LC76G(PA)**	**LC76G(PB)**	**LS550G(00)***	**LC26G(AB)**	**LC260Z(00)**
	Compatible								
									
GNSS	GPS/GLONASS/ Galileo/BDS/QZSS	GPS/GLONASS/ Galileo/BDS/QZSS	GPS/Galileo/ GLONASS/QZSS	GPS/GLONASS/ Galileo/BDS/QZSS	GPS/GLONASS/ Galileo/BDS/QZSS	GPS/GLONASS/ Galileo/BDS/QZSS	GPS/GLONASS/ Galileo/BDS/QZSS	GPS/GLONASS/ Galileo/BDS/QZSS	GPS/Galileo/BDS/ QZSS/SBAS
Form factor	LCC	LCC	LCC	LCC	LCC	LCC	LGA	LCC	LCC
Dimensions (mm)	7.0 × 7.0 × 2.0	10.1 × 9.7 × 2.5	10.1 × 9.7 × 2.3	10.1 × 9.7 × 2.4	10.1 × 9.7 × 2.4	10.1 × 9.7 × 2.4	5.0 × 5.0 × 1.05	12.2 × 16.0 × 2.4	12.2 × 16.0 × 2.4
Weight (approx.) (g)	0.2	0.6	0.5	0.5	0.6	0.6	0.07	0.5	1
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	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Storage temperature	-40°C ~ +90°C	-40°C ~ +90°C	-45°C ~ +90°C	-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	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Chip solution	MT3333	MT3333	HD8120	AG3352Q	AG3352Q	AG3352Q	AG3352B	AG3352Q	HD8120
L1 band receiver (C/A code) channel number	33 Track/ 99 Acq	33 Track/ 99 Acq.	24 track / 64 Acq.	47 track	47 track	47 track	47 track	47 track	24 track / 64 Acq.
L1 band receiver (C/A code) SBAS	WAAS/EGNOS/MSAS/ GAGAN	WAAS/EGNOS/MSAS/ GAGAN	Supported	Supported	Supported	Supported	Supported	Supported	Supported
A-GNSS	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Sensitivity — Autonomous acquisition	-146 dBm	-149 dBm	-149 dBm	-147 dBm	-147 dBm	-147 dBm	-146 dBm	-147 dBm	-148 dBm
Sensitivity — Reacquisition	-156 dBm	-161 dBm	-158 dBm	-159 dBm	-159 dBm	-159 dBm	-158 dBm	-159 dBm	-158 dBm
Sensitivity — Tracking	-163 dBm	-167 dBm	-160 dBm	-166 dBm	-166 dBm	-166 dBm	-165 dBm	-166 dBm	-159 dBm
TTFF (time to first fix) — Cold start	25 s, Autonomous 17 s, with EASY ™	32 s, Autonomous 15 s, with EASY™	28 s, Autonomous 15 s, with AGNSS	28s, Autonomous 15s, with EASY ™ 5s, with EPO™	28 s, Autonomous 15 s, with EASY ™ 5 s, with EPO™	28 s, Autonomous 15 s, with EASY ™ 5 s, with EPO™	30 s	28 s, Autonomous 15 s, with EASY ™ 5 s, with EPO™	28 s, Autonomous 15 s, with AGNSS 5 s, with EPO™
TTFF (time to first fix) — Warm start	23 s, Autonomous 5 s, with EASY ™	30 s, Autonomous 5 s, with EASY™	26 s, Autonomous 4 s, with AGNSS	25s, Autonomous 2s, with ESAY™	25 s, Autonomous 2 s, with ESAY™	25 s, Autonomous 2 s, with ESAY™	25 s	25 s, Autonomous 2 s, with ESAY™	26 s, Autonomous 4 s, with AGNSS
TTFF (time to first fix) — Hot start	2 s	2 s	1 s	1 s	1 s	1 s	2 s	1 s	1 s
Position accuracy (autonomous)	2.5 m CEP	2.5 m CEP	2.0 m CEP	1.5 m CEP	1.5 m CEP	1.5 m CEP	1.5 m CEP	1.5 m CEP	2 m CEP
Velocity accuracy (without aid)	0.1 m/s	0.1 m/s	0.1 m/s	0.1 m/s	0.1 m/s	0.1 m/s	0.1 m/s	0.1 m/s	0.1 m/s
Maximum acceleration accuracy (without aid)	0.1 m/s²	0.1 m/s²	0.1 m/s²	0.1 m/s²	0.1 m/s²	0.1 m/s²	0.1 m/s²	0.1 m/s²	0.1 m/s²
Accuracy of 1PPS signal (RMS)	35 ns	100 ns	100 ns	30 ns	30 ns	30 ns	100 ns	35 ns	100 ns
Max update rate	10 Hz	10 Hz	5 Hz	10 Hz	1 Hz	1 Hz	1 Hz	10 Hz	5 Hz
Baud rate(default)	9600 bps	9600 bps	115200 bps	115200 bps	115200 bps	115200 bps	115200 bps	115200 bps	115200 bps
Geo-fence	•	•	•	•	•	•	•	•	/
Jamming detection	•	•	•	•	•	•	•	•	•
Anti-jamming	•	•	•	•	•	•	•	•	/
Built-in LNA	/	•	•	•	•	•	•	•	•
Electrical data									
Power supply (VCC)	2.8 V ~ 4.3 V	2.8 V ~ 4.3 V	2.8 V ~ 3.6 V	2.55 V ~ 3.6 V	2.55 V ~ 3.6 V	1.75 V ~ 1.98 V	1.75 V ~ 1.98 V, typ. 1.8 V	2.55 V ~ 3.6 V	2.8 V ~ 3.6 V, typ. 3.3 V
I/O voltage	1.7 V ~ 1.9 V/ 2.7 V ~ 2.9 V	2.7 V ~ 2.9 V	Same as VCC	2.55 V ~ 3.6 V	2.55 V ~ 3.6 V	1.75 V ~ 1.98 V	Typ. 1.8 V	typ. 3.3 V	2.8 V ~ 3.6 V, typ. 3.3 V
Power consumption (acquisition)	24 mA (GPS + GLONASS)	31 mA (GPS + GLONASS)	23 mA (GPS + Galileo + GLONASS)	36 mA(G3B)	10 mA(G3B)	15 mA(G3B)	TBD	36 mA(G3B)	20 mA(G2B)
Power consumption (tracking)	23 mA (GPS + GLONASS)	31 mA (GPS + GLONASS)	22 mA (GPS + Galileo + GLONASS)	36 mA(G3B)	10 mA(G3B)	15 mA(G3B)	TBD	36 mA(G3B)	20 mA(G2B)
Power consumption (backup)	6 µA	8 µA	13 µA	13 µA	13 µA	13 µA	TBD	15 µA	13 µA
Interfaces									
UART	•	•	•	•	•	•	•	•	•
I2C (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	Active or passive	Active or passive	Active or passive
Antenna power	External	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	/
Recommended applications	Vehicle trackers, asset trackers, safety, industrial PDAs & PNDs, digital cameras	Vehicle trackers, asset trackers, safety, industrial PDAs & PNDs, digital cameras	Vehicle trackers, asset trackers, safety, industrial PDAs & PNDs, digital cameras	Vehicle trackers, asset trackers, safety, industrial PDAs & PNDs, digital cameras	Vehicle trackers, asset trackers, safety, industrial PDAs & PNDs, digital cameras	Vehicle trackers, asset trackers, safety, industrial PDAs & PNDs, digital cameras	Portable and wearable devices	Vehicle trackers, asset trackers, safety, industrial PDAs & PNDs, digital cameras	Fleet management, tracker, T-BOX, safety driving assistant

• Supported

	Standard precision GNSS - dual band			
Product	**LC79H(AL)**	**LC29H(AA)**	**LC29H(AI)**	**LG695H(06)**
				
GNSS	GPS/QZSS: L1 C/A, L5 GLONASS: L1 Galileo: E1, E5a BDS: B1I, B2a	GPS/QZSS: L1 C/A, L5 GLONASS: L1 Galileo: E1, E5a BDS: B1I, B2a	GPS/GLONASS/Galileo/BDS/QZSS/NavIC/SBAS	GPS + GLONASS + BDS+ Galileo + QZSS
Form factor	LCC	LCC	LCC	LGA
Dimensions (mm)	10.1 × 9.7 × 2.4	12.2 × 16.0 × 2.5	12.2 × 16.0 × 2.5	22.0 × 17.0 × 3.3
Weight (approx.) (g)	0.5	0.9	0.9	2.25
Operating temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +105°C
Storage temperature	-40°C ~ +90°C	-40°C ~ +90°C	-40°C ~ +90°C	-40°C ~ +105°C
General features				
working mode	Standard mode	Standard mode	Standard mode	IMU & GNSS Raw data
Chip solution	AG3335M	AG3335M	AG3335M	AG3335
L1 band receiver (C/A code) channel number	Tracking and acquisition total: 135	Tracking and acquisition total: 135	Tracking and acquisition total: 75	/
L1 band receiver (C/A code) SBAS	WAAS, EGNOS, MSAS, GAGAN	WAAS, EGNOS, MSAS, GAGAN	WAAS, EGNOS, MSAS, GAGAN	WAAS/EGNOS/MSAS/GAGAN
A-GNSS	Supported	Supported	Supported	Supported
Sensitivity – Autonomous acquisition	-148 dBm	-147 dBm	-150 dBm	-145 dBm
Sensitivity – Reacquisition	-159 dBm	-159 dBm	-160 dBm	-160 dBm
Sensitivity – Tracking	-166 dBm	-165 dBm	-165 dBm	-165 dBm
TTFF (time to first fix) – Cold start	26 s	26 s	29 s	26 s
TTFF (time to first fix) – Warm start	18 s	16 s	24 s	16 s
TTFF (time to first fix) – Hot start	1 s	1 s	1 s	1 s
Position accuracy (autonomous)	1.0 m CEP	1.0 m CEP	1.8 m CEP	1.0 m CEP
Velocity accuracy (without aid)	0.03 m/s	0.03 m/s	0.1 m/s	0.1 m/s
Maximum acceleration accuracy (without aid)	/	/	/	0.1 m/s²
Accuracy of 1PPS signal (RMS)	20 ns	20 ns	80 ns	50 ns
Max update rate	PVT: 1 Hz	PVT: 1 Hz	PVT: 1 Hz	10 Hz
Baud rate(default)	115200 bps	115200 bps	115200 bps	460800 bps
Geo-fence	•	•	•	/
Jamming detection	•	•	•	/
Anti-jamming	/	/	/	/
Built-in LNA	•	•	•	/
Electrical data				
Power supply (VCC)	1.75 V ~ 1.98 V	3.1 V ~ 3.6 V	3.1 V ~ 3.6 V, typ. 3.3 V	typ. 3.3V
I/O voltage	2.8 V	2.8 V	Typ. 2.8 V	Same as VCC
Power consumption (acquisition)	33 mA	24 mA	16 mA	25 mA
Power consumption (tracking)	33 mA	24 mA	16 mA	25 mA
Power consumption (backup)	20 μA	25 μA	51 μA	60 μA (198 μW)@ Backup mode (VCC is not disconnected) 85 μA (280.5 μW)@ Backup mode (VCC is disconnected)
Interfaces				
UART	9600~921600 bps(Default:115200 bps)	9600~3000000 bps(Default:115200 bps)	•	•
I2C (NMEA)	•	•	•	/
Reset	•	•	•	•
Time pulse	•	•	•	•
Antenna				
Antenna type	Active or passive	Active or passive	Active or passive	Active
Antenna power	External or internal	External or internal	External or internal	External
Certifications	CE	CE	CE	CE*
Recommended applications	Shared mobility, delivery robots, GIS	Shared mobility, delivery robots, GIS	Application areas include trackers, asset preservation, vehicle navigation, etc	Shared mobility, delivery robots, GIS

* Planning/ Under development/ In progress
• Supported

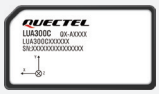
GNSS modules

		Integrated antenna							
Product		**LC86L(C)**	**LC86G(AA)**	**LC86G(AB)**	**LC86G(LA)**	**LC86G(PA)**	**L86**	**L89 R2.0**	**L96**
		Compatible							
									
GNSS		GPS/GLONASS/Galileo/BDS/QZSS	GPS/BDS/Galileo	GPS/GLONASS/Galileo	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/Galileo/BDS/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/IRNSS/QZSS	GPS/GLONASS/BDS/Galileo/QZSS
Form factor		LCC	LCC	LCC	LCC	LCC	LCC	LCC	LCC
Dimensions (mm)[1]		16.0 × 16.0 × 6.95	16.0 × 16.0 × 6.95	16.0 × 16.0 × 6.95	18.4 × 18.4 × 6.95	16.0 × 16.0 × 6.95	18.4 × 18.4 × 6.45	26.4 × 18.4 × 6.8	14.0 × 9.6 × 2.0
Weight (approx.) (g)		6	5.9	5.9	8	5.9	7.6	8.2	0.6
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	-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	-40°C ~ +90°C	-40°C ~ +90°C
General features									
Chip solution		MT3333	AG3352	AG3352	AG3352	AG3352	MT3333	AG3335	MT3333
L1 band receiver (C/A code) channel number		33 Track/ 99 Acq	47 Track	47 Track	47 Track	47 Track	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	Supported	WAAS/EGNOS/MSAS/GAGAN	Supported	WAAS/EGNOS/MSAS/GAGAN	WAAS/EGNOS/MSAS/GAGAN	WAAS/EGNOS/MSAS/GAGAN
A-GNSS		Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported
Sensitivity	Autonomous acquisition	-148 dBm	-147 dBm	-147 dBm	-147 dBm	-147 dBm	-149 dBm	-148 dBm	-148 dBm
	Reacquisition	-162 dBm	-160 dBm	-160 dBm	-160 dBm	-160 dBm	-161 dBm	-157 dBm	-160 dBm
	Tracking	-166 dBm	-166 dBm	-166 dBm	-166 dBm	-166 dBm	-167 dBm	-165 dBm	-165 dBm
TTFF (time to first fix)	Cold start	35 s, Autonomous 15 s, with AGNSS	<30 s, Autonomous <12 s, with EASY ™	<30 s, Autonomous <12 s, with EASY ™	30 s, Autonomous 12 s, with EASY ™	<30 s, Autonomous <12 s, with EASY ™	35 s, Autonomous 15 s, with AGNSS	<35 s, Autonomous <15 s, with EASY™	35 s, Autonomous 15 s, with EASY™
	Warm start	30 s, Autonomous 5 s, with AGNSS	<28 s, Autonomous <2 s, with EASY ™	<28 s, Autonomous <2 s, with EASY ™	25 s, Autonomous 2 s, with EASY ™	<28 s, Autonomous <2 s, with EASY ™	30 s, Autonomous 5 s, with AGNSS	<30 s, Autonomous <5 s, with EASY™	30 s, Autonomous 5 s, with EASY™
	Hot start	2 s	<1 s	<1 s	<1s	<1 s	1 s	<1 s	1 s
Position accuracy(autonomous)		2.5 m CEP	1.5 m CEP	1.5 m CEP	1.5 m CEP	1.5 m CEP	2.5 m CEP	1.8 m CEP	2.5 m CEP
Velocity accuracy(without aid)		0.1 m/s	0.1 m/s	0.1 m/s	0.1 m/s	0.1 m/s	0.1 m/s	0.03 m/s	0.1 m/s
Maximum acceleration accuracy (without aid)		0.1 m/s²	0.1 m/s²	0.1 m/s²	0.1 m/s²	0.1 m/s²	0.1 m/s²	/	0.1 m/s²
Accuracy of 1PPS signal (RMS)		100 ns	30 ns	30 ns	30 ns	30 ns	100 ns	100 ns	100 ns
Max update rate		10 Hz	10 Hz	10 Hz	10 Hz	1 Hz	10 Hz	1 Hz	10 Hz
Baud rate(default)		9600 bps	115200 bps	115200 bps	115200 bps	115200 bps	9600 bps	9600 bps	9600 bps
Geo-fence		•	•	•	•	•	•	•	•
Jamming detection		•	•	•	•	•	•	•	•
Anti-jamming		•	•	•	•	•	•	/	•
Built-in LNA		•	•	•	•	•	•	•	•
Electrical data									
Power supply (VCC)		2.8 V ~ 4.3 V	2.55 V ~ 3.6 V	2.55 V ~ 3.6 V	2.55 V ~ 3.6 V	2.55 V ~ 3.6 V	2.8 V ~ 4.3 V	3.1 V ~ 4.3 V	2.8 V ~ 4.3 V
I/O voltage		2.7 V ~ 2.9 V	2.55 V ~ 3.6 V	2.55 V ~ 3.6 V	2.55 V ~ 3.6 V	2.55 V ~ 3.6 V	2.7 V ~ 2.9 V	3.0 V	2.7 V ~ 2.9 V
Power consumption (acquisition)		32 mA (GPS+GLONASS)	30 mA	33 mA	34 mA	11 mA	32 mA (GPS+GLONASS)	32 mA	25 mA
Power consumption (tracking)		30 mA (GPS+GLONASS)	30 mA	33 mA	34 mA	11 mA	30 mA (GPS+GLONASS)	32 mA	20 mA
Power consumption (backup)		7 μA	13 μA	13 μA	13 μA	13 μA	7 μA	51 μA	7 μA
Interfaces									
UART		•	•	•	•	•	•	•	•
I2C (NMEA)		/	/	/	/	/	/	•	•
Reset		•	•	•	•	•	•	•	•
Time pulse		•	•	•	•	•	•	•	•
Antenna									
Short-circuit protection & open-circuit detection		•	•	•	•	•	•	•	/
Antenna automatic switch		•	•	•	•	•	•	•	/
Antenna type		Embeded patch antenna or external active antenna	Embeded patch antenna or external active antenna	Embeded patch antenna or external active antenna	Embeded patch antenna or external active antenna	Embeded patch antenna or external active antenna	Embeded patch antenna or external active antenna	Embeded patch antenna and chip antenna, external active antenna	Embeded chip antenna or external active antenna
Antenna power		Internal	Internal	Internal	Internal	Internal	Internal	Internal	Internal
Certifications		CE	CE	CE	CE	CE	CE	CE	CE
Recommended applications		Vehicle or asset trackers, DVRs, connected PNDs & PDAs, safety, digital cameras, etc.	Vehicle or asset trackers, DVRs, connected PNDs & PDAs, safety, digital cameras, etc.	Vehicle or asset trackers, DVRs, connected PNDs & PDAs, safety, digital cameras, etc.	Vehicle or asset trackers, DVRs, connected PNDs & PDAs, safety, digital cameras, etc.	Vehicle or asset trackers, DVRs, connected PNDs & PDAs, safety, digital cameras, etc.	Vehicle or asset trackers, DVRs, connected PNDs & PDAs, safety, digital cameras, etc.	(Dedicated for India market) standard tracking	Asset tracking, digital cameras

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

• Supported

GNSS modules

	IMU module	
Product	**LUA600A**	**LUA300C**
		
Dimensions (mm)	25.0 × 25.0 × 12.5	18.8 × 10.4 × 11.1
Weight (approx.) (g)	11.3	2.4
Operating temperature	-40°C ~ +105°C	-40°C ~ +105°C
Storage temperature	-40°C ~ +105°C	-40°C ~ +105°C
General features		
Chip solution	SCHA634	ASM330LHB
Update rate	10–400 Hz; Default: 100 Hz	/
Gyroscope specifications		
Range	±300 °/s	±250 °/s
Bias instability (Allan)	Typ. 1.8 °/h (X/Y axis), 1.4 °/h (Z axis) Max. 2.6 °/h (X/Y axis), 2.1 °/h (Z axis)	2.5 °/h
Angular random walk	Typ. 0.09 °/√ h (X/Y axis), 0.1 °/√ h (Z axis) Max. 0.13 °/√ h (X/Y axis), 0.15 °/√ h (Z axis)	0.2 °/√ h
Bias error over temperature (10 s smoothing, 1σ)	Typ. 0.01 °/s Max. 0.02 °/s	0.03 °/s
Scale factor error (@ 25°C)	Typ. 0.04 % Max. 0.15 %	0.05%
Non-Linearity (@ 25°C)	Typ. 0.003 % FS Max. 0.01 % FS	0.005 % FS
Misalignment error	Typ. 0.004° Max. 0.01°	0.003°
Accelerometer specifications		
Range	±6g	±8 g
Bias instability (Allan)	Typ. 15 μg Max.18 μg	30 μg
Velocity random walk	Typ. 0.035 m/s/√h Max. 0.05 m/s/√h	0.025 m/s/√ h
Bias error over temperature (10 s smoothing, 1σ)	Typ. 0.05 mg(X/Y axis); 1mg(Z axis) Max. 0.1 mg(X/Y axis); 2mg(Z axis)	0.8 mg
Scale factor error (@ 25°C)	Typ. 0.02%(X/Y axis); 0.03 %(Z axis) Max. 0.05%(X/Y axis); 0.12 %(Z axis)	0.02%
Non-Linearity (@ 25°C, ±1g)	Typ. 0.008%FS(X/Y axis); 0.008 %FS(Z axis) Max. 0.02%FS(X/Y axis); 0.02 %FS(Z axis)	0.006 %
Misalignment Error	Typ. 0.002°(X/Y axis); 0.004 °(Z axis) Max. 0.01°(X/Y axis); 0.017 °(Z axis)	0.01°
Electrical features		
Power supply (VCC)	3.0 V ~ 3.6 V, typ. 3.3 V	3.0 V ~ 3.6 V, typ. 3.3 V
I/O voltage	Following VCC	Following VCC
Power consumption (@ 3.3 V)	75 mA	2.6 mA
Interfaces		
UART	Baud rate: 115200–921600 bps; Default: 460800 bps	/
SPI	Max. clock frequency: 8 MHz	Max. clock frequency: 10 MHz
CAN	Max. Baud Rate (CAN): 1 Mbps Max. Baud Rate (CAN FD): 2 Mbps	/
Recommended applications	Automated driving, high-precision navigation, robotics and etc	Automated driving, high-precision navigation, robotics and etc

		Smart antenna	
Product		**QLM29HBAA-GM**	**QLM29HCAA-GM**
			
GNSS		GPS/QZSS: L1 C/A, L5 GLONASS: L1 Galileo: E1, E5a BDS: B1I, B2a	GPS/QZSS: L1 C/A, L5 GLONASS: L1 Galileo: E1, E5a BDS: B1I, B2a
Form factor		/	/
Dimensions (mm)		72 × 57.6 × 22.3	72 × 57.6 × 22.3
Weight (approx.) (g)		220	220
Operating temperature		-40°C ~ +85°C	-40°C ~ +85°C
Storage temperature		-40°C ~ +105°C	-40°C ~ +105°C
General features			
Working mode		DR+RTK	DR
Chip solution		AG3335A/T	AG3335A/T
L1 band receiver (C/A code) channel number		Tracking and acquisition total: 135	Tracking and acquisition total: 135
L1 band receiver (C/A code) SBAS		• (WAAS/EGNOS/MSAS/GAGAN)	• (WAAS/EGNOS/MSAS/GAGAN)
A-GNSS		Supported	Supported
Sensitivity	Autonomous acquisition	-147 dBm	-147 dBm
	Reacquisition	-157 dBm	-157 dBm
	Tracking	-165 dBm	-165 dBm
TTFF (time to first fix)	Cold start	26 s	26 s
	Warm start	16 s	16 s
	Hot start	1 s	1 s
Position accuracy(autonomous)		Autonomous: 1 m	Autonomous: 1 m
Position accuracy(RTK)		RTK: < 0.1 m + 1 ppm	/
Velocity accuracy(without aid)		0.03 m/s	0.03 m/s
Convergence time (RTK)		RTK: < 10 s	/
Maximum acceleration accuracy (without aid)		/	/
Accuracy of 1PPS signal (RMS)		20 ns	20 ns
Max update rate		GNSS : 1 Hz IMU : 100 Hz (MAX)	GNSS : 1 Hz IMU : 100 Hz(MAX)
Baud rate(default)		115200 bps	115200 bps
Geo-fence		•	•
Jamming detection		•	•
Anti-jamming		/	/
Built-in LNA		•	•
Electrical data			
Power supply (VCC)		3.3 V ~ 5.5 V, typ. 5 V	3.3 V ~ 5.5 V, typ. 5 V
Power Consumption		39.8 mA	42 mA
Interfaces			
RS232		115200 bps	115200 bps
UART		/	/
I2C (NMEA)		/	/
Antenna			
Short-circuit protection & open-circuit detection		/	/
Antenna type		Active	Active
Antenna power		Internal	Internal
Certifications		CE	CE
Recommended applications		Car sharing, vehicle navigation	Car sharing, vehicle navigation

• Supported

UMTS/HSPA(+) modules

Product	UC200A-GL
	
Form factor	LCC
Dimensions (mm)	29.0 × 32.0 × 2.4
3G	UMTS/HSPA+
Frequency bands (MHz)	UMTS: B1/2/5/8; GSM: 850/900/1800/1900MHz
Region	Global
Weight (approx.) (g)	4.3
Operating temperature	-35°C ~ +75°C
Extended temperature	-40°C ~ +85°C
Data transmission (Max.)	
HSPA data rates (Mbps)	21 (DL)/5.76 (UL)
UMTS data rates (Kbps)	384 (DL/UL)
GPRS data rates (Kbps)	85.6 (DL/UL)
EDGE data rates (Kbps)	236.8 (DL/UL)
SMS	•
CSD	•
Protocols	TCP/UDP/PPP/NTP/NITZ/FTP/HTTP/PING/CMUX/HTTPS/FTPS/SSL/FILE/MQTT/MMS/SMTP/SMTPS
Interfaces	
SIM	1.8 V/ 3 V
UART	2
USB	2.0 hi-speed
Audio digital (PCM)	•
RTC backup	•
ADC	× 2, 12bits
Antenna	Pads for primary
Enhanced features	
DTMF	•
QuecFOTA®	•
DFOTA	•
RIL driver	Android 4.x~12.x
USB serial driver	Windows 7/8/8.1/10/11, Linux 2.6~5.15, Android 4.x~12.x
SIM detection	•
Firmware update	via USB/ DFOTA
Electrical features	
Supply voltage range	3.4 V ~ 4.5 V, typ. 3.8 V
Power consumption	17 μA @ Power Off 1 mA @ Sleep
Certifications	CE/FCC/Anatel/RCM
Recommended applications	Telematics, smart metering, mobile POS terminals, gateways, safety, tracking and tracing, remote maintenance and control, networking, mobile computing, healthcare, etc.

• Supported

GSM/GPRS modules

Product	M66	M65	M95	M95-R	MC60/ MC60E
					
Form factor	LCC	LCC	LCC	LCC	LCC
Dimensions (mm)	17.7 × 15.8 × 2.3	17.7 × 15.8 × 2.3	23.6 × 19.9 × 2.65	23.6 × 19.9 × 2.65	18.7 × 16.0 × 2.1
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	1.1	3.0	3.0	1.3
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 (Max.)					
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/FTP/HTTP/SMTP/NITZ/ PING/NTP/SSL/MQTT/HTTPS/SMTPS	TCP/UDP/PPP/FTP/HTTP/NITZ/PING/ NTP/SSL/MQTT/HTTPS	TCP/UDP/PPP/FTP/HTTP/SMTP/NITZ/ PING/NTP/SSL/MQTT	TCP/UDP/PPP/FTP/HTTP/NITZ/PING/ NTP/SSL/MQTT	TCP/UDP/PPP/FTP/HTTP/NITZ/PING/ NTP/SSL/HTTPS/MQTT
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	1.8 V/3 V	1.8 V/3 V	1.8 V/ 3 V	1.8 V/3 V	1.8 V/3 V
Audio analog	1 input/2 outputs	1 input/2 outputs	2 inputs/ 2 outputs	2 inputs/ 2 outputs	1 input/ 2 outputs
Audio digital (PCM)	•	/	•	•	•
RTC backup	•	•	•	•	•
UART	3	3	2	2	4
ADC	× 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	•	•	•
QuecCell	•	•	•	•	•
QuecFile	•	•	/	/	•/o
QuecOpen®	•	•	/	/	•
MUX	•	•	•	•	•
Bluetooth	•	/	/	/	BT 3.0 (MC60) BT 3.0/ BT4.0 (MC60E)
GNSS	/	/	/	/	BEIDOU/GPS/GLONASS/Galileo/QZSS
Electrical features					
Power supply	3.3 V ~ 4.6V	3.45 V ~ 4.25 V	3.3 V ~ 4.6 V	3.45 V ~ 4.25 V	3.3 V ~ 4.6 V
Low power consumption	1.3mA @DRX=5 1.2mA @DRX=9	1.2mA @DRX=5 1.1mA @DRX=9	1.3mA @DRX=5 1.2mA @DRX=9	1.4mA @DRX=5 1.3mA @DRX=9	1.2mA @DRX=5 0.8mA @DRX=9
Certifications	Vodafone/Deutsche Telekom/CE/ GCF/FCC/Anatel/ICASA/UCRF	CE/Anatel	Vodafone/CE/GCF/PTCRB/FCC/IC/ Rogers/Anatel/RCM/ICASA/NCC/ UCRF/Telenor	CE/Anatel	CE/GCF/FCC/Anatel/ICASA/UCRF
Recommended applications	Telematics, smart metering, mobile POS terminals, gateways, safety, tracking and tracing, remote maintenance and control, networking, mobile computing, healthcare, etc.				

o Under development
• Supported

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YC0018CA

5G SMT mount PCB chip IFA embedded antenna

EVB

YC0018CAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	617–960 MHz, 1420–1520 MHz, 1710–2690 MHz, 3300–4200 MHz, 4400–5000 MHz, 5150–5850 MHz
Efficiency	20%–75%
Peak gain	5.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 40 × 7 × 3 mm; EVB: 141 × 40.4 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YPCS001AA

5G SMT mount PCB chip monopole embedded antenna

EVB

YPCS001AAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	1427–5850 MHz
Efficiency	20%–65%
Peak gain	2.6 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 20 × 10 × 3 mm, EVB: 60 × 20 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YF0017FA

5G adhesive mount FPC + cable dipole embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1500–6000 MHz
Efficiency	45%–75%
Peak gain	4.4 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	49 × 13 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF4L
Cable type	RF1.13
Cable length	201 mm
Operation temperature	–40°C to +85°C

YF0017GA

5G adhesive mount FPC + cable dipole embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1100–6000 MHz
Efficiency	53% AVG.
Peak gain	6.4 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	49 × 13 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF4L
Cable type	RF1.13
Cable length	201 mm
Operation temperature	–40°C to +85°C

YF0020EA

5G adhesive mount FPC + cable dipole embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	600–6000 MHz
Efficiency	30%–90%
Peak gain	4.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	90.3 × 15.3 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF4L
Cable type	RF1.13
Cable length	202 mm
Operation temperature	–40°C to +85°C

YFCA010AA

5G adhesive mount FPC + cable dipole embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	410–470 MHz; 700–960 MHz; 1400–6000 MHz
Efficiency	23%–68%
Peak gain	3.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	138.8 × 16.2 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	101 mm
Operation temperature	–40°C to +85°C

YP0009NA

5G adhesive mount PCB + cable dipole embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1100–6000 MHz
Efficiency	30%–80%
Peak gain	5.4 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	49 × 13 × 0.8 mm
Form factor	PCB + cable
Mounting type	Adhesive
Connector type	IPEX MHF4L
Cable type	RF1.13
Cable length	202 mm
Operation temperature	–40°C to +85°C

YP0009OA

5G adhesive mount PCB + cable dipole embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	600–6000 MHz
Efficiency	30%–75%
Peak gain	5.4 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	78.5 × 14.2 × 0.8 mm
Form factor	PCB + cable
Mounting type	Adhesive
Connector type	IPEX MHF4L
Cable type	RF1.13
Cable length	202 mm
Operation temperature	–40°C to +85°C

YPCA006AA

5G adhesive mount PCB + cable dipole embedded antenna

Compliant

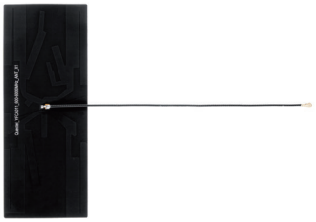
RoHS & REACH

Electrical data

Frequency range	410–470 MHz; 700–960 MHz; 1400–6000 MHz
Efficiency	16%–75%
Peak gain	3.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	150 × 16.2 × 0.6 mm
Form factor	PCB + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	101 mm
Operation temperature	–40°C to +85°C



YFCA011AA

5G adhesive mount FPC + cable dipole embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	600–960 MHz, 1520–6000 MHz
Efficiency	20%–75%
Peak gain	7.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	120 × 47 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.37
Cable length	150 mm
Operation temperature	–40°C to +85°C

YFCP001WWA

5G SMT mount PCB chip monopole embedded antenna
Compatible with Japan market

EVB

YFCP001WWAEVB

Compliant

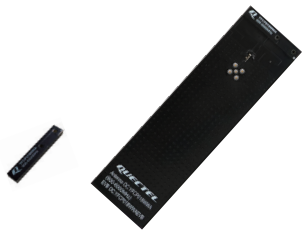
RoHS & REACH

Electrical data

Frequency range	1427–5850 MHz
Efficiency	45% AVG.
Peak gain	2.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 20 × 10 × 3 mm, EVB: 60 × 20 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YFCP018WWA

5G SMT mount PCB chip IFA embedded antenna
Compatible with Japan market

EVB

YFCP018WWAEVB

Compliant

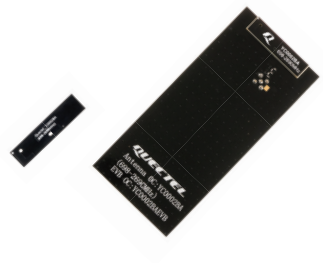
RoHS & REACH

Electrical data

Frequency range	617–960 MHz, 1420–1520 MHz, 1710–2690 MHz, 3300–4200 MHz, 4400–5000 MHz, 5150–5850 MHz
Efficiency	43% AVG.
Peak gain	2.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 40 × 7 × 3 mm, EVB: 141 × 40.4 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YC0002BA

4G SMT mount PCB chip IFA embedded antenna

EVB

YC0002BAEVB

Compliant

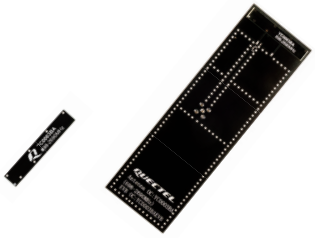
RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	30%–75%
Peak gain	4.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 42 × 10 × 3 mm, EVB: 131 × 60 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YC0003BA

4G SMT Mount PCB chip IFA embedded antenna

EVB

YC0003BAEVB

Compliant

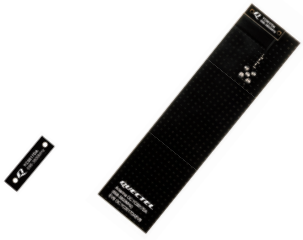
RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	30%–60%
Peak gain	3.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 40 × 7 × 3 mm, EVB: 136.5 × 43 × 1 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YC0017DA

4G SMT mount PCB chip IFA embedded antenna

EVB

YC0017DAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	698–960 MHz, 1710–2690 MHz, 3300–3800 MHz
Efficiency	25%–75%
Peak gain	3.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 25 × 7 × 3 mm, EVB: 140 × 36 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YC0017EA

4G SMT mount PCB chip IFA embedded antenna

EVB

YC0017EAEVB

Compliant

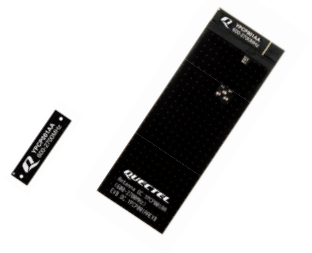
RoHS & REACH

Electrical data

Frequency range	698–960 MHz, 1710–2690 MHz, 3300–3800 MHz
Efficiency	20%–75%
Peak gain	3.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 25 × 7 × 3 mm, EVB: 140 × 36 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YPCP001AA

4G SMT mount PCB chip IFA embedded antenna

EVB

YPCP001AAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	600–960 MHz, 1710–2690 MHz
Efficiency	20%–75%
Peak gain	3.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 36 × 9 × 3 mm, EVB: 110 × 45.5 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YPCP003AA

4G SMT mount PCB chip IFA embedded antenna
Compatible with Japan market

EVB

YPCP003AAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	698–960 MHz, 1695–2200 MHz, 2300–2700 MHz
Efficiency	50% AVG.
Peak gain	3.3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 28 × 8 × 3 mm, EVB: 130 × 36 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YPCP003BA

4G SMT mount PCB chip IFA embedded antenna

EVB

YPCP003BAEVB

Compliant

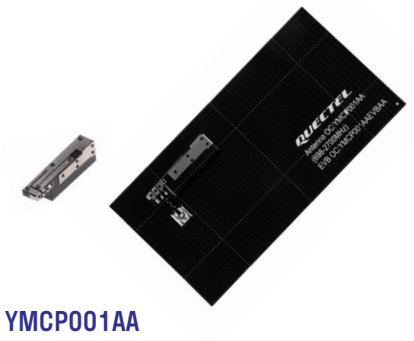
RoHS & REACH

Electrical data

Frequency range	698–960 MHz, 1695–2200 MHz, 2300–2700 MHz
Efficiency	46% AVG.
Peak gain	3.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 28 × 8 × 3 mm, EVB: 130 × 36 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YMCP001AA

4G screw mount sheet metal + holder PIFA embedded antenna
Compatible with Japan market

EVB

YMCP001AAEVBAA

Compliant

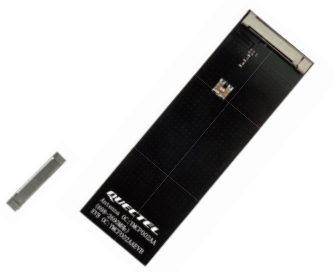
RoHS & REACH

Electrical data

Frequency range	698–960 MHz, 1710–2700 MHz
Efficiency	48% AVG.
Peak gain	2.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 43.19 × 12.73 × 8.15 mm YMCP001AAEVBAA : 145 × 75 mm
Form factor	Sheet metal + holder
Mounting type	Screw
Operation temperature	–40°C to +85°C



YMCP002AA

4G SMT mount sheet metal PIFA embedded antenna

EVB

YMCP002AAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	600–960 MHz, 1710–2690 MHz
Efficiency	40%–75%
Peak gain	3.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 40 × 7.23 × 7.6 mm, EVB: 40 × 136.5 mm
Form factor	Sheet metal
Mounting type	SMT
Operation temperature	–40°C to +85°C

YFCA002HA

4G adhesive mount FPC + cable monopole embedded antenna
Compatible with Japan market

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	20%–75%
Peak gain	3.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	30 × 20 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	86.5 mm
Operation temperature	–40°C to +85°C

YF0006PA

4G adhesive mount FPC + cable monopole embedded antenna
Compatible with Japan market

Compliant

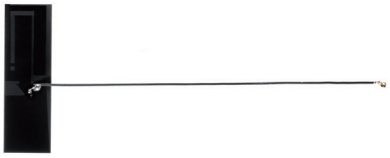
RoHS & REACH

Electrical data

Frequency range	690–2700 MHz
Efficiency	52% AVG.
Peak gain	3.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	50 × 25 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	90 mm
Operation temperature	–40°C to +85°C



YF0003FA

4G adhesive mount FPC + cable monopole embedded antenna

Compliant

RoHS

Electrical data

Frequency range	824–960 MHz, 1710–2690 MHz
Efficiency	25%–70%
Peak gain	3.3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	62 × 19 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	150 mm
Operation temperature	–40°C to +85°C

YF0028AA

4G adhesive mount FPC + cable dipole embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	698–2690 MHz
Efficiency	30%–75%
Peak gain	3.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	94 × 21 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.37
Cable length	150 mm
Operation temperature	–40°C to +85°C

YF0022DA

4G adhesive mount PCB + cable monopole embedded antenna
Compatible with Japan market

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	46% AVG.
Peak gain	2.6 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	15 × 40 × 0.8 mm
Form factor	PCB + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	74.5 mm
Operation temperature	–40°C to +85°C

YF0007KA

4G adhesive mount PCB + cable monopole embedded antenna
Compatible with Japan market

Compliant

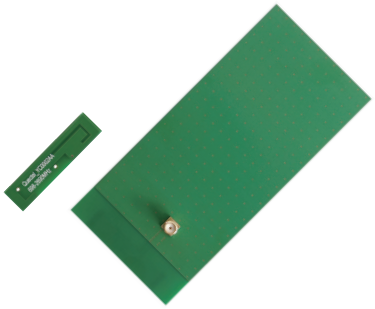
RoHS & REACH

Electrical data

Frequency range	600–960 MHz, 1427.9–1495.9 MHz 1710–2690 MHz
Efficiency	58% AVG.
Peak gain	3.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	50 × 25 × 0.8 mm
Form factor	PCB + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.37
Cable length	74.5 mm
Operation temperature	–40°C to +85°C



YC0002AA

4G SMT mount PCB chip IFA
embedded antenna
Compatible with Japan market

EVB

YC0002AAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	698–960 MHz,1710–2690 MHz
Efficiency	30%–80%
Peak gain	3.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 42 × 10 × 3 mm, EVB: 131 × 60 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YPCA004AA

4G adhesive mount PCB + cable monopole
embedded antenna
Compatible with Japan market

Compliant

RoHS

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	43% AVG.
Peak gain	2.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	40 × 10 × 1.15 mm
Form factor	PCB + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFCP002WWA

4G SMT mount PCB chip IFA
embedded antenna
Compatible with Japan market

EVB

YFCP002WWAEVB

Compliant

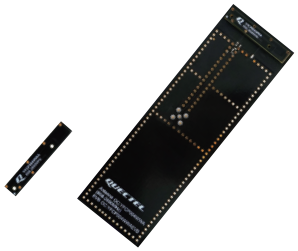
RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	35%~72%
Peak gain	3.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 42 × 10 × 3 mm, EVB: 131 × 60 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YFCP004WWA

4G SMT mount PCB chip IFA embedded antenna
Compatible with Japan market

EVB

YFCP004WWAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	27%–68%
Peak gain	2.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 40 × 7 × 3 mm, EVB: 136.5 × 43 × 1 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YFCP017WWA

4G SMT mount PCB chip IFA embedded antenna
Compatible with Japan market

EVB

YFCP017WWAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	698–960 MHz, 1710–2690 MHz, 3300–3800 MHz
Efficiency	26%–66%
Peak gain	2.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 25 × 7 × 3 mm, EVB: 140 × 36 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YFCP017WWB

4G SMT mount PCB chip IFA embedded antenna
Compatible with Japan market

EVB

YFCP017WWBEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	698–960 MHz, 1710–2690 MHz, 3300–3800 MHz
Efficiency	29%–73%
Peak gain	2.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 25 × 7 × 3 mm, EVB: 140 × 36 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YFCP005WWA

4G SMT Mount PCB chip IFA
embedded antenna
Compatible with Japan market

EVB

YFCP005WWAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	600–960 MHz, 1710–2690 MHz
Efficiency	45% AVG.
Peak gain	2.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 36 × 9 × 3 mm, EVB: 126.5 × 45.5 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YFCP006WWA

4G SMT mount PCB chip IFA
embedded antenna
Compatible with Japan market

EVB

YFCP006WWAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	698–960 MHz, 1695–2200 MHz, 2300–2690 MHz
Efficiency	48% AVG.
Peak gain	2.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 28 × 8 × 3 mm, EVB: 130 × 36 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YFCH001WWA

4G Screw mount sheet metal + holder PIFA
embedded antenna
Compatible with Japan market

EVB

YFCH001WWAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	698–960 MHz,1710–2700 MHz
Efficiency	45% AVG.
Peak gain	2.3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 43.19 × 12.73 × 8.15 mm, EVB: 145 × 75 mm
Form factor	Sheet metal + holder
Mounting type	Screw
Operation temperature	–40°C to +85°C

YFCH002WWA

4G SMT mount sheet metal PIFA embedded antenna
Compatible with Japan market

EVB

YFCH002WWAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	600–960 MHz,1710–2690 MHz
Efficiency	22%–64%
Peak gain	2.6 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 40 × 7.23 × 7.6 mm, EVB: 136.5 × 43 mm
Form factor	Sheet metal
Mounting type	SMT
Operation temperature	–40°C to +85°C

YC0001CA

4G SMT mount PCB chip IFA embedded antenna
Compatible with Japan market

EVB

YC0001CAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2700 MHz
Efficiency	42% AVG.
Peak gain	2.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 35 × 8.5 × 3 mm, EVB: 121.4 × 65 × 1 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YC0009AA

Wi-Fi SMT mount ceramic chip IFA embedded antenna

EVB

YC0009AAEVB

Compliant

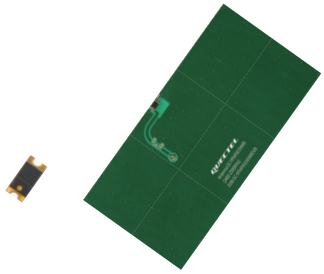
RoHS

Electrical data

Frequency range	2400–2500 MHz
Efficiency	55%–70%
Peak gain	0.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 3.2× 1.6× 0.5 mm, EVB: 91 × 51 mm
Form factor	Ceramic chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YFBP001WWA

Wi-Fi SMT mount PCB chip IFA embedded antenna

EVB

YFBP001WWAEVB

Compliant

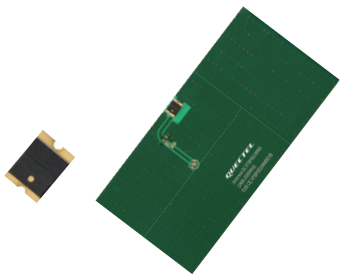
RoHS

Electrical data

Frequency range	2400–2500 MHz
Efficiency	55%–70%
Peak gain	1.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 3.2 × 1.6 × 0.6 mm, EVB: 80 × 40 × 0.6 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YFBP001WWB

Wi-Fi SMT mount PCB chip IFA embedded antenna

EVB

YFBP001WWBEVB

Compliant

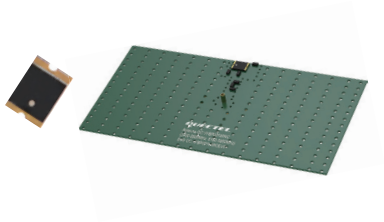
RoHS

Electrical data

Frequency range	2400–2500 MHz
Efficiency	65%–80%
Peak gain	1.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 5 × 3.6 × 0.5 mm, EVB: 80 × 40 × 0.6 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YFBP001WWC

Wi-Fi SMT mount PCB chip IFA embedded antenna

EVB

YFBP001WWCEVB

Compliant

RoHS

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz
Efficiency	65%–83%
Peak gain	3.4 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 5 × 3.6 × 0.5 mm, EVB: 80 × 40 × 0.6 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YC0010AA

Wi-Fi SMT mount ceramic chip monopole embedded antenna

EVB

YC0010AAEVB

Compliant

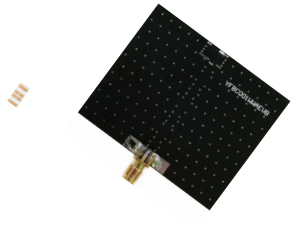
RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz
Efficiency	55%–70%
Peak gain	3.8 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 5.2 × 2 × 1.2 mm, EVB: 90 × 50 mm
Form factor	Ceramic chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YFBC001WWA

Wi-Fi SMT mount ceramic chip loop embedded antenna

EVB

YFBC001WWAEVB

Compliant

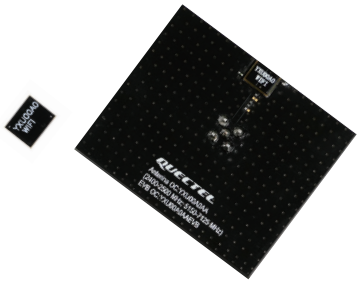
RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Efficiency	25%–65%
Peak gain	2.3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 1.6 × 0.8 × 0.4 mm, EVB: 60 × 50 × 1 mm
Form factor	Ceramic chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YXU00A0AA

Wi-Fi SMT mount PCB chip loop embedded antenna
Compatible with Japan market

EVB

YXU00A0AAEVB

Compliant

RoHS

Electrical data

Frequency range	2400–2500 MHz; 5150–7125 MHz
Efficiency	45%–70%
Peak gain	3.6 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 8 × 6.6 × 1.6 mm, EVB: 60 × 50 × 1.6 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YF0011KA

Wi-Fi adhesive mount FPC + cable dipole embedded antenna
Compatible with Japan market

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz
Efficiency	60%–80%
Peak gain	3.3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	38.9 × 9 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	50.5 mm
Operation temperature	–40°C to +85°C

YF0011SA

Wi-Fi adhesive mount FPC + cable dipole embedded antenna

Compliant

RoHS

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz
Efficiency	40%–75%
Peak gain	3.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	38.9 × 9 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF4L
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YF0026AA

Wi-Fi adhesive mount FPC + cable PIFA embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Efficiency	50%–80%
Peak gain	6.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	28.9 × 11 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.37
Cable length	100 mm
Operation temperature	–40°C to +85°C

YF0026LA

Wi-Fi adhesive mount FPC + cable IFA embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Efficiency	50%–80%
Peak gain	5.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	28.9×11 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF4L
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YF0027AA

Wi-Fi adhesive mount FPC + cable PIFA embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Efficiency	45%–85%
Peak gain	6.4 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	38 × 7 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.37
Cable length	100 mm
Operation temperature	–40°C to +85°C

YF0027CA

Wi-Fi adhesive mount FPC + cable IFA embedded antenna

Compliant

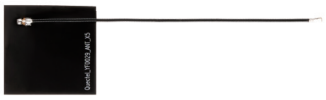
RoHS

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Efficiency	35%~70%
Peak gain	5.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	38×7 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF4L
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C



YF0029AA

Wi-Fi adhesive mount FPC + cable IFA embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Efficiency	40%–80%
Peak gain	7.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	29.98×30.85 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.37
Cable length	100 mm
Operation temperature	–40°C to +85°C

YF0029CA

Wi-Fi adhesive mount FPC + cable IFA embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Efficiency	40%–75%
Peak gain	6.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	29.98 × 30.85 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF4L
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YF0023HA

Wi-Fi adhesive mount FPC + cable monopole embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 4900–5850 MHz, 5925–7125 MHz
Efficiency	45%–80%
Peak gain	6.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	22.7×11.9 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–20°C to +85°C

YF0023IA

Wi-Fi adhesive mount FPC + cable monopole embedded antenna

Compliant

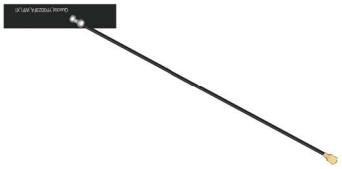
RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 4900–5850 MHz, 5925–7125 MHz
Efficiency	45%–85%
Peak gain	5.6 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	22.7×11.9 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF4L
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–20°C to +85°C



YF0023FA

Wi-Fi adhesive mount FPC + cable monopole embedded antenna

Compliant

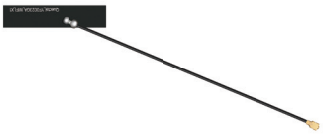
RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 4900–5850 MHz, 5925–7125 MHz
Efficiency	55%~90%
Peak gain	7.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	37.8 × 7.5 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–20°C to +85°C



YF0023GA

Wi-Fi adhesive mount FPC + cable monopole embedded antenna

Compliant

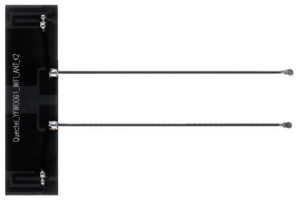
RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Efficiency	50%–85%
Peak gain	7.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	37.8 × 7.5 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF4L
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–20°C to +85°C



YFWO001AA

Wi-Fi 2in1 adhesive mount combo embedded antenna

Compliant

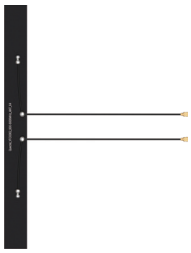
RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz; 5150–7150 MHz
Efficiency	45%–75%
Peak gain	5.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	78.6 × 21.4 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C



YFCO002AA

5G 2in1 adhesive mount Combo embedded antenna

Compliant

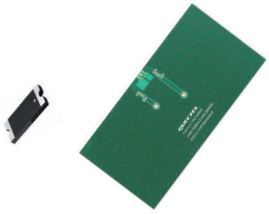
RoHS & REACH

Electrical data

Frequency range	600–6000 MHz
Efficiency	35%–70%
Peak gain	5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	237 × 22 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	150 mm
Operation temperature	–40°C to +85°C



YFMP200WWA

Wi-Fi & GNSS 2in1 SMT mount Combo embedded antenna

EVB

YFMP200WWAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	Wi-Fi × 1: 2400–2500 MHz, GNSS × 1: 1560–1580 MHz
Efficiency	Wi-Fi × 1: 50%–70%, GNSS × 1: 45%–55%
Peak gain	Wi-Fi × 1: 1.3 dBi, GNSS × 1: 1.5 dBi
Radiation pattern	Wi-Fi × 1: Omni-directional, GNSS × 1: Omni-directional
Polarization	Wi-Fi × 1: Linear, GNSS × 1: Linear

Mechanical data

Dimensions	Antenna: 3.2 × 1.6 × 0.6 mm, EVB: 80 × 40 × 0.6 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YC0013AA

GNSS SMT mount ceramic chip passive embedded antenna

EVB

YC0013AAEVB

Compliant

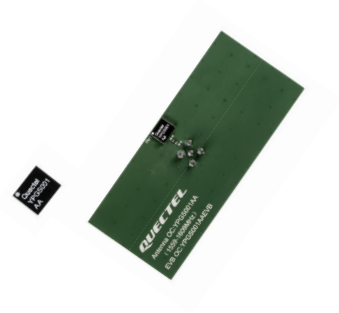
RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	55%–65%
Peak gain	0.8 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 3.2 × 1.6 × 0.6 mm, EVB: 90 × 50 mm
Form factor	Ceramic chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YPGS001AA

GNSS SMT mount PCB passive embedded antenna

EVB

YPGS001AAEVB

Compliant

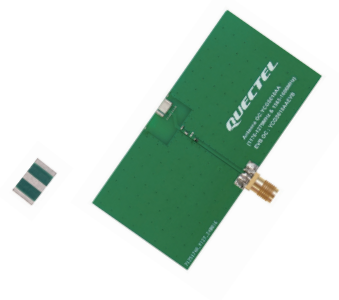
RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	51%–54%
Peak gain	1.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 7 × 5.8 × 0.8 mm, EVB: 80 × 35 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YCGS010AA

GNSS SMT mount ceramic chip passive embedded antenna

EVB

YCGS010AAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1300 MHz, 1565–1586 MHz
Efficiency	L2/L5/E6/B3: 42%–50%, L1: 70%–74%
Peak gain	L2/L5/E6/B3: 1.3 dBi, L1: 2.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 5 × 3 × 0.5 mm, EVB: 80 × 40 mm
Form factor	Ceramic chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YFGA003AA

GNSS adhesive mount FPC + cable passive embedded antenna

Compliant

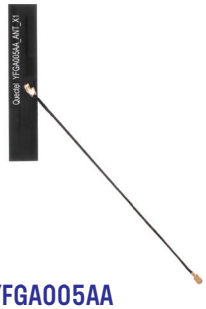
RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	53%–55%
Peak gain	1.6 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	39.45 × 13.25 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	RF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C



YFGA005AA

GNSS adhesive mount FPC + cable passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	60%–65%
Peak gain	3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	61.15 × 11.24 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100.5 mm
Operation temperature	–40°C to +85°C

YFGA006AA

GNSS adhesive mount FPC + cable passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1300 MHz, 1559–1606 MHz
Efficiency	40%–75%
Peak gain	3.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	74.5 × 24.5 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	143 mm
Operation temperature	–40°C to +85°C

YFGC009WWB

GNSS SMT mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	42%–68%
Peak gain	2.1 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	18 × 18 × 4 mm
Form factor	Ceramic patch
Mounting type	SMT
Operation temperature	–40°C to +85°C

YFGC009WWC

GNSS SMT mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1586 MHz
Efficiency	70%–75%
Peak gain	3.9 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	25 × 25 × 4 mm
Form factor	Ceramic patch
Mounting type	SMT
Operation temperature	–40°C to +85°C

YFGC009WWA

GNSS SMT mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	23%–57%
Peak gain	0.9 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	15 × 15 × 4 mm
Form factor	Ceramic patch
Mounting type	SMT
Operation temperature	–40°C to +85°C

YFGC010WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1565–1586 MHz
Efficiency	20%–33%
Peak gain	0.1 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	10.2 × 10.2 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC012WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1565–1586 MHz
Efficiency	20%–37%
Peak gain	–2.4 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	12 × 12 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & Soldering
Operation temperature	–40°C to +85°C

YFGC012WWB

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1586 MHz
Efficiency	28%–30%
Peak gain	–1 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	12 × 12 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC015WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	25%–65%
Peak gain	2.1 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	15 × 15 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC015WWB

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	35%–60%
Peak gain	1.8 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	15 × 15 × 4mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC018WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	32%–68%
Peak gain	2.3 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	18 × 18 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC020WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	25%–70%
Peak gain	2.9 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	20 × 20 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC025WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	30%–58%
Peak gain	0.8 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	25 × 25 × 2 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC025WWB

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	23%–60%
Peak gain	2.1 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	25 × 25 × 2 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC025WWC

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	60%–80%
Peak gain	3.6 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	25 × 25 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC025WWD

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	50%–80%
Peak gain	3.6 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	25 × 25 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC225WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz, 1565–1586 MHz
Efficiency	L1: 55%–59%, L5: 50%–53%
Peak gain	L1: 1.2 dBi, L5: 1.1 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	25 × 25 × 4 + 18 × 18 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC000WWAM

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz, 1565–1586 MHz
Efficiency	L1: 65%, L5: 44%
Peak gain	L1: 0.58 dBi, L5: –0.31 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	25 × 25 × 4 + 18 × 18 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC233WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz, 1565–1586 MHz
Efficiency	L1: 45%–60%, L5: 40%–44%
Peak gain	L1: 2.3 dBi, L5: 0.7 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	33 × 33 × 4 + 25 × 25 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC235WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

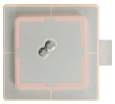
RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz, 1565–1586 MHz
Efficiency	L1: 44%–53%, L5: 45%–50%
Peak gain	L1: 2.9 dBi, L5: 1.2 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	35 × 35 × 6 + 28 × 28 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C



YFGC238WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz, 1565–1586 MHz
Efficiency	L1: 45%–63%, L5: 40%–50%
Peak gain	L1: 3.9 dBi, L5: 1.4 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	38 × 38 × 6 + 28 × 28 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC035WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	72%–82%
Peak gain	4.4 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	35 × 35 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC035WWB

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	78%–83%
Peak gain	3.6 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	35 × 35 × 6 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC035WWC

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	63%–69%
Peak gain	3.8 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	35 × 35 × 6 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC040WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

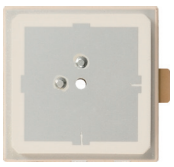
RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	66%–73%
Peak gain	4.3 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	40 × 40 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C



YFGC245WWA

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz, 1565–1586 MHz
Efficiency	L1: 45%–60%, L5: 45%–50%
Peak gain	L1: 3.6 dBi, L5: 1 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	45 × 45 × 6 + 40 × 40 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGC245WWB

GNSS adhesive & soldering mount ceramic patch passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz, 1565–1586 MHz
Efficiency	L1: 52%–64%, L5: 55%–60%
Peak gain	L1: 4.4 dBi, L5: 2.9 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	45 × 45 × 8 + 40 × 40 × 4 mm
Form factor	Ceramic patch
Mounting type	Adhesive & soldering
Operation temperature	–40°C to +85°C

YFGA010E3BM

GNSS buckle mount ceramic patch + cable passive embedded antenna

Compliant

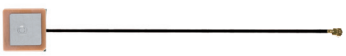
RoHS & REACH

Electrical data

Frequency range	1565–1586 MHz
Efficiency	14%–16%
Peak gain	–4.5 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	10.2 × 10.2 × 7.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C



YFGA015E3BM

GNSS buckle mount ceramic patch + cable passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1565–1586 MHz
Efficiency	30%–46%
Peak gain	–1 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	15 × 15 × 7.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA018E3BM

GNSS buckle mount ceramic patch + cable passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1586 MHz
Efficiency	44%–53%
Peak gain	–0.3 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	18 × 18 × 7.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA020E3BM

GNSS buckle mount ceramic patch + cable passive embedded antenna

Compliant

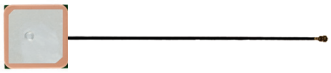
RoHS & REACH

Electrical data

Frequency range	1559 - 1586 MHz
Efficiency	53.8% ~ 58.7%
Peak gain	0.4 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	20 × 20 × 7.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C



YFGA025E3CM

GNSS buckle mount ceramic patch + cable active embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1586 MHz
Efficiency	65%–74%
Peak gain	0.7 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	16 dB

Mechanical data

Dimensions	25 × 25 × 7.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA025E3DM

GNSS buckle mount ceramic patch + cable passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1586 MHz
Efficiency	65%–74%
Peak gain	0.7 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	25 × 25 × 7.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA010E3AM

GNSS buckle mount ceramic patch + cable active embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1565–1586 MHz
Efficiency	14%–16%
Peak gain	–4.5 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	16 dB

Mechanical data

Dimensions	10.2 × 10.2 × 7.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA012E3AM

GNSS buckle mount ceramic patch + cable active embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1565–1586 MHz
Efficiency	36% AVG.
Peak gain	–1.7 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	16 dB

Mechanical data

Dimensions	12 × 12 × 7.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA012E3BM

GNSS buckle mount ceramic patch + cable passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1565 - 1586 MHz
Efficiency	36%
Peak gain	-1.7 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	12 × 12 × 7.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA015E3AM

GNSS buckle mount ceramic patch + cable active embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1565–1586 MHz
Efficiency	30%–46%
Peak gain	–1 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	16 dB

Mechanical data

Dimensions	15 × 15 × 7.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA018E3AM

GNSS buckle mount ceramic patch + cable active embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1586 MHz
Efficiency	44%–53%
Peak gain	–0.3 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	16 dB

Mechanical data

Dimensions	18 × 18 × 7.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA025E3AM

GNSS buckle mount ceramic patch + cable active embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1586 MHz
Efficiency	45%–47%
Peak gain	–0.45 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	16 dB

Mechanical data

Dimensions	25 × 25 × 5.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA025E3BM

GNSS buckle mount ceramic patch + cable passive embedded antenna

Compliant

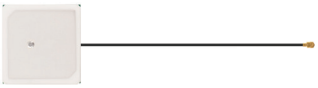
RoHS & REACH

Electrical data

Frequency range	1559-1606 MHz
Efficiency	47%
Peak gain	-0.4 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	25 × 25 × 5.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C



YFGA035E3BM

GNSS buckle mount ceramic patch + cable passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559 - 1606 MHz
Efficiency	75% ~ 81%
Peak gain	1.21 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	35 × 35 × 7.9 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA035E3DM

GNSS buckle mount ceramic patch + cable passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559 - 1586 MHz
Efficiency	78% ~ 83%
Peak gain	1.39 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	35 × 35 × 9.9 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGC007E3A

GNSS buckle mount ceramic patch + cable active embedded antenna

Compliant

RoHS

Electrical data

Frequency range	1164–1189 MHz, 1559–1606 MHz
Efficiency	L1: 32%–50%, L5: 50%–53%
Peak gain	L1: 1.2 dBi, L5: 1.1 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	17 dB

Mechanical data

Dimensions	50 × 50 × 14.5 mm
Form factor	Ceramic patch + cable
Mounting type	Buckle
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA225E3AM

GNSS screw mount ceramic patch + cable active embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz, 1565–1586 MHz
Efficiency	L1: 55%–57%, L5: 35%–39%
Peak gain	L1: –0.2 dBi, L5: –1 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	14 dB

Mechanical data

Dimensions	39 × 39 × 12.1 mm
Form factor	Ceramic patch + cable
Mounting type	Screw
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA225E3BM

GNSS screw mount ceramic patch + cable passive embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz,1565–1586 MHz
Efficiency	L1: 65%, L5: 44%
Peak gain	L1: 0.6 dBi, L5: –0.3 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	39 × 39 × 12.1 mm
Form factor	Ceramic patch + cable
Mounting type	Screw
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA233E3AM

GNSS screw mount ceramic patch + cable active embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz, 1559–1606 MHz
Efficiency	L1: 28~59%, L5: 38.8%
Peak gain	2.64 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	17 dB

Mechanical data

Dimensions	50 × 50 × 12.2 mm
Form factor	Ceramic patch + cable
Mounting type	Screw
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFGA235E3CM

GNSS screw mount ceramic patch + cable passive embedded antenna

Compliant

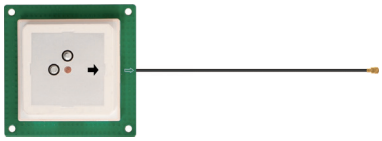
RoHS & REACH

Electrical data

Frequency range	1164-1189 MHz, 1565-1586 MHz
Efficiency	78%
Peak gain	2.69 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	50 × 50 × 12.2 mm
Form factor	Ceramic patch + cable
Mounting type	Screw
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C



YFGA245E3AM

GNSS screw mount ceramic patch + cable active embedded antenna

Compliant

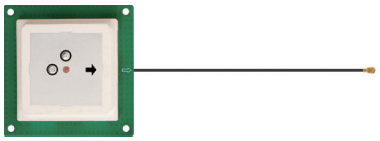
RoHS & REACH

Electrical data

Frequency range	1164-1189 MHz, 1559-1606 MHz
Efficiency	L1: 48.9-74%, L5: 54.9%
Peak gain	2.17 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	17 dB

Mechanical data

Dimensions	59 × 59 × 14.2 mm
Form factor	Ceramic patch + Cable
Mounting type	Screw
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C



YFGA245E3BM

GNSS screw mount ceramic patch + cable active embedded antenna

Compliant

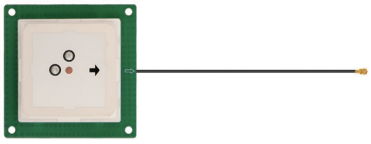
RoHS & REACH

Electrical data

Frequency range	1217-1238 MHz, 1559-1606 MHz
Efficiency	L1: 46%-73%, L2: 58%-61%
Peak gain	L1: 3.5 dBi, L2: 2 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	17 dB

Mechanical data

Dimensions	59 × 59 × 14.2 mm
Form factor	Ceramic patch + Cable
Mounting type	Screw
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C



YFGA245E3CM

GNSS screw mount ceramic patch + cable active embedded antenna

Compliant

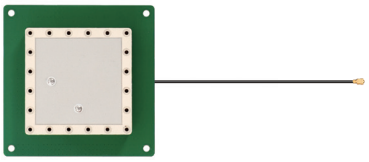
RoHS & REACH

Electrical data

Frequency range	1164–1238 MHz, 1559–1606 MHz
Efficiency	L1: 50%–76%, L2/L5: 28%–35%
Peak gain	L1: 3.6 dBi, L2/L5: –1 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	17 dB

Mechanical data

Dimensions	59 × 59 × 16.2 mm
Form factor	Ceramic patch + cable
Mounting type	Screw
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C



YFTA009E3AM

L-Band & GNSS L1 & Iridium screw mount ceramic patch + cable passive embedded antenna

Compliant

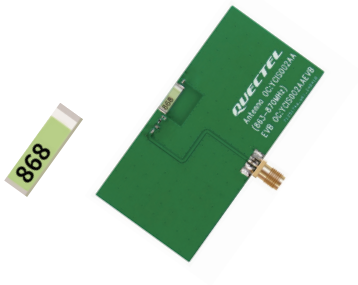
RoHS & REACH

Electrical data

Frequency range	GNSS: 1559–1606 MHz, L-Band: 1518–1559 MHz,1626–1660 MHz,1668–1675 MHz Iridium: 1616–1626.5 MHz
Efficiency	GNSS: 75%-80%, L-Band: 60%-91%, Iridium: 87%
Peak gain	GNSS: 5.3 dBi, L-Band: 5.6 dBi, Iridium: 2.38 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	80 × 80 × 13.3 mm
Form factor	Ceramic patch + cable
Mounting type	Screw
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C



YCIS002AA

LPWA/ISM SMT mount ceramic chip IFA embedded antenna

EVB

YCIS002AAEVB

Compliant

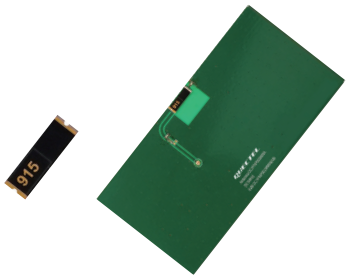
RoHS

Electrical data

Frequency range	863–870 MHz
Efficiency	40%~60%
Peak gain	0.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 10 × 3.2 × 0.5 mm, EVB: 80 × 40 mm
Form factor	Ceramic chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YFNP001WWA

LPWA/ISM SMT mount PCB chip loop embedded antenna

EVB

YFNP001WWAEVB

Compliant

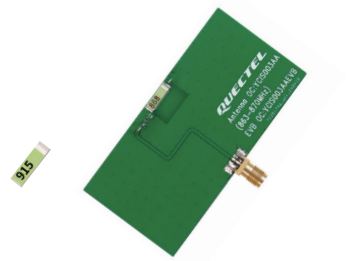
RoHS

Electrical data

Frequency range	900–930 MHz
Efficiency	30%~45%
Peak gain	0.4 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 10 × 3.2 × 0.6 mm, EVB: 90 × 45 × 0.6 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YCIS003AA

LPWA/ISM SMT mount ceramic chip IFA embedded antenna

EVB

YCIS003AAEVB

Compliant

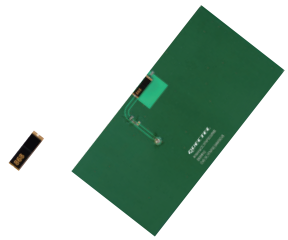
RoHS

Electrical data

Frequency range	902–928 MHz
Efficiency	35%~70%
Peak gain	1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 10 × 3.2 × 0.5 mm, EVB: 80 × 40 mm
Form factor	Ceramic chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YFNP001WWB

LPWA/ISM SMT mount PCB chip loop embedded antenna

EVB

YFNP001WWBEVB

Compliant

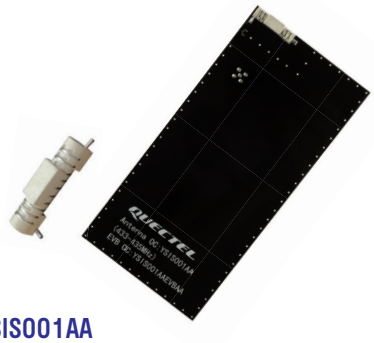
RoHS

Electrical data

Frequency range	855–880 MHz
Efficiency	35%–45%
Peak gain	0 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 10 × 3.2 × 0.6 mm, EVB: 90 × 45 × 0.6 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YSIS001AA

LPWA/ISM SMT mount spring + holder monopole embedded antenna

EVB

YSIS001AAEVBAA

Compliant

RoHS & REACH & TSCA

Electrical data

Frequency range	412–427 MHz, 433–435 MHz, 450–470 MHz
Efficiency	25% AVG.
Peak gain	0.4 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 30 × 7 × 7 mm, EVB: 185 × 90 × 1 mm
Form factor	Spring + holder
Mounting type	SMT
Operation temperature	–40°C to +85°C

YFNP017WWA

LPWA/ISM SMT mount PCB chip monopole embedded antenna

EVB

YFNP017WWAEVB

Compliant

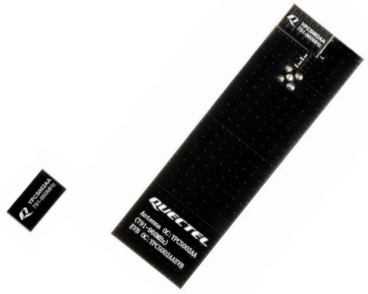
RoHS & REACH

Electrical data

Frequency range	790–960 MHz
Efficiency	40%–60%
Peak gain	0.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 25 × 7 × 3 mm, EVB: 105.53 × 25 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C



YPCS002AA

LPWA/ISM SMT mount PCB chip monopole embedded antenna

EVB

YPCS002AAEVB

Compliant

RoHS & REACH

Electrical data

Frequency range	791–960 MHz
Efficiency	20%–35%
Peak gain	1.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 20 × 11 × 1.6 mm, EVB: 115 × 35 × 0.8 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YMCP003AA

LPWA/ISM SMT mount sheet metal PIFA embedded antenna

EVB

YMCP003AAEVBAA

Compliant

RoHS & REACH

Electrical data

Frequency range	790–960 MHz
Efficiency	60%–70%
Peak gain	1.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Antenna: 40.99 × 6.68 × 3.99 mm, EVB: 135 × 45 mm
Form factor	Sheet metal
Mounting type	SMT
Operation temperature	–40°C to +85°C

YFOA004AA

LPWA/ISM adhesive mount FPC + cable monopole embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	410–470 MHz
Efficiency	45%~54%
Peak gain	0.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	100×20 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +85°C

YFNF915F3AM

LPWA/ISM adhesive mount FPC + cable dipole embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	915 MHz
Efficiency	70%–73%
Peak gain	2.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	120.2 × 25 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF 1
Cable type	RF1.13
Cable length	150 mm
Operation temperature	–40°C to +85°C

YFNF868F3AM

LPWA/ISM adhesive mount FPC + cable PIFA embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	868 MHz
Efficiency	65%–70%
Peak gain	1.3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	70× 40 mm
Form factor	FPC + cable
Mounting type	Adhesive
Connector type	IPEX MHF 1
Cable type	RF1.13
Cable length	150 mm
Operation temperature	–40°C to +85°C

YFVP001WWA

UWB SMT mount PCB chip monopole embedded antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	3000 – 8000 MHz
Efficiency	52% AVG.
Peak gain	2.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	8 × 6 × 1 mm
Form factor	PCB chip
Mounting type	SMT
Operation temperature	–40°C to +85°C

YECT004W1A

5G terminal mount rubber dipole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	600–6000 MHz
Efficiency	20%–70%
Peak gain	5.6 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	135 × 15.6 × 13 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
IP rating	IP67
Operation temperature	–40°C to +85°C

YECT005W1A

5G terminal mount rubber dipole external antenna

Compliant

RoHS

Electrical data

Frequency range	600–6000 MHz
Efficiency	52% AVG.
Peak gain	3.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	135 × 15.6 × 13 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
Operation temperature	–40°C to +85°C

YECN009AA

5G terminal mount rubber dipole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	600–6000 MHz
Efficiency	30%–80%
Peak gain	3.4 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	200 × 21 × 8 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
Operation temperature	–40°C to +85°C

YECN028AA

5G terminal mount rubber dipole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	410–470 MHz, 617–960 MHz, 1427–6000 MHz
Efficiency	25%–80%
Peak gain	5.8 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	225 × 54.5 × 13 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
IP rating	IP66
Operation temperature	–40°C to +85°C

YECT000WBA

5G screw mount stubby monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	600–960 MHz, 1400–2690 MHz, 3300–6000 MHz
Efficiency	20%–90%
Peak gain	8.3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ40.6 × 104 mm
Form factor	Stubby
Mounting type	Screw
Connector type	N type female
IP rating	IP67 & IP69K
IK rating	IK10
Operation temperature	–40°C to +85°C

YECT028W1A

5G terminal mount rubber dipole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	600–960 MHz, 1710–2690 MHz, 3300–6000 MHz
Efficiency	45%–85%
Peak gain	5.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	225 × 54.5 × 13 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
IP rating	IP66
Operation temperature	–40°C to +80°C

YECT102WAAH

5G terminal mount rubber dipole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	600–960 MHz, 1710–2690 MHz, 3300–6000 MHz
Efficiency	45%–85%
Peak gain	5.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	231 × 54.5 × 14.5 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	TNC male
IP rating	IP66
Operation temperature	–40°C to +85°C

YECT103W7AH

5G terminal mount rubber dipole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	600–960 MHz, 1710–2690 MHz, 3300–6000 MHz
Efficiency	45%–85%
Peak gain	5.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	233 × 54.5 × 20 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	N type male
IP rating	IP66
Operation temperature	–40°C to +85°C

YECA001L1AH

5G adhesive mount whip monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	600–6000 MHz
Efficiency	30%–65%
Peak gain	6.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ30 × 83.2mm
Form factor	Whip
Mounting type	Adhesive
Connector type	SMA male
Cable type	RG174LL
Cable length	1000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YECM001L1AH

5G magnetic mount whip monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	600–6000 MHz
Efficiency	30%–65%
Peak gain	6.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ30 × 82.2 mm
Form factor	Whip
Mounting type	Magnetic
Connector type	SMA male
Cable type	RG174LL
Cable length	1000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YECN001J1A

5G screw mount stubby PIFA external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	600–960 MHz, 1400–2690 MHz, 3300–6000 MHz
Efficiency	30%–90%
Peak gain	8.3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ40.6 × 104 mm
Form factor	Stubby
Mounting type	Screw
Connector type	SMA male
Cable type	ALSR200
Cable length	300 mm
IP rating	IP67 & IP69K
IK rating	IK10
Operation temperature	–40°C to +85°C

YECT001W1AM

5G terminal mount rubber monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz, 3300–6000 MHz
Efficiency	30%–75%
Peak gain	2.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	52.6 × 18.6 × 9 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	Right angle SMA male
IP rating	IP53
Operation temperature	–40°C to +85°C

YECT001W1BM

5G terminal mount rubber monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz, 3300–6000 MHz
Efficiency	35%–80%
Peak gain	4.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ9 × 54.9 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
IP rating	IP53
Operation temperature	–40°C to +85°C

YECA000G1AM

5G adhesive mount low profile dipole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz, 3300–6000 MHz
Efficiency	35%–80%
Peak gain	4.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	116.5 × 21.7 × 5.6 mm
Form factor	Low profile
Mounting type	Adhesive
Connector type	SMA male
Cable type	RG174
Cable length	215 mm
Operation temperature	–40°C to +85°C

YECT002W1A

5G terminal mount rubber dipole external antenna
Compatible with Japan market

Compliant

RoHS & REACH

Electrical data

Frequency range	600–5000 MHz
Efficiency	55% AVG.
Peak gain	2.8 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	209 × 42 × 6 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
Operation temperature	–20°C to +60°C

YECA000J1AM

4G adhesive mount low profile monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	35%–80%
Peak gain	4.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	60 × 16 × 6.3 mm
Form factor	Low profile
Mounting type	Adhesive
Connector type	SMA male
Cable type	RG174
Cable length	213 mm
Operation temperature	–40°C to +85°C

YEMN117L1B

4G screw mount low profile monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	410–470 MHz, 700–2690 MHz
Efficiency	30%–70%
Peak gain	4.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ108 × 45 mm
Form factor	Low profile
Mounting type	Screw
Connector type	SMA male
Cable type	RG174
Cable length	1000 mm
IP rating	IP67 & IP69K
IK rating	IK09
Operation temperature	–40°C to +85°C

YECT003W1A

4G terminal mount rubber monopole external antenna
Compatible with Japan market

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz; 1450–2690 MHz; 3300–3800 MHz
Efficiency	25%–80%
Peak gain	3.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ12.4 × 50.8 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
IP rating	IP67
Operation temperature	–40°C to +85°C

YECT011W1AM

4G terminal mount rubber dipole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	20%-70%
Peak gain	4.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	135 × 15.6 × 13 mm
Form factor	Rubber
Mounting type	Terminal
Connector Type	SMA male
IP Rating	IP67
Operation temperature	–40°C to +85°C

YECT012W1AM

4G terminal mount rubber dipole external antenna

Compliant

RoHS

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	52% AVG.
Peak gain	3.6 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	135 × 15.6 × 13 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA Male
Operation temperature	–40°C to +85°C

YE0013CA

4G terminal mount rubber monopole external antenna
Compatible with Japan market

Compliant

RoHS

Electrical data

Frequency range	698–2700 MHz
Efficiency	45%–95%
Peak gain	4.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ10.2× 115.4 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
IP rating	IP66
Operation temperature	–40°C to +85°C

YCN001AA

4G terminal mount rubber monopole external antenna
Compatible with Japan market

Compliant

RoHS

Electrical data

Frequency range	700–960 MHz, 1560–1610 MHz, 1710–2700 MHz
Efficiency	48% AVG.
Peak gain	0 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ13 × 144 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
IP rating	IP66
Operation temperature	–40°C to +85°C

YECA000M1A

4G adhesive mount low profile monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz 1710–2690 MHz
Efficiency	36% AVG.
Peak gain	2.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ99.98 × 17.46 mm
Form factor	Low profile
Mounting type	Adhesive
Connector type	SMA male
Cable type	ALSR100
Cable length	1460 mm
IP rating	IP68
IK rating	IK10
Operation temperature	–40°C to +85°C

YE0010AA

4G adhesive mount low profile dipole external antenna
Compatible with Japan market

Compliant

RoHS

Electrical data

Frequency range	698–2700 MHz
Efficiency	30%–80%
Peak gain	2.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	152 × 18 × 11.1 mm
Form factor	Low profile
Mounting type	Adhesive
Connector type	SMA male
Cable type	RG174
Cable length	1000 mm
IP rating	IP66
Operation temperature	–40°C to +85°C

YECW000N1A

4G screw mount low profile PIFA external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	450–470 MHz, 700–960 MHz, 1710–2690 MHz
Efficiency	20%–60%
Peak gain	3.6 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	150 × 50 × 36.5 mm
Form factor	Low profile
Mounting type	Screw
Connector type	SMA male
Cable type	ALSR100
Cable length	2000 mm
Operation temperature	–40°C to +85°C

YECM002L1AH

4G magnetic mount whip monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	37% - 65%
Peak gain	4.4 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ30 × 82.2 mm
Form factor	Whip
Mounting type	Magnetic
Connector type	SMA male
Cable type	RG174LL
Cable length	1000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YECA002L1AH

4G adhesive mount whip monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	700 – 960 MHz, 1710 – 2690 MHz
Efficiency	37% – 65%
Peak gain	4.4 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ30 × 83.2 mm
Form factor	Whip
Mounting type	Adhesive
Connector type	SMA male
Cable type	RG174LL
Cable length	1000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YE0006AA

4G magnetic mount whip monopole external antenna
Compatible with Japan market

Compliant

RoHS

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	25%–60%
Peak gain	4.5 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ30 × 318 mm
Form factor	Whip
Mounting type	Magnetic
Connector type	SMA male
Cable type	RG174
Cable length	1500 mm
IP rating	IP65
Operation temperature	–40°C to +85°C

YECT007AA

4G pole mount fiberglass dipole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	700–2690 MHz
Efficiency	40%–95%
Peak gain	1.9 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ20 × 300 mm
Form factor	Fiberglass
Mounting type	Pole
Connector type	N type male
IP rating	IP65
Operation temperature	–40°C to +85°C

YECT001W1CM

4G terminal mount rubber monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	30%–70%
Peak gain	3.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	52.6 × 18.6 × 9 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	Right angle SMA male
IP rating	IP53
Operation temperature	–40°C to +85°C

YECT001W1DM

4G terminal mount rubber monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	700–960 MHz, 1710–2690 MHz
Efficiency	35%–75%
Peak gain	2.6 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ9 × 54.9 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
IP rating	IP53
Operation temperature	–40°C to +85°C

YECT009W1AM

4G terminal mount rubber monopole external antenna
Compatible with Japan market

Compliant

RoHS

Electrical data

Frequency range	600–960 MHz, 1710–2690 MHz
Efficiency	20%–65%
Peak gain	2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ10.22 × 69.5 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
Operation temperature	–40°C to +85°C

YEBT001W1AM

Wi-Fi terminal mount rubber monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500MHz, 5150–5850MHz, 5925–7125 MHz
Efficiency	45%–70%
Peak gain	4.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	135 × 15.6 × 13 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	RP SMA male
IP rating	IP67
Operation temperature	–40°C to +85°C

YEBT002W1AM

Wi-Fi Terminal mount rubber monopole external antenna

Compliant

RoHS

Electrical data

Frequency range	2400–2500MHz, 5150–5850MHz, 5925–7125 MHz
Efficiency	45%–75%
Peak gain	4.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	135 × 15.6 × 13 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	RP SMA male
Operation temperature	–40°C to +85°C

YEBA000J1AM

Wi-Fi adhesive mount low profile dipole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500MHz, 5150–5850MHz, 5925–7125 MHz
Efficiency	45%–65%
Peak gain	2.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	60 × 16 × 6.3 mm
Form factor	Low profile
Mounting type	Adhesive
Connector type	SMA male
Cable type	RG174
Cable length	209 mm
Operation temperature	–40°C to +85°C

YEBA001L1AH

Wi-Fi adhesive mount whip monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Efficiency	30%–65%
Peak gain	4.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ30 × 83.2 mm
Form factor	Whip
Mounting type	Adhesive
Connector type	SMA male
Cable type	RG174LL
Cable length	1000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YEBM001L1AH

Wi-Fi magnetic mount whip monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Efficiency	30%–65%
Peak gain	4.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ30 × 82.2 mm
Form factor	Whip
Mounting type	Magnetic
Connector type	SMA male
Cable type	RG174LL
Cable length	1000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YEBT001WFAM

Wi-Fi terminal mount rubber monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Efficiency	30%–65%
Peak gain	1.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	52.6 × 18.6 × 9mm
Form factor	Rubber
Mounting type	Terminal
Connector type	Right angle RP SMA male
IP rating	IP53
Operation temperature	–40°C to +85°C

YEBT001WFBM

Wi-Fi terminal mount rubber monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
Efficiency	35%–70%
Peak gain	4.3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ9 × 54.9 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	RP SMA male
IP rating	IP53
Operation temperature	–40°C to +85°C

YB0027AA

5G & GNSS 9in1 screw mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	5G × 4: 600–960 MHz, 1400–6000 MHz; 5G × 4: 1400–6000 MHz GNSS × 1: 1164–1189 MHz, 1559–1606 MHz
Efficiency	5G × 4: 25%–60%; 5G × 4: 30%–70% GNSS × 1: L1: 45%–66%, L5: 80%–85%
Peak gain	5G × 4: 4.9 dBi; 5G × 4: 4.1 dBi GNSS × 1: L1: 3.8 dBi, L5: 4.7 dBi
Radiation pattern	5G × 4: Omni-directional; 5G × 4: Omni-directional GNSS × 1: Directional
Polarization	5G × 4: Linear; 5G × 4: Linear GNSS × 1: RHCP
LNA gain	22 ± 3 dB

Mechanical data

Dimensions	Φ162 × 56 mm
Form factor	Low profile
Mounting type	Screw
Connector type	SMA male
Cable type	ALS302 & RG174
Cable length	300 mm
IP rating	IP67 & IP69K
IK rating	IK09
Operation temperature	–40°C to +85°C

YB0031AA

4G & GNSS 2in1 adhesive mount Combo external antenna

Compliant

RoHS

Electrical data

Frequency range	4G × 1: 698–960 MHz; 1710–2690 MHz GNSS × 1: 1559–1592 MHz
Efficiency	4G × 1: 20%–65% GNSS × 1: 53% AVG.
Peak gain	4G × 1: 2.3 dBi GNSS × 1: 2.4 dBi
Radiation pattern	4G × 1: Omni-directional GNSS × 1: Directional
Polarization	4G × 1: Linear GNSS × 1: RHCP
LNA gain	26 ± 3 dB

Mechanical data

Dimensions	Φ84×17.5 mm
Form factor	Low profile
Mounting type	Adhesive
Connector type	SMA male
Cable type	RG174
Cable length	300 mm
IP rating	IP66
Operation temperature	–40°C to +85°C

YB0008AA

4G & GNSS 3in1 adhesive mount Combo external antenna

Compliant

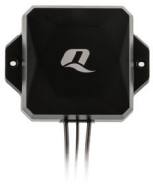
RoHS

Electrical data

Frequency range	4G × 2: 698–960 MHz, 1710–2690 MHz
	GNSS × 1: 1556–1581 MHz
Efficiency	4G × 2: 20%–65%
	GNSS × 1: 54% AVG.
Peak gain	4G × 2: 3.5 dBi
	GNSS × 1: 3.2 dBi
Radiation pattern	4G × 2: Omni-directional
	GNSS × 1: Directional
Polarization	4G × 2: Linear
	GNSS × 1: RHCP
LNA gain	26 ± 3 dB

Mechanical data

Dimensions	Φ84 × 17.5 mm
Form factor	Low profile
Mounting type	Adhesive
Connector type	SMA male
Cable type	RG174
Cable length	300 mm
IP rating	IP66
Operation temperature	–40°C to +85°C



YEMD301L1A

4G & GNSS 3in1 multiple mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	4G × 2: 700–960 MHz, 1710–2690 MHz
	GNSS × 1: 1565–1606 MHz
Efficiency	4G × 2: 40%–70%
	GNSS × 1: 76%–79%
Peak gain	4G × 2: 5.5 dBi
	GNSS × 1: 2.18 dBi
Radiation pattern	4G × 2: Omni-directional
	GNSS × 1: Directional
Polarization	4G × 2: Linear
	GNSS × 1: RHCP
LNA gain	18 ± 3 dB

Mechanical data

Dimensions	109.28 × 89 × 25.8 mm
Form factor	Low profile
Mounting type	Multiple
Connector type	SMA male
Cable type	ALS302 & RG174
Cable length	1025 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YEMD301L1B

4G & GNSS 3in1 multiple mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	4G × 2: 700–960 MHz, 1710–2690 MHz
	GNSS × 1: 1565–1606 MHz
Efficiency	4G × 2: 40%-70%
	GNSS × 1: 76%~79%
Peak gain	4G × 2: 5.5 dBi
	GNSS × 1: 2.18 dBi
Radiation pattern	4G × 2: Omni-directional
	GNSS × 1: Directional
Polarization	4G × 2: Linear
	GNSS × 1: RHCP
LNA gain	28 ± 3 dB

Mechanical data

Dimensions	109.28 × 89 × 25.8 mm
Form factor	Low profile
Mounting type	Multiple
Connector type	SMA male
Cable type	ALS302 & RG174
Cable length	1025 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YEMD302L1A

4G & Wi-Fi & GNSS 3in1 multiple mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	4G × 1: 700–960 MHz, 1710–2690 MHz
	Wi-Fi × 1: 2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
	GNSS × 1: 1565–1606 MHz
Efficiency	4G × 1: 30%–75%
	Wi-Fi × 1: 33%–58%
	GNSS × 1: 76%–79%
Peak gain	4G × 1: 5.1 dBi
	Wi-Fi × 1: 5.8 dBi
	GNSS × 1: 2.18 dBi
Radiation pattern	4G × 1: Omni-directional
	Wi-Fi × 1: Omni-directional
	GNSS × 1: Directional
Polarization	4G × 1: Linear
	Wi-Fi × 1: Linear
	GNSS × 1: RHCP
LNA gain	18 ± 3 dB

Mechanical data

Dimensions	109.28 × 89 × 25.8 mm
Form factor	Low profile
Mounting type	Multiple
Connector type	SMA male
Cable type	ALS302 & RG174
Cable length	1025 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YEMD302L1B

4G & Wi-Fi & GNSS 3in1 multiple mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	4G × 1: 700–960 MHz, 1710–2690 MHz
	Wi-Fi × 1: 2400–2500 MHz, 5150–5850 MHz, 5925–7125 MHz
	GNSS × 1: 1565–1606 MHz
Efficiency	4G × 1: 30%-75%
	Wi-Fi × 1: 33%~58%
	GNSS × 1: 76%~79%
Peak gain	4G × 1: 5.1 dBi
	Wi-Fi × 1: 5.8 dBi
	GNSS × 1: 2.18 dBi
Radiation pattern	4G × 1: Omni-directional
	Wi-Fi × 1: Omni-directional
	GNSS × 1: Directional
Polarization	4G × 1: Linear
	Wi-Fi × 1: Linear
	GNSS × 1: RHCP
LNA Gain	28 ± 3 dB

Mechanical data

Dimensions	109.28 × 89 × 25.8 mm
Form factor	Low profile
Mounting type	Multiple
Connector type	SMA male
Cable type	ALS302 & RG174
Cable length	1025 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YEMA004AA

4G & Wi-Fi 2in1 screw mount Combo external antenna

Compliant

RoHS

Electrical data

Frequency range	4G × 1: 698–960 MHz, 1710–2690 MHz
	Wi-Fi × 1: 2400–2500 MHz
Efficiency	4G × 1: 25%–50%
	Wi-Fi × 1: 35%–45%
Peak gain	4G × 1: 2.8 dBi
	Wi-Fi × 1: 2.6 dBi
Radiation pattern	4G × 1: Omni-directional
	Wi-Fi × 1: Omni-directional
Polarization	4G × 1: Linear
	Wi-Fi × 1: Linear

Mechanical data

Dimensions	Φ81 × 14.5 mm
Form factor	Low profile
Mounting type	Screw
Connector type	SMA male
Cable type	RG174
Cable length	900 mm
IP rating	IP66
Operation temperature	–40°C to +85°C

YB0014AA

4G & GNSS 3in1 screw mount Combo external antenna
Compatible with Japan market

Compliant

RoHS

Electrical data

Frequency range	4G × 2: 698–960 MHz, 1710–2690 MHz GNSS × 1: 1559–1586 MHz
Efficiency	4G × 2: 10%–20% GNSS × 1: 36%~44%
Peak gain	4G × 2: –2.2 dBi GNSS × 1: 1.75dBi
Radiation pattern	4G × 2: Omni-directional GNSS × 1: Directional
Polarization	4G × 2: Linear GNSS × 1: RHCP
LNA gain	22 ± 3 dB

Mechanical data

Dimensions	Φ81×14.5 mm
Form factor	Low profile
Mounting type	Screw
Connector type	SMA male
Cable type	RG174
Cable length	3000 mm
IP rating	IP66
Operation temperature	–40°C to +85°C

YEMN302Q1A

4G & GNSS 3in1 screw mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	4G × 2: 700–960 MHz, 1710–2690 MHz GNSS × 1: 1565–1606 MHz
Efficiency	4G × 2: 30%–55% GNSS × 1: 66% AVG.
Peak gain	4G × 2: 3.3 dBi GNSS × 1: 2.57 dBi
Radiation pattern	4G × 2: Omni-directional GNSS × 1: Directional
Polarization	4G × 2: Linear GNSS × 1: RHCP
LNA gain	18 ± 3 dB

Mechanical data

Dimensions	Φ81.4 × 16.5 mm
Form factor	Low profile
Mounting type	Screw
Connector type	SMA male
Cable type	ALSR100 & RG174
Cable length	1000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YEMN210J1AH

5G & Wi-Fi 2in1 screw mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	5G × 1: 600–960 MHz & 1400–6000 MHz
	Wi-Fi × 1: 2400-2500 MHz
Efficiency	5G × 1: 20%-80%
	Wi-Fi × 1: 53~62%
Peak gain	5G × 1: 5.9 dBi
	Wi-Fi × 1: 4.4 dBi
Radiation pattern	5G × 1: Omni-directional
	Wi-Fi × 1: Omni-directional
Polarization	5G × 1: Linear
	Wi-Fi × 1: Linear

Mechanical data

Dimensions	Φ40.6 × 104 mm
Form factor	Stubby
Mounting type	Screw
Connector type	SMA male
Cable type	RG174LL
Cable length	300 mm
IP rating	IP67 & IP69K
IK rating	IK10
Operation temperature	-40°C to +85°C

YEMN017AA

5G & GNSS 5in1 screw mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	5G × 2: 600–960 MHz, 1400–6000 MHz; 5G × 2: 1400–6000 MHz
	GNSS × 1: 1164–1189 MHz, 1559–1606 MHz
Efficiency	5G × 2: 50% AVG. ; 5G × 2: 30%–70%
	GNSS × 1: L1: 40%–42%, L5: 45%–47%
Peak gain	5G × 2: 5 dBi; 5G × 2: 4.9 dBi
	GNSS × 1: L1: –1.2 dBi, L5: 0 dBi
Radiation pattern	5G × 2: Omni-directional; 5G × 2: Omni-directional
	GNSS × 1: Directional
Polarization	5G × 2: Linear; 5G × 2: Linear
	GNSS × 1: RHCP
LNA gain	28 dB

Mechanical data

Dimensions	Φ103.5 × 42.5 mm
Form factor	Low profile
Mounting type	Screw
Connector type	SMA male
Cable type	RG405 & RG174
Cable length	300 mm
IP rating	IP67 & IP69K
IK rating	IK09
Operation temperature	-40°C to +85°C

YEMN926J1A

5G & GNSS 9in1 screw mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	5G × 4: 600–960 MHz, 1400–6000 MHz; 5G × 4: 1400–6000 MHz GNSS × 1: 1164–1189 MHz, 1559–1606 MHz
Efficiency	5G × 4: 46% AVG. ; 5G × 4: 30%–60% GNSS × 1: L1: 45%–66%, L5: 80%–85%
Peak gain	5G × 4: 4.3 dBi; 5G × 4: 5.4 dBi GNSS × 1: L1: 3.8 dBi, L5: 4.7 dBi
Radiation pattern	5G × 4: Omni-directional; 5G × 4: Omni-directional GNSS × 1: Directional
Polarization	5G × 4: Linear; 5G × 4: Linear GNSS × 1: RHCP
LNA gain	22 ± 3 dB

Mechanical data

Dimensions	Φ167 × 57 mm
Form factor	Low profile
Mounting type	Screw
Connector type	SMA male
Cable type	ALS302 & RG174
Cable length	300 mm
IP rating	IP67 & IP69K
IK rating	IK09
Operation temperature	–40°C to +85°C

YEMN016AA

5G & GNSS 5in1 screw mount Combo external antenna

Compliant

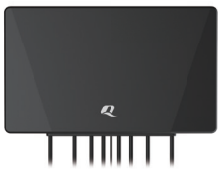
RoHS & REACH

Electrical data

Frequency range	5G × 2: 600–960 MHz, 1400–6000 MHz; 5G × 2: 1400–6000 MHz GNSS × 1: 1164–1189 MHz, 1559–1606 MHz
Efficiency	5G × 2: 20%–70%; 5G × 2: 20%–60% GNSS × 1: L1: 50%–52%, L5: 75%–78%
Peak gain	5G × 2: 5.9 dBi; 5G × 2: 4.7 dBi GNSS × 1: L1: 2.7 dBi, L5: 4.3 dBi
Radiation pattern	5G × 2: Omni-directional; 5G × 2: Omni-directional GNSS × 1: Directional
Polarization	5G × 2: Linear, 5G × 2: Linear, GNSS × 1: RHCP
LNA gain	28 dB

Mechanical data

Dimensions	204.4 × 86.7 × 32 mm
Form factor	Low profile
Mounting type	Screw
Connector type	SMA male
Cable type	ALS302 & RG174
Cable length	300 mm
IP rating	IP67 & IP69K
Operation temperature	–40°C to +85°C



YEMA013AA

5G & GNSS 9in1 adhesive mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	5G × 4: 600–960 MHz, 1400–6000 MHz; 5G × 4: 1400–6000 MHz GNSS × 1: 1166–1186 MHz, 1559–1606 MHz
Efficiency	5G × 4: 30%–75%; 5G × 4: 30%–70% GNSS × 1: L1: 50%–53%, L5: 55%–60%
Peak gain	5G × 4: 5.6 dBi; 5G × 4: 6.3 dBi GNSS × 1: L1: 4.2 dBi, L5: 2.8 dBi
Radiation pattern	5G × 4: Omni-directional; 5G × 4: Omni-directional GNSS × 1: Directional
Polarization	5G × 4: Linear; 5G × 4: Linear GNSS × 1: RHCP
LNA gain	28 dB

Mechanical data

Dimensions	264.6 × 161.2 × 30.6 mm
Form factor	Low profile
Mounting type	Adhesive
Connector type	SMA male
Cable type	ALSR200 & RG174
Cable length	300 mm
IP rating	IP67 & IP69K
IK rating	IK09
Operation temperature	–40°C to +85°C

YEMX223J1A

5G 2in1 multiple mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	410–470 MHz, 617–960 MHz, 1420–1520 MHz, 1710–2690 MHz, 3300–3800 MHz, 4000–6000 MHz
Efficiency	50% AVG.
Peak gain	5.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	186 × 176 × 100.5 mm
Form factor	Low profile
Mounting type	Multiple
Connector type	SMA male
Cable type	ALSR200
Cable length	450 mm
IP rating	IP67
IK rating	IK09
Operation temperature	–40°C to +85°C

YEMA300QXA

4G & Wi-Fi & GNSS 3in1 adhesive mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	4G × 1: 700–960 MHz, 1710–2690 MHz Wi-Fi × 1: 2400–2500 MHz, 5150–5850 MHz GNSS × 1: 1559–1606MHz
Efficiency	4G × 1: 25%–60% Wi-Fi × 1: 47%–53% GNSS × 1: 50%–75%
Peak gain	4G × 1: 4.1 dBi Wi-Fi × 1: 2.7 dBi GNSS × 1: 2.4 dBi
Radiation pattern	4G × 1: Omni-directional Wi-Fi × 1: Omni-directional GNSS × 1: Directional
Polarization	4G × 1: Linear Wi-Fi × 1: Linear GNSS × 1: RHCP
LNA gain	18 ± 3 dB

Mechanical data

Dimensions	143.73 × 51.33 × 15 mm
Form factor	Low profile
Mounting type	Adhesive
Connector type	SMA male & RP SMA male
Cable type	RG174LL & RG174
Cable length	1028 mm
IP rating	IP67
Operation temperature	-40°C to +85°C

YEMX425J1A

5G 4in1 multiple mount Combo external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	410–470 MHz, 617–2690 MHz, 3300–6000 MHz
Efficiency	50% AVG.
Peak gain	5.3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	186 × 176 × 150 mm
Form factor	Low profile
Mounting type	Multiple
Connector type	SMA male
Cable type	ALSR200
Cable length	450 mm
IP rating	IP67
Operation temperature	-40°C to +85°C

YEWN004AA

Wi-Fi 2in1 screw mount Combo external antenna

Compliant

RoHS

Electrical data

Frequency range	2400–2500 MHz; 5150–5850 MHz
Efficiency	40%–60%
Peak gain	5.1 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ46 × 15 mm
Form factor	Low profile
Mounting type	Screw
Connector type	SMA male
Cable type	RG174
Cable length	300 mm
IP rating	IP66
Operation temperature	–40°C to +85°C

YEGB000Q1A

GNSS multiple mount low profile active external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz, 1559–1606 MHz
Efficiency	L1: 40%–70%, L5: 50%–60%
Peak gain	L1: 3.4 dBi, L5: 1.4 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	17 dB

Mechanical data

Dimensions	62 × 56 × 23 mm
Form factor	Low profile
Mounting type	Multiple
Connector type	SMA male
Cable type	RG174
Cable length	3000 mm
IP rating	IP67
IK rating	IK09
Operation temperature	–40°C to +85°C

YEGN000Q1A

GNSS bracket mount low profile active external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz, 1559–1606 MHz
Efficiency	L1: 40%–70%, L5: 50%–60%
Peak gain	L1: 3.4 dBi, L5: 1.4 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	17 dB

Mechanical data

Dimensions	62 × 56 × 23 mm
Form factor	Low profile
Mounting type	Bracket
Connector type	SMA male
Cable type	RG174
Cable length	3000 mm
IP rating	IP67
IK rating	IK09
Operation temperature	–40°C to +85°C

YEGB001Q1A

GNSS multiple mount low profile active external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1165–1189 MHz, 1559–1606 MHz
Efficiency	L1: 32%–52%, L5: 50%–52%
Peak gain	L1: 1.2 dBi, L5: 1 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	17 dB

Mechanical data

Dimensions	55.2 × 48 × 20.5 mm
Form factor	Low profile
Mounting type	Multiple
Connector type	SMA male
Cable type	RG174
Cable length	3000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YEGN001Q1A

GNSS bracket mount low profile active external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1189 MHz, 1559–1606 MHz
Efficiency	L1: 32%–52%, L5: 50%–52%
Peak gain	L1: 1.2 dBi, L5: 1 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	17 dB

Mechanical data

Dimensions	55.2 × 48 × 20.5 mm
Form factor	Low profile
Mounting type	Bracket
Connector type	SMA male
Cable type	RG174
Cable length	3000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YEGB000Q1C

GNSS multiple mount low profile active external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1565–1606 MHz
Efficiency	70%–73%
Peak gain	1.7 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	17 ± 3 dB

Mechanical data

Dimensions	46 × 36 × 15.8 mm
Form factor	Low profile
Mounting type	Multiple
Connector type	SMA male
Cable type	RG174
Cable length	3000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YEGT000W8A

GNSS screw mount low profile active external antenna

Compliant

RoHS

Electrical data

Frequency range	1164–1189 MHz, 1559–1606 MHz
Efficiency	L1: 27%–36%, L5: 45%–48%
Peak gain	L1: –0.5 dBi, L5: –0.5 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	28 dB

Mechanical data

Dimensions	Φ65 × 45 mm
Form factor	Low profile
Mounting type	Screw
Connector type	TNC female
IP rating	IP67
Operation temperature	–40°C to +85°C

YEGN103W8A

GNSS magnetic mount low profile active external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164–1300 MHz, 1525–1606 MHz
Efficiency	Lower band: 67%, L-band: 49%, Upper band: 77%
Peak gain	Lower band: 5.4 dBi, L-band: 3.3 dBi, Upper band: 5.5 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA gain	40 ± 4 dB

Mechanical data

Dimensions	Φ146.4 × 71.43 mm
Form factor	Low profile
Mounting type	Magnetic
Connector type	SMA male
Cable Type	RG174
Cable Length	3000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YEGR001W8AH

GNSS terminal mount low profile active external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1164-1300 MHz,1525-1606 MHz
Efficiency	L2/L5/E6/B3: 30%~67%, L1: 58%~76%
Peak gain	L2/L5/E6/B3: 5.4 dBi, L1: 5.5 dBi
Radiation pattern	Directional
Polarization	RHCP
Polarization	40 ± 4 dB

Mechanical data

Dimensions	Φ146.4 × 71.43 mm
Form factor	Low profile
Mounting type	Terminal
Connector type	TNC female
IP rating	IP67
Operation temperature	–40°C to +85°C

YEGT002W1AM

GNSS terminal mount rubber passive external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	57%–62%
Peak gain	2.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	52.6 × 18.6 × 9 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male 90
IP rating	IP53
Operation temperature	–40°C to +85°C

YEGT003W1AM

GNSS terminal mount rubber passive external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	1559–1606 MHz
Efficiency	52%–56%
Peak gain	1.7 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ9 × 54.9 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
IP rating	IP53
Operation temperature	–40°C to +85°C

YEGT001W1AM

GNSS terminal mount rubber passive external antenna

Compliant

RoHS

Electrical data

Frequency range	1559 – 1606 MHz
Efficiency	70~76%
Peak gain	2.2 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ13 × 135 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
Operation temperature	–40°C to +85°C

YETN001L1A

L-Band & GNSS L1 & Iridium screw mount low profile passive external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	GNSS: 1559–1606 MHz L-Band: 1518–1559 MHz,1626–1660 MHz,1668–1675 MHz Iridium: 1616–1626 MHz
Efficiency	GNSS: 60%–65% L-Band: 45%–72% Iridium: 68%–70%
Peak gain	GNSS: 4.3 dBi L-Band: 4.2 dBi Iridium: 4.2 dBi
Radiation pattern	Directional
Polarization	RHCP

Mechanical data

Dimensions	106.15 × 87.21 × 26.5 mm
Form factor	Low profile
Mounting type	Screw
Connector type	SMA male
Cable type	ALS302
Cable length	524 mm
IP rating	IP67 & IP69K
IK rating	IK09
Operation temperature	–40°C to +85°C

YEGD006U1A

GNSS multiple mount low profile active external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	Lower band: 1164-1300 MHz, L-band: 1525-1559 MHz Upper band: 1559-1606 MHz
Efficiency	Lower band: 63% L-band: 51% Upper band: 80%
Peak gain	Lower band: 3.27 dBi L-band: 2.46 dBi Upper band: 4.77 dBi
Radiation pattern	Directional
Polarization	RHCP
LNA Gain	30 ± 4 dB

Mechanical data

Dimensions	109.28 × 89 × 25.8 mm
Form factor	Low profile
Mounting type	Multiple
Connector type	SMA male
Cable type	RG174
Cable length	5055 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YENA001L1AH

LPWA/ISM adhesive mount whip monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	433–435 MHz, 450–470 MHz
Efficiency	35%–40%
Peak gain	3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ30 × 83.2 mm
Form factor	Whip
Mounting type	Adhesive
Connector type	SMA male
Cable type	RG174
Cable length	1000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YENM001L1AH

LPWA/ISM magnetic mount whip monopole external antenna

Compliant

RoHS & REACH

Electrical data

Frequency range	433–435 MHz, 450–470 MHz
Efficiency	35%–40%
Peak gain	3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	Φ30 × 82.2 mm
Form factor	Whip
Mounting type	Magnetic
Connector type	SMA male
Cable type	RG174
Cable length	1000 mm
IP rating	IP67
Operation temperature	–40°C to +85°C

YENT000W1AM

LPWA/ISM terminal mount rubber monopole external antenna

Compliant

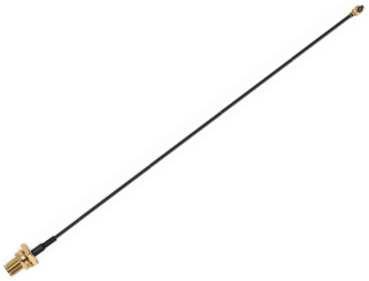
RoHS & REACH

Electrical data

Frequency range	410-470 MHz
Efficiency	24%-83%
Peak gain	1.3 dBi
Radiation pattern	Omni-directional
Polarization	Linear

Mechanical data

Dimensions	135 × 15.6 × 13 mm
Form factor	Rubber
Mounting type	Terminal
Connector type	SMA male
IP rating	IP67
Operation temperature	–40°C to +85°C



YSAN025AA

DC~6GHz SMA female to IPEX MHF1 cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +80°C

YSAN025BA

DC~6GHz SMA female to IPEX MHF1 cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF1
Cable type	RF1.13
Cable length	150 mm
Operation temperature	–40°C to +80°C

YSAN025CA

DC~6GHz SMA female to IPEX MHF1 cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF1
Cable type	RF1.13
Cable length	200 mm
Operation temperature	–40°C to +80°C

YSAN025DA

DC~6GHz SMA female to IPEX MHF1 cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF1
Cable type	RF1.13
Cable length	250 mm
Operation temperature	–40°C to +80°C

YSAN025EA

DC~6GHz SMA female to IPEX MHF1 cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF1
Cable type	RF1.13
Cable length	300 mm
Operation temperature	–40°C to +80°C

YSAN026AA

DC~6GHz RP SMA female to IPEX MHF1 cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RF SMA female
Connector type2	IPEX MHF1
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–20°C to +85°C

YSAN026BA

DC~6GHz RP SMA female to IPEX MHF1 cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF1
Cable type	RF1.13
Cable length	150 mm
Operation temperature	–20°C to +85°C

YSAN026CA

DC~6GHz RP SMA female to IPEX MHF1 cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF1
Cable type	RF1.13
Cable length	200 mm
Operation temperature	–20°C to +85°C

YSAN026DA

DC~6GHz RP SMA female to IPEX MHF1 cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF1
Cable type	RF1.13
Cable length	250 mm
Operation temperature	–20°C to +85°C

YSAN026EA

DC~6GHz RP SMA female to IPEX MHF1 cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF1
Cable type	RF1.13
Cable length	300 mm
Operation temperature	–20°C to +85°C

YSAN027AA

DC~6GHz SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +80°C

YSAN027BA

DC~6GHz SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	150 mm
Operation temperature	–40°C to +80°C

YSAN027CA

DC~6GHz SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA Female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	200 mm
Operation temperature	–40°C to +80°C

YSAN027DA

DC~6GHz SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	250 mm
Operation temperature	–40°C to +80°C

YSAN027EA

DC~6GHz SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	300 mm
Operation temperature	–40°C to +80°C

YSAN027FA

DC~6GHz SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	150 mm
Operation temperature	–40°C to +80°C

YSAN027GA

DC~6GHz SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	200 mm
Operation temperature	–40°C to +80°C

YSAN027HA

DC~6GHz SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	250 mm
Operation temperature	–40°C to +80°C

YSAN027IA

DC~6GHz SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	300 mm
Operation temperature	–40°C to +80°C

YSAN027JA

DC~6GHz SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	500 mm
Operation temperature	–40°C to +80°C

YSAN028AA

DC~6GHz RP SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +80°C

YSAN028BA

DC~6GHz RP SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	150 mm
Operation temperature	–40°C to +80°C

YSAN028CA

DC~6GHz RP SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	200 mm
Operation temperature	–40°C to +80°C

YSAN028DA

DC~6GHz RP SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	250 mm
Operation temperature	–40°C to +80°C

YSAN028EA

DC~6GHz RP SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	300 mm
Operation temperature	–40°C to +80°C

YSAN028FA

DC~6GHz RP SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	100 mm
Operation temperature	–40°C to +80°C

YSAN028GA

DC~6GHz RP SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	150 mm
Operation temperature	–40°C to +80°C

YSAN028HA

DC~6GHz RP SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	200 mm
Operation temperature	–40°C to +80°C

YSAN028IA

DC~6GHz RP SMA female to IPEX MHF4L cable

Compliant

RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	250 mm
Operation temperature	–40°C to +80°C

YSAN028JA

DC~6GHz RP SMA female to IPEX MHF4L cable

Compliant

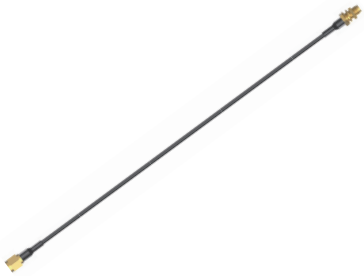
RoHS

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	RP SMA female
Connector type2	IPEX MHF4L
Cable type	RF1.13
Cable length	300 mm
Operation temperature	–40°C to +80°C



YLUX013XQA

DC~6GHz SMA male to SMA female cable

Compliant

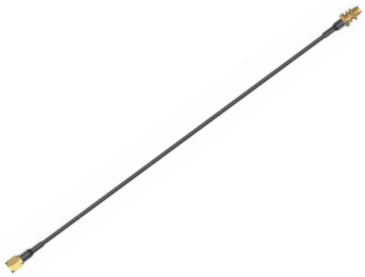
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALSR200
Cable length	700 mm
Operation temperature	–40°C to +85°C



YLUX013XQB

DC~6GHz SMA male to SMA female cable

Compliant

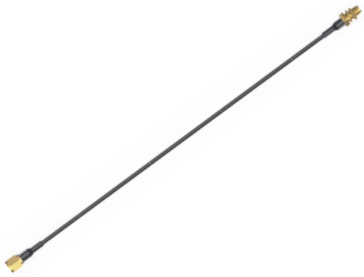
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALSR200
Cable length	700 mm
Operation temperature	–40°C to +85°C



YLUX013XQC

DC~6GHz SMA male to SMA female cable

Compliant

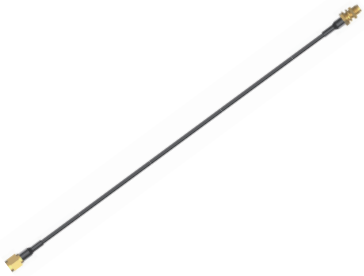
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALSR200
Cable length	700 mm
Operation temperature	–40°C to +85°C



YLUX013XQD

DC~6GHz SMA male to SMA female cable

Compliant

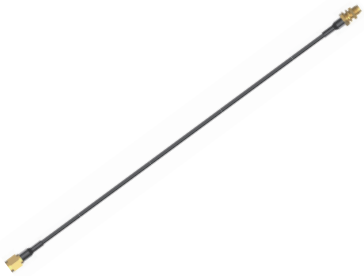
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALSR200
Cable length	1700 mm
Operation temperature	–40°C to +85°C



YLUX013XQE

DC~6GHz SMA male to SMA female cable

Compliant

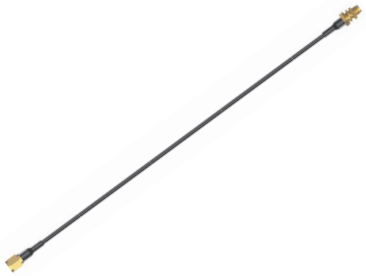
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALSR200
Cable length	1700 mm
Operation temperature	–40°C to +85°C



YLUX013XQF

DC~6GHz SMA male to SMA female cable

Compliant

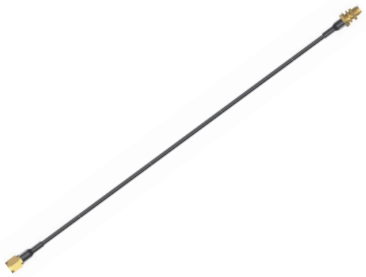
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALSR200
Cable length	1700 mm
Operation temperature	–40°C to +85°C



YLUX013XQG

DC~6GHz SMA male to SMA female cable

Compliant

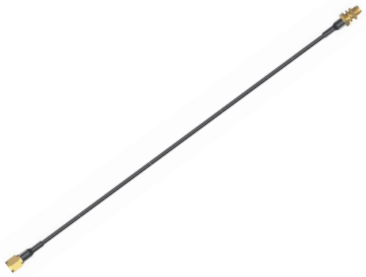
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALSR200
Cable length	2700 mm
Operation temperature	–40°C to +85°C



YLUX013XQH

DC~6GHz SMA male to SMA female cable

Compliant

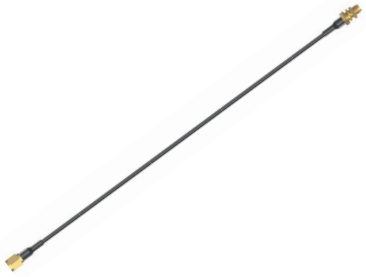
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALSR200
Cable length	2700 mm
Operation temperature	–40°C to +85°C



YLUX013XQJ

DC~6GHz SMA male to SMA female cable

Compliant

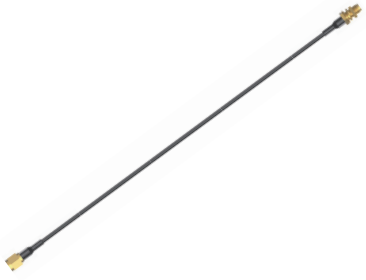
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALSR200
Cable length	2700 mm
Operation temperature	–40°C to +85°C



YLUX013XQK

DC~6GHz SMA male to SMA female cable

Compliant

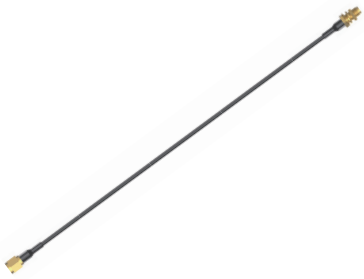
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALSR200
Cable length	4700 mm
Operation temperature	–40°C to +85°C



YLUX013XQL

DC~6GHz SMA male to SMA female cable

Compliant

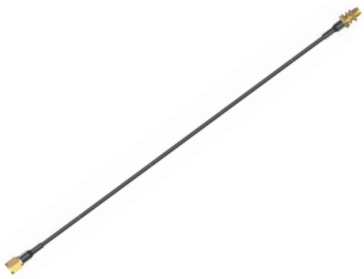
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALSR200
Cable length	4700 mm
Operation temperature	–40°C to +85°C



YLUX013XQM

DC~6GHz SMA male to SMA female cable

Compliant

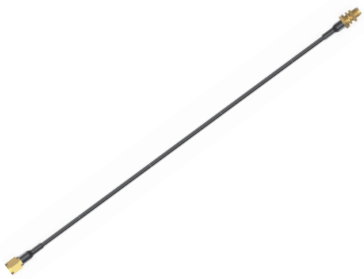
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALSR200
Cable length	4700 mm
Operation temperature	–40°C to +85°C



YLUX013XQN

DC~2GHz SMA male to SMA female cable

Compliant

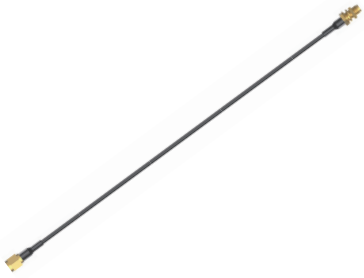
RoHS & REACH

Electrical data

Frequency range
DC–2000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG174
Cable length	700 mm
Operation temperature	–40°C to +85°C



YLUX013XQP

DC~2GHz SMA male to SMA female cable

Compliant

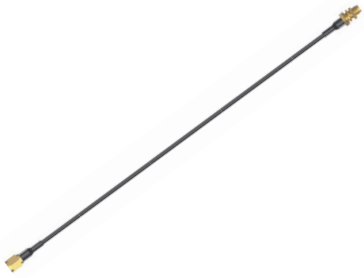
RoHS & REACH

Electrical data

Frequency range
DC–2000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG174
Cable length	1700 mm
Operation temperature	–40°C to +85°C



YLUX013XQQ

DC~6GHz SMA male to SMA female cable

Compliant

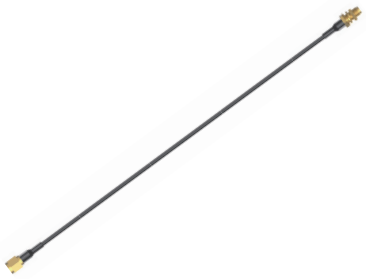
RoHS & REACH

Electrical data

Frequency range
DC–2000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG174
Cable length	2700 mm
Operation temperature	–40°C to +85°C



YLUX013XQR

DC~2GHz SMA male to SMA female cable

Compliant

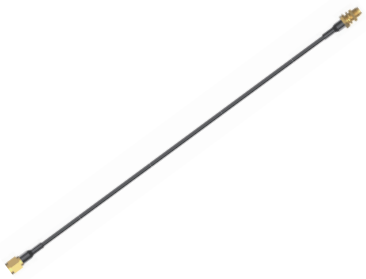
RoHS & REACH

Electrical data

Frequency range
DC–2000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG174
Cable length	4700 mm
Operation temperature	–40°C to +85°C



YLUX016XQA

DC~6GHz SMA male to SMA female cable

Compliant

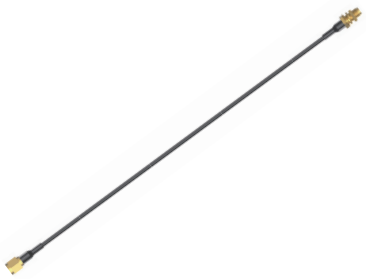
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALS302
Cable length	700 mm
Operation temperature	–40°C to +85°C



YLUX016XQB

DC~6GHz SMA male to SMA female cable

Compliant

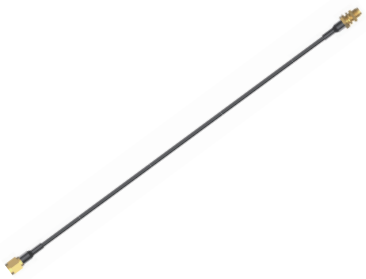
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALS302
Cable length	700 mm
Operation temperature	–40°C to +85°C



YLUX016XQC

DC~6GHz SMA male to SMA female cable

Compliant

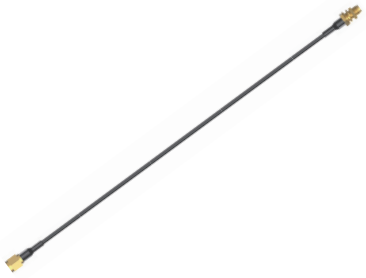
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALS302
Cable length	700 mm
Operation temperature	–40°C to +85°C



YLUX016XQD

DC~6GHz SMA male to SMA female cable

Compliant

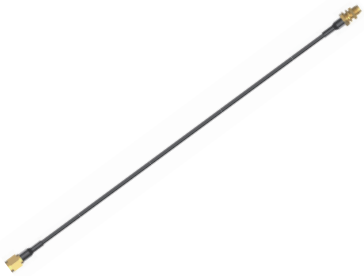
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALS302
Cable length	1700 mm
Operation temperature	–40°C to +85°C



YLUX016XQE

DC~6GHz SMA male to SMA female cable

Compliant

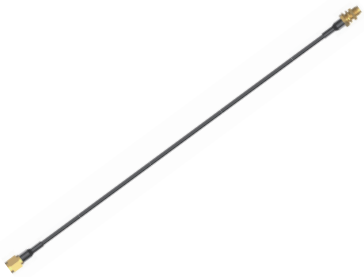
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALS302
Cable length	1700 mm
Operation temperature	–40°C to +85°C



YLUX016XQF

DC~6GHz SMA male to SMA female cable

Compliant

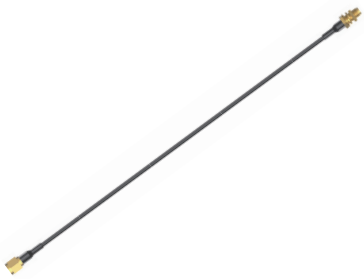
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALS302
Cable length	1700 mm
Operation temperature	–40°C to +85°C



YLUX016XQG

DC~6GHz SMA male to SMA female cable

Compliant

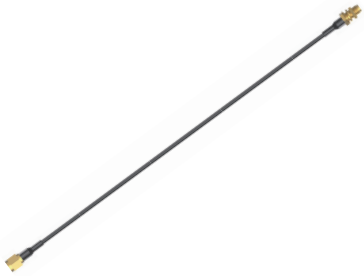
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALS302
Cable length	2700 mm
Operation temperature	–40°C to +85°C



YLUX016XQH

DC~6GHz SMA male to SMA female cable

Compliant

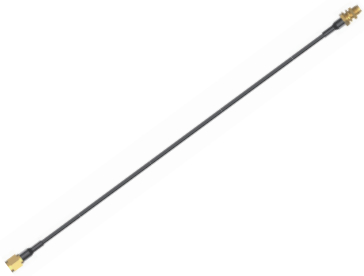
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALS302
Cable length	2700 mm
Operation temperature	–40°C to +85°C



YLUX016XQJ

DC~6GHz SMA male to SMA female cable

Compliant

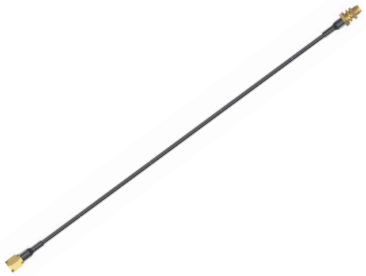
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALS302
Cable length	2700 mm
Operation temperature	–40°C to +85°C



YLUX016XQK

DC~6GHz SMA male to SMA female cable

Compliant

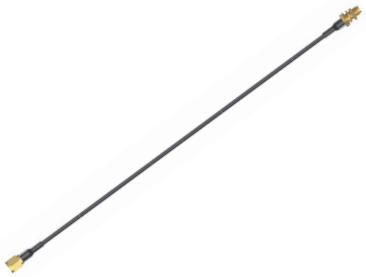
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALS302
Cable length	4700 mm
Operation temperature	–40°C to +85°C



YLUX016XQL

DC~6GHz SMA male to SMA female cable

Compliant

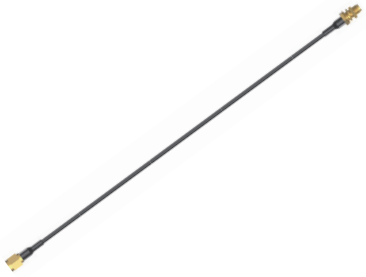
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALS302
Cable length	4700 mm
Operation temperature	–40°C to +85°C



YLUX016XQM

DC~6GHz SMA male to SMA female cable

Compliant

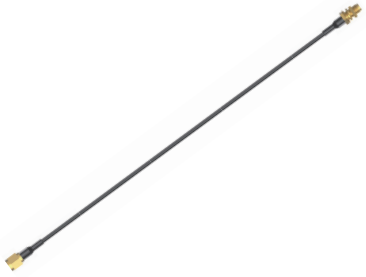
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	ALS302
Cable length	4700 mm
Operation temperature	–40°C to +85°C



YLUX017XQA

DC~6GHz SMA male to SMA female cable

Compliant

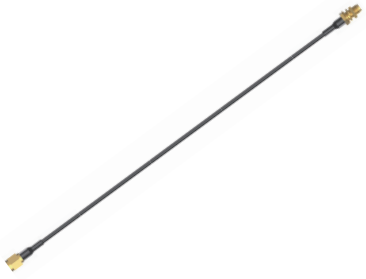
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG405
Cable length	700 mm
Operation temperature	–40°C to +85°C



YLUX017XQB

DC~6GHz SMA male to SMA female cable

Compliant

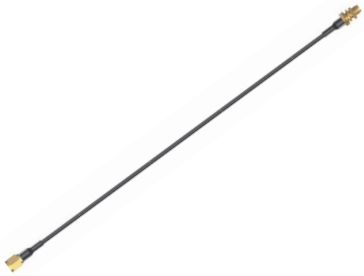
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG405
Cable length	700 mm
Operation temperature	–40°C to +85°C



YLUX017XQC

DC~6GHz SMA male to SMA female cable

Compliant

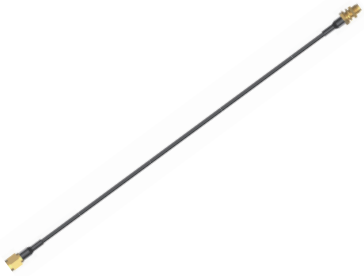
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG405
Cable length	700 mm
Operation temperature	–40°C to +85°C



YLUX017XQD

DC~6GHz SMA male to SMA female cable

Compliant

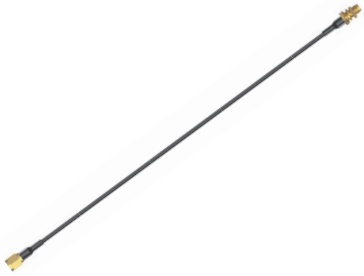
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG405
Cable length	1700 mm
Operation temperature	–40°C to +85°C



YLUX017XQE

DC~6GHz SMA male to SMA female cable

Compliant

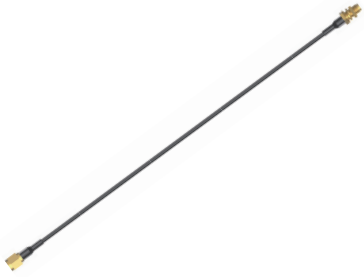
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG405
Cable length	1700 mm
Operation temperature	–40°C to +85°C



YLUX017XQF

DC~6GHz SMA male to SMA female cable

Compliant

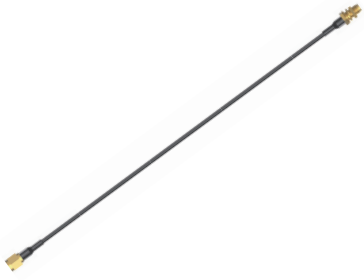
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG405
Cable length	1700 mm
Operation temperature	–40°C to +85°C



YLUX017XQG

DC~6GHz SMA male to SMA female cable

Compliant

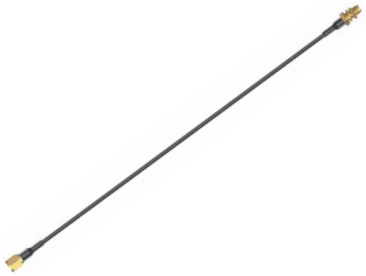
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG405
Cable length	2700 mm
Operation temperature	–40°C to +85°C



YLUX017XQH

DC~6GHz SMA male to SMA female cable

Compliant

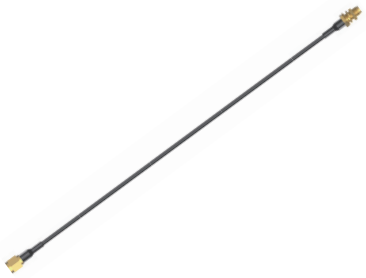
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG405
Cable length	2700 mm
Operation temperature	–40°C to +85°C



YLUX017XQJ

DC~6GHz SMA male to SMA female cable

Compliant

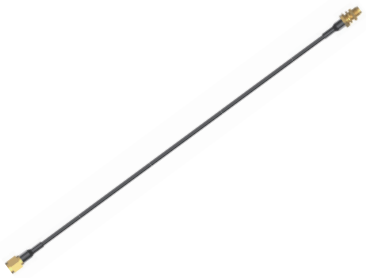
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG405
Cable length	2700 mm
Operation temperature	–40°C to +85°C



YLUX017XQK

DC~6GHz SMA male to SMA female cable

Compliant

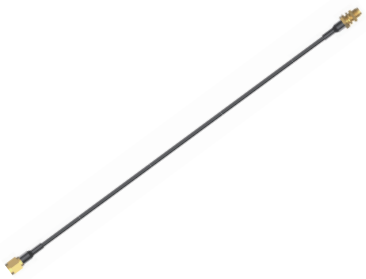
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG405
Cable length	4700 mm
Operation temperature	–40°C to +85°C



YLUX017XQL

DC~6GHz SMA male to SMA female cable

Compliant

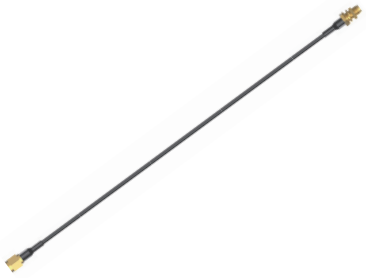
RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG405
Cable length	4700 mm
Operation temperature	–40°C to +85°C



YLUX017XQM

DC~6GHz SMA male to SMA female cable

Compliant

RoHS & REACH

Electrical data

Frequency range
DC–6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	SMA female
Cable type	RG405
Cable length	4700 mm
Operation temperature	–40°C to +85°C

YLUX001KQA

DC~6GHz fakra male to SMA female cable

Compliant

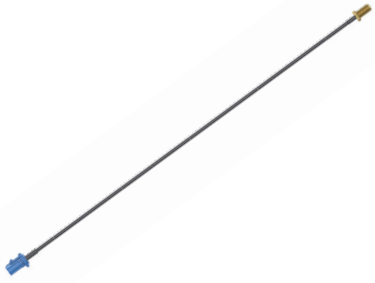
RoHS & REACH

Electrical data

Frequency range
DC~6GHz

Mechanical data

Connector type1	Fakra male C
Connector type2	SMA female
Cable type	RG174
Cable length	700 mm
Operation temperature	–40°C to +85°C



YLUX001MQA

DC~6GHz fakra male to SMA female cable

Compliant

RoHS & REACH

Electrical data

Frequency range
DC~6GHz

Mechanical data

Connector type1	Fakra male C
Connector type2	SMA female
Cable type	RG174
Cable length	1700 mm
Operation temperature	–40°C to +85°C

YLUX001PQA

DC~6GHz fakra male to SMA female cable

Compliant

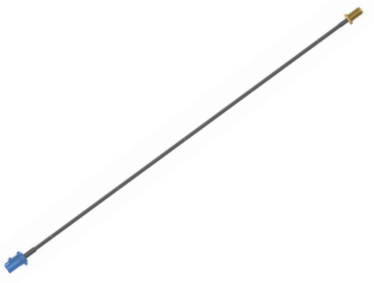
RoHS & REACH

Electrical data

Frequency range
DC~6GHz

Mechanical data

Connector type1	Fakra male C
Connector type2	SMA female
Cable type	RG174
Cable length	2700 mm
Operation temperature	–40°C to +85°C



YLUX001TQA

DC~6GHz fakra male to SMA female cable

Compliant

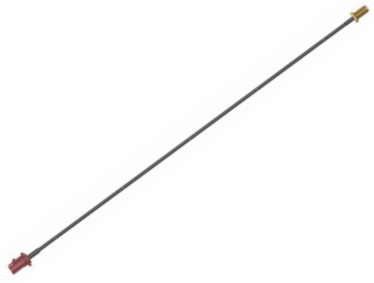
RoHS & REACH

Electrical data

Frequency range
DC~6GHz

Mechanical data

Connector type1	Fakra male C
Connector type2	SMA female
Cable type	RG174
Cable length	4700 mm
Operation temperature	–40°C to +85°C



YLUX002KQA

DC~6GHz fakra male to SMA female cable

Compliant

RoHS & REACH

Electrical data

Frequency range
DC~6GHz

Mechanical data

Connector type1	Fakra male D
Connector type2	SMA female
Cable type	RG174
Cable length	700 mm
Operation temperature	–40°C to +85°C

YLUX002MQA

DC~6GHz fakra male to SMA female cable

Compliant

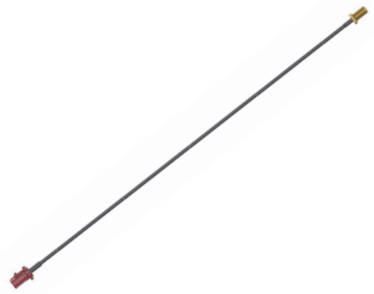
RoHS & REACH

Electrical data

Frequency range
DC~6GHz

Mechanical data

Connector type1	Fakra male D
Connector type2	SMA female
Cable type	RG174
Cable length	1700 mm
Operation temperature	-40°C to +85°C



YLUX002PQA

DC~6GHz fakra male to SMA female cable

Compliant

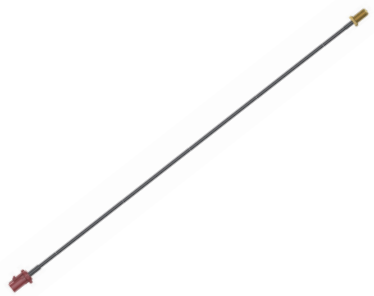
RoHS & REACH

Electrical data

Frequency range
DC~6GHz

Mechanical data

Connector type1	Fakra male D
Connector type2	SMA female
Cable type	RG174
Cable length	2700 mm
Operation temperature	-40°C to +85°C



YLUX002TQA

DC~6GHz fakra male to SMA female cable

Compliant

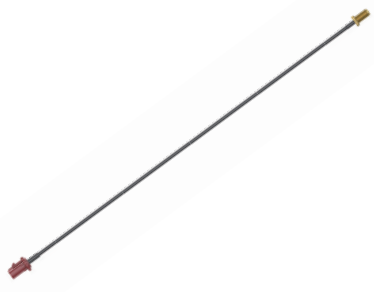
RoHS & REACH

Electrical data

Frequency range
DC~6GHz

Mechanical data

Connector type1	Fakra male D
Connector type2	SMA female
Cable type	RG174
Cable length	4700 mm
Operation temperature	-40°C to +85°C



YLUX003KQA

DC~6GHz fakra male to SMA female cable

Compliant

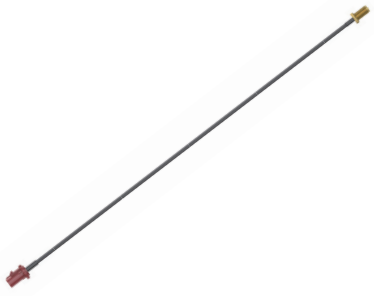
RoHS & REACH

Electrical data

Frequency range
DC~6GHz

Mechanical data

Connector type1	Fakra male D
Connector type2	SMA female
Cable type	ALSR100
Cable length	700 mm
Operation temperature	-40°C to +85°C



YLUX003MQA

DC~6GHz fakra male to SMA female cable

Compliant

RoHS & REACH

Electrical data

Frequency range
DC~6GHz

Mechanical data

Connector type1	Fakra male D
Connector type2	SMA female
Cable type	ALSR100
Cable length	1700 mm
Operation temperature	-40°C to +85°C

YLUX003PQA

DC~6GHz fakra male to SMA female cable

Compliant

RoHS & REACH

Electrical data

Frequency range
DC~6GHz

Mechanical data

Connector type1	Fakra male D
Connector type2	SMA female
Cable type	ALSR100
Cable length	2700 mm
Operation temperature	–40°C to +85°C

YLUX003TQA

DC~6GHz fakra male to SMA female cable

Compliant

RoHS & REACH

Electrical data

Frequency range
DC~6GHz

Mechanical data

Connector type1	Fakra male D
Connector type2	SMA female
Cable type	ALSR100
Cable length	4700 mm
Operation temperature	–40°C to +85°C

YEGX000Q1AM

DC~6GHz SMA male to TNC male cable

Compliant

RoHS & REACH

Electrical data

Frequency range
DC-6000 MHz

Mechanical data

Connector type1	SMA male
Connector type2	TNC male
Cable type	RG174
Cable length	3000 mm
Operation temperature	–40°C to +85°C

Accessories

YAXX001XXA

Accessory-Bracket

Compliant

RoHS & REACH

Mechanical data

Dimensions	82.2 × 60.31 × 48 mm
Operation temperature	–40°C to +85°C

YSOS001AA

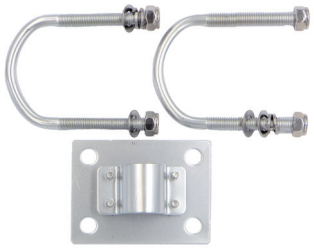
Accessory-RF tuner

Compliant

RoHS & REACH

Mechanical data

Dimensions	1.1 × 1.5 × 0.375 mm
Operation temperature	–40°C to +85°C



YBY00A0IA

Accessory-Bracket

Compliant

RoHS

Mechanical data

Dimensions	80 × 60 × 86 mm
Operation temperature	–20°C to +85°C

YEGM003WWAM

Accessory-Bracket

Compliant

RoHS

Mechanical data

Dimensions	Φ108×123mm
Operation temperature	–40°C to +85°C

Build a smarter world

Europe

Czech Republic: Prague
Denmark: Copenhagen
France: Nice/Paris
Germany: Augsburg/Berlin/Hannover/Munich
Ireland: Navan
Italy: Casatenovo/Milan
Poland: Gdynia/Warsaw/Wroclaw
Serbia: Belgrade
Slovenia: Ljubljana
Spain: Barcelona
Sweden: Sollentuna/Stockholm
Switzerland: Zurich
The Netherlands: Eindhoven
Turkey: Istanbul
UK: Birmingham/London/Manchester/Oxford

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Vancouver, B.C

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

Israel / Africa

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South Africa: Gauteng/Johannesburg
Egypt: Cairo

Asia Pacific

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Indonesia: Bandung/Jakarta
Japan: Tokyo
Korea: Seoul
Malaysia: Penang
Pakistan: Lahore
Philippines: Manila/Pasay City
Singapore
Thailand: Bangkok/Samutprakarn
Vietnam: Hanoi/Ho Chi Minh City

Latin America

Argentina: Buenos Aires
Brazil: Sao Paulo
Mexico: Mexico City / Queretaro

50+ sales offices, 8 R&D centers globally
90+ distributors
Serving 7000+ 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: easteurope-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 Xiyou Road,
High-tech Zone, Hefei, Anhui 230088, China
Tel: +86 551 6586 9386

Vancouver R&D Center

13551 Commerce Pkwy Unit 100,
Richmond, BC Canada

Shanghai R&D Center

Building 13, Shanghai Business Park Phase III (Area B),
No.1016 Tianlin Road, Minhang District, Shanghai 200233, China
Tel: +86 21 5108 6236

Foshan R&D Center

Floor 9, Building 2, Sanshan Science and Technology Innovation Center, No. 12,
Gangkou Road, Sanshan New City, Guicheng Street, Nanhai District, Foshan,
Guangdong 528200, China
Tel: +86 757 6663 6236

Belgrade R&D Center

3rd Floor, Danube Business Center, Bulevar Mihaila Pupina 10L,
11070 New Belgrade, Serbia

Guilin R&D Center

Floor 4, Building 9, Guilin Electric Valley, Chaoyang Road,
Qixing District, Guilin, Guangxi 541004, China
Tel: +86 773 5886 236

Wuhan R&D Center

Floor 4-5, A2 Huaxiang Center, 776 Gaoxin Avenue, Donghu New Technology
Development Zone, Hongshan District, Wuhan City, Hubei 430074, China
Tel: +86 027 6552 5933

Penang R&D Center

1C-1-01 One Precinct, Lengkok Mayang Pasir, 11900 Bayan Lepas, Pulau
Pinang, Malaysia

www.quectel.com

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Sales support: sales@quectel.com **Technical support: support@quectel.com** **General: info@quectel.com**