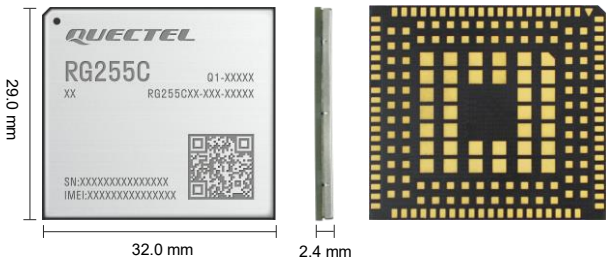
Quectel RG255C Series

5G RedCap Sub-6 GHz LGA Module



Quectel RG255C is a series of 5G Redcap Sub-6 GHz LGA module. Adopting the 3GPP Rel-17 RedCap technology, with features of 5G LAN*/ URLLC/ Slicing, the module supports a theoretical peak data rate of 223 Mbps in the downlink and 123 Mbps in the uplink. The module supports LTE Cat 4 and 5G Sub-6 SA mode, and is backward compatible with Rel-15 and Rel-16 networks. The module is partially compatible with Quectel 4G module EG2x series modules with smaller sizes, which can meet customers' different application demands for medium speed, large capacity, low latency, high reliability, etc., and is convenient for customers to design.

RG255C series module is an industrial-grade module for industrial and commercial applications only.

RG255C series module contains four variants: RG255C-GL, RG255C-NA, RG255C-EU and RG255C-CN. It supports Qualcomm® IZat™ location technology Gen 9VT (GPS, GLONASS, NavIC*, BDS, QZSS and Galileo). The integrated GNSS receiver greatly simplifies product design and provides quicker, more accurate and more dependable positioning capability.

A rich set of Internet protocols, industry-standard interfaces (USB 2.0, PCIe 2.0, PCM, UART, SGMII, SPI, etc.) and abundant functionalities (USB drivers for Windows 10/ 11, Linux and Android) extend the applicability of the module to a wide range of RedCap applications.

Key Features

- LGA form factor, small size
- Worldwide 5G/ 4G coverage
- 5G SA mode, with 5G LAN*/ URLLC/ Slicing features
- Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment (optional)
- Feature refinements: DFOTA and VoNR/ VoLTE (optional)
- PCIe 2.0 interface for Wi-Fi/ Bluetooth

5G NR Sub-6 GHz

LTE Cat 4

Quectel Enhanced AT Commands

Embedded Abundant Protocols

LGA Form Factor

Multi-constellation GNSS (optional)

USB 2.0 High Speed Interface

PCIe 2.0 Interface

VoNR/ VoLTE (optional)

Version: 1.4 | Status: Released

Quectel RG255C Series

		RG255C-CN	RG255C-GL	RG255C-NA	RG255C-EU
Region/Operator		China/ India	Global	North America	EMEA/APAC①/Brazil
Dimensions (mm)		29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4
Weight		Approx. 5.2 g	Approx. 5.2 g	Approx. 5.2 g	Approx. 5.2 g
Temperature Range					
Operating Temperature		-30 °C to +75 °C	-30 °C to +75 °C	-30 °C to +75 °C	-30 °C to +75 °C
Extended Temperature		-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C
Frequency Bands					
5G	**5G NR**	**3GPP Release 17 RedCap SA operation, Sub-6 GHz**	**3GPP Release 17 RedCap SA operation, Sub-6 GHz**	**3GPP Release 17 RedCap SA operation, Sub-6 GHz**	**3GPP Release 17 RedCap SA operation, Sub-6 GHz**
	5G NR SA	n1/ 3/ 5/ 8/ 28/ 40/ 41/ 78/ 79	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	n2/ 5/ 7/ 12/ 13/ 14/ 25/ 26/ 30/ 38/ 41/ 48/ 66/ 70/ 71/ 77/ 78	n1/ 3/ 5/ 7/ 8/ 20/ 26/ 28/ 38/ 40/ 41/ 77/ 78
	DL 2 × 2 MIMO	n1/ 3/ 5/ 8/ 28/ 40/ 41/ 78/ 79	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	n2/ 5/ 7/ 12/ 13/ 14/ 25/ 26/ 30/ 38/ 41/ 48/ 66/ 70/ 71/ 77/ 78	n1/ 3/ 5/ 7/ 8/ 20/ 26/ 28/ 38/ 40/ 41/ 77/ 78
LTE	**LTE-FDD**	B1/ 3/ 5/ 8	B1/ 2/ 3/ 4/ 5/ 7/ 8/ 12/ 13/ 14/ 17/ 18/ 19/ 20/ 25/ 26/ 28/ 30/ 66/ 70/ 71	B2/ 4/ 5/ 7/ 12/ 13/ 14/ 17/ 25/ 26/ 30/ 66/ 71	B1/ 3/ 5/ 7/ 8/ 20/ 26/ 28
	LTE-TDD	B34/ 38/ 39/ 40/ 41	B34/ 38/ 39/ 40/ 41/ 42/ 43/ 48	B38/ 41/ 42/ 43/ 48	B38/ 40/ 41/ 42/ 43
	DL 2 × 2 MIMO	B1/ 3/ 5/ 8 / 34/ 38/ 39/ 40/ 41	B1/ 2/ 3/ 4/ 5/ 7/ 8/ 12/ 13/ 14/ 17/ 18/ 19/ 20/ 25/ 26/ 28/ 30/ 34/ 38/ 39/ 40/ 41/ 42/ 43/ 48/ 66/ 70/ 71	B2/ 4/ 5/ 7/ 12/ 13/ 14/ 17/ 25/ 26/ 30/ 38/ 41/ 42/ 43/ 48/ 66/ 71	B1/ 3/ 5/ 7/ 8/ 20/ 26/ 28/ 38/ 40/ 41/ 42/ 43
GNSS (Optional)		GPS/ GLONASS/ BDS/ Galileo/ NavIC*/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ NavIC*/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ NavIC*/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ NavIC*/ QZSS
Certifications					
Regulatory		SRRC/ NAL/ CCC	GCF/ CE/ PTCRB/ FCC/ IC/ RCM	PTCRB②/ FCC②/ IC②	CE②/ RCM②
Carrier		TBD	Swisscom/ Verizon/ AT&T/ T-Mobile/ Boost_Mobile(DISH)	AT&T②/ Verizon②/ T-Mobile②	TBD
Others		RoHS	RoHS	RoHS	RoHS
Data Rates (Max.) ③					
5G SA Sub-6 GHz		223 Mbps (DL)/ 123 Mbps (UL)	223 Mbps (DL)/ 123 Mbps (UL)	223 Mbps (DL)/ 123 Mbps (UL)	223 Mbps (DL)/ 123 Mbps (UL)
LTE		200 Mbps (DL)/ 105 Mbps (UL)	200 Mbps (DL)/ 105 Mbps (UL)	200 Mbps (DL)/ 105 Mbps (UL)	200 Mbps (DL)/ 105 Mbps (UL)
Interfaces					
(U)SIM		× 2	× 2	× 2	× 2
UART		× 2	× 2	× 2	× 2
SGMII		× 1	× 1	× 1	× 1
USB 2.0		× 1	× 1	× 1	× 1
PCIe 2.0		× 1	× 1	× 1	× 1
PCM		× 1	× 1	× 1	× 1
I2C		× 1	× 1	× 1	× 1
SPI		× 1	× 1	× 1	× 1
ADC		●	●	●	●
RESET_N		●	●	●	●
GPIOs (QuecOpen®)		●	●	●	●
Antennas		Cellular: × 2; GNSS: × 1	Cellular: × 2; GNSS: × 1	Cellular: × 2; GNSS: × 1	Cellular: × 2; GNSS: × 1
Audio					
Audio		Digital Audio and VoNR/VoLTE (optional)	Digital Audio and VoNR/VoLTE (optional)	Digital Audio and VoNR/VoLTE (optional)	Digital Audio and VoNR/VoLTE (optional)
Enhanced Features					
eSIM		○	○	○	○
DTMF		●	●	●	●
DFOTA		●	●	●	●
(U)SIM Card Detection		●	●	●	●
Drivers					
USB Serial Driver		Windows 10/11; Linux 2.6–6.7; Android 4.x–14.x	Windows 10/11; Linux 2.6–6.7; Android 4.x–14.x	Windows 10/11; Linux 2.6–6.7; Android 4.x–14.x	Windows 10/11; Linux 2.6–6.7; Android 4.x–14.x
RIL Driver		Android 4.x–14.x	Android 4.x–14.x	Android 4.x–14.x	Android 4.x–14.x
PCIe MHI Driver		Linux 3.10–6.12	Linux 3.10–6.12	Linux 3.10–6.12	Linux 3.10–6.12
USB MBIM Driver ④		Windows 10/11; Linux 3.18–6.7	Windows 10/11; Linux 3.18–6.7	Windows 10/11; Linux 3.18–6.7	Windows 10/11; Linux 3.18–6.7
USB RNDIS Driver		Windows 10/11; Linux 2.6–6.7	Windows 10/11; Linux 2.6–6.7	Windows 10/11; Linux 2.6–6.7	Windows 10/11; Linux 2.6–6.7
USB GobiNet Driver		Linux 2.6–3.4	Linux 2.6–3.4	Linux 2.6–3.4	Linux 2.6–3.4
USB QMI_WWAN Driver		Linux 3.4–6.7	Linux 3.4–6.7	Linux 3.4–6.7	Linux 3.4–6.7
Electrical Features					
Supply Voltage Range		3.3–4.3 V, typ. 3.8 V	3.3–4.3 V, typ. 3.8 V	3.3–4.3 V, typ. 3.8 V	3.3–4.3 V, typ. 3.8 V
Power Consumption		Typical 2.5 mA @ Sleep Typical 25 mA @ Idle	Typical 2.8 mA @ Sleep Typical 23 mA @ Idle	Typical 2.5 mA @ Sleep Typical 27 mA @ Idle	Typical 2.0 mA @ Sleep Typical 21 mA @ Idle

NOTE:

1. ①: Excl. China/Japan.
2. ②: Arrange testing based on actual business opportunity.
3. ③: Theoretical only; actual values depend on network conditions.
4. ④: Optional (a license is required to use this driver).
5. *: Under development/In progress.
6. ●: Supported; ○: Optional.
7. TBD: To be determined.

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