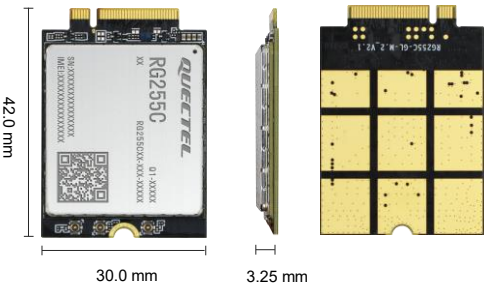
Quectel RG255C Series M.2

5G RedCap Sub-6 GHz M.2 Module



Quectel RG255C M.2 is a series of 5G Sub-6 GHz M.2 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 GHz SA mode, and is backward compatible with Rel-15 and Rel-16 networks. The module can meet customers' different application demands for medium speed, large capacity, low latency, high reliability, etc., and is convenient for customers to design.

RG255C M.2 series module contains two variants: RG255C-GL M.2 and RG255C-CN M.2. The module supports Qualcomm® IZat™ location technology Gen 9VT (GPS, GLONASS, BDS, Galileo, QZSS & NavIC*). 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, 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

- M.2 form factor
- Worldwide 5G/ LTE coverage
- 5G SA mode with features of 5G LAN*/ URLLC/ Slicing
- 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 Bands

LTE Cat 4 (DL)

Multi-constellation GNSS (Optional)

Embedded Abundant Protocols

M.2 Form Factor

USB 2.0 High Speed Interface

PCIe 2.0 High Speed Interface

VoNR*/ VoLTE* (Optional)

Quectel Enhanced AT Commands

Version: 1.4 | Status: Released

Quectel RG255C M.2 Series

5G RedCap Sub-6 GHz		RG255C-CN M.2	RG255C-GL M.2
Region/Operator		China/ India	Global
Dimensions (mm)		30 × 42 × 3.25	30 × 42 × 3.25
Weight (g)		Approx. 8.4	Approx. 8.4
Temperature Range			
Operating Temperature		-30 °C to +75 °C	-30 °C to +75 °C
Extended Temperature		-40 °C to +85 °C	-40 °C to +85 °C
Frequency Bands			
5G NR	**5G NR**	**3GPP Rel-17 RedCap SA operation, Sub-6 GHz**	**3GPP Rel-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
	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
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
	LTE-TDD	B34/ 38/ 39/ 40/ 41	B34/ 38/ 39/ 40/ 41/ 42/ 43/ 48
	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
GNSS (Optional)		GPS/ GLONASS/ BDS/ Galileo/ QZSS/ NavIC*	GPS/ GLONASS/ BDS/ Galileo/ QZSS/ NavIC*
Certifications			
Regulatory		CCC/ NAL/ SRRC	CE②/ FCC②/ IC②/ RCM②/GCF③/ PTCRB③
Carrier		TBD	AT&T③/ T-Mobile③/ Verizon④⑤/ Boost_Mobile(DISH)
Others		RoHS	RoHS
Data Rates (Max.) ①			
5G SA Sub-6 GHz		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)
Interfaces			
USIM		× 2	× 2
USB 2.0		× 1	× 1
PCIe 2.0		× 1	× 1
RESET#		× 1	× 1
PCM		× 1	× 1
Antennas		Cellular: × 2; GNSS: × 1	Cellular: × 2; GNSS: × 1
Audio* (optional)			
Audio		Digital Audio and VoNR/VoLTE	Digital Audio and VoNR/VoLTE
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
RIL Driver		Android 4.x–14.x	Android 4.x–14.x
PCIe MHI Driver		Linux 3.10–6.12	Linux 3.10–6.12
USB MBIM Driver⑥		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
USB GobiNet Driver		Linux 2.6–3.4	Linux 2.6–3.4
USB QMI_WWAN Driver		Linux 3.4–6.7	Linux 3.4–6.7
Electrical Features			
Supply Voltage Range		3.135–4.4 V, typ. 3.7 V	3.135–4.4 V, typ. 3.7 V
Power Consumption		Typical 2.8 mA @ Sleep Typical 25 mA @ Idle	Typical 2.9 mA @ Sleep Typical 28 mA @ Idle

NOTE:

①: Theoretical only; actual values depend on network conditions.
②: CE, FCC, IC and RCM can only provide certification reports.
③: AT&T, T-Mobile, GCF and PTCRB can reuse RG255C-GL certification results.
④: Verizon requires Delta testing based on RG255C-GL to obtain Variant certification.
⑤: Arrange testing based on actual business opportunity.
⑥: Optional (a license is required to use this driver).
*: Under development/In progress.
●: Supported; ○: Optional.
TBD: To be determined.

HQ address: Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China
Tel: +86 21 51086236 Email: info@quectel.com