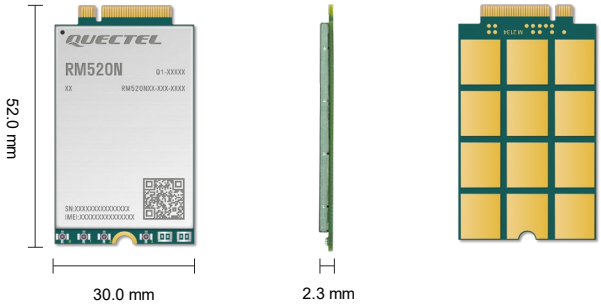
Quectel RM520N-GL

IoT/eMBB-Optimized 5G Sub-6 GHz M.2 Module



Quectel RM520N-GL is a 5G module optimized specially for IoT/eMBB applications. Adopting the 3GPP Release 16 technology, it supports both 5G NSA and SA modes. Designed in an M.2 form factor, RM520N-GL is compatible with Quectel 5G module RM50xQ series, LTE-A Cat 6 module EM06, Cat 12 modules EM12/EM12xR/EM120K series and Cat 16 module EM160R-GL, which facilitates customers' migration from LTE-A to 5G.

RM520N-GL is an industrial-grade module for industrial and commercial applications only.

The Global version RM520N-GL nearly covers all the mainstream carriers worldwide. The module supports Qualcomm® IZat™ location technology Gen9C Lite (GPS, GLONASS, BDS and Galileo). The integrated GNSS receiver greatly simplifies the product design and provides quicker, more accurate and more dependable positioning capability.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB and PCIe drivers for Windows 7/8/8.1/10, Linux, Android) extend the applicability of the module to a wide range of eMBB and IoT applications such as industrial router, home gateway, STB, industrial laptop, consumer laptop, industrial PDA, rugged tablet PC, video surveillance and digital signage.

Key Features

- 5G/4G/3G multi-mode module with M.2 form factor, optimized for IoT and eMBB applications
- Worldwide 5G and LTE-A coverage
- Both NSA and SA modes supported
- Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment
- Feature refinements: DFOTA and VoLTE (optional)

5G NR Sub-6 Bands Supported

LTE
DL: LTE Cat 19
UL: LTE Cat 18

3G HSPA+
DL: max. 42 Mbps
UL: max. 5.76 Mbps

Embedded Abundant Protocols

M.2 Form Factor

Multi-constellation GNSS

USB 3.1/PCIe 4.0 Super Speed Interface

VoLTE
Voice over LTE (Optional)

AT
Quectel Enhanced AT Commands

Version: 1.0 | Status: Released

Quectel RM520N-GL

5G Sub-6		RM520N-GL
Region/Operator		Global
Dimensions (mm)		30.0 × 52.0 × 2.3
Weight (g)		Appr. 8.7
Supply Voltage Range		3.135–4.4 V, typical 3.7 V
Power Consumption		195 μA @ Power down 4.7 mA @ Sleep 51 mA @ USB 2.0, Idle 70 mA @ USB 3.0, Idle
Temperature Range		
Operation Temperature		-30 °C to +75 °C
Extended Temperature		-40 °C to +85 °C
Frequency Bands		
5G NR	NSA	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
	SA	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	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
UMTS	WCDMA	B1/ 2/ 4/ 5/ 8/ 19
GNSS		GPS/ GLONASS/ BDS/ Galileo
Certifications		
Regulatory		GCF/ PTCRB/ CE/ Anatel*/ CCC/ RCM/ IC/ FCC/ JATE*/ TELEC*/ KC*/ NCC*
Carrier		T-Mobile*/ AT&T*/ Verizon*/ Deutsche Telekom*
Others		RoHS
Data Rate (Max.) ①		
5G SA Sub-6		DL 2.4 Gbps; UL 900 Mbps
5G NSA Sub-6		DL 3.4 Gbps; UL 550 Mbps
LTE		DL 1.6 Gbps; UL 200 Mbps
WCDMA		DL 42 Mbps; UL 5.76 Mbps
Interface		
(U)SIM		× 2
USB 2.0		× 1
USB 3.0/3.1		× 1
PCIe 4.0		× 1
Antenna (Sub-6/GNSS)		× 4
Voice		
Voice		Digital Audio and VoLTE (Voice over LTE) (Optional)
Enhanced Features		
eSIM*		Optional
DTMF*		Supported
DFOTA*		Supported
(U)SIM Card Detection		Optional

Notes:

1. ①: The presented data rates are theoretical only, and the actual value depends on network conditions.
2. *: Under development/in progress.

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