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.

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**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)
### Quectel RM520N-GL

<table>
<thead>
<tr>
<th>Region/Operator</th>
<th>Global</th>
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<tbody>
<tr>
<td>Dimensions (mm)</td>
<td>30.0 × 52.0 × 2.3</td>
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<tr>
<td>Weight (g)</td>
<td>Appr. 8.7</td>
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<tr>
<td>Supply Voltage Range</td>
<td>3.135–4.4 V, typical 3.7 V</td>
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</tbody>
</table>
| 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/ 18/ 20/ 25/ 26/ 28/ 29/ 30/ 38/ 40/ 41/ 48/ 66/ 70/ 71/ 75/ 76/ 77/ 78/ 79  
                          | 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  
| Certification           | 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.)        |  
                          | 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                   | 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.