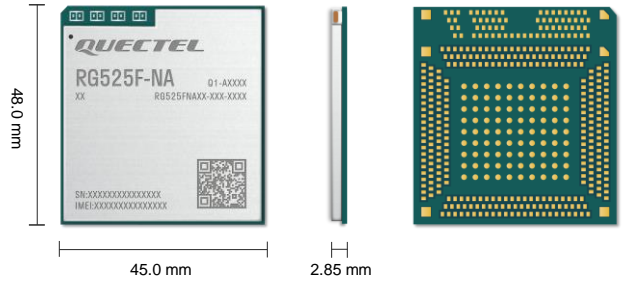


Quectel RG525F-NA

IoT/eMBB-Optimized 5G Sub-6 GHz LGA Module



Quectel RG525F-NA is a 5G Sub-6 GHz LGA module optimized specially for IoT and eMBB applications. Adopting the 3GPP Rel-16 technology, it supports both 5G NSA and SA modes with Option 3x/3a/3 and Option 2 network architectures, and is compatible with the 4G network. It is compatible with Quectel 5G module RG50xQ series, and LTE-A module EG512R-EA (while some additional pins are added to RG525F-NA). It can meet customers' different application demands for high speed, large capacity, low latency, high reliability, etc.

RG525F-NA is an industrial-grade module for industrial and commercial applications only.

RG525F-NA supports Qualcomm® IZat™ location technology Gen9C Lite (GPS, GLONASS, BDS, Galileo and QZSS). 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 2.0/3.0/3.1, PCIe 3.0, PCM, UART, etc.), and abundant functionalities (USB drivers for Windows 7/ 8/ 8.1/ 10/ 11, Linux and Android) extend the applicability of the module to a wide range of IoT and eMBB applications such as business routers, home gateway, STB, industrial laptops, consumer laptops, industrial PDA, rugged tablet PCs and video transmission.



Key Features

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

 5G^{NR} 5G NR Sub-6 GHz Bands	 4G LTE LTE Cat 20 (DL) LTE Cat 18 (UL)	 Multi-constellation GNSS L1 + L5 (Optional)
 Embedded Abundant Protocols	 LGA LGA Package	 AT Quectel Enhanced AT Commands
 USB 3.1 High Speed Interface	 PCIe PCIe 3.0 Interface	 VoNR 5G VoNR/ VoLTE (Optional)
 RoHS Compliant		

Quectel RG525F-NA

5G Sub-6		RG525F-NA
Region/Operator		North America
Dimensions (mm)		48.0 × 45.0 × 2.85
Weight (g)		Approx. 14.13
Temperature Range		
Operating Temperature		-30 °C to +75 °C
Extended Temperature		-40 °C to +85 °C
Frequency Bands		
	5G NR	3GPP Rel-16 NSA/SA operation, Sub-6 GHz
	5G NR NSA	n2/ 5/ 7/ 12/ 13/ 14/ 25/ 26/ 29/ 30/ 38/ 41/ 48/ 66/ 70/ 71/ 77/ 78
5G	5G NR SA	n2/ 5/ 7/ 12/ 13/ 14/ 25/ 26/ 29/ 30/ 38/ 41/ 48/ 66/ 70/ 71/ 77/ 78
	DL 4 × 4 MIMO	n2/ 5/ 7/ 12/ 13 ^② / 14/ 25/ 26 ^② / 29/ 30/ 38/ 41/ 48/ 66/ 70/ 71/ 77/ 78
	8RX*	n48/ 77/ 78
	LTE Category	Cat 20 (DL)/Cat 18 (UL)
	LTE-FDD	B2/ 4/ 5/ 7/ 12(17)/ 13/ 14/ 25/ 26/ 29/ 30/ 66/ 71
LTE	LTE-TDD	B38/ 41/ 42/ 43/ 48
	LAA	B46
	DL 4 × 4 MIMO	B2/ 4/ 5/ 7/ 12(17)/ 13/ 14/ 25/ 26/ 29/ 30/ 38/ 41/ 42/ 43/ 48/ 66/ 71
GNSS (Optional)		GPS/ GLONASS/ BDS/ Galileo/ QZSS
Certifications		
Regulatory		PTCRB/ FCC/ IC
Carrier		Rogers
Others		RoHS
Data Rates (Max.) ^①		
5G SA Sub-6		4.0 Gbps (DL)/ 900 Mbps (UL)
5G NSA Sub-6		4.0 Gbps (DL)/ 550 Mbps (UL)
LTE		2.0 Gbps (DL)/ 200 Mbps (UL)
Interfaces		
(U)SIM		× 2, 1.8/ 2.95 V
UART		× 3
SDIO		× 1
USB 2.0/ 3.0/ 3.1		× 1
PCIe 3.0		Gen 3, Lane × 2
PCM*		× 1
I2S*		× 1
I2C		× 1
SPI		× 1
ADC		●
RESET_N		●
GPIOs (QuecOpen®)		●
Antenna		Cellular: × 8; GNSS: × 1
Voice		
VoNR/ VoLTE		Digital Audio and VoNR/ VoLTE (Voice over LTE) (Optional)
Enhanced Features		
DTMF*		●
DFOTA		●
(U)SIM Card Detection		●

NOTE:

- ①: The presented data rates are theoretical only, and the actual values depend on network conditions.
- ②: Only DL 2 × 2 MIMO supported.
- *: Under development.
- : Supported.

Quectel RG525F-NA

5G Sub-6	RG525F-NA
Drivers	
USB Serial Driver	Windows 7/8/8.1/10/11; Linux 2.6–5.18; Android 4.x–13.x
GNSS Driver	Android 4.x–13.x
RIL Driver	Android 4.x–13.x
USB NDIS Driver	Windows 7/8/8.1/10/11
USB MBIM Driver	Windows 8/8.1/10/11; Linux 3.18–5.18
USB GobiNet Driver	Linux 2.6–5.18
USB QMI_WWAN Driver	Linux 3.4–5.18
PCIe MHI Driver	Linux 3.10–5.18
Electrical Features	
Supply Voltage Range	3.3–4.4 V, typ. 3.8 V
Output Power	5G NR: - Class 1.5 (29 dBm + 2/-3 dB) for n41/ 77/ 78 - Class 2 (26 dBm + 2/-3 dB) for n38/ 41/ 77/ 78 - Class 3 (23 dBm+2/-2 dB) for other Sub-6 bands LTE: - Class 2 (26 dBm +2/-2 dB) for B38/ 41/ 42/ 43 - Class 3 (23 dBm +2/-2 dB) for other LTE bands
Power Consumption	104 uA @ Power down 5.78 mA @ Sleep 43.31 mA @ USB 2.0, Idle 63.74 mA @ USB 3.0, Idle