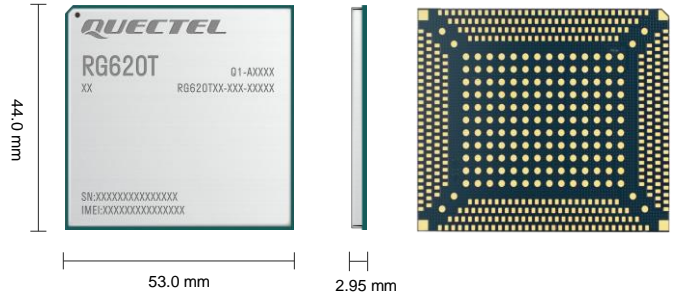


# Quectel RG620T Series

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



Quectel RG620T is a series of 5G Sub-6 GHz LGA modules optimized specially for IoT/ eMBB/ uRLLC applications. Adopting the 3GPP Release 16 technology, the module supports the 5G modes of both NSA and SA and the deployment of Option 3x, 3a, 3, and 2. It also supports 4G or 3G.

RG620T series are industrial-grade for industrial and commercial applications only.

The module integrates a multi-constellation GNSS receiver that supports GPS, GLONASS, BDS, Galileo and QZSS. It helps to simplify the product design and can achieve high-precision, fast, and dependable positioning.

RG620T series have a quad-core 2.2 GHz CPU and integrate network and VPN accelerators, which extends the applicability of the module to a wide range of eMBB , IoT and uRLLC applications such as 5G router, CPE, MiFi, industrial router, and home gateway.



### Key Features

- ✓ Sub-6 GHz 5G module with LGA form factor, optimized for IoT/ eMBB/ /uRLLC applications
- ✓ Both NSA and SA modes supported
- ✓ 5G 4CA supported
- ✓ Multi-mode network coverage, compatible with 4G network (Cat 19)
- ✓ Transmission Mode 9 (TM9) supported, increased spectral efficiency and improved performance
- ✓ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment



5G Sub-6 GHz Bands Supported



Max. 1.6 Gbps (DL)  
Max. 211 Mbps (UL)



Multi-Constellation GNSS



Embedded Abundant Protocols



LGA Form Factor



USB 3.2/ PCIe 4.0 Super Speed Interface



VoLTE/ VoNR (Optional)



Quectel Enhanced API

# Quectel RG620T Series

5G Sub-6	RG620T-NA	RG620T-EU	RG620T-EM	RG620T-EG	
Region/Operator	North America	EMEA/ APAC <sup>①</sup> / Brazil	EMEA/ APAC <sup>①</sup> / 巴西	EMEA/ APAC/ 巴西	
Dimensions (mm)	53.0 × 44.0 × 2.95	53.0 × 44.0 × 2.95	53.0 × 44.0 × 2.95	53.0 × 44.0 × 2.95	
Temperature Range					
Operation Temperature	-30 °C to +70 °C	-30 °C to +70 °C	-30 °C ~ +70 °C	-30 °C ~ +70 °C	
Extended Temperature	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C ~ +85 °C	-40 °C ~ +85 °C	
Frequency Band					
5G	NR NSA	n2/ 5/ 7/ 12/ 13/ 14/ 25/ 26/ 29/ 30/ 38/ 41/ 48/ 66/ 70/ 71/ 77/ 78	n1/ 3/ 5 / 7/ 8/ 20/ 28/ 38/ 40/ 41/ 75/ 76/ 77/ 78	n1/ 3/ 5 / 7/ 8/ 20/ 28/ 38/ 40/ 41/ 71/ 77/ 78	n1/ 3/ 5 / 7/ 8/ 20/ 28/ 38/ 40/ 41/ 77/ 78/ 79
	NR SA	n2/ 5/ 7/ 12/ 13/ 14/ 25/ 26/ 29/ 30/ 38/ 41/ 48/ 66/ 70/ 71/ 77/ 78	n1/ 3/ 5 / 7/ 8/ 20/ 28/ 38/ 40/ 41/ 75/ 76/ 77/ 78	n1/ 3/ 5 / 7/ 8/ 20/ 28/ 38/ 40/ 41/ 71/ 77/ 78	n1/ 3/ 5 / 7/ 8/ 20/ 28/ 38/ 40/ 41/ 77/ 78/ 79
	DL CA	DL 4CA/ UL 2CA	DL 4CA/ UL 2CA	DL 4CA/ UL 2CA	DL 4CA/ UL 2CA
	DL 4 × 4 MIMO	n2/ 5/ 7/ 12/ 13/ 14/ 25/ 26/ 30/ 38/ 41/ 48/ 66/ 70/ 71/ 77/ 78	n1/ 3/ 5 / 7/ 8/ 20/ 28/ 38/ 40/ 41/ 77/ 78	n1/ 3/ 7/ 8/ 20/ 28/ 38/ 40/ 41/ 77/ 78	n1/ 3/ 5 / 7/ 8/ 20/ 28/ 38/ 40/ 41/ 77/ 78 / 79
	UL 2 × 2 MIMO	n2/ 5/ 25/ 38/ 41/ 48/ 66/ 70/ 71/ 77/ 78	n38/ 40/ 41/ 77/ 78	n38/ 40/ 41/ 77/ 78	n38/ 40/ 41/ 77/ 78/ 79
LTE	LTE-FDD	B2/ 4/ 5/ 7/ 12 (17)/ 13/ 14/ 25/ 26/ 29/ 30/ 66/ 70/ 71	B1/ 3/ 5 / 7/ 8/ 20/ 28/ 32	B1/ 3/ 5 / 7/ 8/ 20/ 28 /B71	B1/ 3/ 5 / 7/ 8/ 20/ 28
	LTE-TDD	B38/ 41/ 42/ 43/ 48	B38/ 40/ 41/ 42/ 43	B38/ 40/ 41/ 42/ 43	B38/ 40/ 41/ 42/ 43
	LAA	B46	B46	B46	-
	DL 4 × 4 MIMO	B2/ 4/ 5/ 7/ 12 (17)/ 13/ 14/ 25/ 26/ 30/ 38/ 41/ 42/ 43/ 48/ 66/ 70/ 71	B1/ 3/ 5 / 7/ 8/ 20/ 28/ 38/ 40/ 41/ 42/ 43	B1/ 3/ 7/ 8/ 20/ 28/ 38/ 40/ 41/ 42/ 43	B1/ 3/ 5/ 7/ 8/ 20/ 28/ 38/ 40/ 41/ 42/ 43
UMTS WCDMA	-	B1/ 5/ 8	B1/ 5/ 8	B1/ 5/ 8	
GNSS	GPS/ BDS/ GLONASS/ Galileo/ QZSS, L1 + L5	GPS/ BDS/ GLONASS/ Galileo/ QZSS, L1 + L5	GPS/ BDS/ GLONASS/ Galileo/ QZSS, L1 + L5	GPS/ BDS/ GLONASS/ Galileo/ QZSS, L1 + L5	
Certification					
Carrier (Based on Carrier's RFP)	America: T-Mobile*/ Verizon*/ AT&T*	Europe: Deutsche Telekom <sup>②</sup> / British Telecom <sup>③</sup> France: Orange <sup>③</sup> Australia: Telstra <sup>③</sup>	Europe: Deutsche Telekom <sup>②</sup> / British Telecom <sup>③</sup> France: Orange <sup>③</sup>	Europe: Deutsche Telekom <sup>②</sup> / British Telecom <sup>③</sup> France: Orange <sup>③</sup>	
Regulatory	Global: GCF North America: PTCRB America: FCC Canada: IC	Global: GCF Europe: CE Australia/New Zealand: RCM	Global: GCF <sup>③</sup> Europe: CE <sup>③</sup> Australia/New Zealand: RCM <sup>③</sup>	Global: GCF <sup>③</sup> Europe: CE <sup>③</sup> Australia/New Zealand: RCM <sup>③</sup>	
Others	RoHS	RoHS	RoHS	RoHS	
Data Rate (Max.)					
5G SA Sub-6 GHz	7.01 Gbps (DL)/ 2.5 Gbps (UL)	7.01 Gbps (DL)/ 2.5 Gbps (UL)	7.01 Gbps (DL)/ 2.5 Gbps (UL)	7.01 Gbps (DL)/ 2.5 Gbps (UL)	
5G NSA Sub-6 GHz	5.67 Gbps (DL)/ 1.46 Gbps (UL)	5.67 Gbps (DL)/ 1.46 Gbps (UL)	5.67 Gbps (DL)/ 1.46 Gbps (UL)	5.67 Gbps (DL)/ 1.46 Gbps (UL)	
LTE	1.6 Gbps (DL)/ 211 Mbps (UL)	1.6 Gbps (DL)/ 211 Mbps (UL)	1.6 Gbps (DL)/ 211 Mbps (UL)	1.6 Gbps (DL)/ 211 Mbps (UL)	
DC-HSPA+	-	42.2 mbps (DL)/ 11.5 mbps (UL)	42.2 mbps (DL)/ 11.5 mbps (UL)	42.2 mbps (DL)/ 11.5 mbps (UL)	
Interface					
Antenna	Cellular: × 8 GNSS: × 1	Cellular: × 8 GNSS: × 1	Cellular: × 8 GNSS: × 1	Cellular: × 8 GNSS: × 1	
(U)SIM	× 2 (DSSS)	× 2 (DSSS)	× 2 (DSSS)	× 2 (DSSS)	
UART	× 3	× 3	× 3	× 3	
USB 3.2/2.0	USB 3.2 Gen2 × 1, USB 2.0 × 1	USB 3.2 Gen2 × 1, USB 2.0 × 1	USB 3.2 Gen2 × 1, USB 2.0 × 1	USB 3.2 Gen2 × 1, USB 2.0 × 1	
USXGMII	× 2	× 2	× 2	× 2	
PCIe	PCIe 4.0 × 1, PCIe 3.0 × 2	PCIe 4.0 × 1, PCIe 3.0 × 2	PCIe 4.0 × 1, PCIe 3.0 × 2	PCIe 4.0 × 1, PCIe 3.0 × 2	

Note:

- ①: Exclude China/Japan.
- ②: Optional.
- ③: To Be Determined.
- \* : Under development/planned/in progress.

# Quectel RG620T Series

5G Sub-6	RG620T-NA	RG620T-EU	RG620T-EM	RG620T-EG
PCM	× 2	× 2	× 2	× 2
SPI	× 3	× 3	× 3	× 3
I2C	× 4	× 4	× 4	× 4
ADC	× 7	× 7	× 7	× 7
SDIO	× 1	× 1	× 1	× 1
DBI	× 1	× 1	× 1	× 1
<b>Voice</b>				
Voice	Digital Audio and VoLTE/ VoNR (Voice over LTE/ New Radio) <sup>①</sup>	Digital Audio and VoLTE/ VoNR (Voice over LTE/ New Radio)	Digital Audio and VoLTE/ VoNR (Voice over LTE/ New Radio)	Digital Audio and VoLTE/ VoNR (Voice over LTE/ New Radio)
<b>Enhanced Feature</b>				
DTMF	●	●	●	●
FOTA	●	●	●	●
(U)SIM Card Detection	●	●	●	●
<b>Electrical/ RF Feature</b>				
Power Supply	3.3–4.4 V, typical 3.8 V	3.3–4.4 V, typical 3.8 V	3.3–4.4 V, typical 3.8 V	3.3–4.4 V, typical 3.8 V
Power Consumption	135 μA @ Power down	135 μA @ Power down	135 μA @ Power down	135 μA @ Power down
	6 mA @ Sleep	6 mA @ Sleep	6 mA @ Sleep	6 mA @ Sleep
	145 mA @ Idle (USB connected)	145 mA @ Idle (USB connected)	145 mA @ Idle (USB connected)	145 mA @ Idle (USB connected)
Transmit Power	Class 3 (23 dBm ±2 dB) for LTE-FDD bands	Class 3 (23 dBm ±2 dB) for WCDMA bands	Class 3 (23 dBm ±2 dB) for WCDMA bands	Class 3 (23 dBm ±2 dB) for WCDMA bands
	Class 3 (23 dBm ±2 dB) for LTE-TDD bands	Class 3 (23 dBm ±2 dB) for LTE-FDD bands	Class 3 (23 dBm ±2 dB) for LTE-FDD bands	Class 3 (23 dBm ±2 dB) for LTE-FDD bands
	Class 2 (26 dBm +2/ -3 dB) for LTE HPUE B38/ 41	Class 3 (23 dBm ±2 dB) for LTE-TDD bands	Class 3 (23 dBm ±2 dB) for LTE-TDD bands	Class 3 (23 dBm ±2 dB) for LTE-TDD bands
	Class 3 (23 dBm ±2 dB) for 5G NR bands	Class 2 (26 dBm +2/ -3 dB) for LTE HPUE B41	Class 2 (26 dBm +2/ -3 dB) for LTE HPUE B38/ 41	Class 2 (26 dBm +2/ -3 dB) for LTE HPUE B38/ 41
	Class 2 (26 dBm +2/ -3 dB) for 5G NR HPUE n38/ 41/ 77/ 78	Class 3 (23 dBm ±2 dB) for 5G NR bands	Class 3 (23 dBm ±2 dB) for 5G NR bands	Class 3 (23 dBm ±2 dB) for 5G NR bands
	Class 1.5 (29 dBm +2/ -3 dB) for 5G NR HPUE n41/ 77/ 78	Class 2 (26 dBm +2/ -3 dB) for 5G NR HPUE n41/ 77/ 78	Class 2 (26 dBm +2/ -3 dB) for 5G NR HPUE n38/ 41/ 77/ 78	Class 2 (26 dBm +2/ -3 dB) for 5G NR HPUE n38/ 41/ 77/ 78/79
	Class 1.5 (29 dBm +2/ -3 dB) for 5G NR HPUE n41/ 77/ 78	Class 1.5 (29 dBm +2/ -3 dB) for 5G NR HPUE n41/ 77/ 78	Class 1.5 (29 dBm +2/ -3 dB) for 5G NR HPUE n41/ 77/ 78/ 79	

**Note:**

- ①: Optional.
- : Supported.