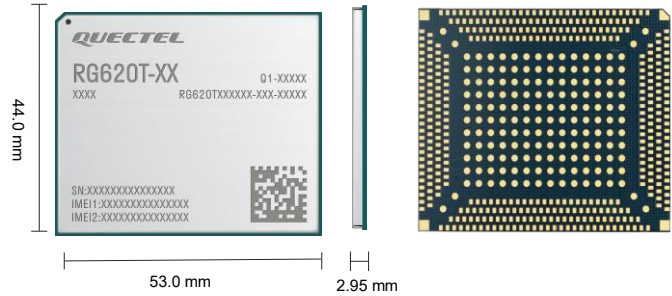




Quectel RG620T Series

IoT/ eMBB/ uRLLC-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 module is 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 module has 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	RG620T-EUC
Region/Operator		North America	EMEA/ APAC ^① / Brazil	EMEA/ APAC ^① / Brazil	EMEA/ APAC/ Brazil	EMEA/ APAC ^③ / Brazil
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	53.0 × 44.0 × 2.95
Temperature Range						
Operation Temperature		-30 °C to +70 °C	-30 °C to +70 °C	-30 °C to +70 °C	-30 °C to +70 °C	-30 °C to +70 °C
Extended Temperature		-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +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	n1/ 3/ 5 / 7/ 8/ 20/ 28/ 38/ 40/ 41/ 71 ^② / 75/ 76/ 77/ 78/ 79 ^②
	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	n1/ 3/ 5 / 7/ 8/ 20/ 28/ 38/ 40/ 41/ 71 ^② / 75/ 76/ 77/ 78/ 79 ^②
	DL CA	DL 4CA/ UL 2CA	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	n1/ 3 / 7/ 28/ 38/ 40/ 41/ 75/ 76/ 77/ 78/ 79 ^②
	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	n1/ 38/ 40/ 41/ 77/ 78/ 79 ^②
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/ 71	B1/ 3/ 5 / 7/ 8/ 20/ 28	B1/ 3/ 5/ 7/ 8/ 18/ 19/ 20/ 26/ 28/ 32/ 71 ^②
	LTE-TDD	B38/ 41/ 42/ 43/ 48	B38/ 40/ 41/ 42/ 43	B38/ 40/ 41/ 42/ 43	B38/ 40/ 41/ 42/ 43	B38/ 40/ 41/ 42/ 43
	LAA	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	B1/ 3/ 7/ 28/ 32/ 38/ 40/ 41/ 42/ 43
UMTS	WCDMA	-	B1/ 5/ 8	B1/ 5/ 8	B1/ 5/ 8	B1/ 5/ 8
GNSS		GPS/ BDS/ GLONASS/ Galileo/ QZSS, (L1 + L5) ^②	GPS/ BDS/ GLONASS/ Galileo/ QZSS, (L1 + L5) ^②	GPS/ BDS/ GLONASS/ Galileo/ QZSS, (L1 + L5) ^②	GPS/ BDS/ GLONASS/ Galileo/ QZSS, (L1 + L5) ^②	-
Certification						
Carrier (Based on Carrier's RFP)		America: T-Mobile/ Verizon*/ AT&T/ EchoStar(DISH)	Europe: Deutsche Telekom ^③ / British Telecom ^③ France: Orange ^③ Australia: Telstra*	Europe: Deutsche Telekom ^③ / British Telecom ^③ France: Orange ^③	Europe: Deutsche Telekom ^③ / British Telecom ^③ France: Orange ^③	-
Regulatory		Global: GCF North America: PTCRB America: FCC Canada: IC	Global: GCF Europe: CE Australia/ New Zealand: RCM	Global: GCF ^③ Europe: CE ^③ Australia/ New Zealand: RCM ^③	Global: GCF ^③ Europe: CE ^③ Australia/ New Zealand: RCM ^③	Global: GCF* Europe: CE* Australia/ New Zealand: RCM*
Others		RoHS	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)	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)	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)	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)	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	Cellular: × 8
(U)SIM		× 2 (DSSS)	× 2 (DSSS)	× 2 (DSSS)	× 2 (DSSS)	× 2 (DSSS)
UART		× 3	× 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	USB 3.2 Gen2 × 1, USB 2.0 × 1
USXGMII		× 2	× 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	PCIe 4.0 × 1, PCIe 3.0 × 1

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



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5G Sub-6	RG620T-NA	RG620T-EU	RG620T-EM	RG620T-EG	RG620T-EUC
PCM	× 2	× 2	× 2	× 2	× 2
SPI	× 3	× 3	× 3	× 3	× 3
I2C	× 4	× 4	× 4	× 4	× 4
ADC	× 7	× 7	× 7	× 7	× 3
SDIO	× 1	× 1	× 1	× 1	× 1
DBI	× 1	× 1	× 1	× 1	× 1
Voice					
Voice (Optional)	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)	Digital Audio and VoLTE/ VoNR (Voice over LTE/ New Radio)	Digital Audio and VoLTE/ VoNR (Voice over LTE/ New Radio)
Enhanced Feature					
DTMF	●	●	●	●	●
FOTA	●	●	●	●	●
(U)SIM Card Detection	●	●	●	●	●
3TX	-	-	-	-	○
8RX	-	-	-	-	○
Electrical/ RF Feature					
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	3.3–4.4 V, typical 3.8 V
Power Consumption	135 μA @ Power down 6 mA @ Sleep 145 mA @ Idle (USB connected)	135 μA @ Power down 6 mA @ Sleep 145 mA @ Idle (USB connected)	135 μA @ Power down 6 mA @ Sleep 145 mA @ Idle (USB connected)	135 μA @ Power down 6 mA @ Sleep 145 mA @ Idle (USB connected)	135 μA @ Power down 6 mA @ Sleep 145 mA @ Idle (USB connected)
Transmit Power	Class 3 (23 dBm ±2 dB) for LTE-FDD bands Class 3 (23 dBm ±2 dB) for LTE-TDD bands Class 2 (26 dBm +2/-3 dB) for LTE HPUE B38/ 41 Class 3 (23 dBm ±2 dB) for 5G NR bands Class 2 (26 dBm +2/-3 dB) for 5G NR HPUE n38/ 41/ 77/ 78 Class 1.5 (29 dBm +2/-3 dB) for 5G NR HPUE n41/ 77/ 78	Class 3 (23 dBm ±2 dB) for WCDMA bands Class 3 (23 dBm ±2 dB) for LTE-FDD bands Class 3 (23 dBm ±2 dB) for LTE-TDD bands Class 2 (26 dBm +2/-3 dB) for LTE HPUE B41 Class 3 (23 dBm ±2 dB) for 5G NR bands Class 2 (26 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 3 (23 dBm ±2 dB) for WCDMA bands Class 3 (23 dBm ±2 dB) for LTE-FDD bands Class 3 (23 dBm ±2 dB) for LTE-TDD bands Class 2 (26 dBm +2/-3 dB) for LTE HPUE B38/ 41 Class 3 (23 dBm ±2 dB) for 5G NR bands Class 2 (26 dBm +2/-3 dB) for 5G NR HPUE n38/ 41/ 77/ 78 Class 1.5 (29 dBm +2/-3 dB) for 5G NR HPUE n41/ 77/ 78	Class 3 (23 dBm ±2 dB) for WCDMA bands Class 3 (23 dBm ±2 dB) for LTE-FDD bands Class 3 (23 dBm ±2 dB) for LTE-TDD bands Class 2 (26 dBm +2/-3 dB) for LTE HPUE B38/ 41 Class 3 (23 dBm ±2 dB) for 5G NR bands 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/ 79	Class 3 (23 dBm ±2 dB) for WCDMA bands Class 3 (23 dBm ±2 dB) for LTE-FDD bands Class 3 (23 dBm ±2 dB) for LTE-TDD bands Class 2 (26 dBm +2/-3 dB) for LTE HPUE B38/ 41 Class 3 (23 dBm ±2 dB) for 5G NR bands 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/ 79

Note:
●: Supported; ○: Optional.