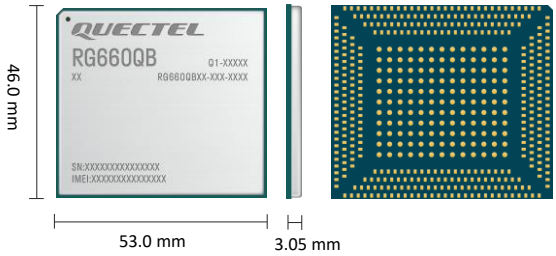
Quectel RG660QB Series

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



Quectel RG660QB series are 5G LGA modules optimized specially for IoT and eMBB applications. Adopting the 3GPP Rel-18 technology, they support both 5G NSA and SA modes with Option 3x/ 3a/ 3 and Option 2 network architectures, and are backward compatible with the 4G/ 3G networks. The module can meet customers' different application demands for high speed, large capacity, low latency, high reliability, etc.

RG660QB series are industrial-grade modules for industrial and commercial applications only.

RG660QB series support 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, 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/ 3G multi-mode module, optimized for IoT and eMBB applications
- LGA package compatible with RG650x series
- Wi-Fi 7 supported
- Enhanced AI capacity
- Multi-constellation GNSS receiver (optional) for applications requiring fast and accurate fixes in any environment
- Feature refinements: FOTA and VoNR / VoLTE (optional)

5G NR Sub-6 GHz

LTE Cat 20 (DL)
LTE Cat 18 (UL)

Max. 42 Mbps (DL)
Max. 5.76 Mbps (UL)

Embedded Abundant Protocols

VoNR /VoLTE (optional)

Multi-constellation GNSS (optional)

Wi-Fi 7 Supported

Enhanced AI Capacity

Compatible with RG650x Series

Version: 0.1 | Status: Draft

Quectel RG660QB Series

		RG660QB-EU	RG660QB-AP	RG660QB-NA
Region/ Operator		EMEA/ APAC/ Brazil	APAC	North America
Dimensions (mm)		46.0 × 53.0 × 3.05	46.0 × 53.0 × 3.05	46.0 × 53.0 × 3.05
Weight		TBD	TBD	TBD
Temperature Range				
Operating Temperature		-30 °C to +75 °C	-30 °C to +75 °C	-30 °C to +75 °C
Extended Temperature		-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C
Frequency Bands				
5G	**5G NR**	**3GPP Rel-18 NSA/ SA operation, Sub-6 GHz**	**3GPP Rel-18 NSA/ SA operation, Sub-6 GHz**	**3GPP Rel-18 NSA/ SA operation, Sub-6 GHz**
	5G NR NSA	n1/ 3/ 5/ 7/ 8/ 20/ 26/ 28/ 38/ 40/ 41/ 71② /75/ 76*/ 77/ 78	n1/ 3/ 5/ 7/ 8/ 28/ 38/ 40/ 41/ 77/ 78/ 79	n2/ 5/ 7/ 12/ 13*/ 14/ 25/ 26/ 29*/ 30/ 38/ 41/ 48*/ 66/ 70*/ 71/ 77/ 78
	5G NR SA	n1/ 3/ 5/ 7/ 8/ 20/ 26/ 28/ 38/ 40/ 41/ 71②/ 75/ 76*/ 77/ 78	n1/ 3/ 5/ 7/ 8/ 28/ 38/ 40/ 41/ 77/ 78/ 79	n2/ 5/ 7/ 12/ 13*/ 14/ 25/ 26/ 29*/ 30/ 38/ 41/ 48*/ 66/ 70*/ 71/ 77/ 78
	DL 4 × 4 MIMO	n1/ 3/ 5/ 7/ 8/ 20/ 26/ 28/ 38/ 40/ 41/ 71② /75/ 76*/ 77/ 78	n1/ 3/ 5/ 7/ 8/ 28/ 38/ 40/ 41/ 77/ 78/ 79	n2/ 5/ 7/ 12/ 13*/ 14/ 25/ 26/ 29*/ 30/ 38/ 41/ 48*/ 66/ 70*/ 71/ 77/ 78
	UL 2 × 2 MIMO	n1/ 3/ 7/ 38/ 40/ 41/ 77/ 78	n1/ 3/ 7/ 38/ 40/ 41/ 77/ 78/ 79	n2/ 7/ 25/ 38/ 41/ 48*/ 66/ 70*/ 77/ 78
LTE	**LTE Category**	**Cat 20 (DL)/ Cat 18 (UL)**	**Cat 20 (DL)/ Cat 18 (UL)**	**Cat 20 (DL)/ Cat 18 (UL)**
	LTE	B1/ 3/ 5/ 7/ 8/ 20/ 28/ 32/ 38/ 40/ 41/ 42/ 43/ 71②	B1 / 3/ 5/ 7/ 8/ 18/ 19/ 26/ 28/ 38/ 40/ 41/ 42	B2/ 4/ 5/ 7/ 12/ 13/ 14/ 17/ 25/ 26/ 29/ 30/ 38/ 41/ 42/ 43/ 48/ 66/ 71
	DL 4 × 4 MIMO	B1/ 3/ 5/ 7/ 8/ 20/ 28/ 32/ 38/ 40/ 41/ 42/ 43/ 71②	B1 / 3/ 5/ 7/ 8/ 18/ 19/ 26/ 28/ 38/ 40/ 41/ 42	B2/ 4/ 5/ 7/ 12/ 13/ 14/ 17/ 25/ 26/ 29/ 30/ 38/ 41/ 42/ 43/ 48/ 66/ 71
WCDMA		B1/ 5/ 8	B1 / 5/ 8/ 19	-
GNSS (optional)		GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS
Certifications				
Regulatory		CE*/ RCM*/GCF*	JATE*/ TELEC*	GCF*/ PTCRB*/ FCC*/ IC*
Carrier		TBD	Docomo*/ KDDI*	Verizon*/ T-Mobile*/ AT&T*
Others		RoHS	RoHS	RoHS
Data Rates (Max.) ①				
5G SA Sub-6		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		5.47 Gbps (DL)/ 730 Mbps (UL)	5.47 Gbps (DL)/ 730 Mbps (UL)	5.47 Gbps (DL)/ 730 Mbps (UL)
LTE		2.0 Gbps (DL)/ 211 Mbps (UL)	2.0 Gbps (DL)/ 211 Mbps (UL)	2.0 Gbps (DL)/ 211 Mbps (UL)
WCDMA		42 Mbps (DL)/ 5.76 Mbps (UL)	42 Mbps (DL)/ 5.76 Mbps (UL)	-
Interfaces				
(U)SIM		1.8/ 3.0 V × 1; 1.8 V × 1 (eSIM external)	1.8/ 3.0 V × 1; 1.8 V × 1 (eSIM external)	1.8/ 3.0 V × 1; 1.8 V × 1 (eSIM external)
UART		× 3	× 3	× 3
USB 2.0/ 3.0/ 3.1		× 1	× 1	× 1
PCIe 3.0		2-Lane × 2, 1-Lane × 1	2-Lane × 2, 1-Lane × 1	2-Lane × 2, 1-Lane × 1
USXGMII		× 2	× 2	× 2
PCM		× 2	× 2	× 2
I2C		× 2	× 2	× 2
SPI		× 2	× 2	× 2
ADC		●	●	●
RESET_N		●	●	●
GPIO (QuecOpen®)		●	●	●
Antenna		Sub-6 GHz: × 8 ; GNSS: × 1	Sub-6 GHz: × 8; GNSS: × 1	Sub-6 GHz: × 8 ; GNSS: × 1

NOTE:
1. ①: The presented data rates are theoretical only, and actual values depend on network conditions.
2. ②: Optional.
3. *: Under development/In progress.
4. ●: Supported.
5. TBD: To Be Determined.

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	RG660QB-EU	RG660QB-AP	RG660QB-NA
Audio			
Audio	Digital Audio VoLTE/ VoNR (optional)	Digital Audio VoLTE/ VoNR (optional)	Digital Audio VoLTE/ VoNR (optional)
Enhanced Features			
DTMF	●	●	●
FOTA	●	●	●
(U)SIM Card Detection	●	●	●
Drivers			
USB Serial Driver	Windows 10/ 11; Linux 2.6–6.11; Android 4.x–14.x	Windows 10/ 11; Linux 2.6–6.11; Android 4.x–14.x	Windows 10/ 11; Linux 2.6–6.11; Android 4.x–14.x
GNSS Driver	Android 4.x–14.x	Android 4.x–14.x	Android 4.x–14.x
RIL Driver	Android 4.x–14.x	Android 4.x–14.x	Android 4.x–14.x
USB NDIS Driver*	Windows 10/ 11;	Windows 10/ 11;	Windows 10/ 11;
USB MBIM Driver③	Windows 10/ 11; Linux 3.18–6.7	Windows 10/ 11; Linux 3.18–6.7	Windows 10/ 11; Linux 3.18–6.7
USB GobiNet Driver	Below Linux 2.6	Below Linux 2.6	Below Linux 2.6
USB QMI_WWAN Driver	Linux 2.6–6.8	Linux 2.6–6.8	Linux 2.6–6.8
USB RNDIS Driver	Windows 10/11; Linux 2.6–6.11	Windows 10/11; Linux 2.6–6.11	Windows 10/11; Linux 2.6–6.11
PCIe MHI Driver	Linux 3.10–6.4	Linux 3.10–6.4	Linux 3.10–6.4
Electrical Features			
Supply Voltage Range	3.3–4.4 V, typ. 3.8 V	3.3–4.4 V, typ. 3.8 V	3.3–4.4 V, typ. 3.8 V
Output Power	**5G NR:** - Class 1.5 (29 dBm +2/ -3 dB) for n38/ 41/ 77/ 78 - Class 2 (26 dBm +2/ -3 dB) for n1/ 3/ 7/ 38/ 40/ 41/ 77/ 78 - Class 3 (23 dBm ±2 dB) for Other Sub-6 GHz bands **LTE:** - Class 2 (26 dBm +2/ -3 dB) for B38/ 41/ 42/ 43 - Class 3 (23 dBm ±2 dB) for Other LTE bands **WCDMA:** - Class 3 (23 dBm ±2 dB)	**5G NR:** - Class 1.5 (29 dBm +2/ -3 dB) for n38/ 41/ 77/ 78 /79 - Class 2 (26 dBm +2/ -3 dB) for n1/ 3/ 7/ 38/ 40/ 41/ 77/ 78 /79 - Class 3 (23 dBm ±2 dB) for Other Sub-6 GHz bands **LTE:** - Class 2 (26 dBm +2/ -3 dB) for B38/ 41/ 42/ 43 - Class 3 (23 dBm ±2 dB) for Other LTE bands **WCDMA:** - Class 3 (23 dBm ±2 dB)	**5G NR:** - Class 1.5 (29 dBm +1/ -3 dB) for n38/ 41/ 77/ 78 - Class 2 (26 dBm +2/ -3 dB) for n2/ 7/ 25/ 38/ 41/ 66/ 77/ 78 - Class 3 (23 dBm ±2 dB) for Other Sub-6 GHz bands **LTE:** - Class 2 (26 dBm +2/ -3 dB) for B38/ 41/ 42/ 43 - Class 3 (23 dBm ±2 dB) for Other LTE bands
Power Consumption	TBD	TBD	TBD

NOTE:
1. *: Under development/In progress.
2. ●: Supported.
3. TBD: To Be Determined.
4. ③: Optional (a license is required to use this driver).

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