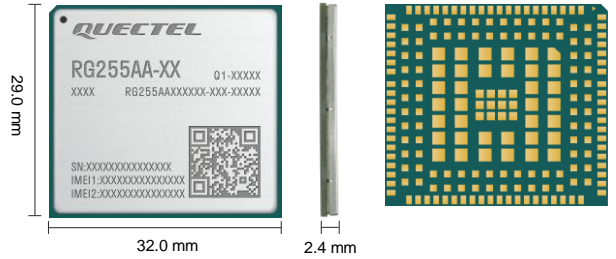


# Quectel RG255AA Series

## 5G RedCap Sub-6 GHz LGA Module



Quectel RG255AA is a series of 5G Redcap Sub-6 GHz LGA module. Adopting the 3GPP Rel-17 RedCap technology, with features of 5G LAN\*/ URLLC\*/ Slicing\*, the module supports a theoretical peak data rate of 226 Mbps in the downlink and 120 Mbps in the uplink. The module supports LTE Cat 4 and 5G Sub-6 SA mode, and is backward compatible with Rel-15 and Rel-16 networks. The module is partially compatible with Quectel 4G module EC2x series modules with smaller sizes, which can meet customers’ different application demands for medium speed, large capacity, low latency, high reliability, etc., and is convenient for customers to design.

RG255AA series module is an industrial-grade module for industrial and commercial applications only.

RG255AA series module currently contains two models: RG255AA-CN and RG255AA-EU, which meet the frequency band coverage of different countries and regions. The module employs laser engraving technology, featuring exquisite appearance, a strong metallic texture, improved heat dissipation, information that is difficult to erase, and greater adaptability to automation requirements.

A rich set of Internet protocols, industry-standard interfaces (USB 2.0, PCIe 2.0, PCM, UART, RGMII, SPI, etc.) and abundant functionalities (USB drivers for Windows 8.1/ 10/ 11, Linux and Android) extend the applicability of the module to a wide range of RedCap applications.

### Key Features

- ✓ LGA form factor, small size
- ✓ Worldwide 5G/ 4G coverage
- ✓ 5G SA mode, with 5G LAN\*/ URLLC\*/ Slicing\* features
- ✓ Feature refinements: DFOTA and VoNR/ VoLTE(optional)
- ✓ PCIe 2.0 interface for Wi-Fi

 <b>5G<sup>NR</sup></b> 5G NR Sub-6 GHz	 <b>4G</b> LTE LTE Cat 4	 <b>AT</b> Quectel Enhanced AT Commands
 Embedded Abundant Protocols	 <b>LGA</b> LGA Form Factor	 <b>VoNR</b> <b>5G</b> VoNR (optional)
 <b>USB 2.0</b> High Speed Interface	 <b>PCIe</b> PCIe 2.0 Interface	 <b>VoLTE</b> VoLTE (optional)

# Quectel RG255AA Series

RG255AA-CN		RG255AA-EU	
Region/ Operator	China	EMEA/ Southeast Asia/ Australia/ New Zealand	
Dimensions (mm)	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4	
Weight	Approx. 4.7 g	Approx. 4.7 g	
<b>Temperature Range</b>			
Operating Temperature	-35 °C to +75 °C	-35 °C to +75 °C	
Extended Temperature	-40 °C to +85 °C	-40 °C to +85 °C	
<b>Frequency Bands</b>			
5G	5G NR	3GPP Release 17 RedCap SA operation, Sub-6 GHz	3GPP Release 17 RedCap SA operation, Sub-6 GHz
	5G NR SA	n1/ 3/ 5/ 8/ 28/ 40/ 41/ 78/ 79	n1/ 3/ 5/ 7/ 8/ 20/ 28/ 38/ 40/ 41/ 77/ 78
LTE	LTE-FDD	B1/ 3/ 5/ 8	B1/ 3/ 5/ 7/ 8/ 20/ 28
	LTE-TDD	B34/ 38/ 39/ 40/ 41	B38/ 40/ 41/ 42/ 43
<b>Certifications</b>			
Regulatory	CCC/ NAL/ SRRC	CE*/ RCM*	
Carrier	TBD	TBD	
Others	TBD	TBD	
<b>Data Rates (Max.)<sup>①</sup></b>			
5G SA Sub-6 GHz	226 Mbps (DL); 120 Mbps (UL)	226 Mbps (DL); 120 Mbps (UL)	
LTE	150 Mbps (DL); 50 Mbps (UL)	150 Mbps (DL); 50 Mbps (UL)	
<b>Interfaces</b>			
(U)SIM	× 2	× 2	
UART	× 4 (Main × 1, Debug × 1, Auxiliary <sup>②</sup> × 2)	× 4 (Main × 1, Debug × 1, Auxiliary <sup>②</sup> × 2)	
USB 2.0	× 1	× 1	
PCIe 2.0 <sup>②</sup>	× 1	× 1	
RGMII/ RMII <sup>②</sup>	× 1	× 1	
SDIO <sup>②</sup>	× 1	× 1	
Digital Audio (PCM)	× 1	× 1	
I2C <sup>②</sup>	× 3	× 3	
SPI <sup>②</sup>	× 3	× 3	
ADC	× 2	× 2	
Camera (SPI) <sup>②</sup>	× 1	× 1	
LCD (MIPI) <sup>②</sup>	× 1	× 1	
Analog Audio	× 1 (1 Analog Audio Input and 1 Analog Audio Output)	× 1 (1 Analog Audio Input and 1 Analog Audio Output)	
RESET_N	●	●	
PWRKEY	●	●	
GPIOs <sup>②</sup>	●	●	
Antennas	× 2	× 2	
<b>Voice</b>			
Audio (Optional)	Digital Audio/ Analog Audio and VoNR/ VoLTE (Optional)	Digital Audio/ Analog Audio and VoNR/ VoLTE (Optional)	
Speech Codec Modes	HR/ FR/ EFR/ AMR/ AMR-WB	HR/ FR/ EFR/ AMR/ AMR-WB	
Echo Algorithm	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression	
<b>Enhanced Features</b>			
Audio Playback/ Audio Recording	●	●	
DTMF	●	●	
QuecFile <sup>®</sup>	●	●	
DFOTA	●	●	
(U)SIM Card Detection	●	●	

**NOTE:**

1. <sup>①</sup>: Theoretical only; actual values depend on network conditions.  
 2. <sup>②</sup>: Only supported by the QuecOpen<sup>®</sup> solution.

3. \*: Under development/ In progress.

4. ●: Supported.

5. TBD: To Be Determined.

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	RG255AA-CN	RG255AA-EU	
<b>Software Features</b>			
<b>Protocols</b>	TCP、UDP、SSL、TLS、FTP(S)、HTTP(S)、MQTT(S)、NTP、PING、NITZ、LwM2M*	TCP、UDP、SSL、TLS、FTP(S)、HTTP(S)、MQTT(S)、NTP、PING、NITZ、LwM2M*	
<b>Drivers</b>	<b>USB Serial Driver</b>	Windows 10/11; Linux 2.6–6.7; Android 4.x–14.x	Windows 10/11; Linux 2.6–6.7; Android 4.x–14.x
	<b>RIL Driver</b>	Android 4.x–14.x	Android 4.x–14.x
	<b>USB ECM Driver</b>	Windows 10/11; Linux 2.6–6.7	Windows 10/11; Linux 2.6–6.7
	<b>USB RNDIS Driver</b>	Windows 10/11; Linux 2.6–6.7	Windows 10/11; Linux 2.6–6.7
<b>Electrical Features</b>			
<b>Supply Voltage Range</b>	3.4–4.3 V, typ. 3.8 V	3.4–4.3 V, typ. 3.8 V	
<b>Power Consumption</b>	Typical 2.9 mA @ sleep Typical 39 mA @ Idle	Typical 1.2 mA @ sleep Typical 42 mA @ Idle	

**NOTE:**

\*: Under development/ In progress.