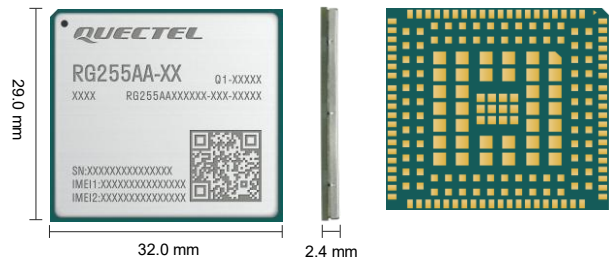


Quectel RG255AA Series

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 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

 5G NR Sub-6 GHz	 LTE Cat 4	 Quectel Enhanced AT Commands
 Embedded Abundant Protocols	 LGA Form Factor	 VoNR (optional)
 USB 2.0 High Speed Interface	 PCIe 2.0 Interface	 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 (g)	Approx. 4.7	Approx. 4.7
Temperature Range		
Operating Temperature	-35 °C to +75 °C	-35 °C to +75 °C
Extended Temperature	-40 °C to +85 °C	-40 °C to +85 °C
Frequency Bands		
5G	5G NR	3GPP Release 17 RedCap SA operation, Sub-6 GHz
	5G NR SA	n1/ 3/ 5/ 8/ 28/ 40/ 41/ 78/ 79
LTE	LTE-FDD	B1/ 3/ 5/ 8
	LTE-TDD	B34/ 38/ 39/ 40/ 41
3GPP Release 17 RedCap SA operation, Sub-6 GHz		n1/ 3/ 5/ 7/ 8/ 20/ 28/ 38/ 40/ 41/ 77/ 78
B1/ 3/ 5/ 7/ 8/ 20/ 28		B38/ 40/ 41/ 42/ 43
Certifications		
Regulatory	CCC/ NAL/ SRRC	CE*/ RCM*
Carrier	TBD	TBD
Others	TBD	TBD
Data Rates (Max.) ^①		
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)
Interfaces		
(U)SIM	× 2	× 2
UART	× 4 (Main × 1, Debug × 1, Auxiliary ^② × 2)	× 4 (Main × 1, Debug × 1, Auxiliary ^② × 2)
USB 2.0	× 1	× 1
PCIe 2.0 ^②	× 1	× 1
RGMII/ RMII ^②	× 1	× 1
SDIO ^②	× 1	× 1
Digital Audio (PCM)	× 1	× 1
I2C ^②	× 3	× 3
SPI ^②	× 3	× 3
ADC	× 2	× 2
Camera (SPI) ^②	× 1	× 1
LCD (MIPI) ^②	× 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 ^②	●	●
Antennas	× 2	× 2
Voice		
Audio (Optional)	Digital Audio/ Analog Audio and VoNR/ VoLTE	Digital Audio/ Analog Audio and VoNR/ VoLTE
Speech Codec Modes	AMR/ AMR-WB	AMR/ AMR-WB
Echo Algorithm	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression
Enhanced Features		
Audio Playback/ Audio Recording	●	●
DTMF	●	●
QuecFile®	●	●
DFOTA	●	●
(U)SIM Card Detection	●	●

NOTE:
1. ①: Theoretical only; actual values depend on network conditions.
2. ②: Only supported by the QuecOpen® solution.
3. *: Under development/ In progress.
4. ●: Supported.
5. TBD: To Be Determined.

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Quectel RG255AA Series

RG255AA-CN		RG255AA-EU
Software Features		
Protocols	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*
Drivers	USB Serial Driver	Windows 10/ 11; Linux 2.6–6.7; Android 4.x–14.x
	RIL Driver	Android 4.x–14.x
	USB ECM Driver	Windows 10/ 11; Linux 2.6–6.7
	USB RNDIS Driver	Windows 10/11; Linux 2.6–6.7
Electrical Features		
Supply Voltage Range	3.4–4.3 V, typ. 3.8 V	3.4–4.3 V, typ. 3.8 V
Power Consumption	Typical 1.9 mA @ sleep Typical 19 mA @ Idle	Typical 1.3 mA @ sleep Typical 42 mA @ Idle

NOTE:
*: Under development/ In progress.

