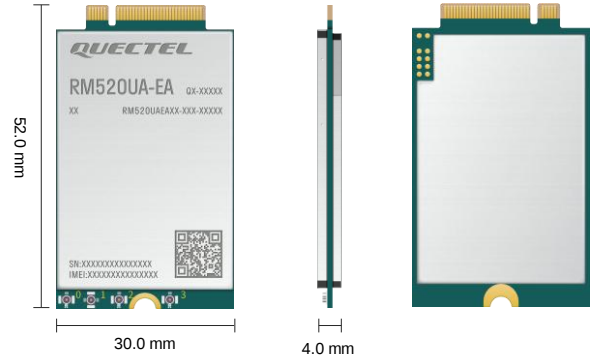


Quectel RM520UA-EA

IoT/ eMBB/ URLLC-Optimized 5G Sub-6 GHz M.2 Module



Quectel RM520UA-EA is a 5G Sub-6 GHz module specifically optimized for IoT/ eMBB/ URLLC applications with M.2 form factor. With the 3GPP Release 16 technology, it supports both 5G NSA and SA modes, and makes it backward compatible with the 4G/ 3G network.

RM520UA-EA is an industrial-grade module for industrial and commercial applications only.

RM520U-EA provides a rich set of built-in network protocols, integrates industry-standard interfaces and supports multiple drivers and software functions (such as USB/ PCIe drivers for Windows, Linux and Android operating systems). It has greatly expanded its application scope in IoT/ eMBB/ URLLC, such as industrial router, home gateway, STB, industrial PDA, rugged tablet PC, video transmission and digital signage.



Key Features

- ✓ 5G/ 4G/ 3G multi-mode module with M.2 form factor, optimized for IoT/ eMBB/ URLLC applications
- ✓ Worldwide 5G and LTE-A coverage
- ✓ 5G NSA and SA modes supported
- ✓ Feature refinements: DFOTA, VoLTE and VoNR



Max. 3.41 Gbps (DL)
Max. 1.25 Gbps (UL)



Max. 800 Mbps (DL)
Max. 210 Mbps (UL)



Max. 42.2 Mbps (DL)
Max. 11 Mbps (UL)



Embedded Abundant
Protocols



M.2 Form Factor



Quectel Enhanced
AT Commands



USB 3.1 High Speed
Interface



VoNR/ VoLTE



PCIe 3.0 Interface

Quectel RM520UA-EA

5G Sub-6		RM520UA-EA
Region/ Operator		Europe/ Asia-Pacific/ Latin America
Dimensions (mm)		30.0 × 52.0 × 4.0
Weight (g)		Approx. 12.43
Temperature Range		
Operating Temperature		-20 °C to +65 °C
Extended Temperature		TBD
Frequency Bands		
5G	5G NR	3GPP Release 16 NSA/ SA operation, Sub-6 GHz
	5G NR NSA	n1/ 3/ 5/ 7/ 8/ 20/ 26/ 28/ 38/ 40/ 41/ 71/ 75*/ 76*/ 77/ 78/ 79
	5G NR SA	n1/ 3/ 5/ 7/ 8/ 20/ 26/ 28/ 38/ 40/ 41/ 71/ 75/ 76/ 77/ 78/ 79
	MIMO	DL 4 × 4 MIMO: n1/ 3/ 5/ 7/ 8/ 20/ 26/ 28/ 38/ 40/ 41/ 71/75/ 76/ 77/ 78/ 79 UL 2 × 2 MIMO: n38/ 40/ 41/ 77/ 78/ 79
LTE	LTE Category	DL Cat 15, UL Cat 18
	LTE-FDD	B1/ 3/ 5/ 7/ 8/ 18/ 19/ 20/ 26/ 28/ 32/ 71
	LTE-TDD	B38/ 40/ 41/ 42/ 43
	DL 4 × 4 MIMO	LTE-FDD: B1/ 3/ 5/ 7/ 8/ 18/ 19/ 20/ 26/ 28/ 32/ 71 LTE-TDD: B38/ 40/ 41/ 42/ 43
UMTS	WCDMA	B1/ 5/ 8
Certifications		
Regulatory/ Conformance		Global: GCF* Europe: CE* North America: PTCRB* Australia/ New Zealand: RCM*
Carrier		TBD
Others		RoHS
Data Rates (Max.) ^①		
5G SA Sub-6		3.27 Gbps (DL)/ 1.25 Gbps (UL)
5G NSA Sub-6		3.41 Gbps (DL)/ 730 Mbps (UL)
LTE		800 Mbps (DL)/ 210 Mbps (UL)
UMTS		42.2 Mbps (DL)/ 11 Mbps (UL)
Interfaces		
(U)SIM		× 2
UART		× 1
I2C		× 1
SPI		× 1
USB 2.0		× 1
USB 3.1		× 1
PCIe 3.0		× 1
PCM		× 1
Antenna		× 4
Audio		
Voice (optional)		Digital Audio, VoLTE and VoNR

NOTE:
1. ① : Theoretical only. The actual values depend on network conditions.
2. TBD: To Be Determined.
3. *: Under development/ In progress/ On planning.



Quectel RM520UA-EA

5G Sub-6	RM520UA-EA
Enhanced Features	
DTMF	●
DFOTA	●
(U)SIM Card Detection	●
5G Network Slicing	●
5G LAN ^②	●
5G High-precision IRIG-B Timing ^②	●
URLLC ^②	●
Drivers	
USB Serial Driver	Windows 10/ 11 Linux 2.6–6.17 Android 4.x–14.x
RIL Driver	Android 4.x–16.x
PCIe Driver	Linux 3.10–6.7
USB RNDIS Driver	Windows 10/ 11 Linux 2.6–6.17
USB ECM Driver	Linux 2.6–6.17
USB NCM Driver	Linux 2.6–6.17
Electrical Features	
Supply Voltage Range	3.3–4.4 V, typ. 3.7 V
Power Consumption	48.5 uA @ Power off
	2.93 mA @ Sleep
	39.48 mA @ idle, USB 2.0
	59.92 mA @ idle, USB 3.1

NOTE:

- ②: Rel-16 protocol supported, no test data available yet.
- : Supported.