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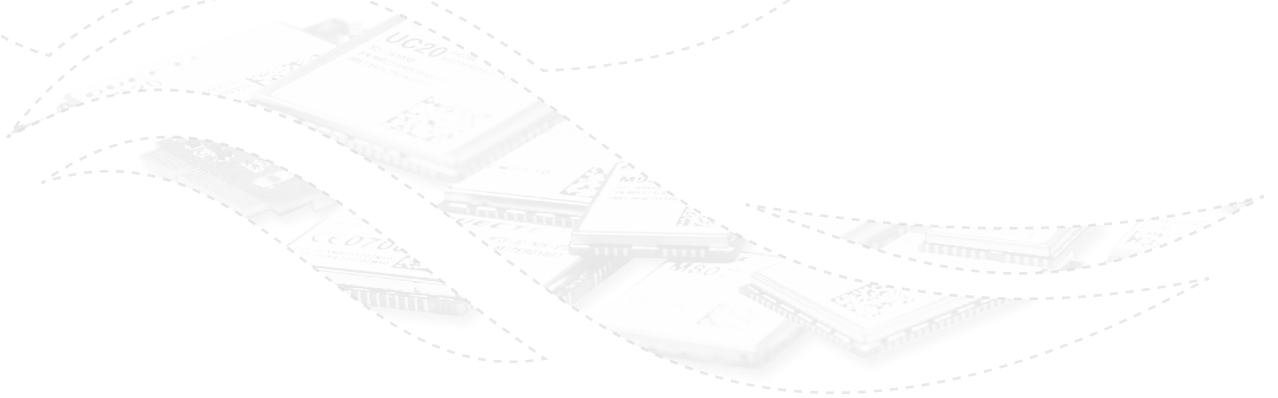
elektronikai alkatrész áruház

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DEDICATED SUPPLIER OF

M2M 
WIRELESS
MODULES






QUECTEL WIRELESS SOLUTIONS CO., LTD.

Quectel GSM/GPRS Module Family

Product	M10	M66	M66-DS	M95	MC60
Picture					
Packaging	64-pin LCC	44-pin LCC	52-pin LCC	42-pin LCC	68-pin LCC
Dimensions (mm)	29.0 × 29.0 × 3.6	15.8 × 17.7 × 2.3	15.8 × 17.7 × 2.3	19.9 × 23.6 × 2.65	16.0 × 18.7 × 2.1
Frequency Range (MHz)	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900
Weight (approx.) g	6.0	1.3	1.3	3.0	1.3
Temperature Range	-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
Data Transmission					
GPRS Multi-slot Class	12, 1-12 configurable	12, 1-12 configurable	12, 1-12 configurable	12, 1-12 configurable	12, 1-12 configurable
Data Rate (kbps)	85.6 (DL & UL)	85.6 (DL & UL)	85.6 (DL & UL)	85.6 (DL & UL)	85.6 (DL & UL)
SMS	•	•	•	•	•
Protocols	TCP/ UDP/ PPP/ HTTP/ FTP/ SMTP/ PING/ NTP/ NITZ/ MMS Sending/ SSL	TCP/ UDP/ PPP/ HTTP/ FTP/ SMTP/ PING/ NTP/ NITZ/ MMS Sending/ SSL	TCP/ UDP/ PPP/ HTTP/ FTP/ SMTP/ PING/ NTP/ NITZ/ MMS Sending	TCP/ UDP/ PPP/ HTTP/ FTP/ SMTP/ PING/ NTP/ NITZ/ MMS Sending/ SSL	TCP/ UDP/ PPP/ HTTP/ FTP/ SSL/ SMTP/ PING/ NTP/ NITZ/ SMS/ MMS Sending/ SSL
Specifications for Voice					
Speech Codec Modes	HR/ FR/ EFR/ AMR	HR/ FR/ EFR/ AMR	HR/ FR/ EFR/ AMR	HR/ FR/ EFR/ AMR	HR/ FR/ EFR/ AMR
Echo Arithmetic	Echo cancellation Echo suppression Noise reduction	Echo cancellation Echo suppression Noise reduction	Echo cancellation Echo suppression Noise reduction	Echo cancellation Echo suppression Noise reduction	Echo cancellation Echo suppression Noise reduction
Interfaces					
SIM	1.8V/ 3V	1.8V/ 3V	1.8V/ 3V	1.8V/ 3V	1.8V/ 3V
Audio Analog	2 inputs/ 2 outputs	1 input/ 2 outputs	1 input/ 2 outputs	2 inputs/ 2 outputs	1 input/ 2 outputs
Audio Digital		•	•	•	•
RTC Backup	•	•	•	•	•
UART	3	3	3	2	4
ADC	× 2, 10bit	× 1, 10bit	× 1, 10bit		× 1, 10bit
SD Card Interface	•	•	•		◦
GPIO	•				•
Temperature Detection			•	•	•
Enhanced Features					
eCall	•	•	•	•	•
Jamming Detection	•	•	•	•	•
DTMF	•	•	•	•	•
Audio Playback/ Audio Recording	•	•	•	•	•
Dual-SIM			•	•	•
QuecFOTA™	•	•	•	•	•
QuecCell	•	•	•	•	•
QuecLocator	•	•	•	•	•
QuecFile	•	•	•		•
OpenCPU™	•	•	•		•
RIL for Android	•	•	•	•	•
MUX	•	•	•	•	•
Bluetooth		•	•		•
GNSS					GPS/ GLONASS
Electrical Features					
Power Supply	3.3 ~ 4.6V	3.3 ~ 4.6V	3.3 ~ 4.6V	3.3 ~ 4.6V	3.3 ~ 4.6V
Low Power Consumption	1.3mA @DRX=5 1.2mA @DRX=9	1.3mA @DRX=5 1.2mA @DRX=9	1.3mA @DRX=5 1.2mA @DRX=9	1.3mA @DRX=5 1.2mA @DRX=9	1.2mA @DRX=5 0.8mA @DRX=9
Certifications					
Certifications	CE/ GCF/ PTCRB/ FCC/ IC/ ANATEL/ Rogers/ NCC/ TELCEL/ UCRF/ ICASA	CE/ ANATEL/ ICASA	UCRF	CE/ GCF/ Vodafone/ PTCRB/ FCC/ IC/ ANATEL/ Rogers/ RCM/ NCC/ TELCEL/ UCRF/ ICASA	CE
Recommended Applications					
Recommended Applications	Telematics, Smart Metering, Mobile POS Terminal, Gateway, Security, Tracking and Tracing, Remote Maintenance and Control, Mobile Computing, Healthcare, etc.				

* Under development


Quectel UMTS/HSPA(+) Module Family



Product	UC15	UC15 Mini PCIe	UC20	UC20 Mini PCIe	UG95	
Picture						
Packaging	108-pin LCC	52-pin Mini PCIe	112-pin LCC	52-pin Mini PCIe	102-pin LGA	
Dimensions (mm)	29.0 × 29.0 × 2.5	51.0 × 30.0 × 4.9	32.0 × 29.0 × 2.5	51.0 × 30.0 × 4.9	19.9 × 23.6 × 2.2	
3G	UMTS/HSDPA	UMTS/HSDPA	UMTS/HSPA+	UMTS/HSPA+	UMTS/HSPA	
Frequency Bands (MHz)	-E (for Europe)	900/2100@UMTS 900/1800@GSM	900/2100@UMTS 900/1800@GSM	900/2100@UMTS 850/900/1800/1900@GSM	900/2100@UMTS 850/900/1800/1900@GSM	900/2100@UMTS 900/1800@GSM
	-A (for America)	850/1900@UMTS 850/900/1800/1900@GSM		850/1900@UMTS	850/1900@UMTS	850/1900@UMTS
	-G (for Global)			800/850/900/1900/2100@UMTS 850/900/1800/1900@GSM	800/850/900/1900/2100@UMTS 850/900/1800/1900@GSM	
	-T (for Thailand)	850/2100@UMTS 850/900/1800/1900@GSM				
Weight (approx.) g	4.3	9.3	4.9	9.8	2.5	
Temperature Range	-40 °C ~ +85 °C	-40 °C ~ +80 °C	-40 °C ~ +85 °C	-40 °C ~ +80 °C	-40 °C ~ +85 °C	
Data Transmission						
HSPA data rate (Mbps)	3.6 (DL)	3.6 (DL)	14.4 (DL)/ 5.76 (UL)	14.4 (DL)/ 5.76 (UL)	7.2 (DL)/ 5.76 (UL)	
UMTS data rate (Kbps)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	
GPRS data rate (Kbps)	85.6 (DL)/ 85.6 (UL)	85.6 (DL)/ 85.6 (UL)	85.6 (DL)/ 85.6 (UL)	85.6 (DL)/ 85.6 (UL)	85.6 (DL)/ 85.6 (UL)	
EDGE data rate (Kbps)	236.8 (DL)	236.8 (DL)	236.8 (DL)/ 236.8 (UL)	236.8 (DL)/ 236.8 (UL)	236.8 (DL)	
SMS	•	•	•	•	•	
CSD	•	•	•	•	•	
Protocols	TCP/UDP/PPP/MMS/FTP/SMTP/SMTPS/HTTP/HTTPS/PING/SSL	TCP/UDP/PPP/MMS/FTP/SMTP/SMTPS/HTTP/HTTPS/PING/SSL	PPP/TCP/UDP/FTP/HTTP/FILE/MMS/SMTP/SSL	PPP/TCP/UDP/FTP/HTTP/FILE/MMS/SMTP/SSL	TCP/UDP/PPP/MMS/FTP/FTP/SMTP/SMTPS/HTTP/HTTPS/NTP/PING/SSL	
Interfaces						
SIM	1.8V/ 3V	1.8V/ 3V	1.8V/ 3V	1.8V/ 3V	1.8V/ 3V	
UART	1	1	2	1	1	
USB	2.0 Hi-Speed	2.0 Hi-Speed	2.0 Hi-Speed	2.0 Hi-Speed	2.0 Hi-Speed	
Audio Analog	Optional ¹	Optional ¹				
Audio Digital (PCM)	Optional ¹	Optional ¹	Optional ¹	Optional ¹	Optional ¹	
RTC Backup			•		•	
ADC	× 2, 12bits		× 2, 15bits			
GPIO	•		•			
Antenna	Pads for Primary	Connector for Primary	Pads for Primary, Rx-diversity and GNSS	Connectors for Primary, Rx-diversity and GNSS	Pads for Primary	
SIM Card Holder				Optional for -E Version		
Enhanced Features						
eCall	•	•	•	•	◦	
DTMF	•	•	•	•	•	
QuecFOTA™	•	•	•	•	•	
DFOTA	•	•	•	•	•	
Audio Playback/ Audio Recording	•	•	•	•	•	
QuecLocator	•	•	•	•	•	
QuecFile	•	•	•	•	•	
RIL Driver	Windows CE6.0*, Android 2.3/4.0/4.2, Windows Mobile 6.1/6.5*	Windows CE6.0*, Android 2.3/4.0/4.2, Windows Mobile 6.1/6.5*	Windows CE6.0, Android 2.3/4.0/4.2/	Windows CE6.0, Android 2.3/4.0/4.2	◦	
NDIS			Windows XP/Vista/7/8, Linux 2.6/3.0	Windows XP/Vista/7/8, Linux 2.6/3.0		
MUX	Linux 2.6 or later, Android 2.3 or later	Linux/ Android	Linux 2.6/3.0, Android 2.3/4.0/4.2	Linux 2.6/3.0, Android 2.3/4.0/4.2	◦	
USB Serial Driver	Windows XP/Vista/7/8, Windows CE5.0/ 6.0/7.0, Windows Mobile 6.1*/6.5*, Linux 2.6 or later, Android 2.3 or later	Windows XP/Vista/7/8, Windows CE5.0/ 6.0/7.0, Windows Mobile 6.1/6.5*, Linux/ Android	Windows XP/Vista/7/8, Windows CE5.0/6.0/7.0, Android 2.3/4.0/4.2, Linux 2.6/3.0	Windows XP/Vista/7/8, Windows CE5.0/6.0/7.0, Android 2.3/4.0/4.2, Linux 2.6/3.0	Windows XP/Vista/7, Linux 2.6/3.0, Android 2.3/4.0/4.2	
SIM Detection	•		•			
GNSS			GPS/GLONASS	GPS/GLONASS		
Firmware Update	via USB/ UART Interface	via USB/ UART Interface	via USB/ UART Interface	via USB/ UART Interface	via USB/ UART Interface	
Electrical Features						
Supply Voltage Range	3.3 ~ 4.3V	3.0~3.6V, typ. 3.3V	3.3 ~ 4.3V	3.0~3.6V, typ. 3.3V	3.3~4.3V, typ. 3.8V	
Power Consumption	1.8mA@ GSM sleep, DRX=9 1.7mA@ UMTS sleep, DRX=9	3.5mA@ GSM sleep, DRX=9 3.3mA@ UMTS sleep, DRX=9	1.5mA@GSM sleep, DRX=9 1.1mA@UMTS sleep, DRX=9	3.1mA@GSM sleep, DRX=9 3.0mA@UMTS sleep, DRX=9	0.96mA@GSM sleep, DRX=9 1.15mA@UMTS sleep, DRX=9	
Certifications						
Certifications	CE/ GCF/ FCC/ PTCRB/ IC/ AT&T/ Rogers/ NCC/ NBTC/ OFCA/ RCM/ CCC/ SRRC/ NAL/ DoC ²	CE/ GCF/ NCC/ PTCRB/ FCC/ DoC ²	CE/ FCC/ IC/ KC/ NCC/ OFCA/ GCF/ PTCRB/ RCM/ SKT/ AT&T/ Rogers/ ANATEL/ Vodafone/ ICASA/ NAL/ NBTC/ JATE/ TELECOM/ SRRC/ DoC ²	CE/ FCC/ PTCRB/ GCF/ RCM/ AT&T/ DoC ²	CE/ GCF/ FCC/ IC/ ICASA/ PTCRB/ AT&T/ Rogers/ DoC ²	
Recommended Applications						
Recommended Applications	Telematics, Smart Metering, Mobile POS Terminal, Gateway, Security, Tracking and Tracing, Remote Maintenance and Control, Networking, Mobile Computing, Healthcare, etc.					

Note 1: Only supported in Telematics Version.
Note 2: for Russia

◦ & * Under development

Quectel LTE Module Family

UG96	
	
102-pin LGA	
22.5 × 26.5 × 2.2	
UMTS/HSPA	
800/850/900/1900/2100@UMTS 850/900/1800/1900@GSM	
3.1	
-40 °C ~ +85 °C	
7.2 (DL)/ 5.76 (UL)	
384 (DL)/ 384 (UL)	
85.6 (DL)/ 85.6 (UL)	
236.8 (DL)/ 236.8 (UL)	
TCP/ UDP/ PPP/ MMS/ HTTP/ HTTPS/ SMTP/ SMTPS/ FTP/ NTP/ NITZ/ PING/ SSL	
1.8V/ 3V	
1	
2.0 Hi-Speed	
Optional ¹	
Pads for Primary	
Windows XP/Vista/7, Linux 2.6/3.0, Android 2.3/4.0/4.2	
via USB/ UART Interface	
3.3~4.3V, typ. 3.8V	
1.1mA@GSM sleep, DRX=9 1.7mA@UMTS sleep, DRX=9	
CE/ FCC/ GCF/ PTCRB/ ANATEL/ RCM/ IFETEL/ Movistar/ ICASA/ DoC ²	

Product	EC20 / EC20 Mini PCIe	EC20 R2.0	
Picture			
Packaging	140-pin LCC (EC20)/ 52-pin (EC20 Mini PCIe)	144-pin LCC	
Dimensions (mm)	32.0 × 29.0 × 2.4 (EC20) 51.0 × 30.0 × 4.9 (EC20 Mini PCIe)	32.0 × 29.0 × 2.4	
4G	LTE Cat3	LTE Cat4	
Frequency Bands (MHz)	-E (for EMEA/ Korea/ Thailand)	B1/B3/B5/B7/B8/B20 @FDD-LTE, B1/B5/B8 @WCDMA 850/900/1800/1900 @GSM	
	-A (for America)	B2/B4/B5/B12/B17 @FDD-LTE, B2/B4/B5 @WCDMA 850/1900 @GSM	
	-C (for China)	B1/B3/B8 @FDD-LTE, B38/B39/B40/B41 @TDD-LTE B1/B8 @WCDMA, B34/B39 @TD-SCDMA, 900/1800 @GSM	B1/B3/B8 @FDD LTE, B38/B39/B40/B41 @TDD LTE B1/B8 @WCDMA, B34/B39 @TD-SCDMA, 900/1800 @GSM
	-CE (for China/ India)	B1/B3 @FDD-LTE, B38/B39/B40/B41 @TDD-LTE B1/B8 @WCDMA, B34/B39 @TD-SCDMA, BC0 @CDMA2000 1X/EVDO, 900/1800 @GSM	B1/B3/B8 @FDD LTE, B38/B39/B40/B41 @TDD LTE B1/B8 @WCDMA, B34/B39 @TD-SCDMA, BC0 @CDMA2000 1X/EVDO, 900/1800 @GSM
Weight (approx.) g	4.6	4.8	
Temperature Range	-40 °C ~ +85 °C (EC20)/ -40 °C ~ +80 °C (EC20 Mini PCIe)	-40 °C ~ +85 °C	
Data Transmission			
LTE data rate (Mbps)	LTE-FDD Max 100 (DL)/ Max 50 (UL) LTE-TDD Max 61 (DL)/ Max 18 (UL)	LTE-FDD Max 150Mbps (DL) Max 50Mbps (UL) LTE-TDD Max 130Mbps (DL) Max35Mbps (UL)	
DC-HSPA+ data rate (Mbps)	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)	
WCDMA data rate (Kbps)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	
TD-SCDMA data rate (Mbps)	4.2 (DL)/ 2.2 (UL)	4.2 (DL)/ 2.2 (UL)	
EDGE data rate (Kbps)	236.8 (DL)/ 236.8 (UL)	236.8 (DL)/ 236.8 (UL)	
GPRS data rate (Kbps)	85.6 (DL)/ 85.6 (UL)	85.6 (DL)/ 85.6 (UL)	
SMS	•	•	
CSD	•	•	
Protocols	TCP/ UDP/ PPP/ FTP/ HTTP/ HTTPS/ SMTP/ MMS/ FTPS/ SMTPS/ NTP/ PING/ QMI/ SSL/ NITZ	TCP/ UDP/ PPP/ FTP/ HTTP/ HTTPS/ SMTP/ MMS/ FTPS/ SMTPS/ NTP/ PING/ QMI/ SSL*	
Interfaces			
SIM	1.8V/ 3V	1.8V/ 3V	
UART	1	1	
USB	2.0 Hi-Speed	2.0 Hi-Speed	
IIC	•	•	
Audio Digital (PCM)	Optional ¹	Optional ¹	
ADC	× 2, 15bits (EC20)		
Antenna	Pads for Primary, Rx-diversity and GNSS	Connector for Primary, Rx-diversity and GNSS	
SIM Card Holder	EC20 Mini PCIe		
Enhanced Features			
TTS	•	◦	
DTMF	•	◦	
DFOTA	•	•	
QM/ Rmnet	•	•	
Audio Playback/ Audio Recording	Optional ¹	Optional ¹	
QuecLocator	•	◦	
RIL Driver	Android 2.3/ 4.0/ 4.2/ 4.4/ 5.0	Android 4.0/ 4.2/ 4.4/ 5.0/ 5.1/ 6.0	
NDIS	Windows XP/ Vista/ 7/ 8	Windows XP/ Vista/ 7/ 8/ 8.1/ 10	
ECM	Linux 2.6 or later	Linux 2.6 or later	
Gobinet	Linux 2.6 or later	Linux 2.6 or later	
Linux qml wwan	Linux 2.6 or later	Linux 3.4 or later	
USB Serial Driver	Windows XP/ Vista/ 7/ 8, Linux 2.6 or later, Android 2.3 or later	Windows XP/ Vista/ 7/ 8/ 8.1/ 10 Linux 2.6 or later, Android 4.0/ 4.2/ 4.4/ 5.0/ 5.1/ 6.0	
SIM Detection	•	•	
GNSS	GPS/ GLONASS	GPS/ GLONASS/ Beidou/ Galileo/ QZSS	
Firmware Update	via USB/ UART Interface	via USB/ UART Interface	
Electrical Features			
Supply Voltage Range	3.3~4.3 V, typ. 3.8V	3.3~4.3 V	
Power Consumption	20uA@ Power off/ 3mA@ Sleep	20uA @Power off/ 3mA @Sleep, Typ./ 22mA @Idle	
Certifications			
Certifications	CCC/ CE/ NAL/ SRRC/ DoC ² / KC/ SKT/ NCC/ ICASA/ GCF/ KT ² / FCC/ ANATEL	CCC/ NAL/ SRRC	
Recommended Applications			
Recommended Applications	Telematics, Smart Metering, Mobile POS Terminal, Gateway, Security, Tracking and Tracing, Remote Maintenance and Control, Networking, Mobile Computing, Healthcare, etc.		

Note 1: Only supported in Telematics Version.
Note 2: for Russia

◦ & * Under development

Quectel LTE Module Family

Product		EC21/ EC21 Mini PCIe	EC25/ EC25 Mini PCIe
Picture			
Packaging		144-pin LCC (EC21)/ 52-pin (EC21 Mini PCIe)	144-pin LCC (EC25)/ 52-pin (EC25 Mini PCIe)
Dimensions (mm)		32.0 × 29.0 × 2.4 (EC21)/ 51.0 × 30.0 × 4.9 (EC21 Mini PCIe)	32.0 × 29.0 × 2.4 (EC25)/ 51.0 × 30.0 × 4.9 (EC25 Mini PCIe)
4G		LTE Cat1	LTE Cat4
Frequency Bands (MHz)	-E (for EMEA/ Korea/ Thailand)	B1/B3/B5/B7/B8/B20@FDD LTE; B1/B5/B8@WCDMA; B3/B8@GSM	B1/B3/B5/B7/B8/B20@FDD LTE; B38/B40/B41@TDD LTE; B1/B5/B8@WCDMA; B3/B8@GSM
	-V (VZW)	B4/B13@FDD LTE	B4/B13@FDD LTE
	-A (AT&T)	B2/B4/B12@FDD LTE; B2/B4/B5@WCDMA	B2/B4/B12@FDD LTE; B2/B4/B5@WCDMA
	-AU (for ANZ/ Taiwan/ Brazil)	B1/B3/B4/B5/B7/B8/B28@FDD LTE; B40@TDD LTE; B1/B2/B5/B8@WCDMA; B2/B3/B5/B8@GSM	B1/B3/B4/B5/B7/B8/B28@FDD LTE; B40@TDD LTE; B1/B2/B5/B8@WCDMA; B2/B3/B5/B8@GSM
	-AUT (for Telstra)	B1/B3/B5/B7/B28@FDD LTE; B1/B5@WCDMA	
	-AUTL (for Telstra)	B3/B7/B28@FDD LTE	
	-J (for Japan)	B1/B3/B8/B18/B19/B26@FDD LTE;	B1/B3/B8/B18/B19/B26@FDD LTE; B41@TDD LTE; B1/B6/B19@WCDMA
	-KL (for Korea)	B1/B3/B5/B7/B8@FDD LTE	
-CT (for China)	B1/B3/B5* @FDD LTE; B41@TDD LTE		
Weight (approx.) g		4.8 (EC21)/ 9.8 (EC21 Mini PCIe)	4.6 (EC25)/ 9.8 (EC25 Mini PCIe)
Temperature Range		-40 °C ~ +85 °C (EC21)/ -40 °C ~ +80 °C (EC21 Mini PCIe)	-40 °C ~ +85 °C (EC25)/ -40 °C ~ +80 °C (EC25 Mini PCIe)
Data Transmission			
LTE data rate (Mbps)		LTE-FDD: Max 8.96 (DL)/ Max 3.1 (UL)	LTE-FDD: Max 150 (DL)/ Max 50 (UL) LTE-TDD: Max 130 (DL)/ Max 35 (UL)
DC-HSPA+ data rate (Mbps)		Max 42 (DL)/ Max 5.76 (UL)	Max 42 (DL)/ Max 5.76 (UL)
WCDMA data rate (Kbps)		Max 384 (DL)/ Max 384 (UL)	Max 384 (DL)/ Max 384 (UL)
EDGE data rate (Kbps)		Max 236.8 (DL)/ Max 236.8 (UL)	Max 236.8 (DL)/ Max 236.8 (UL)
GPRS data rate (Kbps)		Max 85.6 (DL)/ Max 85.6 (UL)	Max 85.6 (DL)/ Max 85.6 (UL)
SMS		•	•
CSD		•	•
Protocols		TCP/ UDP/ PPP/ FTP/ HTTP/ HTTPS*/ SMTP*/ MMS*/ FTPS*/ SMTPS*/ NTP/ PING/ QMI/ SSL*	TCP/ UDP/ PPP/ FTP/ HTTP/ HTTPS*/ SMTP*/ MMS*/ FTPS*/ SMTPS*/ NTP/ PING/ QMI/ SSL*
Interfaces			
SIM		1.8V/ 3V	1.8V/ 3V
UART		1	1
USB		2.0 HS	2.0 HS
IIC		•	•
Audio Digital (PCM)		Optional ¹	Optional ¹
ADC		× 2, 15bits (EC21)	× 2, 15bits (EC25)
GPIO		•	•
Antenna		Pads for Primary, Rx-diversity and GNSS	Pads for Primary, Rx-diversity and GNSS
Enhanced Features			
eCall		○	○
DTMF		○	○
DFOTA		•	•
QM/ Rmnet		•	•
Audio Playback/ Audio Recording		Optional ¹	Optional ¹
QuecLocator		○	○
QuecFile		•	•
RIL Driver		Android 4.0/ 4.2/ 4.4/ 5.0/ 5.1/ 6.0	Android 4.0/ 4.2/ 4.4/ 5.0/ 5.1/ 6.0
NDIS		Windows XP/ Vista/ 7/ 8/ 8.1/ 10	Windows XP/ Vista/ 7/ 8/ 8.1/ 10
ECM		Linux 2.6 or later	Linux 2.6 or later
Gobinet		Linux 2.6 or later	Linux 2.6 or later
Linux qml wwan		Linux 3.4 or later	Linux 3.4 or later
USB Serial Driver		Windows XP/ Vista/ 7/ 8/ 8.1/ 10 Linux 2.6 or later, Android 4.0/ 4.2/ 4.4/ 5.0/ 5.1/ 6.0	Windows XP/ Vista/ 7/ 8/ 8.1, Linux 2.6 or later, Android 4.0/ 4.2/ 4.4/ 5.0/ 5.1/ 6.0
SIM Detection		•	•
GNSS		GPS/ GLONASS/ Beidou/ Galileo/ QZSS	GPS/ GLONASS/ Beidou/ Galileo/ QZSS
Firmware Update		via USB/ UART Interface	via USB/ UART Interface
Electrical Features			
Supply Voltage Range		3.3~4.3 V (EC21)/ 3.0~3.6 V (EC21 Mini PCIe)	3.3~4.3 V (EC25)/ 3.0~3.6 V (EC25 Mini PCIe)
Power Consumption		20uA @Power off/ 3mA @Sleep, Typ./ 22mA @Idle (EC21) 3.5mA @Sleep, Typ./ 34mA @Idle (EC21 Mini PCIe)	20uA @Power off/ 3mA @Sleep, Typ./ 22mA @Idle (EC25) 3.6mA @Sleep, Typ./ 35mA @Idle (EC25 Mini PCIe)
Certifications			
Certifications		FCC/ CE/ CCC/ SRRC*/ NAL*/ PTCRB*/ AT&T*/ GCF*/ Verizon*/ RCM/ Telstra/ JATE&TELEC*/ KC*/ SKT*	FCC/ CE/ PTCRB*/ AT&T*/ GCF*/ Verizon*/ RCM/ JATE&TELEC*/ KC*/ SKT*
Recommended Applications			
Recommended Applications		Telematics, Smart Metering, Mobile POS Terminal, Gateway, Security, Tracking and Tracing, Remote Maintenance and Control, Networking, Mobile Computing, Healthcare, etc.	

Note 1: Only supported in Telematics Version.

* Under development






Quectel Smart Module Family

Product		SC20 Smart Module
Picture		
Packaging		210-pin (146 LCC pads and 64 LGA pads)
Dimensions (mm)		40.5 × 40.5 × 2.8
4G		LTE Cat4
Frequency Bands (MHz)	-CE (for China/ India)	B1/B3/B8 @FDD LTE; B38/B39/B40/B41@TDD LTE; B34/B39@ TD-SCDMA; BC0 @EVDO/CDMA; B1/B8 @WCDMA; 900/1800MHz @GSM
	-E* (for EMEA/ Korea/ Thailand)	B1/B3/B5/B7/B20 @FDD LTE; B38/B40/B41 @TDD LTE; B1/B5/B8 @WCDMA; 850/900/1800/1900MHz @GSM
	-A* (for AT&T)	B2/B4/B5/B7/B12/B13/B25/B26 @FDD LTE; B1/B2/B4/B5/B8 @WCDMA; 850/1900MHz @GSM
	-AU* (for ANZ/ Taiwan/ Brazil)	B1/B3/B5/B7/B8/B28 @FDD LTE; B40 @TDD LTE; B1/B2/B5/B8 @WCDMA; 850/900/1800/1900MHz @GSM
	-J* (for Japan)	B1/B3/B8/B18/B19/B26 @FDD LTE; B41 @TDD LTE; B1/B6/B19 @WCDMA
-W (Wi-Fi)		Only Wi-Fi & BT
OS		Android 5.1
LTE Version		3GPP E-UTRA Release 11
Bandwidth		1.4/3/5/10/15/20MHz
Antenna		DL MIMO 2×2, supports Rx-diversity
Supply Voltage Range		3.5V ~ 4.2V, 3.8V Typ.
Weight (approx.) g		9.6
Temperature Range		-40 °C ~ +85 °C
Control via AT Commands		3GPP TS27.007 and enhanced AT commands
Data Transmission		
LTE data rate (Mbps)		LTE-FDD: Max 150 (DL)/ Max 50 (UL) LTE-TDD: Max 61 (DL)/ Max18 (UL)
DC-HSPA+ data rate (Mbps)		Max 42 (DL)/ Max 5.76 (UL)
WCDMA data rate (Kbps)		Max 384 (DL)/ Max 384 (UL)
TD-SCDMA (Mbps)		Max 4.2 (DL)/ Max 2.2 (UL)
EDGE data rate (Kbps)		Max 236.8 (DL)/ Max 236.8 (UL)
GPRS data rate (Kbps)		Max 85.6 (DL)/ Max 85.6 (UL)
SMS		•
CSD		•
Enhanced Features		
Firmware Update		Firmware updated via USB
VoLTE		•
WLAN		2.4G, 802.11b/g/n (SC20-CE/-W) 2.4G/ 5.8G, 802.11a/b/g/n (SC20-E/ -A/ -AU/ -J)*
BT		BT2.1+EDR/ 3.0/ 4.1LE
GNSS		GPS/ GLONASS/ BeiDou
Interfaces		
LCD		4 lanes MIPI_DSI, up to 1.5Gbps each, HD(720P) @60fps
Camera		Use MIPI_CSI, up to 1.5Gbps per lane, support two cameras 2-lane MIPI_CSI for rear camera, up to 8MPs 1-lane MIPI_CSI for front camera, up to 2MP
Touch		Capacitive-screen
Audio		MP3, AAC, AAC+, eAAC, AMR-NB, - WB, G.711, WMA 9/10 Pro
Video		Encode: 30fps 720P (H.264), 30fps WVGA (MPEG-4/ VP8) Decode: 30fps1080P (H.264/ MPEG-4/ VP8/ H.265 DivX4/5/6), 30fps WVGA (H.263)
USB 2.0 Device		High Speed, 480Mbps
I2C		×3
USIM		×2, support 1.8/ 3V
GPIO		×25
UART		×2, high-speed UARTs
SDIO		SDIO×1, 3.0, 4bit SDIO
Antenna		4 pads: Main Antenna, Diversity Antenna, GNSS Antenna, Wi-Fi/BT Antenna
ADC		×3 (BAT_SNS, BAT_THERM, ADC)
Certifications		
Certifications		CCC/ CE*/ FCC*/ GCF*/ PTCRB*/ AT&T*/ Verizon*/ ACMA/ RCM*
Recommended Applications		
Recommended Applications		Telematics, Smart Metering, Mobile POS Terminal, Gateway, Security, Tracking and Tracing, Remote Maintenance and Control, Networking, Mobile Computing, Healthcare, etc.

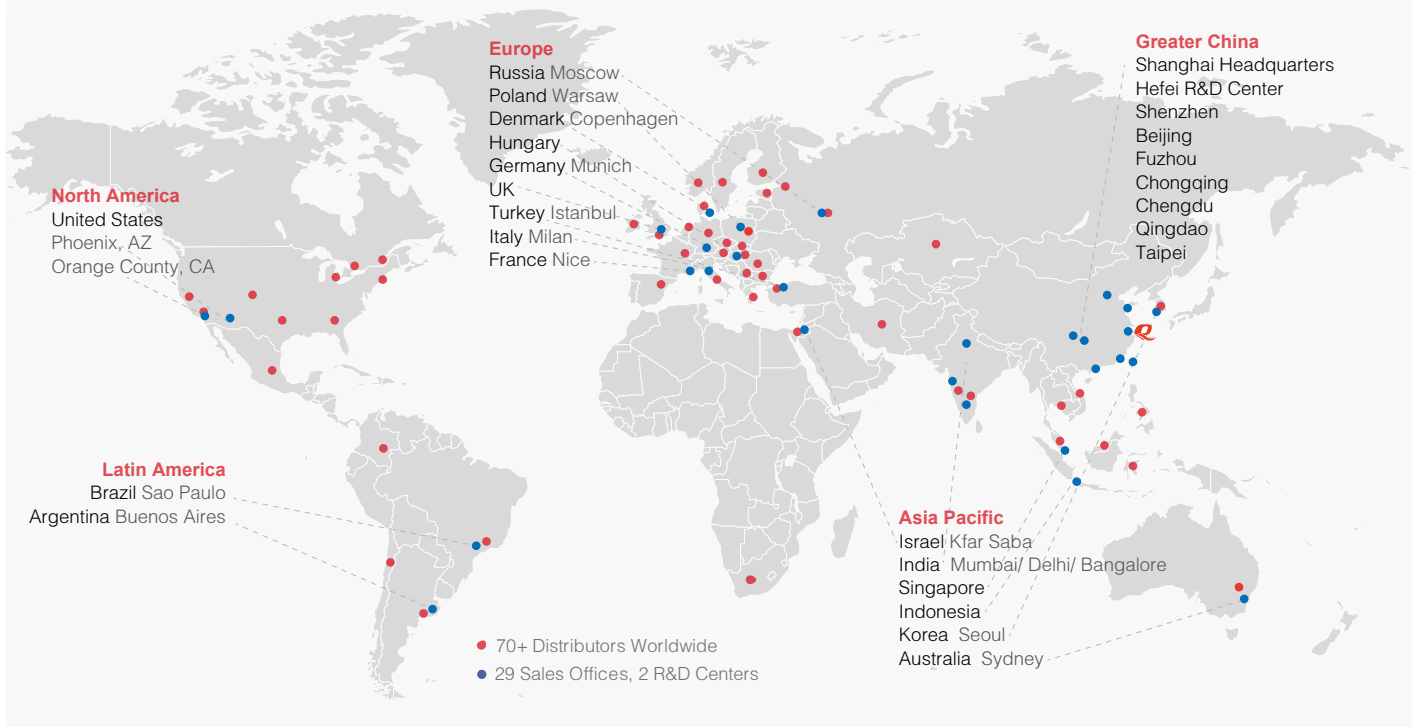
Note 1: Only supported in Telematics Version.

* Under development

Quectel GNSS Module Family

Product		Standalone Modules			Patch Antenna Modules	
		L26	L70/ L70-R/ L70-RL	L76/ L76B/ L76-L	L80/ L80-R	L86
		Compatible			Compatible	
Picture						
GNSS		GLONASS/ GPS/ QZSS	GPS/ QZSS	GLONASS/ GPS/ QZSS(L76) GPS/ BeiDou(L76B)	GPS/ QZSS	GLONASS/ GPS/ QZSS
Packaging		24-pin LCC	18-pin LCC	18-pin LCC	12-pin LCC	12-pin LCC
Dimensions (mm)		16.0 × 12.2 × 2.4	9.7 × 10.1 × 2.5	9.7 × 10.1 × 2.5	16.0 × 16.0 × 6.45	18.4 × 18.4 × 6.45
Weight (approx.)		1.0	0.6	0.6	6.0	7.6
Temperature Range	Operation	-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
	Storage	-45 °C to +125 °C	-45 °C to +125 °C	-45 °C to +125 °C	-45 °C to +125 °C	-45 °C to +125 °C
General Features						
Chip Solution		MT3333	MT3339 (L70) MT3337 (L70-R/ L70-RL)	MT3333	MT3339 (L80) MT3337 (L80-R)	MT3333
L1 Band Receiver (C/A Code)	Channel Number	33 Track/ 99 Acq.	22 Track/ 66 Acq.	33 Track/ 99 Acq.	22 Track/ 66 Acq.	33 Track/ 99 Acq.
	SBAS	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN (Supported by L70)	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN
A-GPS		EASY™/ EPO	EASY™/ EPO	EASY™/ EPO	EASY™/ EPO	EASY™/ EPO
Sensitivity	Autonomous Acquisition	-148dBm	-148dBm (L70/ L70-R) -149dBm (L70-RL)	-148dBm (L76/ L76B) -149dBm (L76-L)	-148dBm	-149dBm
	Reacquisition	-160dBm	-160dBm (L70/ L70-R) -161dBm (L70-RL)	-160dBm (L76/ L76B) -161dBm (L76-L)	-160dBm	-161dBm
	Tracking	-167dBm	-165dBm (L70/ L70-R) -167dBm (L70-RL)	-165dBm (L76/ L76B) -167dBm (L76-L)	-165dBm	-167dBm
TTFF (Time To First Fix)	Cold Start	<35s, Autonomous <15s, With EASY™	<35s, Autonomous <15s, With EASY™	<35s, Autonomous <15s, With EASY™	<35s, Autonomous <15s, With EASY™	<35s, Autonomous <15s, With EASY™
	Warm Start	<30s, Autonomous <5s, With EASY™	<30s, Autonomous <5s, With EASY™	<30s, Autonomous <5s, With EASY™	<30s, Autonomous <5s, With EASY™	<30s, Autonomous <5s, With EASY™
	Hot Start	<1s	<1s	<1s	<1s	<1s
Position Accuracy (autonomous)		<2.5m CEP	<2.5m CEP	<2.5m CEP	<2.5m CEP	<2.5m CEP
Velocity Accuracy (without aid)		<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s	<0.1m/s
Maximum Acceleration Accuracy (without aid)		<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²	<0.1m/s²
Timing Accuracy		<10ns	<10ns	<10ns	<10ns	<10ns
Max Update Rate		10Hz	10Hz (L70) 5Hz (L70-R/ L70-RL)	10Hz	10Hz	10Hz
Baud Rate(default)		9600bps	9600bps	9600bps	9600bps	9600bps
Geo-fence		•	•	•	•	•
Jamming Detection		•	•	•	•	•
Anti-jamming		•	•	•	•	•
Built-in LNA		•	Supported by L70-RL	Supported by L76-L	•	•
Electrical Data						
Power Supply		2.8V to 4.3V	2.8V to 4.3V	2.8V to 4.3V	3.0V to 4.3V	3.0V to 4.3V
I/O Voltage		2.7V to 2.9V	2.7V to 2.9V	2.7V to 2.9V	2.7V to 2.9V	2.7V to 2.9V
Power Consumption	Acquisition	29mA (GPS+GLONASS) 26mA (GPS)	18mA (L70) 16mA (L70-R) 21mA (L70-RL)	25mA (GPS+GLONASS)/ 21mA (GPS) (L76) 23mA (GPS+BeiDou) (L76B) 29mA (GPS+GLONASS) (L76-L)	25mA	30mA (GPS+GLONASS)
	Tracking	21mA (GPS+GLONASS) 18mA (GPS)	12mA (L70) 13mA (L70-R) 18mA (L70-RL)	18mA (GPS+GLONASS)/ 15mA (GPS) (L76) 18mA (GPS+BeiDou) (L76B) 22mA (GPS+GLONASS) (L76-L)	20mA	26mA (GPS+GLONASS)
	Backup	7uA	7uA (L70) 8uA (L70-R/ L70-RL)	7uA	7uA	7uA
Interfaces						
UART		•	•	•	•	•
IIC (NMEA)				Supported by L76-L		
Reset		•	•	•	•	•
Time Pulse		•	•	•	•	•
Antenna						
Short-Circuit Protection & Open-Circuit Detection		•			Supported by L80	•
Antenna Automatic Switch					•	•
Antenna Type		Active or passive	Active or passive	Active or passive	Embedded patch antenna or external active antenna	Embedded patch antenna or external active antenna
Antenna Power		External or internal	External or internal	External or internal	Internal	Internal
Certifications						
Certifications		CE	CE	CE	CE	CE
Recommended Applications						
Recommended Applications		Vehicle Tracking and Tracing, Pet Tracking, Asset Tracking, Connected PND, GIS Application, Security, Industrial PDA, Digital Camera, etc.				

Global Presence



Overseas

Europe

Email: europe@quectel.com

Germany

Email: germany@quectel.com

France

Email: france@quectel.com

Poland

Email: poland@quectel.com

Turkey

Email: turkey@quectel.com

North America

Email: northamerica@quectel.com

South-East Asia

Email: southeastasia@quectel.com

Australia

Email: australia@quectel.com

Korea

Email: korea@quectel.com

Russia

Email: russia@quectel.com

UK

Email: uk@quectel.com

Denmark

Email: denmark@quectel.com

Italy

Email: italy@quectel.com

Hungary

Email: hungary@quectel.com

Latin America

Email: latinamerica@quectel.com

Brazil

Email: brazil@quectel.com

Israel

Email: israel@quectel.com

India

Email: india@quectel.com

Greater China

Shanghai

Email: sales@quectel.com

Shenzhen

Email: shenzhen@quectel.com

Fuzhou

Email: fuzhou@quectel.com

Beijing

Email: beijing@quectel.com

Chongqing

Email: chongqing@quectel.com

Chengdu

Email: chengdu@quectel.com

Qingdao

Email: qingdao@quectel.com

Taipei

Email: taipei@quectel.com

Headquarters

Office # 501, Building 13, No.99 Tianzhou Road, Shanghai, China 200233

Tel: +86 21 5108 6236

Fax: +86 21 5445 3668

Web: www.quectel.com

Email: info@quectel.com

Technical Support: support@quectel.com

Hefei R&D Center

Third Floor, Building B2, Huayi Science Park, No.71 TianDa Road, Hefei High-tech Zone, Hefei, Anhui, China. 230088

Tel: +86 551 65869386

Fax: +86 551 65869376