









# Quectel GSM/GPRS Module Family

Product	M10	M66	M72	M85	M95
Picture					
Packaging	64-pin LCC Quad-band	44-pin LCC Dual-band	30-pin LCC Dual-band	83-pin LCC Quad-band	42-pin LCC Quad-band
Dimensions	29.0 × 29.0 × 3.6mm	15.8 × 17.7 × 2.3mm	27.5 × 24.0 × 2.7mm	24.5 × 25.3 × 2.6mm	19.9 × 23.6 × 2.65mm
Frequency Range (MHz)	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900	900/ 1800	850/ 900/ 1800/ 1900	850/ 900/ 1800/ 1900
Weight (approx.)	6.0 g	1.3 g	3.3 g	3.3 g	3.0 g
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
<b>Data Transmission</b>					
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/ POP3/ MMS/ SSL	TCP/ UDP/ PPP/ HTTP/ FTP/ SMTP/ PING/ NTP/ NITZ/ MMS Sending	TCP/ UDP/ PPP/ HTTP/ FTP/ SMTP/ PING/ NTP/ NITZ/ MMS Sending	TCP/ UDP/ PPP/ HTTP/ FTP/ SMTP/ PING/ NTP/ NITZ/ POP3/ MMS/ SSL	TCP/ UDP/ PPP/ HTTP/ FTP/ SMTP/ PING/ NTP/ NITZ/ MMS Sending/ SSL
<b>Specifications for Voice</b>					
Speech Codec Modes	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
<b>Interfaces</b>					
SIM	3V/ 1.8V	3V/ 1.8V	3V/ 1.8V	3V/ 1.8V	3V/ 1.8V
Audio Analog	2 inputs/ 2 outputs	1 input/ 2 outputs		2 inputs/ 3 outputs	2 inputs/ 2 outputs
Audio Digital		•		•	
RTC Backup	•	•	•	•	•
UART	3	3	2	3	2
ADC	× 2, 10bit	× 1, 10bit		× 2, 10bit	
SD Card Interface	•			•	
GPIO	•				
Temperature Detection				•	•
<b>Enhanced Features</b>					
eCall		•		•	•
Jamming Detection	•	•	•	•	•
DTMF	•	•	•	•	•
Audio Playback/ Audio Recording	•	•		•	
Dual-SIM				•	•
QuecFOTA™	•	•	•	•	•
QuecCell	•	•		•	•
QuecLocator	•	•	•	•	•
QuecFile	•	•		•	
OpenCPU™	•	•		•	
RIL for Android & WinCE	•	•	•	•	•
MUX	•	•	•	•	•
<b>Electrical Features</b>					
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	1.3mA @DRX=5 1.2mA @DRX=9
<b>Certifications</b>					
Certifications	CE/ GCF/ PTCRB FCC/ IC/ ANATEL Rogers/ NCC/ TELCEL UCRF/ ICASA	CE*	CE/ GCF/ UCRF/ RCM	GCF	CE/ GCF/ Vodafone/ PTCRB/ FCC/ IC/ ANATEL/ Rogers/ RCM/ NCC/ TELCEL/ UCRF/ ICASA
<b>Recommended Applications</b>					
Recommended Applications	Telematics, Smart Metering, Mobile POS Terminal, Gateway, Security, Tracking and Tracing, Remote Maintenance and Control, Mobile Computing, Healthcare, etc.				





# 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	29.0 × 29.0 × 2.5mm	51.0 × 30.0 × 4.9mm	32.0 × 29.0 × 2.5mm	51.0 × 30.0 × 4.9mm	23.6 × 19.9 × 2.2mm	
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	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	
Weight (approx.)	4.3g	9.3g	4.9g	9.8g	2.5g	
Temperature Range	-40 °C ~ +85 °C	-40 °C ~ +80 °C	-40 °C ~ +85 °C	-40 °C ~ +80 °C	-35 °C ~ +70 °C	
<b>Data Transmission</b>						
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	TCP/ UDP/ PPP/ MMS/ FTP/ SMTP/ SMTPS/ HTTP/ HTTPS/ PING/ SSL	TCP/ UDP/ PPP/ MMS/ FTP/ SMTP/ SMTPS/ HTTP/ HTTPS/ PING/ SSL	TCP/ UDP/ PPP/ MMS/ SMTP*/ FTP*/ SSL*	
<b>Interfaces</b>						
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 HS	2.0 HS	2.0 HS	2.0 HS	2.0 HS	
Audio Analog	Optional <sup>1</sup>	Optional <sup>1</sup>				
Audio Digital (PCM)	Optional <sup>1</sup>	Optional <sup>1</sup>	Optional <sup>1</sup>	Optional <sup>1</sup>	Optional <sup>1</sup>	
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		
<b>Enhanced Features</b>						
eCall	•	•	•	•	◦	
DTMF	•	•	•	•	◦	
QuecFOTA™	•	•	•	•	◦	
DFOTA*	◦	◦	•	•	◦	
Audio Playback/ Audio Recording			◦	◦		
QuecLocator	◦	◦	•	•	◦	
QuecFile	•	•	•	•	◦	
RIL Driver	Windows CE6.0*, Android 2.3/4.0, Windows Mobile 6.1*/6.5*	Windows CE6.0*, Android 2.3/4.0, 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, Linux2.6/3.0	Windows XP/Vista/7/8, Linux2.6/3.0		
MUX	Linux 2.6 or later, Android 2.3 or later	Linux 2.6 or later, Android 2.3 or later	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 2.6 or later, Android 2.3 or later	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/7/8*, 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	
<b>Electrical Features</b>						
Supply Voltage Range	3.3 ~ 4.3V	3.0~3.6V, typ. 3.3V	3.4 ~ 4.3V	3.0~3.6V, typ. 3.3V	3.4 ~ 4.3V	
Power Consumption	2.2mA@ GSM sleep, DRX=9 2.1mA@ UMTS sleep, DRX=9	3.5mA@ GSM sleep, DRX=9 3.3mA@ UMTS sleep, DRX=9	1.5mA@GSM sleep, DRX=9 1.4mA@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	
<b>Certifications</b>						
Certifications	CE/ GCF*/ FCC/ PTCRB/ AT&T	CE/ GCF*	CE/ FCC/ IC/ KC/ NCC/ OFCA/ GCF/ PTCRB/ RCM/ SKT*/ AT&T/ Telstra*/ ANATEL*/ Vodafone/ Rogers*	CE/ FCC/ PTCRB/ GCF/ RCM	CE*/GCF*/ FCC*/ PTCRB*/ AT&T*	
<b>Recommended Applications</b>						
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			
	L20	L26	L70	L70-R
	Compatible		Compatible	
Picture				
GNSS	GPS/ QZSS	GLONASS/ GPS/ QZSS	GPS/ QZSS	GPS/ QZSS
Packaging	24-pin LCC	24-pin LCC	18-pin LCC	18-pin LCC
Dimensions	16.0 × 12.2 × 2.4 mm	16.0 × 12.2 × 2.4 mm	10.1 × 9.7 × 2.5 mm	10.1 × 9.7 × 2.5 mm
Weight (approx.)	1.0 g	1.0 g	0.6 g	0.6 g
Temperature Range	Operation	-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
<b>General Features</b>				
Chip Solution	SiRF IV	MT3333	MT3339	MT3337
L1 Band Receiver (C/A Code)	Channel Number	48 Track	33 Track/ 99 Acq.	22 Track/ 66 Acq.
	SBAS	WAAS/ EGNOS	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN
Sensitivity	Autonomous Acquisition	-148dBm	-148dBm	-148dBm
	Reacquisition	-160dBm	-160dBm	-160dBm
	Tracking	-163dBm	-167dBm	-165dBm
TTFF (Time To First Fix)	Cold Start	<35s, Autonomous 25s typ. With CGEE	<35s, Autonomous <15s, With EASY	<35s, Autonomous <15s, With EASY
	Warm Start	<35s, Autonomous 10s typ. With CGEE	<30s, Autonomous <5s, With EASY	<30s, Autonomous <5s, With EASY
	Hot Start	<1s	<1s	<1s
Position Accuracy (autonomous)	<2.5m CEP	<2.5m CEP	<2.5m CEP	<2.5m CEP
Velocity Accuracy (without aid)	<0.01m/s	<0.1m/s	<0.1m/s	<0.1m/s
Maximum Acceleration Accuracy (without aid)	<0.1 m/s <sup>2</sup>	<0.1 m/s <sup>2</sup>	<0.1 m/s <sup>2</sup>	<0.1 m/s <sup>2</sup>
Timing Accuracy	<500ns	<10ns	<10ns	<15ns
Max Update Rate	5Hz	10Hz	10Hz	5Hz
Baud Rate(default)	4800bps	9600bps	9600bps	9600bps
Anti-jamming	•	•	•	•
<b>Electrical Data</b>				
Power Supply	2.0V to 3.6V	2.8V to 4.3V	2.8V to 4.3V	2.8V to 4.3V
I/O Voltage	2.0V to 3.6V	2.7V to 2.9V	2.7V to 2.9V	2.7V to 2.9V
Power Consumption	Acquisition	39mA	29mA (GPS+GLONASS) 26mA(GPS)	18mA
	Tracking	36mA	21mA (GPS+GLONASS) 18mA (GPS)	12mA
	Backup	33uA	7uA	7uA
<b>Interfaces</b>				
UART	•	•	•	•
IIC (NMEA)				
DR IIC	•			
Reset		•	•	•
Time Pulse	•	•	•	•
<b>Antenna</b>				
Antenna Detection		Short circuit detection and protection Open circuit detection		
Antenna Type	Active or passive	Active or passive	Active or passive	Active or passive
Antenna Power	External or internal	External or internal	External or internal	External or internal
<b>Certifications</b>				
Certifications	CE	CE	CE/ FCC	
<b>Recommended Applications</b>				
Recommended Applications	Vehicle Tracking and Tracing, Pet Tracking, Asset Tracking, Connected PND, GIS Application, Security, Industrial PDA, Digital Camera, etc.			

# M2M Applications

	Patch Antenna Modules	
L76	L80	L86
	Compatible	
		
GLONASS/ GPS/ QZSS	GPS/ QZSS	GLONASS/GPS/QZSS
18-pin LCC	12-pin LCC	12-pin LCC
10.1 × 9.7 × 2.5 mm	16.0 × 16.0 × 6.45 mm	18.4 × 18.4 × 6.45 mm
0.6 g	6.0 g	7.6 g
-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C
-45 °C to +125 °C	-45 °C to +125 °C	-45 °C to +125 °C
MT3333	MT3339	MT3333
33 Track/ 99 Acq.	22 Track/ 66 Acq.	22 Track/ 66 Acq.
WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN	WAAS/ EGNOS/ MSAS/ GAGAN
-148dBm	-148dBm	-148dBm
-160dBm	-160dBm	-160dBm
-165dBm	-165dBm	-165dBm
<35s, Autonomous <15s, With EASY	<35s, Autonomous <15s, With EASY	<35s, Autonomous <15s, With EASY
<30s, Autonomous <5s, With EASY	<30s, Autonomous <5s, With EASY	<30s, Autonomous <5s, With EASY
<1s	<1s	<1s
<2.5m CEP	<2.5m CEP	<2.5m CEP
<0.1m/s	<0.1m/s	<0.1m/s
<0.1 m/s <sup>2</sup>	<0.1 m/s <sup>2</sup>	<0.1 m/s <sup>2</sup>
<10ns	<10ns	<10ns
10Hz	10Hz	10Hz
9600bps	9600bps	9600bps
•	•	•
2.8V to 4.3V	3.0V to 4.3V	3.0V to 4.3V
2.7V to 2.9V	2.7V to 2.9V	2.7V to 2.9V
25mA (GPS+GLONASS) 21mA (GPS)	25mA	25mA
18mA (GPS+GLONASS) 15mA (GPS)	20mA	20mA
7uA	7uA	7uA
•	•	•
•	•	•
•	•	•
	Short circuit detection and protection Open circuit detection	Short circuit detection and protection Open circuit detection
Active or passive	Embedded patch antenna or external active antenna	Embedded patch antenna or external active antenna
External or internal	Internal	Internal
CE	CE	CE*



## Telematics

Clean, cost effective and intelligent travel has become a new trend in this era. It has proven that M2M-enabled technology has the power to improve transportation systems in five significant areas: road safety, navigation, environmental impact, freight and logistics management and traffic management. In addition, telematics and infotainment will soon become standard in new vehicles.



## Smart Metering

With the new energy economy trend of innovation and smart communication penetrating into M2M industry, Quectel wireless solutions designed the solution that integrates wireless communication technology with smart grid, which both meet the wireless communication needs and make the energy supply smart, secure, sustainable and reliable. GSM/GPRS modules play an important role in the whole system of smart grid, which is the bridge between sensor and base station, as well as the environment of smart meter deployment is varied.



## Mobile POS Terminal

Wireless payment devices expand the ways in which customers can pay and free retailers from handling cumbersome cash. Mobile-enabled M2M commerce can even extend the boundaries of a retailer's physical store by allowing them to accept payments at mobile or temporary locations without a telephone line.



## Security

Combining wireless communication technology, advanced camera equipment and 3G network, Quectel's Security & Surveillance solution provides the real time images and video when the security alarm is automatically triggered by sensor and then sends the alarm message to the user's phone or other terminals. The user can remotely control the situation and know the detailed information about it.



## Networking

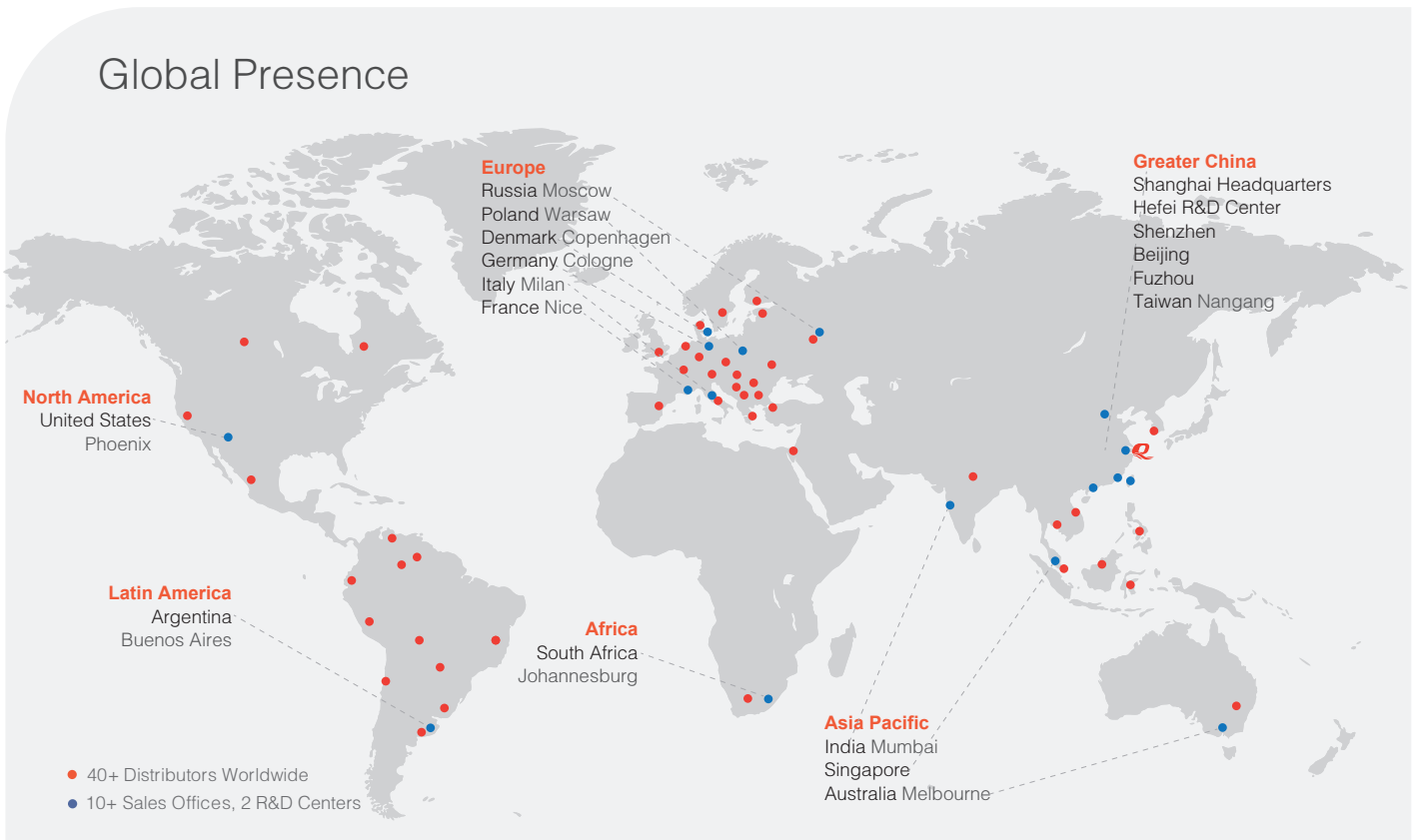
Secure high-speed wireless connections and Internet access have become the bed rock for a world that is increasingly reliant on electronic information. Highlighted concerns about the natural and man-made disaster are driving the growth of fixed cellular broadband. As broadband expands and become more reliable, 4G mobile broadband will enable networking solutions.



## Healthcare

High population growth, a high burden of disease prevalence, low health care workforce, large numbers of rural inhabitants, and limited financial resources are causing great challenges for today's healthcare and social system. Medical device with built-in M2M technology is a new way of supporting wellness and delivering and managing healthcare. This device is already allowing patients to undertake tasks traditionally carried out only by the physicians or under the direct care of the physicians. Patients can be monitored, diagnosed and even treated at home or on the move, without needing to see a clinician, speed time in a hospital or clinic, or wait long periods for test results.

## Global Presence



### Overseas

#### Germany

Email: europe@quectel.com

#### Italy

Email: italy@quectel.com

#### France

Email: france@quectel.com

#### Latin America

Email: latinamerica@quectel.com

#### India

Email: india@quectel.com

#### South Africa

Email: southafrica@quectel.com

#### Russia

Email: russia@quectel.com

#### Poland

Email: poland@quectel.com

#### Denmark

Email: denmark@quectel.com

#### North America

Email: northamerica@quectel.com

#### South-East Asia

Email: southeastasia@quectel.com

### Greater China

#### Shanghai

Email: sales@quectel.com

#### Shenzhen

Email: shenzhen@quectel.com

#### Fuzhou

Email: fuzhou@quectel.com

#### Beijing

Email: beijing@quectel.com

#### Taiwan

Email: taiwan@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

