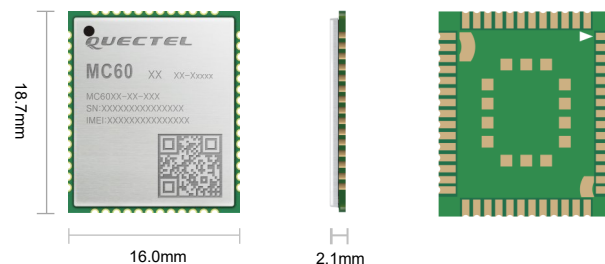




Quectel MC60

Ultra-small LCC Quad-band GSM/GPRS/GNSS Module



MC60 is a quad-band full-featured GSM/GPRS/GNSS module using LCC castellation package. With an extensive set of Internet protocols (TCP, UDP, PPP, FTP, HTTP, SSL, MQTT, etc.), it integrates the GNSS technology for satellite navigation. Based on the latest 2G chipset, it has the optimal performance in SMS & data transmission as well as audio service even in harsh environments. It features Dual SIM Single Standby function.

MC60 module integrates both GPRS and GNSS engines in one compact and low profile SMT package. It supports EPO™ technology which provides predicted Extended Prediction Orbit to speed up TTFF without need of extra server. Based on EPO data, QuecFastFix Online function further reduces TTFF in cold start, making cold start TTFF comparable to that in hot start. EASY™ (Embedded Assist System) technology is also supported. It enables the GNSS engine to achieve a very fast first fix when there is no enough satellite information. MC60 additionally supports working in proven AlwaysLocate™ and GLP (GNSS Low Power) modes, which ensure great positioning accuracy while with ultra-low power consumption. The built-in LNA provides the module with improved RF sensitivity and exceptional acquisition/tracking performance even in weak signal areas.

The compact form factor, great positioning performance, low power consumption and dual (U)SIM card interfaces make MC60 the best choice for a wide range of M2M applications, such as automotive, telematics, wearable device, asset tracker, pet tracker, and so on.



Key Benefits

- ✓ Ultra compact size: 18.7mm × 16.0mm × 2.1mm
- ✓ Multi navigation constellation: GPS/GLONASS/Galileo/BeiDou/QZSS
- ✓ GNSS receiver channels: 99 acquisition/33 tracking channels
- ✓ Powerful AGPS functions: Autonomous AGPS EASY™/Offline AGPS EPO™/Online AGPS QuecFastFix
- ✓ Built-in LNA for better GNSS sensitivity (-167dBm @Tracking): able to use passive GNSS antenna without the need of any extra LNA
- ✓ Enhanced GNSS features: SDK command/AIC/LOCUS/GLP
- ✓ GSM quad-band: 850/900/1800/1900MHz
- ✓ Multi internet protocols: TCP/UDP/FTP/PPP/HTTP/NITZ/NTP/PING/HTTPS/TCP/SSL/MQTT
- ✓ Support Voice, SMS, QuecFOTA®, DSSS and QuecOpen®
- ✓ Support Bluetooth SPP & HFP-AG profiles (BT 3.0) and GATT/FMP*/PXP* (BT 4.0)



Quad-band



GPRS Multi-slot
Class 12



Extended Temperature
Range: -40°C~+85°C



Highly Compact Size



LCC Package



Embedded Internet
Services Protocols



Dual SIM Single
Standby



Digital Audio



BT 3.0 & BT 4.0
(Optional)



Multi-GNSS System

Version: V1.4 | Status: Released

GSM/GPRS/GNSS		MC60
Frequency Band	Quad-band: 850/900/1800/1900MHz	
Dimensions (mm)	18.7 × 16.0 × 2.1	
Temperature Range		
Operation Temperature	-35°C ~ +75°C	
Extended Temperature	-40°C ~ +85°C	
Certifications		
Regulatory	Global: GCF Europe: CE/UCRF North America: FCC Brazil: Anatel Russia: FAC South Africa: ICASA	
Others	RoHS China: AITC	
Data		
GPRS Class 12	Max 85.6kbps (Downlink and Uplink)	
PBCCH	●	
Coding Schemes	CS-1, CS-2, CS-3, CS-4	
USSD	●	
Non-transparent Mode	●	
SMS		
Point-to-point MO and MT	●	
SMS Cell Broadcast	●	
Text and PDU Modes	●	
Interfaces		
(U)SIM	x 2, 1.8V/3.0V	
UART	x 4 (Main UART Port, Auxiliary UART Port, Debug UART Port, GNSS UART Port)	
SD Card	x 1	
Bluetooth	BT 3.0 BT 4.0 (Optional)	
GPIO	● (QuecOpen® Version Only)	
Analog Audio Channel	x 3 (2 Output Channels and 1 Input Channel)	
PCM	x 1 (LGA Pad)	
ADC	x 1	
RTC	x 1	
PWRKEY	●	
Network Status Indication	●	
Antennas	x 3 (GSM Antenna, GNSS Antenna, Bluetooth Antenna)	
Voice		
Speech Codec Modes	HR/FR/EFR/AMR	
Echo Arithmetic	Echo Cancellation/Echo Suppression/Noise Reduction	
GNSS Features		
Receiving Bands	GPS L1 Band Receiver (1575.42MHz) GLONASS L1 Band Receiver (1601.7MHz): C/A Code Galileo E1 Band Receiver (1575.42MHz): C/A Code BeiDou B1 Band Receiver (1561.098MHz): C/A Code QZSS L1 Band Receiver (1575.42MHz)	
SBAS	WAAS/EGNOS/MSAS/GAGAN	
Number of Channels	GPS L1 Band Receiver (1575.42MHz): 33 (Tracking)/ 99 (Acquisition)/ 210 (PRN)	
Horizontal Position Accuracy (Autonomous)	<2.5m CEP @-130dBm	
Velocity Accuracy (Without Aid)	<0.1m/s	
Acceleration Accuracy (Without Aid)	0.1m/s ²	
Reacquisition Time	<1s	
TTFF @-130dBm with QuecFastFix Online	Cold Start: <4.5s	
TTFF @-130dBm with EASY™	Cold Start: <15s Warm Start: <5s Hot Start: <1s	
TTFF @-130dBm without EASY™	Cold Start: <35s Warm Start: <30s Hot Start: 1s	
Sensitivity	Acquisition: -149dBm Tracking: -167dBm Reacquisition: -161dBm	
Dynamic Performance	Maximum Altitude: 18000m Maximum Velocity: Max 515m/s Maximum Acceleration: 4G	

Notes:
 1. * means under development.
 2. ● means supported.
 3. GPS+GLONASS is supported by default.

GSM/GPRS/GNSS		MC60
Advanced Technologies		
EASY™/LOCUS™/AlwaysLocate™/EPO™/GLP/AIC/SDK/QuecFastFix Online/1PPS		●
Enhanced Features		
eCall		●
DTMF		●
CMUX		●
Dual UART		●
DSSS (Dual SIM Single Standby)		●
STK		●
Audio Playing/Audio Recording		●
QuecOpen®		●
FOTA		●
QuecFile		●
(U)SIM Card Detection		●
GNSS		●
Jamming Detection		●
Firmware Upgrade		●
Electrical & Sensitivity		
Output Power		Class 4 (2W @850/900MHz) Class 1 (1W @1800/1900MHz)
Consumption		1.2mA @DRX=5 0.9mA @DRX=9
Supply Voltage		3.3V~4.6V, 4.0V Typ.
Software Features		
Protocols		TCP/UDP/FTP/PPP/HTTP/NITZ/NTP/PING/HTTPS/TCP/SSL/MQTT
GNSS		GPS/GLONASS/Galileo/BeiDou/QZSS
Bluetooth		BT 3.0 (SPP/ HFP-AG Profiles Supported) BT 4.0 (GATT/FMP*/PXP* Profiles Supported) (Optional)
General Features		
GPRS Multi-slot Class		Class 12
GPRS Mobile Station		Class B
Great Anti-jamming Performance due to Multi-tone Active Interface Cancellor		●
Built-in LNA for Higher Sensitivity		●
LCC Package		●
GSM 07.07, 07.05 and Other Enhanced AT Commands		●

Notes:
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