Quectel MC60

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

GSM/GPRS/GNSS

Quad-band

GPRS Multi-slot Class 12

Extended Temperature Range -40°C to +85°C

Highly Compact Size

LCC Package

Embedded Internet Services Protocols

Dual SIM Single Standby

Digital Audio

Bluetooth 3.0

Multi-GNSS System

Key Benefits

- Ultra compact size: 18.7 × 16.0 × 2.1mm
- Easier soldering process with LCC package
- Power consumption as low as 1.2mA@DRX=5
- Support Voice, Data, SMS and QuecFOTA™ functions
- Embedded abundant Internet service protocols
- Support Bluetooth V3.0 and SPP & HFP-AG profiles
- Built-in LNA for higher sensitivity: -149dBm@Acquisition -167dBm@Tracking
- Multi-GNSS engine for GPS, GLONASS and QZSS
- 99 acquisition/33 tracking/210 PRN channels
- Advanced technologies: EASY™/ LOCUS™/ AlwaysLocate™/GLP/EPO™*/SUPL*
- Support SDK commands developed by Quectel
- Great anti-jamming performance due to multi-tone active interface canceller

MC60 is a quad-band full-featured GSM/GPRS module using LCC castellation package. With an extensive set of internet protocols (TCP, UDP, PPP, FTP, HTTP and SSL*), it has integrated 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™ (Extended Prediction Orbit) function which is a kind of offline AGPS technology allowing for automatic EPO data download and update to GNSS engine through GPRS network. This, coupled with advanced AGPS called EASY (Embedded Assist System), greatly improves MC60's TTFF. Also, the module supports working in proven AlwaysLocate™ and GLP (GNSS Low Power) modes, which ensure great positioning accuracy while with very-low power consumption. Additionally, MC60 integrates a built-in LNA to offer improved RF sensitivity and exceptional acquisition/tracking performance even in weak signal areas.

The compact form factor, low power consumption and dual 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.

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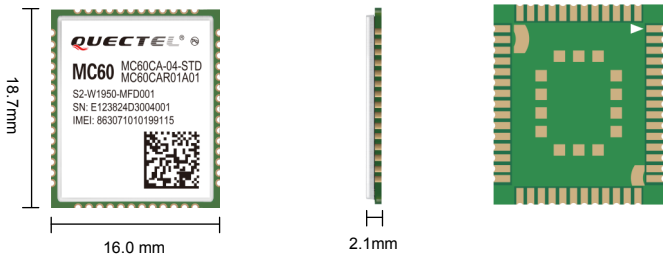

General Features

Quad-band	850/900/1800/1900MHz
GPRS Multi-slot Class	Class 12
GPRS Mobile Station	Class B
Compliant to GSM Phase 2/2+	Class 4 (2W @850/900MHz) Class 1 (1W @1800/1900MHz)
Supply Voltage Range	3.3~4.6V, 4.0V Typ.
Low Power Consumption	1.2mA@DRX=5
Operation Temperature	-40 °C ~ +85 °C
Dimensions	18.7 × 16.0 × 2.1mm
Weight	Approx. 1.3g
Control via AT Commands	GSM 07.07, 07.05 and other enhanced AT Commands

Specifications for Data Function

GPRS Class 12	85.6kbps (Downlink) 85.6kbps (Uplink)
PBCCH Support	
Coding Schemes	CS 1, 2, 3, 4
USSD	
Non Transparent Mode	
Protocols	TCP/UDP/FTP/HTTP/SSL*/PPP*

Specifications for SMS Function

Point-to-point MO and MT
SMS Cell Broadcast
Text and PDU Mode

Specifications for Voice Function

Speech Codec Modes	Half Rate (HR) Full Rate (FR) Enhanced Full Rate (EFR) Adaptive Multi-Rate (AMR)
Echo Arithmetic	Echo Cancellation Echo Suppression Noise Reduction

Specifications for GNSS Function

GPS L1 Band Receiver (1575.42MHz)	Channel	33 (Tracking) / 99 (Acquisition) / 210 (PRN)
GLONASS L1 Band Receiver (1601.71MHz)	C/A Code	
	SBAS	WAAS, EGNOS MSAS, GAGAN
Horizontal Position Accuracy	Autonomous	<2.5 m CEP
Velocity Accuracy	Without Aid	<0.1m/s
Acceleration Accuracy	Without Aid	0.1m/s²
Advanced Technologies	EASY™/LOCUS™/AlwaysLocate™/GLP/SDK/ AIC/EPO™*/SUPL*	
Reacquisition Time		<1s
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	Max.18000m
	Maximum Velocity	Max.515m/s
	Maximum Acceleration	4G

Interfaces

SIM/USIM	×2 3V/1.8V
SD*	×1
UART	×2 (×1 GSM main serial port, ×1 GSM debug port)
Analog Audio Channel	2 output channels and 1 input channel
Bluetooth	BT 3.0 Profile: SPP/HFP-AG
ADC	×1
GPIO	×1
PCM*	×1 (LGA pad)
RTC	×1
Antenna PAD	×3 (×1 GSM antenna pad, ×1 GNSS antenna pad, ×1 Bluetooth antenna pad)

* Under development

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