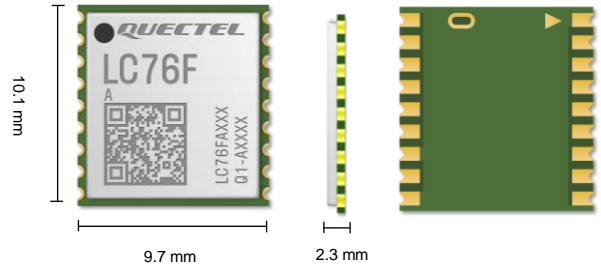


# Quectel LC76F

## Compact GNSS Module



Quectel LC76F GNSS module supports concurrent reception of GPS, GLONASS (or BeiDou) and QZSS. It can acquire and track any mix of GPS, GLONASS (or BeiDou) and SBAS signals. LC76F is designed to be compatible with Quectel L76 and L76-L as well as L76-LB modules, allowing convenient migration between them.

The integrated LNA provides an improved sensitivity, as well as improved accuracy, fast tracking and acquisition of signals, and can keep enhanced performance under challenged environment. Compared with single GPS system, multiple GNSS systems increase the number of visible satellites, reduce the time to first fix and improve positioning accuracy, even in dense urban canyons.

Combining advanced AGNSS technologies and low-power modes, LC76F achieves high performance, low power consumption and fully meets the industrial standards.

Quectel LC76F’s superior performance makes it ideal for industrial PDA, consumer and industry applications. Extremely low power consumption makes it a great solution for power-sensitive applications, especially portable devices.



### Key Features

- ✓ Multi-GNSS engine for GPS, GLONASS (or BeiDou) and QZSS
- ✓ Industrial leading sensitivity of -165 dBm during tracking and -148 dBm during acquisition
- ✓ Integrated LNA for high sensitivity
- ✓ Supports anti-jamming and multi-tone active interference canceller
- ✓ Supports multiple low-power modes to ensure ultra-low power consumption
- ✓ Supports UART and I2C Interfaces



AGNSS Technology



Ultra Low Power Consumption



Extremely Compact Size



Super Tracking Sensitivity: -165 dBm



Operating Temperature Range: -40 to +85 °C



Anti-jamming



RoHS Compliant



Multi-GNSS System

GNSS Module	LC76F
Region	Global
Dimensions (mm)	10.1 × 9.7 × 2.3
Weight (g)	Approx. 0.3
Temperature Range	
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +90 °C
GNSS Features	
Supported Bands	GPS L1 C/A: 1575.42 MHz GLONASS L1: 1601.71 MHz BeiDou B1I: 1561.098 MHz
Default GNSS Constellation	GPS + GLONASS
Channel	26 Channels
Horizontal Position Accuracy <sup>①</sup>	Autonomous: < 2 m CEP
Velocity Accuracy <sup>①</sup>	Without Aid: < 0.1 m/s
Acceleration Accuracy <sup>①</sup>	Without Aid: < 0.1 m/s <sup>2</sup>
Timing Accuracy <sup>①</sup>	1PPS < 100 ns
Reacquisition Time	< 1 s
TTFF @ -130 dBm with AGNSS <sup>②</sup>	Cold Start: < 6 s Warm Start: < 2 s Hot Start: < 2 s
TTFF @ -130 dBm without AGNSS <sup>①</sup>	Cold Start: < 30 s Warm Start: < 2 s Hot Start: < 2 s
Sensitivity	Acquisition: -148 dBm Tracking: -165 dBm Reacquisition: -162 dBm
Dynamic Performance <sup>①</sup>	Maximum Altitude: 18000 m Maximum Velocity: 515 m/s Maximum Acceleration: 4g
Interfaces	
I2C Interface	Up to 400 kbps
UART Interface	Adjustable: 9600–921600 bps Default: 9600 bps Update Rate: 1 Hz (Default), up to 10 Hz
Protocol	NMEA 0183
External Antenna Interface	
Antenna Type	Active or passive
Antenna Power Supply	External power supply, or through the VDD_RF pin
Electrical Characteristics	
Supply Voltage Range	2.8–4.3 V, Typ. 3.3 V
I/O Voltage	2.8 V
Current Consumption (@ 3.3 V)	Normal Operation Mode: 28 mA @ Acquisition (GPS + GLONASS) 28 mA @ Tracking (GPS + GLONASS) Power Saving Modes: 1.4 mA @ Standby Mode 30 µA @ Backup Mode

Note:

- ①: Room temperature, all satellites at -130 dBm.
- ②: Open-sky, active high precision GNSS antenna.