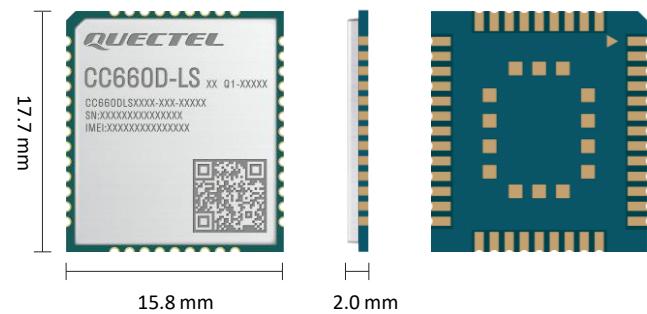


Quectel CC660D-LS

3GPP NTN Satellite Communication Module



CC660D-LS is a 3GPP NTN (Non-Terrestrial Network) satellite communication module which supports 3GPP Rel-17 (IoT-NTN) at L-band (B255) and S-band (B256/ 23) frequencies for satellite communications. With an ultra-compact form factor of 17.7 mm x 15.8 mm x 2.0 mm, it is a perfect choice for size-sensitive applications.

CC660D-LS adopts surface mount technology, which makes it an ideal solution for durable and rugged designs. The low profile and small size of the LCC + LGA package allow CC660D-LS to be easily embedded into space-constrained applications and provide reliable connectivity with the applications. This form factor is ideally suitable for mass production which has strict requirements for cost and efficiency.

The module can be easily integrated into any type of portable devices due to its compact size and low power consumption. CC660D-LS is suitable for applications such as messaging, tracking, and emergency services due to its highly integrated functionalities. It might also be used for the large-scale IoT applications such as power-grid, pipe and infrastructure management, maritime and logistics tracking.



Key Features

- ✓ NTN satellite communication module
- ✓ Ultra-low power consumption
- ✓ Super-high sensitivity
- ✓ Low voltage power supply: 2.2–3.6 V
- ✓ LCC + LGA package, easy for large-volume manufacturing
- ✓ Abundant embedded Internet service protocols



Compact Size



B23/ 255/ 256



Quectel Enhanced AT Commands



LCC + LGA Package



Multiple Serial Ports



Extended Operating Temperature: -40 °C to +85 °C



Embedded Internet Service Protocols

Quectel CC660D-LS

Satellite Communication		CC660D-LS
Region/ Operator	Global ^①	
General Features		
Pins	58	
Package	LCC + LGA	
Dimensions	$(17.7 \pm 0.15) \text{ mm} \times (15.8 \pm 0.15) \text{ mm} \times (2.0 \pm 0.2) \text{ mm}$	
Weight	Approx. 1.2 g	
Temperature Range		
Normal Operating Temperature	-35 °C to +75 °C	
Extended Operating Temperature	-40 °C to +85 °C	
Frequency Bands		
IoT-NTN	<ul style="list-style-type: none"> L- Band (B255): UL: 1626.5–1660.5 MHz; DL: 1525–1559 MHz S-Band (B256): UL: 1980–2010 MHz; DL: 2170–2200 MHz S-Band (B23): UL: 2000–2020 MHz; DL: 2180–2200 MHz 	
Certification		
Satellite	Skylo/ Spark	
Regulatory	Europe: CE America: FCC Canada: IC Australia/ New Zealand: RCM	
Satellite Transceiver		
Bandwidth	<ul style="list-style-type: none"> UL single-tone and multi-tone DL 200 kHz bandwidth 	
Data Transmission ^②	<ul style="list-style-type: none"> Single-tone with 15/ 3.75 kHz subcarrier: UL 5.8 kbps (15 kHz)/ 2.7 kbps (3.75 kHz) Multi-tone with 15 kHz subcarrier: DL 8.3 kbps/ UL 8.6 kbps 	
Interfaces		
USIM	x 1	
UART	x 3	
RI	x 1	
ADC	x 1	
RESET_N	x 1	
USB	x 1	
NET_STATUS	x 1	
PWRKEY	x 1	
PSM_EINT	x 1	
Antenna	x 1	

Caution:

CC660D-LS module updates location information through GNSS, so it must be used together with a GNSS module.

Note:

^①: Currently, support is only available in North America, Europe, Australia, New Zealand, and Japan. It is expected to be supported in South America and Southeast Asia by 2025.

^②: Reference data provided by the baseband chip platform.

Quectel CC660D-LS

Satellite Communication		CC660D-LS
SMS		
Short Message Service (Point-to-Point MO and MT)		PDU Mode*
Enhanced Features		
RAI (Release Assistance Indication)		Supported
Software Features		
Protocol Stack		IPv4/ UDP/ NIDD/ DNS
Firmware Upgrading Method		UART <ul style="list-style-type: none"> • 3GPP TS 27.005 • 3GPP TS 27.007 • Quectel Enhanced AT Commands
Electrical Characteristics		
Supply Voltage Range		2.2–3.6 V, typical 3.3 V
GPIO* Voltage		1.8 V
Maximum Transmitting Power		23 dBm ±2 dB
Sensitivity		-114 dBm ±1 dB
Power Consumption (Typical)		3.4 µA @ Deep Sleep ^① 55 mA @ TX, 23 dBm (B255) 54 mA @ TX, 23 dBm (B256) 272 mA @ TX, 23 dBm (B23) 25 mA @ TX, 0 dBm (B255) 25 mA @ TX, 0 dBm (B256) 36 mA @ TX, 0 dBm (B23)

Note:

①: Reference data provided by the baseband chip platform.

*: Under development