Quectel AG15

IATF 16949 Compliant Automotive Grade C-V2X Module

28.0 mm

32.0 mm   2.85 mm
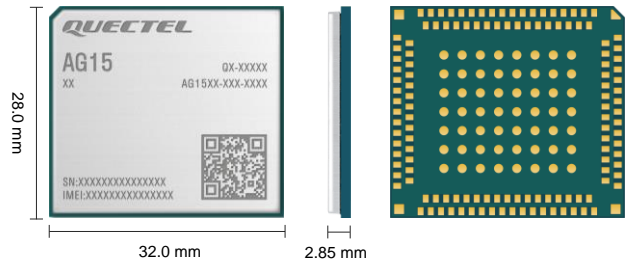
Quectel AG15 is an automotive grade C-V2X module designed and manufactured according to IATF 16949:2016 standard. With high robustness, the module is designed for extremely harsh environments and features superior ESD/EMI protection. It is a global V2X communication solution for meeting advanced driver-assistance system (ADAS), enhanced driver safety, autonomous driving, and intelligent transport system (ITS) application demands. It provides more functions and supports extended communication ranges for automotive industry solutions when used with Quectel AG35 series module.
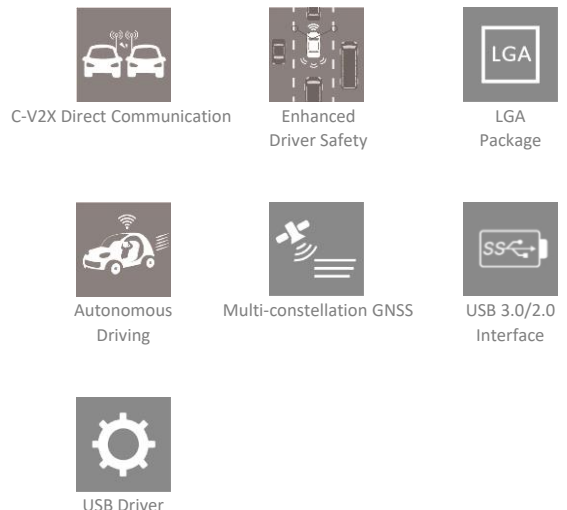
Adopting 3GPP Rel-14 technology, AG15 supports vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I) and vehicle-to-pedestrian (V2P) communication in 5.9 GHz ITS band independently of (U)SIM, cellular subscription or network assistance. Through PC5-based C-V2X communication, it makes traffic smoother and more efficient and paves the way for fully connected and automated traffic. It can meet the communication demands of connected vehicles with lower latency, higher reliability and high throughput. In addition, the module supports abundant interfaces, which allows for seamless application development.

AG15 supports multiple-input multiple-output (MIMO) technology. The use of multiple antennas at the receiver end at the same time and on the same frequency band greatly minimizes errors and optimizes the data speed. The module also has an embedded multi-constellation high-sensitivity GNSS (GPS/GLONASS/Galileo/BDS/QZSS) receiver for positioning, which simplifies design and improves positioning speed and accuracy.

Key Features

- ✓ C-V2X PC5 Mode 4 direct communications: independent of cellular network for (U)SIM-less operation

- ✓ Ideal for automotive premarket applications with IATF 16949:2016 requirements

- ✓ Compliant with automotive quality processes such as APQP and PPAP

- ✓ Extended operation temperature range (-40 °C to +85 °C) and excellent EMI protection compliant with the demanding requirements for automotive devices and ensuring great robustness even in harsh environments

- ✓ Compact SMT form factor ideal for integration in slim and size-constrained automotive solutions

- ✓ MIMO technology meets demands for data rate and link reliability in modem wireless communication systems

- ✓ Embedded multi-constellation GNSS receiver available for applications requiring a fast and accurate positioning in any environment

C-V2X Direct Communication

Enhanced Driver Safety

LGA Package

Autonomous Driving

Multi-constellation GNSS

USB 3.0/2.0 Interface

USB Driver

C-V2X Module	AG15
Region	Global
Dimensions (mm)	28.0 × 32.0 × 2.85
Temperature Range	
Operating Temperature	-35 °C to +75 °C
Extended Temperature	-40 °C to +85 °C
Frequency Band	
C-V2X TDD	B47/46D
Certificates	
Regulatory	**China:** SRRC **Europe:** CE [①]
Max. Data Rate	
C-V2X TDD	26 Mbps (Tx/Rx)
Interfaces	
USB	× 1 (USB 3.0/2.0)
UART	× 2
SPI	× 1
PCIe	× 1
I2C	× 1
DR_SYNC	× 1
ADC	× 2
GPIO	× 4
Antenna	× 3 (C-V2X × 2 and GNSS × 1)
Enhanced Features	
PACE	●
QDR 3.0*	Optional
Embedded GNSS (GPS/GLONASS/Galileo/BDS/QZSS)	Single-frequency GNSS
Enhanced Security	Secure Boot SELinux
ESD/EMI Protection	Realized Through Internal Specific Circuits and Components
Sensitivity	C-V2X TDD B47: -93 dBm (10 MHz) C-V2X TDD B46D: -93 dBm
Software Features	
USB Serial Driver	Windows 7/8/8.1/10/11 Linux 2.6–6.5
Protocol	QMI (Qualcomm MSM Interface)
Electrical Features	
Supply Voltage Range	**VBAT_BB_3V8:** 3.3–4.3 V, typ. 3.8 V **VBAT_RF_5V0:** 4.75–5.25 V, typ. 5.0 V
Transmitting Power	Class 3 (23 dBm ±2 dB) for C-V2X
Power Consumption (Typ.)	40 µA @ Power off

NOTE:

1. * : Under development.
2. ① : To be determined.
3. ● : Supported.

QUECTEL