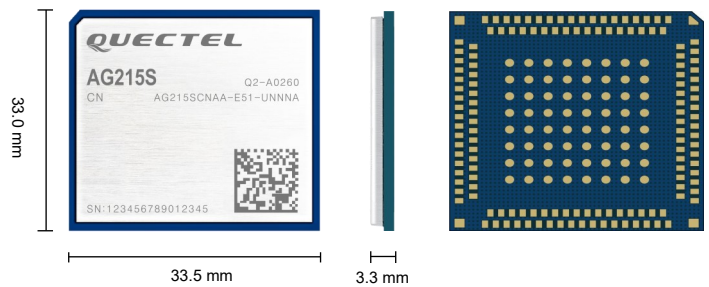


Quectel AG215S

IATF 16949 Compliant Automotive Grade C-V2X Application Processor Module



Quectel AG215S is a series of automotive grade C-V2X Application Processor modules designed and manufactured according to IATF 16949:2016 standards. Designed for use in extremely harsh environments and providing superior ESD/EMI protection performance, AG215S series EAP module can be used widely in C-V2X communication solution to meet enhanced driving safety, autonomous driving, intelligent transport system (ITS) and advanced driver-assistance system (ADAS) application demands. It can also fulfill the critical security function in V2X based on the powerful ARM cores and dedicated hardware Crypto engine.

Based on 3GPP Release 14/15 compliant LTE-V2X direct communications, Quectel automotive grade C-V2X module AG15 and cellular modules AG520R/AG550Q support vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I) and vehicle-to-pedestrian (V2P) communications in PC5 mode on the unified 5.9 GHz ITS band and concurrently work in uU mode. AG215S can be used in combination with these automotive grade modules (AG15/AG520R/AG550Q) to implement as C-V2X Application Processor to host ITS stack and applications. Thus, it provides automotive industry application solutions with more functions and further extended communication range, especially enabling C-V2X for traffic safety and efficiency in nowadays.

Quectel Automotive Modules will make traffic smoother and more efficient through paving the way for automated driving and achieving the goal of fully connected traffic.



Key Benefits

- ✓ Designed for automotive applications with IATF 16949:2016 requirement
- ✓ Compliant with automotive quality processes such as APQP, PPAP, etc.
- ✓ Powerful Application Processor to host ITS stack and applications
- ✓ Optimized communication performance with Quectel AG520R/AG550Q
- ✓ Hardware Crypto Engine embedded to fulfill powerful ECDSA verification capability
- ✓ Support global and China national security algorithms
- ✓ Additional HSM/SE integrated
- ✓ ITS stack integrated (optional)
- ✓ Wide operation temperature range (-40 °C to +85 °C) meets the demanding requirements for automotive devices
- ✓ Excellent EMC protection ensures great robustness even in harsh environments
- ✓ Compact SMT form factor ideal for integration in slim and size-constrained automotive solutions



C-V2X V2V/V2I/V2P
Using Cases



LGA Package



Enhanced
Driving Safety



USB Drivers



Autonomous
Driving



USB 2.0/3.0 High
Speed Interface

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Processors

ARM Cortex-A53 Microprocessor Cores

64-bit Processor

1.4 GHz Dual-Core Processor

(Quad-Core Processor Optional)

Interfaces

USB 2.0/3.0 × 1

PCIe Gen2 × 1

RGMII 1 Gbps × 1

UART × 2

SPI × 2

I2C × 2

1PPS (Input) × 1

ADC × 2

Enhanced Features

High Security:

Secure Boot*

SELinux*

Powerful ECDSA Capability:

Curve Supported:

NIST p-384, NIST p-256

Brainpool p-384, Brainpool p-256

SM2 256 bit

Scalable ECDSA Capability:

Up to 2500TPS through Embedded Engine and

CPU (Based on NIST p-256 and SMT Curves)

Hardware Crypto Engine Embedded*

Support Secret Key Generation and Storage, and

Digital Signature and Verification

Additional 2000TPS ECDSA Capability Supported

(Based on NIST p-256 and SMT Curves)

ESD/EMI Protection:

Realized through Internal Specific Circuits and

Components

Electrical Characteristics

Power Consumption:

TBD

Software Features

USB Serial Driver:

Linux 4.9.11/4.9.88/4.14

PCIe Driver:

Linux 4.9.11/4.9.88/4.14

Protocol:

QMI (Qualcomm MSM Interface)

General Features

Temperature Range:

-40 °C to +85 °C

Dimensions:

33.0 mm × 33.5 mm × 3.3 mm

Supply Voltage:

VBAT_3V8: 3.3 to 4.3 V, 3.8 V Typ.

Package:

LGA

Approvals

TBD

* Under Development