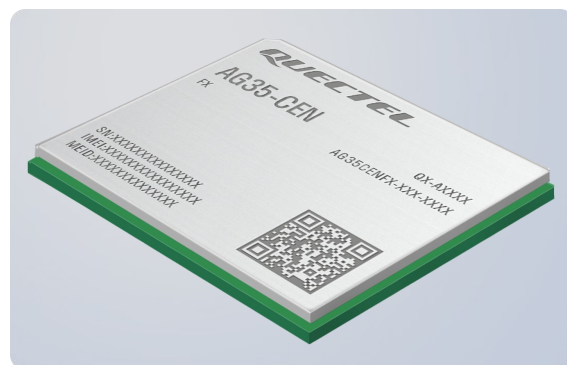


Quectel AG35-CEN

IoT/M2M-optimized LTE Cat 4 Module



Quectel AG35-CEN is an LTE Cat 4 industrial-grade wireless communication module optimized specially for M2M and IoT applications. Adopting the 3GPP Rel-10 LTE technology, it delivers maximum data rates up to 150 Mbps downlink and 50 Mbps uplink. AG35-CEN is compatible with Quectel automotive-grade LTE module AG35 in the compact and unified form factor, which allows for flexible migration between them in design and manufacturing.

Adopting laser engraving technique, AG35-CEN features a more vibrant appearance, strong metallic texture, better thermal capacity capability and durable label information, which makes it ideally suitable for large-scale manufacturing. The module is controlled according to IATF16949 system to ensure the product quality during the production process.

AG35-CEN 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 combines high-speed wireless connectivity with embedded multi-constellation high-sensitivity GNSS (GPS, GLONASS, BDS, Galileo and QZSS) receiver for positioning.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB drivers for Windows 7/8/8.1/10, Linux and Android operating systems, etc.) extend the applicability of the module to a wide range of M2M and IoT application.

AG35-CEN is an industrial-grade module, of which the defect rates, quality and reliability in automotive-grade application scenarios are not guaranteed. If you have higher requirements for use, it is recommended to choose automotive-grade products. Quectel shall not be liable for any product-related liability beyond the scope of applications stated in the specification.



Key Features

- ✓ LTE category 4 module optimized for M2M and IoT applications
- ✓ Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- ✓ Feature refinements: supports QuecOpen®, multi-APN, DFOTA*
- ✓ MIMO technology meets demands for data rate and link reliability in modem wireless communication systems
- ✓ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment



LTE Cat 4
Max.150 Mbps (DL)
Max. 50 Mbps (UL)



Max. 42 Mbps (DL)
Max. 5.76 Mbps (UL)



LGA Package



Embedded Abundant
Protocols



Multi-constellation
GNSS



USB Drivers



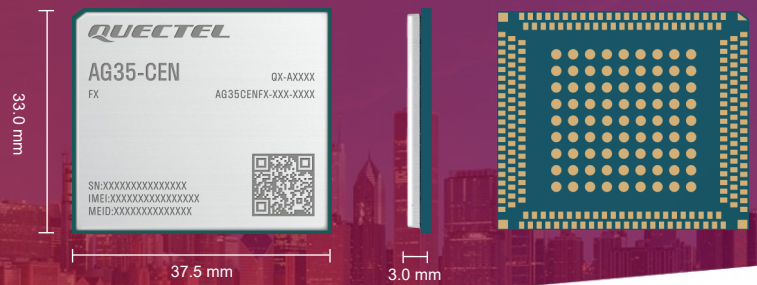
Quectel Enhanced
AT Commands



USB 2.0 High Speed
Interface

Quectel AG35-CEN

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Variant for China

AG35-CEN:

TE FDD: B1/B3/B5/B8
LTE TDD: B34/B38/B39/B40/B41
WCDMA: B1/B8
TD-SCDMA: B34/B39
EVDO/CDMA: BC0
GSM: 900/1800 MHz

Data

LTE:

LTE FDD: Max. 150 Mbps (DL)/Max. 50 Mbps (UL)
LTE TDD: Max. 130 Mbps (DL)/Max. 30 Mbps (UL)

UMTS:

DC-HSDPA: Max. 42 Mbps (DL)
HSUPA: Max. 5.76 Mbps (UL)
WCDMA: Max. 384 kbps (DL/UL)

TD-SCDMA:

Max. 4.2 Mbps (DL)/Max. 2.2 Mbps (UL)

CDMA2000:

EVDO: Max. 3.1 Mbps (DL)/Max. 1.8 Mbps (UL)
1X Advanced: Max. 307.2 kbps (DL/UL)

GSM:

EDGE: Max. 296 kbps (DL)/Max. 236.8 kbps (UL)
GPRS: Max. 107 kbps (DL)/Max. 85.6 kbps (UL)

Voice

Speech Codec Modes:

HR, FR, EFR, AMR, AMR-WB

Echo Arithmetic:

Echo Cancellation, Noise Reduction

VoLTE:

Digital Audio and VoLTE (Voice over LTE)
(Optional)

SMS

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

GNSS

Embedded GNSS:

GPS/GLONASS/BDS/Galileo/QZSS

TTFF (Autonomous @ Open Sky):

Cold Start: 35 s
Warm Start: 26 s
Hot Start: 2.5 s

TTFF (XTRA Enabled @ Open Sky):

Cold Start: 18 s
Warm Start: 2.2 s
Hot Start: 1.8 s

Sensitivity:

Acquisition: -146 dBm
Reacquisition: -158 dBm
Tracking: -162 dBm

Interfaces

USB 2.0 × 1 (with High Speed up to 480 Mbps)
UART × 3 (for Main/BT/Debug UART)
I2C × 2 (× 1 for PCM)
PCM × 1
SDIO × 2 (for Wi-Fi and eMMC)
ADC × 3 (15 bits)
SGMII × 1
1.8 V/3.0 V (U)SIM Interface
Main/Rx-diversity/GNSS Antenna Interfaces
SPI > 1 (for QuecOpen® Version Only)
GPIO > 15 (for QuecOpen® Version Only, GPIO > 15, in multiplexing function)

Enhanced Features

QuecOpen® (Open Linux)
Multi-APN
SDIO Interface for Wi-Fi Function (Optional)
UART2 Interface for Bluetooth Function* (Optional)
Temperature Management*
FOTA
DFOTA*

High Security:

TrustZone/TPM*
Secure Boot
Code/User Data Backup
ESD/EMI Protection:
Realized through Internal Specific Circuits and Components

Electrical Characteristics

Output Power:

LTE: Class 3 (23 dBm ±2 dB)
TD-SCDMA: Class 2 (24 dBm +1/-3 dB)
WCDMA: Class 3 (24 dBm +1/-3 dB)
EVDO/CDMA BC0: Class 3 (24 dBm +2/-1 dB)
EGSM900: Class E2 (27 dBm ±3 dB)
DCS1800: Class E2 (26 dBm ±3 dB)
EGSM900: Class 4 (33 dBm ±2 dB)
DCS1800: Class 1 (30 dBm ±2 dB)

Consumption:

20 uA @ Power off
1.9 mA @ LTE Sleep, PF = 128
1.6 mA @ LTE Sleep, PF = 256
22 mA @ Idle, Typ.

Sensitivity:

FDD B1: -101 dBm (10 MHz)
FDD B3: -101 dBm (10 MHz)
FDD B5: -101 dBm (10 MHz)
FDD B8: -101 dBm (10 MHz)
TDD B34: -101 dBm (10 MHz)
TDD B38: -99 dBm (10 MHz)
TDD B39: -100.5 dBm (10 MHz)
TDD B40: -99 dBm (10 MHz)
TDD B41: -99 dBm (10 MHz)
WCDMA B1: -109 dBm
WCDMA B8: -110 dBm
TD-SCDMA B34: -109 dBm
TD-SCDMA B39: -110 dBm
EVDO/CDMA BC0: -109 dBm
EGSM900: -109 dBm
DCS1800: -109 dBm

Software Features

USB Serial Driver:

Windows 7/8/8.1/10, Windows CE 5.0/6.0/7.0*,
Linux 2.6/3.x/4.1–4.14, Android 4.x/5.x/6.x/7.x

RIL Driver: Android 4.x/5.x/6.x/7.x

USB NDIS Driver: Windows 7/8/8.1/10

USB ECM Driver*: Linux 2.6/3.x/4.1–4.14

USB GobiNet Driver: Linux 2.6/3.x/4.1–4.14

USB QMI_WWAN Driver:

Linux 3.x (3.4 or later)/4.1–4.14

Protocols: TCP/UDP/PPP/FTP/HTTP/NTP/PING/
QMI/HTTPS*/SMTP*/MMS*/FTPS*/SMTPS*/SSL*

General Features

3GPP E-UTRA Release 10
Bandwidth: 1.4/3/5/10/15/20 MHz
Temperature Range: -40 °C to +85 °C
Dimensions: 33.0 mm × 37.5 mm × 3.0 mm
Approx. 8.1 g
Supply Voltage: 3.3 V–4.3 V, Typ. 3.8 V
LGA Package
3GPP TS 27.007, 3GPP TS 27.005 and Quectel
Enhanced AT Commands

* Under Development