

Quectel EC25

IoT/M2M-optimized LTE Cat.4 Module



Quectel EC25 is a series of LTE category 4 module optimized specially for M2M and IoT applications. Adopting the 3GPP Rel. 11 LTE technology, it delivers 150Mbit/s downlink and 50Mbit/s uplink data rates. Designed in the compact and unified form factor, EC25 is compatible with Quectel UMTS/HSPA+ UC20 module and multi-mode LTE EC20/EC21 module, which allows for flexible migration among them in design and manufacturing.

EC25 contains 7 variants: EC25-V, EC25-J, EC25-A, EC25-AU, EC25-AUT, EC25-AUTL and EC25-E. This makes it backward-compatible with existing EDGE and GSM/GPRS networks, ensuring that it can be connected even in remote areas devoid of 4G or 3G coverage.

EC25 supports Qualcomm® IZat™ location technology Gen8C Lite (GPS, GLONASS, BeiDou, Galileo and QZSS). The integrated GNSS greatly simplifies product design, and provides quicker, more accurate and more dependable positioning.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB drivers for Windows XP, Windows Vista, Windows 7/8/8.1/10, Linux, Android/eCall) extend the applicability of the module to a wide range of M2M and IoT applications such as industrial router, industrial PDA, rugged tablet PC, video surveillance, and digital signage.



Key Benefits

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



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



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



LCC Package



Embedded Abundant
Protocols



eCall



Multi-constellation
GNSS



USB 2.0 High Speed
Interface



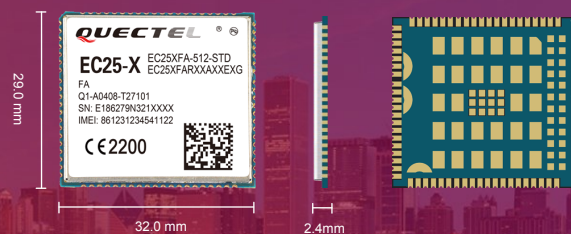
USB Drivers



Quectel Enhanced
AT Commands

Quectel EC25

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Variant for EMEA/Korea/Thailand

EC25-E:

LTE FDD: B1/B3/B5/B7/B8/B20
LTE TDD: B38/B40/B41
WCDMA: B1/B5/B8
GSM: B3/B8

Variants for North America

EC25-A:

LTE FDD: B2/B4/B12
WCDMA: B2/B4/B5

EC25-V:

LTE FDD: B4/B13

Variants for Australia/New Zealand/Taiwan/ Brazil

EC25-AU:

LTE FDD: B1/B2^①/B3/B4/B5/B7/B8/B28
LTE TDD: B40
WCDMA: B1/B2/B5/B8
GSM: B2/B3/B5/B8

EC25-AUT:

LTE FDD: B1/B3/B5/B7/B28
WCDMA: B1/B5

EC25-AUTL:

LTE FDD: B3/B7/B28

Variant for Japan

EC25-J:

LTE FDD: B1/B3/B8/B18/B19/B26
LTE TDD: B41
WCDMA: B1/B6/B8/B19

Data

LTE:

LTE FDD: Max 150Mbps (DL)/Max 50Mbps (UL)
LTE TDD: Max 130Mbps (DL)/Max 35Mbps (UL)

UMTS:

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

GSM:

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

Interfaces

USB 2.0 with High Speed up to 480Mbps
Digital Audio through PCM (Optional)

1.8V/3.0V (U)SIM Interface

NETLIGHT × 2 (NET_STATUS and NET_MODE)

UART × 2 (Main UART and Debug UART)

RESET

PWRKEY

Solder pads for Primary, Rx-diversity and GNSS

Antennas

ADC × 2

SDIO × 2 (for Wi-Fi and SD card)

Enhanced Features

SDIO Interface for Wi-Fi Function (Optional)

UART/PCM Interfaces for BT4.0 Function*

eCall*

DTMF

DFOTA*: Delta Firmware Upgrade over the Air

Audio Playback/Audio Recording

QuecFile*

(U)SIM Card Detection

GNSS: GPS/GLONASS/BeiDou/Galileo/QZSS

(Optional)

Electrical Characteristics

Output Power:

Class 3 (23dBm±2dB) for LTE FDD

Class 3 (23dBm±2dB) for LTE TDD

Class 3 (24dBm+1/-3dB) for TD-SCDMA

Class 3 (24dBm+1/-3dB) for WCDMA

Class E2 (27dBm±3dB) for EDGE 850/900MHz

Class E2 (26dBm+3/-4dB) for EDGE

1800/1900MHz

Class 4 (33dBm±2dB) for GSM 850/900MHz

Class 1 (30dBm±2dB) for GSM 1800/1900MHz

Consumption:

20uA @Power off

3mA @Sleep, Typ.

22mA @Idle

Sensitivity:

LTE B1: -101.5dBm (10M)

LTE B2: -101dBm (10M)

LTE B3: -101.5dBm (10M)

LTE B4: -101dBm (10M)

LTE B5: -101dBm (10M)

LTE B7: -99.5dBm (10M)

LTE B8: -101dBm (10M)

LTE B12: -101dBm (10M)

LTE B13: -100dBm (10M)

LTE B20: -102.5dB (10M)

LTE B28: -102dBm (10M)

WCDMA B1: -110dBm

WCDMA B2: -110dBm

WCDMA B4: -110dBm

WCDMA B5: -110.5dBm

WCDMA B8: -110.5dBm

GSM: -109dBm

DCS: -109dBm

Software Features

USB Serial Driver:

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

RIL Driver:

Android 4.x/5.x/6.0/7.0

NDIS Driver:

Windows 7/8/8.1/10

ECM Driver:

Linux 2.6/3.x/4.1

Gobinet Driver:

Linux 2.6/3.x/4.1

Linux qmi wwan Driver:

3.x (3.4 or later)/4.1

Protocols:

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

General Features

3GPP E-UTRA Release 11

Bandwidth: 1.4/3/5/10/15/20MHz

Temperature Range: -40°C ~ +85°C

Dimensions: 32.0mm x 29.0mm x 2.4mm

LCC Package

Approx. 4.9g

Supply Voltage: 3.3V~4.3V, 3.8V Typ.

3GPP TS27.007 and Enhanced AT Commands

Approvals

RoHS Compliant

CE/GCF/Vodafone* (Europe)

FCC/PTCRB/AT&T/Verizon* (North America)

RCM/Telstra (Australia)

JATE/TELEC/DOCOMO*/Softbank (Japan)

NCC (Taiwan)

KC/SKT/KT*/LGU+* (Korea)

IC/Rogers (Canada)

NBTC (Thailand)

Anatel (Brazil)

①: LTE B2 of EC25-AU does not support
Rx-diversity

* Under Development