

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



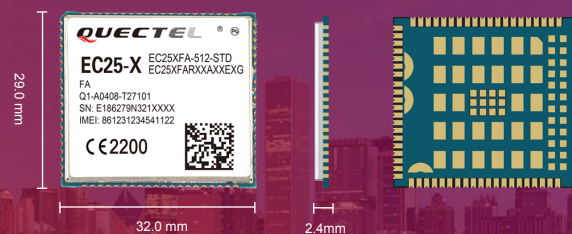
USB Drivers



Quectel Enhanced
AT Commands

Quectel EC25

IoT/M2M-optimized LTE Cat 4 Module



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

Audio:

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

Audio Playback/Audio Recording

QuecFile*

(U)SIM Card Detection

DFOTA*:

Delta Firmware Upgrade Over the Air

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.x/7.x

RIL Driver:

Android 4.x/5.x/6.x/7.x

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/

CMUX*/HTTPS*/SMTP*/MMS*/FTPS*/SMTPS*/

SSL*/FILE*

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