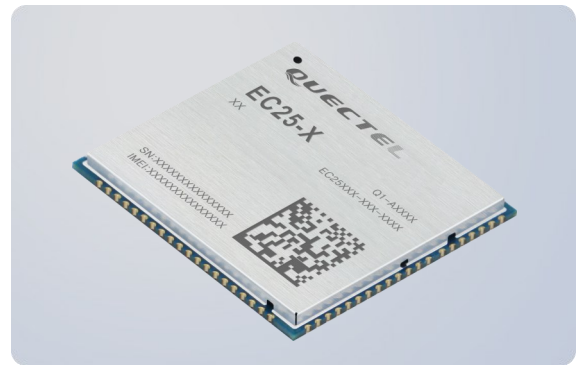


Quectel EC25

IoT/M2M-optimized LTE Cat 4 Module



Quectel EC25 is a series of LTE Cat 4 module optimized specially for M2M and IoT applications. Adopting the 3GPP Rel. 11 LTE technology, it delivers 150Mbps downlink and 50Mbps 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 10 variants: EC25-E, EC25-EU, EC25-EC, EC25-A, EC25-V, EC25-AF, EC25-AU, EC25-AUT, EC25-AUTL and EC25-J. 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 serial drivers for 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 Cat 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



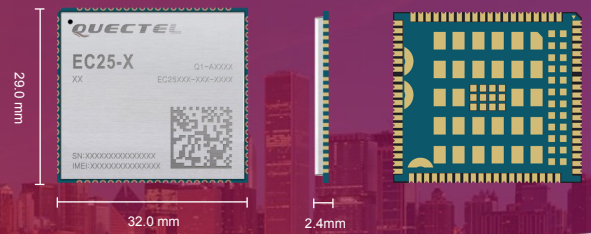
USB Drivers



Quectel Enhanced
AT Commands

Quectel EC25

IoT/M2M-optimized LTE Cat 4 Module



Variants 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

EC25-EU:

LTE FDD: B1/B3/B7/B8/B20/B28A

LTE TDD: B38/B40/B41

WCDMA: B1/B8

GSM: B3/B8

EC25-EC:

LTE FDD: B1/B3/B7/B8/B20/B28A

WCDMA: B1/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

EC25-AF:

LTE FDD: B2/B4/B5/B12/B13/B14/B66/B71

WCDMA: B2/B4/B5

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 30Mbps (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 Suppression

VoLTE:

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

Interfaces

UART × 2 : Main UART and Debug UART

USB x 1: USB 2.0 with High Speed up to 480Mbps

(U)SIM x 1: 1.8V/3.0V (U)SIM Interface

Digital Audio through PCM Interface (Optional)

NETLIGHT × 2 (NET_STATUS and NET_MODE)

ADC × 2

SDIO × 2 (for Wi-Fi and SD card)

RESET

PWRKEY

Solder Pads for Primary, Rx-diversity and GNSS

Antennas

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 4 (33dBm±2dB) for GSM850

Class 4 (33dBm±2dB) for EGSM900

Class 1 (30dBm±2dB) for DCS1800

Class 1 (30dBm±2dB) for PCS1900

Class E2 (27dBm±3dB) for GSM850 8-PSK

Class E2 (27dBm±3dB) for EGSM900 8-PSK

Class E2 (26dBm±3dB) for DCS1800 8-PSK

Class E2 (26dBm±3dB) for PCS1900 8-PSK

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

Class 3 (23dBm±2dB) for LTE-FDD bands

Class 3 (23dBm±2dB) for LTE-TDD bands

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 B14: -99dBm (10M)

LTE B18: -101.7dBm (10M)

LTE B19: -101.4dBm (10M)

LTE B20: -102.5dB (10M)

LTE B26: -101.5dBm (10M)

LTE B28: -102dBm (10M)

LTE B38: -100dBm (10M)

LTE B40: -100dBm (10M)

LTE B41: -99dBm (10M)

LTE B66: -99dBm (10M)

LTE B71: -100dBm (10M)

WCDMA B1: -110dBm

WCDMA B2: -110dBm

WCDMA B4: -110dBm

WCDMA B5: -110.5dBm

WCDMA B6 -110.5dBm

WCDMA B8: -110.5dBm

WCDMA B19: -110.5dBm

GSM850: -109dBm

EGSM900: -109dBm

DCS1800: -109dBm

PCS1900: -109dBm

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/8.x

RIL Driver:

Android 4.x/5.x/6.x/7.x/8.x

NDIS Driver:

Windows 7/8/8.1/10

ECM Driver*:

Linux 2.6/3.x/4.1~4.14

Gobinet Driver:

Linux 2.6/3.x/4.1~4.14

Linux qmi wwan Driver:

3.x (3.4 or later)/4.1~4.14

Protocols:

TCP/UDP/PPP/FTP/HTTP/NTP/PING/QMI/

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

SSL*/FILE*

General Features

Temperature Range: -40°C ~ +85°C

Dimensions: 29.0mm x 32.0mm x 2.4mm

Weight: Approx. 4.9g

LCC Package

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

3GPP E-UTRA Release 11

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

3GPP TS 27.007, 27.005 and Enhanced AT Com-
mands

Approvals

RoHS Compliant

GCF (Global)

CE/Vodafone/Deutsche Telekom (Europe)

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

RCM/Telstra* (Australia)

JATE/TELEC/DOCOMO/Softbank/KDDI (Japan)

NCC (Taiwan)

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

IC/Rogers (Canada)

NBTC (Thailand)

Anatel (Brazil)

ICASA (S. Africa)

FAC (Russia)

Telefonica* (Spain)

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

* Under Development