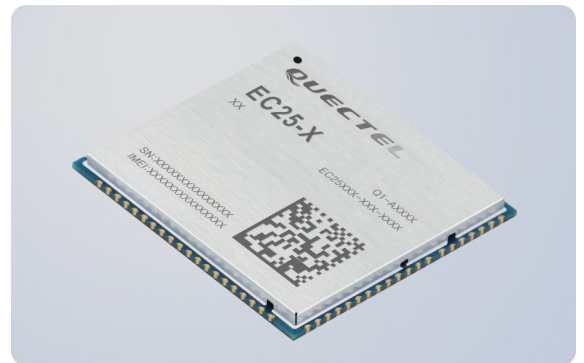


Quectel EC25

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/UC200T modules and multi-mode LTE EC2x/EG25-G modules, which allows for flexible migration among them in design and manufacturing.

EC25 contains 12 variants: EC25-E, EC25-EU, EC25-EC, EC25-EUX, EC25-A, EC25-V, EC25-AF, EC25-MX, 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



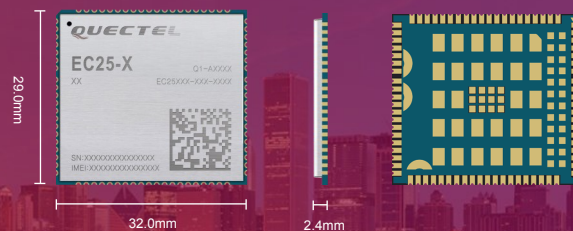
USB Drivers



Quectel Enhanced AT Commands

Quectel EC25

IoT/M2M-optimized LTE Cat 4 Module



Variants for EMEA/Korea/Thailand/India

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

EC25-EUX^①:
LTE FDD: B1/B3/B7/B8/B20/B28A
LTE TDD: B38/B40/B41
WCDMA: B1/B8
GSM: B3/B8

Variants for North America/Mexico

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

EC25-MX^②:
LTE FDD: B2/B4/B5/B7/B28/B66
WCDMA: B2/B4/B5

Variants for Australia/New Zealand/Taiwan/ Latin America

EC25-AU:
LTE FDD: B1/B2^③/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 × 1: USB 2.0 with High Speed up to 480Mbps
(U)SIM × 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/9.x

RIL Driver:
Android 4.x/5.x/6.x/7.x/8.x/9.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/NITZ/
SMTP/CMUX*/HTTPS*/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
Commands

Approvals^③

Carrier:
Vodafone (Global)
Deutsche Telekom/Telefónica (Europe)
Verizon/AT&T/T-Mobile (North America)
Rogers/Bell*/Telus* (Canada)
SKT/KT*/LGU+* (South Korea)
NTT DOCOMO/SoftBank/KDDI (Japan)

Regulatory:
GCF (Global)
CE (Europe)
FCC/PTCRB (North America)
IC (Canada)
Anatel (Brazil)
KC (South Korea)
NCC (Taiwan)
JATE/TELEC (Japan)
RCM (Australia/New Zealand)
FAC (Russia)
NBTC (Thailand)
ICASA (South Africa)

Others:
RoHS Compliant
WHQL

- ① EC25-EUX/-EX support ThreadX software.
- ② LTE B2 of EC25-AU does not support Rx-diversity.
- ③ Certification status are different among different variants of EC25 module.

* Under Development