

Quectel EC25 Mini PCIe

IoT/M2M-optimized LTE Cat 4 Module



Quectel EC25 Mini PCIe is a series of LTE category 4 module adopting standard PCI Express® Mini Card form factor (Mini PCIe). It is optimized specially for M2M and IoT applications, and delivers 150Mbps downlink and 50Mbps uplink data rates.

EC25 Mini PCIe contains 10 variants: EC25-E Mini PCIe, EC25-EU Mini PCIe, EC25-EC Mini PCIe, EC25-EUX Mini PCIe, EC25-A Mini PCIe, EC25-V Mini PCIe, EC25-AF Mini PCIe, EC25-MX Mini PCIe, EC25-AU Mini PCIe and EC25-J Mini PCIe. 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 Mini PCIe 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 applications such as industrial router, industrial PDA, rugged tablet PC, video surveillance and digital signage.



Key Benefits

- ✓ LTE category 4 module optimized for broadband IoT applications
- ✓ Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- ✓ Standard PCI Express® MiniCard form factor (Mini PCIe) ideal for manufacturers to easily integrate wireless connectivity into their devices
- ✓ 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 150Mbps (DL)
Max 50Mbps (UL)



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



Mini PCIe Package



Embedded Abundant Protocols



eCall*



Multi-constellation GNSS



USB 2.0 High Speed Interface



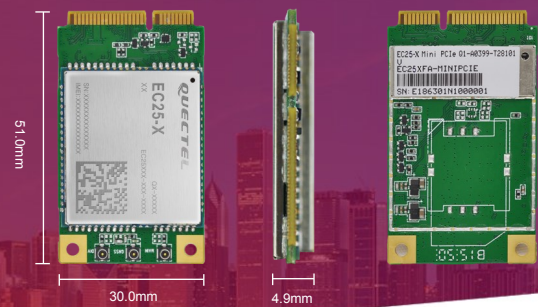
USB Drivers



Quectel Enhanced AT Commands

Quectel EC25 Mini PCIe

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Variant for EMEA/Korea/Thailand/India

EC25-E Mini PCIe:

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

EC25-EU Mini PCIe:

LTE FDD: B1/B3/B7/B8/B20/B28A
LTE TDD: B38/B40/B41
WCDMA: B1/B8
GSM: B3/B8

EC25-EC Mini PCIe:

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

EC25-EUX Mini PCIe^①:

LTE FDD: B1/B3/B7/B8/B20/B28A
LTE TDD: B38/B40/B41
WCDMA: B1/B8
GSM: B3/B8

Variants for North America

EC25-A Mini PCIe:

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

EC25-V Mini PCIe:

LTE FDD: B4/B13

EC25-AF Mini PCIe:

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

EC25-MX Mini PCIe^②:

LTE FDD: B2/B4/B5/B7/B28/B66
WCDMA: B2/B4/B5

Variant for Australia/New Zealand/Taiwan/ Latin America

EC25-AU Mini PCIe:

LTE FDD: B1/B2^③/B3/B4/B5/B7/B8/B28
LTE TDD: B40
WCDMA: B1/B2/B5/B8
GSM: B2/B3/B5/B8

Variant for Japan

EC25-J Mini PCIe:

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 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
LED_WWAN# for Network Status Indication
W_DISABLE# for Disabling RF Function
UART x 1
PERST# for Module Resetting
Solder Pads for Main Antenna, Rx-diversity and
GNSS Antennas

Enhanced Features

eCall*
DTMF
(U)SIM Card Detection
Support MIMO in DL Direction
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:

3.6mA @Sleep, Typ.
35mA @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

NIDS 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 ~ +80°C

Dimensions: 30.0mm x 51.0mm x 4.9mm

Weight: Approx. 9.8g

Mini PCIe Package

Supply Voltage: 3.0V~3.6V, 3.3V Typ.

3GPP E-UTRA Release 11

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

3GPP TS 27.007, 27.005 and Quectel 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 Mini PCIe/-EX Mini PCIe support ThreadX software.
- ② LTE B2 of EC25-AU Mini PCIe does not support Rx-diversity.
- ③ Certification status are different among different variants of EC25 Mini PCIe.

* Under Development