

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® MiniCard 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 5 variants: EC25-J Mini PCIe, EC25-E Mini PCIe, EC25-AU Mini PCIe, EC25-V Mini PCIe and EC25-A 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 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 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



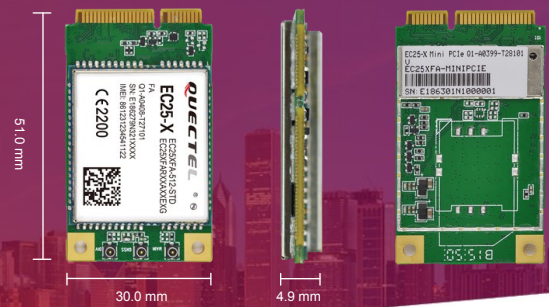
USB Drivers



Quectel Enhanced AT Commands

Quectel EC25 Mini PCIe

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Variant for EMEA/Korea/Thailand

EC25-E Mini PCIe:

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 Mini PCIe:

LTE FDD: B2/B4/B12

WCDMA: B2/B4/B5

EC25-V Mini PCIe:

LTE FDD: B4/B13

Variant for Australia/Taiwan/Brazil

EC25-AU Mini PCIe:

LTE FDD: B1/B2/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 35Mbps (UL)

DC-HSPA+:

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

UMTS:

Max 384Kbps (DL)/Max 384Kbps (UL)

EDGE:

Max 236.8Kbps (DL)/Max 236.8Kbps (UL)

GPRS:

Max 85.6Kbps (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 Card Interface

LED_WWAN# for Network Status Indication

W_DISABLE# for Disabling RF Function

UART x 1

PERST# for Module Resetting

Enhanced Features

eCall

DTMF

DFOTA*: Delta firmware upgrade over the air

(U)SIM Card Detection

Antenna: DL MIMO, Support Rx-diversity/GNSS

GNSS: GPS/GLONASS/BeiDou/Galileo/QZSS

(Optional)

Electrical Characteristics

Output Power:

Class 3 (23dBm±2dB) for LTE

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

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

Class E2 (26dBm±3dB) for EDGE 1800/1900MHz

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

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

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 B20: -102.5dB (10M)

LTE B28: -102dBm (10M)

UMTS B1: -110dBm

UMTS B2: -110dBm

UMTS B4: -110dBm

UMTS B5: -110.5dBm

UMTS B8: -110.5dBm

GSM: -109dBm

DCS: -109dBm

Software Features

USB 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

NIDS 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 ~ +80°C

Dimensions: 51.0mm x 30.0mm x 4.9mm

Mini PCIe Package

Approx. 9.8g

Supply Voltage: 3.0V~3.6V, 3.3V 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)

* Under Development