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-AULT 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

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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

Variant 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 TDD: B40
WCDMA: B1/B5/B8
GSM: B2/B3/B8

EC25-AVT:
LTE FDD: B1/B3/B5/B7/B28
WCDMA: B1/B5

EC25-AULT:
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
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 Interface
NETLIGHT × 2 (NET_STATUS and NET_MODE)
UART × 2 (Main UART and Debug UART)
RESET
PWRIKEY
Solders 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
DFOTA*: Delta Firmware Upgrade over the Air Audio Playback/Audio Recording
QuecFile*
(U)SIM Card Detection
GNSS: GPS/GLONASS/BeiDou/Galileo/QZSS (Optional)

Electrical Characteristics
Output Power:
Class 3 (23dBm±2dB) for LTE FDD
Class 2 (23dBm±2dB) for LTE TDD
Class 3 (24dBm±1/3dB) for TD-SCDMA
Class 2 (27dBm±3dB) for EDGE 850/900MHz
Class 2 (26dBm+3/4dB) for EDGE 1800/1900MHz
Class 4 (33dBm±3dB) for GSM 850/900MHz
Class 1 (30dBm±3dB) for GSM 1800/1900MHz

Consumption:
20mA @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: -100.5dBm (10M)
LTE B20: -102.5dBm (10M)
LTE B28: -102dBm (10M)
WCDMA B1: -110dBm
WCDMA B3: -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/6.0
RIL Driver:
Android 4.x/5.x/6.0/7.0
NDIS Driver:
Windows 7/8/8.1/10
ECM Driver:
Linux 2.6.3/4.x/4.1
Gobinet Driver:
Linux 2.6.3/4.x/4.1
Linux qmi wwan Driver:
3.x (3.4 or later)/4.1

Protocols:
TCP/UDP/PPP/FTP/HTTP/NT/NG/QM/HTTP*/SMTP*/IMIP*/FTP*/SMTPS*/SSL*

General Features
3GPP E-UTRA Release 11
Bandwidth: 1.4/3/5/10/15/20MHz
Temperature Range: -40°C ~ +85°C
Dimensions: 29.0mm x 22.8mm 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)

*: Under Development

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