Quectel EP06

IoT/M2M-optimized LTE-A Cat 6 Mini PCIe Module

Quectel EP06 is a series of LTE Advanced category 6 module optimized specially for M2M and IoT applications. Adopting the 3GPP Rel. 12 LTE technology, it delivers M2M-optimized speeds of 300Mbit/s downlink and 50Mbit/s uplink peak data rates. Designed in the Mini PCIe form factor, EP06 is compatible with Quectel future Cat 12 module EP12 and Cat 16 module EP16 , which will help customers to migrate between different categories in the future.

EP06 contains 4 variants (EP06-E, EP06-A, EP06-LA and EP06-APAC) which are designed for different target regions and nearly cover all the main stream carriers worldwide.

EP06 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 capability.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB drivers for Windows XP, Windows Vista, Windows 7, Windows 8/8.1, Windows 10, Linux, Android/eCall) extend the applicability of the module to a wide range of M2M and IoT applications such as industrial router, home gateway, STB, industrial PDA, rugged tablet PC, video surveillance and digital signage, etc.

Key Benefits

- LTE-A Cat 6 module with Mini PCIe form factor, optimized for M2M and IoT applications
- Support LTE-A carrier aggregation
- Worldwide LTE-A, UMTS/HSPA+ 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
LTE Cat 6
Max 300Mbps (DL)
Max 50Mbps (UL)

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

Mini PCIe
Mini PCIe Package

Embedded Abundant Protocols

eCall
eCall

Multi-constellation GNSS

USB 2.0/3.0 High Speed Interface

USB Drivers

AT
Quectel Enhanced AT Commands

Rev.: V1.1 | Status: Released

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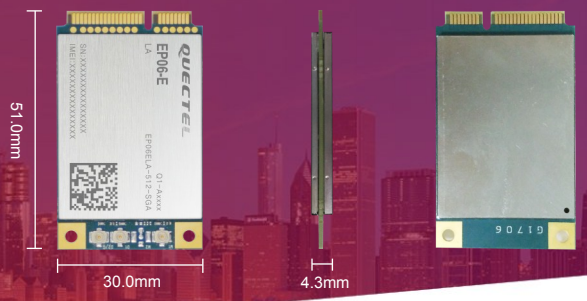

Variant for EMEA/Australia/Brazil

EP06-E

LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32
LTE-TDD: B38/B40/B41
2×CA: B1+B1/B5/B8/B20/B28;
B3+B3/B5/B7/B8/B20/B28;
B7+B5/B7/B8/B20/B28;
B20+B32①; B38+B38; B40+B40; B41+B41
WCDMA: B1/B3/B5/B8

Variant for North America

EP06-A

LTE-FDD: B2/B4/B5/B7/B12/B13/B25/B26/B29/B30/B66
LTE-TDD: B41
2×CA: B2+B2/B5/B12/B13/B26/B29①;
B4+B4/B5/B12/B13/B26/B29①;
B7+B5/B7/B12/B13/B26/B29①;
B25+B5/B12/B13/B25/B26/B29①;
B30+B5/B12/B13/B26/B29①;
B66+B5/B12/B13/B26/B29①/B66;
B41+B41
WCDMA: B2/B4/B5

Variant for Latin America

EP06-LA②

LTE-FDD: B2/B3/B4/B5/B7/B8/B20/B28
2×CA: B2+B2/B5/B8/B20/B28;
B3+B3/B5/B7/B8/B20/B28;
B4+B4/B5/B8/B20/B28;
B7+B5/B7/B8/B20/B28
WCDMA: B2/B3/B4/B5/B8

Variant for Asia-Pacific

EP06-APAC②

LTE-FDD: B1/B3/B5/B7/B8/B18/B19/B21/B26
LTE-TDD: B38/B39/B40/B41
2×CA: B1+B3/B8/B18/B19; B3+B5/B19;
B7+B5/B7; B21+B19; B38+B38; B39+B39;
B39+B41; B40+B40; B41+B41
WCDMA: B1/B5/B6/B8/B9/B19

Data

LTE:
LTE-FDD: Max 300Mbps (DL)/Max 50Mbps (UL)
LTE-TDD: Max 226Mbps (DL)/Max 28Mbps (UL)
UMTS:
DC-HSDPA: Max 42Mbps (DL)
HSUPA: Max 5.76Mbps (UL)
WCDMA: Max 384Kbps (DL)/Max 384Kbps (UL)

SMS

Point-to-point MO and MT
SMS Cell Broadcast
Text and PDU Mode

Interfaces

USB 2.0/3.0, Supports Slave Mode
Digital Audio Through PCM Interface
I2C × 1
(U)SIM Interface × 2: 1.8V/3.0V
ANTCTL/GPIO × 4
W_DISABLE_N: Control RF Function
RESET_N: Reset the Module
WAKE_N: Wake up the Host
WAN_LED_N: Indicate Network Status
PCIe Interface* (Optional)
Main, Diversity and GNSS Antenna Interfaces

Enhanced Features

MIMO: 2 × 2, 4 × 2, DL
eCall: Emergency Service
Digital Audio and VoLTE (Voice over LTE) (Optional)
DTMF: Dual-tone Multi-frequency
DFOTA: Delta Firmware over the Air
GNSS: GPS/GLONASS/BeiDou/Galileo/QZSS

Electrical Characteristics

Output Power:
Class 3 (23dBm±2dB) for LTE-FDD
Class 3 (23dBm±2dB) for LTE-TDD
Class 3 (24dBm+1/-3dB) for WCDMA
Consumption:
TBD @Power off
TBD @Sleep, Typ.
TBD @Idle

Software Features

MBIM Driver:
Windows 10
USB Serial Driver:
Windows XP/Vista 7/8/8.1/10,
WinCE 5.0/6.0/7.0*, Linux 2.6/3.x/4.1~4.14,
Android 4.x/5.x/6.x/7.x
RIL Driver:
Android 4.x/5.x/6.x/7.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
QMI_WWAN Driver:
Linux 3.x (3.4 or later)/4.1~4.14
Protocols:
PPP/QMI/TCP*/UDP*/FTP*/HTTP*/NTP*/PING*/HTTPS*/SMTP*/MMS*/FTPS*/SMTPS*/SSL*

General Features

3GPP E-UTRA Release 12
Bandwidth: 1.4/3/5/10/15/20/40 (2×CA)MHz
Supply Voltage: 3.1V~4.4V, 3.3V Typ.
Temperature Range: -40°C ~ +85°C
Dimensions: 51.0mm × 30.0mm × 4.3mm
Mini PCIe Package
Approx. 6.0g
3GPP TS27.007 and Quectel Enhanced AT Commands

Approvals

CE*/GCF* (Europe)
FCC*/PTCRB*/AT&T*/Verizon* (North America)
CCC* (China)

①: B29 and B32 in 2×CA are only for secondary component carrier
②: EP06-LA and EP06-APAC are under planning
* Under Development

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