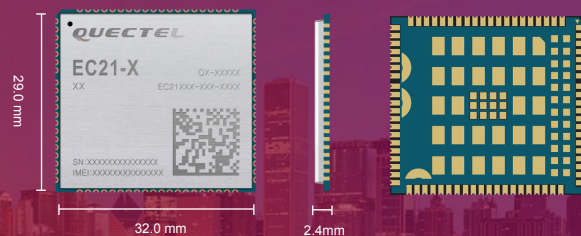


Quectel EC21

IoT/M2M-optimized LTE

Cat 1 Module



Variants for EMEA/Korea/Thailand

EC21-E:

LTE FDD: B1/B3/B5/B7/B8/B20

WCDMA: B1/B5/B8

GSM: B3/B8

EC21-EU:

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

WCDMA: B1/B8

GSM: B3/B8

EC21-EC:

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

WCDMA: B1/B8

GSM: B3/B8

Variants for North America

EC21-A:

LTE FDD: B2/B4/B12

WCDMA: B2/B4/B5

EC21-V:

LTE FDD: B4/B13

Variants for Australia/New Zealand/Taiwan/ Brazil

EC21-AU:

LTE FDD: B1/B2^①/B3/B4/B5/B7/B8/B28

LTE TDD: B40

WCDMA: B1/B2/B5/B8

GSM: B2/B3/B5/B8

EC21-AUT:

LTE FDD: B1/B3/B5/B7/B28

WCDMA: B1/B5

EC21-AUV:

LTE FDD: B1/B3/B5/B8/B28

WCDMA: B1/B5/B8

Variant for Japan

EC21-J:

LTE FDD: B1/B3/B8/B18/B19/B26

Variant for Korea

EC21-KL:

LTE FDD: B1/B3/B5/B7/B8

Variant for China

EC20-CEL:

LTE FDD: B1/B3/B5

Data

LTE:

LTE FDD: Max 10Mbps (DL)/Max 5Mbps (UL)

LTE TDD: Max 8.96Mbps (DL)/Max 3.1Mbps (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

Audio:

Digital Audio and VoLTE (Voice over LTE)

(Optional)

Interfaces

UART × 2 : Main UART and Debug UART

USB x 1: USB 2.0 with High Speed up to 480Mbps

(U)SIM x 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 (Active Low)

PWRKEY (Active Low)

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*

(Optional)

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 3 (23dBm±2dB) for LTE FDD bands

Class 3 (23dBm±2dB) for LTE TDD bands

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

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 4 (33dBm±2dB) for GSM850

Class 4 (33dBm±2dB) for EGSM900

Class 1 (30dBm±2dB) for DCS1800

Class 1 (30dBm±2dB) for PCS1900

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 B18: -101.7dBm (10M)

LTE B19: -101.4dBm (10M)

LTE B20: -102.5dBm (10M)

LTE B26: -101.5dBm (10M)

LTE B28: -102dBm (10M)

WCDMA B1: -110dBm

WCDMA B2: -110dBm

WCDMA B4: -110dBm

WCDMA B5: -110.5dBm

WCDMA B8: -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

RIL Driver:

Android 4.x/5.x/6.x/7.x/8.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 and later)/4.1~4.14

Protocols:

TCP/UDP/PPP/FTP/HTTP/NTP/PING/QMI/

CMUX*/HTTPS*/SMTP*/MMS*/FTPS*/SMTPS*/

SSL*/FILE*

General Features

Temperature Range: -40°C ~ +85°C

Dimensions: 29.0mm × 32.0mm × 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 TS27.007, 27.005 and Enhanced AT Com-
mands

Approvals

RoHS Compliant

GCF (Global)

CE/Vodafone/Deutsche Telekom (Europe)

FCC/PTCRB/AT&T/Verizon (North America)

RCM/Telestra (Australia)

JATE/TELEC/DOCOMO (Japan)

NCC (Taiwan)

KC/SKT/KT (Korea)

IC/Rogers (Canada)

Anatel (Brazil)

FAC (Russia)

Telefonica* (Spain)

CCC/SRRC/NAL (China)

①: LTE B2 of EC21-AU Does Not Support
Rx-diversity

* Under Development