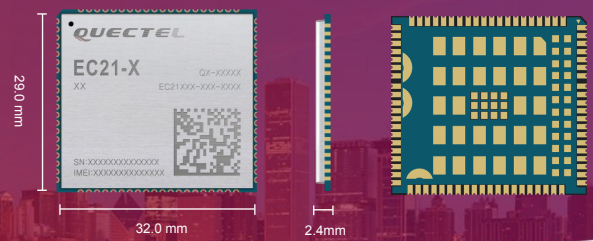


Quectel EC21

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