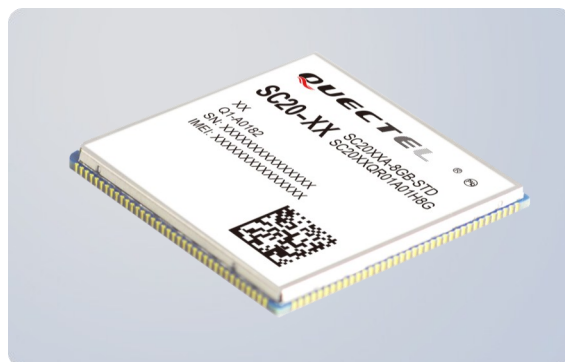


Quectel SC20

Multi-mode Smart LTE Module with Wi-Fi & Bluetooth



SC20 series is Quectel’s new generation of multi-mode Smart LTE Cat.4 modules with built-in Android OS. It contains five variants: SC20-CE, SC20-E, SC20-A, SC20-AU and SC20-J.

SC20 series delivers speeds of 150Mbit/s downlink and 50Mbit/s uplink data rates. It is ideal for both industrial and consumer applications requiring the highest data-rate and high-speed internet access. SC20 series is backward-compatible with existing EDGE and GSM/GPRS networks, ensuring that it can be connected even in remote areas devoid of 3G or LTE coverage. It also supports short-range wireless communication via IEEE 802.11 b/g/n (SC20-E/-A/-AU/-J support IEEE 802.11 a/b/g/n) and BT4.1 LE.

SC20 features multiple-input multiple-output (MIMO) technology, a cutting edge antenna technology capable of transmitting multiple data streams on multiple transmitters to multiple receivers. The antennas at each end of the communications circuit are combined to minimize errors and optimize data speed. The module also combines high-speed wireless connectivity with embedded multi-constellation and high-sensitivity GPS+GLONASS+BeiDou receiver for positioning.

A rich set of interfaces (such as LCM, Camera, Touch Panel, MIC, SPK, UART, USB, I2C) and abundant drivers (USB drivers for Windows XP, Windows Vista, Windows 7/8/8.1, Linux) extend the applicability of the module to a wide range of M2M applications, such as CPE, wireless POS, smart metering, router, data card, automotive, smart phone, digital signage, alarm panel, security and industry PDA.



Key Benefits

- ✓ Integrates Android OS, Wi-Fi, Bluetooth and GNSS into one module
- ✓ Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- ✓ 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
- ✓ LCC package ensures reliable connectivity with applications



Smart LTE Cat.4
Max 150Mbps (DL)
Max 50Mbps (UL)



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



LCC Package



Android 5.1



Powerful Multimedia
Function



Multi-constellation
GNSS



USB 2.0 High Speed
Interface



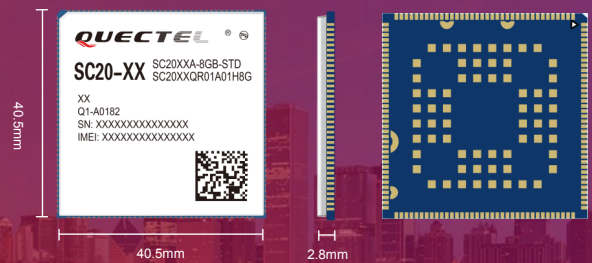
USB Drivers



Quectel Enhanced
AT Commands

Quectel SC20

Multi-mode Smart LTE Module with Wi-Fi & Bluetooth



Variant for China/India

SC20-CE:

LTE FDD: B1/B3/B8
LTE TDD: B38/B39/B40/B41
TDSCDMA: B34/B39
EVDO/CDMA: BC0
WCDMA: B1/B8
GSM: 900/1800MHz

Variant for EMEA/Korea/Thailand

SC20-E*:

LTE FDD: B1/B3/B5/B7/B8/B20
LTE TDD: B38/B40/B41
WCDMA: B1/B5/B8
GSM: 850/900/1800/1900MHz

Variant for North America

SC20-A*:

LTE FDD: B2/B4/B5/B7/B12/B13/B25/B26
WCDMA: B1/B2/B4/B5/B8
GSM: 850/1900MHz

Variant for Australia/Taiwan/Brazil

SC20-AU*:

LTE FDD: B1/B3/B5/B7/B8/B28
LTE TDD: B40
WCDMA: B1/B2/B5/B8
GSM: 850/900/1800/1900MHz

Variant for Japan

SC20-J*:

LTE FDD: B1/B3/B8/B18/B19/B26
LTE TDD: B41
WCDMA: B1/B6/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)

WCDMA:

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

TD-SCDMA:

Max 4.2Mbps (DL)/Max 2.2Mbps (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

LCM: 4-lane MIPI_DSI, up to 1.5Gbps for each HD (720P) @60fps

Camera: Use MIPI_CSI, up to 1.5Gbps per lane Support Two Cameras:

2-lane MIPI_CSI for Rear Camera, up to 8MP

1-lane MIPI_CSI for Front Camera, up to 2MP

Touch Panel: Capacitive-screen

Audio: MP3/AAC/AAC+/eAAC/AMR-NB/-WB/G.711/WMA 9/10 Pro

Video: Encode: 30fps 720P (H.264), 30fps WVGA (MPEG-4/VP8)

Decode: 30fps 1080P (H.264/MPEG-4/VP8/H.265 DivX4/5/6), 30fps WVGA (H.263)

USB 2.0: High Speed up to 480Mbps

I2C: × 3

(U)SIM Card Interface: × 2, 1.8V/2.95V

GPIO: × 25

UART: × 2 (high speed UARTs)

SDIO: × 1 (3.0, 4bit SDIO)

PWRKEY

4 Solder Pads for Main Antenna, Diversity Antenna, GNSS Antenna and Wi-Fi/BT Antenna, respectively

ADC: × 3 (BAT_SNS, BAT_THERM, ADC)

Enhanced Features

BT2.1+EDR/3.0/4.1 LE

WLAN: 2.4G, 802.11 b/g/n (SC20-CE)

2.4G/5.8G, 802.11 a/b/g/n (SC20-E/-A/-AU/-J)*

(U)SIM Card Detection

Firmware Upgrade via USB

GNSS: GPS/GLONASS/BeiDou

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 2 (24dBm+1/-3dB) for TD-SCDMA Bands

Class 3 (24dBm+3/-1dB) for CDMA BC0

Class 4 (33dBm±2dB) for EGSM900

Class 1 (30dBm±2dB) for DCS1800

Class E2 (27dBm±3dB) for EGSM900 8-PSK

Class E2 (26dBm±3dB) for DCS1800 8-PSK

Consumption:

20uA @Power off

3mA @Sleep, Typ.

Sensitivity:

LTE FDD B1: -102dBm	LTE TDD B39: -101dBm
LTE FDD B2: -101dBm	LTE TDD B40: -100dBm
LTE FDD B3: -101dBm	LTE TDD B41: -100dBm
LTE FDD B4: -101dBm	WCDMA B1: -110dBm
LTE FDD B5: -101dBm	WCDMA B2: -110dBm
LTE FDD B7: -100dBm	WCDMA B4: -110dBm
LTE FDD B8: -101dBm	WCDMA B5: -112dBm
LTE FDD B12: -100dBm	WCDMA B6: -110dBm
LTE FDD B13: -100dBm	WCDMA B8: -110dBm
LTE FDD B18: -100dBm	WCDMA B19: -110dBm
LTE FDD B19: -100dBm	TD-SCDMA: -108dBm
LTE FDD B20: -99dBm	CDMA/EVDO: -109dBm
LTE FDD B25: -99dBm	GSM 850: -110dBm
LTE FDD B26: -99dBm	GSM 900: -109dBm
LTE FDD B28: -99dBm	GSM 1800: -109dBm
LTE TDD B38: -100dBm	GSM 1900: -108dBm

Software Features

OS: Android 5.1

USB Serial: Windows XP, Windows Vista, Windows 7/8/8.1, Linux 2.6 or later

NIDS: Windows XP, Windows Vista, Windows 7/8/8.1

Gobinet: Linux 2.6 or later

Linux QMI/WWAN: Linux 3.4 or later

General Features

3GPP E-UTRA Release 11

Bandwidth: 1.4/3/5/10/15/20MHz

DL MIMO 2 × 2, Support Rx-diversity

Temperature Range: -40°C ~ +75°C

Dimensions: 40.5mm × 40.5mm × 2.8mm

LCC Package

Weight: Approx. 9.8g

Supply Voltage: 3.5V~4.2V, 3.8V Typ.

3GPP TS27.007 and Enhanced AT Commands

Approvals

RoHS Compliant

CE*/GCF* (Europe)

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

RCM* (Australia)

CCC/SRRC/CTA (China)

* Under Development