

Zertifiziert nach ISO 9001:2015



# Quectel SC20

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



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



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



LCC Package



Android 5.1



Powerful Multimedia Function



GPS+GLONASS +BeiDou



USB 2.0 High Speed Interface



USB Drivers



Quectel Enhanced AT Commands

SC20 series is Quectel's new generation of multi-mode Smart LTE Cat.4 modules with built-in Android 5.1 Lollipop OS. It supports short-range wireless communication via Wi-Fi 802.11b/g/n and BT4.1 LE, and offers data rate up to 150Mbps. It is ideal for both industrial and consumer applications requiring the highest data-rate and high-speed internet access.

SC20 series comes in five variants: SC20-CE, SC20-E, SC20-A, SC20-AU and SC20-J. This makes it 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.

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, Windows 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

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

### General Features

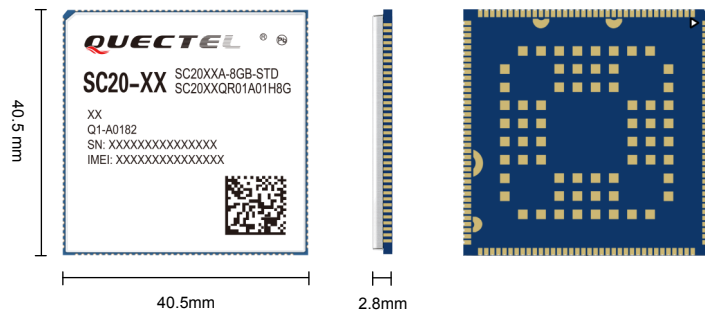
<b>Frequency Bands</b>	<b>SC20-CE</b> FDD LTE: B1/B3/B8 TDD LTE: B38/B39/B40/B41 TDSCDMA: B34/B39 EVDO/CDMA: BC0 WCDMA: B1/B8 GSM: 900/1800MHz  <b>SC20-E*</b> FDD LTE: B1/B3/B5/B7/B8/B20 TDD LTE: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 850/900/1800/1900MHz  <b>SC20-A*</b> FDD LTE: B2/B4/B5/B7/B12/B13/B25/B26 WCDMA: B1/B2/B4/B5/B8 GSM: 850/1900MHz  <b>SC20-AU*</b> FDD LTE: B1/B3/B5/B7/B8/B28 TDD LTE: B40 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900MHz  <b>SC20-J*</b> FDD LTE: B1/B3/B8/B18/B19/B26 TDD LTE: B41 WCDMA: B1/B6/B19
<b>OS</b>	Android 5.1
<b>LTE Version</b>	3GPP E-UTRA Release 11
<b>Bandwidth</b>	1.4/3/5/10/15/20MHz
<b>Antenna</b>	DL MIMO 2x2, supports Rx-diversity
<b>Supply Voltage Range</b>	3.5V ~ 4.2V, 3.8V Typ.
<b>Operation Temperature</b>	-40°C ~ +85°C
<b>Dimensions</b>	40.5mm × 40.5mm × 2.8mm
<b>Package</b>	LCC
<b>Weight</b>	Approx. 9.8g
<b>Control via AT Commands</b>	3GPP TS27.007 and enhanced AT commands

### Specifications

<b>Data</b>	<b>LTE</b>	LTE-FDD Max 150Mbps (DL) Max 50Mbps (UL) LTE-TDD Max 130Mbps (DL) Max 35Mbps (UL)
	<b>DC-HSPA+</b>	Max 42Mbps (DL) Max 5.76Mbps (UL)
	<b>WCDMA</b>	Max 384Kbps (DL) Max 384Kbps (UL)
	<b>TD-SCDMA</b>	Max 4.2Mbps (DL) Max 2.2Mbps (UL)
	<b>EDGE</b>	Max 236.8Kbps (DL) Max 236.8Kbps (UL)
	<b>GPRS</b>	Max 85.6Kbps (DL) Max 85.6Kbps (UL)
<b>Voice</b>	<b>Speech Codec Modes</b>	HR, FR, EFR, AMR, AMR-WB
	<b>Echo Arithmetic</b>	Echo Cancellation Noise Reduction
<b>VoLTE</b>		Analog Audio and VoLTE (Voice over LTE) (Optional)

### Special Features

<b>Firmware Update</b>	Firmware updated via USB
<b>WLAN</b>	2.4G, 802.11 b/g/n (SC20-CE) 2.4G/5.8G, 802.11 a/b/g/n (SC20-EI-AI-AU-J)*
<b>BT</b>	BT2.1+EDR/3.0/4.1 LE
<b>GNSS</b>	GPS/GLONASS/BeiDou



### Electrical Characteristics

<b>Output Power</b>	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	
<b>Consumption</b>	20uA @Power off 3mA @Sleep, Typ.	
<b>Sensitivity (10MHz for LTE)</b>	LTE FDD B1: -102dBm LTE FDD B2: -101dBm LTE FDD B3: -101dBm LTE FDD B4: -101dBm LTE FDD B5: -101dBm LTE FDD B7: -100dBm LTE FDD B8: -101dBm LTE FDD B12: -100dBm LTE FDD B13: -100dBm LTE FDD B18: -100dBm LTE FDD B19: -100dBm LTE FDD B20: -99dBm LTE FDD B25: -99dBm LTE FDD B26: -99dBm LTE FDD B28: -99dBm LTE TDD B38: -100dBm	LTE TDD B39: -101dBm LTE TDD B40: -100dBm LTE TDD B41: -100dBm WCDMA B1: -110dBm WCDMA B2: -110dBm WCDMA B4: -110dBm WCDMA B5: -112dBm WCDMA B6: -110dBm WCDMA B8: -110dBm WCDMA B19: -110dBm TD-SCDMA: -108dBm CDMA/EVDO: -109dBm GSM 850: -110dBm GSM 900: -109dBm GSM 1800: -109dBm GSM 1900: -108dBm

### Interfaces

<b>LCM</b>	4-lane MIPI_DSI, up to 1.5Gbps for each HD (720P) @60fps
<b>Camera</b>	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
<b>Touch Panel</b>	Capacitive-screen
<b>Audio</b>	MP3, AAC, AAC+, eAAC, AMR-NB, - WB, G.711, WMA 9/10 Pro
<b>Video</b>	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)
<b>USB 2.0 Device</b>	×1, high Speed, 480Mbps
<b>I2C</b>	×3
<b>USIM</b>	×2, support 1.8/2.95V
<b>GPIO</b>	×25
<b>UART</b>	×2, high-speed UARTs
<b>SDIO</b>	×1, 3.0, 4bit SDIO
<b>PWRKEY</b>	
<b>Antenna</b>	4 pads for Main Antenna, Diversity Antenna, GNSS Antenna and Wi-Fi/BT Antenna, respectively
<b>ADC</b>	×3 (BAT_SNS, BAT_THERM, ADC)

### Certification

<b>Approval</b>	CCC/CE*/FCC*/GCF*/PTCRB*/AT&T*/ACMA RCM*/Verizon*
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\* Under development

