

Quectel SC20

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



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



Max. 42Mbps (DL)
Max. 11Mbps (UL)



LCC Package



Android 5.1



Powerful Multimedia
Function



GLONASS+GPS
+BeiDou



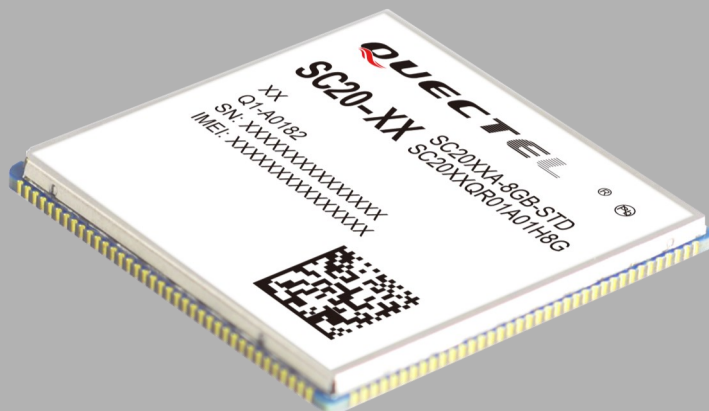
USB 2.0 High Speed
Interface



USB Drivers



Quectel Enhanced
AT Commands



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
- ☞ GNSS receiver available for applications requiring fast and accurate fixes in any environment
- ☞ LCC package ensures reliable connectivity with applications

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 six variants: SC20-E, SC20-A, SC20-AU, SC20-J, SC20-CE and SC20-W. 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 LCD, 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.

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

General Features

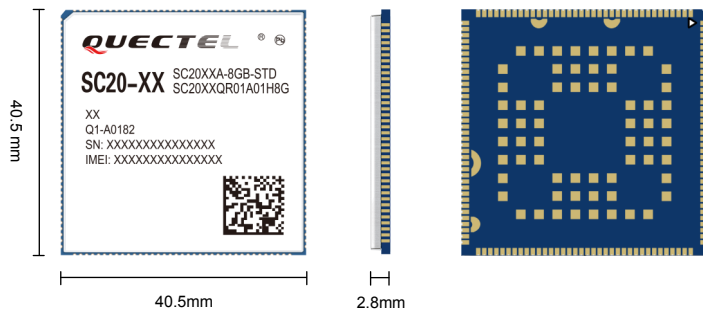
Frequency Bands	SC20-CE FDD LTE: B1/B3/B8 TDD LTE: B38/B39/B40/B41 TDSCDMA: B34/B39 EVDO/CDMA: BC0 WCDMA: B1/B8 GSM: 900/1800MHz
	SC20-W Only Wi-Fi & BT
	SC20-E* FDD LTE: B1/B3/B5/B7/B8/B20 TDD LTE: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 850/900/1800/1900MHz
	SC20-A* FDD LTE: B2/B4/B5/B12/B13/B25 WCDMA: B1/B2/B4/B5/B8 GSM: 850/900/1800/1900MHz
OS	SC20-AU* FDD LTE: B1/B3/B4/B5/B7/B8/B28 TDD LTE: B40 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900MHz
	SC20-J* FDD LTE: B1/B3/B8/B18/B19/B26 TDD LTE: B41
	Android 5.1
LTE Version	3GPP E-UTRA Release 11
Bandwidth	1.4/3/5/10/15/20MHz
Antenna	DL MIMO 2×2, supports Rx-diversity
Supply Voltage Range	3.5V ~ 4.2V, 3.8V Typ.
Operation Temperature	-40°C ~ +85°C
Dimensions	40.5mm × 40.5mm × 2.8mm
Package	LCC
Weight	Approx. 9.6g
Control via AT Commands	3GPP TS27.007 and enhanced AT commands

Specifications

Data	LTE	LTE-FDD Max 150Mbps (DL) Max 50Mbps (UL) LTE-TDD Max 61Mbps (DL) Max 18Mbps (UL)
	DC-HSPA+	Max 42Mbps (DL) Max 11Mbps (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)
Voice	GPRS	Max 85.6Kbps (DL) Max 85.6Kbps (UL)
	Speech Codec Modes	HR, FR, EFR, AMR, AMR-WB
	Echo Arithmetic	Echo Cancellation Noise Reduction
VoLTE	Analog Audio and VoLTE (Voice over LTE) (Optional)	

Special Features

Firmware Update	Firmware updated via USB
WLAN	2.4G, 802.11b/g/n (SC20-CE/-W) 2.4G/5.8G, 802.11a/b/g/n/ac (SC20-E/-A/-AU/-J)*
BT	BT2.1+EDR/3.0/4.1LE
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 EGSM9008-PSK Class E2 (26dBm±3dB) for DCS18008-PSK																														
Consumption	20uA@Power off 3mA@Sleep, Typ.																														
Sensitivity (10MHz For LTE)	<table border="0"> <tr> <td>LTE FDD B1: -102dBm</td> <td>LTE TDD B38: -100dBm</td> </tr> <tr> <td>LTE FDD B2: -101dBm</td> <td>LTE TDD B39: -101dBm</td> </tr> <tr> <td>LTE FDD B3: -101dBm</td> <td>LTE TDD B40: -100dBm</td> </tr> <tr> <td>LTE FDD B4: -101dBm</td> <td>LTE TDD B41: -100dBm</td> </tr> <tr> <td>LTE FDD B5: -101dBm</td> <td>WCDMA B1: -110dBm</td> </tr> <tr> <td>LTE FDD B7: -100dBm</td> <td>WCDMA B2: -110dBm</td> </tr> <tr> <td>LTE FDD B8: -101dBm</td> <td>WCDMA B4: -110dBm</td> </tr> <tr> <td>LTE FDD B12: -100dBm</td> <td>WCDMA B5: -112dBm</td> </tr> <tr> <td>LTE FDD B13: -100dBm</td> <td>WCDMA B8: -110dBm</td> </tr> <tr> <td>LTE FDD B18: -100dBm</td> <td>TD-SCDMA: -108dBm</td> </tr> <tr> <td>LTE FDD B19: -100dBm</td> <td>CDMA/EVDO: -109dBm</td> </tr> <tr> <td>LTE FDD B20: -99dBm</td> <td>GSM 850: -110dBm</td> </tr> <tr> <td>LTE FDD B25: -99dBm</td> <td>GSM 900: -109dBm</td> </tr> <tr> <td>LTE FDD B26: -99dBm</td> <td>GSM 1800: -109dBm</td> </tr> <tr> <td>LTE FDD B28: -99dBm</td> <td>GSM 1900: -108dBm</td> </tr> </table>	LTE FDD B1: -102dBm	LTE TDD B38: -100dBm	LTE FDD B2: -101dBm	LTE TDD B39: -101dBm	LTE FDD B3: -101dBm	LTE TDD B40: -100dBm	LTE FDD B4: -101dBm	LTE TDD B41: -100dBm	LTE FDD B5: -101dBm	WCDMA B1: -110dBm	LTE FDD B7: -100dBm	WCDMA B2: -110dBm	LTE FDD B8: -101dBm	WCDMA B4: -110dBm	LTE FDD B12: -100dBm	WCDMA B5: -112dBm	LTE FDD B13: -100dBm	WCDMA B8: -110dBm	LTE FDD B18: -100dBm	TD-SCDMA: -108dBm	LTE FDD B19: -100dBm	CDMA/EVDO: -109dBm	LTE FDD B20: -99dBm	GSM 850: -110dBm	LTE FDD B25: -99dBm	GSM 900: -109dBm	LTE FDD B26: -99dBm	GSM 1800: -109dBm	LTE FDD B28: -99dBm	GSM 1900: -108dBm
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Interfaces

LCD	4 lanes MIPI_DSI, up to 1.5Gbps 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 720P (H.264/MPEG-4/VP8/H.265 DivX4/5/6), 30fps WVGA (H.263)
USB 2.0 Device	High Speed, 480Mbps
I2C	×3
USIM	×2, support 1.8/3V
GPIO	×25
UART	×2, high-speed UARTs
SDIO	SDIO×1, 3.0, 4bit SDIO
PWRKEY	
Antenna	4 pads (for Main Antenna, Diversity Antenna, GNSS Antenna, Wi-Fi/BT Antenna, respectively)
ADC	×3 (BAT_SNS, BAT_THERM, ADC)

Certification

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