Quectel SC200R Series

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

SC200R-XX QX–XXXX
XX   SC200RXXXX–XXX–XXXXX

SN: XXXXXXXXXXXXX
IMEI1: XXXXXXXXXXXXX
IMEI2: XXXXXXXXXXXXX
MEID: XXXXXXXXXXXXX

40.5 mm

40.5 mm   2.8 mm
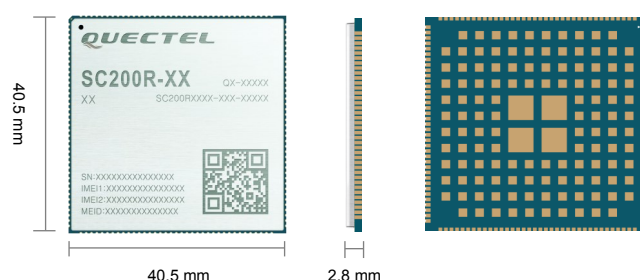
SC200R series is Quectel's new generation of multi-mode Smart LTE Cat 4 module with built-in Android OS. Based on Qualcomm quad-core ARM Cortex-A53 64-bit processor with built-in Adreno™ 308 GPU, it is an ideal solution for both industrial and consumer applications requiring high data rates and multimedia functions. SC200R series is available in five variants: SC200R-CE*, SC200R-EM*, SC200R-NA, SC200R-JP* and Wi-Fi & BT only version SC200R-WF*.

SC200R series supports multiple-input multiple-output (MIMO) technology. The use of multiple antennas at the receiver end at the same time and on the same frequency band greatly minimizes errors and optimizes data speed. This module also combines high-speed wireless connectivity with embedded multi-constellation and high-sensitivity GNSS (GPS, BeiDou, GLONASS and Galileo) receiver for positioning.

A rich set of interfaces (such as LCM, Camera, Touch Panel, MIC, SPK, UART, USB, I2C and SPI) extend the applicability of the module to a wide range of M2M applications, including edge device, edge computing, smart POS, smart cash registers, smart home gateways, smart robots, smart wearables, security surveillance, PDA & tablets, vending machines, delivery lockers, police and law enforcement equipment, in-car video streaming and entertainment systems, etc.

Key Benefits

- Exceptional application and system performance based on the quad-core A53 64-bit processor

- Enhanced mobile rendering APIs for image and video applications via Adreno™ 308 GPU

- Integrated ADSP, better DoU and user experience in DSP enabled environment

- Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage

- Support dual ISP and up to 13 MP camera

- Support recording and playback of 1080p video at 30 fps

- Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment

ARM Cortex-A53 64-bit Processor (Quad-core)

Qualcomm® Adreno™ 308 GPU

Android OS

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

IEEE 802.11 a/b/g/n

BT 4.2 (BR/EDR + BLE)

GPS, BeiDou, GLONASS, Galileo

Powerful Multimedia Function

LCC + LGA Package

Quectel SC200R Series

LTE Cat 4	SC200R-CE*	SC200R-EM*	SC200R-NA	SC200R-JP*	SC200R-WF*
Region/Operator	China	EMEA/India/Korea/South Asia/ Latin America/Australia/ New Zealand/South Africa	North America	Japan	Global
CPU	QCM2150, Quad-core ARM Cortex-A53 64-bit CPU @ 1.3 GHz	QCM2150, Quad-core ARM Cortex-A53 64-bit CPU @ 1.3 GHz	QCM2150, Quad-core ARM Cortex-A53 64-bit CPU @ 1.3 GHz	QCM2150, Quad-core ARM Cortex-A53 64-bit CPU @ 1.3 GHz	QCM2150, Quad-core ARM Cortex-A53 64-bit CPU @ 1.3 GHz
Memory	1 GB LPDDR3 + 8 GB eMMC 2 GB LPDDR3 + 16 GB eMMC	1 GB LPDDR3 + 8 GB eMMC 2 GB LPDDR3 + 16 GB eMMC	1 GB LPDDR3 + 8 GB eMMC 2 GB LPDDR3 + 16 GB eMMC	1 GB LPDDR3 + 8 GB eMMC 2 GB LPDDR3 + 16 GB eMMC	1 GB LPDDR3 + 8 GB eMMC 2 GB LPDDR3 + 16 GB eMMC
OS	Android 10.0	Android 10.0	Android 10.0	Android 10.0	Android 10.0
Dimensions (mm)	40.5 × 40.5 × 2.8	40.5 × 40.5 × 2.8	40.5 × 40.5 × 2.8	40.5 × 40.5 × 2.8	40.5 × 40.5 × 2.8
Temperature Range					
Operating Temperature	-35 to +75 °C	-35 to +75 °C	-35 to +75 °C	-35 to +75 °C	-35 to +75 °C
Frequency Bands					
LTE-FDD	B1/B3/B5/B8	B1/B2/B3/B4/B5/B7/B8/B20/B28	B2/B4/B5/B7/B12/B13/B14/B17/ B25/B26/B66/B71	B1/B3/B5/B8/B11/B18/B19/B21/ B26/B28	/
LTE-TDD	B34/B38/B39/B40/B41	B38/B40/B41	B41	B41	/
WCDMA	B1/B8	B1/B2/B4/B5/B8	B2/B4/B5	B1/B6/B8/B19	/
EVDO/CDMA	BC0	/	/	/	/
GSM	900/1800 MHz	850/900/1800/1900 MHz	/	/	/
WLAN	2.4/5 GHz 802.11a/b/g/n	2.4/5 GHz 802.11a/b/g/n	2.4/5 GHz 802.11a/b/g/n	2.4/5 GHz 802.11a/b/g/n	2.4/5 GHz 802.11a/b/g/n
Bluetooth	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE
GNSS	GPS/BeiDou/GLONASS or GPS/BeiDou/Galileo	GPS/BeiDou/GLONASS or GPS/BeiDou/Galileo	GPS/BeiDou/GLONASS or GPS/BeiDou/Galileo	GPS/BeiDou/GLONASS or GPS/BeiDou/Galileo	/
Certifications					
Carrier	/	**Australia:** Telstra*	**America:** Verizon*/AT&T*	**Japan:** NTT DOCOMO*	TBD
Regulatory	**China:** SRRC*/NAL*/CCC*	**Global:** GCF* **Europe:** CE* **Australia/New Zealand:** RCM*	**Global:** GCF* **North America:** PTCRB* **America:** FCC* **Canada:** IC*	**Japan:** JATE*/TELEC*	TBD
Others	RoHS/REACH	RoHS/REACH	RoHS/REACH	RoHS/REACH	RoHS/REACH
Data Transmission					
LTE-FDD Data Rate (Mbps)	150 (DL)/50 (UL)	150 (DL)/50 (UL)	150 (DL)/50 (UL)	150 (DL)/50 (UL)	/
LTE-TDD Data Rate (Mbps)	130 (DL)/30 (UL)	130 (DL)/30 (UL)	130 (DL)/30 (UL)	130 (DL)/30 (UL)	/
DC-HSPA Data Rate (Mbps)	42 (DL)/11.2 (UL)	42 (DL)/11.2 (UL)	42 (DL)/11.2 (UL)	42 (DL)/11.2 (UL)	/
WCDMA Data Rate (kbps)	384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)	/
EVDO Data Rate (Mbps)	3.1 (DL)/1.8 (UL)	/	/	/	/
EDGE Data Rate (kbps)	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)	/	/	/
GPRS Data Rate (kbps)	107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)	/	/	/
Enhanced Features					
3GPP E-UTRA	Release 10	Release 10	Release 10	Release 10	/
Bandwidth	1.4/3/5/10/15/20 MHz	1.4/3/5/10/15/20 MHz	1.4/3/5/10/15/20 MHz	1.4/3/5/10/15/20 MHz	/
Rx-diversity	●	●	●	●	/
DL MIMO 2 × 2	●	●	●	●	/
(U)SIM Detection	●	●	●	●	/
Dual SIM Dual Standby	●	●	●	●	/
Firmware Upgrade via USB	●	●	●	●	●
OTA	●	●	●	●	●
General Features					
Supply Voltage Range	3.55–4.2 V, typ. 3.8 V	3.55–4.2 V, typ. 3.8 V	3.55–4.2 V, typ. 3.8 V	3.55–4.2 V, typ. 3.8 V	3.55–4.2 V, typ. 3.8 V
Power Consumption	TBD	TBD	TBD	TBD	TBD
Package	LCC + LGA	LCC + LGA	LCC + LGA	LCC + LGA	LCC + LGA
Weight (g)	Approx. 10.2	Approx. 10.2	Approx. 10.2	Approx. 10.2	Approx. 10.2

Interfaces of SC200R Series	
LCM	× 1, 4-lane MIPI_DSI, HD+ (1440 × 720) @ 60 fps
Camera	2 groups of 4-lane MIPI_CSI, up to 2.1 Gbps/lane Support 2 or 3 cameras, up to 13 MP with dual ISP
Touch Panel	Capacitive touch panel
Audio	3 analog inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC) 3 analog outputs: speaker, earpiece, headphone
Video	Video encoding + decoding: 720p @ 30 fps + 1080p @ 30 fps Encoding up to 1080p @ 30 fps, decoding up to 1080p @ 30 fps
USB 2.0	× 1, compliant with USB 2.0, support USB OTG, USB OTG + charge, etc.
(U)SIM	× 2, support 1.8/2.95 V (U)SIM cards, with (U)SIM card detection function, DSDS supported
UART	× 3, up to 4 Mbps, one of them supports hardware flow control
SD Card	× 1, SD 3.0, support 4-bit SD mode
ADC	× 1, general-purpose ADC interface
I2C	× 4
I2S	× 2, can be multiplexed from GPIO interfaces
SPI	× 3, can be multiplexed from UART and GPIO interfaces
PWRKEY	1.8 V, pulled up internally
GPIO	× 35
Antenna	× 4, Main/Rx-diversity/GNSS/Wi-Fi & BT Antenna respectively (SC200R-WF*: × 1, Wi-Fi & BT Antenna)

Notes:
1. * means under development/planning/on-going.
2. ● means supported.

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