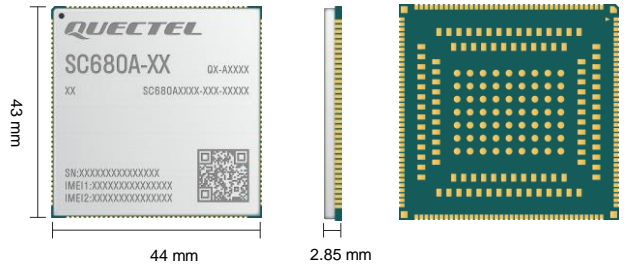


Quectel SC680A Series

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



SC680A series is Quectel’s new generation of multi-mode Smart LTE Cat 6 module with built-in Android OS. Based on Qualcomm octa-core and 64-bit ARM v8.0 compliant application processor with built-in Adreno™ 610 GPU, the module is designed to support high performance, various multimedia features and Quick Charge 3.0 technology. It is ideal for both industrial and consumer applications with high data rate and multimedia functions.

SC680A series supports multiple-input multiple-output (MIMO) technology. The use of multiple antennas at the receiver end on the same frequency band greatly minimizes errors and optimizes the data speed. This module also combines high-speed wireless connectivity with embedded dual-band multi-constellation and high-sensitivity GNSS (GPS/GLONASS/BDS/Galileo/NavIC/QZSS) receiver for positioning.

A rich set of interfaces (such as LCM, Camera, Touch Panel, MIC, SPK, UART, USB, I2C, SPI) extend the applicability of the module to a wide range of M2M applications, including 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, video streaming and entertainment systems, etc.



Key Features

- ✓ LTE Cat 6 modem supporting 2 × 20 MHz carrier aggregation, with maximum downlink speed of up to 300 Mbps
- ✓ Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- ✓ 4-lane MIPI_DSI for 2520 × 1080 @ 60 fps display
- ✓ Maximum of 4 cameras, supports 2 cameras working simultaneously
- ✓ Dual-band multi-constellation GNSS receiver for applications requiring fast and accurate fixes in any environment
- ✓ Recording and playback of 1080P videos @ 60 fps



64-bit ARM v8.0 Processor (Octa-core)



Qualcomm® Adreno™ 610 GPU



Android OS



Smart LTE Cat 6
Max. 300 Mbps (DL)
Max. 50 Mbps (UL)



IEEE 802.11 a/b/g/n/ac



Bluetooth 5.0 (BR/EDR + BLE)



GPS/GLONASS/BDS/Galileo/NavIC/QZSS (L1 + L5)



Powerful Multimedia Functions



LCC + LGA Package

Quectel SC680A Series

LTE Cat 6	SC680A-EM	SC680A-NA	SC680A-JP*	SC680A-WF
Region/Operator	EMEA/Korea/South Asia/ Latin America/India/Australia/ New Zealand/South Africa	North America	Japan	Global
OS	Android 12/13*/14*	Android 12/13*/14*	Android 12/13*/14*	Android 12/13*/14*
Memory	64 GB eMMC + 4 GB LPDDR4X	64 GB eMMC + 4 GB LPDDR4X	64 GB eMMC + 4 GB LPDDR4X	64 GB eMMC + 4 GB LPDDR4X
Dimensions (mm)	43.0 × 44.0 × 2.85	43.0 × 44.0 × 2.85	43.0 × 44.0 × 2.85	43.0 × 44.0 × 2.85
Temperature Range				
Operating Temperature	-35 °C to +75 °C	-35 °C to +75 °C	-35 °C to +75 °C	-35 °C to +75 °C
Frequency Bands				
LTE-FDD	B1/ 2/ 3/ 4/ 5/ 7/ 8/ 20/ 28	B2/ 4/ 5/ 7/ 12/ 13/ 14/ 17/ 25/ 26/ 66/ 71	B1/ 3/ 5/ 8/ 11/ 18/ 19/ 21/ 26/ 28	-
LTE-TDD	B38/ 40/ 41	B41	B41	-
WCDMA	B1/ 2/ 4/ 5/ 8	-	B1/ 6/ 8/ 19	-
GSM	850/900/1800/1900 MHz	-	-	-
Bluetooth	Bluetooth 5.0	Bluetooth 5.0	Bluetooth 5.0	Bluetooth 5.0
Wi-Fi	2.4&5 GHz, 802.11a/b/g/n/ac	2.4&5 GHz, 802.11a/b/g/n/ac	2.4&5 GHz, 802.11a/b/g/n/ac	2.4&5 GHz, 802.11a/b/g/n/ac
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	-
GNSS	GPS/GLONASS/BDS/Galileo/NavIC/QZSS, L1 + L5	GPS/GLONASS/BDS/Galileo/NavIC/QZSS, L1 + L5	GPS/GLONASS/BDS/Galileo/NavIC/QZSS, L1 + L5	-
Certifications				
Carrier	Australia: Telstra*	America: Verizon*/AT&T*/ T-Mobile*	Japan: NTT DOCOMO*	-
Regulatory	Global: GCF* Europe: CE* South Korea: KC* Australia/New Zealand: RCM*	Global: GCF* North America: PTCRB* America: FCC* Canada: IC*	Japan: JATE*/TELEC*	Europe: CE* South Korea: KC* Japan: JATE*/TELEC* Australia/New Zealand: RCM*
Others	RoHS*/REACH*	RoHS*/REACH*	RoHS*/REACH*	RoHS*/REACH*
Data Transmission				
LTE-FDD Data Rate (Mbps)	300 (DL)/50 (UL)	300 (DL)/50 (UL)	300 (DL)/50 (UL)	-
LTE-TDD Data Rate (Mbps)	265 (DL)/30 (UL)	265 (DL)/30 (UL)	265 (DL)/30 (UL)	-
WCDMA Data Rate (kbps)	384 (DL)/384 (UL)	-	384 (DL)/384 (UL)	-
GPRS Data Rate (kbps)	107 (DL)/85.6 (UL)	-	-	-
Enhanced Features				
3GPP E-UTRA	Release 10	Release 10	Release 10	-
Rx-diversity	●	●	●	-
DL MIMO 2 × 2	●	●	●	-
(U)SIM Card Detection	●	●	●	-
Firmware Upgrade via USB	●	●	●	●
Firmware Upgrade via OTA	●	●	●	●
General Features				
Supply Voltage Range	3.55–4.4V, typ. 3.8 V			
Power Consumption	TBD			
Weight (g)	TBD			
Interfaces				
LCM	4-lane MIPI_DSI WUXGA (2520 × 1080) @ 60 fps			
Camera	3 groups of 4-lane MIPI_CSI, up to 2.1 Gbps per lane Supports maximum of 4 cameras, up to 25 MP with dual ISPs			
Capacitive Touch Panel	Supported			
UART	× 3 (Supports 4 Mbps with hardware flow control)			
USB	USB 3.1 Gen1(5 Gbps)/2.0 compliant, supports USB OTG			
Audio	3 analog inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC) 3 analog outputs: speaker, earpiece, headphone			
GPIO	× 21			
SD Card	× 1 (SD 3.0, 4-bit SDIO)			
I2C	× 5			
ADC	× 2			
SPI	× 3 (Can be multiplexed into UART and I2S respectively, and the multiplexed I2S supports both Tx and Rx)			
PWRKEY	Pulled up internally to 1.8 V			
Motor Drive	× 1			
(U)SIM	× 2 (1.8/2.95 V)			
Flashlight	× 2			
LED	× 1			
Antenna	× 4, Main/Rx-diversity/GNSS/Wi-Fi & Bluetooth antenna interface respectively (SC680A-WF: × 1, Wi-Fi & Bluetooth antenna interface)			

- Notes:
1. *: under development/planning
2. ●: supported
3. TBD: to be determined.