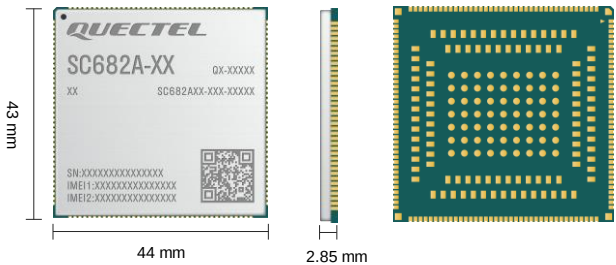


Quectel SC682A Series

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



The SC682A is a series of multi-mode Smart LTE Cat 4 modules running the Android operating system. Powered by the SM6115 Kryo™ octa-core processor (4 × A73 @ 2.0 GHz + 4 × A53 @ 1.8 GHz) and an integrated Adreno™ 610 GPU, the module delivers exceptional performance and rich multimedia capabilities. This makes it an ideal solution for both industrial and consumer applications that require high data rates and robust multimedia processing.

The SC682A series supports Multiple-Input Multiple-Output (MIMO) technology. By concurrently using multiple receiving antennas on the same frequency band, the module significantly reduces error rates and optimizes data throughput. Furthermore, it combines high-speed wireless connectivity with an embedded, highly sensitive, dual-band multi-constellation GNSS receiver (GPS, GLONASS, BDS, Galileo, QZSS, and SBAS) to ensure fast and accurate positioning.

A comprehensive set of interfaces—including LCM, camera, touch panel, microphone, speaker, UART, USB, I2C, and SPI—extends the module's versatility across a wide range of M2M applications. These include smart POS terminals, cash registers, home gateways, robotics, wearables, and safety systems, as well as PDAs, tablets, vending machines, delivery lockers, A/ V recorders, and entertainment systems.

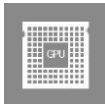


Key Features

- ✓ Global coverage across LTE, UMTS/ HSPA+, and GSM/ GPRS/ EDGE networks
- ✓ 4-lane MIPI DSI supporting displays up to 2520 × 1080 @ 60 fps
- ✓ Up to 4 cameras, with up to 3 operating concurrently
- ✓ Dual-band multi-constellation GNSS receiver for rapid and accurate fixes in challenging environments
- ✓ 1080p video recording and playback at 60 fps



Arm® Kryo™ 64-bit Octa-core Processor



Qualcomm® Adreno™ 610 GPU



Android



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



IEEE 802.11 a/ b/ g/ n/ ac



Bluetooth 5.1 (BR/ EDR + BLE)



GPS/ GLONASS/ BDS/ Galileo/ QZSS/ SBAS (L1)



Rich multimedia capabilities



LCC + LGA Packages

Quectel SC682A Series

LTE Cat 4	SC682A-EM	SC682A-NA	SC682A-JP	SC682A-WF
Region/ Operator	EMEA/ South Korea/ South Asia/ Latin America/ India/ Australia/ New Zealand/ South Africa	North America	Japan	Global
OS	Android 13/ 16*	Android 13/ 16*	Android 13/ 16*	Android 13/ 16*
CPU	SM6115, 4 × A73 @ 2.0 GHz + 4 × A53 @ 1.8 GHz	SM6115, 4 × A73 @ 2.0 GHz + 4 × A53 @ 1.8 GHz	SM6115, 4 × A73 @ 2.0 GHz + 4 × A53 @ 1.8 GHz	SM6115, 4 × A73 @ 2.0 GHz + 4 × A53 @ 1.8 GHz
NPU	0.9 TOPS	0.9 TOPS	0.9 TOPS	0.9 TOPS
Memory	4 GB + 64 GB (LPDDR4X + eMMC)	4 GB + 64 GB (LPDDR4X + eMMC)	4 GB + 64 GB (LPDDR4X + eMMC)	4 GB + 64 GB (LPDDR4X + eMMC)
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
Package	LCC + LGA	LCC + LGA	LCC + LGA	LCC + LGA
Weight (g)	Approx. 11.8	Approx. 11.8	Approx. 11.8	Approx. 11.8
Temperature Range				
Operating Temperature	-30 °C to +75 °C	-30 °C to +75 °C	-30 °C to +75 °C	-30 °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 (200 MHz)	B41	-
WCDMA	B1/ 2/ 4/ 5/ 8	-	-	-
GSM	850/ 900/ 1800/ 1900 MHz	-	-	-
Bluetooth	5.1	5.1	5.1	5.1
WLAN	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/ QZSS/ SBAS; L1	GPS/ GLONASS/ BDS/ Galileo/ QZSS/ SBAS; L1	GPS/ GLONASS/ BDS/ Galileo/ QZSS/ SBAS; L1	-
Certifications				
Carrier	-	America: AT&T	-	-
Regulatory	Europe: CE Australia/ New Zealand: RCM	Global: GCF North America: PTCRB America: FCC Canada: IC	Japan: JATE/ TELEC	Europe: CE Japan: JATE/ TELEC Australia/ New Zealand: RCM
Others	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)	-
LTE-TDD Data Rate (Mbps)	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)	-
WCDMA Data Rate (kbps)	384 (DL)/ 384 (UL)	-	-	-
EDGE Data Rate (kbps)	296 (DL)/ 236.8 (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	●	●	●	●

Note:
*: Under development



Quectel SC682A Series

LTE Cat 4	General Module Features
Interfaces	
LCM	4-lane MIPI DSI × 1, FHD+ (2520 × 1080) @ 60 fps
Camera	Three 4-lane MIPI CSI, with up to 2.5 Gbps/ lane Up to 4 cameras, with up to 25 MP, and triple ISPs
Touch Panel	Capacitive touch panel, controlled by I2C
UART	× 4, 4 Mbps with hardware flow control (2 are default, while the remaining 2 are multiplexed with other interfaces)
USB	USB 3.1 Gen 1 (5 Gbps), USB 2.0 compliant; USB OTG
Video	Decoding: 1080P @ 60 fps, 8 bits, HEVC (H.265)/ H.264/ VP9 Encoding: 1080P @ 60 fps, 8 bits, HEVC (H.265)/ H.264
Audio	Analog inputs × 3: MIC1, MIC2, and MIC3 (including 1 noise-canceling MIC) Analog outputs × 3: Speaker, earpiece, and headphone
GPIO	× 23
SD Card	× 1, SD 3.0, 4-bit SDIO
I2C	× 7 (4 are dedicated, 1 is general-purpose, while the remaining 2 are multiplexed with other interfaces)
ADC	× 2
SPI	× 3 (Multiplexable as UART and I2S interfaces respectively, and the I2S multiplexed with other interfaces supports both Tx and Rx)
PWRKEY	Internally pulled up to 1.8 V
Motor Drive	× 1
(U)SIM	× 2 (1.8/ 2.95 V)
Flashlight	× 2
Antenna	× 4, Main/ Rx-diversity/ GNSS/ Wi-Fi & Bluetooth respectively (SC682A-WF: × 1, Wi-Fi & Bluetooth)
Electrical Features	
Supply Voltage Range	3.55 V to 4.4 V (typ. 3.8 V)
Power Consumption	4.1 mA

