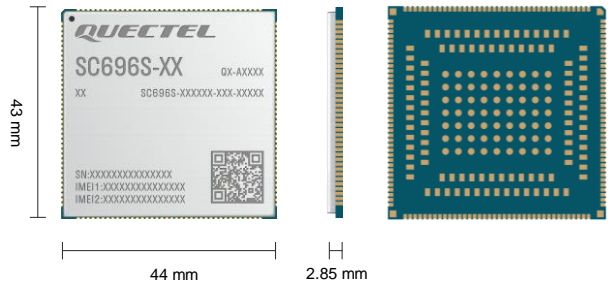


Quectel SC696S Series

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



SC696S is a series of multi-mode Smart LTE Cat 4 modules with built-in Linux OS. Based on QCM6125 high-performance 64-bit octa-core processors with built-in Adreno™ 610 GPU, it is an ideal solution for a wide range of industrial and consumer applications requiring high data rates and multimedia functions. SC696S series comes in three variants: SC696S-EM, SC696S-NA and SC696S-WF (SC696S-WF only supports Wi-Fi and Bluetooth) .

SC696S series supports multiple-input multiple-output (MIMO) technology. The concurrent use of multiple antennas at the receiver end on the same frequency band greatly minimizes bit error rate and optimizes the data speed, thereby improving communication quality. The module also supports multi-constellation GNSS (GPS, GLONASS, BDS, Galileo, QZSS and SBAS) receiver for fast and accurate positioning.

A rich set of interfaces (such as LCM, camera, touch panel, UART, USB, I2C, I2S and SPI) are integrated to extend the applicability of the module to a wide range of M2M applications, including smart cash registers, smart POS, smart safety, on-board equipment, high-end information acquisition equipment, smart robots, smart home, smart hardware, industrial smart handheld equipment, drones, audio and video recorders, smart interphones, smart wearables, vending machines, logistics cabinets, etc.



Key Features

- ✓ Exceptional system performance based on Qualcomm 64-bit octa-core ARM Kryo™ 260 processors
- ✓ Built-in Qualcomm high-performance Adreno™ 610 graphics engine
- ✓ Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- ✓ MIPI DSI (resolution of up to 1920 × 1200 @ 60 fps or 1080 × 2520 @ 60 fps)
- ✓ Maximum 6 cameras, and supports two concurrently-working cameras supported
- ✓ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment
- ✓ Recording and playback of 4K videos @ 30 fps

ARM Kryo™ 260 64-bit Processor (Octa-core)	Qualcomm Adreno™ 610 GPU	Yocto Linux (Kernel 4.14)
LTE Cat 4 Max. 150 Mbps (UL) Max. 50 Mbps (DL)	IEEE 802.11 a/b/g/n/ac	Bluetooth 5.0 (BR/EDR + BLE)
GPS/ GLONASS/ BDS/ Galileo/ QZSS/ SBAS	Powerful Multimedia Function	LCC + LGA Package

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LTE Cat 4	SC696S-EM	SC696S-NA	SC696S-WF
Region/ Operator	Europe/ India/ Korea/ South Asia/ Latin America/ Australia/ South Africa	North America	Global
CPU	QCM6125 Kryo Gold: high-performance quad-core processor @ 2.0 GHz Kryo Silver: low-power quad-core processor @ 1.8 GHz	QCM6125 Kryo Gold: high-performance quad-core processor @ 2.0 GHz Kryo Silver: low-power quad-core processor @ 1.8 GHz	QCM6125 Kryo Gold: high-performance quad-core processor @ 2.0 GHz Kryo Silver: low-power quad-core processor @ 1.8 GHz
Memory	2 GB LPDDR4X + 16 GB eMMC	2 GB LPDDR4X + 16 GB eMMC	2 GB LPDDR4X + 16 GB eMMC
OS	Linux (Kernel 4.14)	Linux (Kernel 4.14)	Linux (Kernel 4.14)
Dimensions (mm)	43 × 44 × 2.85	43 × 44 × 2.85	43 × 44 × 2.85
Package	LCC + LGA	LCC + LGA	LCC + LGA
Weight (g)	Approx. 12	Approx. 12	Approx. 12
Temperature Range			
Operating Temperature	-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	-
LTE-TDD	B38/ 39/ 40/ 41 (200 MHz)	B41 (200 MHz)	-
WCDMA	B1/ 2/ 4/ 5/ 8	-	-
EVDO/CDMA	-	-	-
GSM	Quad-band	-	-
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
Bluetooth	Bluetooth 2.1 + EDR/ 3.0/ 4.1 LE/ 4.2 BLE/ 5.0 LE	Bluetooth 2.1 + EDR/ 3.0/ 4.1 LE/ 4.2 BLE/ 5.0 LE	Bluetooth 2.1 + EDR/ 3.0/ 4.1 LE/ 4.2 BLE/ 5.0 LE
GNSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS/ SBAS	GPS/ GLONASS/ BDS/ Galileo/ QZSS/ SBAS	-
Certifications			
Carrier	TBD	America: Verizon*/ AT&T*	TBD
Regulatory	Europe: CE* Australia/ New Zealand: RCM* UK: UKCA* Global: GCF*	America: FCC* Canada: IC* Global: GCF* North America: PTCRB*	Europe: CE* Australia/ New Zealand: RCM* America: FCC* Canada: IC* South Korea: KC*
Others	RoHS/ REACH	RoHS/ REACH	RoHS/ REACH
Data Rates			
LTE-FDD (Mbps)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	-
LTE-TDD (Mbps)	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)	-
DC-HSPA+ (Mbps)	42 (DL)/ 5.76 (UL)	-	-
WCDMA (kbps)	384 (DL)/ 384 (UL)	-	-
EDGE (kbps)	296 (DL)/ 236.8 (UL)	-	-
GPRS (kbps)	107 (DL)/ 85.6 (UL)	-	-
Enhanced Features			
3GPP E-UTRA	Release 12	Release 12	-
Bandwidth	1.4/ 3/ 5/ 10/ 15/ 20 MHz	1.4/ 3/ 5/ 10/ 15/ 20 MHz	-
Rx-diversity	●	●	-
DL MIMO 2 × 2	●	●	-
(U)SIM Card Detection	●	●	-
Dual-SIM Dual-Standby	●	●	-
Firmware Upgrade via USB	●	●	●
Firmware Upgrade OTA	●	●	●

Notes:

- : supported
- : not supported
- *: planning/under development

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LTE Cat 4	General Features
Interfaces	
LCM	4-lane MIPI DSI, supports up to 1920 × 1200 @ 60 fps or 1080 × 2520 @ 60 fps
Camera	3 groups of 4-lane MIPI CSI, up to 2.1 Gbps per lane Each group of 4-lane can be divided into (2-lane + 1-lane), supports up to 6 cameras, supports 2 concurrently working cameras Dual-ISP, supports up to (16 MP + 16 MP) or up to 24 MP
Touch Panel	Capacitive touch panel
Video	Encode: 4K @ 30 fps; HEVC/ H.264/ VP8 Decode: 4K @ 30 fps; HEVC/ H.264/ VP8/ VP9 1080P @ 30 fps, MPEG-2
USB	× 1, supports USB 3.1 Type-C interface, compatible with USB 2.0
DP	× 1, supports up to 1920 × 1200 @ 60 fps, currently DP is only compatible with USB 2.0
(U)SIM	× 2, supports 1.8/ 2.95 V (U)SIM cards; supports (U)SIM card hot swap detection and dual-SIM dual-standby
SD Card	× 1, SD 3.0, supports 4-bit SDIO
ADC	× 2, general-purpose ADC interface
UART	× 3 Debug UART: 2-wire serial port, specialized for debugging use UART03: 2-wire serial port UART00: 4-wire serial port, supports RTS and CTS hardware flow control with maximum data rate of 4 Mbps
I2C	× 2
SPI	× 2
I2S	× 1
PWRKEY	1.8 V, internally pulled up
GPIO	× 20
Antenna	× 4, Main, Rx-diversity, GNSS, Wi-Fi/Bluetooth antennas respectively (SC696S-WF: × 1, Wi-Fi/ Bluetooth antenna)
Electrical Features	
Supply Voltage Range	3.55–4.4 V, typ. 3.8 V
Power Consumption (Typical)	100 μA @ power off; 5.5 mA @ sleep mode