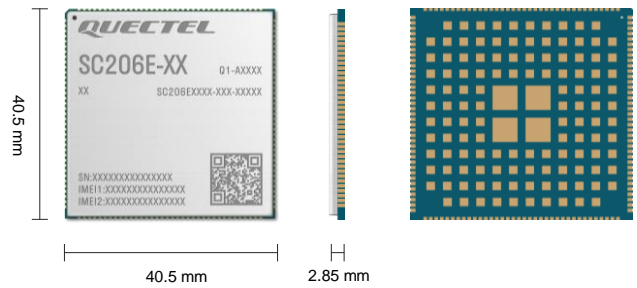


# Quectel SC206E Series

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



SC206E series is Quectel’s new generation of multi-mode Smart LTE Cat 4 module. Based on Qualcomm 64-bit quad-core Cortex-A53 processors with built-in Adreno™ 702 GPU, it is ideal for both industrial and consumer applications requiring high data rate, multimedia functions and long lifetime support. SC206E series is available in four variants: SC206E-EM, SC206E-NA, SC206E-GL and the Wi-Fi&Bluetooth-only-version SC206E-WF.

SC206E 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 improves the data speed. This module also combines high-speed wireless connectivity with embedded multi-constellation and high-sensitivity GNSS receiver supporting GPS, BDS, GLONASS, Galileo, QZSS, SBAS (SC206E-NA supports NavIC and L1) for positioning.

A rich set of interfaces (such as LCM, Camera, Touch Panel, MIC, Line Out, 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, smart safety, PDA & tablets, vending machines, delivery lockers, as well as video streaming and entertainment systems.



### Key Features

- ✓ Exceptional application and system performance based on the quad-core Cortex-A53 64-bit processor
- ✓ Enhanced mobile rendering APIs for image and video applications via Adreno™ 702 GPU
- ✓ Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- ✓ Dual ISP and up to 25 MP camera @ 30 fps
- ✓ Recording and playback of 1080P videos @ 30 fps
- ✓ Multi-constellation GNSS receiver for applications requiring fast and accurate fixes in any environment

ARM Cortex-A53 64-bit Processor (Quad-core)	Qualcomm® Adreno™ 702 GPU	Linux OS
LTE Cat 4 Max. 150 Mbps (DL) Max. 50 Mbps (UL)	IEEE 802.11 a/b/g/n/ac	Bluetooth 5.0 (BR/EDR + BLE)
GPS/BDS/GLONASS/ Galileo/QZSS/SBAS	Powerful Multimedia Functions	LCC + LGA Package

# Quectel SC206E Series

LTE Cat 4	SC206E-EM	SC206E-NA	SC206E-WF	SC206E-GL
Region/Operator	EMEA/ Korea/ South Asia/ Latin America/ India/ Australia/ New Zealand/ South Africa	North America	Global	Global
CPU	QCM2290, Quad-core ARM Cortex-A53 64-bit CPU @ 2.0 GHz	QCM2290, Quad-core ARM Cortex-A53 64-bit CPU @ 2.0 GHz	QCM2290, Quad-core ARM Cortex-A53 64-bit CPU @ 2.0 GHz	QCM2290, Quad-core ARM Cortex-A53 64-bit CPU @ 2.0 GHz
Memory	1 GB + 8 GB (LPDDR4X eMCP, Default) 2 GB + 16 GB (LPDDR4X eMCP, Optional)	1 GB + 8 GB (LPDDR4X eMCP, Default) 2 GB + 16 GB (LPDDR4X eMCP, Optional)	1 GB + 8 GB (LPDDR4X eMCP, Default) 2 GB + 16 GB (LPDDR4X eMCP, Optional)	1 GB + 8 GB (LPDDR4X eMCP, Default) 2 GB + 16 GB (LPDDR4X eMCP, Optional)
OS	Yocto Linux (Kernel 5.4)	Yocto Linux (Kernel 5.4)	Yocto Linux (Kernel 5.4)	Yocto Linux (Kernel 5.4)
Dimensions (mm)	40.5 × 40.5 × 2.85	40.5 × 40.5 × 2.85	40.5 × 40.5 × 2.85	40.5 × 40.5 × 2.85
Package	LCC + LGA	LCC + LGA	LCC + LGA	LCC + LGA
Weight	Approx. 10.3 g	Approx. 10.3 g	Approx. 10.1 g	Approx. 10.6
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/ 2/ 3/ 4/ 5/ 7/ 8/ 12/ 13/ 14/ 17/ 18/ 19/ 20/ 25/ 26/ 28/ 66/ 71
LTE-TDD	B38/ 40/ 41	B41	-	B34/ 38/ 39/ 40/ 41
WCDMA	B1/ 2/ 4/ 5/ 8	-	-	B1/ 2/ 4/ 5/ 6/ 8/ 19
GSM/EDGE	Quad band	-	-	Quad band
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
Bluetooth®	2.1 EDR/ 3.0 HS/ 4.2 LE/ 5.0 LE	2.1 EDR/ 3.0 HS/ 4.2 LE/ 5.0 LE	2.1 EDR/ 3.0 HS/ 4.2 LE/ 5.0 LE	2.1 EDR/ 3.0 HS/ 4.2 LE/ 5.0 LE
GNSS	GPS/ BDS/ GLONASS/ Galileo/ QZSS/ SBAS, L1	GPS/ BDS/ GLONASS/ Galileo/ QZSS/ SBAS/ NavIC, L1	-	GPS/ BDS/ GLONASS/ Galileo/ QZSS/ SBAS/ NavIC, L1
Certifications				
Carrier	Telstra®	America: Verizon/ AT&T/ T-Mobile	-	TBD
Regulatory	Global: GCF Europe: CE UK: UKCA South Korea: KC Australia/New Zealand: RCM	Global: GCF North America: PTCRB America: FCC Canada: IC	Europe: CE UK: UKCA South Korea: KC Taiwan, China: NCC Australia/New Zealand: RCM Japan: JATE/ TELEC America: FCC Canada: IC	America: FCC Canada: IC Europe: CE Australia/ New Zealand: RCM Japan: JATE/ TELEC South Korea: KC Brazil: Anatel®
Others	RoHS/ REACH	RoHS/ REACH	RoHS/ REACH	RoHS/ REACH
Data Rate				
LTE-FDD (Mbps)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	-	150 (DL)/ 50 (UL)
LTE-TDD (Mbps)	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)	-	130 (DL)/ 30 (UL)
DC-HSDPA/HSUPA (Mbps)	42 (DL)/ 5.76 (UL)	-	-	42 (DL)/ 5.76 (UL)
WCDMA (kbps)	384 (DL)/ 384 (UL)	-	-	384 (DL)/ 384 (UL)
EDGE (kbps)	296 (DL)/ 236.8 (UL)	-	-	296 (DL)/ 236.8 (UL)
GPRS (kbps)	107 (DL)/ 85.6 (UL)	-	-	107 (DL)/ 85.6 (UL)
Enhanced Features				
3GPP E-UTRA	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
Rx-diversity	●	●	-	●
DL MIMO 2 × 2	●	●	-	●
(U)SIM Detection	●	●	-	●
Dual SIM Dual Standby	●	●	-	●
Firmware Upgrade via USB	●	●	●	●
Firmware Upgrade via OTA	●	●	●	●

NOTE:

\*: Under development/ in progress. ●: supported.

①: The module is compliant with all mandatory Bluetooth 5.0 features, but does not support Bluetooth 5.0 optional features like 2 Mbps BLE, Advanced Advertising Extension, etc.

②: TBD.

# Quectel SC206E Series

LTE Cat 4		General Features of SC206E Series	
<b>Interfaces</b>			
<b>LCM</b>		1 group of 4-lane MIPI DSI, HD+ (1680 × 720) @ 60 fps	
<b>Camera</b>		2 groups of 4-lane MIPI CSI, up to 2.5 Gbps/lane 2 or 3 cameras supported, up to 25 MP or 13 MP + 13 MP with dual ISP	
<b>Touch Panel</b>		Capacitive touch panel	
<b>Audio</b>		3 analog inputs: MIC1, MIC2, MIC3 (including one noise-canceling MIC) 3 analog outputs: Line Out, earpiece, headphone	
<b>Video</b>		Encoder: 1080P 8-bit H.264/H.265(HEVC) @ 30 fps Decoder: 1080P 8-bit H.264/H.265(HEVC)/VP9 @ 30 fps	
<b>USB</b>		× 1, compliant with USB 2.0/3.1, supports USB OTG, charge, etc.	
<b>(U)SIM</b>		× 2, supports 1.8/2.95 V (U)SIM cards, with (U)SIM card detection function, DSDS supported	
<b>UART</b>		× 3, up to 4 Mbps, supports hardware flow control	
<b>SD Card</b>		× 1, SD 3.0, supports 4-bit SDIO	
<b>ADC</b>		× 1, general-purpose ADC interface	
<b>I2C</b>		× 4	
<b>SPI</b>		× 1 (multiplexed)	
<b>PWRKEY</b>		Pulled up internally to 1.1 V	
<b>GPIO</b>		× 33	
<b>Antenna</b>		× 4, Main/Rx-diversity/GNSS/Wi-Fi & Bluetooth antenna interface respectively (SC206E-WF: × 1, Wi-Fi & Bluetooth antenna interface)	
<b>Electrical Features</b>			
<b>Supply Voltage Range</b>		3.55–4.4 V, typ. 3.8 V	
<b>Power Consumption</b>		80 μA @ power off, typ. 4.5 mA @ sleep mode	