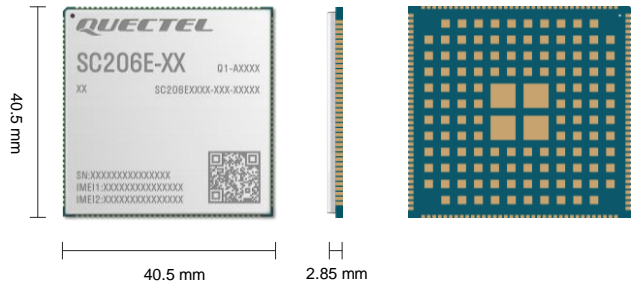


Quectel SC206E Series

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 three variants: SC206E-EM, SC206E-NA, 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 + L5) 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, security surveillance, PDA & tablets, vending machines, delivery lockers, video streaming and entertainment systems, etc.



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 (SC206E-NA supports NavIC and L1 + L5)	 Powerful Multimedia Functions	 LCC + LGA Package

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LTE Cat 4	SC206E-EM	SC206E-NA	SC206E-WF
Region/Operator	EMEA/ Korea/ South Asia/ Latin America/ India/ Australia/ New Zealand/ South Africa	North America	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
Memory	2 GB LPDDR4X + 32 GB eMMC	2 GB LPDDR4X + 32 GB eMMC	2 GB LPDDR4X + 32 GB eMMC
OS	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
Package	LCC + LGA	LCC + LGA	LCC + LGA
Weight	Approx. 10.3 g	Approx. 10.3 g	Approx. 10.1 g
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/ 40/ 41	B41	-
WCDMA	B1/ 2/ 4/ 5/ 8	-	-
GSM/EDGE	850/ 900/ 1800/ 1900 MHz	-	-
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
Bluetooth ^①	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 + L5	-
Certifications			
Carrier ^②	TBD	America: Verizon/ AT&T/ T-Mobile	-
Regulatory ^②	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 Australia/New Zealand: RCM America: FCC Canada: IC
Others	RoHS/ REACH	RoHS/ REACH	RoHS/REACH
Data Rate			
LTE-FDD (Mbps)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	-
LTE-TDD (Mbps)	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)	-
DC-HSDPA/HSUPA (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 10	Release 10	-
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 Detection	●	●	-
Dual SIM Dual Standby	●	●	-
Firmware Upgrade via USB	●	●	●
Firmware Upgrade via OTA	●	●	●

Notes:

- *: Under development/ in progress.
- 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.
- : supported.

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