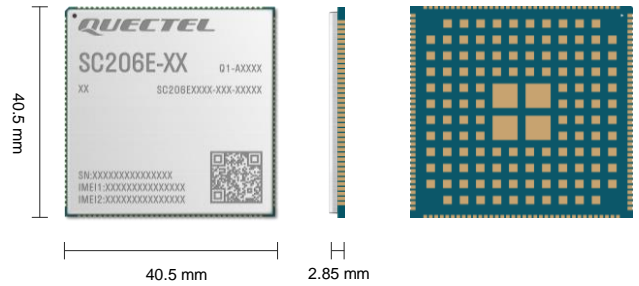


Quectel SC206E Series

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, smart safety, PDA & tablets, vending machines, delivery lockers, as well as video streaming and entertainment systems.

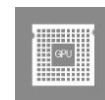


Key Features

- ✓ 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
(SC206E-NA supports
NavIC and L1 + L5)



Powerful Multimedia
Functions



LCC + LGA
Package

Quectel SC206E Series

| 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 | ● | ● | ● |

NOTE:

- *: 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.

Quectel SC206E Series

| 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 | |