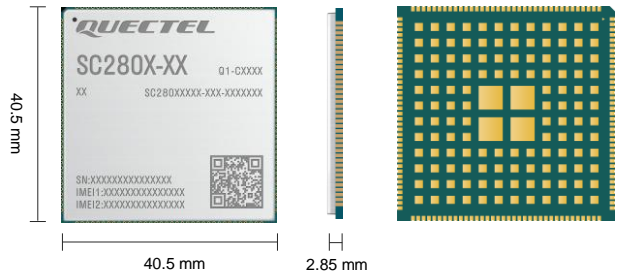


# Quectel SC280M Series

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



SC280M series is Quectel’s new generation of multi-mode smart LTE Cat 4 module with built-in Android 13 OS. Based on MT8768 high-performance 64-bit octa-core processors (4 × A53 @ 2.0 GHz + 4 × A53 @ 1.5 GHz) with built-in IMG GE8320 @ 650 MHz GPU, it is an ideal solution for a wide range of industrial and consumer applications requiring high data rates and multimedia functions. SC280M series has three variants: SC280M-EM, SC280M-CE\* and SC280M-WF\* (only supports Wi-Fi and Bluetooth) .

SC280M series module 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 and QZSS) receiver for fast and accurate positioning.

A rich set of interfaces (such as LCM, camera, touch panel, video, audio, 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, tax control machines, smart safety, on-board equipment, high-end information acquisition equipment, smart robots, smart home, smart hardware, industrial smart handheld equipment, audio and video recorders, smart interphones, smart wearables, vending machines, logistics cabinets, etc.



### Key Features

- ✓ Exceptional system performance based on MTK MT8768 64-bit octa-core ARM processors
- ✓ Built-in high-performance IMG GE8320 @ 650 MHz GPU
- ✓ Worldwide LTE, UMTS/ HSPA+ and GSM/ GPRS/ EDGE coverage
- ✓ MIPI DSI (resolution of up to 1920 × 1200 @ 60 fps)
- ✓ Dual concurrently-working cameras supported
- ✓ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment
- ✓ Recording and playback 1080P @ 30 fps



ARM A53 64-bit Processor (octa-core)



MTK IMG GE8320 GPU



Android OS



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



Powerful Multimedia Function



LCC Package

# Quectel SC280M Series

LTE Cat 4	SC280M-EM	SC280M-CE*	SC280M-WF*
Region/ Operator	EMEA/ Korea/ South Asia/ Latin America/ India/ Australia/ New Zealand/ South Africa	China	Global
CPU	MT8768 high-performance processors 4 x A53 @ 2.0 GHz + 4 x A53 @ 1.5 GHz	MT8768 high-performance processors 4 x A53 @ 2.0 GHz + 4 x A53 @ 1.5 GHz	MT8768 high-performance processors 4 x A53 @ 2.0 GHz + 4 x A53 @ 1.5 GHz
Memory	3 GB LPDDR4X + 32 GB eMMC (Default) 2 GB LPDDR4X + 32 GB eMMC (Optional)	3 GB LPDDR4X + 32 GB eMMC (Default) 2 GB LPDDR4X + 32 GB eMMC (Optional)	3 GB LPDDR4X + 32 GB eMMC (Default) 2 GB LPDDR4X + 32 GB eMMC (Optional)
OS	Android 13	Android 13*	Android 13*
Dimensions (mm)	40.5 x 40.5 x 2.85	40.5 x 40.5 x 2.85	40.5 x 40.5 x 2.85
Package	LCC	LCC	LCC
Weight (g)	Approx. 8.3 g	TBD	TBD
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	B1/ 3/ 5/ 8	-
LTE-TDD	B38/ 40/ 41	B34/ 38/ 39/ 40/ 41 (140 M)	-
WCDMA	B1/ 2/ 4/ 5/ 8	B1/ 8	-
GSM	850/ 900/ 1800/ 1900 MHz	900/ 1800 MHz	-
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, L1	GPS/ GLONASS/ BDS/ Galileo/ QZSS, L1	-
Certifications			
Carrier	Australia: Telstra*	TBD	TBD
Regulatory	Europe: CE Australia/New Zealand: RCM Global: GCF* UK: UKCA* Brazil: Anatel* South Korea: KC*	China: CCC*/ SRRC*/ NAL*	TBD
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)	42.2 (DL)/ 11.5 (UL)	42.2 (DL)/ 11.5 (UL)	-
WCDMA (kbps)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	-
EDGE (kbps)	236 (DL)/ 236 (UL)	236 (DL)/ 236 (UL)	-
GPRS (kbps)	85.6 (DL)/ 85.6 (UL)	85.6 (DL)/ 85.6 (UL)	-
Enhanced Features			
3GPP E-UTRA	Release 11	Release 11	-
Bandwidth	1.4/ 3/ 5/ 10/ 15/ 20 MHz	1.4/ 3/ 5/ 10/ 15/ 20 MHz	-
Rx-diversity	●	●	-
DL MIMO 2 x 2	●	●	-
(U)SIM Card Detection	●	●	-
Dual SIM Dual Standby	●	●	-
Firmware Upgrade via USB	●	●	●
Firmware Upgrade via OTA	●	●	●

Notes:

- : Supported.
- : Not Supported.
- \*: Under development/ planning/ in progress.
- TBD: To Be Determined.

# Quectel SC280M Series

LTE Cat 4	General Features
<b>Interfaces</b>	
LCM	4-lane MIPI DSI, supports up to 1920 × 1200 @ 60 fps
Camera	Three groups of MIPI CSI: 1 group of 4-lane CSI, 1 group of 2-lane CSI, 1 group of 1-lane CSI Two 4-lane MIPI CSI, up to 2.8 Gbps/ lane Supports 2 cameras, up to 21 MP or 13 MP + 8 MP with dual ISPs
Touch Panel	Capacitive touch panel, controlled by I2C
Video	Encode: 1080P @ 30 fps/ H.263/ H.264/ MPEG4 Decode: 1080P @ 30 fps/ HEVC/ H.263/ H.264/ VP9/ MPEG4
Audio IO	3 analog input: MIC1, MIC2 (earpiece), MIC3 3 analog output: Line-out, earpiece, headphone
USB	× 1, supports USB 2.0, USB OTG etc.
(U)SIM	× 2, supports 1.8/ 3 V (U)SIM cards; supports (U)SIM card hot-plug detection and dual-SIM dual-standby
SD Card	× 1, SD 3.0, supports 4-bit SDIO
ADC	× 1, general-purpose ADC interface
UART	× 2 Debug UART: 2-wire serial port, dedicated for debugging UART1: 4-wire UART with the speed rate up to 3 Mbps; supporting RTS and CTS hardware flow control
I2C <sup>①</sup>	× 7 (Multiplexed)
SPI <sup>①</sup>	× 4 (Multiplexed)
I2S <sup>①</sup>	× 2 (Multiplexed)
PWRKEY	0–5 V, pull it down to power on
GPIO <sup>①</sup>	× 39
Antenna	× 4, Main, Rx-diversity, GNSS, Wi-Fi/ Bluetooth antennas respectively (SC280M-WF*: × 1, Wi-Fi & Bluetooth antenna)
<b>Electrical Features</b>	
Supply Voltage Range	3.55–4.4 V, typ. 3.8 V
Power Consumption (Typical)	TBD

#### Notes:

- ①: SPI, I2C, I2S and GPIO outputs are multiplexed. Let us know your requirements if you need to customize them. We will assist you in customizing the software needed
- \*: Under development/ planning/ in progress