

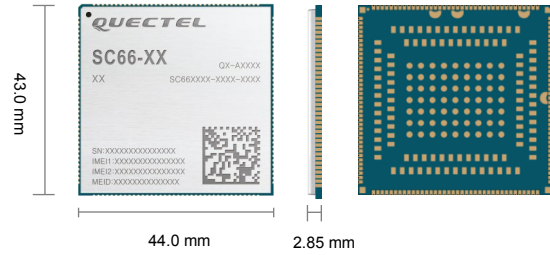


**THE DATASHEET OF
TPS62824DMQR**



Quectel SC66 Series

Multi-mode Smart LTE Cat 6 Module with Wi-Fi & Bluetooth



SC66 series is Quectel’s new generation of multi-mode Smart LTE Cat 6 module with Android 9.0/10.0. Based on Qualcomm ARM Kryo™ 260 64-bit octa-core high-performance processor with built-in Adreno™ 512 GPU, it is an ideal solution for a wide range of industrial and consumer applications requiring high data rates and multimedia functions. SC66 series is available in five variants: SC66-CE, SC66-E, SC66-A, SC66-J and SC66-MW.

SC66 series supports multiple-input multiple-output (MIMO) technology. The use of multiple antennas at the receiver end at the same time and on the same frequency band greatly minimizes errors and optimizes data speed. The module also combines high-speed wireless connectivity with embedded multi-constellation and high-sensitivity GNSS (GPS, GLONASS, BeiDou, QZSS and SBAS) receiver for positioning.

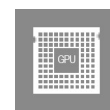
A rich set of interfaces (such as LCM, Camera, Touch Panel, MIC, SPK, UART, USB, I2C, SPI) extend the applicability of the module to a wide range of M2M applications, including smart POS, smart cash registers, smart home gateways, smart robots, smart wearables, security surveillance, PDA & tablets, vending machines, delivery lockers, AI, police and law enforcement equipment, in-car video streaming and entertainment systems, etc.

Key Features

- ✓ Supports LTE Cat 6 and 2 × 20 MHz carrier aggregation, with maximum downlink speed of up to 300 Mbps
- ✓ Worldwide LTE, UMTS/HSPA+, TD-SCDMA, CDMA/EVDO and GSM/GPRS/EDGE coverage
- ✓ Supports MIPI_DSI (up to 2560 × 1600 @ 60 fps) and DP over USB Type-C (up to 4096 × 2160 @ 30 fps) for dual independent display
- ✓ Supports MIPI_DSIO (1920 × 1080 @ 60 fps) and MIPI_DSI1 (1920 × 1080 @ 60 fps) for dual independent display as an option
- ✓ Supports up to four cameras, with two of them working simultaneously
- ✓ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment
- ✓ Supports recording and playback of 4K videos @ 30 fps



SDM660 64-bit Processor (Octa-core)



Qualcomm® Adreno™ 512 GPU



Android OS



Smart LTE Cat 6
Max. 300 Mbps (DL)
Max. 50 Mbps (UL)



IEEE 802.11 a/b/g/n/ac



BT 5.0



GPS/GLONASS/BeiDou/QZSS/SBAS



Powerful Multimedia Function



LCC + LGA Package

Quectel SC66 Series

LTE Cat 6	SC66-CE	SC66-E	SC66-A	SC66-J	SC66-MW
Region/Operator	China	Europe/India/South Korea/ South Asia/Latin America/ Australia/South Africa	North America	Japan	Global
CPU	Kryo 260 Gold (2.2 GHz) Kryo 260 Silver (1.843 GHz)	Kryo 260 Gold (2.2 GHz) Kryo 260 Silver (1.843 GHz)	Kryo 260 Gold (2.2 GHz) Kryo 260 Silver (1.843 GHz)	Kryo 260 Gold (2.2 GHz) Kryo 260 Silver (1.843 GHz)	Kryo 260 Gold (2.2 GHz) Kryo 260 Silver (1.843 GHz)
Memory	32 GB eMMC + 3 GB LPDDR4X 64 GB eMMC + 4 GB LPDDR4X	32 GB eMMC + 3GB LPDDR4X 64 GB eMMC + 4GB LPDDR4X	32 GB eMMC + 3 GB LPDDR4X 64 GB eMMC + 4 GB LPDDR4X	32 GB eMMC + 3 GB LPDDR4X 64 GB eMMC + 4 GB LPDDR4X	32 GB eMMC + 3 GB LPDDR4X 64 GB eMMC + 4 GB LPDDR4X
OS	Android 9.0/10.0	Android 9.0/10.0	Android 9.0/10.0	Android 9.0/10.0	Android 9.0/10.0
Dimensions (mm)	43.0 × 44.0 × 2.85	43.0 × 44.0 × 2.85	43.0 × 44.0 × 2.85	43.0 × 44.0 × 2.85	43.0 × 44.0 × 2.85
Temperature Range					
Operating Temperature	-35 to +75 °C	-35 to +75 °C	-35 to +75 °C	-35 to +75 °C	-35 to +75 °C
Frequency Bands					
LTE-FDD	B1/B3/B5/B8	B1/B2/B3/B4/B5/B7/B8/B20/ B28(A+B)	B2/B4/B5/B7/B12/B13/B14/ B17/B25/B26/B66/B71	B1/B3/B5/B8/B11/B18/B19/B21/ B26/B28(A+B)	/
LTE-TDD	B34/B38/B39/B40/B41 ^②	B38/B39/B40/B41 ^①	B41 ^①	B41 ^②	/
WCDMA	B1/B8	B1/B2/B4/B5/B8	B2/B4/B5	B1/B6/B8/B19	/
TD-SCDMA	B34/B39	/	/	/	/
EVDO/CDMA	BC0	/	/	/	/
GSM/EDGE	B3/B8	B2/B3/B5/B8	/	/	/
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	2.4/5 GHz 802.11a/b/g/n/ac	2.4/5 GHz 802.11a/b/g/n/ac
Bluetooth	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE/ BT 5.0	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE/ BT 5.0	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE/ BT 5.0	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE/ BT 5.0	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE/ BT 5.0
GNSS	GPS/GLONASS/BeiDou/ QZSS/SBAS	GPS/GLONASS/BeiDou/ QZSS/SBAS	GPS/GLONASS/BeiDou/ QZSS/SBAS	GPS/GLONASS/BeiDou/ QZSS/SBAS	/
Certifications					
Carrier	/	Australia: Telstra ^③ Global: GCF Europe: CE Taiwan, China: NCC Australia/New Zealand: RCM Brazil: Anatel ^③ South Korea: KC ^③	North America: Verizon*/AT&T* Global: GCF North America: PTCRB America: FCC Canada: IC	Japan: NTT DOCOMO ^③ Japan: JATE/TELEC	/
Regulatory	China: SRRC/NAL/CCC				Europe: CE America: FCC Canada: IC Australia/New Zealand: RCM
Others	RoHS/REACH	RoHS/REACH	RoHS/REACH	RoHS/REACH	RoHS/REACH
Data Transmission					
LTE-FDD Data Rate (Mbps)	300 (DL)/50 (UL)	300 (DL)/50 (UL)	300 (DL)/50 (UL)	300 (DL)/50 (UL)	/
LTE-TDD Data Rate (Mbps)	265 (DL)/30 (UL)	265 (DL)/30 (UL)	265 (DL)/30 (UL)	265 (DL)/30 (UL)	/
DC-HSPA Data Rate (Mbps)	42 (DL)/11.2 (UL)	42 (DL)/11.2 (UL)	42 (DL)/11.2 (UL)	42 (DL)/11.2 (UL)	/
WCDMA Data Rate (kbps)	384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)	/
TD-SCDMA Data Rate (Mbps)	4.2 (DL)/2.2 (UL)	/	/	/	/
EVDO Data Rate (Mbps)	3.1 (DL)/1.8 (UL)	/	/	/	/
EDGE Data Rate (kbps)	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)	/	/	/
GPRS Data Rate (kbps)	107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)	/	/	/
Enhanced Features					
3GPP E-UTRA	Release 12	Release 12	Release 12	Release 12	/
Bandwidth (MHz)	1.4/3/5/10/15/20	1.4/3/5/10/15/20	1.4/3/5/10/15/20	1.4/3/5/10/15/20	/
Rx-diversity	●	●	●	●	/
DL MIMO 2 × 2	●	●	●	●	/
(U)SIM Detection	●	●	●	●	/
Dual SIM Dual Standby	●	●	●	●	/
Firmware Upgrade via USB	●	●	●	●	●
OTA	●	●	●	●	●
General Features					
Supply Voltage Range	3.55–4.4 V, Typ. 4.0 V				
Power Consumption	80 μA @ power off; Typ. 5.5 mA @ sleep mode				
Package	LCC + LGA				
Weight (g)	Approx. 12				
Interfaces					
LCM	2560 × 1600 @ 60 fps primary display + 4K @ 30 fps over DP; Dual MIPI_DSI				
Camera	3 groups of 4-lane MIPI_CSI, up to 2.1 Gbps/lane; Supports 3 or 4 cameras; Up to 24 MP with Dual ISPs				
Touch Panel	Capacitive touch panel				
Audio	Speaker, earpiece, headphone and 3 microphones (including one Noise-canceling Microphone) for analog audio				
USB	Supports 2 groups of USB interfaces: ● One supports USB 3.1 Type-C interface, which is compatible with USB 2.0; ● The other supports USB 2.0, which can only work in host mode.				
(U)SIM	× 2, Supports 1.8/2.95 V (U)SIM cards, with (U)SIM card detection function, DSDS supported				
UART	× 4, Each of the four UARTs supports up to 4 Mbps; One of the four UARTs supports hardware flow control				
SD Card	× 1, SD 3.0, 4-bit SDIO				
ADC	× 2, General-purpose ADC interface				
I2C	× 5				
I2S	× 2				
SPI	× 1,				
PWRKEY	× 1, 1.8 V, Pulled up internally				
GPIO	× 22				
Antenna	× 6, Main/Rx-diversity/GNSS/Wi-Fi&BT/FM*/WIFI_MIMO antenna respectively (SC66-CE: WIFI_MIMO is not supported; SC66-MW: × 2, Wi-Fi&BT/WIFI_MIMO antennas)				

Notes:

- ① B41 of SC66-E and SC66-A only supports 200 MHz bandwidth.
- ② B41 of SC66-CE and SC66-J only supports 120 MHz bandwidth.
- ③ means TBD.
- * means under development.
- means supported.

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