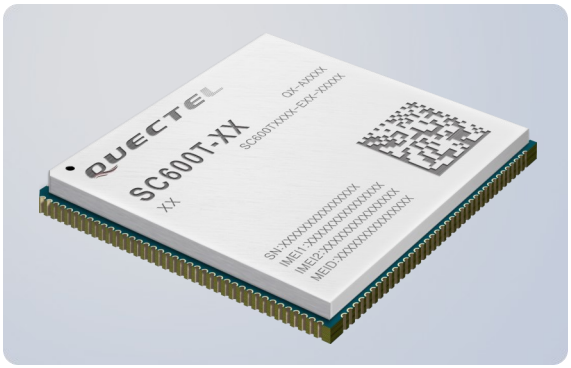
Quectel SC600T

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



SC600T is Quectel's new generation of multi-mode Smart LTE Cat 6 module with built-in Android 9.0 OS. Based on Qualcomm octa-core 64-bit high-performance processors with built-in Adreno™ 506 GPU, SC600T is designed to support leading performance, various multimedia features and Quick Charge 3.0 technology. It is ideal for both industrial and consumer applications with high data-rate and multimedia functions. SC600T comes in four variants: SC600T-NA*, SC600T-EM*, SC600T-JP* and Wi-Fi & BT only version SC600T-WF*.

SC600T 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 the data speed. This module also combines high-speed wireless connectivity with embedded multi-constellation and high-sensitivity GNSS (GPS, GLONASS and BeiDou) 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, police and law enforcement equipment, in-car video streaming and entertainment systems, etc.

Key Benefits

- LTE Cat 6 modem supporting 2x20MHz carrier aggregation, with maximum download speed up to 300Mbps
- Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- Dual LCDs and dual touch panels for independent display and operation: 1920x1200 @60fps for primary display and 1920x1080 @60fps for secondary display
- Support 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
- Support recording and playback of 4k videos at 30fps

ARM Cortex-A53 64-bit Processor (Octa-core)

Qualcomm® Adreno™ 506 GPU

Android 9.0

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

IEEE 802.11 a/b/g/n/ac

BT4.2 (BR/EDR+BLE)

GPS+GLONASS+ BeiDou

Powerful Multimedia Function

LCC+LGA Package

Rev.: V1.1| Status: Released

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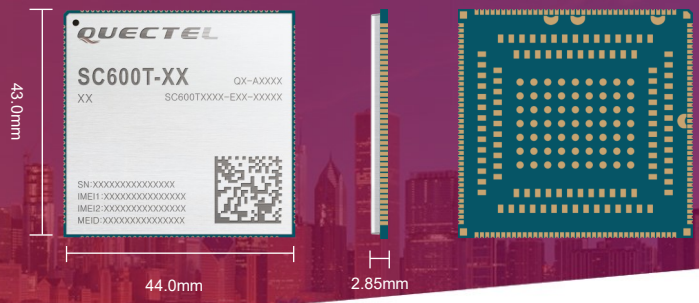

Variant for EMEA/India/Korea/Taiwan/South Asia/Latin America/Australia/New Zealand

SC600T-EM*:

LTE FDD: B1/B2/B3/B4/B5/B7/B8/B20/B28
LTE TDD: B38/B39/B40/B41
WCDMA: B1/B2/B4/B5/B8
GSM: 850/900/1800/1900MHz

Variant for North America

SC600T-NA*:

LTE FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B66/B71
LTE TDD: B41
WCDMA: B2/B4/B5

Variant for Japan

SC600T-JP*:

LTE FDD: B1/B3/B5/B8/B11/B18/B19/B21/B26/B28
LTE TDD: B41
WCDMA: B1/B6/B8/B19

Variant for the Global

SC600T-WF*:

Only Support Wi-Fi & BT

Data

LTE:
Cat 6 FDD: Max 300Mbps (DL)/Max 50Mbps (UL)
Cat 6 TDD: Max 265Mbps (DL)/Max 35Mbps (UL)
UMTS:
DC-USDPA: Max 42Mbps (DL)
DC-HSUPA: Max 11.2Mbps (UL)
WCDMA: Max 384Kbps (DL/UL)
GSM:
GPRS: Max 107Kbps (DL)/85.6Kbps (UL)
EDGE: Max 296Kbps (DL)/236.8Kbps (UL)

Electrical Characteristics

Supply Voltage: 3.55V~4.4V, 3.8V Typ.
Consumption: 70uA @Power off
3.6mA @Sleep, Typ.
Output Power:
Class 4 (33dBm±2dB) for GSM850
Class 4 (33dBm±2dB) for EGSM900
Class 1 (30dBm±2dB) for DCS1800
Class 1 (30dBm±2dB) for PCS1900
Class E2 (27dBm±3dB) for GSM850 8-PSK
Class E2 (27dBm±3dB) for EGSM900 8-PSK
Class E2 (26dBm±3dB) for DCS1800 8-PSK
Class E2 (26dBm±3dB) for PCS1900 8-PSK
Class 3 (24dBm+1/-3dB) for WCDMA bands
Class 3 (23dBm±2dB) for LTE-FDD bands
Class 3 (23dBm±2dB) for LTE-TDD bands
Sensitivity (dBm):
LTE FDD B1: -100.2 LTE FDD B2: -100.2
LTE FDD B3: -99. 5 LTE FDD B4: -99
LTE FDD B5: -100.7 LTE FDD B7: -98.7
LTE FDD B8: -101.5 LTE FDD B11: -99.5
LTE FDD B12: -99.7 LTE FDD B13: -99.5
LTE FDD B14: -99.3 LTE FDD B17: -99.7
LTE FDD B18: -101.2 LTE FDD B19: -100.7
LTE FDD B20: -100 LTE FDD B21: -99.7
LTE FDD B25: -100.7 LTE FDD B26: -99.2
LTE FDD B28: -99.2 LTE FDD B66: -99.4
LTE FDD B71: -99.3 LTE TDD B38: -99.2
LTE TDD B39: -99.2 LTE TDD B40: -99.2
LTE TDD B41: -98.7 WCDMA B1: -109
WCDMA B2: -109 WCDMA B4: -109.5
WCDMA B5: -110 WCDMA B6: -111
WCDMA B8: -110.5 WCDMA B19: -100.5
EGSM850: -108.3 EGSM900: -108.8
DCS1800: -108 PCS1900: -107

Audio & Video

VoLTE:
Crystal Clear VoLTE with Ultra HD Voice and SRVCC/CSFB
High Fidelity Music Playback of 24-bit/192kHz
Video:
Encode:
3840x2160 @30fps (HEVC/H.264)
1080p @30fps (MPEG-4/VP8)
864x480 @30fps (H.263)
Decode:
3840x2160 @30fps (HEVC/H.264,VP8/VP9)
1080p @60fps (VC-1/MPEG-4/)
1080p @30fps (DivX4.x/5.x/6.x,MPEG-2)
864x480 @30fps (H.263)
720x480 @30fps (DivX3.11)
Wi-Fi Display Supports up to 1080P at 30fps for Encoding and Decoding

Interfaces

LCM:
4-lane MIPI_DSI0 + 4-lane MIPI_DSI1
WUXGA (1920×1200) @60fps
Camera:
3 Groups of 4-lane MIPI_CSI, up to 2.1Gbps/Lane
Support 3 or 4 Cameras
Up to 24MP with Dual ISPs
Touch Panel:
Capacitive Touch Panel
Audio:
Speaker, Earpiece, Headphone, and 3 MICs for Analog Audio
Support One Noise-canceling MIC
USB:
Compliant with USB 3.0/2.0 , Support USB OTG
I2C: × 5
(U)SIM: × 2 (1.8V/2.95V)
UART: × 4 (Support 4Mbps with Hardware Flow Control)
SD Card: × 1 (3.0, 4-bit SDIO)
PWRKEY: 1.8V, Pulled-up Internally
SPI: × 2 (Can be Multiplexed into UART and I2S Respectively, and I2S Supports Both Tx and Rx)
ADC: × 2
GPIO: × 19
Motor Drive: × 1
Flash Driver: × 2
LED Sink: × 4
Antenna: 4 Solder Pads for Main/Rx-diversity/GNSS/Wi-Fi & BT Antennas, Respectively

Enhanced Features

WLAN:
2.4G/5G, 802.11 a/b/g/n/ac
Bluetooth:
BT2.1+EDR/3.0/4.1 LE/4.2 BLE
GNSS: GPS/GLONASS/BeiDou
Cat 6 Modem with 2x20MHz CA
Support Rx-diversity , DL MIMO 2 × 2
Support 3GPP E-UTRA Release 10
Bandwidth: 1.4/3/5/10/15/20MHz
Built-in Charge IC & Fuel Gauge, Qualcomm Quick Charge 3.0
Support Dual LCDs for Independent Display
Support Dual SIM Dual Standby
Firmware Upgrade via USB Interface

General Features

OS: Android 9.0
Memory:
16GB eMMC+2GB LPDDR3 (Default)
32GB eMMC+3GB LPDDR3 (Optional)
64GB eMMC+4GB LPDDR3 (Optional)
Operating Temperature: -35°C ~ +65°C
Dimensions: 43.0mm × 44.0mm × 2.85mm
Package: LCC+LGA
Weight: Approx. 13.0g

Approvals

Carrier:
Verizon*/AT&T*/T-Mobile* (North America)
NTT DOCOMO*/KDDI* (Japan)
Telstra① (Australia)
Regulatory:
GCF* (Global)
CE* (Europe)
FCC*/PTCRB* (North America)
IC* (Canada)
JATE/TELEC (Japan)
RCM* (Australia/New Zealand)
Others:
RoHS Compliant

* Under Development
① TBD

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