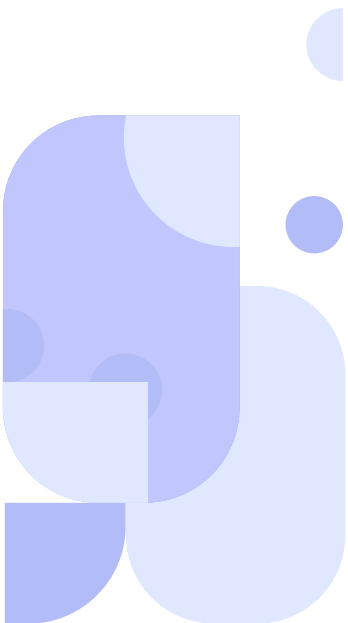
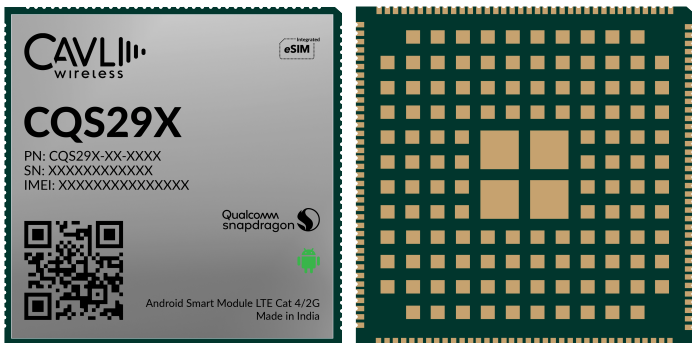


CQS29X Cavli C Series

CQS290 | CQS291 | CQS292




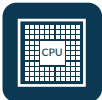











Overview

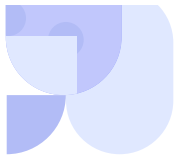
CQS29X series is a part of Cavli's C-Series module family, comprising of LTE Cat 4 modules supporting data rates up to 150 Mbit/s downlink and 50 Mbit/s uplink, with 2G fallback. These Android smart modules feature a Cortex A53 quad-core CPU architecture and a built-in Adreno™ 702 GPU, delivering enhanced graphics capabilities, superior image quality, and exceptional compute performance.

Available in two variants, CQS29X-EA and CQS29X-NA, the series supports multi-constellation GNSS, including GPS, BDS, GLONASS, Galileo, QZSS, and SBAS. Versatile features such as USB 3.1 Type-C/Micro USB, Wi-Fi, Bluetooth, and FM make the CQS29X ideal for diverse applications, including vehicle clusters, e-mobility, telematics, and Smart Kiosks etc.

Supporting Qualcomm's LA2.1 Automotive Middleware, the module series enables advanced features like telemetry and device management functionalities for connected vehicles. Additionally, the CQS29X offers an optional integrated eSIM with global connectivity powered by the Cavli Hubble Modem management platform, for seamless global deployments.

Key Highlights

- 
 ARM Cortex-A53
64-bit Processor
(Quad-core)
- 
 Qualcomm
Adreno™ 702 GPU
- 
 Android 12,
SP upto 14
- 
 LTE Cat 4
- 
 LCC+LGA
Package
- 
 GPS/BDS/GLONASS/
Galileo/QZSS/SBAS
- 
 Superior Multimedia
Functions
- 
 IEEE 802.11
a/b/g/n/ac
- 
 Bluetooth 5.0
(BR/EDR + BLE)
- 
 Integrated
eSIM
- 
 Hubble
Connectivity Platform
- 
 Qualcomm LA2.1
Middleware
- 
 Integrated LCD +
Touch Interface



Basic Module Information

Basic Specification

Processor: Quad-core ARM Cortex-A53 64-bit CPU @ 2.0 GHz
 Inbuilt GPU: Adreno 702 @ 845 MHz (64-bit)

Flash: 16 GB eMMC / 64 GB eMMC
 RAM: 2 GB LPDDR4X / 3 GB LPDDR4X
 OS: Android 12 + SP till Android 14

SDK :	CQS290	CQS291	CQS292
	Not Available	LA2.1 SDK (2 Wheeler)	LA2.1 SDK (4 Wheeler)

Radio Technology

RAT Used: LTE Cat 4 with 2G
 3GPP Release: 10
 Secondary Wireless Protocols: WLAN and BLE

LTE Bands

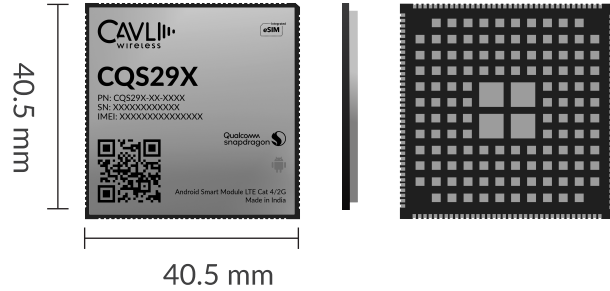
EA: B1 /B3 /B5 /B8 /B20 /B40
 NA: B2 /B4 /B5 /B12 /B13 /B66

GSM Bands

EA: 900 /1800 MHz
 NA: N/A

Interfaces

MIPI_CSI (4-bit)	x2
MIPI_DSI (4-bit)	x1
Analog Audio Out	x2
USB (3.1)	x1
USIM	x1
UART	x3
Main ANT	x1
DIV ANT	x1
GNSS ANT	x1
Wi-Fi, BLE& FM ANT	x1
GPIO	x37
SDC (4 bit)	x1
ADC	x1
I2C	x2
CCI I2C	x2
Capacitive Touch Panel (I2C)	x1
I3C(Sensor for Accel + Gyro)	x1
SPI	x1
MIC (Analog)	x2
DMIC (Analog)	x2



Packaging

Form Factor: LCC+LGA
 Dimensions: 40.5 x 40.5 x TBD (mm scale)

WLAN and BLE Specifications

WLAN Frequencies: 2.4GHz & 5GHz
 WLAN Standard: 802.11a/b/g/n/ac
 BLE Specifications: 2.1 EDR/3.0 HS/4.2 LE/5.0 LE
 BLE Standard: BLE 5.0

Network Speed (Peak Values)

Cat 4: DL 150Mbps & UL 50 Mbps
 GSM: DL 236.8Kbps & UL 236.8 Kbps

Constellation Coverage

In-built Qualcomm Location Suite Gen9VT with support for GPS/BDS/GLONASS/Galileo/QZSS/SBAS

CQS290	CQS291	CQS292
L1	L1	L1+L5

Temperature Range

Operating Temperature: TBD

Power Characteristics

Voltage Range: 3.5 V to 4.4 V
 Typical Voltage: 3.8 V

Applicable Region

EA: EMEA & APAC
 NA: North America

This document is a pre-release version. Some of the technical specifications are subjected to change.