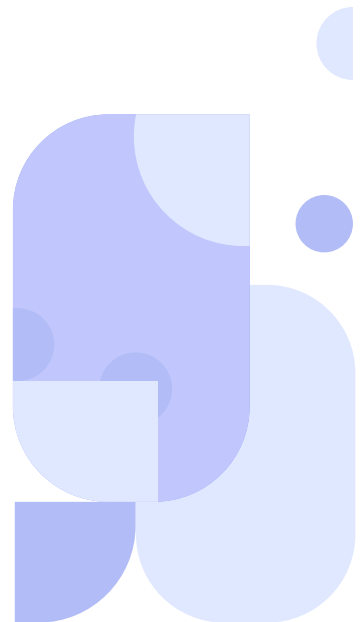
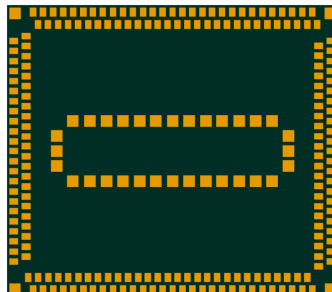


CQS29X Cavli C Series

CQS290 | CQS291 | CQS292



Overview

CQS29X is a series of LTE Cat 4 modules from Cavli C-Series module family that supports data rates up to 150 Mbit/s in downlink and 50 Mbit/s in uplink with 2G fall back. These Android smart modules are equipped with the Cortex A53 quad-core CPU architecture with built-in Adreno(TM) 702 GPU delivering higher graphics capabilities, better quality images and excellent power performance. The module series comes in 2 variants - CQS29X-EA and CQS29X-NA and both variants support multi-constellation GNSS supporting GPS, BDS, GLONASS, Galileo, QZSS and SBAS. The CQS29X supports versatile features such as USB 3.1 Type-C/Micro USB, Wi-Fi and Bluetooth & FM making it ideal for wide range of applications such as two wheelers, e-mobility, telematics, fleet management etc. The module series supports Qualcomm LA2.1 Automotive Middleware that enables advanced features such as Telemetry and device management functionalities for connected vehicles. CQS29X also comes with optional integrated eSIM with global connectivity powered by the Cavli Hubble platform.

Key Highlights

 ARM Cortex-A53 64-bit Processor (Quad-core)	 Qualcomm Adreno™ 702 GPU	 Android OS	 LTE Cat 4	 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 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 (EGPRS)
3GPP Release: 10
Secondary Wireless Protocols: WLAN and BLE

LTE Bands

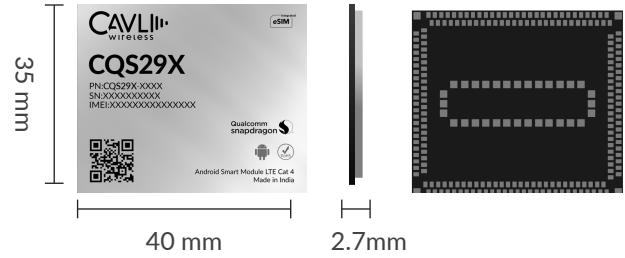
EA: B1 /B3 /B5 /B8 /B20 /B40

GSM Bands

EA: 900 /1800 MHz

Interfaces

MIPI_CSI	x2
MIPI_DSI	x1
Analog Audio Out	x2
USB (3.1)	x1
USIM	x1
UART	x3
JTAG	x1
Main ANT	x1
DIV ANT	x1
GNSS ANT	x1
Wi-Fi & Bluetooth ANT	x1
GPIO	x33
SDC (4 bit)	x1
ADC (Accelerometer & Gyrometer)	x1
I2C	x2
CCI I2C	x2
Capacitive Touch Panel (I2C)	x1
I3C	x1
SPI	x1
LED Indicators	x3
Motor Driver	x1
MIC (Analog)	x2



WLAN and BLE Specifications

WLAN Frequencies: 2.4GHz & 5GHz
WLAN Standard: 802.11a/b/g/n/ac
BLE Specifications: v2.1 + EDR and v3.0 + HS Modes
BLE Standard: BLE 5.0 Modes

Packaging

Form Factor: LGA
Dimensions: 40.4 x 35.4 x 2.7 (mm scale)
Pin Count: 208

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: -35 °C to +75 °C

Power Characteristics

Voltage Range: 3.5 V to 4.4 V
Typical Voltage: 4.2 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.