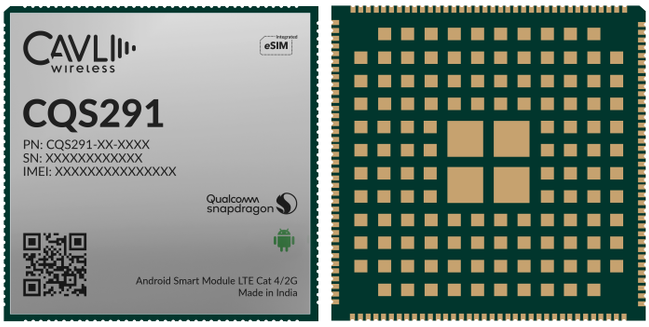
CQS291

Cavli
C Series



Overview

Cavli CQS291 is a series of LTE Cat 4 modules with 2G fallback, designed as an Android smart module. It features a Cortex A53 quad-core CPU paired with an Adreno™ 702 GPU, delivering superior graphics performance, enhanced image quality, and exceptional power efficiency. CQS291 supports multi-constellation GNSS, including GPS, BDS, GLONASS, Galileo, QZSS, and SBAS, ensuring precise and reliable location tracking.

The CQS291 includes versatile connectivity options such as USB 2.0, Bluetooth 5.0, Wi-Fi, and FM, making it suitable for a diverse range of applications. It also integrates Qualcomm's LA2.1 automotive middleware, which supports advanced functionalities like telemetry and device management for connected two-wheelers.

For global deployments, the CQS291 offers an optional integrated eSIM, enabling seamless global connectivity through the Cavli Hubble platform. The CQS291 Smart Module is available in four regional variants—CQS291-EAJ for Eurasia & Japan, CQS291-NA for North America, CQS291-AN for Australia & New Zealand, CQS291-IN for India along with a worldwide variant, CQS291-WW, for global deployments.

This combination of features positions the module as an ideal choice for automotive applications requiring advanced connectivity and performance.

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
- WiFi IEEE 802.11 a/b/g/n/ac
- Bluetooth 5.0 (BR/EDR + BLE)
- Integrated eSIM
- Hubble Connectivity Platform
- Qualcomm LA2.1 Middleware
- Integrated MIPI-DSI Interface
- Qualcomm QWM2290 Baseband Chipset

www.cavliwireless.com
HQ address: Cavli Inc.,99 South Almaden Blvd.,Suite 600, San Jose, California, 95113
Email: solutions@cavliwireless.com

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 :	LA2.1 Middleware (2 Wheeler)

Radio Technology

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

LTE Bands

EAJ:	B1/B3/B5/B7/B8/B18/B19/ B20/B26/B38/B40/B41
AN:	B1/B3/B5/B8/B18/B19/B26/B28
IN:	B1/B3/B5/B8/B40/B41
NA:	B2/B4/B5/B7/B8/B12/B13/B17/ B25/B66/B71
WW:	B1/B2/B3/B4/B5/B7/B8/B12/ B13/B18/B19/B20/B25/B26/ B28/B38/B40/B41/B66/B71

GSM Bands

EAJ:	900 /1800 MHz
AN:	900 /1800 MHz
IN:	900 /1800 MHz
WW:	900 /1800 MHz
NA:	N/A

Constellation Coverage

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

Temperature Range

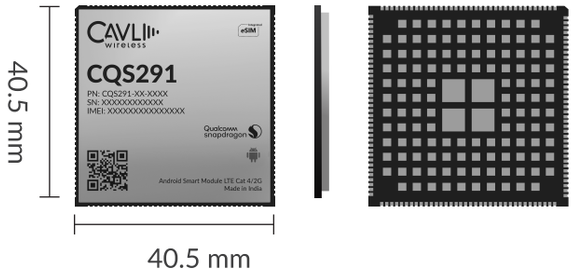
Operating Temperature:	TBD

Power Characteristics

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

Applicable Region

Eurasia & Japan, North America, Australia & New Zealand, India only, Worldwide



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

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	x2

*Maximum Number Possible

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

 www.cavliwireless.com

HQ address: Cavli Inc.,99 South Almaden Blvd.,Suite 600, San Jose, California, 95113
Email: solutions@cavliwireless.com