



# Technical Specification Document

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## CQM220

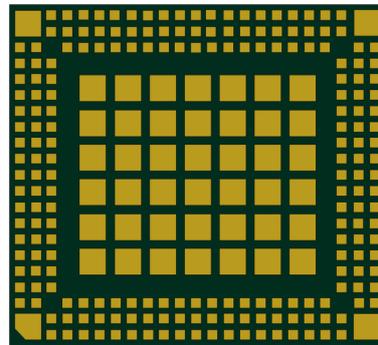
5G - redCap Module



# Cavli C-Series CQM220 Module



## 5G - redCap Module



CQM220 is the latest 5G RedCap module in Cavli's C-Series portfolio based on 3GPP release 17 standards, supports SA mode and is backward compatible with 4G network. The module supports a theoretical data rate of 223Mbps and uplink speed of 123Mbps under the 5G RedCap network. It also offers multi-constellation dual band GNSS capability, with support for constellations like GPS, GLONASS, Galileo, NavIC, SBAS and QZSS.

The CQM220 is engineered in a compact LCC+LGA form factor, measuring 32mm x 29mm x TBD mm. Moreover, the CQM220 offers PCIe Gen2 interface support for high bandwidth peripheral connectivity to further elevate your connected solutions. The module currently comes in CQM220-WW variant that supports major World Wide bands. The CQM220 is an ideal candidate for IoT enabled applications that require high-throughput and precise location tracking such as Asset tracking, HD Smart Surveillance Solutions, Industry 4.0 etc.

## Key features



redCap



Integrated GNSS  
L1+L5



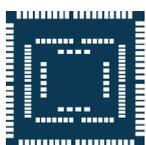
soft SIM



Cavli Hubble  
Platform



OpenSDK  
Support



LCC+LGA Package



USB 2.0 Interface



4G fallback

# CQM220

## Basic Information

Region	WorldWide
CPU	ARM Cortex - A7 @ 1.7 GHz
Memory	256 MB RAM/ 256 MB Flash
OS	Linux
Package	LCC+LGA/ M.2 <sup>3</sup>
Pin Count	172
Dimensions	32 x 29 x TBD mm
Weight	TBD
Operating Temperature	TBD

## Radio Frequency Bands

RAT	5G - redCap with 4G fallback
Transmission Rates (Peak)	5G: DL 223 Mbps & UL 123 Mbps 4G: DL 195 Mbps & UL 105 Mbps
LTE Band List	5G - n1/ n2/ n3/ n5/ n7/ n8/ n12/ n13/ n14/ n18/ n20/ n25/ n26/ n28/ n34/ n38/ n40/ n41/ n48/ n66/ n70/ n71/ n77/ n78 4G - B1/ B2/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B14/ B17/ B18/ B19/ B20/ B25/ B26/ B28A/ B28B/ B34/ B38/ B39/ B40/ B41/ B42/ B43/ B48/ B66/ B70/ B71
3GPP Release	17

## GNSS Capability

Constellations	GPS/GLONASS/Galileo/QZSS/SBAS/NavIC, L1 + L5
Time Taken for First Fix (@130dBm)	TBD

## Network Protocols

Internet Protocols	TBD
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## Interfaces

UART	x3
USB 2.0 (HS)	x1
USIM	x1
SDC <sup>3</sup>	x1

<sup>1</sup>Optional

<sup>2</sup>Needs SDK

<sup>3</sup>In Progress

I2S	x2
SGMII	x1
I2C	x1
ADC	x2
PCIe (1 lane)	x1
SPI	x1
JTAG	x1
GPIO	x7
Network status	x2
GNSS ANT	x1
Main ANT	x1
Diversity ANT	x1

## Electrical Characteristics

Operating Voltage	Range: 3.0V - 5.0V Typical: 3.8V
TxD Idle	TBD

## Certifications

Regulatory	North America : PTCRB <sup>3</sup> America : FCC <sup>3</sup> Canada : IC <sup>3</sup>
Carrier	Verizon <sup>3</sup> /AT&T <sup>3</sup> /T-Mobile <sup>3</sup>
Others	RoHS/REACH

## Other Features

M.2 Form Factor <sup>3</sup>	Optional
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<sup>1</sup>Optional

<sup>2</sup>Needs SDK

<sup>3</sup>In Progress

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