



Technical Specification Document

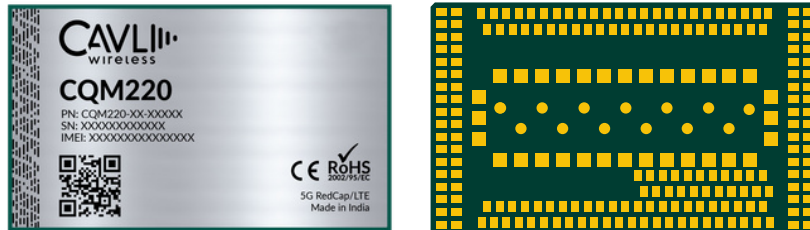
CQM220

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. CQM220 currently comes in CQM220-NA variant that supports major North American bands. It also comes with integrated GNSS that supports both L1 and L5 frequencies and supports integrated connectivity.

CQM220 comes in a compact form factor 37mm x 21.8mm x 2.8mm and is pin compatible with C20QM, C10QM LTE CAT4 and LTE CAT1 modules respectively, facilitating seamless transition from 4G to 5G.

Key features



redCap



Integrated GNSS
L1+L5



soft SIM



Cavli Hubble
Platform



OpenSDK
Support



LGA Package



M.2 Form Factor



USB 2.0 Interface



4G fallback

CQM220-NA

Basic Information

Region	North America
CPU	ARM Cortex - A7 @ 1.7 GHz
Memory	256 MB RAM/ 256 MB Flash
OS	Linux
Package	LGA/ M.2/ mPCIe ³ (Gen2 × 1 Lane)
Pin Count	233
Dimensions	37 x 21.8 x 2.8 mm
Weight	TBD
Operating Temperature	TBD
Extended 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 - n2/n4/n5/n7/n12/n13/n25/n66/n71 4G - B2/B4/B5/B7/B12/B13/B25/B66/B71
3GPP Release	17

GNSS Capability

Constellations	TBD
Time Taken for First Fix (@130dBm)	TBD
Accuracy	TBD
Sensitivity	TBD

Network Protocols

Internet Protocols	TBD
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Interfaces

UART	TBD
USB 2.0 (HS)	x1
USIM (1.8V / 3.0V)	x1
GPIO	TBD
PCM	x1
SGMII	x1

¹Optional

²Needs SDK

³In Progress

I2S	x1
JTAG	x1
DAC	TBD
I2C ³	TBD
SPI (master only) ³	TBD
GNSS ANT	x1
Main ANT	x1
Diversity ANT	x1

Electrical Characteristics

Operating Voltage	TBD
TxD Idle	TBD

Certifications

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

Other Features

Mini-PCIe Form Factor ³	Optional
M.2 Form Factor	Optional

¹Optional

²Needs SDK

³In Progress

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

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