CAVLI wireless

Technical Specification Document

CQM220

5G - RedCap Module

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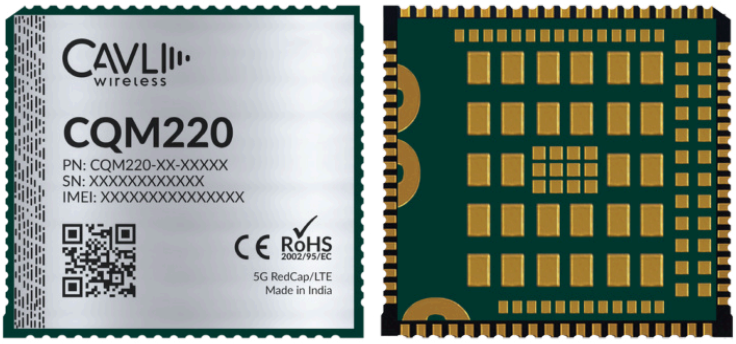
Cavli
C Series

Cavli C-Series CQM220 Module

5G - RedCap/ LTE Module



The CQM220 stands as Cavli's latest addition to the C-Series portfolio, employing the cutting-edge 5G RedCap technology in compliance with 3GPP release 17 standards. The module supports Standalone (SA) mode while maintaining backward compatibility with the existing 4G network. With data rates reaching up to 223Mbps (Downlink) and 123Mbps (Uplink) within the 5G RedCap network, it enables high-speed connectivity for critical IoT applications. Available in the CQM220-G variant, it offers compatibility with global frequency bands. Additionally, the module features inbuilt GNSS capabilities accommodating both L1 and L5 frequencies, alongside seamless connectivity integration. Compact in design, the CQM220 measures at 32mm x 29mm x TBD mm.

Key features

- 5G — RedCap
- Integrated GNSS L1+L5
- eSIM
- Cavli Hubble Platform
- OpenSDK Support
- LCC+LGA Package
- M.2 — M.2 Form Factor
- USB 2.0 Interface
- 4G — 4G fallback

CQM220

Basic Information

Region	Global
CPU	ARM Cortex - A7 @ 1.7 GHz
Memory	256 MB RAM/ 256 MB Flash
OS	Linux/ OpenWrt
Package	LCC+LGA/ M.2/ mPCIe[3](Gen2 × 1 Lane)
Pin Count	172
Dimensions	32 x 29 x TBD 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 150 Mbps & UL 50 Mbps
LTE Band List	5G- n77/n78 4G - B1/ B2/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B14/ B18/ B20/ B25/ B26/ B28A/ B28B/ B30/B38/ B40/ B41/ B66/ B70/ B71
3GPP Release	17

GNSS Capability

Constellations	GPS/ Glonass/ NavIC/ BeiDou/ Galileo/ QZSS/ SBAS
Time to Fix @-135 dBm	26s
Accuracy	< 2.0 m CEP
Call start sensitivity	-147 dBm

Network Protocols

Internet Protocols	TCP/HTTP/MQTT/HTTP/HTTPS/MQTTS/FTP/FTPS/PPP /SNMP /Web Socket protocols

Interfaces

UART	x2
USB 2.0 (HS)	x1
USIM (1.8V / 3.0V)	x1
SDC WLAN-SDIO	x1
PCM	x1

[1] Optional [2] Needs SDK [3] In Progress

SGMII	x1
I2S	x1
I2C[3]	x1
COEX_UART	x1
Network status	x2
GNSS ANT	x1
Main ANT	x1
Diversity ANT	x1

Electrical Characteristics

Operating Voltage	TBD
TxD Idle	TBD

Certifications

Regulatory	Europe : CE [3] Japan : TELEC/JATE [3] Australia : RCM [3] Taiwan : NCC [3] Malaysia : SIRIM [3] Global : GCF [3] America : FCC [3] Canada : IC [3] N.A : PTCRB [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

[1] Optional [2] Needs SDK [3] In Progress

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

For more information

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