CAVLI wireless

Technical Specification Document

CQM220

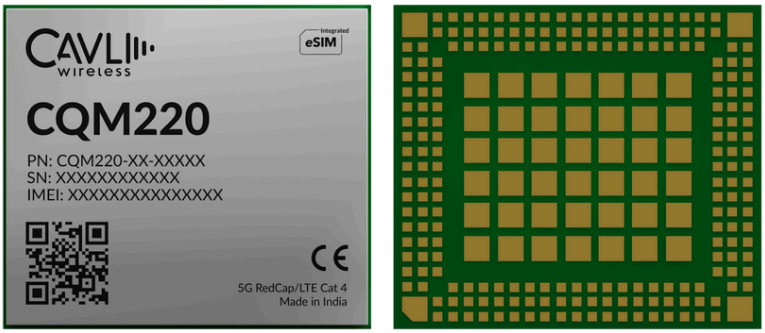
5G RedCap Module

Contact: sales@cavliwireless.com
Visit : www.cavliwireless.com

Cavli
C Series

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, SBAZ and QZSS.

The CQM220 is engineered in a compact LGA form factor, measuring 28.0mm x 25.5mm x 2.7 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, along with regional variants for North America, Eurasia & Japan, Latin America and India only. 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

- 5G RedCap
- In-built GNSS L1+L5
- 4G fallback
- Cavli Hubble Platform
- OpenSDK Support
- LGA Package
- USB 2.0 Interface
- Integrated eSIM

CQM220

Basic Information

Region	WW / NA / EAJ / IN / LA
CPU	ARM Cortex - A7 @ 1.9 GHz
Memory	256 /512 MB RAM + 256 /512 MB Flash
OS	OpenWrt
Package	LGA [3]
Pin Count	204
Dimensions	28.0 x 25.5 x 2.7mm
Weight	TBD
Operating Temperature	-30°C to 85°C

Radio Frequency Bands

RAT	5G - RedCap with 4G fallback
Transmission Rates (Peak)	5G: DL 220 Mbps & UL 120 Mbps 4G: DL 150 Mbps & UL 50 Mbps
LTE Band List	**WW** LTE: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17 /B18/B19/B20/B25/B26/B28/B34/B38/B39/ B40/B41/B42/B43/B48/B66/B70/B71 5G : n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/ n25/n26/n28/n38/n40/n41/n48/n66/n70/n71/n77/n78 **NA** LTE: B2/B4/B5/B7/B12/B13/B14/B17/B25/ B42/B43/B48/B66/B70/B71 5G :n2/n5/n7/n12/n13/n14/n25/n48/n66/n70/n71/ n77/n78 **EAJ** LTE:B1/B3/B5/B7/B18/B19/B20/B26/B28/B34/ B38/B39/B40/B41/B42/B43/B48 5G :n1/n3/n5/n7/n8/n18/n20/n26/n28/n38 /n40/n41/n48/n77/n78 **IN** LTE:B1/B3/B5/B8/B28/B38/B40/B41/B42/B43/B48 5G :n1/n3/n5/n8/n28/n38/n40/n41/n48/n77/n78 **LA** LTE:B2/B4/B5/B7/B8/B25/B28/B40/ B41/B42/B43/B48/B66 5G :n2/n5/n7/n8/n25/n28/n40/n48/n66/n77/n78
3GPP Release	17

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

GNSS Capability

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

Network Protocols

Internet Protocols	TBD

Interfaces

UART	x2
USB 2.0 (HS)	x1
USIM	x2
SDC [3]	x1
I2S	x1
SGMII	x1
I2C	x1
ADC	x2
PCIe Gen 2 (1 lane)	x1
SPI	x1
JTAG	x1
GPIO	x1
Network status	x2
GNSS ANT	x1
Main ANT	x1
Diversity ANT	x1

Electrical Characteristics

Operating Voltage	Range: 3.4V - 4.5V Typical: 3.8V
TxD Idle	TBD

Certifications

Regulatory	North America : PTCRB [3] America : FCC [3] Canada : IC [3] Europe : CE [3]
Carrier	Verizon [3] /AT&T [3]/T-Mobile [3] Soft Bank [3]/KDDI [3]/Docomo [3]

[1] Optional

[2] Needs SDK

[3] In Progress

Others	RoHS/REACH

Other Features

M.2 Form Factor [3]	Optional

[1] Optional

[2] Needs SDK

[3] In Progress

For more information

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