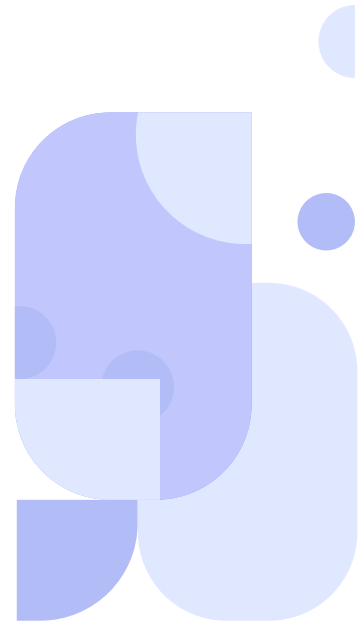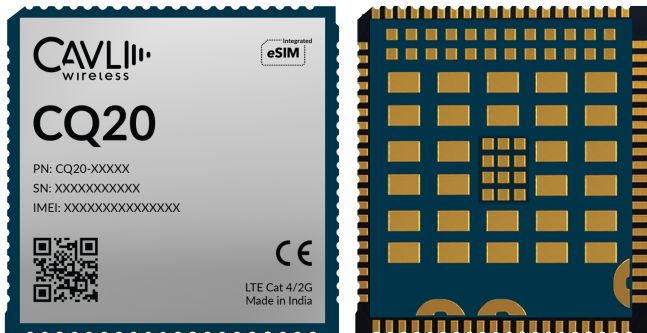# CQ20

Cavli
C Series

Overview

CQ20 is an LTE Cat 4 module with 2G fall back compliant with 3GPP release 10 standards, with emphasis on data speed/bandwidth. Engineered in LCC+LGA form factor, it delivers a maximum data rate of 150 Mbit/s DL & 50 Mbit/s UL. CQ20 supports in-built GNSS powered by Qualcomm® IZatTM location technology Gen8C Lite (GPS, GLONASS, BeiDou, Galileo and QZSS), ensuring precise positioning. Additionally, it supports VoLTE and SMS over IMS/SG/CS and a wide variety of Internet protocols and industry-standard hardware interfaces.

The module comes in two variants: CQ20-EA for the Europe and Asia markets, CQ20-NA for the North America market, and CQ20-WW for worldwide deployments. Featuring an optional integrated eSIM powered by Cavli Hubble platform, the module provides seamless global connectivity and wide coverage which helps to reduce the time to market. CQ20 is tailored for IoT and M2M applications, such as asset tracking, automotive, e-mobility, data loggers, fleet management, environmental monitoring and much more.

Key Highlights

4G LTE — LTE Cat 4

In-built GNSS

eSIM — Integrated eSIM[1]

Cavli Hubble Platform

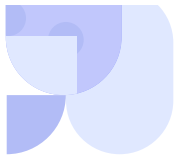**VoLTE** — VoLTE Support

SMS — SMS over IMS/SG/CS

2G — 2G Fallback

USB 2.0 Interface

Basic Module Information

Basic Specification

Processor: ARM Cortex-A7 upto 1.3 GHz

RAM:	256 MB
Flash:	256 MB / 512 MB
OS:	Yocto Linux (Kernel 4.14)

Radio Technology

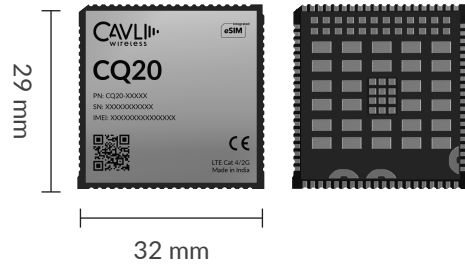|	
RAT Used:	LTE Cat 4 with 2G
3GPP Release:	10

LTE Bands

EA:	B1/ B3/ B5/ B8/ B20/ B40
NA:	B2/ B4/ B5/ B12/ B13 /B25/ B26/ B66
WW:	B1/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B18/ B19/ B20/ B25/ B26/ B40

GSM Bands

EA:	900 /1800 MHz
NA:	900 /1800 MHz
WW:	900 /1800 MHz

Interfaces

UART	x3
USB 2.0 (HS)	x1
HSIC	x1
WLAN/BT (External)	x1
USIM (1.8V / 2.85V)	x1
SDC	x2
Network Status Indicator	x2
Power ON Status Indicator	x1
SGMII	x1
I2C [2]	x1
ADC	x2
PCM [2]	x1
Main ANT	x1
Diversity ANT	x1
GNSS ANT	x1
JTAG	x1

29 mm

32 mm

Packaging

Form Factor:	LCC + LGA
Dimensions:	32x 29 x TBD (mm scale)
Pin Count:	144 Pins
Other FF:	mPCIe

Network Speed (Peak Values)

Cat 4:	DL 150Mbps & UL 50 Mbps
GSM:	DL 236.8Kbps & UL 236.8 Kbps

Constellation Coverage

GPS/GLO/GAL/BDS with QZSS

Qualcomm Location Suite Gen8C Lite

Temperature Range

Operating Temperature:	-30 °C to 85 °C[4]
Extended Operating temp:	-40 °C to 85 °C[4]

Power Characteristics

Voltage Range:	3.6 V to 4.5 V
Typical Voltage:	3.8 V

Internet Protocols

TCP(S), HTTP(S), MQTT(S), FTP(S), UDP, PPP[4]

Product Variants

Variant Name	Region	Integrated eSIM	RAM	Flash
CQ20-WW-22GNN	WW	✗	256MB	256MB
CQ20-WW-22GNH		✓	256MB	256MB

[1] Optional   [2] Needs SDK