



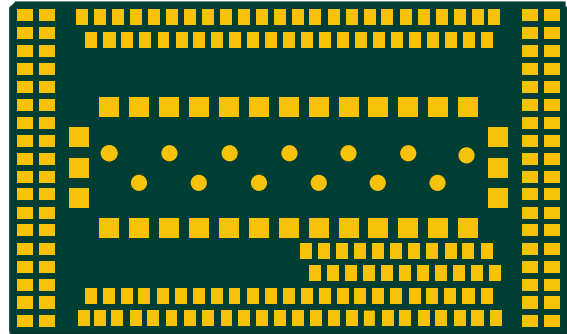
Technical  
Specification  
Document

C20QM  
LTE Cat 4 / 2G Module

# Cavli C-Series C20QM Module



## LTE Cat 4/ 2G Module



C20QM is the series of LTE Cat 4 modules with 2G fall back supporting 3GPP release 10 designed for IoT and M2M applications. It delivers a maximum data rate of 150 Mbit/s DL & 50 Mbit/s UL. It has a compact LGA form factor which is pin compatible with C10GS LTE Cat 1/4 module which allows flexible migration. C20QM supports integrated GNSS with Qualcomm® IZat™ location technology Gen8C Lite (GPS, GLONASS, BeiDou/Compass, Galileo and QZSS), for precise and dependable positioning. C20QM supports VoLTE and SMS over IMS/SG/CS and supports wide set Internet protocols and industry-standard interfaces.

They come in 2 variants - C20QM-EA for the Europe and Asia market and C20QM-NA for the North America market. With optional integrated eSIM powered by Cavli Hubble platform, it provides global connectivity that helps to further reduce the time to market. C20QM is ideal for IoT applications such as asset tracking, e-mobility, data loggers, fleet management and environmental monitoring.

## Key features



LTE Cat 4



eSIM



Cavli Hubble Platform



Integrated GNSS



USB 2.0 Interface



2G



Small Form Factor Design



VoLTE Support



SMS over IMS/SG/CS

	C20QM-EA	C20QM-NA
<b>Basic Information</b>		
Region	EMEA, APAC	North America
CPU	ARM Cortex-A7 @ 1.3 GHz	ARM Cortex-A7 @ 1.3 GHz
Memory	256 MB RAM + 256 MB Flash	256 MB RAM + 256 MB Flash
OS	Linux 3.18	Linux 3.18
Package	LGA	LGA
Pin Count	233	233
Dimensions	37 x 21.8 x 2.8 mm	37 x 21.8 x 2.8 mm
Weight	TBD	TBD
Operating Temperature	-30 °C to +75 °C	-30 °C to +75 °C
Extended Operating Temperature	-40 °C to +85 °C	-40 °C to +85 °C
<b>Radio Frequency Bands</b>		
RAT	Cat 4 GSM	Cat 4 GSM
Transmission Rates	Cat 4: DL 150 Mbps & UL 50 Mbps GSM (2G): DL 236.8 Mbps & UL 236.8 Mbps	Cat 4: DL 150 Mbps & UL 50 Mbps GSM (2G): DL 236.8 Mbps & UL 236.8 Mbps
LTE Band List   GSM Band List	B1/ B3/ B5/ B8/ B20/ B40   900/ 1800MHz	B2/ B4/ B5/ B12/ B13/ B25/ B26/ B66   900/ 1800MHz
3GPP Release	10	10
<b>GNSS Capability</b>		
GNSS (GNA Variant)	GPS/ GLONASS/ BeiDou/ Galileo QZSS Capable	GPS/ GLONASS/ BeiDou/ Galileo QZSS Capable
<b>Network Protocols</b>		
Internet Protocols	TCP(S), HTTP(S), MQTT(S), FTP(S), UDP, WS(S), PPP, SNMP	TCP(S), HTTP(S), MQTT(S), FTP(S), UDP, WS(S), PPP, SNMP
<b>Interfaces</b>		
UART	x3	x3
USB 2.0 (HS)	x1	x1
SDIO 3.0	x1	x1
USIM (DSSS) (1.8V / 3.0V)	x1	x1
JTAG	x1	x1
Network Status Indicator	x1	x1
Power ON Status Indicator	x1	x1
SGMII	x1	x1
I2C**	x1	x1
SPI**	x1	x1
ADC	x2	x2

\* Optional

\*\* Needs SDK

\*\*\* In Progress

LCD	x1	x1
GPIO**	x9	x9
PCM**	x1	x1
Main ANT	x1	x1
GNSS ANT	x1	x1
Diversity ANT	x1	x1

## Electrical Characteristics

Operating Voltage	Range: 3.6 V to 4.5 V Typical: 3.8 V	Range: 3.6 V to 4.5 V Typical: 3.8 V
TxD Peak	TBD	TBD
TxD Idle	TBD	TBD
GNSS (Fix)	TBD	TBD

## Enhanced Features

VoLTE	Yes	Yes
SMS - IMS	Yes	Yes
SMS - SG	Yes	Yes
SMS - CS	Yes	Yes

## Driver Support

USB Driver	TBD	TBD
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## Certifications

Regulatory	Global: GCF*** Europe: CE*** UK: UKCA*** Taiwan: NCC*** South Korea: KC***	Global: GCF*** North America: PTCRB*** America: FCC*** Canada: IC***
Carrier	TBD	Verizon*** /AT&T*** /TMobile***
Others	RoHS / REACH	RoHS / REACH

## Other Features

Integrated GNSS	Optional	Optional
Integrated eSIM + Cavli Hubble Global Connectivity and Device Management Platform	Optional	Optional
miniPCIe Form Factor	Optional	Optional



# Product Variants

Variant Name	Region	Integrated eSIM
C20QM-EA-22GNAN	EMEA, APAC	✗
C20QM-EA-22GNAH	EMEA, APAC	✓
C20QM-NA-22GNAN	North America	✗
C20QM-NA-22GNAH	North America	✓

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

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