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Technical Specification Document
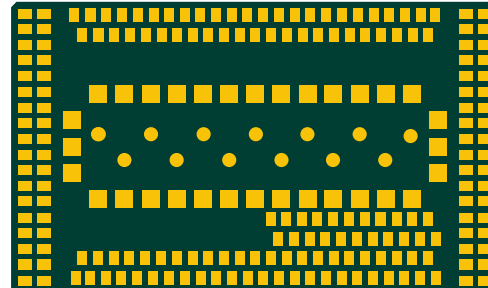

C10QM
LTE Cat 1 / 2G Module

Cavli
C Series

Cavli C-Series C10QM Module

LTE Cat 1/ 2G Module

C10QM is the series of LTE Cat 1 modules with 2G fall back supporting 3GPP release 10 designed for IoT and M2M applications. It delivers a maximum data rate of 10 Mbit/s DL & 5 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. C10QM supports integrated GNSS with Qualcomm® IZat™ location technology Gen8C Lite (GPS, GLONASS, BeiDou/Compass, Galileo and QZSS), for precise and dependable positioning. C10QM supports VoLTE and SMS over IMS/SG/CS and supports wide set Internet protocols and industry-standard interfaces.

They come in 2 variants - C10QM-EA for the Europe and Asia market and C10QM-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. C10QM is ideal for IoT applications such as asset tracking, e-mobility, data loggers, fleet management and environmental monitoring.

Key features

4G LTE	eSIM	Cavli Hubble Platform	Integrated GNSS	USB 2.0 Interface
LTE Cat 1	eSIM	Cavli Hubble Platform	Integrated GNSS	USB 2.0 Interface

2G	LGA	VoLTE	SMS
2G	Small Form Factor Design	VoLTE Support	SMS over IMS/SG/CS

	C10QM-EA	C10QM-NA
Basic Information		
Region	EMEA, APAC	North America
CPU	ARM Cortex-A7 @ 1.3 GHz	ARM Cortex-A7 @ 1.3 GHz
Memory	256 MB RAM 256/512 MB Flash	256 MB RAM 256/512 MB Flash
OS	Linux 4.14	Linux 4.14
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
Radio Frequency Bands		
RAT	Cat 1 GSM	Cat 1 GSM
Transmission Rates	Cat 1: DL 10 Mbps & UL 5 Mbps GSM (2G): DL 236.8 Mbps & UL 236.8Mbps	Cat 1: DL 10 Mbps & UL 5 Mbps GSM (2G): DL 236.8 Mbps & UL 236.8Mbps
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
GNSS Capability		
GNSS (GNA Variant)	GPS/ GLONASS/ BeiDou/ Galileo SBAS + QZSS Capable	GPS/ GLONASS/ BeiDou/ Galileo SBAS + QZSS Capable
Network Protocols		
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
Interfaces		
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
ADC	x2	x2
I2C [2]	x1	x1

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

	C10QM-EA	C10QM-NA
SPI [2]	x1	x1
GPIO [2]	x9	x9
LCD	x1	x1
PCM [2]	x1	x1
Main ANT	x1	x1
GNSS ANT	x1	x1

Electrical Characteristics

	C10QM-EA	C10QM-NA
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

	C10QM-EA	C10QM-NA
VoLTE	Yes	Yes
SMS - IMS	Yes	Yes
SMS - SG	Yes	Yes
SMS - CS	Yes	Yes

Driver Support

	C10QM-EA	C10QM-NA
USB Driver	TBD	TBD

Certifications

	C10QM-EA	C10QM-NA
Regulatory	Global : GCF [3] Europe : CE [3] UK : UKCA [3] Taiwan : NCC [3] South Korea: KC [3]	Global : GCF [3] North America: PTCRB [3] America : FCC [3] Canada : IC [3]
Carrier	TBD	Verizon [3] /AT&T [3] /TMobile [3]
Others	RoHS / REACH	RoHS / REACH

Other Features

	C10QM-EA	C10QM-NA
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	Flash Size	Integrated eSIM
C10QM-EA-22GNN	EMEA, APAC	256 MB	✗
C10QM-EA-22GNH	EMEA, APAC	256 MB	✓
C10QM-NA-22GNN	North America	256 MB	✗
C10QM-NA-22GNH	North America	256 MB	✓
C10QM-EA-24GNN	EMEA, APAC	512 MB	✗
C10QM-EA-24GNH	EMEA, APAC	512 MB	✓
C10QM-NA-24GNN	North America	512 MB	✗
C10QM-NA-24GNH	North America	512 MB	✓

For more information

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

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