



Technical Specification Document

CQ10

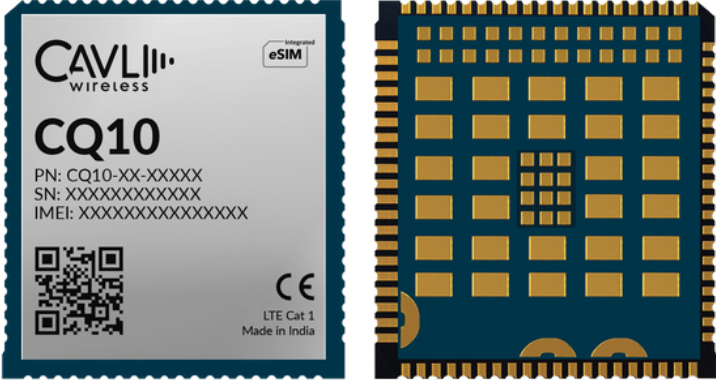
LTE Cat 1 / 2G Module





Cavli C-Series CQ10 Module

LTE Cat 1/ 2G Module



CQ10 is an LTE Cat 1 module 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+LCC form factor. CQ10 supports integrated GNSS with Qualcomm® IZat™ location technology Gen8C Lite (GPS, GLONASS, BeiDou/ Compass, Galileo and QZSS), for precise and dependable positioning. CQ10 supports VoLTE and SMS over IMS/SG/CS and supports wide set Internet protocols and industry-standard interfaces.

With optional integrated eSIM powered by Cavli Hubble platform, it provides global connectivity that helps to further reduce the time to market. CQ10 is ideal for IoT applications such as asset tracking, automotive, e-mobility, data loggers, fleet management and environmental monitoring.

Key features



LTE Cat 1



eSIM



Cavli Hubble Platform



Integrated GNSS



USB 2.0 Interface



2G fallback



VoLTE Support



SMS over IMS/SG/CS

	CQ10-EA	CQ10-NA	CQ10-WW
Basic Information			
Region	EMEA, APAC	North America	Global
CPU	ARM Cortex-A7 @ 1.3 GHz	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	256 MB RAM 256/512 MB Flash
OS	Linux 4.14	Linux 4.14	Linux 4.14
Package	LGA + LCC	LGA + LCC	LGA + LCC
Pin Count	144	144	144
Dimensions	32 x 29 x TBD mm	32 x 29 x TBD mm	32 x 29 x TBD mm
Weight	TBD	TBD	TBD
Operating Temperature	-30 °C to +85 °C	-30 °C to +85 °C	-30 °C to +85 °C
Radio Frequency Bands			
RAT	Cat 1 GSM	Cat 1 GSM	Cat 1 GSM
Transmission Rates	Cat 1: DL 10 Mbps & UL 5 Mbps GSM (2G): DL 236.8 Kbps & UL 236.8 Kbps	Cat 1: DL 10 Mbps & UL 5 Mbps GSM (2G): DL 236.8 Kbps & UL 236.8 Kbps	Cat 1: DL 10 Mbps & UL 5 Mbps GSM (2G): DL 236.8 Kbps & UL 236.8 Kbps
LTE Bands GSM Bands	B1/ B3/ B5/ B8/ B20/ B40 900/ 1800MHz	B2/ B4/ B5/ B12/ B13/ B25/ B26/ B66 900/ 1800MHz	B1/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B18/ B19/ B20/ B25/ B26/ B40 900/ 1800MHz
3GPP Release	10	10	10
GNSS Capability			
GNSS (GNA Variant)	GPS/ GLONASS/ BeiDou/ Galileo QZSS Capable	GPS/ GLONASS/ BeiDou/ Galileo QZSS Capable	GPS/ GLONASS/ BeiDou/ Galileo QZSS Capable
Network Protocols			
Internet Protocols	TCP(S), HTTP(S), MQTT(S), FTP(S), UDP	TCP(S), HTTP(S), MQTT(S), FTP(S), UDP	TCP(S), HTTP(S), MQTT(S), FTP(S), UDP
Interfaces			
UART	x3	x3	x3
USB 2.0 (HS)	x1	x1	x1
HSIC	x1	x1	x1
WLAN/BT (External)	x1	x1	x1
SDC	x2	x2	x2
USIM (1.8V / 2.85V)	x1	x1	x1
Network Status Indicator	x2	x2	x2
Power ON Status Indicator	x1	x1	x1
SGMII	x1	x1	x1
I2C ²	x1	x1	x1

¹Optional

²Needs SDK

³In Progress

	CQ10-EA	CQ10-NA	CQ10-WW
ADC	x2	x2	x2
PCM ²	x1	x1	x1
JTAG	x1	x1	x1
Main ANT	x1	x1	x1
GNSS ANT	x1	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	Range: 3.6 V to 4.5 V Typical: 3.8 V
TxD Peak	TBD	TBD	TBD
TxD Idle	TBD	TBD	TBD
GNSS (Fix)	TBD	TBD	TBD

Enhanced Features

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

Driver Support

USB Driver	RNDIS/ CDC-ECM/ RMNET/ MBIM/ DUN	RNDIS/ CDC-ECM/ RMNET/ MBIM/ DUN	RNDIS/ CDC-ECM/ RMNET/ MBIM/ DUN
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Certifications

Regulatory	Global: GCF ³ Europe: CE ³ Taiwan: NCC ³	Global: GCF ³ North America: PTCRB ³ America: FCC ³ Canada: IC ³	TBD
Carrier	TBD	Verizon ³ /AT&T ³ /TMobile ³	Verizon ³ /AT&T ³ /TMobile ³
Others	RoHS / REACH	RoHS / REACH	RoHS / REACH

Other Features

Integrated eSIM + Cavli Hubble Global Connectivity and Device Management Platform	Optional	Optional	Optional
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¹Optional

²Needs SDK

³In Progress

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

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