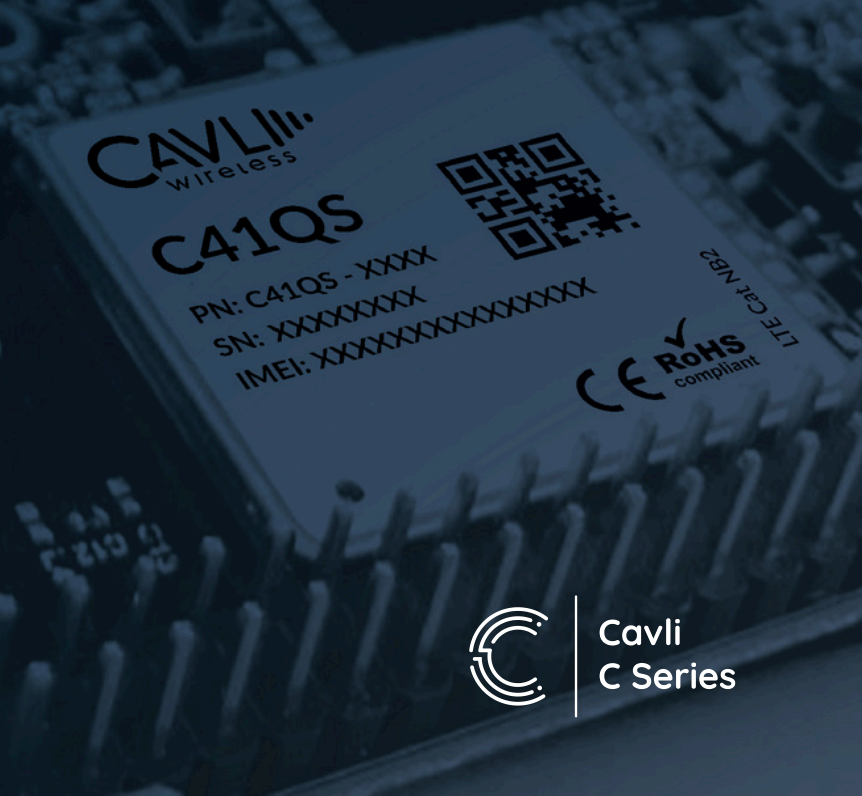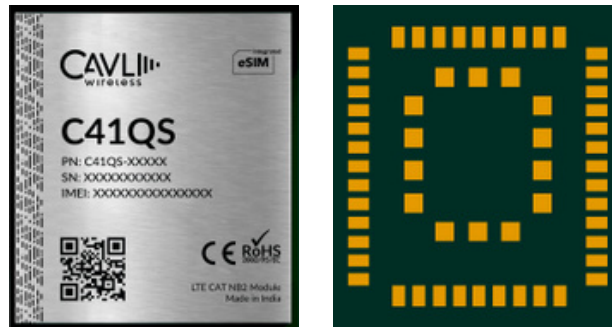# Technical Specification Document

C41QS

Cat NB2 Module

Cavli C-Series C41QS Module

Cat NB2 Module

C41QS is an Cat NB2 Module compatible with 3GPP E-UTRA Release 14 standards supporting frequency bands B1/B2/B3/B4/B5/B8/B12/B13/B14/B17/B18/ B19/B20/B25/ B26/B28/B66/B70/B85 making it usable globally while consuming very low power. The module comes in a compact form-factor of 17.7mm x 15.8mm x 2.0mm ideal for size constrained applications. The module supports an optional integrated GNSS, and eSIM enabling Global Connectivity and Device management features powered by Cavli Hubble platform.

C41QS is ideal for applications that demand low space, low power consumption and aggressive pricing. It is suited for applications such as smart metering, smart parking, sensor and monitor- ing applications etc.

Key features

LTE-M					
Cat NB2	Ultra-Low Power Consumption	LGA Package	Compact Form Factor Design	Cavli Hubble Platform	Integrated GNSS

C41QS

Basic Information

Region	Global
CPU	ARM Cortex M3 @ 204MHz clock
Memory	4 MB Flash + 272 KB RAM
OS	Free RTOS
Package	LGA
Dimensions	17.7 x 15.8 x 2.0 mm
Weight	TBD
Operating Temperature	-35°C to +75°C
Extended Operating Temperature	-40°C to +85°C
Pin Count	58

Radio Frequency Bands

RAT	Cat NB2
Transmission Rates (Peak)	Cat NB2: Peak DL 127 Kbps & UL 158.5Kbps
LTE Band List	B1/B2/B3/B4/B5/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B66/B70/B85
3GPP Release	14

GNSS Capability

Constellations	GPS/ BeiDou SBAS + QZSS Capable

Network Protocols

Internet Protocols	HTTP(S), TCP(S), UDP, MQTT(S)

Interfaces

UART	x3
GNSS UART*	x1
USIM (DSSS) (1.8V / 3.0 V)	x1
SWD	x1
Network Status Indicator	x1
Power ON Status Indicator	x1
ADC	x1
SPI**	x1
GPIO**	x1
Main ANT	x1
GNSS ANT*	x1

* Optional   ** Needs SDK. Not available currently   *** In Progress

Electrical Characteristics

Operating Voltage	Range: TBD Typical: TBD
TxD Idle	TBD
DRx Mode (Avg)	TBD
eDRx Mode (Avg)	TBD
Power Saving Mode	TBD
Dormanat Mode	TBD
GNSS (Fix)	TBD

Driver Support

USB Driver	TBD

Certifications

Regulatory	Global: GCF*** Europe: CE*** UK: UKCA*** South Korea: KC***
Carrier	Verizon*** /AT&T*** /T-Mobile***
Others	RoHS/REACH

Other Features

Integrated GNSS	Optional
Integrated eSIM + Hubble Connectivity and Device Management Access	Optional
Mini-PCIe form factor	Optional

* Optional   ** Needs SDK. Not available currently   *** In Progress

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

For more information

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

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