



Cavli C41QS

EVK User Manual

External Release Version 1.1

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VERSION HISTORY

Version	Edit	Date
1.0	Initial Version	17-08-2023
1.1	Renamed and added descriptions for sections from 3.5 to 3.8	04-06-2024



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1 Introduction

1.1 Overview

This document aims to familiarize the reader on the different functionalities and interfaces of C41QS Evaluation board.

It also helps the customer in getting started with the C41QS EVK.

The EVK is a tool designed for engineers, programmers and developers who are looking to:

- Debug and/or improve applications based on Cavli C41QS modules.
- Develop a first-pass proof-of-concept device for new application.

1.2 References

The present document is based on the following document:

Cavli C41QS Hardware Manual



2 Interfaces

2.1 Chapter Overview

Description:

This chapter contains all the necessary information on C41QS EVK Interfaces and Pin-outs.

2.2 EVK Layout

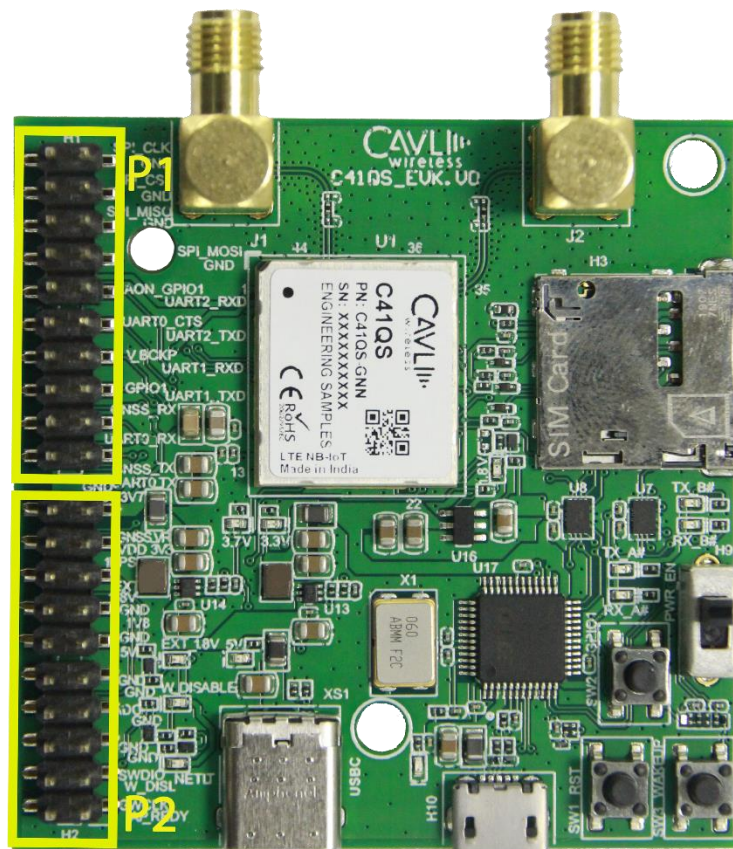


Figure 1: C41QS EVK Layout

2.3 Pin Layout

2.3.1 P1 20-Pin Connector Pinout

Pin No	Pin name	Pin No.	Pin name
1	U0_TX	2	U0_RX
3	U1_TX	4	U1_RX
5	U2_TX	6	U2_RX
7	GND	8	GND
9	GND	10	GND
11	SPI_CLK	12	SPI_CS_N
13	SPI_MISO	14	SPI_MOSI
15	AON_GPIO1	16	U0_CTS_3V3
17	V_BCKP	18	GPIO1
19	GNSS_RXD	20	GNSS_TXD

2.3.2 P2 20-Pin Connector Pinout

Pin No	Pin name	Pin No.	Pin name
1	AP_READY	2	W_DISABLE
3	GND	4	GND
5	GND	6	GND
7	VIN_5V	8	VO_LDO1833IO
9	VDD_3V3	10	VDD3V7_LTE
11	GND	12	GNSS_VRTC
13	GNSS_1PPS	14	GND



15	GND	16	GND
17	ADC	18	GND
19	SWDIO	20	SWCLK

3 Component Description

3.1 Antenna

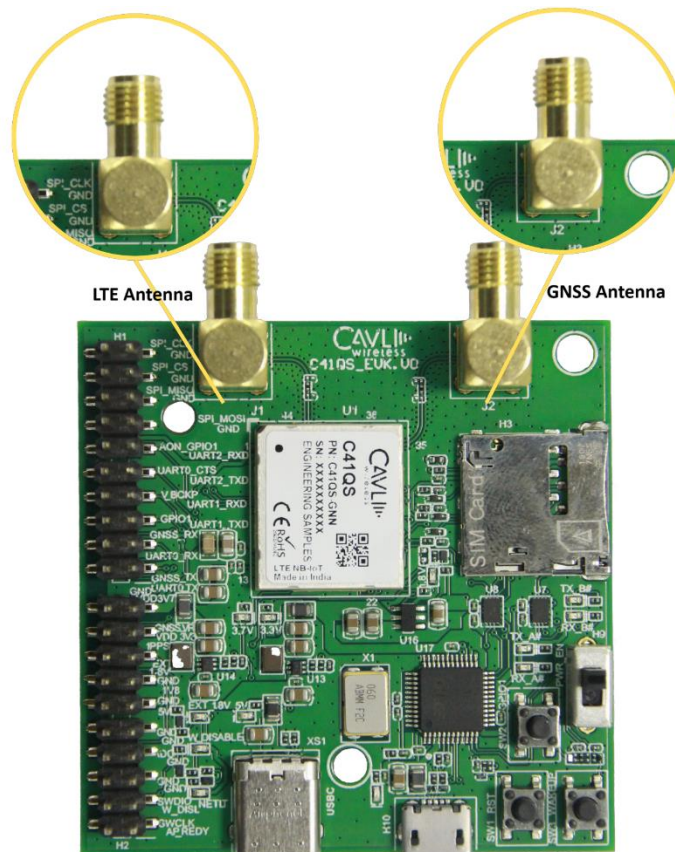


Figure 2: C41QS EVK Antennas

3.1.1 LTE Antenna

C41QS EVK comes with an SMA Antenna connector for interfacing an external LTE Antenna.

3.1.2 GNSS Antenna

C41QS EVK comes with an SMA Antenna connector for interfacing an external GNSS Antenna.

3.2 Sim Card Socket

- You can insert your micro-SIM card to the micro-SIM card push-push socket.

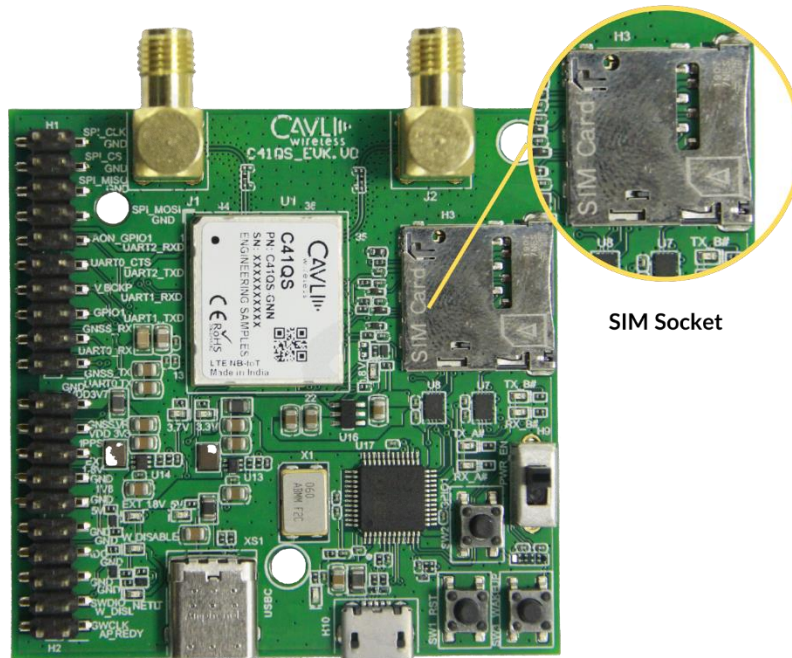


Figure 3: C41QS EVK SIMCARD SLOT

3.3 USB-UART Converter Chip

- A 2 channel USB-UART converter is used in this EVK.

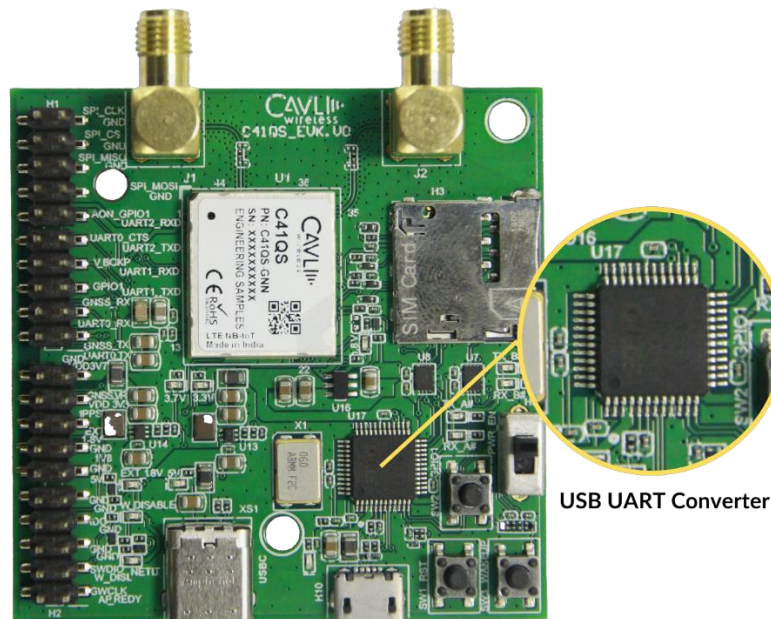


Figure 4: C41QS EVK USB UART Converter

3.4 P1 20-pin connector and P2 20-pin connector

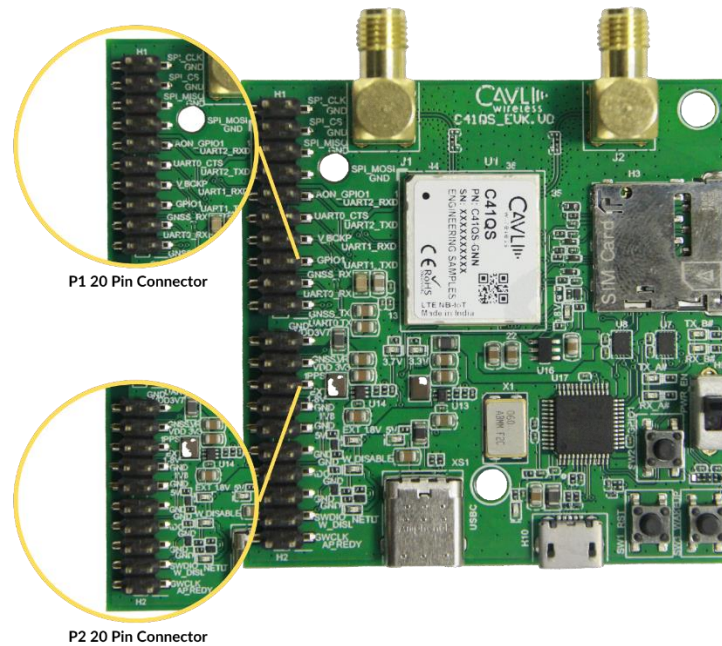


Figure 5: C41QS EVK 20 pin connectors

3.5 Reset Button (SW1)

- This button is used to reset the module. Pressing the switch will reset the modem by pulling the RSTN pin of the modem to GND

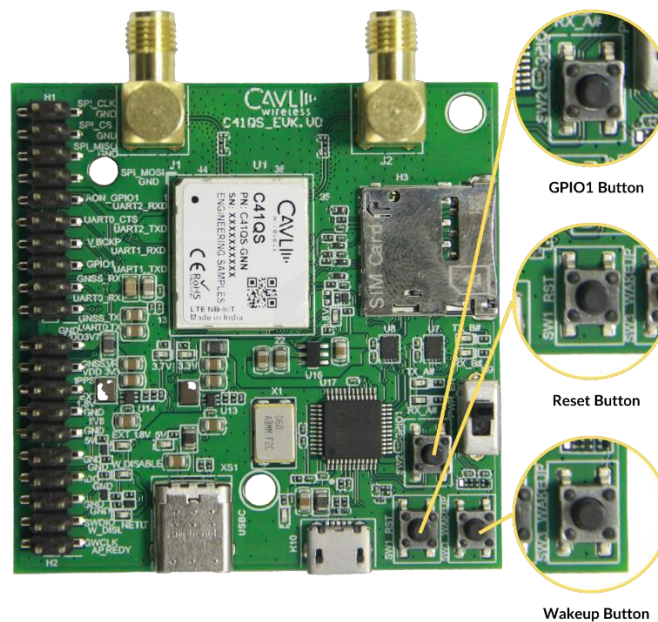


Figure 6: C41QS EVK buttons

3.6 Wakeup Button (SW3)

- This switch is used to wake up the module from idle state

3.7 GPIO1 Button (SW2)

- The GPIO 1 switch is used for controlling the GPIO 1 pin of the C41QS module. Pressing the switch will pull the pin to GND

3.8 Power_EN Switch (H0)

- The power switch is used to power on and off the EVK board. Sliding the header from the top position to bottom enables the needed power supply

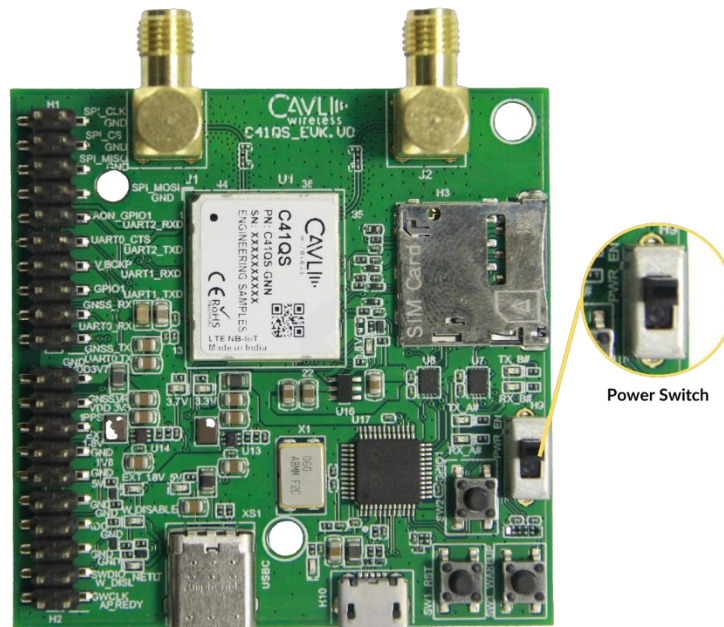


Figure 7: C41QS EVK Power switch

3.9 Power Input- Type C (XS1)

- It is the input power supply port of the EVK.
- It is recommended to use a 5V/2A adapter for the input power supply. The user can also use PC-USB port to power the modules.

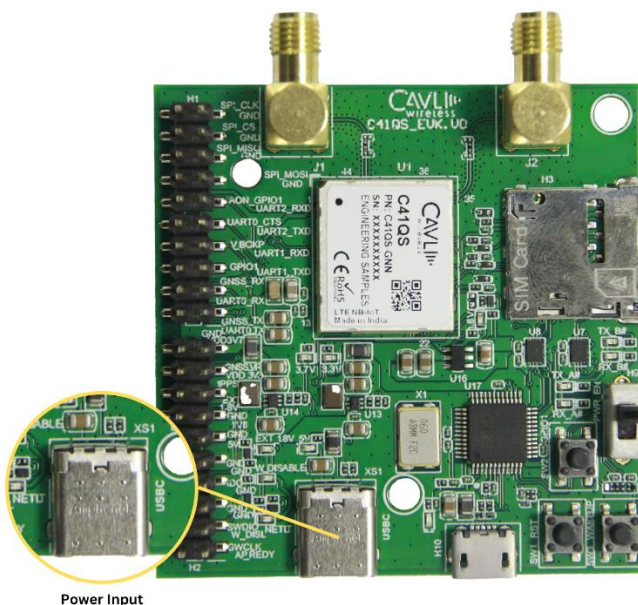


Figure 8: C41QS EVK Power input

3.10 USB-UART Interface

- Micro-USB Interface to access the module's UART Interfaces (UART0 and UART1) through the FTDI chip on the EVK

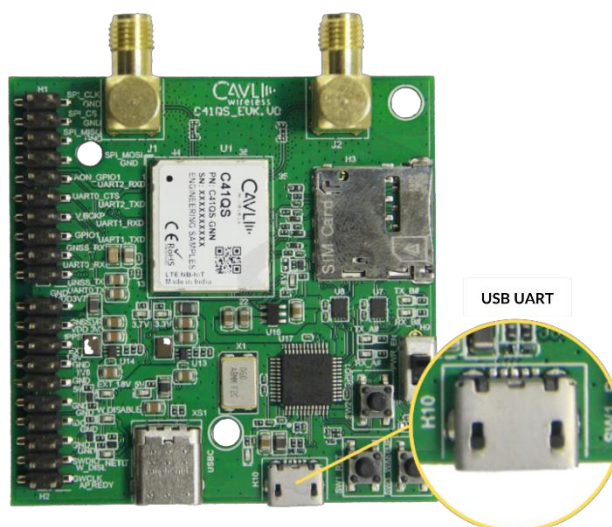


Figure 9: C41QS EVK USB UART Interface

4 Setup Guide

Given below are the various steps involved in the connection of C41QS with a PC:

1. Place the EVK on an insulated platform.

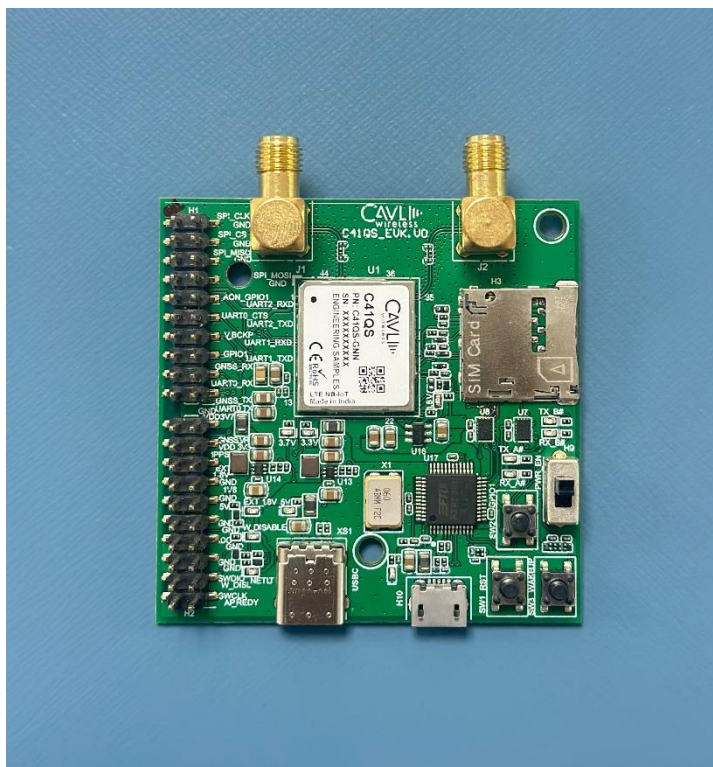


Figure 10: Placing the EVK on an insulated surface

2. Connect the LTE Antenna and GNSS Antenna (as needed) to the corresponding SMA Connectors.



Figure 11: Interfacing Antenna

3. Connect the Type-C power supply input.



Figure 12: Supplying power

4. Connect micro-USB cable to USB interface to access the AT and DM UART ports.



Figure 13: Interfacing USB UART

5. Toggle the Power switch to power on the EVK.

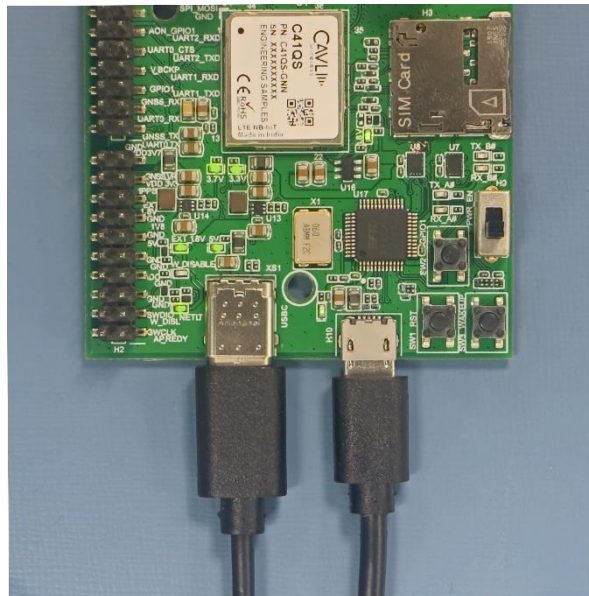


Figure 14: LEDs after powering on the EVK

6. The complete setup is shown below:



Figure 15: Complete Setup

7. Using the micro-USB cable connected to the USB interface, after powering on, COM ports will be automatically be initialized onto your Windows PC (ttyUSB in Linux).

- 1xCOM for AT Port
- 1xCOM for DM Port

The Lower COM port is for DM and the Higher COM port is for AT.

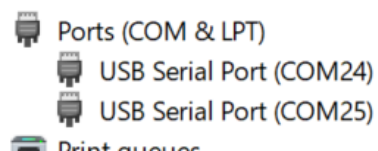


Figure 16 :COM Ports