CMB100 DEV KIT
Quick Start Guide

This Quick Start Guide will walk you through the essential steps for setting up and configuring your CMB100. The CMB100 module evaluation board is available in two variants:

- CMB100-A featuring a Cat. 4 module.
- CMB100-C featuring a Cat. M module.

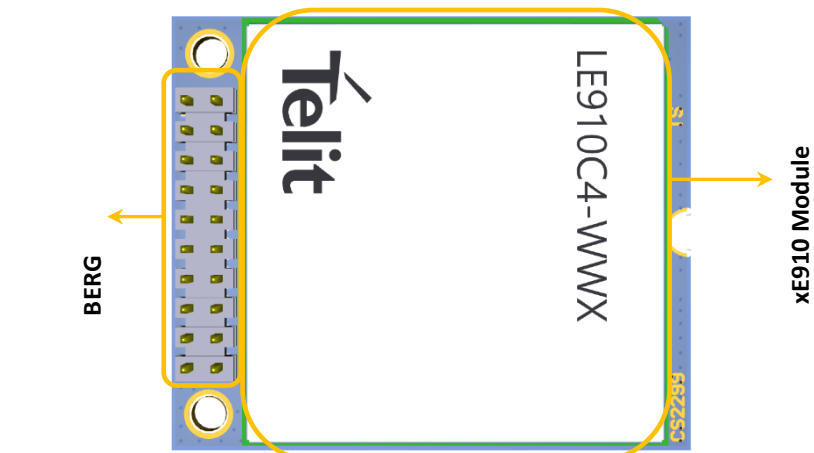The CMB100 is a small board 36mmx30 that contains the following parts:
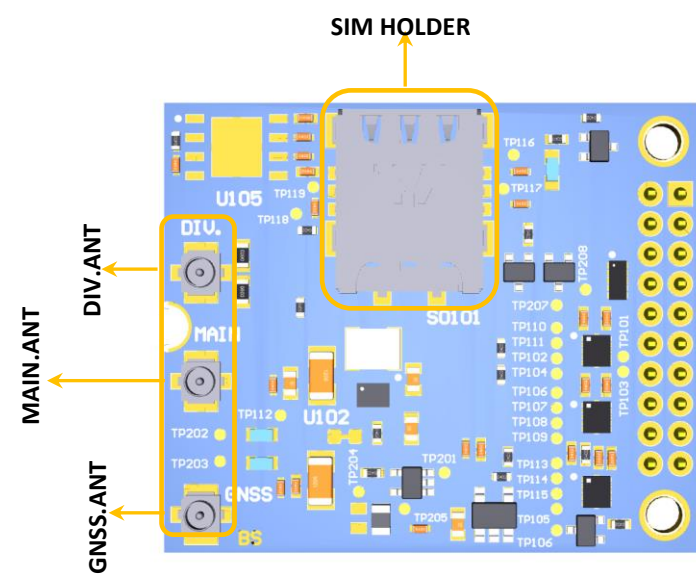

Figure 1: CMB100 – TOP SIDE

Figure 2: CMB100 - BOTTOM-SIDE

The DEV Kit supports various CMB100 module options and enables network connectivity, firmware upgrades, and development with the on-board STM32 microcontroller.
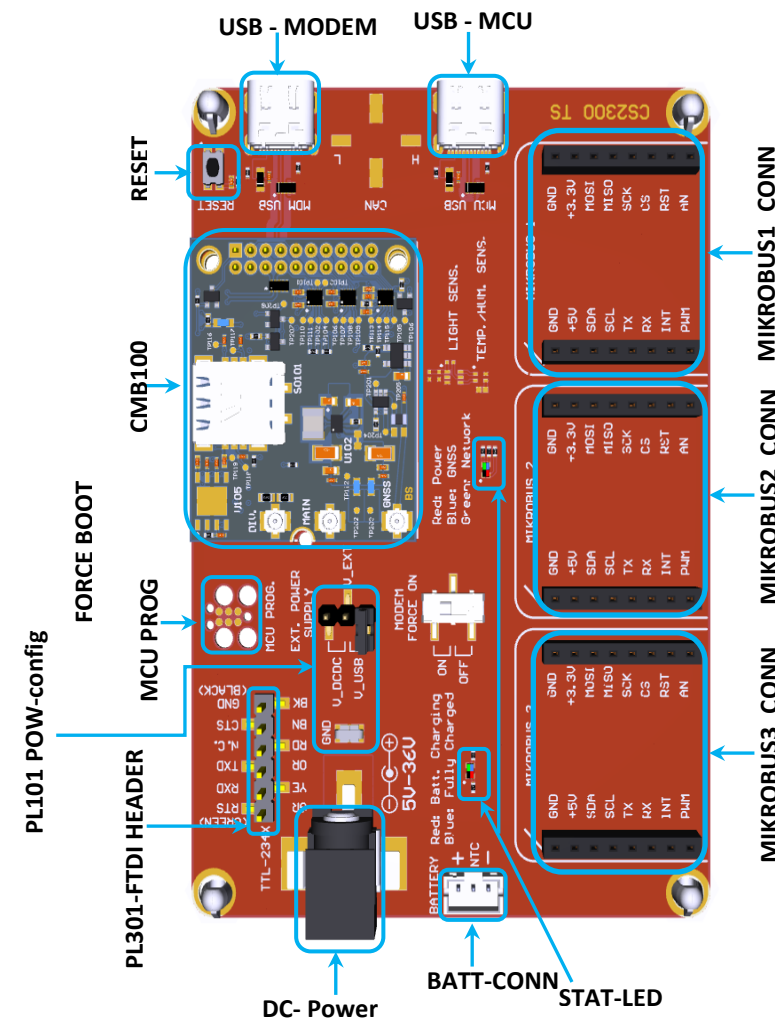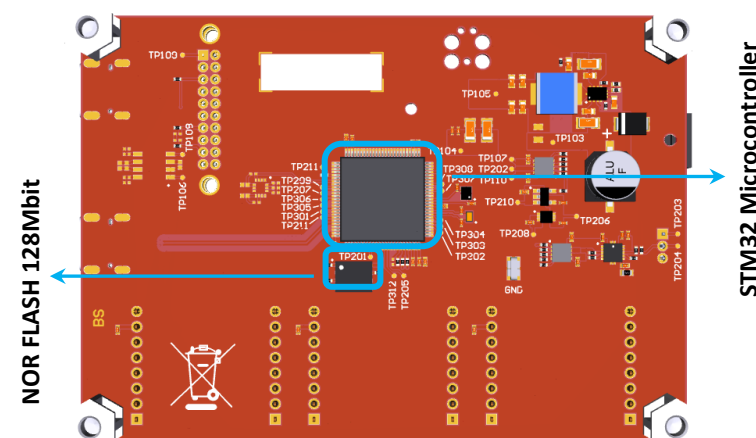

Figure 3: CMB100 DEV KIT – TOP SIDE

Figure 4: CMB100 DEV KIT – BOTTOM SIDE

1.1 Kit Contents

- DEV KIT Quick Start Guide (this document)
- DEV KIT Evaluation Board
- 4 x rubber feet "1HH1000113RI"
- 3x UFL ADAPTERS "761-9881"
- 2x "1RR0100113TLB" Antenna Main/Div
- 1x "1RR0100212TJA" GPS Antenna
- 1x USB Type C cable

1 Power Supply and operating ways

The CMB100 DEV KIT provides users with five power input options:

- DC Adapter
- Battery Mode
- USB-MODEM or USB-MCU
- External power supply

DC Adapter

Any DC voltage from 5 to 36V can power the CMB100DK and CMB100. Ensure that PIN 1 and PIN 2 are shorted (connect V_DCDC to V_EXT on the external power supply).
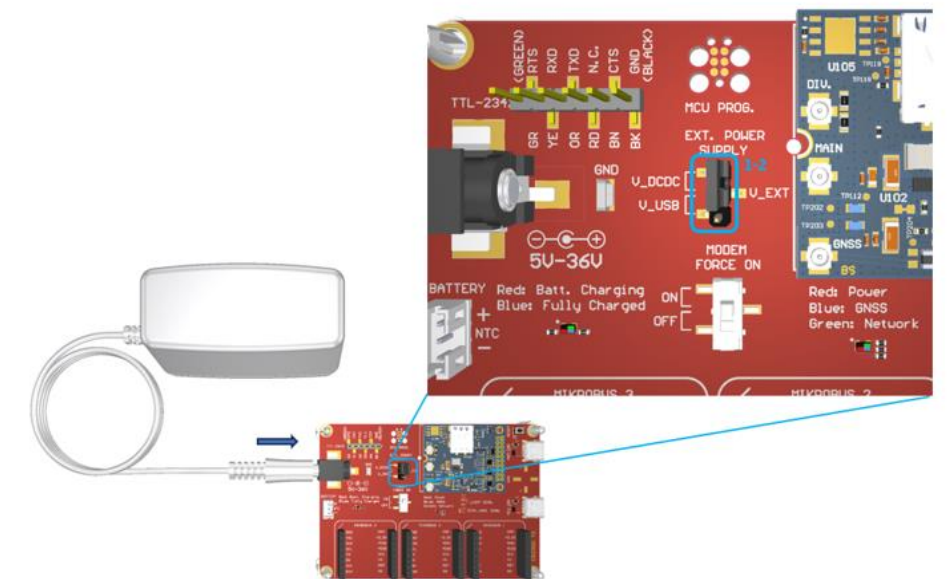

Figure 5: power supply – DC Adapter

BATTERY

To use the DEV KIT with a battery, plug a 3.8V Li-ION battery with an integrated NTC into the BATTERY connector. In this setup, changing the jumper position on the EXT POWER SUPPLY connector is unnecessary.
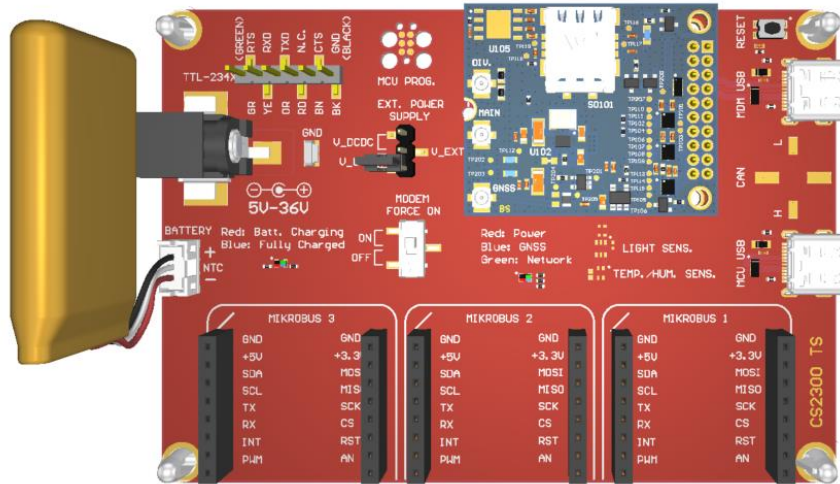

Figure 6: power supply – BATTERY

Note: The system includes an automatic battery charger circuit that will charge the battery whenever an external power source is connected to the board. Additionally, the board features a multicolor status LED that provides real-time updates on the charging status.

RED ➔ Charging

Blue ➔ Fully Charged

Figure 7: LED status -Battery Charger

Note: 5V will not be available on the MIKROBUS connectors when the battery powers the system. This limits the use of MIKROBUS boards to those that only require 3.3V.

USB CABLE

The DEV KIT features two Type-C USB connectors. Either connector can power the entire system and facilitate communication with the Modem and MCU. In all scenarios, ensure that the jumper is set to EXT. POWER SUPPLY, connecting V_USB to V_EXT.
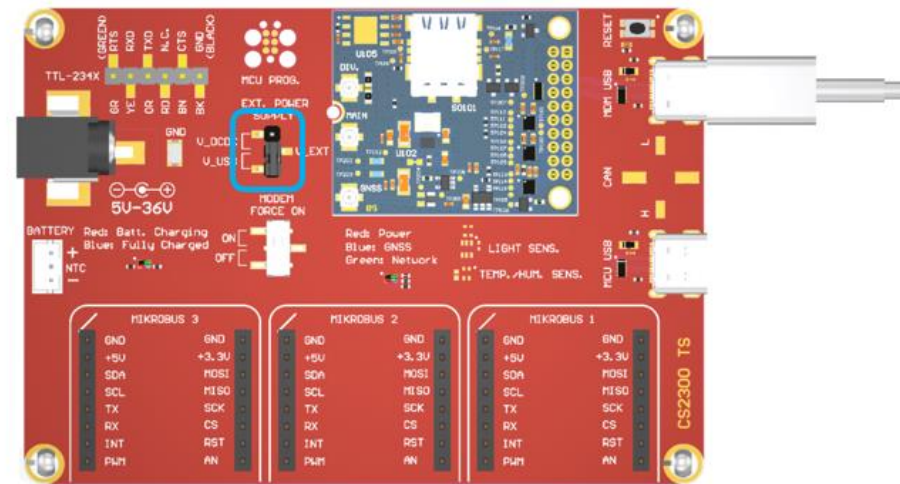

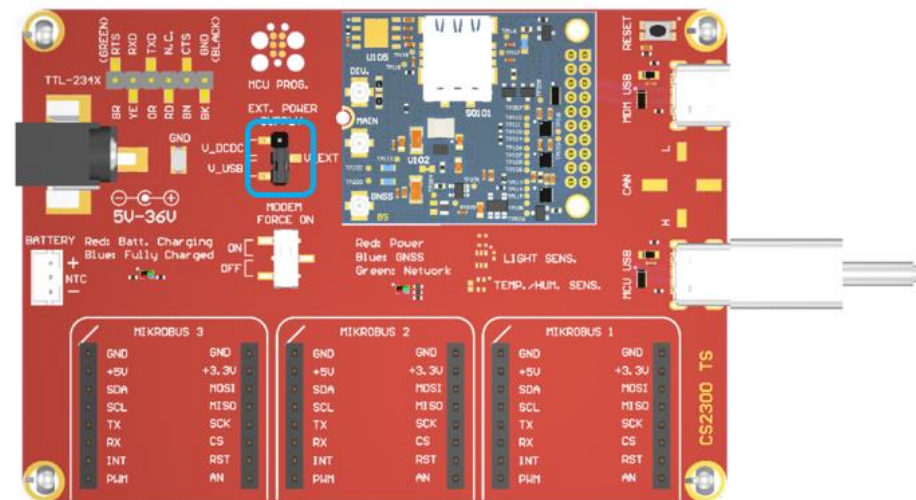Figure 7: USB MODEM to PC or DC ADAPTER

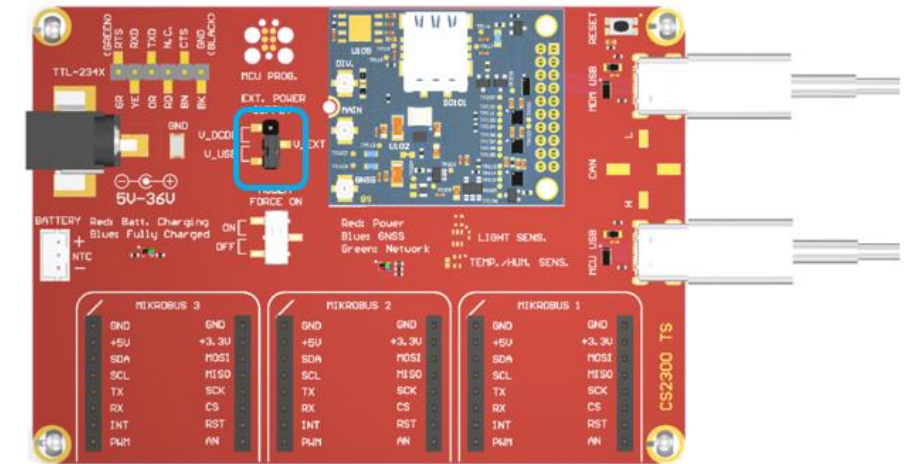
Figure 8: USB MCU to PC or DC ADAPTER

Figure 9: USB MCU and USB MODEM both connected,

Figure 9 illustrates an alternative method for powering the board using two USB connections simultaneously. For instance, the MCU-USB port can be connected to a DC power adapter, while the MDM-USB port can be connected directly to a PC for communication between the PC and the MODEM.

EXTERNAL power source PL101

The PL101 (EXT. POWER SUPPLY) and the GND connector can power the entire board in scenarios requiring a bench power supply, such as measuring current consumption under various conditions. To do so, connect the DC power source to the middle pin labeled V_EXT.
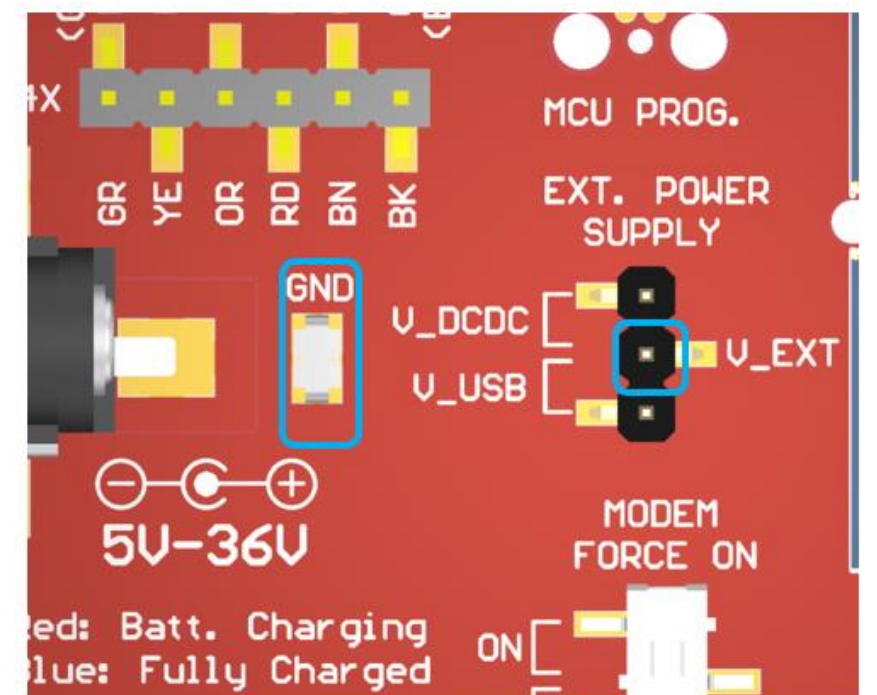

Figure 10: External Power source PL101 and GND connector,

2 Standalone mode or control mode

The switch SW101 (MODEM FORCE ON) lets you operate the CMB100 board in either controlled mode or forced-on mode. When the switch is set to 'ON,' the CMB100 automatically boots up at power-on, allowing direct control of the module via AT commands through the USB MODEM PORT. In the 'OFF' position, the CMB100 will be powered on by the STM32 microcontroller.
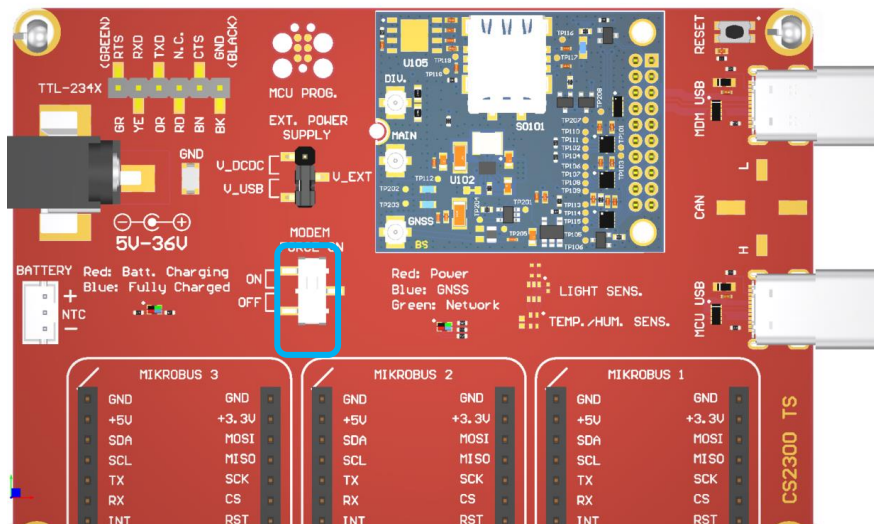

Figure 11 : SW101 configuration

In each scenario, to use the CMB100's connection capabilities, you need to follow a specific sequence of actions. Please use the UFL to SMA connectors provided in the packaging. Then, use the provided set of Antennas to grant a connection to the network. Once the connection is established, a second multicolor LED will indicate the modem status.

RED→ Power

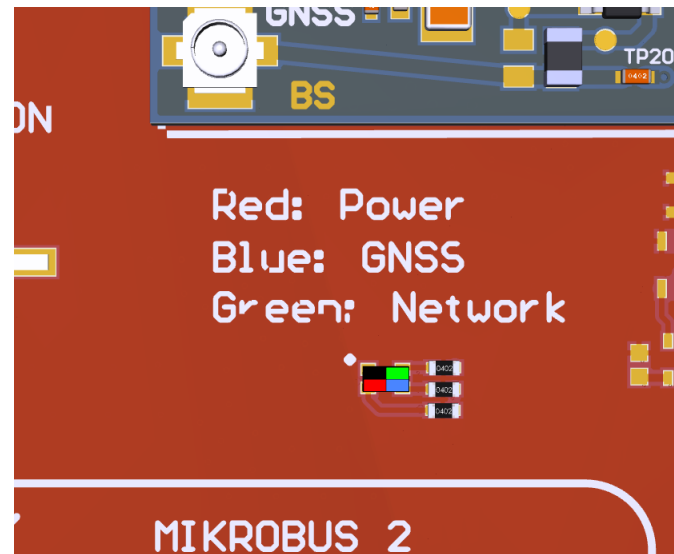BLUE → GNSS tracked

GREEN → Connected to the cellular network.

Figure 12 : Status LED

3 MikroBUS Connection

The DEVKIT is designed to be compatible with the MIKROBUS family of boards and can support up to three MIKROBUS units simultaneously, all managed directly by the on board STM32 microcontroller.
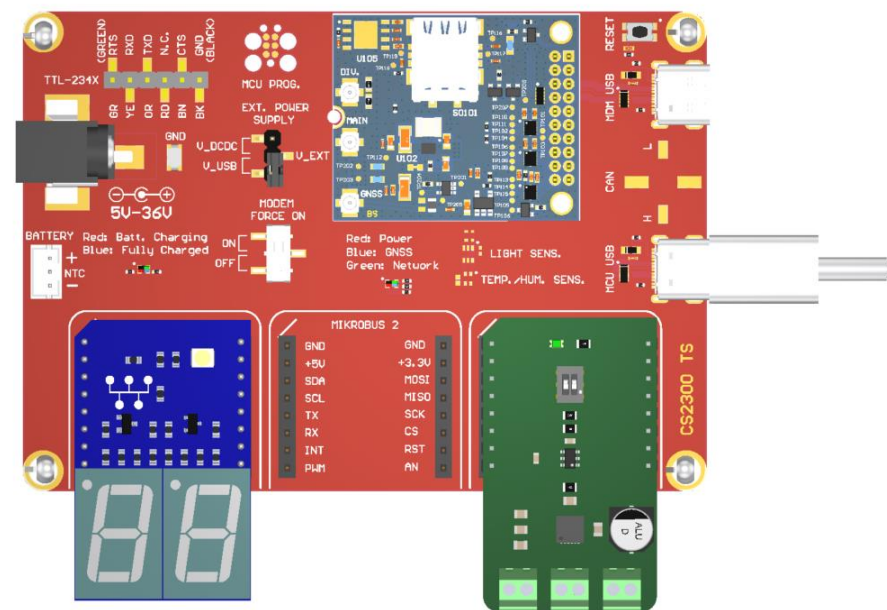

Figure 13 : MIKROBUS CONNECTION

4 Others

The RESET button performs a reset of the microcontroller. The CMB100 can be reset either through the HW_SHDN MCU GPIO pin or via the relevant software reset AT command, in both standalone and controlled modes. ed mode.

For MCU reprogramming, use the MCU Programming port with a standard SV2 (TC2030) cable.

Alternatively, the TTL-234X FTDI connector provides another method to access the microcontroller.

Resource Links

For the latest Firmware Packages and product documentation downloads, or APP notes please visits: www.telit.com

Contact Information, Support

For technical support and general questions please e-mail:

- *TS-SRD@telit.com*

Alternatively, use:
https://www.telit.com/contact-us