

Guidelines for Using Commonly Used Tools

Standard Operating Procedures-CAN box-(ESS)

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Technical Support Document



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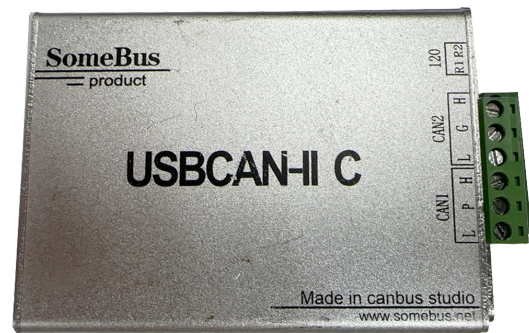
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1 Introduction

CAN Bus Analyzer, often called CAN Box or CAN Tool, is a commonly used tool during communication system debugging.

CAN boxes produced by each manufacturer vary slightly, but their usage is largely the same. As shown in the figures below, CAN boxes generally look similar, with some having one channel and others having two. A single channel means it can only connect to one CAN channel for debugging at a time, whereas a dual-channel can debug two CAN channels simultaneously; in most applications one channel suffices.

To the right of the channel, there is usually an adjustable resistance switch. As we all know, the resistance of a typical communication channel is between 60 and 120 ohms. If the resistance of the channel we are monitoring is not within this range, we can adjust the resistance switch to match the corresponding resistance value.

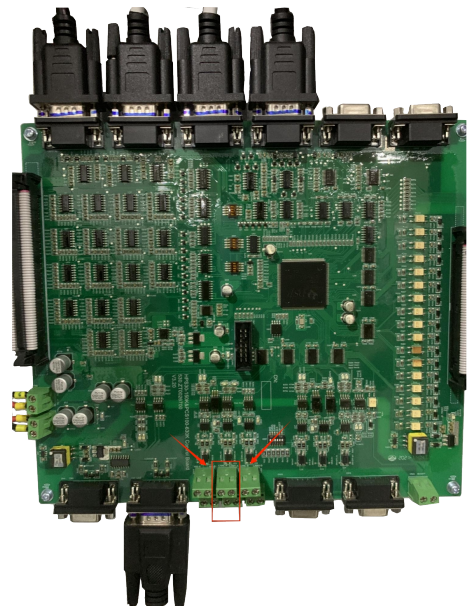


2 Usage of CAN Box –CANTest

1.Data Reading of Inverter CAN-A Bus

Connect the CAN-bus analyzer's communication cable to the computer directly. Route the analyzer's channel interface leads to either the inverter's CAN-A interface or the battery's CAN interface to read communication data.

Note: The communication line has two different interfaces, L and H. When connecting, it is necessary to connect according to the corresponding interface. If the connection is reversed, it may result in the inability to read the data correctly.



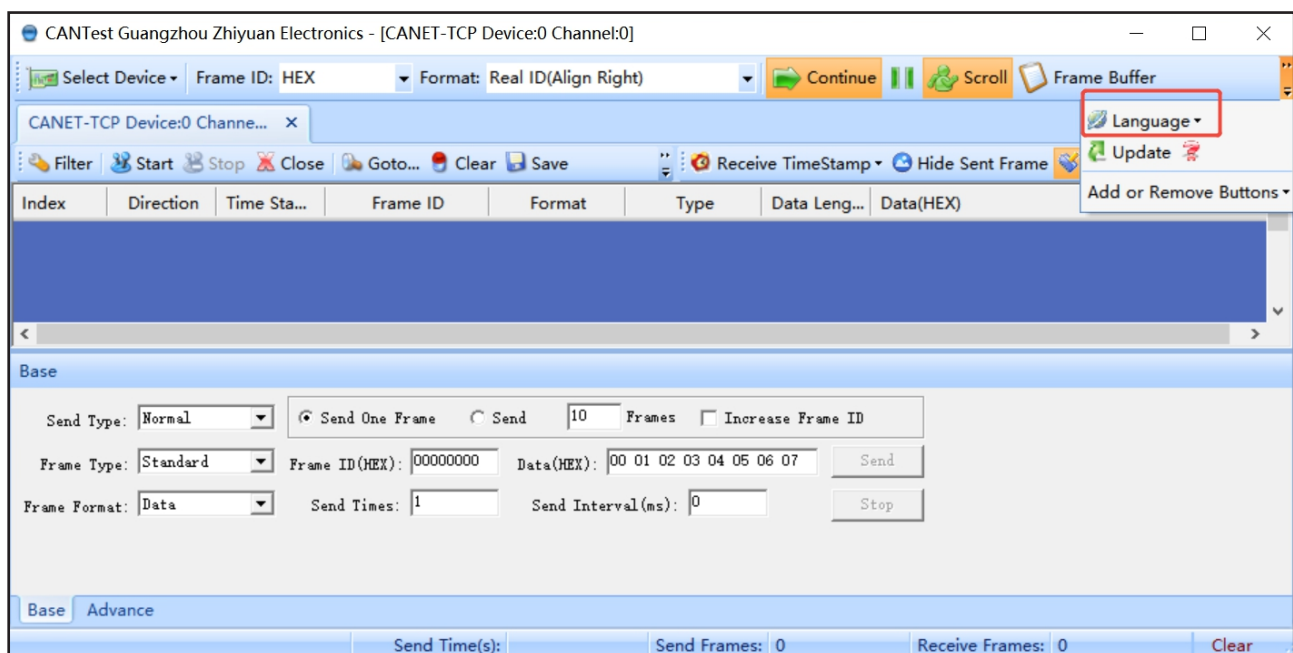
2. Usage of software

a. Download CANTest from the official website and install to the computer.

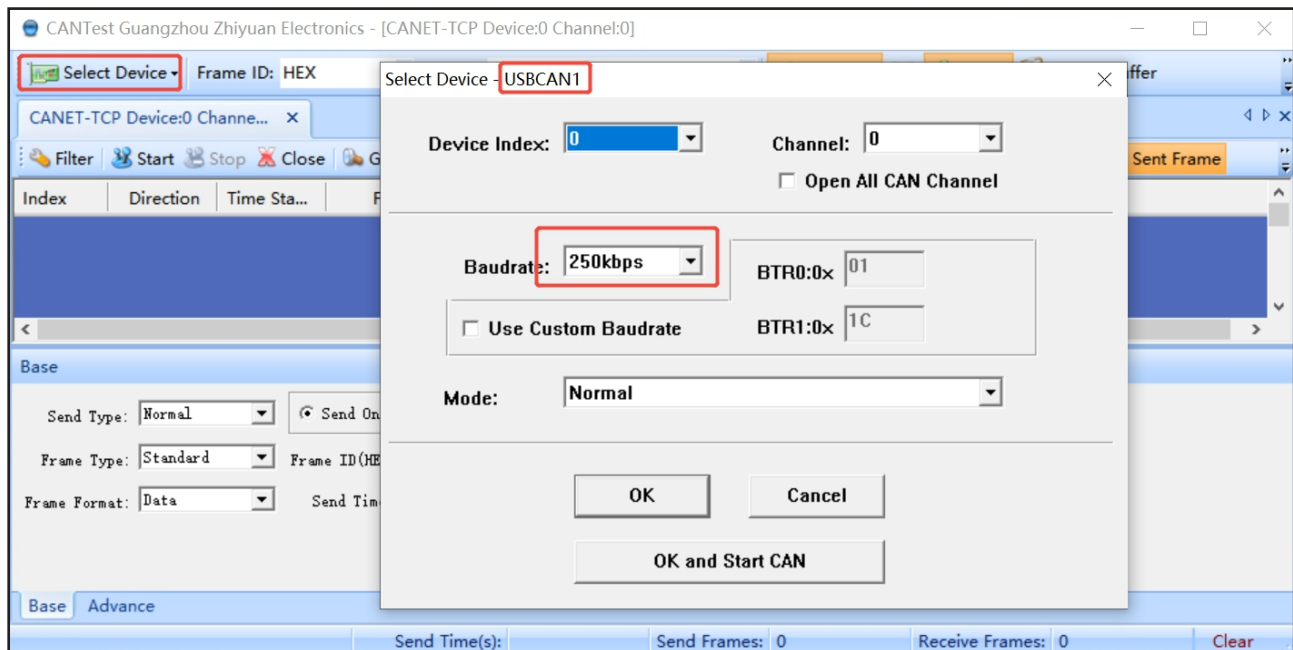
Download Address: <https://www.zlg.cn/can/down/down/id/22.html>



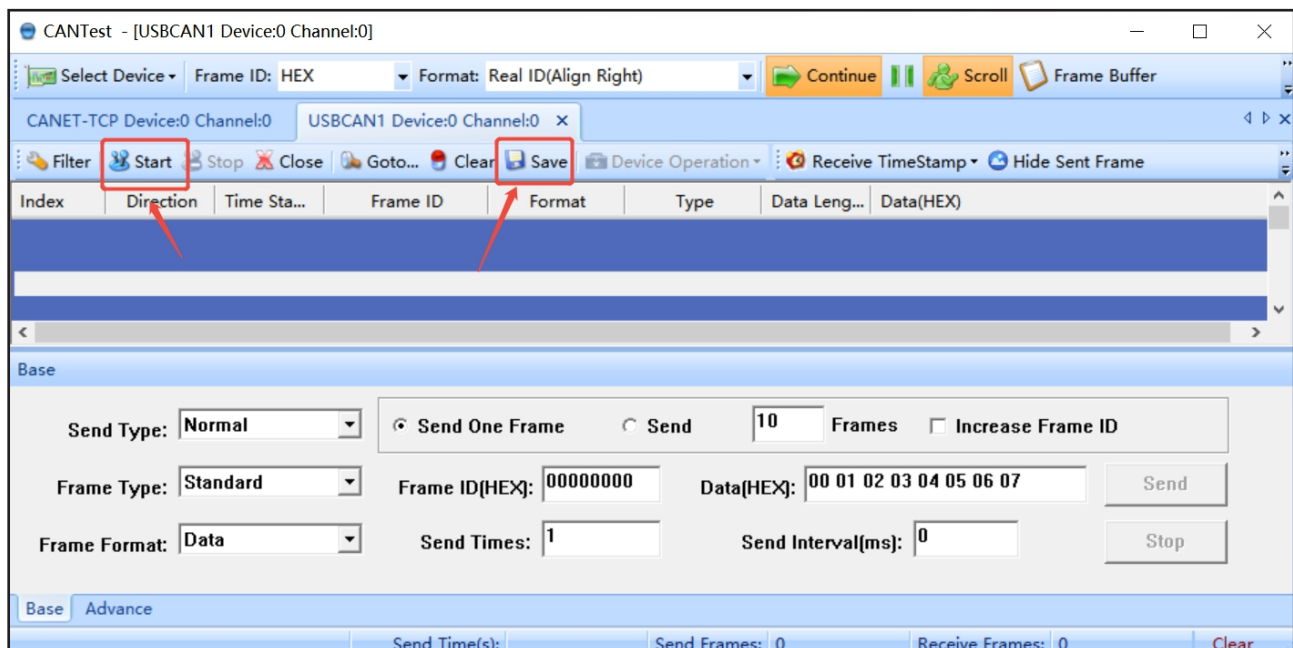
b. Run CANTest and you can switch to the English version at the language position.



c. Click "select device" in the upper left corner and choose the CAN tool to be used. Generally, we choose USBCAN1. If you use CAN boxes of other brands, you may need to select the corresponding model. Note that the baud rate must be selected as 250Kbps. No other adjustments are needed. Just click OK to proceed to the next step.



d. Finally, click start to begin reading the data. Then click "save" to save the data.

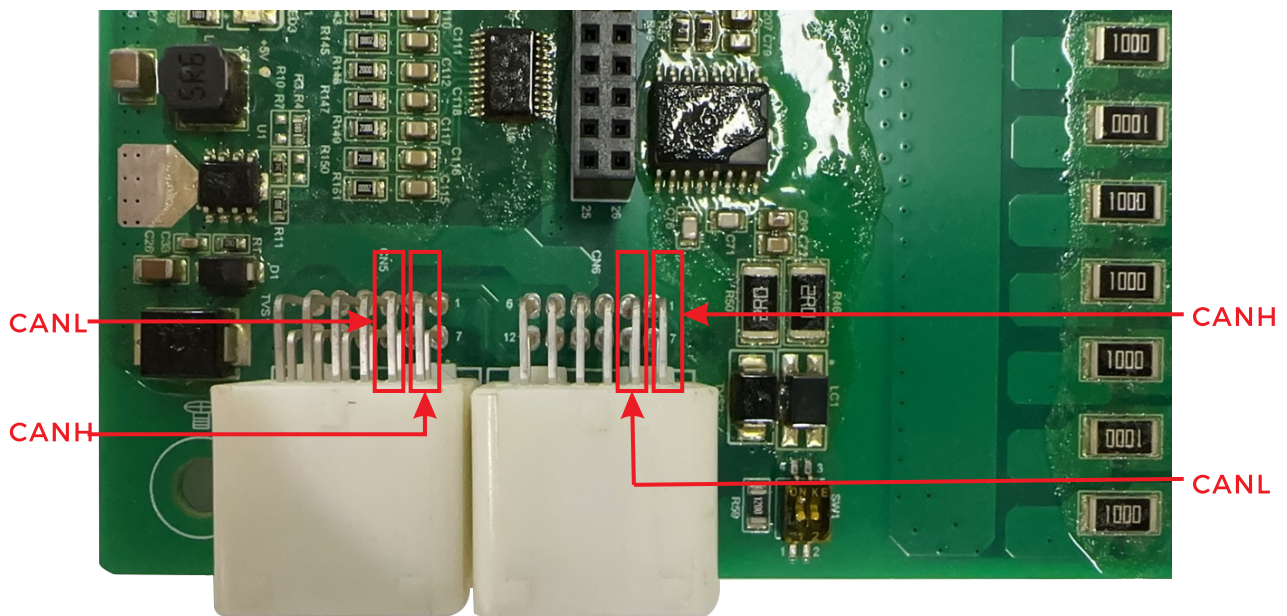


3 Usage of CAN Box — BMS_Tool

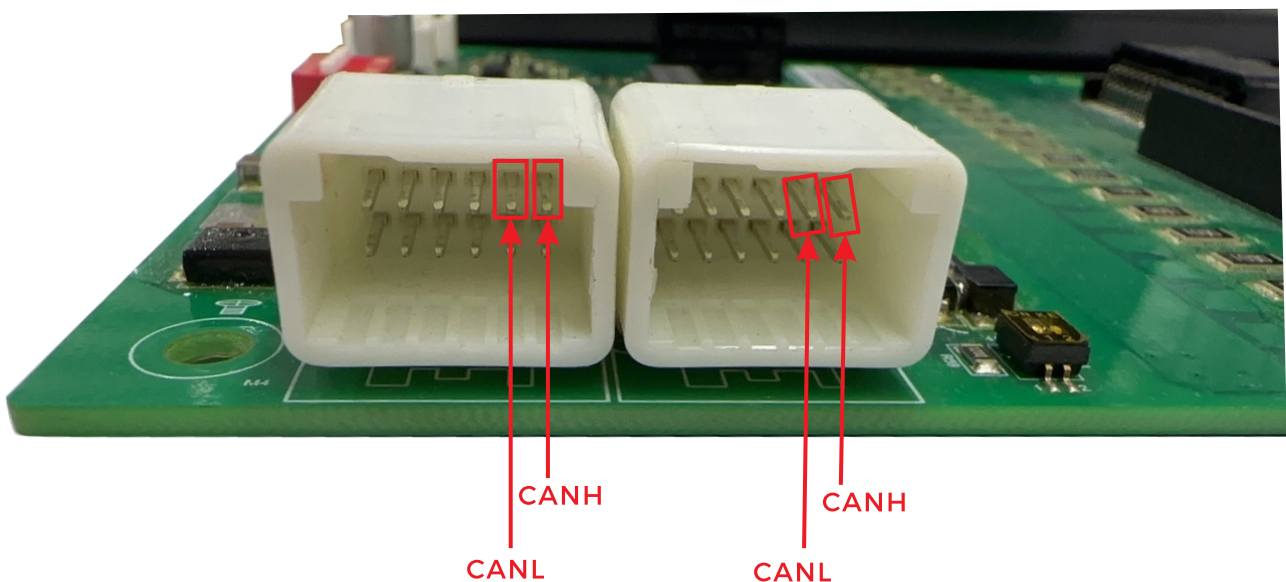
1. Data Reading of Battery BMU

The CAN box is connected to the computer in the same way. The channel end of the CAN box is directly connected to the BMU CAN data pin of the battery. The following uses our REPT battery BMU as an example.

According to our pin definitions, PIN 1 is CANH and PIN 2 is CANL. As shown in the figure below, the left and right groups are identical, so we simply connect the channel of the CAN box to either of the following groups. According to the silkscreen on the PCS board, from right to left, they are 1-6 respectively. Therefore, PIN 1 on the far right is CANH, and PIN 2 on the right is CANL. Simply connect the H and L pins of the CAN box to these two pins.



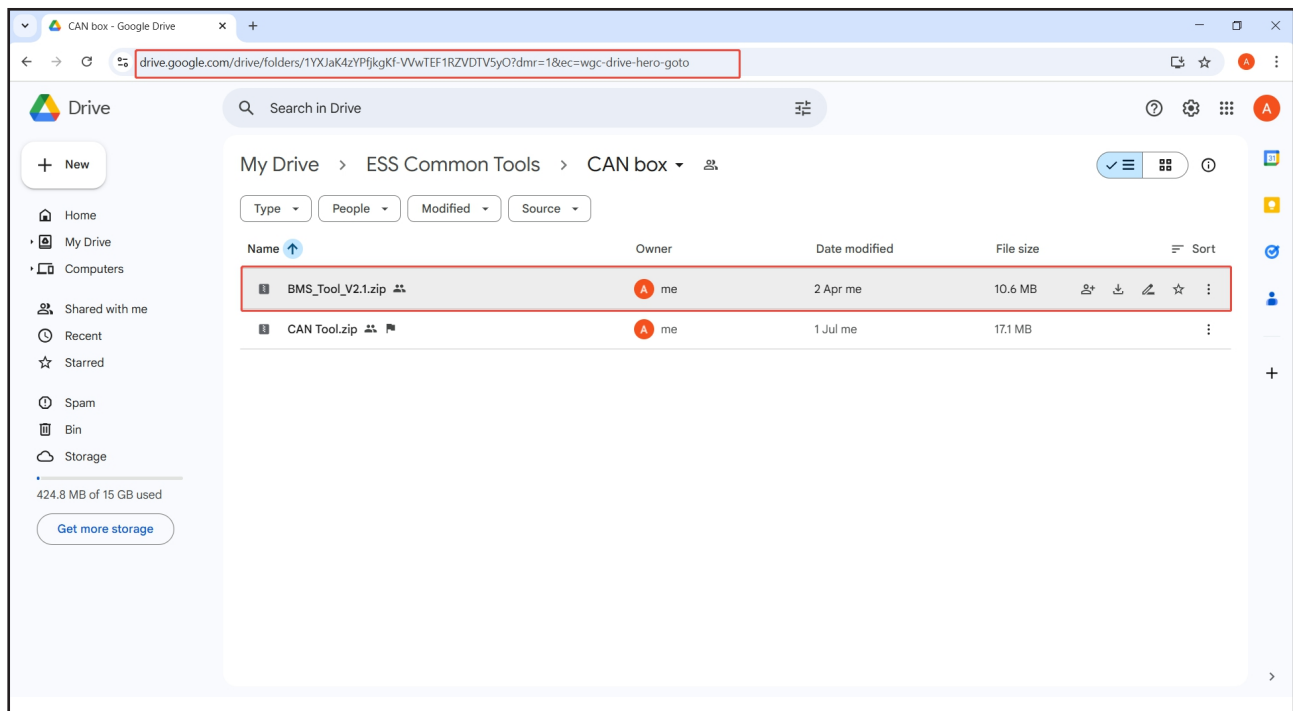
Or it can be connected to these two pins. They are the same as the picture above. This interface is convenient and stable to connect with DuPont wire.



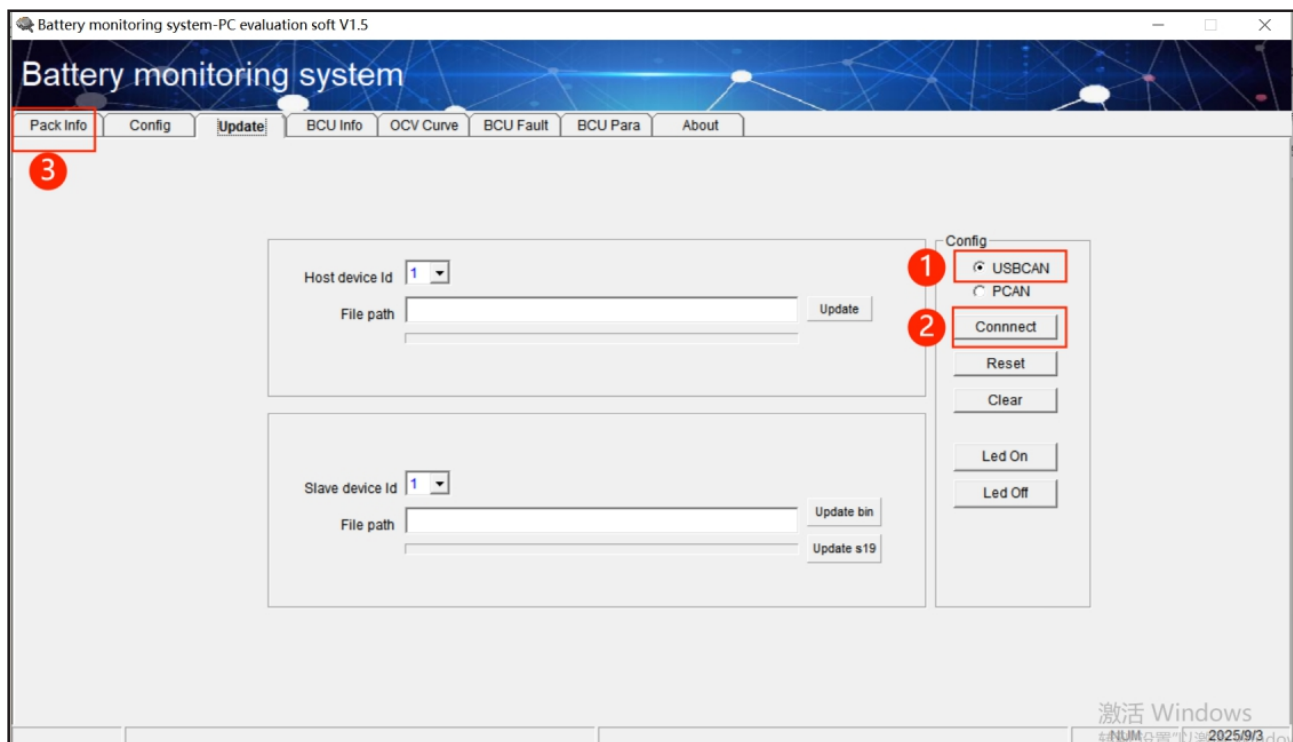
2. Usage of software

a. Download BMS_Tool from the Google Drive and install it on your computer.

Download link: <https://drive.google.com/drive/folders/1YXJaK4zYPfjkgKf-VVwTEF1RZVDTV5yO?dmr=1&ec=wgcd-drive-hero-goto>



b. Run BMS-Tool, select our tool type as "USBCAN", and then click "connected" to connect. And then click position 3 "pack info" to read the data.



c. As shown below, enter the BMU address in the index position. If you are unsure of your BMU's specific communication address, you can select a larger number, such as 20, and it will automatically read the BMU data from addresses 1 to 20. If your BMU address is one of these, the battery data will be displayed in the corresponding address row. (Or you can directly adjust the DIP switch position on the BMU to Address 1, so that you can read the battery data directly in PACK1.)

