DB2605 EV Charging Evaluation Kit

Quick Start Guide

Rev 1.0.3, July 2024

Please read this user manual carefully before use and retain it for future reference.

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1 Overview

The DB2605 EV Charging Evaluation Kit is a platform that facilitates evaluation, software development, and integration of the DB2605 EV Charging Controller, the ISO 15118-2/20 AC charging solution.

For evaluation purposes, the kit is configured to communicate over the UART interface between the DB2605 and a Raspberry Pi. The user can establish a charging session by connecting a DB-EVCC-500 EV simulator that compiles with HPGP and ISO 15118 over the pilot wire.

The kit also provides several additional product design options to facilitate the development of the intended new product. It can be powered from either a USB type C supply or from the Raspberry PI interface power supply. The board has several configuration jumpers, push buttons, and LEDs to further customize the DB2605 per system requirements.

Configuration is described in detail in *DB2605 EV Charging HAT Setup Guide*.

2 DB2605 EV Charging Evaluation Kit

Figure 1 – DB2605 EV Charging Evaluation Kit

Package Contents:

Item	Description	Quality
	DB2605 EV Charging Evaluation Kit	1
	Jumpers, various colors	4
	Power wiring harness for EV Simulator	2

	CAN bus wiring harness for EV Simulator (Upgrade)	2
	Micro HDMI to HDMI Cable for the monitor of Raspberry Pi	1

Notes: the power adapter for EV simulator and type-C power supply are not provided

3 Quick Setup

3.1 Hardware Requirements

- DB2605 EV Charging Evaluation Kit
- 20W Type-C power supply for Raspberry Pi
- 3W@12V power adapter for EV Simulator

3.2 Hardware Setup

1. Connect power wiring harness to power supply and KL30/KL31 on the panel.
2. Supply power for Raspberry PI.
3. Push the “POWER” button to start.

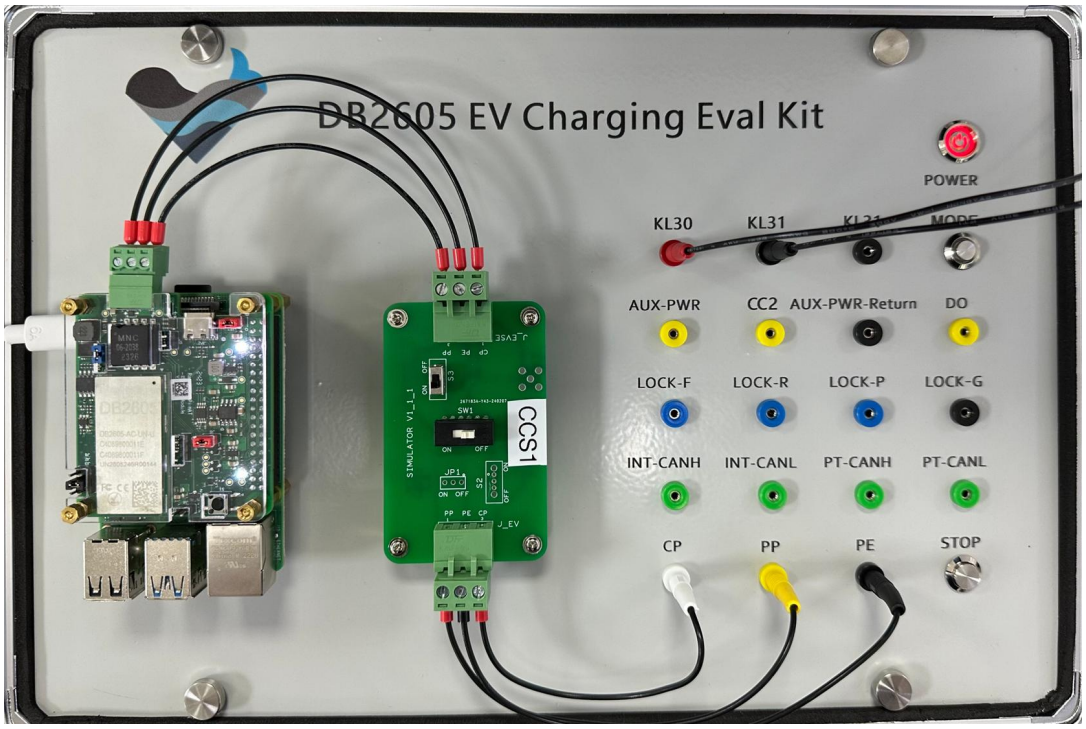


Figure 2 – Power Supply

3.3 Setting Jumpers

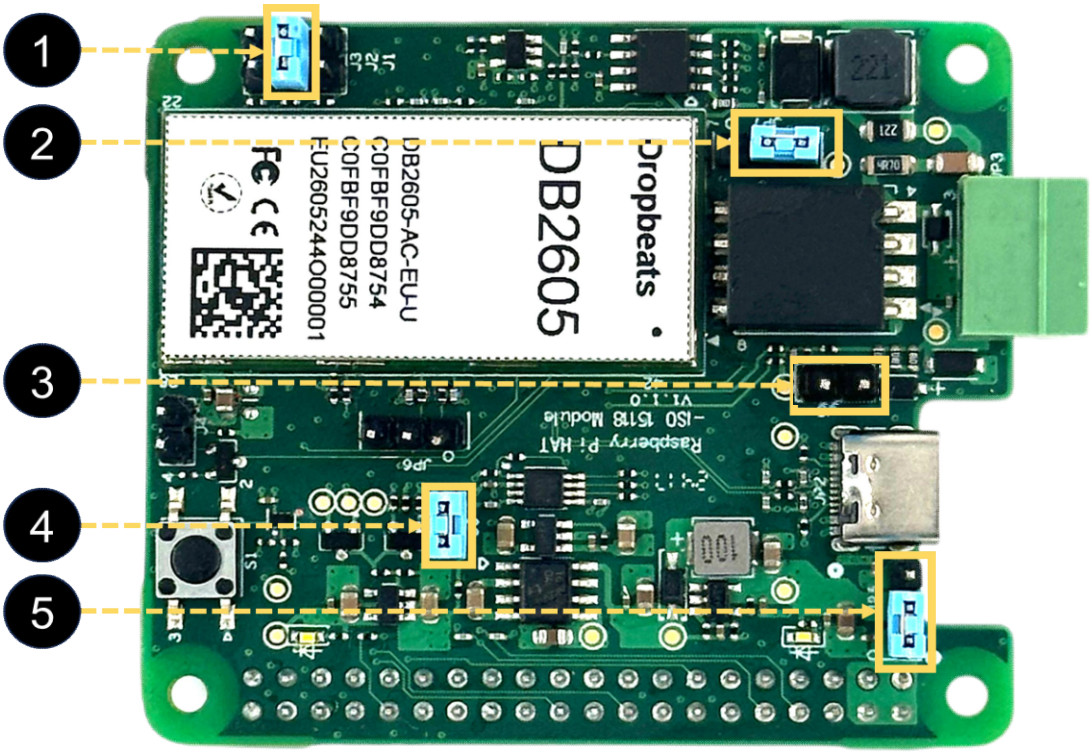


Figure 3 – Jumpers on DB2605 EV Charging HAT

Item	Reference	Use	In Figure 3
1	J2	IEC 61851-1 source	IEC 61851-1 Source CCU (Raspberry Pi)
2	JP7	CP PWM signal selection	Raspberry Pi PWM signal selected
3	J5	Proximity pilot power enable/disable	Disabled
4	J6	Power mode	Constant power mode
5	JP5	Power source selection	Powered from Raspberry Pi

3.4 Quick Test

The following procedure allows a quick connectivity test per Figure 4.

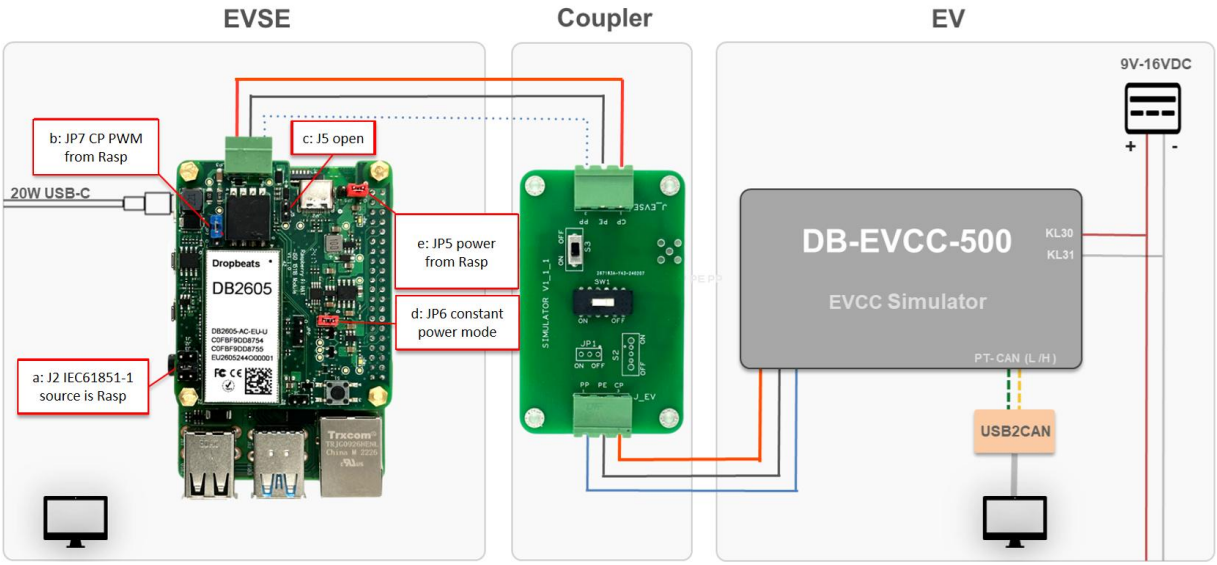


Figure 4 – Evaluation Setup

The DB-EVCC-500 is an EV simulator, which is already installed in the DB2605 EV charging Eval Kit.

1. Make sure the HAT is set as follows. Refer to Figure 3.
   a. J2 jumpered, IEC 61851-1 source is set to Raspberry Pi (CCU)
   b. JP7 set for CP PWM from Raspberry Pi
   c. J5 open
   d. J6 set for constant power mode
   e. JP5 set for power from Raspberry Pi

2. Log into the Raspberry Pi

   Find the IP address of the Raspberry Pi, refer to

   https://www.raspberrypi.com/documentation/computers/getting-started.html

   https://raspberrytips.com/find-current-ip-raspberry-pi/

   The "Micro HDMI to HDMI Cable" for the monitor is provided.

   Use SSH (MobaXterm) to connect Raspberry Pi.

   As default, the username is *dropbeats* and the password is *db2605*.

3. Start CCU simulator in path /Home/Dropbeats/CCU_Simulator

   sudo ./DB2605_CCU_Simulator_Rasp_V1.0.x

4. Charge

SW1 on the Vehicle Coupler board is used to simulate plug-in and plug-out actions.

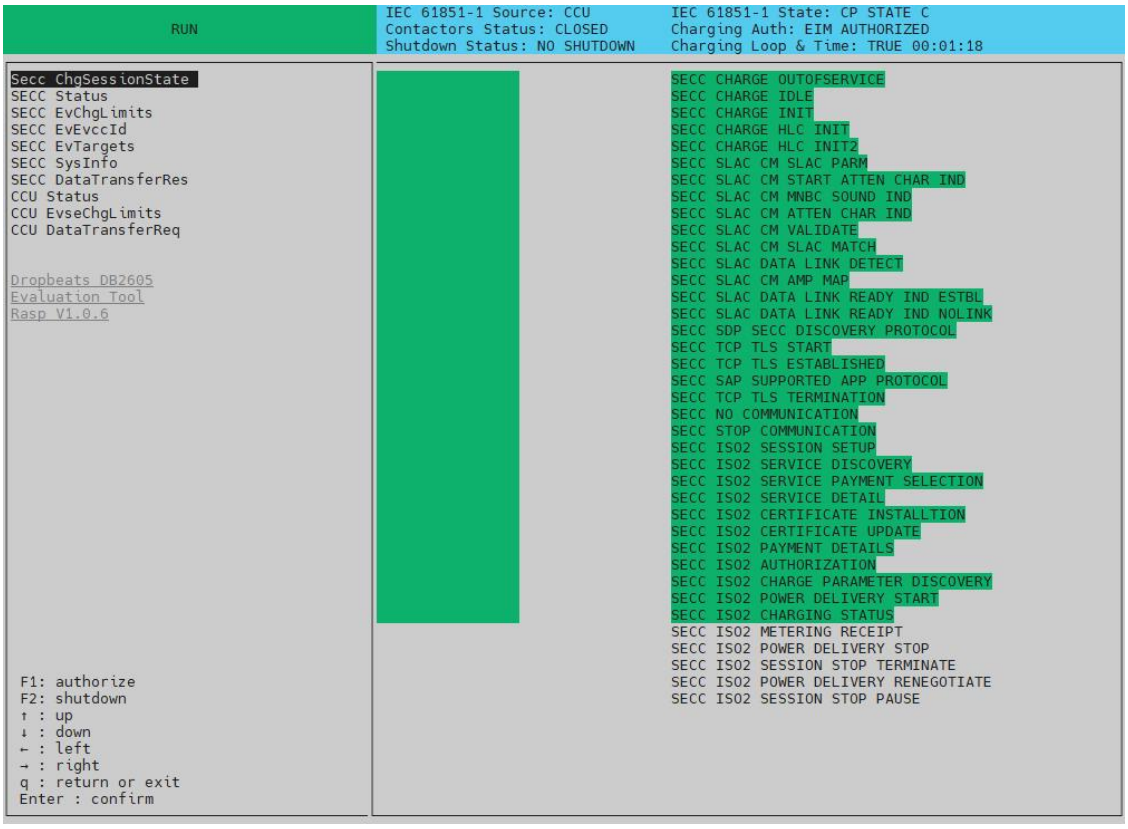
F1 on the keyboard authorizes a charge session.

F2 on the keyboard stops a charge session.

STOP button on the panel of the kit is also used to stop a charge session.

A. Switch **SW1 ON** on the Vehicle Coupler board

B. Press "F1" to start a charge session.



C. Press "F2" or Push "STOP" button on the panel to stop a charge session.

D. Switch **SW1 OFF** on the Vehicle Coupler board.

4 Safety instructions

To ensure safe use and avoid injury or property damage, follow these safety instructions.

- Avoid stress and vibration on all mechanical assemblies
- In case of malfunction, stop use and seek professional repair
- Turn off all power before making any changes to the configuration

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Revision History

Revision	Date	Descriptions
1.0.0	2024.4.24	Initial
1.0.1	2024.5.31	Added CCU simulator operation command.
1.0.2	2024.6.4	Changed "DB2605 module" to "DB2605 EV Charging Controller"
1.0.2	2024.7.8	Updated the EV Charging Eval Kit.