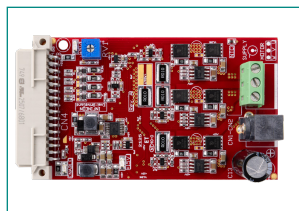
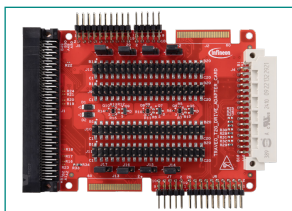
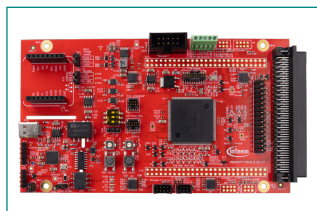


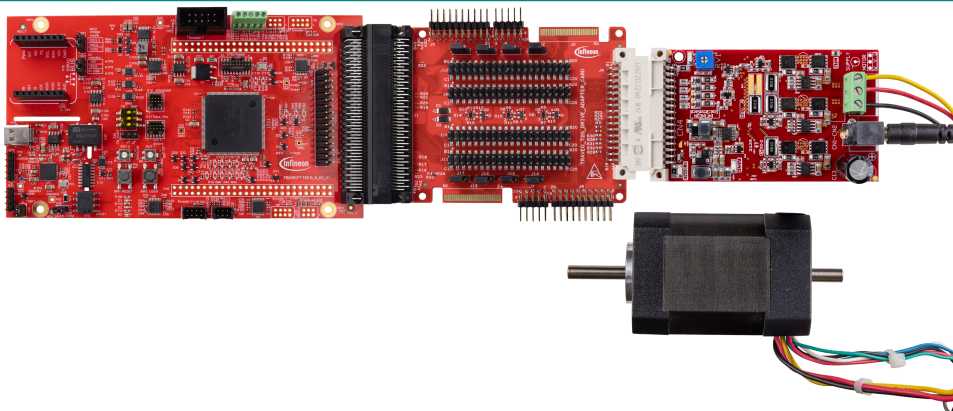
TRAVEO™ T2G CYT4BF Complete System Motor Control Kit

KIT_TRAVEO_T2G_B_H_MC1

Kit contents

1. KIT_TRAVEO_T2G_B_H_DC_V1 motor control card
2. Drive adapter card
3. KIT_MOTOR_DC_250W_24V_T2G power board
4. USB-A to USB-C cable
5. Screwdriver
6. Nanotec DB42S03 or DB42M03 24V BLDC motor
7. 24 V/1 A AC-DC adapter
8. Quick start guide (this document)



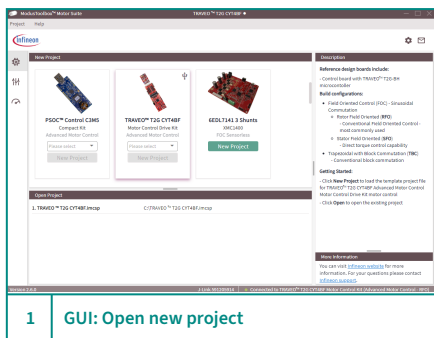


1 Complete setup of KIT_TRAVEO_T2G_B_H_MC1

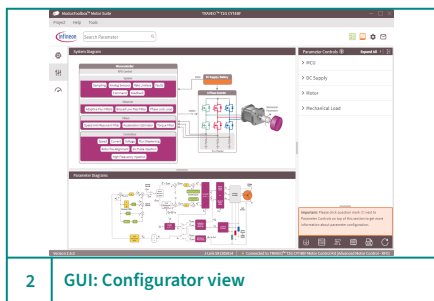
Standalone operation

1. The MCU is pre-programmed with the out-of-box (OOB) firmware configured to run the included motor in sensorless field-oriented control (FOC) three-shunt mode.
2. Ensure that the 5 V selection jumper (X20) is set to position 2-3 (V5V) and the MCU voltage supply jumper (X21) is set to position 1-2 (VDD5).
3. Connect KIT_TRAVEO_T2G_B_H_DC_V1 motor control card and KIT_MOTOR_DC_250W_24V_T2G power board to the drive adapter card as shown in the above figure.
4. Connect the RYB power wires from the BLDC motor to the screw terminal connector (CN3) on the power board as follows:
 - Yellow : U
 - Red : V
 - Black : W
5. Connect the 24 V / 1 A power adapter pin to the DC input barrel jack (CN1) on the power board and turn on the power supply.
6. The motor shaft starts spinning in the clockwise direction (with respect to the motor's front side).
7. The motor speed depends on the value of the potentiometer (R6). Use the screwdriver (provided with the kit) to adjust the potentiometer value.
8. The user button (SW2) changes the motor direction. When pressed, the motor speed ramps down to '0' and stops. Turn the potentiometer (R6) fully clockwise to reduce its value to '0'. Then, slowly rotate it counterclockwise to gradually increase the value and restart the motor in the reverse direction.
9. The yellow LED1 (D1) indicates the motor direction:
 - On for clockwise direction
 - Off for counter-clockwise direction

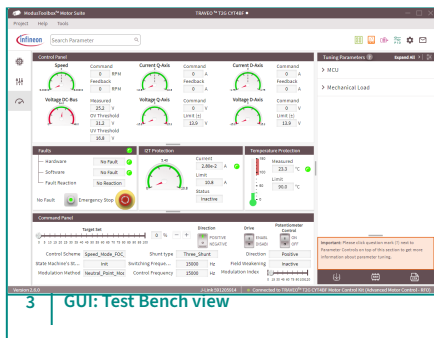
Note: The motor speed depends on the value of the potentiometer (R6). If the potentiometer value is set to '0' (fully turned clockwise), the motor will not start.



1 GUI: Open new project



2 GUI: Configurator view



3 GUI: Test Bench view

GUI-based operation

1. Install ModusToolbox™ Motor Suite GUI from Infineon Developer Center (IDC).
Note: Use ModusToolbox™ Setup tool as an alternative to download and install ModusToolbox™ Motor Suite.
2. Ensure that all the micro switches of SW3 are on the right side for proper operation.
3. Follow steps 1 to 5 as described in the standalone operation section to set up the hardware.
4. Connect the USB cable to the PC and the KIT_TRAVEO_T2G_B_H_DC_V1 motor control card USB-C connector
5. Open the ModusToolbox™ Motor Suite GUI
6. Navigate to TRAVEO™ T2G CYT4BF Motor Control Drive Kit, select RFO, and click **New Project** to open the configurator view.

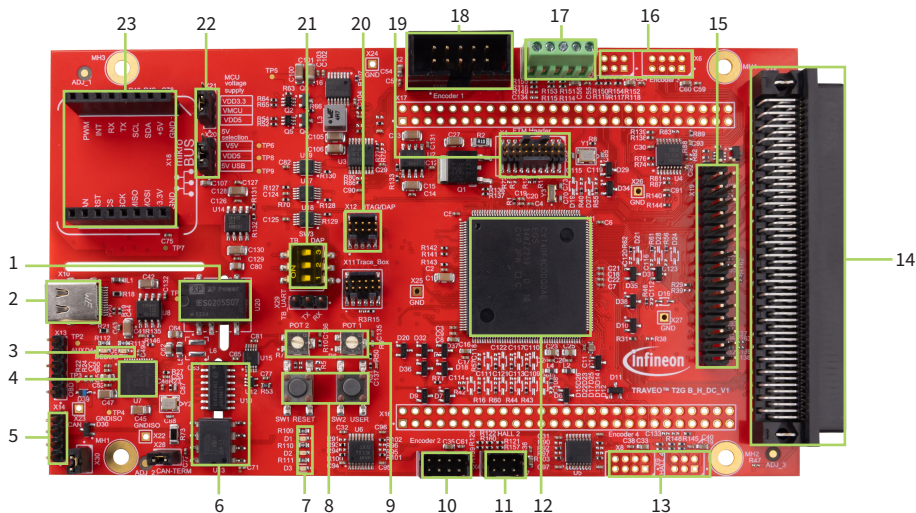
Configurator view

1. A green color at the bottom of the suite indicates a successful connection.
2. The **Configurator** view provides the option to configure the static parameter.
3. Click **Flash Firmware** on the lower right side to reprogram the default firmware.
4. Click the **Test Bench** button to switch to the Test Bench view.

GUI operation in Test Bench view

1. In the **Command Panel**, the **Drive** switch is used to enable/disable the drive.
2. To set the motor speed using the **Target Set** slider in the **Command Panel**, turn off the **Potentiometer Control** switch in the GUI.
3. If the **Potentiometer Control** switch is on, then the potentiometer (R6) on the kit controls the motor speed.
4. **Emergency Stop** button is used to stop/restart the motor, to clear the faults.
5. The **Control Panel** and **Command Panel** sections display parameters such as voltage applied, currents flowing, DC bus voltage, faults, control scheme, state of the state machine, and the motor direction.
6. Select the **Oscilloscope** view to stream the parameters and see the user manual on the top left corner of the Oscilloscope window for more details.

KIT_TRAVEO™ T2G B_H_DC_V1 Motor Drive Card details



- | | |
|--|--|
| 1 DC-DC converter (U20) | 12 TRAVEO™ T2G CYT4BF (U1) |
| 2 USB-C connector (X10) | 13 Motor4 encoder and Hall inputs (X8, X9) |
| 3 DEBUG (D5) and AUX LEDs (D4) | 14 HD 100-pin connector (X15) |
| 4 XMC4200 MCU (J-Link - U7) | 15 MADK M5 pinout header (X19) |
| 5 Isolated CAN header (X14) | 16 Motor3 encoder and Hall inputs (X5, X6) |
| 6 SWD/UART and CAN isolators (U13, U10) | 17 Motor1 Hall sensor inputs (X3) |
| 7 User LEDs (D1, D2) | 18 Motor1 encoder input (X2) |
| 8 User button (SW2) and reset button (SW1) | 19 ETM-Trace header (X1) |
| 9 Potentiometers (R6, R7) | 20 10-pin SWD/JTAG header (X12) |
| 10 Motor2 encoder input (X4) | 21 Debug interface selection (SW3) |
| 11 Motor2 Hall sensor input (X7) | 22 Supply selection jumpers (X20, X21) |
| | 23 mikroBUS header (X18) |

Next steps

- The ModusToolbox™ software supports this kit and the associated code examples.
- Visit the [kit website](#) and [ModusToolbox™ webpage](#) for more information on code examples supported for this kit and the kit documentation.