PowerBox-Systems GmbH Industrial 2 Powercube One Centralita Powerbox User Guide

Contents

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Specifications

- Product Name: PowerCube ONE
- Power Input Range: 6V to 35V
- Connection: USB-C port

Product Usage Instructions

Connecting Cube Pilot to PowerCube ONE:
Secure the Cube Pilot to the PowerCube ONE using the provided screws.

Powering Up the System:
Ensure at least one battery is connected within the power input range of 6V to 35V. Press the SET button for one second to turn the system on.

Setting Up Parameters in Ardupilot Mission Planner:

1. Connect the USB-C port to your computer.
2. Press CONNECT in the Mission Planner.
3. Open the Full Parameter List and follow the recommended sequence for setting up parameters related to BATT, BATT2, CAN, and BRD.
4. After changing the settings, write the parameters and allow the Cube to restart.

Verifying Connection
Once the Cube has restarted, check for the status message “Cube o.k.” in the PowerBox monitor to ensure correct data transmission.

Additional Control Systems:
You can use systems like MavLink, DroneCan, or S.BUS connected to the Cube or utilize the RX1 input for bypassing the Cube Flight computer.

FAQ

- **Q: How can I get detailed receiver data?**
  A: You can use the provided Script by selecting PBS_MP_Script from the download section and executing it to view detailed receiver data like Fades, Lost frames, and Holds.
- **Q: How can I contact technical support?**
  A: For technical questions, you can reach out to industrialsupport@powerbox-systems.com.

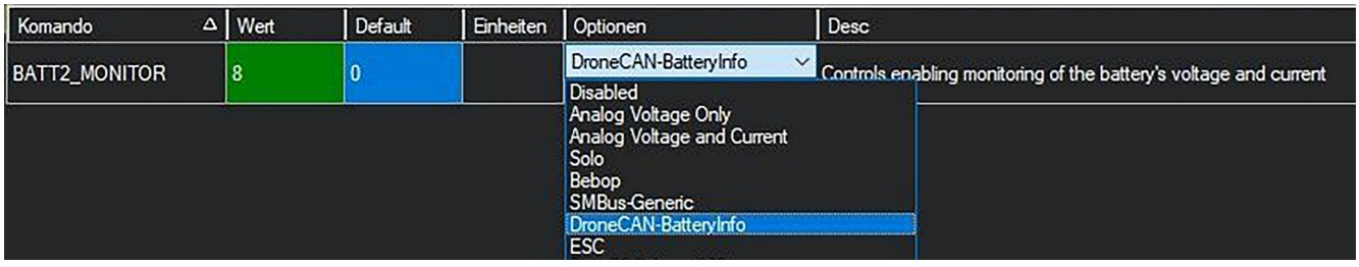
Setting Up Parameters in Ardupilot Mission Planner

This short manual shows how to get the Cube flight computer ready to use in the PowerCube ONE power supply unit.
The manual includes the parameters setup in Ardupilot Mission Planer for the communication between the Cube flight computer and the PowerCube ONE.

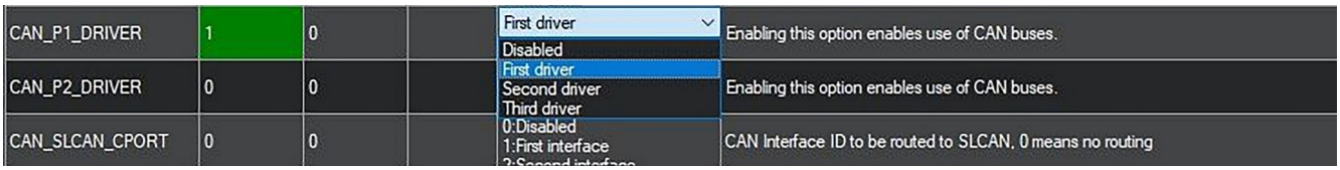
1. Connect the Cube Pilot to the PowerCube ONE and use the 4 screws included with the package to secure it in place.
2. Power up the system with at least one battery. The power input works in a range of 6V to 35V.
3. Turn the system on by pressing the SET button for one second. Once the red LED lights up, press button I and II, while continuing to hold the SET button.
4. Connect the USB-C port to your computer and press CONNECT in the Mission Planner.
5. Open the Full Parameter List and change the settings in the recommended sequence:

BATT and BATT2 Parameters
Command: BATT_MONITOR – Option: DroneCan-BatteryInfo

Command: BATT2_MONITOR – Option: DroneCan-BatteryInfo

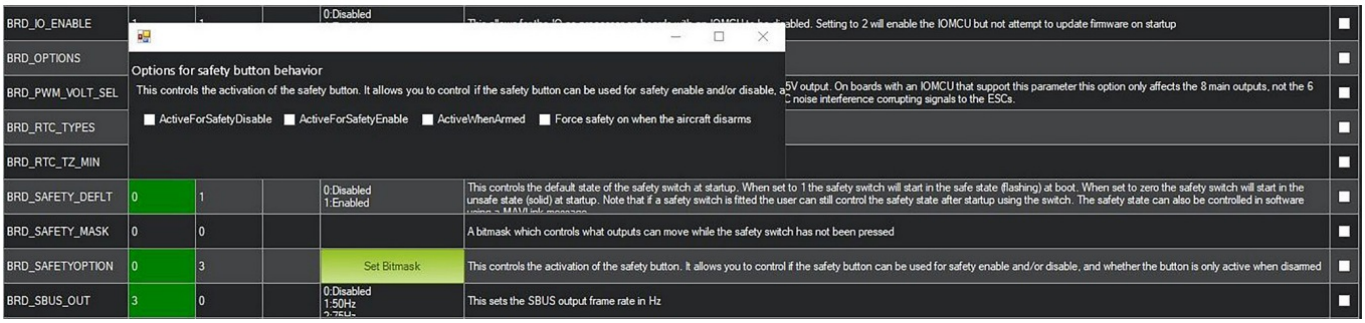


CAN Parameter
Command: CAN_P1_DRIVER – Option: First driver

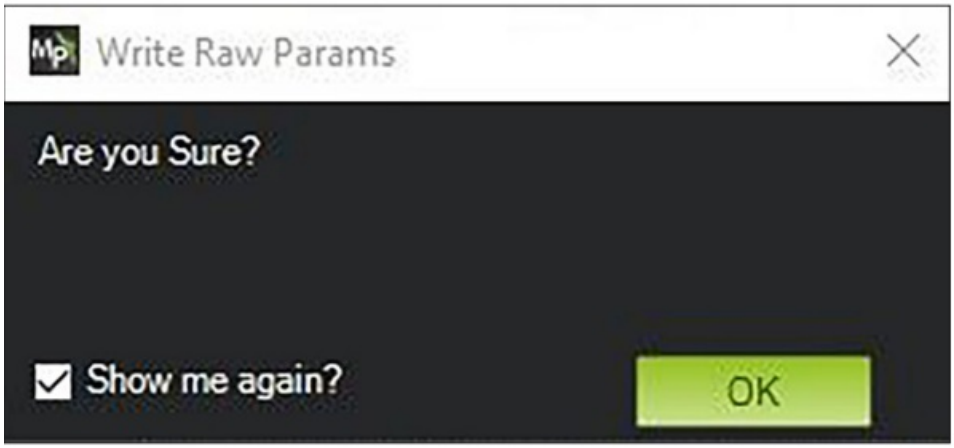


BRD Parameter

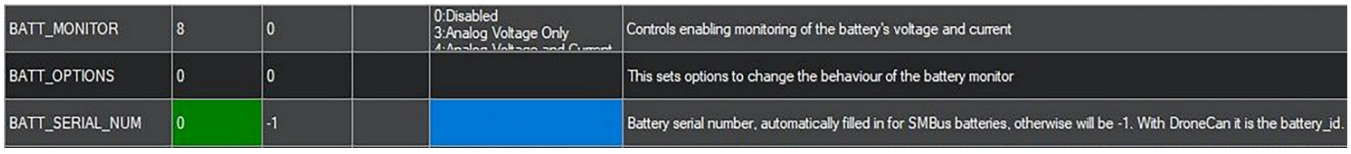
- Command: BRD_SAFETY_DEFLT – Option 0: Disabled
- Command: BRD_SAFETYOPTION – Option 0
- Command: BRD_SBUS_OUT – Option 3: 100Hz



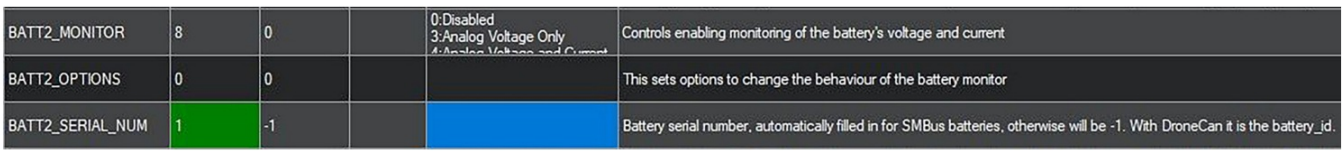
Write parameters
After writing the parameters, the Cube will restart and more options are available for the BRD and CAN parameters.



BATT and BATT2 Parameters
Command: BATT_SERIAL_NUM – Option: 0



Command: BATT2_ SERIAL_NUM – Option: 1



CAN Parameters

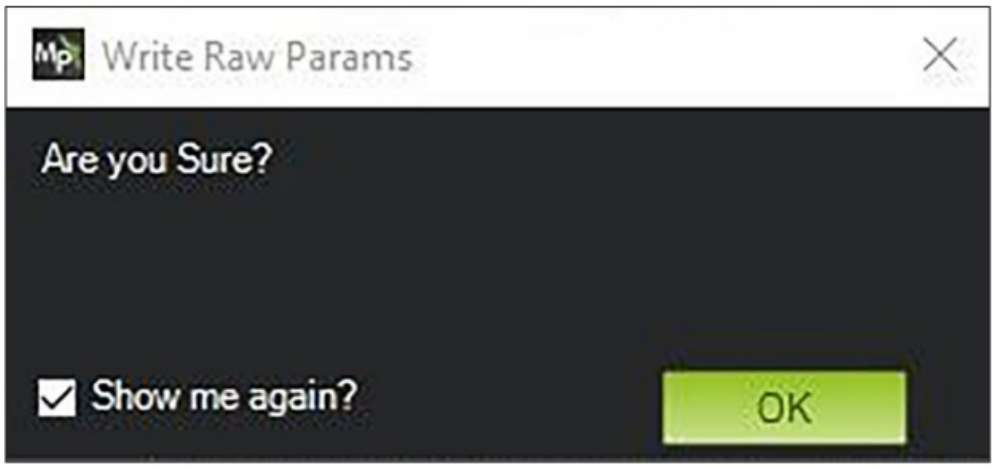
Command: CAN_P1_FDBITRATE – Option 1: 1M

CAN_P1_DRIVER	1	0		0:Disabled 1:First driver	Enabling this option enables use of CAN buses.
CAN_P1_FDBITRATE	1	8		1M 1M 2M 4M 5M	Bit rate can be set up to from 1000000 to 8000000
CAN_P2_DRIVER	0	0			Enabling this option enables use of CAN buses.

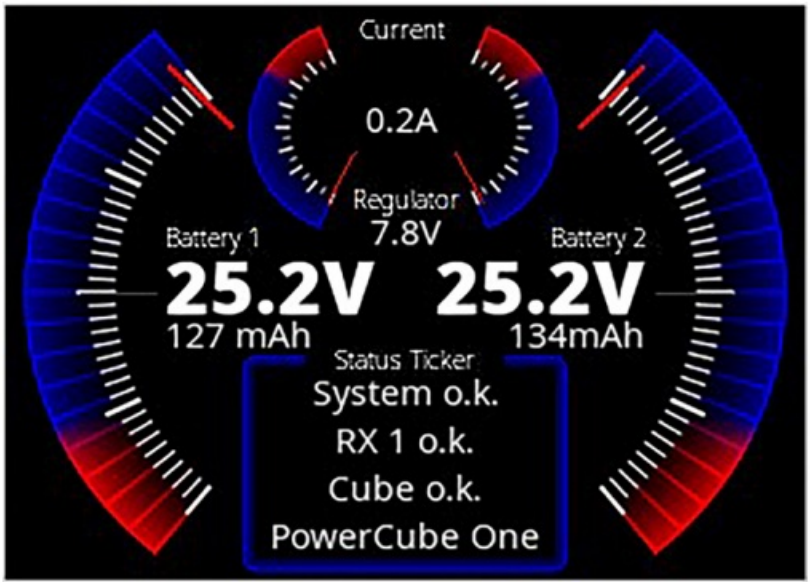
Command: CAN_LOGLEVEL – Option 1: Log Error

CAN_LOGLEVEL	1	0		Log Error Log None Log Error Log Warning and below Log Info and below Log Everything	Loglevel for recording initialisation and debug information from CAN Interface
CAN_P1_BITRATE	1000000	1000000			Bit rate can be set up to from 10000 to 1000000
CAN_P1_DRIVER	1	0		1:First driver	Enabling this option enables use of CAN buses.

Safe settings and restart the system



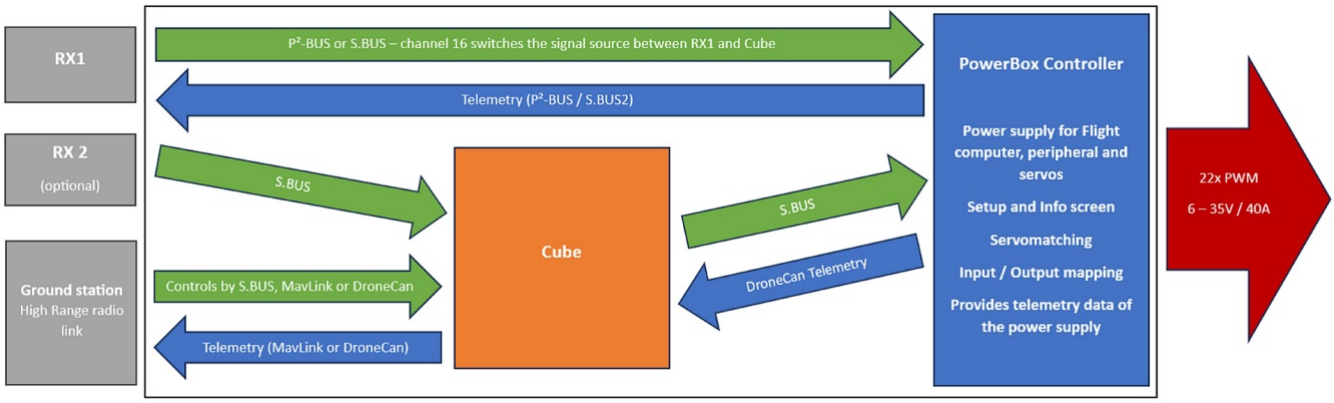
When the Cube has booted up again you will see the status message: Cube o.k. in the PowerBox monitor. This means that the servo data from the Cube is correctly received in the PowerCube ONE.



In the Mission Planner, the battery data from the PowerCube ONE is found in the left lower corner.

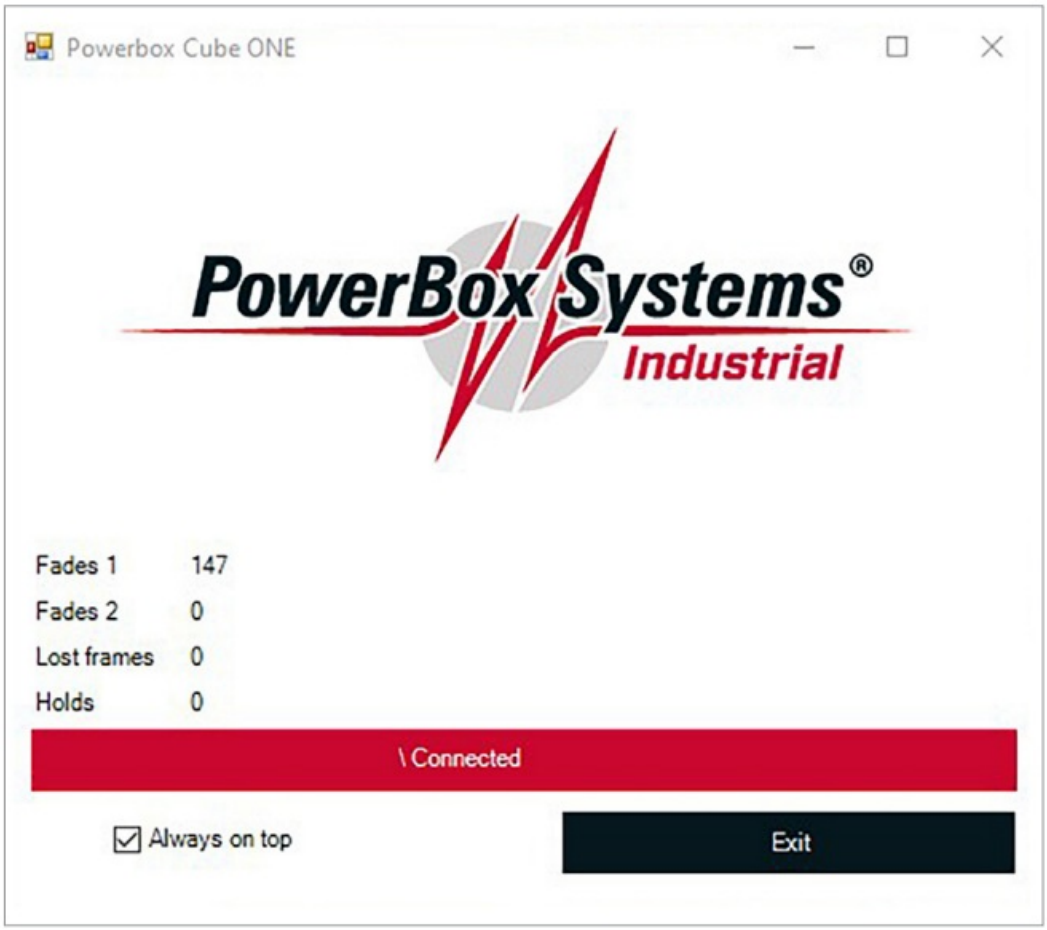
There are different systems which can be used to control the aircraft. For example, with MavLink, DroneCan or S.BUS connected to the Cube or using the RX1 input for bypassing the Cube Flight computer.

You can see the internal signal path of the PowerCube ONE to understand how it works:



For detailed receiver data like Fades, Lost frames and Holds you can use our Script. Open the Scripts tab:

Select the Script from our download section PBS_MP_Script and execute it. You will see following screen:



For technical questions you can contact us here: industrialsupport@powerbox-systems.com

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Documents / Resources

	PowerBox-Systems GmbH Industrial 2 Powercube One Centralita Powerbox [pdf] User Guide Industrial 2, Industrial 2 Powercube One Centralita Powerbox, Powercube One Centralita Powerbox, Centralita Powerbox, Powerbox

References

- User Manual