PowerBox Systems®
Industrial

QUICK SETUP GUIDE

POWERCUBE ONE

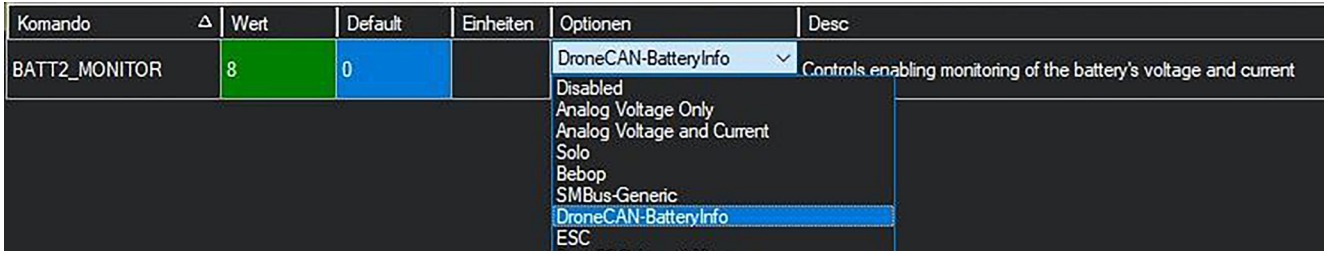
This short manual shows how to get the Cube flight computer ready to use in the **PowerCube ONE** power supply unit.
The manual includes the parameters setup in Ardupilot Mission Planer for the communication between the Cube flight computer and the **PowerCube ONE**.

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:

a) *BATT and BATT2* Parameters

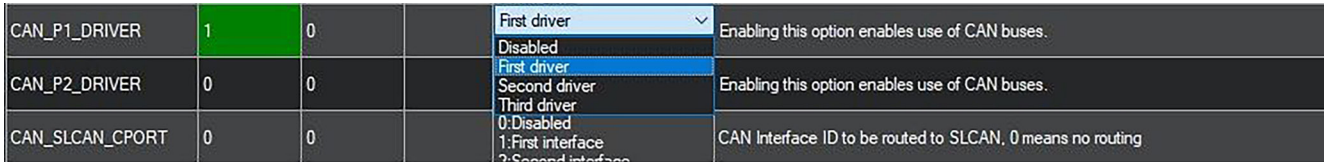
Command: ***BATT_MONITOR*** - Option: ***DroneCan-BatteryInfo***

Command: ***BATT2_MONITOR*** - Option: ***DroneCan-BatteryInfo***



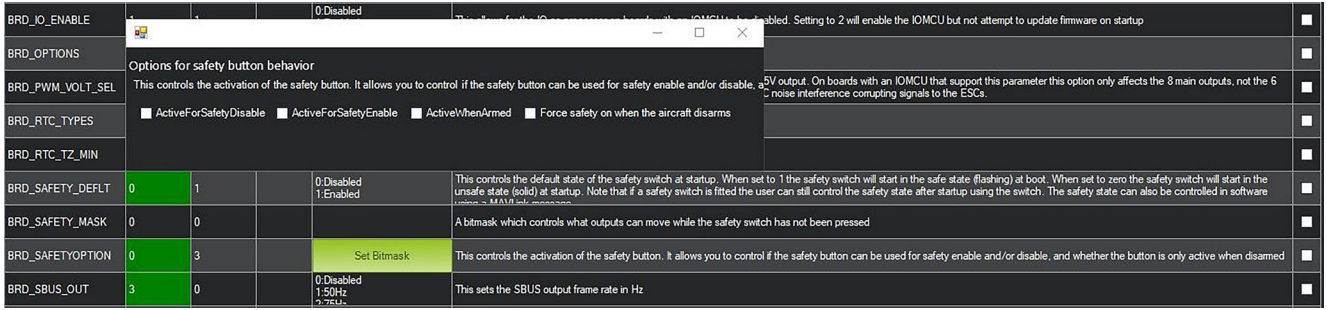
b) *CAN* Parameter

Command: ***CAN_P1_DRIVER*** - Option: ***First driver***



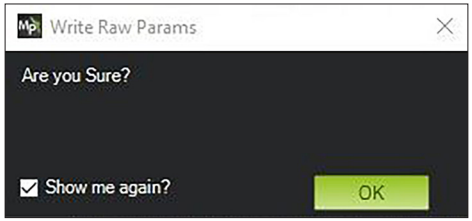
c) *BRD* Parameter

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



d) Write parameters

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



e) BATT and BATT2 Parameters

Command: ***BATT_SERIAL_NUM*** - Option: ***0***

BATT_MONITOR	8	0		0:Disabled 3:Analog Voltage Only	Controls enabling monitoring of the battery's voltage and current
BATT_OPTIONS	0	0			This sets options to change the behaviour of the battery monitor
BATT_SERIAL_NUM	0	-1			Battery serial number, automatically filled in for SMBus batteries, otherwise will be -1. With DroneCan it is the battery_id.

Command: ***BATT2_ SERIAL_NUM*** - Option: ***1***

BATT2_MONITOR	8	0		0:Disabled 3:Analog Voltage Only	Controls enabling monitoring of the battery's voltage and current
BATT2_OPTIONS	0	0			This sets options to change the behaviour of the battery monitor
BATT2_SERIAL_NUM	1	-1			Battery serial number, automatically filled in for SMBus batteries, otherwise will be -1. With DroneCan it is the battery_id.

f) CAN Parameters

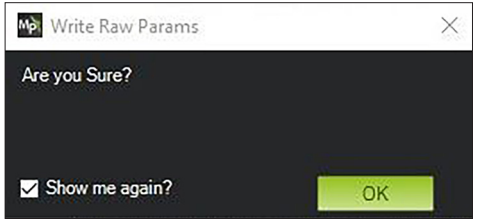
Command: ***CAN_P1_FDBITRATE*** – Option ***1: 1M***

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.

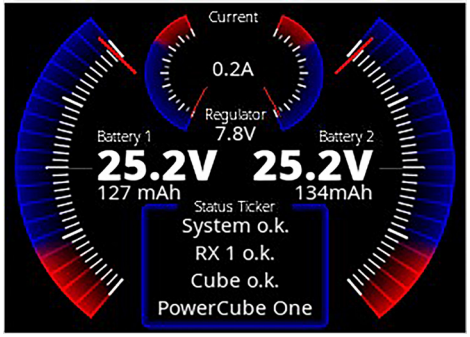
Command: ***CAN_LOGLEVEL*** – Option ***1: Log Error***

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		1:First driver	Bit rate can be set up to from 10000 to 1000000
CAN_P1_DRIVER	1	0			Enabling this option enables use of CAN buses.

g) Safe settings and restart the system



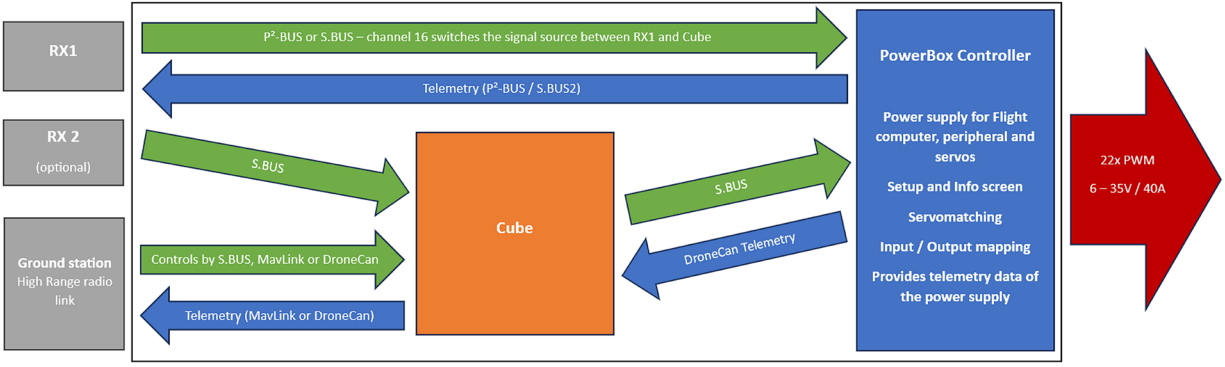
When the Cube has booted up again you will see the status message: ***Cube o.k.*** in the PowerBox monitor.
This means that the servo data from the Cube is correctly received in the **PowerCube ONE**.



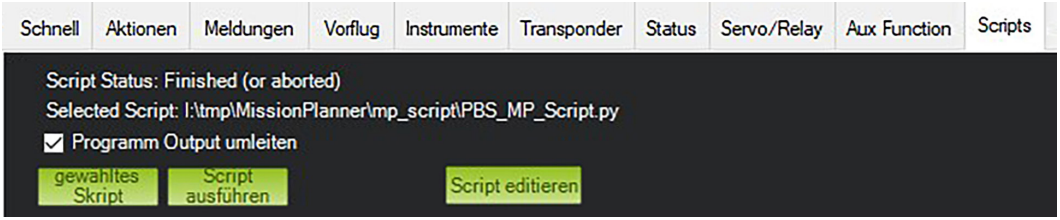
In the Mission Planner, the battery data from the **PowerCube ONE** is found in the left lower corner.

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.

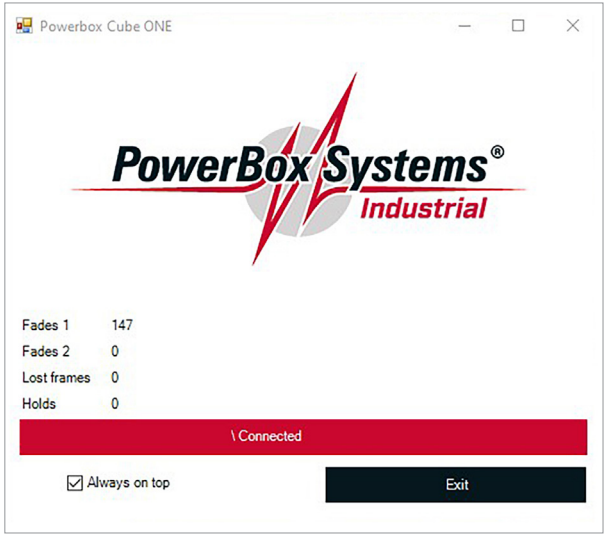
You can see the internal signal path of the PowerCube ONE to understand how it works:



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:



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