

Power switch

The power switch is supposed to be two-position ON-OFF switch (not the button).

When the switch goes ON, the +5V power is applied for one second. If during this time switch is turned into OFF position or the battery voltage goes below the 3.50V limit, +5V is immediately turned off.

After one second passed if the switch was turned OFF the power controller signals to the RaspberryPi board and turns +5V off after the command from RaspberryPi or after 100s, whichever earlier.

Status LEDs

Green:

OFF means standby mode, less than 160uA current consumption

4Hz flashing means normal running mode

8Hz bright flashing means that power off timer is activated

3 short flashes before switching to OFF means low battery or temperature shutdown

Red:

ON means high temperature ($>55^{\circ}\text{C}$ inside the case) or low battery warning

Orange:

ON means battery charging is performed

flashing means that charge current is reduced due to high temperature or not enough input power

low frequency blinks means that battery is fully charged while input supply is connected

UART

Baudrate 38400, None, 8-1-1

All requests are initiated by RaspberryPi by text mode commands terminated by “\n” or “\r\n”. All answers from the power controller are also text strings terminated by “\r\n”. All commands are case-sensitive.

Command Answer	Description
INFO VBAT=4.05 VOUT=5.12 VDC=5.29 VIN=39.8 IOUT=2.8 TEMP=031 CHG=1 WRN=0 PWR=1 INFO VBAT=3.52 VOUT=5.02 VDC=0.00 VIN=00.0 IOUT=3.0 TEMP=028 CHG=0 WRN=1 PWR=1	Status information: VBAT – battery voltage (in volts) VOUT – output voltage VDC – 5VDC internal voltage VIN – input voltage IOUT – approx. output current (in Amps) TEMP – temperature (in °C) WRN – warning signal (low battery or high temp) CHG – 0 or 1 as status of charger IC PWR – 0 means that switch is in OFF position
TIME 2017-07-30T23:46:36Z	UTC time in ISO 8601 compatible format
TIME 2017-07-30T23:49:31Z 2017-07-30T23:49:31Z	Setting the new time. Time string is separated by space. It is allowed to have following format only: YYYY-MM-DDThh:mm:ssZ
PWR OK PWR 1 OK PWR 1000 ERROR	Command to turn off +5V supply. Second argument sets the time in seconds (1 to 999) after which the power is turned OFF. For example: PWR 1 turns power OFF after 1 second. Command PWR without arguments disables the previously set timer.
RST OK RST 60 OK	Command to set the watchdog timer. Second argument sets the time in seconds (1 to 999) after which the +5V power is turned OFF for 1 second. Command RST without arguments disables the previously set timer.