

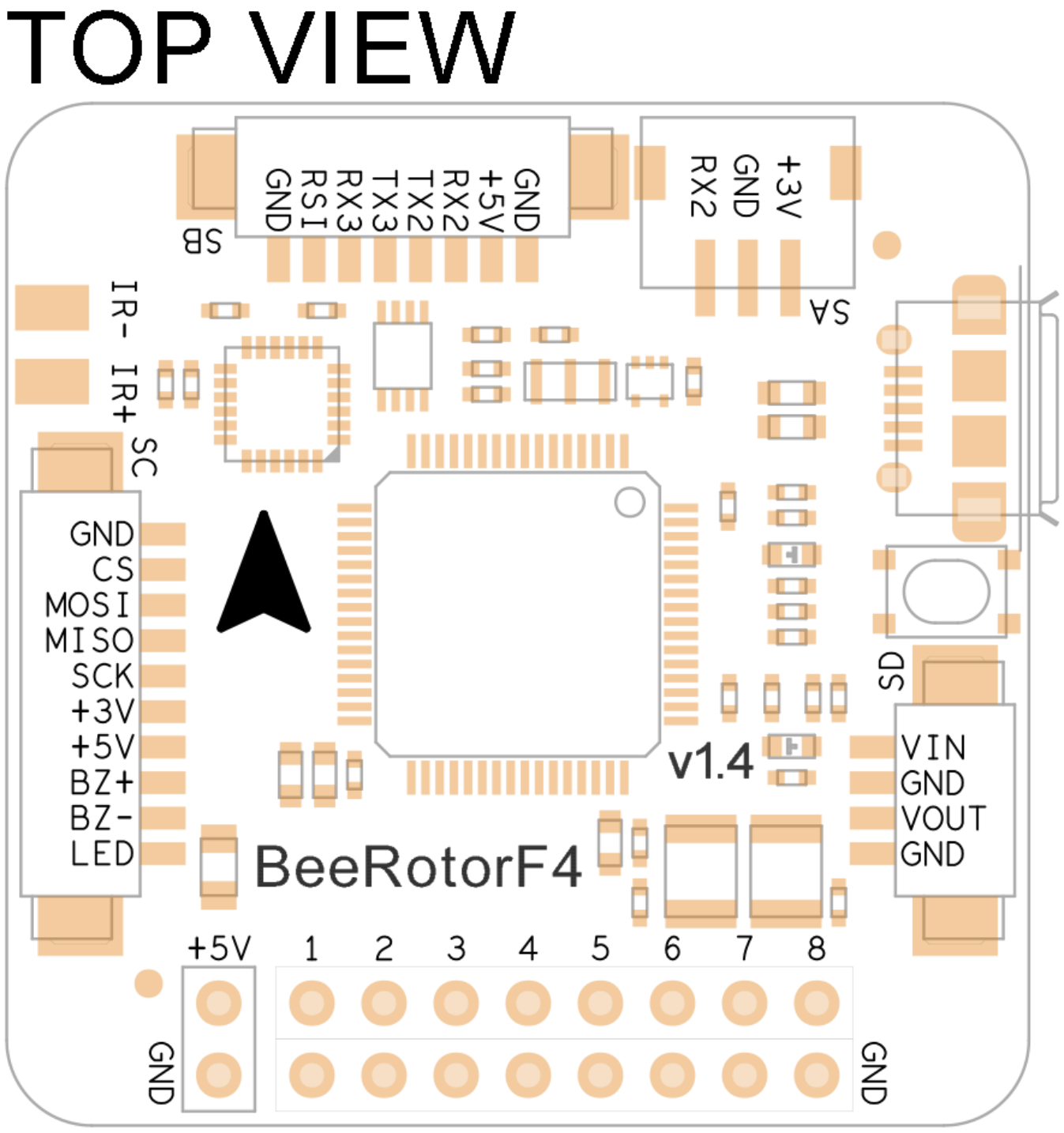
BeeRotorF4 Flight Controller
Manual 170422

Specification

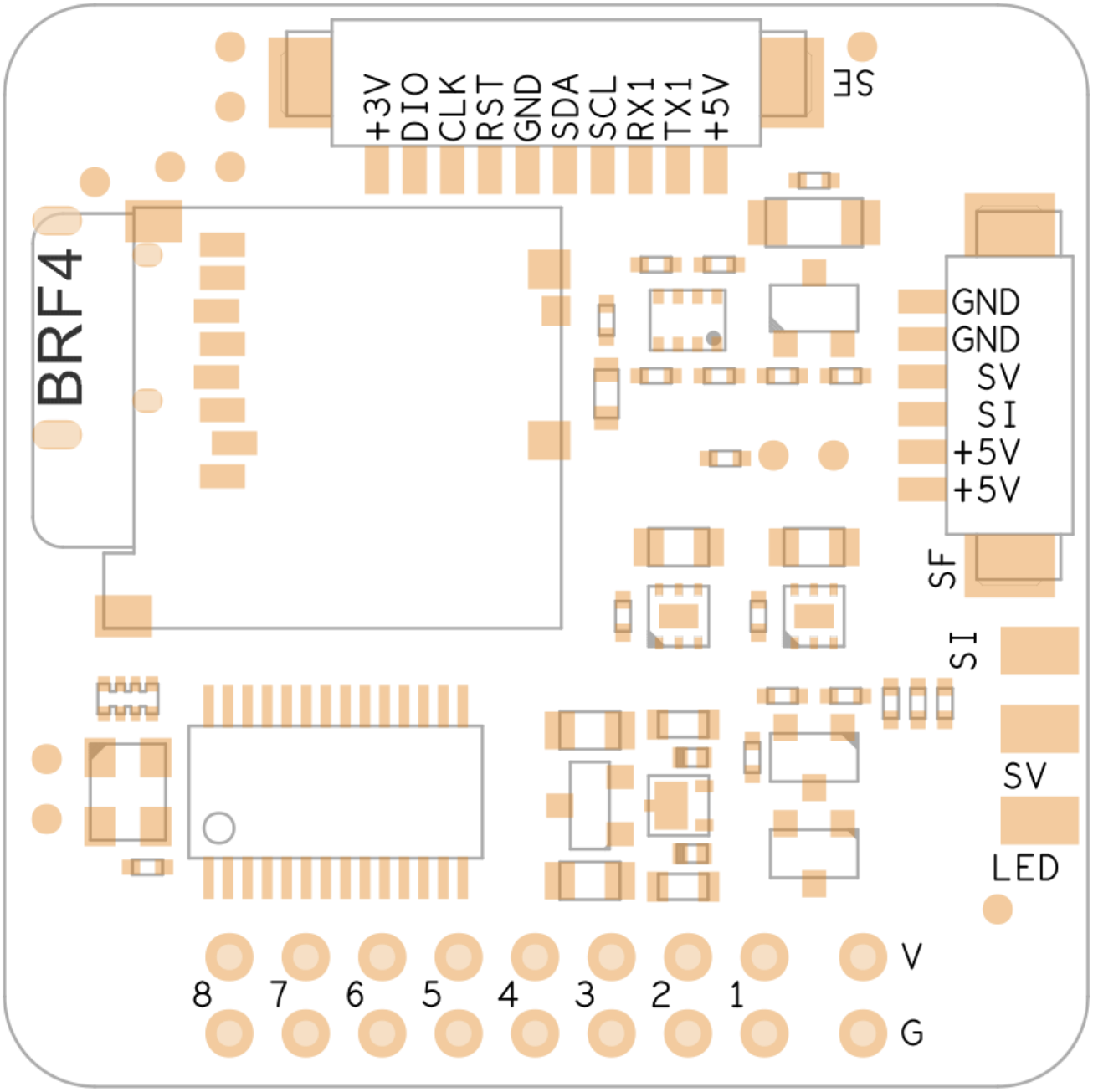
- Power input: 5.0~5.5V
- Dimension: 36x36x9mm
- Fixing holes spacing: 30mm
- Weight: 8g

GETTING STARTED

Board layout



BOTTOM VIEW


+3V
DIO
CLK
RST
GND
SDA
SCL
RX1
TX1
+5V
SF
BRF4
GND
GND
SV
SI
+5V
+5V
SF
SI
SV
LED
8
7
6
5
4
3
2
1
V
G

SA DSM2/DSMX	
1	+3.3V
2	GND
3	RX2

Socket SA can be used for direct connect to DSMX / DSM2 receivers with supply current limit of 300mA.

SB Receivers/Telemetry/RSSI	
1	GND
2	+5V
3	RX2
4	TX2
5	TX3
6	RX3
7	RSSI
8	GND

All types of receivers can be connected to RX2, such as S.BUS and PPM.

TX3/RX3 can be used for FRSKY_TELEMETRY function or a normal UART port. If it needs to be used for smartport (s.port), please use a dedicated cable to connect to a FRSKY X-series receiver.

RSSI only used for analog signal.

SC External SPI/BUZZER/LED-Strip	
1	GND
2	CS
3	MOSI
4	MISO
5	SCK
6	+3.3V
7	+5V
8	BUZZER+ (+5V)
9	BUZZER-
10	LED-Strip

External SPI (Pin 2~5) used to control an external device, such as VTX and Receiver Module. Usually VTX require a large supply current, do not use FC to provide the power!

Pin 8~9 used to drive a buzzer.
If buzzer is powered by PDB power supply, connect Pin 9 only.

There is an LED-strip pad on the back of FC, you can choose one of them to use.

SD VIDEO IN/OUT	
1	GND
2	VIDEO_OUT
3	GND
4	VIDEO_IN

The signal output from the camera should be connected to VIDEO_IN (VIN) and VTX is connected to VIDEO_OUT (VOUT).

SE UART1/I2C/SWD	
1	+5V
2	TX1
3	RX1
4	SCL
5	SDA
6	GND
7	RST
8	CLK
9	DIO
10	+3.3V

If you need to use GPS and compass, you can connect them to the SE.

SF PDB only	
1	PWR_5V
2	PWR_5V
3	SENSE_I
4	SENSE_V
5	GND
6	GND

WARNING!
Do not connect battery to the SF socket directly, it is only used for Beerotor PDB!

If you do not have Beerotor PDB and want to measure voltage, please solder the positive cable of battery to the SV pad on the back of FC.

If using a non-Beerotor PDB current signal, please solder it to the SI pad on the back of FC.

Basic Software Setup

DFU Mode

BRF4 has two work modes after powered, normal mode and DFU mode. Hold the boot button while plugging in the USB cable, and then release button, BRF4 will enter DFU mode. Otherwise, it is in the normal mode.

Install Virtual Comport (VCP) Driver

If the VCP driver of BRF4 unable installed automatically, please manually download the driver through the BetaFlight configurator.

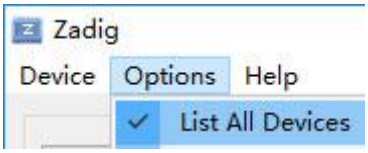
Install DFU Driver

BRF4 connect to computer via OTG function, you must install the appropriate drivers to ensure proper flash firmware.

Windows users:

Download Zadig from http://zadig.akeo.ie

Open Zadig, in the menu, select Options > List All Devices.



Select STM32 BOOTLOADER and WinUSB Driver.

If the STM32 BOOTLOADER can not be displayed, please re-enter DFU mode.



Click “Reinstall Driver” or “Replace driver”.



Mac / Linux users:

Driver will install automatically.

Betaflight Configurator

Betaflight Configurator will be used to configure BRF4.

http://chrome.google.com/webstore

Use Betaflight Configurator to Flash / Upgrade Firmware

Connect the BRF4 to your computer.
Open Betaflight Configurator, click the Firmware Flasher tab.
Select BEEROTORF4 and version in the Board menu.
Select Full chip erase.
Click Load Firmware [Online] and wait for the download is completed.
Click Flash Firmware and wait for the flash process is completed

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FRSKY_TELEM Set

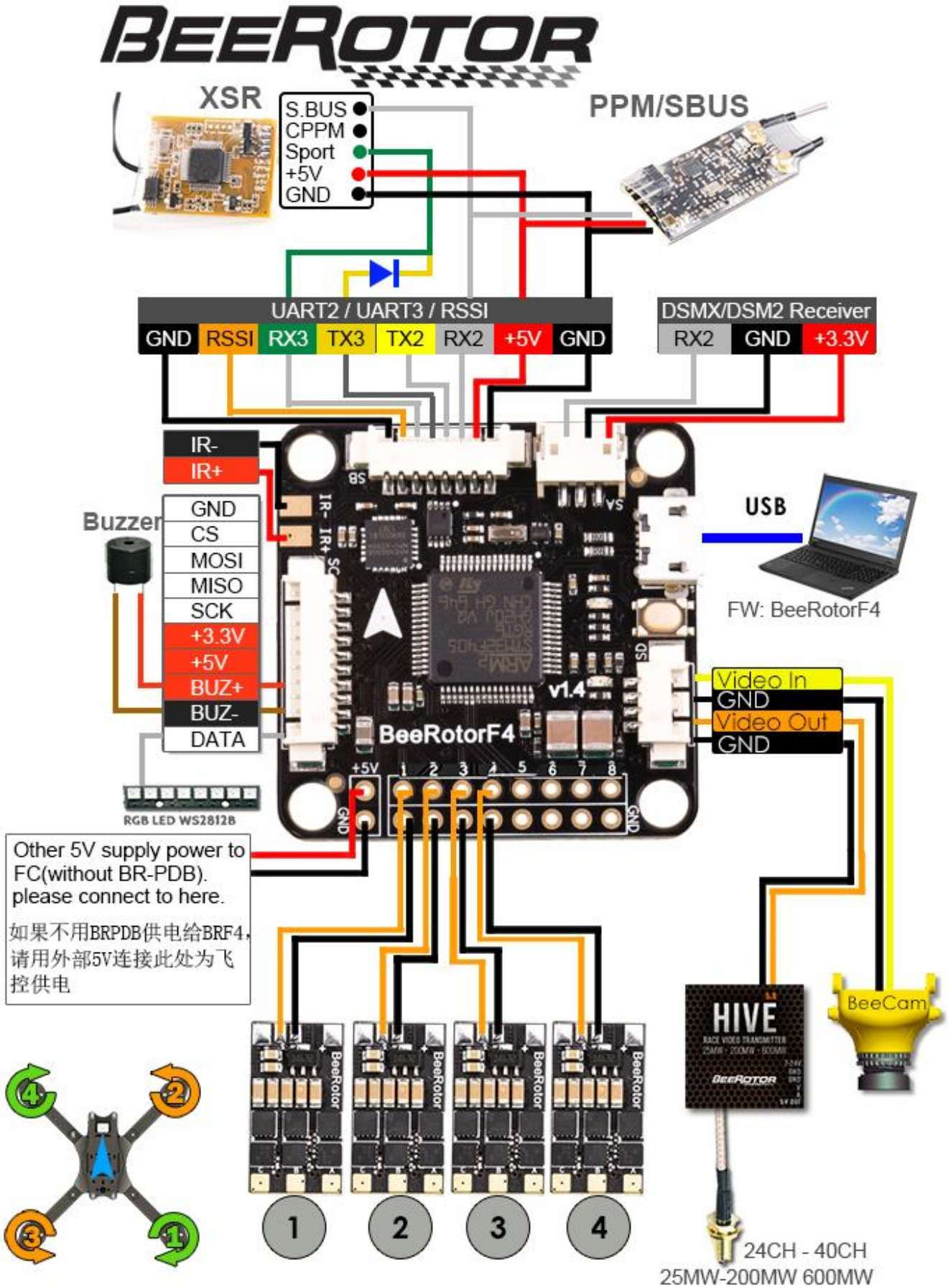
1: Open the UART3

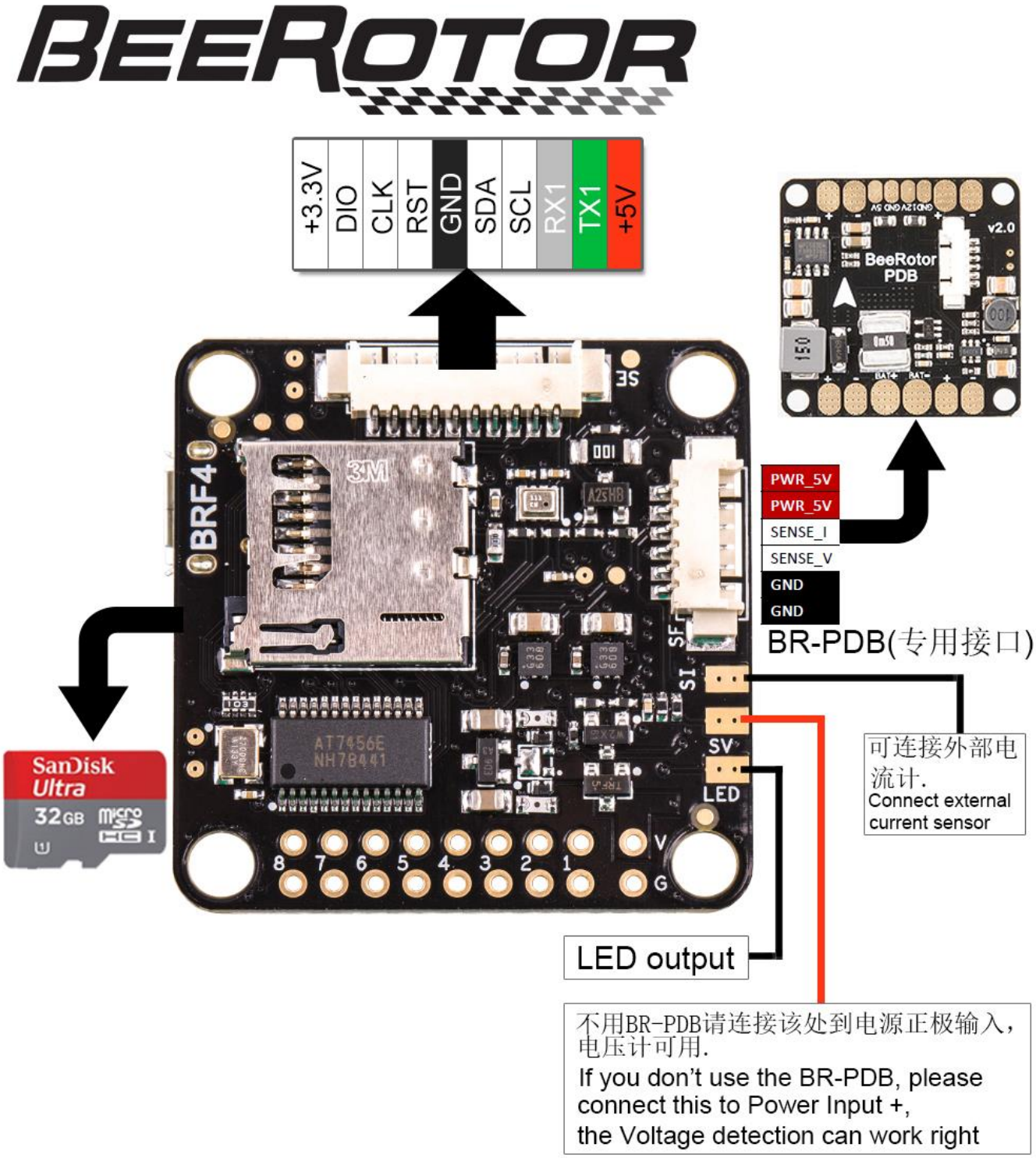


2: Input the CLI Code:

set sport_halfduplex = OFF

save


BEEROTOR
XSR
S.BUS
CPPM
Sport
+5V
GND
PPM/SBUS
UART2 / UART3 / RSSI
GND RSSI RX3 TX3 TX2 RX2 +5V GND
DSMX/DSM2 Receiver
RX2 GND +3.3V
IR-
IR+
Buzzer
GND
CS
MOSI
MISO
SCK
+3.3V
+5V
BUZ+
BUZ-
DATA
RGB LED WS2812B
USB
FW: BeeRotorF4
Video In
GND
Video Out
GND
BeeRotorF4
v1.4
Other 5V supply power to FC(without BR-PDB). please connect to here.
如果不用BRPDB供电给BRF4，请用外部5V连接此处为飞控供电
HIVE
BeeCam
1
2
3
4
24CH - 40CH
25MW-200MW 600MW


+3.3V
DIO
CLK
RST
GND
SDA
SCL
RX1
TX1
+5V
BeeRotor
PDB
v2.0
PWR_5V
PWR_5V
SENSE_I
SENSE_V
GND
GND
BR-PDB(专用接口)
BRF4
3S
SF
SI
SV
LED
V
G
8 7 6 5 4 3 2 1
SanDisk
Ultra
32GB
可连接外部电流计.
Connect external current sensor
LED output
不用BR-PDB请连接该处到电源正极输入，电压计可用.
If you don't use the BR-PDB, please connect this to Power Input +,
the Voltage detection can work right