VBCore BLDC Driver 30A v1.2

Power IN
9-60V
XT30 compatible

+ −

I2C4 voltage select solder jumper
switch 3.3 or 5V for I2C4 connector

5V · 3.3V

C + −
B
A

STM32G4

VOLTBRO.COM
v1.3

USR
LD1
LD2
RST
TERM
ON

User siwtch

8 pin, ON == HIGH

ON
1 2 3 4 5 6 7 8

PB2 PB10 PB11 PB12 PA12 PA11 PA1 PA0

ON
1 2 3 4 5 6 7 8

1 G 5V 3V 6
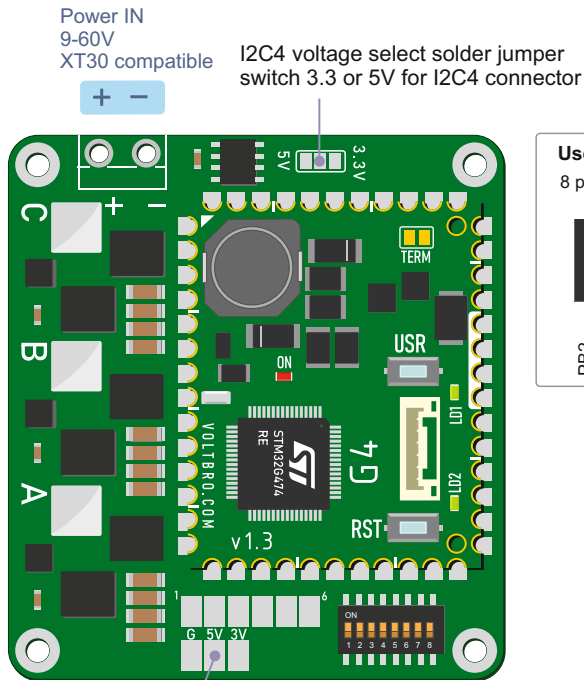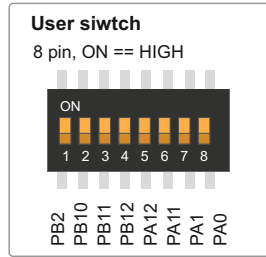
Solder pads
Use common pins with user switch (1-6 inputs)
NOTE: put switches off in case of using solder pads

I2C4_SDA
I2C4_SCL
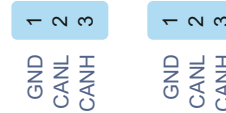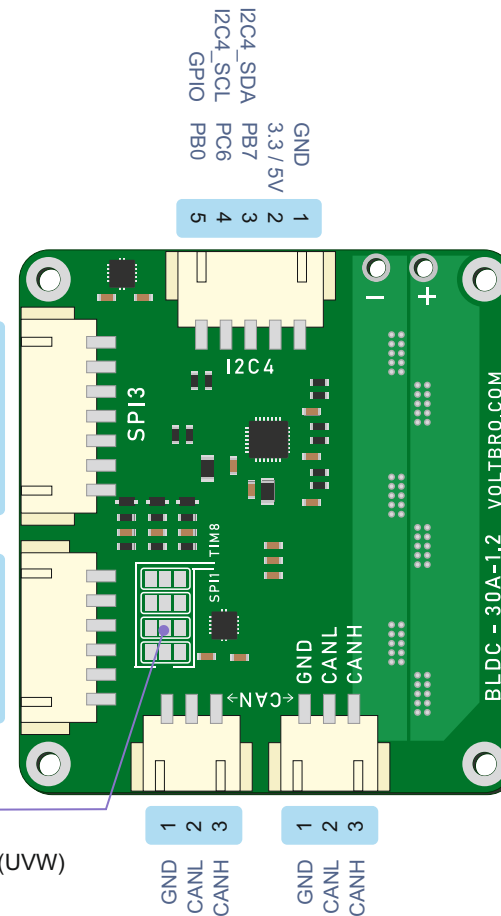GPIO
PB7
PC6
PB0

GND
3.3 / 5V
5 4 3 2 1

I2C 4

SPI3

SPI1 - TIM8

BLDC - 30A-1.2   VOLTBRO.COM

GND	1
5V	2
SPI3_MISO PC11	3
SPI3_MOSI PC12	4
SPI3_SCK PC10	5
SPI3_NSS PA15	6
SPI3_NSS2 PB4	7

GND	1
5V	2
TIM8_CH1 PB6	3
TIM8_CH2 PC7	4
TIM8_CH3 PC8	5
NC NC	6

GND	1
5V	2
SPI1_MISO PA6	3
SPI1_MOSI PA7	4
SPI1_SCK PA5	5
SPI1_NSS PA4	6

←CAN→

GND CANL CANH

1 2 3   1 2 3

GND CANL CANH   GND CANL CANH

**Solder jump switch
SPI1 / TIM8
Use TIM8 for Hall sensors (UVW)**

NOTES:

1. SPI1 and SPI3 connectors connected to controller via level shifters
2. Hall sensors connectors connected to controller via filter
3. I2C4 SCL and SDA lines pulled up - **DON'T USE** internal pull-up
4. To enable power on I2C4 line (including EEPROM) close the voltage select solder jumper

VBCore BLDC Driver v1.2

VIN: 6-60V
MAX CURRENT 30A
MCU: VB32G4 (STM32G474RE)
BLDC DRIVER: DRV8328B
SPI encoder interface
UVW Hall encoder interface
I2C encoder interface
Current sensors
EEPROM
CAN / CAN-FD
Dimentions: 51x56mm
Mount holes: 45x50mm D2.5 mm

VB Cores

www.vbcores.com

Electronics for robotics
research and development

Motor driver

DRV8328B 4.5 to 60 V
Three-phase BLDC Gate Driver

Controll	PIN	Timer
INLA	PB13	TIM1_CH1N
INLB	PB14	TIM1_CH2N
INLC	PB15	TIM1_CH3N
INHA	PA8	TIM1_CH1
INHB	PA9	TIM1_CH2
INHC	PA10	TIM1_CH3
NSLEEP	PB3	
NFAULT	PB5	

Current sensor

ACS711KEXLT-31AB-T
Range: ± 31A
Sensitivity: 45mV/A

Controll	PIN	ADC
I_A	PC1	ADC12_IN7
I_B	PC2	ADC12_IN8
I_C	PC3	ADC12_IN9

EEPROM

256K
AT24C256C-SSHL-T

Controll	PIN	I2C
A0	GND	
A1	GND	
A2	GND	
SCL	PC6	I2C4_SCL
SDA	PB7	I2C4_SDA

Voltage controll

Resistive voltage divider 16:1

Controll	PIN	ADC
V input	PC0	ADC12_IN6