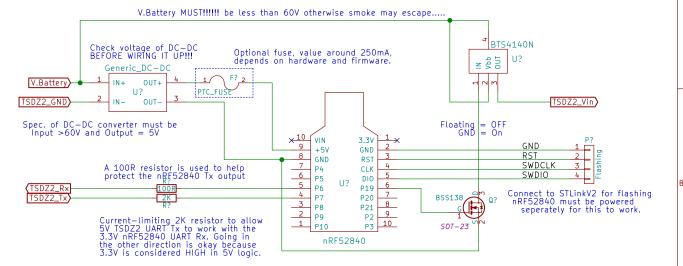If you have the TSDZ2 with the throttle option you will
have the 8-Way cable. If you don't have a throttle, you
are more likely to have the 6-Way cable.
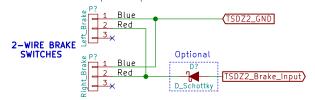
8-Way_Higo

Black/GND	1	TSDZ2_GND
Blue/V.Battery	2	V.Battery
Red/Vin	3	TSDZ2_Vin
Yellow/Rx	4	TSDZ2_Rx
White/5V	5	TSDZ2_5V_Output
Green/Brake	6	TSDZ2_Brake_Input
Orange/Throttle	7	
Brown/Tx	8	TSDZ2_Tx

K?

NOTE!!! Wire colouring and pin numbers
may change! Always check with a meter first.

6-Way_Higo

Black/GND	1	TSDZ2_GND
Purple/Brake	2	TSDZ2_Brake_Input
Orange/Rx	3	TSDZ2_Rx
Green/V.Battery	4	V.Battery
Brown/Tx	5	TSDZ2_Tx
White/Vin	6	TSDZ2_Vin

K?

V.Battery MUST!!!!!! be less than 60V otherwise smoke may escape.....

Check voltage of DC-DC
BEFORE WIRING IT UP!!!

Generic_DC-DC

Optional fuse, value around 250mA,
depends on hardware and firmware.

V.Battery — 1 IN+   OUT+ 4 — PTC_FUSE F?
TSDZ2_GND — 2 IN−   OUT− 3

U?

Spec. of DC-DC converter must be
Input >60V and Output = 5V

A 100R resistor is used to help
protect the nRF52840 Tx output

TSDZ2_Rx — 100R
TSDZ2_Tx — 2K

Current-limiting 2K resistor to allow
5V TSDZ2 UART Tx to work with the
3.3V nRF52840 UART Rx. Going in
the other direction is okay because
3.3V is considered HIGH in 5V logic.

BTS4140N
U?

Floating = OFF
GND = On

nRF52840

10	VIN	3.3V	1
9	+5V	GND	2
8	GND	RST	3
7	P4	CLK	4
6	P5	DIO	5
5	P6	P19	6
4	P7	P20	7
3	P8	P21	8
2	P9	P2	9
1	P10	P3	10

U?

BSS138
Q?
SOT-23

TSDZ2_Vin

P?
Flashing

GND	1
RST	2
SWDCLK	3
SWDIO	4

Connect to STLinkV2 for flashing
nRF52840 must be powered
seperately for this to work.

NOTE!!!! Pinout will depend on powered brake-sensor model — check first!

2-WIRE BRAKE
SWITCHES

P?
Left_Brake

1	Blue
2	Red
3	

TSDZ2_GND

P?
Right_Brake

1	Blue
2	Red
3	

Optional
D?
D_Schottky

TSDZ2_Brake_Input

NOTE — The brake input to the TSDZ2 is pulled up to 5V
by a resistor inside the motor controller. Pull the input
to GND to activate. This is normally done with a switch
(2-Pin Connector). If you have the 8-Way Higo cable
you can use a via a powered brake sensor with 3-wires.

3-WIRE BRAKE
SWITCHES

P?
Left_Brake

1	Black
2	Red
3	Yellow

TSDZ2_GND

PTC_FUSE F?

TSDZ2_5V_Output

P?
Right_Brake

1	Black
2	Red
3	Yellow

Optional
D?
D_Schottky

TSDZ2_Brake_Input

Diode to protect from high voltage into brake input, use
a Schottky type to reduce the dropped voltage when it's
conducting. The Fuse is a PPTC self-resetting type to
protect the TSDZ2 5V — 50mA should be about right.