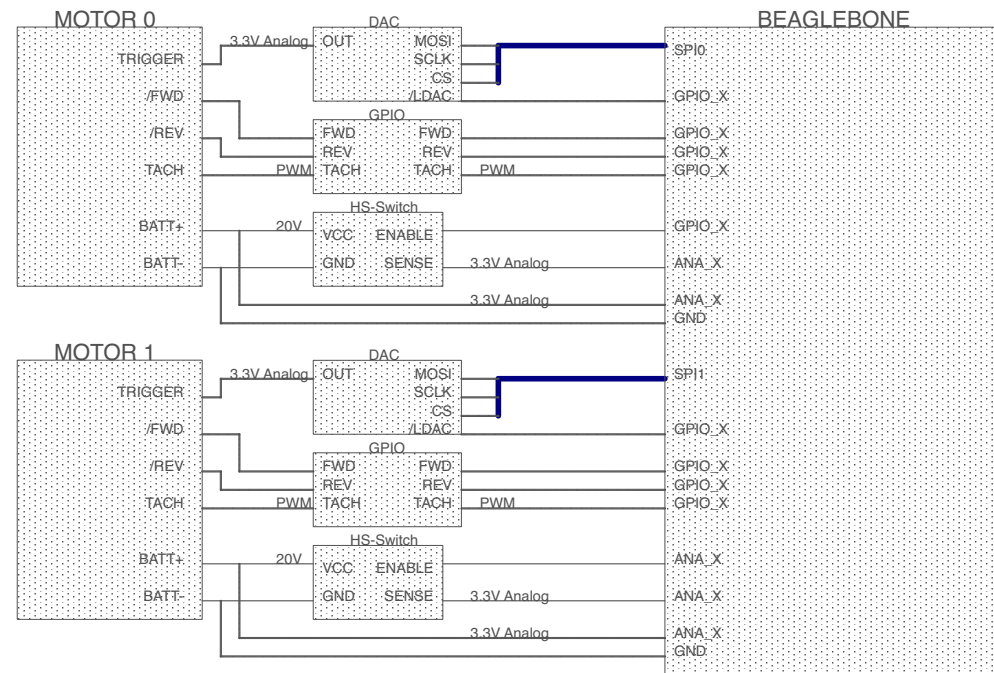


Beaglebone Black Cape Motor Controller

1. Beaglebone Connector
2. Power Supply
3. Connectors
4. DAC and GPIO
5. High Side Switches



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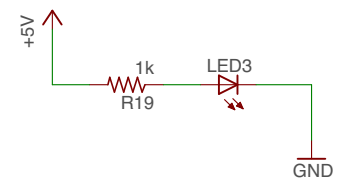
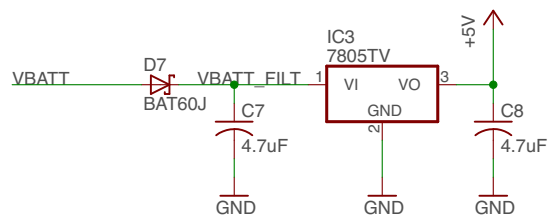
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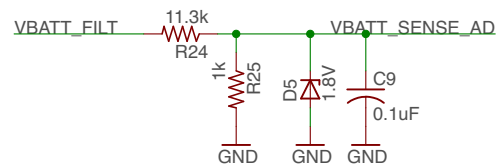
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Power Supply

Be lazy and use a Recom Power R-78E5.0-1.0



VBATT at 14V produces 1.15V on VBATT_SENSE



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1

2

3

4

5

6

Connectors

A

A

B

B

C

C

D

D

E

E

PAD5 ~~X~~ MOTOR0_TRIGGER
 WIREPAD2,54/1,0
 PAD6 ~~X~~ MOTOR0_FWD
 WIREPAD2,54/1,0
 PAD7 ~~X~~ MOTOR0_REV
 WIREPAD2,54/1,0
 PAD12 ~~X~~ MOTOR0_TACH
 WIREPAD2,54/1,0
 PAD8 ~~X~~ MOTOR1_TRIGGER
 WIREPAD2,54/1,0
 PAD9 ~~X~~ MOTOR1_FWD
 WIREPAD2,54/1,0
 PAD10 ~~X~~ MOTOR1_REV
 WIREPAD2,54/1,0
 PAD11 ~~X~~ MOTOR1_TACH
 WIREPAD2,54/1,0

PAD13 ~~X~~ VBATT
 WIREPADSMD2,54-5,08
 PAD14 ~~X~~
 WIREPADSMD2,54-5,08
 GND

PAD1 ~~X~~ VCC
 WIREPADSMD2,54-5,08
 PAD2 ~~X~~ MOTOR0_HS
 WIREPADSMD2,54-5,08

MOTOR0_TACH_FILT

GPIO_48

SPI0_CS

SPI1_MOSI

SPI1_SCLK

VBATT_SENSE_AD

VCC_SENSE_AD

VDD_SENSE_AD

MOTOR1_EN

+3V3

+5V

U\$1
P8

GND
 GPIO1_6
 GPIO1_2
 TIMER4
 TIMER5
 GPIO1_13
 EHRPWM2B
 GPIO1_15
 GPIO0_27
 EHRPWM2A
 GPIO1_30
 GPIO1_4
 GPIO1_0
 GPIO2_22
 GPIO2_23
 UART5_CTSN
 UART4_RTSN
 UART4_CTSN
 UART5_TXD
 GPIO2_12
 GPIO2_10
 GPIO2_8
 GPIO2_6

P9

GND
 VDD_3V3EXP
 VDD_5V
 SYS_5V
 PWR_BUT
 UART4_RXD
 UART4_TXD
 GPIO1_16
 I2C1_SCL
 I2C2_SCL
 UART2_TXD
 GPIO1_17
 GPIO3_21
 GPIO3_19
 SPI1_DO
 SPI1_SCLK
 AIN4
 AIN6
 AIN2
 AIN0
 CLKOUT2
 GND
 GND

BEAGLEBONE_OUTLINE

GND

PAD3 ~~X~~ VDD
 WIREPADSMD2,54-5,08
 PAD4 ~~X~~ MOTOR1_HS
 WIREPADSMD2,54-5,08

GND
 GPIO1_7
 GPIO1_3
 TIMER7
 TIMER6
 GPIO1_12
 GPIO0_26
 GPIO1_14
 GPIO2_1
 GPIO1_31
 GPIO1_5
 GPIO1_1
 GPIO1_29
 GPIO2_24
 GPIO2_25
 UART5_RTSN
 UART3_RTSN
 UART3_CTSN
 UART5_RXD
 GPIO2_13
 GPIO2_11
 GPIO2_9
 GPIO2_7

+5V

+3V3

MOTOR1_TACH_FILT

GPIO_60

GPIO_50

GPIO_51

SPI0_SCLK

SPI1_CS

MOTOR1_SENSE_AD

MOTOR0_SENSE_AD

MOTOR0_EN

GND

TITLE: motor_control_cape

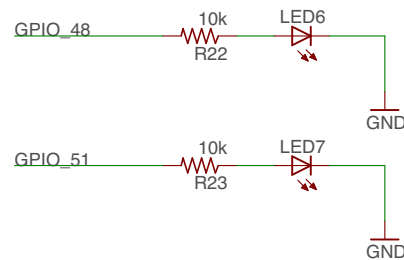
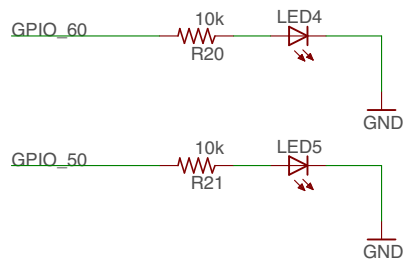
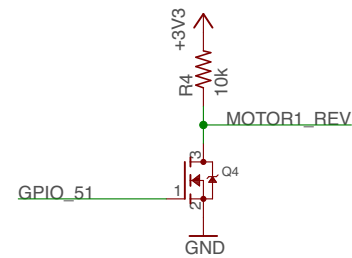
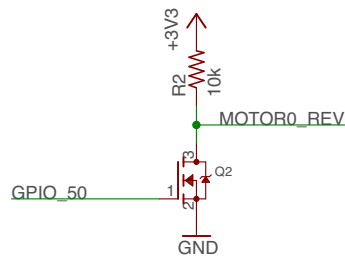
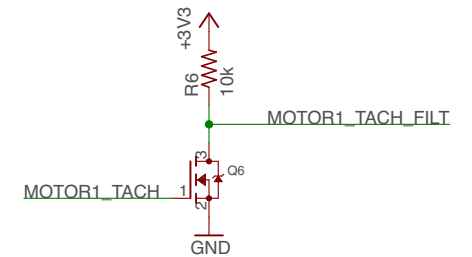
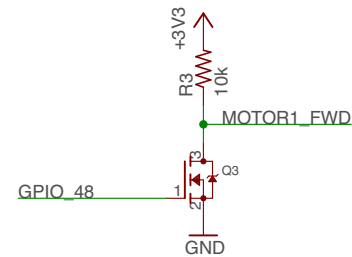
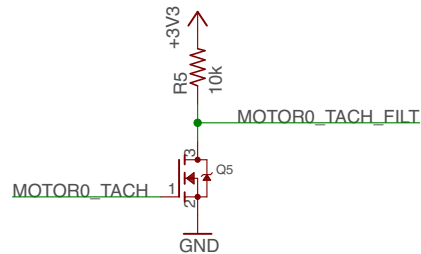
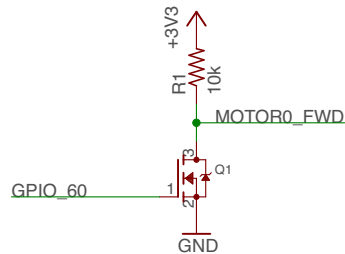
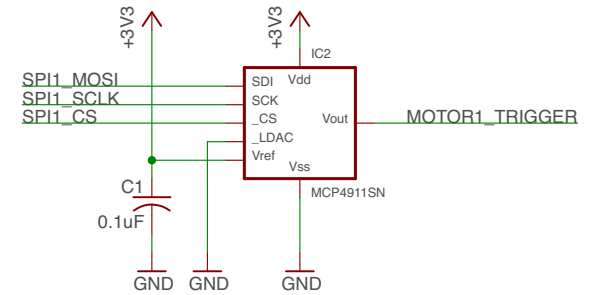
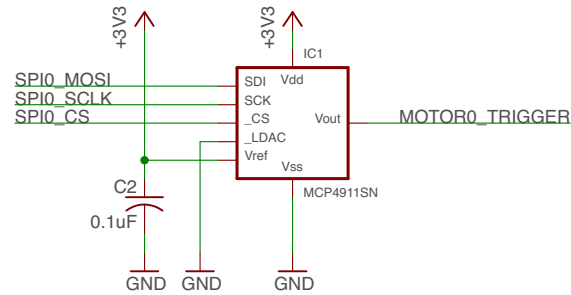
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DAC and GPIO



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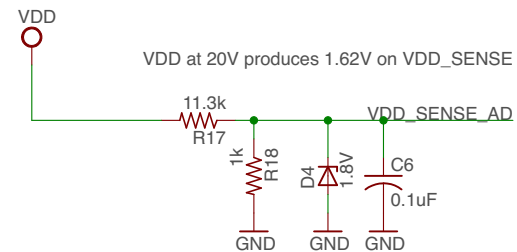
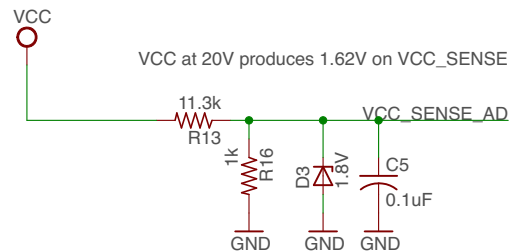
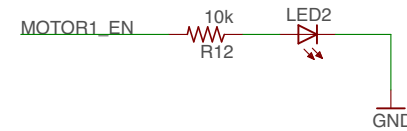
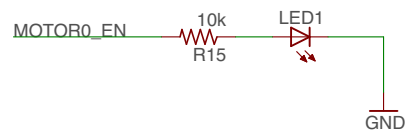
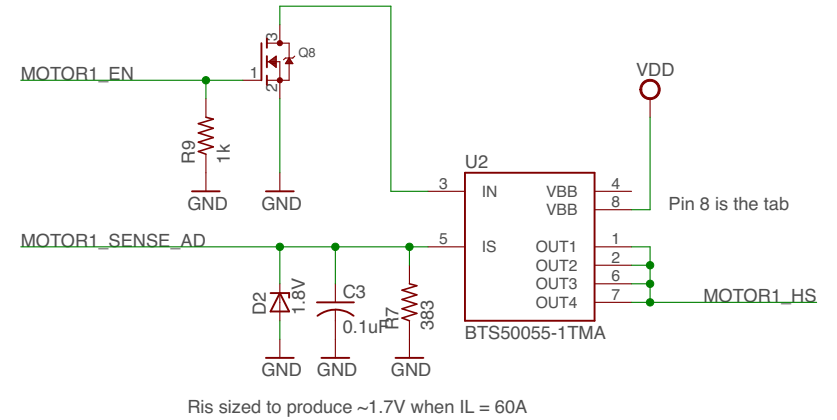
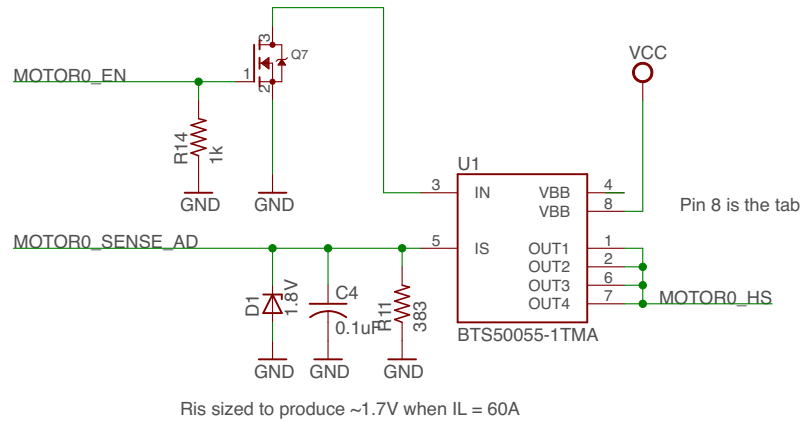
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High Side Switches

VCC, VDD are independently supplied by one 1 battery pack each
~20V fully charged



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