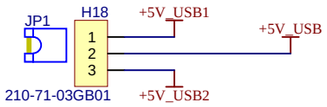
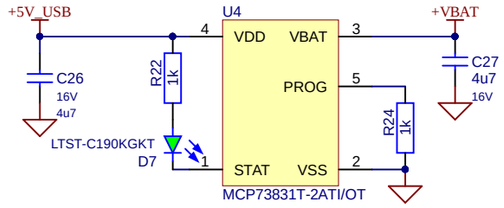
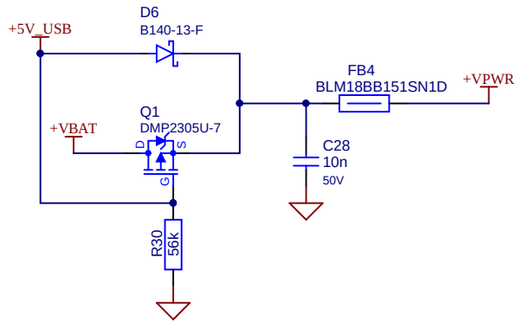
USB input power selector (jumper)



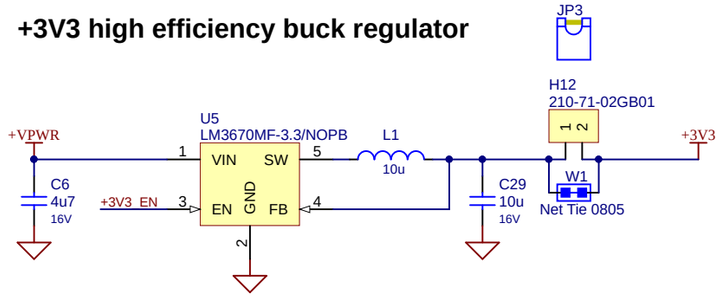
Li-Po Battery Charger



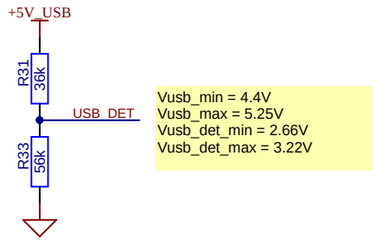
Automatic power path selection



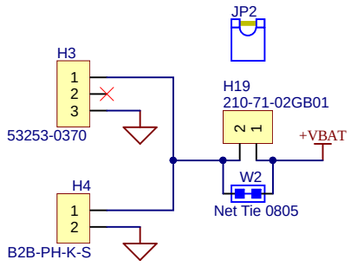
+3V3 high efficiency buck regulator



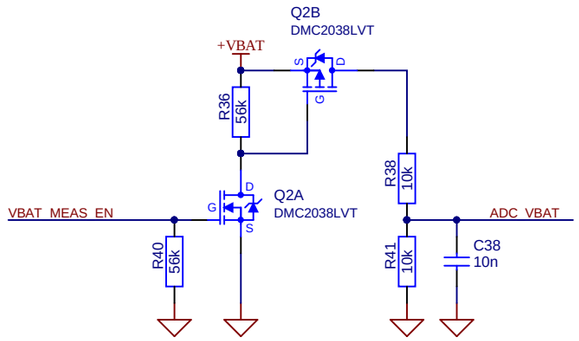
USB power detect



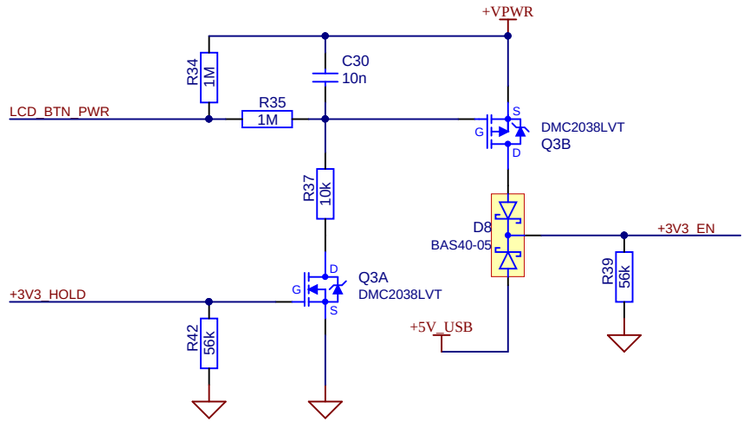
Li-Po Battery Connector (Molex or JST)



Battery Voltage Measurement



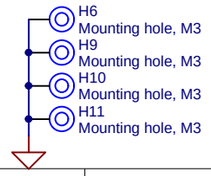
Power on button and microcontroller hold (always on when USB connected)



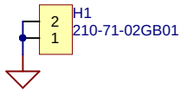
Fiducials

- H5 Fiducial 1mm
- H8 Fiducial 1mm
- H13 Fiducial 1mm
- H14 Fiducial 1mm

Mounting Holes



GND Test Points



BOM

PCB1

P0014-A

PCB NAME: Hero Board		PCB NUMBER: P0012
SCH PAGE TITLE: Power Supply		PCB REV: B
SHEET: 1 OF 3	DATE: 2018-08-14	VARIANT: [No Variations]
DRAWN BY: Pieter Conradie	PROJECT E NGINEER: Pieter Conradie	TEMPLATE REV: 02

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ARM Cortex M0+ Microcontroller

U1
STM32L072RBT6

GPIO3	14	PA0/TIM2_CH1/TSC_G1_IO1/USART2_CTS/TIM2_ETR/USART4_TX/COMP1_OUT/COMP1_INM/ADC_IN0/RTC_TAMP2/WKUP1	
GPIO2	15	PA1/EVENTOUT/TIM2_CH2/TSG_G1_IO2/USART2_RTS/TIM21_ETR/USART4_RX/COMP1_INP/ADC_IN1	
UART2_TX	16	PA2/TIM21_CH1/TIM2_CH3/TSG_G1_IO3/USART2_TX/LPUART1_TX/COMP2_OUT/COMP2_INM/ADC_IN2	
UART2_RX	17	PA3/TIM21_CH2/TIM2_CH4/TSG_G1_IO4/USART2_RX/LPUART1_RX/COMP2_INP/ADC_IN3	
DAC	20	PA4/SPI1_NSS/TSG_G2_IO1/USART2_CK/TIM22_ETR/COMP1_INM/COMP2_INM/ADC_IN4/DAC_OUT1	
GPIO1	21	PA5/SPI1_SCK/TIM2_ETR/TSC_G2_IO2/TIM2_CH1/COMP1_INM/COMP2_INM/ADC_IN5/DAC_OUT2	
GPIO0	22	PA6/SPI1_MISO/TSC_G2_IO3/LPUART1_CTS/TIM22_CH1/EVENTOUT/COMP1_OUT/ADC_IN6	
ADC3_IN	23	PA7/SPI1_MOSI/TIM3_CH2/TSC_G2_IO4/TIM22_CH2/EVENTOUT/COMP2_OUT/ADC_IN7	
USB_DET	41	PA8/MCO/USB_CRS_SYNC/EVENTOUT/USART1_CK/I2C3_SCL	
UART1_TX	42	PA9/MCO/TSC_G4_IO1/USART1_TX/I2C3_SMBA	
UART1_RX	43	PA10/TSC_G4_IO2/USART1_RX/I2C1_SDA	
USB1D_N	44	PA11/SPI1_MISO/EVENTOUT/TSC_G4_IO3/USART1_CTS/COMP1_OUT/USB_DM	
USB1D_P	45	PA12/SPI1_MOSI/EVENTOUT/TSC_G4_IO4/USART1_RTS_DE/COMP2_OUT/USB_DP	
SWDIO	46	PA13/SWDIO/USB_OE/LPUART1_RX	
SWCLK	49	PA14/SWCLK/USART2_TX/LPUART1_TX	
LCD_BTN_5_NO	50	PA15/SPI1_NSS/TIM2_ETR/EVENTOUT/USART2_RX/TIM2_CH1/USART4_RTS_DE	
ADC0_IN	26	PB0/EVENTOUT/TIM3_CH3/TSC_G3_IO2/ADC_IN8/VREF_OUT	
ADC_VBAT	27	PB1/TIM3_CH4/TSC_G3_IO3/LPUART1_RTS/ADC_IN9/VREF_OUT	
SPI2_CS_DF	28	PB2/LPTIM1_OUT/TSC_G3_IO4/I2C3_SMBA	
SPI1_SCK	55	PB3/SPI1_SCK/TIM2_CH2/TSC_G5I_IO1/EVENTOUT/USART1_RTS_DE/USART5_TX/COMP2_INN	
SPI1_MISO	56	PB4/SPI1_MISO/TIM3_CH1/TSC_G5_IO2/TIM22_CH1/USART1_CTS/USART5_RX/I2C3_SDA/COMP2_INP	
SPI1_MOSI	57	PB5/SPI1_MOSI/LPTIM1_IN1/I2C1_SMBA/TIM3_CH2/TIM22_CH2/USART1_CK/USART5_CK/USART5_RTS_DE/COMP2_INP	
SPI1_CS	58	PB6/USART1_TX/I2C1_SCL/LPTIM1_ETR/TSC_G5_IO3/COMP2_INP	
GPIO7_SD_CD	59	PB7/USART1_RX/I2C1_SDA/LPTIM1_IN2/TSC_G5_IO4/USART4_CTS/COMP2_INP/PVD_IN	
I2C1_SCL	61	PB8/TSC_SYNC/I2C1_SCL	
I2C1_SDA	62	PB9/EVENTOUT/I2C1_SDA/SPI2_NSS/I2S2_WS	
SPI2_CS_LCD	29	PB10/TIM2_CH3/TSC_SYNC/LPUART1_TX/SPI2_SCK/I2C2_SCL/LPUART1_RX	
LCD_RS	30	PB11/EVENTOUT/TIM2_CH4/TSC_G6_IO1/LPUART1_RX/I2C2_SDA/LPUART1_TX	
LCD_BACKLIGHT	33	PB12/SPI2_NSS/I2S2_WS/LPUART1_RTS_DE/TSC_G6_IO2/I2C2_SMBA/EVENTOUT	
SPI2_SCK	34	PB13/SPI2_SCK/I2S2_CK/MCO/TSC_G6_IO3/LPUART1_CTS/I2C2_SCL/TIM21_CH1	
SPI2_MISO	35	PB14/SPI2_MISO/I2S2_MCK/RTC_OUT/TSC_G6_IO4/LPUART1_RTS_DE/I2C2_SDA/TIM21_CH2	
SPI2_MOSI	36	PB15/SPI2_MOSI/I2S2_SD/RTC_REFIN	
LCD_BTN_1_LT	8	PC0/LPTIM1_IN1/EVENTOUT/TSC_G7_IO1/LPUART1_RX/I2C3_SCL/ADC_IN10	
GPIO6	9	PC1/LPTIM1_OUT/EVENTOUT/TSC_G7_IO2/LPUART1_TX/I2C3_SDA/ADC_IN11	
GPIO5	10	PC2/LPTIM1_IN2/SPI2_MISO/I2S2_MCK/TSC_G7_IO3/ADC_IN12	
GPIO4	11	PC3/LPTIM1_ETR/SPI2_MOSI/I2S2_SD/TSC_G7_IO4/ADC_IN13	
ADC2_IN	24	PC4/EVENTOUT/LPUART1_TX/ADC_IN14	
ADC1_IN	25	PC5/LPUART1_RX/TSC_G3_IO1/ADC_IN15	
PWM_BUZZER	37	PC6/TIM22_CH1/TIM3_CH1/TSC_G8_IO1	
VBAT_MEAS_EN	38	PC7/TIM22_CH2/TIM3_CH2/TSC_G8_IO2	
+3V3_HOLD	39	PC8/TIM22_ETR/TIM3_CH3/TSC_G8_IO3	
LCD_BTN_6_YES	40	PC9/TIM21_ETR/USB_OE/TIM3_CH4/TSC_G8_IO4/I2C3_SDA	
UART3_TX	51	PC10/LPUART1_TX/USART4_TX	
UART3_RX	52	PC11/LPUART1_RX/USART4_RX	
LCD_BTN_4_DN	53	PC12/USART5_TX/USART4_CK	
LCD_BTN_3_UP	2	PC13/RTC_TAMP1/RTC_TS/RTC_OUT/WKUP2	
	3	PC14/OSC32_IN	
	4	PC15/OSC32_OUT	
SPI1_CS_SD	54	PD2/LPUART1_RTS_DE/TIM3_ETR/USART5_RX	
USR_LED	5	PH0/USB_CRS_SYNC/OSC_IN	
LCD_BTN_2_RT	6	PH1/OSC_OUT	
		NRST	7
		BOOT0	60
		VDD	1, 19, 32, 64
		VSS	18, 31, 63
		VDDA	13
		VSSA	12
		VDD_USB	48
		VSS	47

+3V3
R1 4k7
R2 4k7

C31 100n, C32 100n, C33 100n, C1 100n, C34 10u

FB5 BLM18BB151SN1D
C35 100n, C36 1u

C37 100n

32kHz Crystal

Y1 32.768kHz
C2 18p, C3 18p

Boot select

R3 10k
H15 JP4 210-71-03GB01

Reset Button

R29 4k7
C41 100n
R25 27R
S2

USB Device Port

+5V_USB1
C8 100n
U6 82400102
J1 10118194-0001LF
VBUS, D-, D+, ID, GND, SHIELD
USB1D_N, USB1D_P

DataFlash

R7 56k
U3 AT25SF041-SSHD-B
SPI2_CS_DF, SPI2_SCK, SPI2_MOSI, SPI2_MISO
CS, SCK, SI, SO, VCC, GND, HOLD, WP
C9 100n

Program & Debug

H16 210-71-05GB01
SWCLK, SWDIO, RST
H21 20021121-00010T4LF
SWDIO, SWCLK, RST

UART Header

H17 210-71-04GB01
UART1_RX, UART1_TX

PCB NAME	Hero Board		PCB NUMBER P0012
SCH PAGE TITLE	Microcontroller		PCB REV B
SHEET	2 OF 3	DATE 2018-08-14	VARIANT [No Variations]
DRAWN BY	Pieter Conradie	PROJECT E NGINEER Pieter Conradie	TEMPLATE REV 02

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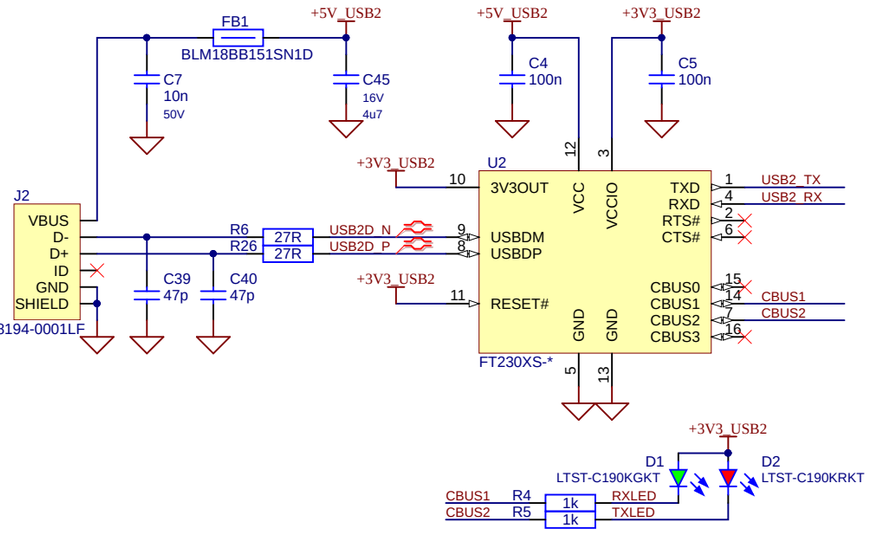
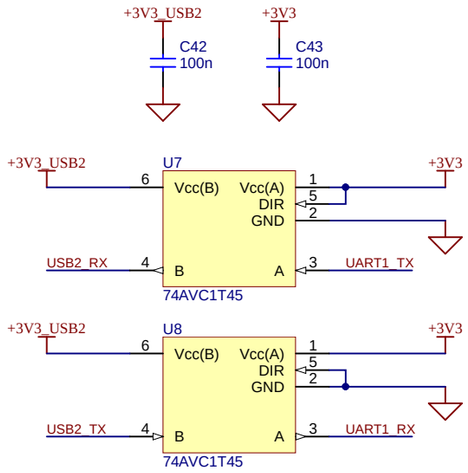
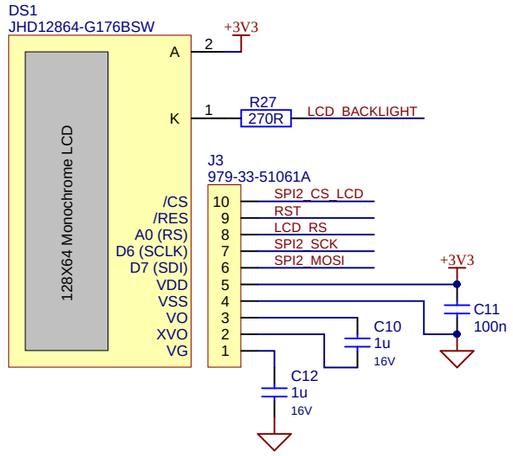
USB-Serial bridge



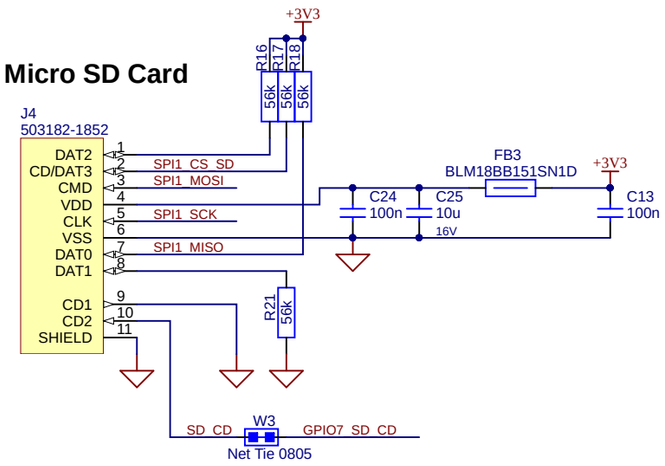
USB-Serial level translation and isolation (USB2 disconnected)



LCD

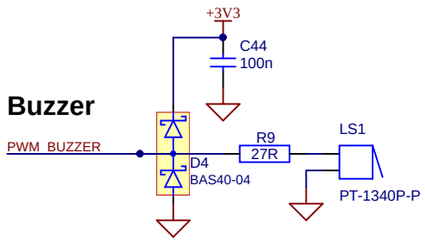


Micro SD Card

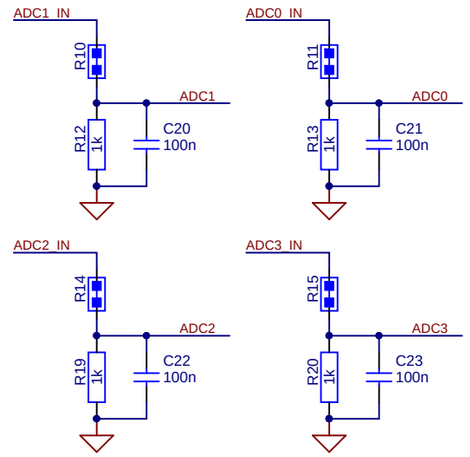


(option to disconnect SD CD from GPIO7)

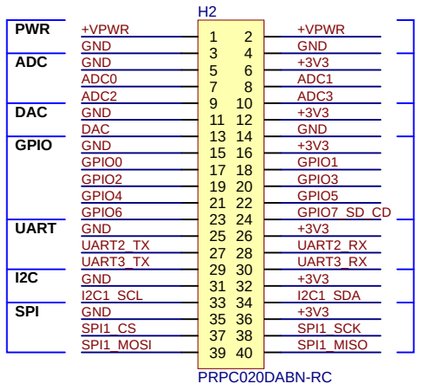
Buzzer



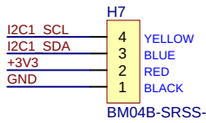
Optional ADC scale and filter circuitry



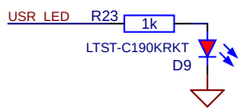
Peripheral connector



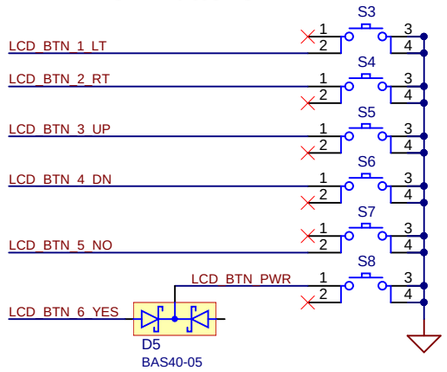
Sparkfun QWIIC Connector



LCD LED

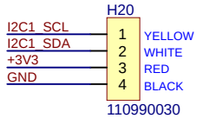


LCD Buttons



(pull-up resistors on micro must be enabled)

Seeed Grove I2C Connector



PCB NAME: Hero Board		PCB NUMBER: P0012
SCH PAGE TITLE: Peripherals		PCB REV: B
SHEET: 3 OF 3	DATE: 2018-08-14	VARIANT: [No Variations]
DRAWN BY: Pieter Conradie	PROJECT E NGINEER: Pieter Conradie	TEMPLATE REV: 02

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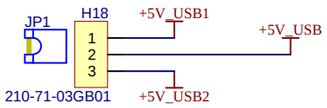
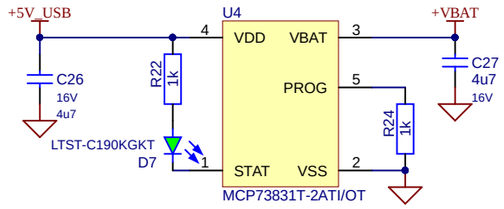
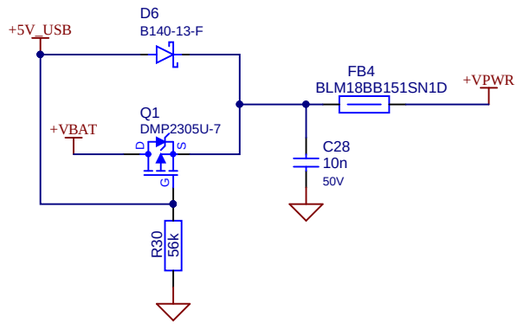
USB input power selector (jumper)



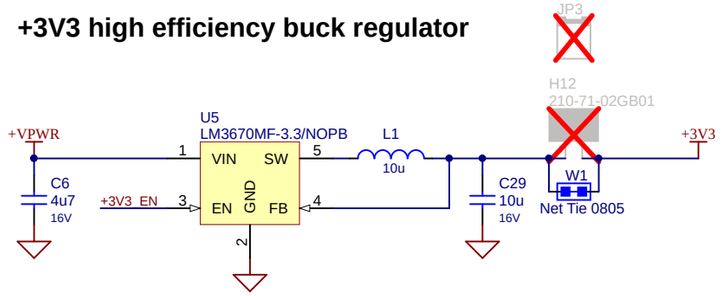
Li-Po Battery Charger



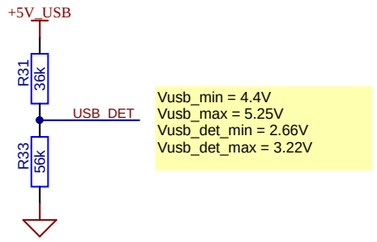
Automatic power path selection



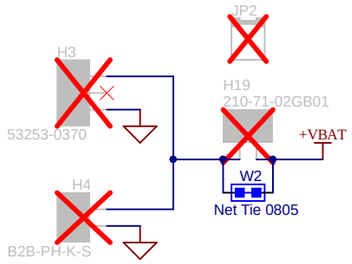
+3V3 high efficiency buck regulator



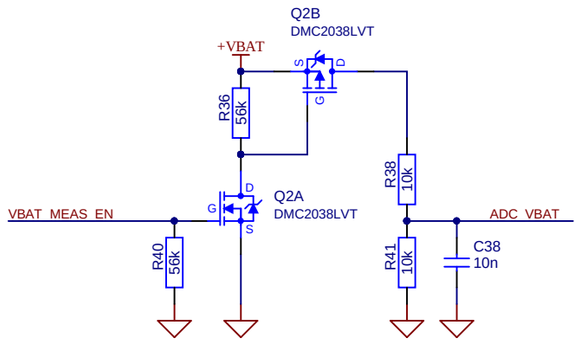
USB power detect



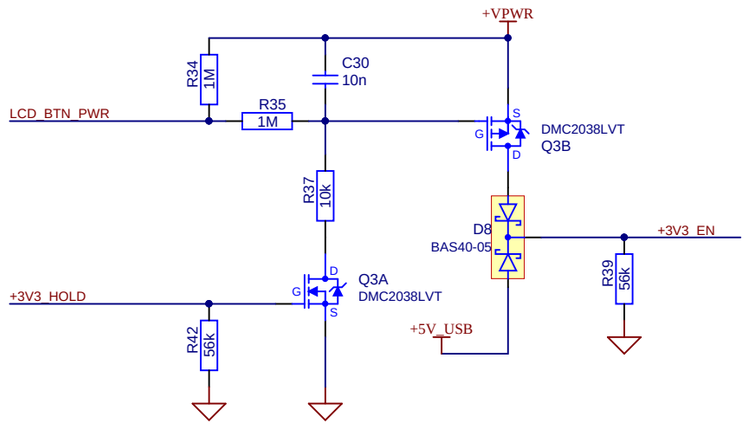
Li-Po Battery Connector (Molex or JST)



Battery Voltage Measurement



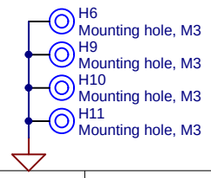
Power on button and microcontroller hold (always on when USB connected)



Fiducials

- H5 Fiducial 1mm
- H8 Fiducial 1mm
- H13 Fiducial 1mm
- H14 Fiducial 1mm

Mounting Holes



GND Test Points

BOM

PCB1

P0014-A

PCB NAME: Hero Board		PCB NUMBER: P0012
SCH PAGE TITLE: Power Supply		PCB REV: B
SHEET: 1 OF 3	DATE: 2018-08-14	VARIANT: deluxe version
DRAWN BY: Pieter Conradie	PROJECT E NGINEER: Pieter Conradie	TEMPLATE REV: 02

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ARM Cortex M0+ Microcontroller

U1
STM32L072RBT6

GPIO3	14	PA0/TIM2_CH1/TSC_G1_IO1/USART2_CTS/TIM2_ETR/USART4_TX/COMP1_OUT/COMP1_INM/ADC_IN0/RTC_TAMP2/WKUP1	VDD	1	
GPIO2	15	PA1/EVENTOUT/TIM2_CH2/TSG_G1_IO2/USART2_RTS/TIM21_ETR/USART4_RX/COMP1_INP/ADC_IN1	VDD	19	
UART2_TX	16	PA2/TIM21_CH1/TIM2_CH3/TSG_G1_IO3/USART2_TX/LPUART1_TX/COMP2_OUT/COMP2_INM/ADC_IN2	VDD	32	
UART2_RX	17	PA3/TIM21_CH2/TIM2_CH4/TSG_G1_IO4/USART2_RX/LPUART1_RX/COMP2_INP/ADC_IN3	VDD	64	
DAC	20	PA4/SPI1_NSS/TSG_G2_IO1/USART2_CK/TIM22_ETR/COMP1_INM/COMP2_INM/ADC_IN4/DAC_OUT1			
GPIO1	21	PA5/SPI1_SCK/TIM2_ETR/TSC_G2_IO2/TIM2_CH1/COMP1_INM/COMP2_INM/ADC_IN5/DAC_OUT2			
GPIO0	22	PA6/SPI1_MISO/TSC_G2_IO3/LPUART1_CTS/TIM22_CH1/EVENTOUT/COMP1_OUT/ADC_IN6	VSS	18	
ADC3_IN	23	PA7/SPI1_MOSI/TIM3_CH2/TSC_G2_IO4/TIM22_CH2/EVENTOUT/COMP2_OUT/ADC_IN7	VSS	31	
USB_DET	41	PA8/MCO/USB_CRS_SYNC/EVENTOUT/USART1_CK/I2C3_SCL	VSS	63	
UART1_TX	42	PA9/MCO/TSC_G4_IO1/USART1_TX/I2C3_SMBA			
UART1_RX	43	PA10/TSC_G4_IO2/USART1_RX/I2C1_SDA			
USB1D_N	44	PA11/SPI1_MISO/EVENTOUT/TSC_G4_IO3/USART1_CTS/COMP1_OUT/USB_DM			
USB1D_P	45	PA12/SPI1_MOSI/EVENTOUT/TSC_G4_IO4/USART1_RTS_DE/COMP2_OUT/USB_DP			
SWDIO	46	PA13/SWDIO/USB_OE/LPUART1_RX			
SWCLK	49	PA14/SWCLK/USART2_TX/LPUART1_TX	VDDA	13	
LCD_BTN_5_NO	50	PA15/SPI1_NSS/TIM2_ETR/EVENTOUT/USART2_RX/TIM2_CH1/USART4_RTS_DE			
ADC0_IN	26	PB0/EVENTOUT/TIM3_CH3/TSC_G3_IO2/ADC_IN8/VREF_OUT	VSSA	12	
ADC_VBAT	27	PB1/TIM3_CH4/TSC_G3_IO3/LPUART1_RTS/ADC_IN9/VREF_OUT			
SPI2_CS_DF	28	PB2/LPTIM1_OUT/TSC_G3_IO4/I2C3_SMBA			
SPI1_SCK	55	PB3/SPI1_SCK/TIM2_CH2/TSC_G5I_IO1/EVENTOUT/USART1_RTS_DE/USART5_TX/COMP2_INN			
SPI1_MISO	56	PB4/SPI1_MISO/TIM3_CH1/TSC_G5_IO2/TIM22_CH1/USART1_CTS/USART5_RX/I2C3_SDA/COMP2_INP			
SPI1_MOSI	57	PB5/SPI1_MOSI/LPTIM1_IN1/I2C1_SMBA/TIM3_CH2/TIM22_CH2/USART1_CK/USART5_CK/USART5_RTS_DE/COMP2_INP			
SPI1_CS	58	PB6/USART1_TX/I2C1_SCL/LPTIM1_ETR/TSC_G5_IO3/COMP2_INP	VDD_USB	48	
GPIO7_SD_CD	59	PB7/USART1_RX/I2C1_SDA/LPTIM1_IN2/TSC_G5_IO4/USART4_CTS/COMP2_INP/PVD_IN			
I2C1_SCL	61	PB8/TSC_SYNC/I2C1_SCL			
I2C1_SDA	62	PB9/EVENTOUT/I2C1_SDA/SPI2_NSS/I2S2_WS	VSS	47	
SPI2_CS_LCD	29	PB10/TIM2_CH3/TSC_SYNC/LPUART1_TX/SPI2_SCK/I2C2_SCL/LPUART1_RX			
LCD_RS	30	PB11/EVENTOUT/TIM2_CH4/TSC_G6_IO1/LPUART1_RX/I2C2_SDA/LPUART1_TX			
LCD_BACKLIGHT	33	PB12/SPI2_NSS/I2S2_WS/LPUART1_RTS_DE/TSC_G6_IO2/I2C2_SMBA/EVENTOUT			
SPI2_SCK	34	PB13/SPI2_SCK/I2S2_CK/MCO/TSC_G6_IO3/LPUART1_CTS/I2C2_SCL/TIM21_CH1			
SPI2_MISO	35	PB14/SPI2_MISO/I2S2_MCK/RTC_OUT/TSC_G6_IO4/LPUART1_RTS_DE/I2C2_SDA/TIM21_CH2			
SPI2_MOSI	36	PB15/SPI2_MOSI/I2S2_SD/RTC_REFIN			
LCD_BTN_1_LT	8	PC0/LPTIM1_IN1/EVENTOUT/TSC_G7_IO1/LPUART1_RX/I2C3_SCL/ADC_IN10			
GPIO6	9	PC1/LPTIM1_OUT/EVENTOUT/TSC_G7_IO2/LPUART1_TX/I2C3_SDA/ADC_IN11			
GPIO5	10	PC2/LPTIM1_IN2/SPI2_MISO/I2S2_MCK/TSC_G7_IO3/ADC_IN12			
GPIO4	11	PC3/LPTIM1_ETR/SPI2_MOSI/I2S2_SD/TSC_G7_IO4/ADC_IN13			
ADC2_IN	24	PC4/EVENTOUT/LPUART1_TX/ADC_IN14			
ADC1_IN	25	PC5/LPUART1_RX/TSC_G3_IO1/ADC_IN15			
PWM_BUZZER	37	PC6/TIM22_CH1/TIM3_CH1/TSC_G8_IO1			
VBAT_MEAS_EN	38	PC7/TIM22_CH2/TIM3_CH2/TSC_G8_IO2			
+3V3_HOLD	39	PC8/TIM22_ETR/TIM3_CH3/TSC_G8_IO3			
LCD_BTN_6_YES	40	PC9/TIM21_ETR/USB_OE/TIM3_CH4/TSC_G8_IO4/I2C3_SDA			
UART3_TX	51	PC10/LPUART1_TX/USART4_TX			
UART3_RX	52	PC11/LPUART1_RX/USART4_RX			
LCD_BTN_4_DN	53	PC12/USART5_TX/USART4_CK			
LCD_BTN_3_UP	2	PC13/RTC_TAMP1/RTC_TS/RTC_OUT/WKUP2			
	3	PC14/OSC32_IN			
	4	PC15/OSC32_OUT			
SPI1_CS_SD	54	PD2/LPUART1_RTS_DE/TIM3_ETR/USART5_RX			
USR_LED	5	PH0/USB_CRS_SYNC/OSC_IN	NRST	7	RST
LCD_BTN_2_RT	6	PH1/OSC_OUT	BOOT0	60	

+3V3
R1 4k7
R2 4k7
SPI2_CS_DF
SPI2_SCK
SPI2_MOSI
SPI2_MISO

+3V3
C31 100n
C32 100n
C33 100n
C1 100n
C34 10u

+3V3
FB5 BLM18BB151SN1D
C35 100n
C36 1u

+3V3
C37 100n

32kHz Crystal

Y1
32.768kHz
C2 18p
C3 18p

Boot select

RST
R3 10k
+3V3
H15
1
2
3
JP4
210-71-03GB01

Reset Button

+3V3
R29 4k7
RST
C41 100n
S2
R25 27R

USB Device Port

+5V_USB1
C8 100n
U6
82400102
J1
VBUS
D-
D+
ID
GND
SHIELD
10118194-0001LF
USB1D_N
USB1D_P

DataFlash

+3V3
R7 56k
U3
CS
SCK
SI
SO
VCC
GND
HOLD
WP
+3V3
C9 100n
AT25SF041-SSHD-B

Program & Debug

H16
210-71-05GB01
SWCLK
SWDIO
RST
+3V3
+3V3
H21
20021121-00010T4LF
SWDIO
SWCLK
RST

UART Header

+3V3
UART1_RX
UART1_TX
H17
210-71-04GB01

PCB NAME: Hero Board			PCB NUMBER: P0012
SCH PAGE TITLE: Microcontroller			PCB REV: B
SHEET: 2 OF 3	DATE: 2018-08-14		VARIANT: deluxe version
DRAWN BY: Pieter Conradie	PROJECT E NGINEER: Pieter Conradie		TEMPLATE REV: 02

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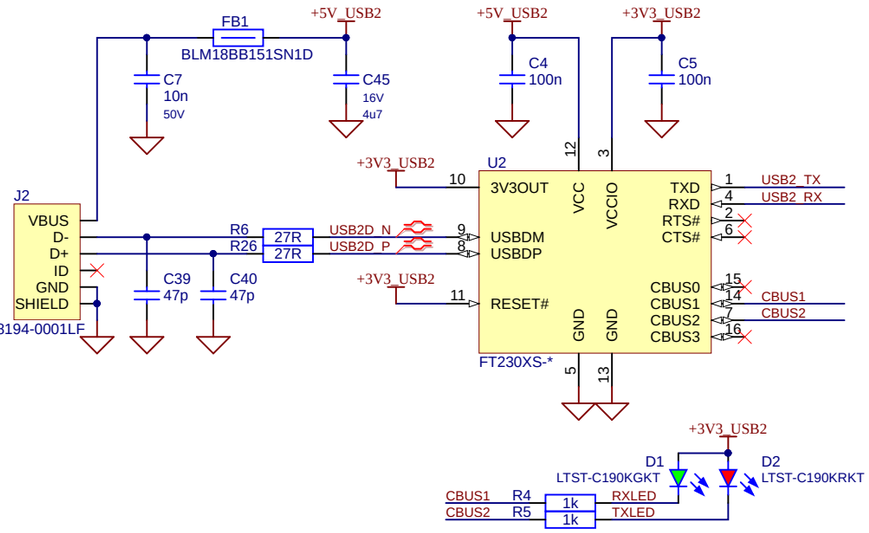
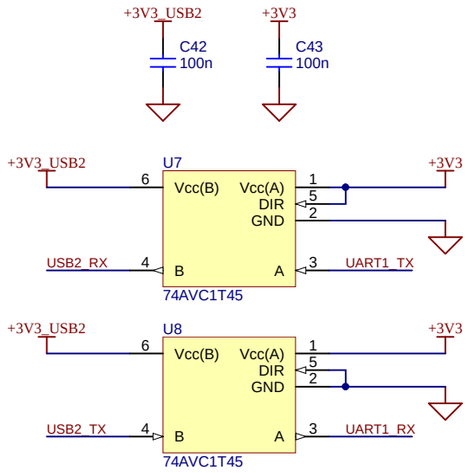
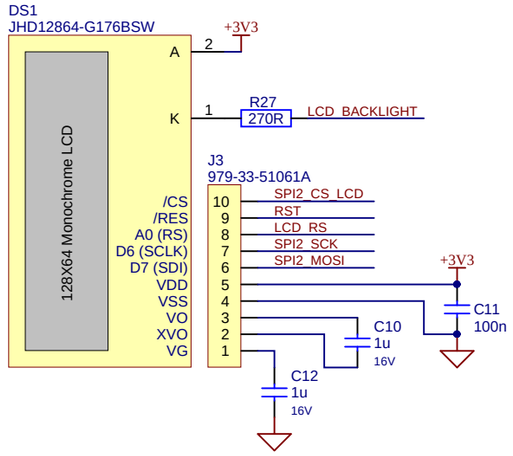
USB-Serial bridge



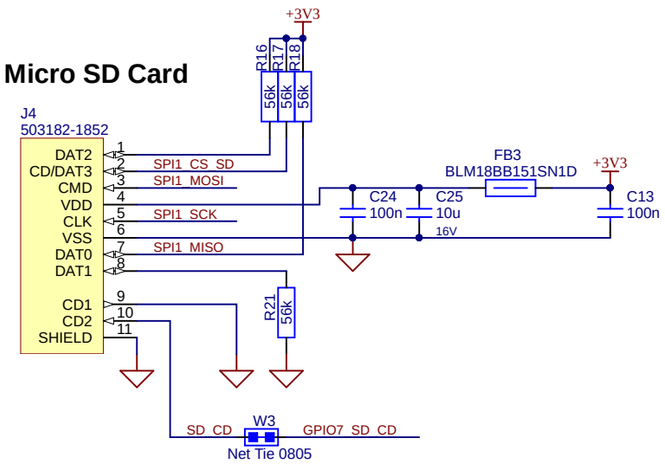
USB-Serial level translation and isolation (USB2 disconnected)



LCD

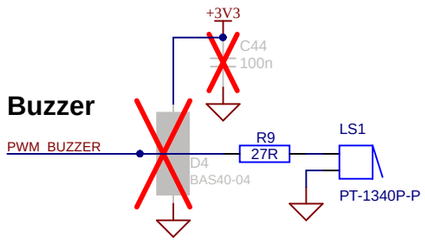


Micro SD Card

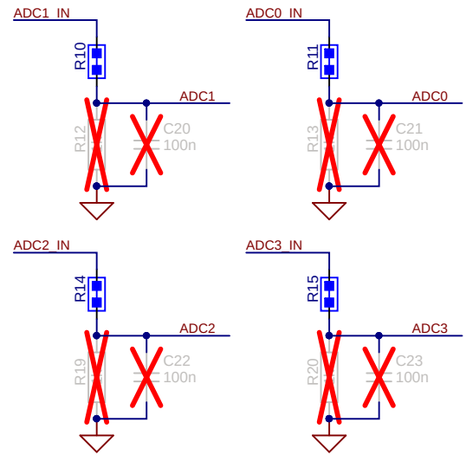


(option to disconnect SD CD from GPIO7)

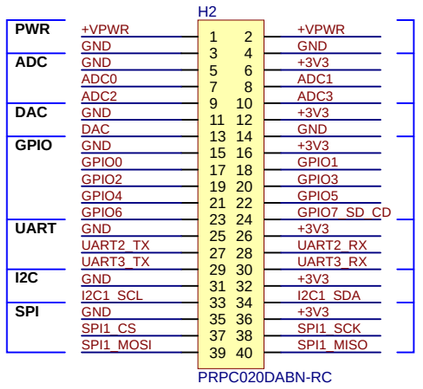
Buzzer



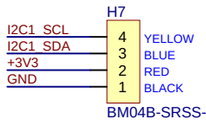
Optional ADC scale and filter circuitry



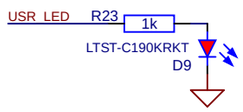
Peripheral connector



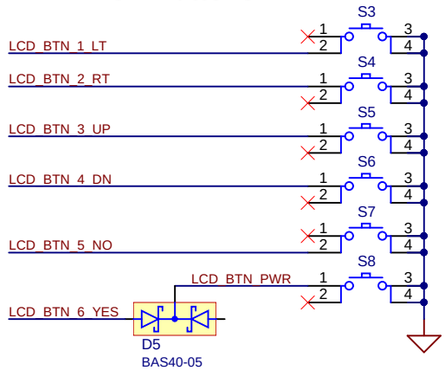
Sparkfun QWIIC Connector



LCD LED

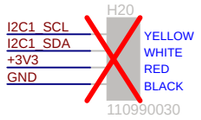


LCD Buttons



(pull-up resistors on micro must be enabled)

Seeed Grove I2C Connector



PCB NAME: Hero Board		PCB NUMBER: P0012
SCH PAGE TITLE: Peripherals		PCB REV: B
SHEET: 3 OF 3	DATE: 2018-08-14	VARIANT: deluxe version
DRAWN BY: Pieter Conradie	PROJECT E NGINEER: Pieter Conradie	TEMPLATE REV: 02

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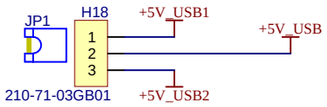
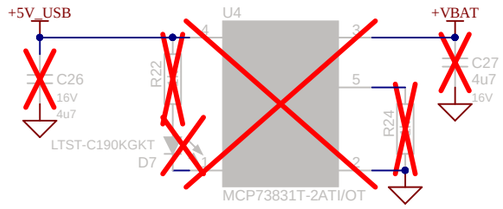
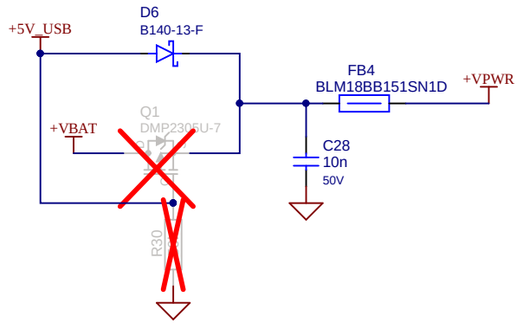
USB input power selector (jumper)



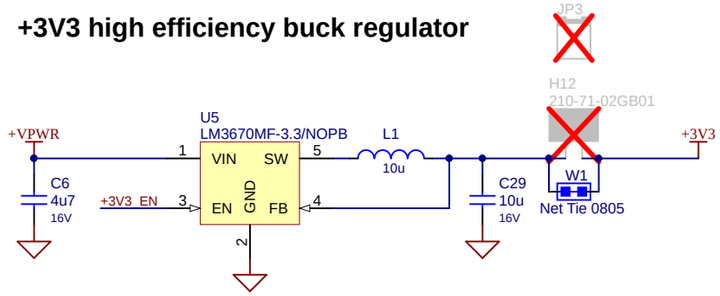
Li-Po Battery Charger



Automatic power path selection



+3V3 high efficiency buck regulator

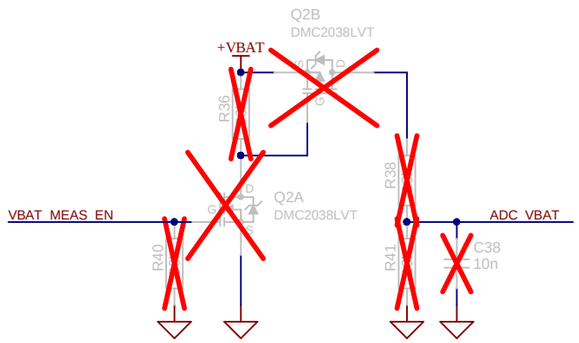


USB power detect

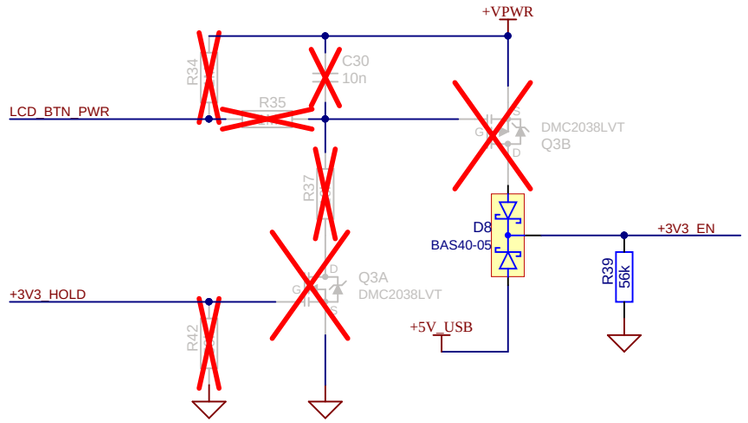
Vusb_min = 4.4V
Vusb_max = 5.25V
Vusb_det_min = 2.66V
Vusb_det_max = 3.22V

Li-Po Battery Connector (Molex or JST)

Battery Voltage Measurement



Power on button and microcontroller hold (always on when USB connected)



Fiducials

- H5 Fiducial 1mm
- H8 Fiducial 1mm
- H13 Fiducial 1mm
- H14 Fiducial 1mm

Mounting Holes

- H6 Mounting hole, M3
- H9 Mounting hole, M3
- H10 Mounting hole, M3
- H11 Mounting hole, M3

GND Test Points

H1
210-71-02GB01

BOM

PCB1
P0014-A

PCB NAME: Hero Board		PCB NUMBER: P0012
SCH PAGE TITLE: Power Supply		PCB REV: B
SHEET: 1 OF 3	DATE: 2018-08-14	VARIANT: lite version
DRAWN BY: Pieter Conradie	PROJECT E NGINEER: Pieter Conradie	TEMPLATE REV: 02

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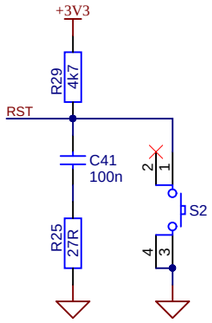
ARM Cortex M0+ Microcontroller

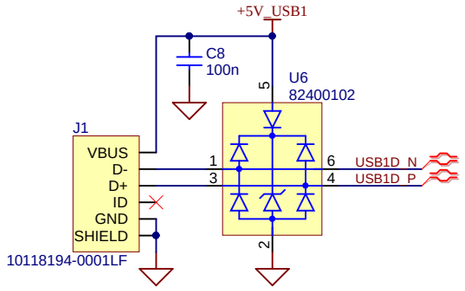
32kHz Crystal

Boot select

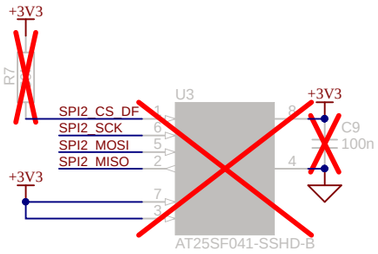
Reset Button



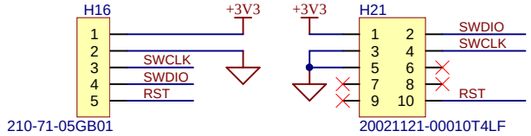
USB Device Port



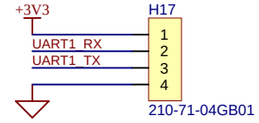
DataFlash



Program & Debug



UART Header



PCB NAME: Hero Board		PCB NUMBER: P0012
SCH PAGE TITLE: Microcontroller		PCB REV: B
SHEET: 2 OF 3	DATE: 2018-08-14	VARIANT: lite version
DRAWN BY: Pieter Conradie	PROJECT E NGINEER: Pieter Conradie	TEMPLATE REV: 02

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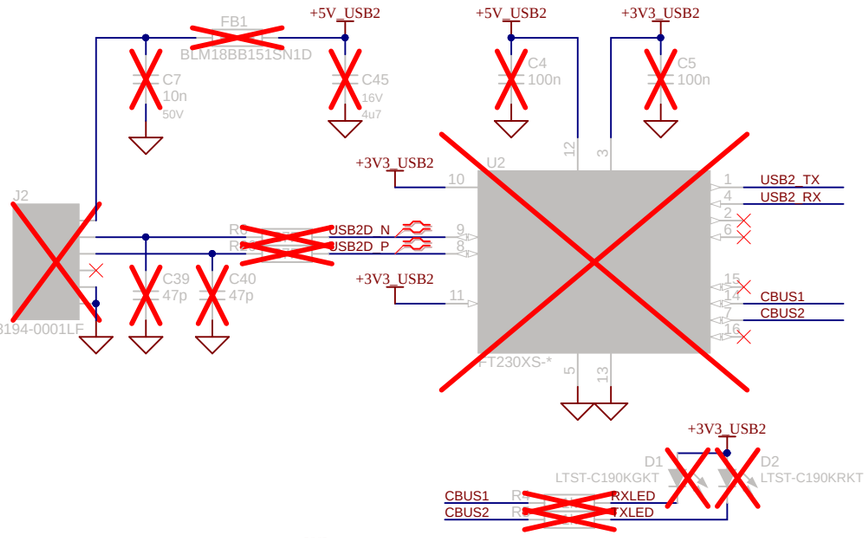
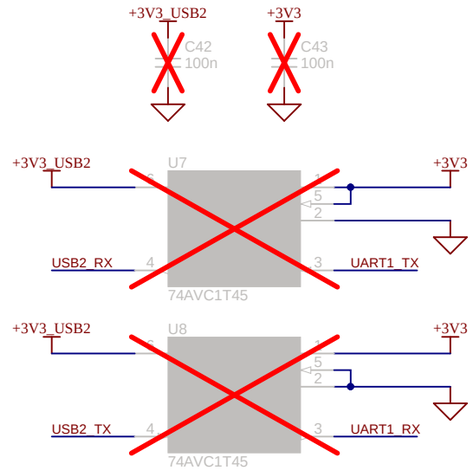
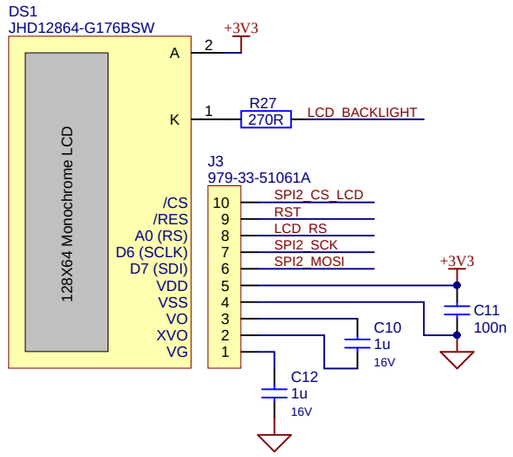
USB-Serial bridge



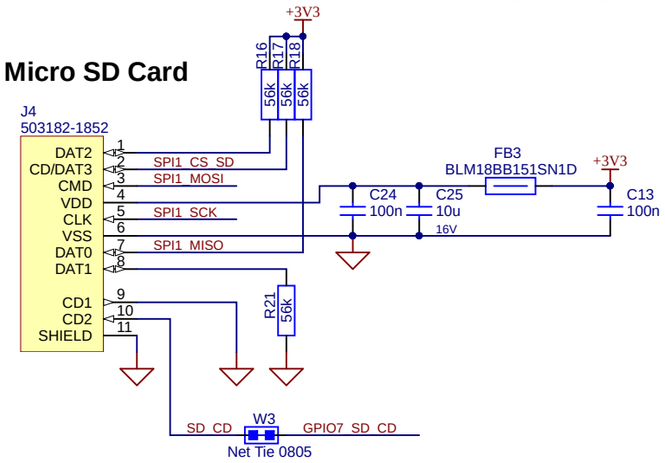
USB-Serial level translation and isolation (USB2 disconnected)



LCD

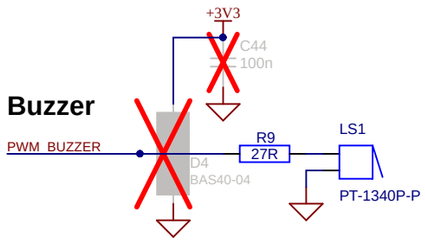


Micro SD Card

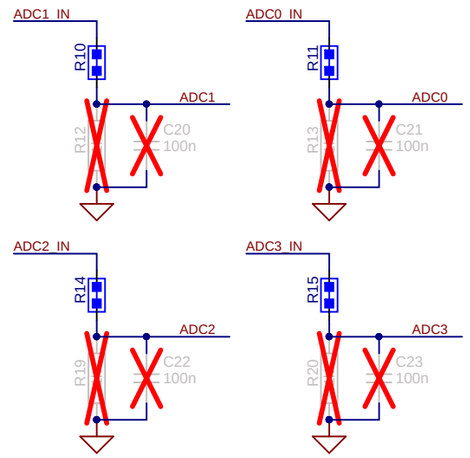


(option to disconnect SD CD from GPIO7)

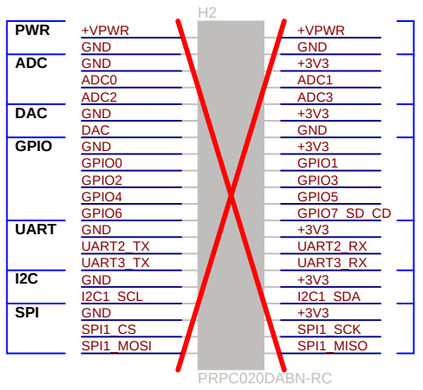
Buzzer



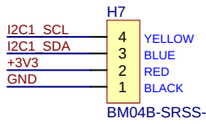
Optional ADC scale and filter circuitry



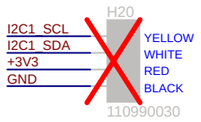
Peripheral connector



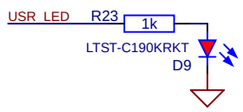
Sparkfun QWIIC Connector



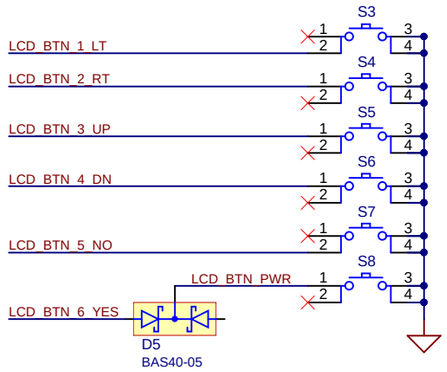
Seeed Grove I2C Connector



LCD LED



LCD Buttons



(pull-up resistors on micro must be enabled)

PCB NAME: Hero Board		PCB NUMBER: P0012
SCH PAGE TITLE: Peripherals		PCB REV: B
SHEET: 3 OF 3	DATE: 2018-08-14	VARIANT: lite version
DRAWN BY: Pieter Conradie	PROJECT E NGINEER: Pieter Conradie	TEMPLATE REV: 02

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