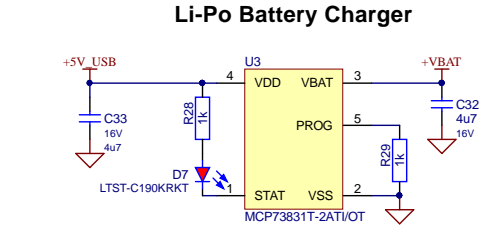


A

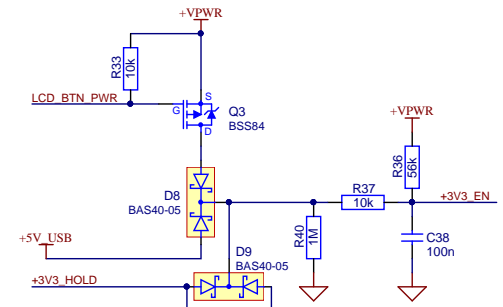


C

D

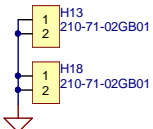


PCB1
P0014




Mounting Holes

- ## GND Test Points



BOM

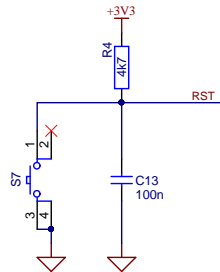


	PCB NAME <u>PX-HERO Board</u>		PCB NUMBER <u>P0012</u>
	SCH PAGE TITLE <u>Power Supply</u>		PCB REV <u>D</u>
	SHEET <u>1 OF 3</u>	DATE <u>2019-02-26</u>	VARIANT <u>[No Variations]</u>
	DRAWN BY <u>Pieter Conradie</u>	PROJECT E ENGINEER <u>Pieter Conradie</u>	TEMPLATE REV <u>02</u>
	COPYRIGHT © 2019 PICONOMIX (https://piconomix.com) ALL RIGHTS RESERVED		

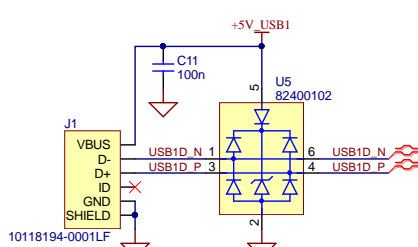
STM32 ARM Cortex M0+ Microcontroller



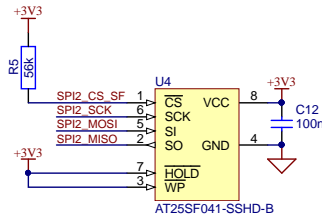
Reset Button



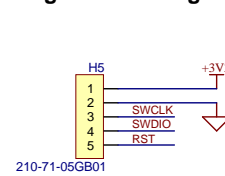
USB Device Port



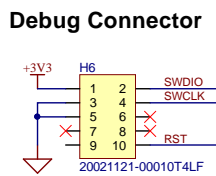
Serial Flash



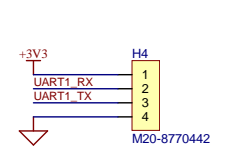
Program & Debug



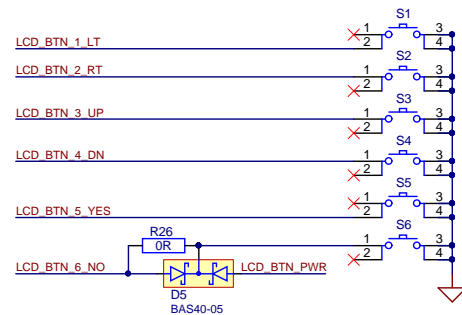
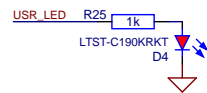
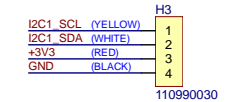
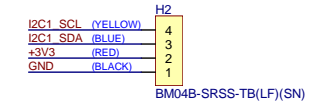
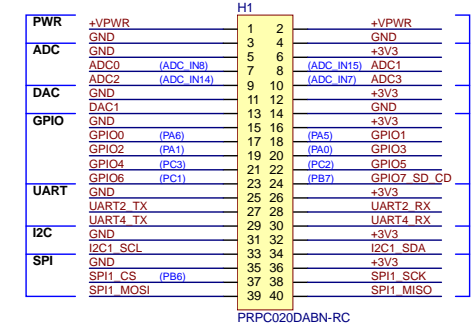
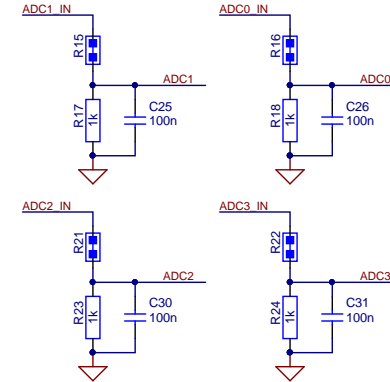
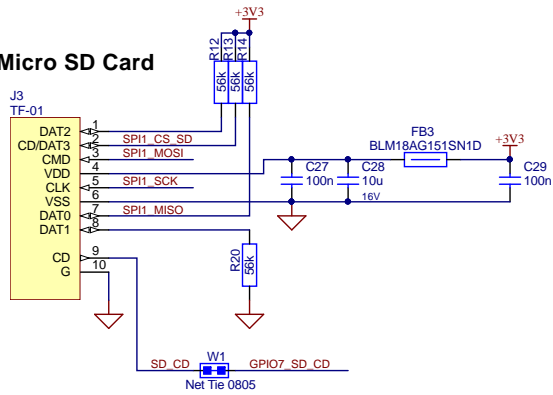
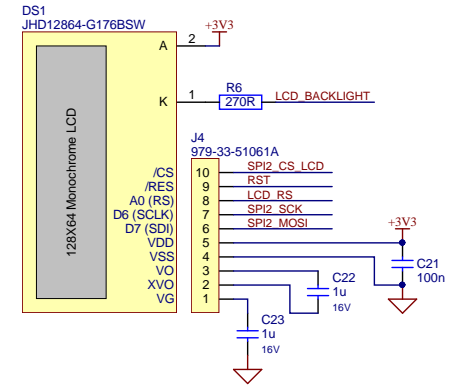
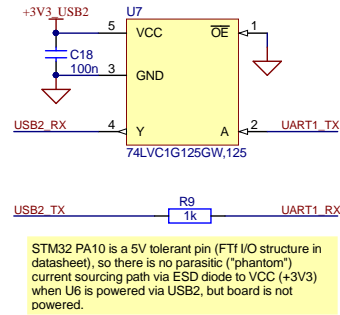
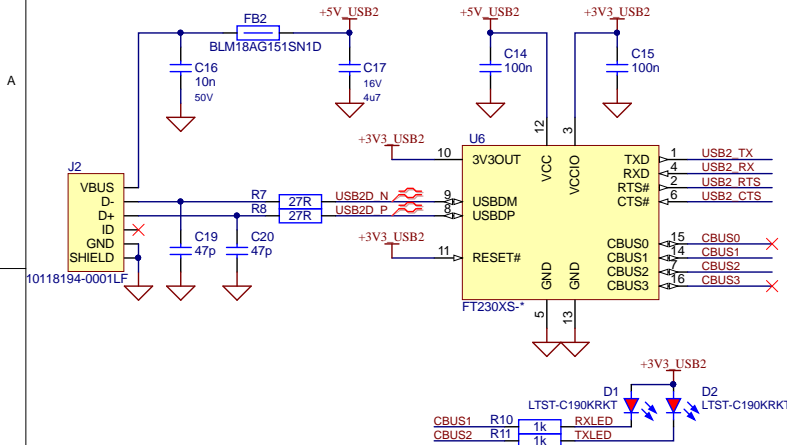
Standard ARM Cortex Debug Connector





UART Header

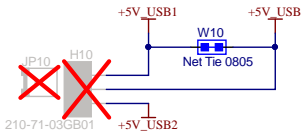


PCB NAME PX-HERO Board		PCB NUMBER P0012
SCH PAGE TITLE Microcontroller		PCB REV D
SHEET 2 OF 3	DATE 2019-02-26	VARIANT [No Variations]
DRAWN BY Pieter Conradie	PROJECT ENGINEER Pieter Conradie	TEMPLATE REV 02
COPYRIGHT © 2019 PICONOMIX (https://piconomix.com) ALL RIGHTS RESERVED		

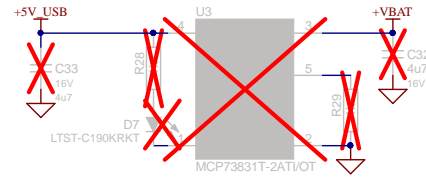


	PCB NAME PX-HERO Board		PCB NUMBER P0012
	SCH PAGE TITLE Peripherals		PCB REV 0
	SHEET 3 OF 3	DATE 2019-02-26	VARIANT [No Variations]
	DRAWN BY Pieter Conradie	PROJECT E ENGINEER Pieter Conradie	TEMPLATE REV 02
	<div>  <div> 2019-07-31 12:02:21 </div> </div>		

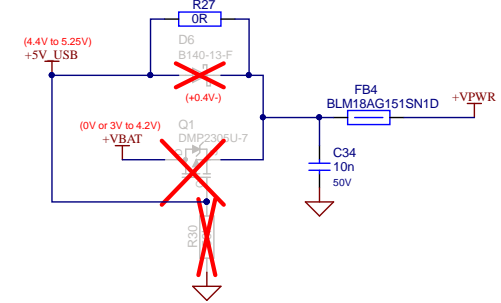
USB input power selector (jumper)



Li-Po Battery Charger

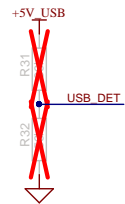


Automatic power path selection

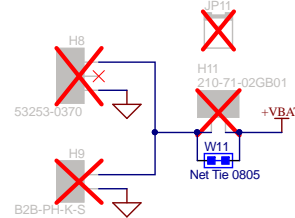


USB power detect

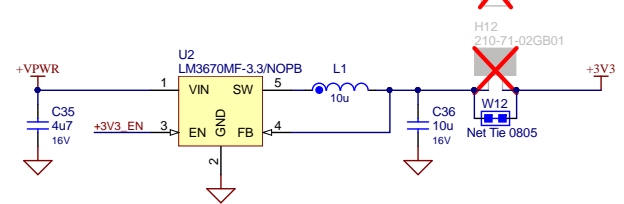
Vusb_min = 4.4V
Vusb_max = 5.25V
Vusb_det_min = 2.66V
Vusb_det_max = 3.22V



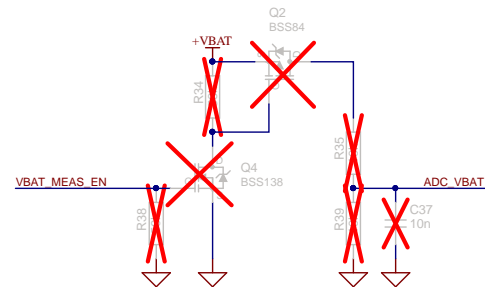
Li-Po Battery Connector (Molex or JST)



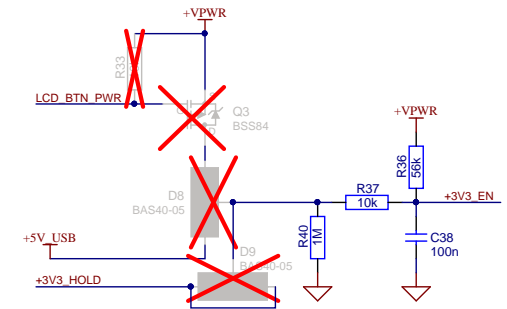
+3V3 high efficiency buck regulator



Battery Voltage Measurement



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



Fiducials

- H14 Fiducial 1mm
- H16 Fiducial 1mm
- H19 Fiducial 1mm
- H21 Fiducial 1mm

Mounting Holes

- H15 Mounting hole, M3
- H17 Mounting hole, M3
- H20 Mounting hole, M3
- H22 Mounting hole, M3

GND Test Points



BOM

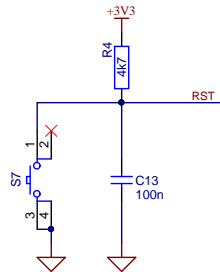
PCB1
P0014

PCB NAME PX-HERO Board		PCB NUMBER P0012
SCH PAGE TITLE Power Supply		PCB REV D
SHEET 1 OF 3	DATE 2019-02-26	VARIANT lite edition
DRAWN BY Pieter Conradie	PROJECT ENGINEER Pieter Conradie	TEMPLATE REV 02
COPYRIGHT © 2019 PICONOMIX (https://piconomix.com) ALL RIGHTS RESERVED		

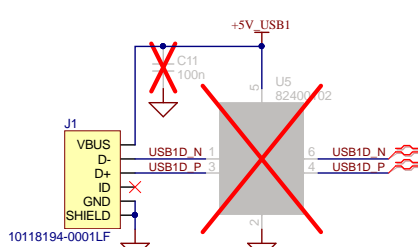
STM32 ARM Cortex M0+ Microcontroller



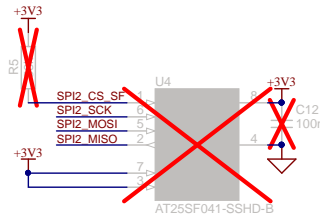
Reset Button



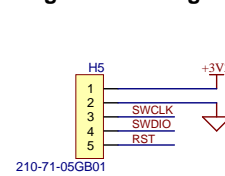
USB Device Port



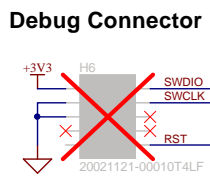
Serial Flash



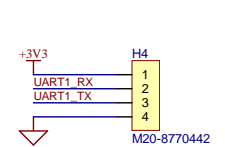
Program & Debug

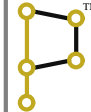


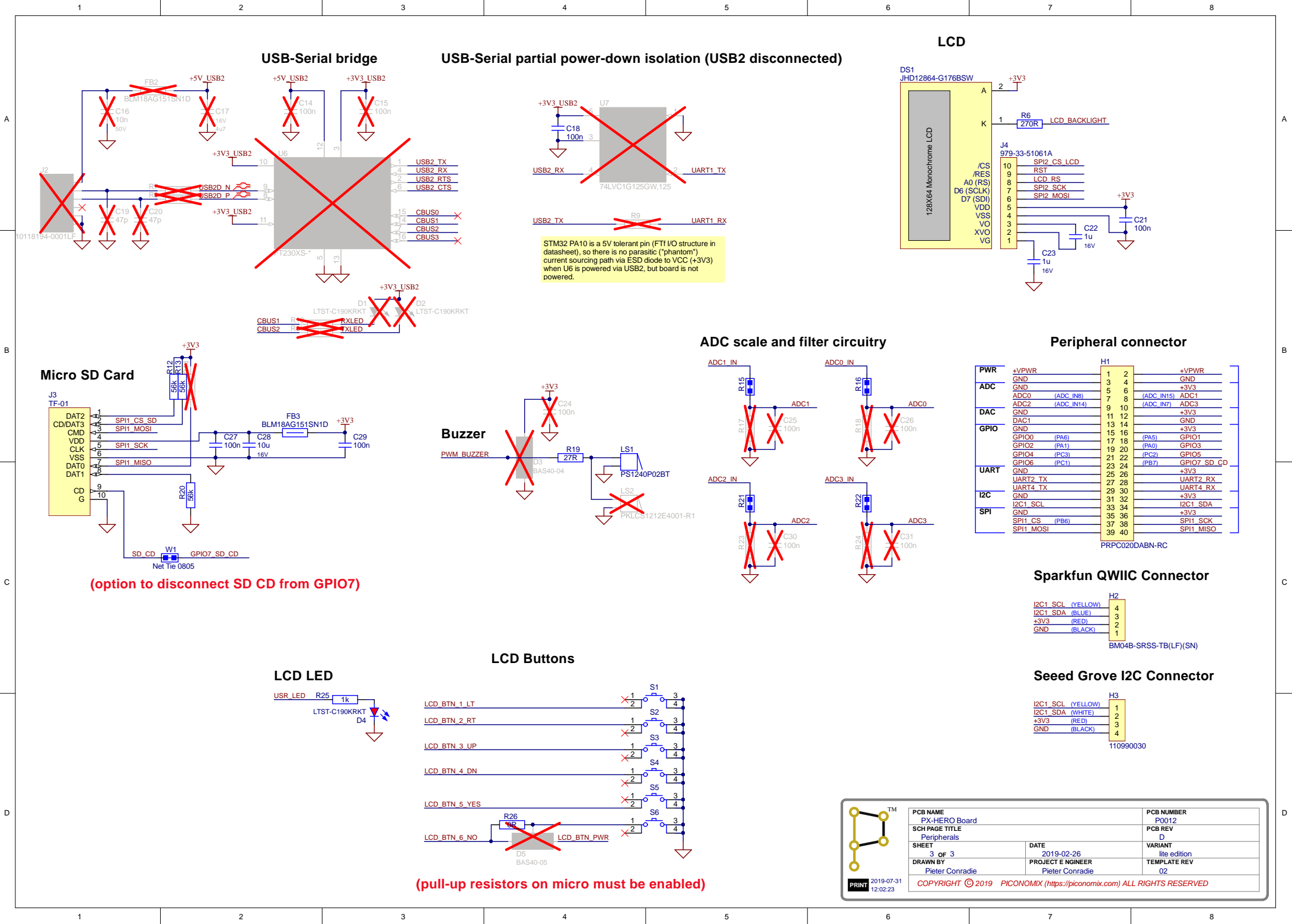
Standard ARM Cortex Debug Connector



UART Header



		PCB NAME PX-HERO Board		PCB NUMBER P0012	
SCH PAGE TITLE Microcontroller		DATE 2019-02-26		PCB REV D	
SHEET 2 OF 3		DRAWN BY Pieter Conradie		VARIANT lite edition	
PROJECT E ENGINEER Pieter Conradie		TEMPLATE REV 02		COPYRIGHT © 2019 PICONOMIX (https://piconomix.com) ALL RIGHTS RESERVED	



USB-Serial bridge

USB-Serial partial power-down isolation (USB2 disconnected)

LCD

Micro SD Card

ADC scale and filter circuitry

Peripheral connector

PWR	+VPWR	1	2	+VPWR
ADC	GND	3	4	GND
	GND	5	6	+3V3
	ADC0 (ADC IN8)	7	8	(ADC IN15) ADC1
	ADC2 (ADC IN14)	9	10	(ADC IN7) ADC3
DAC	GND	11	12	+3V3
	DAC1	13	14	GND
GPIO	GND	15	16	+3V3
	GPIO0 (PA6)	17	18	(PA5) GPIO1
	GPIO2 (PA1)	19	20	(PA0) GPIO3
	GPIO4 (PC3)	21	22	(PC2) GPIO5
	GPIO6 (PC1)	23	24	(PB7) GPIO7 SD GD
UART	GND	25	26	+3V3
	UART2 TX	27	28	UART2 RX
I2C	UART4 TX	29	30	UART4 RX
	I2C1 SCL	31	32	+3V3
	GND	33	34	I2C1 SDA
SPI	GND	35	36	+3V3
	SPI1 CS (PB6)	37	38	SPI1 SCK
	SPI1 MOSI	39	40	SPI1 MISO

PRPC020DABN-RC

Sparkfun QWII Connector

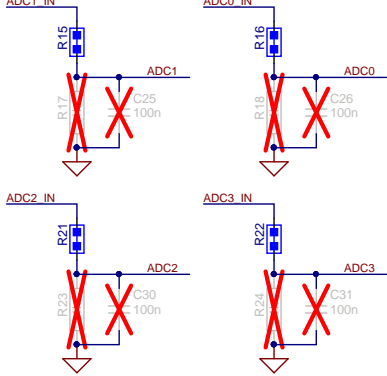
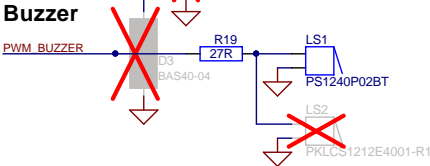
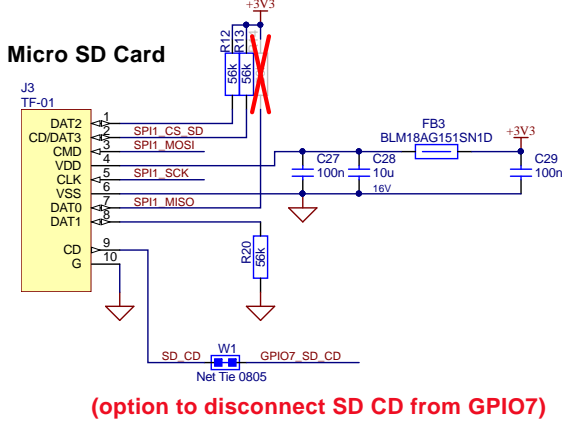
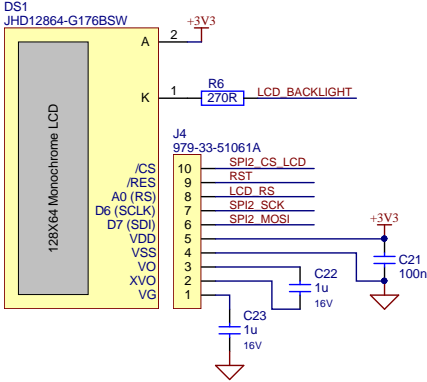
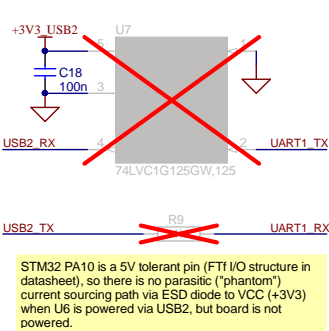
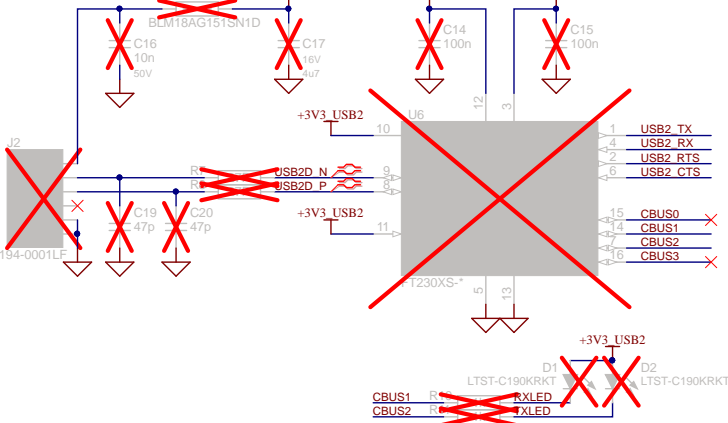
I2C1_SCL (YELLOW)	4
I2C1_SDA (BLUE)	3
+3V3 (RED)	2
GND (BLACK)	1

BM04B-SRSS-TB(LF)(SN)

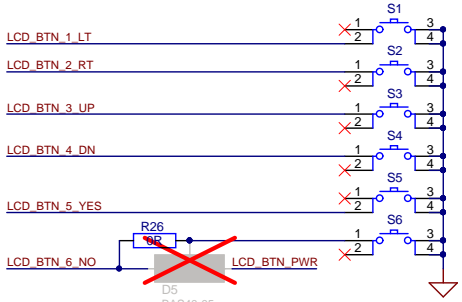
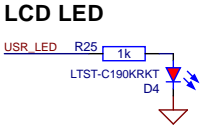
Seed Grove I2C Connector


I2C1_SCL (YELLOW)	1
I2C1_SDA (WHITE)	2
+3V3 (RED)	3
GND (BLACK)	4

110990030



LCD Buttons



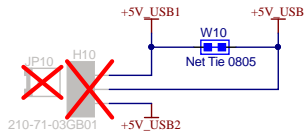


2019-07-31
12:02:23

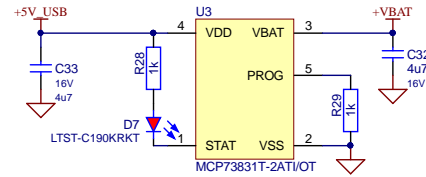
PCB NAME PX-HERO Board		PCB NUMBER P0012
SCH PAGE TITLE Peripherals		PCB REV D
SHEET 3 OF 3	DATE 2019-02-26	VARIANT lite edition
DRAWN BY Pieter Conradie	PROJECT ENGINEER Pieter Conradie	TEMPLATE REV 02
COPYRIGHT © 2019 PICONOMIX (https://piconomix.com) ALL RIGHTS RESERVED		

(pull-up resistors on micro must be enabled)

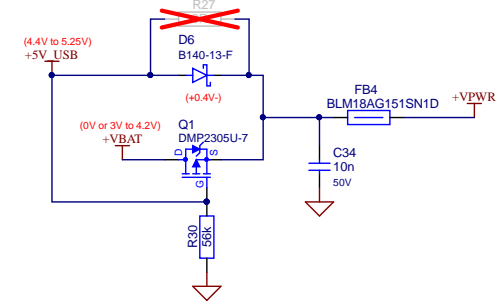
USB input power selector (jumper)



Li-Po Battery Charger

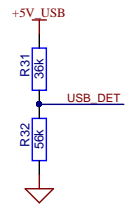


Automatic power path selection

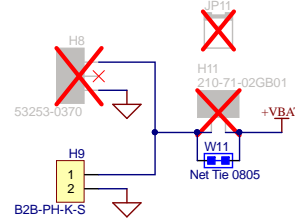


USB power detect

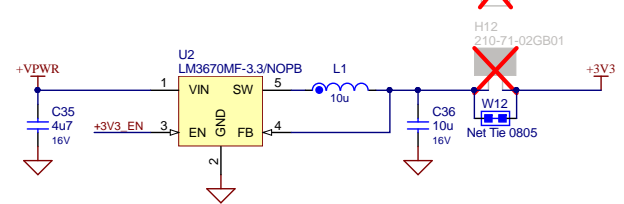
Vusb_min = 4.4V
Vusb_max = 5.25V
Vusb_det_min = 2.66V
Vusb_det_max = 3.22V



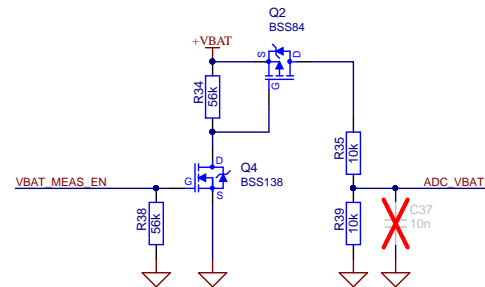
Li-Po Battery Connector (Molex or JST)



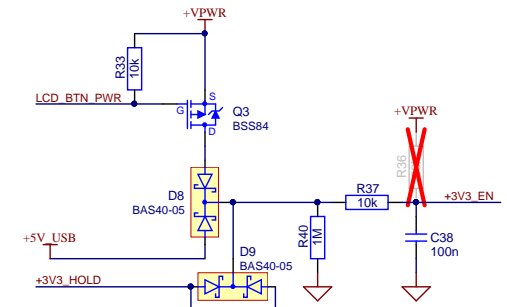
+3V3 high efficiency buck regulator



Battery Voltage Measurement



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



Fiducials

- H14 Fiducial 1mm
- H16 Fiducial 1mm
- H19 Fiducial 1mm
- H21 Fiducial 1mm

Mounting Holes

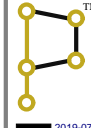
- H15 Mounting hole, M3
- H17 Mounting hole, M3
- H20 Mounting hole, M3
- H22 Mounting hole, M3

GND Test Points

- H13 210-71-02GB01
- H18 210-71-02GB01

BOM

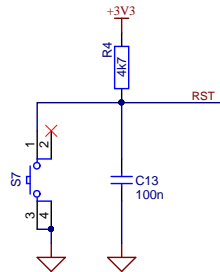
- PCB1
- P0014

	PCB NAME PX-HERO Board		PCB NUMBER P0012	
	SCH PAGE TITLE Power Supply		PCB REV D	
	SHEET 1 OF 3		DATE 2019-02-26	
	DRAWN BY Pieter Conradie		PROJECT ENGINEER Pieter Conradie	
	12:02:24		VARIANT deluxe edition	
		TEMPLATE REV 02		COPYRIGHT © 2019 PICONOMIX (https://piconomix.com) ALL RIGHTS RESERVED

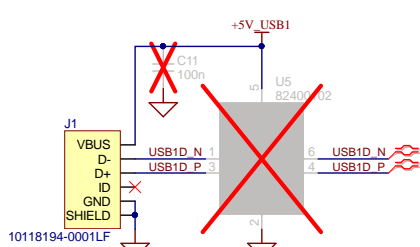
STM32 ARM Cortex M0+ Microcontroller



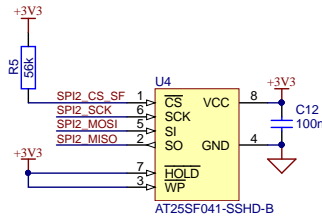
Reset Button



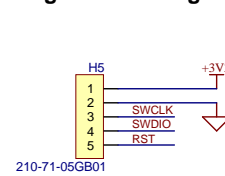
USB Device Port



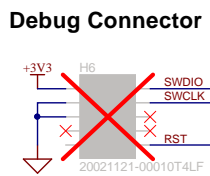
Serial Flash



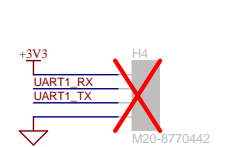
Program & Debug



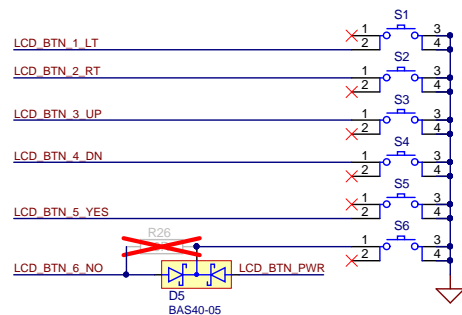
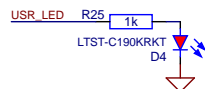
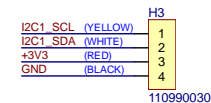
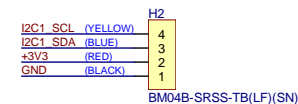
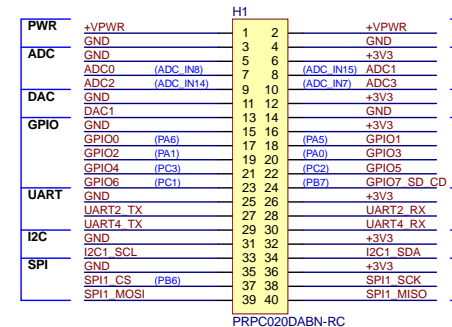
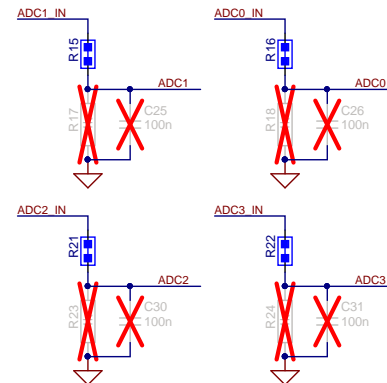
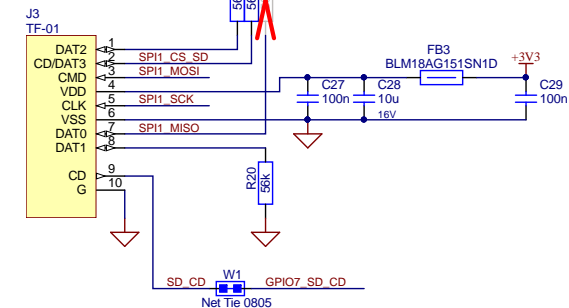
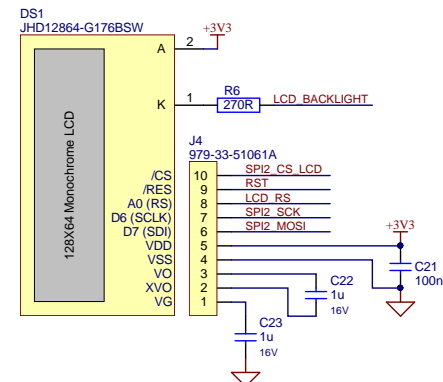
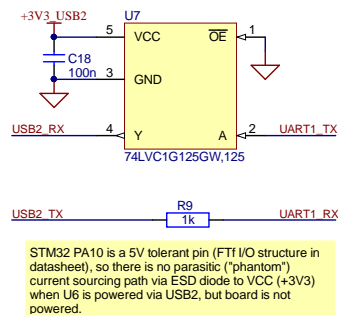
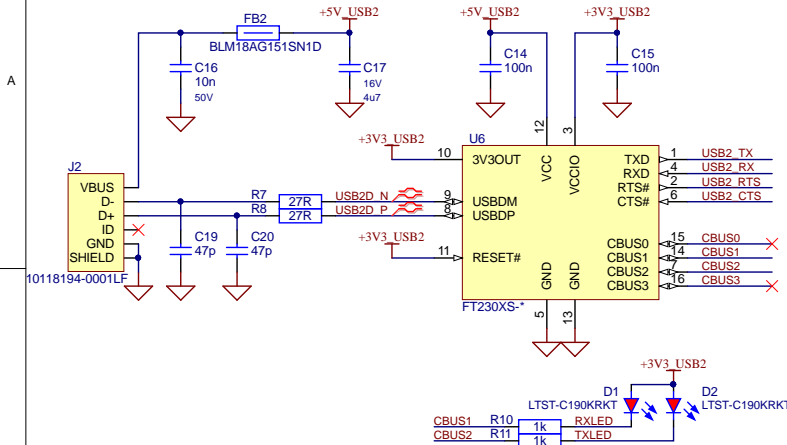
Standard ARM Cortex Debug Connector




UART Header



PCB NAME PX-HERO Board		PCB NUMBER P0012
SCH PAGE TITLE Microcontroller		PCB REV D
SHEET 2 OF 3	DATE 2019-02-26	VARIANT deluxe edition
DRAWN BY Pieter Conradie	PROJECT ENGINEER Pieter Conradie	TEMPLATE REV 02
COPYRIGHT © 2019 PICONOMIX (https://piconomix.com) ALL RIGHTS RESERVED		





PCB NAME <u>PX-HERO Board</u>		PCB NUMBER <u>P0012</u>
SCH PAGE TITLE <u>Peripherals</u>		PCB REV <u>D</u>
SHEET <u>3</u> OF <u>3</u>	DATE <u>2019-02-26</u>	VARIANT <u>deluxe edition</u>
DRAWN BY <u>Pieter Conradie</u>	PROJECT E NGINEER <u>Pieter Conradie</u>	TEMPLATE REV <u>02</u>

PRINT

2019-07-31
12:02:24

COPYRIGHT © 2019 PICONOMX (<https://piconomx.com>) ALL RIGHTS RESERVED