Medesto-PCBA3.0-V3.0

V1.1 Change logs:

1. Change the size of MH5 to D3.81mm for the bracket.
2. Change the C10 to a smaller size capacitor - UCL1V221MNL1GS
3. Change the L2 to a smaller size inductor - NS10155T6R8NNA.
4. Change CN2 to a vertical connector.
5. Change CN17 to a SMD connector.
6. Correct 3.3V Power rail on LTE Page.
7. Change CN9, CN10 to smaller size connector - B4B-PH-K-S(LF)(SN)
8. Change CN13, CN14 to smaller size connector - B2B-PH-K-S(LF)(SN)
9. Removed Testing points from TP40 to TP51, merge the signals into CN17 and change CN17 to 20 PINs connector - 0878325922
10. Change CN18 to smaller size connector - B7B-PH-K-S(LF)(SN)
11. Swap signals on U6 and CN17 for better PCB routing

V1.2 Change logs:

1. Change Mounting holes to Non-plated and remove the GND
2. Swapp PIN1 and PIN2 on CN1
3. Change R2 to R3 in design note of U1

V2 Change logs:

1. Change CN13 to Molex 5055680271
2. Correct SCI5 and SCI8 naming.
3. Change U6 to R7FA6M3AH3CFP#AA0

V2.1 Change logs:

1. Change F1 to 0685T2000-01
2. Change U8 to ESP32-WROOM-32E(8MB)
3. DNP U9
4. Change the connector to match serial port (follow ESP-PROG pinout)
5. Remove Jtag test points
6. Add CLI passthrough Tx/Rx test points
7. Add SCI2 tx and rx test points

V2.6 Change logs:

1. Changed title bock
2. Updated Silk screen

V3.0 Change logs:

1. The programming ports are on bottom
2. Battery connector is flipped 180

V3.2 Change logs:

1. Changes solder mask bridge and Layer Stack as per Fabricator's requirement
2. Update pannel placement and Gerber file

V3.3 Change logs:

1. IR sensor current limiting resistor reduced
2. IR sensor collector resistor reduced
3. Cell sensor current limiting resistor reduced
4. Cell sensor collector resistor reduced

MH1
Mounting_Hole_NPTH
3.20 mm

MH2
Mounting_Hole_NPTH
3.20 mm

MH3
Mounting_Hole_NPTH
3.20 mm

Four holes (MH1 - 4) for #3 machine screws and washers

MH4
Mounting_Hole_NPTH
3.20 mm

MH5
Mounting_Hole_NPTH
3.81 mm

FD1 FD2 FD3 FD4

FD5 FD6

PCB1
Medesto-PCBA3.0-V3.3

Notes (unless otherwise specified):
1. All resistors are 1%.
2. Board operating temperature is 0°C to 50°C.
3. Capacitors and resistors are 0603 unless noted (termination resistors and BGA capacitors are 0402).
4. Text in italic placed on a wire doesn't correspond to net name. It just helps to identify rapidly MCU IO related to this wire.
5. 10 mil PCB Layout clearance for Critical circuit section.

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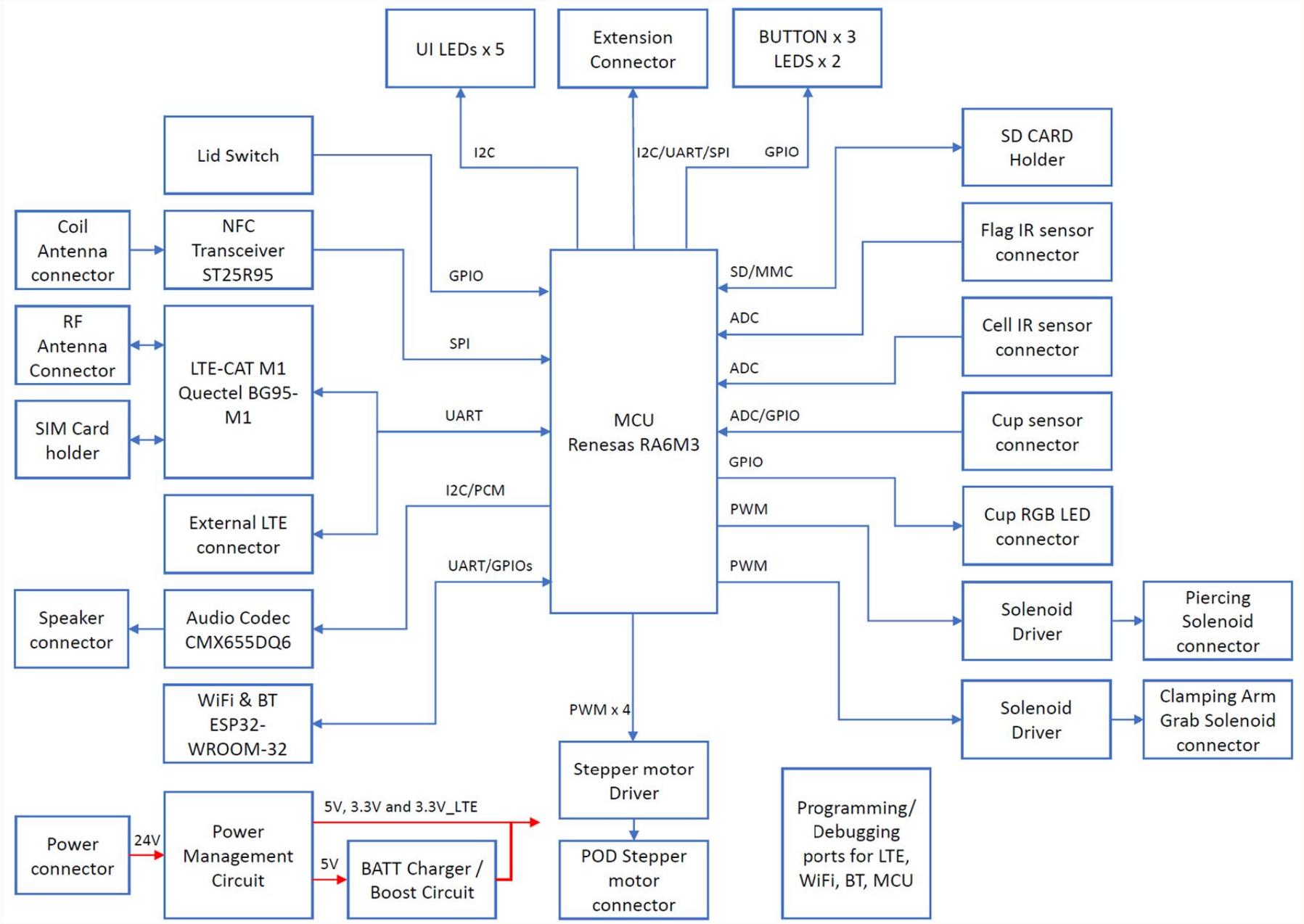
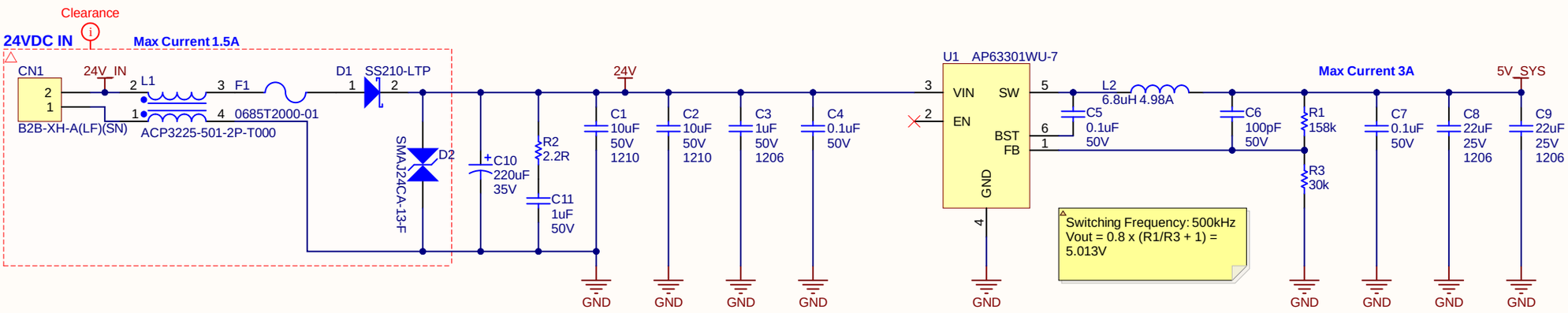
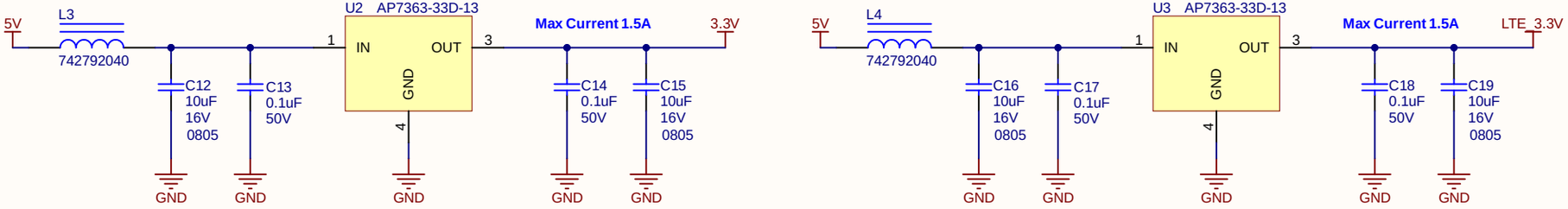
Title:			
Medesto-PCBA3.0-V3.3			
Size:	Perigon #:	Project:	
ANSI A	LB100-3000-0A - PCBA 3.0	G3.5 Dispenser	
Date:	Page:	Designed By:	Approved By:
6/21/202212:19:35 PM	1 of 15	AU , JW	JG

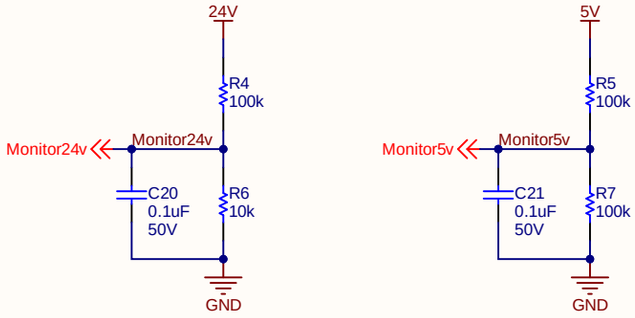


Perigon Health 360
340 N Main Street
Plymouth, MI 48170

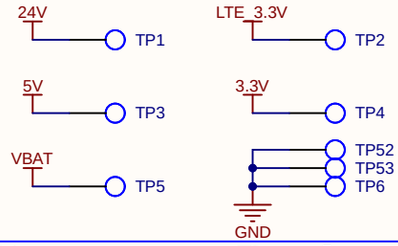
Title:			
Medesto-PCBA3.0-V3.3			
Size:	Perigon #:	Project:	
ANSI A	LB100-3000-0A - PCBA 3.0	G3.5 Dispenser	
Date:	Page:	Designed By:	Approved By:
6/21/202212:19:35 PM	2 of 15	AU , JW	JG







Jig Test Points



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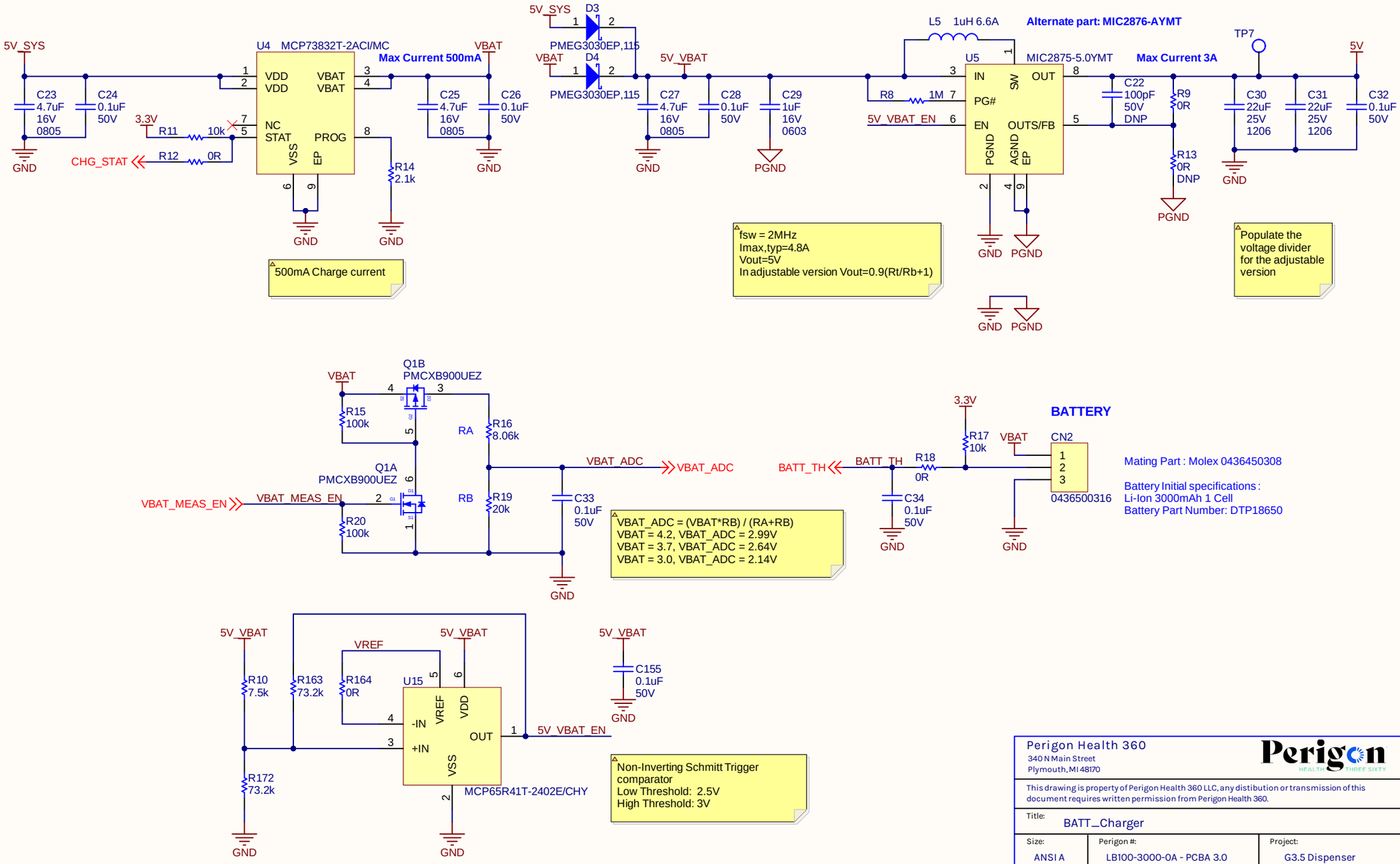
Plymouth, MI 48170

Title:			
Power			
Size:	Perigon #:	Project:	
ANSI A	LB100-3000-0A - PCBA 3.0	G3.5 Dispenser	
Date:	Page:	Designed By:	Approved By:
6/21/202212:19:35 PM	3 of 15	AU , JW	JG



Perigon Health 360
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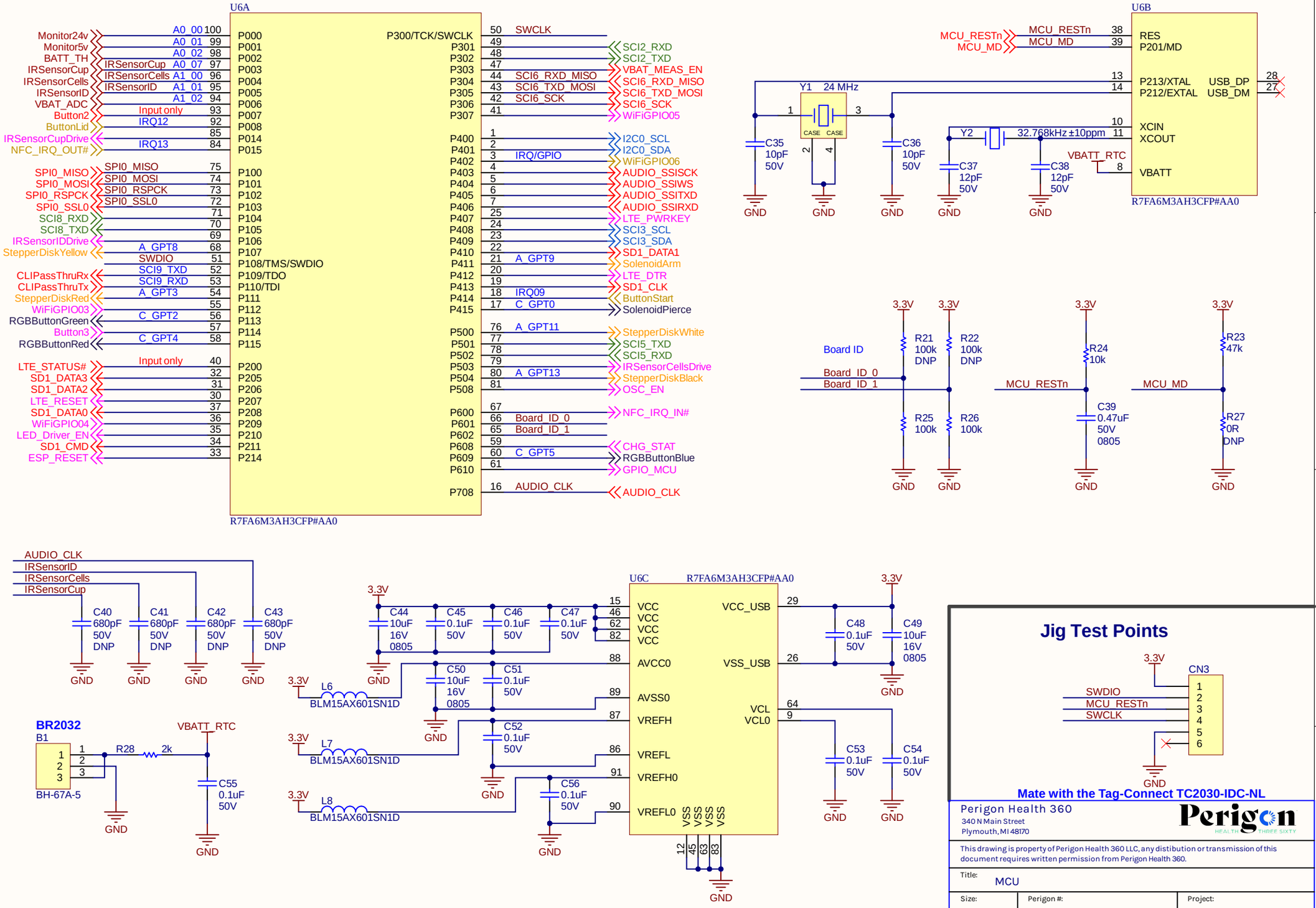
Plymouth, MI 48170

Title: BATT_Charger			
Size: ANSI A	Perigon #: LB100-3000-0A - PCBA 3.0	Project: G3.5 Dispenser	
Date: 6/21/202212:19:35 PM	Page: 4 of 15	Designed By: AU , JW	Approved By: JG


U6A
R7FA6M3AH3CFP#AA0
Monitor24v
Monitor5v
BATT_TH
IRSensorCup
IRSensorCells
IRSensorID
VBAT_ADC
Button2
ButtonLid
IRSensorCupDrive
NFC_IRQ_OUT#
SPI0_MISO
SPI0_MOSI
SPI0_RSPCK
SPI0_SSL0
SCI8_RXD
SCI8_TXD
IRSensorIDDrive
StepperDiskYellow
CLIPassThruRx
CLIPassThruTx
StepperDiskRed
WiFiGPIO03
RGBButtonGreen
Button3
RGBButtonRed
LTE_STATUS#
SD1_DATA3
SD1_DATA2
LTE_RESET
SD1_DATA0
WiFiGPIO04
LED_Driver_EN
SD1_CMD
ESP_RESET
SWCLK
SCI2_RXD
SCI2_TXD
VBAT_MEAS_EN
SCI6_RXD_MISO
SCI6_TXD_MOSI
SCI6_SCK
WiFiGPIO05
I2C0_SCL
I2C0_SDA
WiFiGPIO06
AUDIO_SSISCK
AUDIO_SSIWS
AUDIO_SSITXD
AUDIO_SSIRXD
LTE_PWRKEY
SCI3_SCL
SCI3_SDA
SD1_DATA1
SolenoidArm
LTE_DTR
SD1_CLK
ButtonStart
SolenoidPierce
StepperDiskWhite
SCI5_TXD
SCI5_RXD
IRSensorCellsDrive
StepperDiskBlack
OSC_EN
NFC_IRQ_IN#
CHG_STAT
RGBButtonBlue
GPIO_MCU
AUDIO_CLK
U6B
R7FA6M3AH3CFP#AA0
MCU_RESTn
MCU_MD
RES
P201/MD
P213/XTAL
P212/EXTAL
USB_DP
USB_DM
XCIN
XCOUT
VBATT
VBATT_RTC
Y1 24 MHz
Y2 32.768kHz ±10ppm
C35 10pF 50V
C36 10pF 50V
C37 12pF 50V
C38 12pF 50V
Board ID
Board_ID_0
Board_ID_1
R21 100k DNP
R22 100k DNP
R25 100k
R26 100k
R24 10k
C39 0.47uF 50V 0805
R23 47k
R27 0R DNP
3.3V
GND
AUDIO_CLK
IRSensorID
IRSensorCells
IRSensorCup
C40 680pF 50V DNP
C41 680pF 50V DNP
C42 680pF 50V DNP
C43 680pF 50V DNP
BR2032
B1
BH-67A-5
R28 2k
C55 0.1uF 50V
U6C
R7FA6M3AH3CFP#AA0
VCC
AVCC0
AVSS0
VREFH
VREFL
VREFH0
VREFL0
VSS
VCC_USB
VSS_USB
VCL
VCL0
C44 10uF 16V 0805
C45 0.1uF 50V
C46 0.1uF 50V
C47 0.1uF 50V
C48 0.1uF 50V
C49 10uF 16V 0805
C50 10uF 16V 0805
C51 0.1uF 50V
C52 0.1uF 50V
C53 0.1uF 50V
C54 0.1uF 50V
C56 0.1uF 50V
L6 BLM15AX601SN1D
L7 BLM15AX601SN1D
L8 BLM15AX601SN1D
Jig Test Points
CN3
SWDIO
MCU_RESTn
SWCLK
Mate with the Tag-Connect TC2030-IDC-NL
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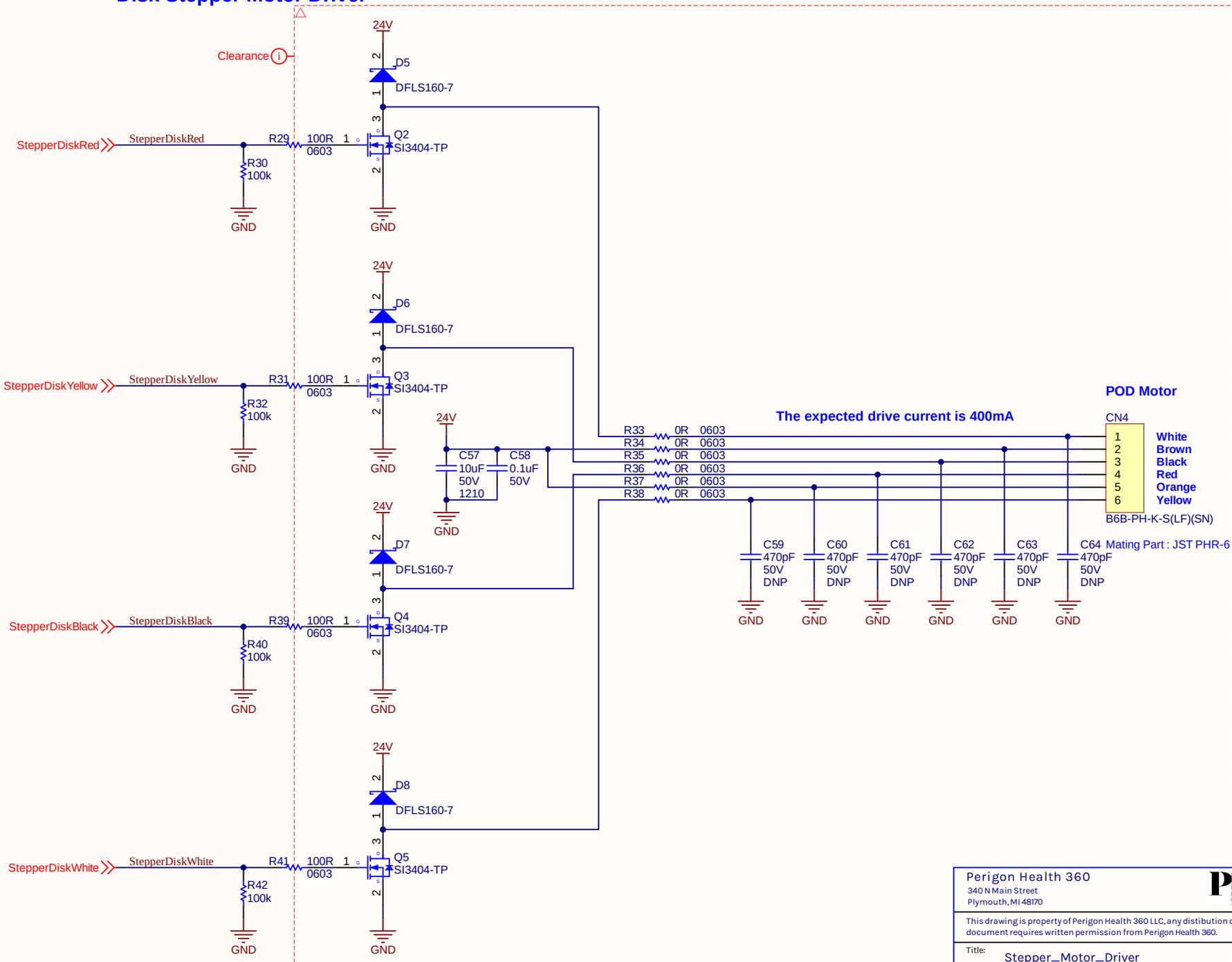
Title: MCU
Size: ANSI A
Perigon #: LB100-3000-0A - PCBA 3.0
Project: G3.5 Dispenser
Date: 6/21/202212:19:35 PM
Page: 5 of 15
Designed By: AU , JW
Approved By: JG

Disk Stepper Motor Driver



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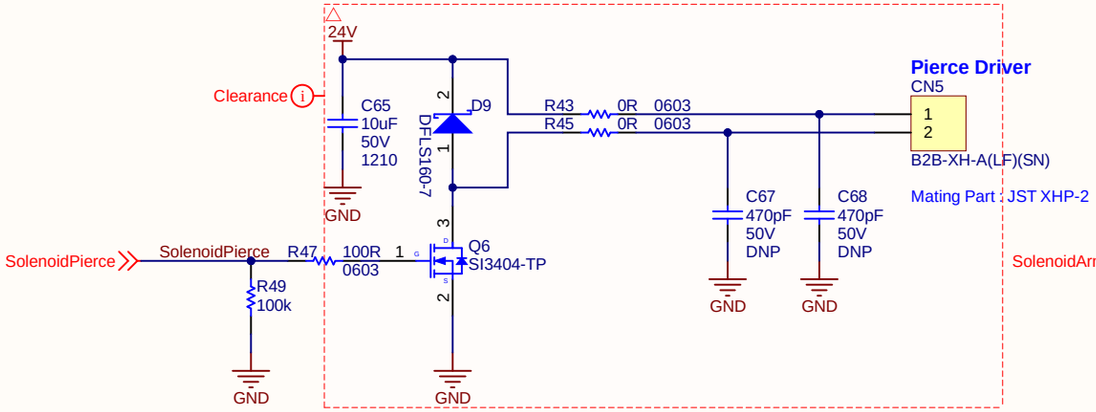
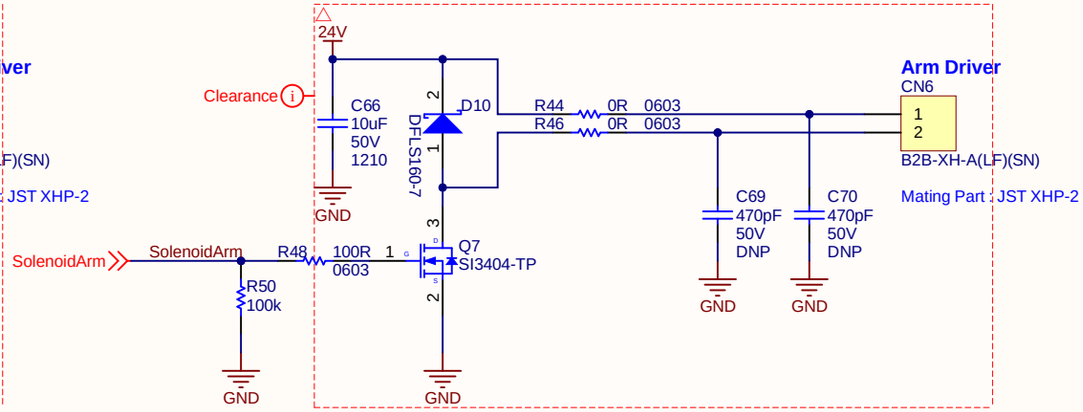
Title: Stepper_Motor_Driver	
Size: ANSI A	Perigon #: LB100-3000-0A - PCBA 3.0
Project: G3.5 Dispenser	
Date: 6/21/202212:19:36 PM	Page: 6 of 15
Designed By: AU , JW	Approved By: JG

Pierce Solenoid Driver



Arm Solenoid Driver



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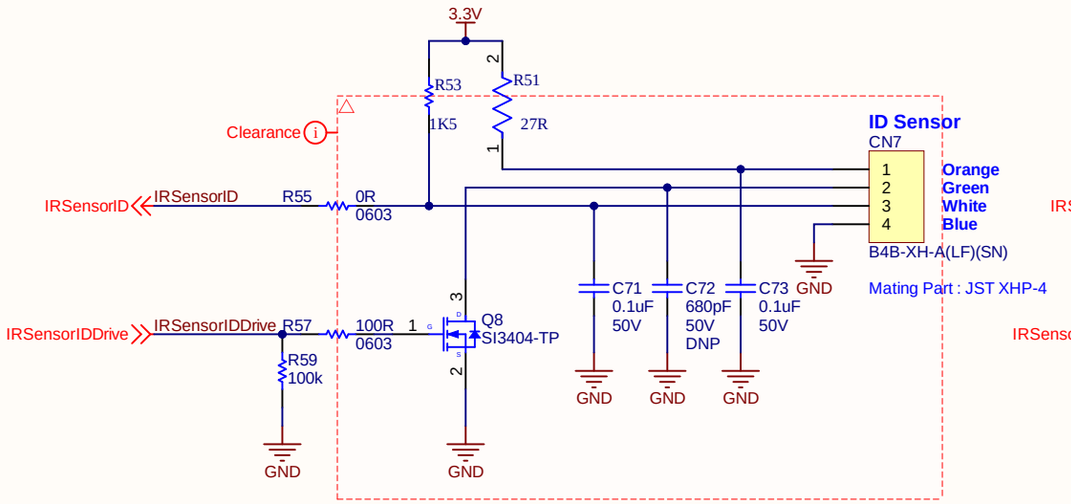
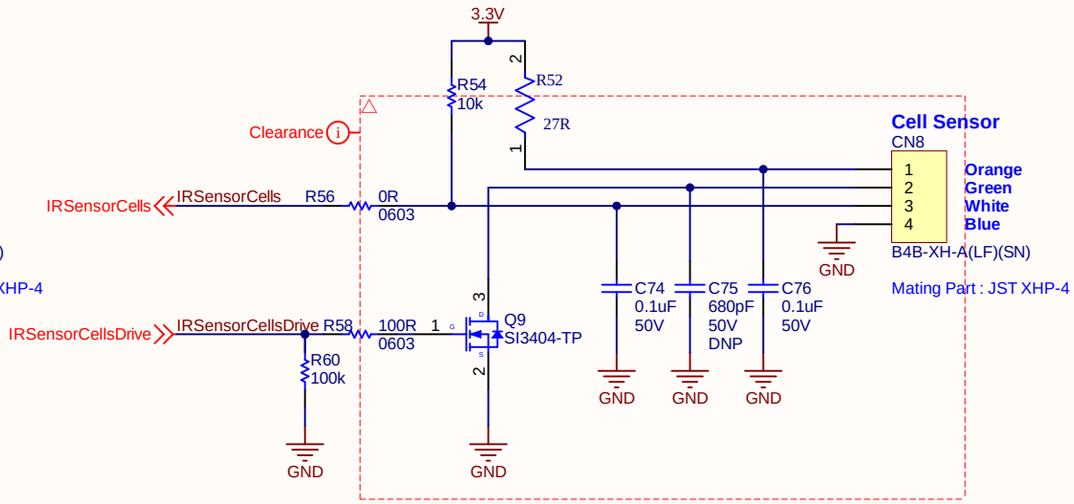
Title: Solenoid_Driver			
Size: ANSI A	Perigon #: LB100-3000-0A - PCBA 3.0	Project: G3.5 Dispenser	
Date: 6/21/202212:19:36 PM	Page: 7 of 15	Designed By: AU , JW	Approved By: JG

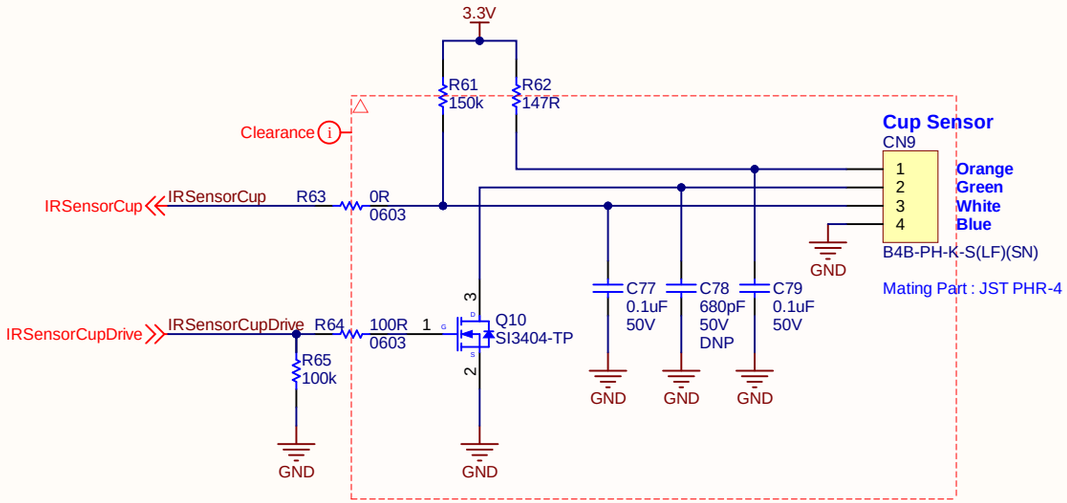
ID IR Sensor



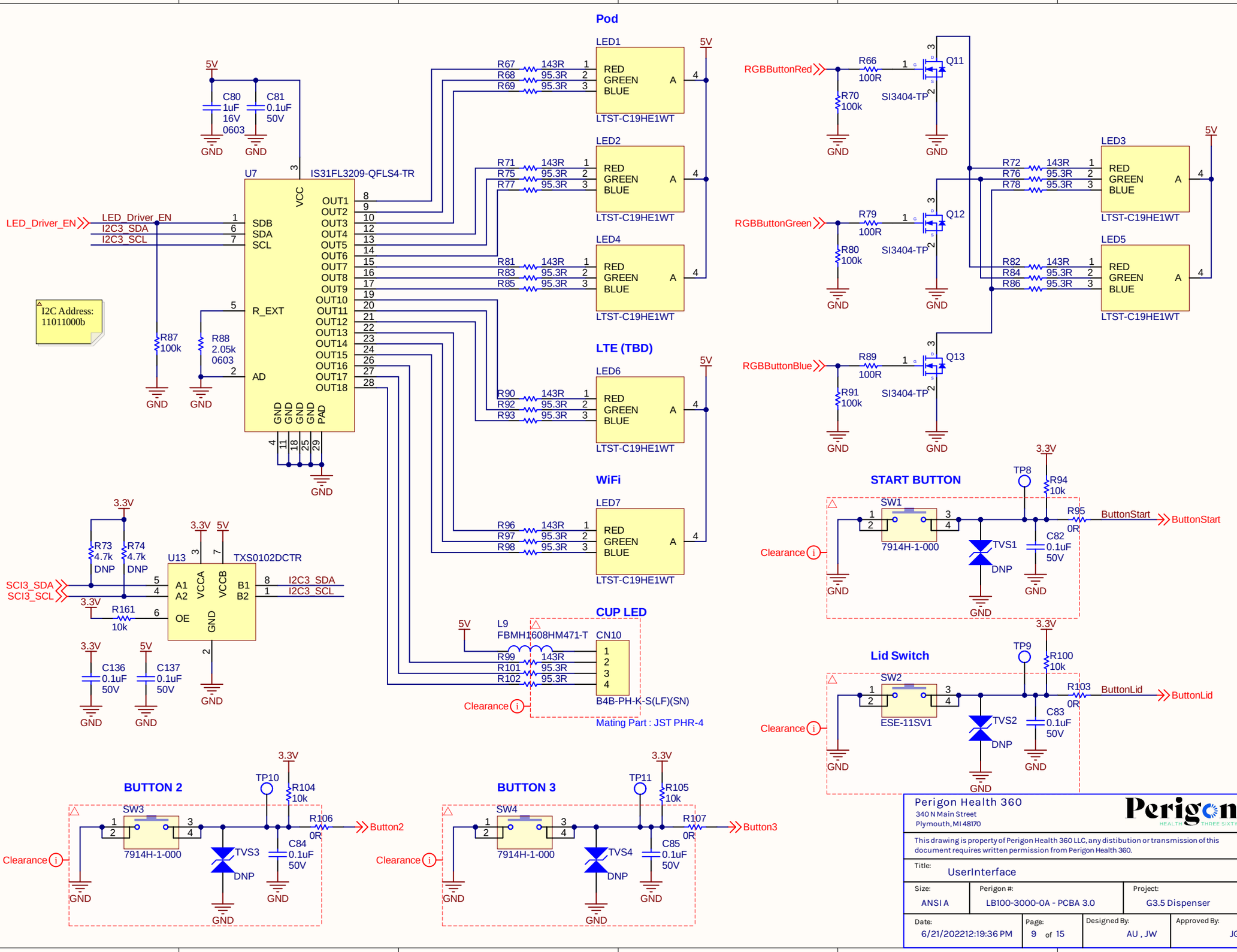
Cells IR Sensor



Cup IR Sensor



Title: Sensor			
Size: ANSI A	Perigon #: LB100-3000-0A - PCBA 3.0	Project: G3.5 Dispenser	
Date: 6/21/202212:19:36 PM	Page: 8 of 15	Designed By: AU , JW	Approved By: JG


Pod
LED1
LED2
LED3
LED4
LED5
LED6
LED7
RED
GREEN
BLUE
A
LTST-C19HE1WT
U7
IS31FL3209-QFLS4-TR
LED_Driver_EN
I2C3_SDA
I2C3_SCL
SDB
SDA
SCL
R_EXT
AD
VCC
I2C Address:
11011000b
R87
100k
R88
2.05k
0603
R67
R68
R69
R71
R75
R77
R81
R83
R85
R90
R92
R93
R96
R97
R98
143R
95.3R
RGBButtonRed
RGBButtonGreen
RGBButtonBlue
R66
R79
R89
100R
R70
R80
R91
100k
Q11
Q12
Q13
SI3404-TP
R72
R76
R78
R82
R84
R86
LTE (TBD)
WiFi
CUP LED
L9
FBMH1608HM471-T
CN10
B4B-PH-K-S(LF)(SN)
Mating Part : JST PHR-4
R99
R101
R102
C80
1uF
16V
0603
C81
0.1uF
50V
C82
C83
C84
C85
C136
C137
U13
TXS0102DCTR
R73
R74
4.7k
DNP
R161
10k
SCI3_SDA
SCI3_SCL
START BUTTON
Lid Switch
BUTTON 2
BUTTON 3
SW1
SW2
SW3
SW4
7914H-1-000
ESE-11SV1
TP8
TP9
TP10
TP11
R94
R95
R100
R103
R104
R105
R106
R107
0R
ButtonStart
ButtonLid
Button2
Button3
TVS1
TVS2
TVS3
TVS4
Clearance
3.3V
5V
GND
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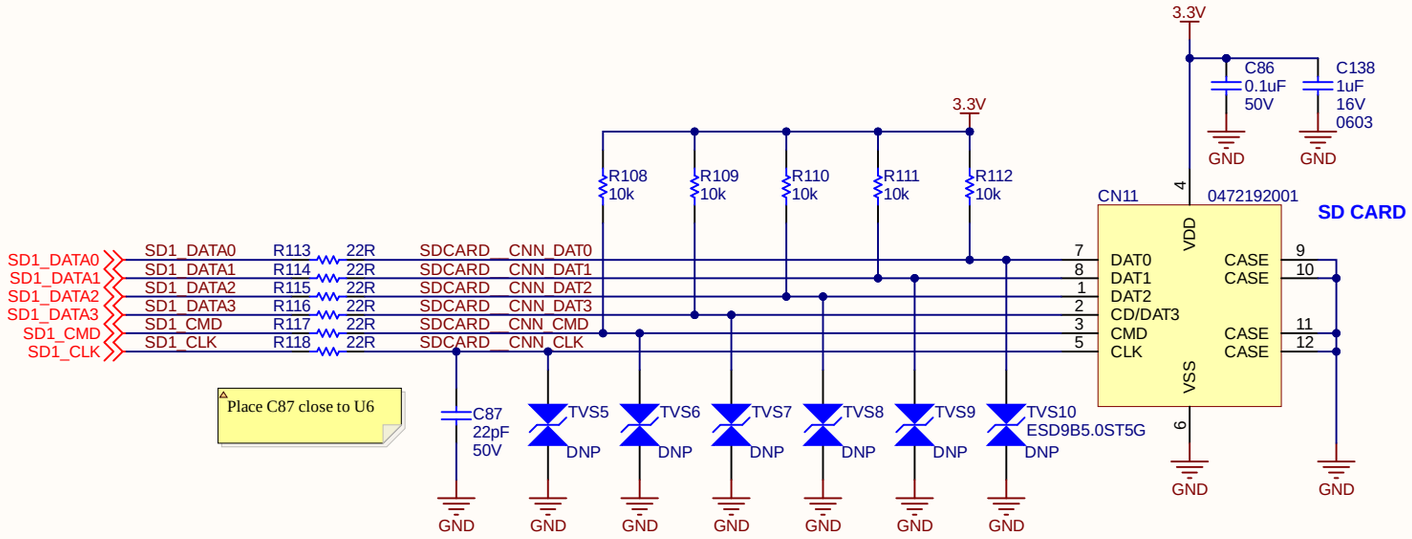
Title:
UserInterface
Size:
ANSI A
Perigon #:
LB100-3000-0A - PCBA 3.0
Project:
G3.5 Dispenser
Date:
6/21/202212:19:36 PM
Page:
9 of 15
Designed By:
AU , JW
Approved By:
JG



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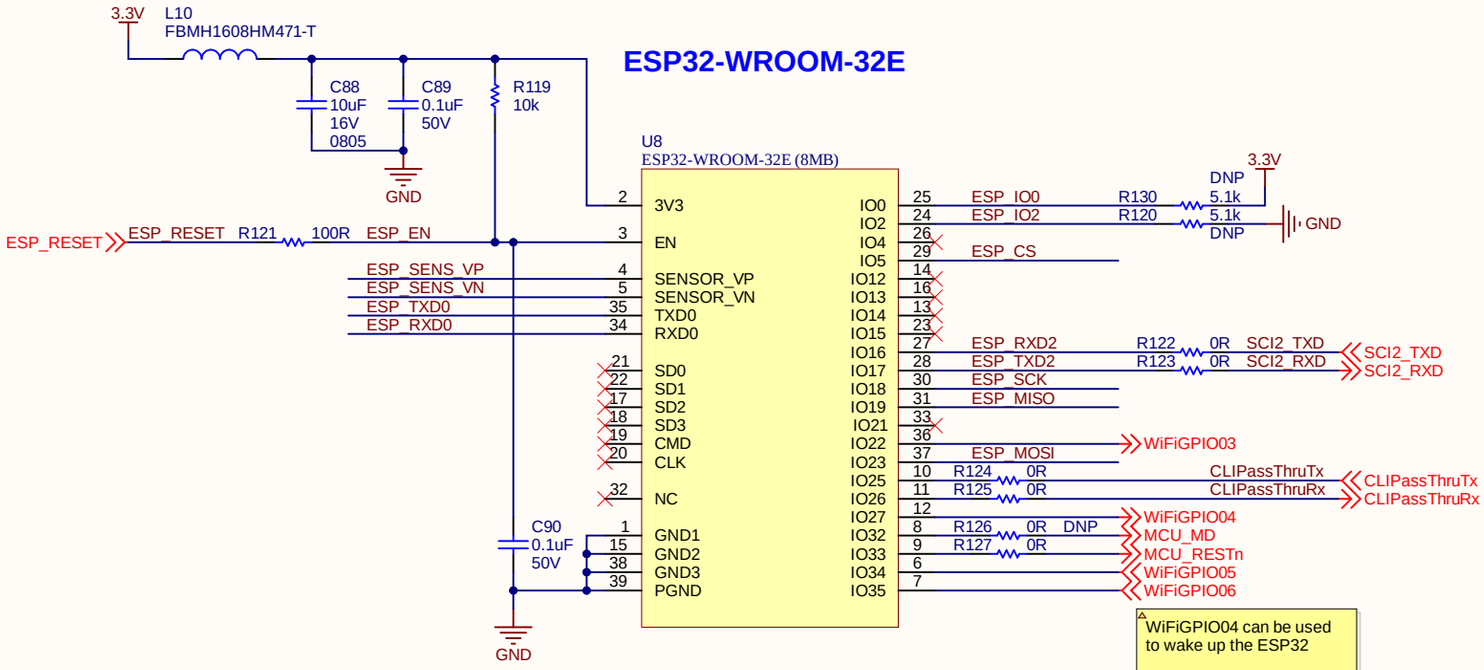
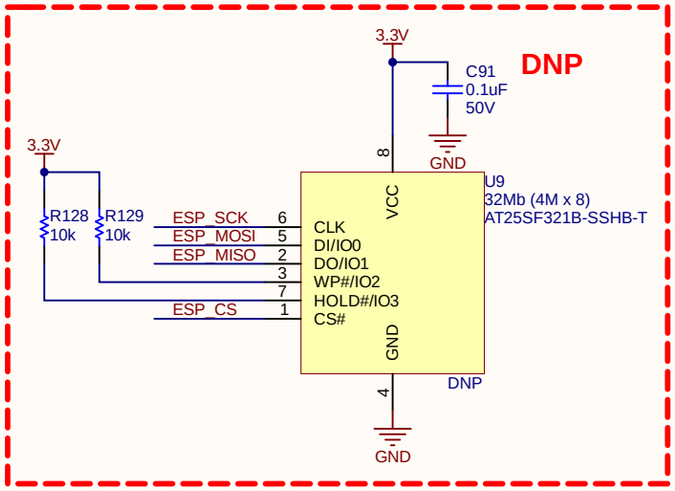
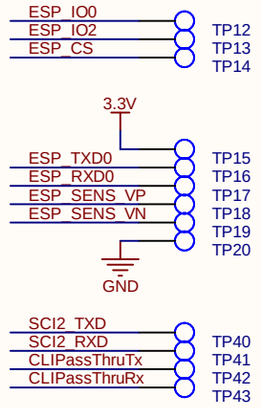
Title:			
SD Card			
Size:	Perigon #:	Project:	
ANSI A	LB100-3000-0A - PCBA 3.0	G3.5 Dispenser	
Date:	Page:	Designed By:	Approved By:
6/21/202212:19:36 PM	10 of 15	AU , JW	JG

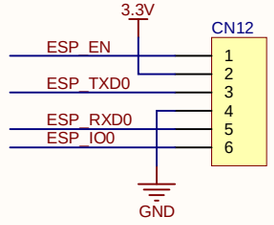




Debug Test Points



Jig Test Points



Perigon Health 360
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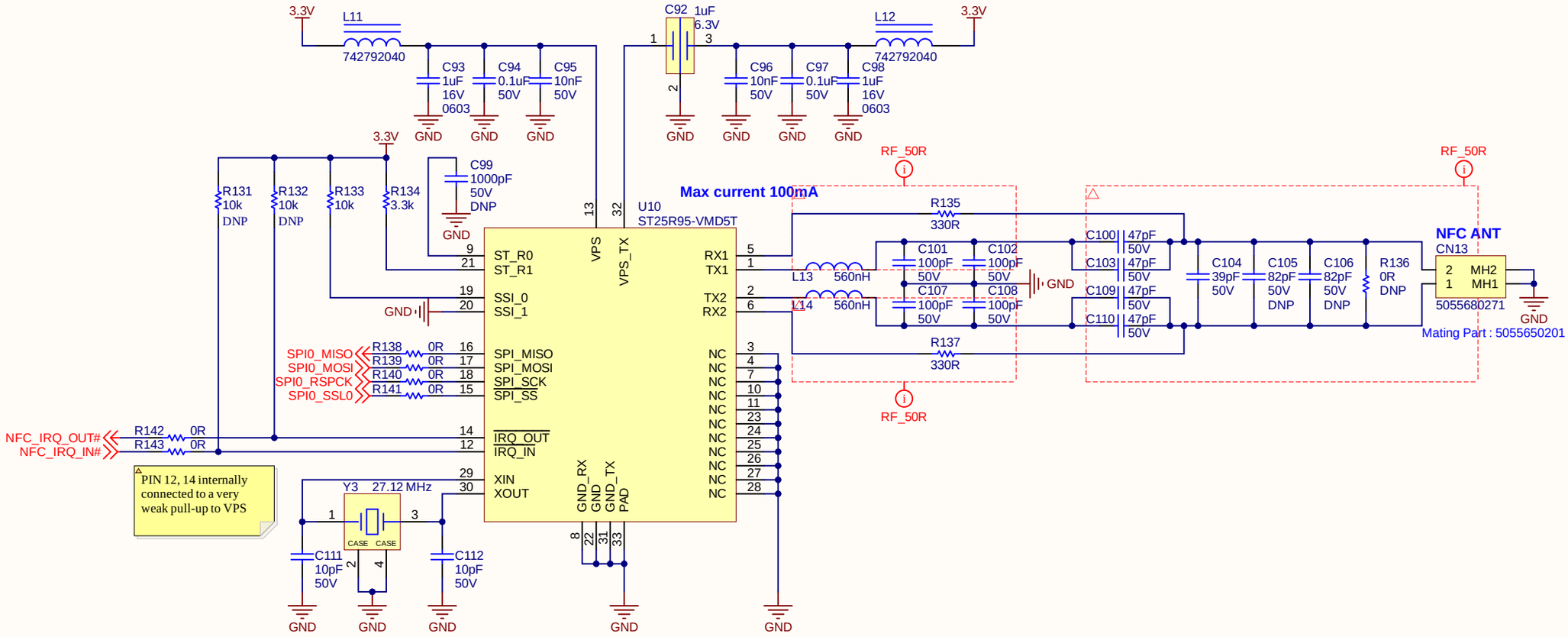
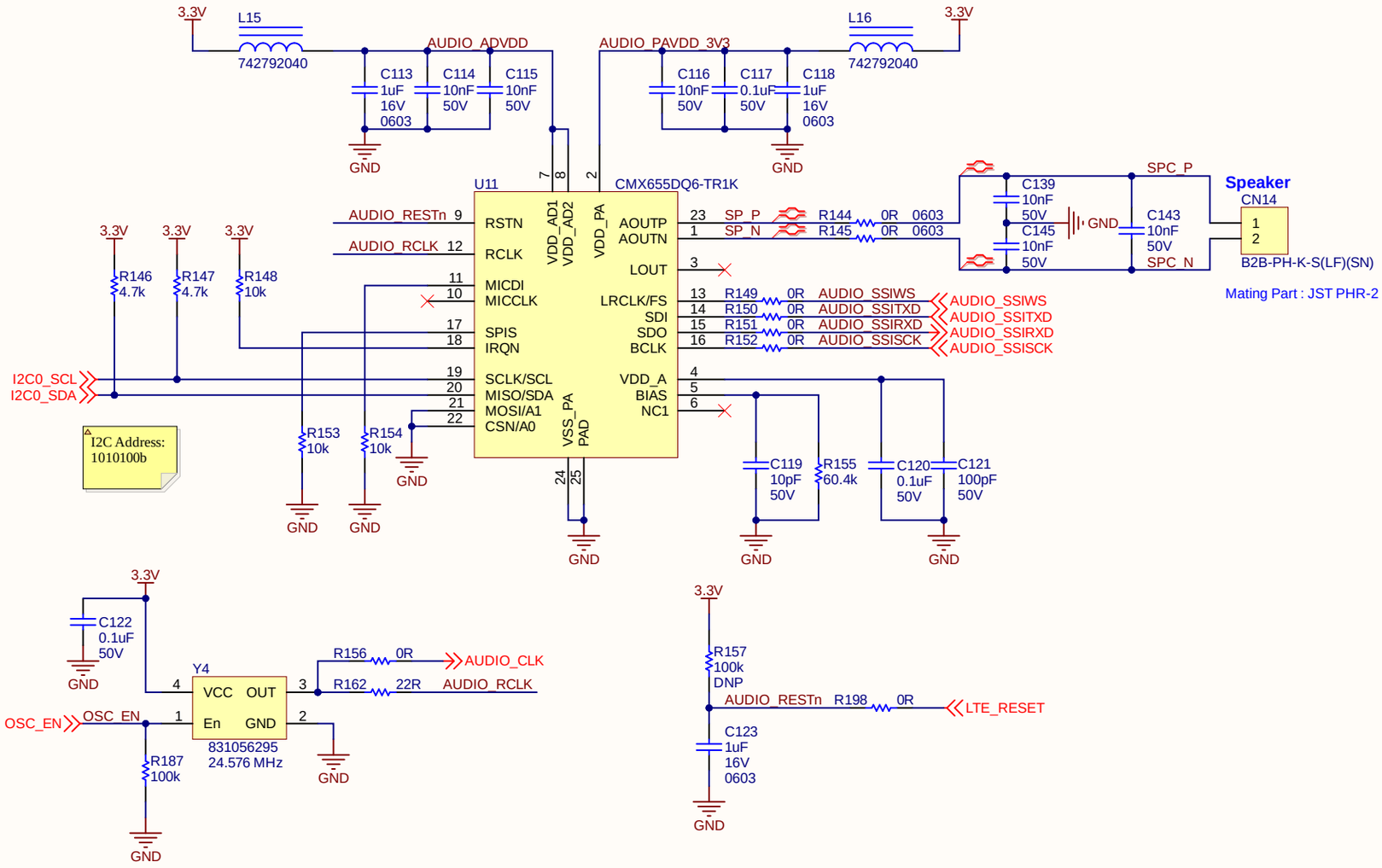
Plymouth, MI 48170

Title: WiFi			
Size: ANSI A	Perigon #: LB100-3000-0A - PCBA 3.0	Project: G3.5 Dispenser	
Date: 6/21/202212:19:36 PM	Page: 11 of 15	Designed By: AU , JW	Approved By: JG



Perigon Health 360
340 N Main Street
Plymouth, MI 48170

Title: NFC			
Size: ANSI A	Perigon #: LB100-3000-0A - PCBA 3.0	Project: G3.5 Dispenser	
Date: 6/21/202212:19:36 PM	Page: 12 of 15	Designed By: AU , JW	Approved By: JG



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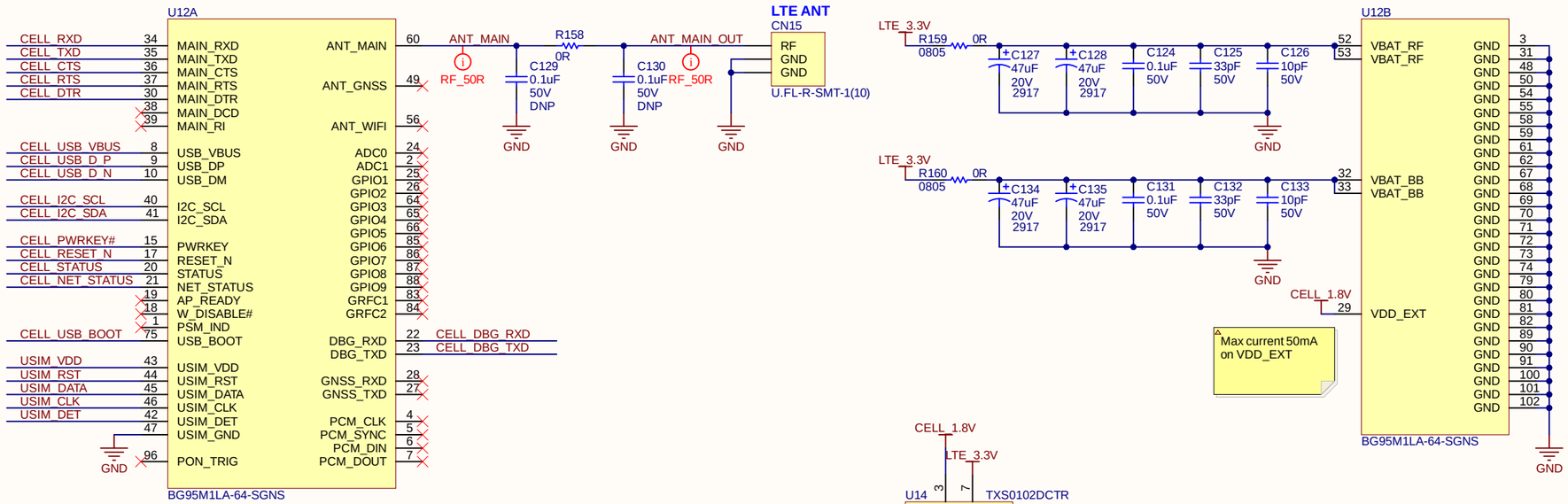
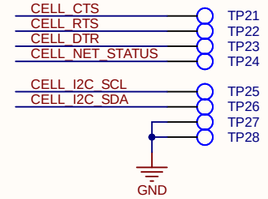
Title: Audio			
Size: ANSI A	Perigon #: LB100-3000-0A - PCBA 3.0	Project: G3.5 Dispenser	
Date: 6/21/202212:19:36 PM	Page: 13 of 15	Designed By: AU , JW	Approved By: JG

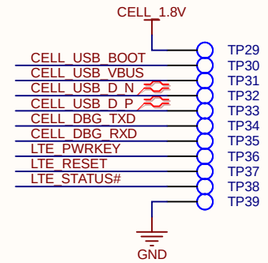
LTE Cat-M Modem



Debug Test Points



Jig Test Points



Perigon Health 360
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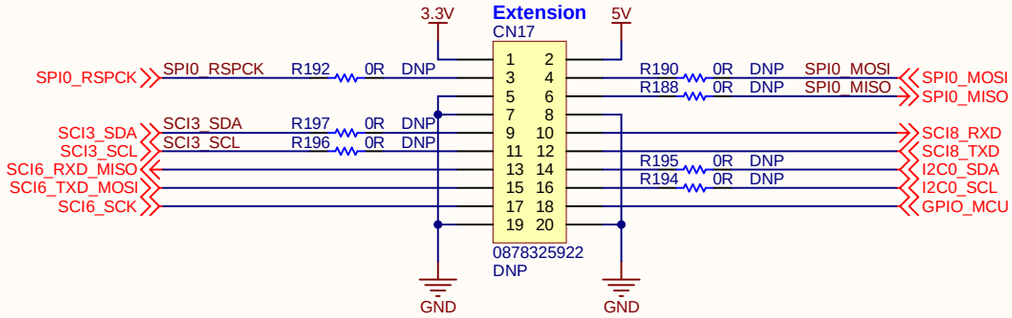
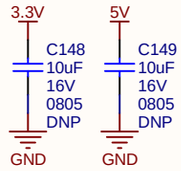
Plymouth, MI 48170

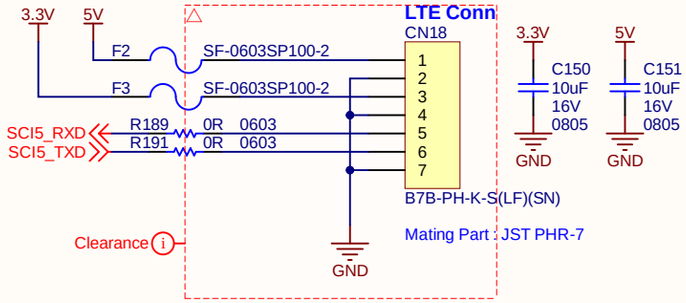
Title:		
LTE_CAT_M1		
Size: ANSI A	Perigon #: LB100-3000-0A - PCBA 3.0	Project: G3.5 Dispenser
Date: 6/21/202212:19:36 PM	Page: 14 of 15	Designed By: AU , JW
		Approved By: JG

Extension Conn - DNP





External LTE Module Conn



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Title: Extension_Connector			
Size: ANSI A	Perigon #: LB100-3000-0A - PCBA 3.0	Project: G3.5 Dispenser	
Date: 6/21/202212:19:36 PM	Page: 15 of 15	Designed By: AU , JW	Approved By: JG