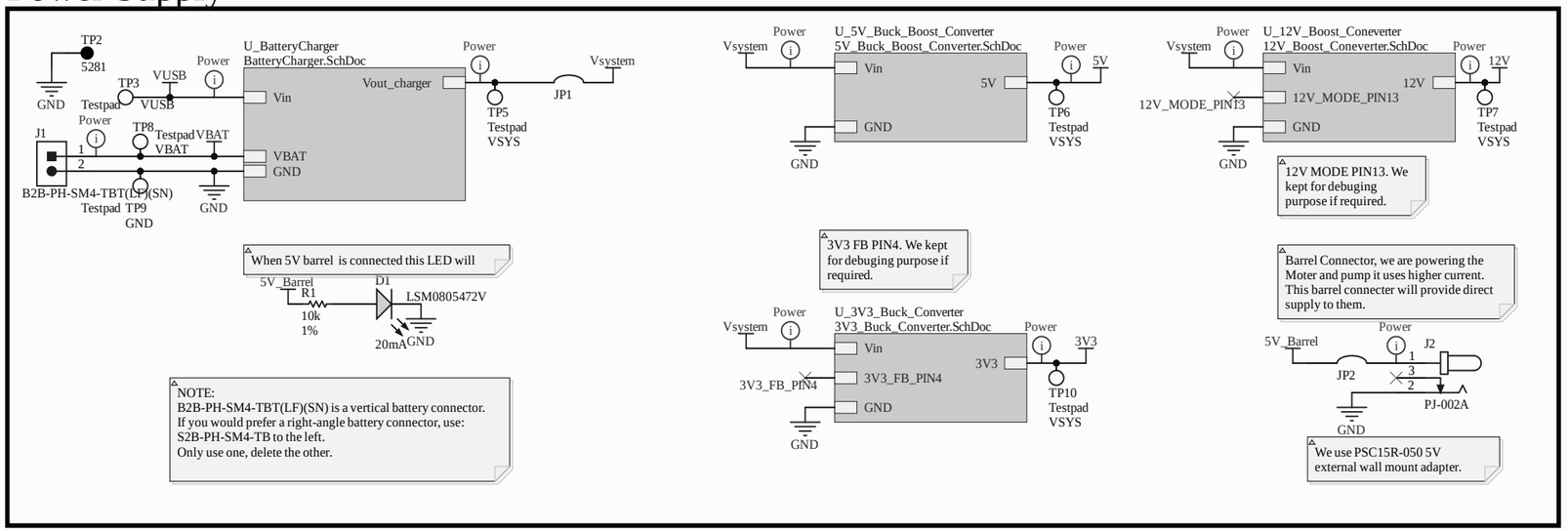
Power Supply



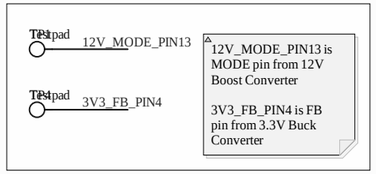
Notes

Section to add version notes or any other general information

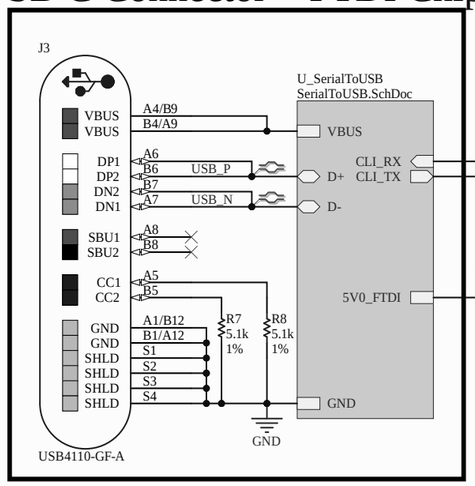
Add your power architecture here!

Don't forget:
0R jumpers in series with your power lines
1x through hole test point per power net

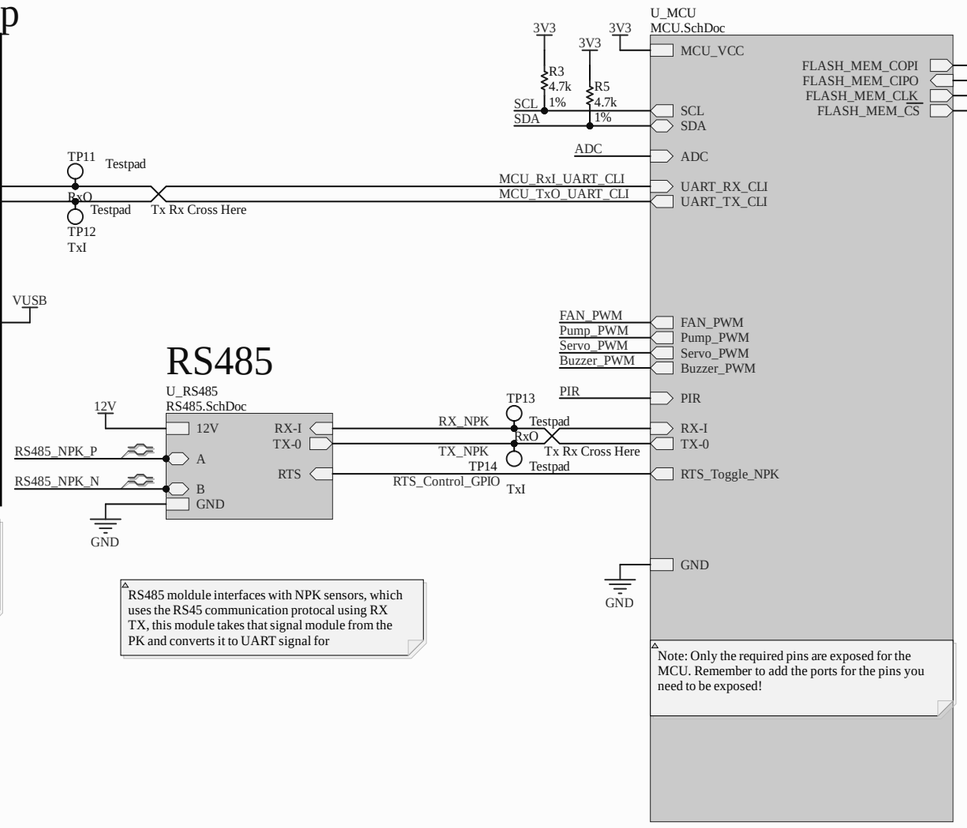
Test Points + Fiducials



USB C Connector + FTDI Chip

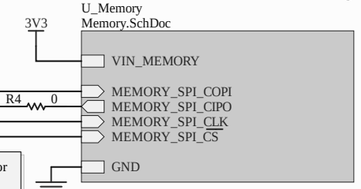


Microcontroller

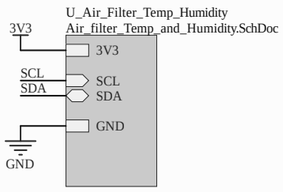


RS485

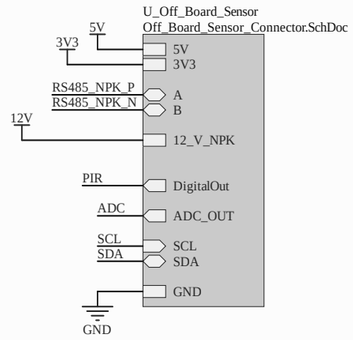
SD Card Memory



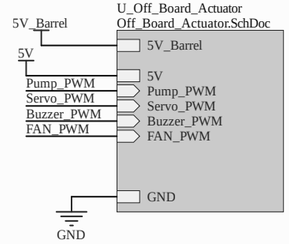
I2C sensors



Off Board Sensors



Actuators



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Desc: Top Sheet			
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VCS: a0cff16059821059d0a6e08702891f8002ca5aff9			www.seas.upenn.edu
Date: 3/5/2025 8:32:31 PM	AD Ver. 25.1.2.22	Doc. *	Sheet 1 of 12
File: C:\Users\abhikkum\AppData\Local\TempReleases\Snapshot\1\Top Level.SchDoc			Electrical and Systems Engineering

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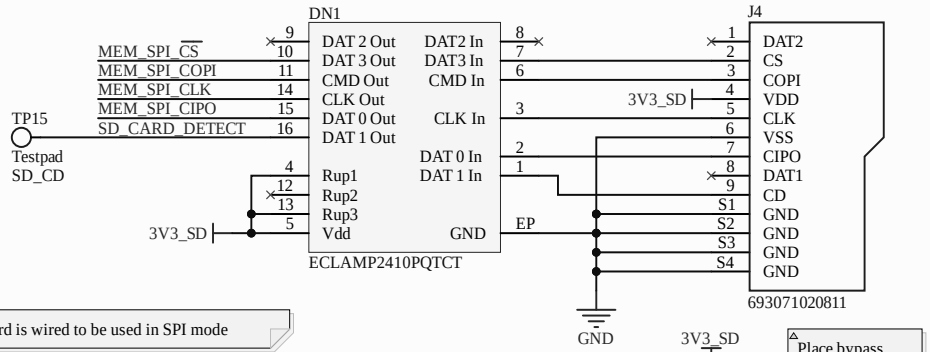
Top Level[5C] MEMORY_SPI_COPI — MEM_SPI_COPI
Top Level[5C] MEMORY_SPI_CIPO — MEM_SPI_CIPO
Top Level[5C] MEMORY_SPI_CLK — MEM_SPI_CLK
Top Level[5C] MEMORY_SPI_CS — MEM_SPI_CS

Power
3V3_SD
Top Level[5C] VIN_MEMORY
5[1B], SerialToUSB[2A] GND
GND

SD CARD

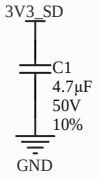


SD Card is wired to be used in SPI mode

CD is a card detect switch. When the SD card in inserted, the switch is closed, and the SD_CARD_DETECT line goes low. When the SD card is not detected, said line goes high. We use the extra DAT1 Channel of the ESD/Pullup device to provide ESD protection and the pullup required.

The ECLAMP2410 IC provides both transient voltage suppression and optional pull up resistors for the SD card. It must be placed in series with the traces between the SD card holder and the MCU.

Use of card detect is optional, but is provided if you want to use it.



Place bypass near VDD Pin of SD Card

Title: ***Memory.SchDoc***			
Desc: SD Card			
Size: Letter	Auth: Abhik & Toma	Proj: ESE5160 - T13 DreamCatcher (Spring 2025).PrjPcb	
VCS: a0cff160598210 59d0a6e0870289f8002ca5aff9			www.seas.upenn.edu
Date: 3/5/2025 8:32:31 PM	AD Ver. 25.1.2.22	Doc. *	Sheet 2 of 12 — Electrical and Systems Engineering
File: C:\Users\abhikkum\AppData\Local\TempReleases\Snapshot\1\Memory.SchDoc			

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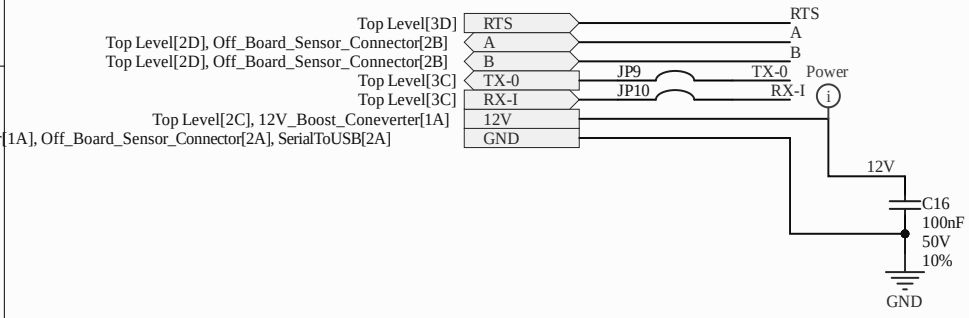
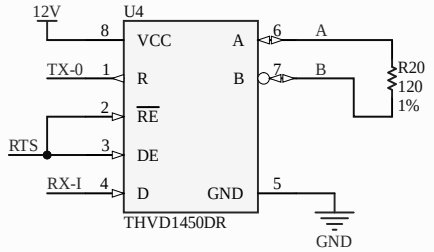


Ask TA and Nic. about how RS485 power the NPK sensor, Or They see the old Project and See how much volt are they using for the NPK sensor.

A: Bus input (complementary to B). Data is received from the RS485 data line A output of the NPK sensor

B: Bus input (complementary to A) Data is received from the RS485 data line B output of the NPK sensor



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Date: 3/5/2025 8:32:31 PM	AD Ver. 25.1.2.22	Doc. *	Sheet 3 of 12
File: C:\Users\abhikkum\AppData\Local\TempReleases\Snapshot\1\RS485.SchDoc			

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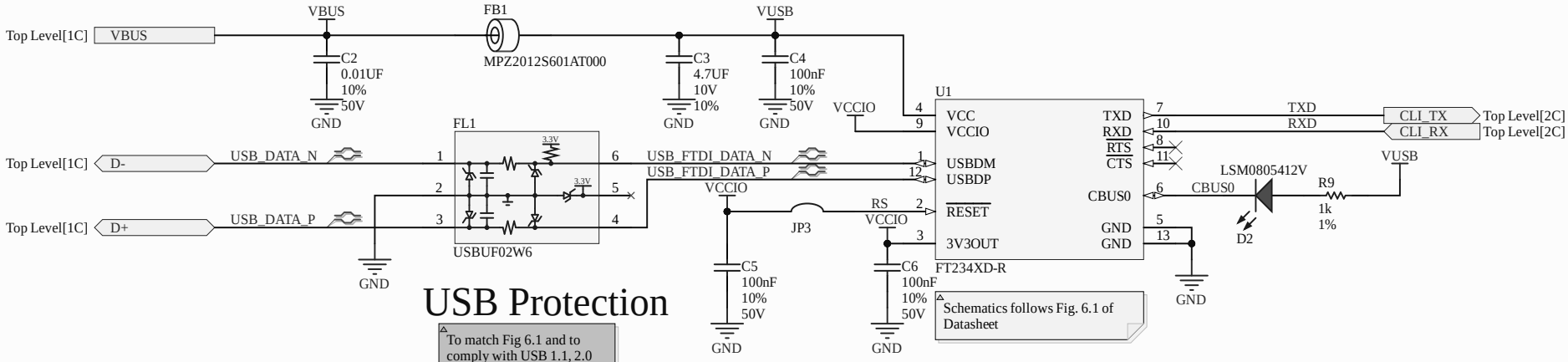
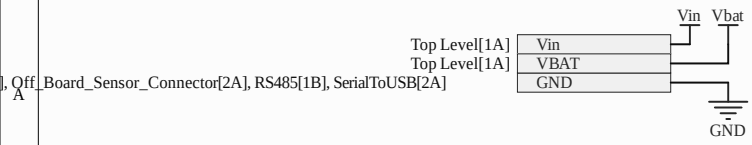
USB to Serial FTDI Chip

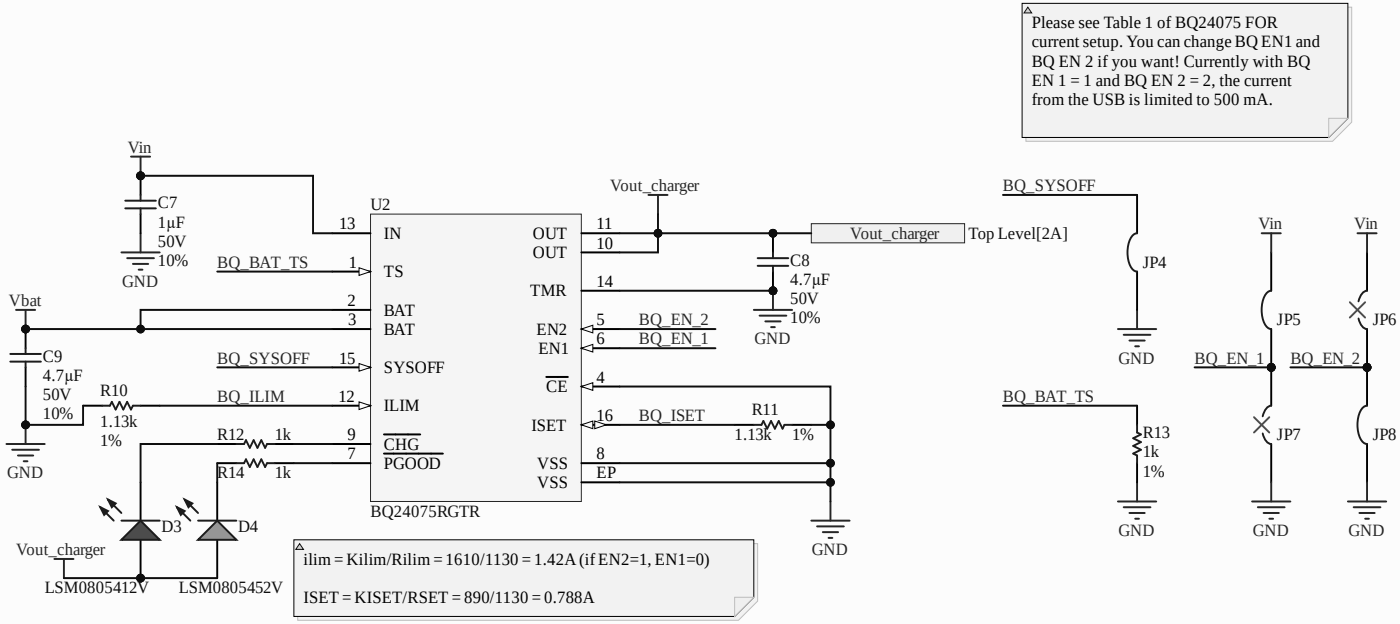


USB Protection

To match Fig 6.1 and to comply with USB 1.1, 2.0 Spec, DO NOT CONNECT PIN 5 TO ANYTHING

Title: ***SerialToUSB.SchDoc***				Penn Engineering, University of Pennsylvania
Desc: USB				
Size: Letter	Auth: Abhik & Toma	Proj: ESE5160 - T13 DreamCatcher (Spring 2025).PrjPcb		
VCS: a0cff160598210 59d0a6e0870289f8002ca5aff9				www.seas.upenn.edu
Date: 3/5/2025 8:32:31 PM	AD Ver. 25.1.2.22	Doc. *	Sheet 4 of 12	Electrical and Systems Engineering
File: C:\Users\abhikkum\AppData\Local\TempReleases\Snapshot\1\SerialToUSB.SchDoc				





Title: ***BatteryCharger.SchDoc***			
Desc: Battery Charger			
Size: Letter	Auth: Abhik & Toma	Proj: ESE5160 - T13 DreamCatcher (Spring 2025).PrjPcb	
VCS: a0cff160598210 59d0a6e0870289f8002ca5aff9			www.seas.upenn.edu
Date: 3/5/2025 8:32:32 PM	AD Ver. 25.1.2.22	Doc. *	Sheet 5 of 12
File: C:\Users\abhikkum\AppData\Local\TempReleases\Snapshot\1\BatteryCharger.SchDoc			

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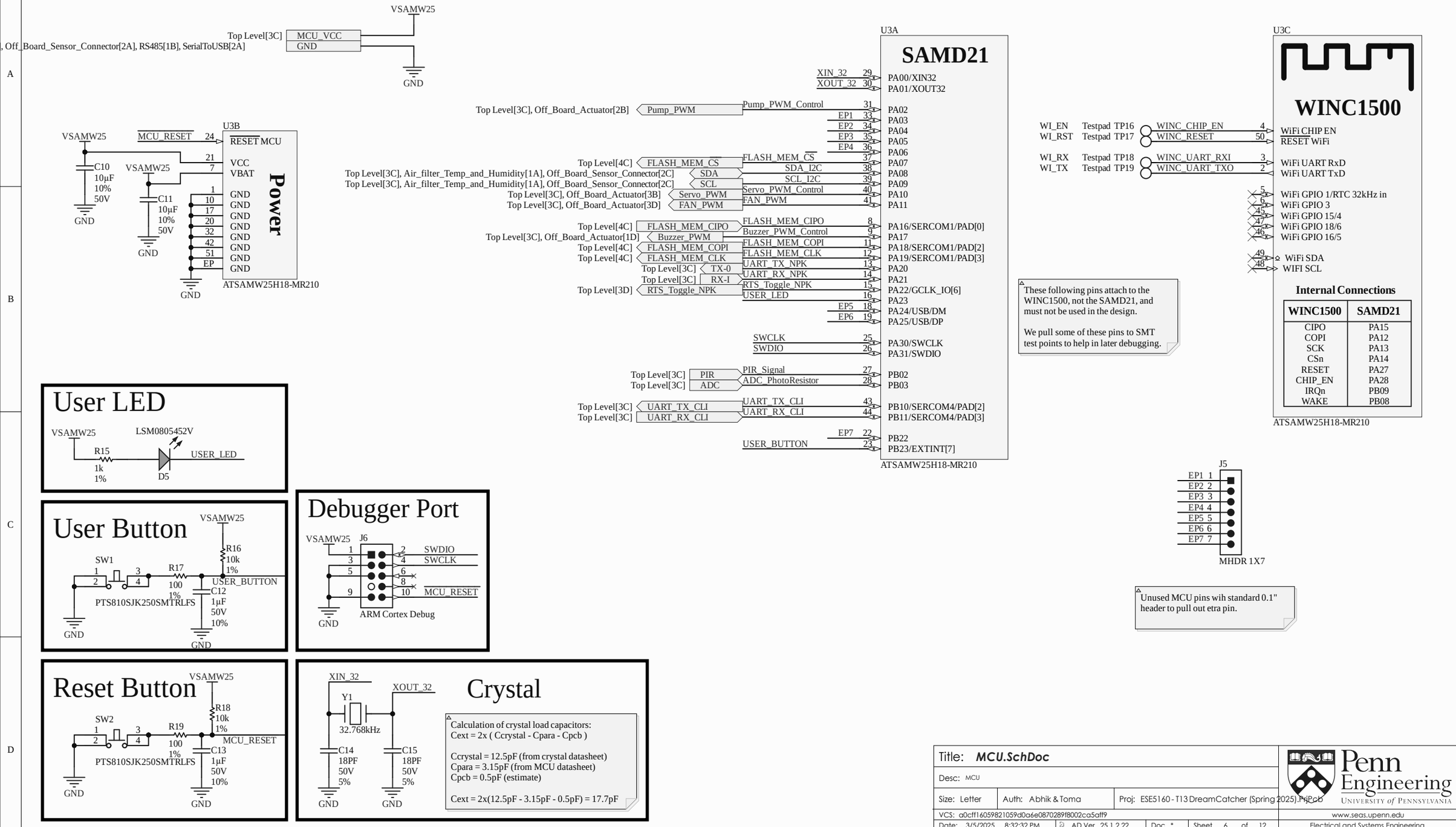
Electrical and Systems Engineering


VSAMW25
Top Level[3C]
MCU_VCC
GND
, Off_Board_Sensor_Connector[2A], RS485[1B], SerialToUSB[2A]
U3B
VSAMW25
MCU_RESET
24
RESET MCU
21
VCC
7
VBAT
C10
10µF
10%
50V
C11
10µF
10%
50V
1
10
17
20
32
42
51
EP
GND
Power
ATSAMW25H18-MR210
U3A
SAMD21
XIN_32
29
PA00/XIN32
XOUT_32
30
PA01/XOUT32
Top Level[3C], Off_Board_Actuator[2B]
Pump_PWM
Pump_PWM_Control
31
PA02
EP1
33
PA03
EP2
34
PA04
EP3
35
PA05
EP4
36
PA06
Top Level[4C]
FLASH_MEM_CS
FLASH_MEM_CS
37
PA07
Top Level[3C], Air_filter_Temp_and_Humidity[1A], Off_Board_Sensor_Connector[2C]
SDA
SDA_I2C
38
PA08
Top Level[3C], Air_filter_Temp_and_Humidity[1A], Off_Board_Sensor_Connector[2C]
SCL
SCL_I2C
39
PA09
Top Level[3C], Off_Board_Actuator[3B]
Servo_PWM
Servo_PWM_Control
40
PA10
Top Level[3C], Off_Board_Actuator[3D]
FAN_PWM
FAN_PWM
41
PA11
Top Level[4C]
FLASH_MEM_CIPO
FLASH_MEM_CIPO
8
PA16/SERCOM1/PAD[0]
Top Level[3C], Off_Board_Actuator[1D]
Buzzer_PWM
Buzzer_PWM_Control
9
PA17
Top Level[4C]
FLASH_MEM_COPI
FLASH_MEM_COPI
11
PA18/SERCOM1/PAD[2]
Top Level[4C]
FLASH_MEM_CLK
FLASH_MEM_CLK
12
PA19/SERCOM1/PAD[3]
Top Level[3C]
TX-0
UART_TX_NPK
13
PA20
Top Level[3C]
RX-I
UART_RX_NPK
14
PA21
Top Level[3D]
RTS_Toggle_NPK
RTS_Toggle_NPK
15
PA22/GCLK_IO[6]
USER_LED
16
PA23
EP5
18
PA24/USB/DM
EP6
19
PA25/USB/DP
SWCLK
25
PA30/SWCLK
SWDIO
26
PA31/SWDIO
Top Level[3C]
PIR
PIR_Signal
27
PB02
Top Level[3C]
ADC
ADC_PhotoResistor
28
PB03
Top Level[3C]
UART_TX_CLI
UART_TX_CLI
43
PB10/SERCOM4/PAD[2]
Top Level[3C]
UART_RX_CLI
UART_RX_CLI
44
PB11/SERCOM4/PAD[3]
EP7
22
PB22
USER_BUTTON
23
PB23/EXTINT[7]
ATSAMW25H18-MR210
These following pins attach to the WINC1500, not the SAMD21, and must not be used in the design.
We pull some of these pins to SMT test points to help in later debugging.
U3C
WINC1500
WI_EN
Testpad TP16
WINC_CHIP_EN
4
WiFi CHIP EN
WI_RST
Testpad TP17
WINC_RESET
50
RESET WiFi
WI_RX
Testpad TP18
WINC_UART_RXI
3
WiFi UART RxD
WI_TX
Testpad TP19
WINC_UART_TXO
2
WiFi UART TxD
5
WiFi GPIO 1/RTC 32kHz in
6
WiFi GPIO 3
45
WiFi GPIO 15/4
47
WiFi GPIO 18/6
46
WiFi GPIO 16/5
49
WiFi SDA
48
WIFI SCL
Internal Connections
WINC1500
SAMD21
CIPO
PA15
COPI
PA12
SCK
PA13
CSn
PA14
RESET
PA27
CHIP_EN
PA28
IRQn
PB09
WAKE
PB08
ATSAMW25H18-MR210
J5
EP1 1
EP2 2
EP3 3
EP4 4
EP5 5
EP6 6
EP7 7
MHDR 1X7
Unused MCU pins wih standard 0.1" header to pull out etra pin.
User LED
VSAMW25
LSM0805452V
R15
1k
1%
USER_LED
D5
User Button
VSAMW25
R16
10k
1%
SW1
R17
100
1%
USER_BUTTON
C12
1µF
50V
10%
PTS810SJK250SMTRLFS
GND
Debugger Port
VSAMW25
J6
SWDIO
SWCLK
MCU_RESET
ARM Cortex Debug
GND
Reset Button
VSAMW25
R18
10k
1%
SW2
R19
100
1%
MCU_RESET
C13
1µF
50V
10%
PTS810SJK250SMTRLFS
GND
Crystal
XIN_32
XOUT_32
Y1
32.768kHz
C14
18PF
50V
5%
C15
18PF
50V
5%
GND
Calculation of crystal load capacitors:
Cext = 2x (Ccrystal - Cpara - Cpcb)
Ccrystal = 12.5pF (from crystal datasheet)
Cpara = 3.15pF (from MCU datasheet)
Cpcb = 0.5pF (estimate)
Cext = 2x(12.5pF - 3.15pF - 0.5pF) = 17.7pF
Title: MCU.SchDoc
Desc: MCU
Size: Letter
Auth: Abhik & Toma
Proj: ESE5160 - T13 DreamCatcher (Spring 2025).PrjPcb
VCS: a0cff16059821059d0a6e0870289f8002ca5aff9
Date: 3/5/2025 8:32:32 PM
AD Ver. 25.1.2.22
Doc. *
Sheet 6 of 12
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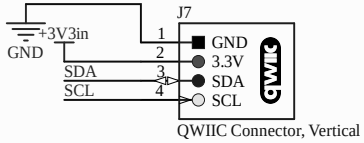
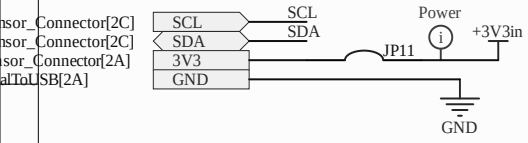
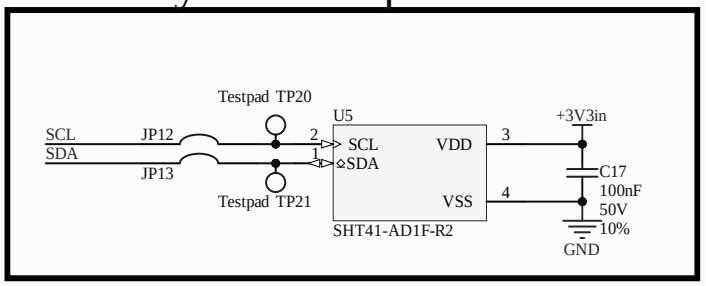


I2C Test Pin QWIIC for testing Purpouses.

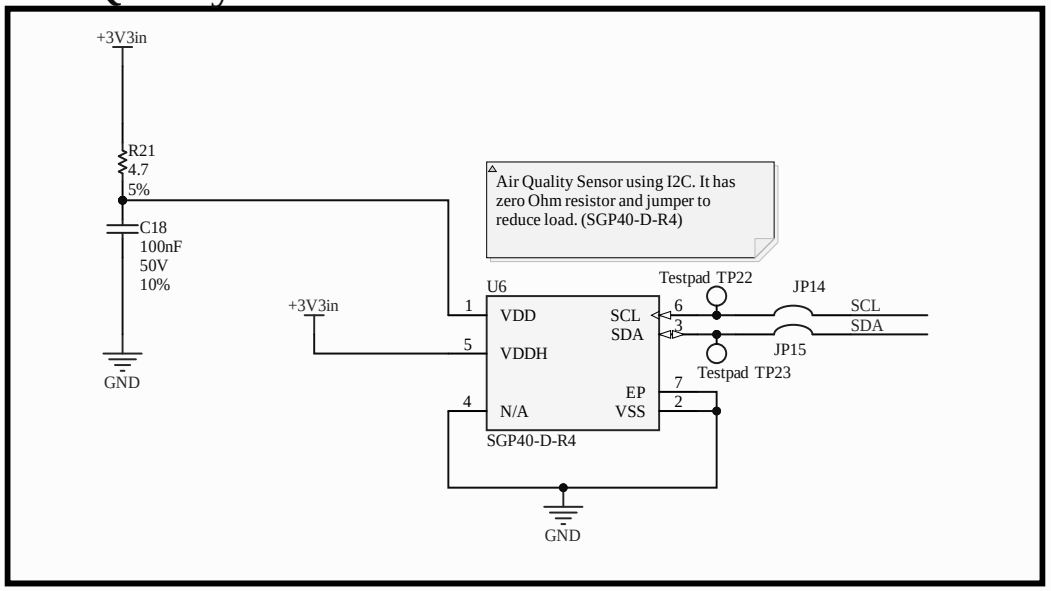


Humidity and Temperature Sensor



Humidity and Temperature Sensor using I2C. It uses zero Ohm resistor amd jumper to reduce load. (SHT41-AD1B-R3)

Air Quality Sensor



Title: *Air_filter_Temp_and_Humidity.SchDoc*			
Desc:			
Size: Letter	Auth: Abhik & Toma	Proj: ESE5160 - T13 DreamCatcher (Spring 2025).PrjPcb	
VCS: a0cff16059821059d0a6e0870289f8002ca5aff9			www.seas.upenn.edu
Date: 3/5/2025 8:32:32 PM	AD Ver. 25.1.2.22	Doc. *	Sheet 7 of 12
File: C:\Users\abhikkum\AppData\Local\TempReleases\Snapshot\1\Air_filter_Temp_and_Humidity.SchDoc			Electrical and Systems Engineering

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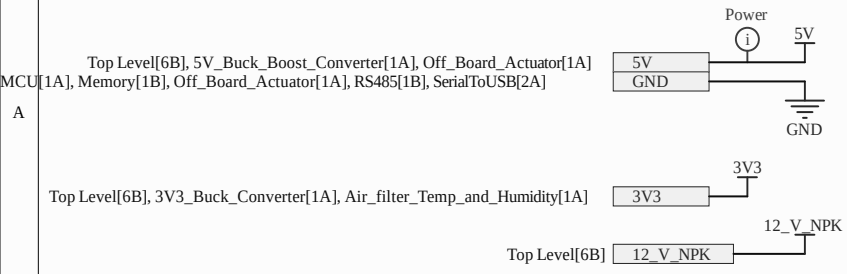
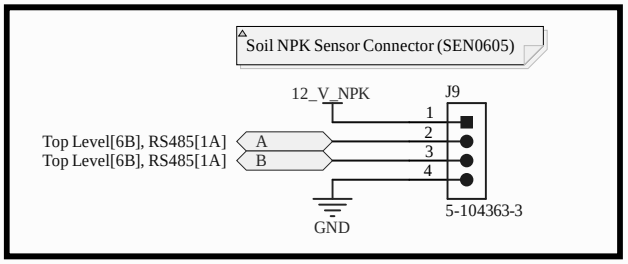
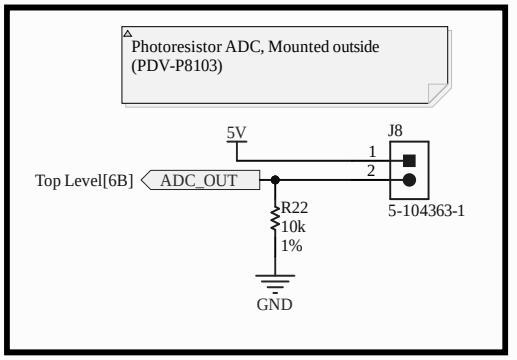


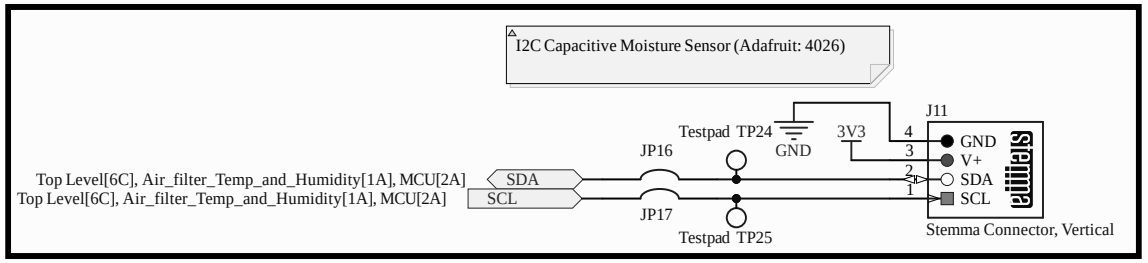
NPK Sensor Connector



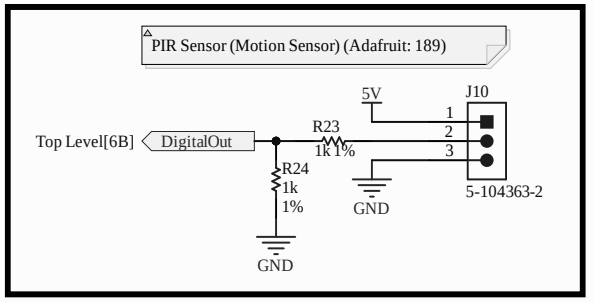
Photoresistor Connector



Moisture Sensor Connector



Motion Sensor Connector



Title: *Off_Board_Sensor_Connector.SchDoc*			
Desc:			
Size: Letter	Auth: Abhik & Toma	Proj: ESE5160 - T13 DreamCatcher (Spring 2025).PrjPcb	
VCS: a0cff16059821059d0a6e0870289f8002ca5aff9			www.seas.upenn.edu
Date: 3/5/2025 8:32:32 PM	AD Ver. 25.1.2.22	Doc. *	Sheet 8 of 12
File: C:\Users\abhikkum\AppData\Local\TempReleases\Snapshot\1\Off_Board_Sensor_Connector.SchDoc			Electrical and Systems Engineering

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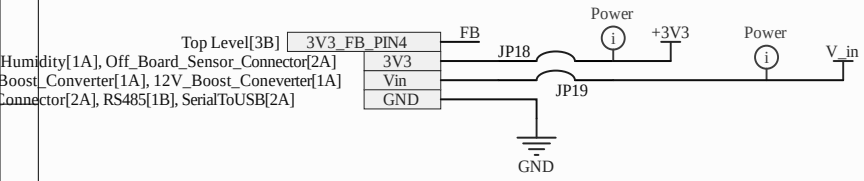

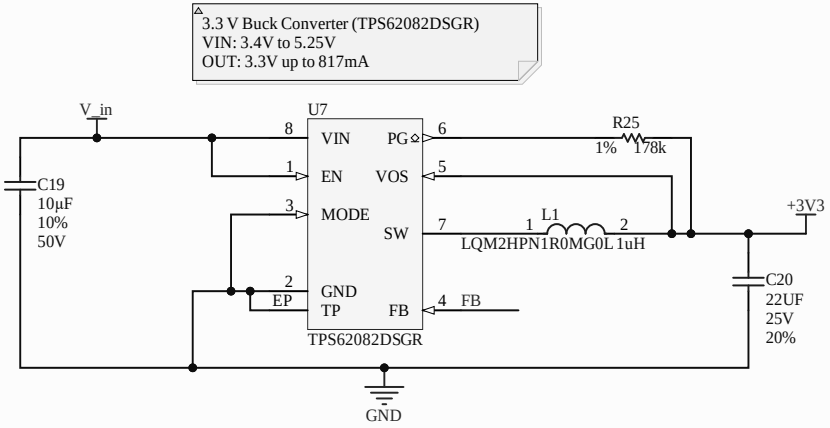

Title: ***3V3_Buck_Converter.SchDoc***			
Desc:			
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VCS: a0cff160598210 59d0a6e0870289f8002ca5aff9			www.seas.upenn.edu
Date: 3/5/2025 8:32:32 PM	AD Ver. 25.1.2.22	Doc. *	Sheet 9 of 12 — Electrical and Systems Engineering
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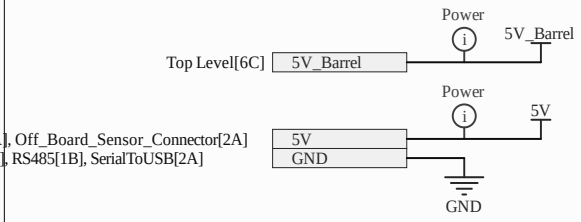
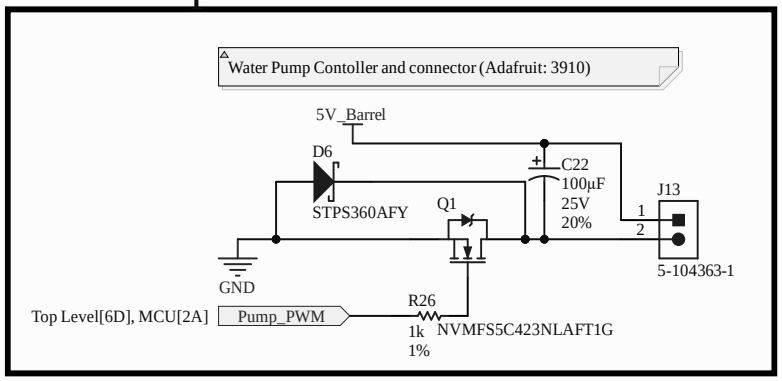
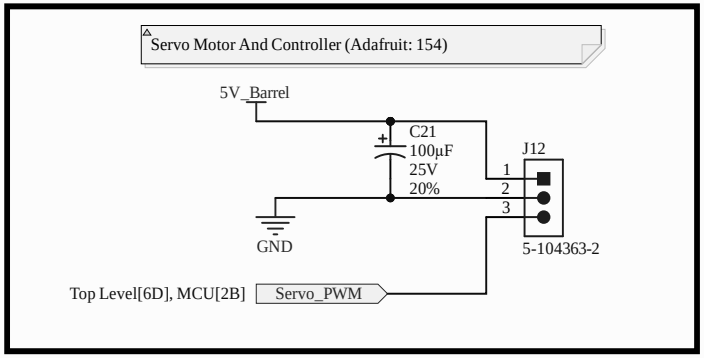


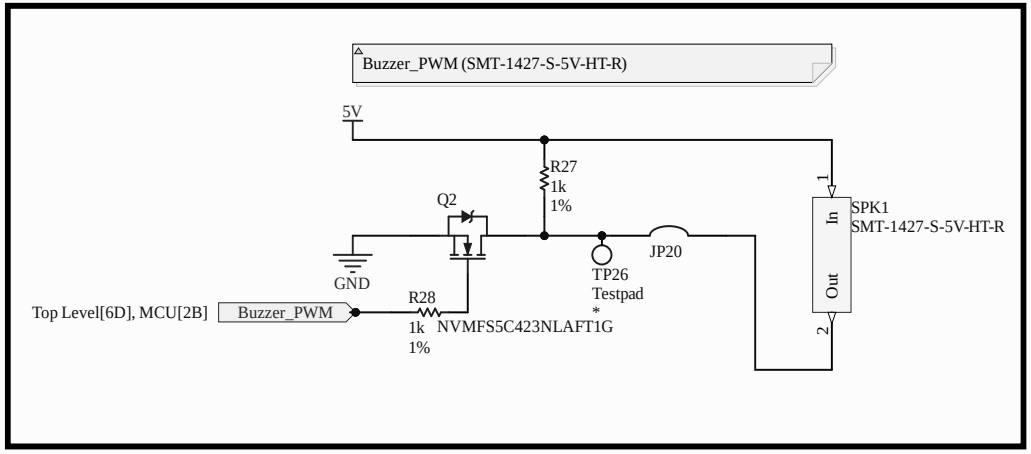
Water Pump Controller and Connector



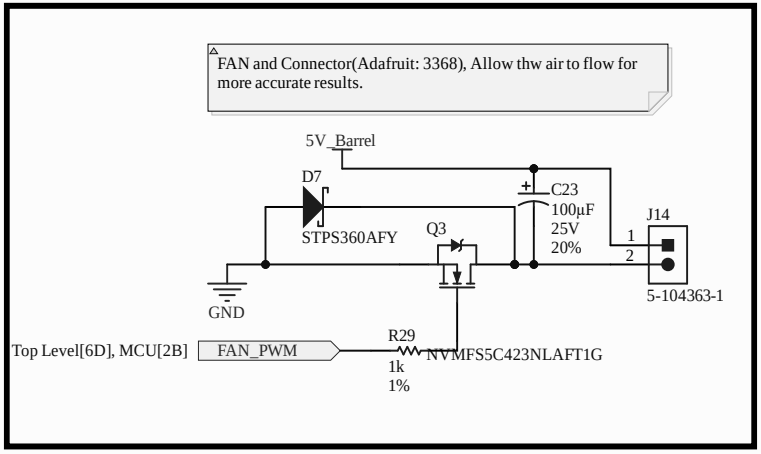
Servo Motor and Controller



Buzzer



Fan and Connector



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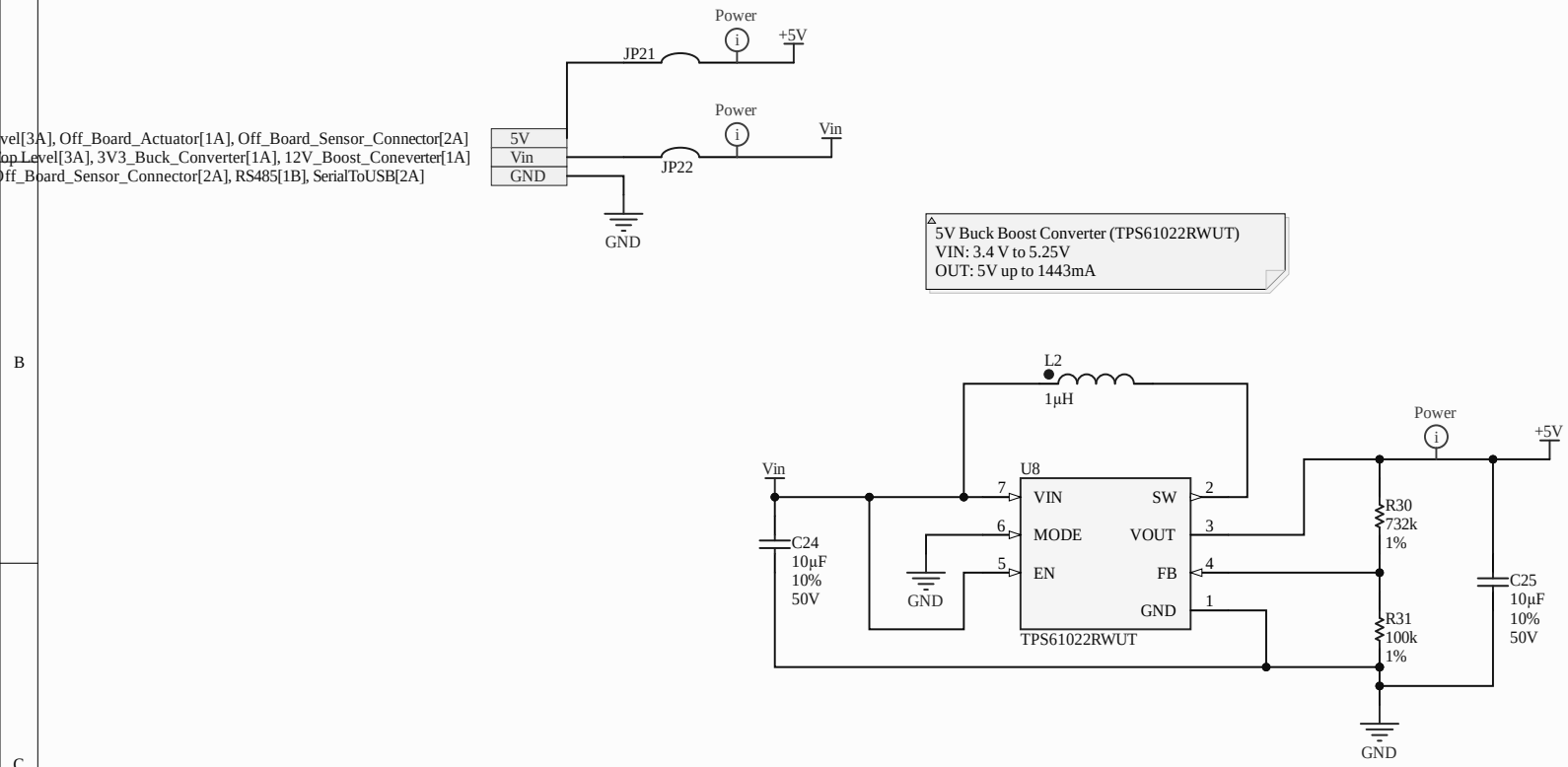
Desc:			
Size: Letter	Auth: Abhik & Toma	Proj: ESE5160 - T13 DreamCatcher (Spring 2025).PrjPcb	
VCS: a0cff16059821059d0a6e0870289f8002ca5aff9			www.seas.upenn.edu
Date: 3/5/2025 8:32:32 PM	AD Ver. 25.1.2.22	Doc. *	Sheet 10 of 12
File: C:\Users\abhikkum\AppData\Local\TempReleases\Snapshot\1\Off_Board_Actuator.SchDoc			Electrical and Systems Engineering

Penn Engineering
University of Pennsylvania



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Date: 3/5/2025 8:32:32 PM	AD Ver. 25.1.2.22	Doc. *	Sheet 11 of 12
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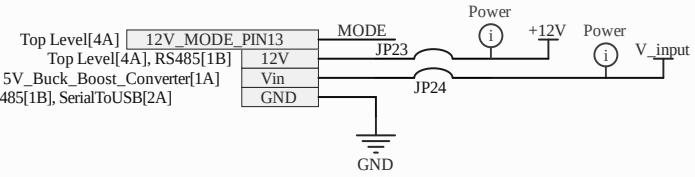
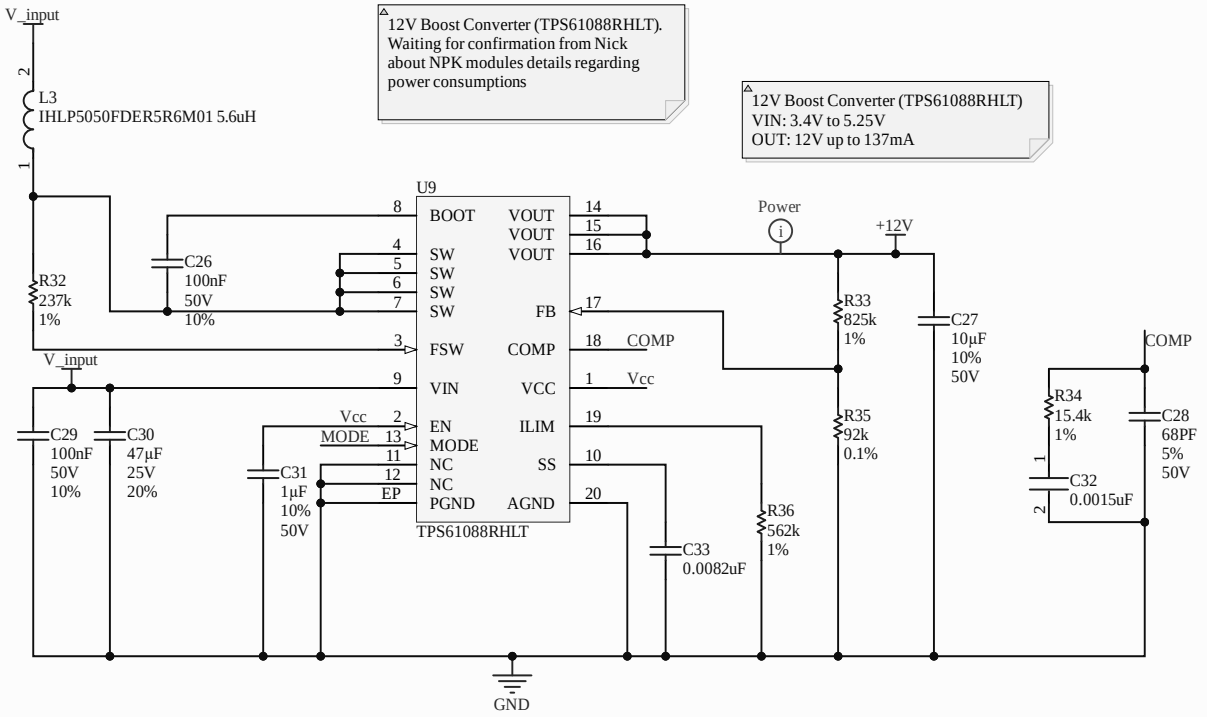
Penn Engineering
University of Pennsylvania
Electrical and Systems Engineering





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Penn Engineering
University of Pennsylvania
Electrical and Systems Engineering

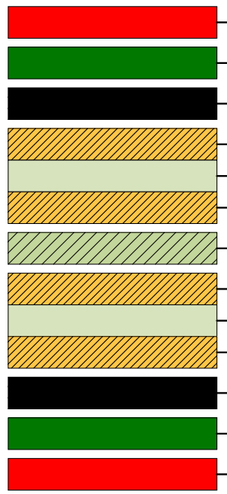
REV STATUS OF SHEETS												
	REV											
	SHEET											

DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

L1 (Scale 1:1)

Layer Stack Legend



Material	Layer	Thickness	Dielectric Material	Type	Gerber
	Top Overlay			Legend	GTO
Surface Material	Top Solder	0.03mm(1.00mil)	PSR-4000BN DI Colors	Solder Mask	GTS
Nickel, Gold	Top Surface Finish	0.00mm(0.16mil)		Surface Finish	
Copper	**L1**	**0.04mm(1.38mil)**		**Signal**	**GTL**
Core		*0.20mm(7.96mil)*	*FR408HR 2113*	*Dielectric*	
Copper	**L2 (GND)**	**0.02mm(0.69mil)**		**Signal**	**G1**
		0.99mm(39.00mil)	*FR408HR*	*Dielectric*	
Copper	**L3 (Power)**	**0.02mm(0.69mil)**		**Signal**	**G2**
Core		*0.20mm(7.96mil)*	*FR408HR 2113*	*Dielectric*	
Copper	**L4**	**0.04mm(1.38mil)**		**Signal**	**GBL**
Nickel, Gold	Bottom Surface Finish	0.00mm(0.16mil)		Surface Finish	
Surface Material	Board Layer Stack Bottom Solder	0.03mm(1.00mil)	PSR-4000BN DI Colors	Solder Mask	GBS
	Board Layer Stack Bottom Overlay			Legend	GBO

Total thickness: 1.56mm(61.37mil)

Manufacturing Notes:

1. All layers are unmirrored - you should be able to "see straight through."
2. Controlled Dielectric: NO
3. Controlled Impedance: NO
4. Thickness tolerance +/-10%
5. UL Marking Required: NO
6. RoHS Marking: NO
7. ITAR: NO

PART NO: =PCB_PART_NUMBER

APPROVALS		DATE
ENGINEER:	=PCB_ENGINEER	=PCB_ENGINEE
DESIGNER:	=PCB_DESIGNER	=PCB_DESIGNE
CHECKER:	=PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
PCB DOC:	=PCB_DWG_NO

THIRD ANGLE PROJECTION

NEXT ASSY | USED ON

APPLICATION

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13 | DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1 =PCB_TITLE_2

A.

SIZE:	CAGE CODE:	DWG NO:	REV:
B	=CAGE_CO		

SCALE: | FILE NAME: FabricationDrawings.PCBDwf | SHEET: 1 OF 12

DWG NO: =DOC_NO_ASSY_ REV: A.4

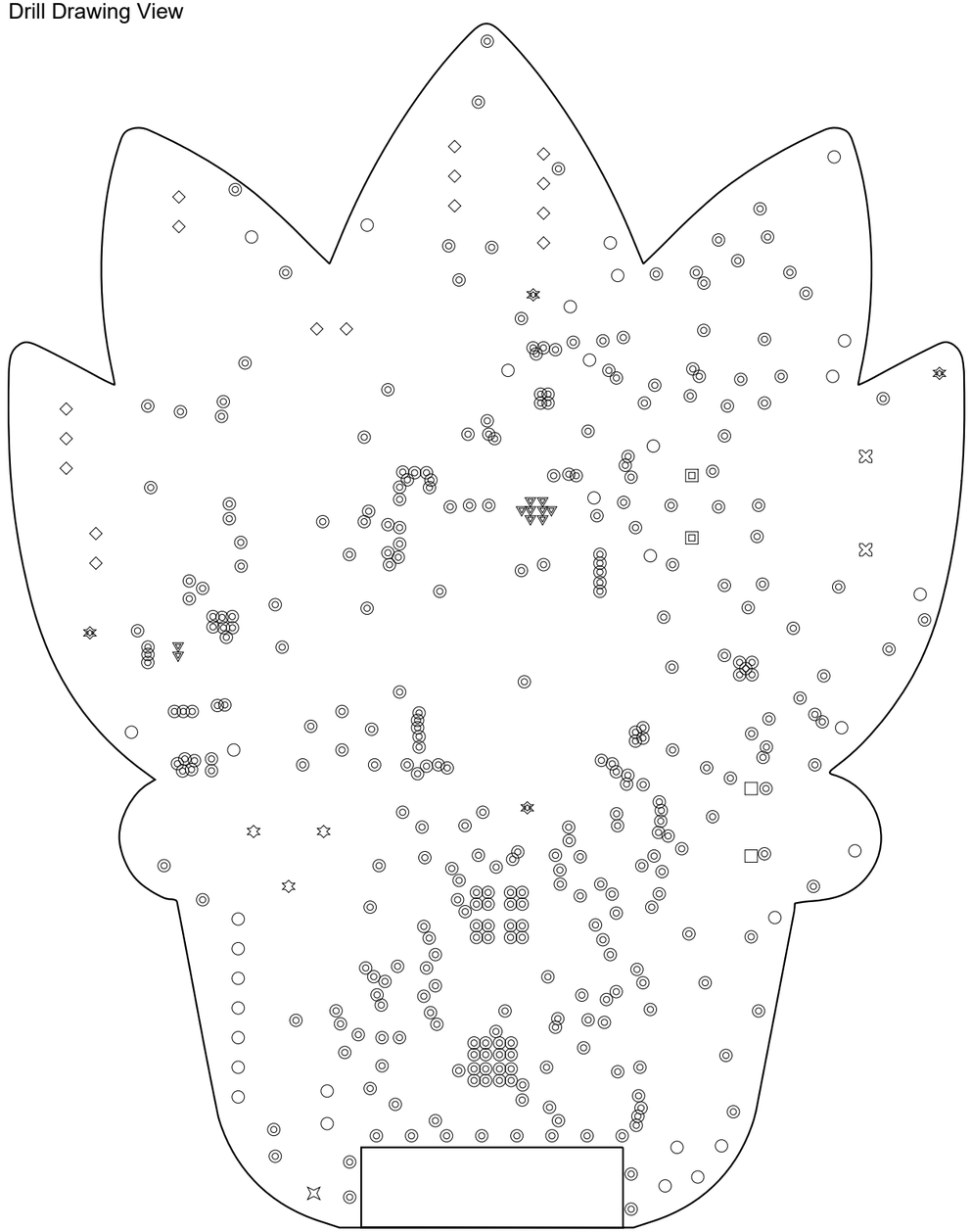
DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REV STATUS OF SHEETS											
	REV										
	SHEET										

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

Drill Drawing View



Drill Table

Symbol	Count	Hole Size	Plated	Hole Tolerance
	4	2.00mm(78.74mil)	Non-Plated	
	32	1.02mm(40.00mil)	Plated	
	3	1.00mm(39.37mil)	Plated	
	16	0.89mm(35.04mil)	Plated	
	2	0.90mm(35.43mil)	Non-Plated	
	2	0.65mm(25.59mil)	Non-Plated	
	1	1.60mm(62.99mil)	Plated	
	339	0.20mm(8.00mil)	Plated	
	10	0.20mm(7.87mil)	Plated	
	2	0.32mm(12.50mil)	Plated	

PART NO: =PCB_PART_NUMBER

APPROVALS		DATE
ENGINEER:	=PCB_ENGINEER	=PCB_ENGINEE
DESIGNER:	=PCB_DESIGNER	=PCB_DESIGNE
CHECKER:	=PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
PCB DOC:	=PCB_DWG_NO

THIRD ANGLE PROJECTION

NEXT ASSY | USED ON

APPLICATION

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13 | DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1 =PCB_TITLE_2

SIZE: B | CAGE CODE: =CAGE_CO | DWG NO: | REV: A.

SCALE: | FILE NAME: FabricationDrawings.PCBDwf | SHEET: 2 OF 12

DWG NO: =DOC_NO_ASSY_ REV: A.4

DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REV STATUS OF SHEETS

REV											
SHEET											

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

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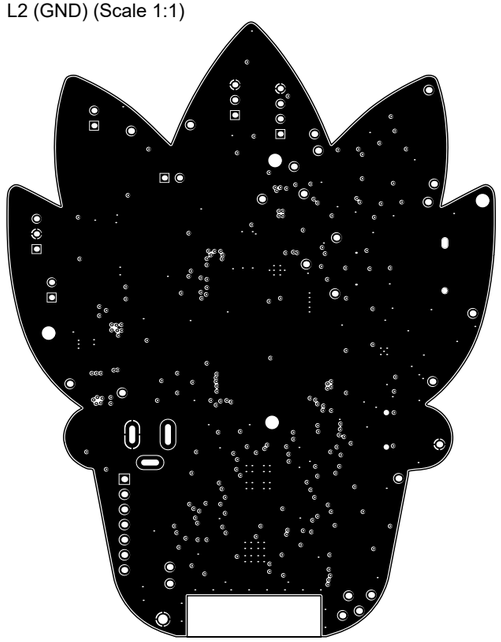
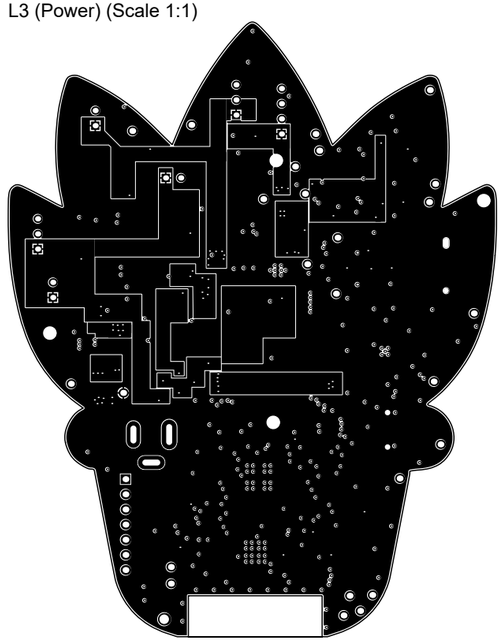


L3 (Power) (Scale 1:1)



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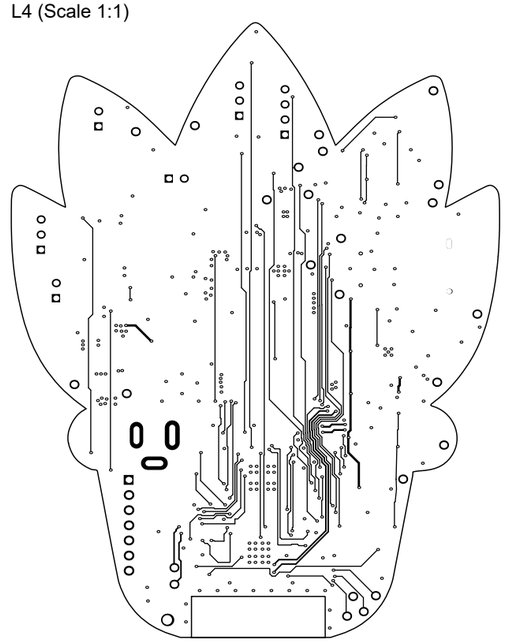
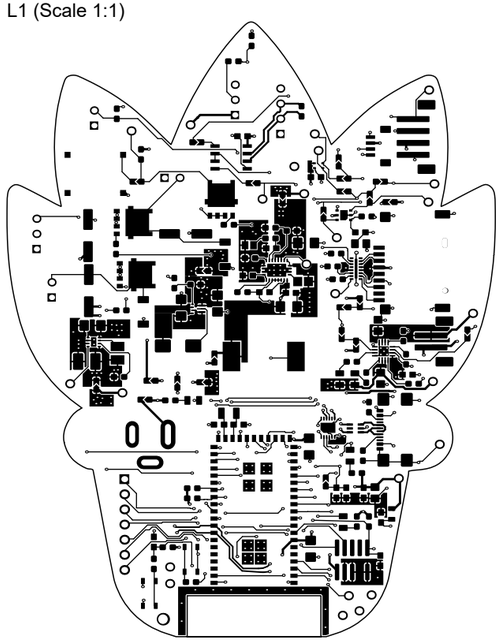


L1 (Scale 1:1)



PART NO: =PCB_PART_NUMBER

APPROVALS		DATE
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DESIGNER:	=PCB_DESIGNER	=PCB_DESIGNE
CHECKER:	=PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
PCB DOC:	=PCB_DWG_NO

THIRD ANGLE PROJECTION

NEXT ASSY	USED ON
APPLICATION	

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13

DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1
=PCB_TITLE_2

A.

SIZE:	CAGE CODE:	DWG NO:	REV:
B	=CAGE_CO		

SCALE: | FILE NAME: FabricationDrawings.PCBDwf | SHEET: 3 OF 12

DWG NO: =DOC_NO_ASSY_ REV: A.4

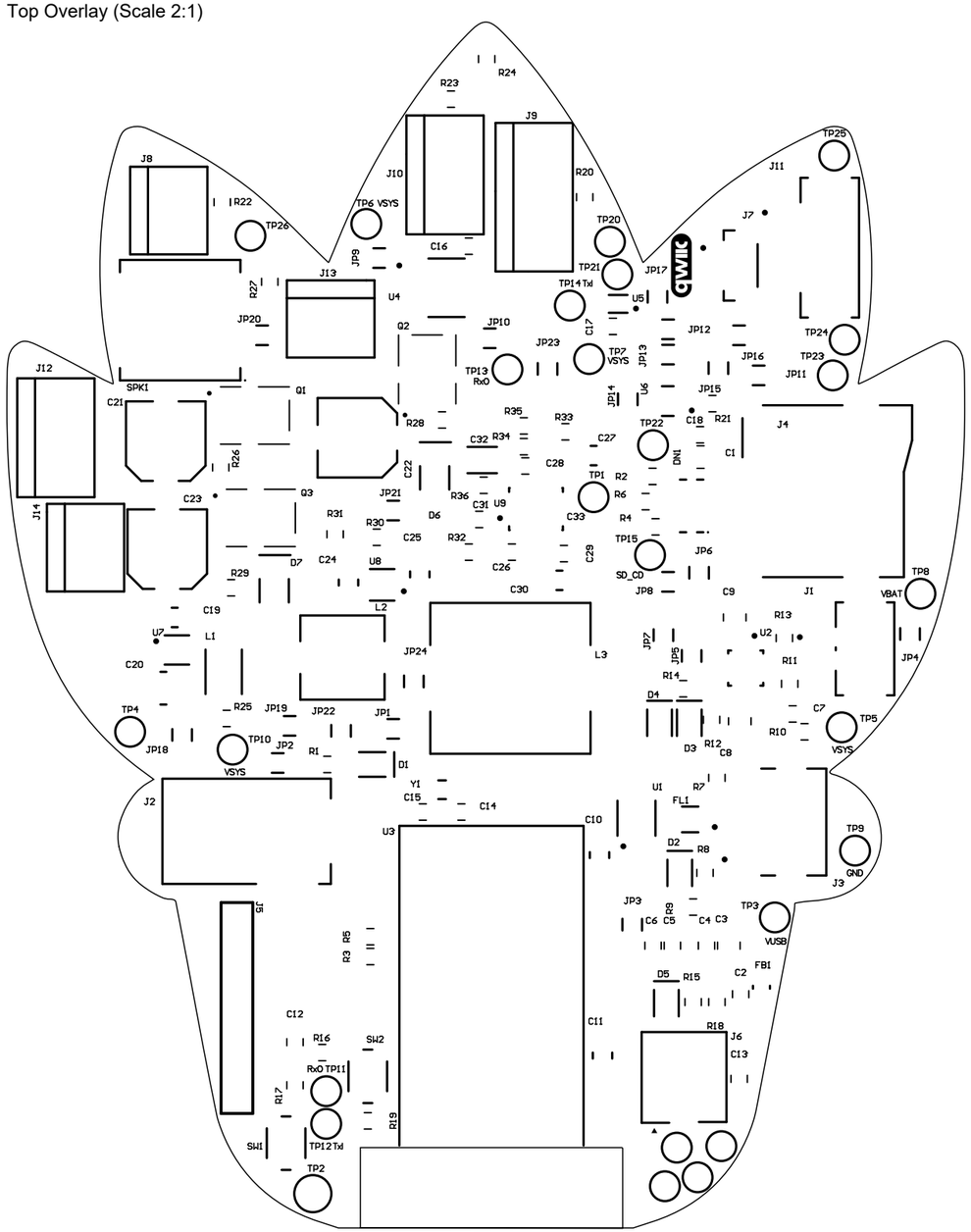
REV STATUS OF SHEETS												
	REV											
	SHEET											

DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

Top Overlay (Scale 2:1)



PART NO: =PCB_PART_NUMBER

APPROVALS	DATE
ENGINEER: =PCB_ENGINEER	=PCB_ENGINEE
DESIGNER: =PCB_DESIGNER	=PCB_DESIGNE
CHECKER: =PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
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THIRD ANGLE PROJECTION

NEXT ASSY | USED ON

APPLICATION

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13 | DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1 =PCB_TITLE_2

SIZE: B | CAGE CODE: =CAGE_CO | DWG NO: | REV: A.

SCALE: | FILE NAME: FabricationDrawings.PCBDwf | SHEET: 4 OF 12

DWG NO: =DOC_NO_ASSY_ REV: A.4

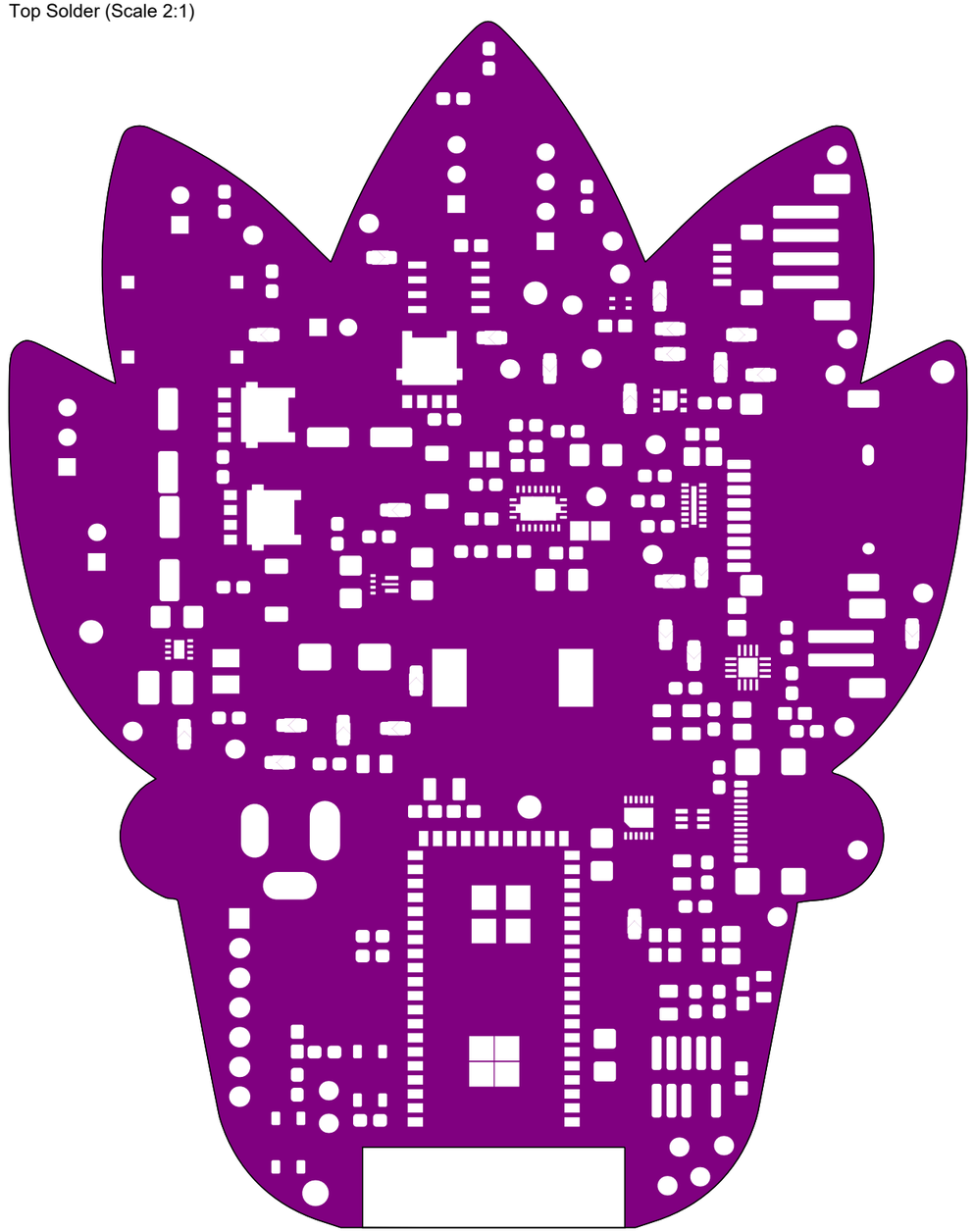
DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REV STATUS OF SHEETS												
	REV											
	SHEET											

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

Top Solder (Scale 2:1)



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DESIGNER:	=PCB_DESIGNER	=PCB_DESIGNE
CHECKER:	=PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
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THIRD ANGLE PROJECTION

NEXT ASSY | USED ON

APPLICATION

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13 | DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1 =PCB_TITLE_2

SIZE: B | CAGE CODE: =CAGE_CO | DWG NO: | REV: A.

SCALE: | FILE NAME: FabricationDrawings.PCBDwf | SHEET: 5 OF 12

DWG NO: =DOC_NO_ASSY_ REV: A.4

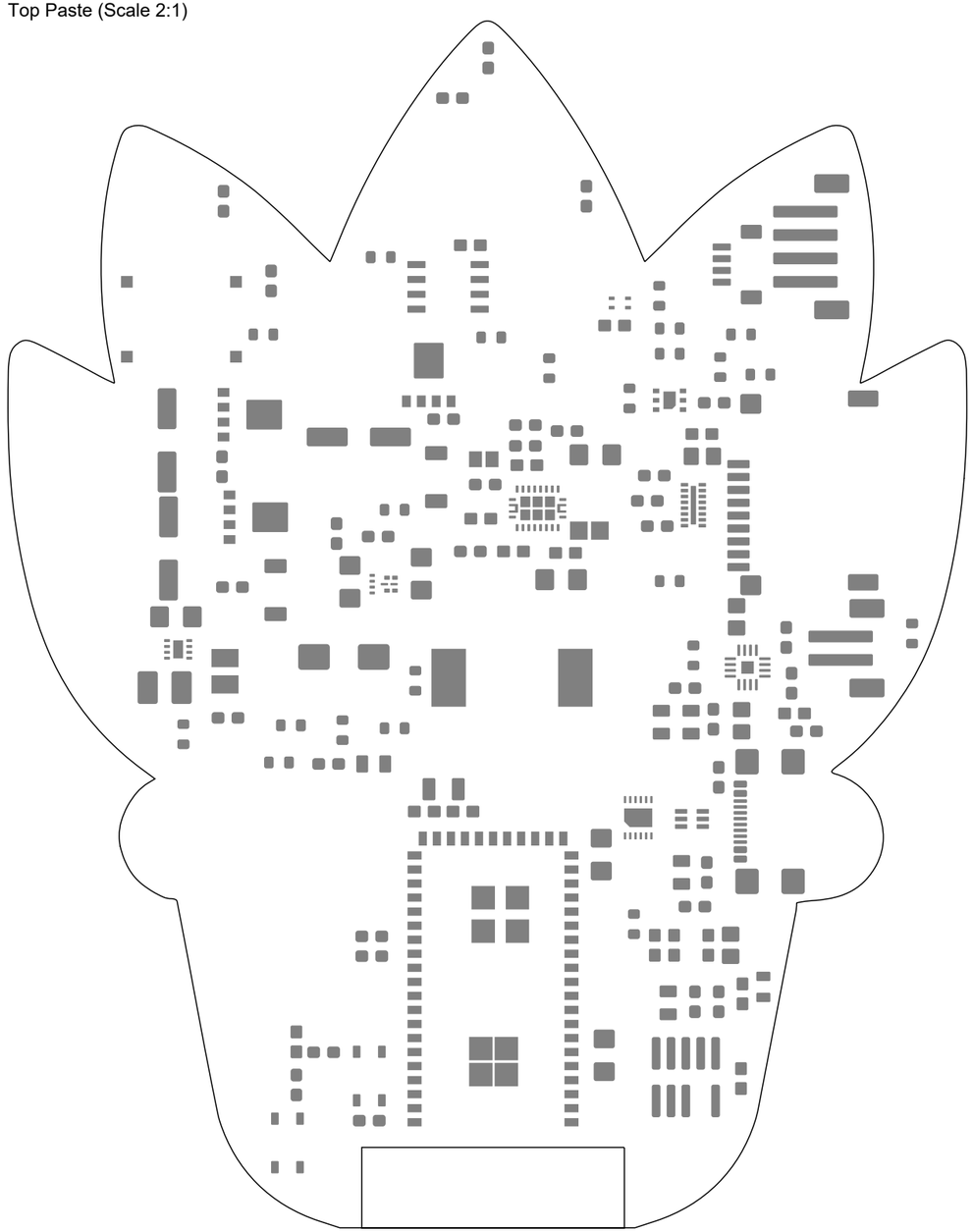
REV STATUS OF SHEETS												
	REV											
	SHEET											

DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

Top Paste (Scale 2:1)



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APPROVALS		DATE
ENGINEER:	=PCB_ENGINEER	=PCB_ENGINEE
DESIGNER:	=PCB_DESIGNER	=PCB_DESIGNE
CHECKER:	=PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
PCB DOC:	=PCB_DWG_NO

THIRD ANGLE PROJECTION

NEXT ASSY | USED ON

APPLICATION

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13

DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1
=PCB_TITLE_2

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SIZE:	CAGE CODE:	DWG NO:	REV:
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SCALE: | FILE NAME: FabricationDrawings.PCBDwf | SHEET: 6 OF 12

DWG NO: =DOC_NO_ASSY_ REV: A.4

REV STATUS OF SHEETS												
	REV											
	SHEET											

DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

L1 (Scale 2:1)

PART NO: =PCB_PART_NUMBER			
APPROVALS	DATE		
ENGINEER: =PCB_ENGINEER	=PCB_ENGINEE		
DESIGNER: =PCB_DESIGNER	=PCB_DESIGNE		
CHECKER: =PCB_CHECKER	=PCB_CHECKE		
Reference Documents			
BOM DOC: =DOC_NO_BOM			
ASSY DOC: =DOC_NO_FAB_DWG			
SCH DOC: =DOC_NO_SCH_DWG			
PCB DOC: =PCB_DWG_NO			

THIRD ANGLE PROJECTION

NEXT ASSY | USED ON

APPLICATION

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13 | DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1 =PCB_TITLE_2

A.

SIZE: B | CAGE CODE: =CAGE_CO | DWG NO: | REV:

SCALE: | FILE NAME: FabricationDrawings.PCBDwf | SHEET: 7 OF 12

DWG NO: =DOC_NO_ASSY_ REV: A.4

REV STATUS OF SHEETS											
	REV										
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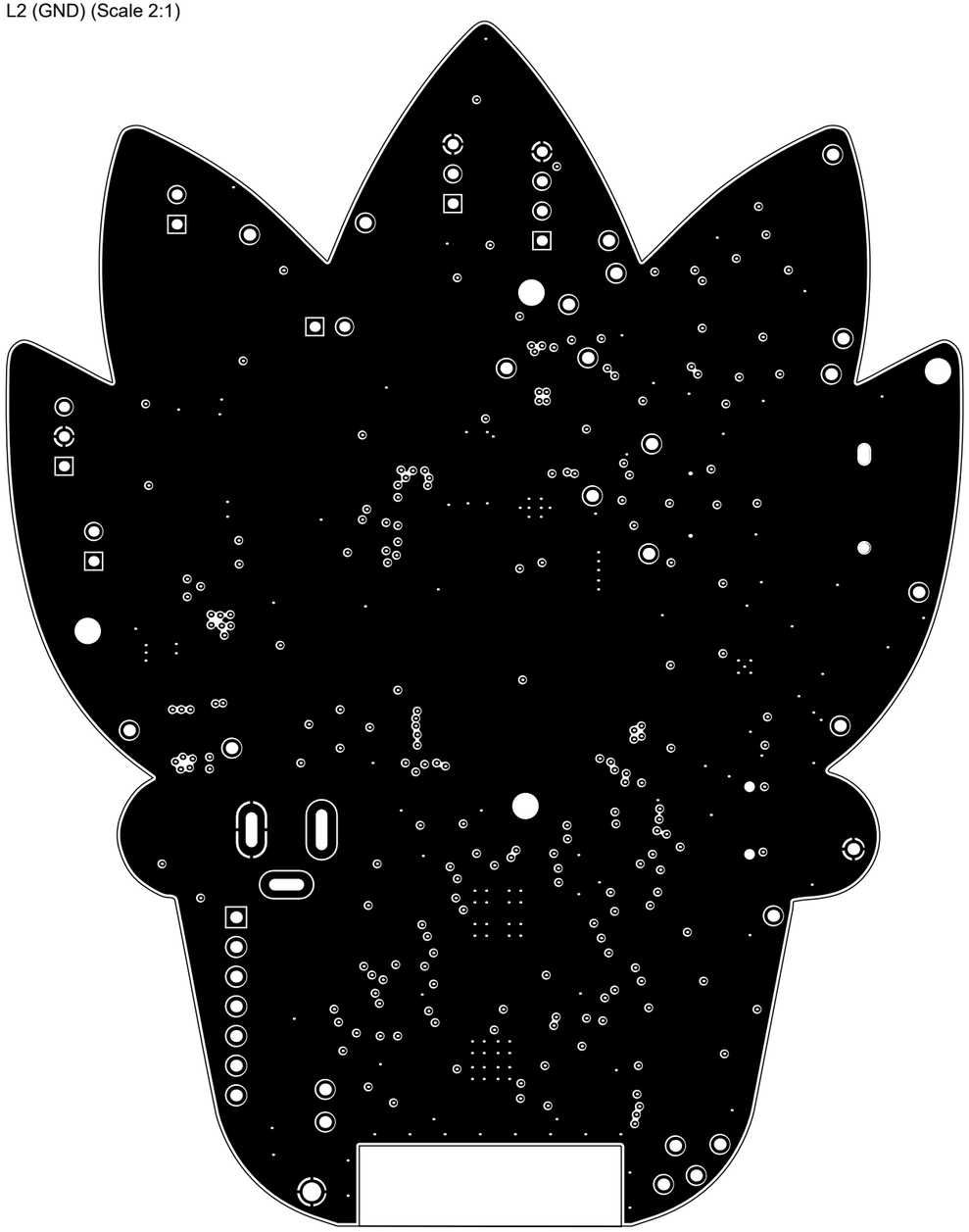
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

DWG NO: =DOC_NO_ASSY_DWG REV: A.4

L2 (GND) (Scale 2:1)



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APPROVALS	DATE
ENGINEER: =PCB_ENGINEER	=PCB_ENGINEE
DESIGNER: =PCB_DESIGNER	=PCB_DESIGNE
CHECKER: =PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
PCB DOC:	=PCB_DWG_NO

THIRD ANGLE PROJECTION

NEXT ASSY | USED ON

APPLICATION

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13

DESIGN ITEM REVISION: A.4

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SIZE: B | CAGE CODE: =CAGE_CO | DWG NO: | REV: A.

SCALE: | FILE NAME: FabricationDrawings.PCBDwf | SHEET: 8 OF 12

DWG NO: =DOC_NO_ASSY_ REV: A.4

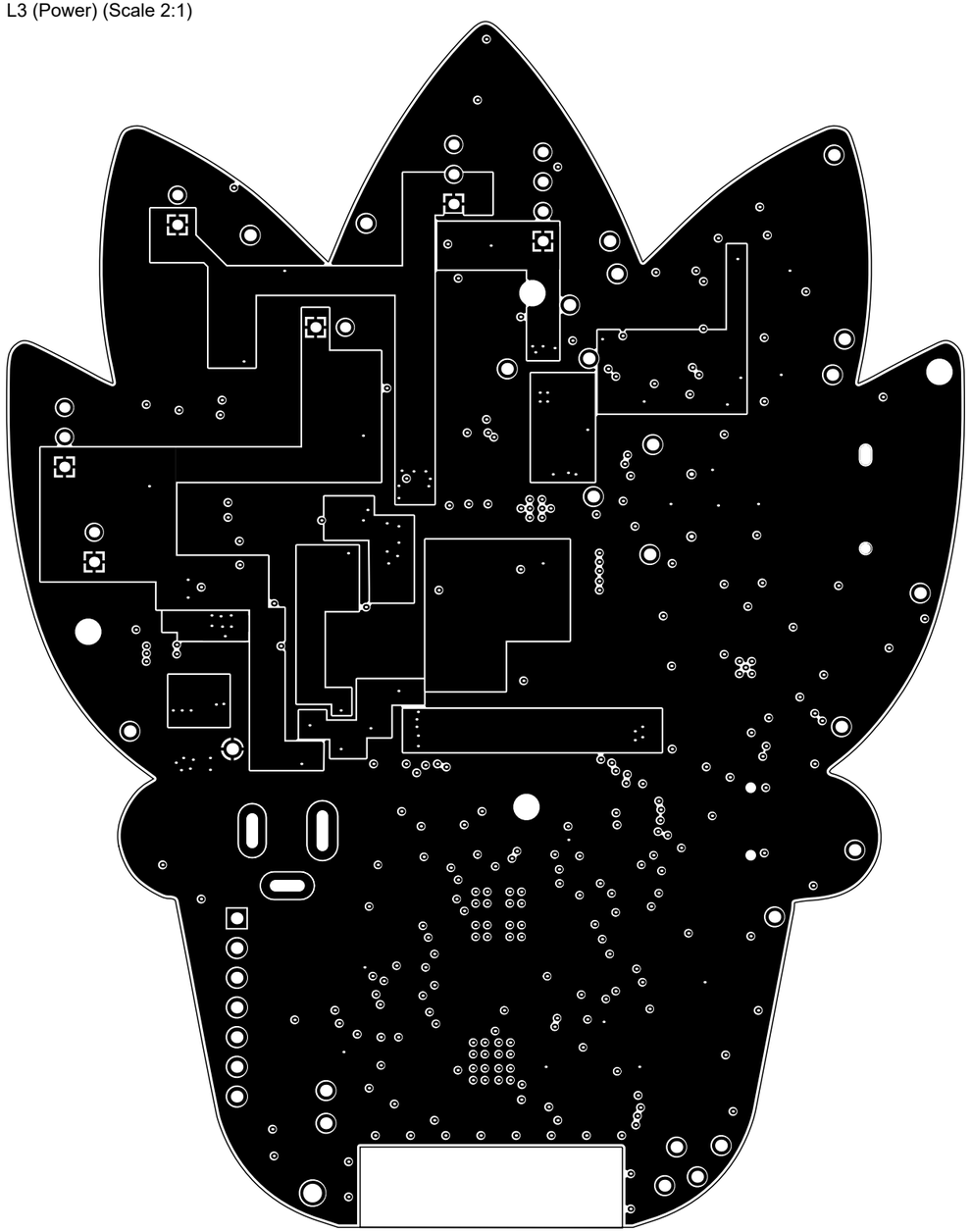
REV STATUS OF SHEETS												
	REV											
	SHEET											

DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

L3 (Power) (Scale 2:1)



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DESIGNER:	=PCB_DESIGNER	=PCB_DESIGNE
CHECKER:	=PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
PCB DOC:	=PCB_DWG_NO

THIRD ANGLE PROJECTION

NEXT ASSY	USED ON
APPLICATION	

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13

DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1 =PCB_TITLE_2

SIZE: B | CAGE CODE: =CAGE_CO | DWG NO: | REV: A.

SCALE: | FILE NAME: FabricationDrawings.PCBDwf | SHEET: 9 OF 12

DWG NO: =DOC_NO_ASSY_ REV: A.4

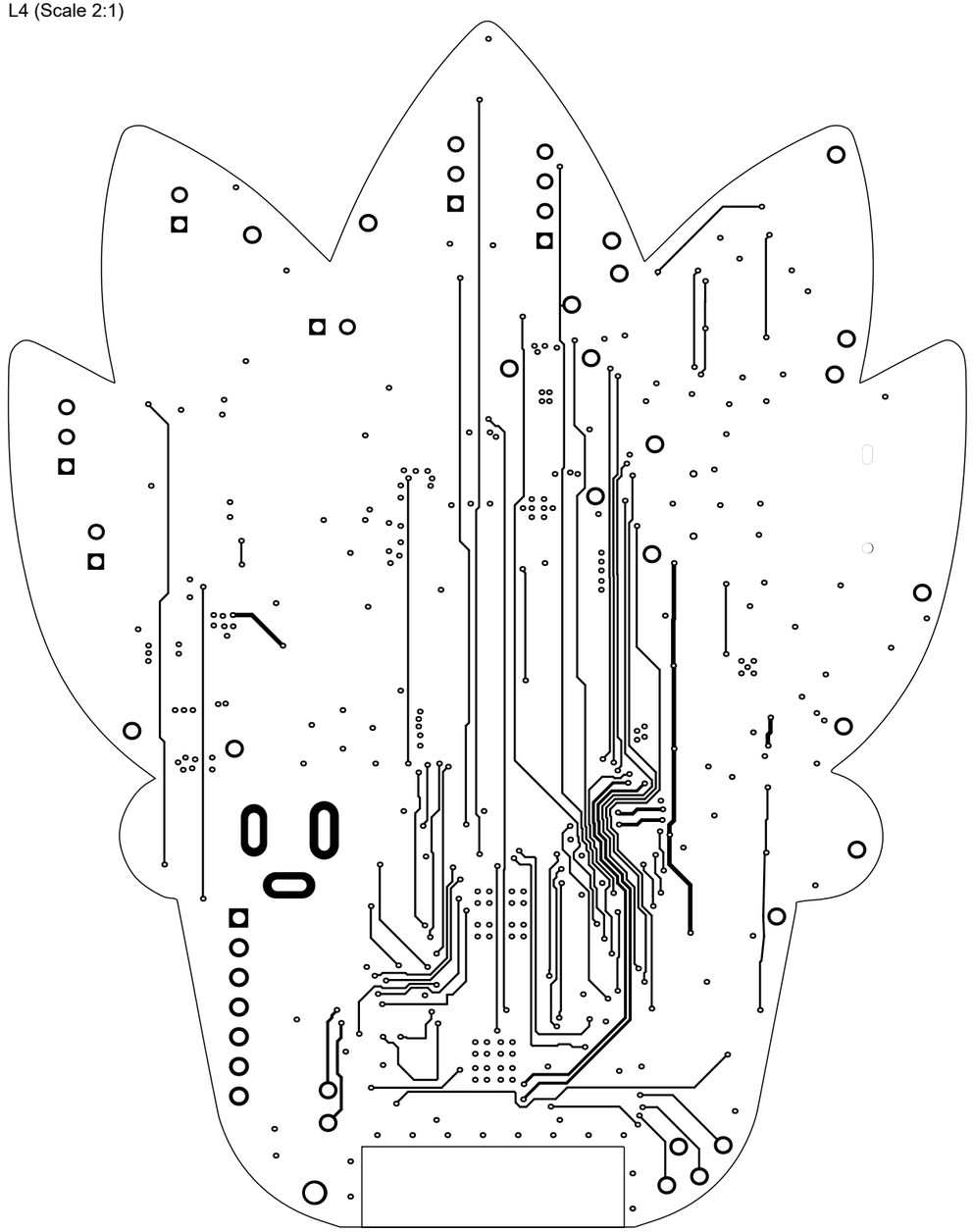
REV STATUS OF SHEETS												
	REV											
	SHEET											

DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

L4 (Scale 2:1)



PART NO: =PCB_PART_NUMBER			
APPROVALS	DATE	=Address1 =Address2 =Address3 =Address4	
ENGINEER: =PCB_ENGINEER	=PCB_ENGINEE		
DESIGNER: =PCB_DESIGNER	=PCB_DESIGNE		
CHECKER: =PCB_CHECKER	=PCB_CHECKE	DESIGN ITEM: SRC-ESE5160 - T13	DESIGN ITEM REVISION: A.4
Reference Documents		TITLE: =PCB_TITLE_1 =PCB_TITLE_2	A.
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PCB DOC: =PCB_DWG_NO		SHEET: 10 OF 12	

THIRD ANGLE PROJECTION

NEXT ASSY | USED ON

APPLICATION

DWG NO: =DOC_NO_ASSY_ REV: A.4

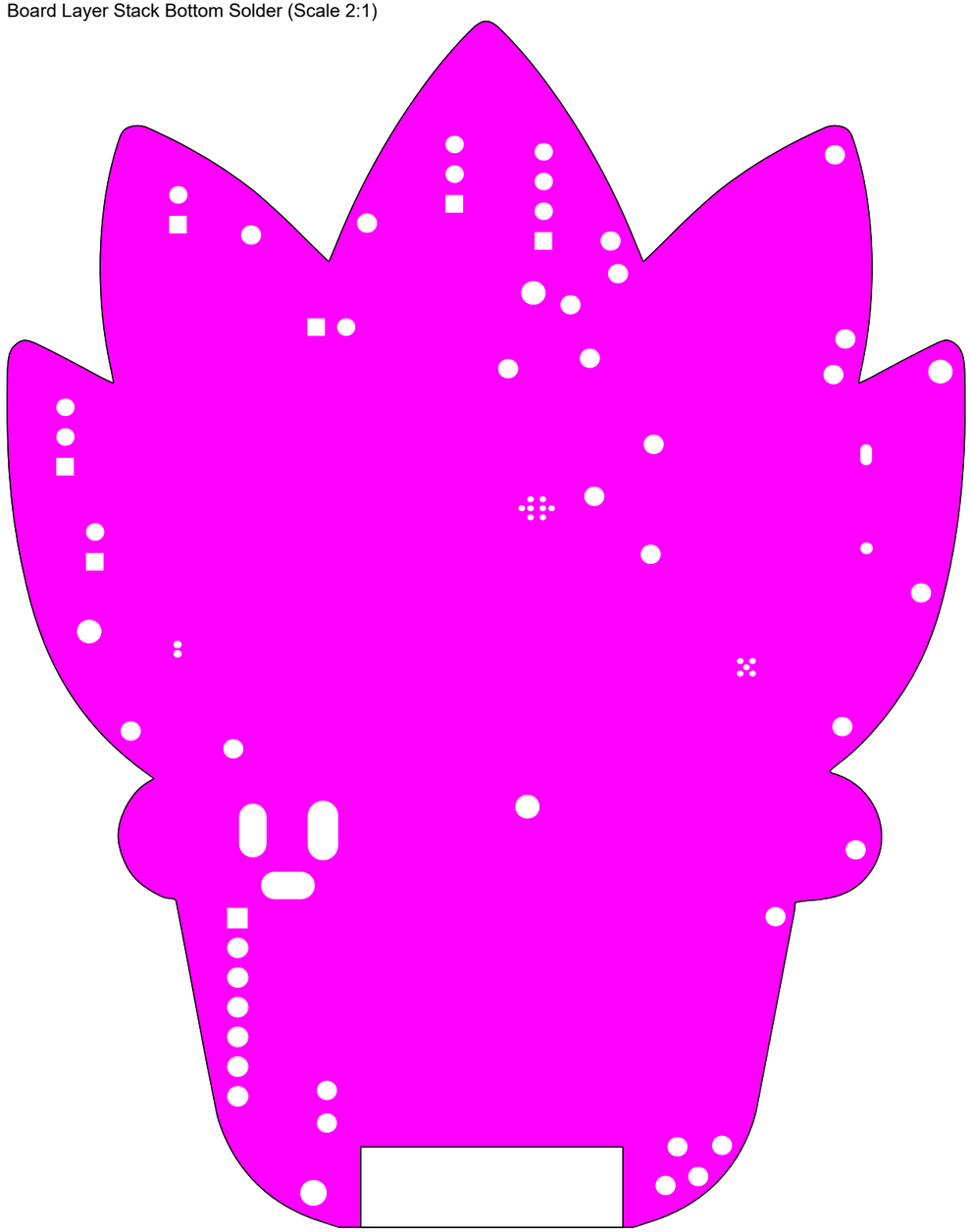
REV STATUS OF SHEETS												
	REV											
	SHEET											

DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

Board Layer Stack Bottom Solder (Scale 2:1)



PART NO: =PCB_PART_NUMBER

APPROVALS		DATE
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DESIGNER:	=PCB_DESIGNER	=PCB_DESIGNE
CHECKER:	=PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
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THIRD ANGLE PROJECTION

NEXT ASSY	USED ON
APPLICATION	

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13 DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1 =PCB_TITLE_2

SIZE: B CAGE CODE: =CAGE_CO DWG NO: REV: A.

SCALE: FILE NAME: FabricationDrawings.PCBDwf SHEET: 11 OF 12

DWG NO: =DOC_NO_ASSY_ REV: A.4

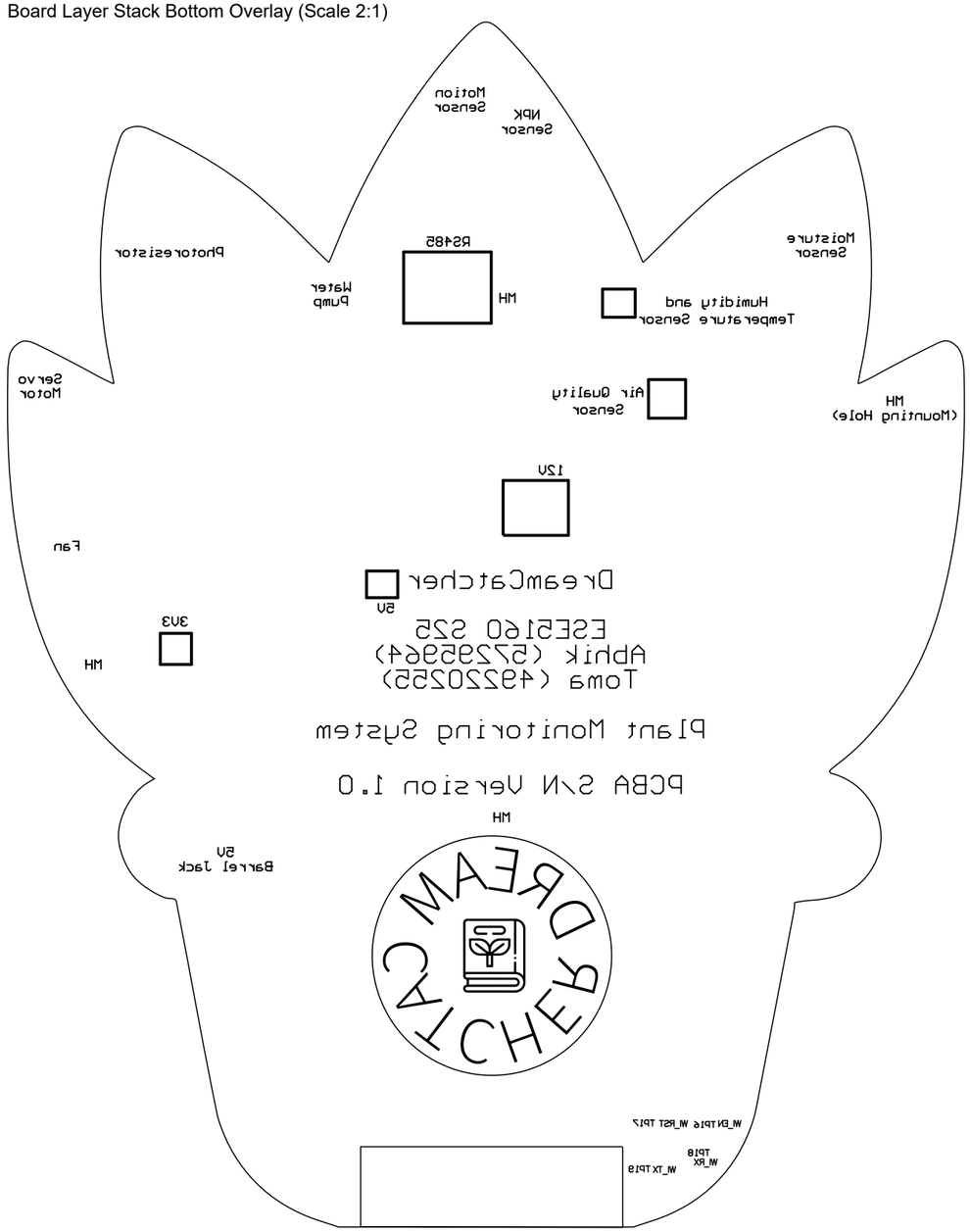
REV STATUS OF SHEETS												
	REV											
	SHEET											

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

DWG NO: =DOC_NO_ASSY_DWG REV: A.4

Board Layer Stack Bottom Overlay (Scale 2:1)



THIRD ANGLE PROJECTION			
NEXT ASSY	USED ON		
APPLICATION			

PART NO: =PCB_PART_NUMBER

APPROVALS	DATE
ENGINEER: =PCB_ENGINEER	=PCB_ENGINEE
DESIGNER: =PCB_DESIGNER	=PCB_DESIGNE
CHECKER: =PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
PCB DOC:	=PCB_DWG_NO

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13 | DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1 =PCB_TITLE_2

SIZE: B | CAGE CODE: =CAGE_CO | DWG NO: | REV: A.

SCALE: | FILE NAME: FabricationDrawings.PCBDwf | SHEET: 12 OF 12

DWG NO: =DOC_NO_ASSY_ REV: A.4

REV STATUS OF SHEETS											
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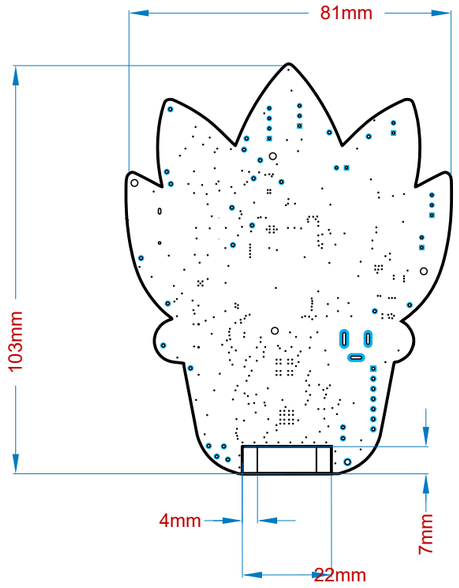
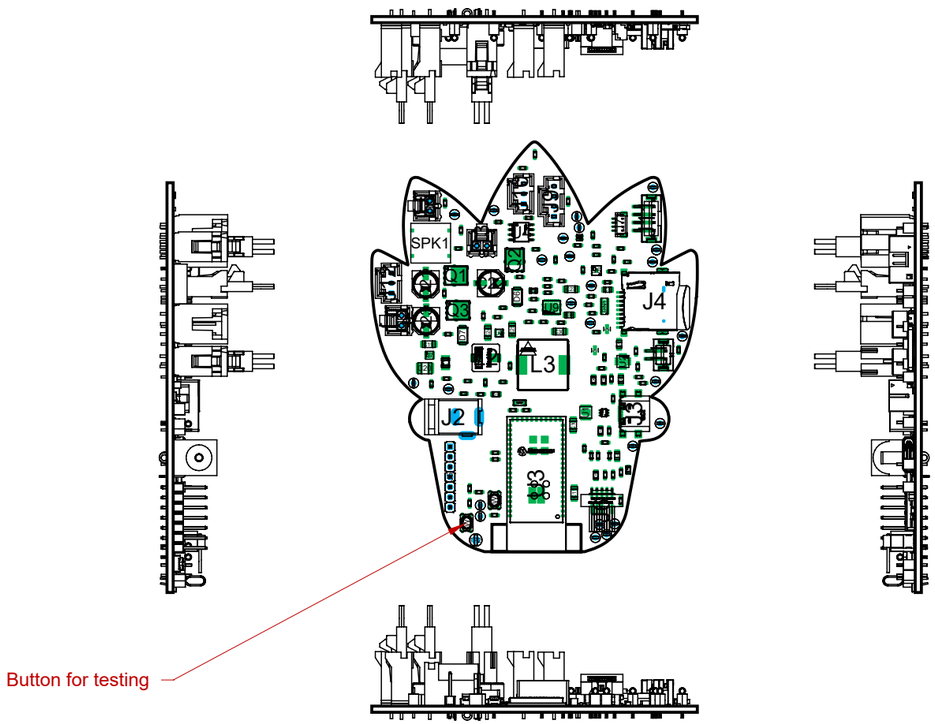
DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED





PART NO: =PCB_PART_NUMBER

APPROVALS		DATE
ENGINEER:	=PCB_ENGINEER	=PCB_ENGINEE
DESIGNER:	=PCB_DESIGNER	=PCB_DESIGNE
CHECKER:	=PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
PCB DOC:	=PCB_DWG_NO

THIRD ANGLE PROJECTION

NEXT ASSY	USED ON
APPLICATION	

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13 | DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1 =PCB_TITLE_2

SIZE: B | CAGE CODE: =CAGE_CO | DWG NO: | REV: A.

SCALE: | FILE NAME: AssemblyDrawings.PCBDwf | SHEET: 1 OF 4

DWG NO: =DOC_NO_ASSY_ REV: A.4

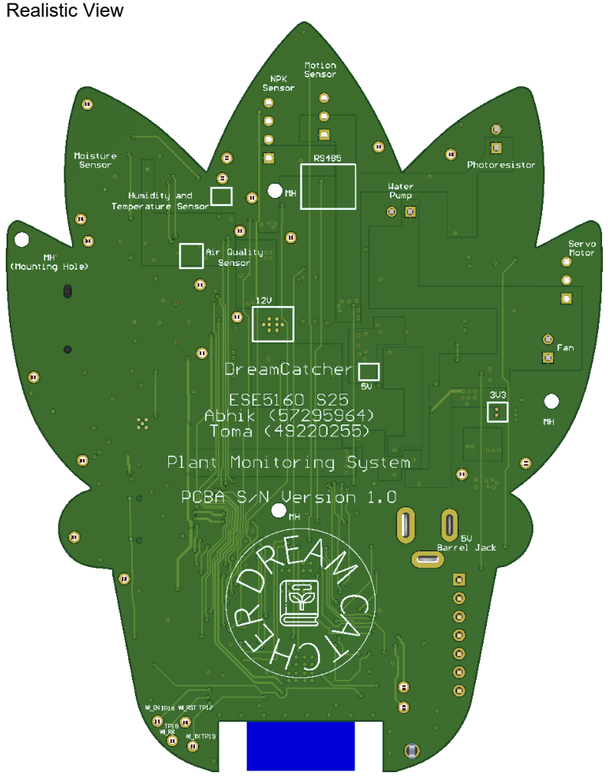
REV STATUS OF SHEETS											
	REV										
	SHEET										

DWG NO: =DOC_NO_ASSY_DWG REV: A.4

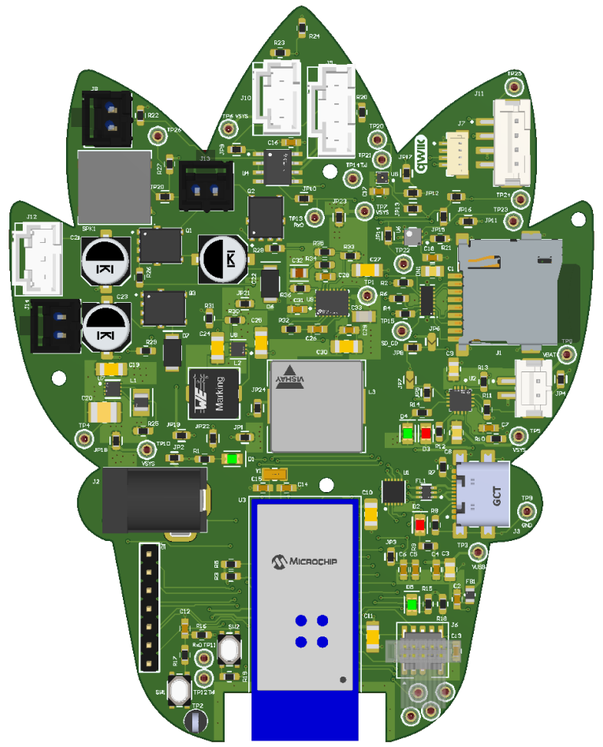
REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

Realistic View



Realistic View



THIRD ANGLE PROJECTION

NEXT ASSY	USED ON
APPLICATION	

PART NO: =PCB_PART_NUMBER

APPROVALS	DATE
ENGINEER: =PCB_ENGINEER	=PCB_ENGINEE
DESIGNER: =PCB_DESIGNER	=PCB_DESIGNE
CHECKER: =PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
PCB DOC:	=PCB_DWG_NO

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13 | DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1 =PCB_TITLE_2

A.

SIZE:	CAGE CODE:	DWG NO:	REV:
B	=CAGE_CO		

SCALE: | FILE NAME: AssemblyDrawings.PCBDwf | SHEET: 2 OF 4

DWG NO: =DOC_NO_ASSY_ REV: A.4

REV STATUS OF SHEETS												
	REV											
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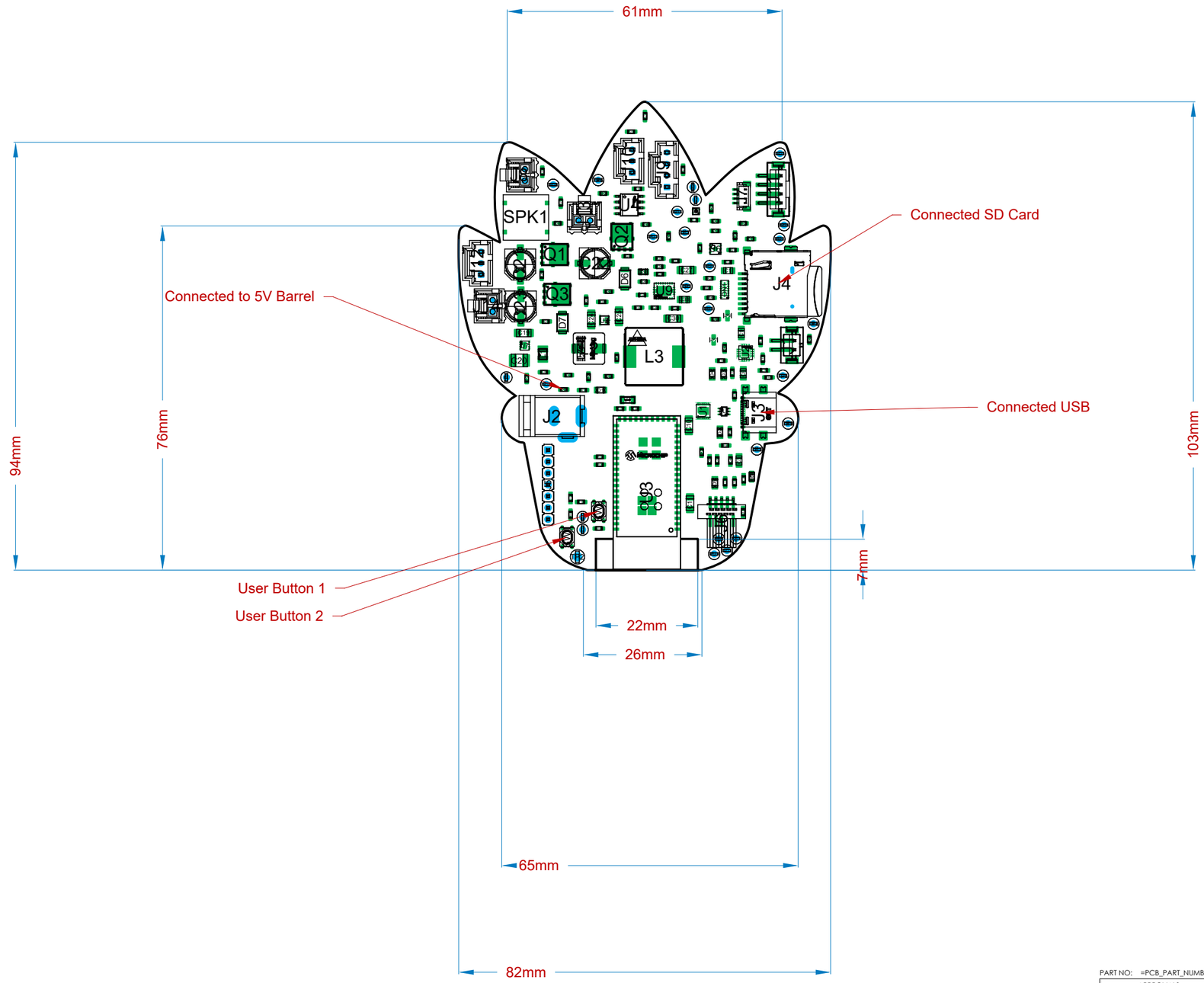
DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED



PART NO: =PCB_PART_NUMBER

APPROVALS	DATE
ENGINEER: =PCB_ENGINEER	=PCB_ENGINEE
DESIGNER: =PCB_DESIGNER	=PCB_DESIGNE
CHECKER: =PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
PCB DOC:	=PCB_DWG_NO

THIRD ANGLE PROJECTION

NEXT ASSY | USED ON

APPLICATION

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13 | DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1 =PCB_TITLE_2

A.

SIZE:	CAGE CODE:	DWG NO:	REV:
B	=CAGE_CO		

SCALE: | FILE NAME: AssemblyDrawings.PCBDwf | SHEET: 3 OF 4

DWG NO: =DOC_NO_ASSY | REV: A.4

REV STATUS OF SHEETS											
	REV										
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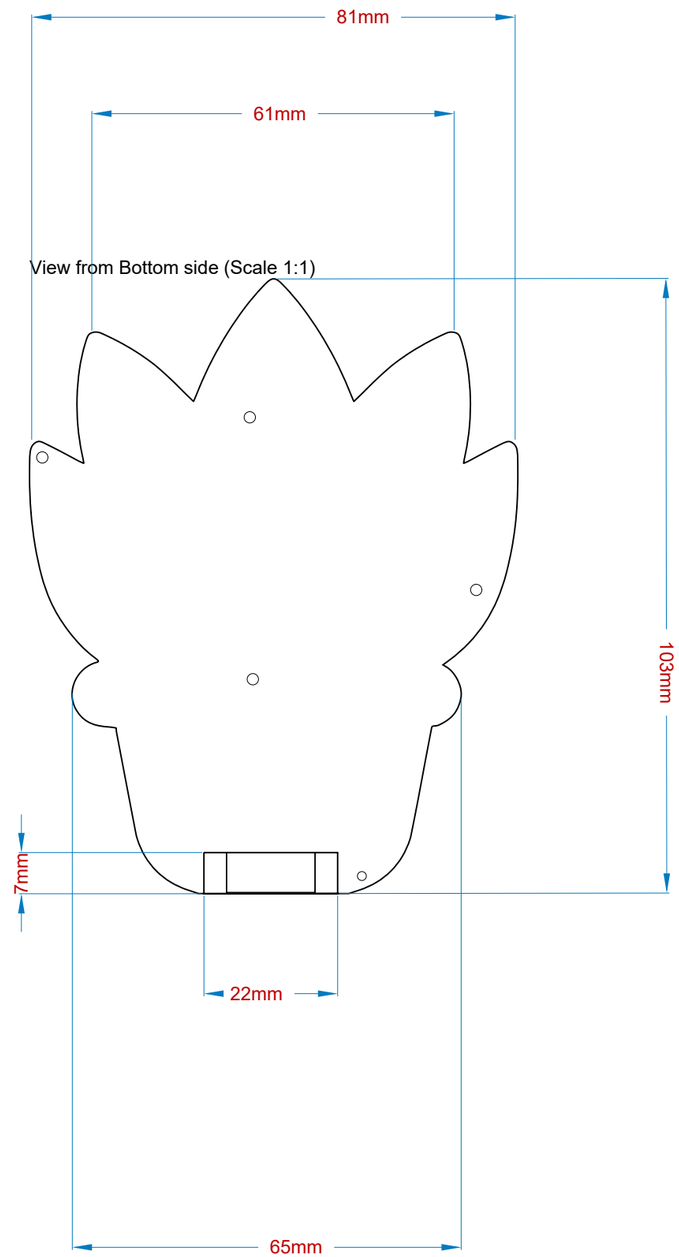
DWG NO: =DOC_NO_ASSY_DWG REV: A.4

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED



PART NO: =PCB_PART_NUMBER

APPROVALS		DATE
ENGINEER:	=PCB_ENGINEER	=PCB_ENGINEE
DESIGNER:	=PCB_DESIGNER	=PCB_DESIGNE
CHECKER:	=PCB_CHECKER	=PCB_CHECKE

Reference Documents

BOM DOC:	=DOC_NO_BOM
ASSY DOC:	=DOC_NO_FAB_DWG
SCH DOC:	=DOC_NO_SCH_DWG
PCB DOC:	=PCB_DWG_NO

THIRD ANGLE PROJECTION

NEXT ASSY | USED ON

APPLICATION

Altium™

=Address1
=Address2
=Address3
=Address4

DESIGN ITEM: SRC-ESE5160 - T13

DESIGN ITEM REVISION: A.4

TITLE: =PCB_TITLE_1
=PCB_TITLE_2

SIZE: B | CAGE CODE: =CAGE_CO | DWG NO: | REV: A.

SCALE: | FILE NAME: AssemblyDrawings.PCBDwf | SHEET: 4 OF 4

DWG NO: =DOC_NO_ASSY_ REV: A.4