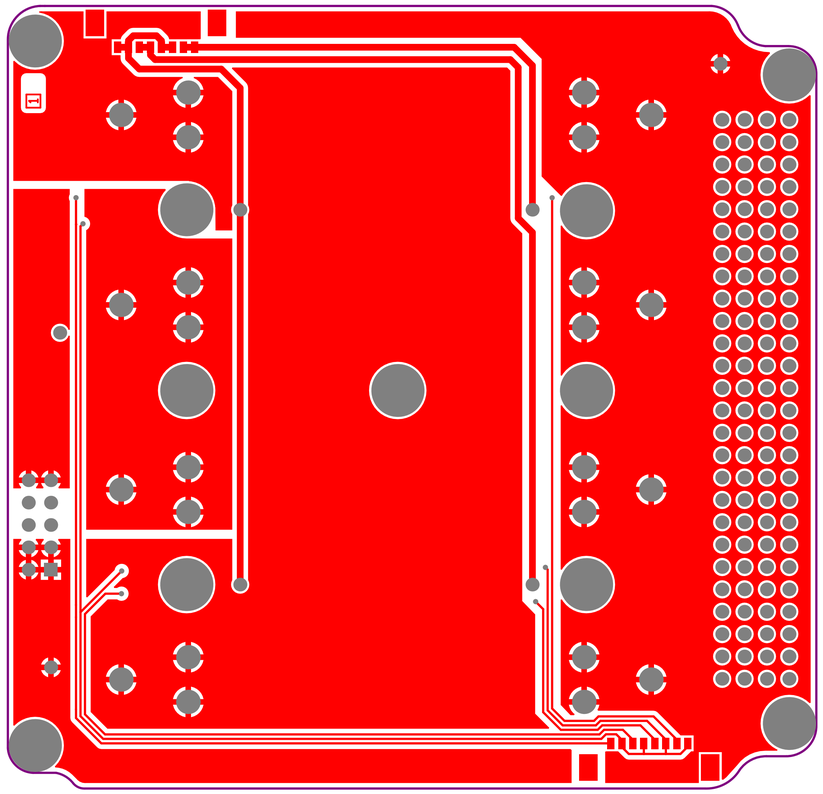
JHeater
H2+
H2-
H1+
H1-
SPACE LAB
BATTERY BOARD v0.1
Battery_1
Heater1
Battery_2
Battery_3
Heater2
Battery_4
VBAT+
VBAT-
V_CM
J1
VBAT+ VBAT- V_CM
VBAT-
VBAT+
V_CM
H1
H2
1
2
5
8
15
16
24
25
32
35
40
45
46
51
52
RTD0
RTD1
RTD4
RTD5
JRTD

V_CM
Battery_1-
Battery_2+
Battery_3+
Battery_4-
H1-
H1+
RTD1
SAMSUNG SD
6
2H75
SAMSUNG SD
6
2H75
H2-
H2+
RTD2
Battery_1+
Battery_2-
VBAT-
Battery_3-
VBAT-
VBAT+
J1
V_CM
VBAT+
Battery_4+



Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0,39mil	3,5	
3	Top Layer	Copper	1,38mil		
4	Dielectric Core	FR-4	59,06mil	4,2	
5	Bottom Layer	Copper	1,38mil		
6	Bottom Solder	Solder Resist	0,39mil	3,5	
7	Bottom Overlay				

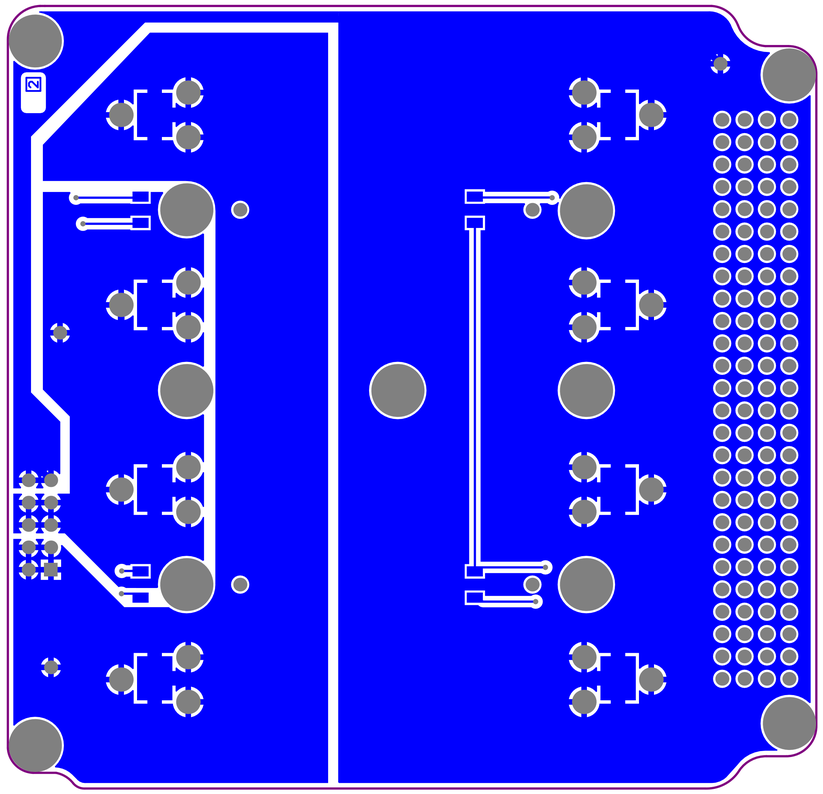
Fabrication specifications:

- Copper base 1OZ:
- PCB Material: Prepeg FR4–Standard
- PCB Tickness: 1.6mm
- PCB Surface: HASL (with lead)
- Silkscreen Color: White (top and bottom)
- Soldermask Color: Green
- Vias: Force Complete Tenting
- Special: Stack–up (herein included)

Assembly specifications:

- Solder composition: Include lead
- Fiducials: 3 top and 3 bottom avaliable
- Check BOM for not placed components

SpaceLab - Federal University of Santa Catarina		
Project: Battery Board 4 cells		
Layer: Top Layer		
Designed by: Amanda B. Medeiros (based on FSat-I Bat)		Project Code: BAT2
Date: 28/09/2020	Version: v0.1	Size: A4



Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0,39mil	3,5	
3	Top Layer	Copper	1,38mil		
4	Dielectric Core	FR-4	59,06mil	4,2	
5	Bottom Layer	Copper	1,38mil		
6	Bottom Solder	Solder Resist	0,39mil	3,5	
7	Bottom Overlay				

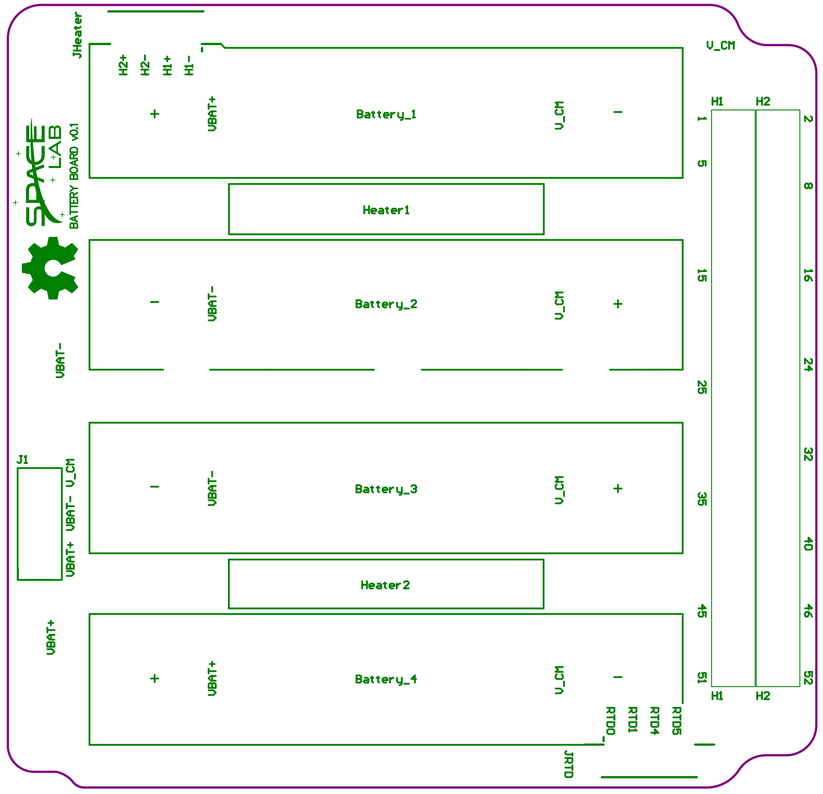
Fabrication specifications:

- Copper base 1OZ:
- PCB Material: Prepeg FR4–Standard
- PCB Tickness: 1.6mm
- PCB Surface: HASL (with lead)
- Silkscreen Color: White (top and bottom)
- Soldermask Color: Green
- Vias: Force Complete Tenting
- Special: Stack–up (herein included)

Assembly specifications:

- Solder composition: Include lead
- Fiducials: 3 top and 3 bottom avaliable
- Check BOM for not placed components

SpaceLab - Federal University of Santa Catarina		
Project: Battery Board 4 cells		
Layer: Bottom Layer		
Designed by: Amanda B. Medeiros (based on FSat-I Bat)		Project Code: BAT2
Date: 28/09/2020	Version: v0.1	Size: A4



Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0,39mil	3,5	
3	Top Layer	Copper	1,38mil		
4	Dielectric Core	FR-4	59,06mil	4,2	
5	Bottom Layer	Copper	1,38mil		
6	Bottom Solder	Solder Resist	0,39mil	3,5	
7	Bottom Overlay				

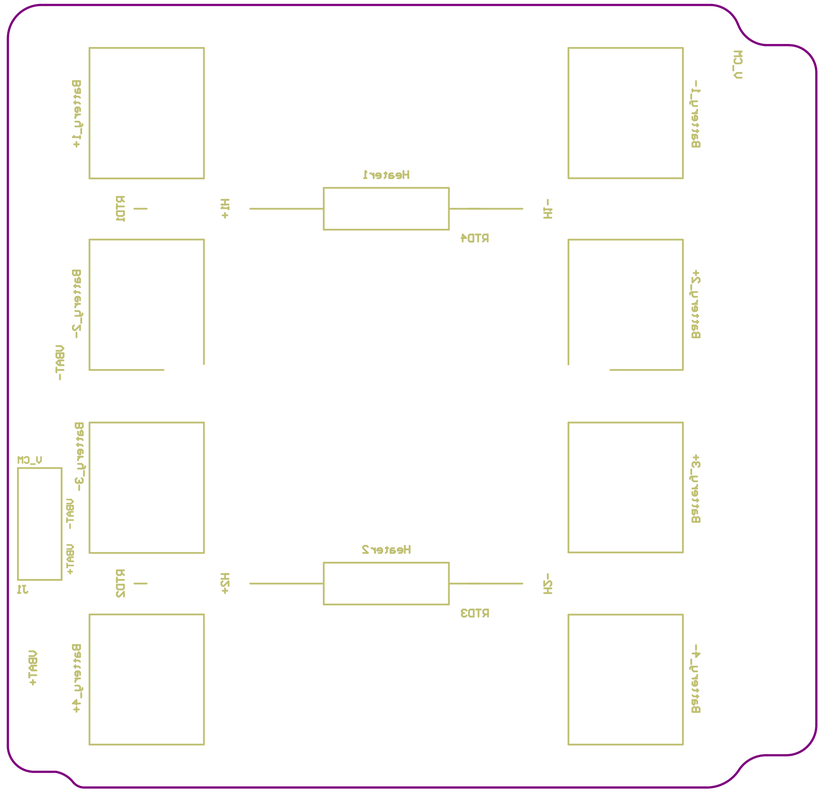
Fabrication specifications:

- Copper base 1OZ:
- PCB Material: Prepeg FR4–Standard
- PCB Tickness: 1.6mm
- PCB Surface: HASL (with lead)
- Silkscreen Color: White (top and bottom)
- Soldermask Color: Green
- Vias: Force Complete Tenting
- Special: Stack–up (herein included)

Assembly specifications:

- Solder composition: Include lead
- Fiducials: 3 top and 3 bottom avaliable
- Check BOM for not placed components

SpaceLab - Federal University of Santa Catarina		SPACE LAB
Project: Battery Board 4 cells		
Layer: Top Overlay		
Designed by: Amanda B. Medeiros (based on FSat-I Bat)		Project Code: BAT2
Date: 28/09/2020	Version: v0.1	Size: A4



Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0,39mil	3,5	
3	Top Layer	Copper	1,38mil		
4	Dielectric Core	FR-4	59,06mil	4,2	
5	Bottom Layer	Copper	1,38mil		
6	Bottom Solder	Solder Resist	0,39mil	3,5	
7	Bottom Overlay				

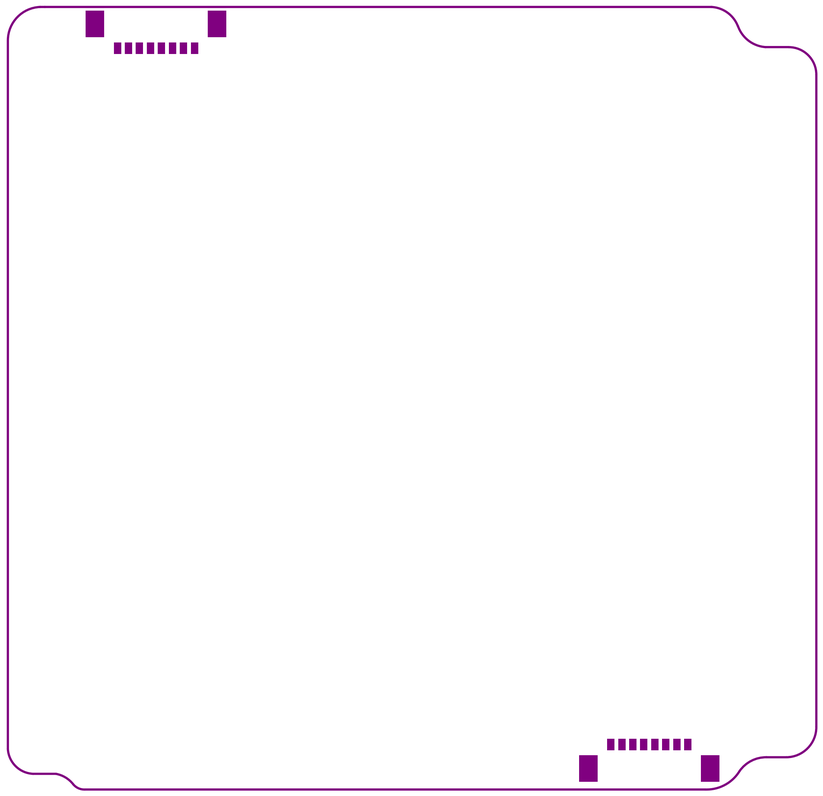
Fabrication specifications:

- Copper base 1OZ:
- PCB Material: Prepeg FR4–Standard
- PCB Tickness: 1.6mm
- PCB Surface: HASL (with lead)
- Silkscreen Color: White (top and bottom)
- Soldermask Color: Green
- Vias: Force Complete Tenting
- Special: Stack–up (herein included)

Assembly specifications:

- Solder composition: Include lead
- Fiducials: 3 top and 3 bottom avaliable
- Check BOM for not placed components

SpaceLab - Federal University of Santa Catarina		
Project: Battery Board 4 cells		
Layer: Bottom Overlay		
Designed by: Amanda B. Medeiros (based on FSat-I Bat)		Project Code: BAT2
Date: 28/09/2020	Version: v0.1	Size: A4



Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0,39mil	3,5	
3	Top Layer	Copper	1,38mil		
4	Dielectric Core	FR-4	59,06mil	4,2	
5	Bottom Layer	Copper	1,38mil		
6	Bottom Solder	Solder Resist	0,39mil	3,5	
7	Bottom Overlay				

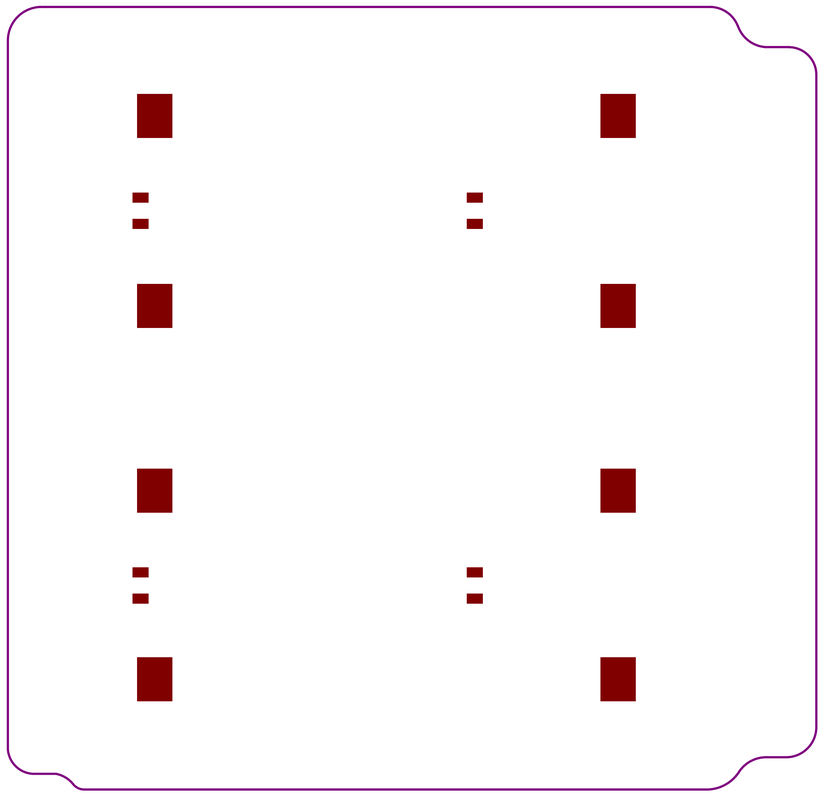
Fabrication specifications:

- Copper base 1OZ:
- PCB Material: Prepeg FR4–Standard
- PCB Tickness: 1.6mm
- PCB Surface: HASL (with lead)
- Silkscreen Color: White (top and bottom)
- Soldermask Color: Green
- Vias: Force Complete Tenting
- Special: Stack–up (herein included)

Assembly specifications:

- Solder composition: Include lead
- Fiducials: 3 top and 3 bottom avaliable
- Check BOM for not placed components

SpaceLab - Federal University of Santa Catarina		SPACE LAB
Project: Battery Board 4 cells		
Layer: Top Paste		
Designed by: Amanda B. Medeiros (based on FSat-I Bat)		Project Code: BAT2
Date: 28/09/2020	Version: v0.1	Size: A4



Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0,39mil	3,5	
3	Top Layer	Copper	1,38mil		
4	Dielectric Core	FR-4	59,06mil	4,2	
5	Bottom Layer	Copper	1,38mil		
6	Bottom Solder	Solder Resist	0,39mil	3,5	
7	Bottom Overlay				

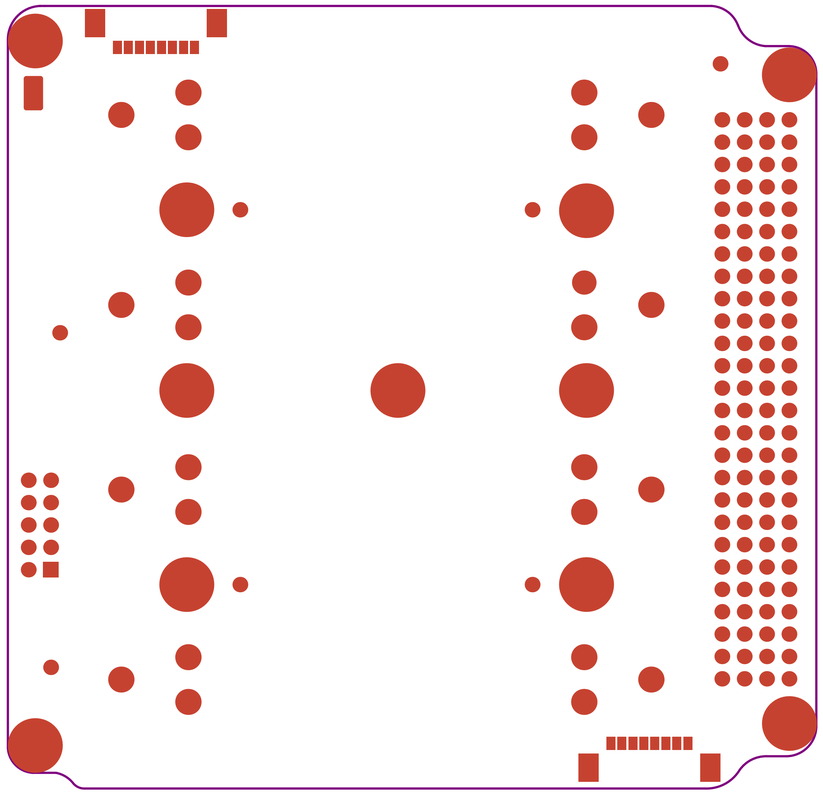
Fabrication specifications:

- Copper base 1OZ:
- PCB Material: Prepeg FR4–Standard
- PCB Tickness: 1.6mm
- PCB Surface: HASL (with lead)
- Silkscreen Color: White (top and bottom)
- Soldermask Color: Green
- Vias: Force Complete Tenting
- Special: Stack–up (herein included)

Assembly specifications:

- Solder composition: Include lead
- Fiducials: 3 top and 3 bottom avaliable
- Check BOM for not placed components

SpaceLab - Federal University of Santa Catarina		
Project: Battery Board 4 cells		
Layer: Bottom Paste		
Designed by: Amanda B. Medeiros (based on FSat-I Bat)		Project Code: BAT2
Date: 28/09/2020	Version: v0.1	Size: A4



Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0,39mil	3,5	
3	Top Layer	Copper	1,38mil		
4	Dielectric Core	FR-4	59,06mil	4,2	
5	Bottom Layer	Copper	1,38mil		
6	Bottom Solder	Solder Resist	0,39mil	3,5	
7	Bottom Overlay				

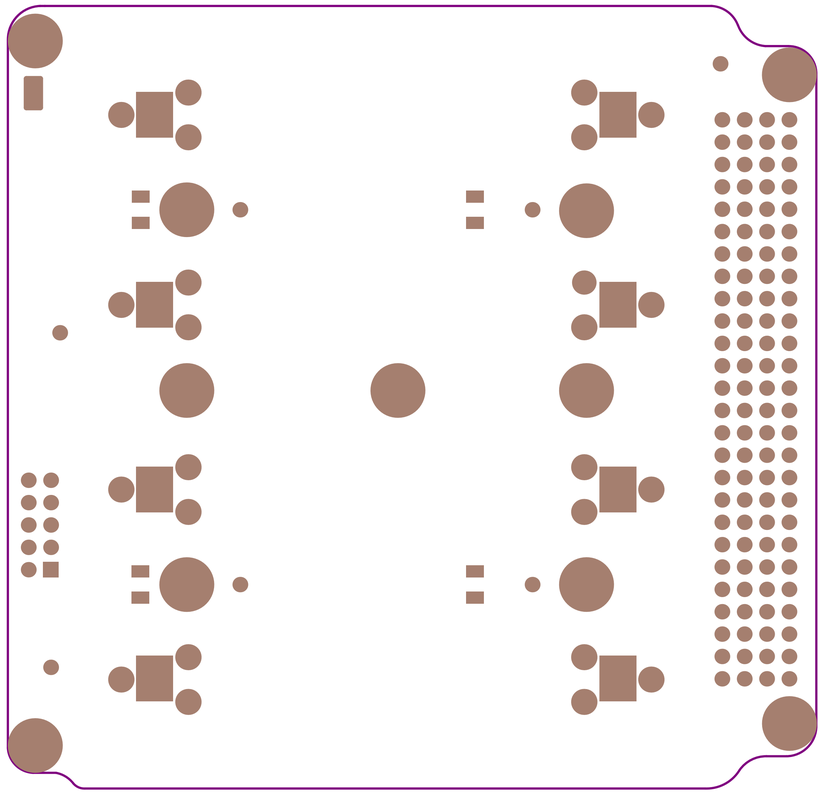
Fabrication specifications:

- Copper base 1OZ:
- PCB Material: Prepeg FR4–Standard
- PCB Tickness: 1.6mm
- PCB Surface: HASL (with lead)
- Silkscreen Color: White (top and bottom)
- Soldermask Color: Green
- Vias: Force Complete Tenting
- Special: Stack–up (herein included)

Assembly specifications:

- Solder composition: Include lead
- Fiducials: 3 top and 3 bottom avaliable
- Check BOM for not placed components

SpaceLab - Federal University of Santa Catarina		
Project: Battery Board 4 cells		
Layer: Top Solder		
Designed by: Amanda B. Medeiros (based on FSat-I Bat)		Project Code: BAT2
Date: 28/09/2020	Version: v0.1	Size: A4



Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0,39mil	3,5	
3	Top Layer	Copper	1,38mil		
4	Dielectric Core	FR-4	59,06mil	4,2	
5	Bottom Layer	Copper	1,38mil		
6	Bottom Solder	Solder Resist	0,39mil	3,5	
7	Bottom Overlay				

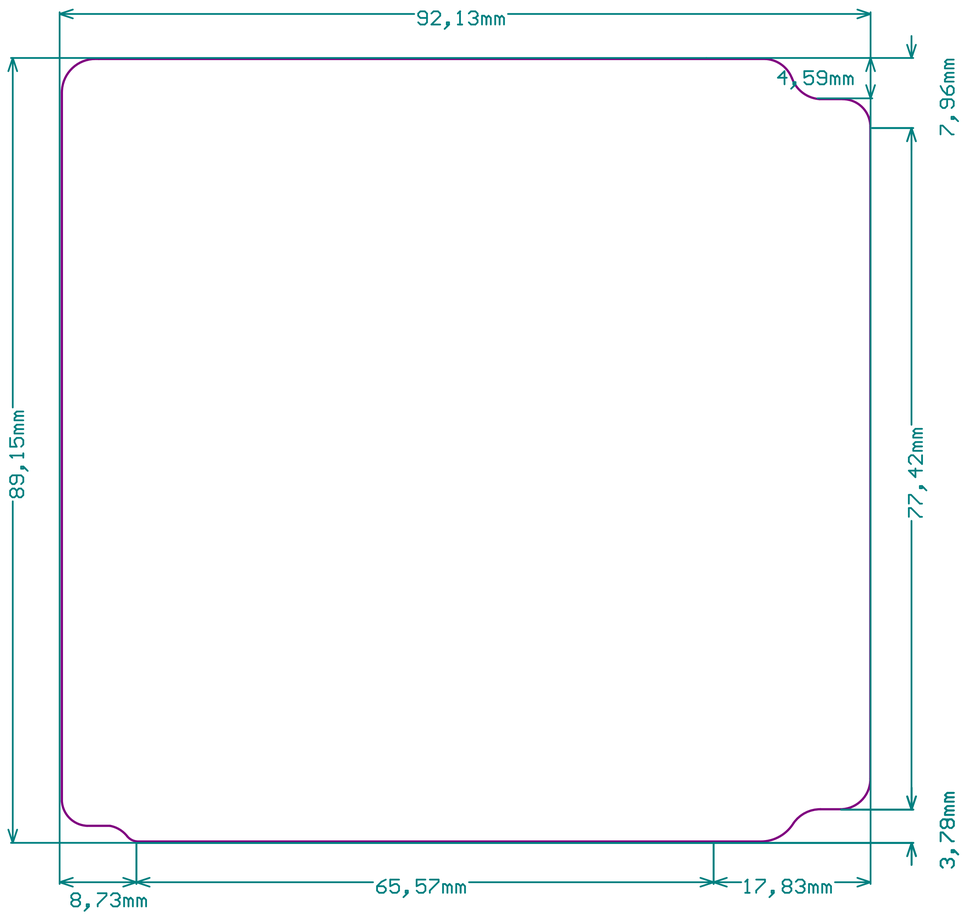
Fabrication specifications:

- Copper base 1OZ:
- PCB Material: Prepeg FR4–Standard
- PCB Tickness: 1.6mm
- PCB Surface: HASL (with lead)
- Silkscreen Color: White (top and bottom)
- Soldermask Color: Green
- Vias: Force Complete Tenting
- Special: Stack–up (herein included)

Assembly specifications:

- Solder composition: Include lead
- Fiducials: 3 top and 3 bottom avaliable
- Check BOM for not placed components

SpaceLab - Federal University of Santa Catarina		
Project: Battery Board 4 cells		
Layer: Bottom Solder		
Designed by: Amanda B. Medeiros (based on FSat-I Bat)		Project Code: BAT2
Date: 28/09/2020	Version: v0.1	Size: A4



Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0,39mil	3,5	
3	Top Layer	Copper	1,38mil		
4	Dielectric Core	FR-4	59,06mil	4,2	
5	Bottom Layer	Copper	1,38mil		
6	Bottom Solder	Solder Resist	0,39mil	3,5	
7	Bottom Overlay				

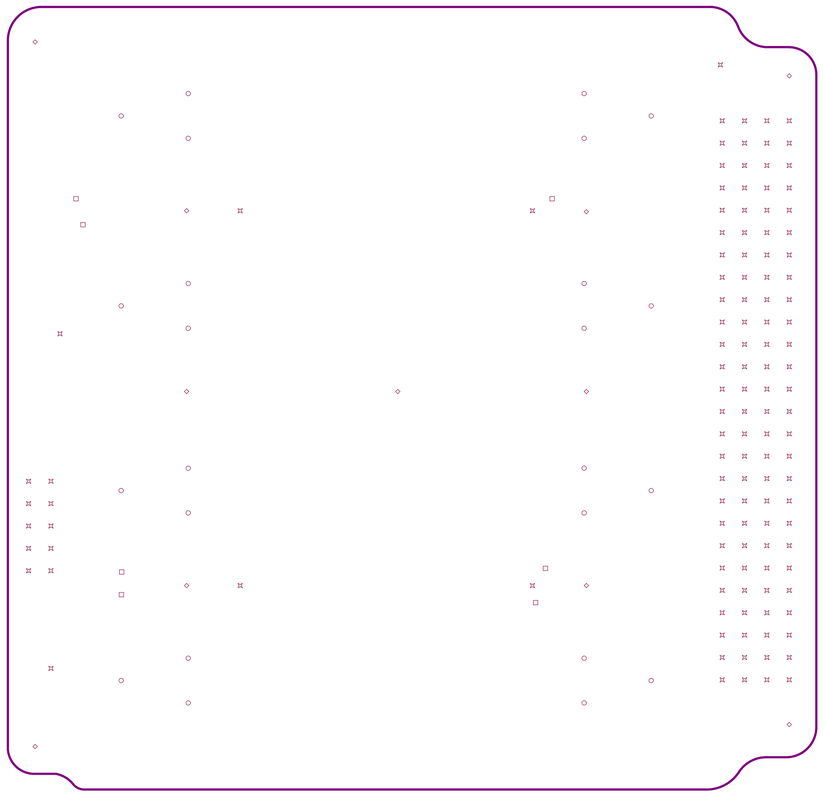
Fabrication specifications:

- Copper base 1OZ:
- PCB Material: Prepeg FR4–Standard
- PCB Tickness: 1.6mm
- PCB Surface: HASL (with lead)
- Silkscreen Color: White (top and bottom)
- Soldermask Color: Green
- Vias: Force Complete Tenting
- Special: Stack–up (herein included)

Assembly specifications:

- Solder composition: Include lead
- Fiducials: 3 top and 3 bottom avaliable
- Check BOM for not placed components

SpaceLab - Federal University of Santa Catarina		SPACE LAB
Project: Battery Board 4 cells		
Layer: Dimension		
Designed by: Amanda B. Medeiros (based on FSat-I Bat)		Project Code: BAT2
Date: 28/09/2020	Version: v0.1	Size: A4



Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0,39mil	3,5	
3	Top Layer	Copper	1,38mil		
4	Dielectric Core	FR-4	59,06mil	4,2	
5	Bottom Layer	Copper	1,38mil		
6	Bottom Solder	Solder Resist	0,39mil	3,5	
7	Bottom Overlay				

Symbol	Count	Hole Size	Plated	Hole Type	Drill Layer Pair	Via/Pad
□	7	11,81mil (0,300mm)	PTH	Round	Top Layer - Bottom Layer	Via
◇	11	125,98mil (3,200mm)	PTH	Round	Top Layer - Bottom Layer	Pad
○	24	72,05mil (1,830mm)	PTH	Round	Top Layer - Bottom Layer	Pad
⌘	121	39,37mil (1,000mm)	PTH	Round	Top Layer - Bottom Layer	Pad
	163 Total					

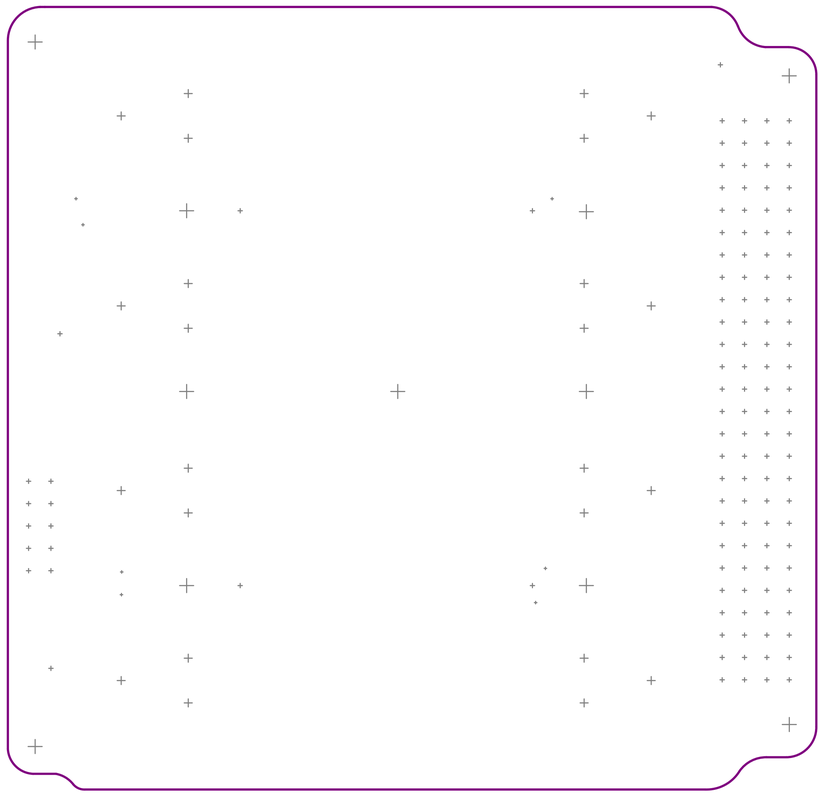
Fabrication specifications:

- Copper base 1OZ:
- PCB Material: Prepeg FR4–Standard
- PCB Tickness: 1.6mm
- PCB Surface: HASL (with lead)
- Silkscreen Color: White (top and bottom)
- Soldermask Color: Green
- Vias: Force Complete Tenting
- Special: Stack–up (herein included)

Assembly specifications:

- Solder composition: Include lead
- Fiducials: 3 top and 3 bottom avaliable
- Check BOM for not placed components

SpaceLab - Federal University of Santa Catarina		SPACE LAB
Project: Battery Board 4 cells		
Layer: Drill Drawing		
Designed by: Amanda B. Medeiros (based on FSat-I Bat)		Project Code: BAT2
Date: 28/09/2020	Version: v0.1	Size: A4



Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0,39mil	3,5	
3	Top Layer	Copper	1,38mil		
4	Dielectric Core	FR-4	59,06mil	4,2	
5	Bottom Layer	Copper	1,38mil		
6	Bottom Solder	Solder Resist	0,39mil	3,5	
7	Bottom Overlay				

Fabrication specifications:

- Copper base 1OZ:
- PCB Material: Prepeg FR4–Standard
- PCB Tickness: 1.6mm
- PCB Surface: HASL (with lead)
- Silkscreen Color: White (top and bottom)
- Soldermask Color: Green
- Vias: Force Complete Tenting
- Special: Stack–up (herein included)

Assembly specifications:

- Solder composition: Include lead
- Fiducials: 3 top and 3 bottom avaliable
- Check BOM for not placed components

SpaceLab - Federal University of Santa Catarina		SPACE LAB
Project: Battery Board 4 cells		
Layer: Drill Guide		
Designed by: Amanda B. Medeiros (based on FSat-I Bat)		Project Code: BAT2
Date: 28/09/2020	Version: v0.1	Size: A4