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REV STATUS OF SHEETS	REV SHEET											REVISIONS			
		ZONE	REV	DESCRIPTION										DATE	APPROVED

ASSEMBLY NOTES  
Board Name: Tartarus Joystick Mod M0  
Rev: 1.0-ES  
1. Assemble in accordance with IPC-A-610, current revision, Class 2.  
2. Solder electrical connections per latest revision of IPC J-STD-001.  
3. This assembly contains ESD sensitive components. Handle per ANSI/ESD S20.20.  
4. RoHS compliance required: Yes.  
5. Mark with current assembly revision.  
6. Mount components with polarity and orientation as shown on component designators/silkscreen.

Bill Of Materials

Line #	Designator	Name	Quantity
	C1, C4, C5, C7	GRM155Z71A105KE01D	4
	C2, C3	04025C104KAT4A	2
	C6	GRM155R61A106ME11J	1
	D1	CDBQR54	1
	D2, D3, D4	CPDQ5V0	3
	DS1, DS2, DS3	LTST-C190GKT	3
	FL1	ECMF02-2AMX6	1
	J1	USB4105-GF-A	1
	J2	GRPB052VWVN-RC	1
	R1	100KR2F	1
	R2, R4, R5	MCS04020C5101FE000	3
	R3	MCS04020C2202FE000	1
	R6	ERJ-2RK1430X	1
	R7, R8	CRCW040259R0FKED	2
	SW1	TL3365AF180QG	1
	U1	ATSAMD21E18A-MU	1
	U2	NCP718BSN330T1G	1
	U3	SN74AUP1T14DCKR	1
	U4	THB001P	1

APPROVALS

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DESIGNER: =PCB\_DESIGNER

CHECKER: =PCB\_CHECKER

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ASSY DOC: =DOC\_NO\_FAB\_DWG

SCH DOC: =DOC\_NO\_SCH\_DWG

PCB DOC: =PCB\_DWG\_NO

DATE

=PCB\_ENGINEE

=PCB\_DESIGNE

=PCB\_CHECKE

Reference Documents

=DOC\_NO\_BOM

=DOC\_NO\_FAB\_DWG

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=PCB\_DWG\_NO

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DESIGN ITEM REVISION: .ItemRevision

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SIZE: B

CAGE CODE: =CAGE\_CO

DWG NO:

REV:

SCALE:

FILE NAME: Tartarus Joystick Mod M0.PCBDwf

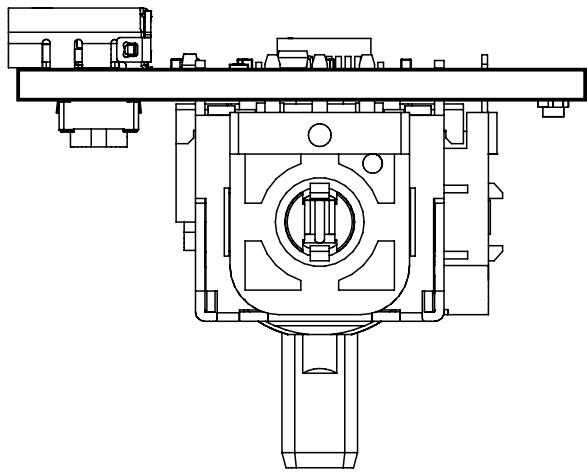
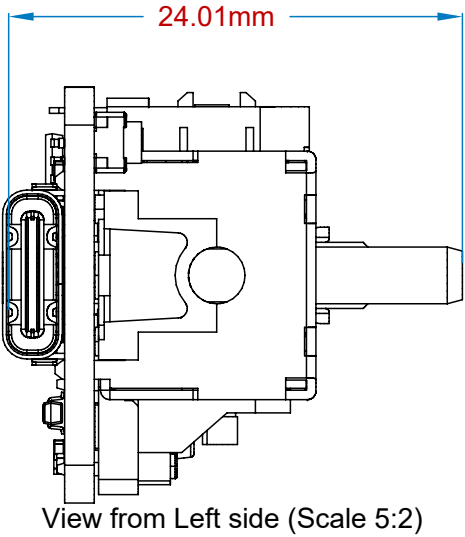
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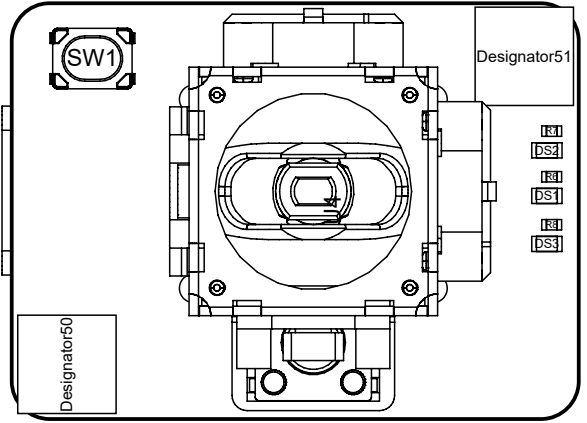
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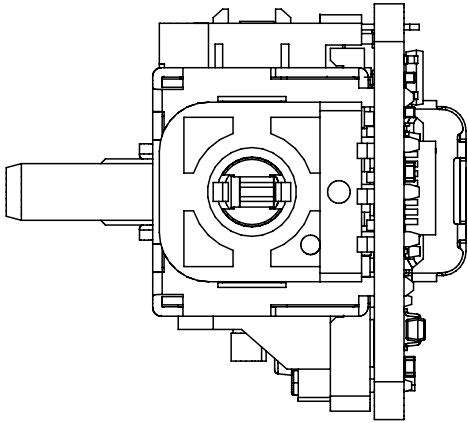
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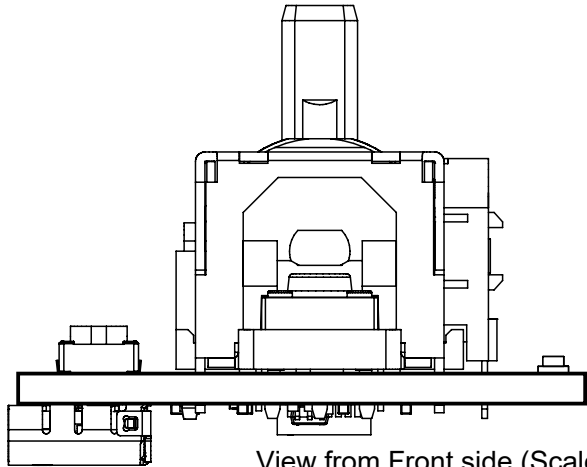
View from Top side (Scale 5:2)



View from Front side (Scale 5:2)



View from Right side (Scale 5:2)



View from Bottom side (Scale 5:2)

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Layer Stack Legend

Material	Layer	Thickness	Dielectric Material	Type	Gerber
	Top Overlay			Legend	GTO
Surface Material	Top Solder	0.01mm	Solder Resist	Solder Mask	GTS
Copper	Top Layer	0.04mm		Signal	GTL
Prepreg		0.22mm	PP-023	Dielectric	
CF-004	PWR	0.04mm		Internal Plane	GP1
Core		0.99mm	Core-042	Dielectric	
CF-004	GND	0.04mm		Internal Plane	GP2
Prepreg		0.22mm	PP-023	Dielectric	
Copper	Bottom Layer	0.04mm		Signal	GBL
Surface Material	Bottom Solder	0.01mm	Solder Resist	Solder Mask	GBS
	Bottom Overlay			Legend	GBO
Total thickness: 1.59mm					

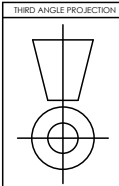
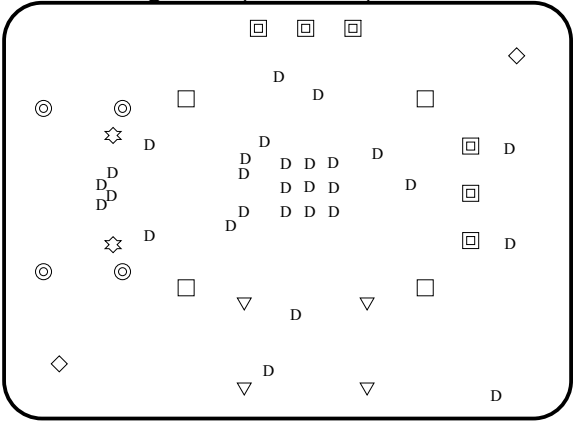
NOTES: UNLESS OTHERWISE SPECIFIED.

- FABRICATE PER IPC-6012A CLASS 3.
- FOR BOARD THICKNESS AND IMPEDANCE DETAILS REFER STACKUP DOCUMENT.
- PRINTED WIRING BOARD SHALL COMPLY WITH REQUIREMENTS OF ANSI/J-STD-003.
- SURFACE FINISH: ENIG
- SOLDERMASK ON BOTH SIDES OF THE BOARD SHALL BE LPI, COLOR BLACK.
- SILK SCREEN LEGEND TO BE APPLIED PER LAYER STACKUP USING WHITE NON-CONDUCTIVE EPOXY INK.
- THIS PRINTED WIRING BOARD IS DESIGNED WITH A MINIMUM CONDUCTOR WIDTH AND SPACING OF 6 MIL & 4 MILS.
- ALL VIAS ARE TENTED ON BOTH SIDES UNLESS SOLDERMASK OPENED IN GERBER.
- ALL VIAS ON PAD SHOULD BE FILLED WITH NON CONDUCTIVE EPOXY AND SURFACE SHOULD BE FLAT. FLATNESS TOLERANCE FOR VIA ON PADS: +0.000 /- 0.001 INCHES ON BOTH SIDES. THE MANUFACTURER IS REQUESTED TO SIZE PER THEIR SOLDERMASK TOLERANCE.
- SOLDER MASK OPENING IS KEPT SAME SIZE AS PAD (1:1) FOR ALL COMPONENTS
- VENDOR SHOULD FOLLOW ROHS COMPLIANT PROCESS AND Pb FREE FOR MANUFACTURING
- MANUFACTURER'S IDENTIFICATION, DATECODE LETTER SHALL BE SILKSCREENED ON SOLDER SIDE OF THE BOARD.
- TRACE WIDTH SHOULD BE ACCURATELY ETCHED. MAX TOLERANCE +/- 1 MIL
- ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.
- FLATNESS REQUIREMENTS:
  - A. BOW AND TWIST OF ASSEMBLY SUB-PANEL OR SINGULATED PWB SHALL NOT EXCEED 0.7% OF LONGEST SIDE
  - B. TEST IN ACCORDANCE WITH THE CURRENT REVISION OF IPC-TM-650 2.4.22
- PCB MATERIAL REQUIREMENTS:
  - A. FLAMMABILITY RATING MUST MEET OR EXCEED UL94V-0 REQUIREMENTS. PCB MUST BEAR THE UL94V-0 REGISTERED MATERIAL ID NUMBER.
  - B. Tg 135 C OR EQUIVALENT.
  - C. EQUIVALENT MATERIAL SHALL BE RoHS COMPLIANT, HALOGEN FREE AND APPROVED BY CE-CERT.
- LAYER TO LAYER REGISTRATION SHALL BE WITHIN +/-2 MIL

Drill Table

Symbol	Count	Hole Size	Plated	Hole Tolerance
D	29	0.30mm	Plated	+/-0.08mm
⊙	4	0.60mm	Plated	+/-0.08mm
☆	2	0.65mm	Non-Plated	+/-0.08mm
□	6	1.10mm	Plated	+/-0.08mm
▽	4	1.30mm	Plated	+/-0.08mm
□	4	1.60mm	Plated	+/-0.08mm
◇	2	2.50mm	Plated	+/-0.08mm
	51 Total			

Drill Drawing View (Scale 5:2)

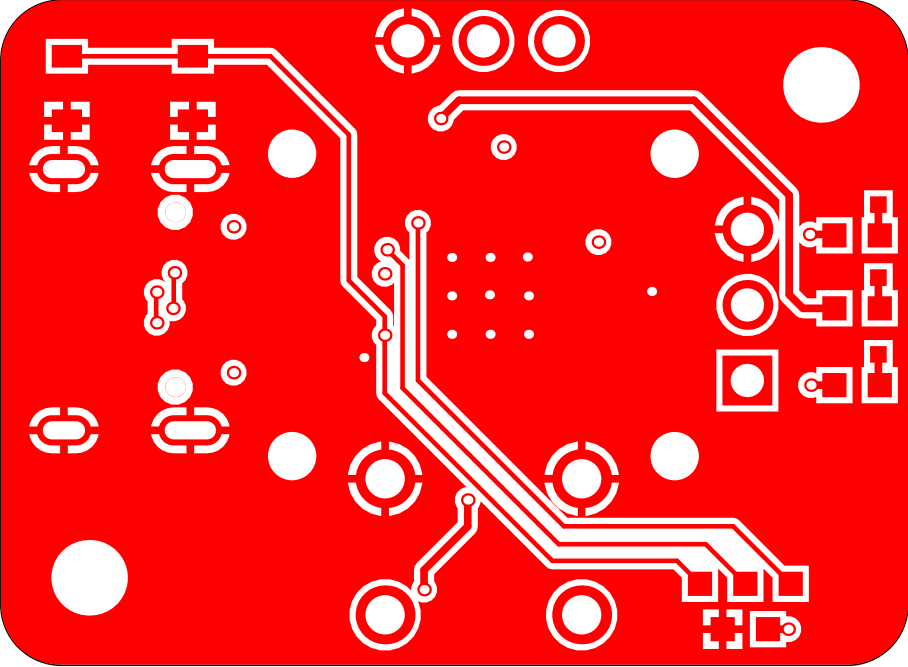


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SCALE:		FILE NAME:		SHEET: 2 OF 4	

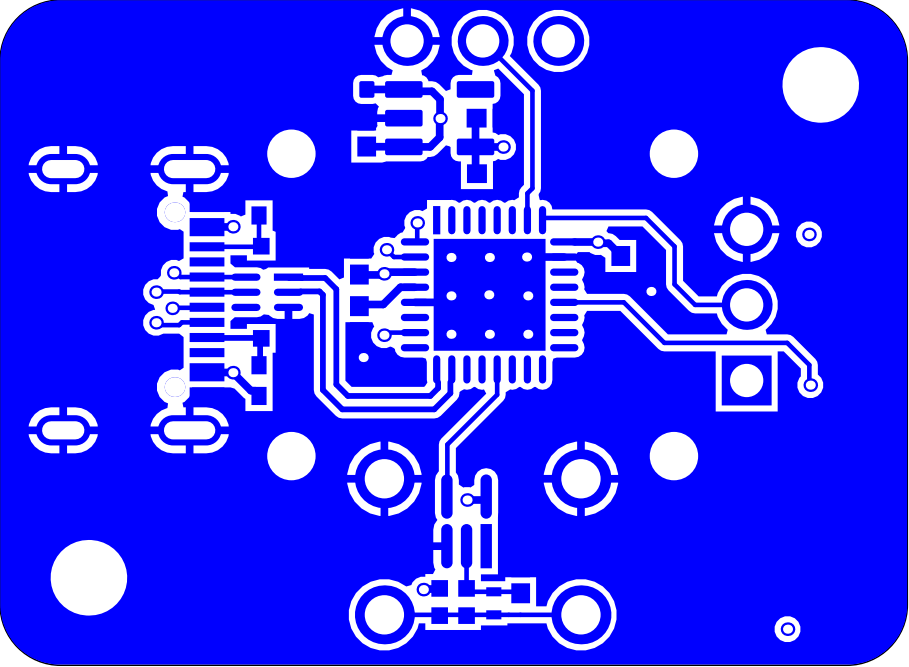
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	SHEET										ZONE	REV	DESCRIPTION	DATE	APPROVED

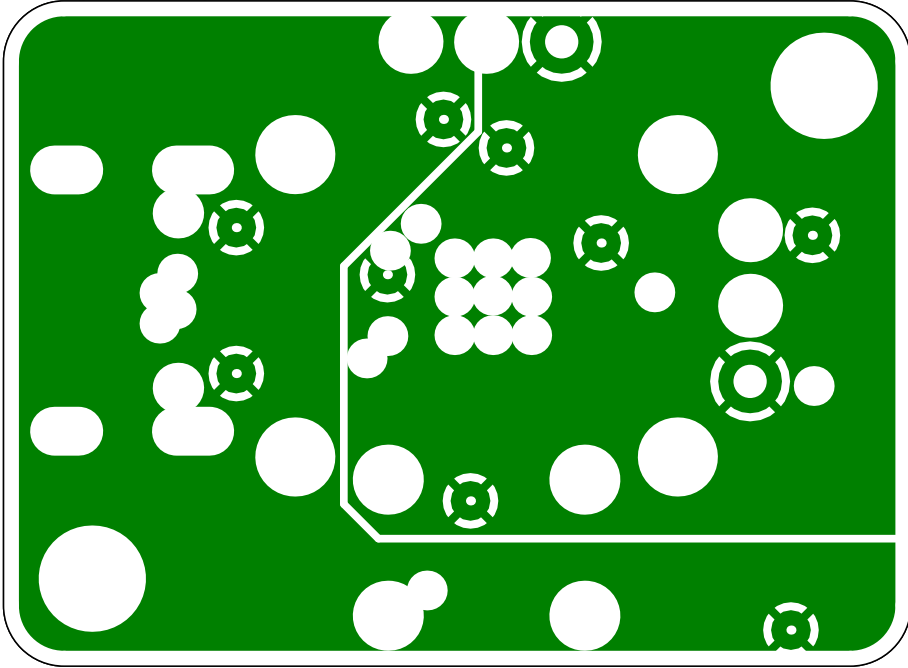
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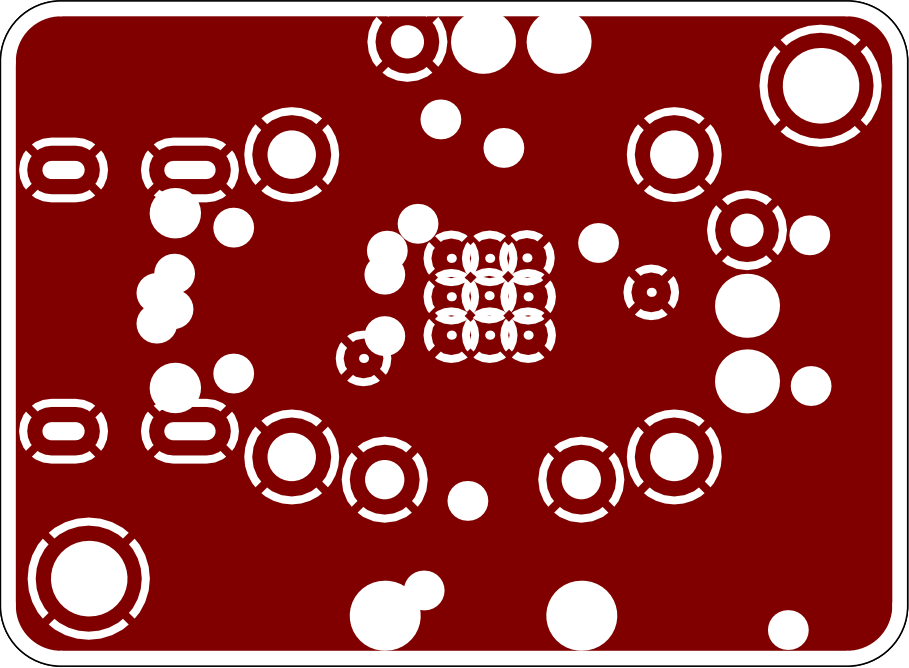
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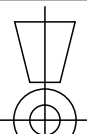


PWR (Scale 4:1)



GND (Scale 4:1)

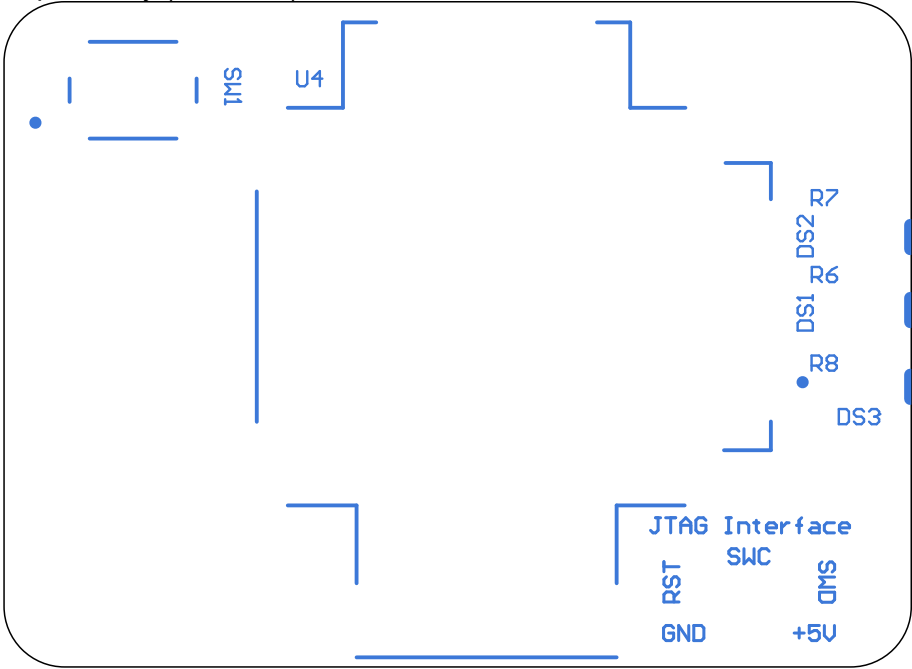


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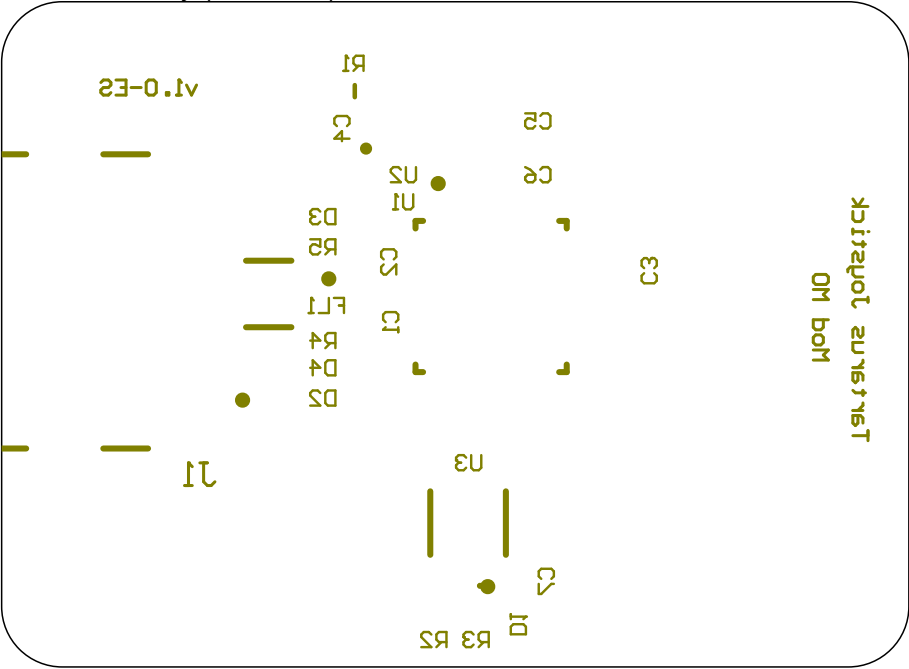
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REV STATUS OF SHEETS	REV											REVISIONS				
	SHEET										ZONE	REV	DESCRIPTION	DATE	APPROVED	

Top Overlay (Scale 4:1)



Bottom Overlay (Scale 4:1)



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Reference Documents		BOM DOC: =DOC_NO_BOM		ASSY DOC: =DOC_NO_FAB_DWG		SCH DOC: =DOC_NO_SCH_DWG		PCB DOC: =PCB_DWG_NO		DESIGN ITEM: .Item		DESIGN ITEM REVISION: .ItemRevision	
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SCALE:		FILE NAME: Tartarus Joystick Mod M0.PCBDwf		SHEET: 4		OF 4							

