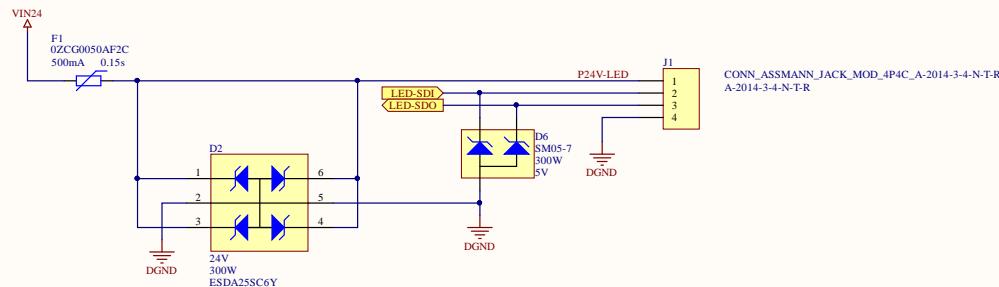
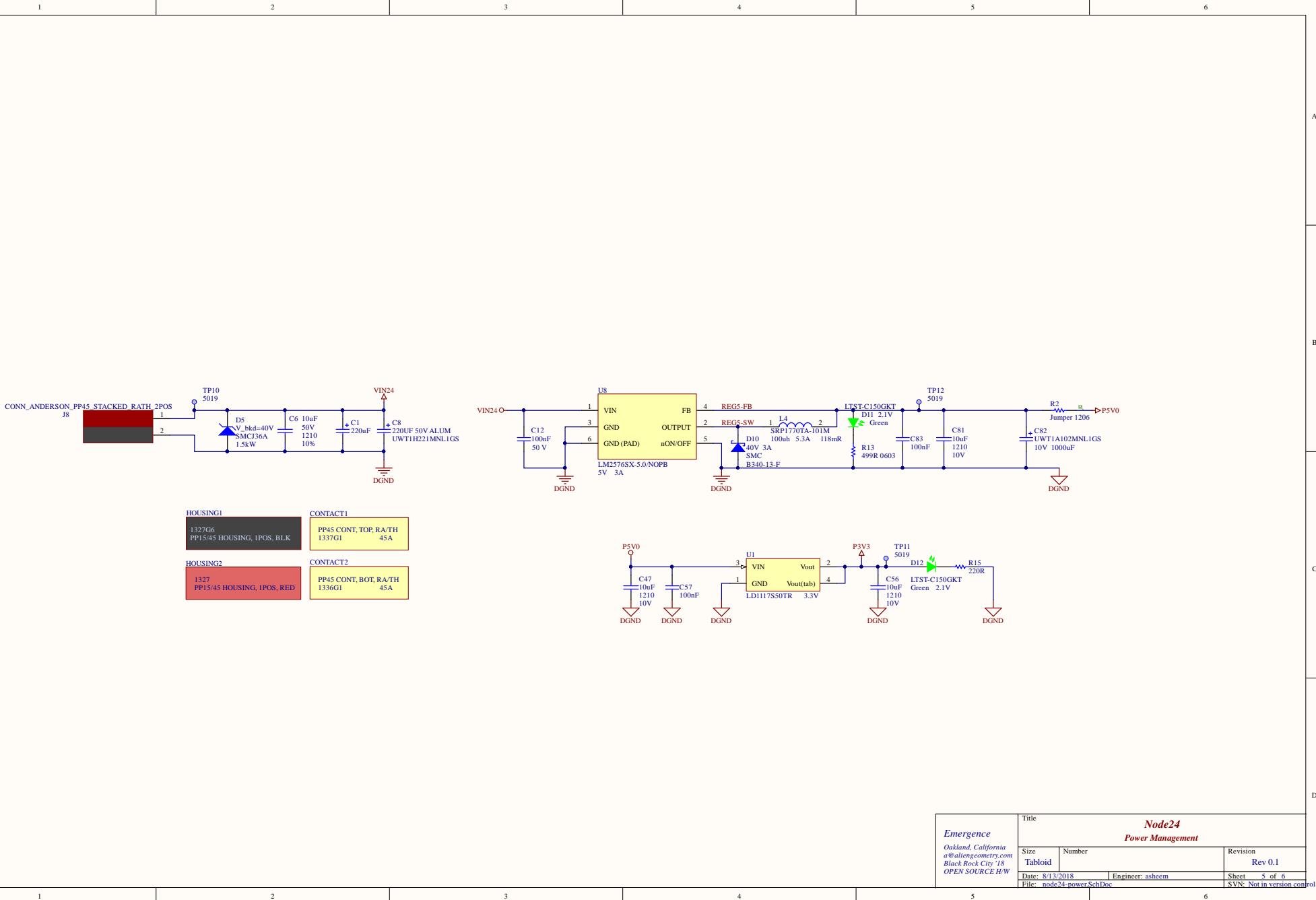
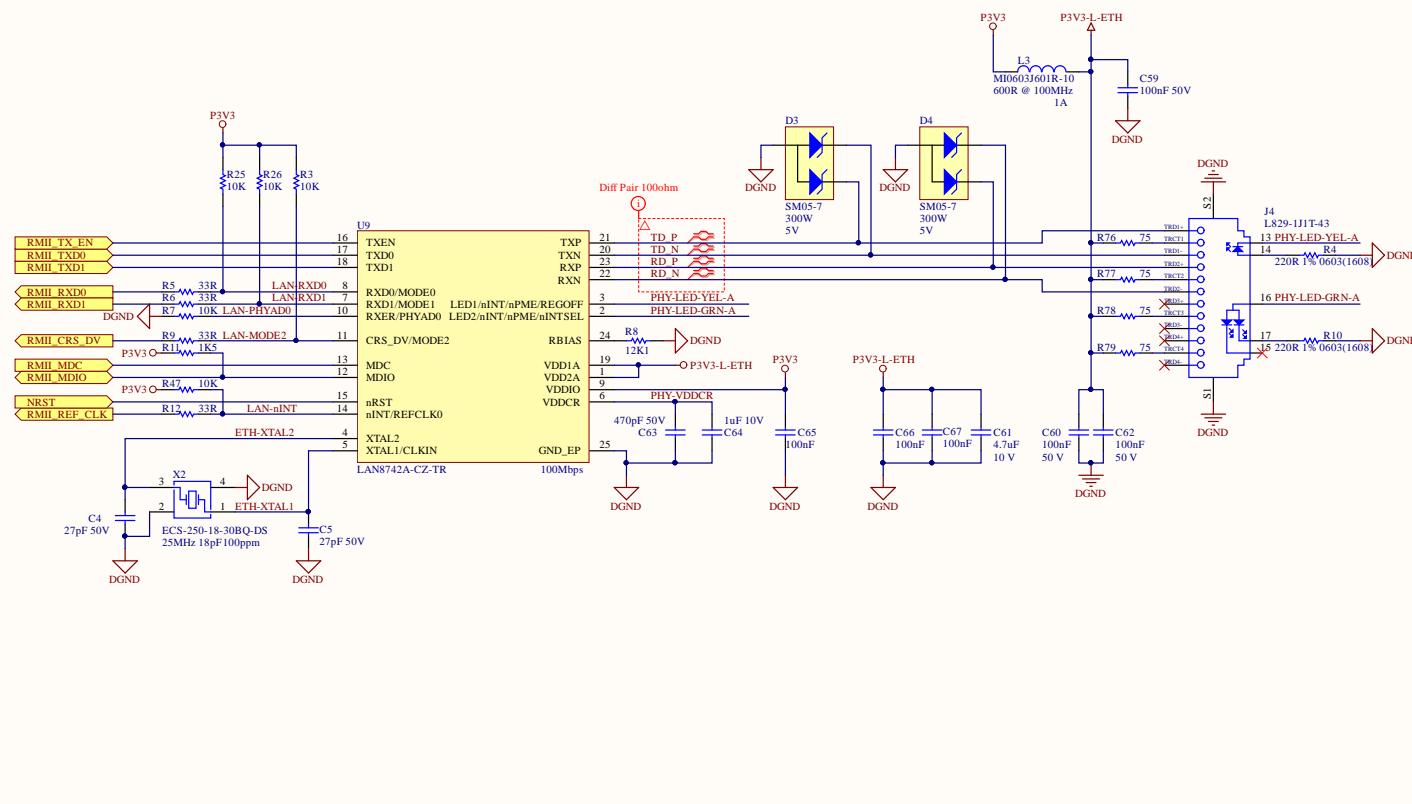


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Node24		
Output Channel		
Title	Number	Revision
Emergence		Rev 0.1
Oakland, California		
a@alinegeometry.com		
Black Rock City '18		
OPEN SOURCE H/W		
Date: 8/13/2018	Engineer: asheem	Sheet 4 of 6
File: node24-channel SchDoc		SVN: Not in version control



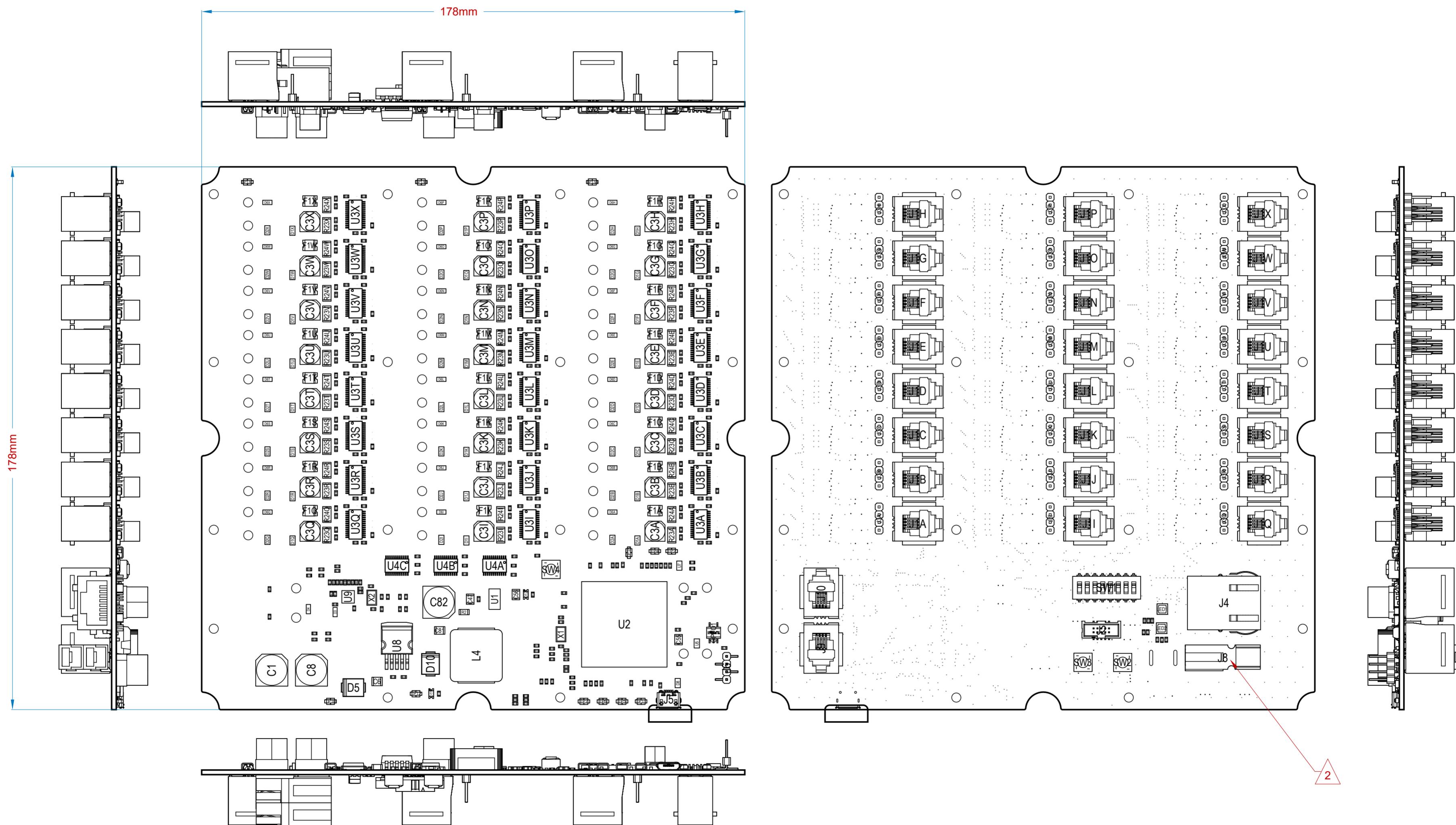


Title		
Node24 Ethernet		
Size	Number	Revision
Tabloid		Rev 0.1
Date: 8/13/2018	Engineer: asheem	Sheet: 6 of 6
File: node24-ethernet.SchDoc		SVN: Not in version control

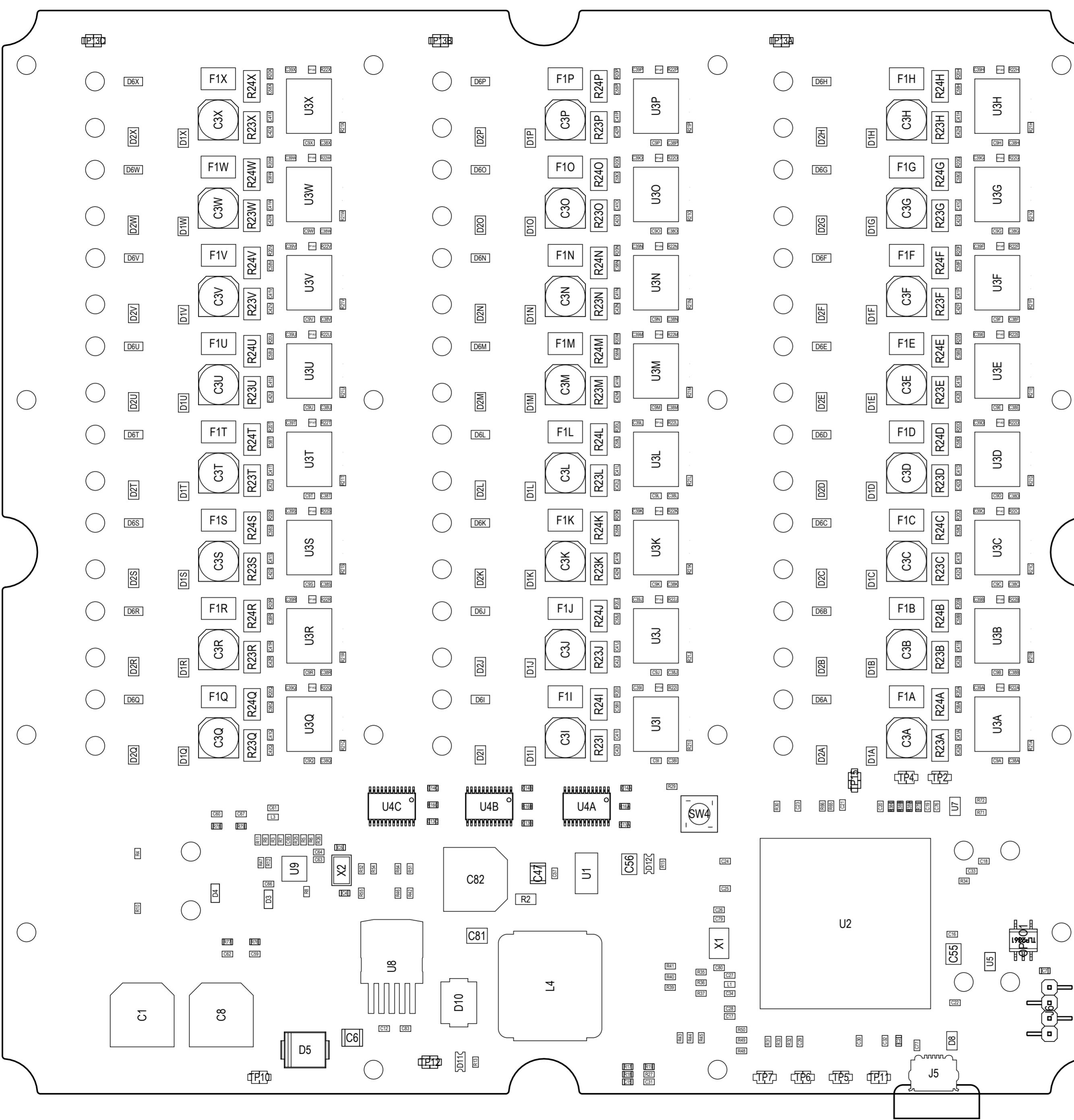
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Notes:

1. All components washable
2. Anderson Powerpole connector is assembled from several different BOM line items.
If connector is assembled by assembly vendor, note that the connector housings should be assembled with the RED housing in the lower (toward PCB) position.
3. LED polarity is marked in silkscreen - orientation mark corresponds to cathode.

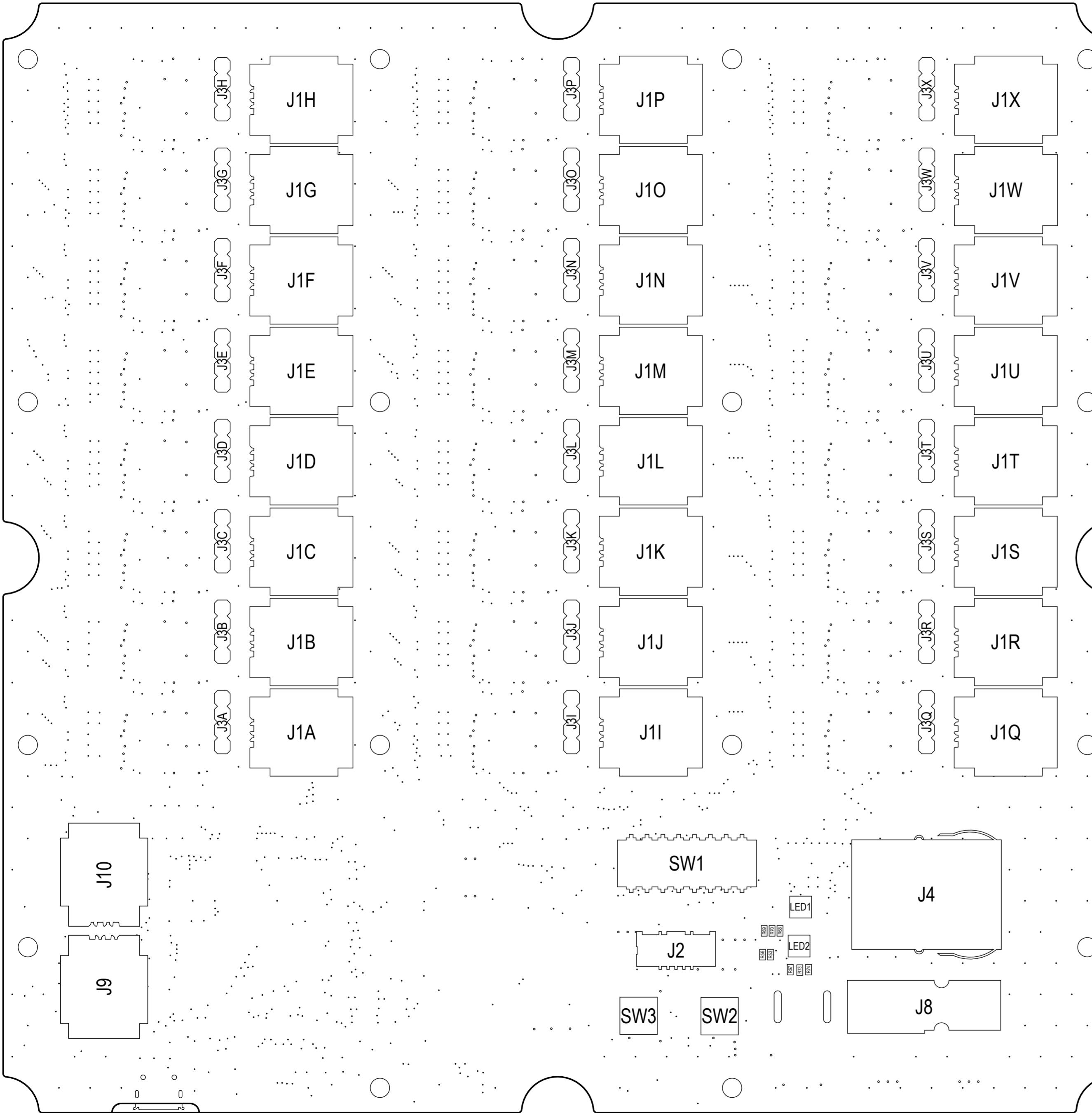


UNLESS OTHERWISE DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES:		FINISH:			DEBURR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING	REVISION
DRAW		NAME	SIGNATURE	DATA			
CHK'D							
APPVD							
MFG							
QA					MATERIAL:		DWG NO.
						WEIGHT:	SCALE 1:1
							SHEET 1 OF 5
							A2



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES:		FINISH:				DEBURR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING	REVISION
	NAME	SIGNATURE	DATA				TITLE: Node24, Assembly Drawing	
DRAW								
CHK'D								
APP'VD								
MFG								
QA				MATERIAL:			DWG NO.	A2
				WEIGHT:		SCALE 1:1	SHEET 2 OF 5	

A B C D E F G H I J K L



UNLESS OTHERWISE DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES:		FINISH:	DEBURR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING	REVISION
DRAW	NAME	SIGNATURE	DATA		
CHK'D					
APPVD					
MFG					
QA			MATERIAL:	DWG NO.	
			WEIGHT:	SCALE 1:1	SHEET 3 OF 5

A B C D E F G H I J K L

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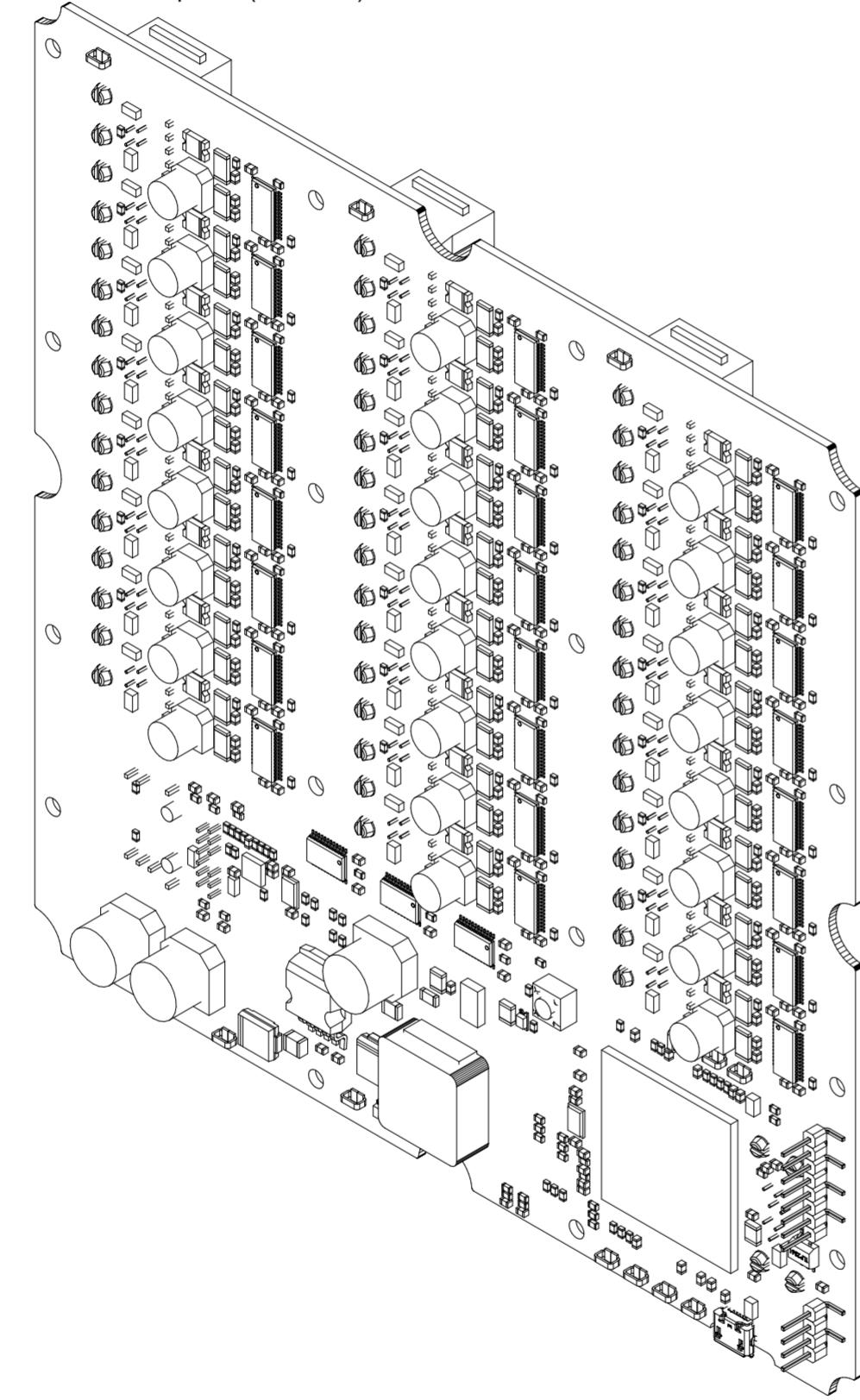
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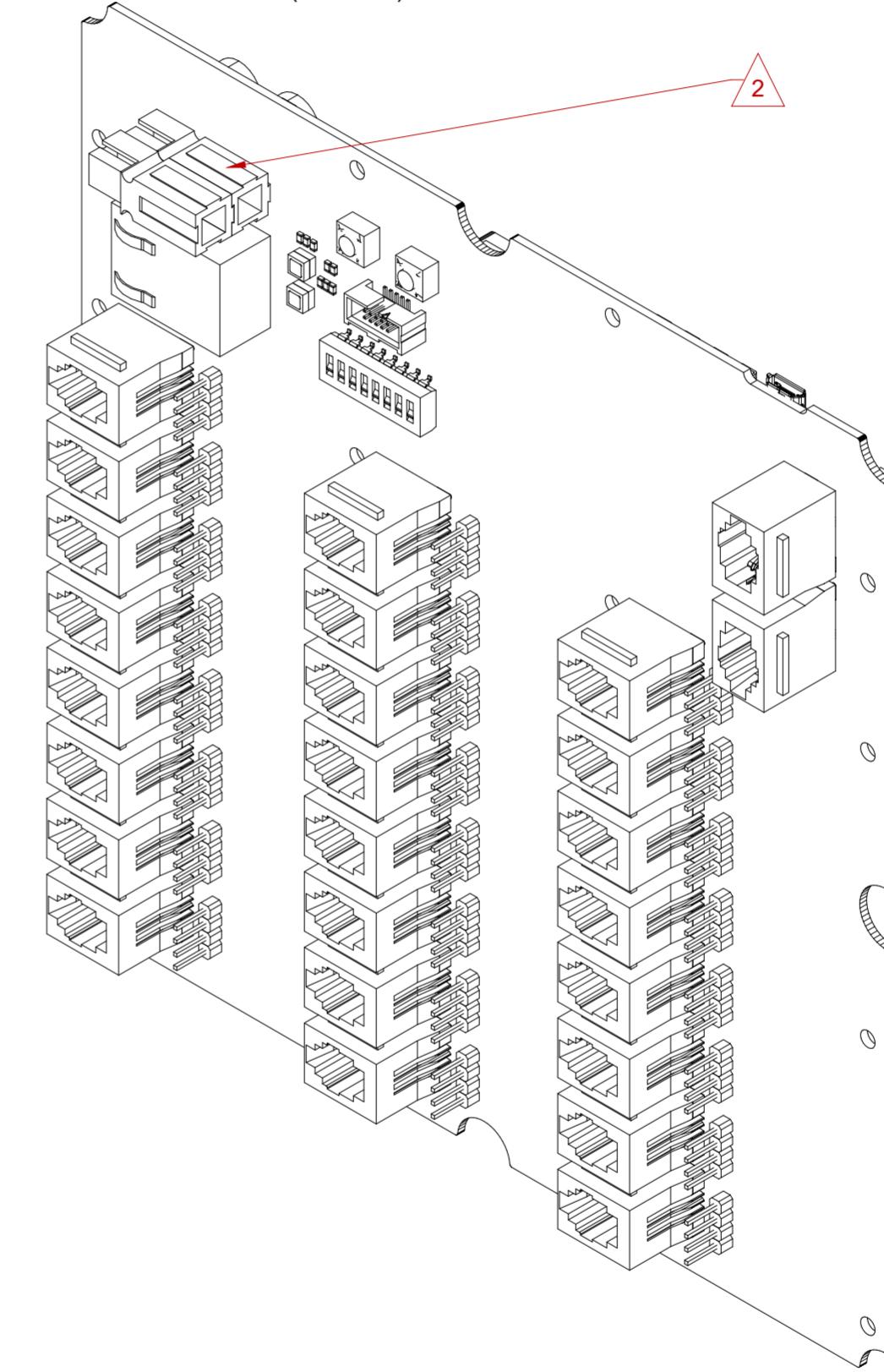
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View from Top side (Scale 1:1)



View from Bottom side (Scale 1:1)



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		NAME	SIGNATURE	DATA				
DRAW								
CHK'D								
APPVD								
MFG								
QA					MATERIAL:			DWG NO.
					WEIGHT:			SCALE 1:1

TITLE:
Node24, Assembly Drawing
DWG NO.
A2
SCALE 1:1
SHEET 4 OF 5

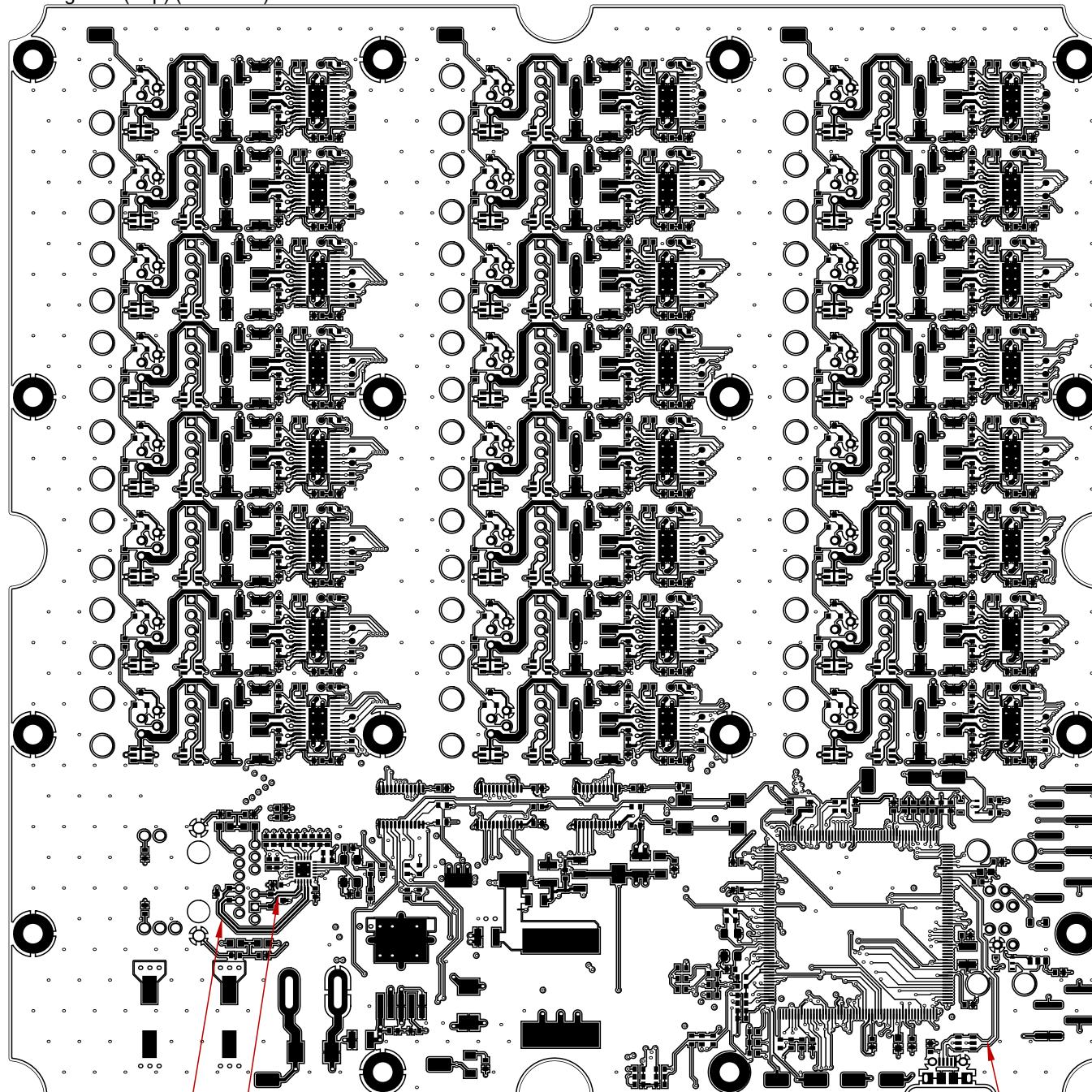
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L1 - Signal 1 (Top) (Scale 1:1)



1. Basic Specifications:
 - Manufacture per IPC-6012, Class 2 requirements
 - RoHS Compliant
 - Soldermask: Standard green photo-imageable, both sides
 - Silkscreen: Standard white, both sides
 - Dielectric: FR-4 or equivalent
 - Surface finish: Immersion Gold (ENIG)

2. Layer Stack-up:

- 6 Layers
- Stackup may be changed to accomodate impedance control requirements, material sourcing considerations, or manufacturing.
- Finished thickness 63 mil \pm 15%
- Notify of stackup modification before proceeding with fabrication.

Controlled Impedance: 100 Ohm \pm 15%, Differential (Ethernet).
 Adjust traces and stackup if necessary to accomodate this requirement.

Controlled Impedance: 90 Ohm \pm 15% Differential (USB).
 Adjust traces and stackup if necessary to accomodate this requirement.

Layer Stack Legend

Material	Layer	Thickness	Dielectric Material	Type	Gerber
	Top Paste			Paste Mask	GTP
	Top Overlay			Legend	GTO
Surface Material	Top Solder	0.40mil	Solder Resist	Solder Mask	GTS
Copper	L1 - Signal 1 (Top)	2.25mil		Signal	GTL
Prepreg		5.00mil	FR-4	Dielectric	
Copper	L2 - Signal 2	1.40mil		Signal	G1
Core		14.00mil	FR-4	Dielectric	
Copper	L3 - Ground	2.10mil		Internal Plane	GP1
Prepreg		7.50mil	FR-4	Dielectric	
Copper	L4 - Power	2.10mil		Internal Plane	GP2
Core		14.00mil	FR-4	Dielectric	
Copper	L5 - Signal 3	1.40mil		Signal	G2
Prepreg		7.50mil	FR-4	Dielectric	
Copper	L6 - Signal 4 (Bot)	2.25mil		Signal	GBL
Surface Material	Bottom Solder	0.40mil	Solder Resist	Solder Mask	GBS
	Bottom Overlay			Legend	GBO
	Bottom Paste			Paste Mask	GBP

Total thickness: 60.30mil

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DRAWN						
CHECKED						
ENG APPR.						
MFG APPR.						
Q.A.						
COMMENTS:						
MATERIAL						
NEXT ASSY	USED ON	FINISH				
APPLICATION		DO NOT SCALE DRAWING				
SCALE: 1:1	WEIGHT:	SHEET 1 OF 3				

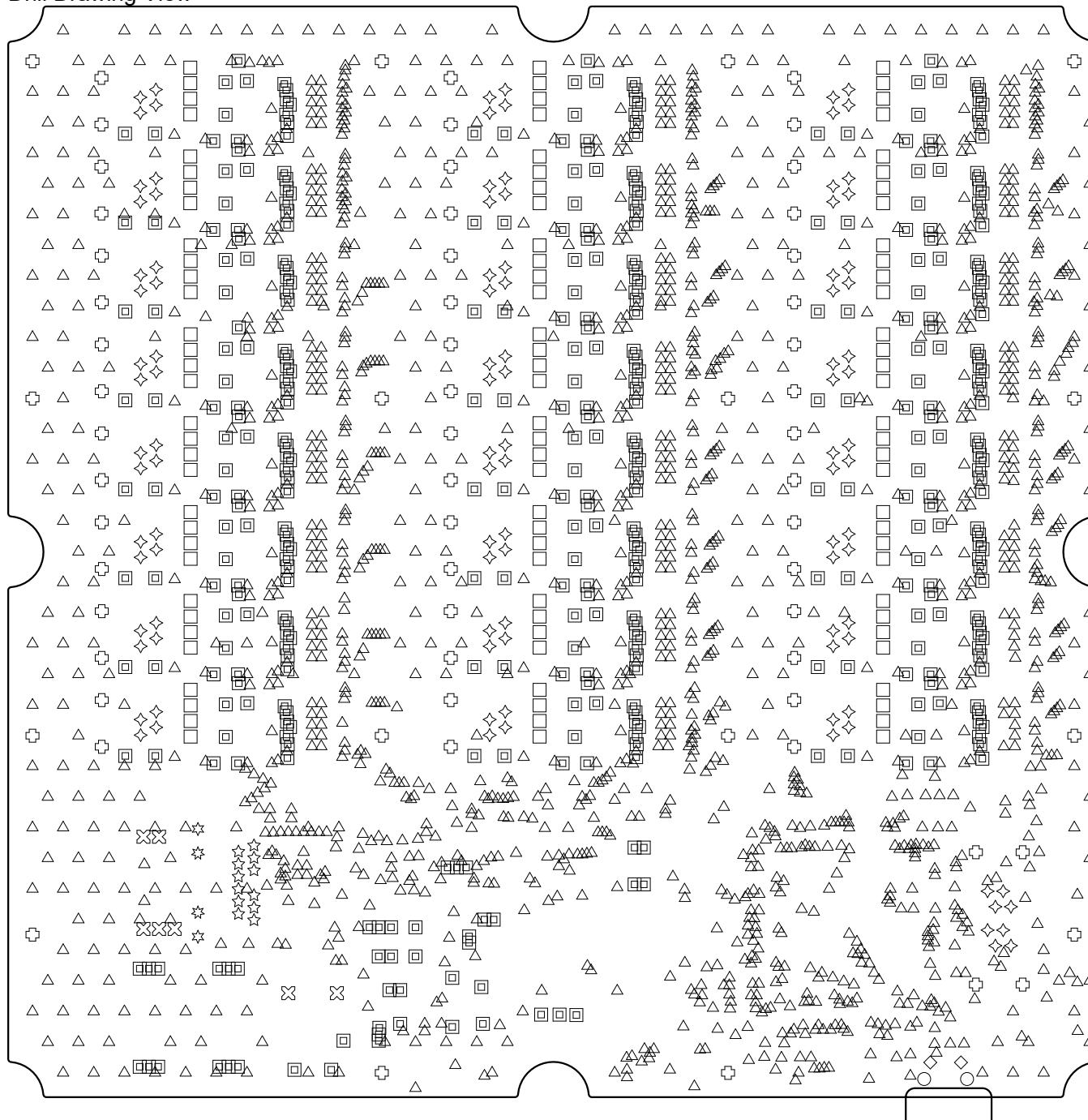
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Drill Drawing View



Drill Table

Symbol	Count	Hole Size	Plated	Hole Tolerance
□	96	1.02	Plated	None
○	2	0.60	Plated	None
◇	2	0.85	Plated	None
✗	7	1.27	Plated	None
✚	68	3.20	Plated	None
◆	104	0.90	Plated	None
★	12	0.89	Plated	None
❖	2	1.57	Plated	None
✳	2	3.25	Non-Plated	None
△	1672	0.25	Plated	+/-0.05
▣	403	0.38	Plated	None

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		DRAWN		8/13/2018		
		CHECKED				
		ENG APPR.				
		MFG APPR.				
		Q.A.				
		COMMENTS:				
		MATERIAL				
		FINISH				
		DO NOT SCALE DRAWING				
NEXT ASSY	USED ON		SIZE	DWG. NO.		
APPLICATION						
			SCALE:	1:1	WEIGHT:	
				SHEET 2 OF 3		

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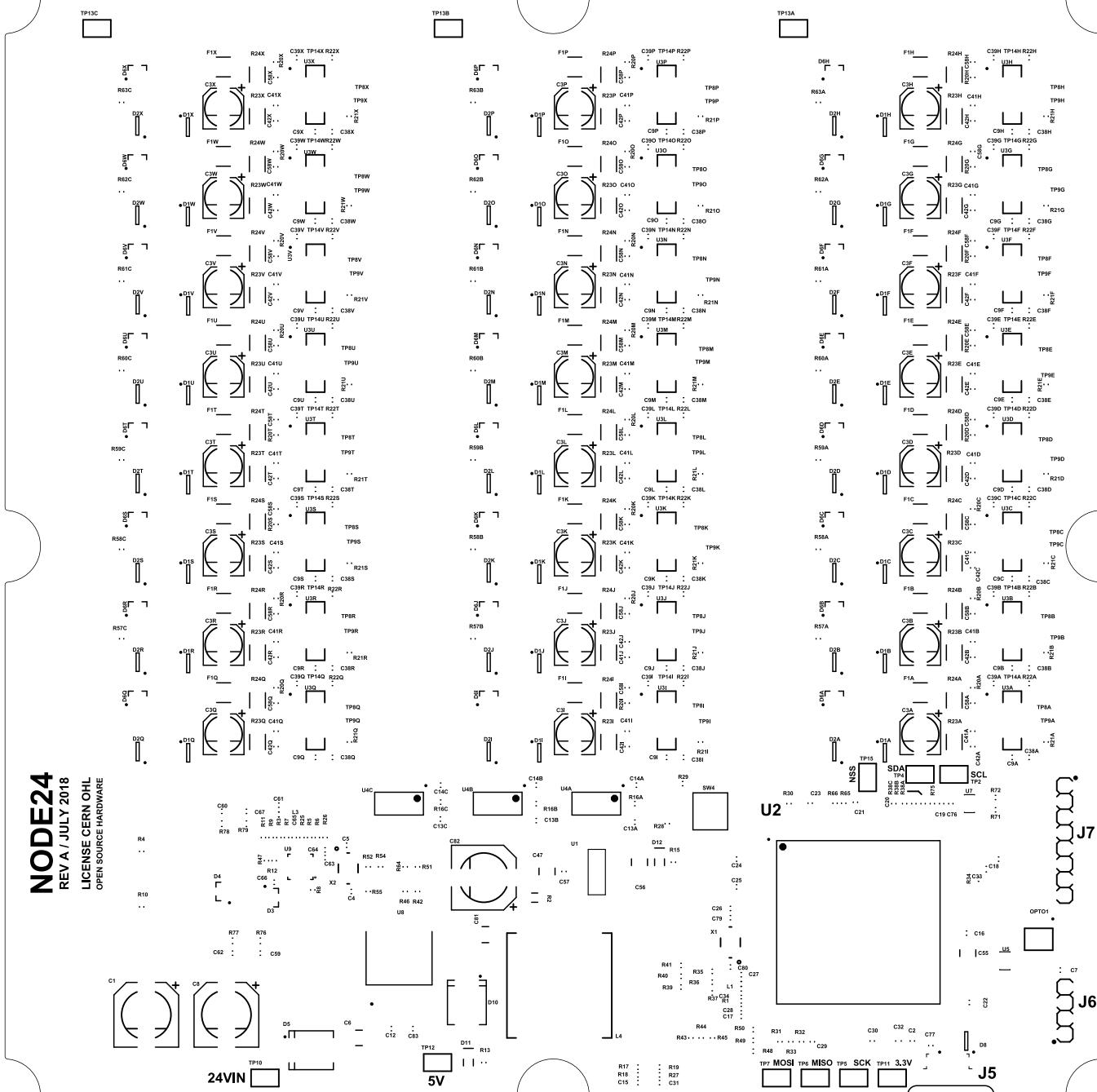
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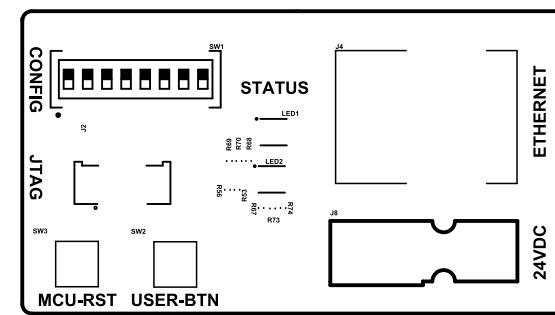
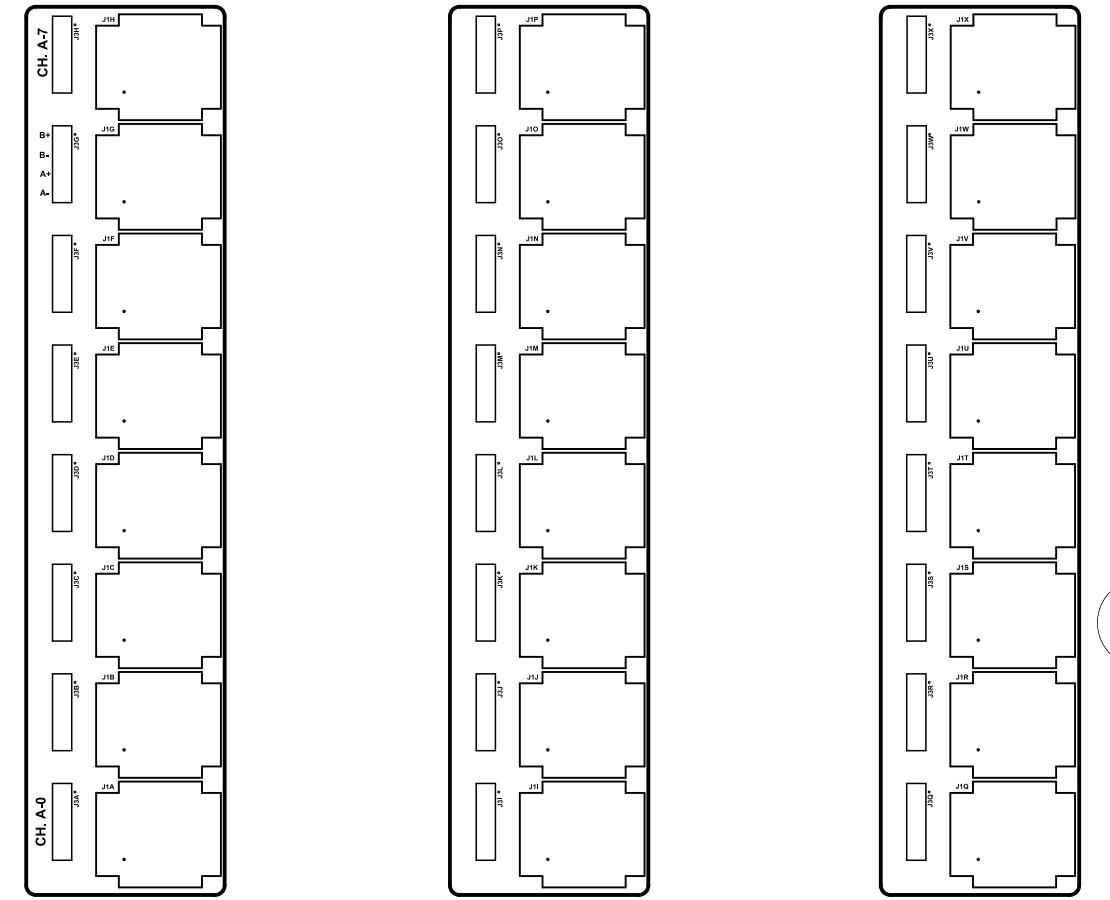
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Top Overlay (Scale 1:1)



Bottom Overlay (Scale 1:1)



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		DRAWN	8/13/2018	TITLE	
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		ENG APPR.			
		MFG APPR.			
		Q.A.		Node24, Drawing, Fabrication	
		COMMENTS:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON	DO NOT SCALE DRAWING			
APPLICATION					
SCALE: 1:1	WEIGHT:	SHEET 3 OF 3			