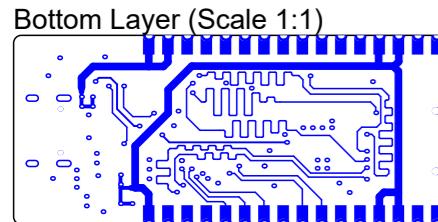


FABRICATION NOTES

Min. Track/Spacing:
Min. Hole Size: 10mil



Notes:

- 1 These are Castellated Pads, The Board edge should be Routed Halfway through the center of these Pads

IMPEDANCE CONTROL REQUIREMENTS

Differential 90Ohms +/-10%

MICROSTRIP

L1 Signal (Reference L2) --> Trace Width = + Trace Spacing =

CASTELLATED PADS

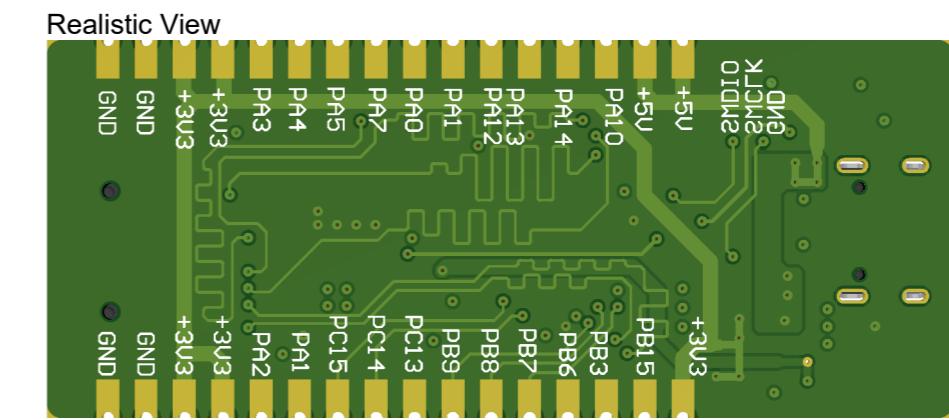
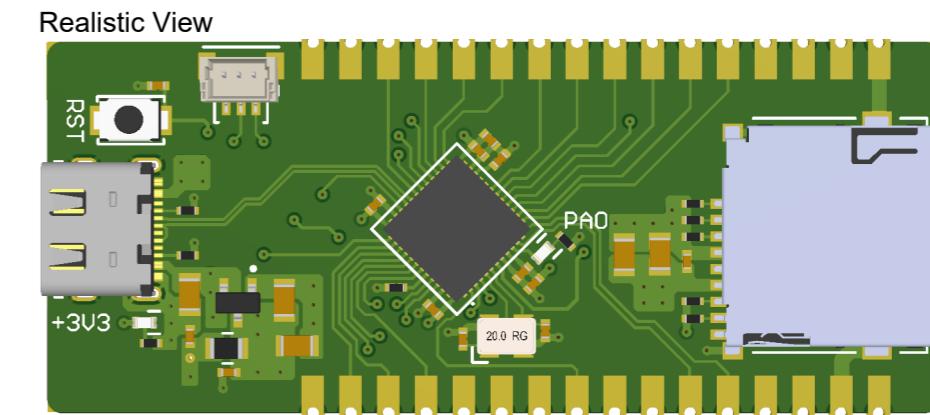
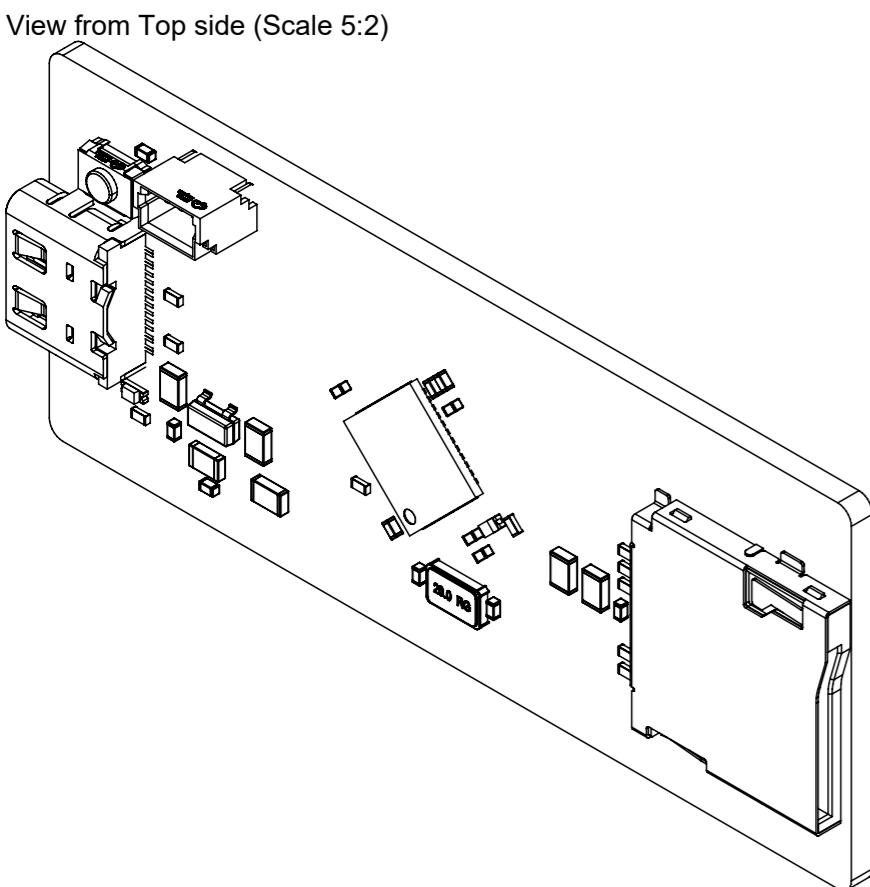
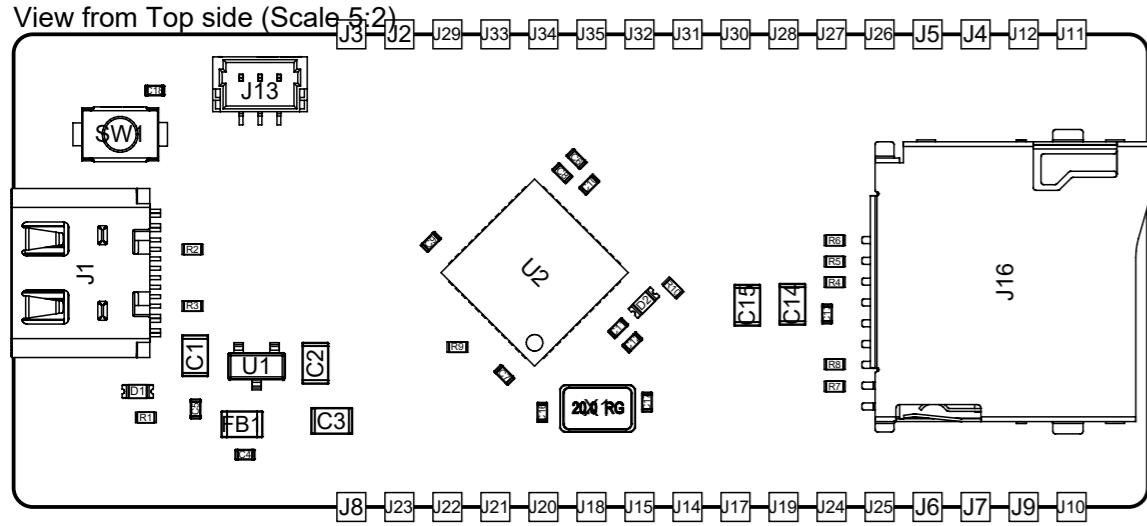
Hole Size/Spacing: 32mil/ 100mil
Pad Diameter: 60mil

Drill Table

Symbol	Count	Hole Size	Plated	Hole Tolerance
X	75	0.25mm	Plated	
□	4	0.60mm	Plated	
▽	2	0.65mm	Non-Plated	
☆	32	0.81mm	Plated	+/-0.08mm
X	2	1.00mm	Non-Plated	
115 Total				

Layer Stack Legend

Material	Layer	Thickness	Dielectric Material	Type	Gerber
Top Overlay				Legend	GTO
Surface Material	Top Solder	0.03mm	SM-001	Solder Mask	GTS
CF-004	Top Layer	0.04mm		Signal	GTL
Prepreg		0.21mm	7628	Dielectric	
CF-004	Int1 (GND)	0.02mm		Signal	G1
Core		1.06mm	Core-039	Dielectric	
CF-004	Int2 (PWR)	0.02mm		Signal	G2
Prepreg		0.21mm	7628	Dielectric	
CF-004	Bottom Layer	0.04mm		Signal	GBL
Surface Material	Bottom Solder	0.03mm	SM-001	Solder Mask	GBS
	Bottom Overlay			Legend	GBO
Total thickness: 1.65mm					



A

B

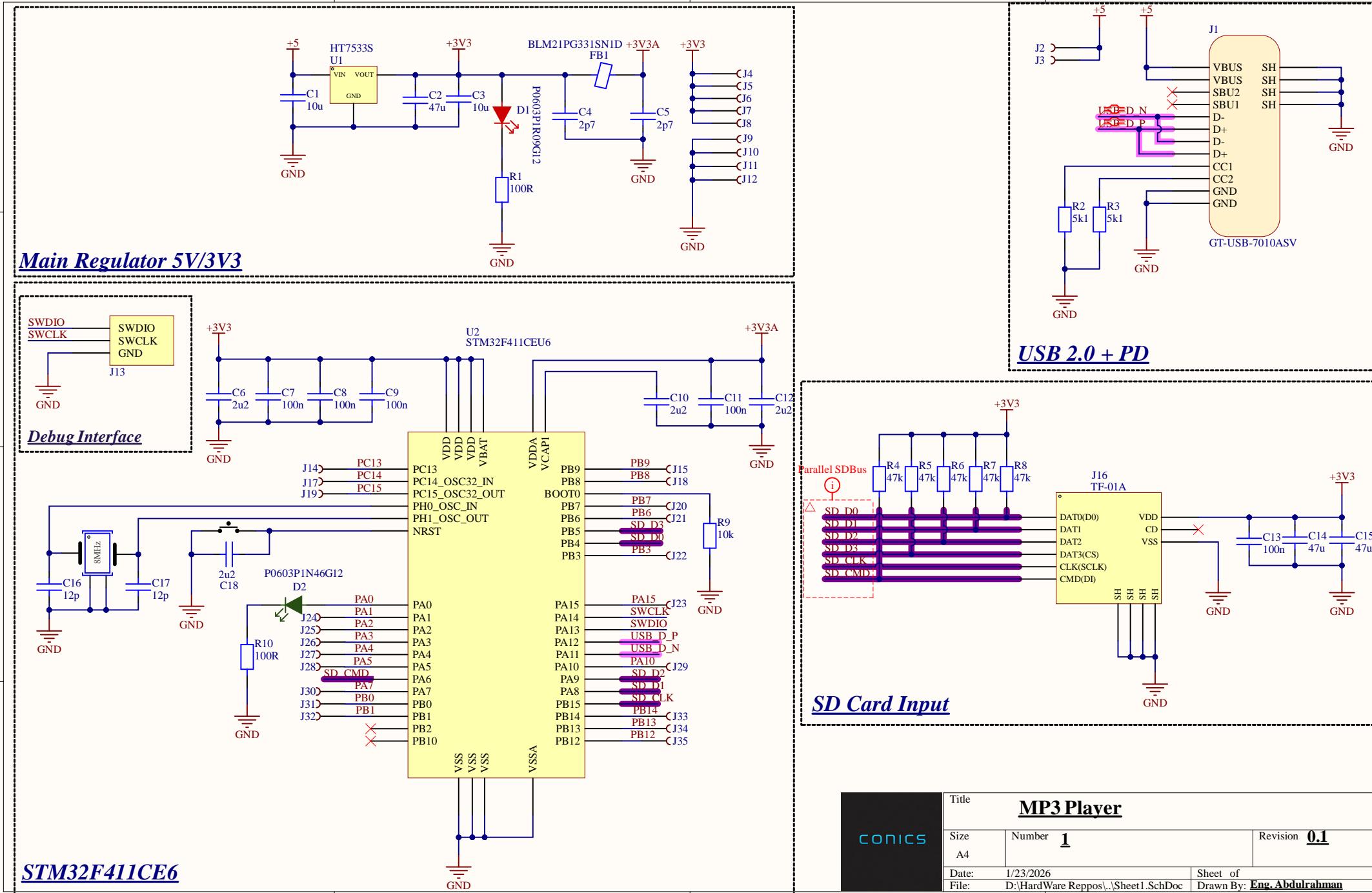
C

D

E

Bill Of Materials

Line #	Designator	Name	Quantity
	C1, C3	10u	2
	C2, C14, C15	47u	3
	C4, C5	2p7	2
	C6, C10, C12, C18	2u2	4
	C7, C8, C9, C11, C13	100n	5
	C16, C17	12p	2
	D1	P0603P1R09G12	1
	D2	P0603P1N46G12	1
	FB1	BLM21PG331SN1D	1
	J1	GT-USB-7010ASV	1
	J2, J3, J4, J5, J6, J7, J8, J9, J10, J11, J12, J14, J15, J17, J18, J19, J20, J21, J22, J23, J24, J25, J26, J27, J28, J29, J30, J31, J32, J33, J34, J35	Castellated Pad	32
	J13	DAP SWD	1
	J16	TF-01A	1
	R1, R10	100R	2
	R2, R3	5k1	2
	R4, R5, R6, R7, R8	47k	5
	R9	10k	1
	SW1	TS-1088-AR02016	1
	U1	HT7533S	1
	U2	STM32F411CEU6	1
	X1	XC32M4-8.000-F12LJDT	1



Line #	Name	Description	Designator	Quantity	Manufacturer 1	Manufacturer Part Number 1	Manufacturer Lifecycle 1	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Supplier Subtotal 1
	Castellated Pad	J2, J3, J4, J5, J6, J7, J8, J9, J10, J11, J12, J14, J15, J17, J18, J19, J20, J21, J22, J23, J24, J25, J26, J27, J28, J29, J30, J31, J32, J33, J34, J35		32							
	P0603P1R09G12	20mA 350mcd 621nm Red 2V 0603 LED Indication - Discrete ROHS	D1	1	Silverlight	P0603P1R09G12					
	BLM21PG331SN1D	70mA ±25% 330Ω@100MHz 0805 Ferrite Beads and Chips RoHS	FB1	1	muRata	BLM21PG331SN1D					
	P0603P1N46G12	1200mcd 518nm-524nm Green 3V 0603 LED Indication - Discrete ROHS	D2	1	Silverlight	P0603P1N46G12					
	STM32F411CEU6	ARM Cortex-M4 32 Bit 100MHz 36 UFQFPN-48(7x7) Microcontrollers RoHS	U2	1	ST	STM32F411CEU6					
	DAP SWD	Connector Header 3 position 1mm Pitch 1A Surface Mount, Vertical - 25°C - 85°C	J13	1	JST	BM03B-SRSS-TB(LF)(SN)					
	XC32M4-8.000-F12LJD	Crystal Oscillator 12pF SMD3225-4P Crystals RoHS	X1	1	HCI	XC32M4-8.000-F12LJDT					
100R		General Purpose SMD Carbon Resistor	R1, R10	2							
5k1		General Purpose SMD Carbon Resistor	R2, R3	2							
47k		General Purpose SMD Carbon Resistor	R4, R5, R6, R7, R8	5							
10k		General Purpose SMD Carbon Resistor	R9	1							
HT7533S		Linear Voltage Regulator IC Positive Fixed 1 Output 100mA SOT-23	U1	1	UMW	HT7533S					
10u		Multilayer Ceramic Capacitor	C1, C3	2							
47u		Multilayer Ceramic Capacitor	C2, C14, C15	3							
2p7		Multilayer Ceramic Capacitor	C4, C5	2							
2u2		Multilayer Ceramic Capacitor	C6, C10, C12, C18	4							
100n		Multilayer Ceramic Capacitor	C7, C8, C9, C11, C13	5							
12p		Multilayer Ceramic Capacitor	C16, C17	2							
TF-01A		Push-Push 1.85mm Connector and Ejector MicroSD Card (TF Card) SMD PC Card Sockets ROHS	J16	1	Korean Hroparts Elec	TF-01A					
GT-USB-7010ASV		USB 2.0 16P - 40°C - 85°C Type-C SMD USB, DVI, HDMI Connector Assemblies ROHS	J1	1	G-Switch	GT-USB-7010ASV					
TS-1088-AR02016		Without Bracket 4mm 12V 3mm Round Button SPST 50mA SMD 4x3mm Tactile Switches RoHS	SW1	1	XUNPU	TS-1088-AR02016					

Design Rules Verification Report

Filename : D:\HardWare Reppos\ALTIUM-reppo\Documents\MP3_player\PCB1.PcbDoc

Warnings 0
Rule Violations 0

Warnings	
Total	0

Rule Violations	
Clearance Constraint (Gap=7.874mil) (All), (All)	0
Clearance Constraint (Gap=5mil) ((InNet("USB*")), (All))	0
Short-Circuit Constraint (Allowed=No) (All), (All)	0
Un-Routed Net Constraint ((All))	0
Modified Polygon (Allow modified: No), (Allow shelved: No)	0
Width Constraint (Min=5mil) (Max =40mil) (Preferred=7.874mil) (All)	0
Routing Topology Rule(Topology =Shortest) (All)	0
Power Plane Connect Rule(Direct Connect)(Expansion=20mil) (Conductor Width=10mil) (Air Gap=10mil) (Entries=4)	0
Hole Size Constraint (Min=1mil) (Max =100mil) (All)	0
Hole To Hole Clearance (Gap=10mil) (All), (All)	0
Minimum Solder Mask Sliver (Gap=4mil) ((InPadClass('All Pads')), (InPadClass('All Pads')))	0
Silk To Solder Mask (Clearance=6mil) (IsPad), (All)	0
Silk to Silk (Clearance=10mil) (All), (All)	0
Net Antennae (Tolerance=0mil) (All)	0
Height Constraint (Min=0mil) (Max =1000mil) (Preferred=500mil) (All)	0
Total	0

Electrical Rules Check Report

Class	Document	Message
Warning	Sheet1.SchDoc	Off grid J1 at 256.48mm,161.83mm
Warning	Sheet1.SchDoc	Off grid No ERC at 245.05mm,166.91mm
Warning	Sheet1.SchDoc	Off grid No ERC at 245.05mm,169.45mm
Warning	Sheet1.SchDoc	Off grid Pin J1-1 at 245.05mm,174.53mm
Warning	Sheet1.SchDoc	Off grid Pin J1-4 at 245.05mm,154.21mm
Warning	Sheet1.SchDoc	Off grid Pin J1-5 at 245.05mm,164.37mm
Warning	Sheet1.SchDoc	Off grid Pin J1-6 at 245.05mm,161.83mm
Warning	Sheet1.SchDoc	Off grid Pin J1-7 at 245.05mm,159.29mm
Warning	Sheet1.SchDoc	Off grid Pin J1-8 at 245.05mm,156.75mm
Warning	Sheet1.SchDoc	Off grid Pin J1-10 at 245.05mm,151.67mm
Warning	Sheet1.SchDoc	Off grid Pin J1-11 at 245.05mm,149.13mm
Warning	Sheet1.SchDoc	Off grid Pin J1-12 at 245.05mm,146.59mm
Warning	Sheet1.SchDoc	Off grid Pin J1-13 at 274.77mm,166.91mm
Warning	Sheet1.SchDoc	Off grid Pin J1-14 at 274.77mm,169.45mm
Warning	Sheet1.SchDoc	Off grid Pin J1-15 at 274.77mm,171.99mm
Warning	Sheet1.SchDoc	Off grid Pin J1-16 at 274.77mm,174.53mm
Warning	Sheet1.SchDoc	Off grid Power Object GND at 239.77mm,139.53mm
Warning	Sheet1.SchDoc	Off grid Power Object GND at 279.77mm,164.53mm