

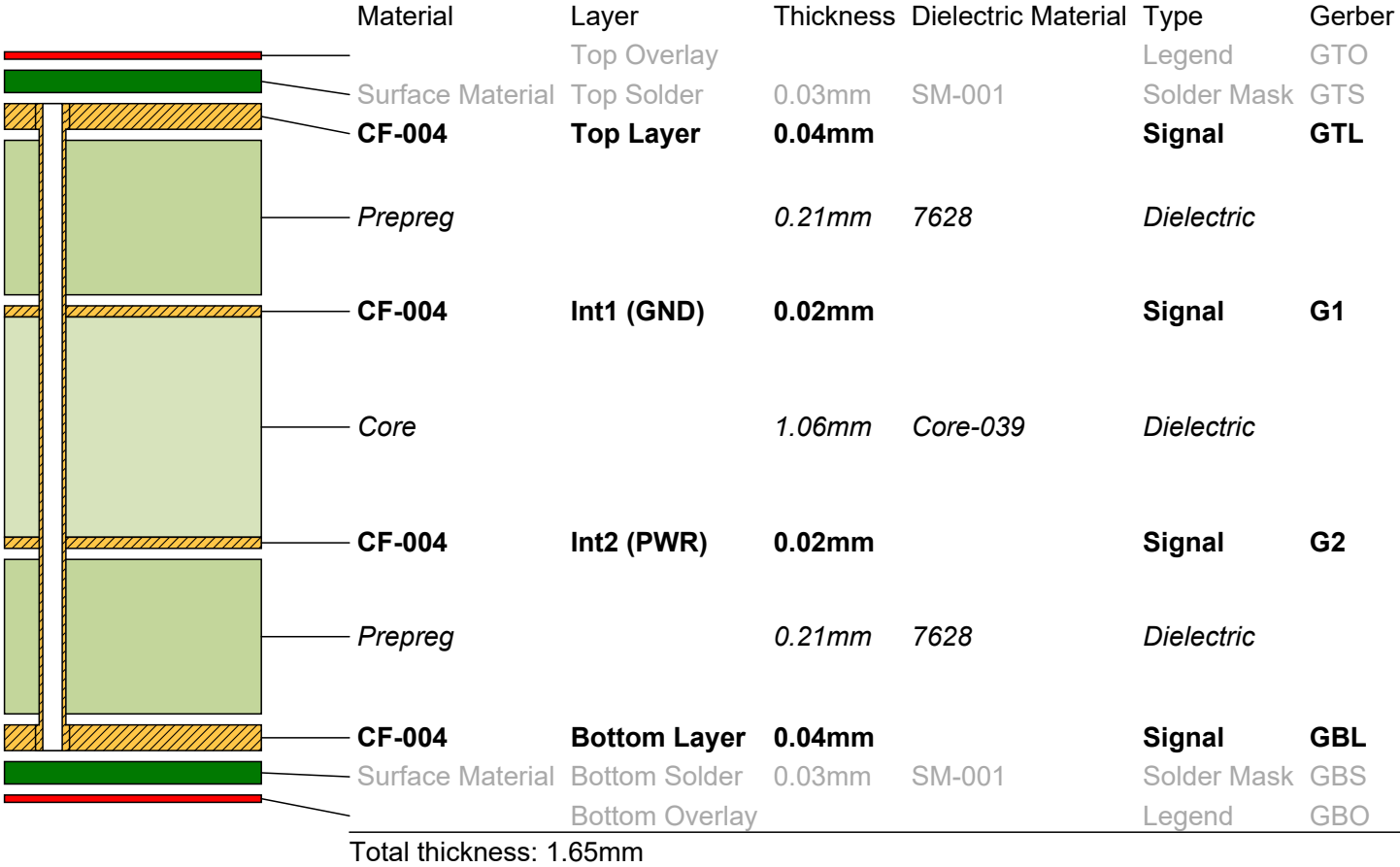
Notes:

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

Drill Table

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

Layer Stack Legend



FABRICATION NOTES

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

IMPEDANCE CONTROL REQUIREMENTS

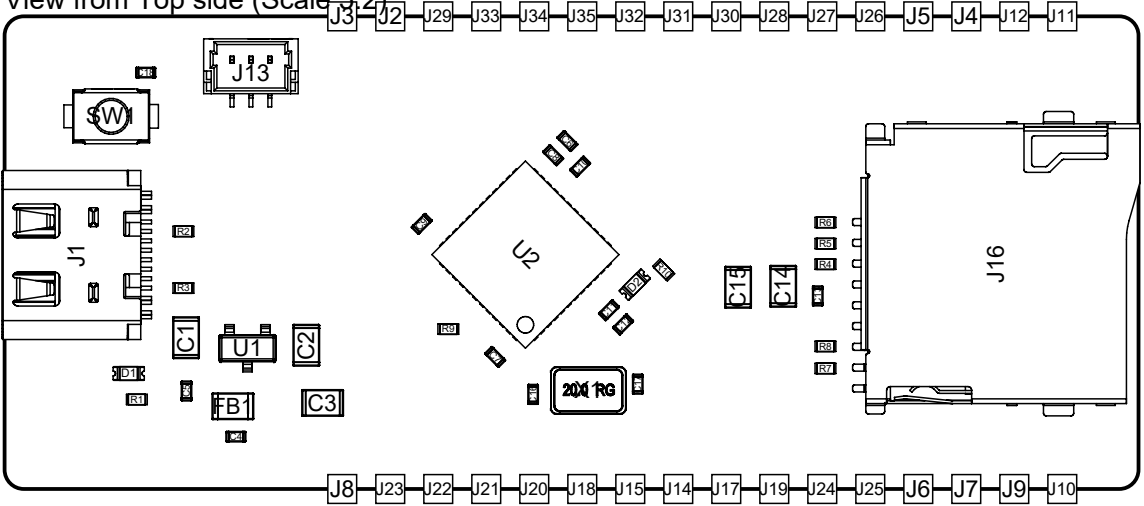
Differential 90Ohms +/-10%

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

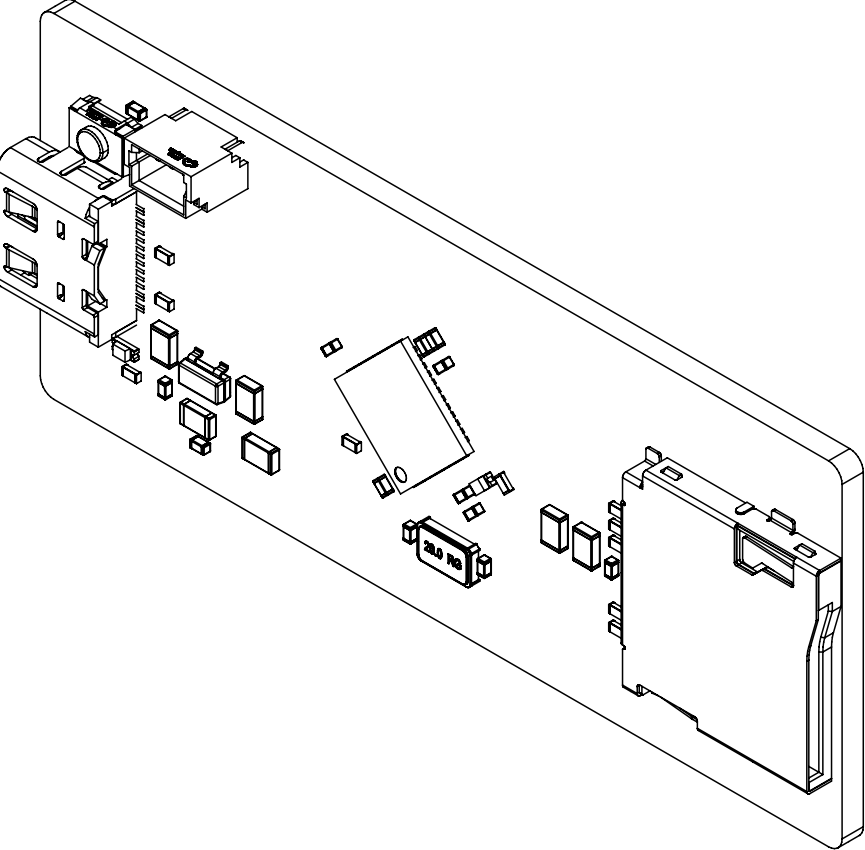
CASTELLATED PADS

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

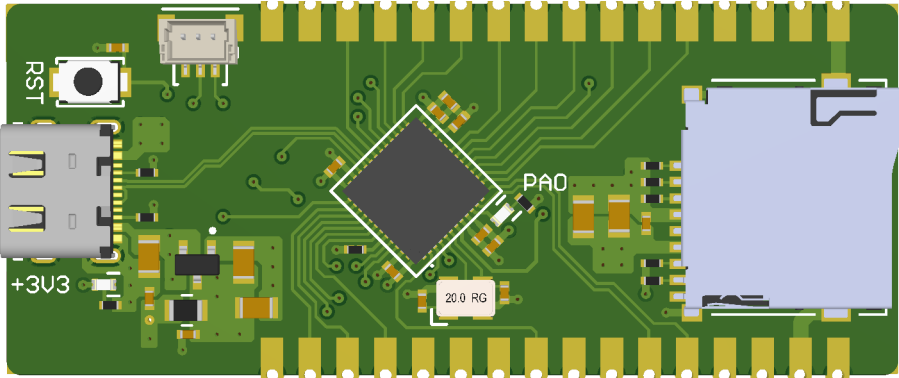
View from Top side (Scale 5:2)



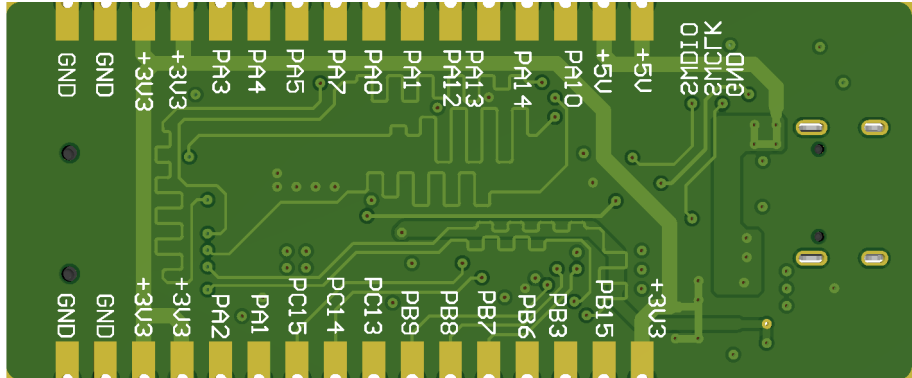
View from Top side (Scale 5:2)



Realistic View



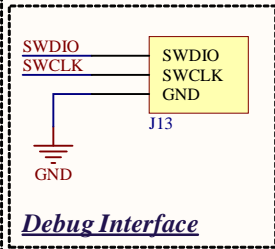
Realistic View



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

Main Regulator 5V/3V3



STM32F411CE6

USB 2.0 + PD

SD Card Input

CONICS

Title			MP3 Player
Size	Number	Revision	
A4	1	0.1	
Date:	1/23/2026	Sheet of	
File:	D:\HardWare Reppos\...\Sheet1.SchDoc	Drawn By:	Eng. Abdulrahman

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	70mΩ ±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-F12LJDT	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 1 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 Repos\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