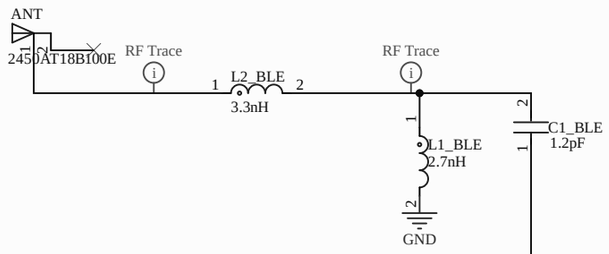
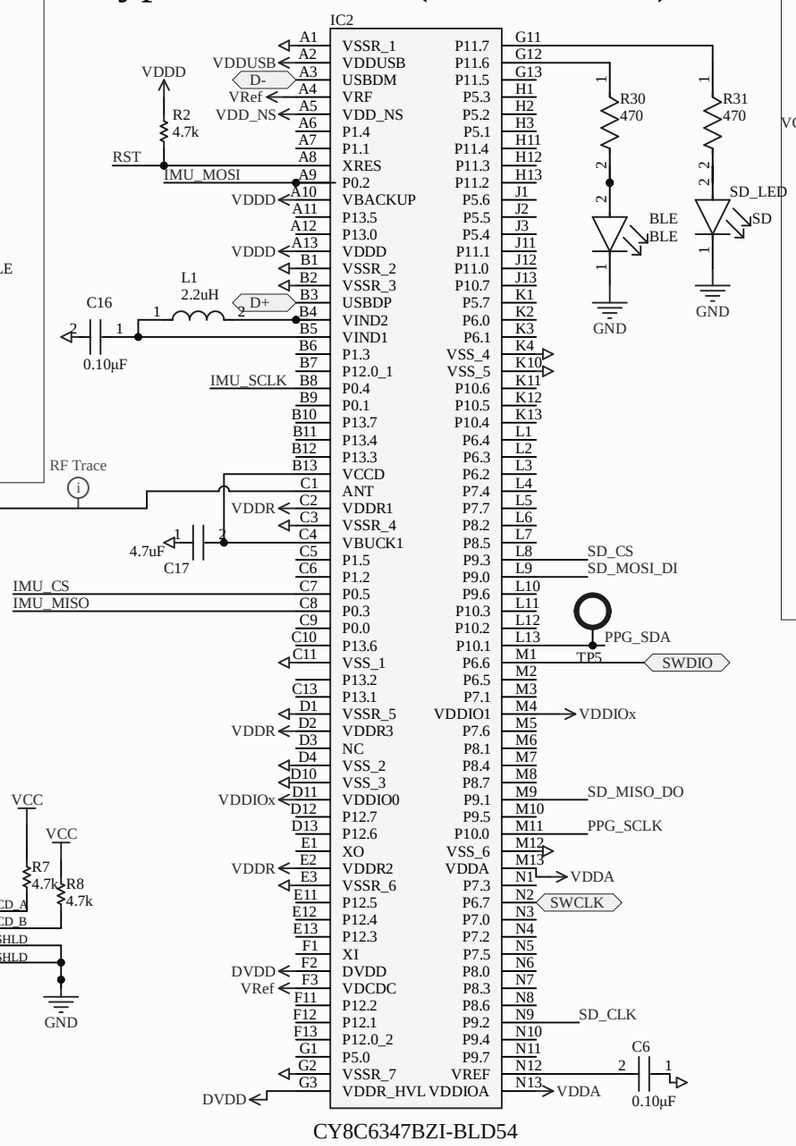
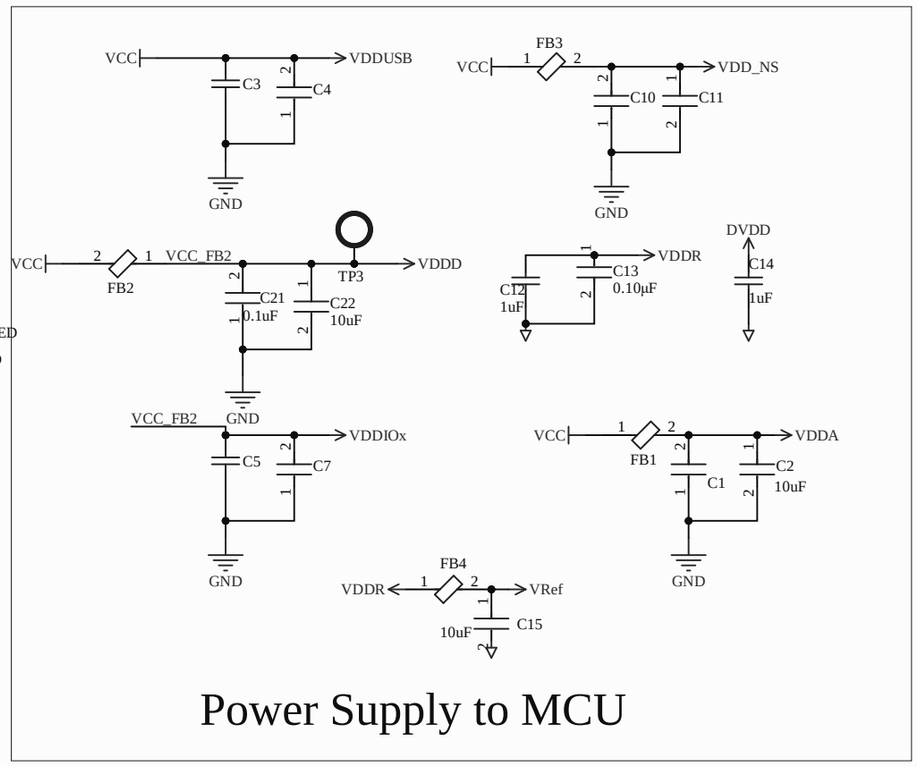
Bluetooth (2.4GHz)
Impedance Matching Network

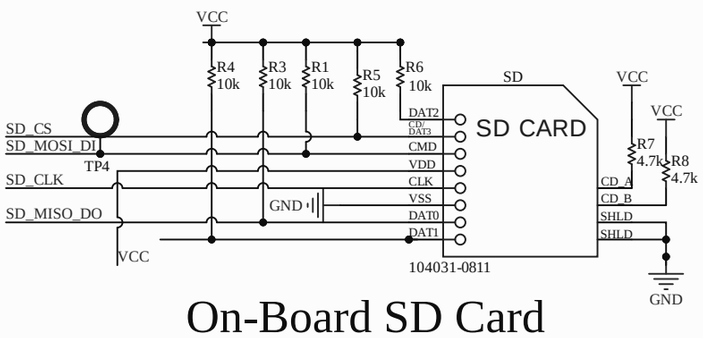


Cypress PSoC63 (M4F Cortex)

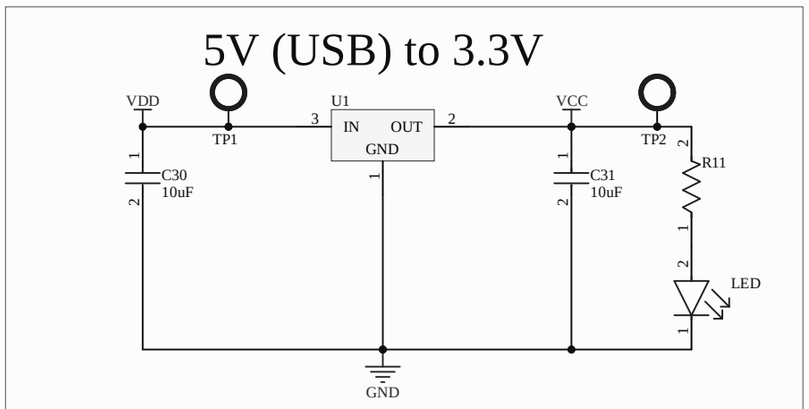




Power Supply to MCU

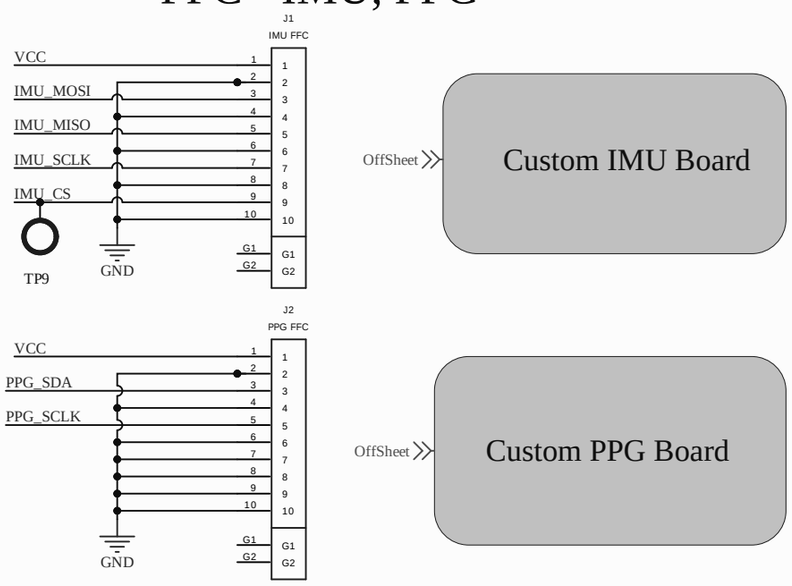


On-Board SD Card

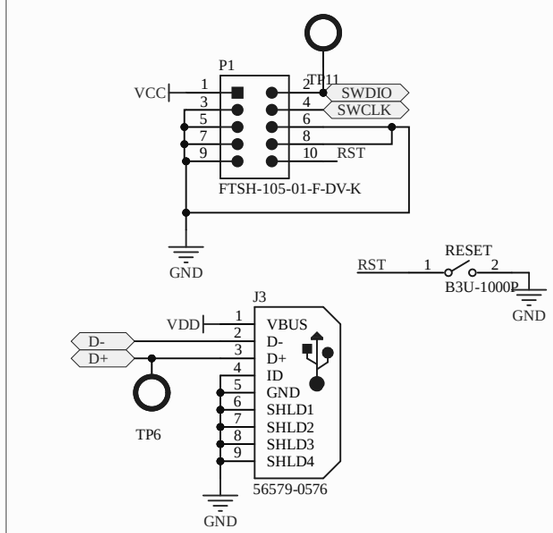


5V (USB) to 3.3V

FFC - IMU, PPG



SWD (Programming Conn.)
microUSB (Data)



JY-16 Cardiac Arrest Monitor

Title		
Size: A	Number	Revision
Date: 3-02-2023	Sheet of	
File: C:\Users\..\PSoC6-Cardiac-Schematic.SchDoc	Drawn By:	

Design Rules Verification Report

Filename : C:\Users\harsh\OneDrive\Desktop\GitHub Projects\Wearable-Cardiac-Monitor-JY16-Capstone\Capstone Circuit JY16\Cypress PSoC6 Embedded Bluetooth Solution\P

Warnings 0
Rule Violations 55

Warnings	
Total	0

Rule Violations	
Clearance Constraint (Gap=5.984mil) (WithinRoom('BGA')),(All)	0
Clearance Constraint (Gap=10mil) (All),(All)	0
Short-Circuit Constraint (Allowed=No) (All),(All)	2
Un-Routed Net Constraint ((All))	0
Modified Polygon (Allow modified: No), (Allow shelved: No)	0
Width Constraint (Min=15mil) (Max=20mil) (Preferred=15mil) (InNet('VCC') Or InNet('VDD'))	0
Width Constraint (Min=8mil) (Max=15mil) (Preferred=10mil) (All)	0
Width Constraint (Min=10mil) (Max=20mil) (Preferred=10mil) (InNet('NetC1_BLE_1') or InNet('NetC1_BLE_2') or	0
Width Constraint (Min=5mil) (Max=7mil) (Preferred=6mil) (WithinRoom('BGA'))	0
Power Plane Connect Rule(Relief 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=10mil) (All),(All)	43
Silk to Silk (Clearance=10mil) (All),(All)	10
Net Antennae (Tolerance=0mil) (All)	0
Room BGA (Bounding Region = (1518.409mil, 4632.819mil, 1968.409mil, 5076.819mil) (False)	0
Height Constraint (Min=0mil) (Max=1000mil) (Prefered=500mil) (All)	0
Total	55

Short-Circuit Constraint (Allowed=No) (All),(All)
Short-Circuit Constraint: Between Pad IC2-L5(1684mil,4751.276mil) on Top Layer And Track (1684mil,4750.703mil)(1684mil,4751.276mil) on Top
Short-Circuit Constraint: Between Pad IC2-L5(1684mil,4751.276mil) on Top Layer And Track (1684mil,4750.703mil)(1684mil,4751.276mil) on Top

Minimum Solder Mask Sliver (Gap=10mil) (All),(All)
Minimum Solder Mask Sliver Constraint: (9.519mil < 10mil) Between Pad C1_BLE-1(1460mil,4956mil) on Top Layer And Pac
Minimum Solder Mask Sliver Constraint: (9.519mil < 10mil) Between Pad C17-1(1785.745mil,4972mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (5.906mil < 10mil) Between Pad C30-1(2256mil,4126mil) on Top Layer And Pad C30-2(2222.376mil,4126mil)
Minimum Solder Mask Sliver Constraint: (5.906mil < 10mil) Between Pad C31-1(2254mil,4338.376mil) on Top Layer And Pad C31-2(2254mil,4372mil)
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J1-1(2610mil,4743.1mil) on Top Layer And Pad J1-2(2610mil,4723.4mil) or
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J1-10(2610mil,4565.8mil) on Top Layer And Pad J1-9(2610mil,4585.5mil) or
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J1-2(2610mil,4723.4mil) on Top Layer And Pad J1-3(2610mil,4703.7mil) or
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J1-3(2610mil,4703.7mil) on Top Layer And Pad J1-4(2610mil,4684mil) on Top
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J1-4(2610mil,4684mil) on Top Layer And Pad J1-5(2610mil,4664.3mil) on Top
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J1-5(2610mil,4664.3mil) on Top Layer And Pad J1-6(2610mil,4644.6mil) or
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J1-6(2610mil,4644.6mil) on Top Layer And Pad J1-7(2610mil,4624.9mil) or
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J1-7(2610mil,4624.9mil) on Top Layer And Pad J1-8(2610mil,4605.2mil) or
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J1-8(2610mil,4605.2mil) on Top Layer And Pad J1-9(2610mil,4585.5mil) or
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J2-1(2608mil,4561.85mil) on Bottom Layer And Pad J2-2(2608mil,4581.55mil)
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J2-10(2608mil,4739.15mil) on Bottom Layer And Pad J2-9(2608mil,4719.45mil)
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J2-2(2608mil,4581.55mil) on Bottom Layer And Pad J2-3(2608mil,4601.25mil)
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J2-3(2608mil,4601.25mil) on Bottom Layer And Pad J2-4(2608mil,4620.95mil)
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J2-4(2608mil,4620.95mil) on Bottom Layer And Pad J2-5(2608mil,4640.65mil)
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J2-5(2608mil,4640.65mil) on Bottom Layer And Pad J2-6(2608mil,4660.35mil)
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J2-6(2608mil,4660.35mil) on Bottom Layer And Pad J2-7(2608mil,4680.05mil)
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J2-7(2608mil,4680.05mil) on Bottom Layer And Pad J2-8(2608mil,4699.75mil)
Minimum Solder Mask Sliver Constraint: (3.7mil < 10mil) Between Pad J2-8(2608mil,4699.75mil) on Bottom Layer And Pad J2-9(2608mil,4719.45mil)
Minimum Solder Mask Sliver Constraint: (3.811mil < 10mil) Between Pad J3-1(2345.095mil,3949.016mil) on Top Layer And Pac
Minimum Solder Mask Sliver Constraint: (3.811mil < 10mil) Between Pad J3-2(2313.599mil,3949.016mil) on Top Layer And Pac
Minimum Solder Mask Sliver Constraint: (3.811mil < 10mil) Between Pad J3-3(2282.102mil,3949.016mil) on Top Layer And Pac
Minimum Solder Mask Sliver Constraint: (3.811mil < 10mil) Between Pad J3-4(2250.606mil,3949.016mil) on Top Layer And Pac
Minimum Solder Mask Sliver Constraint: (6.083mil < 10mil) Between Pad L1_BLE-1(1422mil,5042.102mil) on Top Layer And Pac
Minimum Solder Mask Sliver Constraint: (1.843mil < 10mil) Between Pad R1-1(1994mil,3823.528mil) on Bottom Layer And Pad R1-2(1994mil,3794mil)
Minimum Solder Mask Sliver Constraint: (5.78mil < 10mil) Between Pad R2-1(1940mil,5157.748mil) on Top Layer And Pad R2-2(1940mil,5126.252mil)
Minimum Solder Mask Sliver Constraint: (1.843mil < 10mil) Between Pad R3-1(2558mil,3884.764mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (1.843mil < 10mil) Between Pad R4-1(2560mil,3763.236mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (1.843mil < 10mil) Between Pad R5-1(1988mil,3873.236mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (1.843mil < 10mil) Between Pad R6-1(1992mil,3711.236mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (5.78mil < 10mil) Between Pad R7-1(1990mil,3995.748mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (5.78mil < 10mil) Between Pad R8-1(2046mil,4140mil) on Bottom Layer And Pad R8-2(2014.504mil,4140mil)
Minimum Solder Mask Sliver Constraint: (1.842mil < 10mil) Between Pad SD-1(2155.461mil,3664.91mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (1.842mil < 10mil) Between Pad SD-12(2504.28mil,3678.689mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (1.842mil < 10mil) Between Pad SD-2(2198.768mil,3664.91mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (1.842mil < 10mil) Between Pad SD-3(2242.075mil,3664.91mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (1.842mil < 10mil) Between Pad SD-4(2285.382mil,3664.91mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (1.842mil < 10mil) Between Pad SD-5(2328.689mil,3664.91mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (1.842mil < 10mil) Between Pad SD-6(2371.996mil,3664.91mil) on Bottom Layer And Pac
Minimum Solder Mask Sliver Constraint: (1.842mil < 10mil) Between Pad SD-7(2415.303mil,3664.91mil) on Bottom Layer And Pac

Silk to Silk (Clearance=10mil) (All),(All)
Silk To Silk Clearance Constraint: (2.886mil < 10mil) Between Arc (2614mil,4370.5mil) on Top Overlay And Text "TP9" (2583.342mil,4314.003mil) or
Silk To Silk Clearance Constraint: (1.631mil < 10mil) Between Text "C21" (1964.674mil,4918.003mil) on Top Overlay And Track
Silk To Silk Clearance Constraint: (9.755mil < 10mil) Between Text "C22" (2151.342mil,5105.573mil) on Top Overlay And Track
Silk To Silk Clearance Constraint: (6.861mil < 10mil) Between Text "C31" (2315.997mil,4334.674mil) on Top Overlay And Track
Silk To Silk Clearance Constraint: (Collision < 10mil) Between Text "IC2" (1451.008mil,5096.003mil) on Top Overlay And Text "L2_BLE"
Silk To Silk Clearance Constraint: (9.219mil < 10mil) Between Text "IC2" (1451.008mil,5096.003mil) on Top Overlay And Track
Silk To Silk Clearance Constraint: (Collision < 10mil) Between Text "L2_BLE" (1498.331mil,4983.352mil) on Top Overlay And Track
Silk To Silk Clearance Constraint: (3.102mil < 10mil) Between Text "LED" (1887.342mil,4354.003mil) on Top Overlay And Track
Silk To Silk Clearance Constraint: (6.952mil < 10mil) Between Text "TP1" (2461.833mil,4121.5mil) on Top Overlay And Track
Silk To Silk Clearance Constraint: (5.676mil < 10mil) Between Text "U1" (2468.671mil,4384.003mil) on Top Overlay And Track

Electrical Rules Check Report

Class	Document	Message
Warning	PSoC6-Cardiac-Schematic.SchDoc	Nets Wire VCC has multiple names (Net Label VCC, Net Label VCC, Net Label VCC, Power Object VCC, Power Object VCC, Power Object VCC, Power Object VCC, Power Object VCC, Power Object VCC, Power Object VCC, Power Object VCC, Power Object VCC, Power Object VDDUSB, Power Object VDDUSB)
Warning	PSoC6-Cardiac-Schematic.SchDoc	Nets Wire VCC_FB2 has multiple names (Net Label VCC_FB2, Net Label VCC_FB2, Power Object VDDD, Power Object VDDD, Power Object VDDD, Power Object VDDD, Power Object VDDIOx, Power Object VDDIOx, Power Object VDDIOx)