
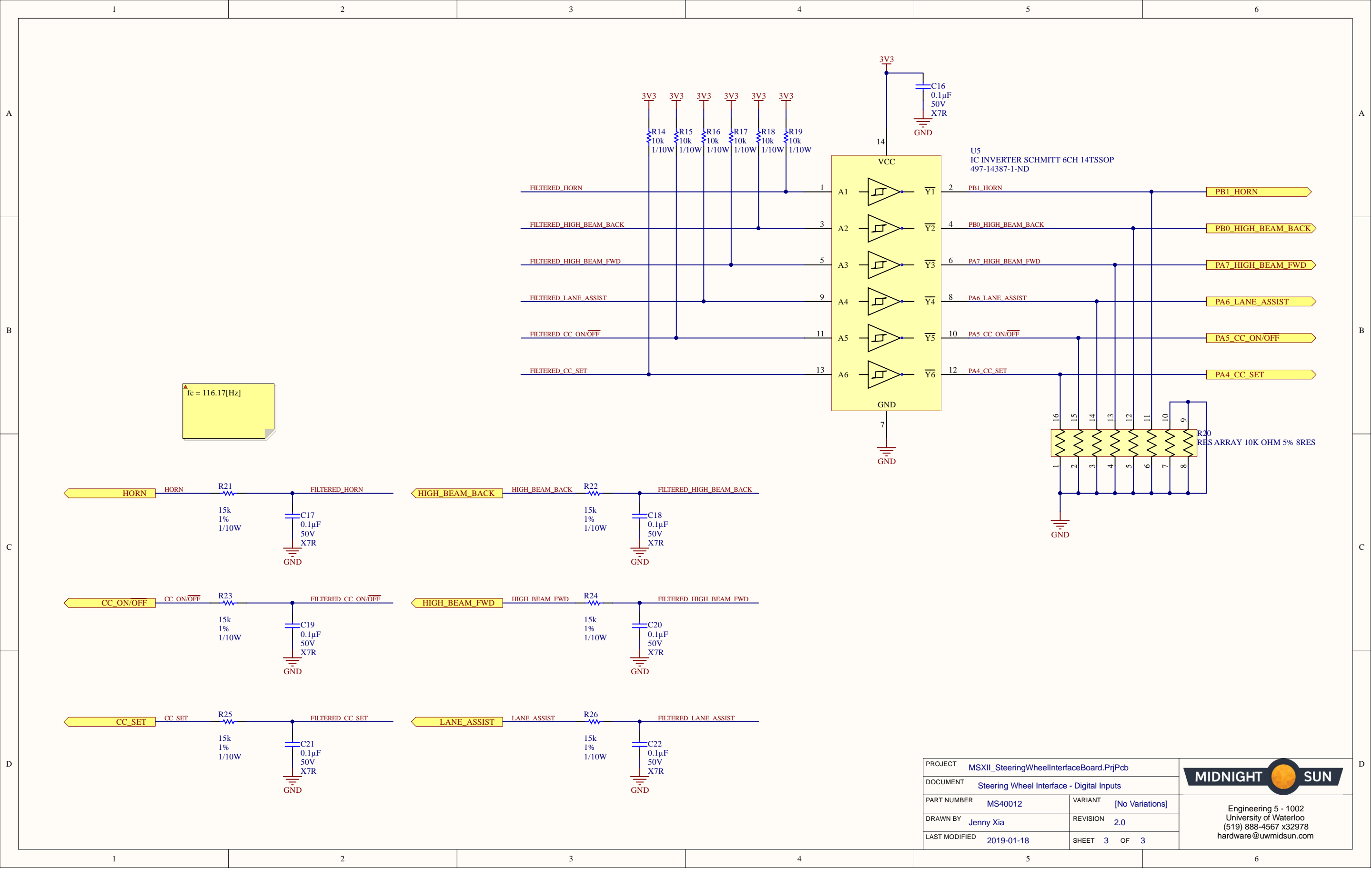
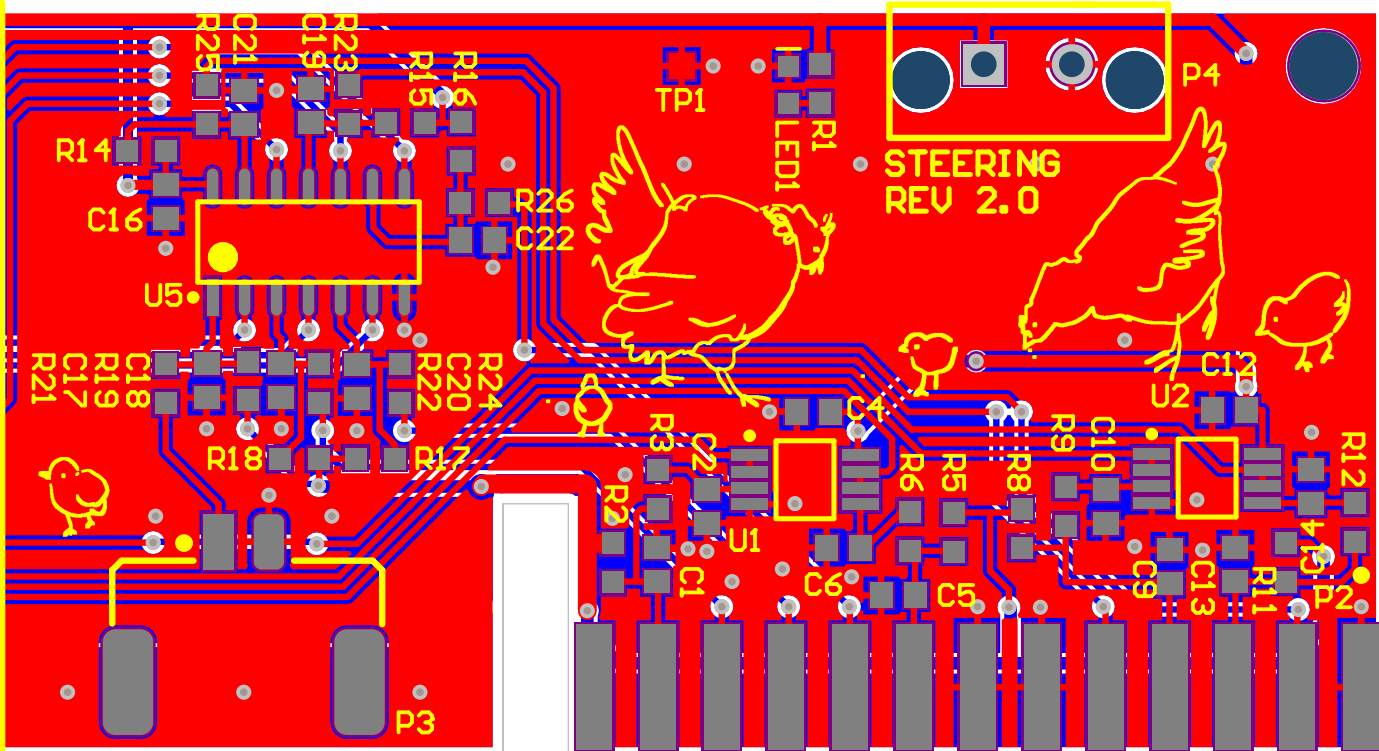
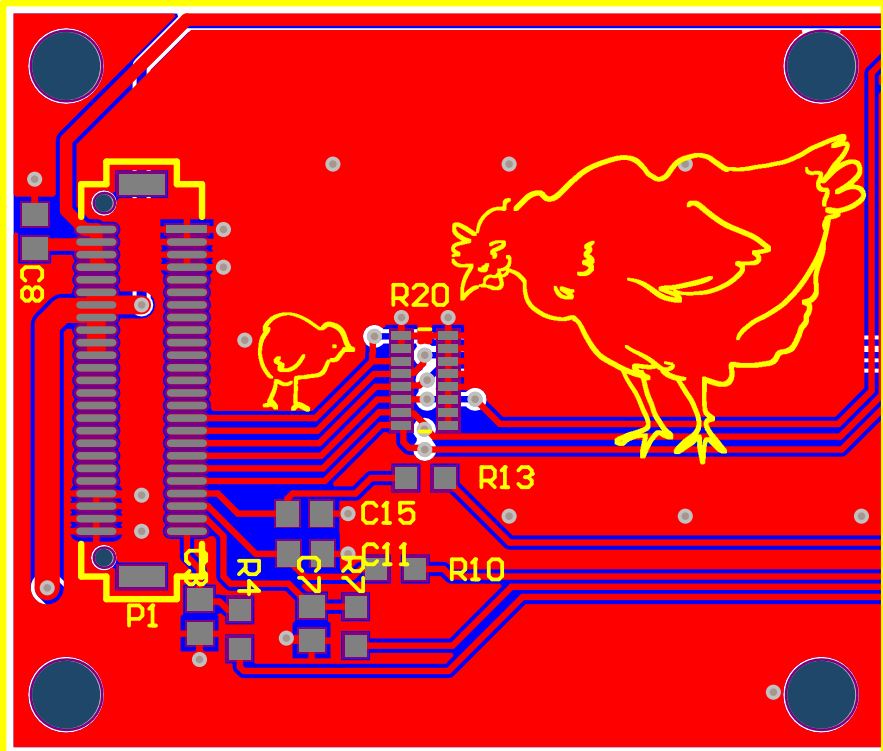
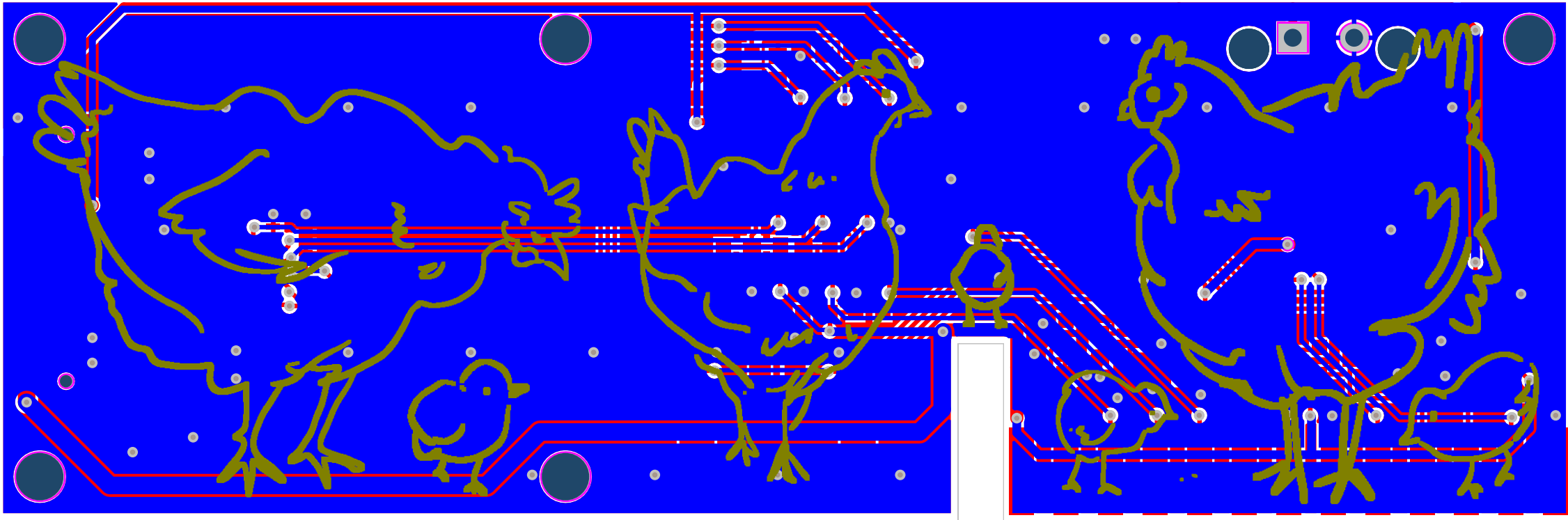


PROJECT		MSXII_SteeringWheelInterfaceBoard.PrjPcb			
DOCUMENT		Steering Wheel Interface - Analog Inputs			
PART NUMBER	MS40012	VARIANT	[No Variations]		
DRAWN BY	Jenny Xia	REVISION	2.0		
LAST MODIFIED	2019-01-18	SHEET	2	OF	3
<p>Engineering 5 - 1002 University of Waterloo (519) 888-4567 x32978 hardware@uwmidsun.com</p>					







Electrical Rules Check Report

Class	Document	Message
Warning	Steering Wheel Interface Analog Inputs.SchDoc	Net NetC2_1 has no driving source (Pin C2-1,Pin R3-1,Pin U1-3)
Warning	Steering Wheel Interface Analog Inputs.SchDoc	Net NetC6_1 has no driving source (Pin C6-1,Pin R6-1,Pin U1-5)
Warning	Steering Wheel Interface Analog Inputs.SchDoc	Net NetC10_1 has no driving source (Pin C10-1,Pin R9-1,Pin U2-3)
Warning	Steering Wheel Interface Analog Inputs.SchDoc	Net NetC14_1 has no driving source (Pin C14-1,Pin R12-1,Pin U2-5)

Design Rules Verification Report

Filename : C:\Users\Taiping\Documents\MidnightSun\hardware\MSXII_SteeringWheelInterfa

Warnings 0

Rule Violations 69

Warnings	
Total	0

Rule Violations	
Clearance Constraint (Gap=0.152mm) (All),(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=0.152mm) (Max=2.54mm) (Preferred=0.254mm) (All)	0
Power Plane Connect Rule(Relief Connect)(Expansion=0.508mm) (Conductor Width=0.254mm) (Air Gap=0.254mm)	0
Minimum Annular Ring (Minimum=0.06mm) (All)	0
Hole Size Constraint (Min=0.3mm) (Max=6.3mm) (All)	0
Hole To Hole Clearance (Gap=0.254mm) (All),(All)	0
Minimum Solder Mask Sliver (Gap=0mm) (All),(All)	0
Silk To Solder Mask (Clearance=0.178mm) (IsPad),(All)	31
Silk to Silk (Clearance=0.254mm) (All),(All)	8
Net Antennae (Tolerance=0mm) (All)	0
Board Clearance Constraint (Gap=0mm) (All)	30
Height Constraint (Min=0mm) (Max=25.4mm) (Preferred=12.7mm) (All)	0
Total	69

Silk To Solder Mask (Clearance=0.178mm) (IsPad),(All)

Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad C11-1(11.325mm,8.1mm) on Top Layer And Text "C7" (11.75mm,7.95mm)
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad C11-2(12.675mm,8.1mm) on Top Layer And Text "C7" (11.75mm,7.95mm)
Silk To Solder Mask Clearance Constraint: (0.175mm < 0.178mm) Between Pad C13-1(84mm,7mm) on Top Layer And Text "R11" (84.75mm,7.5mm) on
Silk To Solder Mask Clearance Constraint: (0.092mm < 0.178mm) Between Pad C3-1(7.8mm,6.275mm) on Top Layer And Text "C3" (7.266mm,8.225mm)
Silk To Solder Mask Clearance Constraint: (0.092mm < 0.178mm) Between Pad C7-1(12.25mm,6mm) on Top Layer And Text "C7" (11.75mm,7.95mm) on
Silk To Solder Mask Clearance Constraint: (0.005mm < 0.178mm) Between Pad C9-1(81.38mm,6.915mm) on Top Layer And Text "C9" (80mm,7.75mm) on
Silk To Solder Mask Clearance Constraint: (0.122mm < 0.178mm) Between Pad C9-2(81.38mm,8.265mm) on Top Layer And Text "C9" (80mm,7.75mm) on
Silk To Solder Mask Clearance Constraint: (0.163mm < 0.178mm) Between Pad P3-3(40mm,3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad R10-1(14.825mm,7.5mm) on Top Layer And Text "C11"
Silk To Solder Mask Clearance Constraint: (0.025mm < 0.178mm) Between Pad R10-1(14.825mm,7.5mm) on Top Layer And Text "R7" (13.5mm,7.95mm)
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad R10-2(16.375mm,7.5mm) on Top Layer And Text "C11"
Silk To Solder Mask Clearance Constraint: (0.16mm < 0.178mm) Between Pad R11-1(86mm,8.55mm) on Top Layer And Text "C14" (87.46mm,7.4mm) on
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad R11-2(86mm,7mm) on Top Layer And Text "R11" (84.75mm,7.5mm) on
Silk To Solder Mask Clearance Constraint: (0.105mm < 0.178mm) Between Pad R23-2(48.763mm,26.762mm) on Top Layer And Text "R23"
Silk To Solder Mask Clearance Constraint: (0.138mm < 0.178mm) Between Pad R25-2(43.125mm,26.73mm) on Top Layer And Text "R25"
Silk To Solder Mask Clearance Constraint: (0.117mm < 0.178mm) Between Pad R4-1(9.4mm,5.875mm) on Top Layer And Text "R4" (9.366mm,7.825mm)
Silk To Solder Mask Clearance Constraint: (0.117mm < 0.178mm) Between Pad R7-1(14mm,6mm) on Top Layer And Text "R7" (13.5mm,7.95mm) on Top
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-1(43.363mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-10(48.443mm,22.7mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-11(47.173mm,22.7mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-12(45.903mm,22.7mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-13(44.633mm,22.7mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-14(43.363mm,22.7mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-2(44.633mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-3(45.903mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-4(47.173mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-5(48.443mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-6(49.713mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-7(50.983mm,18.3mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-8(50.983mm,22.7mm) on Top Layer And Track
Silk To Solder Mask Clearance Constraint: (Collision < 0.178mm) Between Pad U5-9(49.713mm,22.7mm) on Top Layer And Track

Silk to Silk (Clearance=0.254mm) (All),(All)

Silk To Silk Clearance Constraint: (0.18mm < 0.254mm) Between Arc (42.588mm,18.3mm) on Top Overlay And Text "U5" (40.75mm,18mm) on Top
Silk To Silk Clearance Constraint: (0.15mm < 0.254mm) Between Region (2 hole(s)) Top Overlay And Text "U2" (80.75mm,14mm) on Top Overlay Silk Text
Silk To Silk Clearance Constraint: (Collision < 0.254mm) Between Text "C11" (14.325mm,7.685mm) on Top Overlay And Text "R7" (13.5mm,7.95mm) on
Silk To Silk Clearance Constraint: (0.227mm < 0.254mm) Between Text "C20" (52.75mm,16mm) on Top Overlay And Text "R22" (51.573mm,16mm) on Top
Silk To Silk Clearance Constraint: (0.164mm < 0.254mm) Between Text "C3" (7.266mm,8.225mm) on Top Overlay And Track
Silk To Silk Clearance Constraint: (Collision < 0.254mm) Between Text "C3" (7.266mm,8.225mm) on Top Overlay And Track
Silk To Silk Clearance Constraint: (Collision < 0.254mm) Between Text "C3" (7.266mm,8.225mm) on Top Overlay And Track
Silk To Silk Clearance Constraint: (0.048mm < 0.254mm) Between Text "P1" (5mm,5.25mm) on Top Overlay And Track (4.1mm,6.3mm)(6.9mm,6.3mm) on

Board Clearance Constraint (Gap=0mm) (All)
Board Outline Clearance(Cutout Edge): (0.32mm < 0.406mm) Between Board Cutout (Multi-Layer)Region (0 hole(s)) Multi-Layer And Pad
Board Outline Clearance(Cutout Edge): (0.375mm < 0.406mm) Between Board Cutout (Multi-Layer)Region (0 hole(s)) Multi-Layer And Track
Board Outline Clearance(Cutout Edge): (0.375mm < 0.406mm) Between Board Cutout (Multi-Layer)Region (0 hole(s)) Multi-Layer And Track
Board Outline Clearance(Cutout Edge): (0.375mm < 0.406mm) Between Board Cutout (Multi-Layer)Region (0 hole(s)) Multi-Layer And Track
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-1(89mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-10(66.14mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-11(63.6mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-12(61.06mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-13(58.52mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-2(86.46mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-3(83.92mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-4(81.38mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-5(78.84mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-6(76.3mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-7(73.76mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-8(71.22mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.3mm < 0.406mm) Between Board Edge And Pad P2-9(68.68mm,2.8mm) on Top Layer
Board Outline Clearance(Outline Edge): (0.35mm < 0.406mm) Between Board Edge And Text "C19" (47mm,29.5mm) on Top Overlay
Board Outline Clearance(Outline Edge): (0.35mm < 0.406mm) Between Board Edge And Text "C21" (44.25mm,29.5mm) on Top Overlay
Board Outline Clearance(Outline Edge): (0.35mm < 0.406mm) Between Board Edge And Text "R23" (48.25mm,29.5mm) on Top Overlay
Board Outline Clearance(Outline Edge): (0.35mm < 0.406mm) Between Board Edge And Text "R25" (42.773mm,29.5mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (0mm,0mm)(0mm,30mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (0mm,0mm)(35mm,0mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (0mm,30mm)(35mm,30mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (35mm,0mm)(35mm,30mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (39.325mm,-0.02mm)(49.875mm,-0.02mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (70.255mm,24.64mm)(70.255mm,29.94mm) on Top
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (70.255mm,29.94mm)(78.5mm,29.94mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (77.5mm,29.94mm)(81.33mm,29.94mm) on Top Overlay
Board Outline Clearance(Outline Edge): (Collision < 0.406mm) Between Board Edge And Track (81.33mm,24.64mm)(81.33mm,29.94mm) on Top Overlay

