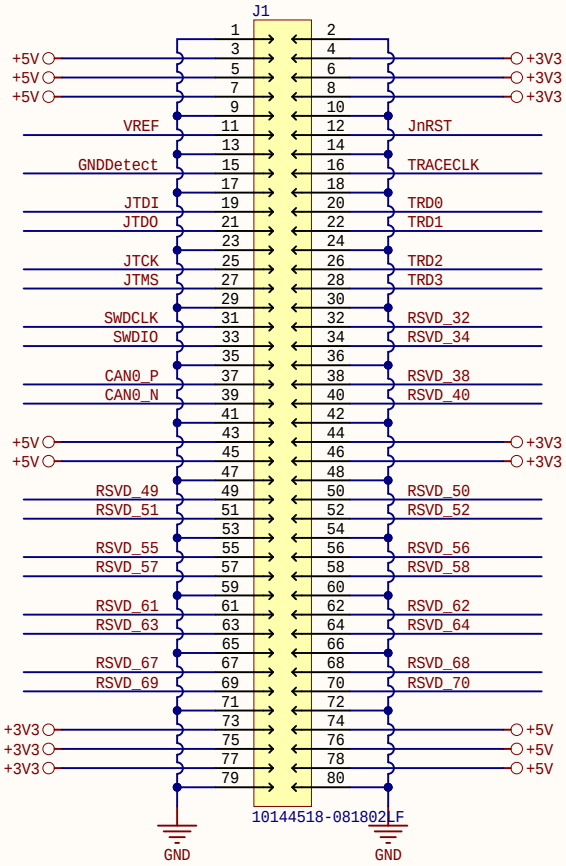
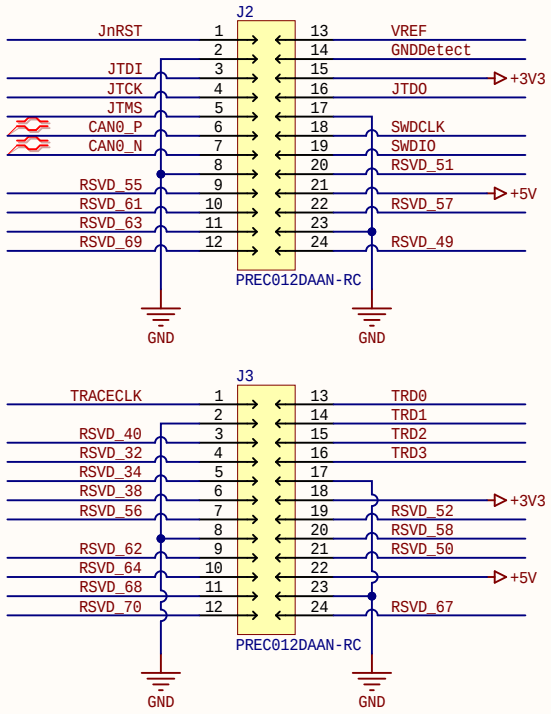
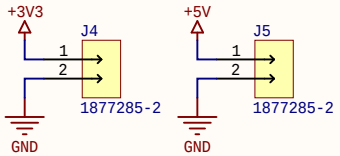
BOARD CONNECTORS

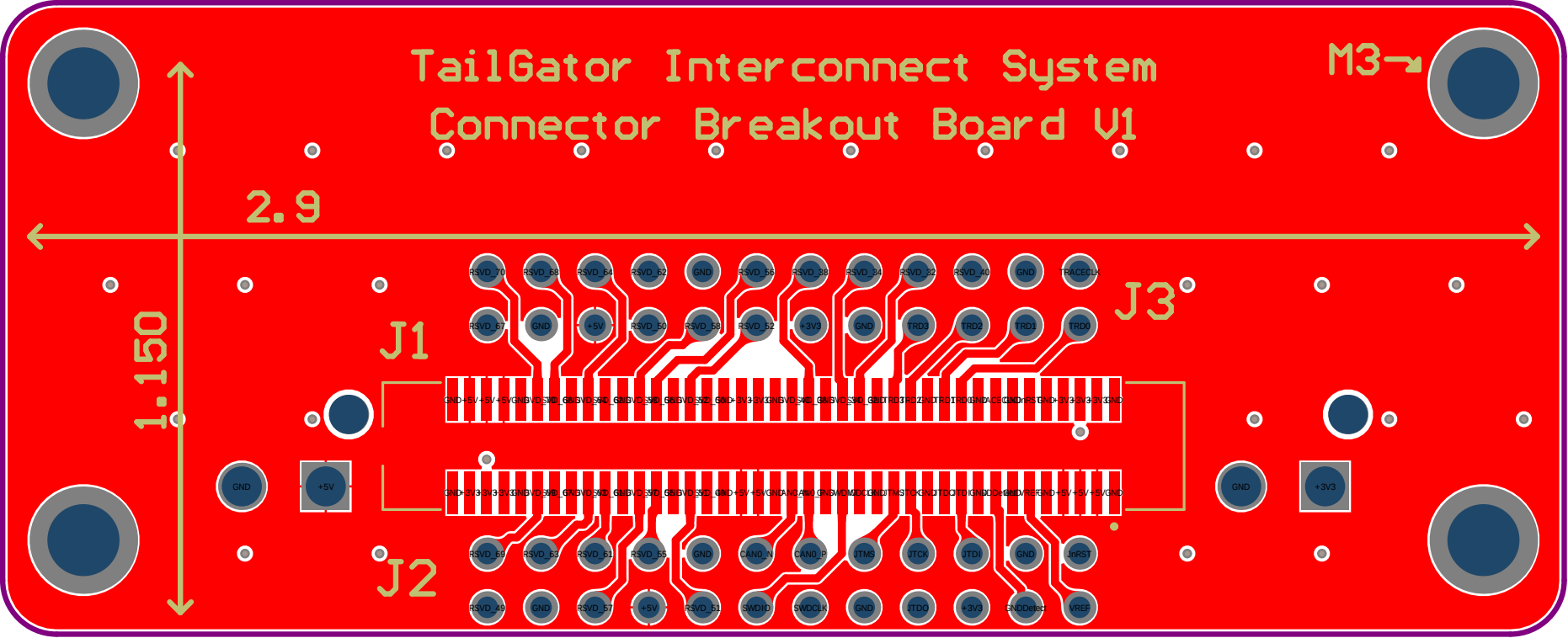


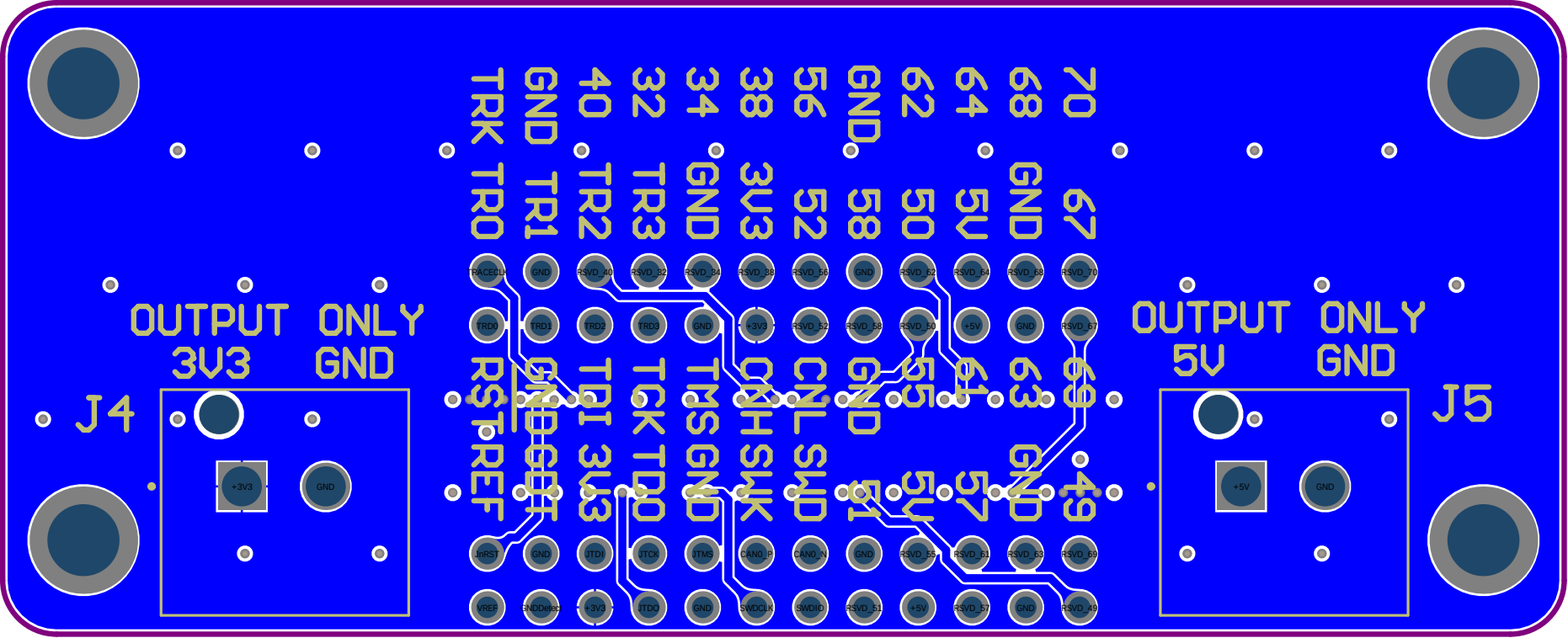




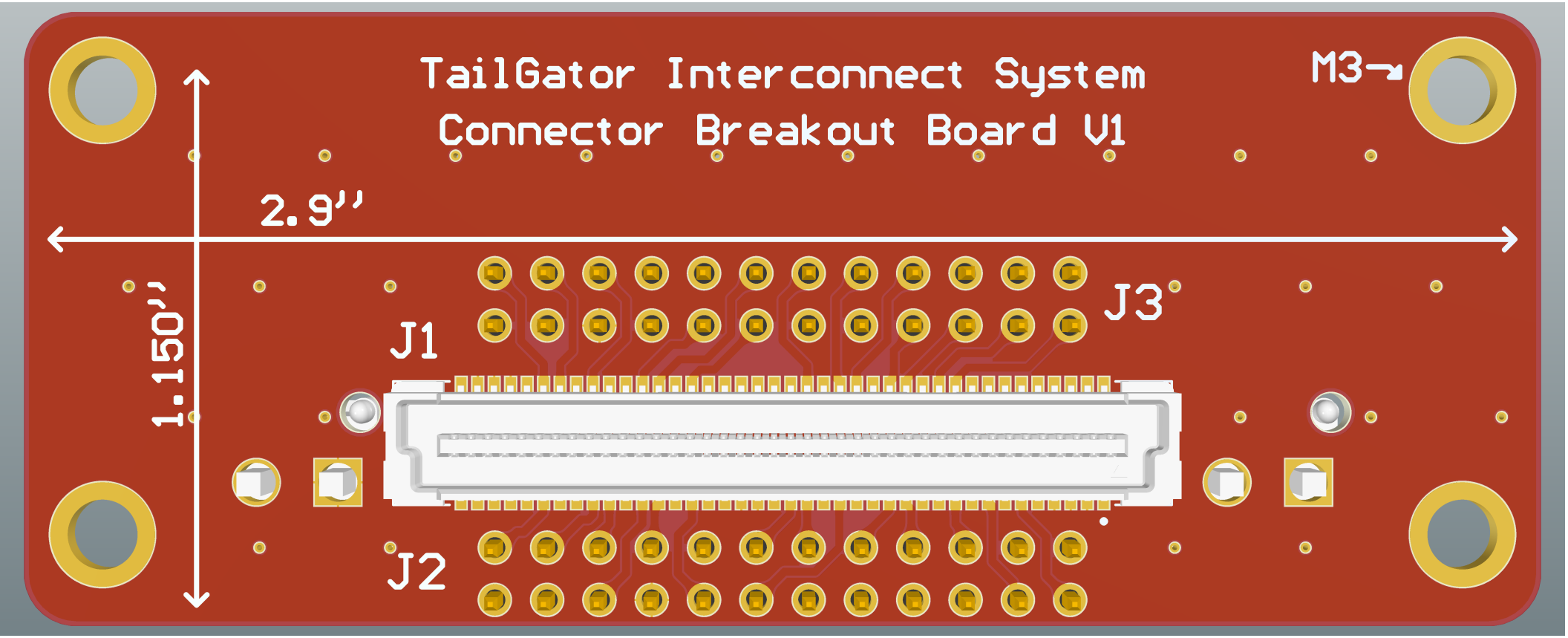
NOTES:
[1] BREAKOUT BOARD WILL BE USED TO TEST PROTECTION CIRCUITS, JTAG, CAN, AND SIGNAL INTEGRITY.
[2] BREAKOUT POWER CONNECTORS WILL SHOULD ONLY BE OUTPUT. NO PROTECTION PROVIDED.
[3] CAN STUBS SHOULD BE NO LONGER THAN 0.3M (30 CM).
[4] SWD CAN ONLY BE USED FOR ONE MICROCONTROLLER UNLESS A SWD MULTIPLEXER IS EMPLOYED (SEE RESEARCH NOTES PG. 9 FOR DETAILS) OR MICROCONTROLLERS SUPPORT SWD 2.0 (SWD MULTIDROP).
[5] IT IS RECOMMENDED TO ROUTE TDI AND TDO SEPARATED BY A GROUND PLANE/WIRE.

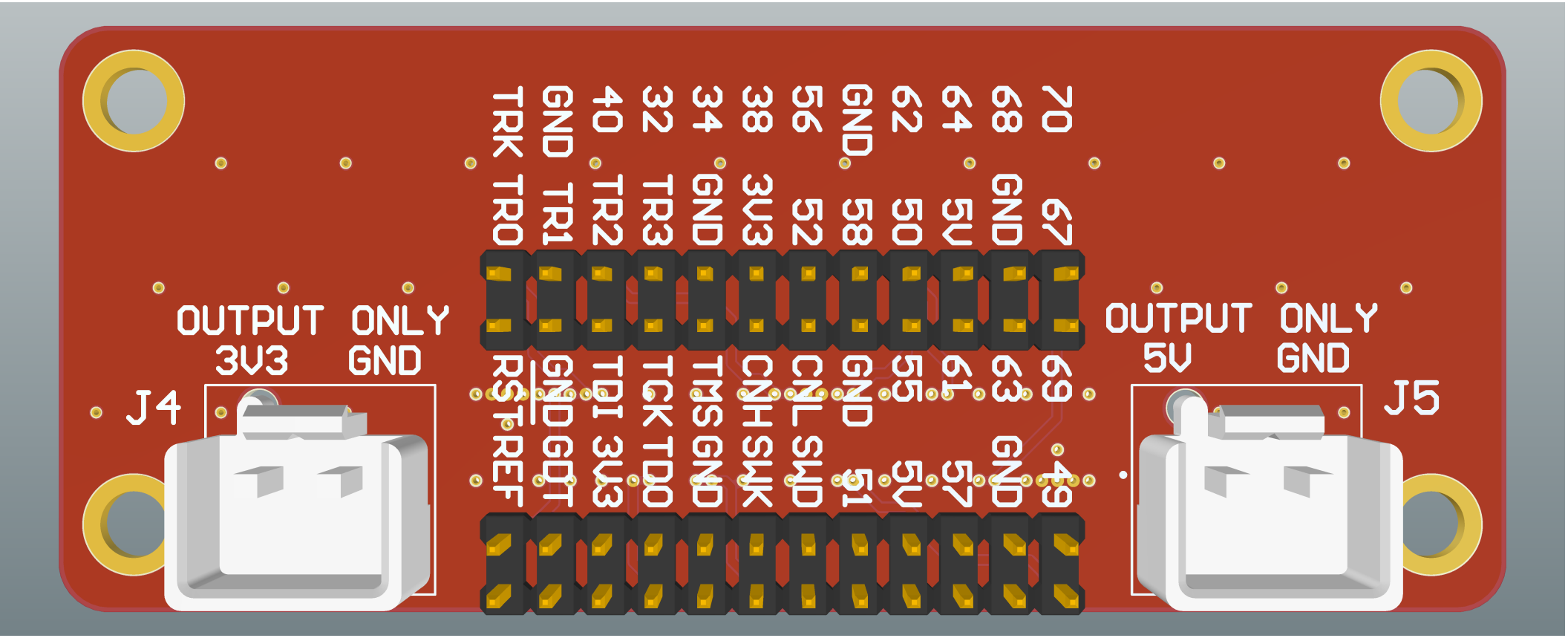
Project/Vehicle: TGIS - Breakout PCB		Machine Intelligence Laboratory 1889 Museum Rd Room 3001 Gainesville, FL, 32611	
Author(s): -Yovany Molina -Blake Sanders -* -*	Revisor(s): -* -* -* -*	Git Repo: https://github.com/yomole/TailGator Git Hash: 3081781f	
Date: 1/18/2024	Revision: A	Size: A	File: Breakout.SchDoc	Sheet 1 of 1


TailGator Interconnect System
Connector Breakout Board V1
M3
2.9
1.150
J1
J2
J3
GND
+5V
+3V3



OUTPUT ONLY
3V3 GND
J4
+3V3
GND
OUTPUT ONLY
5V GND
J5
+5V
GND
TRK TR0
GND TR1
40 TR2
32 TR3
34 GND
38 3V3
56 52
GND 58
62 50
64 5V
68 GND
70 67
TRACECLK
GND
RSVD_40
RSVD_32
RSVD_34
RSVD_38
RSVD_56
GND
RSVD_62
RSVD_64
RSVD_68
RSVD_70
TRD0
TRD1
TRD2
TRD3
GND
+3V3
RSVD_52
RSVD_58
RSVD_50
+5V
GND
RSVD_67
RST REF
GND GDT
TDI 3V3
TCK TDO
TMS GND
CNH SWK
CNL SWD
GND 51
55 5V
61 57
63 GND
69 49
JnRST
GND
JTDI
JTCK
JTMS
CAN0_P
CAN0_N
GND
RSVD_55
RSVD_61
RSVD_63
RSVD_69
VREF
GNDDefect
+3V3
JTDO
GND
SWDCLK
SWDIO
RSVD_51
+5V
RSVD_57
GND
RSVD_49


TailGator Interconnect System
Connector Breakout Board V1
M3
2.9''
1.150''
J1
J2
J3


OUTPUT ONLY
3V3 GND
J4
OUTPUT ONLY
5V GND
J5
TRK TR0 GND TR1 40 TR2 32 TR3 34 GND 38 3V3 56 52 GND 58 62 50 64 5V 68 GND 70 67
RST REF GND GDT TDI 3V3 TCK TDO TMS GND CNH SWK CNL SWD GND 55 61 63 GND 69 49 51 5V 57

Comment	Description	Designator	Footprint	LibRef	Quantity
10144518-081802LF	CONN PLUG 180POS SMD GOLD	J1	AMPHENOL_10144518-081802LF	10144518-081802LF	1
PREC012DAAN-RC	Connector Header Through Hole 24 position 0.100" (2.54mm)	J2, J3	PREC012DAAN-RC	PREC012DAAN-RC	2
1877285-2		J4, J5	TE_1877285-2	1877285-2	2

Electrical Rules Check Report

Class	Document	Message
		Successful Compile for TGIS Breakout.PrjPcb

Design Rules Verification Report

Filename : C:\Users\molyo\OneDrive\Desktop\MIL\TailGator\PCB\TailGator Interconnect Syste
m\TGIS Breakout\TGIS Breakout\Breakout.PcbDoc

Warnings 0
Rule Violations 1

Warnings	
Total	0

Rule Violations	
Clearance Constraint (Gap=4mil) (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=4mil) (Max=71497.938mil) (Preferred=4mil) (All)	0
Power Plane Connect Rule(Direct Connect)(Expansion=20mil) (Conductor Width=10mil) (Air Gap=10mil) (Entries=4)	0
Power Plane Connect Rule(Relief Connect)(Expansion=11.811mil) (Conductor Width=4mil) (Air Gap=4mil) (Entries=4)	0
Minimum Annular Ring (Minimum=3mil) (All)	0
Hole Size Constraint (Min=7.874mil) (Max=248.031mil) (All)	0
Hole To Hole Clearance (Gap=9.842mil) (All),(All)	0
Minimum Solder Mask Sliver (Gap=0mil) (All),(All)	0
Silk To Solder Mask (Clearance=4mil) (IsPad),(All)	0
Silk to Silk (Clearance=0mil) (All),(All)	0
Net Antennae (Tolerance=0mil) (All)	0
Board Clearance Constraint (Gap=0mil) (All)	0
Matched Lengths(Tolerance=5mil) (InNetClass('CAN0'))	1
Height Constraint (Min=0mil) (Max=71497.938mil) (Prefered=500mil) (All)	0
Total	1

Matched Lengths(Tolerance=5mil) (InNetClass('CAN0'))
Matched Net Lengths: Between Net CAN0_N And Net CAN0_P Actual Difference against CAN0_P is: 26.406mil, Tolerance : 5mil.