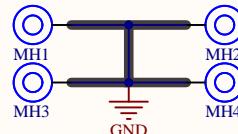
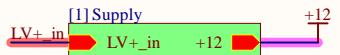
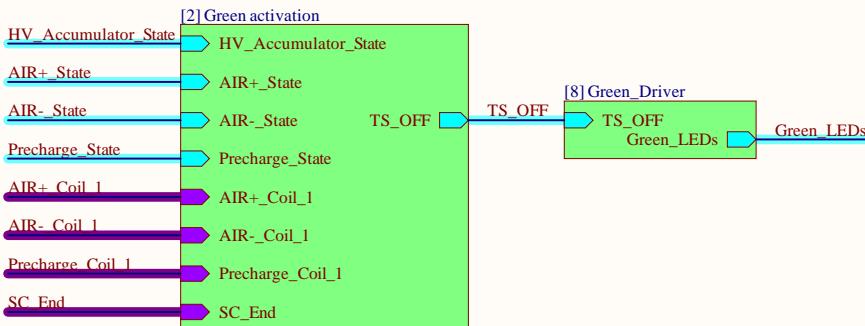


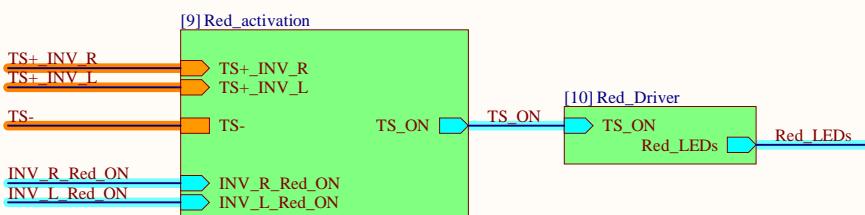
A



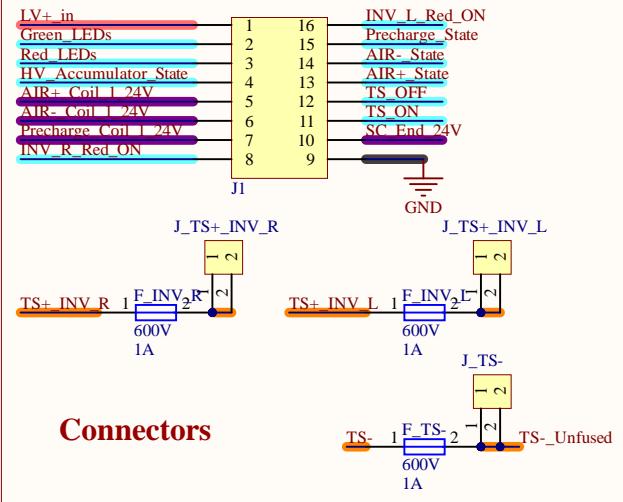
B



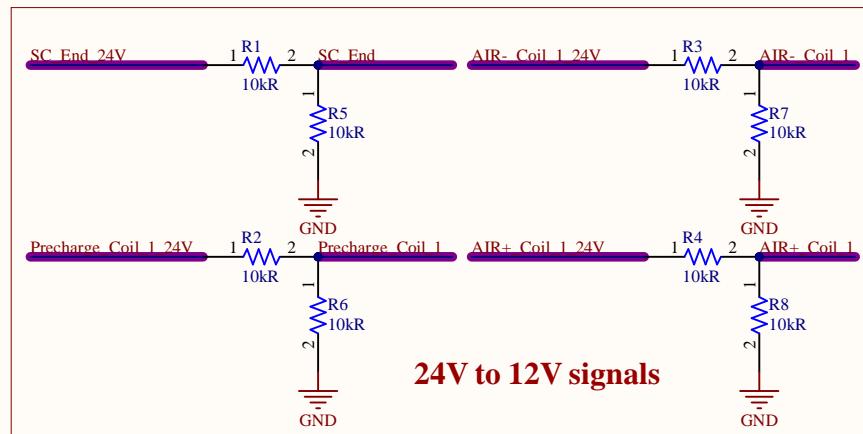
Signal	12V	1V	0V
Relay_AUX	relay is open	relay is closed	broken wire
HV_Accumulator_State	no voltage in accumulator	more than 60VDC in accumulator	broken wire
Relay_Coil_1	relay is open	N/A	relay is closed
INV_X_Red_ON	no voltage in inverters' box	more than 60VDC in inverters' box	broken wire



Cyan: External signal
Orange: High Voltage
Red: Untreated supply
Pink: Treated supply
Purple: Shutdown chain



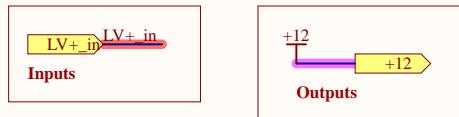
Connectors



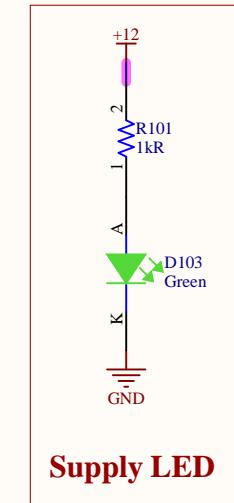
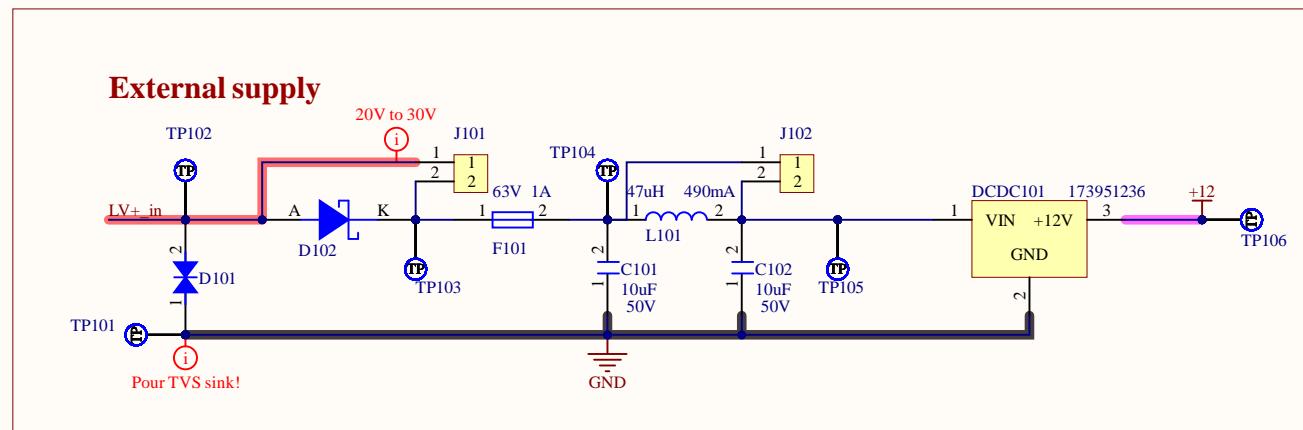
24V to 12V signals

Company:	e-Tech Racing	e-techracing.es	
Project:	TSAL_Control	Variant: [No Variations]	
Size:	Page Contents: TSAL_Control.SchDoc	Version: 5.0	
-		Department: Powertrain	
Author:	David Redondo	dredondovinolo@gmail.com	Sheet 1 of 11
Checked by:	David Redondo		Date: 11/12/2022

A



B

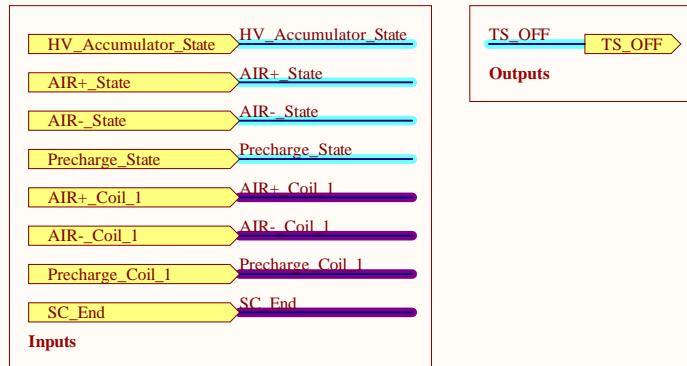


C

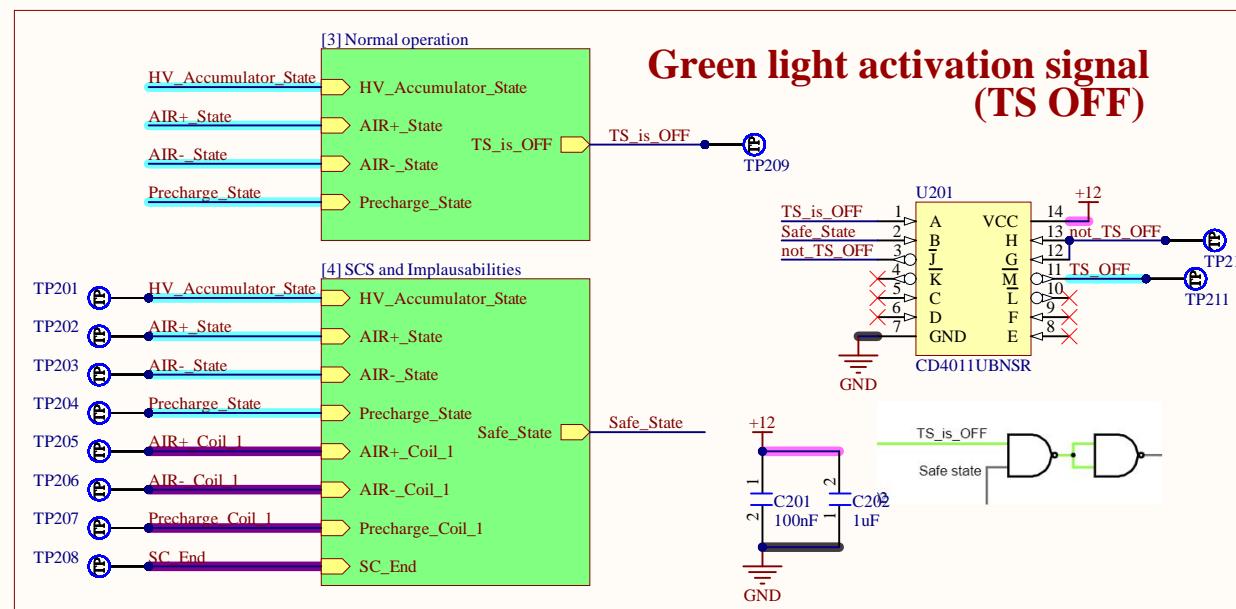
D

Company:	e-Tech Racing	e-techracing.es	
Project:	TSAL_Control	Variant: [No Variations]	
Size:	Page Contents: [1]Supply.SchDoc	Version: 5.0	
-		Department: Powertrain	
Author:	David Redondo dredondovinolo@gmail.com	Sheet 2 of 11	
Checked by:	David Redondo	Date: 11/12/2022	

A



B

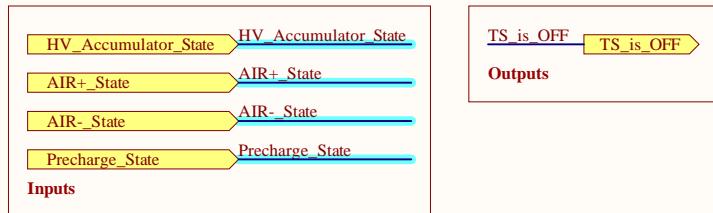


C

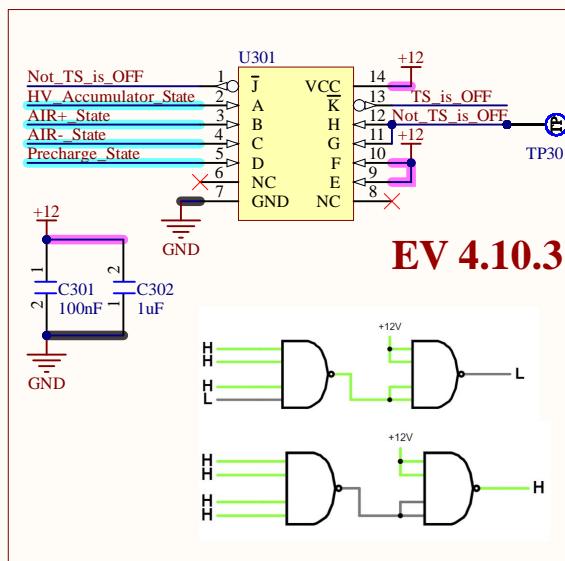
D

Company:	e-Tech Racing	e-techracing.es	
Project:	TSAL_Control	Variant: [No Variations]	
Size:	Page Contents: [2] Green activation.SchDoc	Version: 5.0	
-		Department: Powertrain	
Author:	David Redondo	dredondovinolo@gmail.com	Sheet 3 of 11
Checked by:	David Redondo		Date: 11/12/2022

A



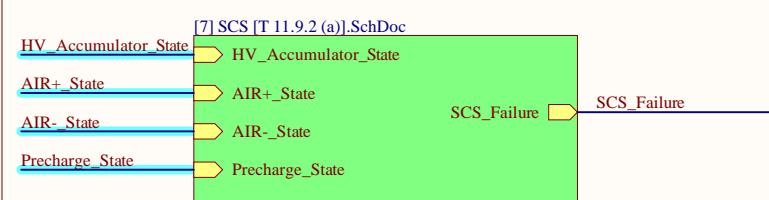
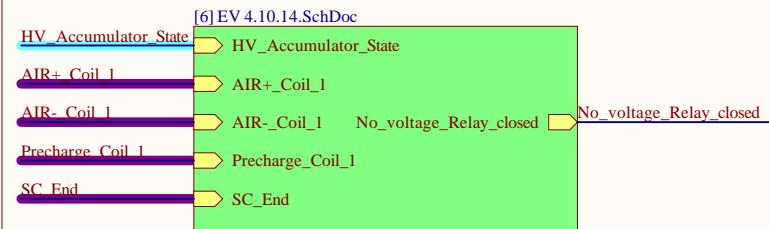
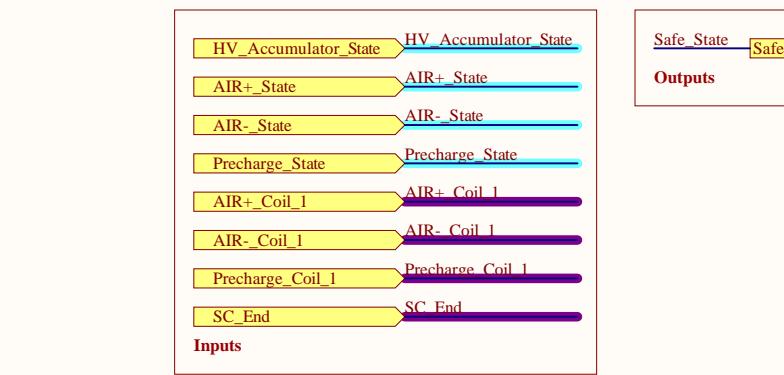
B



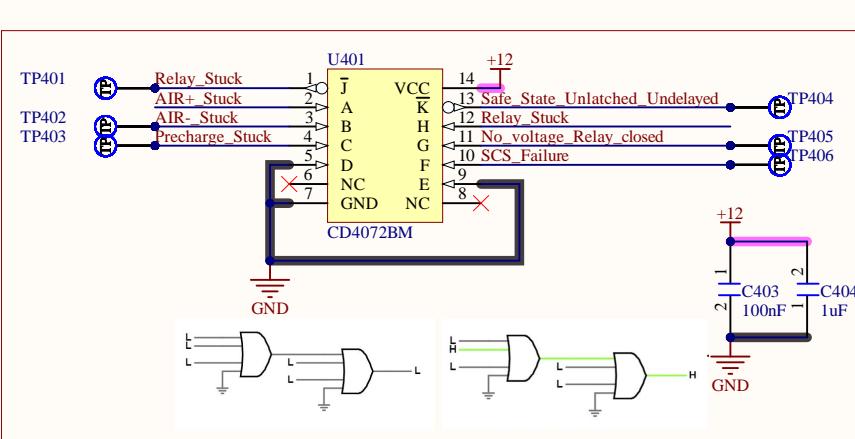
C

D

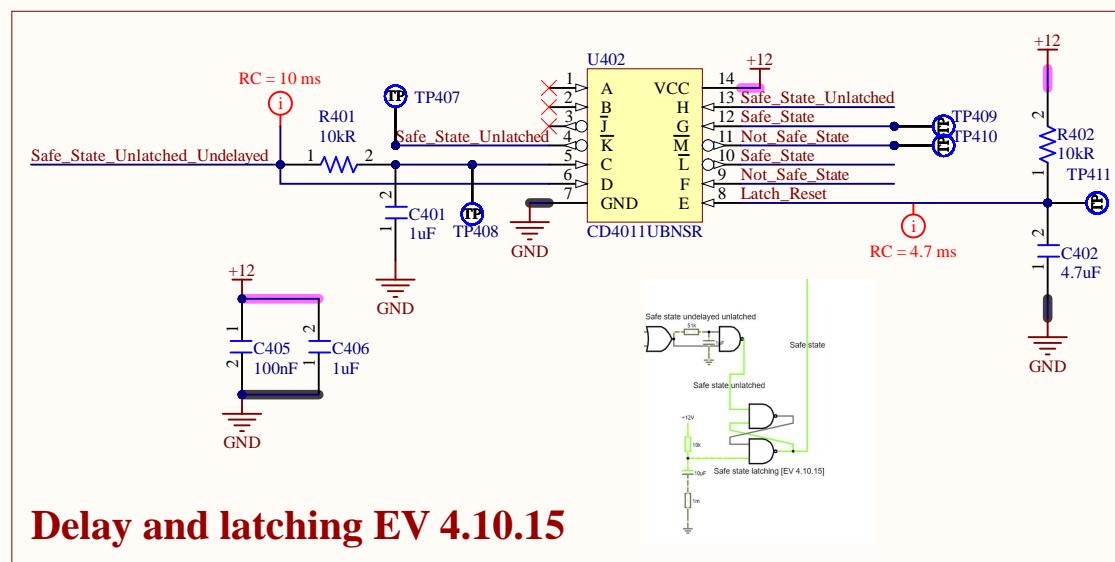
Company:	e-Tech Racing	e-techracing.es	
Project:	TSAL_Control	Variant: [No Variations]	
Size:	Page Contents: [3]Normal.operation.SchDoc	Version: 5.0	
-		Department: Powertrain	
Author:	David Redondo	dredondovinolo@gmail.com	Sheet 4 of 11
Checked by:	David Redondo		Date: 11/12/2022



SCS and Implausibilities



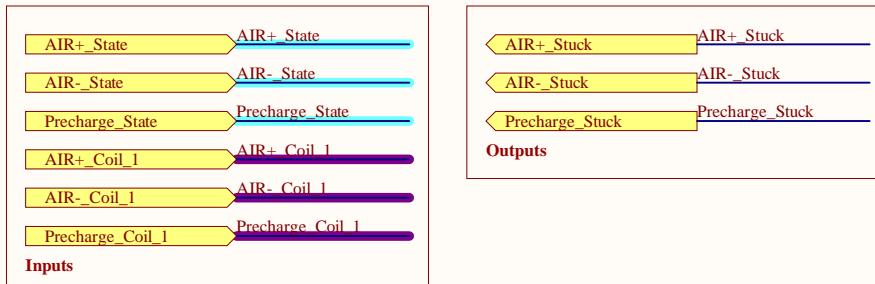
Implausibilities merging



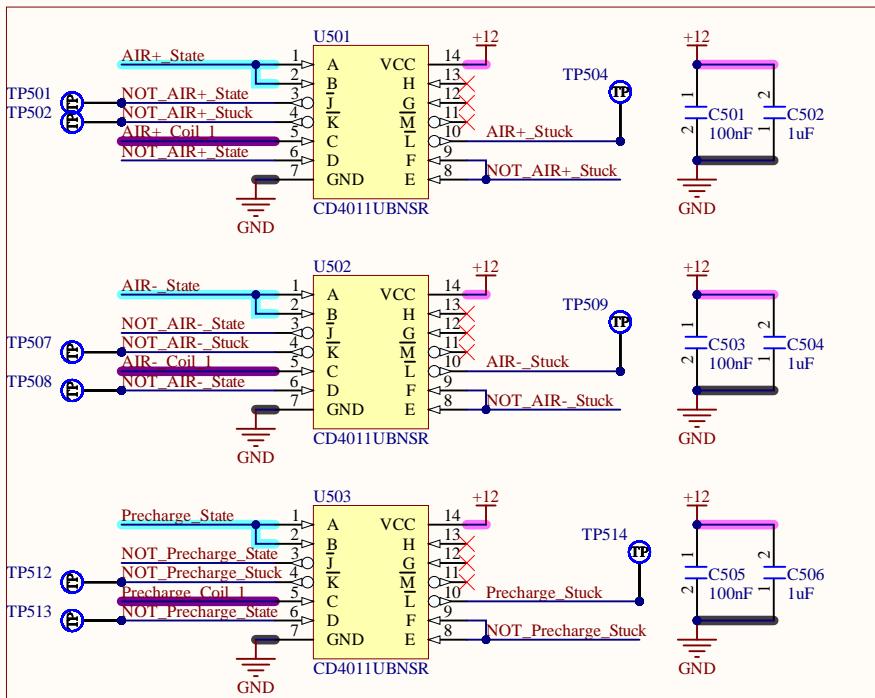
Delay and latching EV 4.10.15

Company:	e-Tech Racing	e-techracing.es	
Project:	TSAL_Control	Variant: [No Variations]	
Size:	Page Contents: [4]SCS and Implausibilities.SchDoc	Version: 5.0	
-		Department: Powertrain	
Author:	David Redondo	dredondovinolo@gmail.com	Sheet 5 of 11
Checked by:	David Redondo		Date: 11/12/2022

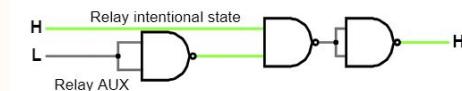
A



B

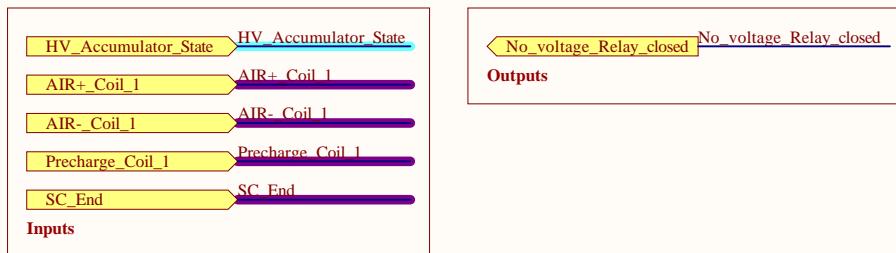


**Relay state is closed but intentional state is open
EV 4.10.13**

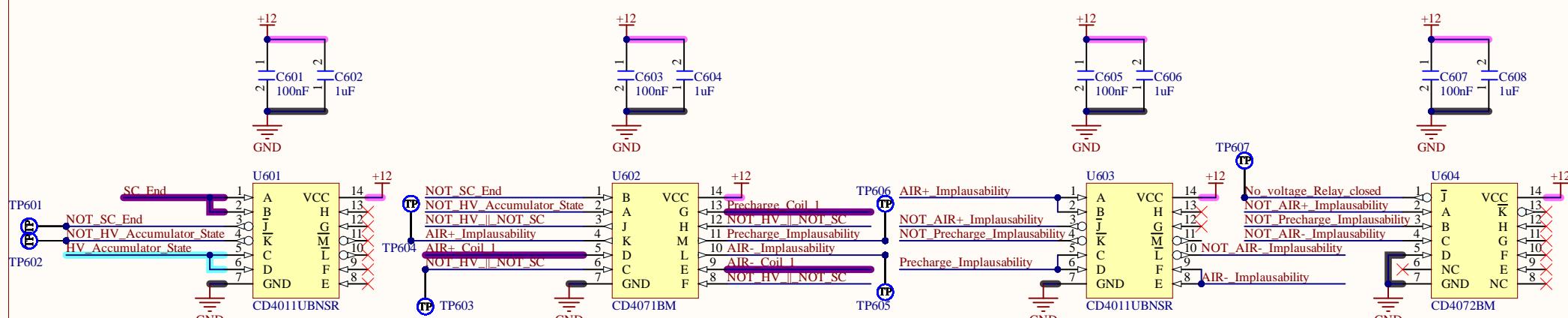


Company:	e-Tech Racing	e-techracing.es	
Project:	TSAL_Control	Variant: [No Variations]	
Size:	Page Contents: [5]EV 4.10.13.SchDoc	Version: 5.0	
-		Department: Powertrain	
Author:	David Redondo	dredondovinolo@gmail.com	Sheet 6 of 11
Checked by:	David Redondo		Date: 11/12/2022

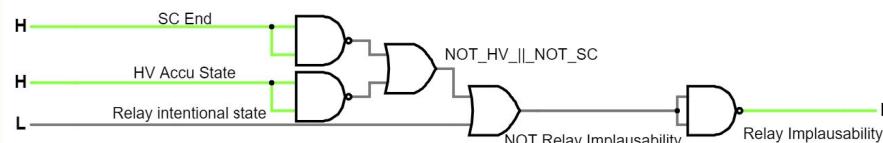
A



B



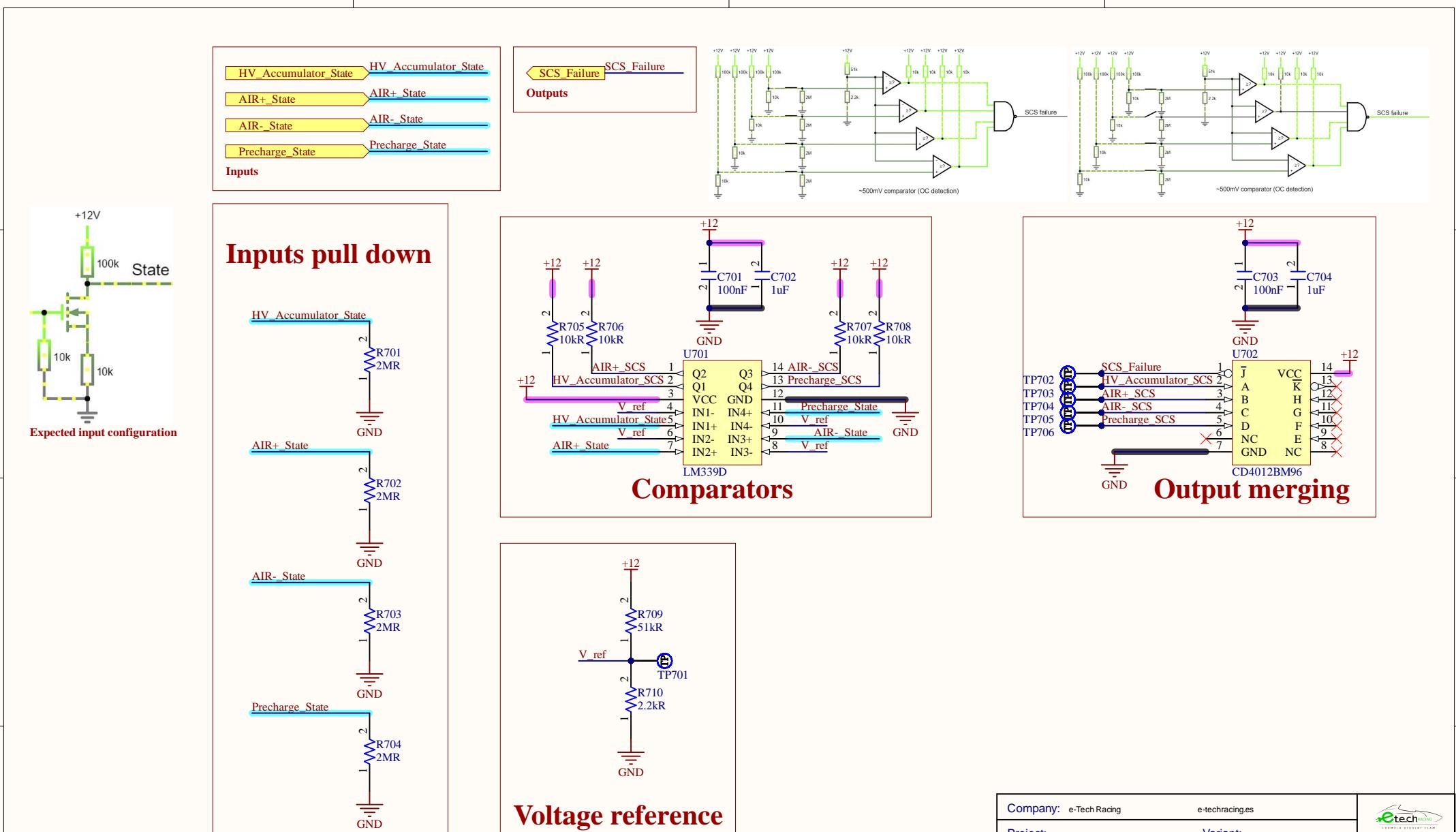
SC is closed, intentional state is closed but no voltage is present [EV 4.10.14]



NOT_HV || NOT_SC is common for the three relays

D

Company:	e-Tech Racing	e-techracing.es	
Project:	TSAL_Control	Variant: [No Variations]	
Size:	Page Contents: [6]EV 4.10.14.SchDoc	Version: 5.0	
-		Department: Powertrain	
Author:	David Redondo	dredondovinolo@gmail.com	Sheet 7 of 11
Checked by:	David Redondo		Date: 11/12/2022



Company:	e-Tech Racing	e-techracing.es	
Project:	TSAL_Control	Variant: [No Variations]	
Size:	Page Contents: [?]SCS[T 11.9.2 (a)].SchDoc	Version: 5.0	
-		Department: Powertrain	
Author:	David Redondo	dredondovinolo@gmail.com	Sheet 8 of 11
Checked by:	David Redondo		Date: 11/12/2022

A

A

B

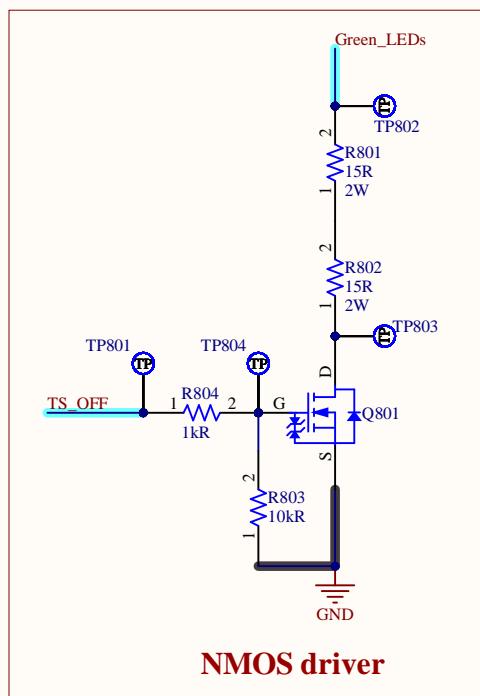
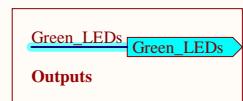
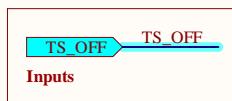
B

C

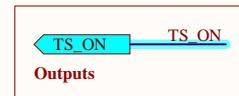
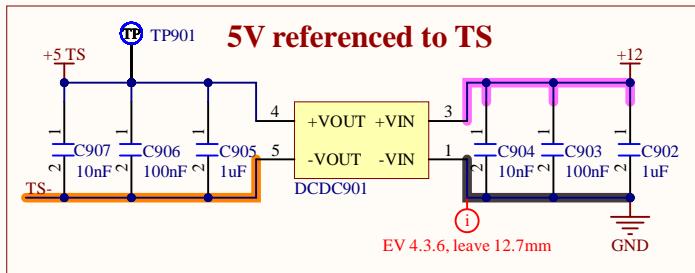
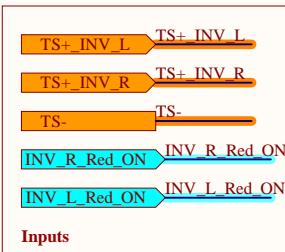
C

D

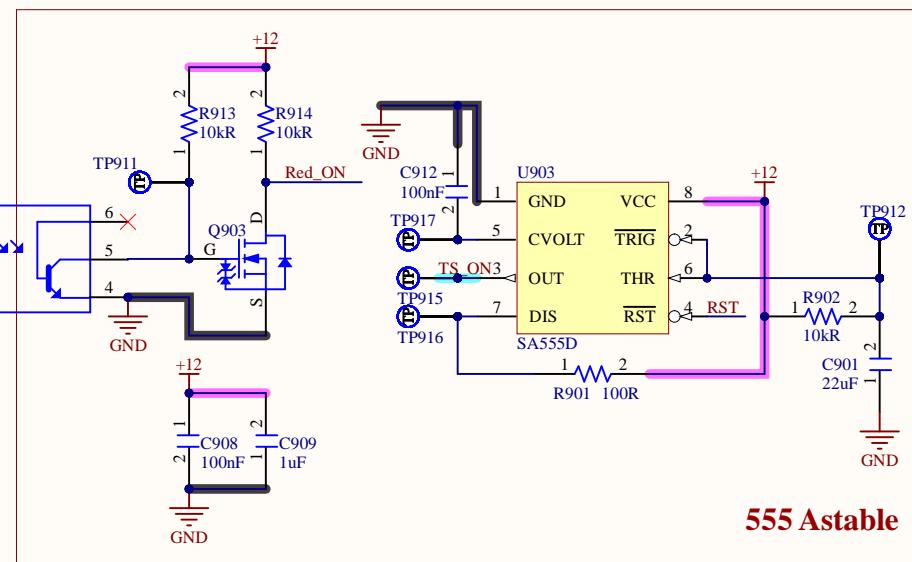
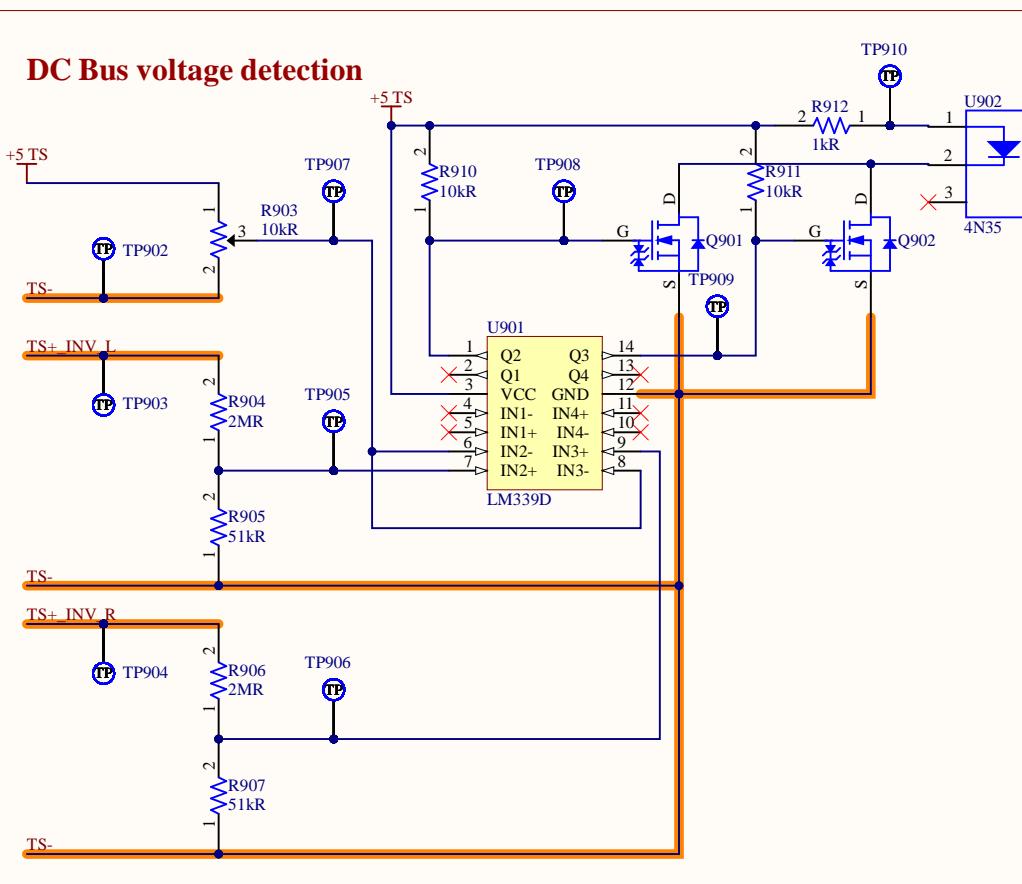
D



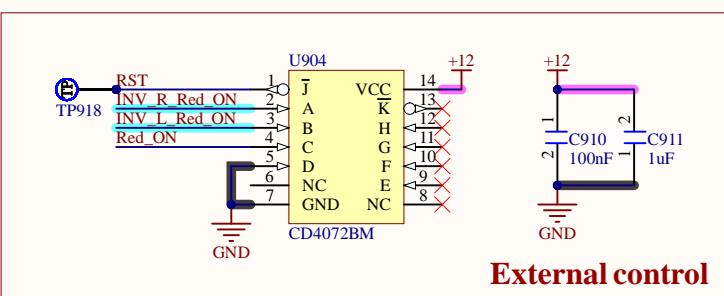
Company:	e-Tech Racing	e-techracing.es	
Project:	TSAL_Control	Variant: [No Variations]	
Size:	Page Contents: [8] Green_Driver.SchDoc	Version: 5.0	
-		Department: Powertrain	
Author:	David Redondo	dredondovinolo@gmail.com	Sheet 9 of 11
Checked by:	David Redondo		Date: 11/12/2022



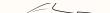
DC Bus voltage detection



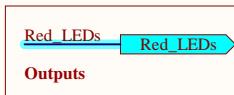
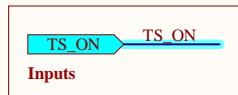
555 Astable



External control

Company:	e-Tech Racing	e-techracing.es	
Project:	TSAL_Control	Variant: [No Variations]	
Size: -	Page Contents: [9] Red_activation.SchDoc	Version: 5.0	
		Department:	Powertrain
Author:	David Redondo	dredondovinolo@gmail.com	Sheet 10 of 11
Checked by:	David Redondo		Date: 11/12/2022

A



B

C

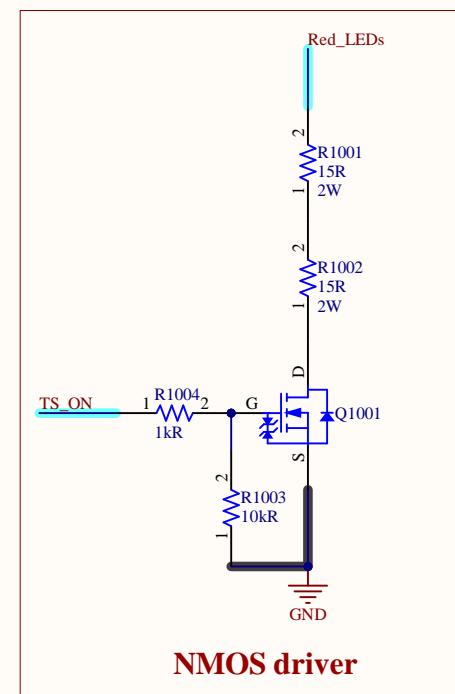
D

A

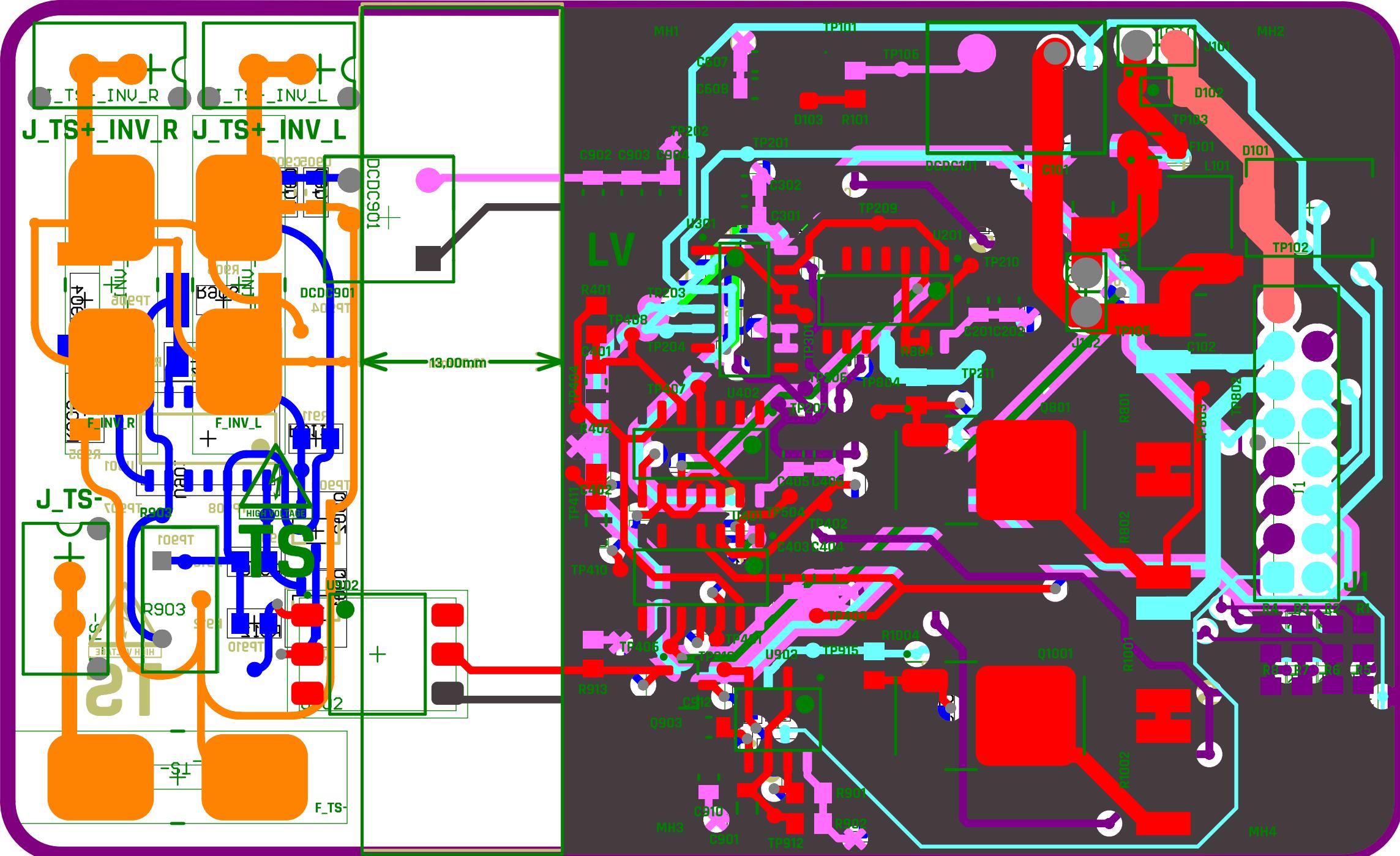
B

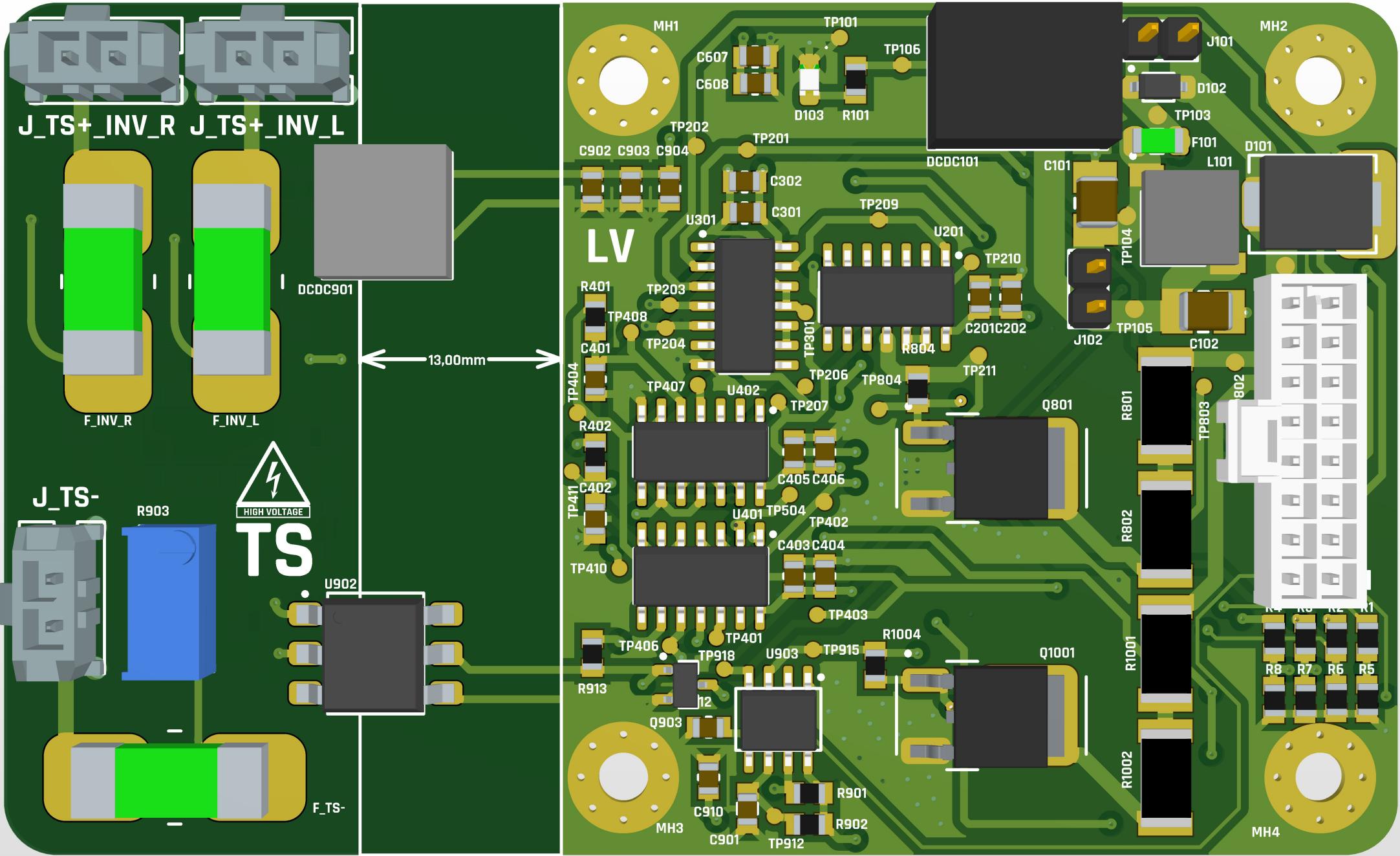
C

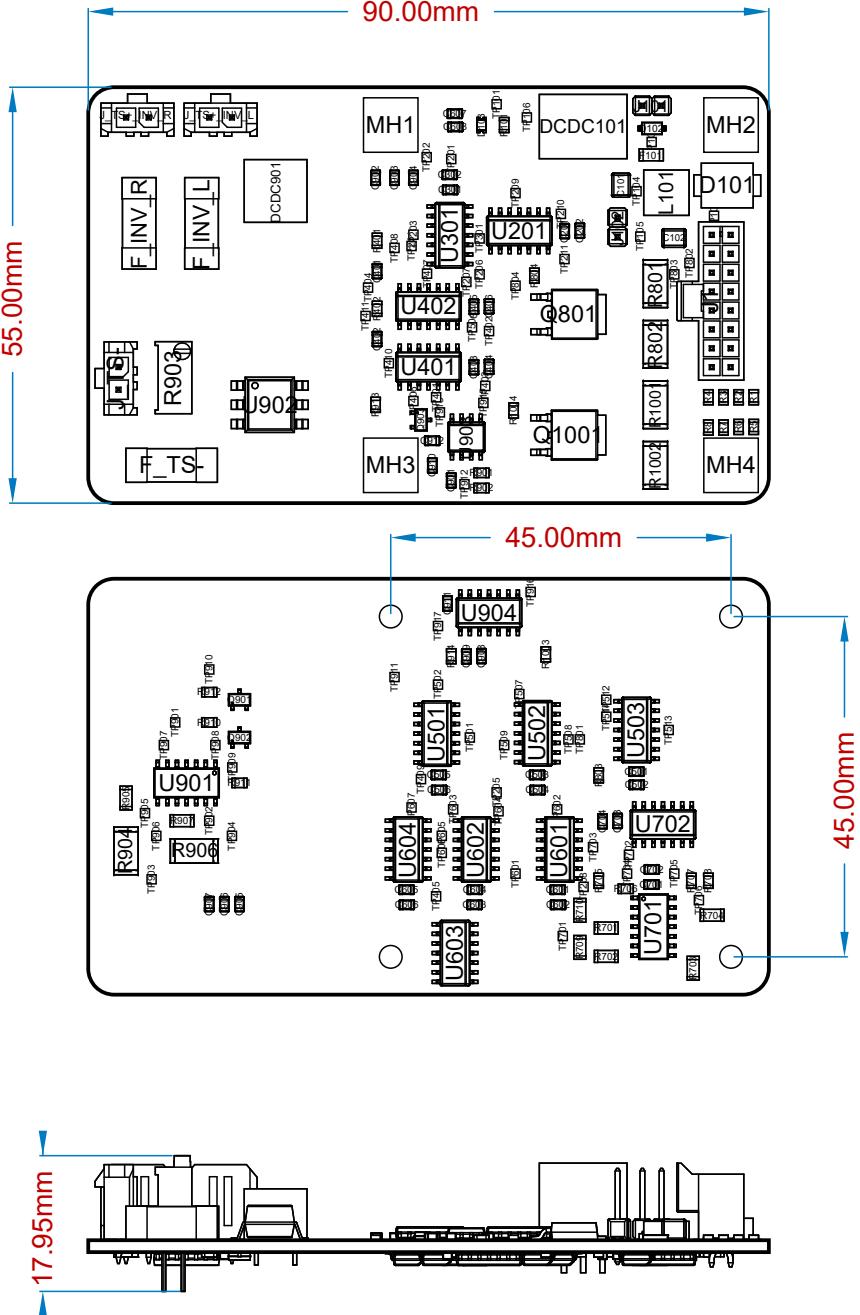
D



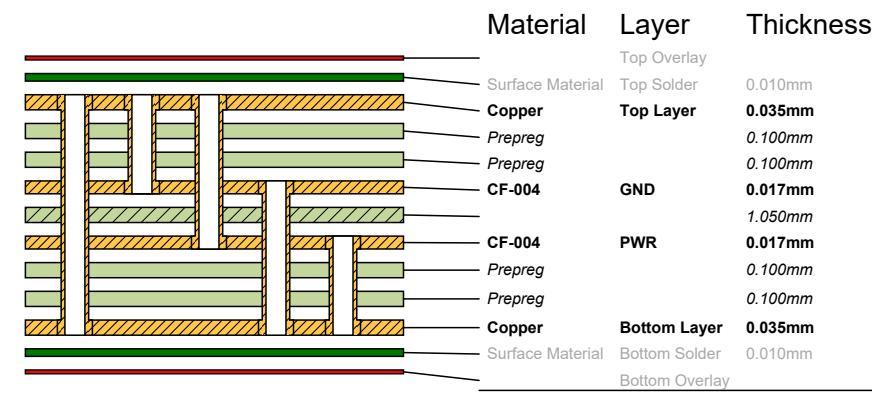
Company:	e-Tech Racing	e-techracing.es	
Project:	TSAL_Control	Variant: [No Variations]	
Size:	Page Contents: [10] Red_Driver.SchDoc	Version: 5.0	
-		Department: Powertrain	
Author:	David Redondo	dredondovinolo@gmail.com	Sheet 11 of 11
Checked by:	David Redondo		Date: 11/12/2022







Designator	Name	Quantity
C101, C102	GRJ32ER71H106KE11L	2
C201, C301, C403, C405, C501, C503, C505, C601, C603, C605, C607, C701, C703, C903, C906, C908, C910, C912	885012207098	18
C202, C302, C401, C404, C406, C502, C504, C506, C602, C604, C606, C608, C702, C704, C902, C905, C909, C911	885012207103	18
C402	GRM219R61A475KE34D	1
C901	885012107011	1
C904, C907	885012207092	2
D101	824551301	1
D102	MBR0530	1
D103	150080VS75000	1
DCDC101	173951236	1
DCDC901	RNM-1205S/P	1
F101	0437001.WRA	1
F_INV_R, F_INV_L, F_TS-	485001	3
J1	1053101116	1
J101, J102	61300211121	2
J_TS-, J_TS+ INV_L, J_TS+ INV_R	436500215	3
L101	CDC5D23BNP-470KC	1
MH1, MH2, MH3, MH4	Mounting_Hole_M3	4
Q801, Q1001	SQ2318BES-T1_GE3	2
Q901, Q902, Q903	SQ2318BES-T1_GE3	3
R1, R2, R3, R4, R5, R6, R7, R8, R401, R402, R705, R706, R707, R708, R803, R902, R910, R911, R913, R914, R1003	CR0805-JW-103ELF	21
R101, R804, R912, R1004	CR0805-JW-102ELF	4
R701, R702, R703, R704	HVC1206-2M0FT3	4
R709, R905, R907	CRCW120610K0FKEA	3
R710	CR1206-FX-2201ELF	1
R801, R802, R1001, R1002	352115RFT	4
R901	CR0805-FX-1000ELF	1
R903	3296W-1-103LF	1
R904, R906	R2M-2512FTK	2
U201, U402, U501, U502, U503, U601, U603	CD4011UBSNR	7
U301, U702	CD4012BM96	2
U401, U604, U904	CD4072BM	3
U602	CD4071BM	1
U701	LM339D	1
U901	LM339D	1
U902	4N35	1
U903	SA555	1



TSAL Control