CHAIR SPEAKER TI RECEIVER

MAJOR REVISION HISTORY :

PCB REV.	SCH. REV.	DESCRIPTION	DATE
0.2	0.2	Initial Draft	12-MAY-2021
	0.3	1.VCHRG_DET circuit is removed. 2.VBAT pin of CC8530 is connected to VBAT 3.Enable speaker enable pullups by default. (placed R33/R43, DNP R35/R45) 4.Removed Q4 & Q5 and sink LED current directly into CC8530 Marked LED2 and R22 as DNP. 5.Marked D4,D5, D6, D7,D10, D11 & U4 DNP 6.Test point added at I2C line 7.Connection of U4 is rearragned as per routing. 8.FB3 removed and make common AUGND and GND plane 9.RF Clip part number changed to S1001-46R. 10.Changed ON/OFF/Pair button connection to CS_N pin of CCS8530. 11.MICBIAS pin of DAC is additionally connected with SPKR_EN_LR using 0R link. 12.Marked the battery and charger circuits DNP by default. Added 0R resistor from VCHRG to VBAT_LDO and marked D8 and D9 as DNP. 13. Add R7 and change R2 and R7 part number as 1.5W 14. Changed LED resistor value from 100E to 220E.	21-MAY-2021
0.3	0.3	(1) Mark R6 mount (2) Mark J1 as DNP and added J5	01-June-2021
	0.4	Mark R20, C77, J2, J5 as DNP	11-July-2021
	0.5	Added U8 C2590 and it's components	17-July-2021
1.0 1.1	1.0	LED1 Connected to VCHARG LED2 position updated in layout	04-Sept-2021 20-April-2022

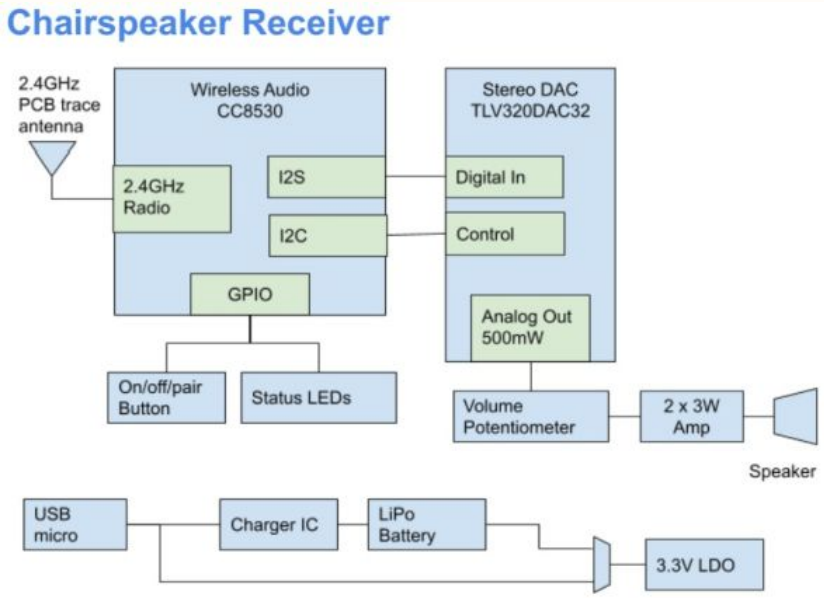
PAGE DESCRIPTION :

PAGE 01 : COVER PAGE
PAGE 02 : S1_POWER
PAGE 03 : S2_WirelessAudio_CC8530
PAGE 04 : S3_CHAIR_SPKR-AMP+SPK

PCB MECHANICAL DETAILS :

1. PCB SIZE: 74.93mm Dia. (Round)
2. NUMBER OF LAYERS: 2
3. IMPEDANCE CONTROL: YES

BLOCK DIAGRAM

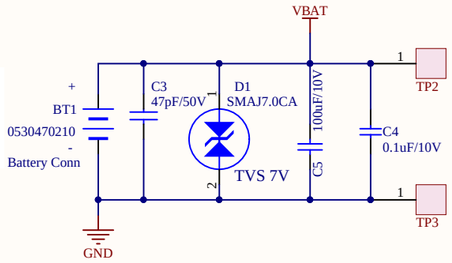


NOTES :

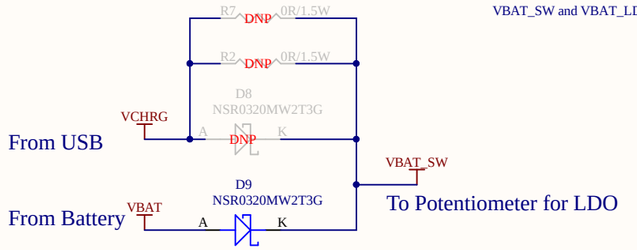
- Wireless Audio - CC8530
  - I2S master to DAC
  - PCB trace antenna
  - Push-button input
  - 2 status LED outputs
- Stereo DAC - TLV320DAC32
  - I2S slave from CC8530
  - I2C control from CC8530
- Speaker amplifier
  - 2 x NS4150
- Dual-gang Potentiometer - RV0971GS
  - Control volume of output
  - Switch gates power to the LDO to turn the board on or off
- Power section
  - USB micro 5V input
  - Lipo charge and battery
  - Board can be powered by either USB or battery

LDO Power Supply 3.3V, 500mA

BATTERY

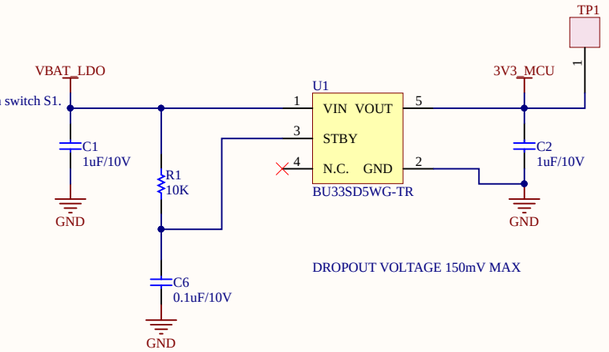


Dual supply option

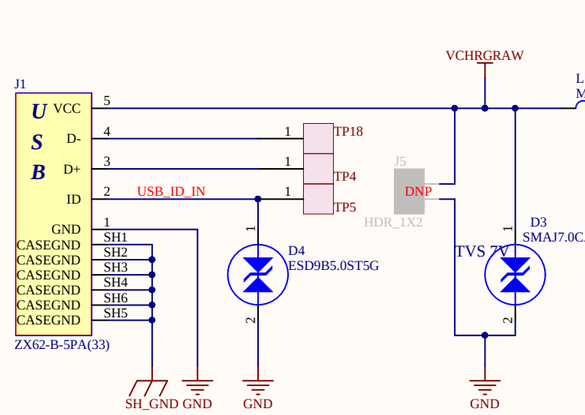


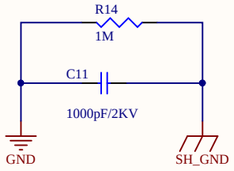
Note :- As per Standard micro USB Connector provides 5V/500mA output. Total Power = 2.5W

VBAT_SW and VBAT_LDO connected through switch S1.

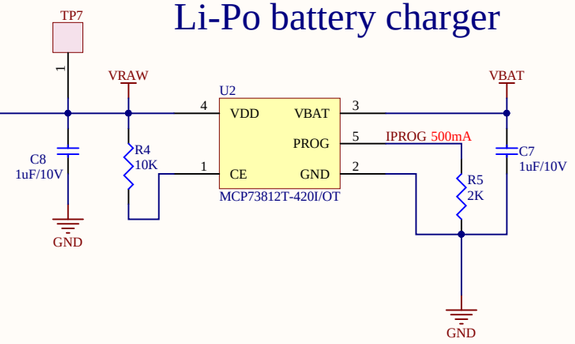


USB Power Connector





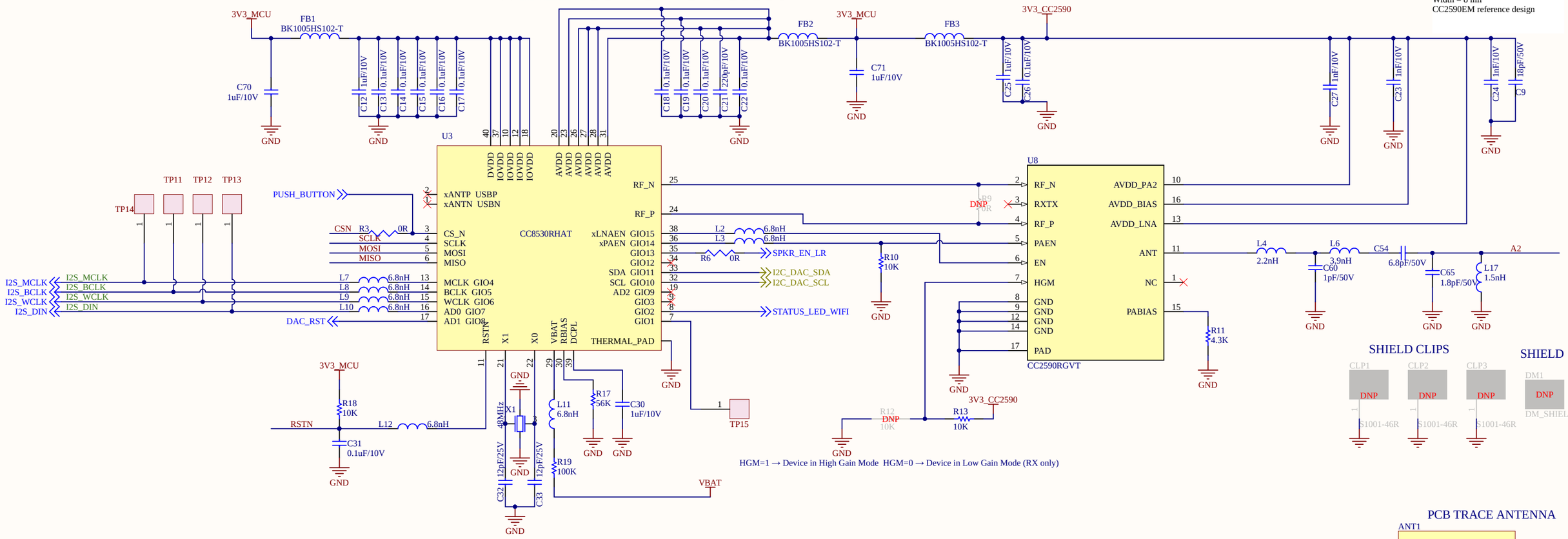
Li-Po battery charger



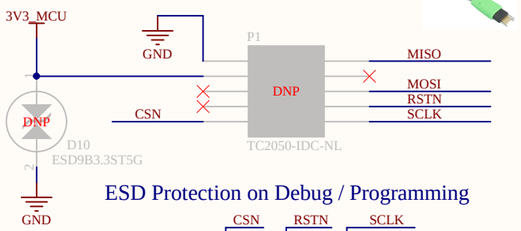
Project	Chair_Speaker_TI_Receiver_REV1-1.PrjPcb	Date:	4/20/2022
Sheet Name	S1_POWER.SchDoc	Revision :	1-0
Customer Name	PLASTIMOLD	Sheet:	2 of 4

WIRELESS AUDIO CC8530

Make virtual Inductor on all three power rail
Transmission line: Length ≈ 40 mil, Width = 8 mil
CC2590EM reference design

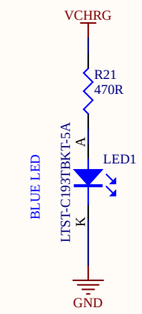


Debug / Programming



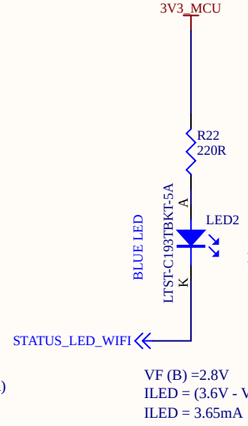
Status LEDs

STATUS LED Charge



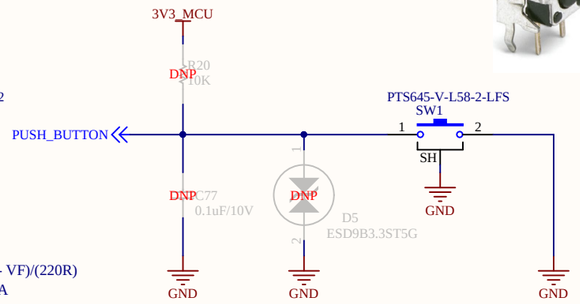
VF (B) =2.8V
ILED = (5V - VF)/(470R)
ILED = 4.68mA

STATUS LED WIFI

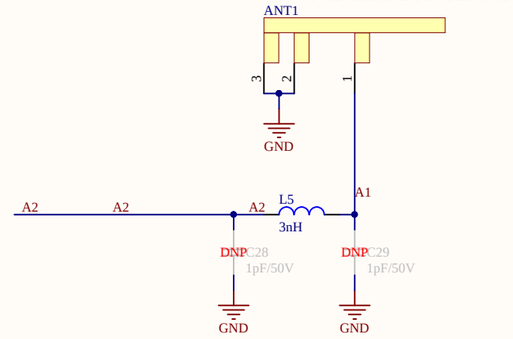


VF (B) =2.8V
ILED = (3.6V - VF)/(220R)
ILED = 3.65mA

Push Button Input

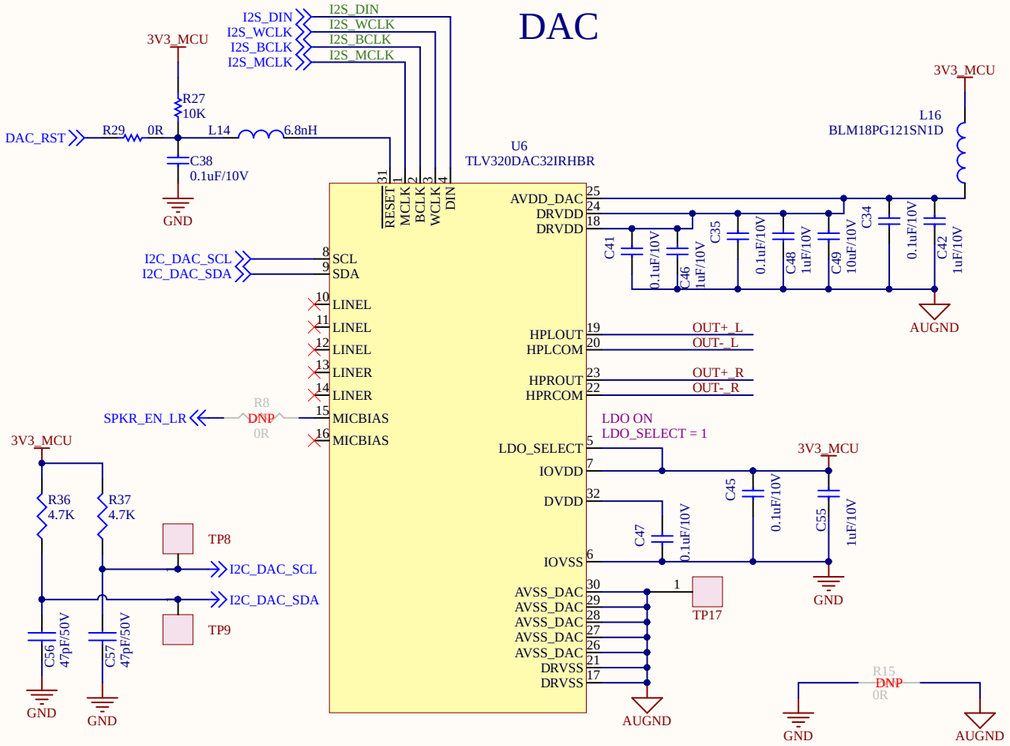


PCB TRACE ANTENNA

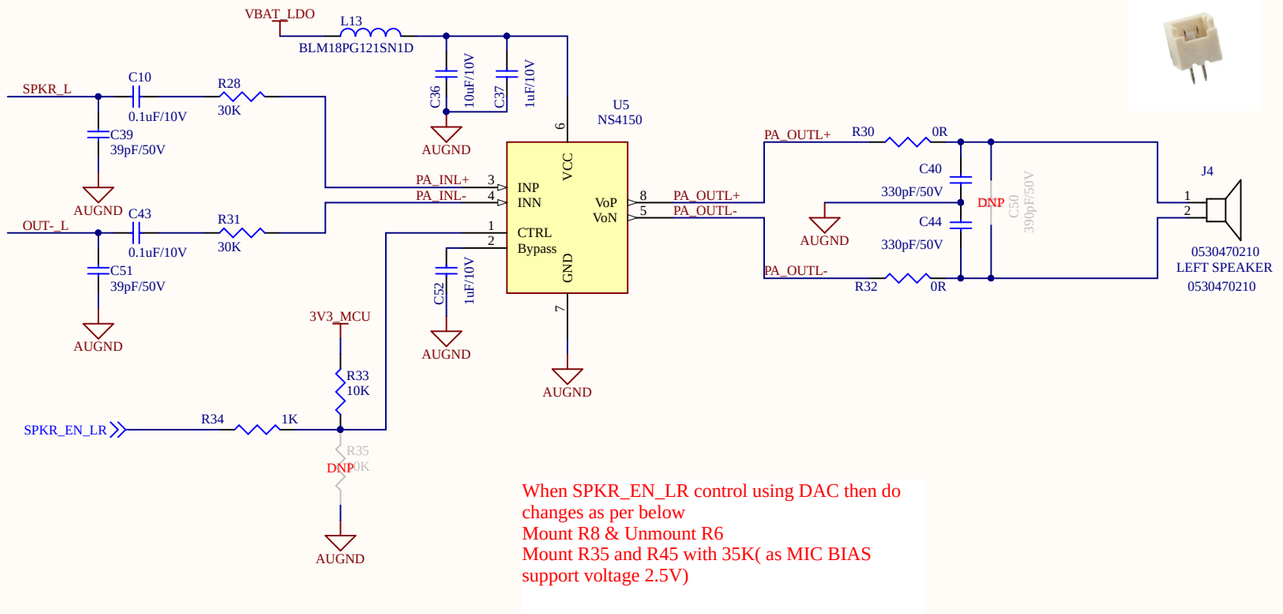


Project	Chair_Speaker_TI_Receiver_REV1-1.PrjPcb	Date:	4/20/2022
Sheet Name	S2_WirelessAudio_CC8530.SchDoc	Revision :	1-0
Customer Name	PLASTIMOLD	Sheet:	3 of 4

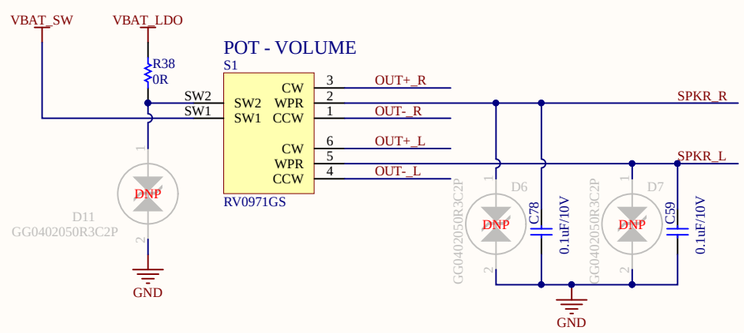
DAC



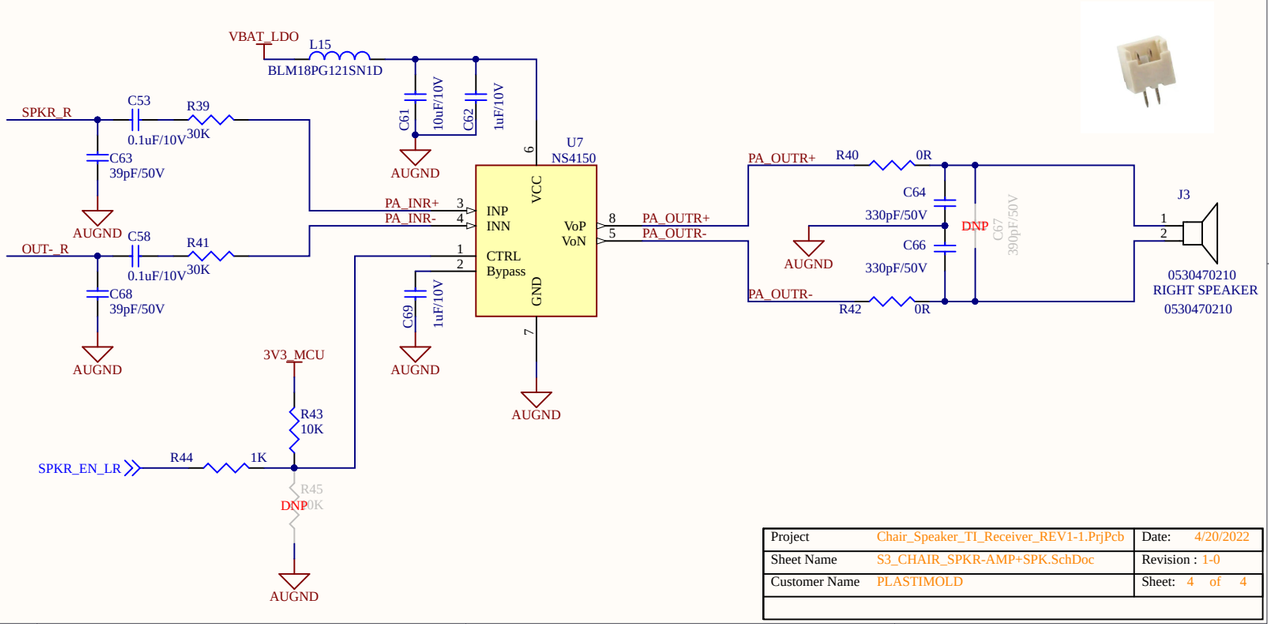
SPEAKER AMPLIFIER-LEFT



ON/Off/ Volume control



SPEAKER AMPLIFIER-RIGHT



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Sheet Name	S3_CHAIR_SPKR-AMP+SPK.SchDoc	Revision :	1-0
Customer Name	PLASTIMOLD	Sheet:	4 of 4