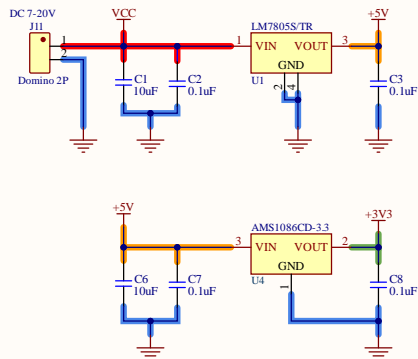
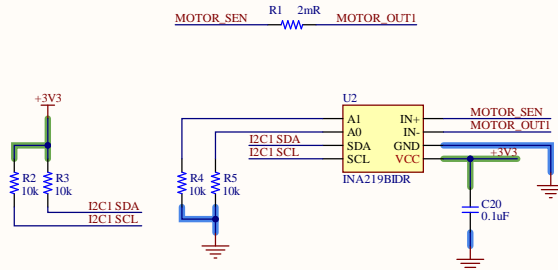


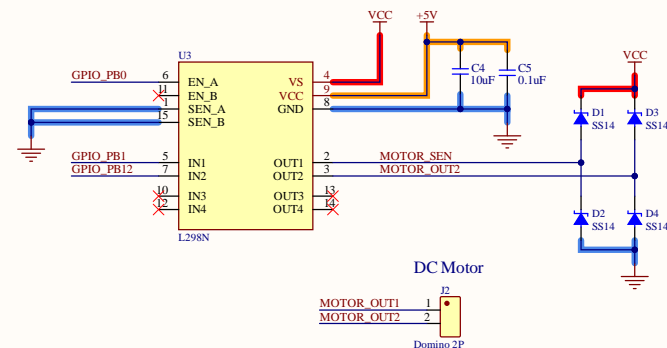
Power Supply



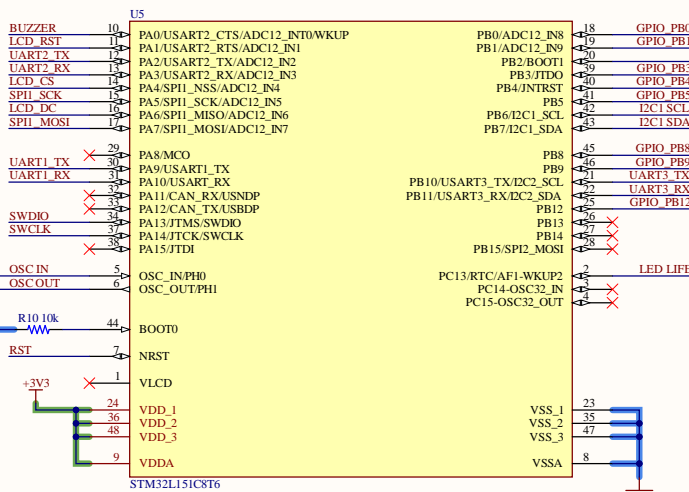
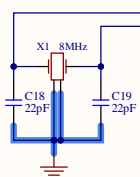
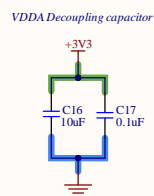
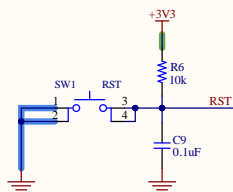
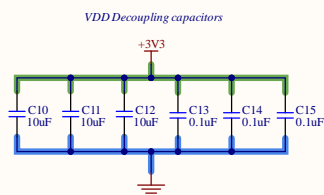
Power Sensing



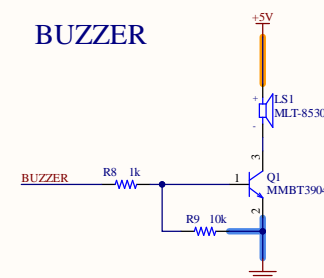
Motor Controller



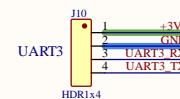
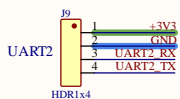
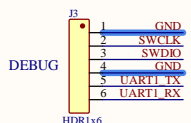
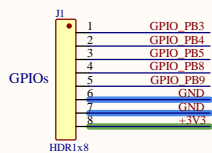
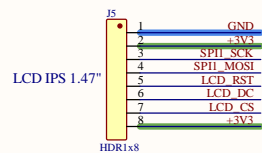
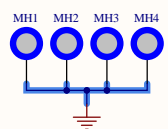
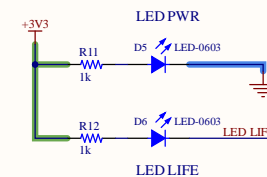
MCU - STM32L151C8T6



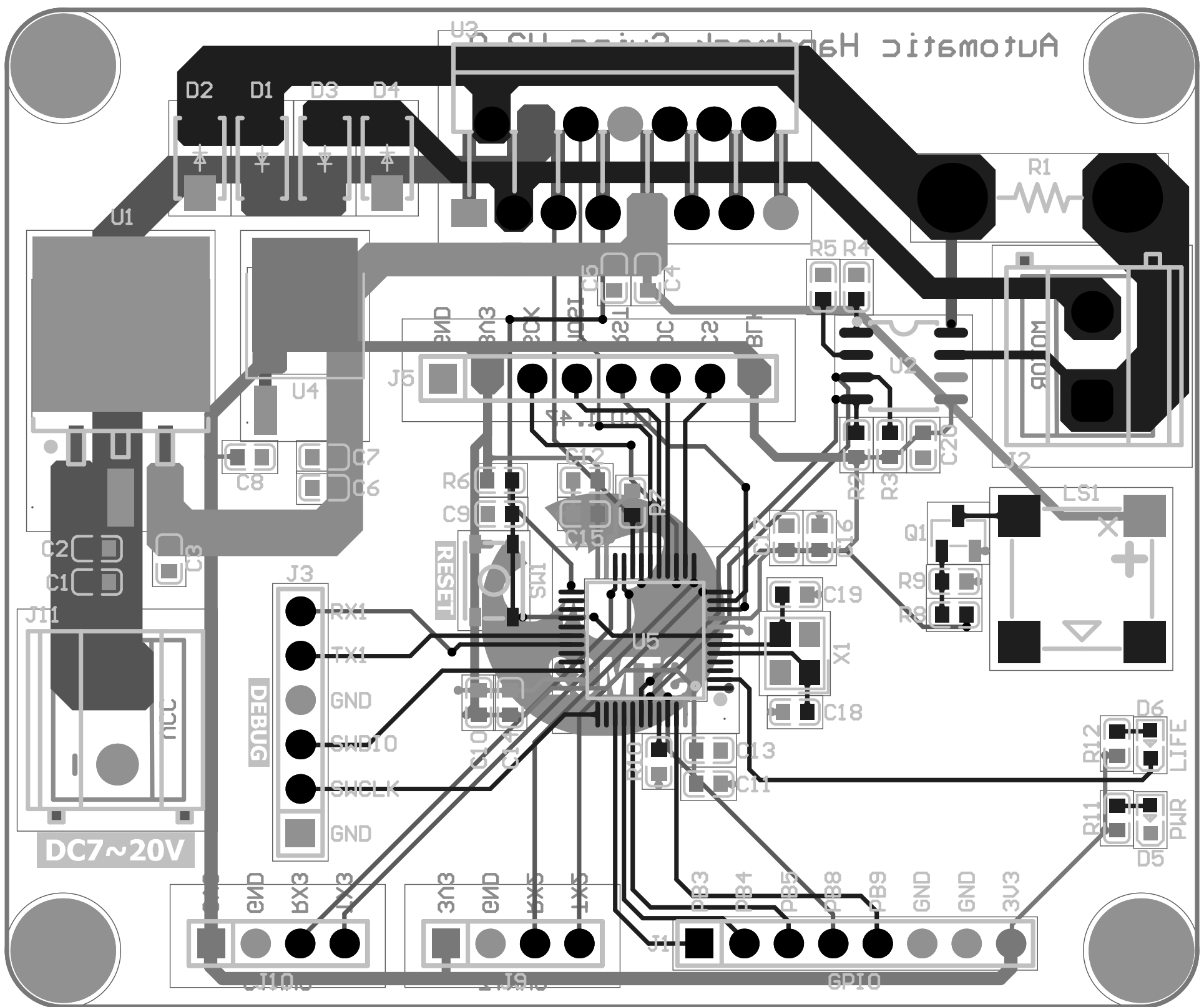
BUZZER

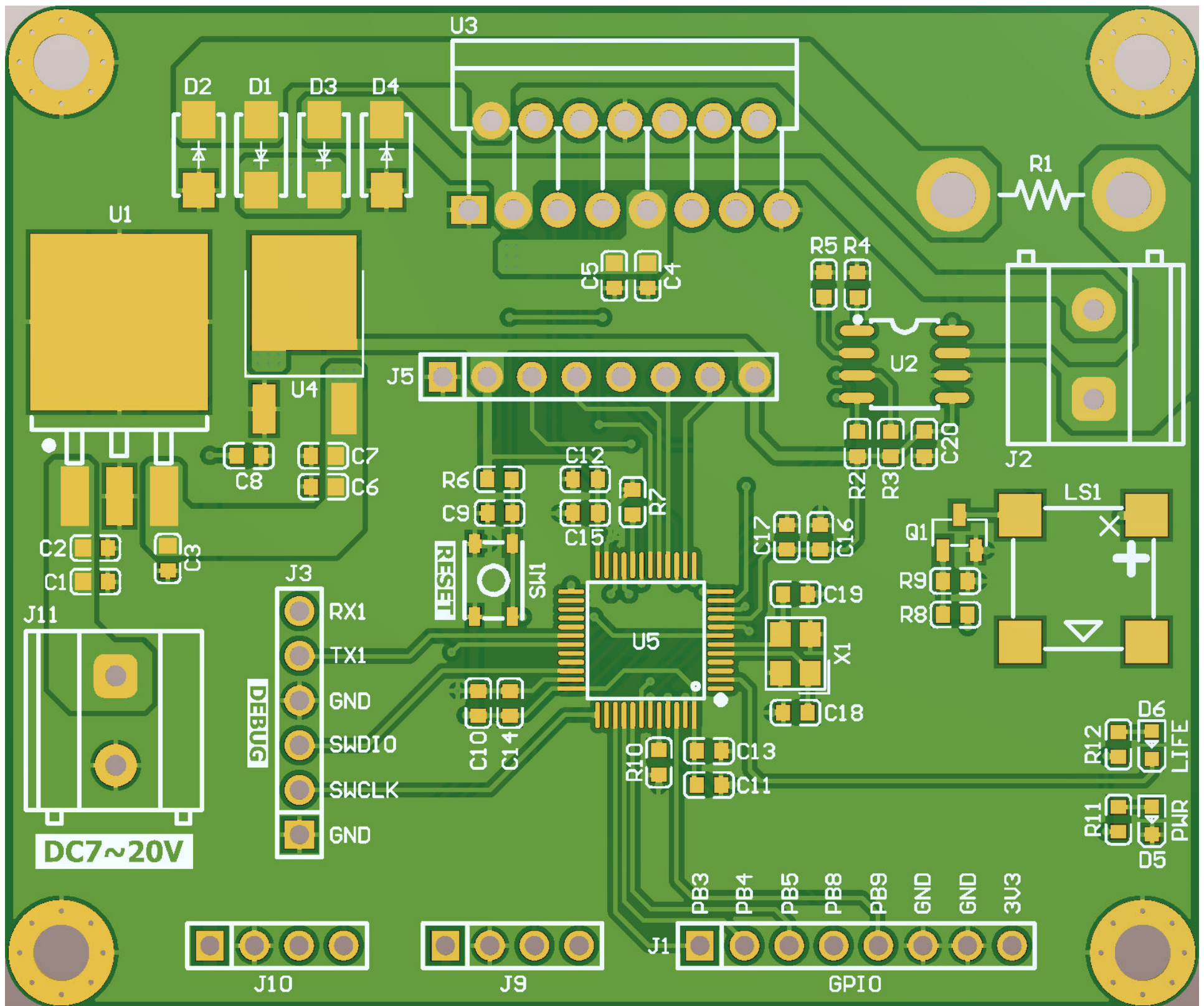


LEDs



Title: DC Motor Controller		
Size: A3	Project: Handmook Swing Machine	Revision: 2.0
Author: Ngo Thanh Nha		
Date: 20/4/2024	Sheet: 1 of 1	





Automatic Handmock Swing V2.0

MOTOR

BLK CS DC RST MOSI SCK 3V3 GND

LCD 1.47"

STM32

UCC

+

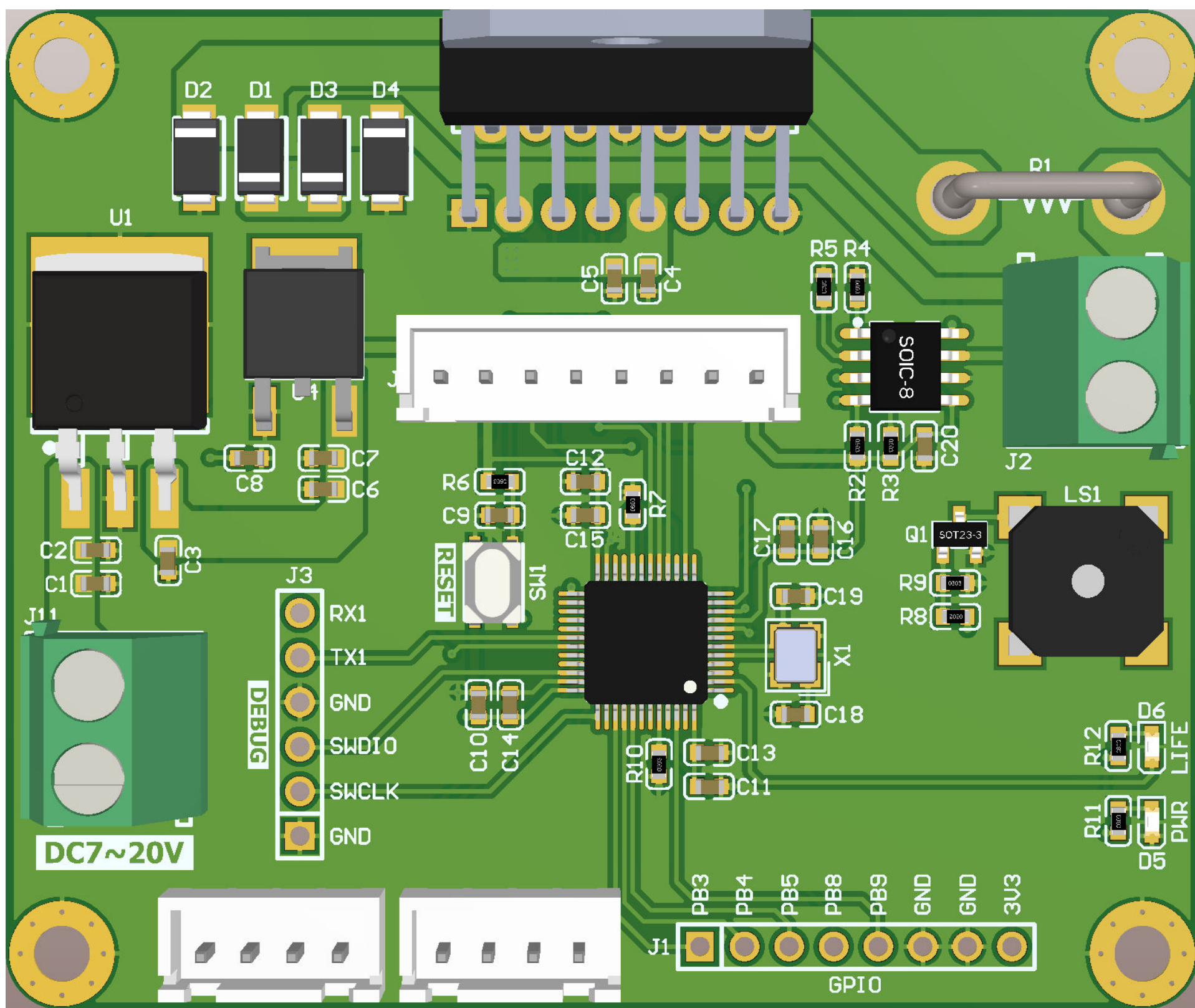
-

TX2 RX2 GND 3V3

UART2

TX3 RX3 GND 3V3

UART3



PCB Bill of Materials - Automatic Handmock Swing V2.0

Designator	Comment	Footprint	Quantity	Description
C1, C4, C6, C10, C11, C12, C16	10uF	C0603	7	25V 10uF X5R ±20% 0603 Multilayer Ceramic Capacitors MLCC - SMD/SMT ROHS
C2, C3, C5, C7, C8, C9, C13, C14, C15, C17, C20	0.1uF	C0603	11	50V 100nF X7R ±10% 0603 Multilayer Ceramic Capacitors MLCC - SMD/SMT ROHS
C18, C19	22pF	C0603	2	50V 22pF C0G ±5% 0603 Multilayer Ceramic Capacitors MLCC - SMD/SMT ROHS
D1, D2, D3, D4	SS14	DO214AC	4	40V Single 1A 550mV @1A SMA (DO-214AC) Schottky Barrier Diodes (SBD) ROHS
D5, D6	LED-0603	LED0603-RD	2	-40°C~+85°C Red 0603 Light Emitting Diodes (LED) ROHS
J1	HDR1x8	HDR-TH_08P-P2.54-V-M-NON-3D	1	3A Straight Square Pins 2.5mm 260°C @10S8P 6mm -40°C~+105°C 3mm 2.54mm Plugin Black Brass 1x8P Plugin, P=2.54mm Pin Headers ROHS
J2, J11	Domino 2P	CONN-TH_P5.08_KF128L-5.08-2P	2	1x2P 20A -40°C~+105°C 300V Green 12~30 Straight pin 5.08mm 2.5 1 2 Plugin, P=5.08mm Screw terminal ROHS
J3	HDR1x6	HDR-TH_06P-P2.54-V-M	1	3A Straight Square Pins 2.5mm 260°C @10S6P 6mm -40°C~+105°C 3mm 2.54mm Plugin Black Brass 1x6P Plugin, P=2.54mm Pin Headers ROHS
J5	HDR1x8	HDR-TH_08P-P2.54-V-M	1	3A Straight Square Pins 2.5mm 260°C @10S8P 6mm -40°C~+105°C 3mm 2.54mm Plugin Black Brass 1x8P Plugin, P=2.54mm Pin Headers ROHS
J9, J10	HDR1x4	HDR-TH_04P-P2.54-V-M	2	3A Straight Square Pins 2.5mm 260°C @10S4P 6mm -40°C~+105°C 3mm 2.54mm Plugin Black Brass 1x4P Plugin, P=2.54mm Pin Headers ROHS
LS1	MLT-8530	BUZ-SMD_4P-L8.5-W8.5-P8.50-BR	1	Externally Driven 80dB @5V, 10cm Magnetic 2700Hz SMD, 8.5x8.5mm Buzzers ROHS
Q1	MMBT3904	SOT-23-3_L2.9-W1.3-P1.90-LS2.4-BR	1	40V 200mW 100 @10mA, 1V 200mA NPN SOT-23 Bipolar Transistors - BJT ROHS
R1	2mR	Shunt_Resistor_P10mm	1	2mΩ Current Sensing Resistors ±40ppm/°C ±5% Plugin Current Sense Resistors/Shunt Resistors ROHS
R2, R3, R4, R5, R6, R7, R9, R10	10k	R0603	8	100mW Thin Film Resistor ±25ppm/°C ±0.1% 10kΩ 0603 Chip Resistor - Surface Mount ROHS
R8, R11, R12	1k	R0603	3	100mW Thick Film Resistors 75V ±100ppm/°C ±1% 1kΩ 0603 Chip Resistor - Surface Mount ROHS
SW1	RST	KEY-SMD_4P-L4.2-W3.25-P2.15-TL	1	0.05A Brick nogging SPST- NO 180gf 12V SMD, 3.2x4.2mm Tactile Switches ROHS
U1	LM7805S/TR	TO-263-3_L8.6-W10.2-P2.54-LS14.4-BR	1	TO-263-3 5V 1A Linear Voltage Regulators (LDO) ROHS
U2	INA219BIDR	SOIC-8_L5.0-W4.0-P1.27-LS6.0-BL	1	SOIC-8 Current-Sensing Amplifiers ROHS
U3	L298N	MULTIWATT-15_L19.6-W5.0-P1.27-L	1	Half Bridge 4.5V~7V MultiwAtt-15 Gate Drive ICs ROHS
U4	AMS1086CD-3.3	TO-252-2_L6.6-W6.1-P4.57-LS9.9-TL-CW	1	72dB @ (120Hz) 1.5A Fixed 3.3V Positive electrode 15V TO-252-2 (DPAK) Linear Voltage Regulators (LDO) ROHS
U5	STM32L151C8T6	LQFP-48_L7.0-W7.0-P0.50-LS9.0-BL	1	64KB 1.8V~3.6V ARM-M3 10KB 32MHz FLASH 37 LQFP-48 (7x7) Microcontroller Units (MCUs/MPUs/SOCs) ROHS
X1	8MHz	CRYSTAL-SMD_4P-L3.2-W2.5-BL	1	8MHz 20pF ±10ppm SMD 3225-4P Crystals ROHS