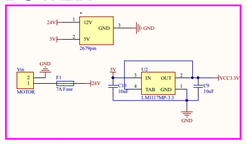
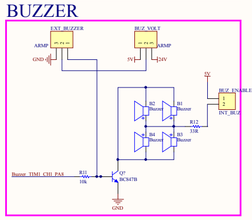
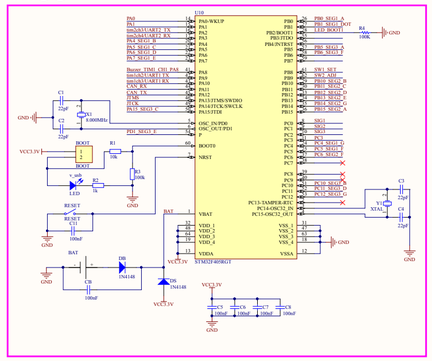
POWER



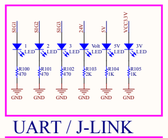
BUZZER



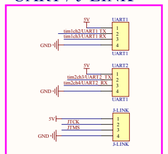
MCU



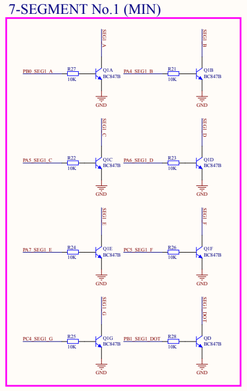
LED



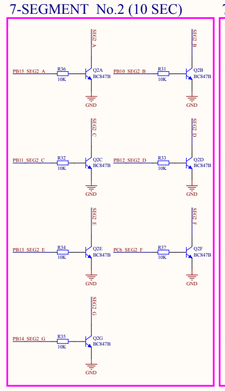
UART / J-LINK



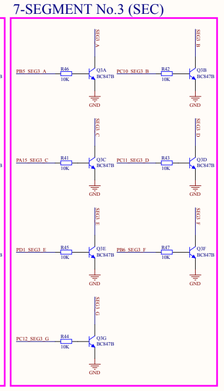
7-SEGMENT No.1 (MIN)



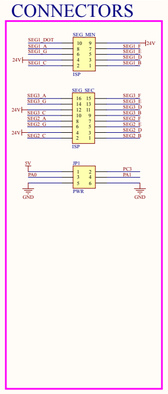
7-SEGMENT No.2 (10 SEC)

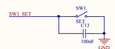


7-SEGMENT No.3 (SEC)



CONNECTORS





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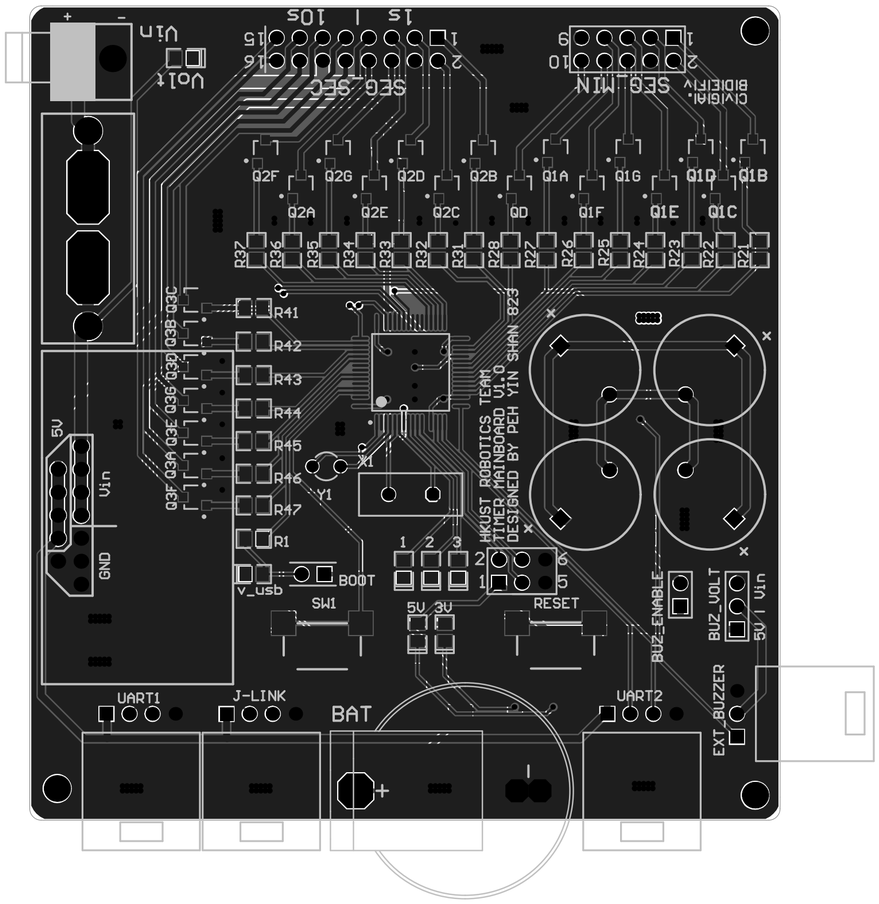

Vin
Volt
SEG SEC
SEG MIN
Q2F Q2G Q2D Q2B Q1A Q1G Q1D Q1B
Q2A Q2E Q2C QD Q1F Q1E Q1C
R37 R36 R35 R34 R33 R32 R31 R28 R27 R26 R25 R24 R23 R22 R21
R41 R42 R43 R44 R45 R46 R47 R1
Q3F Q3A Q3E Q3G Q3D Q3B Q3C
5V
Vin
GND
v_usb
BOOT
SW1
X1
Y1
HKUST ROBOTICS TEAM
TIMER MAINBOARD V1.0
DESIGNED BY PEH YIN SHAN 823
5V 3V
RESET
BUZ_ENABLE
BUZ_VOLT
5V / Vin
EXT_BUZZER
UART1
J-LINK
BAT
UART2

Comment	Description	Designator	Footprint	LibRef	Quantity
2679pin			PCBComponent_1	2679pin	1
LED	Typical RED GaAs LED	1, 2, 3, 3V, 5V, v_usb, Volt	D0805	LED	7
Buzzer		B1, B2, B3, B4	POL_BUZZER-12.0	Buzzer	4
3V Battery		BAT	3V Battery	3V Battery	1
BOOT	Header, 2-Pin	BOOT	HDR1X2	Header 2	1
INT_BUZ	Header, 2-Pin	BUZ_ENABLE	HDR1X2	Header 2	1
ARMP	Header, 3-Pin	BUZ_VOLT	HDR1X3	Header 3	1
22pF	Capacitor (Semiconductor SIM Model)	C1, C2, C3, C4	CC2012-0805	Cap Semi	4
100nF	Capacitor (Semiconductor SIM Model)	C5, C6, C7, C8, C11, C13, C8	CC2012-0805	Cap Semi	7
10uF	Capacitor (Semiconductor SIM Model)	C9, C10	CC2012-0805	Cap Semi	2
1N4148	General Purpose Diode	DB, DS	SOD-80	D General	2
ARMP	Header, 3-Pin	EXT_BUZZER	LOCKEDHDR-3W	Header 3	1
7A Fuse	Fuse	F1	FUSE SOCKET	Fuse	1
J-LINK	Header, 4-Pin	J-LINK	LOCKEDHDR-4W	Header 4	1
PWR	Header, 3-Pin, Dual row	JP1	HDR2X3	Header 3X2	1
BC847B	NPN	Q1A, Q1B, Q1C, Q1D, Q1E, Q1F, Q1G, Q2A, Q2B, Q2C, Q2D, Q2E, Q2F, Q2G, Q3A, Q3B, Q3C, Q3D, Q3E, Q3F, Q3G, Q?, QD	SOT-23	BC847B	23
10k	Resistor, Semiconductor Resistor	R1, R11	CR2012-0805	Res2, Res Semi	2
1k	Resistor, Semiconductor Resistor, Semiconductor Resistor	R2, R104, R105	CR2012-0805	Res2, Res Semi, Res Semi	3
100k	Resistor, Semiconductor Resistor	R3, R4	CR2012-0805	Res2, Res Semi	2
33R	Semiconductor Resistor	R12	CR2012-0805	Res Semi	1
Res2	Resistor	R21, R22, R23, R24, R25, R26, R27, R28, R31, R32, R33, R34, R35, R36, R37, R41, R42, R43, R44, R45, R46, R47	CR2012-0805	Res2	22
470	Semiconductor Resistor	R100, R101, R102	CR2012-0805	Res Semi	3
2K	Semiconductor Resistor	R103	CR2012-0805	Res Semi	1
RESET	Single-Pole, Single-Throw Switch	RESET	PUSH SWITCH	SW-SPST	1
ISP	Header, 5-Pin, Dual row	SEG_MIN	HDR2X5	Header 5X2	1
ISP	Header, 8-Pin, Dual row	SEG_SEC	HDR2X8	Header 8X2	1
SET	Single-Pole, Single-Throw Switch	SW1	PUSH SWITCH	SW-SPST	1
LM1117MP-3.3	800mA Low-Dropout Linear Regulator	U2	MP04A_N	LM1117MP-3.3	1
STM32F405RGT	STM32 ARM-based 32-bit MCU with 128 Kbytes Flash, 64-pin LQFP, Industrial Temperature	U10	LQFP64_N	STM32F103RBT6	1
UART1	Header, 4-Pin	UART1, UART2	LOCKEDHDR-4W	Header 4	2
MOTOR	Header, 2-Pin	Vin	LOCKEDPWRHDR	Header 2	1
8.000MHz	Crystal Oscillator	X1	BCY-W2/E4.7	XTAL	1
XTAL	Crystal Oscillator	Y1	R38	XTAL	1