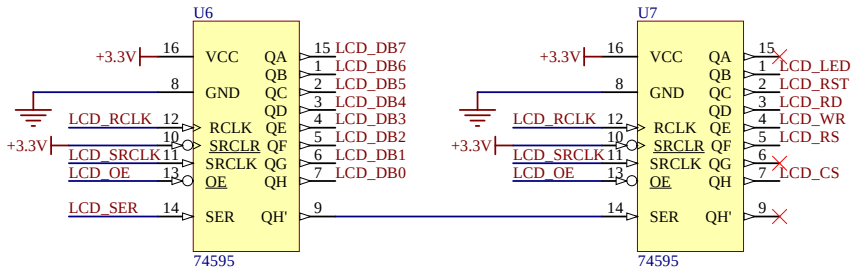
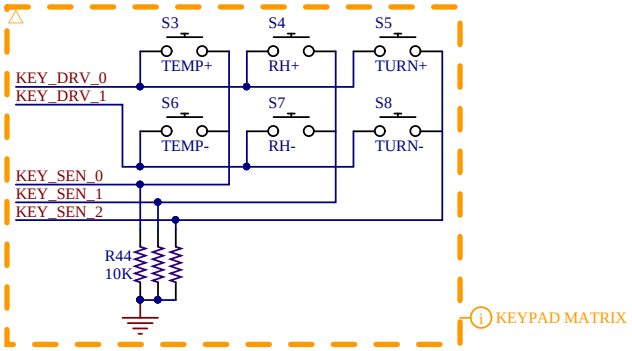
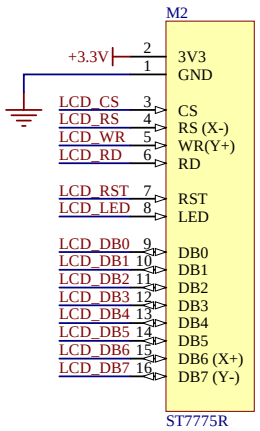
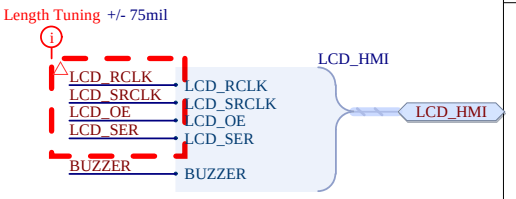
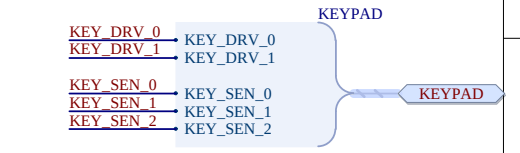
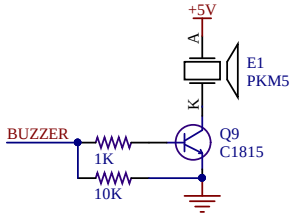




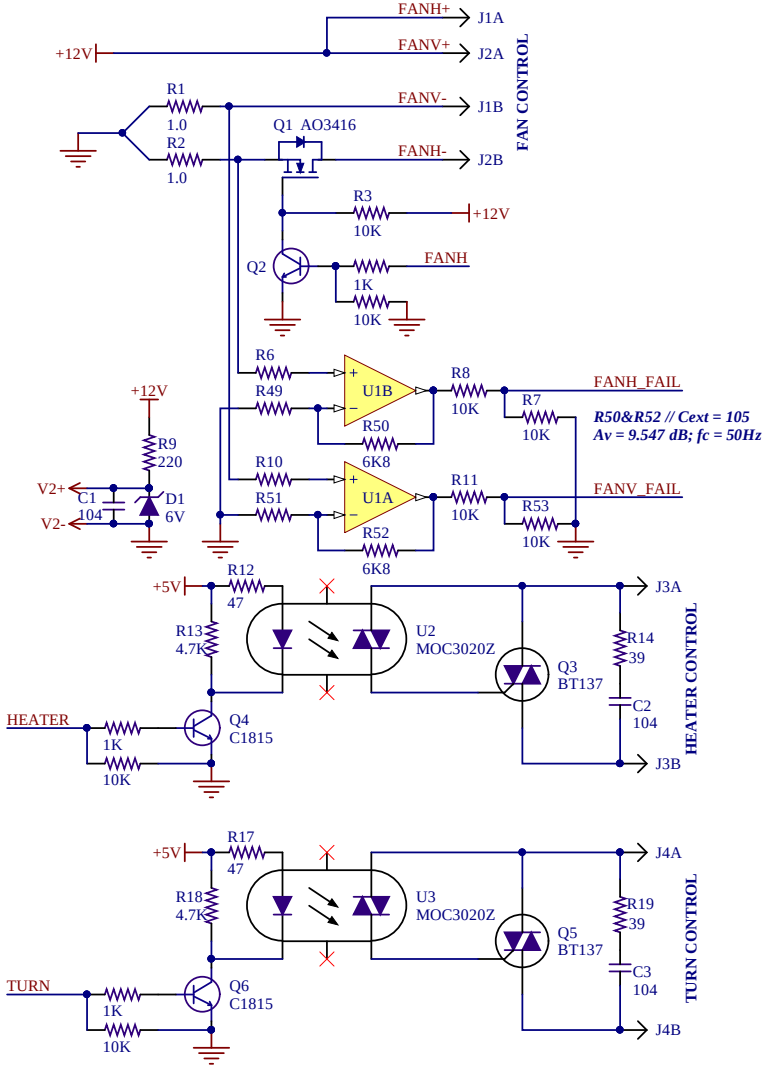


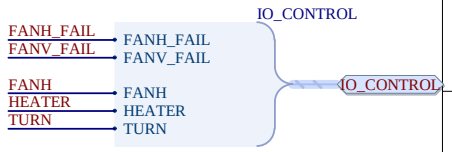




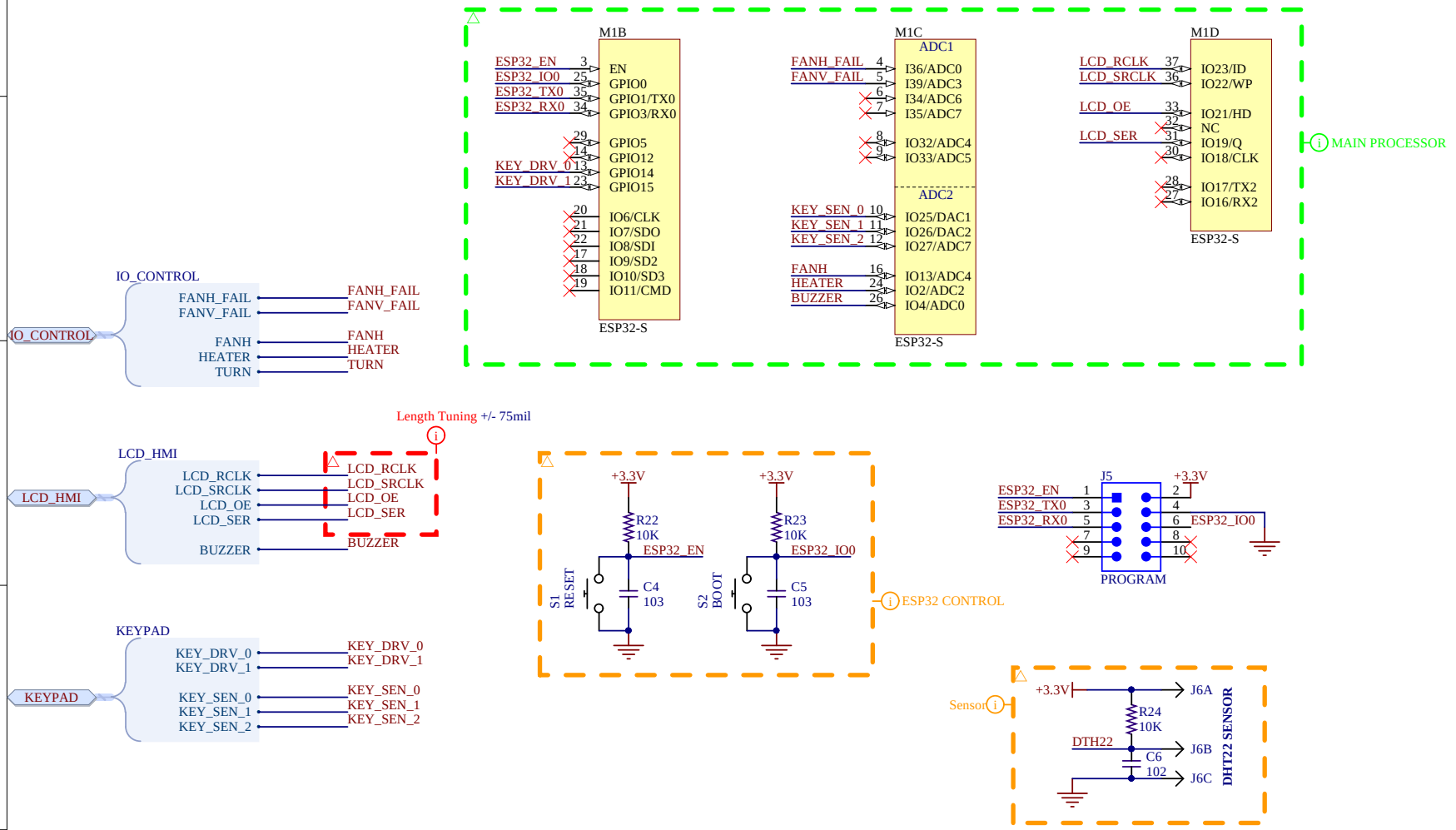


Project/Equipment	EGG INCUBATION (PC-BASED MEASUREMENT AND CONTROL SYSTEMS)		
Document	**MOTHERBOARD INPUT/OUTPUT**	Designer Vo Hao Hao	
TGM		Drawn by Vo Hao Hao	XX/XX/XXXX
		Check.by THIEN-KEMC	-
		Last Mod. -	11/28/2022
		File [SCH]_HMI.SchDoc	
		Print Date 11/29/2022 12:35:06 AM	Sheet * of *
TEAM GA MO Limited 30, Nhat Hamet, Thanh Hoa, Phung Hiep, HG	TGA-00005-04-1	Size A4	Rev *





Project/Equipment	EGG INCUBATION (PC-BASED MEASUREMENT AND CONTROL SYSTEMS)		
Document	**MOTHERBOARD INPUT/OUTPUT**	Designer	Vo Hao Hao
		Drawn by	Vo Hao Hao XX/XX/XXXX
		Check.by	THIEN-KEMC -
		Last Mod.	- 11/27/2022
		File	[SCH]_IO.SchDoc
		Print Date	11/29/2022 12:35:06 AM Sheet * of *
TGM	*TEAM GA MO Limited* *30, Nhat Hamet, Thanh Hoa, Phung Hiep, HG*	TGA-00005-03-1	Size A4 Rev *



Project/Equipment	EGG INCUBATION (PC-BASED MEASUREMENT AND CONTROL SYSTEMS)
Document	MOTHERBOARD MAIN PROCESSOR ESP32
Designer	Vo Hao Hao
Drawn by	Vo Hao Hao XX/XX/XXXX
Check.by	THIEN-KEMC -
Last Mod.	- 11/26/2022
File	[SCH]_MainProcessor.SchDoc
Print Date	11/29/2022 12:35:06 AM Sheet * of *
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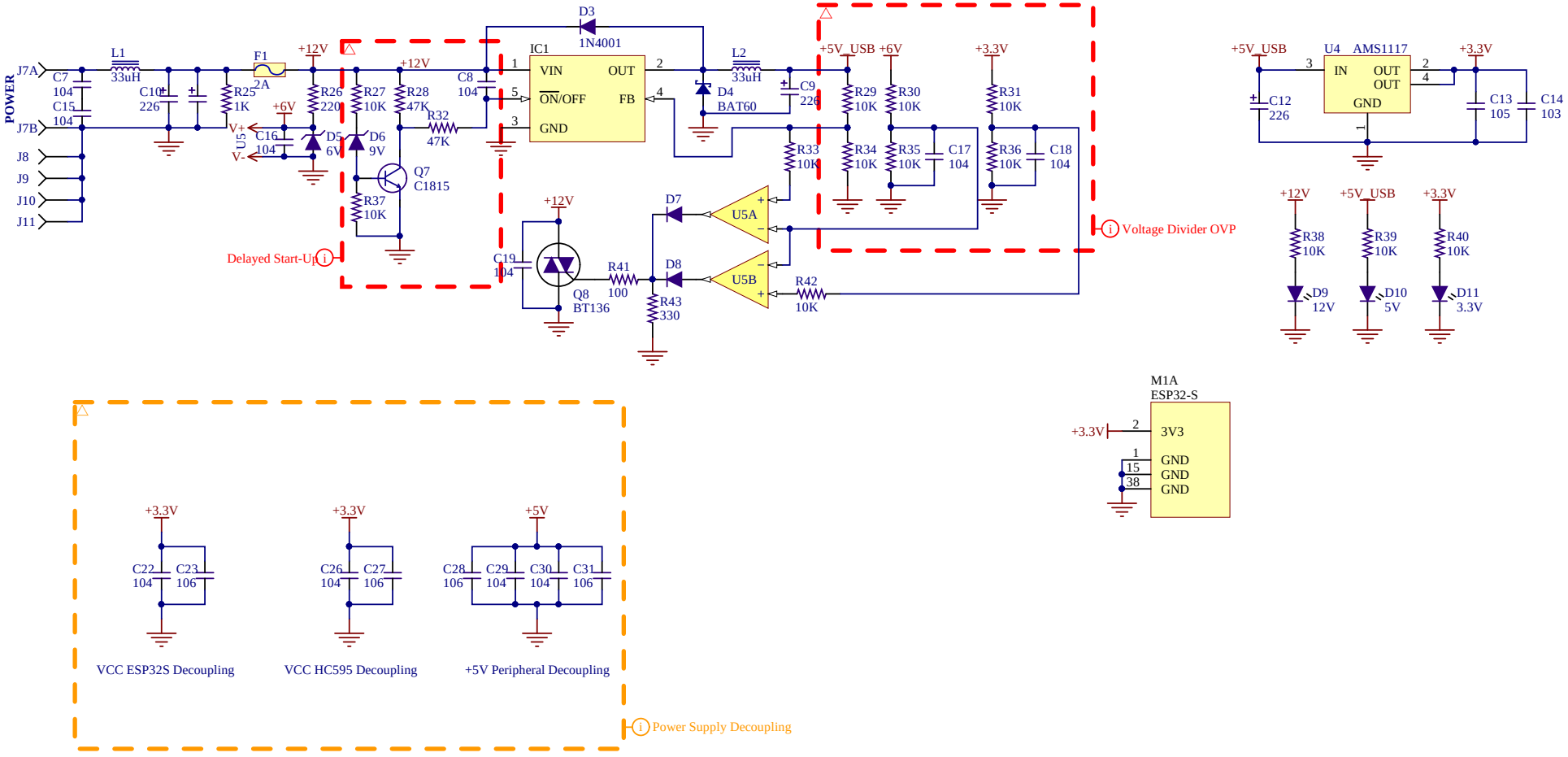
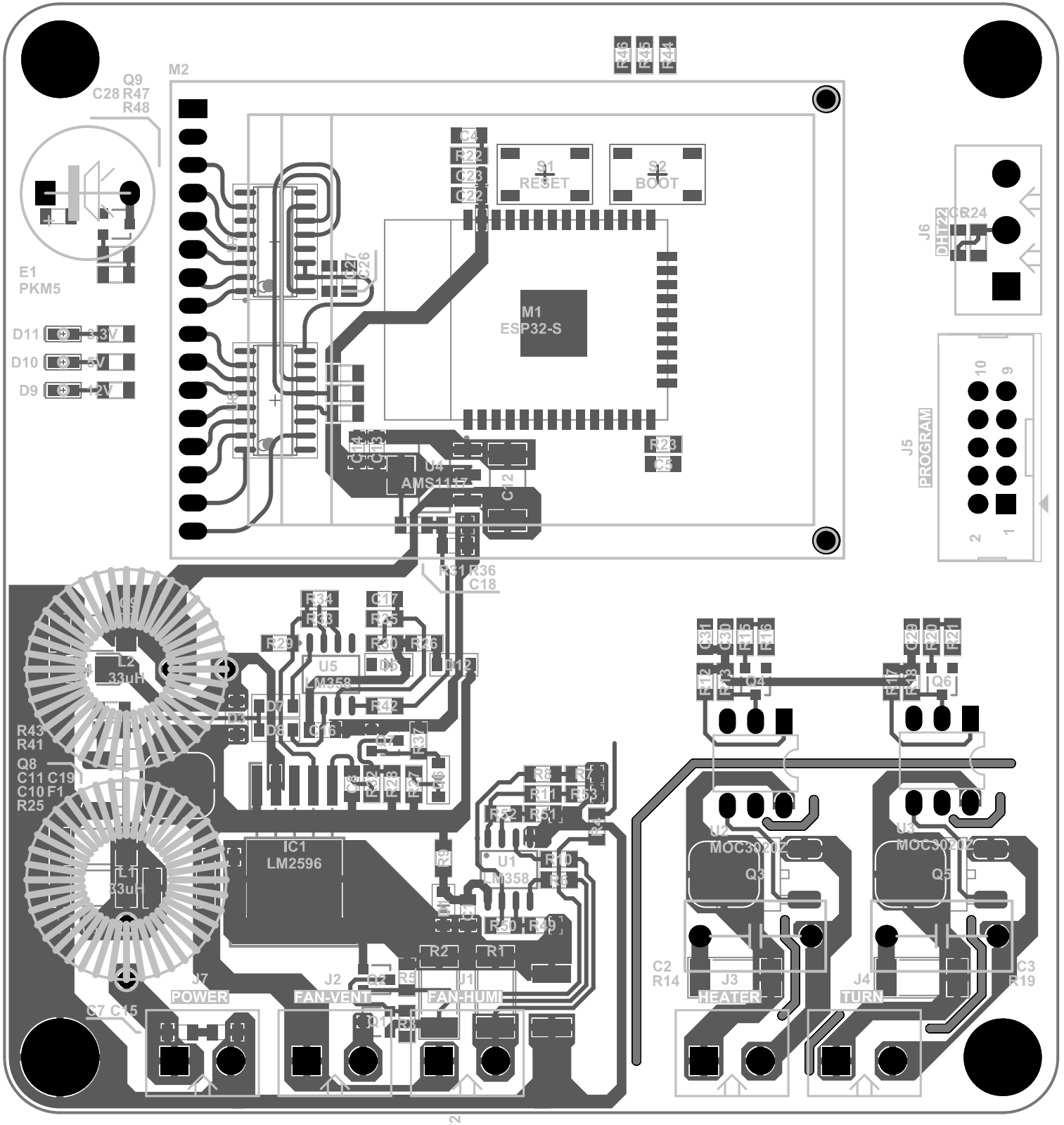
	TGA-00005-02-1
Size	A4
Rev	*



Project/Equipment	EGG INCUBATION (PC-BASED MEASUREMENT AND CONTROL SYSTEMS)		
Document	**MOTHERBOARD POWER SUPPLY LV**	Designer	Vo Hao Hao
TGM		Drawn by	Vo Hao Hao XX/XX/XXXX
		Check.by	THIEN-KEMC -
		Last Mod.	- 11/27/2022
		File	[SCH]_Power.SchDoc
		Print Date	11/29/2022 12:35:06 AM Sheet * of *
TEAM GA MO Limited 30, Nhat Hamet, Thanh Hoa, Phung Hiep, HG	TGA-00005-01-1	Size	A4
		Rev	*


M2
Q9
C28 R47
R48
E1
PKM5
D11 3.3V
D10 5V
D9 12V
M1
ESP32-S
S1
RESET
S2
BOOT
U4
AMS1117
J6
DHT22
J5
PROGRAM
L2
33uH
L1
33uH
IC1
LM2596
U5
LM358
U1
LM358
U2
MOC3020
U3
MOC3020
Q3
Q5
Q4
Q6
J7
POWER
J2
FAN-VENT
J1
FAN-HUMI
J3
HEATER
J4
TURN
F2

Comment	Description	Designator	Footprint	LibRef	Quantity	Price
104	Non-polar capacitor	C1, C7, C8, C15, C16, C17, C18, C19, C22, C26, C29, C30	CAP-SMD-0805	Cap-Non-SMD	12	
104	Non-polar capacitor	C2, C3	Cap-Mica-10-6.2x12.5x10.5	Cap-Non-DIP	2	0.005
103	Non-polar capacitor	C4, C5, C14	CAP-SMD-0805	Cap-Non-SMD	3	
102	Non-polar capacitor	C6	CAP-SMD-0805	Cap-Non-SMD	1	
226	Non-polar capacitor	C9, C10, C11, C12	CAP-SMD-2512	Cap-Pol-SMD	4	
105	Non-polar capacitor	C13	CAP-SMD-0805	Cap-Non-SMD	1	
106	Non-polar capacitor	C23, C27, C28, C31	CAP-SMD-0805	Cap-Non-SMD	4	
6V	DIODE-ZNR 5.1V 5% PD=1W IR=10uA	D1, D5	DIO-SMD-123	ZENER	2	
1N4001	1.0A RECTIFIER	D3, D7, D8	DIO-SMD-123	1N4001	3	0.006
BAT60	DIODE SCHOTTKY 10V 3A SOD323-2	D4	DIO-SMD-106	BAT60	1	0.008
9V	DIODE-ZNR 5.1V 5% PD=1W IR=10uA	D6	DIO-SMD-123	ZENER	1	
12V	LED RED CLEAR 0603 SMD	D9	LED0603-IPC	LED 0603 Red	1	
5V	LED YELLOW CLEAR 0603 SMD	D10	LED0603-IPC	LED 0603 Yellow	1	
3.3V	LED GREEN CLEAR 0603 SMD	D11	LED0603-IPC	LED 0603 Green	1	
PKM5	ALARM-AUDIBLE PIEZO ALARM PIN TYPE; 5V	E1	BUZZER	BUZZER	1	
2A		F1	Fuse-SMD 1813	Fuse SMD	1	
LM2596	Power IC	IC1	TO263	LM2596	1	
FAN-HUMI		J1	KF2/5.08	JP2	1	
FAN-VENT		J2	KF2/5.08	JP2	1	
HEATER		J3	KF2/5.08	JP2	1	
TURN		J4	KF2/5.08	JP2	1	
PROGRAM	Male Box Header WR-BHD, THT, Vertical, pitch 2.54 mm, 10 pins	J5	IDC10	IDE_5X2	1	
DHT22		J6	KF3/5.08	JP3	1	
POWER		J7	KF2/5.08	JP2_IN	1	
MASS 3MM	3MM PAD	J8, J9, J10, J11	MY_PAD_3MM	JP1_IN	4	
33uH	2.2µH Shielded Wirewound Inductor 8.2A 10mOhm Max Nonstandard, 4 Lead	L1, L2	5026_INDUCTOR	INDUCTOR_FE	2	
ESP32-S	Tensilica Xtensa LX6 microprocessor @ 160 or 240 MHz · 320 KiB SRAM	M1	ESP32-S-Footprint	ESP32-S	1	
ST7775R		M2	LCD_176X220_MODULE	LCD_176x220	1	
AO3416	N-Channel 16A (Tc) 79W (Tc) Surface Mount D-Pak	Q1	SOT23(123)	IRFR3910TRLPBF	1	0.15
NPN	Transistor, NPN, RF, 50mA, 12V	Q2	SOT23(123)	NPN	1	
BT137	THYRISTOR-TRIAC TO-220AB VRRM=600	Q3, Q5	TO252AA	SCR	2	
C1815	Transistor, NPN, RF, 50mA, 12V	Q4, Q6, Q7, Q9	SOT23(123)	NPN	4	
BT136	THYRISTOR-TRIAC TO-220AB VRRM=600	Q8	TO252AA	SCR	1	
RES-2512-4.7R	Chip Resistor, 0805, 1%, 1/8 W	R1, R2	RES-SMD-2512	RES	2	0.005
RES-2512-4.7R	Chip Resistor, 0805, 1%, 1/8 W	R3, R4, R5, R6, R7, R8, R10, R11, R12, R13, R15, R16, R17, R18, R20, R21, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53	RES-SMD-0805	RES	26	0.005
R0805	Chip Resistor, 0805, 1%, 1/8 W	R9, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43	RES-SMD-0805	RES	23	0.005
RES	Chip Resistor, 0805, 1%, 1/8 W	R14, R19	RES-SMD-2512	RES	2	0.005
RESET	SWITCH TACTILE SPST-NO 0.05A 12V	S1	TL3342F260QG	SWITCH TACTILE SPST	1	0.25
BOOT	SWITCH TACTILE SPST-NO 0.05A 12V	S2	TL3342F260QG	SWITCH TACTILE SPST	1	0.25
LM358	7mV 250nA 7uV/C 1MHz 0.6V/uS 0.8mA 3-32V	U1, U5	SOIC-8S	LM358	2	0.24
MOC3020Z	OPTO-ISOLATOR LED-PTRIAC IF=50mA-max	U2, U3	DIP6	MOC3020Z	2	
AMS1117	1A Bipolar Linear Regulator	U4	SOT223(1234)	AMS1117	1	
74595	CD74HC595 8-Bit Shift Registers With 3-State Output Registers	U6, U7	SOIC-16S	74595	2	