

1

2

3

4

A

A

B




B

C

C

D

D

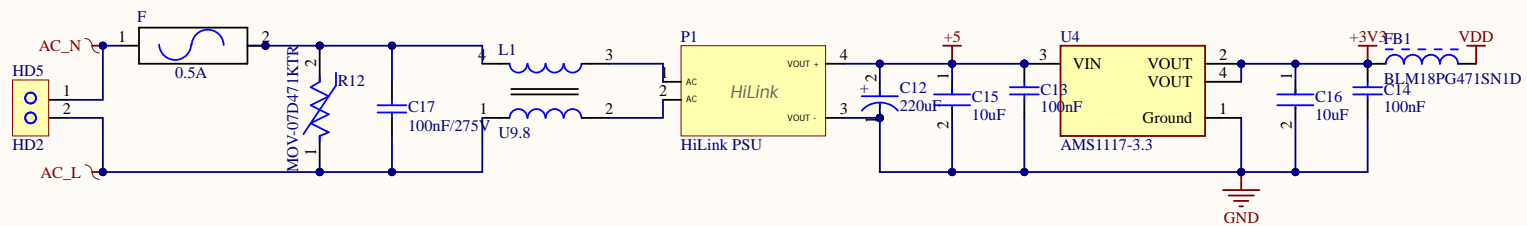
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Size: A4	Number:1	Revision:1.0			
Date: 8/4/2020	Time: 8:09:13 PM	Sheet1 of 4			
Design by: N.S.T	Check by: N.S.T				
			 https://github.com/tung080827		



1

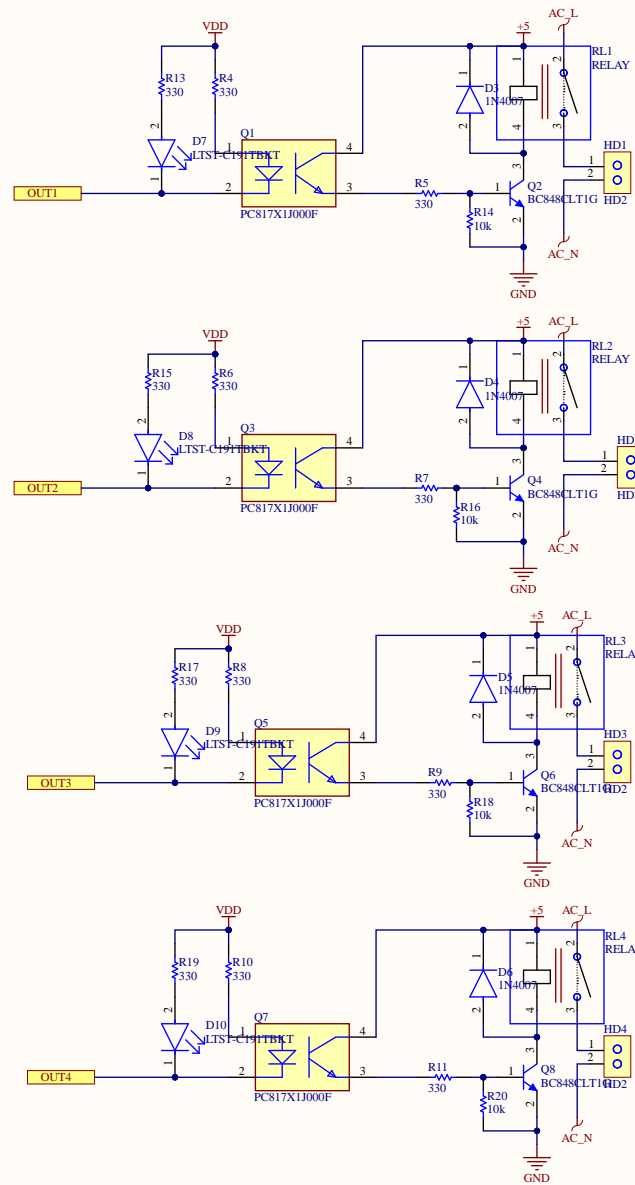
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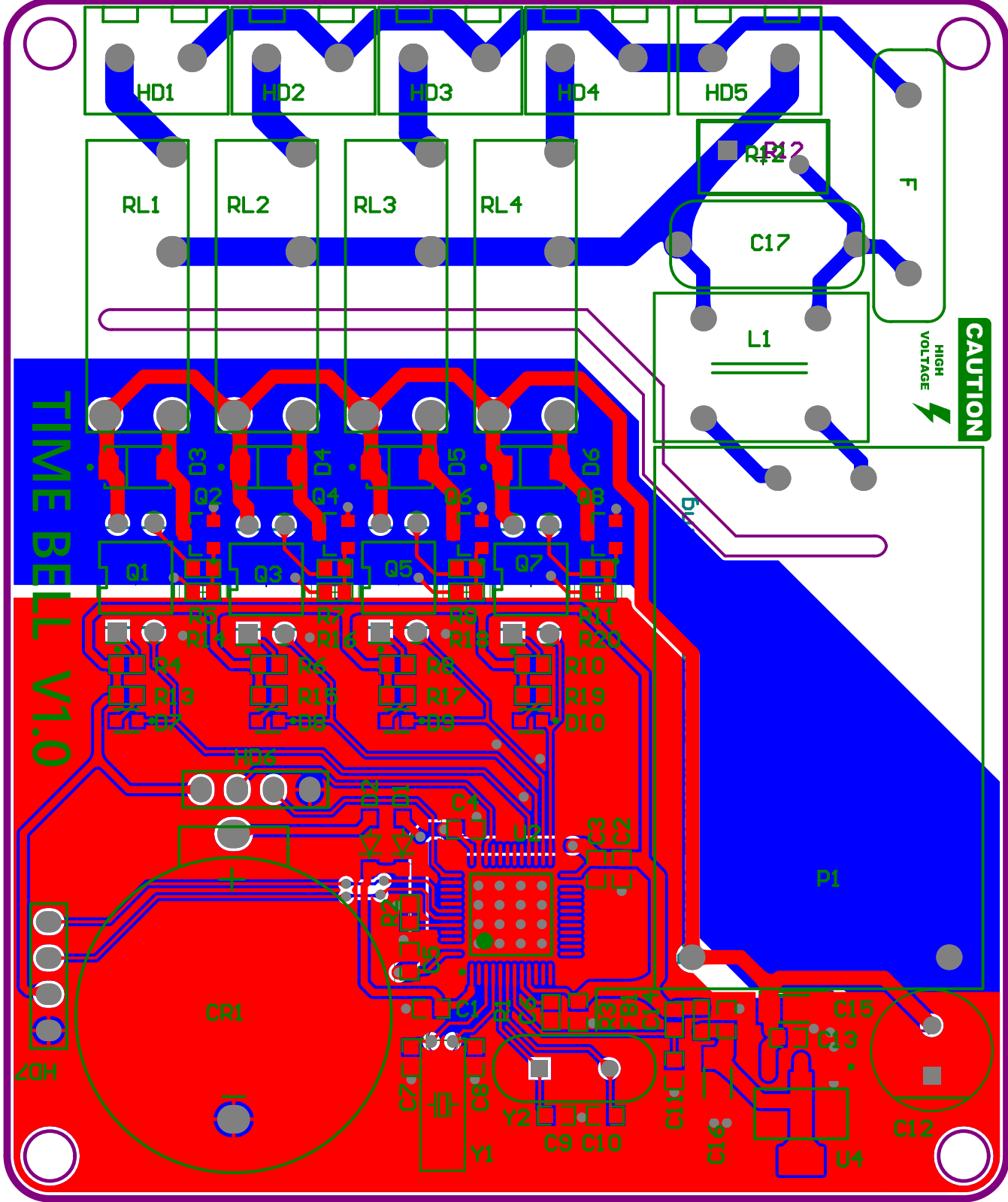
3

4



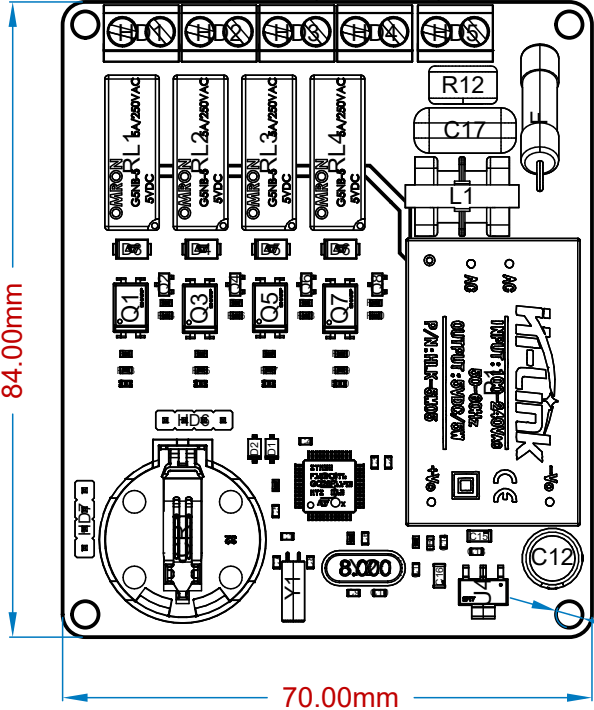
Title TIME BELL			N . S . T	 open hardware	 https://github.com/tung080827
Size: A4	Number: 3	Revision: 1.0			
Date: 8/4/2020	Time: 8:09:14 PM	Sheet 3 of 4			
Design by: N.S.T	Check by: N.S.T				



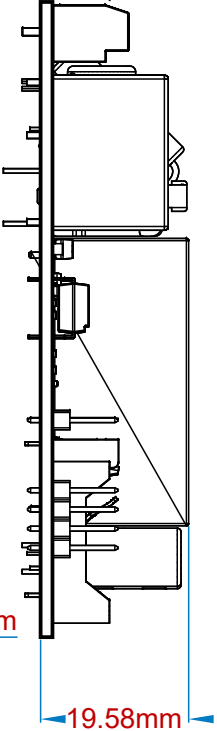


BOARD DIMENTIONS

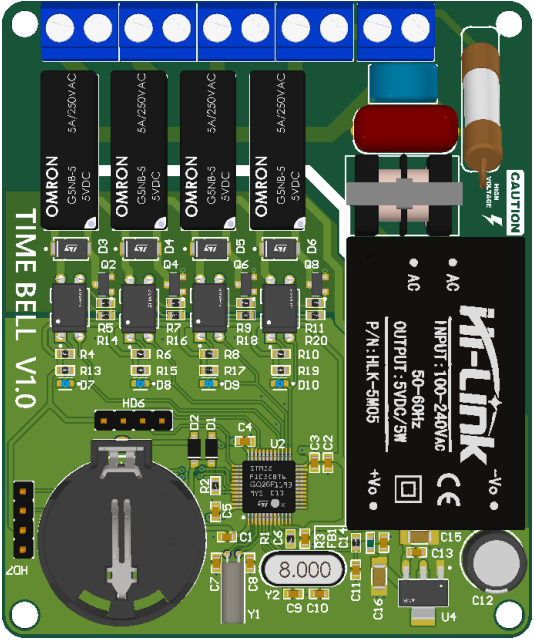
View from Top side (Scale 1:1)



View from Left side (Scale 1:1)

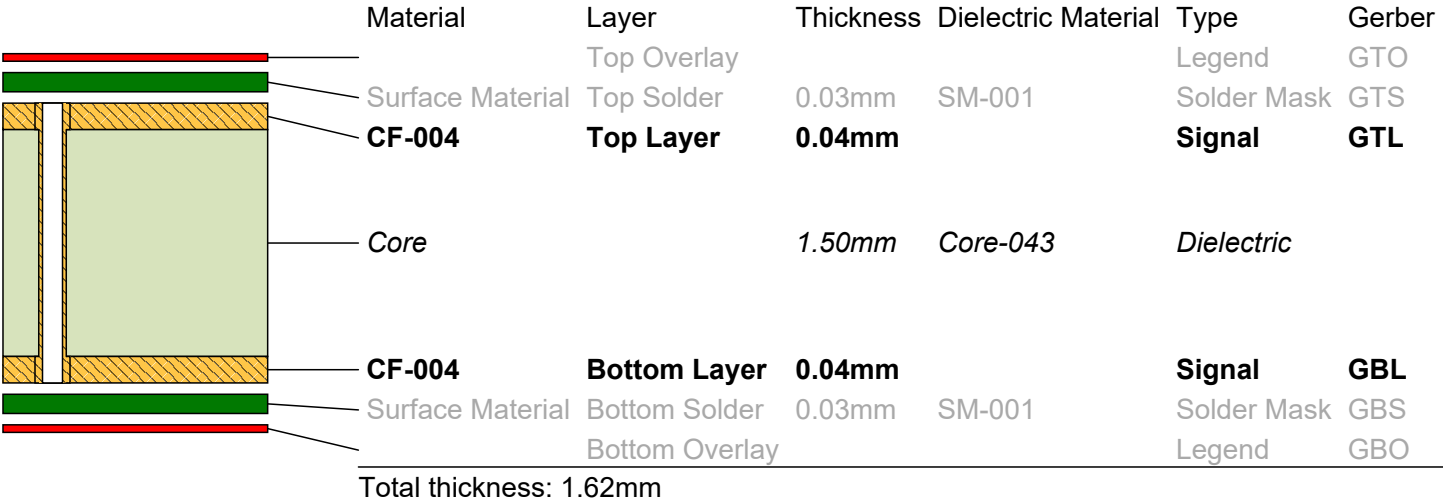


Realistic View



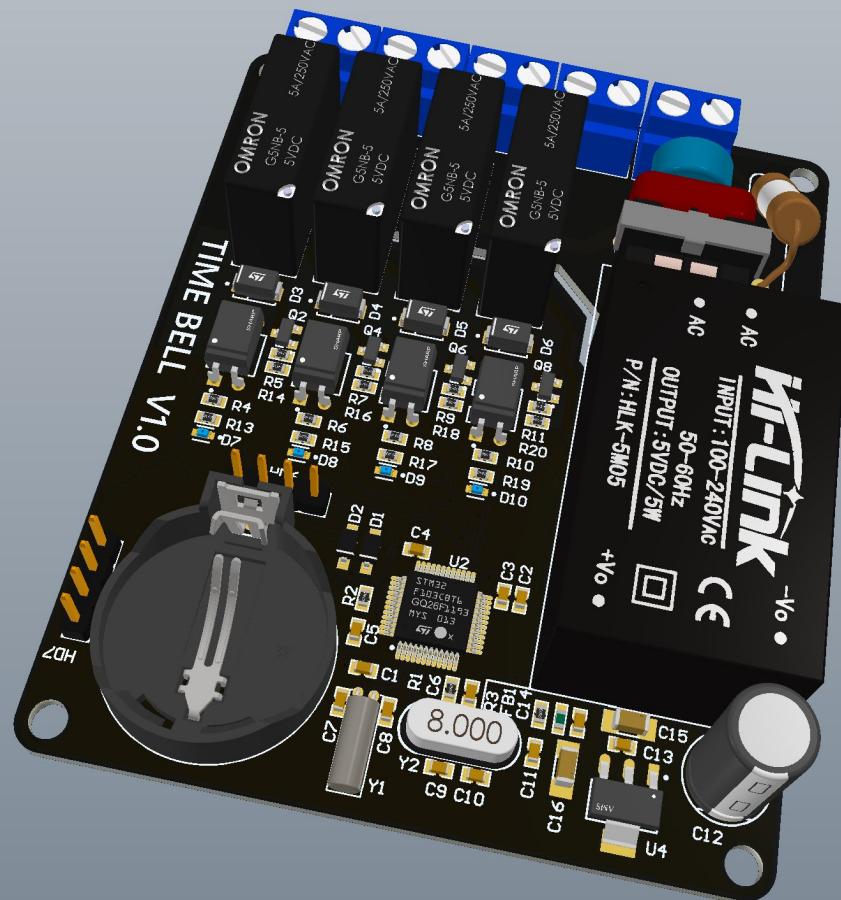
LAYER STACK, MATERIAL, DRILL SPECIFICATIONS

Layer Stack Legend



Drill Table

Symbol	Count	Hole Size	Plated	Hole Tolerance
⊙	55	0.30mm	Plated	
◇	2	0.45mm	Plated	
⊕	2	0.70mm	Plated	
○	2	0.75mm	Plated	
☆	18	0.85mm	Plated	
□	12	0.90mm	Plated	
▣	8	1.02mm	Plated	
⊗	26	1.10mm	Plated	
△	2	1.30mm	Plated	
127 Total				



Comment	Description	Designator	Footprint	LibRef	Quantity
100nF	Chip Capacitor, 0.1 uF, +/- 10%, 50 V, -55 to 125 degC, 0603 (1608 Metric), RoHS, Tape and Reel	C1, C3, C4, C5, C6, C11, C13, C14	0603 CAP	CMP-2100-03643-1	8
4.7uF	Chip Capacitor, 0.1 uF, +/- 10%, 50 V, -55 to 125 degC, 0603 (1608 Metric), RoHS, Tape and Reel	C2	0603 CAP	CMP-2100-03643-1	1
18pF	Chip Capacitor, 18 pF, +/- 5%, 50 V, -55 to 125 degC, 0603 (1608 Metric), RoHS, Tape and Reel	C7, C8, C9, C10	0603 CAP	CMP-2000-06099-1	4
220uF	CAP ALUM 220UF 20% 35V RADIAL	C12	FP-ESTG4-MFG	CMP-03015-000001-1	1
10uF	Cap Ceramic 10uF 25V X7R 10% Pad SMD 1206 +125°C Automotive T/R	C15, C16	FP-CGA5L-0_3-0_1-IPC_B	CMP-08246-002126-1	2
100nF/275V	Chip Capacitor, 0.1 uF, +/- 10%, 400 V, -55 to 125 degC, 0603 (1608 Metric), RoHS, Tape and Reel	C17	CAP 12.5mm Pitch	CMP-2100-03643-1	1
CR2032 Holder		CR1	CR2032	CR2032	1
B5819W	Switching Diode, 2-Pin SOD-323, Pb-Free, Tape and Reel	D1, D2	SOD123	CMP-1054-00068-1	2
1N4007	DIODE GEN PURP 600V 1A SMA	D3, D4, D5, D6	FP-SMA-MFG	CMP-12188-000002-1	4
LTST-C191TBKT	LED BLUE CLEAR CHIP SMD	D7, D8, D9, D10	FP-LTST-C191TBKT-MFG	CMP-22017-000008-1	4
0.5A		F	FUSE 20mm	FUSE	1
BLM18PG471SN1D	Chip Ferrite Bead for Power Lines, 470 Ohm, 1000 mA, -55 to 125 degC, 1.6 x 0.8 x 0.95 mm SMD, Tape and Reel	FB1	0603 Ferrite	CMP-0686-00587-2	1
HD2		HD1, HD2, HD3, HD4, HD5	HD2 5.08mm	HD2	5
HD4		HD6, HD7	HD4x1 2.54mm	HD4x1	2
U9.8		L1	INDUCTOR FILTER U9.8	INDUCTOR FILTER	1
HiLink PSU		P1	HLK-5M05	HiLink PSU	1
PC817X1J000F	OPTOISOLATOR 5KV TRANS 4DIP	Q1, Q3, Q5, Q7	FP-PC817X1J000F-MFG	CMP-65434-000003-1	4
BC848CLT1G	General Purpose Transistor, NPN Silicon, 3-Pin SOT-23, Pb-Free, Tape and Reel	Q2, Q4, Q6, Q8	SOT23-3	CMP-1048-00721-1	4
0R		R1	0603 RES	CMP-2000-03818-1	1
100k		R2	0603 RES	CMP-2000-03818-1	1
10k		R3, R14, R16, R18, R20	0603 RES	CMP-2000-03818-1	5
330		R4, R5, R6, R7, R8, R9, R10, R11, R13, R15, R17, R19	0603 RES	CMP-2000-03818-1	12
MOV-07D471KTR	VARISTOR 470V 1.2KA DISC 7MM	R12	FP-MOV-07D471KTR-MFG	CMP-07402-000006-1	1
RELAY		RL1, RL2, RL3, RL4	RELAY G5NB OMRON	RELAY 4PIN	4
STM32F103C8T6	ARM Cortex-M3 32-bit MCU, 64 KB Flash, 20 KB Internal RAM, 37 I/Os, 48-pin LQFP, -40 to 85 degC, Tray	U2	STM-LQFP48	CMP-0237-00215-3	1
AMS1117-3.3	LDO Voltage Regulators 1A, 3.3V	U4	FP-AMS1117-IPC_C	CMP-209535-000001-1	1
AB26T-32.768KHZ	Crystal, 12.5 pF, 32.768 KHz, -10 to 60 degC, 2-Pin THD, RoHS, Bulk	Y1	Crystal 3x8	CMP-2000-05723-1	1
FOXSLF/080-20	Resistance Weld Thru Hole Crystal, 8 MHz, -20 to 70 degC, 2-Pin THD, RoHS, Bulk	Y2	CRYSTAL HC49	CMP-1749-00002-1	1