Schematic Sheet

Signal labels (top-left connectors)	
SU1	UART4_TX
SU2	UART2_TX
SU3	UART1_TX
SU4	UART5_TX
SU5	UART3_TX

VDD

VDD1
VDD2
VDD3
VDD4
VDD5
VDD6
VDD7
VDD8
VDD9
VDD10

GND1
GND2
GND3
GND4
GND5
GND6
GND7
GND8
GND9
GND10

GND

SD1	UART4_RX
SD2	UART2_RX
SD3	UART1_RX
SD4	UART5_RX
SD5	UART3_RX

U1 — STM32G0B1CEU6

VDDA

Pin	Name		Pin	Name	
1	PC13		49	EPAD	GND
2	PC14-OSC32_IN		48	PB9	UART3_RX
3	PC15-OSC32_OUT		47	PB8	UART3_TX
4	VBAT		46	PB7	
5	VREF+		45	PB6	
6	VDD/VDDA		44	PB5	
7	VSS/VSSA		43	PB4	
8	PF0-OSC_IN		42	PB3	UART5_TX
9	PF1-OSC_OUT		41	PD3	UART5_RX
10	PF2-NRST	NRST	40	PD2	
11	PA0	UART4_TX	39	PD1	
12	PA1	UART4_RX	38	PD0	
13	PA2	UART2_TX	37	PA15	ENABLE/PA15
14	PA3	UART2_RX	36	PA14-BOOT0	CLK_BOOT
15	PA4		35	PA13	DATA
16	PA5		34	PA12[PA10]	
17	PA6		33	PA11[PA9]	
18	PA7		32	PA10	UART1_RX
19	PB0		31	PC7	
20	PB1		30	PC6	
21	PB2		29	PA9	UART1_TX
22	PB10		28	PA8	NSLEEP/PA8
23	PB11		27	PB15	NFAULT/PB15
24	PB12		26	PB14	DIR/PB14
			25	PB13	STEP/PB13

VSSA

GND

X1

LED1

R1
270Ω

GND

J1

		Signal
1	1	CLK_BOOT
2	2	DATA
3	3	NRST

C5
100nF

R3
10kΩ

GND

VDDVDDA Coupling

VDD   VDDA

FB1
1   2

D1

C1
100nF

C2
4.7µF

R2

GND   VSSA

Vref Coupling

VDDA

C3
100nF

C4
1µF

VSSA

Tables 7-3 and 7-7 were taken from the DRV8424 datasheet
1 = connect to DVDD, 0 = connect to GND, Hi-Z = unconnected

Table 7-3. Microstepping Indexer Settings
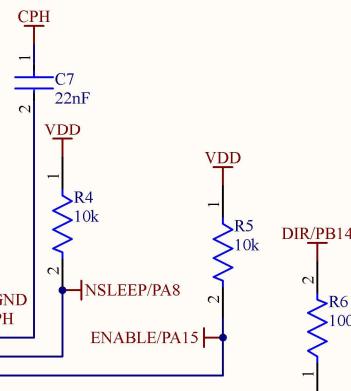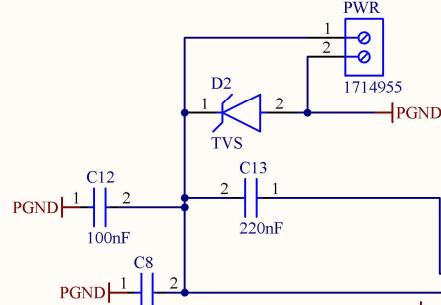
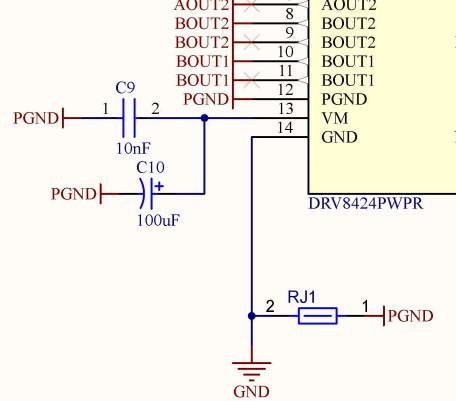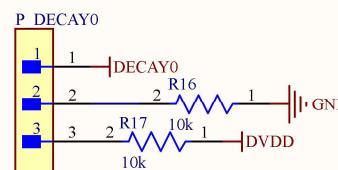| MODE0	MODE1	STEP MODE
0	0	Full step (2-phase excitation) with 100% current
0	330kΩ to GND	Full step (2-phase excitation) with 71% current
1	0	Non-circular 1/2 step
Hi-Z	0	1/2 step
0	1	1/4 step
1	1	1/8 step
Hi-Z	1	1/16 step
0	Hi-Z	1/32 step
Hi-Z	330kΩ to GND	1/64 step
Hi-Z	Hi-Z	1/128 step
1	Hi-Z	1/256 step
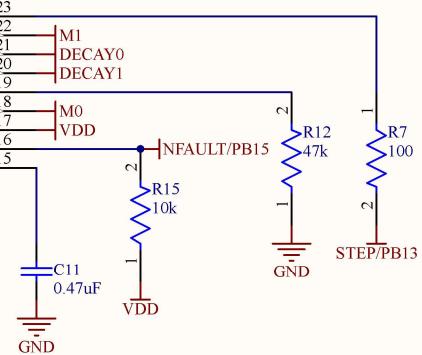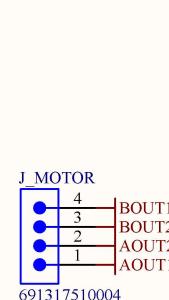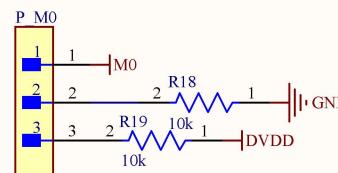
Table 7-7. Decay Mode Settings
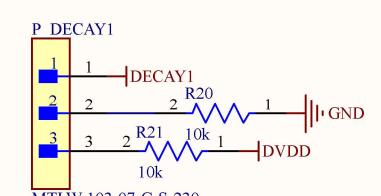
DECAY0	DECAY1	INCREASING STEPS	DECREASING STEPS
0	0	Smart tune Dynamic Decay	Smart tune Dynamic Decay
0	1	Smart tune Ripple Control	Smart tune Ripple Control
1	0	Mixed decay: 30% fast	Mixed decay: 30% fast
1	1	Slow decay	Mixed decay: 30% fast
Hi-Z	0	Mixed decay: 60% fast	Mixed decay: 60% fast
Hi-Z	1	Slow decay	Slow decay

DRV1 — DRV8424PWPR

Pin	Name		Pin	Name
1	VCP		EPAD	EPAD
2	VM		28	CPH
3	PGND		27	CPL
4	AOUT1		26	NSLEEP
5	AOUT1		25	ENABLE
6	AOUT2		24	DIR
7	AOUT2		23	STEP
8	BOUT2		22	M1
9	BOUT2		21	DECAY0
10	BOUT1		20	DECAY1
11	BOUT1		19	TOFF
12	PGND		18	M0
13	VM		17	VREF
14	GND		16	NFAULT
			15	DVDD

Components:
- PWR 1714955
- D2 TVS
- C12 100nF
- C13 220nF
- C8 10nF
- C9 10nF
- C10 100uF
- C7 22nF
- R4 10k
- R5 10k
- R6 100
- R7 100
- R12 47k
- R15 10k
- C11 0.47uF
- RJ1
- NSLEEP/PA8
- ENABLE/PA15
- DIR/PB14
- STEP/PB13
- NFAULT/PB15

J_MOTOR — 691317510004
- 4 BOUT1
- 3 BOUT2
- 2 AOUT2
- 1 AOUT1

P_DECAY0 — MTLW-103-07-G-S-230
- 1 DECAY0
- 2 — R16 — GND
- 3 — R17 10k — DVDD

P_DECAY1 — MTLW-103-07-G-S-230
- 1 DECAY1
- 2 — R20 — GND
- 3 — R21 10k — DVDD

P_M0 — MTLW-103-07-G-S-230
- 1 M0
- 2 — R18 — GND
- 3 — R19 10k — DVDD

P_M1 — TSW-104-08-T-S
- R22 10k — GND
- R23 10k — DVDD
- M1
- R24 330k — GND

Module:	*H01R0*	Title:	H17R0_Frontend.SchDoc
Description:	RGB LED	Revision:	1
		Size:	Letter
Date: 11/13/2025		Time: 5:49:27 PM	Sheet 2 of 3

HEXABITZ
www.hexabitz.com