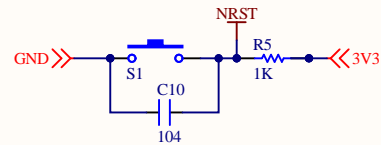
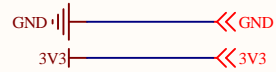
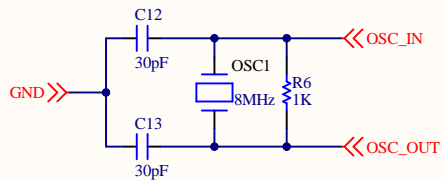
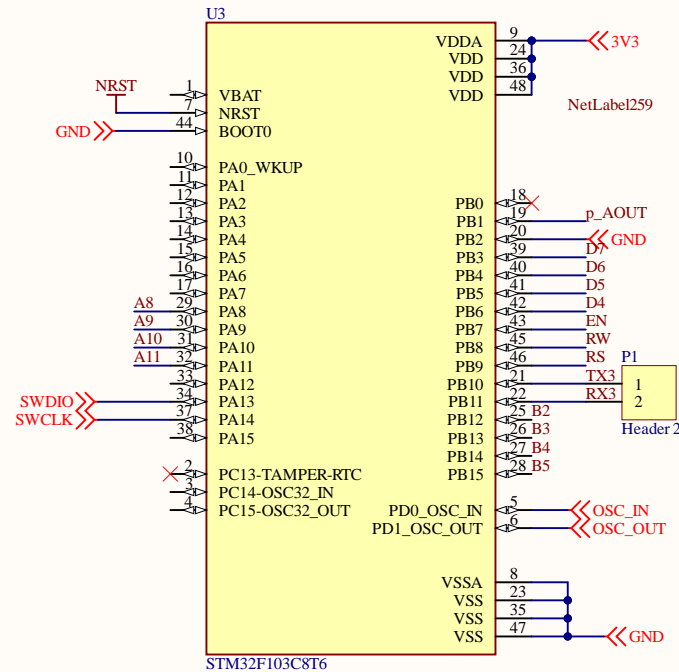


Title		
Size	Number	Revision
A4		
Date:	11/24/2024	Sheet of
File:	C:\Users\...\Sheet3.SchDoc	Drawn By:

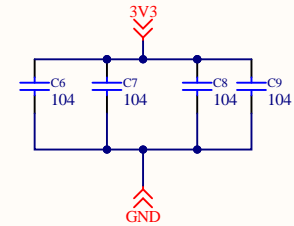
## Khởi reset

HIGH SPEED  
EXTERNAL CRYSTAL

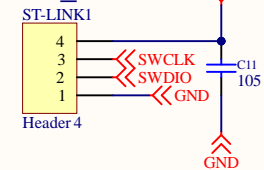
## Khởi điều khiển trung tâm



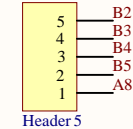
## Supply Filter



## ST\_LINK



## P2



Title		
Size	Number	Revision
A4		
Date:	11/24/2024	Sheet of
File:	C:\Users\...\MCU.SchDoc	Drawn By:

LCD1

JDC1

C4U2

BK\_PH\_SENSOR1

C5

OSC1

C12

U3

ST-LINK1

R5C10R6

C8

C13

U1

R2

VR2

J1

R3

C2

R1

C1

R4

S1

C3

VR1

P1

P2

Comment	Description	Designator	Footprint	LibRef	Quantity
JP4	Connector 4	BK_PH_SENSOR1	CON4	Con4	1
100nF	Capacitor	C1, C2, C3, C4, C5	C2012-0805	Capacitor	5
104	Capacitor	C6, C7, C8, C9	C1608-0603	Capacitor	4
104	Cap SMD	C10	SM-0805	CM	1
105	Capacitor	C11	C1608-0603	Capacitor	1
30pF	Cap SMD	C12, C13	SM-0805	CM	2
JP3	Connector 3	DS1	CON3	Con3	1
BNC5 - pH_Probe	BNC Connector Jack, Female Socket 50Ohm Panel Mount, Through Hole, Right Angle Solder	J1	SAMTEC_BNC5-J-P- GN-RA-BH2D	BNC5-J-P-GN-RA- BH2D	1
Jac DC	Jac DC input	JDC1	DC-IN	DCIN	1
LCD16x2A	LCD display 16 char, 2 line	LCD1	LCD16X2	LCD16x2	1
Crystal2	Quarz Crystal	OSC1	Crystal.HC49/USxx	Crystal2	1
Header 2	Header, 2-Pin	P1	Header 2	Header 2	1
Header 5	Header, 5-Pin	P2	Header 5	Header 5	1
RESISTOR	Resistor	R1, R2, R3, R4, R5, R6	R-0805	RESISTOR	6
SW-SMD	Switch	S1	SW-SMD	SW-SMD	1
Header 4	Header, 4-Pin	ST-LINK1	Header 4	Header 4	1
TLE2142	Low-Power Dual Operational Amplifier	U1	SOIC8	LM2904	1
AMS1117-3.3	Sot223/Pkg 1-Amp 3.3- Volt Low Drop Out Voltage Regulator	U2	SOT229P700X180-4N	AMS1117-3.3	1
STM32F103C8T6	ARM®Cortex®M3 STM32F1 Microcontroller IC 32- Bit 72MHz 64KB (64Kx 8) FLASH 48-LQFP (7x7)	U3	QFP50P900X900X160- 48N	STM32F103C8T6	1
Variable Resistor	Variable Resistor	VR1	VRes-R	Variable Resistor	1
	Variable Resistor	VR2	VRes-C	Variable Resistor	1