

Nixie Clock Main Board

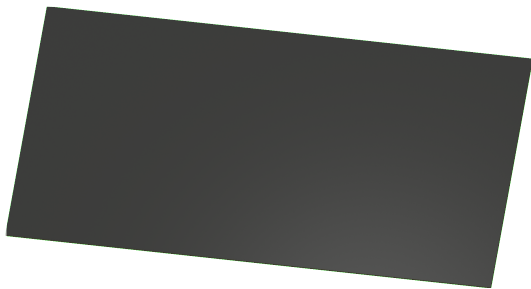
Variant: DRAFT

2026-03-13

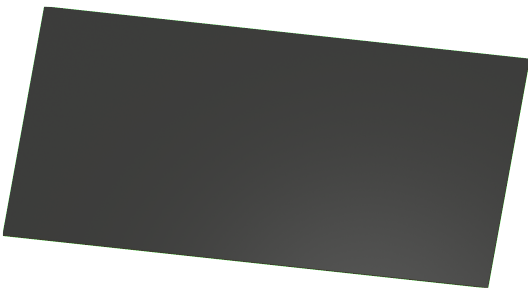
Rev + (Unreleased)

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TOP VIEW



BOTTOM VIEW



NOTES

Comment

Not fitted components are marked as **X**

DRAFT - Very early stage of schematic, ignore details.

PRELIMINARY - Close to final schematic.

CHECKED - There shouldn't be any mistakes. Contact the engineer if you find any.

RELEASED - A board with this schematic has been sent to production.

Date: 13-Mar-2026

DESIGN CONSIDERATIONS

DESIGN NOTE:
Example text for informational design notes.

DESIGN NOTE:
Example text for debug notes.

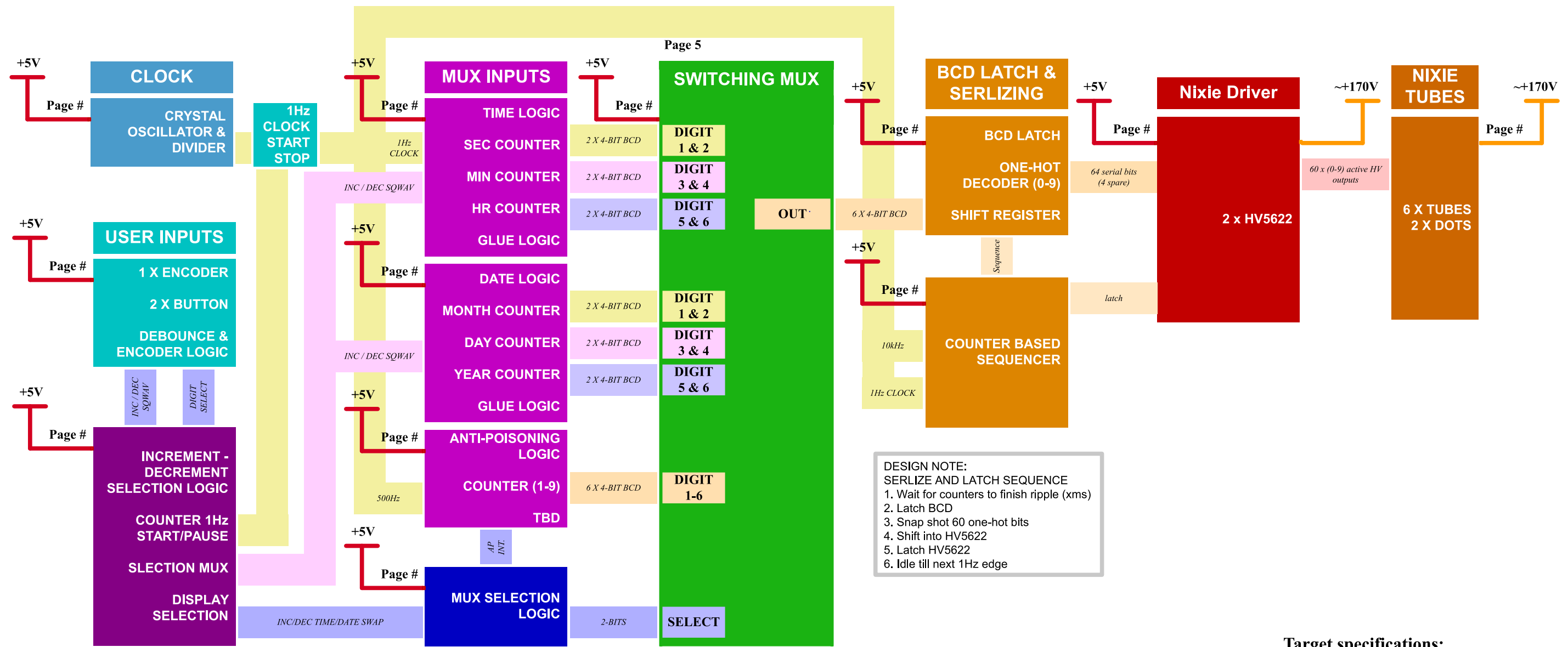
DESIGN NOTE:
Example text for cautionary design notes.

DESIGN NOTE:
Example text for critical design notes.

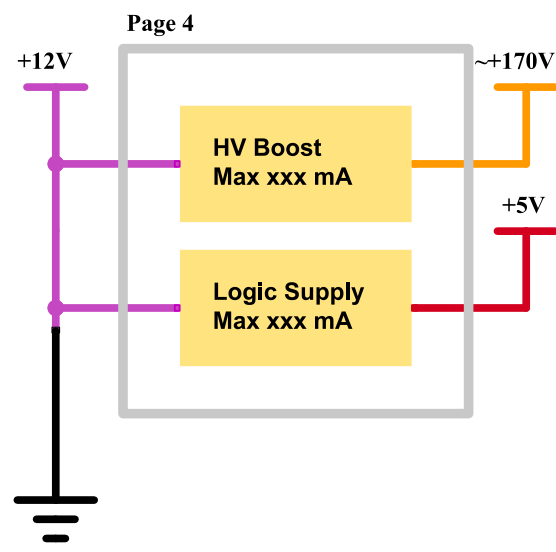
LAYOUT NOTE:
Example text for critical layout guidelines.

	Comments:	Company: Company Name	Variant: DRAFT	Git Hash: 1d094c6
	Sheet Title:	Board Name: Nixie Clock Main Board	Project Name: Nixie Tube Clock	
	Sheet Path: /	File Name: Nixie_Tube_Clock.kicad_sch	Designer: Aidan Brzezinski	Date: 2025-01-12
		Reviewer:	Size: A3	Revision: + (Unreleased)
			Sheet: 1 of 10	

[2] Block Diagram



DESIGN NOTE:
SERLIZE AND LATCH SEQUENCE
1. Wait for counters to finish ripple (xms)
2. Latch BCD
3. Snap shot 60 one-hot bits
4. Shift into HV5622
5. Latch HV5622
6. Idle till next 1Hz edge



DESIGN NOTE:
TIMER FOR AP CYCLE HARD SET ~1HR NOT SURE. INCLUDE BUTTON SOMEWHERE, NOT DIRECT USER INPUT.

ENCODER FOR INCRMENT DECRMENT, 1 BUTTON FOR CYCLING THROUGH DIGITS, 1 BUTTON FOR SHOWING DATE ~15 SECONDS.

FOR INCREMENT - DECREMENT AN ENCODER INC. AND DEC. AND CYCLE BUTTON. FIRST THE CYCEL BUTTON WILL PAUSE THE 1Hz CLOCK, THEN THE CYCLE BUTTON WILL INCREMENT A COUNTER THAT WILL GO TO A MUX SELECT THAT CHANGES BTWEEN: SS, MM, HH, (AT THIS POINT THE DISPLAY WILL SWAP TOO)MM, DD, YY, THEN ENABLE THE 1Hz CLOCK AGAIN(AND SWAP BACK).

THEN EACH INC, DEC, IS PASSED TROUGH TO THE RESPECTIVE COUNTER AND PUT INTO THE INCREMNT OR DECRMENT INPUT. THE INCRMENT WILL NEED TO BE AND WITH THE RESPECTIVE INCREMNT FOR THAT COUNTER.

IMPORTANT: A COUNTER SHOULD NEVER RECEIVE AN INCREMNT AND DECREMENT AT THE SAME TIME.

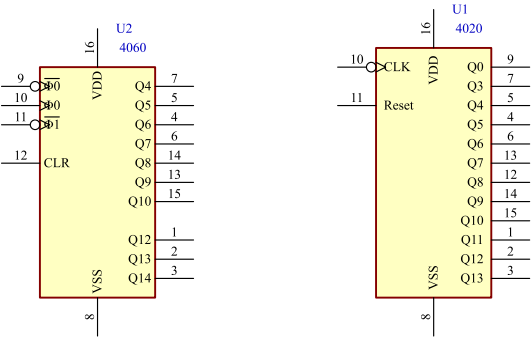
Target specifications:	
Input voltage:	?? - ?? V
Spec 2	??
Spec 3	??
Spec 4	??

Comments:	Company:		Variant:	Git Hash:
	Company Name		DRAFT	1d094c6
	Board Name:		Project Name:	
Sheet Title:	File Name:	Designer:	Date:	Revision:
Block Diagram	Block Diagram.kicad_sch	Aidan Brzezinski	2025-01-12	+ (Unreleased)
Sheet Path:	Reviewer:		Size:	Sheet:
/Block Diagram/			A3	2 of 10

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A	[3] Project Architecture							
B	Description	Clock - Oscillator & Divider Page 4 File: Clock - Oscillator & Divider.kicad_sch		MUX Inputs - Time Logic Page 5 File: Section B - Title B.kicad_sch		Switching MUX Page 5 File: Switching MUX.kicad_sch		
C		MUX Inputs - Date Logic Page 5 File: MUX Inputs - Date Logic.kicad_sch						
D		MUX Inputs - Anti-Poisoning Logic Page 5 File: MUX Inputs - Anti-Poisoning Logic.kicad_sch						
E								
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		Nixie Clock Main Board			Nixie Tube Clock		
	Sheet Title:	File Name:		Designer:	Date:	Revision:	
Project Architecture	Project Architecture.kicad_sch		Aidan Brzezinski	2025-01-12	+ (Unreleased)		
Sheet Path:			Reviewer:	Size:	Sheet:		
/Project Architecture/				A3	3 of 10		

[4] Clock



Block Description

LAYOUT NOTE:
blablabla

DESIGN NOTE:
blablabla

Comments:

AN5346
STM32G474 Datasheet p.81
J. Pieper ADC investigation

Company:

Company Name

Variant:

DRAFT

Git Hash:

1d094e6

Board Name:

Nixie Clock Main Board

Project Name:

Nixie Tube Clock

Sheet Title:

Clock - Oscillator & Divider

File Name:

Clock - Oscillator & Divider.kicad_sch

Designer:

Aidan Brzezinski

Date:

2025-01-12

Revision:

+ (Unreleased)

Sheet Path:

/Project Architecture/Clock - Oscillator & Divider/

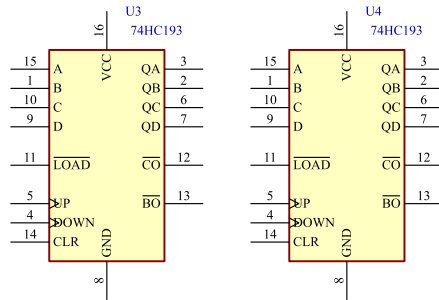
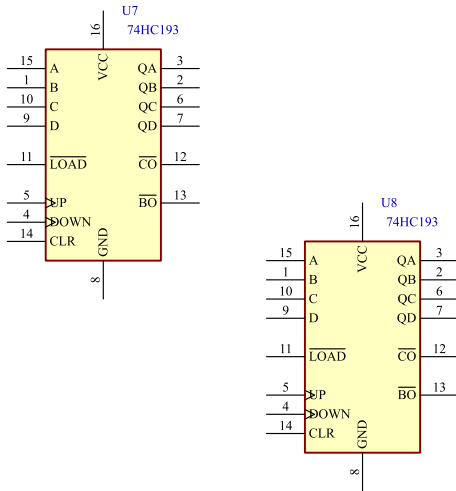
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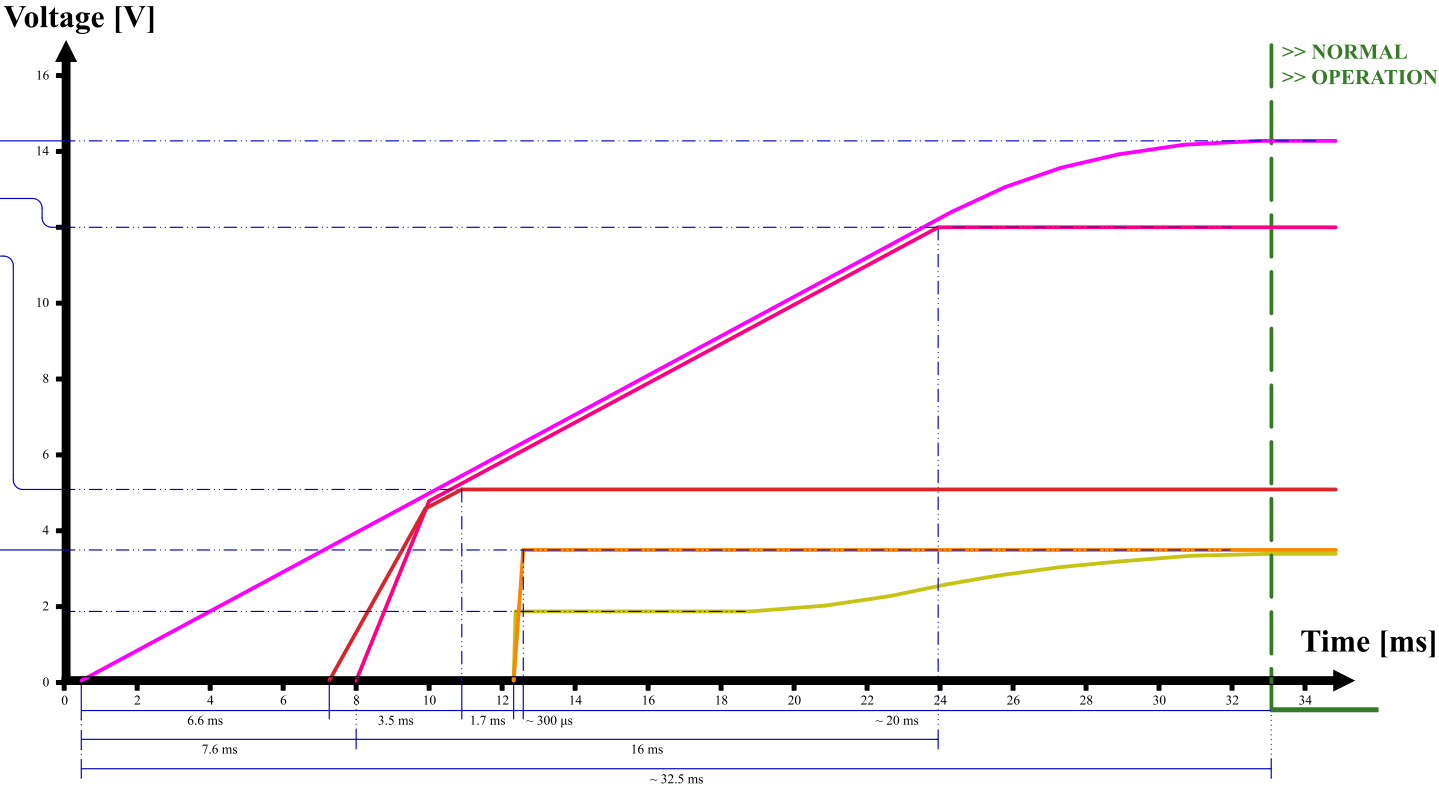
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						Sheet Title: MUX Inputs - Anti-Poisoning Logic	File Name: MUX Inputs - Anti-Poisoning Logic.kicad_sch Designer: Aidan Brzezinski	Date: 2025-01-12 Revision: + (Unreleased)			
						Sheet Path: /Project Architecture/MUX Inputs - Anti-Poisoning Logic/	Reviewer:	Size: A3 Sheet: 8 of 10			
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						Sheet Path: /Project Architecture/MUX Inputs - Date Logic/	Reviewer:	Size: A3 Sheet: 10 of 10			
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[6] Power - Sequencing

NAME	SOURCE	LEVEL
+V??	??	? - ? ± ??%
+V??	??	? - ? ± ??%
+V??	??	? - ? ± ??%
+V??	??	? - ? ± ??%
+V??	??	? - ? ± ??%



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Power - Sequencing	Power - Sequencing.kicad_sch	Aidan Brzezinski	2025-01-12	+ (Unreleased)
Sheet Path:	Reviewer:	Size:	Sheet:	
/Power - Sequencing/		A4	6 of 10	

[7] Revision History					