

Nixie Clock Main Board

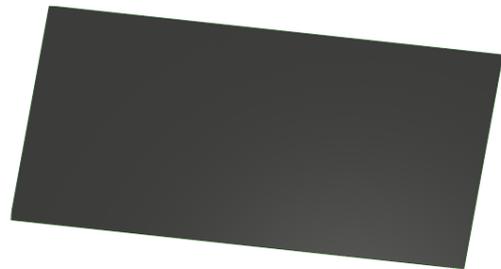
2026-03-19

Variant: DRAFT

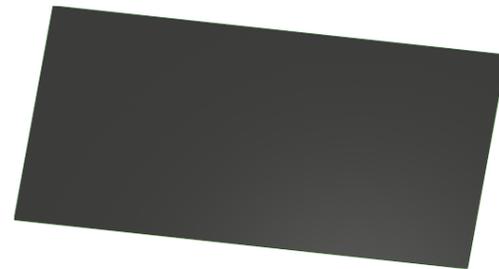
Rev + (Unreleased)

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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: 19-Mar-2026

DESIGN CONSIDERATIONS

DESIGN NOTE:
Example text for informational design notes.

DESIGN NOTE:
Example text for debug notes.

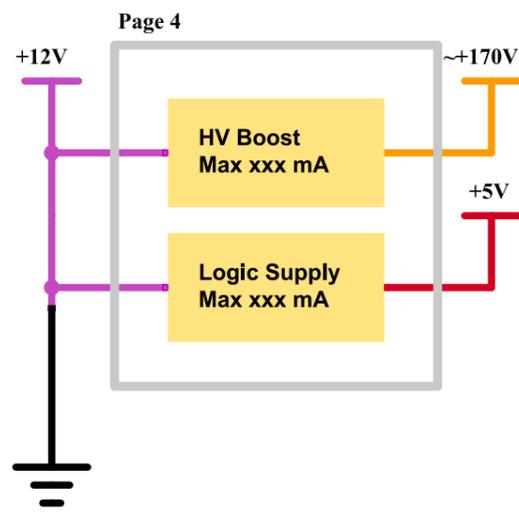
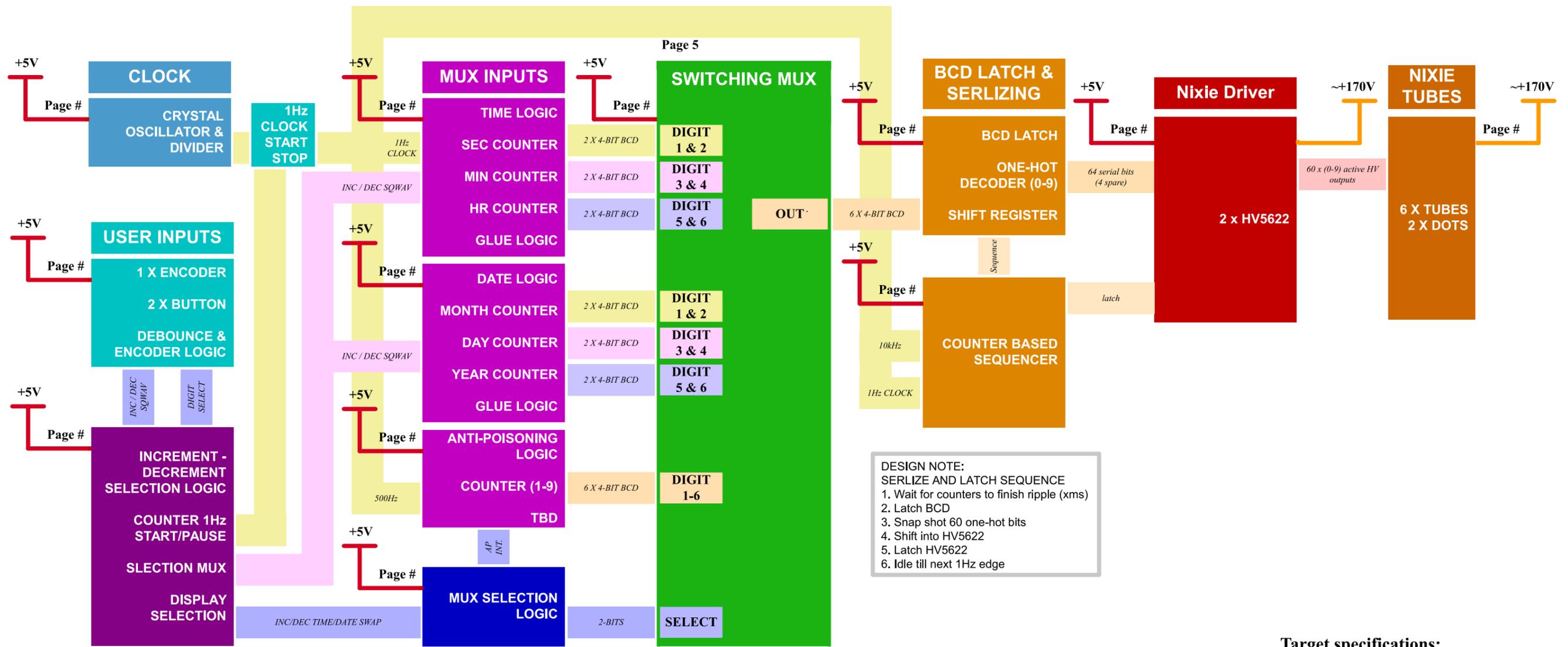
DESIGN NOTE:
Example text for cautionary design notes.

DESIGN NOTE:
Example text for critical design notes.

LAYOUT NOTE:
Example text for critical layout guidelines.

Comments:	Company:	Variant:	Git Hash:	
	Company Name	DRAFT	1d094e6	
	Board Name:	Project Name:		
Sheet Title:	File Name:	Designer:	Date:	Revision:
/	Nixie_Tube_Clock.kicad_sch	Aidan Brzezinski	2025-01-12	+(Unreleased)
Sheet Path:	Reviewer:	Size:	Sheet:	
/		A3	1 of 10	

[2] Block Diagram



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 BETWEEN: 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	??

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Sheet Title:	Board Name:	Project Name:		
	Block Diagram	Nixie Clock Main Board	Nixie Tube Clock	
Sheet Path:	File Name:	Designer:	Date:	Revision:
	/Block Diagram/	Block Diagram.kicad_sch	Aidan Brzezinski	2025-01-12
	Reviewer:	Size:	Sheet:	
		A3	2 of 10	

[3] Project Architecture

Description

Clock - Oscillator & Divider



File: Clock - Oscillator & Divider.kicad_sch

MUX Inputs - Time Logic



File: Section B - Title B.kicad_sch

Switching MUX



File: Switching MUX.kicad_sch

MUX Inputs - Date Logic



File: MUX Inputs - Date Logic.kicad_sch

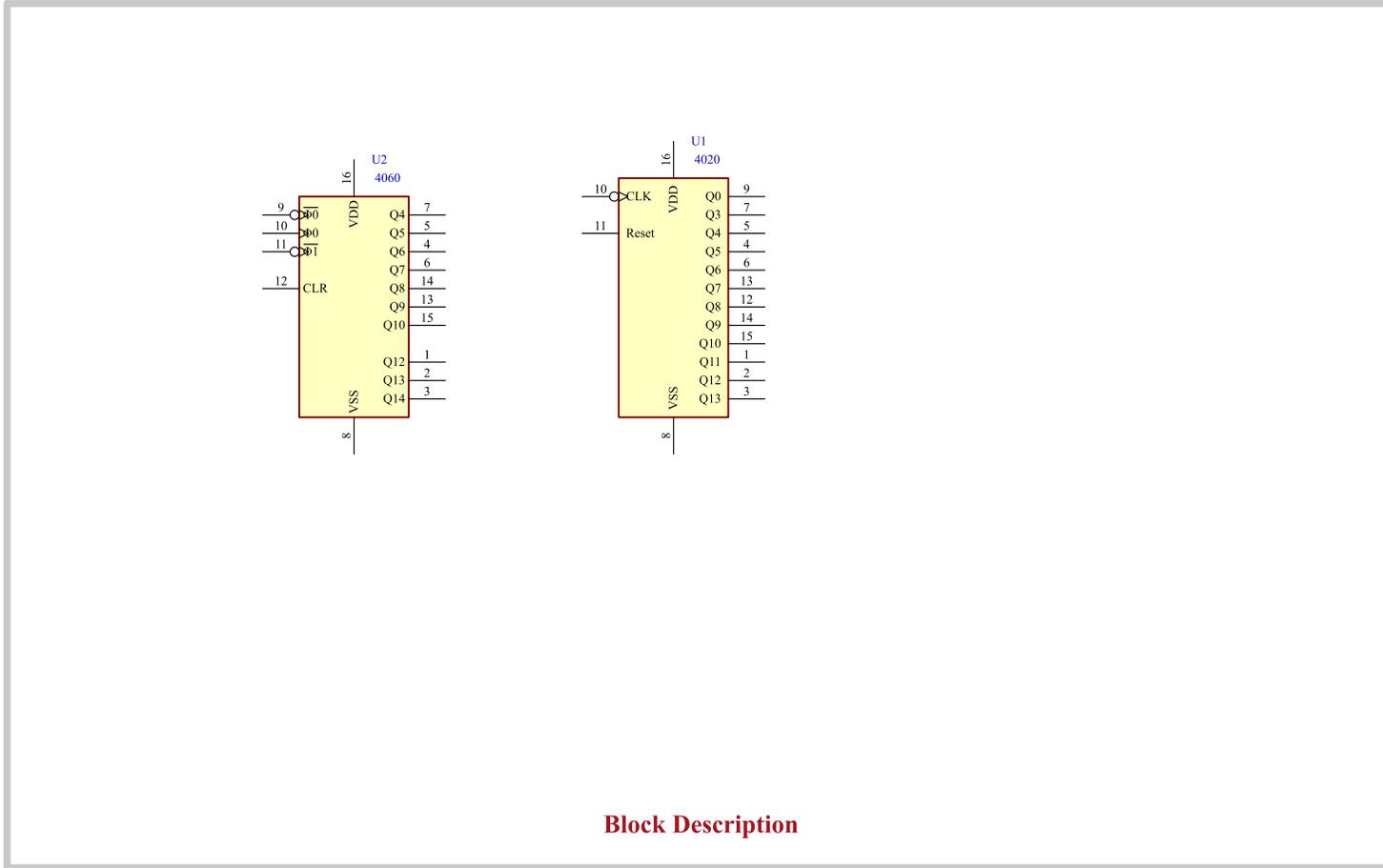
MUX Inputs - Anti-Poisoning Logic



File: MUX Inputs - Anti-Poisoning Logic.kicad_sch

	Comments:	Company: Company Name	Variant: DRAFT	Git Hash: 1d094e6
	Sheet Title: Project Architecture	File Name: Project Architecture.kicad_sch	Designer: Aidan Brzezinski	Date: 2025-01-12
	Sheet Path: /Project Architecture/	Reviewer:	Size: A3	Revision: + (Unreleased)
		Board Name: Nixie Clock Main Board	Project Name: Nixie Tube Clock	
			Sheet: 3 of 10	

[4] Clock



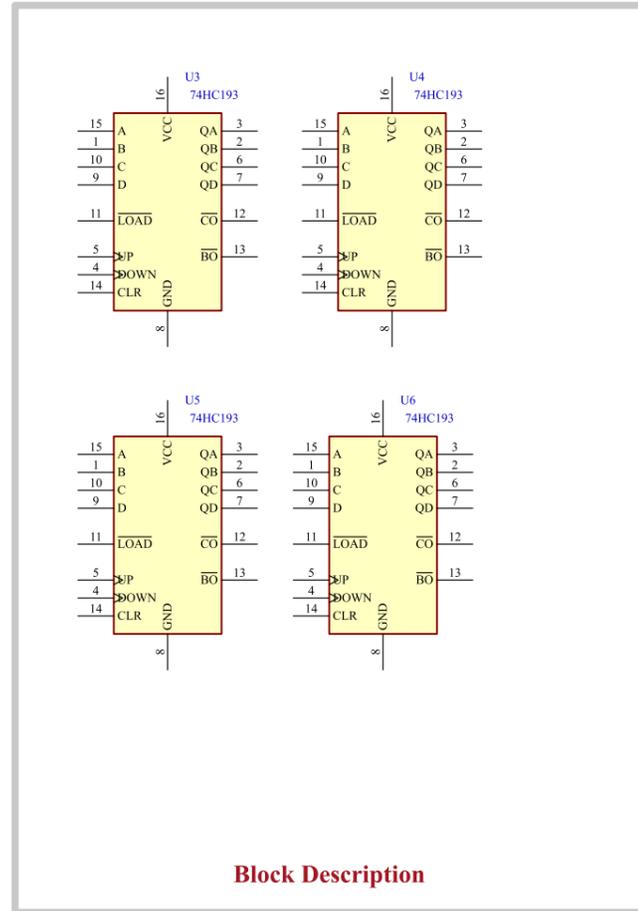
Block Description

LAYOUT NOTE:
blablabla

DESIGN NOTE:
blablabla

	Comments: AN5346 STM32G474 Datasheet p.81 J. Pieper ADC investigation	Company: Company Name	Variant: DRAFT	Git Hash: 1d094e6	
	Sheet Title: Clock - Oscillator & Divider	Board Name: Nixie Clock Main Board	Project Name: Nixie Tube Clock		
	Sheet Path: /Project Architecture/Clock - Oscillator & Divider/	File Name: Clock - Oscillator & Divider.kicad_sch	Designer: Aidan Brzezinski	Date: 2025-01-12	Revision: + (Unreleased)
			Reviewer:	Size: A4	Sheet: 4 of 10

[5] Sheet Title B



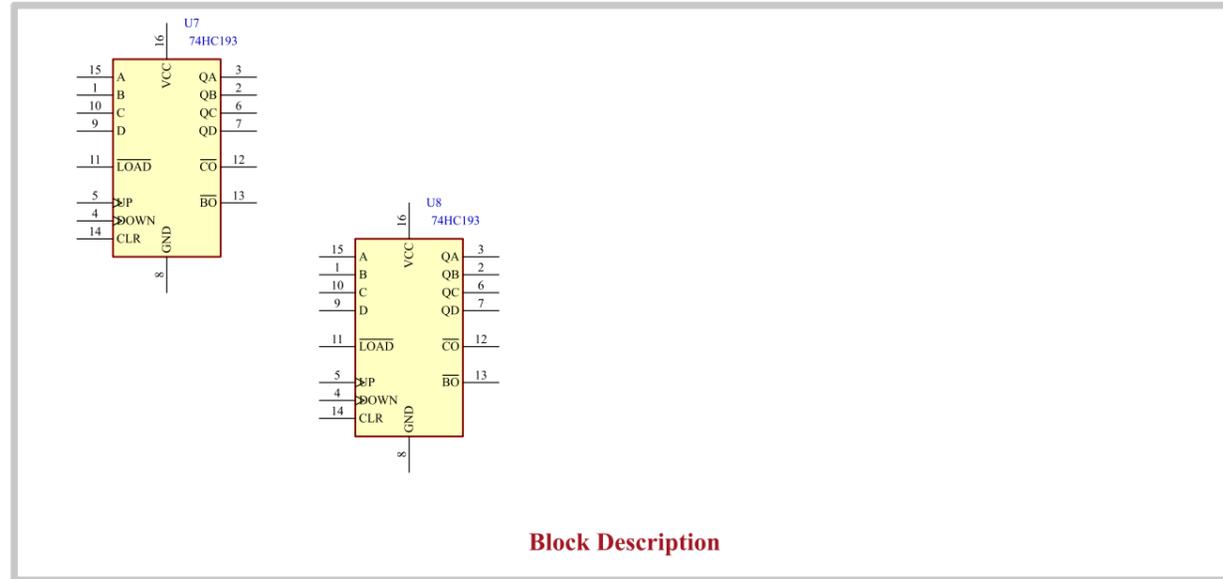
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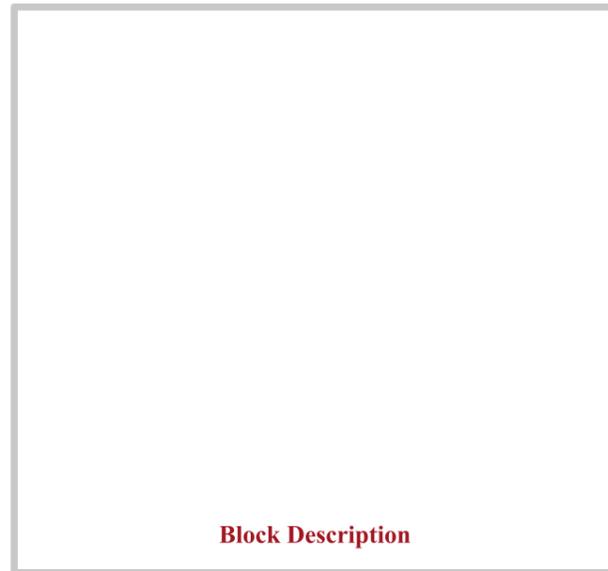
Block Description



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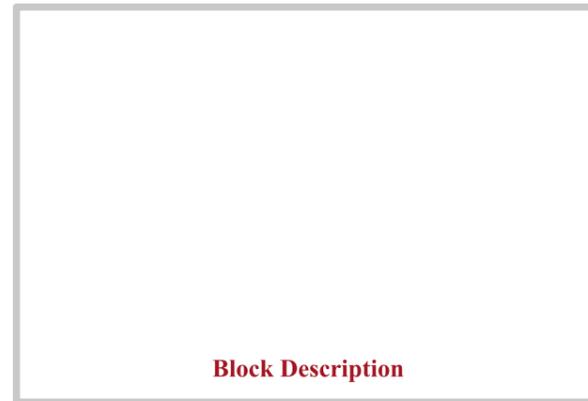
Block Description



Block Description



Block Description



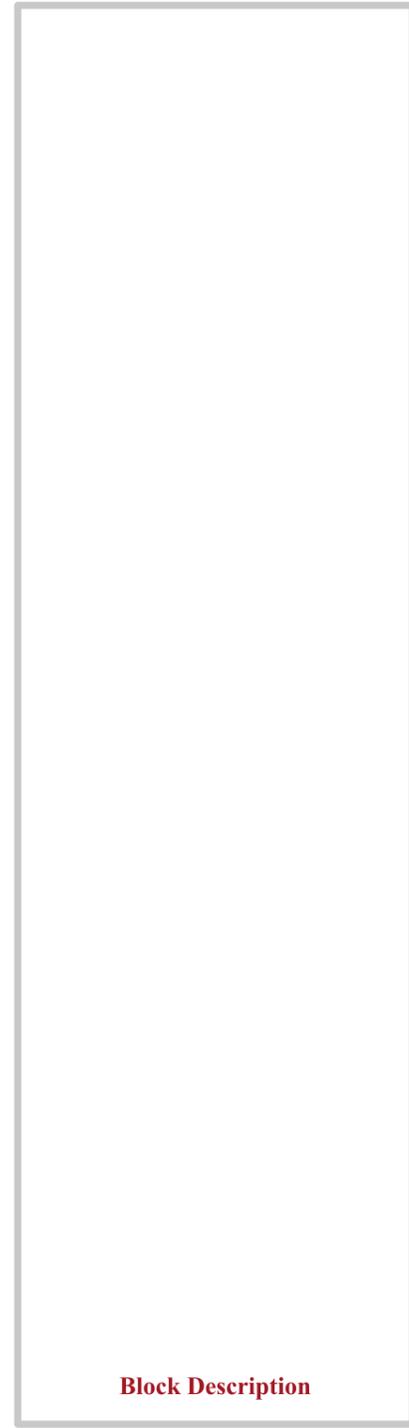
Block Description



Block Description



Block Description



Block Description

Comments: References: Flexible I/O worked examples Flexible I/O source configuration	Company: Company Name		Variant: DRAFT	Git Hash: 1d094e6
	Board Name: Nixie Clock Main Board		Project Name: Nixie Tube Clock	
Sheet Title: MUX Inputs - Time Logic	File Name: Section B - Title B.kicad_sch	Designer: Aidan Brzezinski	Date: 2025-01-12	Revision: + (Unreleased)
Sheet Path: /Project Architecture/MUX Inputs - Time Logic/		Reviewer:	Size: A3	Sheet: 5 of 10

[8] Sheet Title B

Block Description

	Comments:	Company:	Variant:	Git Hash:
	References: Flexible I/O worked examples Flexible I/O source configuration	Company Name: Board Name: Nixie Clock Main Board	DRAFT	1d094e6
	Sheet Title: MUX Inputs - Anti-Poisoning Logic	File Name: MUX Inputs - Anti-Poisoning Logic.kicad_sch	Designer: Aidan Brzezinski	Project Name: Nixie Tube Clock
Sheet Path: /Project Architecture/MUX Inputs - Anti-Poisoning Logic/		Date: 2025-01-12	Revision: + (Unreleased)	
		Reviewer:	Size: A3	Sheet: 8 of 10

[9] Sheet Title B

Block Description

	Comments:	Company:	Variant:	Git Hash:
	References: Flexible I/O worked examples Flexible I/O source configuration	Company Name: Board Name: Nixie Clock Main Board	DRAFT	1d094e6
	Sheet Title: Switching MUX	File Name: Switching MUX.kicad_sch	Designer: Aidan Brzezinski	Project Name: Nixie Tube Clock
Sheet Path: /Project Architecture/Switching MUX/		Date: 2025-01-12	Revision: + (Unreleased)	
		Reviewer:	Size: A3	Sheet: 9 of 10

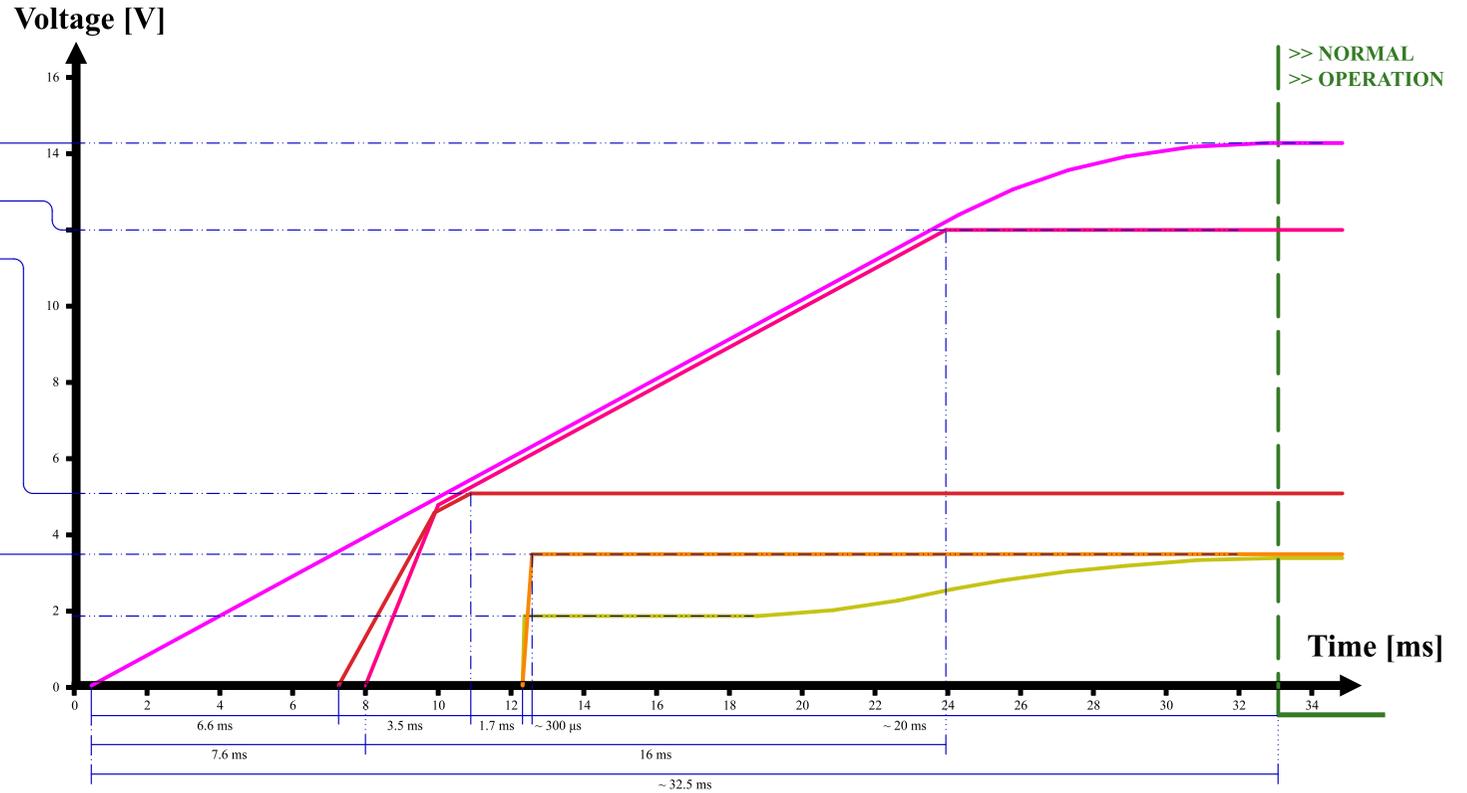
[10] Sheet Title B

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	Sheet Title: MUX Inputs - Date Logic	File Name: MUX Inputs - Date Logic.kicad_sch	Designer: Aidan Brzezinski	Project Name: Nixie Tube Clock
Sheet Path: /Project Architecture/MUX Inputs - Date Logic/		Date: 2025-01-12	Revision: + (Unreleased)	Size: A3
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[6] Power - Sequencing

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



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	Board Name:	Project Name:		
	Nixie Clock Main Board	Nixie Tube Clock		
Sheet Title:	File Name:	Designer:	Date:	Revision:
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

	Comments:	Company:	Variant:	Git Hash:
		Company Name	DRAFT	1d094e6
		Board Name:	Project Name:	
		Nixie Clock Main Board	Nixie Tube Clock	
Sheet Title:	File Name:	Designer:	Date:	Revision:
Revision History	Revision History.kicad_sch	Aidan Brzezinski	2025-01-12	+ (Unreleased)
Sheet Path:	Reviewer:	Size:	Sheet:	
/Revision History/		A4	7 of 10	