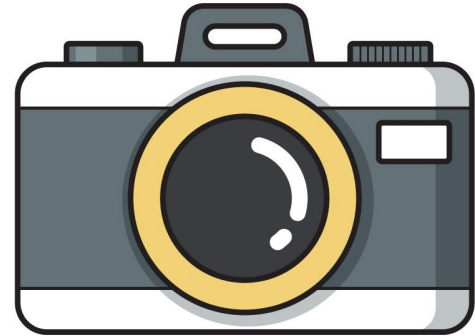


EEEC136 Digital Camera

Week 5 Project Update

Waylon, Cassandra, Viktor, Alina, Angel





Overview

1. Received PSoC boards and began assembly
2. Finalized Beta Prototype Design
3. Improved and optimized Matlab code
4. Translating Design into Altium. Intend to order PCB for photodiodes by mid next week
5. Filmed presentation video



Waylon

This week:

- Filmed and edited presentation video
- Updated Beta Prototype Circuit and designed in LTSpice
- Finalized BOM
- Calculated power consumption and submitted videos

Next week:

- Translate LTSpice design into Altium
- Place order for Photodiode and transimpedance amplifier board
- Place order for parts needed for PCB assembly
- Test PSoC board to fix ground issue
- Begin designs for physical enclosure.



Alina

This week:

- **Hardware** - Tested out the multiplexer on the breadboard with Viktor
- Researched other ways of what to include since multiplexer has problems. Researched mosfet and multiplexer parts.

Plans for next week:

- **PCB Design** - Send a PCB layout to the manufacturer
- **Hardware** - Test out the connections of the PCB custom PSoC



Viktor

This week:

- **Hardware** - Worked with the team to put the PsoC custom board together.
 - Worked with the team to conceptualize the last week feedback on the new final design.
 - Double checked multiplexer behavior with Alina.
- **Management** - Recorded the presentation video with the team and recorder the firmware video with Angel.

Plans for next week:

- **PCB Design** - Help the team on creating the Altium library with new parts.
- **Hardware** - Research and order new multiplexer for the final design.

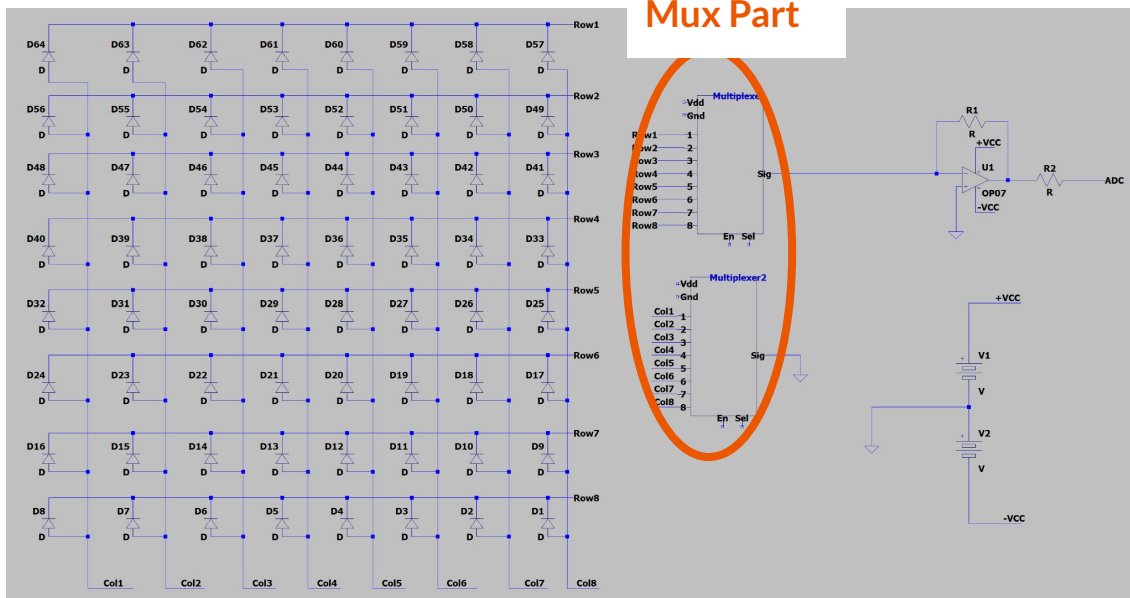
Angel

This week:

- **Hardware:** Created the schematic for the 8x8 camera sensor using LTSpice with Waylon. Made Multiplexer custom part in LTSpice.
 - Tested the new PsoC PCB board and worked with Viktor to assemble the parts.

Plans for next week:

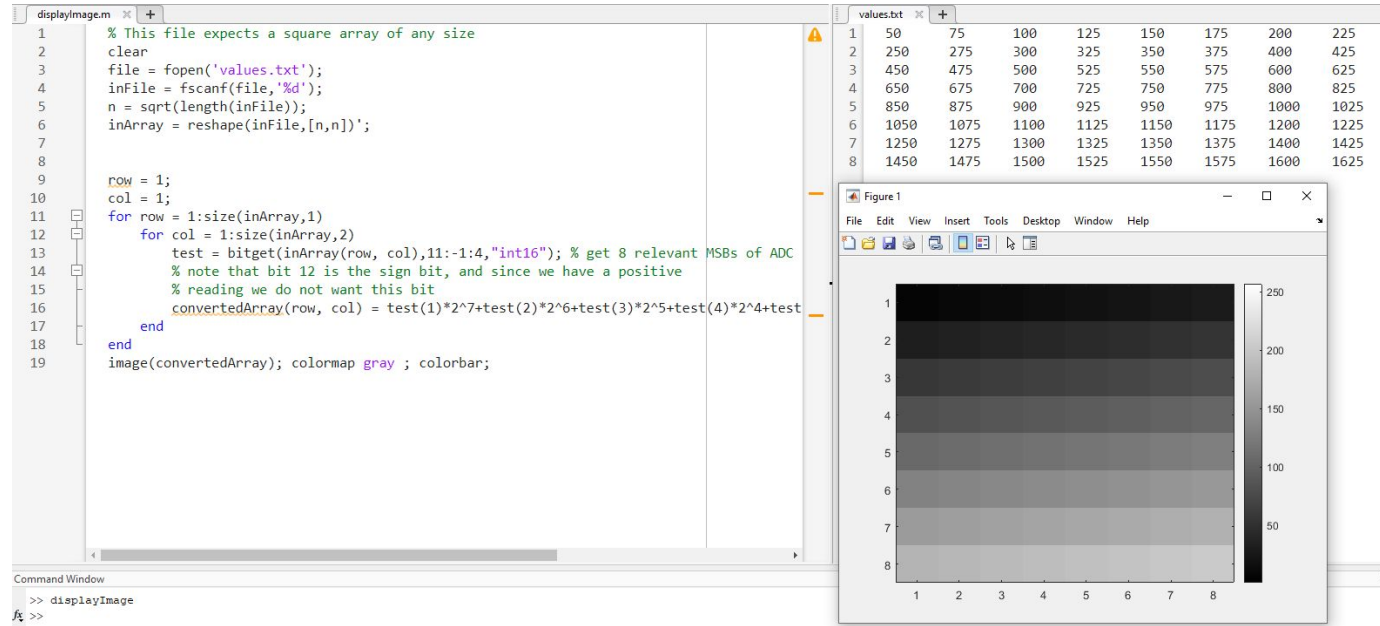
- **PCB Design** - Begin PCB Routing with this new schematic layout and send to manufacture.



Cassandra

This week:

- **Software** - Upgraded MATLAB image processing code to accept any size of (square) pixel array
- **Misc** - Assisted with board testing, design finalization, video recording

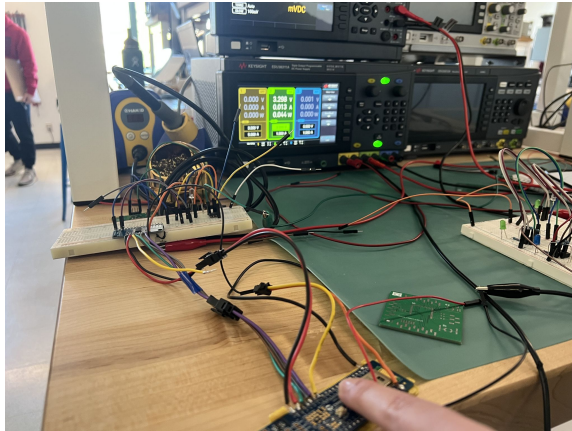


Plans for next week:

- **Software** - Further refine MATLAB code to process files generated by PuTTY
- **Hardware** - Assist with soldering and testing prototype boards and new components

Reference Images

**Fig 1.1 PsoC to Multiplexer
Testing Power Draw**



**Fig 1.2 Transimpedance
Op-Amps to Photodiodes
Testing Power Draw**

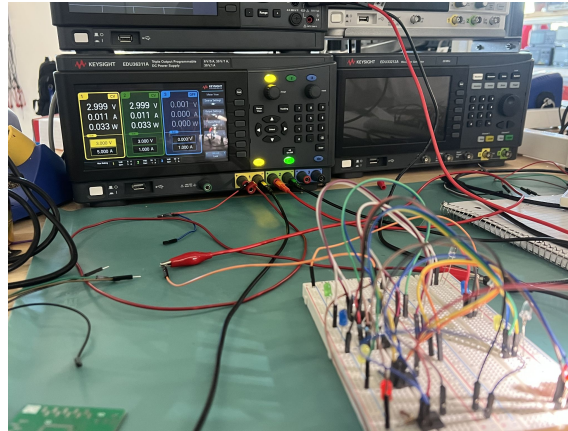
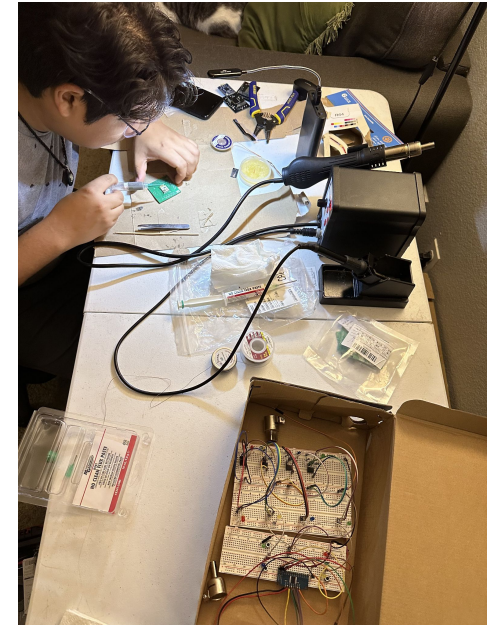
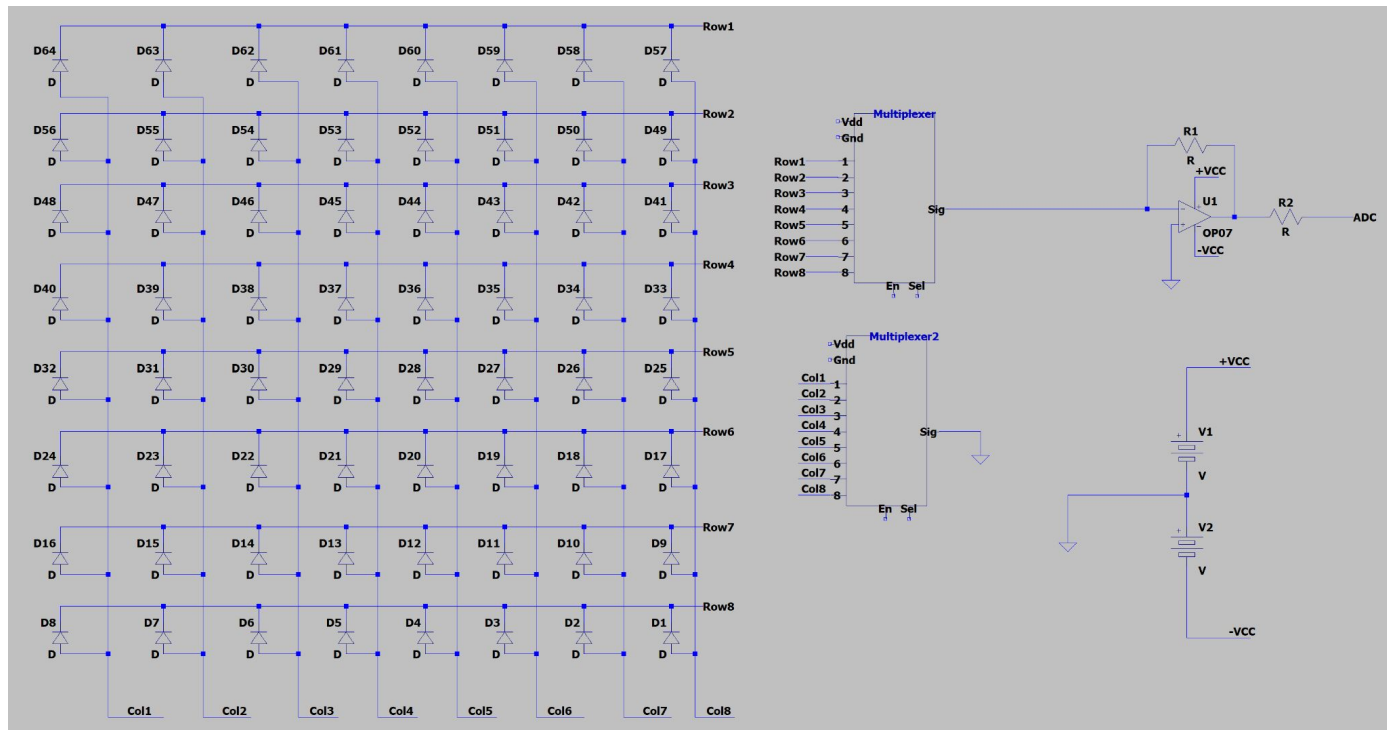


Fig 1.3 PsoC PCB Assembly



Reference Images

Fig 1.4 Sensor PCB Schematic



PROJECT TITLE	Digital Camera	COMPANY NAME	EEC136B
PROJECT MANAGER	Waylon	DATE	2/10/23

WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE	PHASE ONE												PHASE TWO												PHASE THREE															
							WEEK 1 - Jan 9-13					WEEK 2 - Jan 16-20					WEEK 3 - Jan 23-27					WEEK 4 - Jan 30-Feb 3				WEEK 5 - Feb 6 - 10				WEEK 6 Feb 13 - 17				WEEK 7 Feb 20 - 24				WEEK 8 Feb 27 - Mar 3								
							M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F	M				
1	Project Conception																																													
1.1	Concept Design	Casandra	1/9/23	1/27/23	18	100%																																								
1.1.1	Bill of Materials	Vic/Way	12/1/22	1/13/23	42	100%																																								
2	Circuit Design																																													
2.1	PSOC Programming Board	Angel	1/9/23	1/27/23	18	80%																																								
2.2	Photo Diode Board	Alina	1/13/23	2/10/23	27	75%																																								
3	Software/Coding																																													
3.1	Reading charge on pixels	Cassandra	1/21/22	2/18/22	27	100%																																								
3.2	Processing Data	Cassandra	1/21/22	2/18/22	27	100%																																								
3.4	Displaying Files	Angel	2/4/22	2/25/22	21	90%																																								
4	PCB Assembly																																													
4.1	Parts Order Placed	Waylon	1/13/23	2/3/23	20	95%																																								
4.2	PCB Boards Order Placed	Angel	1/13/23	2/3/23	20	80%																																								
4.3	Soldering	Waylon	2/11/22	2/18/22	7	15%																																								
4.4	Continuity Testing	Waylon	2/25/22	3/4/22	9	10%																																								
5	Enclosure Design																																													
5.1	3D Model	Victor	1/14/22	2/11/22	27	5%																																								
5.2	3D Print	Victor	1/28	2/11/22	13	5%																																								
5.3	Assembly		2/11/22	2/18/22	7	0%																																								
5.4																																														

[Gantt Chart Google Slides Link](#)

Bill of Materials Page 1 of 2

Item	Part No.	QTY	Cost	Received
Photodiode (final board)	VBPW34S	64	\$54.00	
MOSFET (n-type)	SQ1922AEEH-T1_GE3	200	\$60.20	X
Button	474-COM-08720	5	\$5.25	X
Header Pins	HDR100IMP40M-G-V-TH	10	\$4.95	X
PSOC	CYBLE-416045-02	2	TBD	X
Crystal Oscillator	ECS-2520MV-250-CL-TR	1	TBD	X
Battery	LIPO Battery (3.7V)	1	\$10.95	X
OLED Display	LCD-13003	2	\$35.76	
Tri-LED	HSMD-C191	5	TBD	X
Multiplexer	BOB-13906	2	\$5.90	

Bill of Materials Page 2 of 2

Item	Part No.	QTY	Cost	Received
10KΩ Resistor	3503G2B10K7FTDF	4	\$6.56	X
0Ω Resistor	MCT0603HZ0000ZP500	10	\$6.10	X
1KΩ Resistor	RA73F1J143RBTDF	2	\$3.88	X
10uF Capacitor	GMK316BJ106KL-T	1	\$0.33	X
22pF Capacitor	12065A220JAT2A	2	\$2.80	X
4.7KΩ Resistor	263-4.7K-RC	2	\$0.20	X
330Ω Resistor	CMP0805-FX-3300ELF	1	\$0.21	X
220Ω Resistor	CRGCQ2512F220K	8	\$3.68	X
470Ω Resistor	CRG0603F470R	1	\$0.14	X