HDRM Hardware Check 2/3

TEAM STELLARHOLD

Design Iterations

Final Design: CAD Model

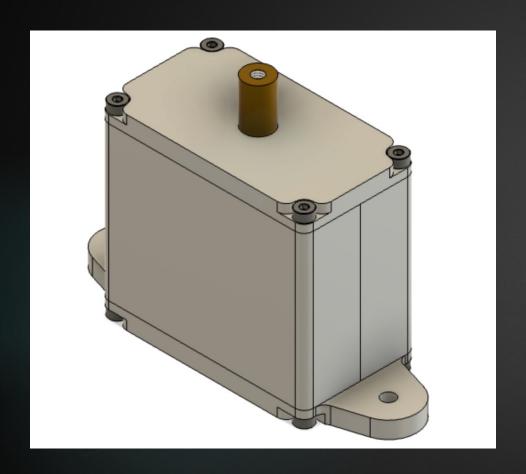


Figure 1: Previous Config

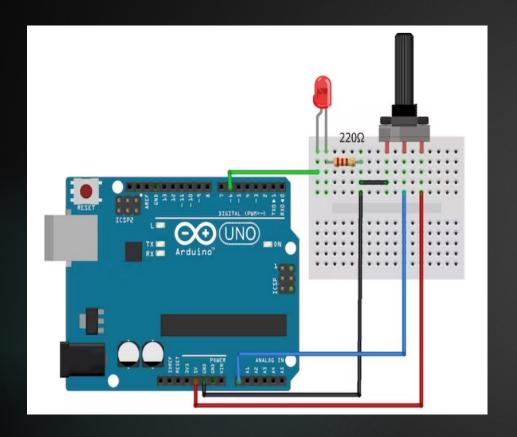


Figure 2: New Config

Final Design: Parametric CAD, DFM and fully optimized.

Design Iterations

Updated Electrical Schematics





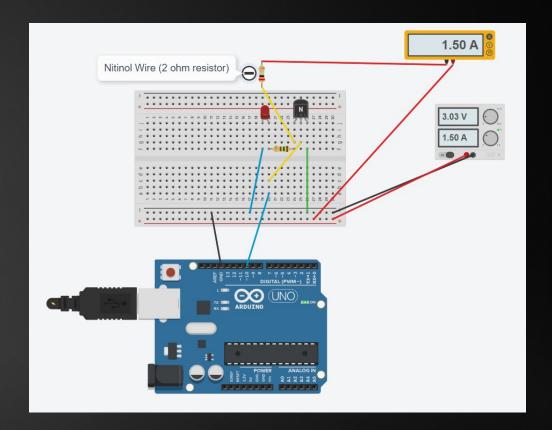
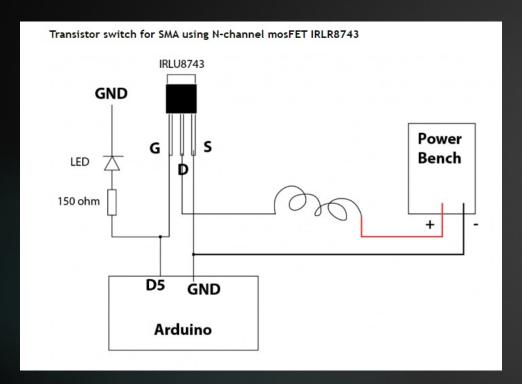


Figure 3: PWM Circuit

Figure 4: PWM Circuit with Nitinol

Design Efforts Updated Electrical Schematics



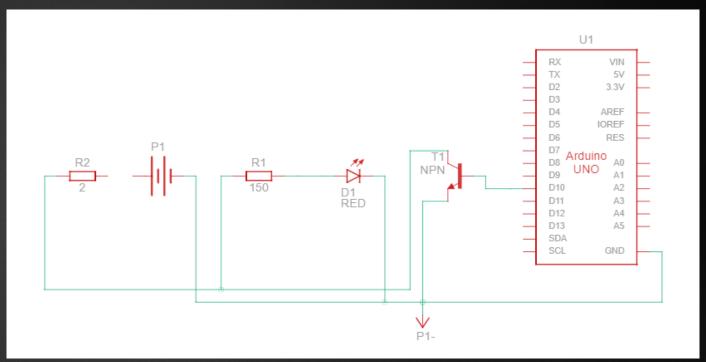


Figure 5: KobaKant's Schematics

Figure 6: GA HDRM Team's Schematics

Purchasing Plan-1 (Updated)

- Green = Ordered and Received
- Yellow = Ordered but Not Received
- Red = Not Yet Ordered
- SMA spring in design process
- Possible updates to come (mylar, PID, Power Supply, etc.)

Part Description	Cost: (\$)	Quantity:	Status:	l	Primary Vender:	Manufacturer:	
:				Buy:			
Acrylic Sheets	21.83	2	09/06/2 2	Buy	Amazon	Acrylic Mega Store	
Nitinol Spring (2.4 mm)	19.58	1	02/23/2 2	Buy	Amazon	Kellogg's Research Lab	Serven Market and Serven Serve
Aluminum Block	40.39	2	09/06/2 2	Buy	Amazon	VERNUOS	2
Generic Springs	14.18	1	09/06/2 2	Buy	Amazon	Ninoge	
	100 (estimate)		09/25/2 2 (latest)	Buy	Menny	Menny	WAY.
Ball-Nose Plunger	8.38	2	04/0 <i>5</i> /2 2	Buy	McMaste r-Carr	McMaster- Carr	
Arduino	49.12	1	09/06/2 2	Buy	Amazon	Arduino	
Aluminum Rod	30.43	1	10/0 <i>5</i> /2 2			McMaster- Carr	
U-C harmel	29.55	2	10/05/2 2	Buy	McMaste r-Carr	McMaster- Carr	
PTFE Balk	12.28	1	10/05/2 2			McMaster- Carr	

Purchasing Plan-2

- Green = Ordered and Received
- Yellow = Ordered but Not Received
- Red = Not Yet Ordered
- SMA spring in design process
- Possible updates to come (mylar, PID, Power Supply, etc.)

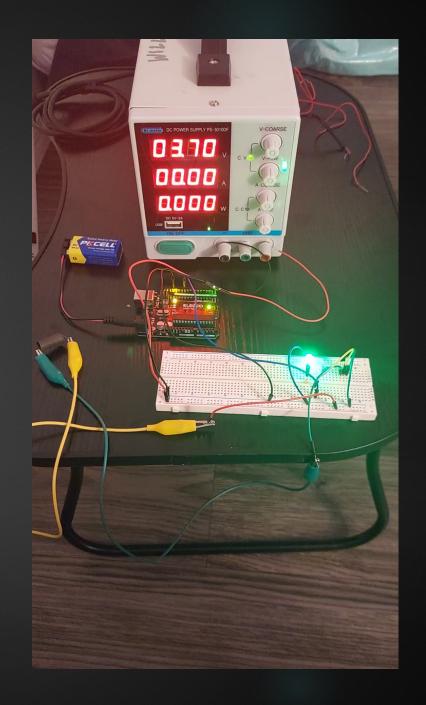
Part Total: Part Total v Total:	vifh Tax	es (estima	ded):	\$458.9 \$500.0 \$700.0	00		\$2,000					
_					:	\$100 	Total Budget:					
SMA Spring	20.93	2	10/05/2 2			NexMetal						
Load Cell	10.42	2	10/05/2 2			ALAMSCN						
Flat Head Screw	9.27	1	10/05/2 2		r-Carr							
Compressio n Spring (Short)	29.28	1	10/05/2 2	Buy	McMaste r-Carr	McMaster- Carr	IVVVVII					
Compressio n Spring (Long)	7.24	1	10/05/2 2	Buy	McMaste r-Carr	McMaster- Carr	10000000M					
Drill Bit	6.84	1	10/05/2 2	Buy	McMaste r-Carr	McMaster- Carr						
PTFE Film		1	10/05/2 2		r-Carr	McMaster- Carr						
Socket Head Screw	119.81	1	10/05/2 2	Buy	McMaste r-Carr	McMaster- Carr						
Polyethylen e Rod	5.01	1	10/05/2 2	Buy	McMaste r-Carr	McMaster- Carr						

Manufacturing Plan

Manufacturing Plan.xlsx

Demonstration

- Cut materials
- Demo Circuit



Gantt Chart

	Display Week:		4		Sep 19, 2	1022	Sep 26	Sep 26, 2022		Oct 3, 2022		Oct 10, 2022		Oct 17, 2022		Oct 24, 2022		Oct 31, 2022		N	Nov 7, 2022	
					19 20 21 2	2 23 24 2	5 26 27 28	29 30 1	2 3 4 5	6 7 8	9 10 11 12	13 14 15 10	6 17 18 19	20 21 22	23 24 25	26 27 28	29 30 3:	1 1 2	3 4 5	6 7	8 9 3	10 11 12 13
TASK	ASSIGNED TO	PROGRESS	START	END	M T W	FSS	M T W	TFS	s M T W	T F S	S M T W	T F S S	мт	TFS	S M T	w T F	S S N	T w	T F S	S M	T W	T F S S
Part 1: Hardware Review 1																						
Project management Review	Team	100%	8/29/22	9/2/22																		
Analysis / Self Learning	Individual	100%	8/29/22	9/12/22									Ш									
SMA Analysis / design	Team	99%	9/2/22	9/12/22																		
Hardware review 1	Team	100%	9/5/22	9/26/22																		
Part 2: Hardware Review 2																						
Website Check	Team	100%	9/27/22	10/10/22																		
Hardware Review 2	Team	100%	9/27/22	10/17/22																		
Part 3: Hardware Review Final																						
Finalize Testing Plan	Team	15%	10/10/22	10/31/22																		
Hardware Review 100%	Team	0%	10/17/22	10/31/22																		
Part 4: Finalization																						
Poster Draft	Team	0%	10/17/22	10/31/22																		
Powerpoint & Poster Final	Team	0%	10/31/22	11/14/22																		
Final CAD	Team	10%	11/1/22	11/21/22																		
Manual/assembly	Team	0%	11/8/22	12/12/22																		
Expo	Team	0%	11/28/22	12/2/22																		
Final Report	Team	0%	11/14/22	12/5/22																		
Final Website	Team	30%	11/14/22	12/5/22																		
Testing Results	Team	0%	11/14/22	12/5/22																		