BER LLC Programmable Power Supply

Overview:

A variable voltage power supply that ranges from 2-14 volts and can source up to 1.5 amps. The dimensions of the power supply are 4.5 x 9.8 x 12 inches, making it a viable bench-top power supply for any lab setup. It can fit on any desk and is fairly portable. It uses an Arduino DUE as the interface between a laptop and the power supply. Having it be programmable gives a customer more control and versatility of the power supply. To ensure customer safety and protect the power supply, a LED warning system was implemented to inform a user how close they are getting to the maximum 1.5A current draw. In addition, a control lock interface was added to prevent unintended changes to the voltage setting. Before we built our blocks, we made our interface definitions to see inputs and outputs of each block. When we agreed on the interface definitions, we split up the blocks that would be part of the power supply and worked on them individually. Having the defined inputs and outputs of each block ensures that we can piece the project together with relative ease. Our design phases mostly revolved around each block checkoff with our designated project mentor. We had weekly meetings with the project mentor to make sure we were on track as well.

Project Timeline:

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PROJECT TITLE Power Supply				COMPANY NAM	e percu													
							DATE	4/10/20										
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	AC-CC schemetic	Sthen	2/12/18	4/3/20		100%												
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1.3.3	AC-OC PC2 Schemetic	Sthen	6/7/20	4/21/20	16	50%												
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1.4	PCB leyout	Ethen	6/15/20	4/22/20	7	0%												
1.5	AC-OC block texting	Ethen	6/18/20	4/26/20	0	0%												
1.0	Moroprocessor block testing	Ethen	6/27/20	\$/7/20	4	0%												
2	Output and warning system																	
2.1	Warning schematic	Robert	3/18/20	4/8/20	/ a	100%				1 1 1 1 1					1 1 1 1 1			
2.2	Chennel output schemetic	Robert	2/18/20	4/8/20	3	100%												
2.2	Warring PC2 leyout	Robert	4/9/20	a/17/20	7	0%												
2.4	Chennel output PCB leyout	Robert	4/9/20	4/17/20	7	0%												
2.5	Channel block testing	Robert	6/18/20	4/26/20		0%												
2.6	Warning block testing	Robert	6/27/20	5/1/20		0%												
3	Bradleys stuff																	
2.1	LCD screen achematic	Snodley	2/16/20	4/8/20		100%			T T T T T	TTTT		1111	TITI		1 1 1 1 1	11111		1 1 1 1 1
3.2	Look sustem achematic	Brodley	3/16/20	4/8/20		100%												
2.2	LCD screen design	Dradley	3/24	4/8/20		100%												
2.4	LCD Arduino code	Brodley	3/25/20	4/17/20	7	755												
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3.0	PC2 layout	Bredley	4/15/20	4/22/20		0%		12 144 144 144										
3.7	LCD Screen testing	Engliey	4/15/20	42420		05				STORE OF STREET	A STATE OF A STATE							
2.2	Look Testing	Gradier/	4(27)20	\$1120		0%					100 COD (0.2 COD)							

Key Lessons:

- Always keep an active timeline with deadlines
- Plan ahead and expect issues to come up; come up with back up plans
- Communicate with teammates more frequently
- Start early
- Have clear quantifiable goals