

# Project Status Letter

PSL Number 08-ALL-GG

Covering period from 3/12/16 to 3/18/16

Prepared by: ECE 492 Design Team

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## Tasks that have been completed in the previous week:

Team - CDR report and presentation completed along with all accompanying materials, ATP final revision submitted (not accepted)

TSV - Control panel PCB design finalized (agrees with mechanical), PackMan boards and parts received, menu system designed (have sample outputs and tree structure), revised state diagram for PackMan computer, mechanical for accumulator finalized and sent to shop

VSCADA - Raspberry Pi 3 set up, compiled kernel for Raspberry Pi, Raspberry Pi talks CAN, communications demonstrated between motor controller, JGB, Raspberry Pi, mocked PackMan

GLV - coms demonstration using the JGB, GLV power safety SCADA interface system, TSI low voltage, TSI high voltage, full system, revised JGB board layout, breakout for GLV power safety SCADA interface system drawings all completed in KiCAD

MCM - Fixed communication with Dyno PSU

## Tasks ongoing

Team - Revising ATP final draft for submission (until acceptable, by CDR), generating materials for CDR report and presentation

GLV - safety panel CAD and wiring schematic, cockpit panel CAD and wiring schematic, TSI high voltage isolator board layout, GLV power safety SCADA interface system box, TSI low voltage system box, TSI high voltage system box CAD

drawings in progress, and all BOMs for above-described systems

VSCADA - Add in write functionality to web interface, setting up touch screen

TSV - building PackMan computer

MCM - Compiling analysis report for static characterization, DAQ calibration ongoing, DC motor model in simulink

### **Tasks due to be complete next week.**

Team - Acceptable ATP final draft to be submitted prior to CDR, CDR report and presentation created by CDR

TSV - building PackMan computer

GLV - JGB3, Joe adapter, and isolator boards all layouts, bill of materials, and footprints completed

MCM - DC motor model completed in simulink

### **Overdue tasks**

Team - ATP accepted, (still revising testing procedure and signoffs, continued revisions until acceptable)

VSCADA - Graphing spoofed CANBus (no longer a priority), adding logging to subsystem models (still pending testing and review)

MCM - Calibration sensors in DAQ using windyno-800 software, analysis results completed for static characterization

## Cost Summary

<b>Budget Category</b>	<b>New This Period</b>	<b>Total Spent to Date</b>	<b>Budget Remaining</b>	<b>Total Budget</b>
TSV	\$49.60	\$213.62	\$636.38	\$850
GLV	\$14.95	\$232.00	\$668.00	\$900
VSCADA	\$0	\$233.50	\$166.50	\$400
Cabling	\$0	\$0	\$300	\$300
MCM (Motor Char. + Model)	\$0	\$0	\$250	\$250
Shipping	\$0	\$79.80	\$220.20	\$300
<b>Totals</b>	<b>\$64.55</b>	<b>\$758.92</b>	<b>\$2,241.08</b>	<b>\$3000</b>

## Receiving Reports

- Raspberry Pi 3 Model B Board (Appendix I)
- Raspberry Pi 7" Touchscreen (Appendix I)
- HDMI Cable (3 Feet) (Appendix I)
- 64GB Micro SDXC Card (Appendix I)
- USB 3.0 Card Reader (Appendix I)
- 61 additional items (Appendix II)

## Purchase Requests

- Linear Technology 42V Flyback Converter (Appendix III)
- Pi Camera HDMI Cable Extension (Appendix IV)

Appendix I:

#	Quantity	Vendor Part	Description	Unit Price	Total Price	Rcvd
<b>ECE Department Material Request</b>						
<b>Course:</b>		ECE 492		<b>Req Number:</b>	005	
<b>Professor:</b>		Nadovich/Yu				
<b>Requested By:</b>		Joseph Cericola on behalf of Domenick Falco		<b>Vendor:</b>	Amazon	
<b>Requested Date:</b>		3-Mar-16		<b>Web Site</b>	<a href="http://www.amazon.com">http://www.amazon.com</a>	
<b>Ship By:</b>		Ground		<b>Phone</b>	1-734-414-0900	
1	1	B01C6FRVQM	Raspberry Pi 3 Model B Board	\$49.99	\$49.99	14-Mar-16
2	1	B0153R2A9I	Raspberry Pi Foundation 7" Touchscreen LCD Display	\$88.62	\$88.62	14-Mar-16
3	1	B00870ZHCQ	AmazonBasics High-Speed HDMI Cable - 3 Feet	\$4.99	\$4.99	14-Mar-16
4	1	B00IVPU7AO	Samsung 64GB EVO Class 10 Micro SDXC Card with Adapter	\$17.95	\$17.95	14-Mar-16
5	1	B009D79VH4	Transcend Information USB 3.0 Card Reader	\$6.95	\$6.95	14-Mar-16
				<b>Shipping Fees</b>	\$1.80	
				<b>Grand Total:</b>	\$170.30	
		Instructor Approval:				
		Department Approval:				
		(Over \$500)				

Appendix II:

<b>ECE Department Material Request</b>							
	<b>Course:</b>	ECE 492			<b>Req Number:</b>	006	
	<b>Professor:</b>	Nadovich/Yu					
	<b>Requested By:</b>	Joseph Cericola			<b>Vendor:</b>	Digi-Key	
	<b>Requested Date:</b>	9-Mar-16			<b>Web Site</b>	<a href="http://www.digikey.com">www.digikey.com</a>	
	<b>Ship By:</b>	Ground			<b>Phone</b>	1-800-344-4539	
#	Quantity	Vendor Part	Description	Customer Reference	Unit Price	Total Price	Rcvd
1	50	P0.0GCT-ND	Panasonic 0.00Ohm Chip Resistor 0603	R30, R31	\$0.0126 0	\$0.63	15-M ar-16
2	50	P120CCT-ND	Panasonic 120Ohm 1% Chip Resistor 0805	R25	\$0.0220 0	\$1.10	15-M ar-16
3	100	P10.0KHCT-ND	Panasonic 10KOhm 1% Chip Resistor 0603	R1, R2, R5, R9, R10, R16, R34, R37, R38	\$0.0084 0	\$0.84	15-M ar-16
4	50	P10.0KCCT-ND	Panasonic 10KOhm 1% Chip Resistor 0805	R18, R19, R20	\$0.0220 0	\$1.10	15-M ar-16
5	50	P113KHCT-ND	Panasonic 113KOhm 1% Chip Resistor 0603	R15	\$0.0114 0	\$0.57	15-M ar-16

6	50	P115KHCT-ND	Panasonic 115KOhm 1% Chip Resistor 0603	R17	\$0.01140	\$0.57	15-Mar-16
7	50	P300KHCT-ND	Panasonic 300KOhm 1% Chip Resistor 0603	R14	\$0.01140	\$0.57	15-Mar-16
8	10	CSNL1206FT1L00CT-ND	Stackpole 0.001Ohm 1% Chip Resistor 1206	R3	\$0.53900	\$5.39	15-Mar-16
9	10	RMCF0603FT10M0CT-ND	Stackpole 10MOhm 1% Chip Resistor 0603	R32	\$0.01900	\$0.19	15-Mar-16
10	50	490-12530-1-ND	Murata 10pF 50V Ceramic Cap 0603	C1, C4	\$0.04380	\$2.19	15-Mar-16
11	10	490-1616-1-ND	Murata 220pF 50V Ceramic Cap 0805	C14	\$0.11000	\$1.10	15-Mar-16
12	10	490-12330-1-ND	Murata 1uF 50V Ceramic Cap 0603	C12	\$0.16300	\$1.63	15-Mar-16
13	10	490-1891-1-ND	Murata 10uF 50V Ceramic Cap 1210	C9, C11, C15	\$0.58000	\$5.80	15-Mar-16
14	10	493-6214-1-ND	Nichicon 220uF 20% 16V Aluminum Cap	C16	\$0.29300	\$2.93	15-Mar-16
15	10	493-9379-1-ND	Nichicon 220uF	C10	\$0.75700	\$7.57	15-Mar-16

			20% 50V Aluminum Cap				
16	10	445-173047-1-ND	TDK 220uH Fixed Inductor	L1	\$0.4600 0	\$4.60	15-M ar-16
17	50	SK310A-LTP MSCT-ND	Micro Commer cial 100V 3A Schottky Diode	D5, D6, D8, D9, D15, D18, D19, D21	\$0.3288 0	\$16.44	15-M ar-16
18	10	PTZTE2533B CT-ND	Rohm 35V 1W Zener Diode	D7	\$0.3850 0	\$3.85	15-M ar-16
19	10	568-6370-1-ND	NXP 5.1V 500MW Zener Diode	D20	\$0.1660 0	\$1.66	15-M ar-16
20	10	732-4980-1-ND	Würth LED Green 0603	D1	\$0.2400 0	\$2.40	15-M ar-16
21	25	RRR015P03T LCT-ND	Rohm P-Fet 30V 1.5A SC-96	Q1, Q2, Q3, Q4	\$0.3720 0	\$9.30	15-M ar-16
22	6	1297-1132-1-ND	Würth Flyback Transfor mer LT8302	T1	\$4.5500 0	\$27.30	15-M ar-16
23	25	507-1077-1-ND	Bel Fuse 1A Board Mount Fuse 1206	F1	\$0.2680 0	\$6.70	15-M ar-16
24	6	Z3697-ND	Omron 10A 3V Relay	RLY1	\$1.4300 0	\$8.58	15-M ar-16
25	6	PB1014-ND	TE Connecti vity 30A 5V Relay	RLY2	\$4.2200 0	\$25.32	15-M ar-16
26	10	887-1741-1-ND	TXC 10MHz Surface Mount Crystal	X1	\$0.6050 0	\$6.05	15-M ar-16
27	6	CKN9363CT-ND	C&K 0.1A 42V Pushbutt	SW1	\$2.4300 0	\$14.58	15-M ar-16

			on Switch				
28	6	ED2983-ND	On Shore Technology 4-Pos USB Receptacle	J1	\$0.58000	\$3.48	15-Mar-16
29	5	5237FE-ND	Norcomp 37-Pos D-Sub Receptacle	J2	\$4.08000	\$20.40	15-Mar-16
30	6	WM3789CT-ND	Molex 6-Pos Vertical Surface Mount RJ12 Receptacle	J3	\$1.16000	\$6.96	15-Mar-16
31	5	A113982-ND	TE Connectivity 4-Pos Blade Socket Receptacle	P1	\$8.66000	\$43.30	15-Mar-16
32	5	WM1340-ND	Molex 2-Pos Connector Header	P2	\$2.61000	\$13.05	15-Mar-16
33	5	WM1344-ND	Molex 6-Pos Connector Header	P3	\$4.20000	\$21.00	15-Mar-16
34	3	3M11931-ND	Sullins 16-Pos Connector Header	P4	\$0.55000	\$1.65	15-Mar-16
35	10	609-4054-ND	Amphenol 10-Pos Connector Header	P5	\$0.96800	\$9.68	15-Mar-16
36	3	AT90CAN128-16AURCT-ND	Atmel 128KB Microcontroller	U1	\$10.40000	\$31.20	15-Mar-16
37	5	ADM6320CY29ARJZ-R7CT-ND	Analog Devices External Watchdog	U2	\$1.44000	\$7.20	15-Mar-16



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<b>38</b>	<b>5</b>	<b>568-1074-1-ND</b>	<b>NXP I2C I/O Expander</b>	<b>U3</b>	<b>\$1.22000</b>	<b>\$6.10</b>	<b>15-Mar-16</b>
<b>39</b>	<b>6</b>	<b>296-29034-1-ND</b>	<b>Texas Instruments Current Monitor</b>	<b>U4</b>	<b>\$3.44000</b>	<b>\$20.64</b>	<b>15-Mar-16</b>
<b>40</b>	<b>5</b>	<b>296-38849-1-ND</b>	<b>Texas Instruments 16-Bit ADC</b>	<b>U5</b>	<b>\$5.65000</b>	<b>\$28.25</b>	<b>15-Mar-16</b>
<b>41</b>	<b>5</b>	<b>LTC3638EMS E#PBF-ND</b>	<b>Linear Technology Buck Converter</b>	<b>U6</b>	<b>\$7.79000</b>	<b>\$38.95</b>	<b>15-Mar-16</b>
<b>42</b>	<b>6</b>	<b>336-2048-5-ND</b>	<b>Silicon Labs 3.75KV Digital Isolator</b>	<b>U8</b>	<b>\$3.33000</b>	<b>\$19.98</b>	<b>15-Mar-16</b>
<b>43</b>	<b>2</b>	<b>NCP1117ST3 3T3GOSCT-ND</b>	<b>ON 3.3V Voltage Regulator</b>	<b>U9</b>	<b>\$0.46000</b>	<b>\$0.92</b>	<b>15-Mar-16</b>
<b>44</b>	<b>6</b>	<b>296-13493-1-ND</b>	<b>Texas Instruments Inverter</b>	<b>U10</b>	<b>\$0.54000</b>	<b>\$3.24</b>	<b>15-Mar-16</b>
<b>45</b>	<b>6</b>	<b>MCP2551-I/SN-ND</b>	<b>Microchip Technology CAN Transceiver</b>	<b>U11</b>	<b>\$1.02000</b>	<b>\$6.12</b>	<b>15-Mar-16</b>
<b>46</b>	<b>5</b>	<b>768-1007-1-ND</b>	<b>FTDI USB/UART Serial Interface</b>	<b>U12</b>	<b>\$4.50000</b>	<b>\$22.50</b>	<b>15-Mar-16</b>
<b>47</b>	<b>6</b>	<b>TLP2361(V4-TPLECT-ND</b>	<b>Toshiba 3.75KV Optoisolator</b>	<b>U13</b>	<b>\$1.14000</b>	<b>\$6.84</b>	<b>15-Mar-16</b>
<b>48</b>	<b>5</b>	<b>603-1284-ND</b>	<b>Delta 5VDC 200mA Fan</b>		<b>\$12.08000</b>	<b>\$60.40</b>	<b>15-Mar-16</b>
<b>49</b>	<b>10</b>	<b>F5984-ND</b>	<b>Littlefuse 30A In-Line Blade Fuseholder</b>		<b>\$4.45500</b>	<b>\$44.55</b>	<b>15-Mar-16</b>

50	25	F4195-ND	Littlefuse 25A Blade Fuse		\$0.24000	\$6.00	15-Mar-16
51	6	556879-4-ND	TE Connectivity 4-Pos Blade Plug		\$4.83000	\$28.98	15-Mar-16
52	25	A104027CT-ND	TE Connectivity Blade Pin		\$0.63200	\$15.80	15-Mar-16
53	10	609-4055-ND	Amphenol 10-Pos Connector Receptacle		\$2.38800	\$23.88	15-Mar-16
54	6	237ME-ND	Norcomp 37-Pos D-Sub Connector Header		\$2.30000	\$13.80	15-Mar-16
55	1	458-1150-ND	Mallory Sonalert 2.9KHz Buzzer		\$16.66000	\$16.66	15-Mar-16
56	2	67-1184-ND	Lumex Panel Mount LED Green		\$1.32000	\$2.64	15-Mar-16
57	1	SC2106-ND	Switchcraft Panel Mount HDMI Receptacle		\$19.74000	\$19.74	15-Mar-16
58	2	626-1355-ND	Conec Panel Mount USB Receptacle		\$13.16000	\$26.32	15-Mar-16
59	1	626-1461-ND	Conec Panel Mount RJ45 Coupler		\$15.77000	\$15.77	
60	1	SC2102-ND	Switchcraft RJ45 Connector Dust		\$2.05000	\$2.05	15-Mar-16

			<b>Cap TE Connecti vity Female Crimp Quick Connect</b>				
<b>61</b>	<b>100</b>	<b>A27828-ND</b>			<b>\$0.1600 0</b>	<b>\$16.00</b>	<b>15-M ar-16</b>
<b>62</b>						<b>\$0.00</b>	
					<b>Shipping Fees</b>	<b>\$0.00</b>	
					<b>Grand Total:</b>	<b>\$763.01</b>	
		<b>Instructor Approval:</b>					
		<b>Department Approval:</b>					
		<b>(Over \$500)</b>					

Appendix III:

<b>ECE Department Material Request</b>						
	<b>Course:</b>	<b>ECE 492</b>		<b>Req Number:</b>	<b>007</b>	
	<b>Professor:</b>	<b>Nadovich /Yu</b>				
	<b>Requested By:</b>	<b>Joseph Cericola</b>		<b>Vendor:</b>	<b>Linear Technology</b>	
	<b>Requested Date:</b>	<b>14-Mar-16</b>		<b>Web Site</b>	<a href="http://www.linear.com">www.linear.com</a>	
	<b>Ship By:</b>	<b>Ground</b>		<b>Phone</b>	<b>408-432-1900</b>	
<b>#</b>	<b>Quantity</b>	<b>Vendor Part</b>	<b>Description</b>	<b>Unit Price</b>	<b>Total Price</b>	<b>Rcvd</b>
<b>1</b>	<b>10</b>	<b>LT8302ES 8E#PBF</b>	<b>Linear Technology 42V Flyback Converter 8-SOIC</b>	<b>\$4.96</b>	<b>\$49.60</b>	
				<b>Shipping Fees</b>		
				<b>Grand Total:</b>	<b>\$49.60</b>	
		<b>Instructor Approval:</b>				

Appendix IV:

#	Quantity	Vendor Part	Description	Unit Price	Total Price	Rcvd
1	1	n/a	Pi Camera HDMI Cable Extension	\$14.95	\$14.95	
				<b>Shipping Fees</b>		
				<b>Grand Total:</b>	<b>\$14.95</b>	
		Instructor Approval:				
		Department Approval:				
		(Over \$500)				

  

<b>ECE Department Material Request</b>						
Course:	ECE 492	Req Number:	008			
Professor:	Nadovich/Yu					
Requested By:	Joseph Cericola on behalf of Timothy Andrews	Vendor:	freto (via Tindie)			
Requested Date:	18-Mar-16	Web Site	<a href="http://www.tindie.com">www.tindie.com</a>			
Ship By:	Ground	Phone				