

# GLV DYNO

## Bill of Material (BOM)

ECE 491 - Fall 2018

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### **Abstract**

This document is intended to show the necessary materials needed to deliver the GLV System as implemented in the Dyno Integration of the project.

# Table of Contents

<b>GLV Break out Board BOM.....</b>	<b>2</b>
<b>GLV P2C Board BOM .....</b>	<b>7</b>
<b>GLV External Devices BOM.....</b>	<b>8</b>

## GLV Break out Board BOM

Description	Manufacturer	Manufacturer P/N	Supplier	Supplier P/N	Unit Cost	Qt	Total Cost
DC/DC CONVERTER 5V 20W	CUI Inc.	PYB20-Q24-S5	Digi key	102-2927-ND	\$33.85	1	\$33.85
IC ADC I/O PORT (ADC/DAC & Temp I2C)	Analog Devices Inc.	AD5593RBRUZ	Digi key	AD5593RBRUZ-ND	\$7.90	1	\$7.90
IC LOAD SW HIGH SIDE 6SOT (IC Switch)	Texas Instruments	TPS27081ADDCR	Digikey	296-34970-1-ND	\$0.54	1	\$0.54
IC MONITOR PWR/CURR BIDIR 10MSOP (Current Monitor)	Texas Instruments	INA226AIDGSR	Digikey	296-29034-1-ND	\$3.44	1	\$3.44
OPTOISO 3.75KV 2CH DARLNG 8DIP (Opto- Isolator)	IXYS Integrated Circuits Division	LDA210	Digikey	CLA186-ND	\$2.17	1	\$2.17
IC OPAMP GP 1MHZ RRO 14DIP (Quad Op- Amp)	Microchip Technology	MCP6004-I/P	Digikey	MCP6004-I/P-ND	\$0.45	1	\$0.45
MOSFET P- CH 50V	Fairchild/ON Semiconductor	BSS84	Digikey	BSS84CT-ND	\$0.24	1	\$0.24

130MA SOT-23							
RELAY GEN PURPOSE SPST 10A 24V	Omron Electronics Inc-EMC Div	G5LE-1A4	Digikey	Z2254-ND	\$1.30	4	\$5.20
CAP CER 0.1µF ±10% 50V X7R 0805	AVX Corporation	08055C104KAT2A	Digikey	478-1395-1-ND	\$0.10	5	\$0.50
DIODE SCHOTTKY 100V 3A DO214AC	Micro Commercial Co	SK310A-LTP	Digikey	SK310A-LTPMSCT-ND	\$0.60	4	\$2.40
RES SMD 10K OHM 1% 1/8W 0805	Panasonic Electronic Components	ERJ-6ENF1002V	Digikey	P10.0KCCT-ND	\$0.10	12	\$1.20
RES SMD 0.001 OHM 1% 1W 1206	Stackpole Electronics Inc	CSNL1206FT1L00	Digikey	CSNL1206FT1L00CT-ND	\$0.65	1	\$0.65
RES SMD 120 OHM 5% 1/8W 0805	Stackpole Electronics Inc	RMCF0805JT120R	Digikey	RMCF0805JT120RCT-ND	\$2.05	1	\$2.05
RES SMD 250 OHM 0.01% 1/8W 0805	Stackpole Electronics Inc	RNCF0805TKY250R	Digikey	RNCF0805TKY250RCT-ND	\$2.05	1	\$2.05
RES SMD 1K OHM 5% 1/8W 0805	Yageo	RC0805JR-071KL	Digikey	311-1.0KARCT-ND	\$0.10	1	\$0.10

RES SMD 200 OHM 1% 1/8W 0805	Stackpole Electronics Inc	RMCF0805FT200R	Digikey	RMCF0805FT200RCT- ND	\$0.10	1	\$0.10
Connector Header Through Hole 12 position 0.224" (5.70mm)	Molex	768290112	Digikey	WM16841-ND	\$4.83	1	\$4.83
Connector Header Through Hole 4 position 0.224" (5.70mm)	Molex	768290104	Digikey	WM16837-ND	\$3.95	4	\$15.80
Connector Header Through Hole 2 position	Molex	768290102	Digikey	WM16836-ND	\$3.41	5	\$17.05

Connector Header Through Hole 6 position 0.224" (5.70mm)	Molex	768290106	Digikey	WM16838-ND	\$4.28	1	\$4.28
12 Position Rectangular Housing Connector Receptacle Black 0.224" (5.70mm)	Molex	1716920112	Digikey	WM10390-ND	\$1.36	1	\$1.36
4 Position Rectangular Housing Connector Receptacle Black 0.224" (5.70mm)	Molex	1716920104	Digikey	WM10386-ND	\$0.67	4	\$2.68
2 Position Rectangular Housing Connector Receptacle Black	Molex	1716920102	Digikey	WM10385-ND	\$0.51	5	\$2.55

6 Position Rectangular Housing Connector Receptacle Black 0.224" (5.70mm)	Molex	1716920106	Digikey	WM10387-ND	\$0.96	1	\$0.96
Socket Contact Tin 14-16 AWG Crimp	Molex	768230321	Digikey	WM11981CT-ND	\$0.25	30	\$7.50
CONN D-SUB PLUG 9POS R/A SOLDER	NorComp Inc.	182-009-113R171	Digikey	182-909ME-ND	\$1.78	1	\$1.78
						<b>Total</b>	<b>\$121.63</b>

*Table 1:GLV BOB BOM*

## GLV P2C Board BOM

Description	Manufacturer	Manufacturer P/N	Supplier	Supplier P/N	Unit Cost	Qt	Total Cost
40 Position Header Connector 0.100" (2.54mm) Surface Mount Tin	<a href="#">Sullins Connector Solutions</a>	NPTC202KFMS-RC	Digi-key	S5690-ND	\$3.52	2	\$7.04
Connector Header Through Hole 40 position 0.100" (2.54mm)	<a href="#">Sullins Connector Solutions</a>	PEC20DAAN	Digi-key	S2012E-20-ND	\$1.82	2	\$3.64
Steel Pan Head Phillips Screws, 3-48 Thread, 1/2" Long	McMaster-Carr	<a href="#">90272A096</a>	McMaster-Carr	<a href="#">90272A096</a>	\$8.00	1	\$8.00
Off-White Nylon Unthreaded Spacer, 3/16" OD, 5/32" Long	McMaster-Carr	<a href="#">94639A470</a>	McMaster-Carr	<a href="#">94639A470</a>	\$3.62	1	\$3.62
Steel Phillips Screws 8-32 (pack of 100)	McMaster-Carr	<a href="#">90272A192</a>	McMaster-Carr	90272A827	\$3.95	1	\$3.95
CONN HEADER DUAL 40 POS RA 2.54	Würth Electronics Inc.	61304021021	Digi-key	732-5363-ND	\$2.10	1	\$2.10
						<b>Total</b>	<b>\$28.35</b>

Table 2: GLV P2C Board BOM



## GLV External Devices BOM

<b>Description</b>	<b>Manufacturer</b>	<b>Manufacturer P/N</b>	<b>Supplier</b>	<b>Supplier P/N</b>	<b>Unit Cost</b>	<b>Qt</b>	<b>Total Cost</b>
22MMHW SeriesEmergency Stop Switches	IDEC	HW1E-LV4F11QD-R-24V	Allied	70172680	\$55.52	3	\$166.56
Push Button; Panel Mount; 2500 V (1 min.); 10 A;	Altech Corp.	2ALF3LB-024	Allied	70156696	\$22.19	2	\$44.38
Car Rotating Battery/Electrical Master Switch	-	-	DealExtreme	22003	\$7.83	2	\$15.66
Rectangular LED Lights Amber/SSOK	Super Bright LED's	MDB-A12	Super Bright LED's	MDB-A12	\$6.49	3	\$19.47
Tractive System Energized Light	Encell	STB-A35	Amazon	B01K9X1ZCE	\$30.00	1	\$30.00
Panel Mount Indicator (Green)	Dialight	6823235142F	Digi-Key	350-4053-ND	\$8.94	5	\$44.70
CircuitBreaker	DigiKey	W28-XQ1A-10	DigiKey	W28-XQ1A-10	\$4.39	1	\$4.39
Panel Mount Indicator (Red)	Dialight	682-3132-141F	Digi-Key	350-4050-ND	\$8.94	3	\$26.82
PST-G100-24F8 battery charger for a 6.6 hour charge	PowerStream	PST-G100-24F8	PowerStream	PST-G100-24F8	\$49.75	1	\$49.75
Lithium Iron PLithium Iron Phosphate	PowerStream	LFP256099	PowerStream	LFP256099	\$295.00	1	\$295.00

Rechargeable Lithium Battery							
The ER-8B blank plate 14" x 19"	Video Mount Products	ER-8B	Video Mount Products	ER-8B	\$34.95	1	\$34.95
Clear Cast Acrylic Sheet 12" x 12" x 1/8"	-	-	McMaster Carr	8560K239	\$9.15	1	\$9.15
6061 Aluminum Sheet 0.16" Thick, 12" x 12"	-	-	McMaster Carr	89015K94	\$32.21	1	\$32.21
						<b>Total</b>	<b>\$773.04</b>

Table 3: GLV External Devices BOM