

# **GLV Bill of Materials**

ECE 492 - Spring 2019

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## **Abstract**

This document is intended as a report of all the materials necessary to build the GLV system.

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# GLV BOM

## GLV BOB BOM (L19\_GLV\_07)

Description	Supplier	Supplier P/N	Unit Cost	Quantity PO	PO Price
CAP CER 0.1 $\mu$ F $\pm$ 10% 50V X7R 0805	Digikey	478-1395-1-ND	\$0.10	6	\$0.60
RES SMD 10K OHM 1% 1/8W 0805	Digikey	RMCF0805JT10K0C T-ND	\$0.10	12	\$1.20
RES SMD 0.001 OHM 1% 1W 1206	Digikey	CSNL1206FT1L00CT -ND	\$0.65	1	\$0.65
RES SMD 120 OHM 5% 1/8W 0805	Digikey	RMCF0805JT120RC T-ND	\$0.10	1	\$0.10
RES SMD 1K OHM 5% 1/8W 0805	Digikey	311-1.0KARCT-ND	\$0.10	4	\$0.40
RES 2.1K OHM 1% 1/8W 0805	Digikey	RMCF0805FT2K10C T-ND	\$0.10	1	\$0.10
RES SMD 200 OHM 1% 1/8W 0805	Digikey	RMCF0805FT200RC T-ND	\$0.10	1	\$0.10
LED YELLOW/GREEN CLEAR 0805 SMD	Digikey	VAOL-S8GT4CT-ND	\$0.40	6	\$2.40
TERM BLK 3POS SIDE ENTRY 5MM PCB	Digikey	WM13971-ND	\$1.60	3	\$4.80
MOSFET P-CH 50V 130MA SOT-23	Digikey	BSS84CT-ND	\$0.24	1	\$0.24
RELAY GEN PURPOSE SPDT 16A 24V	Digikey	Z2618-ND	\$2.17	4	\$8.68
DGTL ISO 2.5KV 2CH I2C 8SOIC	Digikey	296-34872-1-ND	\$4.32	1	\$4.32
IC REG LINEAR 5V 100MA 8SO	Digikey	497-1182-1-ND	\$0.35	1	\$0.35
CONN RCPT TYPEA 4POS R/A	Digikey	ED2989-ND	\$0.50	1	\$0.50

GLV MAINTENANCE MANUAL 3

OPTOISO 3.75KV 2CH DARLNG 8DIP (Opto-Isolator)	Digikey	CLA186-ND	\$2.17	2	\$4.34
2 Position Rectangular Housing Connector Receptacle Black	Digikey	WM10385-ND	\$0.51	2	\$1.02
CONN HEADER VERT 40POS 2.54MM	Digikey	S1012EC-40-ND	\$0.51	3	\$1.53
DC/DC CONVERTER 5V 20W	Digikey	102-2927-ND	\$33.8 5	1	\$33.85
IC ADC I/O PORT (ADC/DAC & Temp I2C)	Digikey	AD5593RBRUZ-ND	\$7.90	1	\$7.90
IC MONITOR PWR/CURR BIDIR 10MSOP (Current Monitor)	Digikey	296-29034-1-ND	\$3.44	1	\$3.44
DIODE SCHOTTKY 100V 3A DO214AC	Digikey	SK310A-LTPMSCT- ND	\$0.60	4	\$2.40
Connector Header Through Hole 10 position 0.224" (5.70mm)	Digikey	WM16846-ND	\$4.83	1	\$4.83
Connector Header Through Hole 4 position 0.224" (5.70mm)	Digikey	WM16837-ND	\$3.95	2	\$7.90
Connector Header Through Hole 2 position	Digikey	WM16836-ND	\$3.41	2	\$6.82
Connector Header Through Hole 6 position 0.224" (5.70mm)	Digikey	WM16838-ND	\$4.28	2	\$8.56
10 Position Rectangular Housing Connector Receptacle Black 0.224" (5.70mm)	Digikey	WM10389-ND	\$1.36	1	\$1.36
4 Position Rectangular Housing Connector Receptacle Black 0.224" (5.70mm)	Digikey	WM10386-ND	\$0.67	2	\$1.34
6 Position Rectangular Housing Connector Receptacle Black 0.224" (5.70mm)	Digikey	WM10387-ND	\$0.96	2	\$1.92

**GLV MAINTENANCE MANUAL 4**

Socket Contact Tin 14-16 AWG Crimp	Digikey	WM11981CT-ND	\$0.25	34	\$8.50
CONN D-SUB PLUG 9POS R/A SOLDER	Digikey	182-909ME-ND	\$1.78	1	\$1.78
					<b>\$121.93</b>

**GLV Enclosure BOM ( L19\_GLV\_01, L19\_GLV\_02, L19\_GLV\_03)**

Description	Supplier	Supplier P/N	Unit Cost	Total Cost
SINGLE BOARD COMPUTER 1.2GHZ 1GB	Digi-Key	1690-1000-ND	\$40.00	\$40.00
RASPBERRY PI 10.1" LCD DISPLAY	Digi-Key	1597-1102-ND	\$95.63	\$135.63
PiCAN 2 - CAN Interface for Raspberry Pi 2/3	CopperHill technologies	PiCAN2-SMPS	\$59.95	\$195.58
CONN RCPT 40POS 0.1 GOLD PCB	Digi-Key	SAM11925-ND	\$6.85	\$202.43
Standoffs amd Spacers 1.125"	Mouser	534-4835	\$0.49	\$206.35
Unthreaded Spacer 1/8" OD, 5/32" Long, for Number 2 Screw Size	McMaster-Carr	92510A415	\$0.77	\$212.51
Passivated 18-8 Stainless Steel Pan Head Phillips Screw 2-56 Thread, 5/8" Long	McMaster-Carr	91772A082	\$4.15	\$216.66
USB Connectors USB Female Adaptor	Mouser	706-17-200001	\$9.43	\$226.09
PCF8523 Real Time Clock for Raspberry Pi	Adafruit	3386	\$5.95	\$237.99
CR1220 12mm Diameter - Lithium Coin Cell Battery	Adafruit	380	\$0.95	\$239.89
14U Steel Rack Panel	Mouser	546-PBPS19014BK2	\$32.76	\$239.89
Passivated 18-8 Stainless Steel Pan Head Phillips Screw 8-32 Thread, 3/8" Long	McMaster-Carr	91772A192	\$6.88	\$246.77
8 x Press Fit Nuts for sheet metal (2-56)	McMaster-Carr	95185A105	\$9.40	\$256.17
Aluminum, 3/16" Hex Size, 1" Long, 2-56 Thread Size	McMaster-Carr	93505A217	\$3.60	\$259.77

**GLV MAINTENANCE MANUAL 5**

Steel Phillips Screws 2-56	McMaster-Carr	90272A079	\$3.28	\$263.05
Passivated 18-8 Stainless Steel Pan Head Phillips Screw 8-32 Thread, 3/8" Long	McMaster-Carr	91772A192	\$6.88	\$269.93
8-32 Thread Size, for 0.03" Minimum Panel Thickness	McMaster-Carr	95185A155	\$10.59	\$280.52
Steel Pan Head Phillips Screws 4-40 Thread, 3/8" Long	McMaster-Carr	90272A108	\$1.65	\$282.17
4-40 Thread Size, for 0.03" Minimum Panel Thickness	McMaster-Carr	95185A110	\$10.29	\$302.75
Digital Display Multimeter	Amazon	B013PKYILS	\$14.99	\$317.74
DT 2 WAY FLANGED RECEPTACLE	Deutsch	DT04-2P-L012	\$4.48	\$331.18
Deutsch dt 4 way flange receptacle connector	Deutsch	DT04-4P-L012	\$7.47	\$346.12
AHD10-6-12P-L	Digi-Key	889-1062-ND	\$10.05	\$356.17
DT04-8PA	TE-Connectivity	DT04-08PA-LE11	\$10.49	\$366.66
Deutsch dt 12 way flange receptacle connector	Deutsch	DT04-12PA-L012	\$10.53	\$377.19
USB Panel Mount Connector	Amazon	B07CZDXJGX	\$8.99	\$386.18
USB/HDMI Panel Mount Connector	Amazon	B077T853NZ	\$11.90	\$398.08
CIR BRKR THRM 10A 250VAC 32VDC	Digikey	Q503-ND	\$2.23	\$400.31
CIR BRKR THRM 15A 250VAC 32VDC	Digikey	Q504-ND	\$2.04	\$402.35
Splined Press-Fit Threaded Standoffs with Open End	McMaster-Carr	92985A110	\$12.78	\$415.13
Male-Female Threaded Hex Standoff Aluminum, 1/4" Hex Size, 1" Long, 4-40 Thread Size	McMaster-Carr	93505A436	\$0.61	\$420.01
Aluminum Unthreaded Spacer 3/16" OD, 1/8" Long, for Number 4 Screw Size	McMaster-Carr	92510A688	\$0.33	\$422.65
Passivated 18-8 Stainless Steel Pan Head Phillips Screw 4-40 Thread, 1/4" Long	McMaster-Carr	91772A106	\$3.39	\$426.04
Male-Female Threaded Hex Standoff Aluminum, 3/16" Hex Size, 1/2" Long, 4-40 Thread Size	McMaster-Carr	93505A103	\$0.04	\$426.39
				<b>\$426.39</b>



## Acknowledgments

This document is largely based on the documentation used in the Class of 2018 and the Class 2017. We would like to acknowledge the Electrical and Computer Engineering Department and Mechanical Engineering Department for making this project possible.

## Disclaimer

While we have made every attempt to ensure that the information contained in this document is complete, understand that there may still be unforeseen errors.