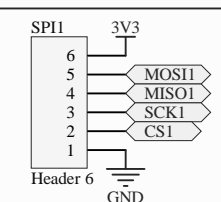
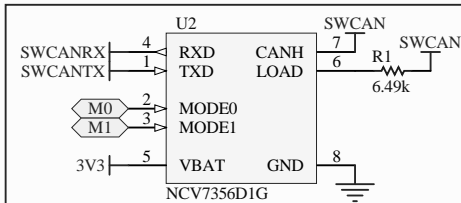


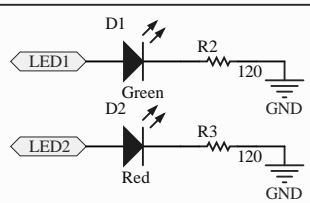
Voltage Regulator and Power Conditioning



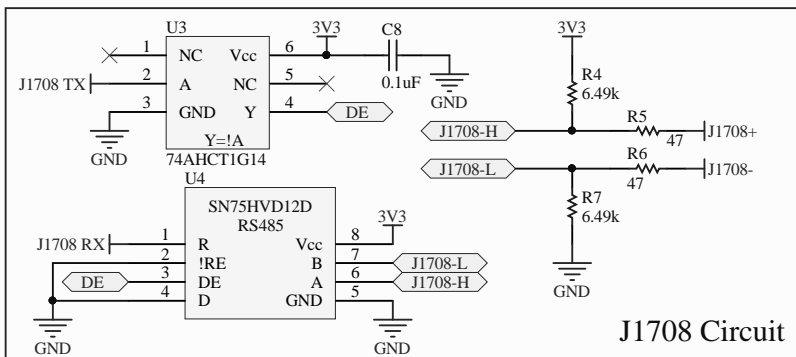
Breakout Header



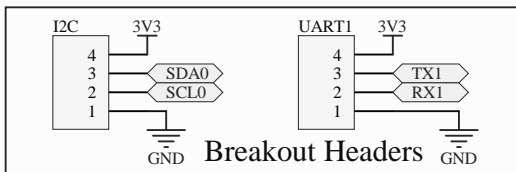
GMLAN



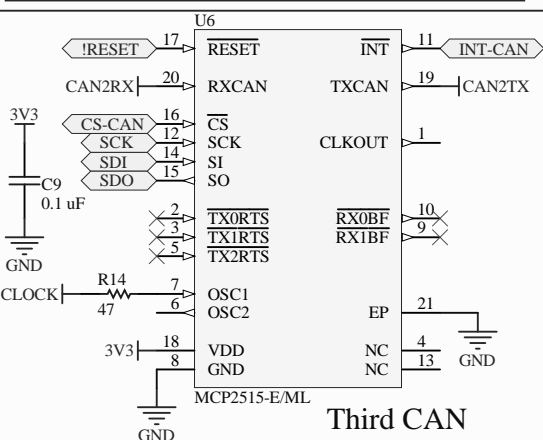
LED Indicators



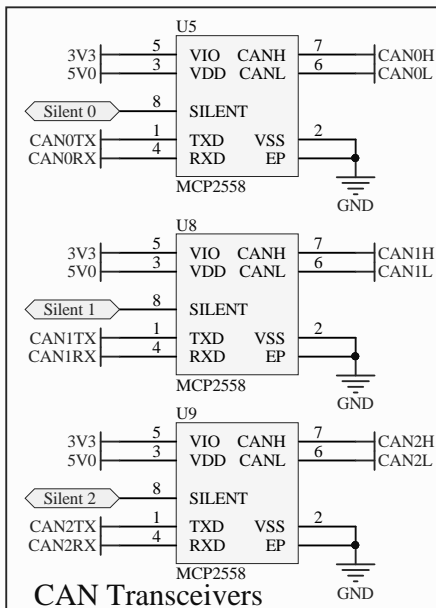
J1708 Circuit



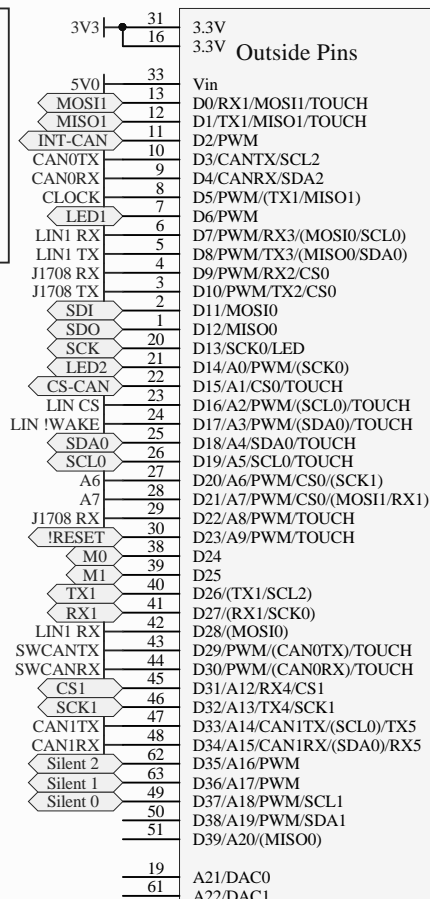
Breakout Headers



Third CAN



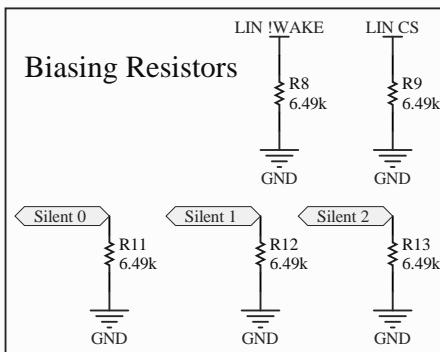
CAN Transceivers



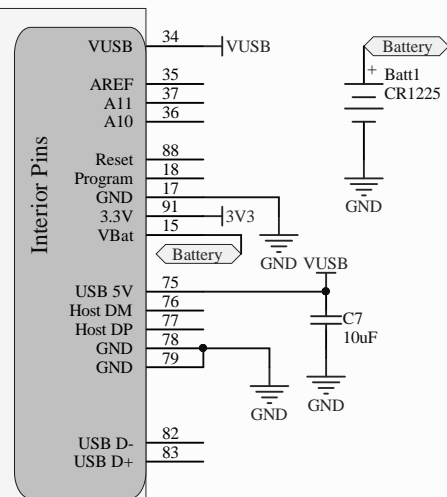
Teensy 3.6 32-Bit

Arduino-Compatible

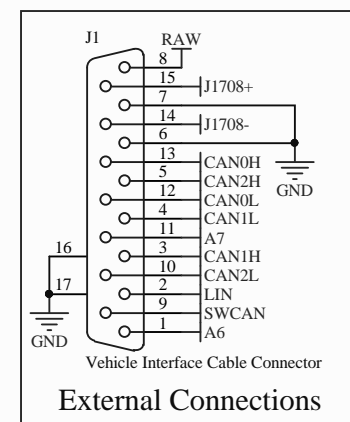
Microcontroller



Biasing Resistors

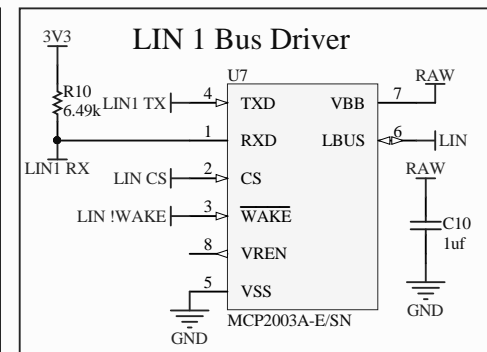


Interior Pins



Vehicle Interface Cable Connector

External Connections



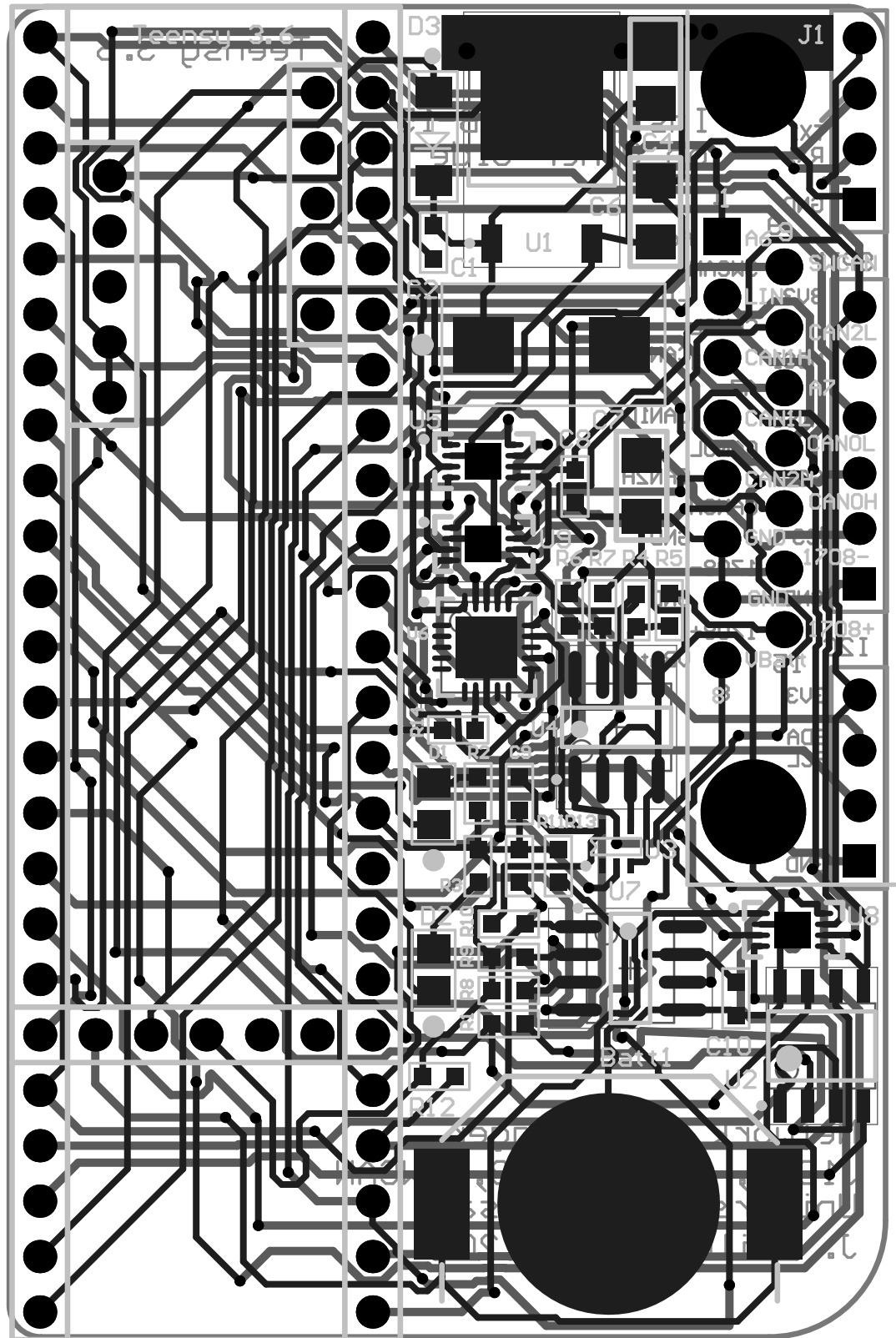
LIN 1 Bus Driver

Title: **Heavy Vehicle Network Data Recorder**Subtitle: **Hands-On Heavy Duty Networking**

Date: 4/8/2017 Time: 9:10:31 AM Size: Letter Sheet 1 of 1

File: C:\Users\jeremy-daily\Dropbox (JHSI)\Electronics\Flat Teensy 3.6 J1939 Logger\Teensy 3.6 with J1939.SchDoc

Dr. Jeremy Daily
Mechanical Engineering
The University of Tulsa
800 S. Tucker Dr.
Tulsa, OK 74104



Comment	Description	Designator	Footprint	LibRef	Manufacturer 1	Manufacturer Part Number 1	Quantity	Supplier 1	Supplier Currency 1	Supplier Order Qty 1	Supplier Part Number 1	Supplier Stock 1	Supplier Subtotal 1	Supplier Unit Price 1
CR1225	Lithium Battery Non-Rechargeable (Primary) 3V Coin, 12.5mm	Batt1	Battery Clip - CR1225	CR2032 Battery Holder	Linx Technologies Inc.	BAT-HLD-012-SMT	1	Digi-Key	USD		BAT-HLD-012-SMT-ND	1579	0.28	0.28
0.1 uF	CAP CER 0.1UF 50V X7R 0603	C1, C9	0603	Cap	Murata Electronics North America	GRM188R71H104K A93D	2	Digi-Key	USD	2	490-1519-1-ND	8912517	0.2	0.1
47 uF	Tantalum Capacitors - Solid SMD 35volts 47uF 10% ESR=300mOhms	C2	2917	Tantalum Cap_1	KEMET	T495X476K035ATE3 00	1	Digi-Key	USD	1	399-3905-1-ND	19076	2.45	2.45
10uF	10µF ±20% 50V Ceramic Capacitor XSR 1206 (3216 Metric)	C4, C6, C7	1206	Cap	Murata Electronics North America	GRT31CR61H106M E01L	3	Digi-Key	USD	3	490-12457-1-ND	6846	1.29	0.43
0.1uF	CAP CER 0.1UF 50V 10% X7R 0603	C8	0603	Cap	Murata Electronics North America	GRM188R71H104K A93D	1	Digi-Key	USD	1	490-1519-1-ND	8912517	0.1	0.1
1uf	1µF ±20% 50V Ceramic Capacitor XSR 0603 (1608 Metric)	C10	0603	Cap	Murata Electronics North America	GRT188R61H105M E13D	1	Digi-Key	USD	1	490-12331-1-ND	3606	0.25	0.25
Green	LED RED DIFFUSED 0805 SMD	D1	0805 Polarized	LED - SMD	OSRAM Opto Semiconductors Inc.	LS R976-NR-1	1	Digi-Key	USD	1	475-1278-1-ND	77434	0.26	0.26
Red	LED RED DIFFUSED 0805 SMD	D2	0805 Polarized	LED - SMD	OSRAM Opto Semiconductors Inc.	LS R976-NR-1	1	Digi-Key	USD	1	475-1278-1-ND	77434	0.26	0.26
CDBA240LL-HF	Diode Schottky 40V 2A Surface Mount DO-214AC (SMA)	D3	SMA with A and K	Schottky Diode	Comchip Technology	CDBA240LL-HF	1	Digi-Key	USD	1	641-1698-1-ND	11124	0.55	0.55
Header 4	Header, 4-Pin	I2C, UART1	HDR1X4	Header 4			2							
Vehicle Interface Cable Connector	Receptacle Assembly, 15 Position, Right Angle	J1	DSUB1.385-2H15	D Connector 15	Amphenol FCI	D15S33E4GV00LF	1	Digi-Key	USD	1	609-1498-ND	1295	2.13	2.13
6.49k	6.49k Ohm ±1% 0.1W, 1/10W Chip Resistor 0603 (1608 Metric) Automotive AEC-Q200 Thick Film	R1, R4, R7, R8, R9, R10, R11, R12, R13	0603	Chip Resistor	Panasonic Electronic Components	ERJ-3EKF6491V	9	Digi-Key	USD	9	P6.49KHCT-ND	59773	0.9	0.1
120	120 Ohm ±1% 0.1W, 1/10W Chip Resistor 0603 (1608 Metric) Automotive AEC-Q200 Thick Film	R2, R3	0603	Chip Resistor	Panasonic Electronic Components	ERJ-3EKF1200V	2	Digi-Key	USD	2	P120HCT-ND	163027	0.2	0.1
47	RES SMD 47 OHM 1% 1/10W 0603	R5, R6, R14	0603	Chip Resistor	Panasonic Electronic Components	ERJ-3EKF47R0V	3	Digi-Key	USD	3	P47.0HCT-ND	87989	0.3	0.1
Header 6	Header, 6-Pin	SPI1	HDR1X6	Header 6			1							
Teensy 3.6 Through Hole	32 Bit Arduino-Compatible Microcontroller	Teensy 1	Teensy 3.6 Through Hole - No Labels	Teensy 3.6 Through Hole	SparkFun Electronics	DEV-14057	1	Digi-Key	USD	1	1568-1442-ND	256	32.5	32.5
TLF80511TF V50	Low Dropout Linear Fixed Voltage Regulator, 5 Vout, -40 to 150 degC, PG-TO252-3, Reel, Green	U1	INF-PG-TO252-3-11_N	TLF80511TF V50	Infineon Technologies	TLF80511TFV50AT MA1	1	Digi-Key	USD	1	TLF80511TFV50AT MA1CT-ND	1070	1.35	1.35
NCV7356D1G	Single Wire CAN Transceiver, 5 to 27 V, 8-Pin SOIC, Pb-Free, Tube	U2	ONSC-SOIC-8-751-07_V	NCV7356D1G	ON Semiconductor	NCV7356D1G	1	Digi-Key	USD		NCV7356D1GOS-ND	89	1.52	1.52
74AHCT1G14	IC SCHMIT-TRIGG INV GATE SOT353	U3	SOT-353	74AHCT1G14 Inverter	Diodes Incorporated	74AHCT1G14SE-7	1	Digi-Key	USD	1	74AHCT1G14SE-7DICT-ND	9908	0.25	0.25
SN75HVD08DR	IC RS485 TXRX 3/5V 8-SOIC	U4	SOIC-SN8_N	SN75HVD12D (3.3V RS485)	Texas Instruments	SN75HVD08DR	1	Digi-Key	USD	1	296-37893-1-ND	9050	3.87	3.87
MCP2558	Microchip CAN FD Transceiver with Silent Mode	U5, U8, U9	TDFN	MCP2558FD	Microchip Technology	MCP2558FDT-H/MNY	3	Digi-Key	USD		MCP2558FDT-H/MNYCT-ND	3187	2.49	0.83
MCP2515-E/ML	CAN Controller CAN 2.0 SPI Interface 20-QFN (4x4)	U6	QFN-ML20_M	MCP2515-E/ML	Microchip Technology	MCP2515-E/ML	1	Digi-Key	USD	1	MCP2515-E/ML-ND	291	2.24	2.24
MCP2003A-E/SN	LIN J2602 Transceiver	U7	SOIC-SN8_N	MCP2003AT-E/SN	Microchip Technology	MCP2003A-E/SN	1	Digi-Key	USD	1	MCP2003A-E/SN-ND	4940	0.84	0.84