MCN Signals

Sensor Configurations

| MCN1	
AIN-1	Front Suspension Travel
AIN-2	Rear Suspension Travel
AIN-3	Steering Angle
AIN-4	Ambient Temp.
AIN-5	Ambient Pres.
AIN-6	Motor Inlet Pressure
AIN-7	Unused Analog 1
AIN-8	Unused Analog 2
GPIO-0	Unused GPIO 1
GPIO-1	Unused GPIO 2

MCN2	
AIN-1	Coolant Temp. Motor Inlet
AIN-2	Coolant Temp. Motor Outlet
AIN-3	Coolant Temp. Controller Inlet
AIN-4	Coolant Temp. Controller Outlet
AIN-5	Contactor Box Temp.
AIN-6	Unused Analog 3
AIN-7	Unused Analog 4
AIN-8	Unused Analog 5
GPIO-0	Coolant Flow Controller Loop
GPIO-1	Coolant Flow Motor Loop

MCN3	
AIN-1	Front Tire Temp.
AIN-2	Rear Tire Temp
AIN-3	Flex 1
AIN-4	Flex 2
AIN-5	Flex 3
AIN-6	Unused Analog 6
AIN-7	Unused Analog 7
AIN-8	Unused Analog 8
GPIO-0	Unused GPIO 3
GPIO-1	Unused GPIO 4

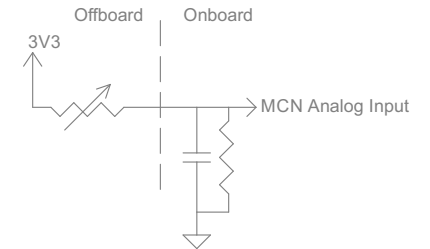| Rider Controls	
AIN-1	Throttle Position
AIN-2	Unused Analog 9
GPIO-0	Throttle Enable
GPIO-1	ABS Enable

Linear Pot.
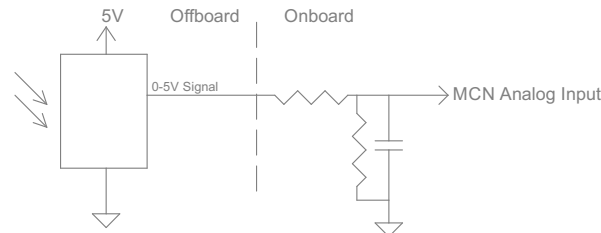Front and rear susp., Steering Ang., Throttle Pos.
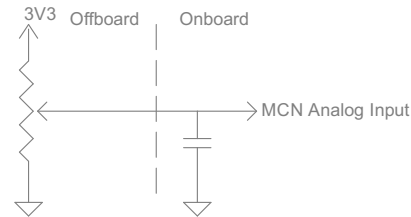
Toggle Switch
Throttle Enable
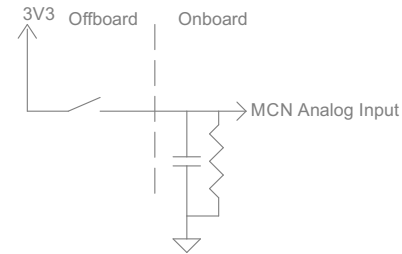
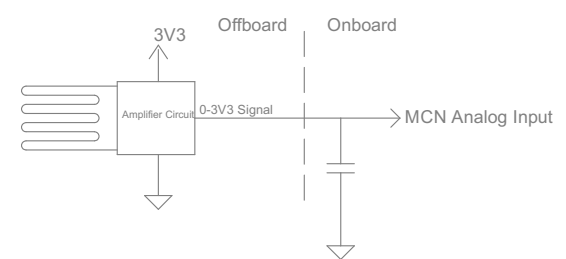### Thermistor
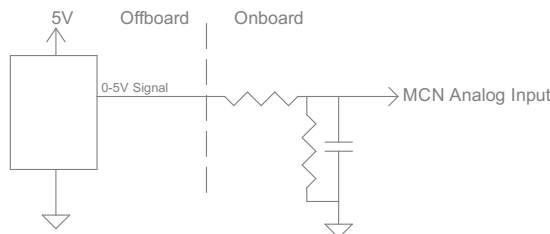Motor in/out temp., Controller in/out temp
Amb. Temp., Contactor Box Temp.

Infrared Camera
Front/Rear Tire Temp.
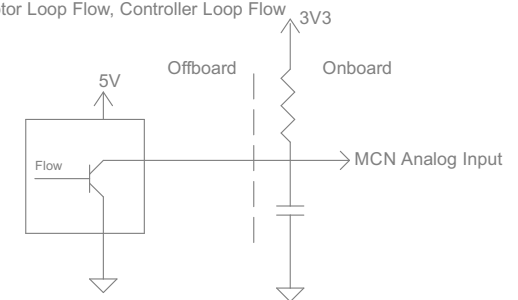
Strain Gauge
Flex 1, 2, 3

Flow
Motor Loop Flow, Controller Loop Flow

Barometer
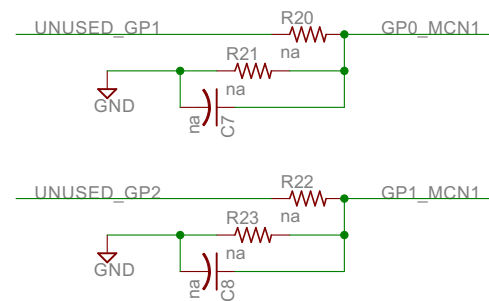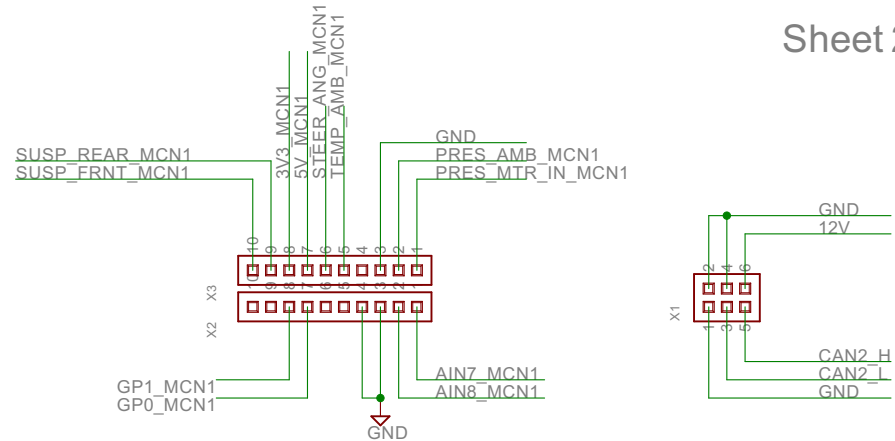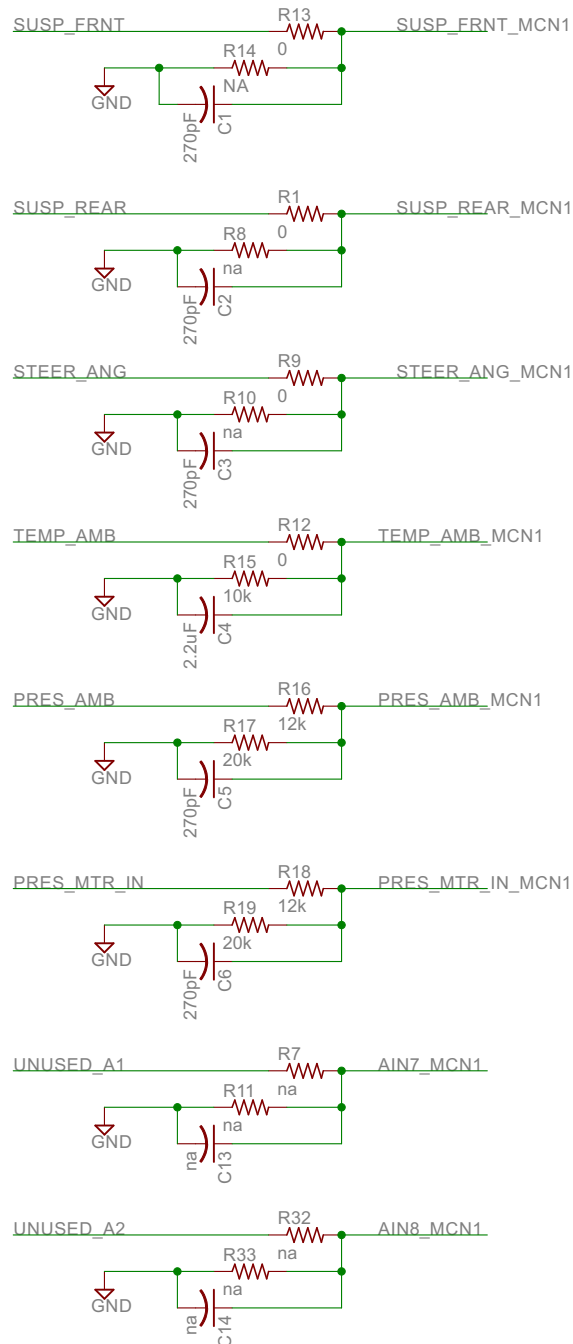Amb. Pres., Motor Inlet Pres.

Board: Sensor Breakout Board
Drawn by Clayton Greenbaum
Revision date: 2/1/14
Last modified date: 2/7/2016 9:19:10 PM

SUSP_FRNT — R13 — SUSP_FRNT_MCN1
R14 0
NA
GND
270pF C1

SUSP_REAR — R1 — SUSP_REAR_MCN1
R8 0
na
GND
270pF C2

STEER_ANG — R9 — STEER_ANG_MCN1
R10 0
na
GND
270pF C3

TEMP_AMB — R12 — TEMP_AMB_MCN1
R15 0
10k
GND
2.2uF C4

PRES_AMB — R16 — PRES_AMB_MCN1
R17 12k
20k
GND
270pF C5

PRES_MTR_IN — R18 — PRES_MTR_IN_MCN1
R19 12k
20k
GND
270pF C6

UNUSED_A1 — R7 — AIN7_MCN1
R11 na
na
GND
na C13

UNUSED_A2 — R32 — AIN8_MCN1
R33 na
na
GND
na C14

SUSP_REAR_MCN1
SUSP_FRNT_MCN1

3V3_MCN1
5V_MCN1
STEER_ANG_MCN1
TEMP_AMB_MCN1

GND
PRES_AMB_MCN1
PRES_MTR_IN_MCN1

X2   X3

GP1_MCN1
GP0_MCN1

AIN7_MCN1
AIN8_MCN1

GND

X1

GND
12V

CAN2_H
CAN2_L
GND

UNUSED_GP1 — R20 — GP0_MCN1
R21 na
na
GND
na C7

UNUSED_GP2 — R22 — GP1_MCN1
R23 na
na
GND
na C8

TEMP_CLNT_MTR_IN — R2 0 — TEMP_CLNT_MTR_IN_MCN2
R3 1k
GND
2.2uF C9

TEMP_CLNT_MTR_OUT — R4 0 — TEMP_CLNT_MTR_OUT_MCN2
R5 1k
GND
2.2uF C10

TEMP_CLNT_MCTL_IN — R6 0 — TEMP_CLNT_MCTL_IN_MCN2
R24 1k
GND
2.2uF C11

TEMP_CLNT_MCTL_OUT — R25 0 — TEMP_CLNT_MCTL_OUT_MCN2
R26 1k
GND
2.2uF C12

TEMP_CONTACTOR_BOX — R27 0 — TEMP_CONTACTOR_BOX_MCN2
R28 10k
GND
2.2uF C15

UNUSED_A3 — R29 na — AIN6_MCN2
R30 na
GND
na C16

UNUSED_A4 — R37 na — AIN7_MCN2
R38 na
GND
na C19

UNUSED_A5 — R39 na — AIN8_MCN2
R40 na
GND
na C20

TEMP_CLNT_MCTL_IN_MCN2
TEMP_CLNT_MCTL_OUT_MCN2
GND
TEMP_CONTACTOR_BOX_MCN2
TEMP_CLNT_MTR_OUT_MCN2
AIN6_MCN2
TEMP_CLNT_MTR_IN_MCN2

CAN2_MCN2
5V2_MCN2

X6
X5

FLOW_MTRLOOP_MCN2
FLOW_MCTLLOOP_MCN2
AIN7_MCN2
AIN8_MCN2
GND

X4
GND
12V
CAN2_H
CAN2_L
GND

3V3_MCN2 — R31 10k — FLOW_MCTLLOOP_MCN2
R34 na
GND
270pf C17

3V3_MCN2 — R35 10k — FLOW_MTRLOOP_MCN2
R36 na
GND
270pf C18

Board: Sensor Breakout Board
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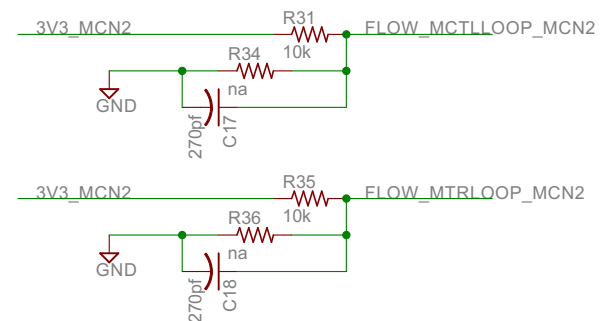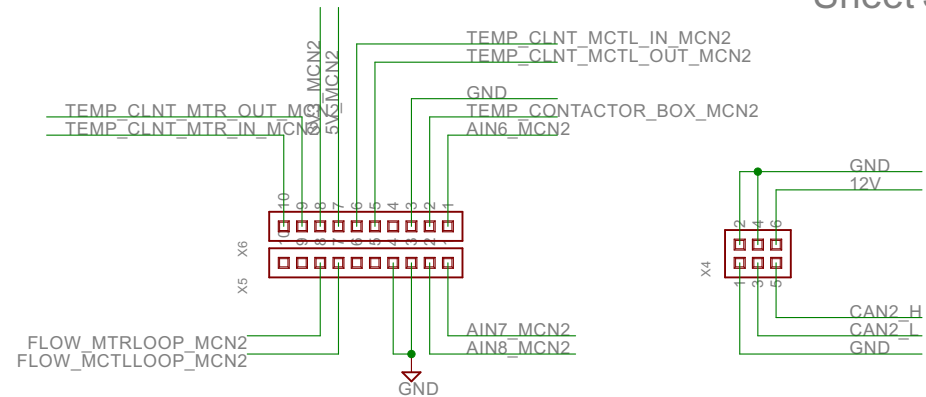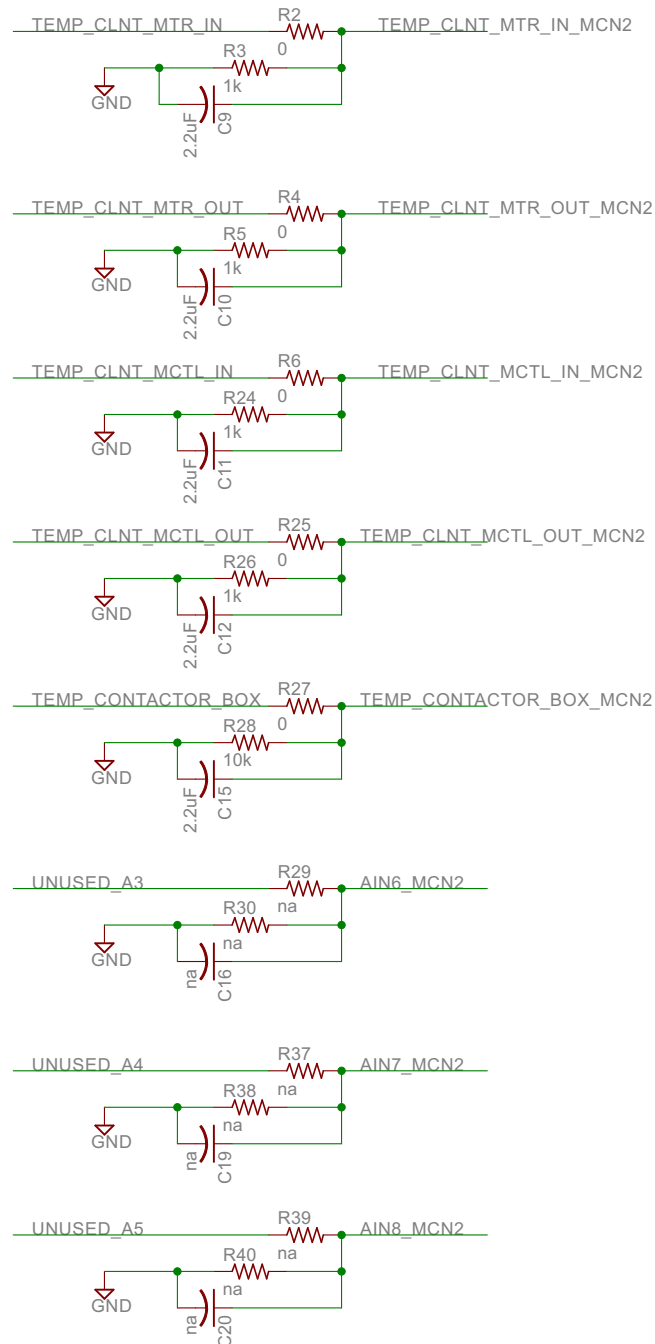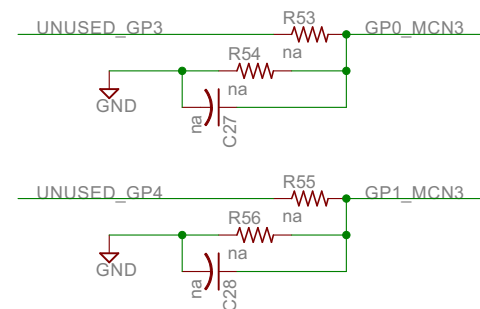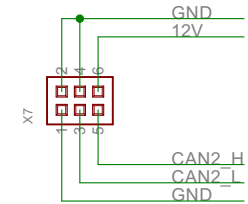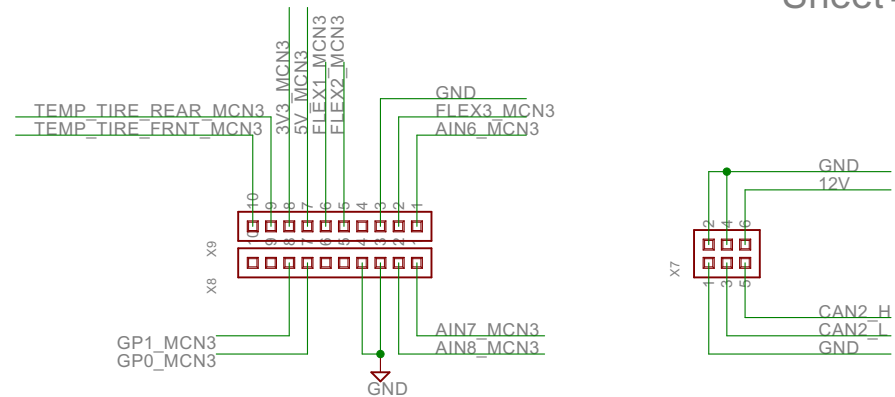Revision date: 2/1/14
Last modified date: 2/7/2016 9:19:10 PM

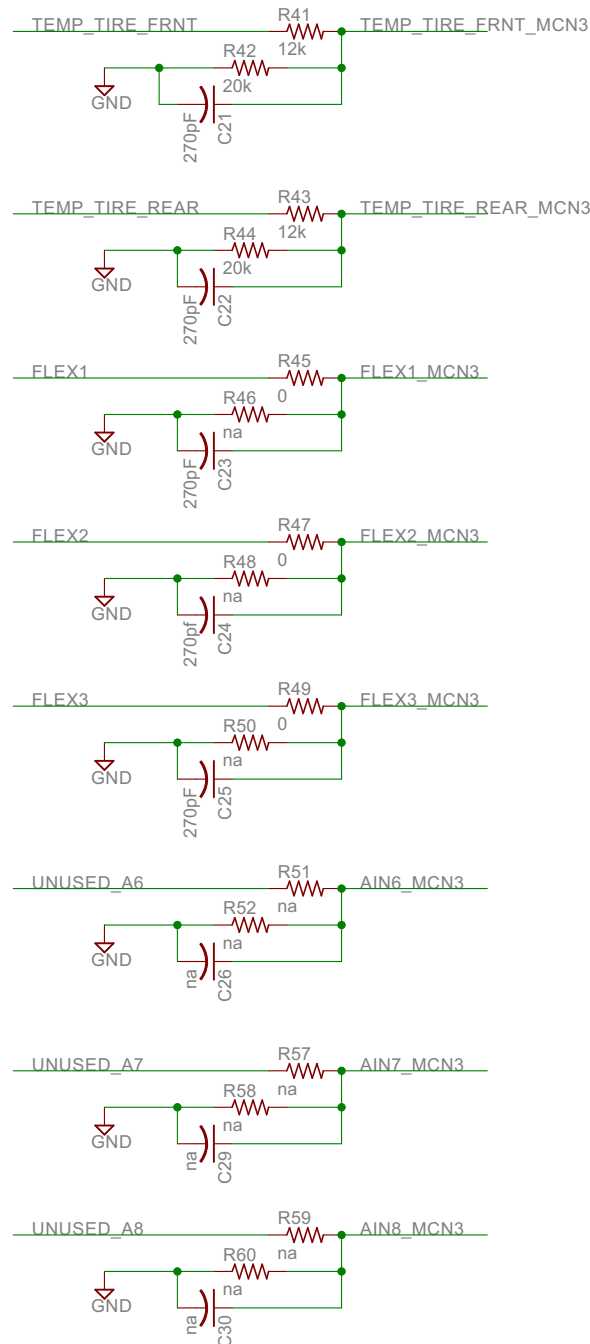TEMP_TIRE_FRNT — R41 12k — TEMP_TIRE_FRNT_MCN3
R42 20k
GND
270pF C21

TEMP_TIRE_REAR — R43 12k — TEMP_TIRE_REAR_MCN3
R44 20k
GND
270pF C22

FLEX1 — R45 — FLEX1_MCN3
R46 0
GND
270pF C23 na

FLEX2 — R47 — FLEX2_MCN3
R48 0
GND
270pf C24 na

FLEX3 — R49 — FLEX3_MCN3
R50 0
GND
270pF C25 na

UNUSED_A6 — R51 na — AIN6_MCN3
R52 na
GND
na C26

UNUSED_A7 — R57 na — AIN7_MCN3
R58 na
GND
na C29

UNUSED_A8 — R59 na — AIN8_MCN3
R60 na
GND
na C30

TEMP_TIRE_REAR_MCN3
TEMP_TIRE_FRNT_MCN3

3V3_MCN3
5V_MCN3
FLEX1_MCN3
FLEX2_MCN3

GND
FLEX3_MCN3
AIN6_MCN3

X8   X9

GP1_MCN3
GP0_MCN3

AIN7_MCN3
AIN8_MCN3

GND

X7

GND
12V

CAN2_H
CAN2_L
GND

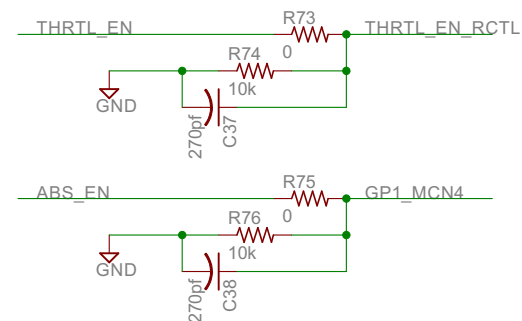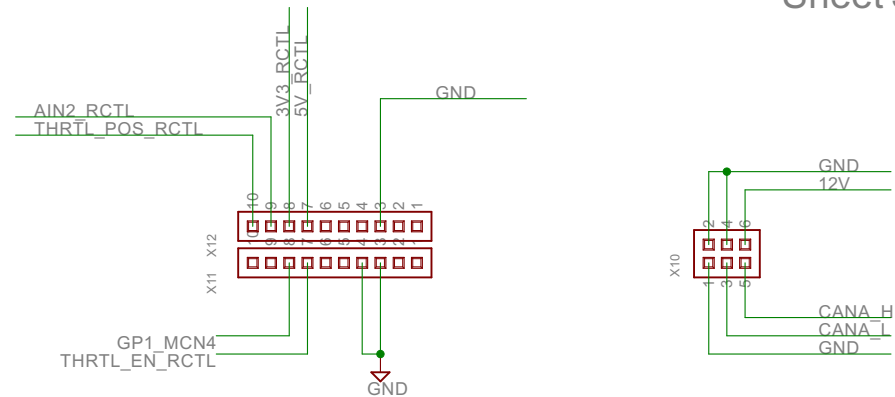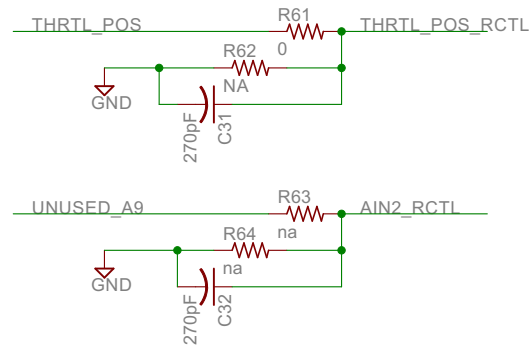UNUSED_GP3 — R53 na — GP0_MCN3
R54 na
GND
na C27

UNUSED_GP4 — R55 na — GP1_MCN3
R56 na
GND
na C28

Board: Sensor Breakout Board
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THRTL_POS — R61 — THRTL_POS_RCTL

R62
0
NA
GND
270pF C31

UNUSED_A9 — R63 — AIN2_RCTL
na
R64
na
GND
270pF C32

AIN2_RCTL
THRTL_POS_RCTL
3V3_RCTL
5V_RCTL
GND

X11 X12

GP1_MCN4
THRTL_EN_RCTL
GND

GND
12V

X10

CANA_H
CANA_L
GND

THRTL_EN — R73 — THRTL_EN_RCTL
R74
0
10k
GND
270pf C37

ABS_EN — R75 — GP1_MCN4
R76
0
10k
GND
270pf C38

Board: Sensor Breakout Board
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Other Support Hardware
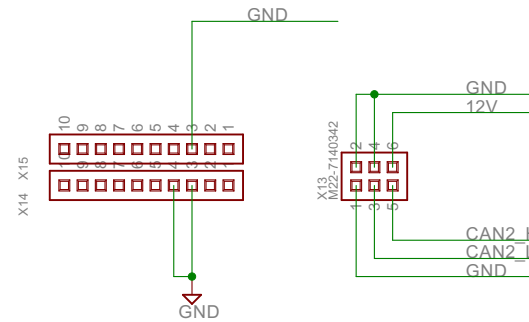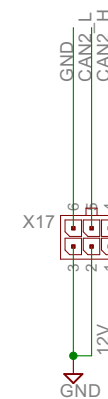
12V Input

X16

12V	P$1
GND	P$2

X22

CANA_L	1	2	CANA_H
CAN2_L	3	4	CAN2_H
N$3	5	6	N$6

GPS MCN

GND

X14 X15

GND

X13
M22-7140342

GND
12V

CAN2_H
CAN2_L
GND
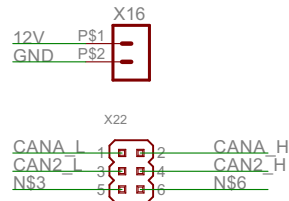
CAN Backplane

Oil Pan Port 2	CAN Mirror	CAN Mirror	Oil Pan Port A	Kvaser
GND CANA_L CANA_H	GND CANA_L CANA_H	GND CAN2_L CAN2_H	GND CAN2_L CAN2_H	GND CAN2_L CAN2_H
X21	X20	X19	X18	X17
12V	12V	12V	12V	12V
GND	GND	GND	GND	GND
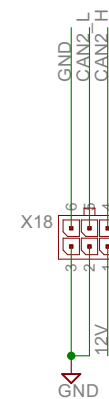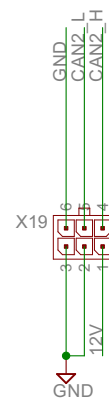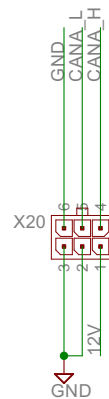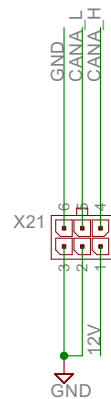
Big Plug

MCN1

UNUSED_GP2 — PAD1
UNUSED_GP1 — PAD2
UNUSED_A2 — PAD3
UNUSED_A1 — PAD4
SUSP_FRNT — PAD5
SUSP_REAR — PAD6
3V3_MCN1 — PAD7
5V_MCN1 — PAD8
TEMP_AMB — PAD9
STEER_ANG — PAD10
PRES_AMB — PAD11
PRES_MTR_IN — PAD12

MCN2

FLOW_MTRLOOP_MCN2 — PAD13
FLOW_MCTLLOOP_MCN2 — PAD14
UNUSED_A5 — PAD15
UNUSED_A4 — PAD16
TEMP_CLNT_MTR_IN — PAD17
TEMP_CLNT_MTR_OUT — PAD18
3V3_MCN2 — PAD19
5V_MCN2 — PAD20
TEMP_CLNT_MCTL_OUT — PAD21
TEMP_CLNT_MCTL_IN — PAD22
TEMP_CONTACTOR_BOX — PAD23
UNUSED_A3 — PAD24

CAN2_H — PAD45
CAN2_L — PAD47

CANA_L — PAD44
CANA_H — PAD46

12V — PAD49
PAD51
PAD53
PAD55
PAD57
PAD59

GND — PAD48
PAD50
PAD52
PAD54
PAD56
PAD58

MCN3

UNUSED_GP4 — PAD25
UNUSED_GP3 — PAD26
UNUSED_A8 — PAD27
UNUSED_A7 — PAD28
TEMP_TIRE_FRNT — PAD29
TEMP_TIRE_REAR — PAD30
3V3_MCN3 — PAD31
5V_MCN3 — PAD32
FLEX2 — PAD33
FLEX1 — PAD34
FLEX3 — PAD35
UNUSED_A6 — PAD36

RCTL

ABS_EN — PAD37
THRTL_EN — PAD38
THRTL_POS — PAD39
UNUSED_A9 — PAD40
3V3_RCTL — PAD41
5V_RCTL — PAD42