FID1
Fiducial 1MM
FID3
Fiducial 1MM
FID2
Fiducial 1MM
FID4
Fiducial 1MM

LOGO1
50mm Wide QUTMS Logo

M1
Hole M3 Tight Unplated
M2
Hole M3 Tight Unplated
M3
Hole M3 Tight Unplated
M4
Hole M3 Tight Unplated

Designator
MCISO-S08-V00-Peripherals.SchDoc
USB
SD

U_MCISO-S04-V00-Microcontroller
MCISO-S04-V00-Microcontroller.SchDoc
USB
SD
CAN GLV
CAN INV

U_MCISO-S05-V00-CANIsolation
MCISO-S05-V00-CANIsolation.SchDoc
CAN INV
INV_CANBUS

INV_CANBUS
CAN INV H
CAN INV L
J3
JST PH 4x RIGHT COMB

U_MCISO-S03-V00-CAN_MAIN
MCISO-S03-V00-CAN_MAIN.SchDoc
CAN
CANBUS

CANBUS
CAN MAIN L
CAN MAIN H
CAN L
CAN H
12V
J10
JST PH 4x RIGHT COMB
GND

B
MCISO-S06-V00-HALL_DIFFB.SchDoc
5V INV
HALL 1A
HALL 1B
HALL 2A
HALL 2B
HALL 3A
HALL 3B
GND INV
H1
H2
H3
5V INV A
5V INV A
5V INV A
J1
JST PH 8x Right comb
M1 H1 ISO
M1 H2 ISO
M1 H3 ISO
J2
JST PH 5x RIGHT COMB
GND INV A
GND INV A
GND INV A

K1A
G5V-2-DC12
NO COM A
COM A
J4B
JST PH 4x RIGHT COMB
J8
Jumper 2Way Pins

SHDN_CHAIN_IN
G5V-2
K1C
G5V-2-DC12
SHDN_CHAIN_OUT
J17
JST PH 2x RIGHT COMB

K1B
G5V-2-DC12
COM B
NO COM B
J4A
JST PH 4x RIGHT COMB
J9
Jumper 2Way Pins

A
MCISO-S06-V00-HALL_DIFFB.SchDoc
5V INV
HALL 1A
HALL 1B
HALL 2A
HALL 2B
HALL 3A
HALL 3B
GND INV
H1
H2
H3
5V INV B
5V INV B
5V INV B
J5
JST PH 8x Right comb
M2 H1
M2 H2
M2 H3
J6
JST PH 5x RIGHT COMB
GND INV B
GND INV B
GND INV B

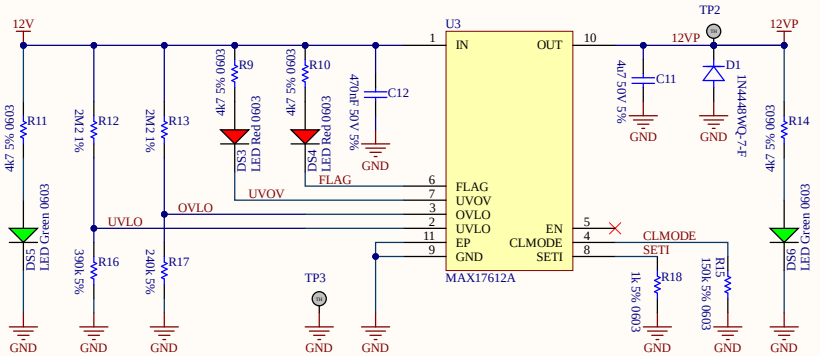
5V ISO
5V INV B
GND ISO
GND INV B

U_MCISO-S02-V00-12VProtection
MCISO-S02-V00-12VProtection.SchDoc

U_MCISO-S07-V00-Master-PSU3V3-300mA
MCISO-S07-V00-Master-PSU3V3-300mA.SchDoc

Title		
Size A3	Number	Revision
Date: 4/20/2021	Sheet of	
File: C:\Users\..\MCISO-S01-V00-Master.SchDoc	Drawn By:	

- UVLO - Under Voltage Lockout set to 10V by 390k (Datasheet)
- OVLO - Over Voltage Lockout set to 15V by 240k (Datasheet)
- SETI: Set current limit. From datasheet, SETI resistor is set to 1k to limit current to maximum 250mA output for device



DS1: FLAG Fault indicator. FLAG goes low, lighting DS1 when:
- Overcurrent duration exceeds the blanking time.
- Reverse current is detected (MAX17612A only).
- Thermal shutdown is active.
- RSETI is less than 1kΩ (max)

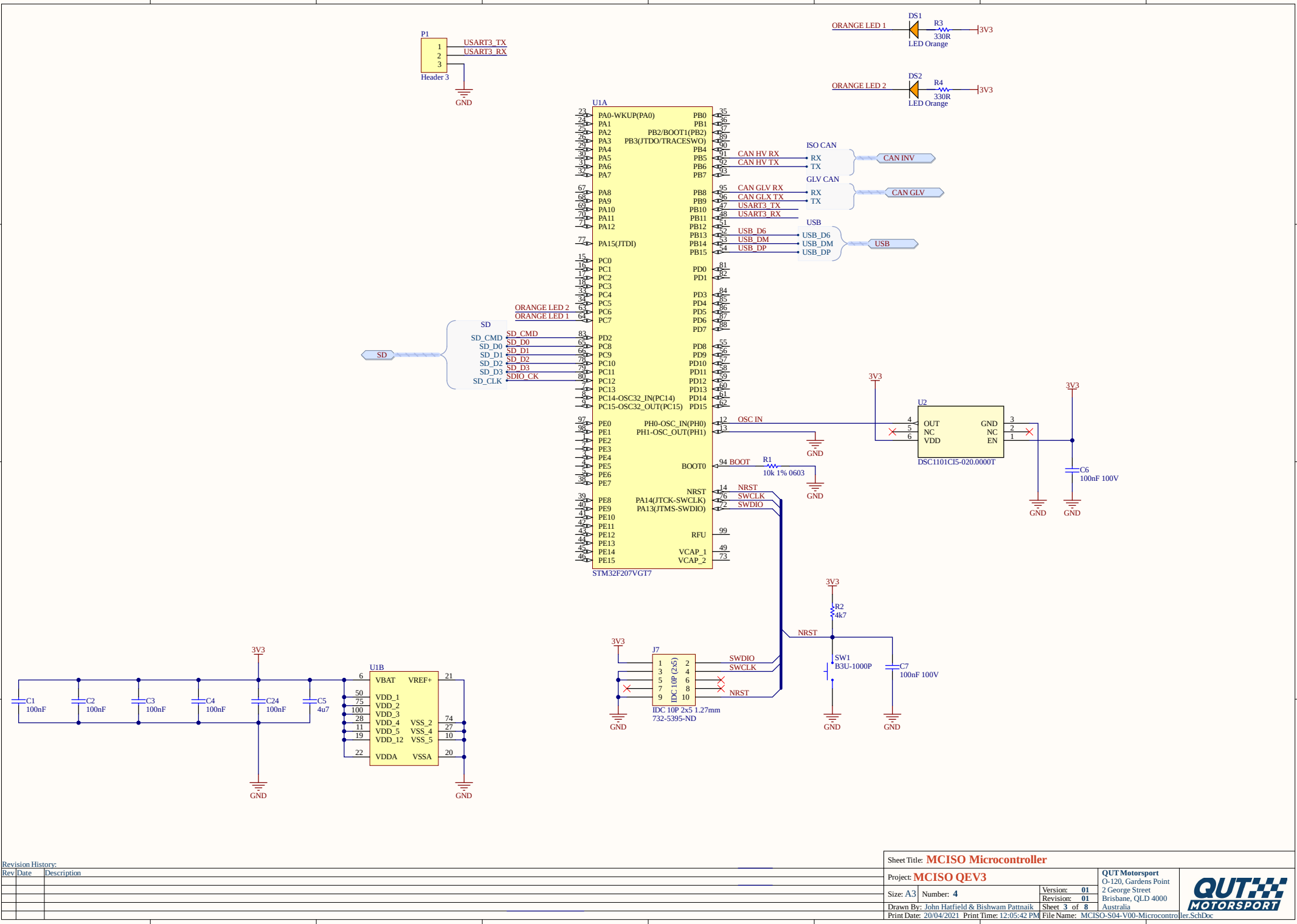
DS2: UVOV Fault indicator. UVOV goes low, lighting DS2 when:
- Input voltage falls below UVLO threshold.
- Input voltage rises above OVLO threshold.

Need 150k resistor from CLMODE to GND to prevent auto-retry. Will require IC to be power cycled

Status LEDs on protected and non-protected size for visual indication that board has power

Check with shutdown board. Check set for max 12V

Title: 12V Protected Input		
Size: A3	Number:	Revision:
Date: 4/20/2021	Sheet of	
File: C:\Users\..\MCISO-S02-V00-12VProtectionSubBo	Drawn By:	

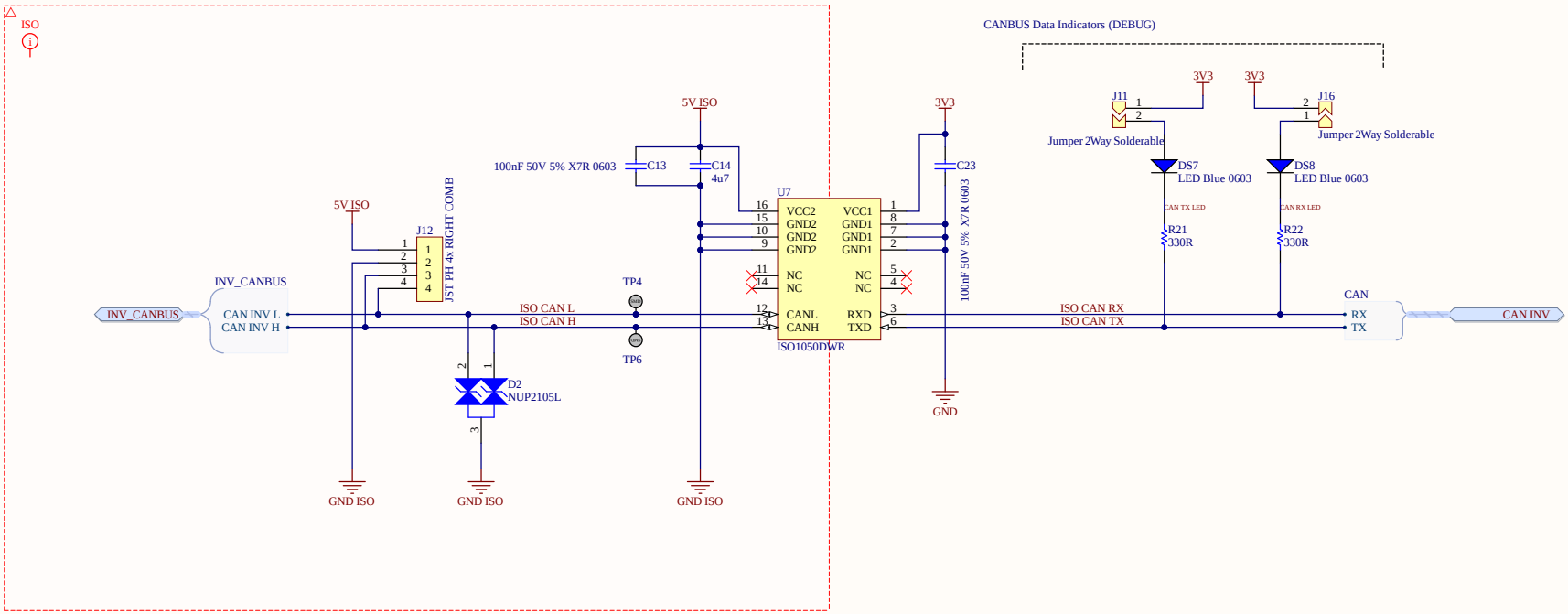


Revision History:

Rev	Date	Description

Sheet Title: MCISO Microcontroller			
Project: MCISO QEV3			
Size: A3	Number: 4	Version: 01	
		Revision: 01	
Drawn By: John Hatfield & Bishwam Pattnaik		Sheet 3 of 8	
Print Date: 20/04/2021	Print Time: 12:05:42 PM	File Name: MCISO-S04-V00-Microcontroller.SchDoc	

QUT Motorsport
Q-120, Gardens Point
2 George Street
Brisbane, QLD 4000
Australia

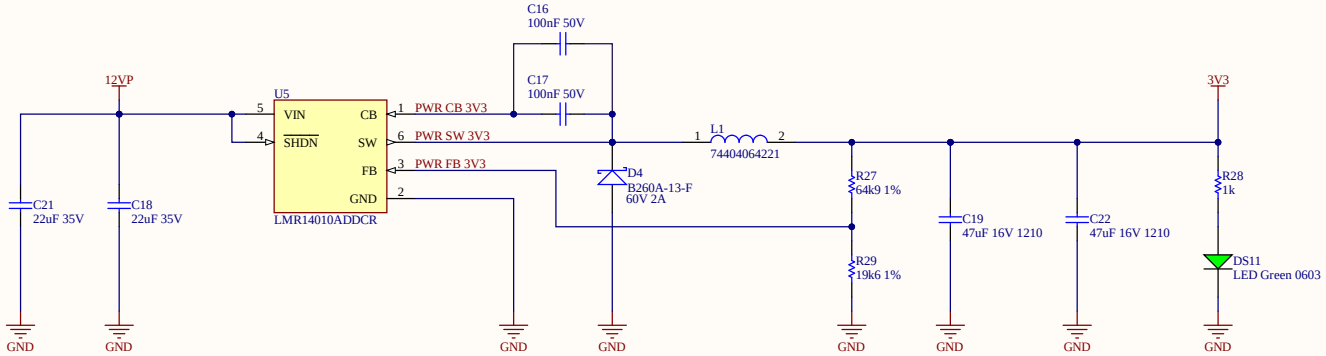


Title: Isolated Canbus		
Size: A3	Number:	Revision:
Date: 4/20/2021	Sheet of	
File: C:\Users\..\MCISO-S05-V00-CANIsolation.SchDoc	Drawn By:	

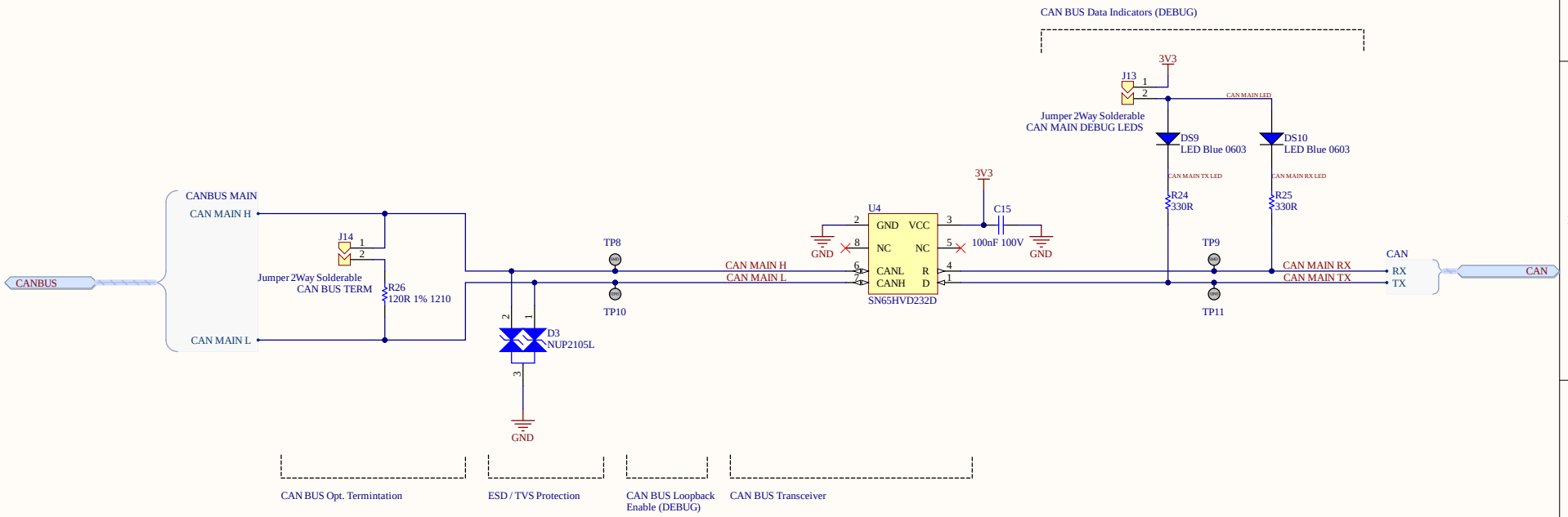
Properties

Input voltage range: 9V - 16V
Output voltage: 3V3
Output current: 300mA
Estimated efficiency: 88%
Price estimate (Feb 2021): $1.64USD

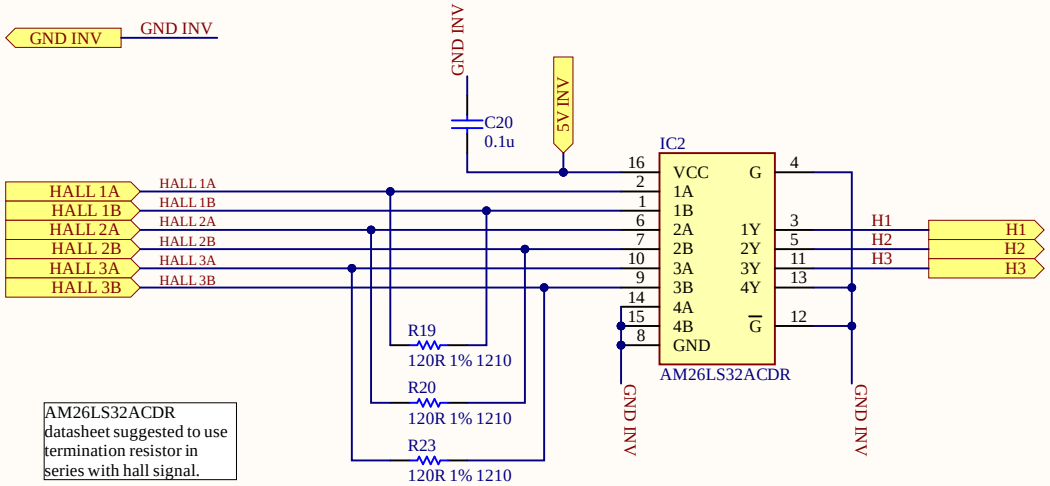
TI Webench Interactive Model



Title	*Power Supply (20-40V to 3v3 @ 0.1-0.6A)*		
Size: A3	Number: 2	Revision: 01	
Date: 20/04/2021	Time: 12:05:43 PM	Sheet 5 of 8	
File: C:\Users\n10222944\Documents\QUTMS_MCISO\hardware\MCISO-S07-V00-Master-PSU3V3-300mA.SchDoc			

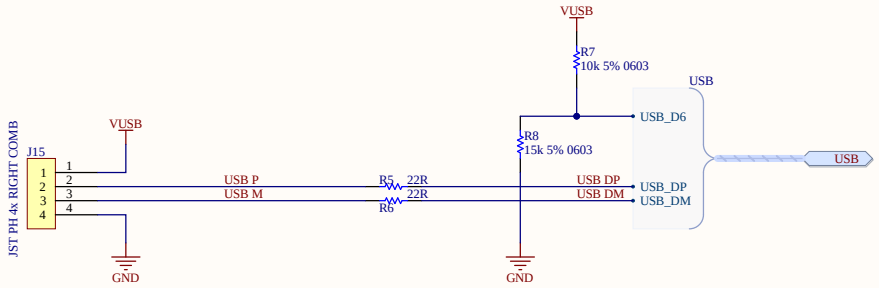


Title: Main Canbus		
Size: A3	Number:	Revision:
Date: 4/20/2021	Sheet of	
File: C:\Users\..\MCISO-S03-V00-CAN_MAIN.SchDoc	Drawn By:	

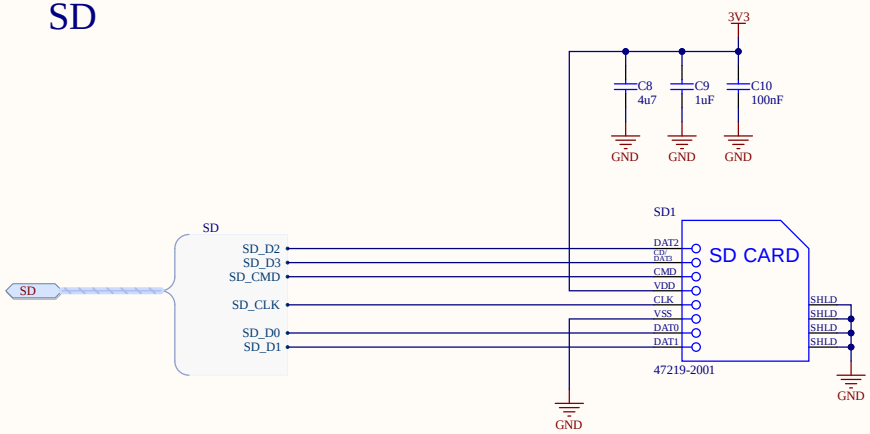


Title: Hall Diff to Analog		
Size: A4	Number:	Revision:
Date: 4/20/2021	Sheet of	
File: C:\Users\..\MCISO-S06-V00-HALL_DIFF.SchDoc	Drawn By:	

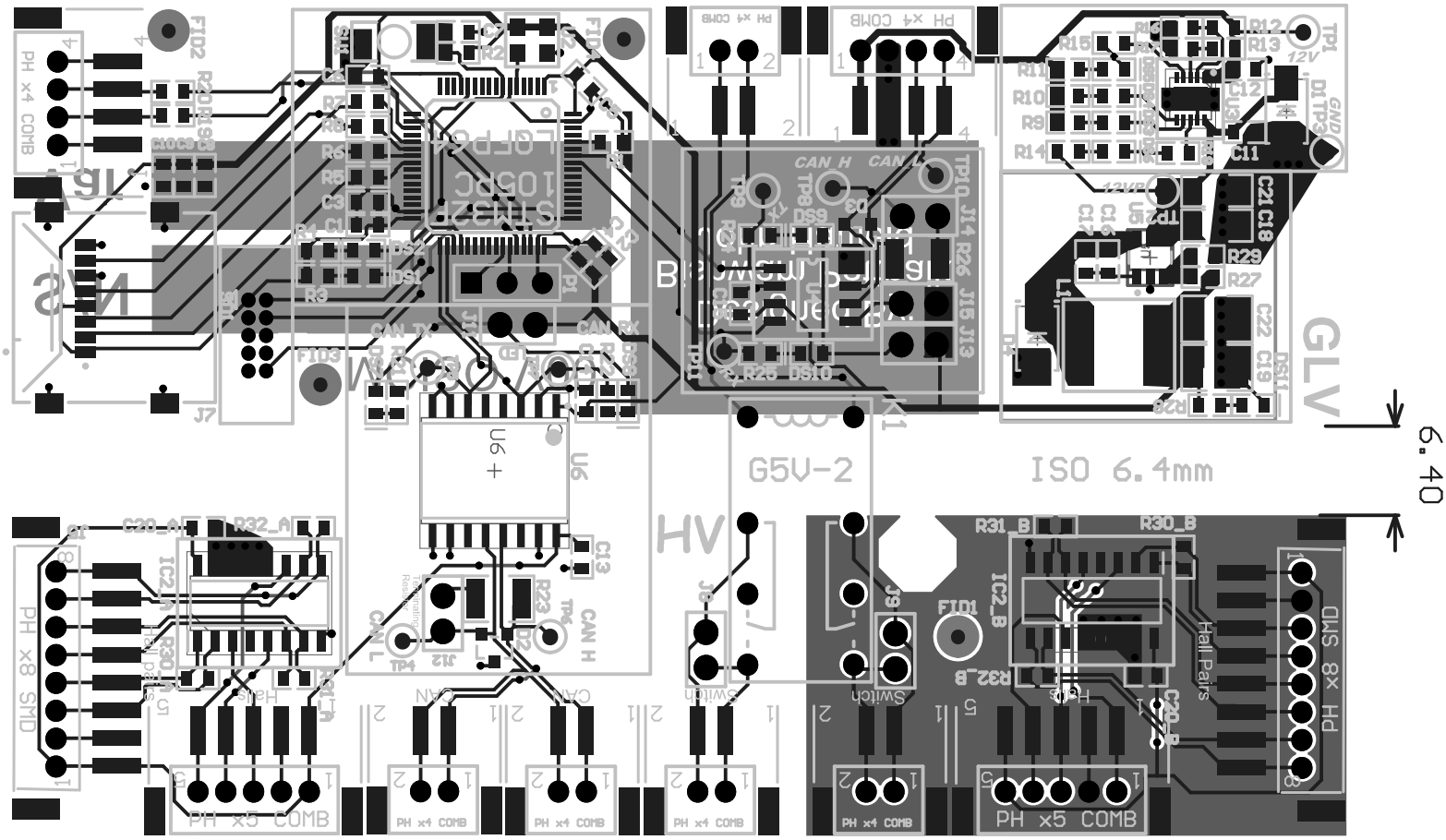
USB



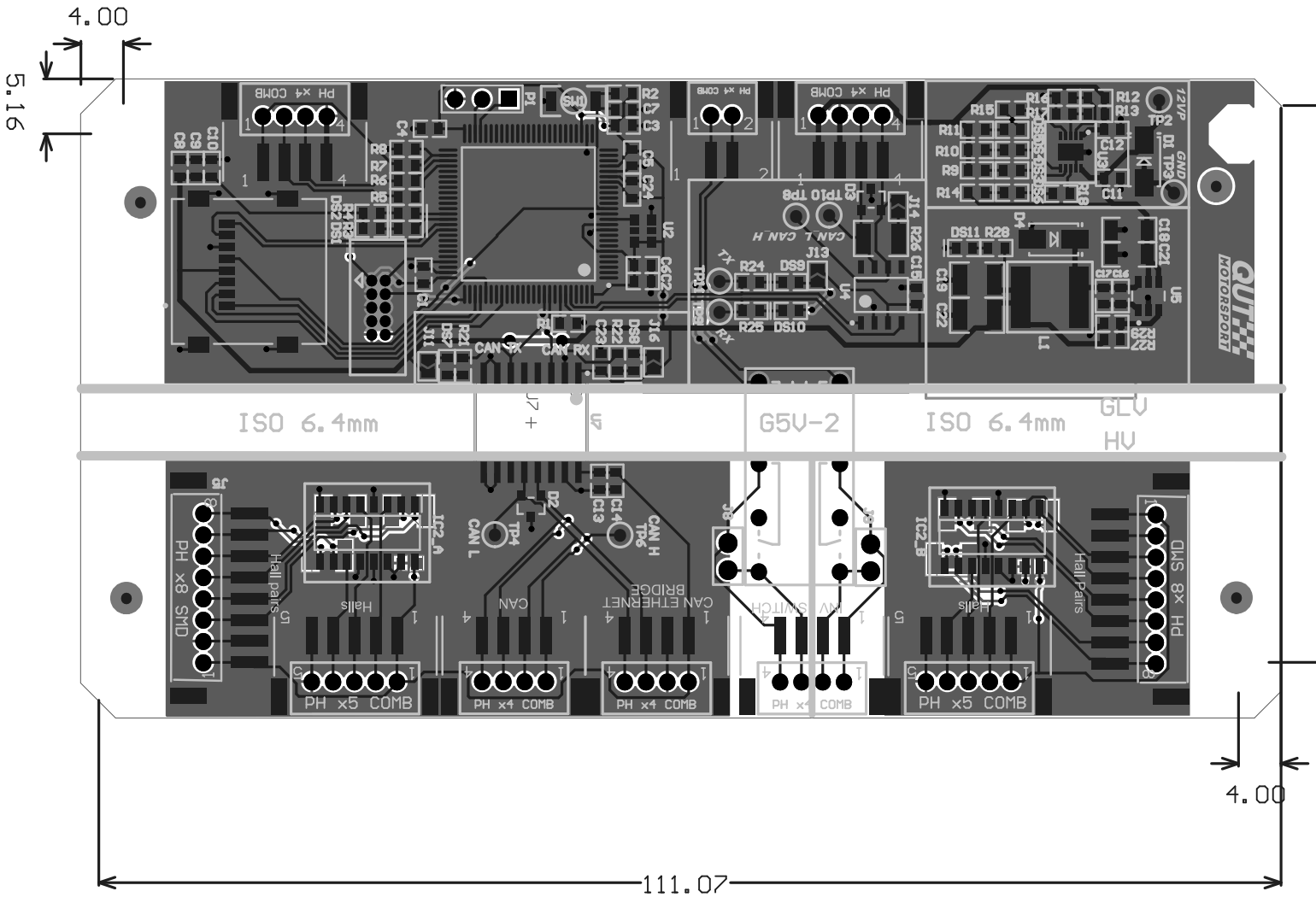
SD



Title: Peripherals			
Size: A3	Number:		Revision:
Date: 4/20/2021		Sheet of	
File: C:\Users\..\MCISO-S08-V00-Peripherals.SchDoc		Drawn By:	


GLV
HV
ISO 6.4mm
G5V-2
6.40
PH x4 COMB
PH x5 COMB
PH x8 SMD
Hall Pairs
Switch
CAN H
CAN L
12V
GND

LOGO1


4.00
5.16
52.28
ISO 6.4mm
G5V-2
ISO 6.4mm
GLV
HV
PH x8 SMD
PH x5 COMB
PH x4 COMB
PH x4 COMB
PH x4 COMB
PH x5 COMB
SMD 8x Hd
Hall pairs
Halls
CAN
CAN ETHERNET BRIDGE
HV SWITCH
CAN L
CAN H
4.00
111.07

Board Stack Report