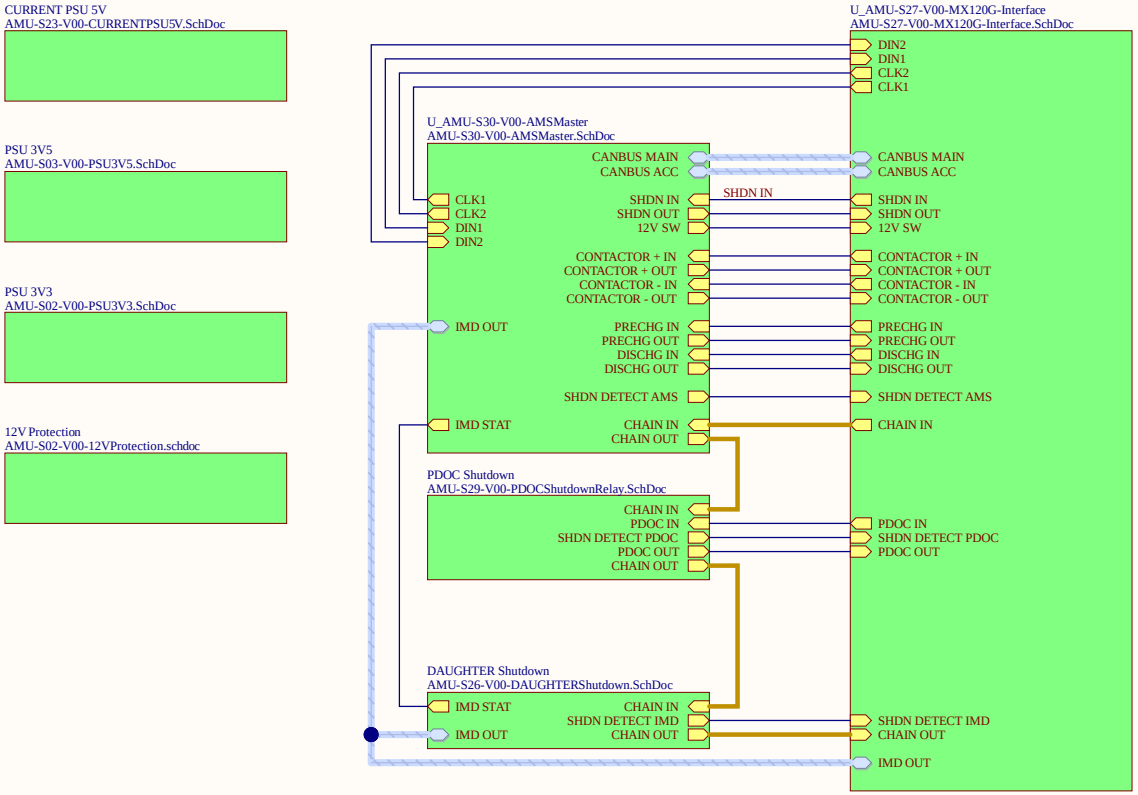
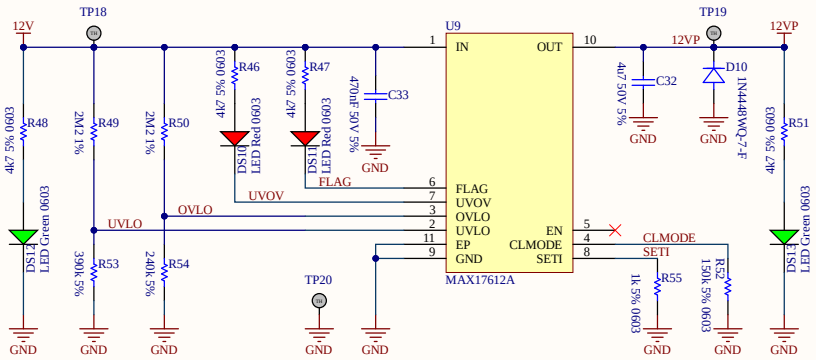


Title	AMU Master Board 2021		
Size	Number		Revision
A3	1		
Date:	1/05/2022	Sheet of	
File:	D:\GIT\..\AMU-S01-V00-Master.SchDoc	Drawn By:	

- 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



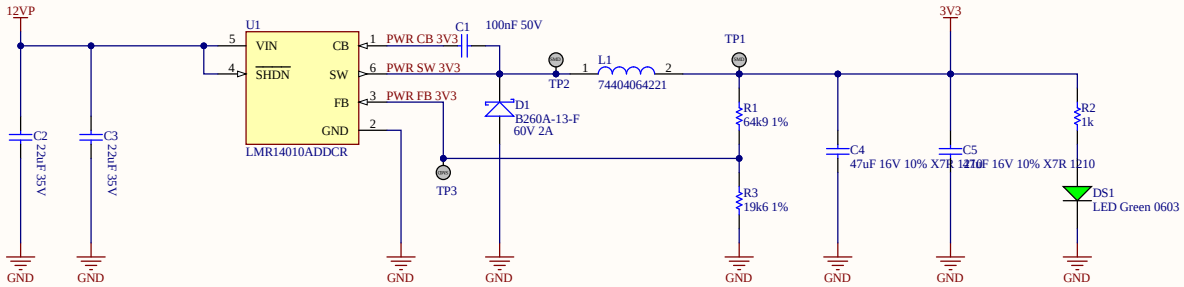
DS1: FLAG Fault indicator. FLAG goes low, lighting DS1 when:
- Overcurrent duration exceeds the blanking time.
- Reverse current is detected (MAX17612A only).
- Thermal shutdown is active.
- RSETI is less than 1kΩ (max)

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

Title		
Size: A3	Number	Revision
Date: 1/05/2022	Sheet of	
File: D:\GIT\..\AMU-S02-V00-12VProtection.sch	Drawn By:	



Revision History:

Rev	Date	Description

Sheet Title: **Power Supply (20-40V to 3v3 @ 0.1-0.6A)**

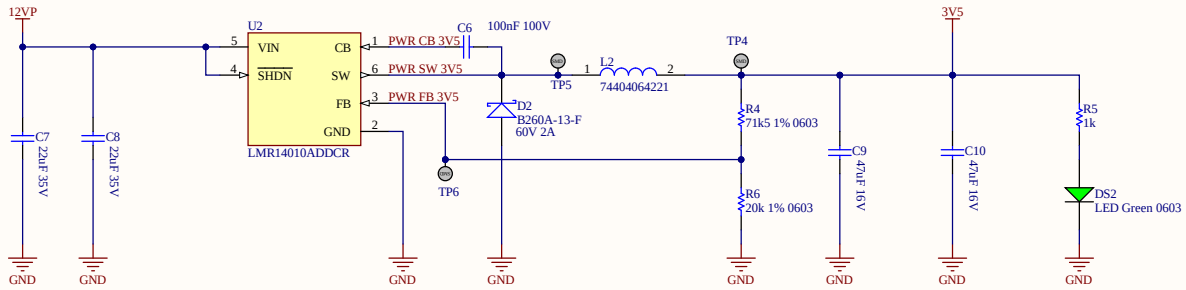
Project: **AMU 2020 (Sourced from BMS 2020)**

Size: A3 | Number: **2** | Version: **01** | Revision: **01**

Drawn By: Jonn Dillon | Sheet 3 of 17

Print Date: 5/01/2022 | Print Time: 10:40:44 AM | File Name: AMU-S02-V00-PSU3V3.SchDoc

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



Revision History:

Rev	Date	Description

Sheet Title: **Power Supply (20-40V to 3v3 @ 0.1-0.6A)**

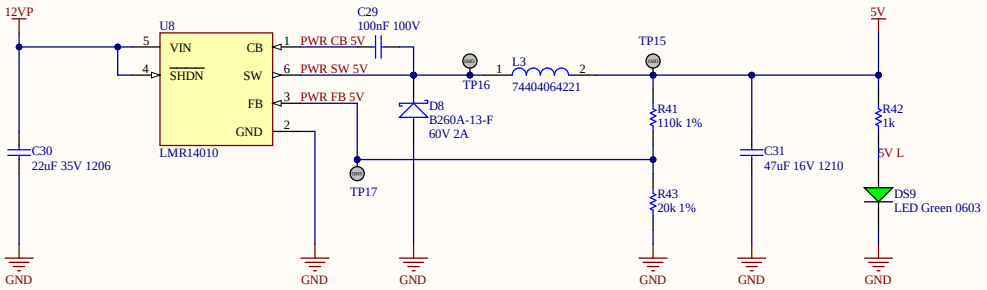
Project: **AMU 2020 (Sourced from BMS 2020)**

Size: A3 | Number: **3** | Version: **00** | Revision: ***** | Sheet **4** of **17**

Drawn By: Jonn Dillon

Print Date: 5/01/2022 Print Time: 10:40:44 AM File Name: AMU-S03-V00-PSU3V5.SchDoc

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



Revision History:

Rev	Date	Description

Sheet Title: **Power Supply (9-25V to 5V @ 0.1-0.3A)**

Project: **Shutdown Current Board 2020**

Size: A3 | Number: **9** | Version: **01** | Revision: **01**

Drawn By: Jonn Dillon | Sheet **6** of **17**

Print Date: 5/01/2022 Print Time: 10:40:44 AM File Name: AMU-S23-V00-CURRENTPSU5V.SchDoc

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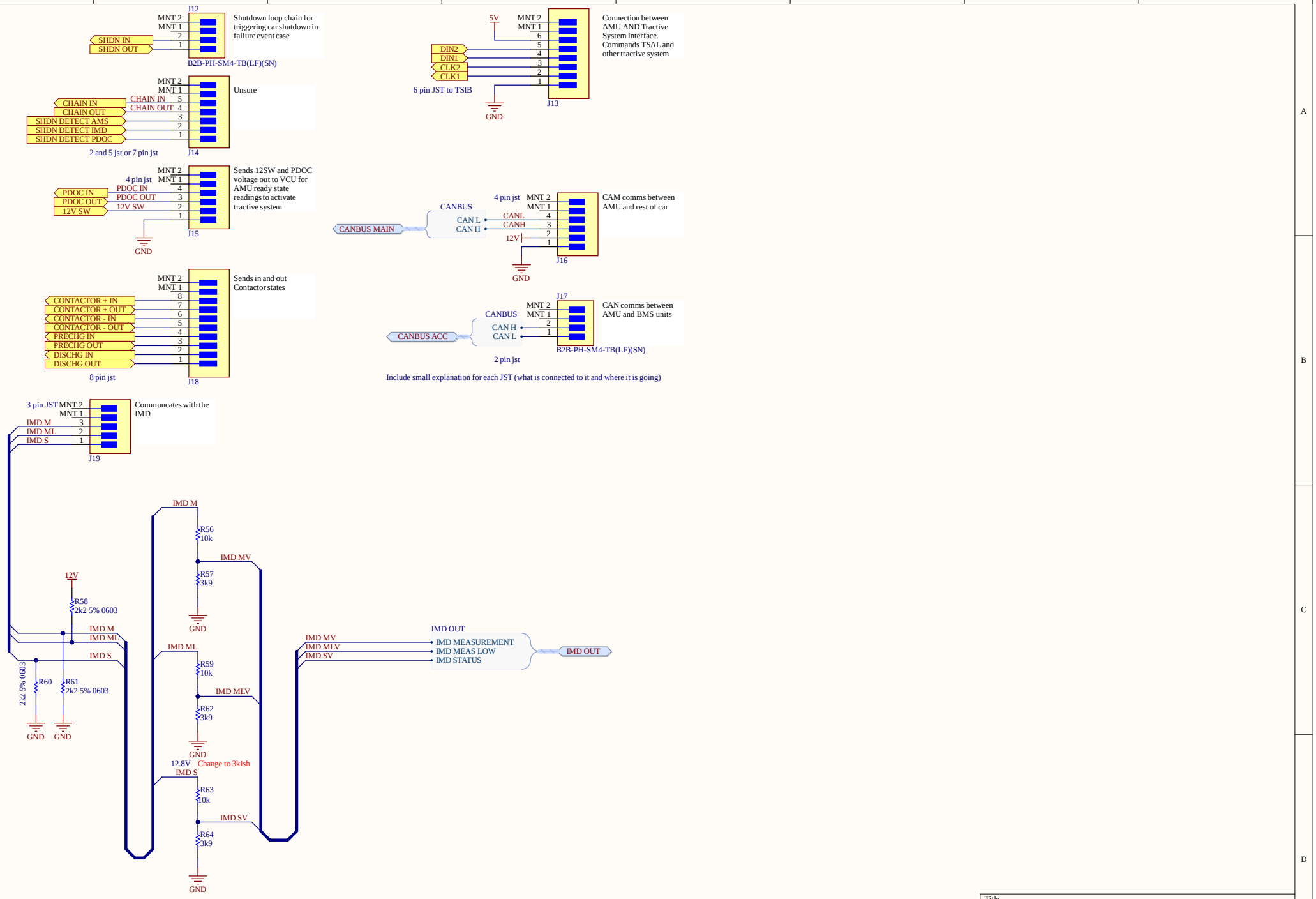
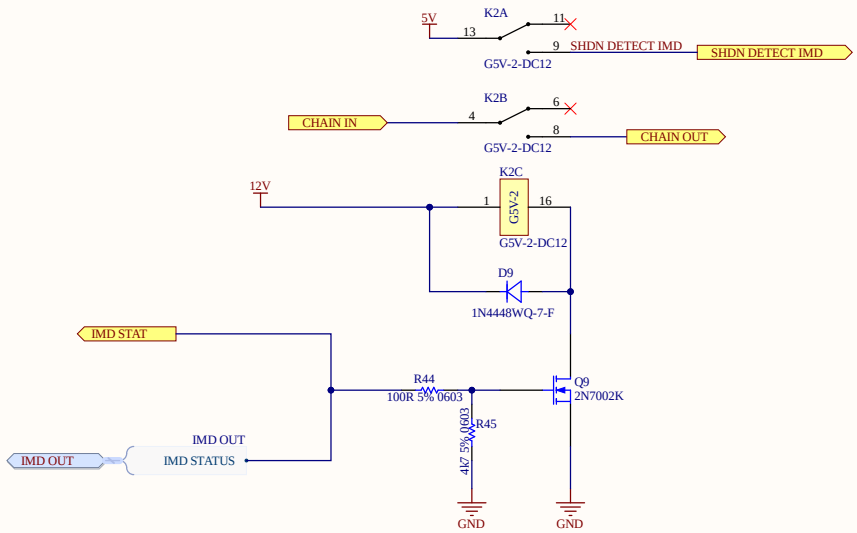
Australia



Title		
Size A3	Number	Revision
Date: 1/05/2022	Sheet of	
File: D:\GIT\..\AMU-S27-V00-MX120G-Interface.SchDoc	Drawn By:	



Revision History:

Rev	Date	Description

Sheet Title: **Shutdown Chain**

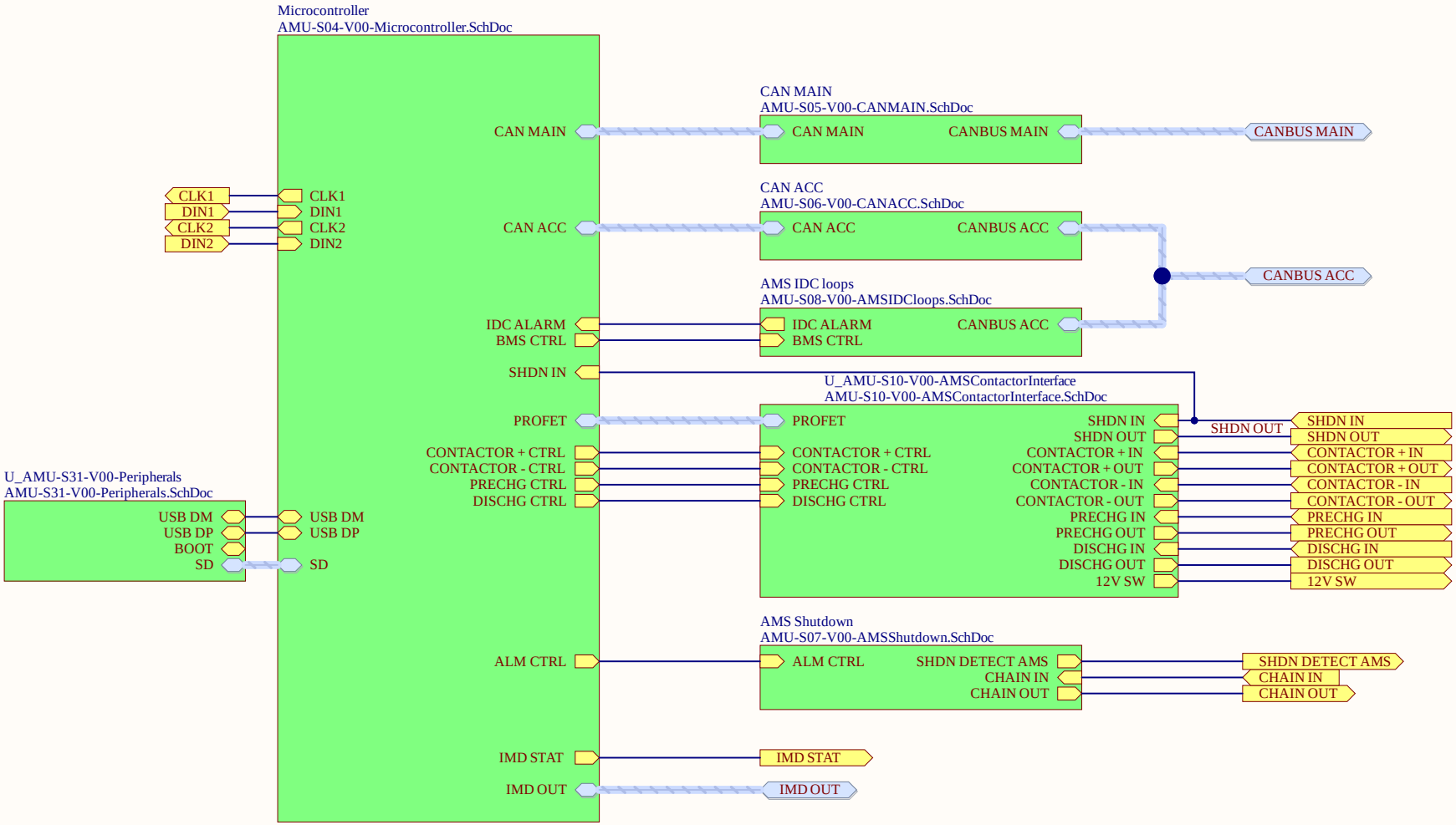
Project: **IMD Daughter Board 2020**

Size: A3 | Number: **5** | Version: **01** | Revision: **00**

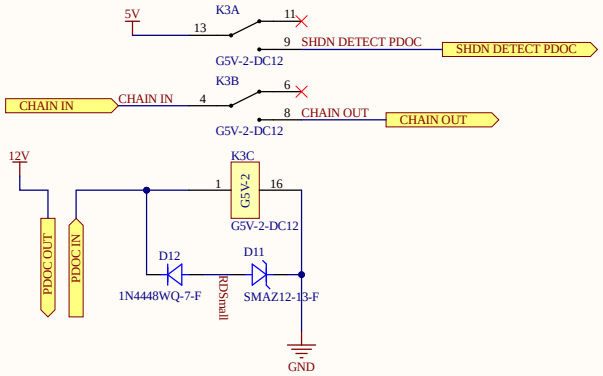
Drawn By: Alikhan Hassan | Sheet **7** of **17**

Print Date: 5/01/2022 Print Time: 10:40:44 AM File Name: AMU-S26-V00-DAUGHTERShutdown.SchDoc

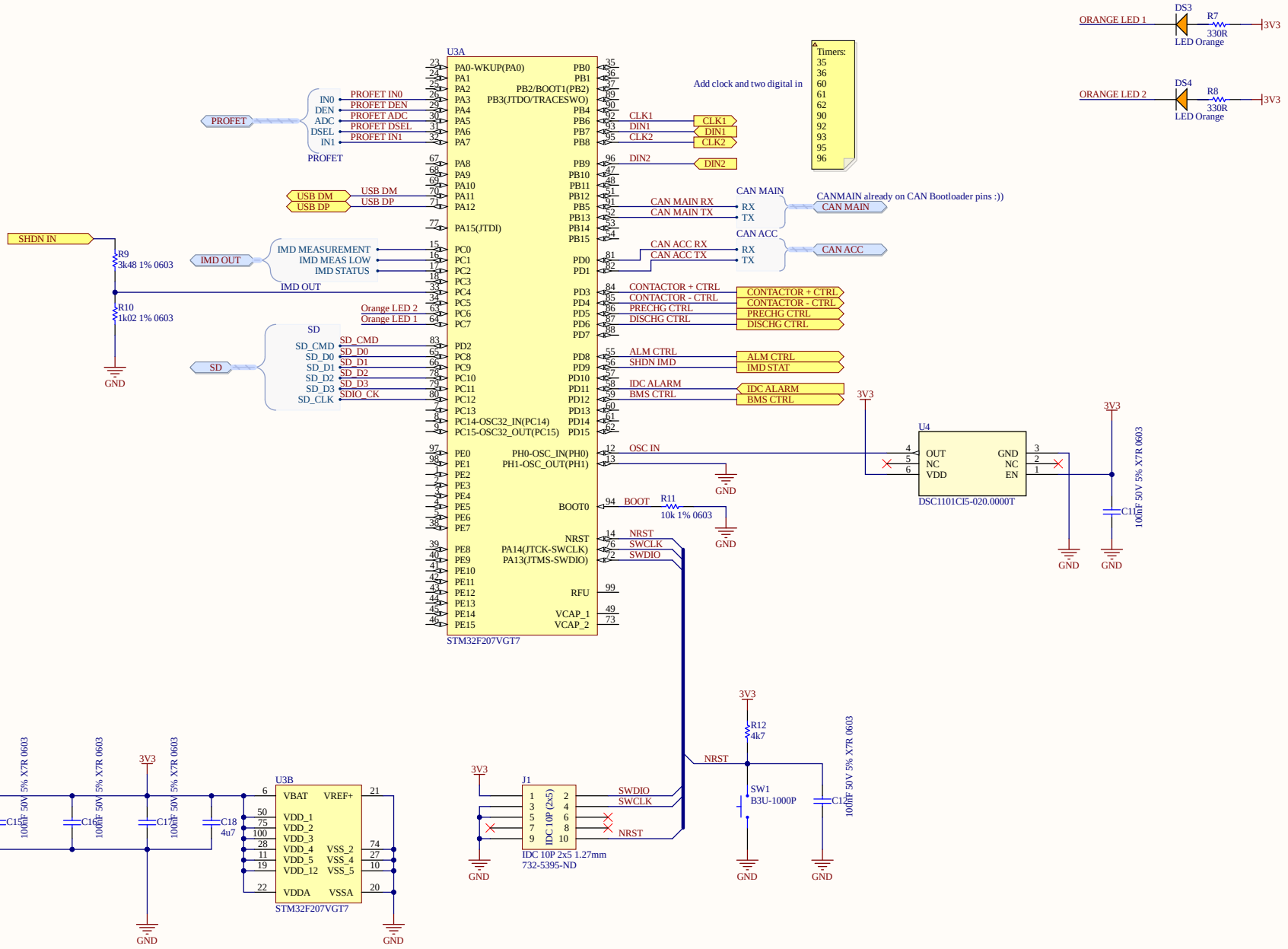
QUT Motorsport
Q-120, Gardens Point
2 George Street
Brisbane, QLD 4000
Australia



Title		
Size A4	Number	Revision
Date: 1/05/2022		Sheet of
File: D:\GIT\..\AMU-S30-V00-AMSMaster.SchDoc		Drawn By:



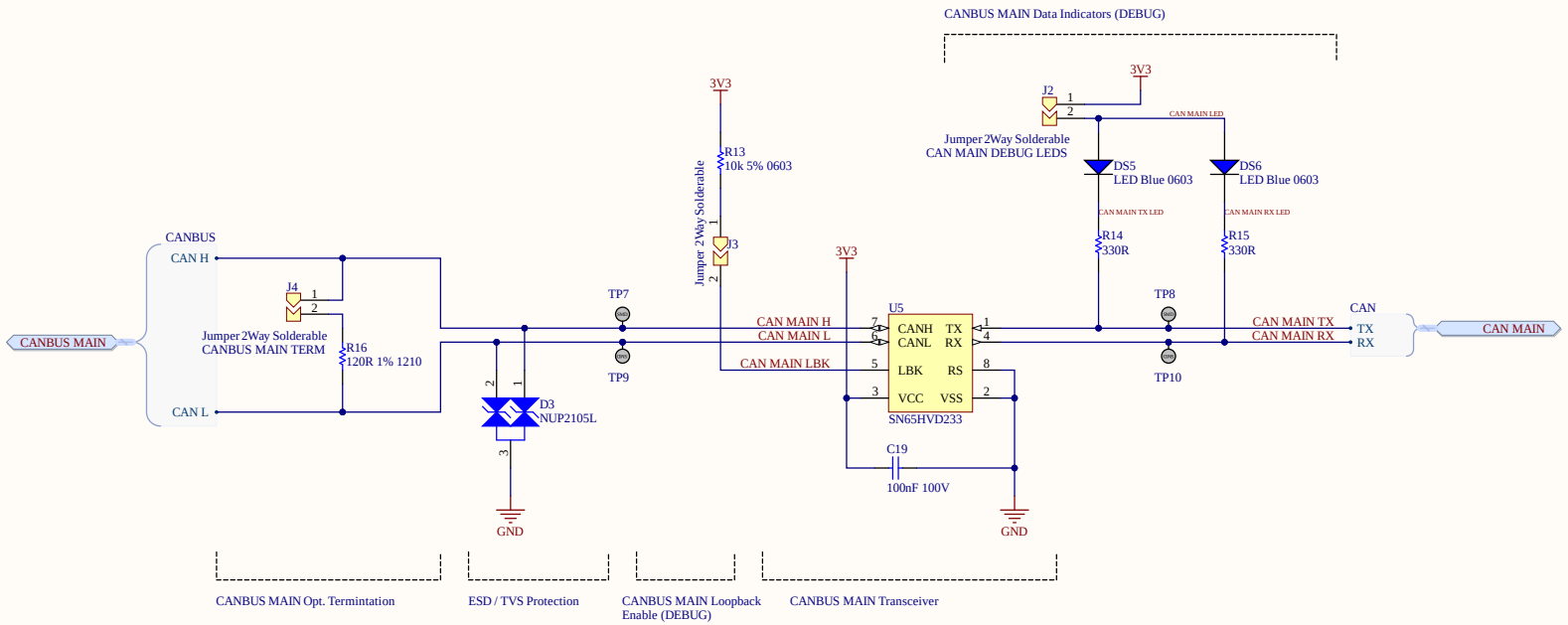
Title			
Size A3	Number		Revision
Date: 1/05/2022		Sheet of	
File: D:\GIT\..\AMU-S29-V00-PDOCShutdownDriver.SchDoc		Drawn By:	



Revision History:

Rev	Date	Description

Sheet Title: AMU Microcontroller			QUT Motorsport Q-120, Gardens Point 2 George Street Brisbane, QLD 4000 Australia
Project: AMU 2020			
Size: A3	Number: 4	Version: 01 Revision: 01	
Drawn By: Thomas Benedetti		Sheet 11 of 18	
Print Date: 5/01/2022	Print Time: 10:40:45 AM	File Name: AMU-S04-V00-Microcontroller.SchDoc	

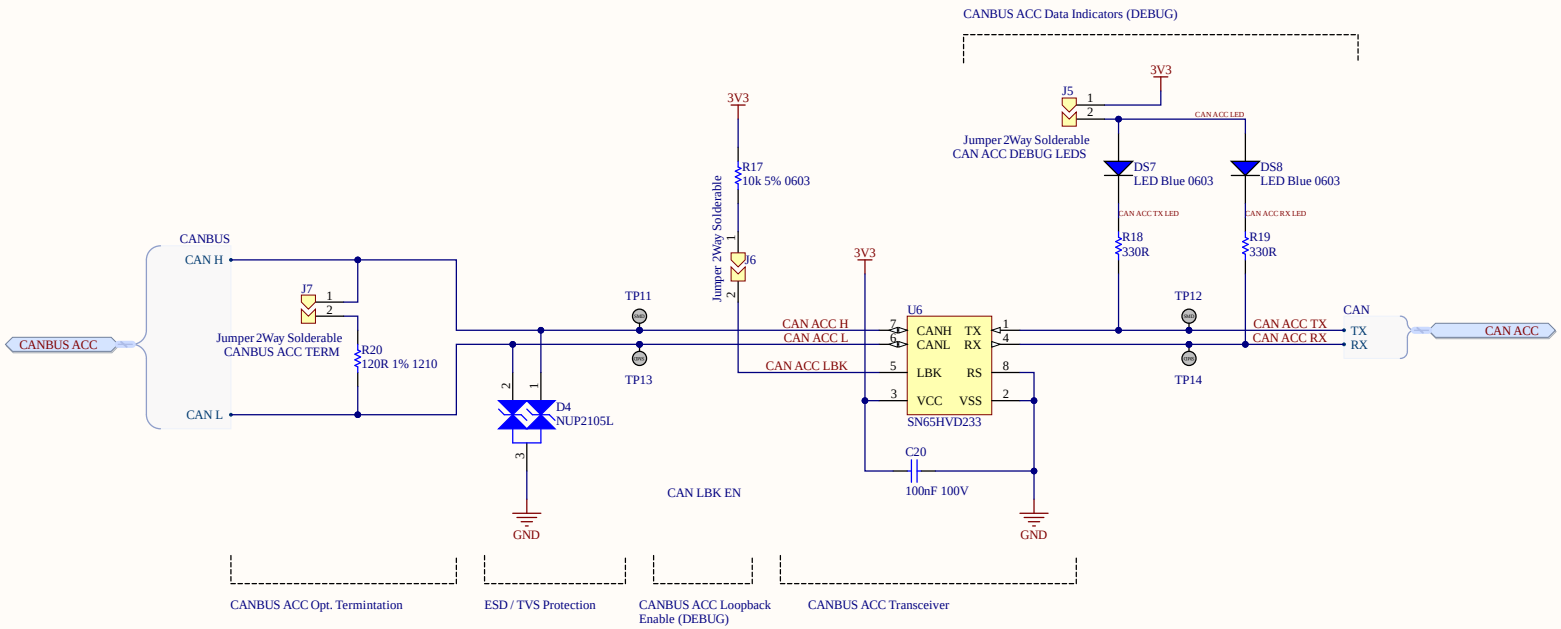


Revision History:

Rev	Date	Description

Sheet Title: Isolated CANBUS2 3V3			
Project: AMU 2020 (Sourced from BMS 2020)			
Size: A3	Number: 5	Version: 01	
		Revision: 01	
Drawn By: Jonn Dillon		Sheet 12 of 19	
Print Date: 5/01/2022	Print Time: 10:40:45 AM	File Name: AMU-S05-V00-CANMAIN.SchDoc	

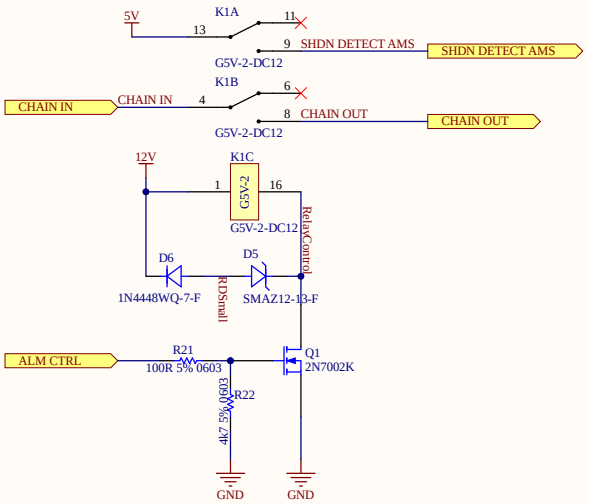
QUT Motorsport
Q-120, Gardens Point
2 George Street
Brisbane, QLD 4000
Australia



Revision History:

Rev	Date	Description

Sheet Title: Isolated CANBUS4 3V3			
Project: AMU 2020 (Sourced from BMS 2020)			QUT Motorsport Q-120, Gardens Point 2 George Street Brisbane, QLD 4000 Australia
Size: A3	Number: 6	Version: 01 Revision: 01	
Drawn By: Jonn Dillon		Sheet 13 of 19	
Print Date: 5/01/2022	Print Time: 10:40:45 AM	File Name: AMU-S06-V00-CANACC.SchDoc	



Revision History:

Rev	Date	Description

Sheet Title: **Alarm Relay**

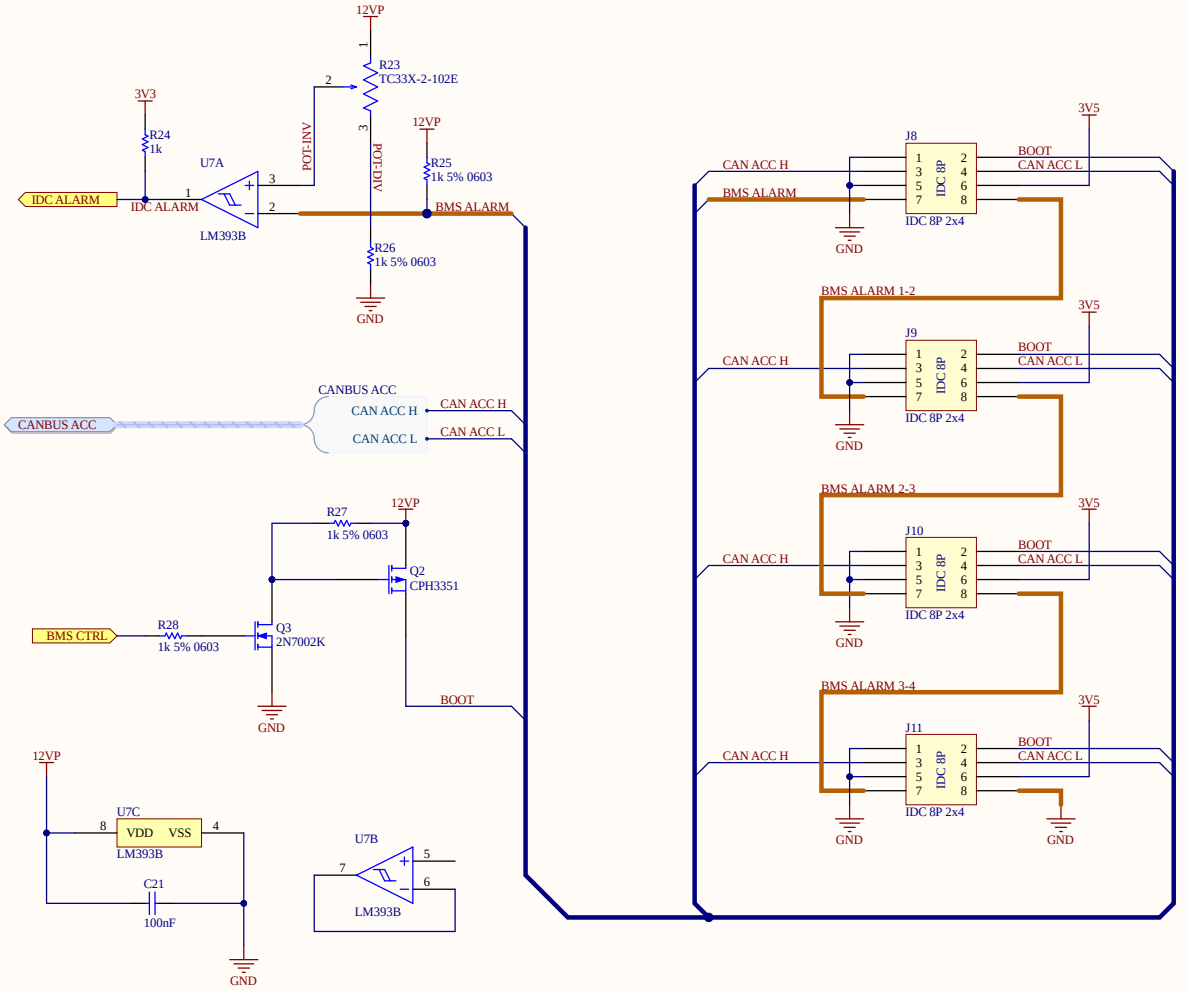
Project: **AMU 2020**

Size: A3 | Number: **7** | Version: **00** | Revision: ***** | Sheet **14** of **17**

Drawn By: Thomas Benedetti

Print Date: 5/01/2022 Print Time: 10:40:45 AM File Name: AMU-S07-V00-AMSShutdown.SchDoc

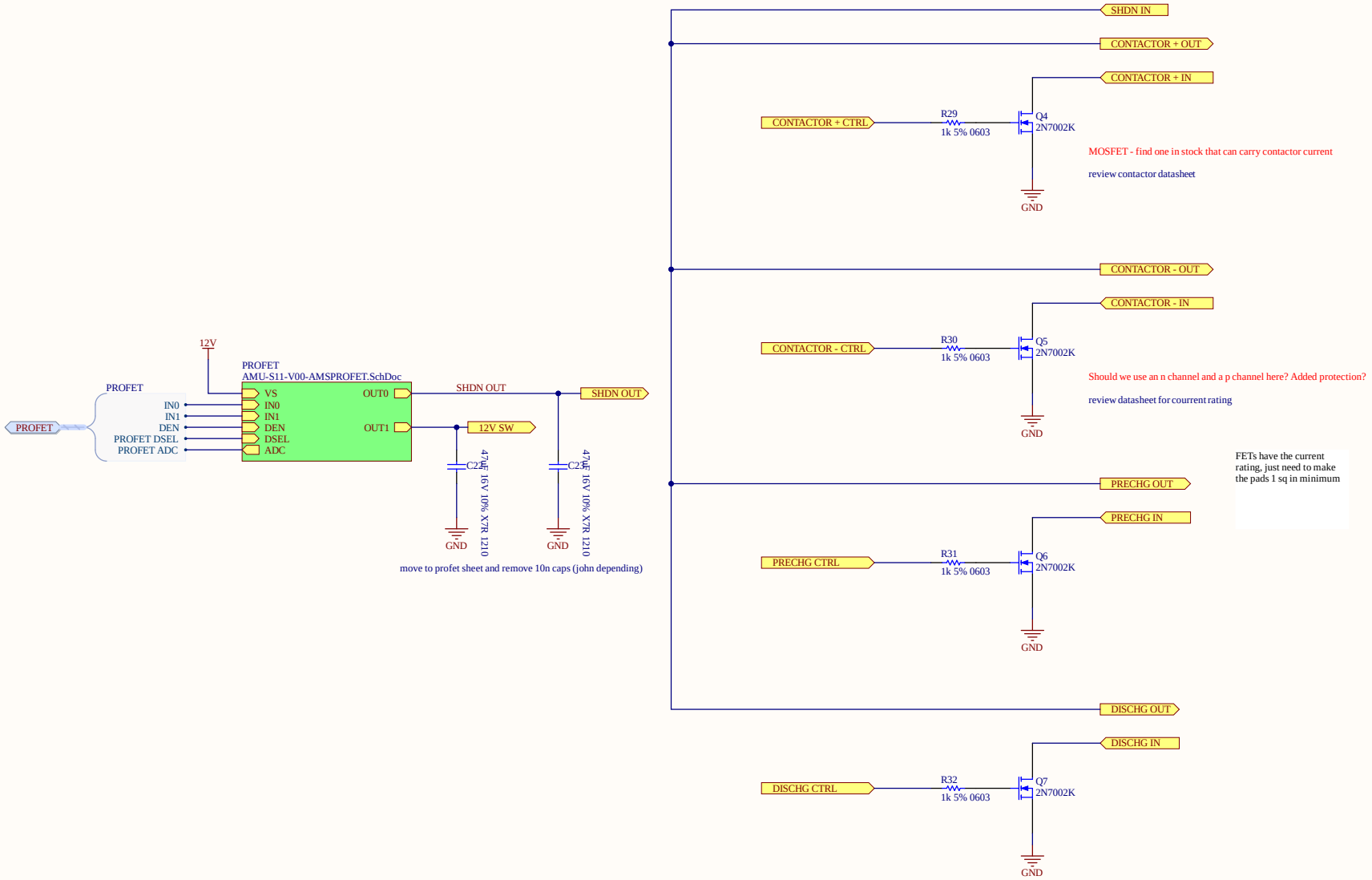
QUT Motorsport
Q-120, Gardens Point
2 George Street
Brisbane, QLD 4000
Australia



Revision History:

Rev	Date	Description

Sheet Title: BMS Interface			QUT Motorsport Q-120, Gardens Point 2 George Street Brisbane, QLD 4000 Australia
Project: AMU 2020			
Size: A3	Number: 8	Version: 00 Revision: *	
Drawn By: Thomas Benedetti		Sheet 15 of 17	
Print Date: 5/01/2022	Print Time: 10:40:45 AM	File Name: AMU-S08-V00-AMSIDCloops.SchDoc	



Revision History:

Rev	Date	Description

Sheet Title: **Contactor Interface**

Project: **AMU 2020**

Size: A3 | Number: **11** | Version: **00** | Revision: ***** | Sheet **16** of **18**

Drawn By: Thomas Benedetti

Print Date: 5/01/2022 Print Time: 10:40:45 AM File Name: AMU-S10-V00-AMSContactorInterface.SchDoc

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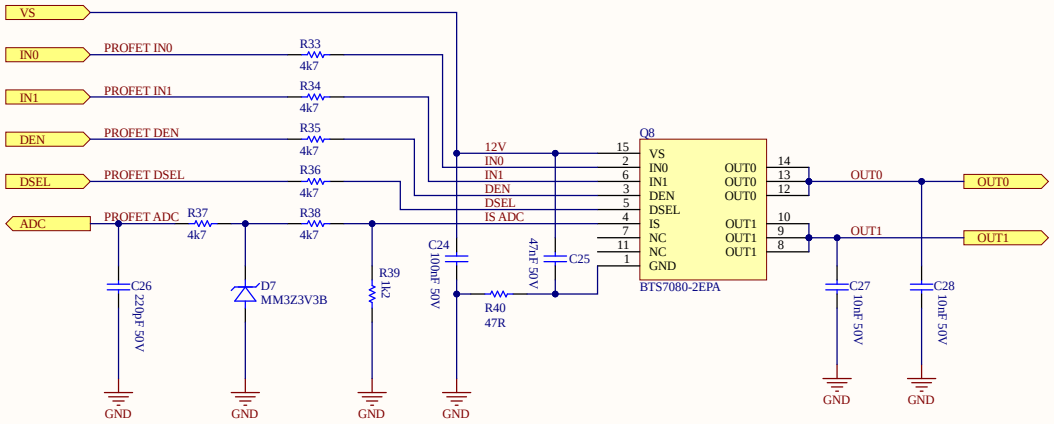
Australia



Revision History:

Rev	Date	Description

Sheet Title: *

Project: ####

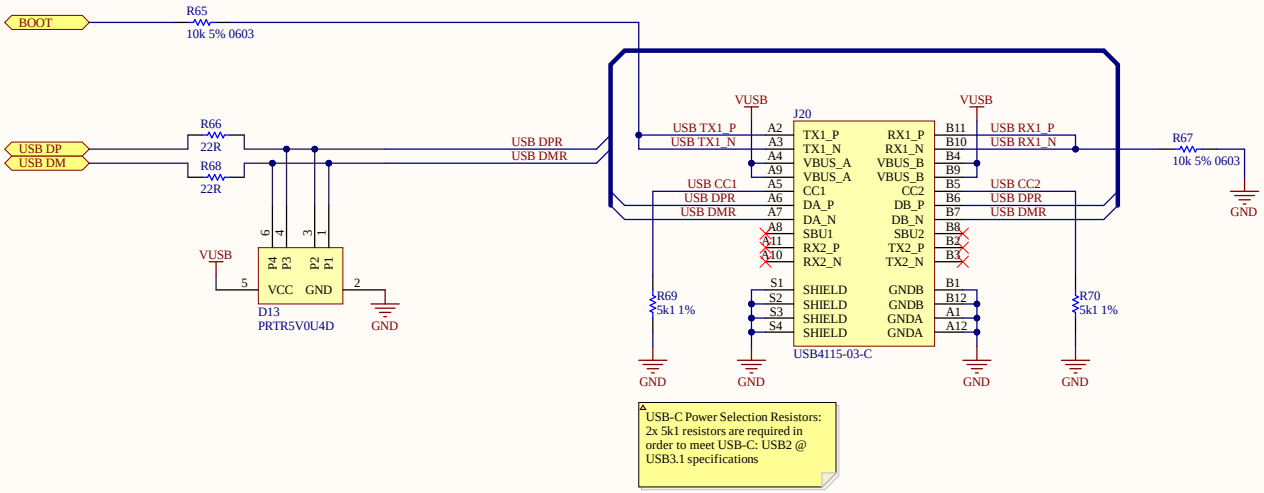
Size: A3 | Number: 12 | Version: 00 | Revision: * | Sheet 17 of 17

Drawn By: *

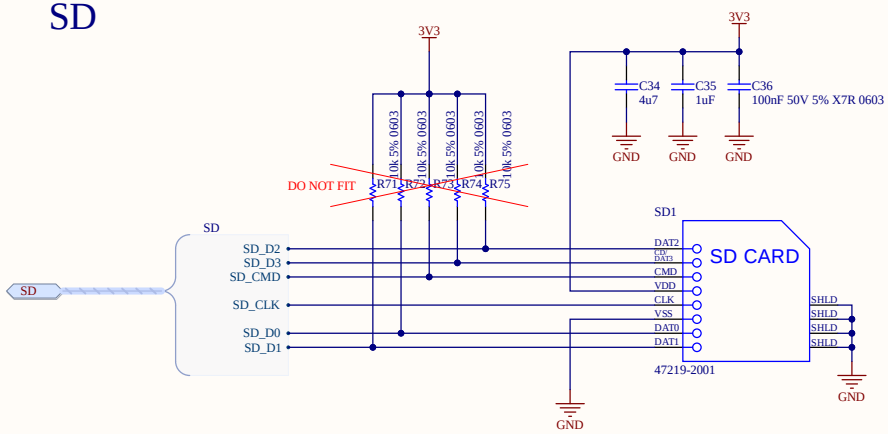
Print Date: 5/01/2022 Print Time: 10:40:45 AM File Name: AMU-S11-V00-AMSPROFET.SchDoc

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

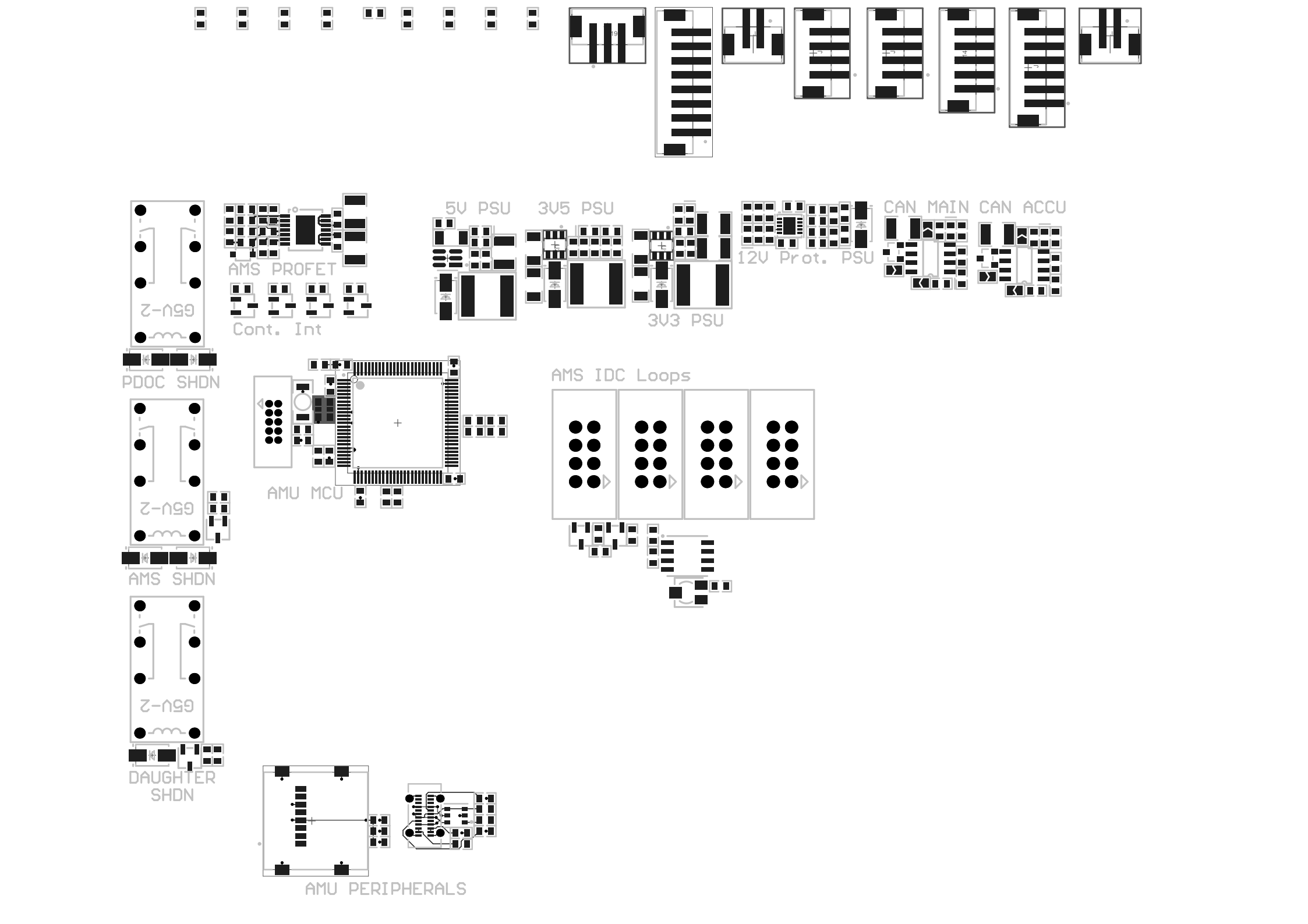
USB



SD



Title		
Size: A3	Number	Revision
Date: 1/05/2022	Sheet of	
File: D:\GIT\..\AMU-S31-V00-Peripherals.Sch	Drawn By:	


5V PSU
3V5 PSU
3V3 PSU
12V Prot. PSU
CAN MAIN
CAN ACCU
AMS PROFET
Cont. Int
PDOC SHDN
AMS SHDN
DAUGHTER SHDN
AMU MCU
AMS IDC Loops
AMU PERIPHERALS