LED Panel Controller

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File: POS12_Input.sch

Sheet: +12V Telemetry
File: POS12_Telemetry.sch

Sheet: +3.3V Power Supply
File: POS3P3_Power_Supply.sch

Sheet: +3.3V Telemetry
File: POS3P3_Telemetry.sch

Sheet: +5V Power Supply
File: POS5_Power_Supply.sch

Sheet: +5V Telemetry
File: POS5_Telemetry.sch

Sheet: PIC32MZ Programming
File: PIC32MZ_Programming.sch

Sheet: PIC32MZ Bypass
File: PIC32MZ_Bypass.sch

Sheet: PIC32MZ Clocking
File: PIC32MZ_Clocking.sch

Sheet: PIC32MZ
File: PIC32MZ.sch

Sheet: Config Hardstraps
File: config_hardstraps.sch

Sheet: I2C Boost
File: I2C_Boost.sch

Sheet: Platform ETC
File: Platform_ETC.sch

Sheet: USB UART Bridge
File: USB_UART_Bridge.sch

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Sheet: WiFi Module
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Sheet: SPI Flash 0
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Sheet: SPI Flash 1
File: SPI_Flash_1.sch

Sheet: SPI Flash 2
File: SPI_Flash_2.sch

Sheet: SPI Flash 3
File: SPI_Flash_3.sch

Sheet: SPI Flash 4
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Sheet: SPI Flash 5
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Sheet: SPI Flash 6
File: SPI_Flash_6.sch

Sheet: SPI Flash 7
File: SPI_Flash_7.sch

Sheet: Panel Level Shifters
File: Panel_Level_Shifters.sch

Sheet: Panel Connectors
File: Panel_Connectors.sch

Sheet: Mechanical
File: Mechanical.sch

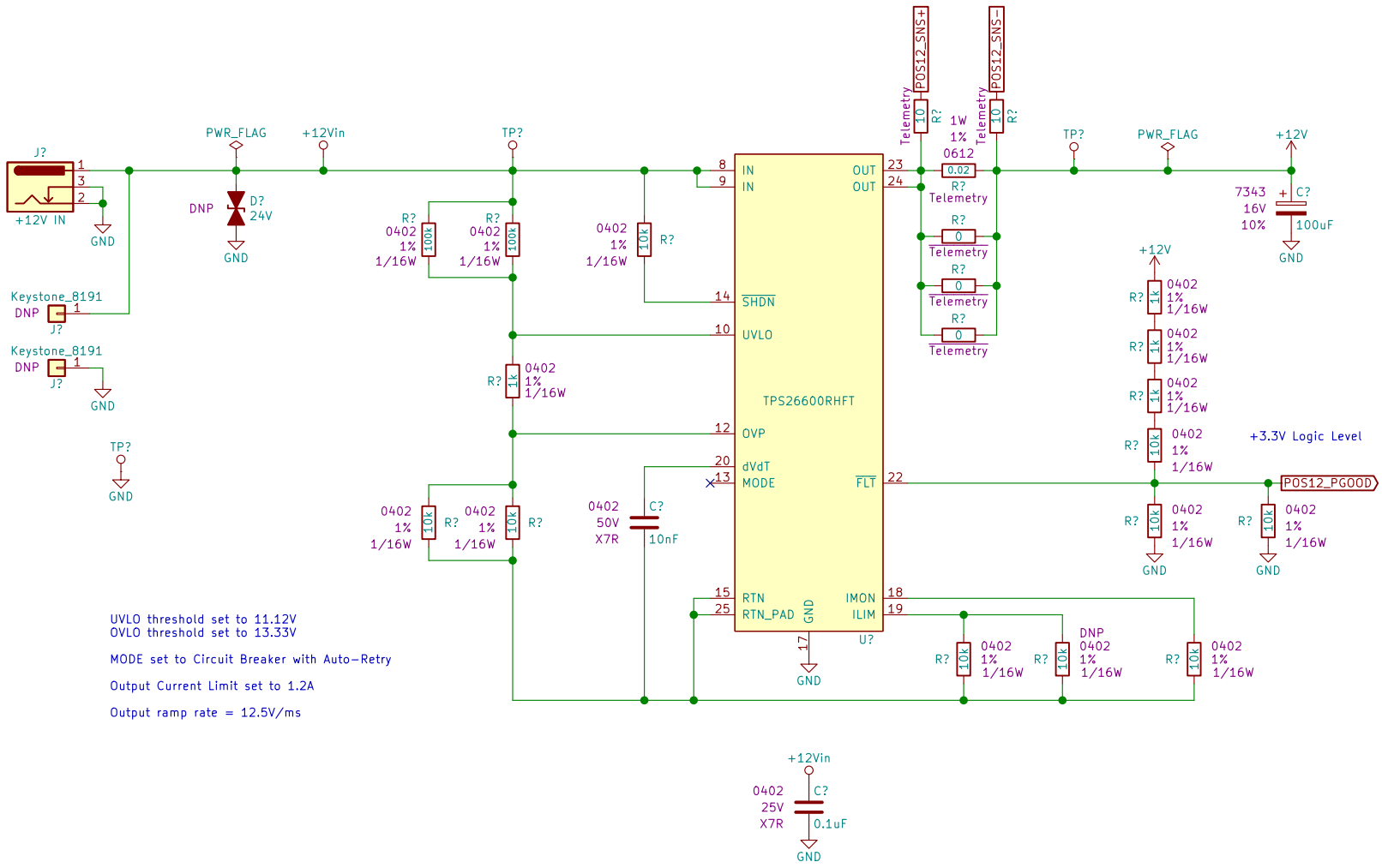
Sheet: USB Telemetry
File: USB_Telemetry.sch

Drew Maatman, Logan Wedel

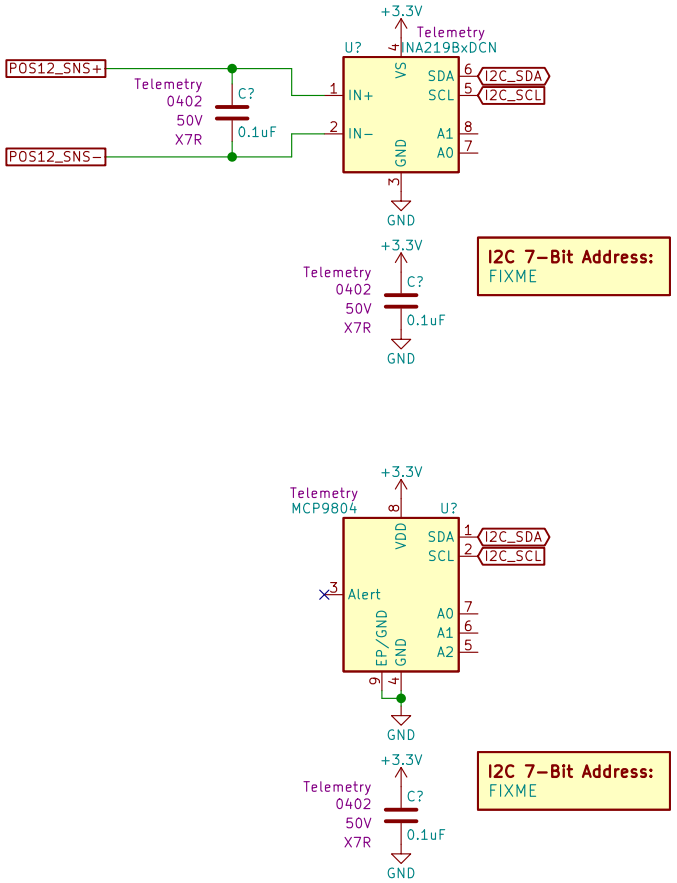
Sheet: /
File: LED_Panel_Controller.sch

Title: LED Panel Controller

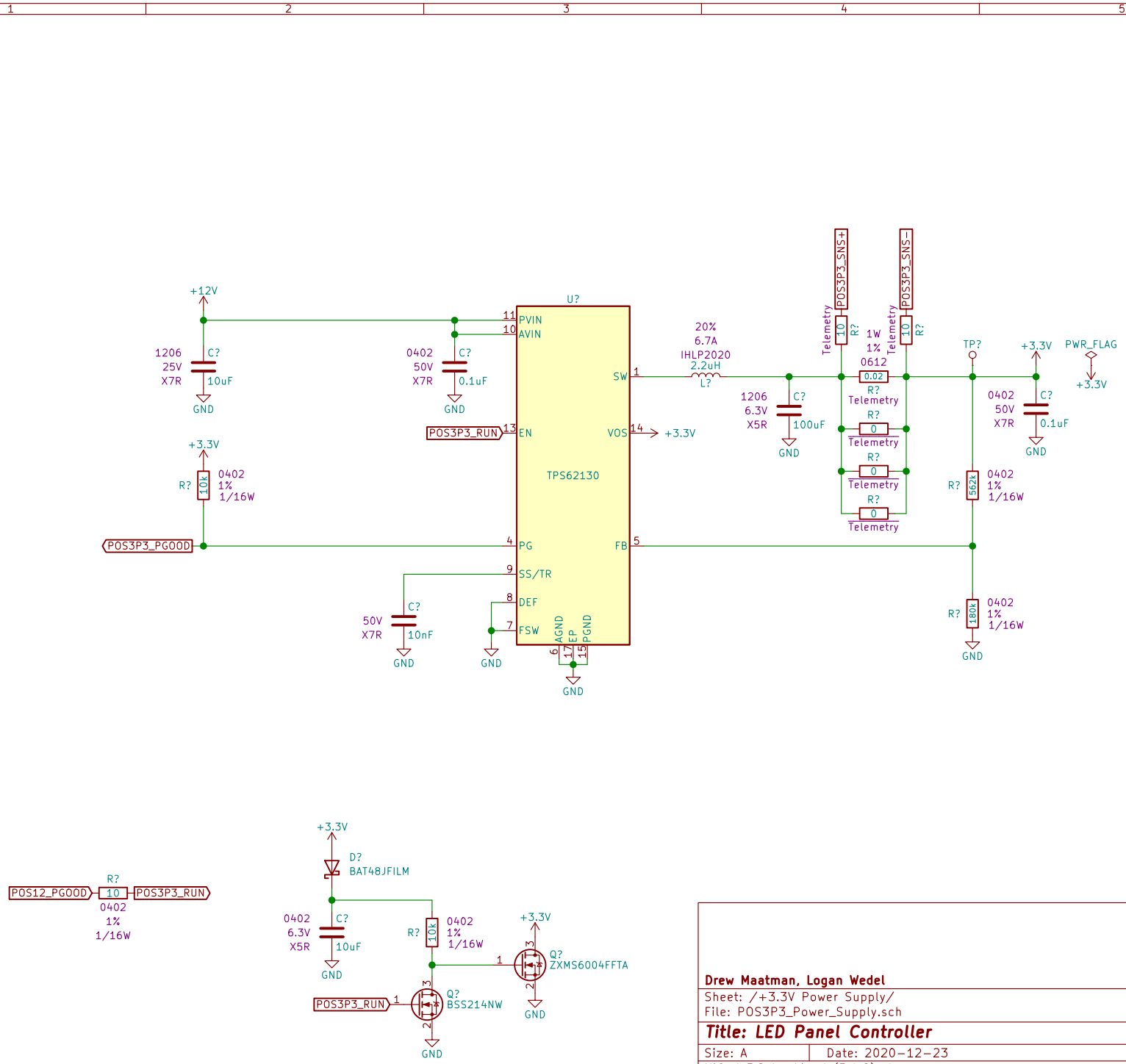
Size: A	Date: 2020-12-23	Rev: A
KiCad E.D.A. kicad (5.1.8)-1		Id: 1/34



Drew Maatman, Nick Mussoline		
Sheet: /+12V Input/		
File: POS12_Input.sch		
Title: Pulse Oximeter		
Size: A	Date: 2020-12-31	**Rev: B**
KiCad E.D.A. kicad (5.1.8)-1		Id: 2/34

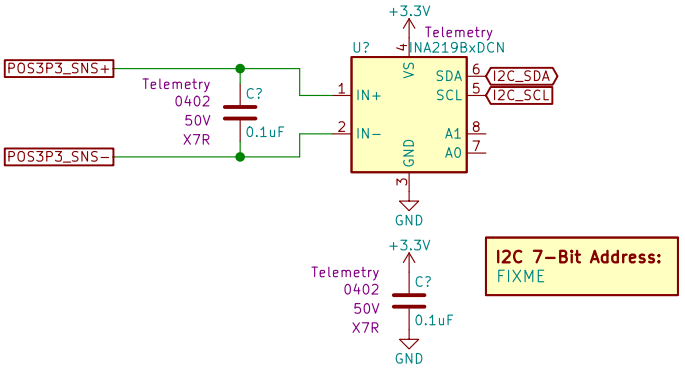


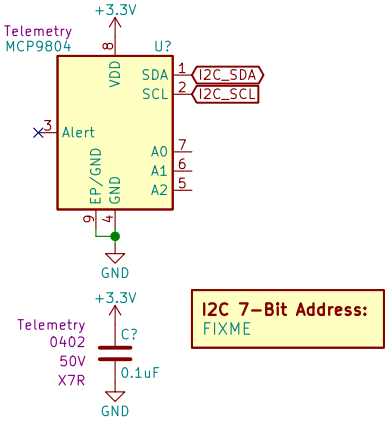
Drew Maatman, Logan Wedel		
Sheet: /+12V Telemetry/		
File: POS12_Telemetry.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 3/34



Drew Maatman, Logan Wedel	
Sheet: /+3.3V Power Supply/	
File: POS3P3_Power_Supply.sch	
Title: LED Panel Controller	
Size: A	Date: 2020-12-23
KiCad E.D.A. kicad (5.1.8)-1	Id: 4/34

Rev: A





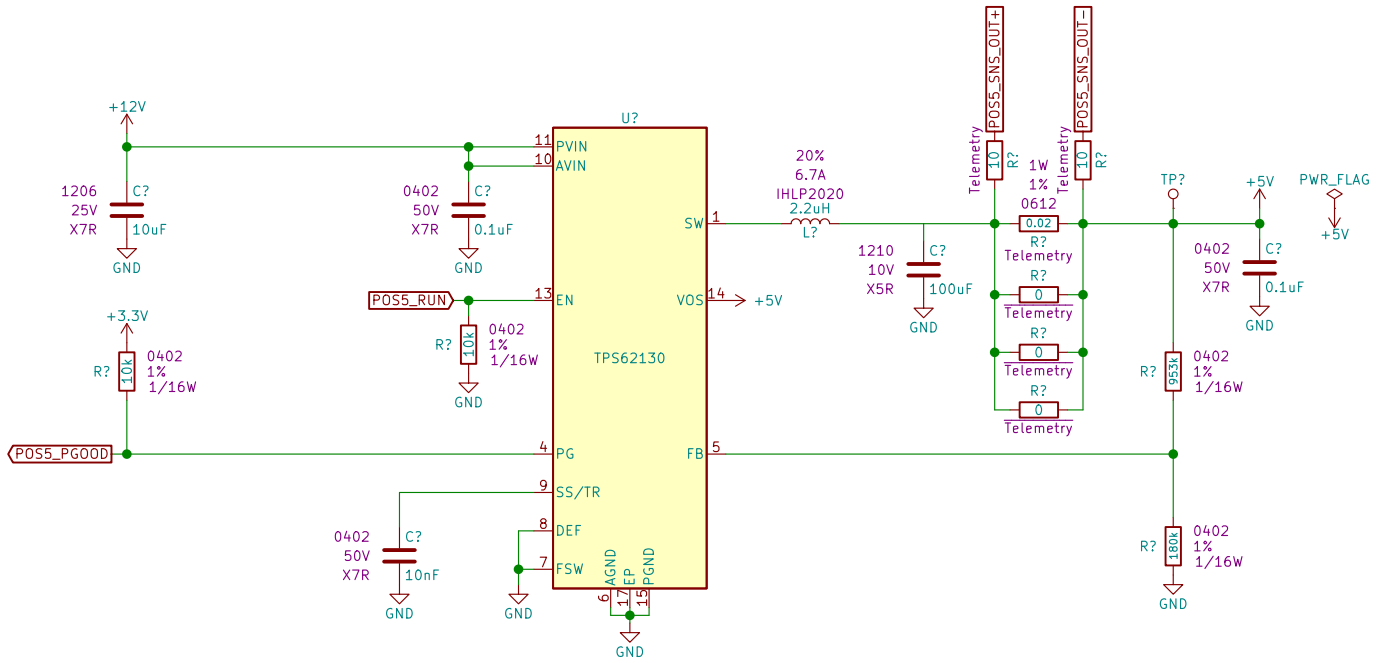
Drew Maatman, Logan Wedel

Sheet: /+3.3V Telemetry/

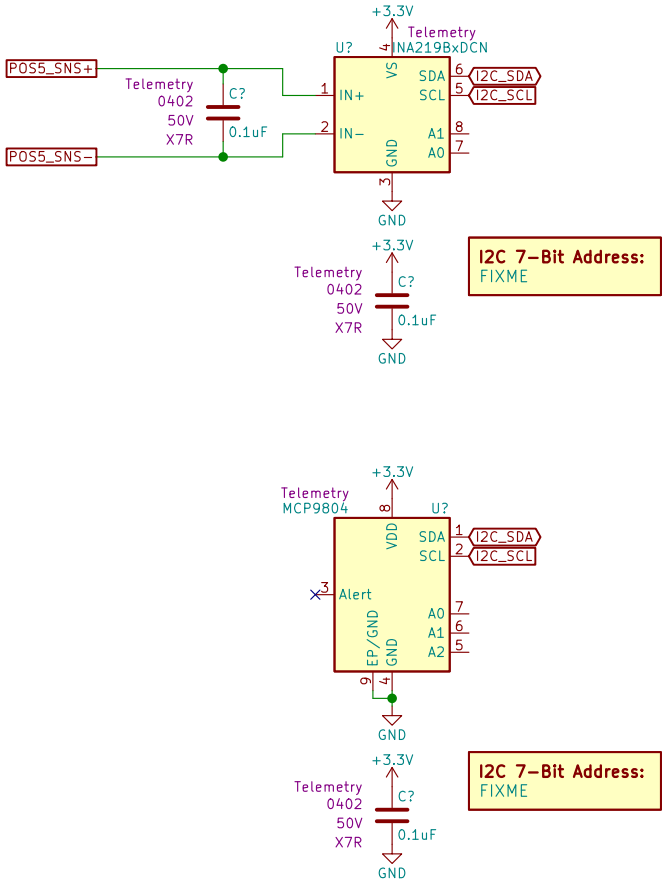
File: POS3P3_Telemetry.sch

Title: LED Panel Controller

Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 5/34

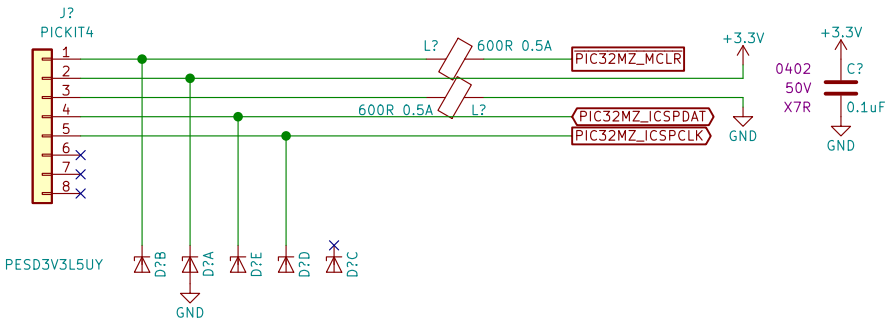


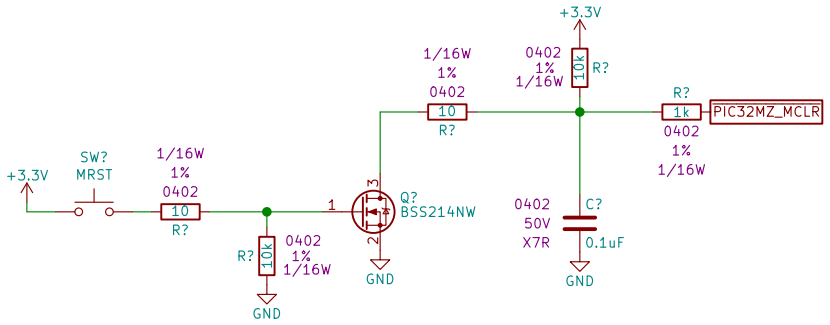
Drew Maatman, Logan Wedel		
Sheet: /+5V Power Supply/		
File: POS5_Power_Supply.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 6/34



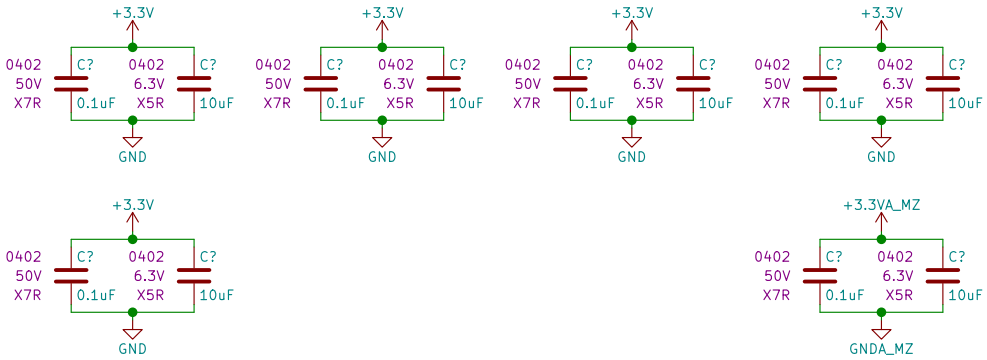
Drew Maatman, Logan Wedel	
Sheet: /+5V Telemetry/	
File: POS5_Telemetry.sch	
Title: LED Panel Controller	
Size: A	Date: 2020−12−23
KiCad E.D.A. kicad (5.1.8)−1	Id: 7/34

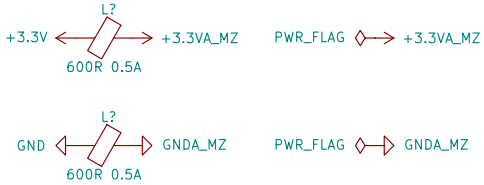
Rev: A



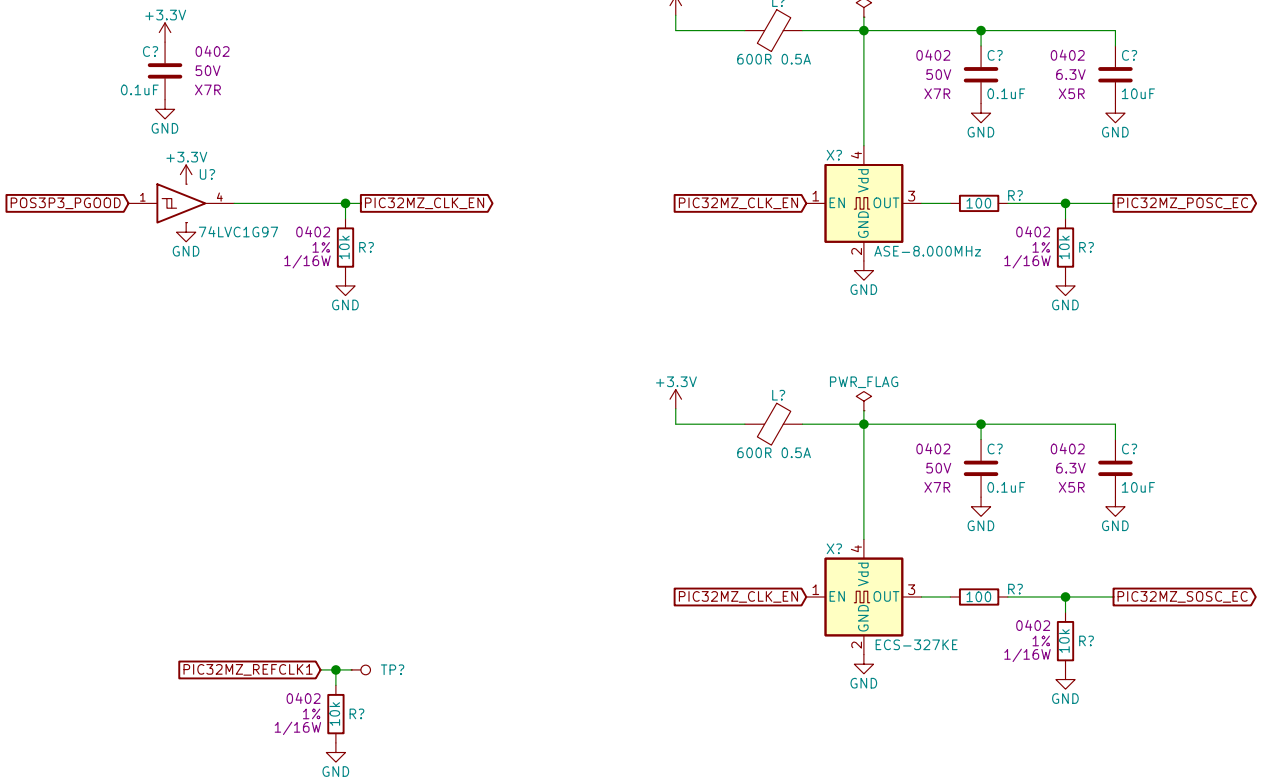


Drew Maatman, Logan Wedel		
Sheet: /PIC32MZ Programming/		
File: PIC32MZ_Programming.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 8/34

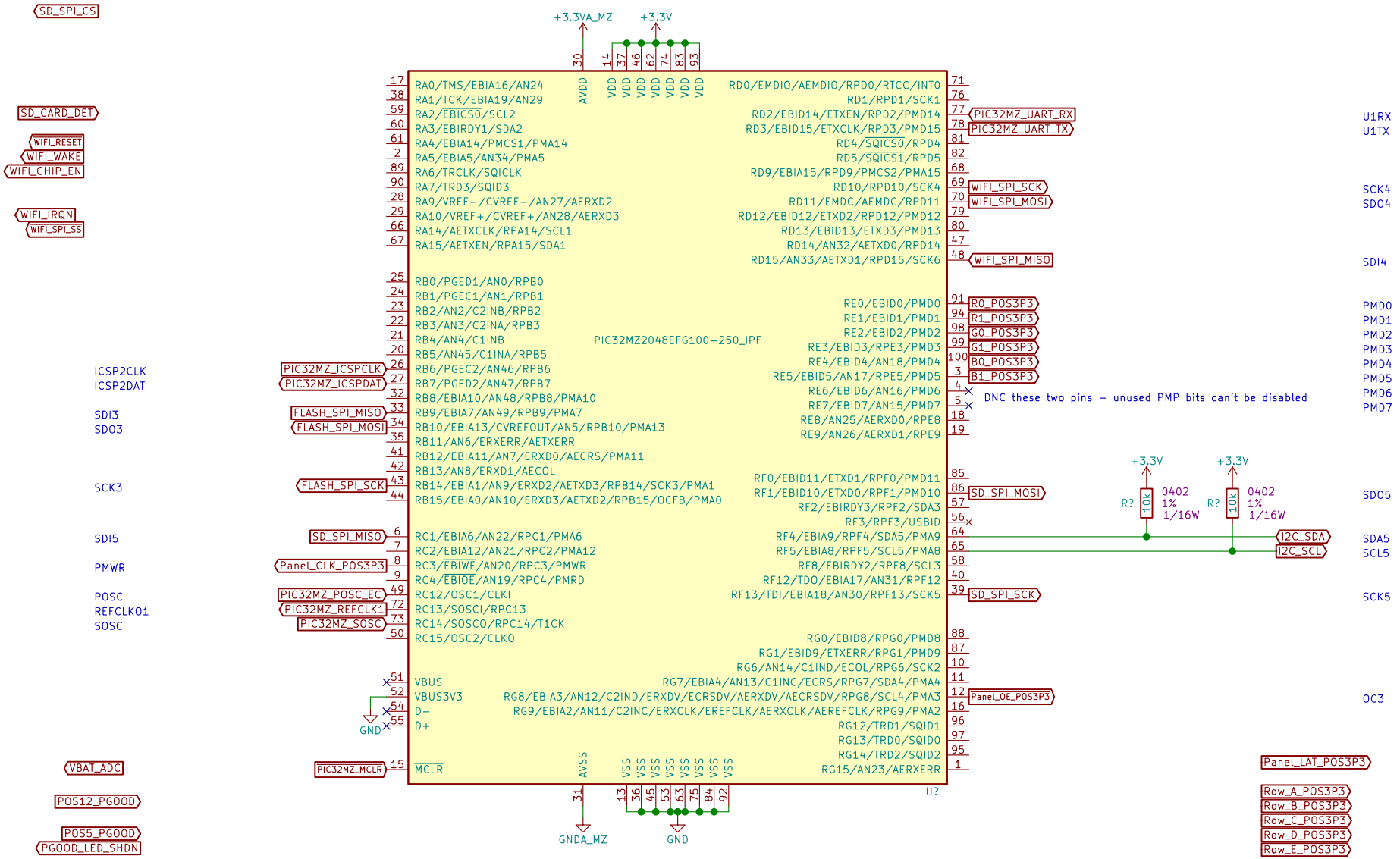


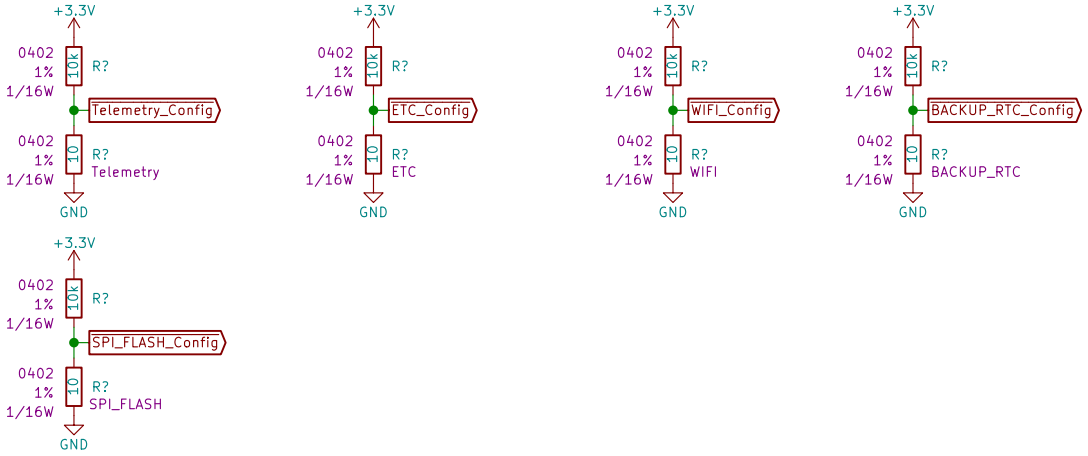


Drew Maatman, Logan Wedel		
Sheet: /PIC32MZ Bypass/		
File: PIC32MZ_Bypass.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 9/34



Drew Maatman, Logan Wedel		
Sheet: /PIC32MZ Clocking/		
File: PIC32MZ_Clocking.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 10/34


SD_SPI_CS
SD_CARD_DET
WIFI_RESET
WIFI_WAKE
WIFI_CHIP_EN
WIFI_IRQN
WIFI_SPI_SS
ICSP2CLK
ICSP2DAT
SDI3
SDO3
SCK3
SDI5
PMWR
POSC
REFCLKO1
SOSC
VBAT_ADC
POS12_PGOOD
POS5_PGOOD
PGOOD_LED_SHDN
POS5_USB_PGOOD
VBAT_PGOOD
POS3P3_PGOOD
Heartbeat_LED
Error_LED
Reset_LED
CPU_Trap_LED
+3.3VA_MZ
+3.3V
GND
GNDA_MZ
PIC32MZ2048EFG100-250_IPF
U?
PIC32MZ_ICSPCLK
PIC32MZ_ICSPDAT
FLASH_SPI_MISO
FLASH_SPI_MOSI
FLASH_SPI_SCK
SD_SPI_MISO
Panel_CLK_POS3P3
PIC32MZ_POSC_EC
PIC32MZ_REFCLK1
PIC32MZ_SOSC
PIC32MZ_MCLR
PIC32MZ_UART_RX
PIC32MZ_UART_TX
U1RX
U1TX
WIFI_SPI_SCK
WIFI_SPI_MOSI
SCK4
SDO4
WIFI_SPI_MISO
SDI4
R0_POS3P3
R1_POS3P3
G0_POS3P3
G1_POS3P3
B0_POS3P3
B1_POS3P3
PMD0
PMD1
PMD2
PMD3
PMD4
PMD5
PMD6
PMD7
DNC these two pins – unused PMP bits can't be disabled
SD_SPI_MOSI
SDO5
I2C_SDA
I2C_SCL
SDA5
SCL5
SD_SPI_SCK
SCK5
Panel_OE_POS3P3
OC3
R?
10k
0402
1%
1/16W
Panel_LAT_POS3P3
Row_A_POS3P3
Row_B_POS3P3
Row_C_POS3P3
Row_D_POS3P3
Row_E_POS3P3
These must all go in a row
Drew Maatman, Logan Wedel
Sheet: /PIC32MZ/
File: PIC32MZ.sch
Title: LED Panel Controller
Size: A
Date: 2020-12-23
Rev: A
KiCad E.D.A. kicad (5.1.8)-1
Id: 11/34

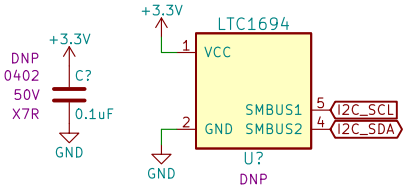


Drew Maatman, Logan Wedel

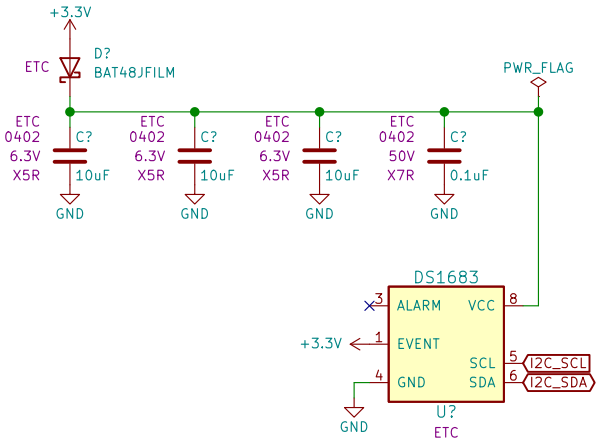
Sheet: /Config Hardstraps/
File: config_hardstraps.sch

Title: LED Panel Controller

Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 12/34



Drew Maatman, Logan Wedel		
Sheet: /I2C Boost/		
File: I2C_Boost.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 13/34



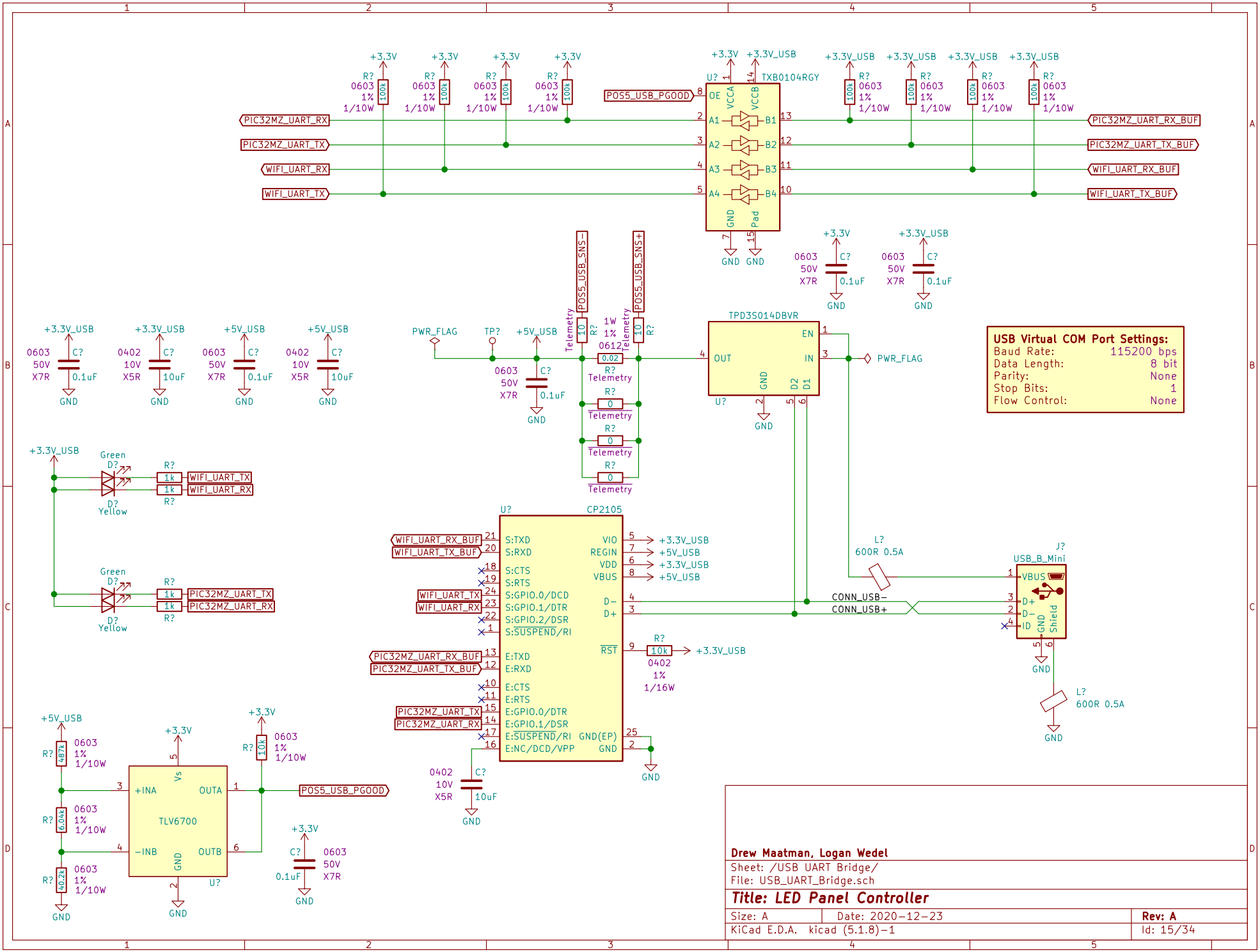
I2C 7-Bit Address:
0x6B

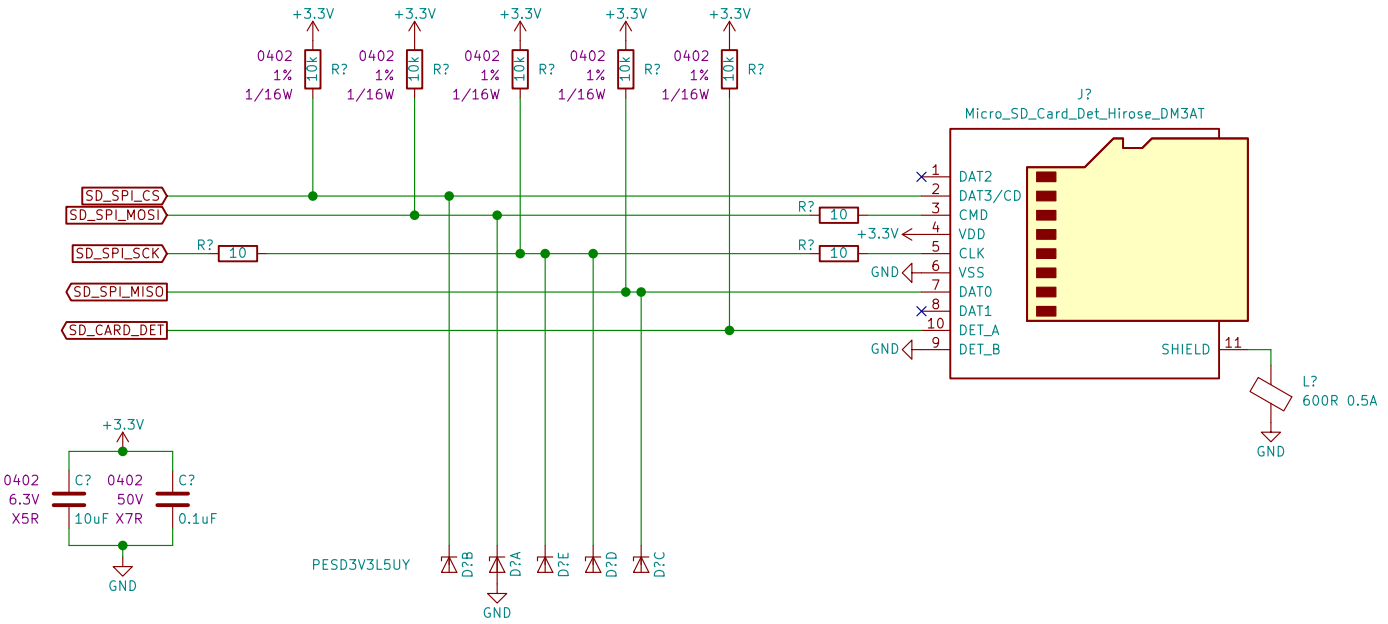
Drew Maatman, Logan Wedel

Sheet: /Platform ETC/
File: Platform_ETC.sch

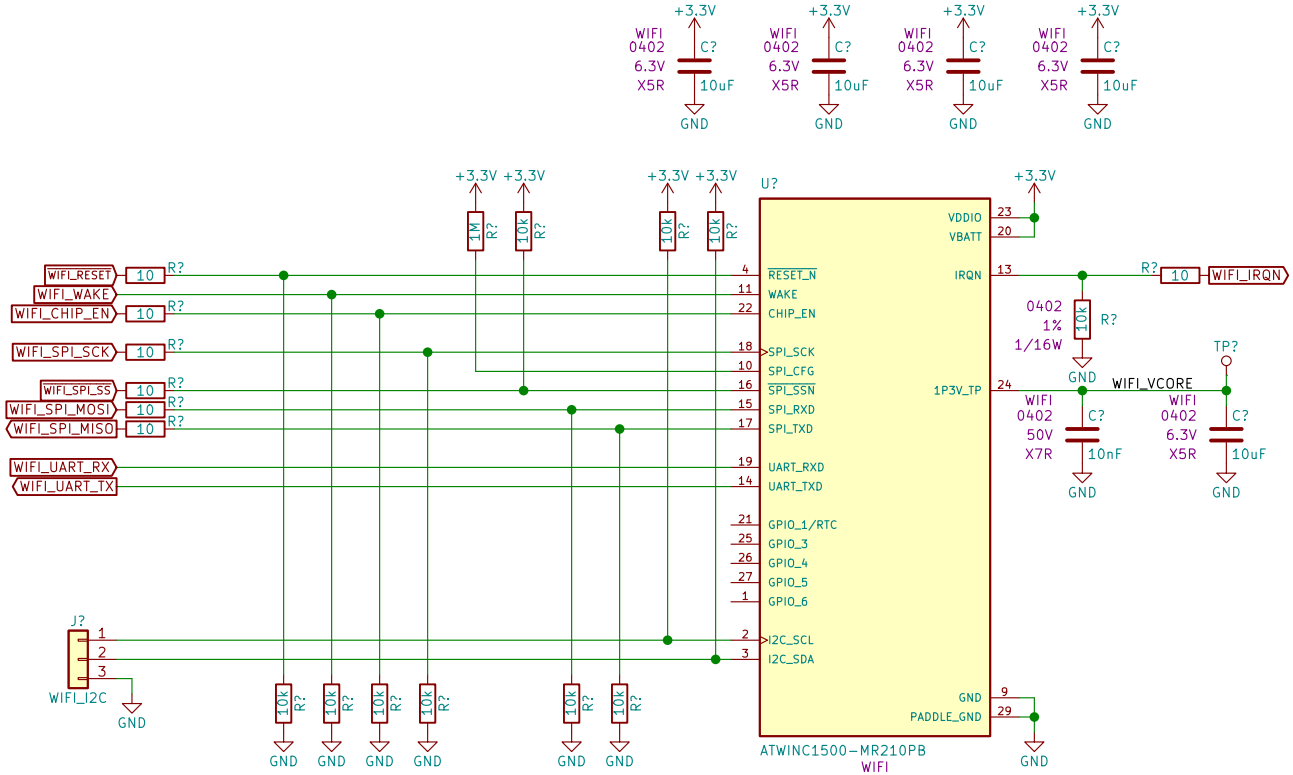
Title: LED Panel Controller

Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 14/34

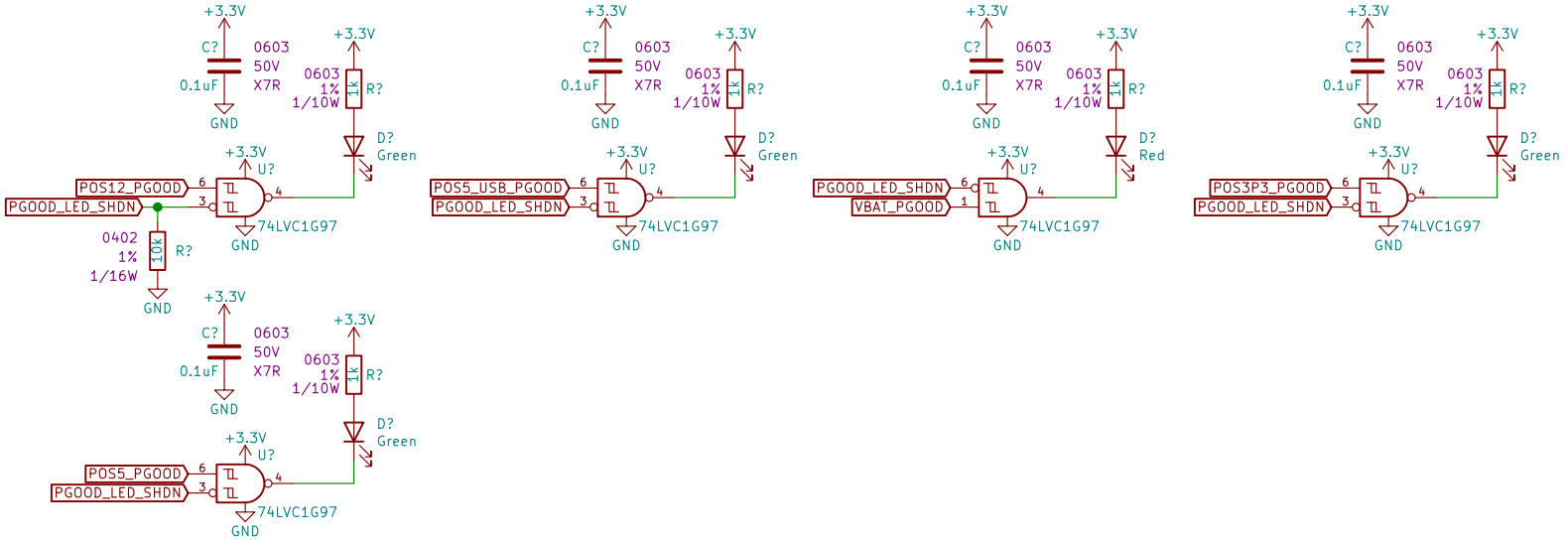

PIC32MZ_UART_RX
PIC32MZ_UART_TX
WIFI_UART_RX
WIFI_UART_TX
POS5_USB_PGOOD
TXB0104RGY
PIC32MZ_UART_RX_BUF
PIC32MZ_UART_TX_BUF
WIFI_UART_RX_BUF
WIFI_UART_TX_BUF
PWR_FLAG
TPD3S014DBVR
POS5_USB_SNS-
POS5_USB_SNS+
USB Virtual COM Port Settings:
Baud Rate: 115200 bps
Data Length: 8 bit
Parity: None
Stop Bits: 1
Flow Control: None
CP2105
CONN_USB-
CONN_USB+
USB_B_Mini
TLV6700
Drew Maatman, Logan Wedel
Sheet: /USB UART Bridge/
File: USB_UART_Bridge.sch
Title: LED Panel Controller
Size: A
Date: 2020-12-23
Rev: A
KiCad E.D.A. kicad (5.1.8)-1
Id: 15/34



Drew Maatman, Logan Wedel		
Sheet: /SD Card Slot/		
File: SD_Card_Slot.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 16/34

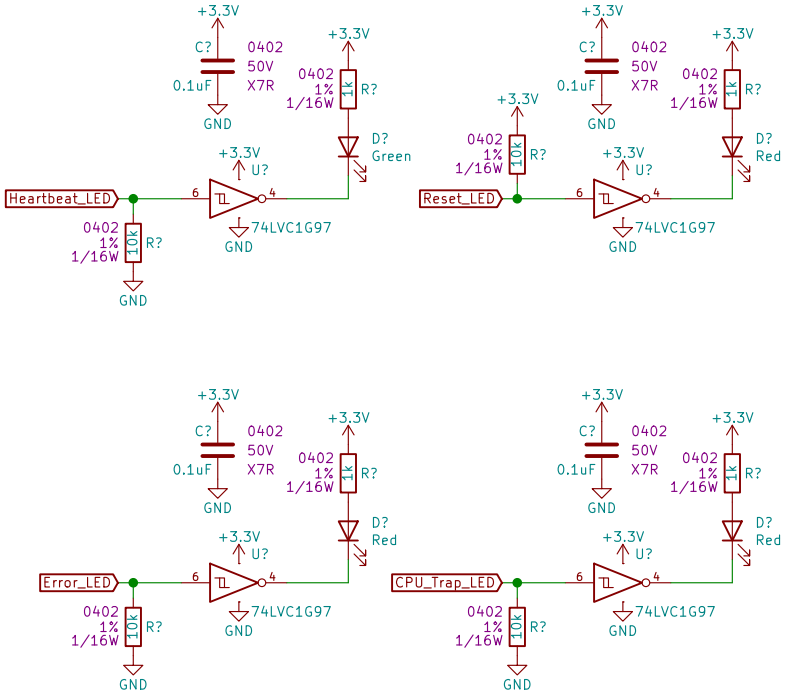


Drew Maatman, Logan Wedel		
Sheet: /WiFi Module/		
File: WiFi_Module.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 17/34

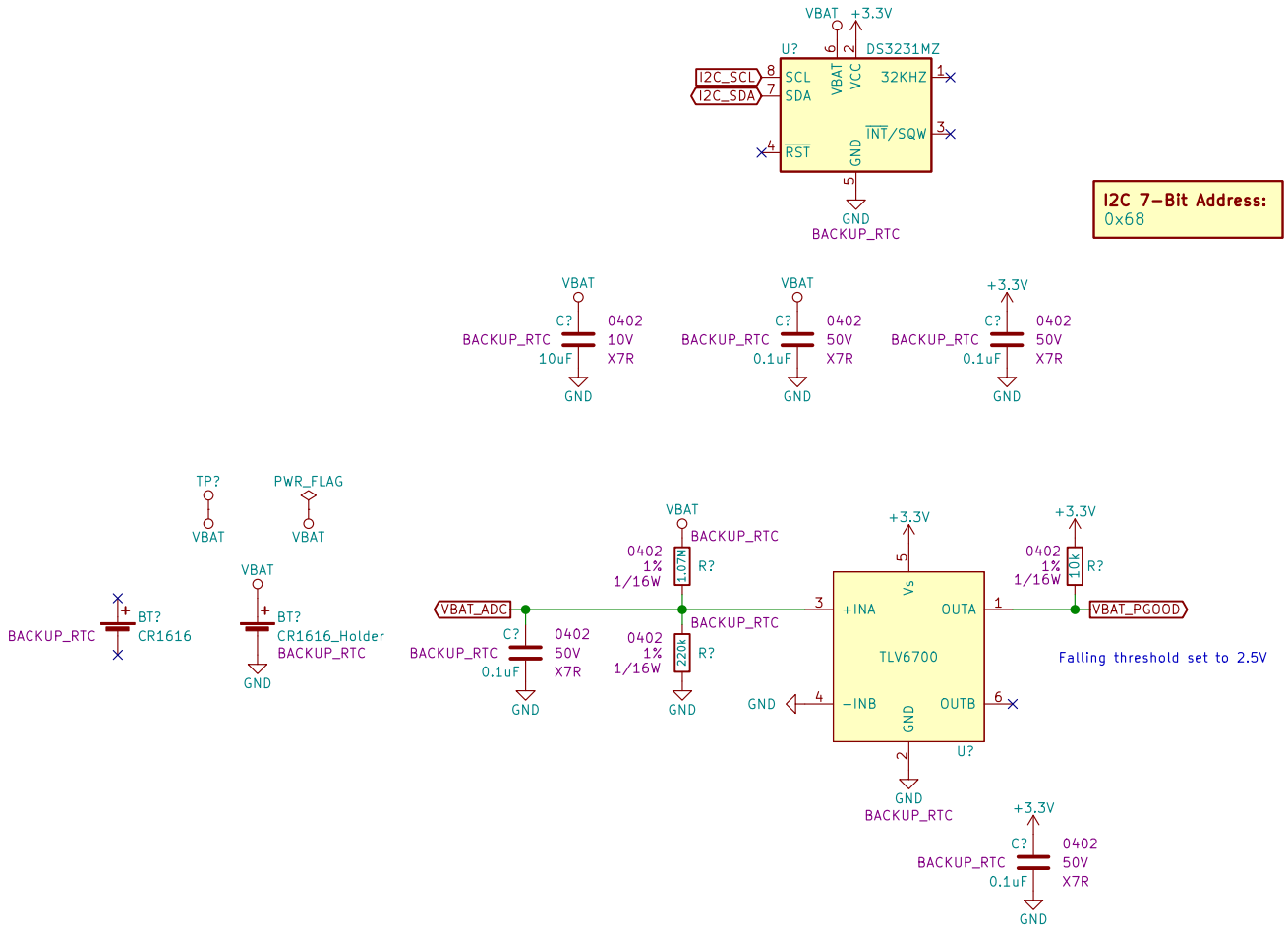


Drew Maatman, Logan Wedel	
Sheet: /PGOOD LEDs/	
File: PGOOD_LEDs.sch	
Title: LED Panel Controller	
Size: A	Date: 2020-12-23
KiCad E.D.A. kicad (5.1.8)-1	Id: 18/34

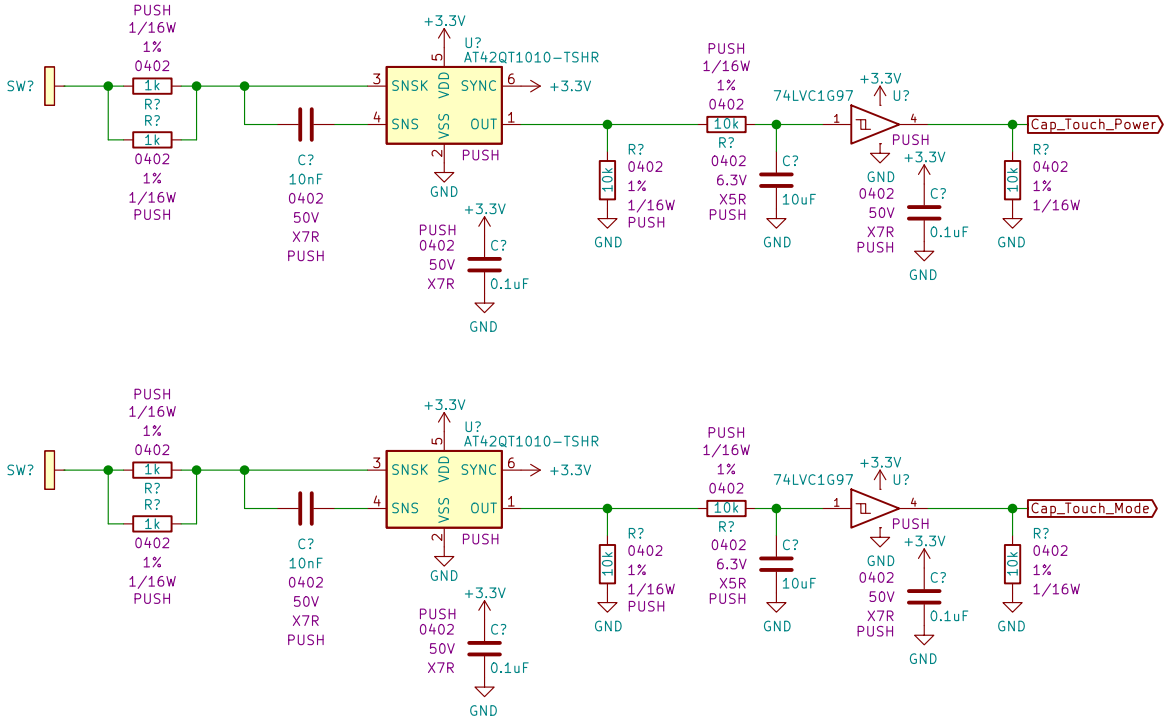
Rev: A



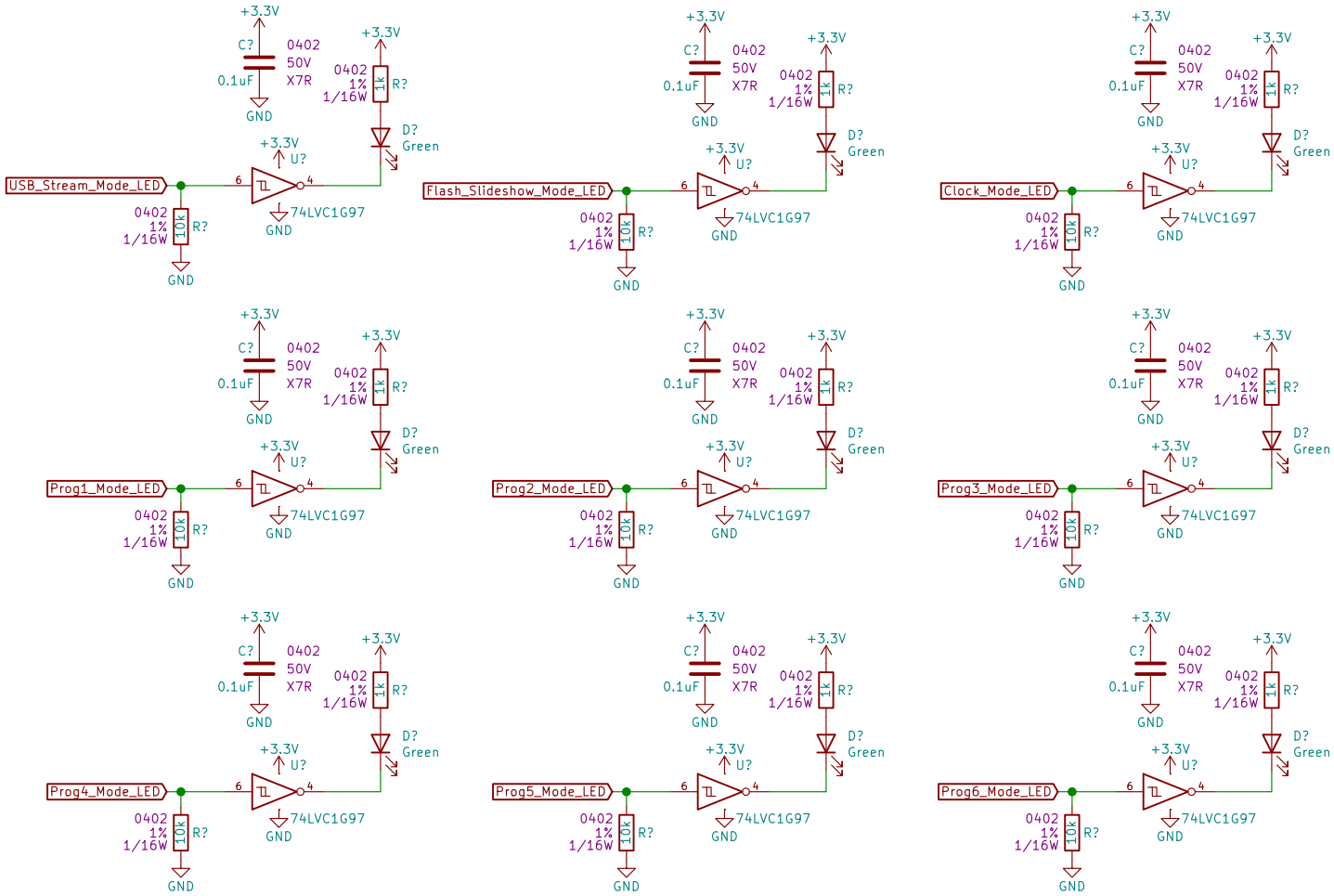
Drew Maatman, Logan Wedel		
Sheet: /Status LEDs/		
File: Status_LEDs.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 19/34



Drew Maatman, Logan Wedel		
Sheet: /Backup RTC/		
File: Backup_RTC.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 20/34

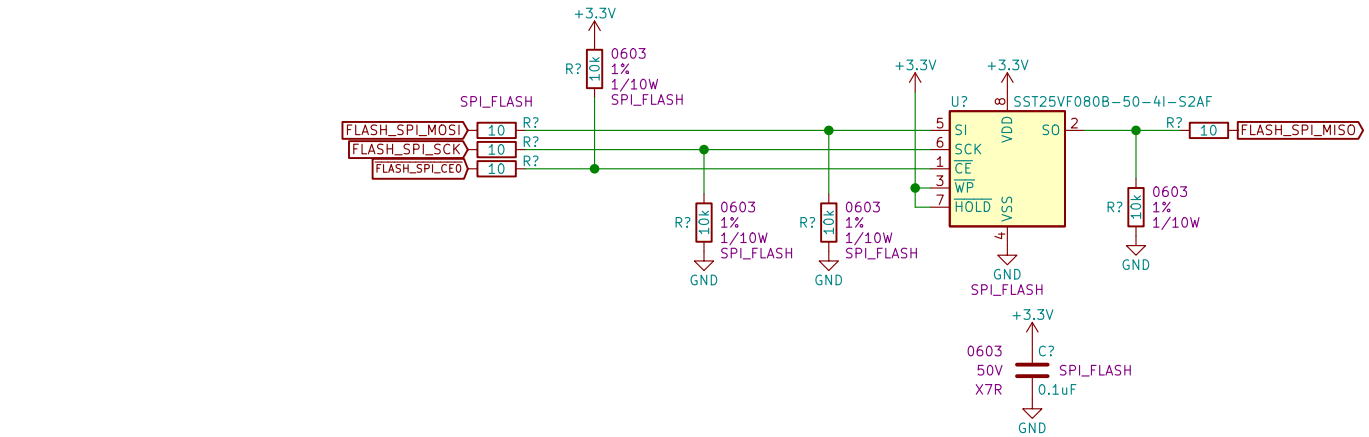


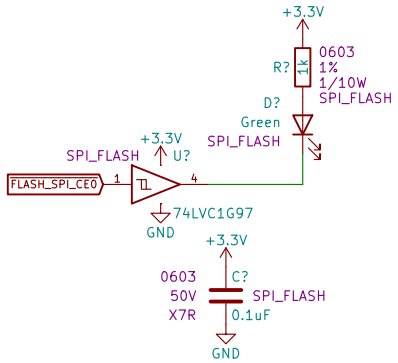
Drew Maatman, Logan Wedel		
Sheet: /Pushbuttons/		
File: Pushbuttons.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 21/34



Drew Maatman, Logan Wedel	
Sheet: /Mode LEDs/	
File: Mode_LEDs.sch	
Title: LED Panel Controller	
Size: A	Date: 2020-12-23
KiCad E.D.A. kicad (5.1.8)-1	Id: 22/34

Rev: A





Drew Maatman, Logan Wedel	
Sheet: /SPI Flash 0/	
File: SPI_Flash_0.sch	
Title: LED Panel Controller	
Size: A | Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1	Id: 23/34

Drew Maatman, Logan Wedel

Sheet: /SPI Flash 1/
File: SPI_Flash_1.sch

Title: LED Panel Controller

Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 24/34

Drew Maatman, Logan Wedel

Sheet: /SPI Flash 2/
File: SPI_Flash_2.sch

Title: LED Panel Controller

Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 25/34

Drew Maatman, Logan Wedel

Sheet: /SPI Flash 3/
File: SPI_Flash_3.sch

Title: LED Panel Controller

Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 26/34

Drew Maatman, Logan Wedel

Sheet: /SPI Flash 4/
File: SPI_Flash_4.sch

Title: LED Panel Controller

Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 27/34

Drew Maatman, Logan Wedel

Sheet: /SPI Flash 5/
File: SPI_Flash_5.sch

Title: LED Panel Controller

Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 28/34

Drew Maatman, Logan Wedel

Sheet: /SPI Flash 6/
File: SPI_Flash_6.sch

Title: LED Panel Controller

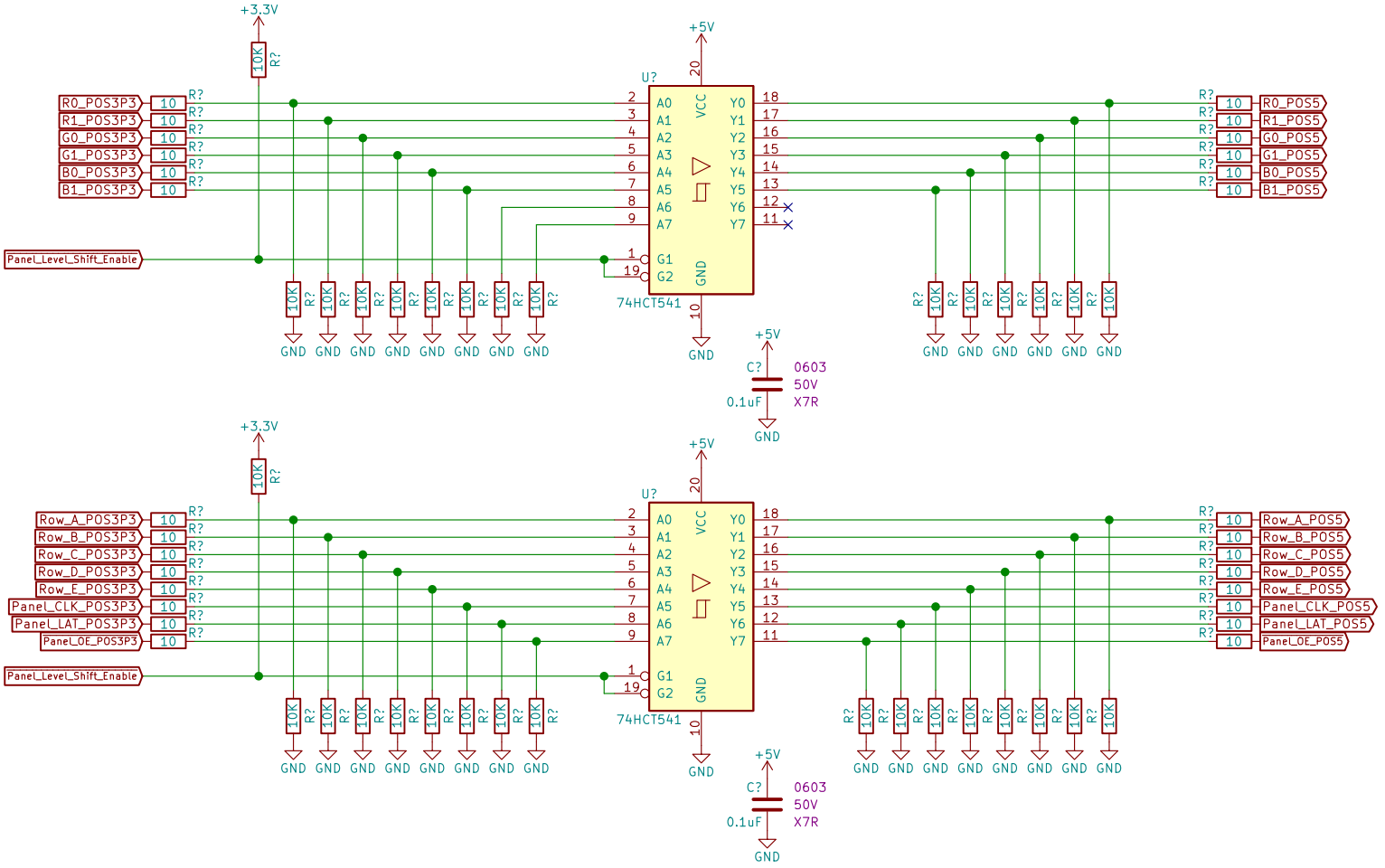
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 29/34

Drew Maatman, Logan Wedel

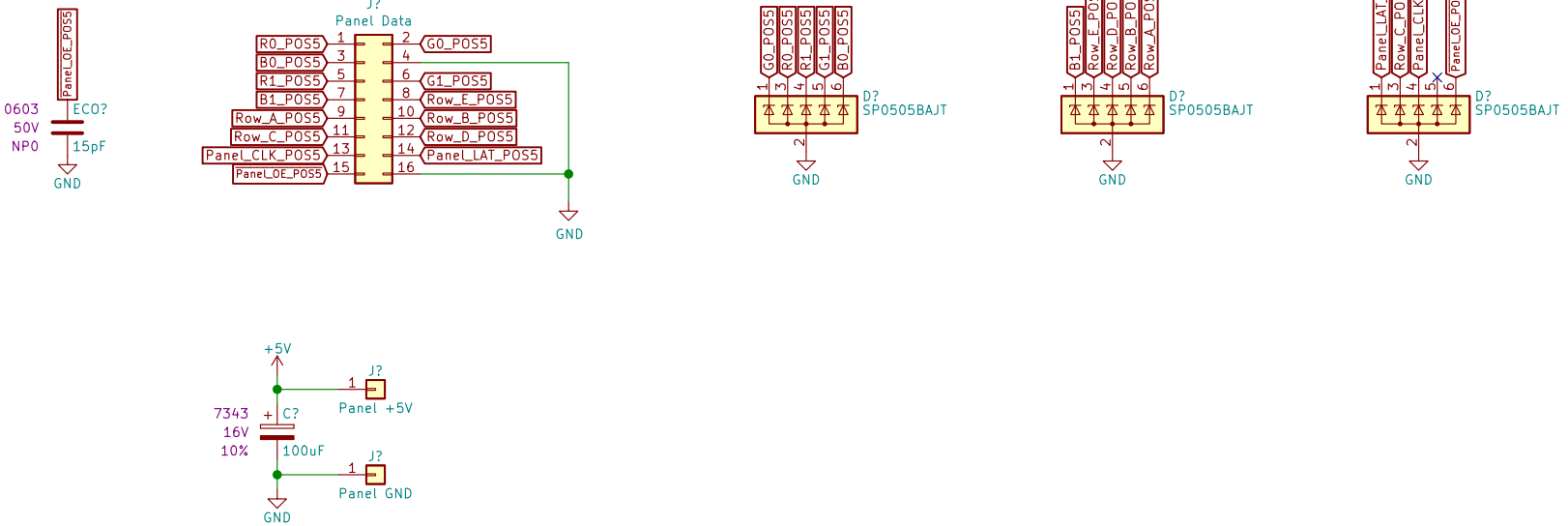
Sheet: /SPI Flash 7/
File: SPI_Flash_7.sch

Title: LED Panel Controller

Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 30/34



Drew Maatman, Logan Wedel		
Sheet: /Panel Level Shifters/		
File: Panel_Level_Shifters.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 31/34



Drew Maatman, Logan Wedel		
Sheet: /Panel Connectors/		
File: Panel_Connectors.sch		
Title: LED Panel Controller		
Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 32/34

H?
MountingHole

H?
MountingHole

H?
MountingHole

H?
MountingHole

Standoff
MK?

Standoff
MK?

Standoff
MK?

Standoff
MK?

Screw
MK?

Screw
MK?

Screw
MK?

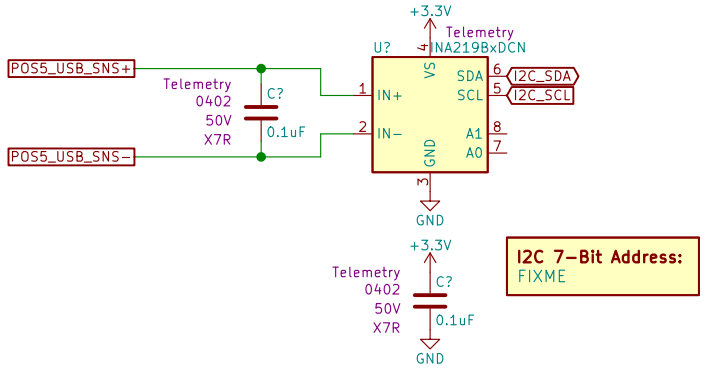
Screw
MK?

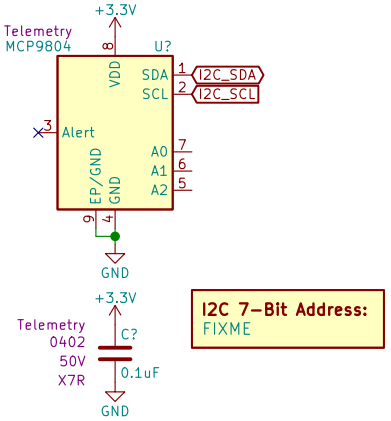
Drew Maatman, Logan Wedel

Sheet: /Mechanical/
File: Mechanical.sch

Title: LED Panel Controller

Size: A	Date: 2020-12-23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)-1		Id: 33/34





Drew Maatman, Logan Wedel		
Sheet: /USB Telemetry/		
File: USB_Telemetry.sch		
Title: LED Panel Controller		
Size: A	Date: 2020−12−23	**Rev: A**
KiCad E.D.A. kicad (5.1.8)−1		Id: 34/34