

Signal	Description
Vin	Input Voltage (9V–26V)
Vout	Output Voltage being monitored
SDA	I2C data line for multiple modules
SCL	I2C clock line for multiple modules
INT	Interrupt signal for the IO expansion module
RST	Reset the LCD display content
CS	SPI chip select for the LCD display
MOSI	SPI data line for the LCD display
CLK	SPI clock line for the LCD display
CD	Command or data signal for the SPI bus (0=commnad, 1=data)
CTRL	PWM singal that controls LCD display brightness
ON_OFF	Turns the load on Vout on and off

Module	Description
Load Measuring Circuit	Monitors the power on the Vout by measuring current and voltage
Power Management	Regulates Vin to 3.3V and 5V, and it also monitors the power used by this device
IO Expansion	Handles button presses. Interrupts the main controller when a button is pressed
Controller Circuit	Main controller module; includes the mcu and digital systems
Display	LCD display module: SPI drives the display, and PWM controls backlight brigthness

Title: Inline Power Logger

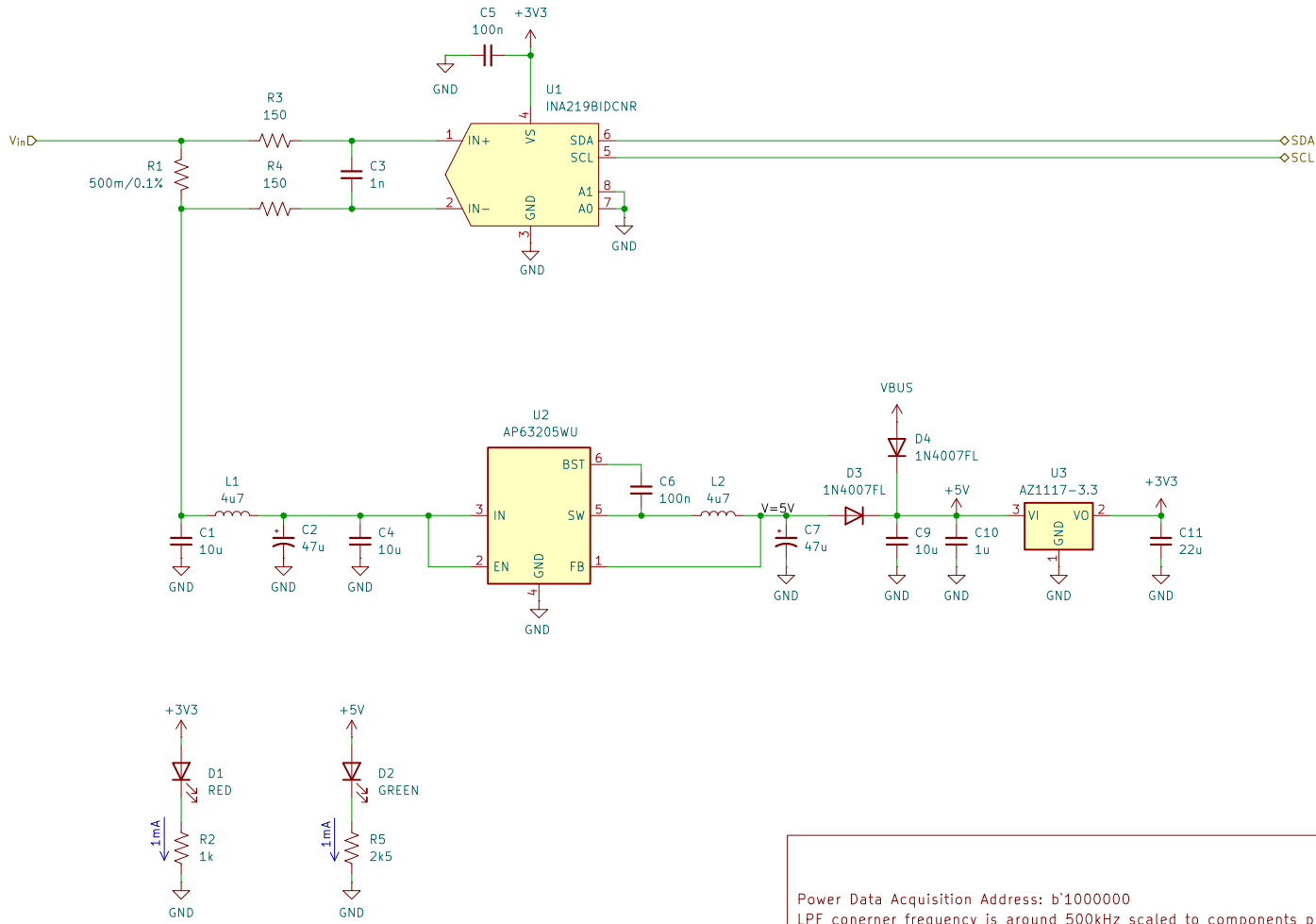
Size: A4

Date: 2025–09–01

Rev: A

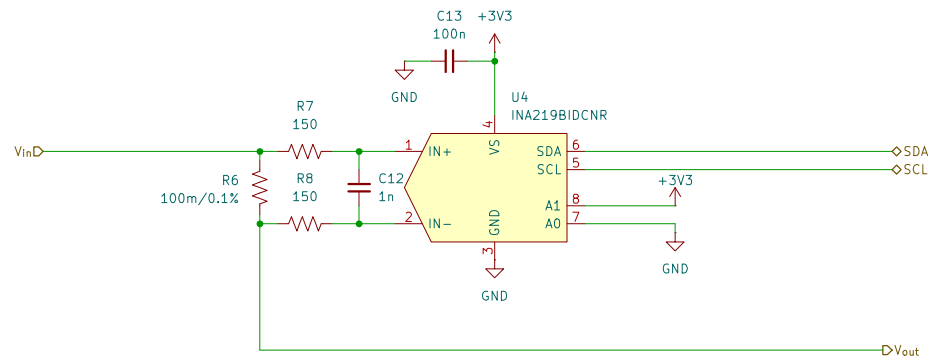
gpcm00

Id: 1/6



Power Data Acquisition Address: b'1000000
LPF corner frequency is around 500kHz scaled to components preferred values

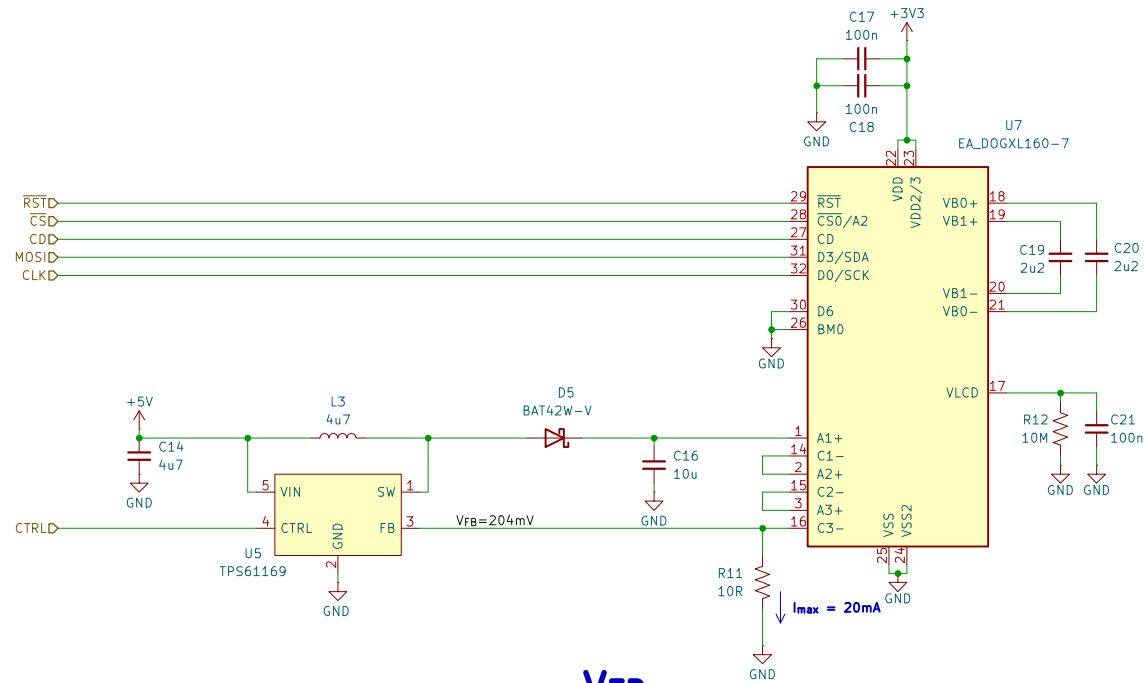
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Size: A4	Date: 2025-09-01	Rev: A
gpcm00		Id: 2/6



Max measurable current = 3.2A
 Power Data Acquisition Address: b'1000100
 LPF corner frequency is around 500kHz scaled to components preferred values

Title: Load Measuring Circuit

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$$I_{LED} = D \frac{V_{FB}}{R_{11}}$$

Current = 20mA * (Duty Cycle on CTRL)
 Backlight: EA LED78X64-W
 Current Controller Address: b'0101110

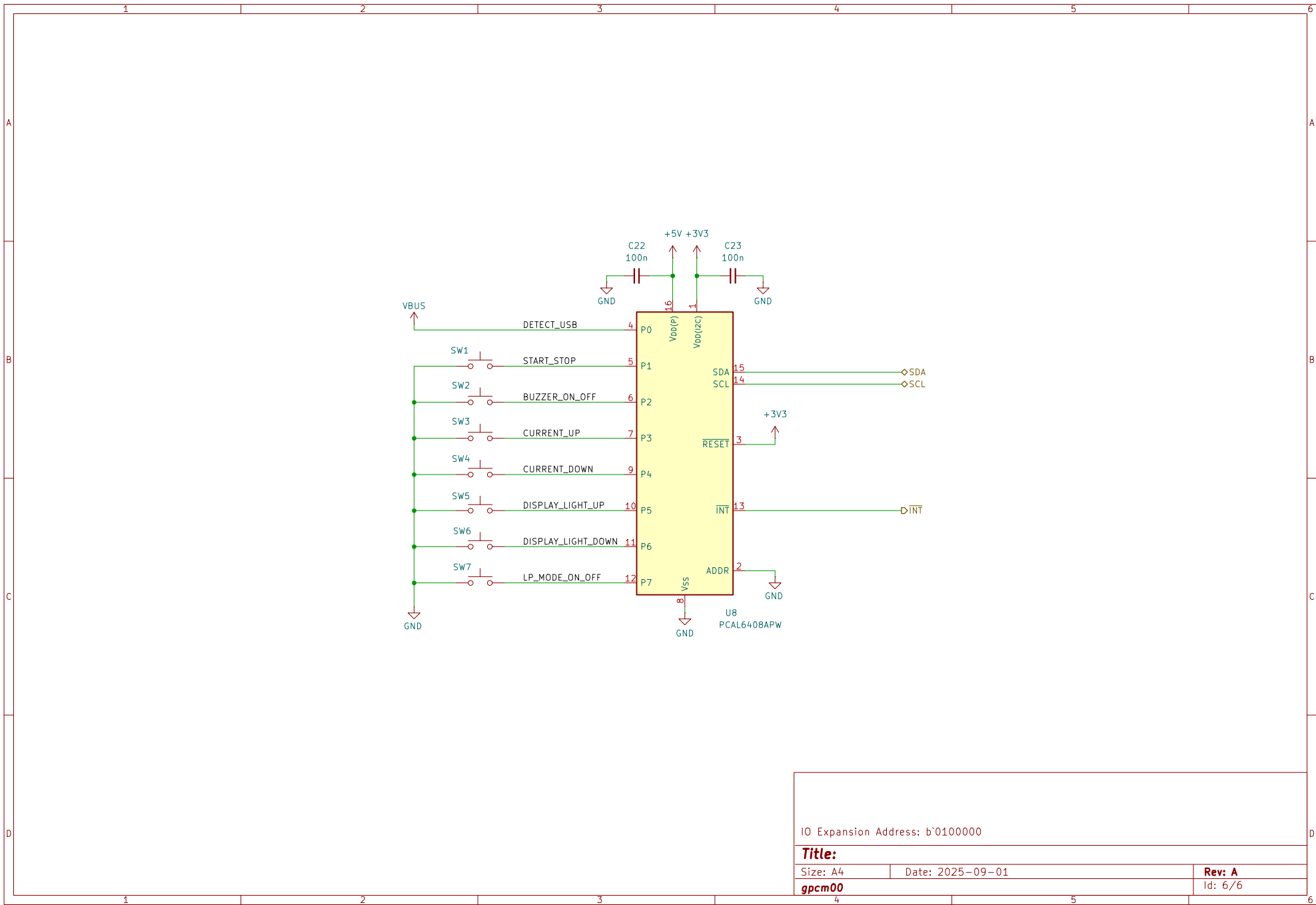
Title: LCD Display with Brightness Control

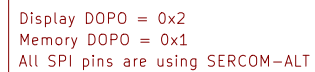
Size: A4 Date: 2025-09-01

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Rev: A
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