Analog Clock Buttons, Pullups, and Debug question: is this a 12v input? J1 PJ-102AH U2 footprints:PJ-102AH L7805 PP12V0 OND PP5V0 R3 C5 С8 File: buttons_pullups_debug_sheet.kicad_sch C_0805_10uf C_0805_1uf - C_0805_0.1uf C_0805_1uf C_0805_0.1uf R_0805_1K Display and LED Matrix Requires 5mA minimum current for regulation. Can replace with an LED. Power DEBUG_LED_1 DEBUG_LED_0 R? R_0805_2.2K R_0805_2.2K Vf = 2.0VVf = 1.75V Vr = 3.25V R = 2.2k --> If ~= 1mA Vr = 3.0VPP5V0 File: display_led_matrix_sheet.kicad_sch D? C2 D? LED_0805_GRN Testpoints C_0805_0.1u C_0805_1uf ₹ LED_0805 CHECK: Make sure to add TPs to all of the disconnected pins! U1 ATmega328-PU. PB0 DEBUG_LED_0 PB1 SPI_MATRIX_SS_L PB2 SPI_DIG_DISPLAY_SS_L File: testpoints_sheet.kicad_sch C_0805_22pf C_0805_0.1 PB3 SPI_MOSI) PB4 SPI_MISO PB5 SPI_SCLK File: motor_sheet.kicad_sch XTAL1/PB6 Y1 PP5V0 XTAL2/PB7 Crystal_16MHz BUTTON_MODE_L PC1 BUTTON_MATRIX_L C7 R_0805_10K PC2 C_0805_22pf ADC_0 PC3 26 ADC_0 PC4 Layout: make sure photosensor is not close to the LEDs. PC5 12C_SCL C? RESET/PC6 RESET_L PhotoconductivePhotocell C_0805_0.1uf The photoresistor various from 100k down to ~5k depending on the input light. This would make the output range from 5*100/(100+10) = 4.55V down to 5*(5/5+10) = 1.67V. PD0 UART_RX PD1 UART_TX PD2 PP5V0 BUTTON_HOURS_L PD3 BUTTON_MINUTES_L BT1 Lightsense PD4 DEBUG_LED_0 > Battery_Cell PD5 SEG_COLON > C_0805_0.1uf PD6 MOTOR_CONTROL_LEFT PD7 MOTOR_CONTROL_RIGHT

U3

-DS1307_DIP-8

R_0805_10K

DEPOP

12C_SCL

12C_SDA

MCU

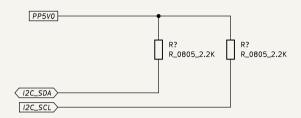
Crystal_32768Hz 2 X2

SCL

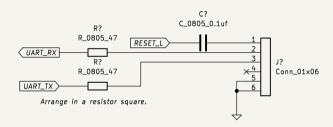
SQW/OUT

⇔ RTC

Buttons, Pullups, and Debug

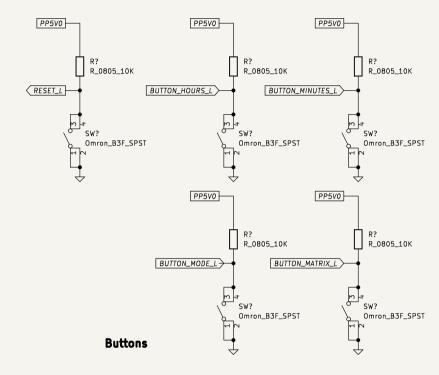


Pullups

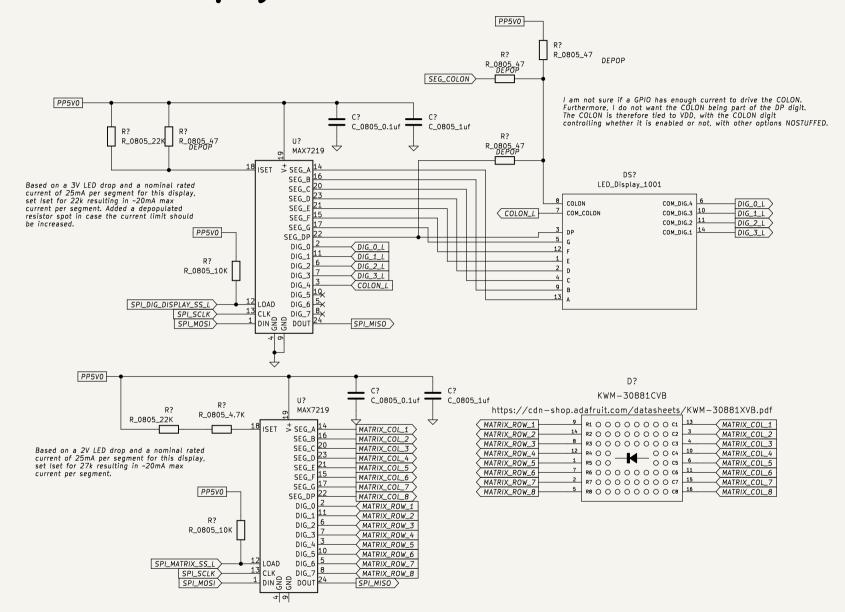


Debug

CHECK: Why does the reset need to be biased? How exactly will we be programming the arduino??



Display and LED Matrix

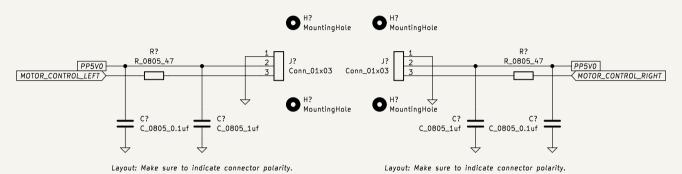


U?

SC56-11EWA

Motor

Layout: Make sure to put mounting holes in correct position under 3 pin connectors.



Testpoints

