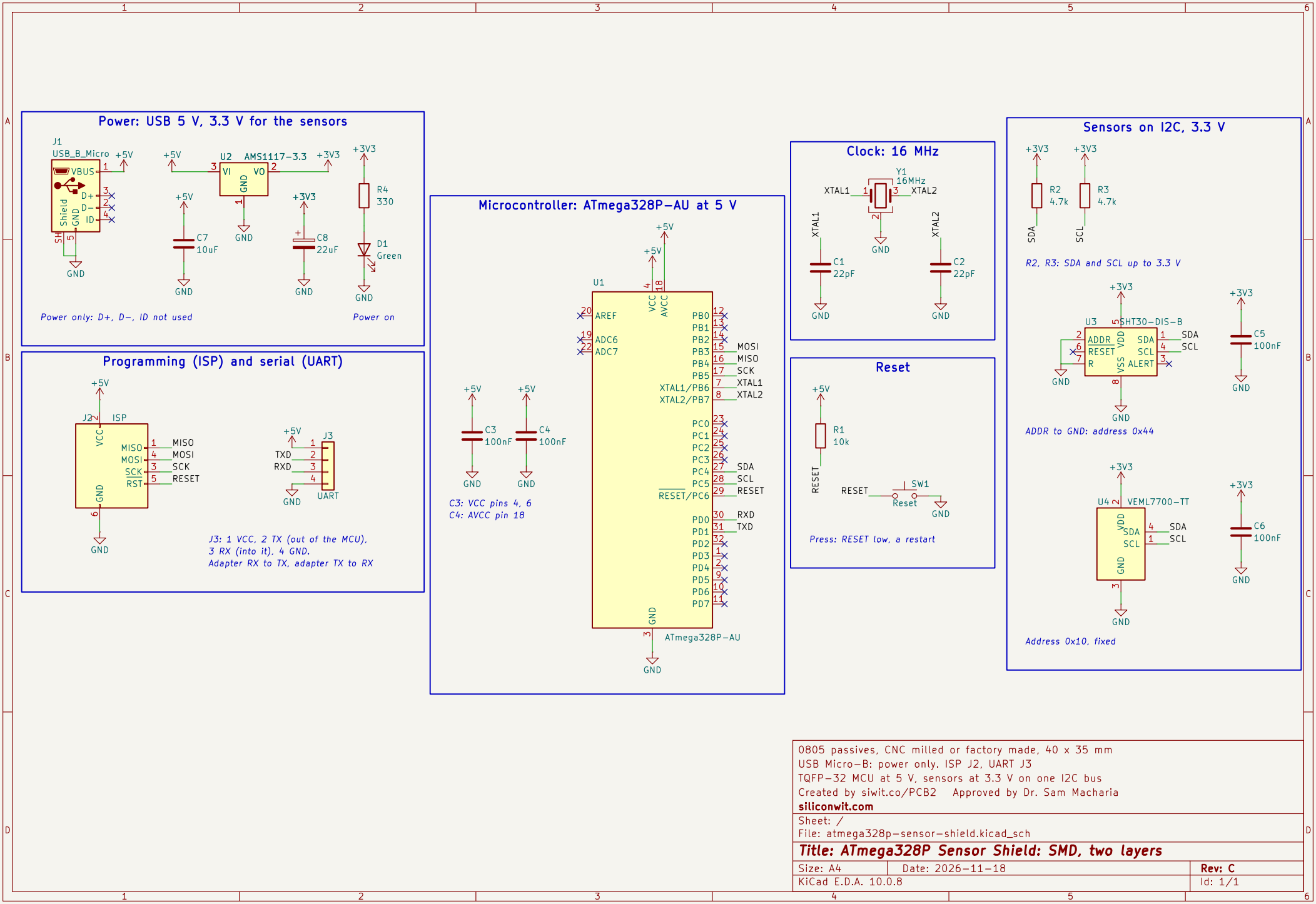

Power: USB 5 V, 3.3 V for the sensors
J1
USB_B_Micro
VBUS
Shield
GND
D+
D−
ID
SH
+5V
U2
AMS1117−3.3
VI
VO
GND
+3V3
C7
10uF
C8
22uF
R4
330
D1
Green
Power only: D+, D−, ID not used
Power on
Programming (ISP) and serial (UART)
J2
ISP
VCC
MISO
MOSI
SCK
RST
RESET
J3
TXD
RXD
UART
J3: 1 VCC, 2 TX (out of the MCU),
3 RX (into it), 4 GND.
Adapter RX to TX, adapter TX to RX
Microcontroller: ATmega328P−AU at 5 V
U1
AREF
ADC6
ADC7
AVCC
PB0
PB1
PB2
PB3
PB4
PB5
XTAL1/PB6
XTAL2/PB7
PC0
PC1
PC2
PC3
PC4
PC5
RESET/PC6
PD0
PD1
PD2
PD3
PD4
PD5
PD6
PD7
ATmega328P−AU
C3
100nF
C4
100nF
C3: VCC pins 4, 6
C4: AVCC pin 18
Clock: 16 MHz
Y1
16MHz
XTAL1
XTAL2
C1
22pF
C2
22pF
Reset
R1
10k
SW1
Reset
Press: RESET low, a restart
Sensors on I2C, 3.3 V
R2
4.7k
R3
4.7k
SDA
SCL
R2, R3: SDA and SCL up to 3.3 V
U3
SHT30−DIS−B
ADDR
RESET
VDD
VSS
ALERT
C5
100nF
ADDR to GND: address 0x44
U4
VEML7700−TT
C6
100nF
Address 0x10, fixed
0805 passives, CNC milled or factory made, 40 x 35 mm
USB Micro−B: power only. ISP J2, UART J3
TQFP−32 MCU at 5 V, sensors at 3.3 V on one I2C bus
Created by siwit.co/PCB2 Approved by Dr. Sam Macharia
siliconwit.com
Sheet: /
File: atmega328p−sensor−shield.kicad_sch
Title: ATmega328P Sensor Shield: SMD, two layers
Size: A4
Date: 2026−11−18
Rev: C
KiCad E.D.A. 10.0.8
Id: 1/1