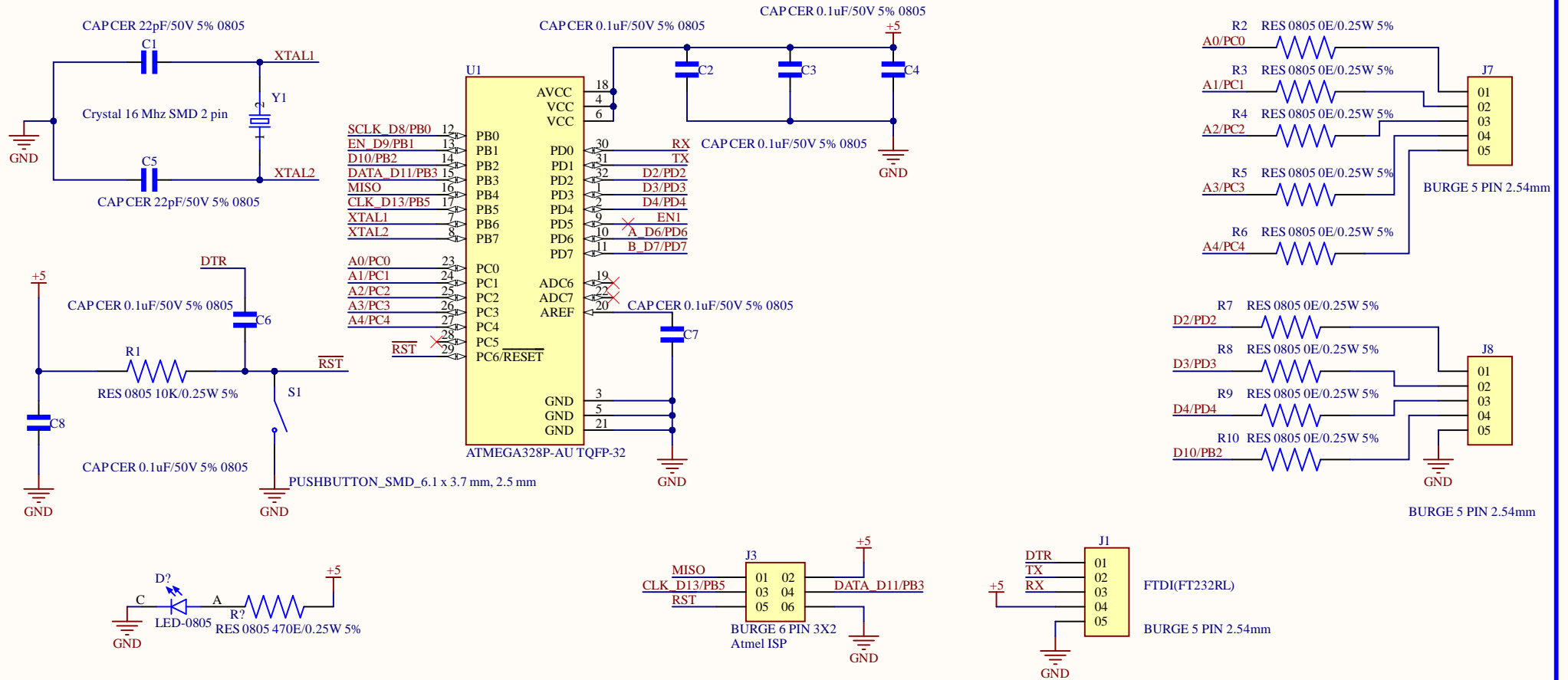
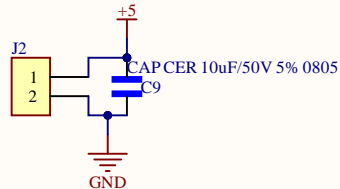


# CONTROLLER



## 5V POWER CONN

2 PIN Terminal Block Connector 5.08 mm



Title		
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## P10 DISPLAY CONN

The diagram illustrates the wiring for a P10 display connection. A 16-pin connector (J4) is shown with pins 01 through 16. The connections are as follows:

- Pin 01:** Connected to **EN\_D9/PB1** through resistor **R12** (RES 0805 0E/0.25W 5%).
- Pin 02:** Connected to **A\_D6/PD6** through resistor **R11** (RES 0805 0E/0.25W 5%).
- Pin 03:** Connected to **B\_D7/PD7** through resistor **R13** (RES 0805 0E/0.25W 5%).
- Pin 04:** Not connected (marked with a red X).
- Pin 05:** Connected to **CLK\_D13/PB5** through resistor **R14** (RES 0805 0E/0.25W 5%).
- Pin 06:** Not connected (marked with a red X).
- Pin 07:** Connected to **SCLK\_D8/PB0** through resistor **R15** (RES 0805 0E/0.25W 5%).
- Pin 08:** Not connected (marked with a red X).
- Pin 09:** Connected to **DATA\_D11/PB3** through resistor **R16** (RES 0805 0E/0.25W 5%).
- Pin 10:** Not connected (marked with a red X).
- Pin 11:** Connected to **DATA\_D11/PB3** through resistor **R16** (RES 0805 0E/0.25W 5%).
- Pin 12:** Not connected (marked with a red X).
- Pin 13:** Connected to **DATA\_D11/PB3** through resistor **R16** (RES 0805 0E/0.25W 5%).
- Pin 14:** Not connected (marked with a red X).
- Pin 15:** Connected to **DATA\_D11/PB3** through resistor **R16** (RES 0805 0E/0.25W 5%).
- Pin 16:** Connected to **DATA\_D11/PB3** through resistor **R16** (RES 0805 0E/0.25W 5%).

**BOX HEADER MALE 8X2 2.54mm**

# Touch Points

TP1  
1  
EN\_D9/PB1  
Touch Points 1mm

TP2  
1  
A\_D6/PD6  
Touch Points 1mm

TP10  
1  
SCLK\_D8/PB0  
Touch Points 1mm

TP8  
1  
CLK\_D13/PB5  
Touch Points 1mm

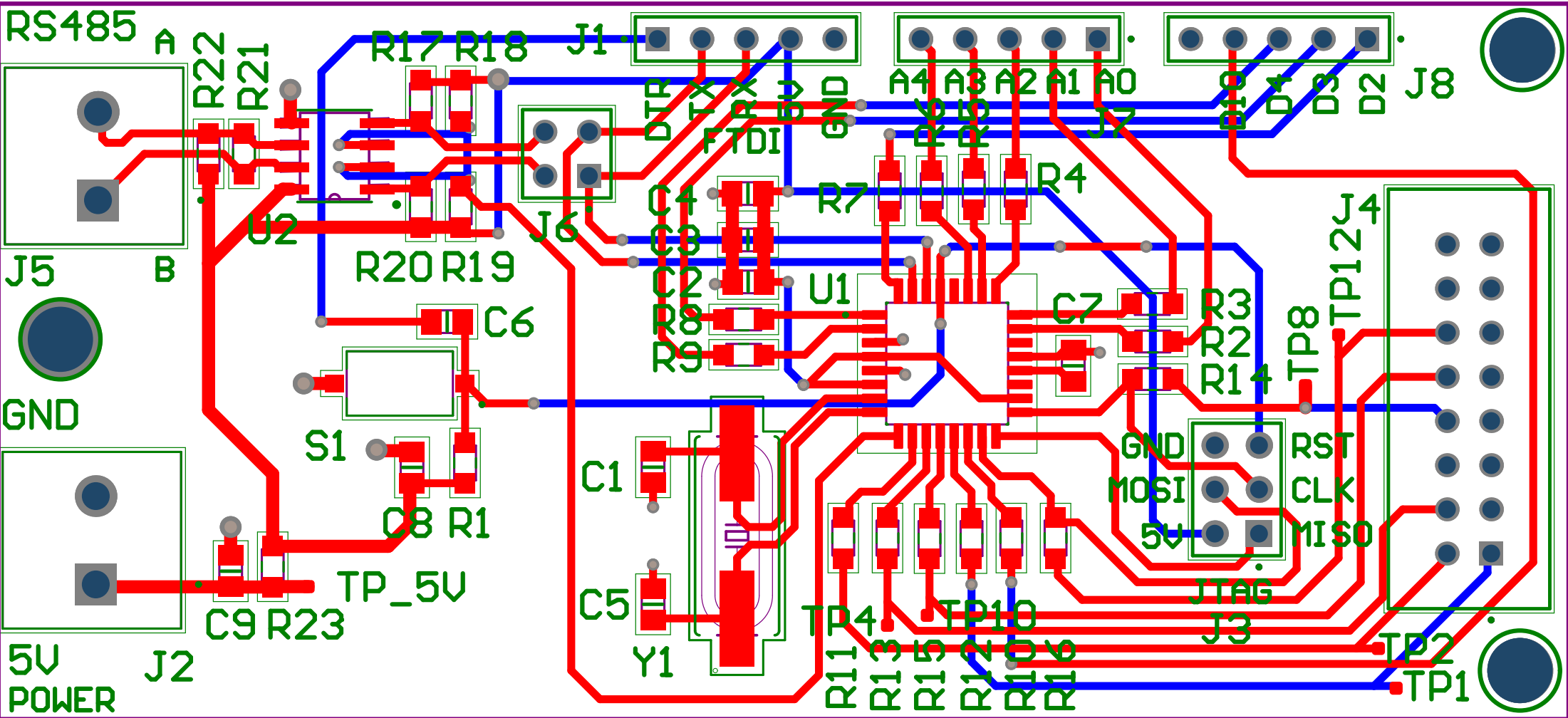
TP12  
1  
DATA\_D11/PB3  
Touch Points 1mm

TP5V  
1  
+5  
Touch Points 1mm

TP4  
1  
B\_D7/PD7  
Touch Points 1mm

[illegible]

Title		
Size A4	Number	Revision
Date:	5-31-2025	Sheet of
File:	C:\Users\...\P10_ATMEGA328P1.SchDoc	Drawn By:



Comment	Description	Designator	Footprint	LibRef	Quantity
CAP CER 22pF/50V 5% 0805	CAP CER 22pF/50V 5% Ceramic Capacitor X7R 0805 (2012 Metric), CAP CER 22pF/50V 5% Ceramic Capacitor X7R 0805 (2012 Metric)	C1, C5	CAP CER 0.1uF/50V 5%	CAP CER 0.1uF/50V 5%	2
CAP CER 0.1uF/50V 5% 0805	CAP CER 0.1uF/50V Ceramic Capacitor X7R 0805 (2012 Metric)	C2, C3, C4, C6, C7, C8	CAP CER 0.1uF/50V 5%	CAP CER 0.1uF/50V 5%	6
CAP CER 10uF/50V 5% 0805	CAP CER 0.1uF/50V Ceramic Capacitor X7R 0805 (2012 Metric)	C9	CAP CER 0.1uF/50V 5%	CAP CER 0.1uF/50V 5%	1
LED-0805	Red 640nm LED Indication - Discrete 1.85V 0805 (2012 Metric) APT2012SRCPRV	D7	LED-0805	LED-0805	1
BURGE 5 PIN 2.54mm	MTSW-105-07-T-S-048 BURGE 5 PIN 2.54mm	J1, J7, J8	BURGE 5 PIN	BURGE 5 PIN	3
2 PIN Terminal Block Connector 5.08 mm	MOLEX Screw Type, Horizontal, 5.08 Pitch, 24-12 (AWG), Terminal Block Connector, TB007-508 02BE	J2, J5	2 PIN Terminal Block Connector 5.08 mm	2 PIN Terminal Block Connector 5.08 mm	2
BURGE 6 PIN 3X2	MTSW-103-X-X-D-X BURGE 6 PIN 3X2 2.54MM	J3	BURGE 6 PIN 3X2	BURGE 6 PIN 3X2	1
BOX HEADER MALE 8X2 2.54mm	BOX HEADER MALE 8X2 2.54mm 16 pin	J4	BOX HEADER MALE 8X2 2.54mm	BOX HEADER MALE 8X2 2.54mm	1
BURGE 2X2 PIN	Connector Header Through Hole 4 position 0.100 (2.54mm), 2X2 PIN	J6	BURGE 2X2 pin	4PIN BURGE	1
RES 0805 10K/0.25W 5%	RESISTOR, THICK FILM, 10K, 5%, 0805, FRESISTOR, THICK FILM, 10K, 5%, 0805, FULL REEL Product Range: PANASONIC - ERJ Series	R1, R17, R18, R19, R20	RES 0805 10K/0.25W 5%	RES 0805 10K/0.25W 5%	5
RES 0805 0E/0.25W 5%	RESISTOR, THICK FILM, 10K, 5%, 0805, FRESISTOR, THICK FILM, 10K, 5%, 0805, FULL REEL Product Range: PANASONIC - ERJ Series	R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16	RES 0805 10K/0.25W 5%	RES 0805 10K/0.25W 5%	15
RES 0805 120E/0.25W 5%	RESISTOR, THICK FILM, 10K, 5%, 0805, FRESISTOR, THICK FILM, 10K, 5%, 0805, FULL REEL Product Range: PANASONIC - ERJ Series	R21	RES 0805 10K/0.25W 5%	RES 0805 10K/0.25W 5%	1
RES 0805 20K/0.25W 5%	RESISTOR, THICK FILM, 10K, 5%, 0805, FRESISTOR, THICK FILM, 10K, 5%, 0805, FULL REEL Product Range: PANASONIC - ERJ Series	R22	RES 0805 10K/0.25W 5%	RES 0805 10K/0.25W 5%	1
RES 0805 470E/0.25W 5%	RESISTOR, THICK FILM, 10K, 5%, 0805, FRESISTOR, THICK FILM, 10K, 5%, 0805, FULL REEL Product Range: PANASONIC - ERJ Series	R7	RES 0805 10K/0.25W 5%	RES 0805 10K/0.25W 5%	1
PUSHBUTTON_SMD_6 .1 x 3.7 mm, 2.5 mm	6.1 x 3.7 mm, 2.5 mm Actuator Height, 260 gf, Red, Surface Mount, SPST, Tactile Switch, TS09-63-25-R-260-SMT-TR	S1	PUSHBUTTON_SMD_6 .1 x 3.7 mm, 2.5 mm	PUSHBUTTON_SMD_6 .1 x 3.7 mm, 2.5 mm	1
Touch Points 1mm	Touch Points 0.75mm to 1mm	TP1, TP2, TP4, TP8, TP10, TP12, TP_5V	Touch Points 1mm	Touch Points	7
ATMEGA328P-AU TOFP-32	AVR ATMEGA328P-AU IC 8-Bit 20MHz 32KB (16K x 16) FLASH 32-TOFP (7x7)	U1	ATMEGA328P-AU IC	ATMEGA328P-AU	1
MAX485CSA SOIC-8	MAX485CSA-RS-485/RS-422 Transceivers, SOIC-8	U2	MAX485CSA	MAX485CSA	1
Crystal 16 Mhz SMD 2 pin	16 Mhz $\pm$ 30ppm Crystal 20pF 60 Ohms HC-49/US FOXSDF/128-20	Y1	Crystal 16 Mhz SMD 2 pin	Crystal 16 Mhz SMD 2 pin	1