

MSP432P4xx Arduino Pin Map Table

40-pin header for MSP432P4xx									
pin#	full name	GPIO	ADC	PWM	Serial	SPI	I2C	RSLK	Note
1	3.3V	+3V3							
2	P6.0/A15	P6.0	A15						
3	P3.2/PM_UCA2RXD/PM_UCA2SOMI	P3.2		PWM1	RXD(1)	POCI(x)			
4	P3.3/PM_UCA2SIMO/PM_UCA2TXD	P3.3		PWM1	TXD(1)	PICO(x)			
5	P4.1/A12	P4.1	A12						
6	P4.3/A10/MCLK/RTCCLK	P4.3	A10					BP_SW_PIN_3	
7	P1.5/UCB0CLK	P1.5				SCLK			
8	P4.6/A7	P4.6	A7					BP_SW_PIN_1	
9	P6.5/UCB1SCL/UCB1SOMI/C1.2	P6.5				POCI(x)	SCL		
10	P6.4/UCB1SDA/UCB1SIMO/C1.3	P6.4				PICO(x)	SDA		
11 <sup>1</sup>	P3.6/PM_UCB2SDA/PM_UCB2SIMO	P3.6		PWM1		PICO(1)	SDA(x)	MOTOR_R_SLP_PIN	Avoid on P4111 board (LCD)
12	P5.2/A3	P5.2	A3					ENCODER_ELB_PIN	
13	P5.0/A5	P5.0	A5					ENCODER_ERB_PIN	
14	P1.7/UCB0SCL/UCB0SOMI	P1.7				POCI	SCL(1)		
15	P1.6/UCB0SDA/UCB0SIMO	P1.6				PICO	SDA(1)		
16	RST	RST							
17	P5.7/TA2.2/C1.6/VREF-	P5.7		PWM2				SRV_2	
18	P3.0/PM_UCA2STE	P3.0		PWM1		CS(x)			
19	P2.5/PM_TA0.2	P2.5		PWM1					
20	GND	GND							
21	5V	+5V0							
22	GND	GND							
23	P6.1/A14	P6.1	A14					SHRP_DIST_C_PIN	
24	P4.0/A13	P4.0	A13					BP_SW_PIN_5	
25	P4.2/A11/TA2CLK/ACLK	P4.2	A11					BP_SW_PIN_4	
26	P4.4/A9/HSMCLK/SVMHOUT	P4.4	A9						
27	P4.5/A8	P4.5	A8					BP_SW_PIN_2	
28	P4.7/A6	P4.7	A6					BP_SW_PIN_0	
29	P5.4/A1	P5.4	A1					MOTOR_L_DIR_PIN	
30	P5.5/A0	P5.5	A0					MOTOR_R_DIR_PIN	
31 <sup>1</sup>	P3.7/PM_UCB2SCL/PM_UCB2SOMI	P3.7		PWM1		POCI(1)	SCL(x)	MOTOR_L_SLP_PIN	Avoid on P4111 board (LCD)
32 <sup>1</sup>	P3.5/PM_UCB2CLK	P3.5		PWM1		SCLK(1)		SRV_1	Avoid on P4111 board (LCD)
33	P5.1/A4	P5.1	A4						
34	P2.3/PM_UCA1SIMO/PM_UCA1TXD	P2.3		PWM1	TXD(2)	PICO(x)			
35	P6.7/TA2.4/UCB3SCL/UCB3SOMI/C1.0	P6.7		PWM2		POCI(x)	SCL(x)		
36	P6.6/TA2.3/UCB3SDA/UCB3SIMO/C1.1	P6.6		PWM2		PICO(x)	SDA(x)		
37	P5.6/TA2.1/C1.7/VREF+	P5.6		PWM2					
38	P2.4/PM_TA0.1	P2.4		PWM1				SRV_0	
39	P2.6/PM_TA0.3	P2.6		PWM1				MOTOR_R_PWM_PIN	
40	P2.7/PM_TA0.4	P2.7		PWM1				MOTOR_L_PWM_PIN	

**Function descriptions**

**GPIO** **digitalRead(), digitalWrite()**  
Digital inputs or outputs

**ADC** **analogRead()**  
Analog input

**PWM** **analogWrite()**  
Pulse-width modulated output. Supports :  
up to 8 PWM1 outputs  
up to 4 PWM2 outputs

**Serial** **Serial, Serial1, Serial2, Serial3<sup>2</sup>**  
UART serial communication

**SPI** **SPI, SPI1**  
SPI serial communication

**I2C** **Wire, Wire1**  
I2C serial communication

**RSLK** Pins used by TI RSLK robotics kit. These pins should not be used for alternate functions on the RSLK robot.

**Board** Pins connected to on-board components. These pins should not be used for alternate functions unless appropriate jumpers are removed.

<sup>1</sup> Do not use with MSP432P4111. These pins used by on-board LCD.

<sup>2</sup> Serial3 only available on MSP432P401R

MSP432P4xx Arduino Pin Map Table

Additional on-board pins									
pin#	full name	GPIO	ADC	PWM	Serial	SPI	I2C	Alt Arduino Name	Note
73	P1.1/UCA0CLK	P1.1				SCLK(x)		PUSH1	
74	P1.4/UCB0STE	P1.4				CS		PUSH2	
75	P2.0/PM_UCA1STE	P2.0		PWM1		CS(x)		RED_LED	
76	P2.1/PM_UCA1CLK	P2.1		PWM1		SCLK(x)		GREEN_LED	
77	P2.2/PM_UCA1RXD/PM_UCA1SOMI	P2.2		PWM1	RXD(2)	POCI(x)		BLUE_LED	
78	P1.0/UCA0STE	P1.0				CS(x)		LED1 (BUILTIN_LED)	
RXD	P1.2/UCA0RXD/UCA0SOMI	P1.2			RXD	POCI(x)		Serial (USB cable)	
TXD	P1.3/UCA0TXD/UCA0SIMO	P1.3			TXD	PICO(x)		Serial (USB cable)	

MSP432P401R J5 header (RSLK robot only)									
pin#	full name	GPIO	ADC	PWM	Serial	SPI	I2C	RSLK	Note
41	P8.5/A20	P8.5	A20					LED_FR_PIN	
42	P9.0/A17	P9.0	A17					SHRP_DIST_R_PIN	
43	P8.4/A21	P8.4	A21					SRV_FB0	
44	P8.2/A23/TA3.2	P8.2	A23					SRV_FB2	
45	P9.2/TA3.3	P9.2						QTR_EMITTER_PIN_ODD	
46	P6.2/UCB1STE/C1.5	P6.2				CS(x)			
47	P7.3/PM_TA0.0	P7.3		PWM1				QTR_3	
48	P7.1/PM_COOUT/PM_TA0CLK/R13	P7.1		PWM1				QTR_1	
49	P9.4/UCA3STE	P9.4				CS(x)		LCD_CS	
50	P9.6/UCA3RXD/UCA3SOMI	P9.6			RXD(3)	POCI(x)		LCD_DC	
51	P8.0/TA1.0/UCB3STE/C0.1	P8.0				CS(x)		LED_FL_PIN	
52	P7.4/PM_TA1.4/C0.5	P7.4		PWM1				QTR_4	
53	P7.6/PM_TA1.2/C0.3	P7.6		PWM1				QTR_6	
54	P10.0/UCB3STE	P10.0				CS(x)			
55	P10.2/UCB3SDA/UCB3SIMO	P10.2				PICO(x)	SDA(x)		
56	P10.4/TA3.0/C0.7	P10.4						ENCODER_ERA_PIN	
57	P8.6/A19	P8.6	A19					LED_BL_PIN	
58	P8.7/A18	P8.7	A18					LED_BR_PIN	
59	P9.1/A16	P9.1	A16					SHRP_DIST_L_PIN	
60	P8.3/A22/TA3CLK	P8.3	A22					SRV_FB1	
61	P5.3/A2	P5.3	A2					QTR_EMITTER_PIN_EVEN	
62	P9.3/TA3.4	P9.3						LCD_RST	
63	P6.3/UCB1CLK/C1.4	P6.3				SCLK(x)			
64	P7.2/PM_C1OUT/PM_TA1CLK/R23	P7.2		PWM1				QTR_2	
65	P7.0/PM_DMAE0/PM_SMCLK/R03	P7.0		PWM1				QTR_0	
66	P9.5/UCA3CLK	P9.5				SCLK(x)		LCD_SCLK	
67	P9.7/UCA3TXD/UCA3SIMO	P9.7			TXD(3)	PICO(x)		LCD_MOSI	
68	P7.5/PM_TA1.3/C0.4	P7.5		PWM1				QTR_5	
69	P7.7/PM_TA1.1/C0.2	P7.7		PWM1				QTR_7	
70	P10.1/UCB3CLK	P10.1				SCLK(x)			
71	P10.3/UCB3SCL/UCB3SOMI	P10.3				POCI(x)	SCL(x)		
72	P10.5/TA3.1/C0.6	P10.5						ENCODER_ELA_PIN	

Function descriptions

**GPIO** **digitalRead(), digitalWrite()**  
Digital inputs or outputs

**ADC** **analogRead()**  
Analog input

**PWM** **analogWrite()**  
Pulse-width modulated output. Supports :  
up to 8 PWM1 outputs  
up to 4 PWM2 outputs

**Serial** **Serial, Serial1, Serial2, Serial3<sup>2</sup>**  
UART serial communication

**SPI** **SPI, SPI1**  
SPI serial communication

**I2C** **Wire, Wire1**  
I2C serial communication

**RSLK** Pins used by TI RSLK robotics kit. These pins should not be used for alternate functions on the RSLK robot.

**Board** Pins connected to on-board components. These pins should not be used for alternate functions unless appropriate jumpers are removed.

<sup>1</sup> Do not use with MSP432P4111. These pins used by on-board LCD.

<sup>2</sup> Serial3 only available on MSP432P401R