40-pin header for MSP432P4xx

pin#		tions	,,,,				
	+3V3	Lions					
20	GND						
22	GND						
21	+5V0						
16	RST						
18	P3.0	PWM1	1				
3	P3.2	PWM1	RXD(1)	ì			
4	P3.3	PWM1	TXD(1)				
32 ¹	P3.5	PWM1	SCLK(1)	SRV 1	Avoid on	P4111 board (LCD)	
11 ¹	P3.6	PWM1	PICO(1)	MOTOR R		Avoid on P4111 bo	ard (LCD)
31 ¹	P3.7	PWM1	POCI(1)	MOTOR L		Avoid on P4111 bo	
7	P1.5	SCLK	()	_	-		
15	P1.6	PICO	SDA(1)]			
14	P1.7	POCI	SCL(1)				
10	P6.4	SDA		•			
9	P6.5	SCL					
36	P6.6	PWM2					
35	P6.7	PWM2					
17	P5.7	PWM2	SRV_2				
37	P5.6	PWM2					
30	P5.5	A0		L_DIR_PIN			
29	P5.4	A1		_DIR_PIN			
12	P5.2	A3	ENCODER	_ELB_PIN			
33	P5.1	A4					
13	P5.0	A5		_ERB_PIN			
28	P4.7	A6		_PIN_0			
8	P4.6	A7		_PIN_1			
27	P4.5	A8	BP_SW	_PIN_2			
26	P4.4	A9	_				
6	P4.3	A10		_PIN_3			
25	P4.2	A11	BP_SW	_PIN_4			
5	P4.1	A12	55 611				
24	P4.0	A13		_PIN_5			
23	P6.1	A14	SHRP_DI	ST_C_PIN			
2	P6.0	A15	MOTOR	DIA/AA DIA			
40	P2.7	PWM1		_PWM_PIN PWM_PIN			
39	P2.6	PWM1	MOTOK_R	_PMM_PIN			
19	P2.5	PWM1	CDV C	1			
38	P2.4	PWM1	SRV_0				
34	P2.3	PWM1	TXD(2)				

Additional on-board pins

pin#	func	tions		
73	P1.1	PUSH1		
74	P1.4	CS	PUSH2	
75	P2.0	PWM1	RED_LED	
76	P2.1	PWM1 GREEN_LED		N_LED
77	P2.2	PWM1	RXD(2)	BLUE_LED
78	P1.0	LED1 (BUI	LTIN_LED)	
RXD	P1.2	RXD	Serial (U	
TXD	P1.3	TXD	Serial (U	SB cable)

MSP432P401R J5 header (RSLK robot only)

Pin# Functions	MSP432P401R J5 header (RSLK robot only)							
42	pin#	func	tions					
Heat	41	P8.5	A20	LED_FR_PIN				
44 P8.2 A23 SRV FB2 45 P9.2 QTR_EMITTER_PIN_ODD 46 P6.2 47 P7.3 PWM1 QTR_3 48 P7.1 PWM1 QTR_1 49 P9.4 50 P9.6 RXD(3) 51 P8.0 LED_FL_PIN 52 P7.4 PWM1 QTR_4 53 P7.6 PWM1 QTR_6 54 P10.0 55 P10.2 56 P10.4 ENCODER_ERA_PIN 57 P8.6 A19 LED_BL_PIN 58 P8.7 A18 LED_BR_PIN 59 P9.1 A16 SHRP_DIST_L_PIN 60 P8.3 A22 SRV_FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 65 P7.0 PWM1 QTR_0 66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 70 P10.1 71 P10.3	42	P9.0	A17	SHRP_DIST_R_PIN				
45	43		A21	SRV_FB0				
46 P6.2 47 P7.3 PWM1 QTR_3 48 P7.1 PWM1 QTR_1 49 P9.4 50 P9.6 RXD(3) 51 P8.0 LED_FL_PIN 52 P7.4 PWM1 QTR_4 53 P7.6 PWM1 QTR_6 54 P10.0 55 P10.2 56 P10.4 ENCODER ERA_PIN 57 P8.6 A19 LED_BL_PIN 58 P8.7 A18 LED_BR_PIN 59 P9.1 A16 SHRP_DIST_L_PIN 60 P8.3 A22 SRV FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 65 P7.0 PWM1 QTR_0 66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 70 P10.1 71 P10.3			A23	SRV_FB2				
47 P7.3 PWM1 QTR_3 48 P7.1 PWM1 QTR_1 49 P9.4 S50 P9.6 RXD(3) 51 P8.0 LED_FL_PIN 52 P7.4 PWM1 QTR_4 53 P7.6 PWM1 QTR_6 54 P10.0 P10.2 56 P10.4 ENCODER_ERA_PIN 57 P8.6 A19 LED_BL_PIN 58 P8.7 A18 LED_BR_PIN 59 P9.1 A16 SHRP_DIST_L_PIN 60 P8.3 A22 SRV_FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_5 70 P10.1 71	45	P9.2	QTR_E	MITTER_PIN_ODD				
48 P7.1 PWM1 QTR_1 49 P9.4 50 P9.6 RXD(3) 51 P8.0 LED_FL_PIN 52 P7.4 PWM1 QTR_6 54 P10.0 55 P10.2 56 P10.4 ENCODER ERA PIN 57 P8.6 A19 LED_BL_PIN 58 P8.7 A18 LED_BR_PIN 59 P9.1 A16 SHRP_DIST_L_PIN 60 P8.3 A22 SRV_FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 65 P7.0 PWM1 QTR_0 66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 71 P10.3	46	P6.2						
49 P9.4 50 P9.6 RXD(3) 51 P8.0 LED_FL_PIN 52 P7.4 PWM1 QTR_4 53 P7.6 PWM1 QTR_6 54 P10.0 P10.2 P10.2 P10.2 56 P10.4 ENCODER ERA PIN ENCODER ERA PIN P10.2 P10.1 P10.3 P10.1 P10.3 P10.1 P10.3 P10.1 P10.3 P10.1 P10.3 P10.2 P10.2 P10.2 P10.2 P10.2 P10.2 P10.2 P1	47	P7.3	PWM1	QTR_3				
SO	48	P7.1	PWM1	QTR_1				
51 P8.0 LED_FL_PIN 52 P7.4 PWM1 QTR_4 53 P7.6 PWM1 QTR_6 54 P10.0 P10.2 56 P10.4 ENCODER_ERA_PIN 57 P8.6 A19 LED_BL_PIN 58 P8.7 A18 LED_BR_PIN 59 P9.1 A16 SHRP_DIST_L_PIN 60 P8.3 A22 SRV_FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 71 P10.3	49	P9.4						
52 P7.4 PWM1 QTR_4 53 P7.6 PWM1 QTR_6 54 P10.0 P10.2 P10.2 56 P10.4 ENCODER ERA_PIN ENCODER ERA_PIN 57 P8.6 A19 LED_BR_PIN 58 P8.7 A18 LED_BR_PIN 59 P9.1 A16 SHRP_DIST_L_PIN 60 P8.3 A22 SRV_FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 A2 QTR_EMITTER_PIN_EVEN 63 P6.3 P6.3 64 P7.2 PWM1 QTR_2 65 P7.0 PWM1 QTR_0 66 P9.5 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 P10.3	50	P9.6	RXD(3)					
53 P7.6 PWM1 QTR_6 54 P10.0 P10.2 55 P10.2 P8.6 A19 LED_BL_PIN 57 P8.6 A19 LED_BR_PIN 58 P8.7 A18 LED_BR_PIN 59 P9.1 A16 SHRP_DIST_L_PIN 60 P8.3 A22 SRV_FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 71 P10.3	51	P8.0	LED_F	L_PIN				
54 P10.0 55 P10.2 56 P10.4 ENCODER ERA PIN 57 P8.6 A19 LED BL_PIN 58 P8.7 A18 LED BR_PIN 59 P9.1 A16 SHRP_DIST_L_PIN 60 P8.3 A22 SRV_FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 65 P7.0 PWM1 QTR_0 66 P9.5 TXD(3) 68 P7.5 PWM1 QTR_5 70 P10.1 71 P10.3		P7.4	PWM1	QTR_4				
S5	53	P7.6	PWM1	QTR_6				
56 P10.4 ENCODER_ERA_PIN 57 P8.6 A19 LED_BL_PIN 58 P8.7 A18 LED_BR_PIN 59 P9.1 A16 SHRP_DIST_L_PIN 60 P8.3 A22 SRV_FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 65 P7.0 PWM1 QTR_0 66 P9.5 F7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_5 70 P10.1 71 P10.3	54	P10.0						
57 P8.6 A19 LED_BL_PIN 58 P8.7 A18 LED_BR_PIN 59 P9.1 A16 SHRP_DIST_L_PIN 60 P8.3 A22 SRV_FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 65 P7.0 PWM1 QTR_0 66 P9.5 F7.0 PWM1 QTR_5 67 P9.7 TXD(3) QTR_5 68 P7.5 PWM1 QTR_7 70 P10.1 71 P10.3		P10.2						
58 P8.7 A18 LED_BR_PIN 59 P9.1 A16 SHRP_DIST_L_PIN 60 P8.3 A22 SRV FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 65 P7.0 PWM1 QTR_0 66 P9.5 G7 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 71 P10.3	56	P10.4	ENCODER	_ERA_PIN				
59 P9.1 A16 SHRP_DIST_L_PIN 60 P8.3 A22 SRV_FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 65 P7.0 PWM1 QTR_0 66 P9.5 G7 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 P10.3	57		A19	LED_BL_PIN				
60 P8.3 A22 SRV_FB1 61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 65 P7.0 PWM1 QTR_0 66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 71 P10.3	58	P8.7	A18	LED_BR_PIN				
61 P5.3 A2 QTR_EMITTER_PIN_EVEN 62 P9.3 63 P6.3 64 P7.2 PWM1 QTR_2 65 P7.0 PWM1 QTR_0 66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 71 P10.3	59		A16	SHRP_DIST_L_PIN				
62 P9.3 63 P6.3 64 P7.2 PWM1 QTR 2 65 P7.0 PWM1 QTR 0 66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR 5 69 P7.7 PWM1 QTR 7 70 P10.1 71 P10.3	60	P8.3	A22	SRV_FB1				
63 P6.3 64 P7.2 PWM1 QTR 2 65 P7.0 PWM1 QTR 0 66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR 5 69 P7.7 PWM1 QTR 7 70 P10.1 71 P10.3		P5.3	A2	QTR_EMITTER_PIN_EVEN				
64 P7.2 PWM1 QTR_2 65 P7.0 PWM1 QTR_0 66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 71 P10.3	62	P9.3		_				
65 P7.0 PWM1 QTR_0 66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 71 P10.3	63	P6.3						
66 P9.5 67 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 71 P10.3	64	P7.2	PWM1	QTR_2				
67 P9.7 TXD(3) 68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 71 P10.3	65	P7.0	PWM1	QTR_0				
68 P7.5 PWM1 QTR_5 69 P7.7 PWM1 QTR_7 70 P10.1 71 P10.3	66	P9.5						
69 P7.7 PWM1 QTR_7 70 P10.1 71 P10.3	67		TXD(3)					
70 P10.1 71 P10.3	68	P7.5	PWM1	QTR_5				
71 P10.3	69	P7.7	PWM1	QTR_7				
	70	P10.1						
72 P10.5 ENCODER_ELA_PIN	71	P10.3						
	72	P10.5	ENCODER	_ELA_PIN				

Function descriptions

GPIO digitalRead(), digitalWrite()

Digital inputs or outputs

analogRead() Analog input ADC

PWM analogWrite()

Pulse-width modulated output. Supports : up to 8 PWM1 outputs up to 4 PWM2 outputs

Serial, Serial1, Serial2, Serial3² Serial

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.

- Do not use with MSP432P4111. These pins used by on-board LCD.
- ² Serial3 only available on MSP432P401R