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DS50002719B

dsPIC33CK256MP508 General Purpose Plug-In Module (PIM) Information Sheet

Overview

The dsPIC33CK256MP508 General Purpose Plug-In Module (MA330042) is designed to demonstrate the capabilities of the dsPIC33CK256MP508 family using the Explorer 16/32 Development Board. Refer to Table 1 and Table 2 for the mapping of the physical pins on the dsPIC33CK256MP508 to the 100 pins on the PIM connector.

Not all predefined PIM signals found on the Explorer 16/32 are connected due to the limited amount of I/O pins available.

Table 1: dsPIC33CK256MP508 PIM Mapping

PIM Pin #	Device Pin #	dsPIC33CK256MP508 I/Os	Function	Explorer 16/32 Net Name
1	—	—	USB Type-C™ VBUS	P1_VBUS
2	12, 25, 31, 51, 71	VDD Pins Plus AVDD	VDD	VDD_PIM
3	64	RE13	LCD D5	P3_LCDD5
4	77	RE14	LCD D6	P4_LCDD6
5	79	RE15	LCD D7	P5_LCDD7
6	16	OA1OUT/AN0/CMP1A/IBIAS0/RA0	General Purpose I/O	P6
7	18	OA1IN-/ANA1/RA1	General Purpose I/O	P7
8	43	PGD2/OA2IN-/AN8/RP35/RB3	General Purpose I/O	P8
9	45	PGC2/OA2IN+/RP36/RB4	General Purpose I/O	P9
10	29	OA3IN+/AN14/CMP2B/ISRC1/RP50/PMD13/PMA13/RC2	EEPROM (SCK) and mikroBUS™ A SCK	P10_SCKA
11	53	RP70/PMD14/RD6	EEPROM (MSDI) and mikroBUS A MISO	P11_MISOA
12	33	AN15/CMP2A/IBIAS2/RP51/PMD11/PMA11/RC3	EEPROM (MSDO) and mikroBUS A MOSI	P12_MOSIA
13	9	$\overline{\text{MCLR}}$	$\overline{\text{MCLR}}$	P13_MCLR
14	69	RP67/ASCL3/RD3	mikroBUS A Chip Select	P14_CSA
15	11, 26, 32, 50, 70	VSS Pins Plus AVSS	VSS + AVSS	VSS
16	12, 25, 31, 51, 71	VDD Pins Plus AVDD	VDD	VDD_PIM
17	2	AN20/RE3	LED D3	P17_LED3
18	80	RP45/PWM2L/PMD4/RB13	mikroBUS B Interrupt	P18_INTB
19	30	AN17/ANN1/IBIAS1/RP54/PMD12/PMA12/RC6	mikroBUS B Reset	P19_RSTB
20	23	OA3OUT/AN4/CMP3B/IBIAS3/RA4	10k Potentiometer	P20_POT
21	40	AN16/ISRC2/RP55/PMD8/PMA8/RC7	TC1047A Temp. Sensor	P21_TEMP
22	28	OA3IN-/AN13/CMP1B/ISRC0/RP49/PMA7/RC1	General Purpose I/O	P22
23	58	TDO/AN2/CMP3A/RP39/SDA3/RB7	mikroBUS B Chip Select	P23_CSB
24	41	OA2OUT/AN1/AN7/ANA0/CMP1D/CMP2D/CMP3D/RP34/SCL3/INT0/RB2	mikroBUS B Analog	P24_ANB
25	21	DACOUT1/AN3/CMP1C/RA3	mikroBUS A Analog or USB Overcurrent Sense	P25_ANA_USBOC
26	56	PGC3/RP38/SCL2/RB6	ICSP™ PGC	P26_PGC
27	55	PGD3/RP37/SDA2/PMA14/PMCS1/PSCS/RB5	ICSP PGD	P27_PGD
28	36	AN19/CMP2C/RP75/PMA0/PMALL/PSA0/RD11	General Purpose I/O	P28
29	44	RE9	General Purpose I/O	P29
30	12, 25, 31, 51, 71	VDD Pins Plus AVDD	VDD	VDD_PIM
31	11, 26, 32, 50, 70	VSS Pins Plus AVSS	VSS	VSS
32	20	OA1IN+/AN9/PMA6/RA2	USB Type-C CC2 Sense Line	P32_CC2
33	15	AN12/ANN0/RP48/RC0	USB Type-C CC1 Sense Line	P33_CC1
34	—	—	General Purpose I/O	P34
35	—	—	General Purpose I/O	P35
36	11, 26, 32, 50, 70	VSS Pins Plus AVSS	VSS	VSS
37	12, 25, 31, 51, 71	VDD Pins Plus AVDD	VDD	VDD_PIM
38	4	AN21/RE1	LED D4	P38_LED4
39	75	TMS/RP42/PWM3H/PMD1/RB10	General Purpose I/O	P39
40	76	TCK/RP43/PWM3L/PMD2/RB11	General Purpose I/O	P40
41	—	—	General Purpose I/O	P41
42	—	—	General Purpose I/O	P42
43	—	—	General Purpose I/O	P43
44	59	RE11	LCD RS	P44_LCDRS
45	11, 26, 32, 50, 70	VSS Pins Plus AVSS	VSS	VSS
46	12, 25, 31, 51, 71	VDD Pins Plus AVDD	VDD	VDD_PIM
47	7	RP62/PWM6H/PMA4/RC14	General Purpose I/O	P47
48	8	RP63/PWM6L/PMA3/RC15	General Purpose I/O	P48
49	66	RP58/PWM7H/PMRD/$\overline{\text{PMWR}}$/PSRD/RC10	MCP2221A/mikroBUS B RX	P49_RXB

Table 1: dsPIC33CK256MP508 PIM Mapping (Continued)

PIM Pin #	Device Pin #	dsPIC33CK256MP508 I/Os	Function	Explorer 16/32 Net Name
50	67	RP59/PWM7L/RC11	MCP2221A/mikroBUS B TX	P50_TXB
51	73	RP65/PWM4H/RD1	mikroBUS™ A TX	P51_TXA
52	74	RP64/PWM4L/PMD0/RD0	mikroBUS A RX	P52_RXA
53	49	RP72/SDO2/PCI19/RD8	mikroBUS B MOSI	P53_MOSIB
54	47	RP57/ASCL1/SDI2/RC9	mikroBUS B MISO	P54_MISOB
55	46	RP56/ASDA1/SCK2/RC8	mikroBUS B SCKB	P55_SCKB
56	61	PGC1/AN11/RP41/SDA1/RB9	Shared I^2C SDA	P56_SDA
57	60	PGD1/AN10/RP40/SCL1/RB8	Shared I^2C SCL	P57_SCL
58	17	AN22/RE2	LED D5	P58_LED5
59	19	AN23/RE3	LED D6	P59_LED6
60	22	RE4	LED D7	P60_LED7
61	24	RE5	LED D8	P61_LED8
62	12, 25, 31, 51, 71	VDD Pins Plus AVDD	VDD	VDD_PIM
63	34	OSCI/CLKI/AN5/RP32/PMD10/PMA10/RB0	Primary Oscillator In	P63_OSCI
64	35	OSCO/CLKO/AN6/RP33/PMA1/PMALH/PSA1/RB1	Primary Oscillator Out	P64_OSCO
65	11, 26, 32, 50, 70	VSS Pins Plus AVSS	VSS	VSS
66	78	TDI/RP44/PWM2H/PMD3/RB12	General Purpose I/O	P66
67	72	RP66/RD2	mikroBUS A Interrupt (digital)	P67_INTA
68	14	ANN2/RP77/RD13	General Purpose I/O	P68
69	65	RP53/PWM5L/ASCL2/PMWR/PMENB/PSWR/RC5	General Purpose I/O	P69
70	13	RP78/PCI21/RD14	General Purpose I/O	P70
71	—	—	General Purpose I/O	P71
72	3	RP47/PWM1L/PMD6/RB15	mikroBUS A PWM	P72_PWMA
73	—	—	SOSC In	P73_SOSCI
74	—	—	SOSC Out	P74_SOSCO
75	11, 26, 32, 50, 70	VSS Pins Plus AVSS	VSS	VSS
76	38	AN18/CMP3C/ISRC3/RP74/PMD9/PMA9/RD10	General Purpose I/O	P76
77	—	—	General Purpose I/O	P77
78	63	RP52/PWM5H/ASDA2/RC4	mikroBUS B PWM	P78_PWMB
79	42	RE8	EEPROM CS	P79_EECS
80	48	RP73/PCI20/RD9	Switch S4	P80_S4
81	57	RE10	LCD E	P81_LCDE
82	—	—	LCD R/W	P82_LCDRW
83	1	RP46/PWM1H/PMD5/RB14	Switch S3	P83_S3
84	10	RP79/PCI22/PMA2/RD15	Switch S6	P84_S6
85	—	—	VCAP, 10 µF Capacitor	P85_VDDCORE
86	—	—	ENVREG	P86_ENVREG
87	5	RP60/PWM8H/PMD7/RC12	General Purpose I/O	P87
88	6	RP61/PWM8L/PMA5/RC13	General Purpose I/O	P88
89	52	RP71/PMD15/RD7	USB D- to Type-C/A	P89_USBDN
90	54	RP69/PMA15/PMCS2/RD5	USB D+ to Type-C/A	P90_USBDP
91	37	RE6	LED D9	P91_LED9
92	39	RE7	LED D10, Switch S5	P92_S5_LED10
93	—	—	LCD D0	P93_LCDD0
94	—	—	LCD D1	P94_LCDD1
95	68	RP68/ASDA3/RD4	mikroBUS A Reset Pin	P95_RSTA
96	27	RP76/RD12	VBUS Output Enable for USB Type-C™	P96_VBUSON
97	—	—	General Purpose I/O	P97
98	—	—	LCD D2	P98_LCDD2
99	—	—	LCD D3	P99_LCDD3
100	62	RE12	LCD D4	P100_LCDD4

Table 2: dsPIC33CK256MP508 PIC® MCU Mapping

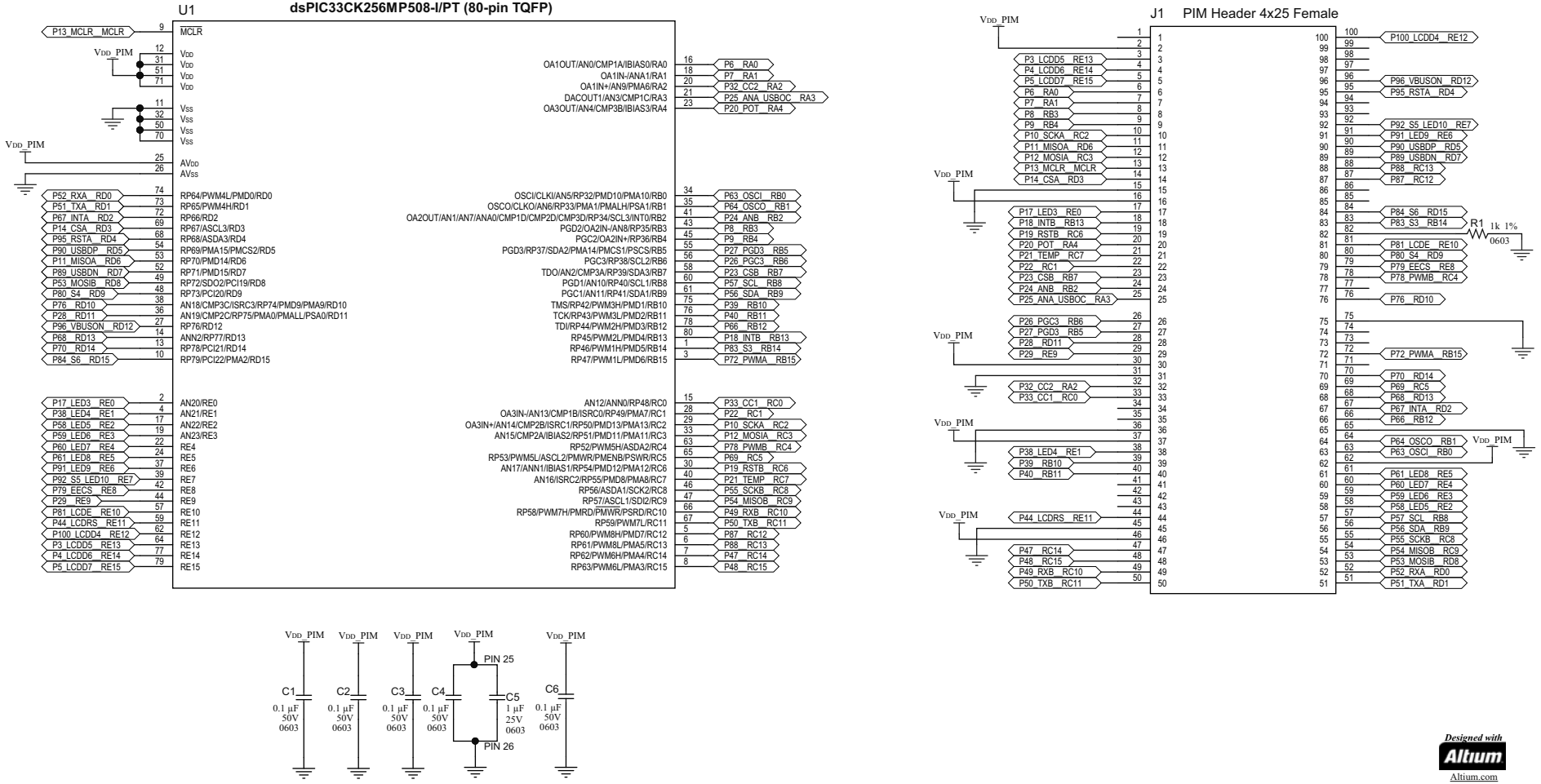
Device Pin #	PIM Pin #	dsPIC33CK256MP508 I/Os	Function	Explorer 16/32 Net Name
1	83	RP46/PWM1H/PMD5/RB14	Switch S3	P83_S3
2	17	AN20/RE0	LED D3	P17_LED3
3	72	RP47/PWM1L/PMD6/RB15	mikroBUS™ A PWM	P72_PWMA
4	38	AN21/RE1	LED D4	P38_LED4
5	87	RP60/PWM8H/PMD7/RC12	General Purpose I/O	P87
6	88	RP61/PWM8L/PMA5/RC13	General Purpose I/O	P88
7	47	RP62/PWM6H/PMA4/RC14	General Purpose I/O	P47
8	48	RP63/PWM6L/PMA3/RC15	General Purpose I/O	P48
9	13	$\overline{\text{MCLR}}$	$\overline{\text{MCLR}}$	P13_MCLR
10	84	RP79/PCI22/PMA2/RD15	Switch S6	P84_S6
11	15, 31, 36, 45, 65, 75	VSS	VSS	VSS
12	2, 16, 30, 37, 46, 62	VDD	VDD	VDD_PIM
13	70	RP78/PCI21/RD14	General Purpose I/O	P70
14	68	ANN2/RP77/RD13	General Purpose I/O	P68
15	33	AN12/ANN0/RP48/RC0	USB Type-C™ CC1 Sense Line	P33_CC1
16	6	OA1OUT/AN0/CMP1A/IBIAS0/RA0	General Purpose I/O	P6
17	58	AN22/RE2	LED D5	P58_LED5
18	7	OA1IN-/ANA1/RA1	General Purpose I/O	P7
19	59	AN23/RE3	LED D6	P59_LED6
20	32	OA1IN+/AN9/PMA6/RA2	USB Type-C CC2 Sense Line	P32_CC2
21	25	DACOUT1/AN3/CMP1C/RA3	mikroBUS A Analog or USB Overcurrent Sense	P25_ANA_USBOC
22	60	RE4	LED D7	P60_LED7
23	20	OA3OUT/AN4/CMP3B/IBIAS3/RA4	10k Potentiometer	P20_POT
24	61	RE5	LED D8	P61_LED8
25	2, 16, 30, 37, 46, 62	AVDD	AVDD	VDD_PIM
26	15, 31, 36, 45, 65, 75	AVSS	AVSS	VSS
27	96	RP76/RD12	VBUS Output Enable for USB Type-C	P96_VBUSON
28	22	OA3IN-/AN13/CMP1B/ISRC0/RP49/PMA7/RC1	General Purpose I/O	P22
29	10	OA3IN+/AN14/CMP2B/ISRC1/RP50/PMD13/ PMA13/RC2	EEPROM (SCK) and mikroBUS A SCK	P10_SCKA
30	19	AN17/ANN1/IBIAS1/RP54/PMD12/PMA12/RC6	mikroBUS B Reset	P19_RSTB
31	2, 16, 30, 37, 46, 62	VDD	VDD	VDD_PIM
32	15, 31, 36, 45, 65, 75	VSS	VSS	VSS
33	12	AN15/CMP2A/IBIAS2/RP51/PMD11/PMA11/RC3	EEPROM (MSDO) and mikroBUS A MOSI	P12_MOSIA
34	63	OSCI/CLKI/AN5/RP32/PMD10/PMA10/RB0	Primary Oscillator In	P63_OSCI
35	64	OSCO/CLKO/AN6/RP33/PMA1/PMALH/PSA1/ RB1	Primary Oscillator Out	P64_OSCO
36	28	AN19/CMP2C/RP75/PMA0/PMALL/PSA0/RD11	General Purpose I/O	P28
37	91	RE6	LED D9	P91_LED9
38	76	AN18/CMP3C/ISRC3/RP74/PMD9/PMA9/RD10	General Purpose I/O	P76
39	92	RE7	LED D10, Switch S5	P92_S5_LED10
40	21	AN16/ISRC2/RP55/PMD8/PMA8/RC7	TC1047A Temp. Sensor	P21_TEMP
41	24	OA2OUT/AN1/AN7/ANA0/CMP1D/CMP2D/ CMP3D/RP34/SCL3/INT0/RB2	mikroBUS B Analog	P24_ANB
42	79	RE8	EEPROM CS	P79_EECS
43	8	PGD2/OA2IN-/AN8/RP35/RB3	General Purpose I/O	P8
44	29	RE9	General Purpose I/O	P29
45	9	PGC2/OA2IN+/RP36/RB4	General Purpose I/O	P9
46	55	RP56/ASDA1/SCK2/RC8	mikroBUS B SCKB	P55_SCKB
47	54	RP57/ASCL1/SDI2/RC9	mikroBUS B MISO	P54_MISOB
48	80	RP73/PCI20/RD9	Switch S4	P80_S4

Table 2: dsPIC33CK256MP508 PIC® MCU Mapping (Continued)

Device Pin #	PIM Pin #	dsPIC33CK256MP508 I/Os	Function	Explorer 16/32 Net Name
49	53	RP72/SDO2/PCI19/RD8	mikroBUS B MOSI	P53_MOSIB
50	15, 31, 36, 45, 65, 75	VSS	VSS	VSS
51	2, 16, 30, 37, 46, 62	VDD	VDD	VDD_PIM
52	89	RP71/PMD15/RD7	USB D- to Type-C/A	P89_USBDN
53	11	RP70/PMD14/RD6	EEPROM (MSDI) and mikroBUS A MISO	P11_MISOA
54	90	RP69/PMA15/PMCS2/RD5	USB D+ to Type-C/A	P90_USBDP
55	27	PGD3/RP37/SDA2/PMA14/PMCS1/PSCS/RB5	ICSP™ PGD	P27_PGD
56	26	PGC3/RP38/SCL2/RB6	ICSP PGC	P26_PGC
57	81	RE10	LED E	P81_LCDE
58	23	TDO/AN2/CMP3A/RP39/SDA3/RB7	mikroBUS B Chip Select	P23_CSB
59	44	RE11	LED RS	P44_LCDRS
60	57	PGD1/AN10/RP40/SCL1/RB8	Shared I^2C SCL	P57_SCL
61	56	PGC1/AN11/RP41/SDA1/RB9	Shared I^2C SDA	P56_SDA
62	100	RE12	LED D4	P100_LCDD4
63	78	RP52/PWM5H/ASDA2/RC4	mikroBUS B PWM	P78_PWMB
64	3	RE13	LED D5	P3_LCDD5
65	69	RP53/PWM5L/ASCL2/PMWR/PMENB/PSWR/ RC5	General Purpose I/O	P69
66	49	RP58/PWM7H/PMRD/$\overline{\text{PMWR}}$/PSRD/RC10	MCP2221A and mikroBUS B RX	P49_RXB
67	50	RP59/PWM7L/RC11	MCP2221A and mikroBUS B TX	P50_TXB
68	95	RP68/ASDA3/RD4	mikroBUS A Reset Pin	P95_RSTA
69	14	RP67/ASCL3/RD3	mikroBUS A Chip Select	P14_CSA
70	15, 31, 36, 45, 65, 75	VSS	VSS	VSS
71	2, 16, 30, 37, 46, 62	VDD	VDD	VDD_PIM
72	67	RP66/RD2	mikroBUS A Interrupt (digital)	P67_INTA
73	51	RP65/PWM4H/RD1	mikroBUS A TX	P51_TXA
74	52	RP64/PWM4L/PMD0/RD0	mikroBUS A RX	P52_RXA
75	39	TMS/RP42/PWM3H/PMD1/RB10	General Purpose I/O	P39
76	40	TCK/RP43/PWM3L/PMD2/RB11	General Purpose I/O	P40
77	4	RE14	LED D6	P4_LCDD6
78	66	TDI/RP44/PWM2H/PMD3/RB12	General Purpose I/O	P66
79	5	RE15	LED D7	P5_LCDD7
80	18	RP45/PWM2L/PMD4/RB13	mikroBUS B Interrupt	P18_INTB
—	1	—	USB Type-C VBUS	P1_VBUS
—	34	—	General Purpose I/O	P34
—	35	—	General Purpose I/O	P35
—	41	—	General Purpose I/O	P41
—	42	—	General Purpose I/O	P42
—	43	—	General Purpose I/O	P43
—	71	—	General Purpose I/O	P71
—	73	—	SOSC In	P73_SOSCI
—	74	—	SOSC Out	P74_SOSCO
—	77	—	General Purpose I/O	P77
—	82	—	LCD R/W	P82_LCDRW
—	85	—	VCAP, 10 µF Capacitor	P85_VDDCORE
—	86	—	ENVREG	P86_ENVREG
—	93	—	LCD D0	P93_LCDD0
—	94	—	LCD D1	P94_LCDD1
—	97	—	General Purpose I/O	P97
—	98	—	LCD D2	P98_LCDD2
—	99	—	LCD D3	P99_LCDD3

dsPIC33CK256MP508 General Purpose Plug-In Module (PIM) Information Sheet

Schematic Revision 1.0



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