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DS50002791A

dsPIC33CK64MP105 General Purpose Plug-In Module (PIM) Information Sheet

Overview

The dsPIC33CK64MP105 General Purpose Plug-In Module (MA330047) is designed to demonstrate the capabilities of the dsPIC33CK64MP105 family using the Explorer 16/32 Development Board. Refer to Table 1 and Table 2 for the mapping of the physical pins on the dsPIC33CK64MP105 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: dsPIC33CK64MP105 PIM Mapping

PIM Pin #	Device Pin #	dsPIC33CK64MP105 I/Os	Function	Explorer 16/32 Net Name
1	—	—	USB Type-C™ VBUS	P1_VBUS
2	13, 18, 32, 43	VDD Pins Plus AVDD	VDD	VDD_PIM
3	15	OA3IN-/AN13/CMP1B/ISRC0/RP49/RC1	LCD D5	P3_LCDD5
4	16	OA3IN+/AN14/CMP2B/ISRC1/RP50/RC2	LCD D6	P4_LCDD6
5	20	AN15/CMP2A/IBIAS2/RP51/RC3	LCD D7	P5_LCDD7
6	—	—	General Purpose I/O	P6
7	—	—	General Purpose I/O	P7
8	—	—	General Purpose I/O	P8
9	—	—	General Purpose I/O	P9
10	45	TMS/RP42/PWM3H/RB10	EEPROM (SCK) and mikroBUS™ A SCK	P10_SCKA
11	46	TCK/RP43/PWM3L/RB11	EEPROM (MSDI) and mikroBUS A MISO	P11_MISOA
12	47	TDI/RP44/PWM2H/RB12	EEPROM (MSDO) and mikroBUS A MOSI	P12_MOSIA
13	5	$\overline{\text{MCLR}}$	$\overline{\text{MCLR}}$	P13_MCLR
14	1	RP46/PWM1H/RB14	mikroBUS A Chip Select	P14_CSA
15	14, 19, 31, 42	VSS Pins Plus AVSS	VSS + AVSS	VSS
16	13, 18, 32, 43	VDD Pins Plus AVDD	VDD	VDD_PIM
17	7	AN12/ANN0/RP48/RC0	LED D3	P17_LED3
18	38	RP52/ASDA2/RC4	mikroBUS B Interrupt	P18_INTB
19	17	AN17/ANN1/IBIAS1/RP54/RC6	mikroBUS B Reset	P19_RSTB
20	12	OA3OUT/AN4/CMP3B/IBIAS3/RA4	10k Potentiometer	P20_POT
21	24	AN16/ISRC2/RP55/RC7	TC1047A Temp. Sensor	P21_TEMP
22	—	—	General Purpose I/O	P22
23	35	TDO/AN2/CMP3A/RP39/RB7	mikroBUS B Chip Select	P23_CSB
24	25	OA2OUT/AN1/AN7/ANA0/CMP1D/CMP2D/CMP3D/ RP34/INT0/RB2	mikroBUS B Analog	P24_ANB
25	11	DACOUT/AN3/CMP1C/RA3	mikroBUS A Analog or USB Overcurrent Sense	P25_ANA_USBOC
26	34	PGC3/RP38/SCL2/RB6	ICSP™ PGC	P26_PGC
27	33	PGD3/RP37/SDA2/RB5	ICSP PGD	P27_PGD
28	—	—	General Purpose I/O	P28
29	—	—	General Purpose I/O	P29
30	13, 18, 32, 43	VDD Pins Plus AVDD	VDD	VDD_PIM
31	14, 19, 31, 42	VSS Pins Plus AVSS	VSS + AVSS	VSS
32	—	—	USB Type-C CC2 Sense Line	P32_CC2
33	—	—	USB Type-C CC1 Sense Line	P33_CC1
34	—	—	General Purpose I/O	P34
35	—	—	General Purpose I/O	P35
36	14, 19, 31, 42	VSS Pins Plus AVSS	VSS + AVSS	VSS
37	13, 18, 32, 43	VDD Pins Plus AVDD	VDD	VDD_PIM
38	15	OA3IN-/AN13/CMP1B/ISRC0/RP49/RC1	LED D4	P38_LED4
39	—	—	General Purpose I/O	P39
40	—	—	General Purpose I/O	P40
41	—	—	General Purpose I/O	P41
42	—	—	General Purpose I/O	P42
43	—	—	General Purpose I/O	P43
44	8	OA1OUT/AN0/CMP1A/IBIAS0/RA0	LCD RS	P44_LCDRS
45	14, 19, 31, 42	VSS Pins Plus AVSS	VSS + AVSS	VSS
46	13, 18, 32, 43	VDD Pins Plus AVDD	VDD	VDD_PIM
47	—	—	General Purpose I/O	P47
48	—	—	General Purpose I/O	P48
49	40	RP58/RC10	MCP2221A/mikroBUS B RX	P49_RXB

Table 1: dsPIC33CK64MP105 PIM Mapping (Continued)

PIM Pin #	Device Pin #	dsPIC33CK64MP105 I/Os	Function	Explorer 16/32 Net Name
50	41	RP59/RC11	MCP2221A/mikroBUS B TX	P50_TXB
51	4	RP61/RC13	mikroBUS™ A TX	P51_TXA
52	3	RP60/RC12	mikroBUS A RX	P52_RXA
53	30	RP72/SDO2/PCI19/RD8	mikroBUS B MOSI	P53_MOSIB
54	29	RP57/ASCL1/SDI2/RC9	mikroBUS B MISO	P54_MISOB
55	28	RP56/ASDA1/SCK2/RC8	mikroBUS B SCK	P55_SCKB
56	37	PGC1/AN11/RP41/SDA1/RB9	Shared I^2C SDA	P56_SDA
57	36	PGD1/AN10/RP40/SCL1/RB8	Shared I^2C SCL	P57_SCL
58	16	OA3IN+/AN14/CMP2B/ISRC1/RP50/RC2	LED D5	P58_LED5
59	20	AN15/CMP2A/IBIAS2/RP51/RC3	LED D6	P59_LED6
60	—	—	LED D7	P60_LED7
61	—	—	LED D8	P61_LED8
62	13, 18, 32, 43	VDD Pins Plus AVDD	VDD	VDD_PIM
63	21	OSCI/CLKI/AN5/RP32/RB0	Primary Oscillator In	P63_OSCI
64	22	OSCO/CLKO/AN6/RP33/RB1	Primary Oscillator Out	P64_OSCO
65	14, 19, 31, 42	VSS Pins Plus AVSS	VSS + AVSS	VSS
66	—	—	General Purpose I/O	P66
67	39	RP53/ASCL2/RC5	mikroBUS A Interrupt	P67_INTA
68	—	—	General Purpose I/O	P68
69	—	—	General Purpose I/O	P69
70	—	—	General Purpose I/O	P70
71	—	—	General Purpose I/O	P71
72	2	RP47/PWM1L/RB15	mikroBUS A PWM	P72_PWMA
73	—	—	SOSC In	P73_SOSCI
74	—	—	SOSC Out	P74_SOSCO
75	14, 19, 31, 42	VSS Pins Plus AVSS	VSS + AVSS	VSS
76	—	—	General Purpose I/O	P76
77	—	—	General Purpose I/O	P77
78	48	RP45/PWM2L/RB13	mikroBUS B PWM	P78_PWMB
79	27	PGC2/OA2IN+/RP36/RB4	EEPROM CS	P79_EECS
80	6	ANN2/RP77/RD13	Switch S4	P80_S4
81	9	OA1IN-/ANA1/RA1	LCD E	P81_LCDE
82	44	RP65/RD1	LCD R/W	P82_LCDRW
83	23	AN18/CMP3C/ISRC3/RP74/RD10	Switch S3	P83_S3
84	26	PGD2/OA2IN-/AN8/RP35/RB3	Switch S6	P84_S6
85	—	—	VCAP, 10 µF Capacitor	P85_VDDCORE
86	—	—	ENVREG	P86_ENVREG
87	—	—	General Purpose I/O	P87
88	—	—	General Purpose I/O	P88
89	—	—	USB D- to Type-C/A	P89_USBDN
90	—	—	USB D+ to Type-C/A	P90_USBDP
91	—	—	LED D9	P91_LED9
92	—	—	LED D10, Switch S5	P92_S5_LED10
93	—	—	LCD D0	P93_LCDD0
94	—	—	LCD D1	P94_LCDD1
95	10	OA1IN+/AN9/RA2	mikroBUS A Reset Pin	P95_RSTA
96	—	—	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	7	AN12/ANN0/RP48/RC0	LCD D4	P100_LCDD4

Table 2: dsPIC33CK64MP105 PIC® MCU Mapping

Device Pin #	PIM Pin #(1)	dsPIC33CK64MP105 I/Os	Function	Explorer 16/32 Net Name
1	14	RP46/PWM1H/RB14	mikroBUS™ A Chip Select	P14_CSA
2	72	RP47/PWM1L/RB15	mikroBUS A PWM	P72_PWMA
3	52	RP60/RC12	mikroBUS A RX	P52_RXA
4	51	RP61/RC13	mikroBUS A TX	P51_TXA
5	13	$\overline{MCLR}$	$\overline{MCLR}$	P13_MCLR
6	80	ANN2/RP77/RD13	Switch S4	P80_S4
7	17, 100	AN12/ANN0/RP48/RC0	LED D3, LCD D4	P17_LED3, P100_LCDD4
8	44	OA1OUT/AN0/CMP1A/IBIAS0/RA0	LCD RS	P44_LCDRS
9	81	OA1IN-/ANA1/RA1	LCD E	P81_LCDE
10	95	OA1IN+/AN9/RA2	mikroBUS A Reset Pin	P95_RSTA
11	25	DACOUT/AN3/CMP1C/RA3	mikroBUS A Analog or USB Overcurrent Sense	P25_ANA_USBOC
12	20	OA3OUT/AN4/CMP3B/IBIAS3/RA4	10k Potentiometer	P20_POT
13	2, 16, 30, 37, 46, 62	AVDD	VDD	VDD_PIM
14	15, 31, 36, 45, 65, 75	AVSS	VSS + AVSS	VSS_PIM
15	3, 38	OA3IN-/AN13/CMP1B/ISRC0/RP49/RC1	LCD D5, LED D4	P3_LCDD5, P38_LED4
16	4, 58	OA3IN+/AN14/CMP2B/ISRC1/RP50/RC2	LCD D6, LED D5	P4_LCDD6, P58_LED5
17	19	AN17/ANN1/IBIAS1/RP54/RC6	mikroBUS B Reset	P19_RSTB
18	2, 16, 30, 37, 46, 62	VDD	VDD	VDD_PIM
19	15, 31, 36, 45, 65, 75	VSS	VSS + AVSS	VSS_PIM
20	5, 59	AN15/CMP2A/IBIAS2/RP51/RC3	LCD D7, LED D6	P5_LCDD7, P59_LED6
21	63	OSCI/CLKI/AN5/RP32/RB0	Primary Oscillator In	P63_OSCI
22	64	OSCO/CLKO/AN6/RP33/RB1	Primary Oscillator Out	P64_OSCO
23	83	AN18/CMP3C/ISRC3/RP74/RD10	Switch S3	P83_S3
24	21	AN16/ISRC2/RP55/RC7	TC1047A Temp. Sensor	P21_TEMP

Note 1: PIM pins 1, 6-9, 22, 28-29, 32-35, 39-43, 47-48, 60-61, 66, 68-71, 73-74, 76-77, 85-94, 96-99 are not connected.

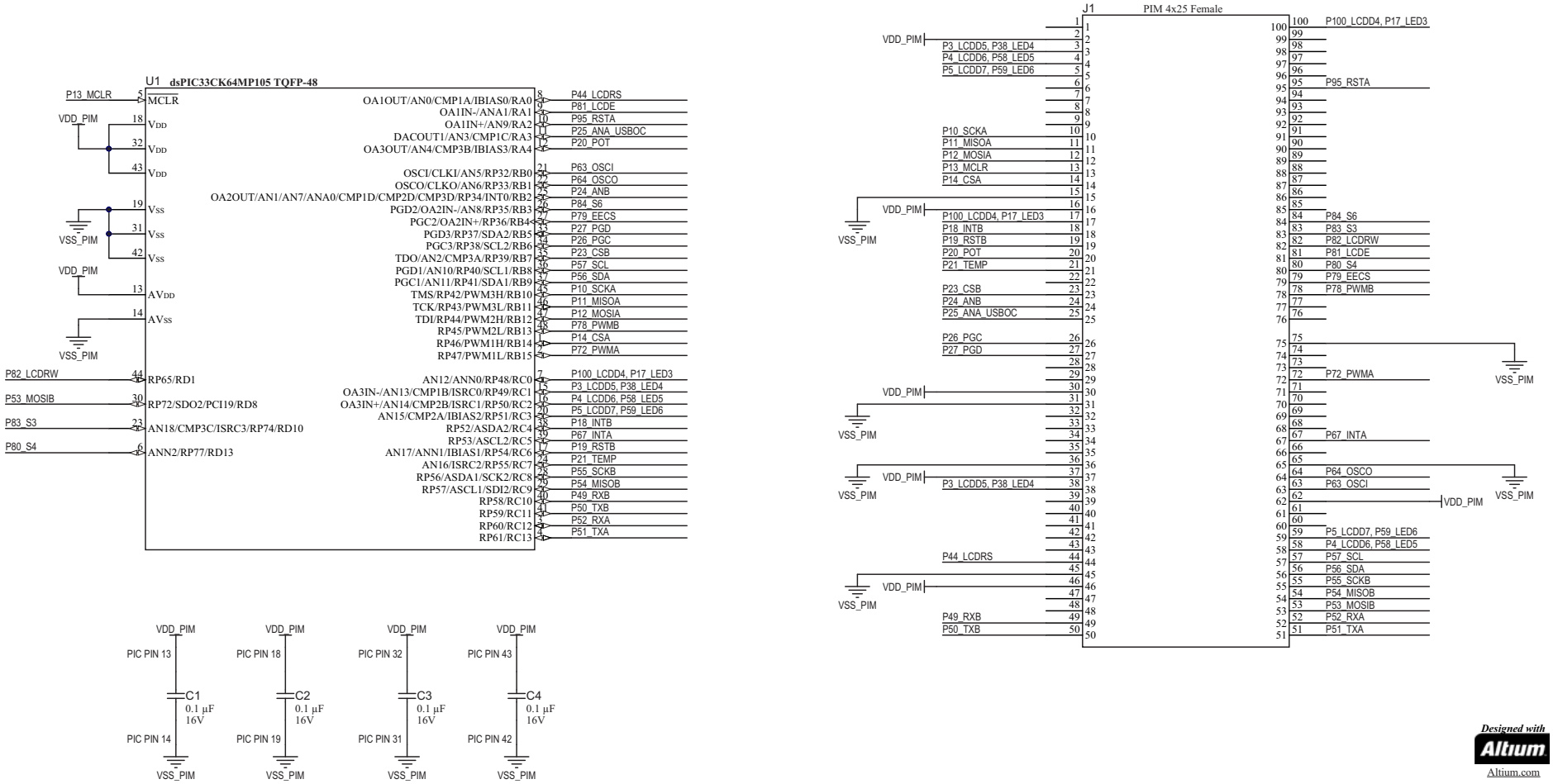
Table 2: dsPIC33CK64MP105 PIC® MCU Mapping (Continued)

Device Pin #	PIM Pin #(1)	dsPIC33CK64MP105 I/Os	Function	Explorer 16/32 Net Name
25	24	OA2OUT/AN1/AN7/ANA0/CMP1D/CMP2D/ CMP3D/RP34/INT0/RB2	mikroBUS™ B Analog	P24_ANB
26	84	PGD2/OA2IN-/AN8/RP35/RB3	Switch S6	P84_S6
27	79	PGC2/OA2IN+/RP36/RB4	EEPROM CS	P79_EECS
28	55	RP56/ASDA1/SCK2/RC8	mikroBUS B SCK	P55_SCKB
29	54	RP57/ASCL1/SDI2/RC9	mikroBUS B MISO	P54_MISOB
30	53	RP72/SDO2/PCI19/RD8	mikroBUS B MOSI	P53_MOSIB
31	15, 31, 36, 45, 65, 75	VSS	VSS + AVSS	VSS_PIM
32	2, 16, 30, 37, 46, 62	VDD	VDD	VDD_PIM
33	27	PGD3/RP37/SDA2/RB5	ICSP™ PGD	P27_PGD
34	26	PGC3/RP38/SCL2/RB6	ICSP PGC	P26_PGC
35	23	TDO/AN2/CMP3A/RP39/RB7	mikroBUS B Chip Select	P23_CSB
36	57	PGD1/AN10/RP40/SCL1/RB8	Shared I^2C SCL	P57_SCL
37	56	PGC1/AN11/RP41/SDA1/RB9	Shared I^2C SDA	P56_SDA
38	18	RP52/ASDA2/RC4	mikroBUS B Interrupt	P18_INTB
39	67	RP53/ASCL2/RC5	mikroBUS A Interrupt	P67_INTA
40	49	RP58/RC10	MCP2221A/mikroBUS B RX	P49_RXB
41	50	RP59/RC11	MCP2221A/mikroBUS B TX	P50_TXB
42	15, 31, 36, 45, 65, 75	VSS	VSS + AVSS	VSS_PIM
43	2, 16, 30, 37, 46, 62	VDD	VDD	VDD_PIM
44	82	RP65/RD1	LCD R/W	P82_LCDRW
45	10	TMS/RP42/PWM3H/RB10	EEPROM (SCK) and mikroBUS A SCK	P10_SCKA
46	11	TCK/RP43/PWM3L/RB11	EEPROM (MSDI) and mikroBUS A MISO	P11_MISOA
47	12	TDI/RP44/PWM2H/RB12	EEPROM (MSDO) and mikroBUS A MOSI	P12_MOSIA
48	78	RP45/PWM2L.RB13	mikroBUS B PWM	P78_PWMB

Note 1: PIM pins 1, 6-9, 22, 28-29, 32-35, 39-43, 47-48, 60-61, 66, 68-71, 73-74, 76-77, 85-94, 96-99 are not connected.

Schematic Revision 1.0

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