

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

## Americas

Atlanta - 678-957-9614  
Austin - 512-257-3370  
Boston - 774-760-0087  
Chicago - 630-285-0071  
Dallas - 972-818-7423  
Detroit - 248-848-4000  
Houston - 281-894-5983  
Indianapolis - 317-773-8323  
Los Angeles - 949-462-9523  
New York - 631-435-6000  
Phoenix - 480-792-7200  
Raleigh - 919-844-7510  
San Jose - 408-735-9110  
Toronto - 905-695-1980

## Europe

Austria - Wels - 43-7242-2244-39  
Denmark - Copenhagen - 45-4450-2828  
Finland - Espoo - 358-9-4520-820  
France - Paris - 33-1-69-53-63-20  
Germany - Garching - 49-8931-9700  
Germany - Haan - 49-2129-3766400  
Germany - Heilbronn - 49-7131-67-3636  
Germany - Karlsruhe - 49-721-625370  
Germany - Munich - 49-89-627-144-0  
Germany - Rosenheim - 49-8031-354-560  
Israel - Ra'anana - 972-9-744-7705  
Italy - Milan - 39-0331-742611  
Italy - Padova - 39-049-7625286  
Netherlands - Drunen - 31-416-690399  
Norway - Trondheim - 47-7289-7561  
Poland - Warsaw - 48-22-3325737  
Romania - Bucharest - 40-21-407-87-50  
Spain - Madrid - 34-91-708-08-90  
Sweden - Gothenberg - 46-31-704-60-40  
Sweden - Stockholm - 46-8-5090-4654  
UK - Wokingham - 44-118-921-5800

## Asia/Pacific

Australia - Sydney - 61-2-9868-6733  
China - Beijing - 86-10-8569-7000  
China - Chengdu - 86-28-8665-5511  
China - Chongqing - 86-23-8980-9588  
China - Dongguan - 86-769-8702-9880  
China - Guangzhou - 86-20-8755-8029  
China - Hangzhou - 86-571-8792-8115  
China - Hong Kong SAR - 852-2943-5100  
China - Nanjing - 86-25-8473-2460  
China - Qingdao - 86-532-8502-7355  
China - Shanghai - 86-21-3326-8000  
China - Shenyang - 86-24-2334-2829  
China - Shenzhen - 86-755-8864-2200  
China - Suzhou - 86-186-6233-1526  
China - Wuhan - 86-27-5980-5300  
China - Xiamen - 86-592-2388138  
China - Xian - 86-29-8833-7252  
China - Zhuhai - 86-756-3210040  
India - Bangalore - 91-80-3090-4444  
India - New Delhi - 91-11-4160-8631  
India - Pune - 91-20-4121-0141  
Japan - Osaka - 81-6-6152-7160  
Japan - Tokyo - 81-3-6880-3770  
Korea - Daegu - 82-53-744-4301  
Korea - Seoul - 82-2-554-7200  
Malaysia - Kuala Lumpur - 60-3-7651-7906  
Malaysia - Penang - 60-4-227-8870  
Philippines - Manila - 63-2-634-9065  
Singapore - 65-6334-8870  
Taiwan - Hsin Chu - 886-3-577-8366  
Taiwan - Kaohsiung - 886-7-213-7830  
Taiwan - Taipei - 886-2-2508-8600  
Thailand - Bangkok - 66-2-694-1351  
Vietnam - Ho Chi Minh - 84-28-5448-2100

## 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.

10/25/17



Microchip Technology Inc. • 2355 West Chandler Blvd. • Chandler, AZ 85224-6199

[www.microchip.com](http://www.microchip.com)

The Microchip name and logo, and the Microchip logo are registered trademarks of Microchip Technology Inc. in the U.S.A. and other countries. All other trademarks mentioned herein are property of their respective companies. © 2018, Microchip Technology Incorporated, Printed in the U.S.A. All Rights Reserved. 8/18

DS50002791A

**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/BIAS2/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	MCLR	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/ANNO/RP48/RC0	LED D3	P17_LED3
18	38	RP52/ASDA2/RC4	mikroBUS B Interrupt	P18_INTB
19	17	AN17/ANN1/BIAS1/RP54/RC6	mikroBUS B Reset	P19_RSTB
20	12	OA3OUT-/AN4/CMP3B/BIAS3/RA4	10k Potentiometer	P20_POT
21	24	AN16/ISRC2/RP55/RC7	TC1047A Temp. Sensor	P21_TEMP
22	—	—	General Purpose I/O	P22
23	35	TD0/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/BIAS0/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/PC119/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 <sup>2</sup> C SDA	P56_SDA
57	36	PGD1/AN10/RP40/SCL1/RB8	Shared I <sup>2</sup> C SCL	P57_SCL
58	16	OA3IN+/AN14/CMP2B/ISRC1/RP50/RC2	LED D5	P58_LED5
59	20	AN15/CMP2A/BIAS2/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/ANNO/RP48/RC0	LCD D4	P100_LCDD4

**Table 2: dsPIC33CK64MP105 PIC® MCU Mapping**

Device Pin #	PIM Pin # <sup>(1)</sup>	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	MCLR	MCLR	P13_MCLR
6	80	ANN2/RP77/RD13	Switch S4	P80_S4
7	17, 100	AN12/ANNO/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 # <sup>(1)</sup>	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 <sup>2</sup> C SCL	P57_SCL
37	56	PGC1/AN11/RP41/SDA1/RB9	Shared I <sup>2</sup> C 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	P3_LED5/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.

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

## Schematic Revision 1.0

### EXP16/32 PIM dsPIC33CK64MP105 TQFP-48

