

PIC24FJ512GU410 General Purpose Plug-In Module (PIM) Information Sheet

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Overview

The PIC24FJ512GU410 General Purpose Plug-In Module (MA240041) is designed to demonstrate the capabilities of the PIC24FJ512GU410 family using the Explorer 16/32 Development Board. Refer to [Table 1](#) and [Table 2](#) for the mapping of the physical pins on the PIC24FJ512GU410 to the 100-pin PIM connector.

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

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Table 1: PIC24FJ512GU410 PIM Mapping

PIM Pin #	Device Pin #	PIC24FJ512GU410 I/Os	Function	Explorer 16/32 Net Name
1	54	Vbus/RF7	USB Vbus	P1_VBUS_RF7
2	2, 16, 30, 37, 46, 55, 62	Vdd	Vdd	Vdd
3	7	SEG52/RP139/OCM2C/RC2	LCD D5	P3_LCDD5_RC2
4	8	SEG33/RP140/OCM2D/RC3	LCD D6	P4_LCDD6_RC3
5	9	SEG53/AN16/RP141/OCM3C/RC4	LCD D7	P5_LCDD7_RC4
6	100	SEG63/LVDIN/RE4	General Purpose I/O	P6_RE4
7	3	LCDBIAS2/RP34/RE5	General Purpose I/O	P7_RE5
8	4	LCDBIAS1/RP35/SCL3/RE6	General Purpose I/O	P8_RE6
9	5	LCDBIAS0/RP36/SDA3/RE7	General Purpose I/O	P9_RE7
10	10	SEG0/AN17/C1IND/RP21/OCM1A/RG6	mikroBUS™ A SPI SCK	P10_SCKA_RG6
11	11	VLCAP1/AN18/C1INC/C2INC/C3INC/RP26/OCM1B/RG7	mikroBUS A SPI MISO	P11_MISOA_RG7
12	12	VLCAP2/AN19/C2IND/RP19/OCM2A/RG8	mikroBUS A SPI MOSI	P12_MOSIA_RG8
13	13	MCLR	MCLR	P13_MCLR_MCLR
14	14	SEG1/AN20/C2INC/RP27/DAC1/OCM2B/RG9	mikroBUS A Chip Select	P14_CSA_RG9
15	15, 31, 36, 45, 65, 75	Vss	Vss	Vss
16	2, 16, 30, 37, 46, 55, 62	Vdd	Vdd	Vdd
17	17	TMS/SEG49/OCM3D/RA0	LED D3	P17_LED3_RA0
18	18	SEG34/RP147/RE8	mikroBUS B Interrupt	P18_INTB_RE8
19	19	SEG35/AN21/RP148/RE9	mikroBUS B Reset	P19_RSTB_RE9
20	20	PGEC3/SEG2/AN5/C1INA/RP18/SCL1A/OCM3A/RB5	10k Potentiometer	P20_POT_RB5
21	21	PGED3/SEG3/AN4/C1INB/RP28/SDA1A/USBOEN/OCM3B/RB4	TC1047A Temp. Sensor	P21_TEMP_RB4
22	22	SEG4/AN3/C2INA/RB3	General Purpose I/O	P22_RB3
23	83	SEG25/C3INB/RP32/U5RX/SS3/FSYNC3/RD6	mikroBUS B Chip Select	P23_CSB_RD6
24	24	PGEC1/SEG6/CVREF-/AN1/AN1-RP1/RB1	mikroBUS B Analog	P24_AN5_RB15
24	34	COM5/SEG29/CVREF+/AN10/RP144/RB10	General Purpose I/O	P34_RB10
25	25	PGED1/SEG7/VREF+/CVREF+/DVREF+/AN0/RP0/RB0	mikroBUS B Analog/USB Overcurrent	P25_ANA_USBOC_RB0
26	26	PGEC2/LCDBIA3/AN6/RP6/RB6	ICSP™ Prog/Debug PG2	P26_PG2C3_RB6
27	27	PGED2/AN7/RP7/T1CK/U6TX/RB7	ICSP Prog/Debug PG2	P27_PG2C3_RB7
28	28	SEG36/RA9	General Purpose I/O	P28_RA9
29	29	SEG37/RA10	General Purpose I/O	P29_RA10
30	2, 16, 30, 37, 46, 55, 62	AVdd	Vdd	Vdd
31	15, 31, 35, 45, 65, 75	AVss	Vss	Vss
31	33	COM6/SEG30/AN9/RP9/RB9	USB CC1	P31_CC1
32	32	COM7/SEG31/AN8/P8/RB8	USB CC2	P32_CC2
35	35	AN11/RB11	General Purpose I/O	P35_RB11
36	15, 31, 35, 45, 65, 75	Vss	Vss	Vss
37	2, 16, 30, 37, 46, 55, 62	Vdd	Vdd	Vdd
38	38	TCK/RA1	LED D4	P38_LED4_RD15
39	39	SEG54/RP31/RF13	General Purpose I/O	P39_RF13
40	40	SEG55/RP146/RF12	General Purpose I/O	P40_RF12
41	41	SEG18/AN12/U6RX/RB12	General Purpose I/O	P41_RB12
42	42	SEG19/AN13/RB13	General Purpose I/O	P42_RB13
43	43	SEG8/AN14/RP14/RB14	General Purpose I/O	P43_RB14
44	44	SEG9/AN15/RP29/RB15	LCD Register Select	P44_LCDRS_RB15
45	15, 31, 35, 45, 65, 75	Vss	Vss	Vss
46	2, 16, 30, 37, 46, 55, 62	Vdd	Vdd	Vdd
47	47	SEG38/RP143/RD14	General Purpose I/O	P47_RD14
48	48	SEG39/RP5/RD15	General Purpose I/O	P48_RD15

Table 1: PIC24FJ512GU410 PIM Mapping (Continued)

PIM Pin #	Device Pin #	PIC24FJ512GU410 I/Os	Function	Explorer 16/32 Net Name
49	49	SEG10/RP10/RF4	MCP2221A/mikroBUS™ B TX	P49_RXB_RF4
50	50	SEG11/RP17/RF5	MCP2221A/mikroBUS B RX	P50_TXB_RF5
51	51	SEG12/RP16/USBID/RF3	mikroBUS A TX	P51_TXA_RF3
52	52	SEG40/RP30/RF2	mikroBUS A RX	P52_RXA_RF2
53	82	SEG24/RP20/SDO3/RD5	mikroBUS B SPI MOSI	P53_MOSIB_RD5
54	81	SEG23/RP25/SDI3/RD4	mikroBUS B SPI MISO	P54_MISOB_RD4
55	78	SEG22/RP22/SCK3/RD3	mikroBUS B SPI SCK	P55_SCKB_RD3
56	67	SEG43/RP149/SDA1/RA15	mikroBUS Shared I ² C SDA	P56_SDA_RA15
57	66	SEG42/RP150/SCL1/RA14	mikroBUS Shared I ² C SCL	P57_SCL_RA14
58	58	SEC56/SCL2/RA2	LED D5	P58_LED5_RA2
59	59	SEC57/SDA2/RA3	LED D6	P59_LED6_RA3
60	60	TDI/RA4	LED D7	P60_LED7_RA4
61	61	TDO/RA5	LED8	P61_LED8_RA5
62	2, 16, 30, 37, 46, 55, 62	Vdd	Vdd	Vdd
63	63	OSCI/CLKI/RC12	Primary Oscillator In	P63_OSCI_RC12
64	64	OSCO/CLKO/RC15	Primary Oscillator Out	P64_OSOCO_RC15
65	15, 31, 36, 45, 65, 75	Vss	Vss	Vss
66	86	RH0	General Purpose I/O	P66_RH0
67	53	SEG41/RP15/RF8	mikroBUS A Interrupt	P67_INTA_RF8
68	68	SEG13/RP2/U6RTS/U6BCLK/RD8	General Purpose I/O	P68_RD8
69	69	SEG14/RP4/RD9	General Purpose I/O	P69_RD9
70	70	SEG15/C3IND/RP3/RD10	General Purpose I/O	P70_RD10
71	71	SEG16/C3INC/RP12/RD11	General Purpose I/O	P71_RD11
72	72	SEG17/RP11/U6CTS/INT0/RD0	mikroBUS A PWM	P72_PWMA_RD0
75	15, 31, 36, 45, 65, 75	Vss	Vss	Vss
76	76	SEG20/RP24/USTX/RD1	General Purpose I/O	P76_RD1
77	77	SEG21/RP23/RD2	General Purpose I/O	P77_RD2
78	23	SEG5/AN2/C2INB/RP13/RB2	mikroBUS B PWM	P78_PWM_B_RB2
79	79	SEG44/RP142/OCM3E/RD12	EEPROM Chip Select	P79_EECS_RD12
80	80	SEG45/OCM3F/RD13	Button 4	P80_S4_RD13
81	89	SEC46/RG1	LCD Enable	P81_LCDE_RG1
82	90	SEC50/RG0	LCD R/W (pulled low by R4)	P82_LCDRW_RG0
83	1	SEG51/OCM1C/RG15	Button 3	P83_S3_RG15
84	84	SEG26/C3INA/RP33/U5RTS/U5BCLK/RD7	Button 6	P84_S6_RD7
85	85	VCAP	VCAP	P85_VDDCORE_VCAP
87	87	SEG27/U5CTS/RF0	General Purpose I/O	P87_RF0
88	88	COM4/SEG48/RP145/RF1	General Purpose I/O	P88_RF1
89	56	D-/RG3	USB D-	P89_USBDN_RG3
90	57	D+/RG2	USB D+	P90_USBDP_RG2
91	91	SEG58/AN23/OCM1E/RA6	LED9	P91_LED9_RA6
92	92	SEG59/AN22/OCM1F/RA7	Button 5/LED10	P92_S5_LED10_RA7
93	93	COM3/RE0	LCD D0	P93_LCDD0_RE0
94	94	COM2/RE1	LCD D1	P94_LCDD1_RE1
95	95	SEG60/RG14	mikroBUS A Reset	P95_RGA_RG14
96	96	SEG61/OCM2E/RG12	VbusON	P96_VBUSON_RG12
97	97	SEG62/OCM2F/RG13	General Purpose I/O	P97_RG13
98	98	COM1/RE2	LCD D2	P98_LCDD2_RE2
99	99	COM0/RE3	LCD D3	P99_LCDD3_RE3
100	6	SEG32/RP138/OCM1D/RC1	LD D4	P100_LCDD4_RC1
—	73	SOSCI/RC13	Secondary Oscillator In	SOSCI
—	74	SOSCO/SCLKI/RP137/RC14	Secondary Oscillator Out	SOSCO
—	2, 16, 30, 37, 46, 55, 62	VUSB3V3	USB Power	Vdd

Table 2: PIC24FJ512GU410 Device Mapping

Device Pin #	PIM Pin #	PIC24FJ512GU410 I/Os	Function	Explorer 16/32 Net Name
1	83	SEG51/OCM1C/RG15	Button 3	P83_S3_RG15
2	2, 16, 30, 37, 46, 62	Vdd	Vdd	Vdd
3	7	LCDBIAS2/RP34/RE5	General Purpose I/O	P7_RE5
4	8	LCDBIAS1/RP35/SCL3/RE6	General Purpose I/O	P8_RE6
5	9	LCDBIAS0/RP36/SDA3/RE7	General Purpose I/O	P9_RE7
6	100	SEG32/RI38/OCM1D/RC1	LCD D4	P100_LCDD4_RC1
7	3	SEG52/RI39/OCM2C/RC2	LCD D5	P3_LCDD5_RC2
8	4	SEG33/RI40/OCM2D/RC3	LCD D6	P4_LCDD6_RC3
9	5	SEG53/AN16/RI41/OCM3C/RC4	LCD D7	P5_LCDD7_RC4
10	10	SEG0/AN17/C1IND/RP21/OCM1A/RG6	mikroBUS™ A SPI SCK	P10_SCKA_RG6
11	11	VLCA1/AN18/C1INC/C2INC/C3INC/CP26/OCM1B/RG7	mikroBUS A SPI MISO	P11_MISOA_RG7
12	12	VLCA2/AN19/C2IND/RP19/OCM2A/RG8	mikroBUS A SPI MOSI	P12_MOSIA_RG8
13	13	MCLR	MCLR	P13_MCLR_MCLR
14	14	SEG1/AN20/C2INC/CP27/DAC1/OCM2B/RG9	mikroBUS A Chip Select	P14_CSA_RG9
15	15, 31, 36, 45, 65, 75	Vss	Vss	Vss
16	2, 16, 30, 37, 46, 62	Vdd	Vdd	Vdd
17	17	TMS/SEG49/OCM3D/RA0	LED D3	P17_LED3_RA0
18	18	SEG34/RI47/RE8	mikroBUS B Interrupt	P18_INTB_RE8
19	19	SEG35/AN21/RI48/RE9	mikroBUS B Reset	P19_RSTB_RE9
20	20	PGEC3/SEG2/AN5/C1INA/RI18/SCL1A/OCM3A/RB5	10k Potentiometer	P20_POT_RB5
21	21	PGED3/SEG3/AN4/C1INB/RI28/SDA1A/USBOEN/OCM3B/RB4	TC1047A Temp. Sensor	P21_TEMP_RB4
22	22	SEG4/AN3/C2INA/RB3	General Purpose I/O	P22_RB3
23	78	SEG5/AN2/C2INB/RI13/RB2	mikroBUS B PWM	P78_PWMB_RB2
24	24	PGEC1/SEG6/CVREF-/AN1/AN1-/RI1/RB1	mikroBUS B Analog	P24_ANB_RB15
25	25	PGED1/SEG7/VREF+/CVREF+/DVREF+/AN0/RI0/RB0	mikroBUS B Analog/USB Overcurrent	P25_ANA_USBOC_RB0
26	26	PGEC2/LCDBIAS3/AN6/RI6/RB6	ICSP™ Prog/Debug PGC2	P26_PGC3_RB6
27	27	PGED2/AN7/RI7/IT1CK/U6TX/RB7	ICSP™ Prog/Debug PGD2	P27_PGD3_RB7
28	28	SEG36/RA9	General Purpose I/O	P28_RA9
29	29	SEG37/RA10	General Purpose I/O	P9_RA10
30	2, 16, 30, 37, 46, 62	AVdd	Vdd	Vdd
31	15, 31, 36, 45, 65, 75	AVss	Vss	Vss
32	32	COM7/SEG31/AN8/RI8/RB8	USB CC2	P32_CC2
33	31	COM6/SEG30/AN9/RI9/RB9	USB CC1	P31_CC1
34	24	COM5/SEG29/CVREF-/AN10/RI44/RB10	General Purpose I/O	P34_RB10
35	35	AN11/RB11	General Purpose I/O	P35_RB11
36	15, 31, 36, 45, 65, 75	Vss	Vss	Vss
37	2, 16, 30, 37, 46, 62	Vdd	Vdd	Vdd
38	38	TCK/RA1	LED D4	P38_LED4_RD15
39	39	SEG54/RI31/RF13	General Purpose I/O	P39_RF13
40	40	SEG55/RI46/RF12	General Purpose I/O	P40_RF12
41	41	SEG18/AN12/U6RX/RB12	General Purpose I/O	P41_RB12
42	42	SEG19/AN13/RB13	General Purpose I/O	P42_RB13
43	43	SEG8/AN14/RI14/RB14	General Purpose I/O	P43_RB14
44	44	SEG9/AN15/RI29/RB15	LCD Register Select	P44_LCDRS_RB15
45	15, 31, 36, 45, 65, 75	Vss	Vss	Vss
46	2, 16, 30, 37, 46, 62	Vdd	Vdd	Vdd
47	47	SEG38/RI43/RD14	General Purpose I/O	P47_RD14
48	48	SEG39/RI5/RD15	General Purpose I/O	P48_RD15

Table 2: PIC24FJ512GU410 Device Mapping (Continued)

Device Pin #	PIM Pin #	PIC24FJ512GU410 I/Os	Function	Explorer 16/32 Net Name
49	49	SEG10/RI10/RF4	MCP2221A/mikroBUS™ B TX	P49_RXB_RF4
50	50	SEG11/RI17/RF5	MCP2221A/mikroBUS B RX	P50_TXB_RF5
51	51	SEG12/RI16/USBID/RF3	mikroBUS A TX	P51_TXA_RF3
52	52	SEG40/RI30/RF2	mikroBUS A RX	P52_RXA_RF2
53	67	SEG41/RI15/RF8	mikroBUS A Interrupt	P67_INTA_RF6
54	1	Vbus/RF7	USB Vbus	P1_VBUS_RF7
55	2, 16, 30, 37, 46, 62	Vusb3v3	USB Power	Vdd
56	89	D-/RG3	USB D-	P89_USBDN_RG3
57	90	D+/RG2	USB D+	P90_USBDP_RG2
58	58	SEG56/SCL2/RA2	LED D5	P58_LED5_RA2
59	59	SEG57/SDA2/RA3	LED D6	P59_LED6_RA3
60	60	TDI/RA4	LED D7	P60_LED7_RA4
61	61	TDO/RA5	LED8	P61_LED8_RA5
62	2, 16, 30, 37, 46, 62	Vdd	Vdd	Vdd
63	63	OSCI/CLKI/C12	Primary Oscillator In	P63_OSCI_RC12
64	64	OSCO/CLKO/RC15	Primary Oscillator Out	P64_OSICO_RC15
65	15, 31, 36, 45, 65, 75	Vss	Vss	Vss
66	57	SEG42/RI50/SCL1/RA14	mikroBUS Shared I2C SCL	P57_SCL_RA14
67	56	SEG43/RI49/SDA1/RA15	mikroBUS Shared I2C SDA	P56_SDA_RA15
68	68	SEG13/RI2/U6RTS/U6BCLK/RD8	General Purpose I/O	P68_RD8
69	69	SEG14/RI4/RD9	General Purpose I/O	P69_RD9
70	70	SEG15/C3IND/RI3/RD10	General Purpose I/O	P70_RD10
71	71	SEG16/C3INC/RI12/RD11	General Purpose I/O	P71_RD11
72	72	SEG17/RI11/U6CTS/INT0/RD0	mikroBUS A PWM	P72_PWMA_RD0
73	—	SOSCI/RC13	Secondary Oscillator In	SOSCI
74	—	SOSCO/SCLKI/RI37/RC14	Secondary Oscillator Out	SOSCO
75	15, 31, 36, 45, 65, 75	Vss	Vss	Vss
76	76	SEG20/RI24/U5TX/RD1	General Purpose I/O	P76_RD1
77	77	SEG21/RI23/RD2	General Purpose I/O	P77_RD2
78	55	SEG22/RI22/SCK3/RD3	mikroBUS B SPI SCK	P55_SCKB_RD12
79	79	SEG44/RI42/OCM3E/RD12	EEPROM Chip Select	P79_EECS_RD12
80	80	SEG45/OCM3F/RD13	Button 4	P80_S4_RD13
81	54	SEG23/RI25/SDI3/RD4	mikroBUS B SPI MISO	P54_MISOA_RD4
82	53	SEG24/RI20/SDO3/RD5	mikroBUS B SPI MOSI	P53_MOSIA_RD5
83	23	SEG25/C3INB/RI32/U5RX/SS3/FSYNC3/RD6	mikroBUS B Chip Select	P23_CSB_RD6
84	84	SEG26/C3INA/RI33/U5RTS/U5BCLK/RD7	Button 6	P84_S6_RD1
85	85	Vcap	Vcap	P85_VDDCORE_VCAP
86	66	RH0	General Purpose I/O	P66_RH0
87	87	SEG27/U5CTS/RF0	General Purpose I/O	P87_RF0
88	88	COM4/SEG48/RI45/RF1	General Purpose I/O	P88_RF1
89	81	SEG46/RI1	LCD Enable	P81_LCDE_RG1
90	82	SEG50/RI1	LCD R/W (pulled low by R4)	P82_LCDRM_RG0
91	91	SEG58/AN23/OCM1E/RA6	LED9	P91_LED9_RA6
92	92	SEG59/AN22/OCM1F/RA7	Button 5/LED10	P92_S5_LED10_RA7
93	93	COM3/RE0	LCD D0	P93_LCDD0_RE0
94	94	COM2/RE1	LCD D1	P94_LCDD1_RE1
95	95	SEG60/RI14	mikroBUS A Reset	P95_RSTA_RG14
96	96	SEG61/OCM2E/RI12	VBUSON	P96_VBUSON_RG12
97	97	SEG62/OCM2F/RI13	General Purpose I/O	P97_RG13
98	98	COM1/RE2	LCD D2	P98_LCDD2_RE2
99	99	COM0/RE3	LCD D3	P99_LCDD3_RE3
100	6	SEG63/LVDIN/RE4	General Purpose I/O	P6_RE4

PIC24FJ512GU410 General Purpose Plug-In Module (PIM) Information Sheet 100-Pin TQFP

Schematic Revision 3.0

