dsPIC33AK512MPS512 General Purpose Dual In-Line Module (DIM) Information Sheet

Overview

The dsPIC33AK512MPS512 General Purpose DIM (EV80L65A) is designed to demonstrate the capabilities of the dsPIC33AK512MPS512 family using the dsPIC33A Curiosity Platform Development Board (EV74H48A). Refer to Table 1 and Table 2 for the mapping of the physical pins on the dsPIC33AK512MPS512 to the 120 pins on the DIM connector.

Not all predefined DIM signals found on the dsPIC33A Curiosity Platform Development Board are connected due to the limited modules available.

Information for dsPIC33AK512MPS512 General Purpose DIM is available through the website at: www.microchip.com/en-us/development-tool/EV80L65A.

Information for dsPIC33A Curiosity Platform Development Board is available through the website at: www.microchip.com/en-us/development-tool/EV74H48A.

TABLE 1: dsPIC33AK512MPS512 DIM Mappings

DIM Pin #	Device Pin #	dsPIC33AK512MPS512 I/Os	DIM Net Name / Function	Curiosity Platform Board Net Name	Platform Board Function
1	60	AD4ANN1/AD4AN2/CVDAN23/CVDTX7/CMP4C/IBIAS1/ISRC1/RP24/IOMAF0/RB7	P1_AD4AN2_CVDAN23_RB7	P1_XPRO1_9	XPLAINED PRO Extension 1 pin 9
2	61	AD4AN4/CVDAN26/CVDTX10/CMP8A/RP27/SCK2/IOMAF11/IOMBF11/RB10	P2_AD4AN4_CVDAN26_RB10	P2_XPRO1_10	XPLAINED PRO Extension 1 pin 10
3	58	AD4ANN2/AD4AN1/CVDAN22/CVDTX6/CMP/CMP7D/IBIAS0/ISRC0/RP23/RB6	P3_AD4AN1_CVDAN22_RB6	P3_XPRO1_8	XPLAINED PRO Extension 1 pin 8
4	75	RP40/SDA3/IOMAF7/RC7	P4_SDA3_RC7	P4_mkB_B_XPRO1_SDA	mikroBUS B pin 11 SDA multiplexed with XPLAINED PRO Extension 1 pin 11 SDA
5	57	PGC1/AD4AN0/CVDAN20/CVDTX4/CMP4B/RP21/SCL1/RB4	P5_AD4AN0_CVDAN20_RB4	P5_XPRO1_7	XPLAINED PRO Extension 1 pin 7
6	73	RP39/SCL3/RC6	P6_SCL3_RC6	P6_mkB_B_SPRO1_SCL	mikroBUS B pin 12 SCL multiplexed with XPLAINED PRO Extension 1 pin 12 SCL
7	55	PGD1/AD4AN3/CVDAN19/CVDTX3/CMP4A/RP20/SDA1/RB3	P7_AD4AN3_CVDAN19_RB3	P7_XPRO1_6	XPLAINED PRO Extension 1 pin 6
8			NC	P8_XPRO1_13	XPLAINED PRO Extension 1 pin 13
9	47	AD2AN5/CVDAN31/CVDTX15/RP32/RB15	P9_AD2AN5_CVDAN31_RB15	P9_XPRO1_5	XPLAINED PRO Extension 1 pin 5
10			NC	P10_XPRO1_14	XPLAINED PRO Extension 1 pin 14
11	46	AD2ANN1/AD2AN3/CVDAN25/CVDTX9/CMP8D/RP26/RB9	P11_AD2AN3_CVDAN25_RB9	P11_XPRO1_4	XPLAINED PRO Extension 1 pin 4
12	43	TMS/OA2IN-/AD2ANN2/AD2AN2/CVDAN17/CVDTX1/CMP2C/RP18/RB1	P12_AD2AN2_CVDAN17_RB1	P12_XPRO1_15	XPLAINED PRO Extension 1 pin 15
13	45	AD2AN4/CVDAN24/CVDTX8/CMP2D/RP25/RB8	P13_AD2AN4_CVDAN24_RB8	P13_XPRO1_3	XPLAINED PRO Extension 1 pin 3
14	41	OA2OUT/AD2AN0/CVDAN16/CVDTX0/CMP2A/RP17/RB0	P14_AD2AN0_CVDAN16_RB0	P14_XPRO1_16	XPLAINED PRO Extension 1 pin 16
15	67	RP99/APWM4L/IOMBD10/RG2	P15_RG2	P15_XPRO1_1	XPLAINED PRO Extension 1 pin 1
16	40	AD3ANN1/AD3AN3/CVDAN29/CVDTX13/RP30/RB13	P16_AD3AN3_CVDAN29_RB13	P16_XPRO1_17	XPLAINED PRO Extension 1 pin 17
17			NC	NC	NC
18	34	RP91/RF10	P18_RF10	P18_XPRO1_18	XPLAINED PRO Extension 1 pin 18
19			NC	NC	NC
20	33	OA3IN+/AD3AN1/AD4AN5/CVDAN21/CVDTX5/CMP3B/RP22/RB5	P20_AD3AN1_CVDAN21_RB5	P20_XPRO2_3	XPLAINED PRO Extension 2 pin 3
21	62	CVDAN27/CVDTX11/CMP7B/RP28/IOMAF10/IOMBF10/SDI2/RB11	P21_RP28_RB11	P21_mkB_B_TX	mikroBUS B pin 13 UART TX
22	31	OA3IN-/AD3ANN2/AD3AN2/CVDAN6/CMPDN/CMP3C/RP7/RA6	P22_AD3AN2_CVDAN6_RA6	P22_XPRO2_4	XPLAINED PRO Extension 2 pin 4
23	65	RP97/RG0	P23_RP97_RG0	P23_mkB_B_RX	mikroBUS B pin 14 UART RX

TABLE 1: dsPIC33AK512MPS512 DIM Mappings (CONTINUED)

DIM Pin #	Device Pin #	dsPIC33AK512MPS512 I/Os	DIM Net Name / Function	Curiosity Platform Board Net Name	Platform Board Function
24	29	OA3OUT/AD3AN0/CVDAN5/CMP3A/RP6/INT0/RA5	P24_AD3AN0_CVDAN5_RA5	P24_XPRO2_5	XPLAINED PRO Extension 2 pin 5
25	49	CVDTX30/RP82/RF1	P25_RP82_RF1	P25_mkB_B_INT	mikroBUS B pin 15 INT
26	28	OA1IN+/AD1AN1/AD5AN4/CVDAN4/CMP1B/RP5/RA4	P26_AD1AN1_CVDAN4_RA4	P26_XPRO2_6	XPLAINED PRO Extension 2 pin 6
27	66	RP98/APWM4H/IOMBD11/RG1	P27_APWM4H_RG1	P27_mkB_B_PWM	mikroBUS B pin 16 PWM
28	71	RP41/APWM1L/IOMAD8/IOMBF3/RC8	P28_RC8	P28_LED_0	General purpose LED 0
29	27	OA1IN-/AD1ANN2/AD1AN2/CVDAN3/CMPCN/CMP1C/RP4/RA3	P29_AD1AN2_CVDAN3_RA3	P29_mkB_B_AN	mikroBUS B pin 1 AN
30	72	RP42/SDO2/IOMBF2/RC9	P30_RC9	P30_LED_1	General purpose LED 1
31	74	RP102/RG5	P31_RP102_RG5	P31_mkB_B_RST	mikroBUS B pin 2 RST
32	87	RP43/PWM7H/IOMBD5/IOMBF1/RC10	P32_RC10	P32_LED_2	General purpose LED 2
33	35	CVDAN28/CVDTX12/CMP3D/RP29/RB12	P33_RP29_RB12	P33_mkB_B_CS	mikroBUS B pin 3 CS
34	88	RP44/PWM7L/IOMBD4/IOMBF0/RC11	P34_RC11	P34_LED_3	General purpose LED 3
35	36	RP90/RF9	P35_RP90_RF9	P35_mkB_B_SCK	mikroBUS B pin 4 SCK
36	91	RP45/PWM8H/IOMBD7/RC12	P36_RC12	P36_LED_4	General purpose LED 4
37	39	RP89/RF8	P37_RP89_RF8	P37_mkB_B_MISO	mikroBUS B pin 5 MISO
38	25	OA1OUT/AD1AN0/CVDAN2/CMP1A/RP3/RA2	P38_AD1AN0_CVDAN2_RA2	P38_Cap_Touch_3R	Capacitive touch pad 3 redundant
39	42	RP92/RF11	P39_RP92_RF11	P39_mkB_B_MOSI	mikroBUS B pin 6 MOSI
40	18	AD1ANN1/AD1AN4/CVDAN10/CMPEN/CMP5C/RP11/RA10	P40_AD1AN4_CVDAN10_RA10	P40_Cap_Touch_3	Capacitive touch pad 3
41	44	OA2IN+/AD2AN1/CVDAN18/CVDTX2/CMP2B/RP19/RB2	P41_RP17_RB2	P41_S3	Push button switch 3
42	16	UREF/AD1AN3/CVDAN9/CMP5B/CMP7A/IBIAS2/ISRC2/RP10/RA9	P42_AD1AN3_CVDAN9_RA9	P42_Cap_Touch_2R	Capacitive touch pad 2 redundant
43	48	AD3AN4/CVDTX29/RP81/RF0	P43_RP81_RF0	P43_S2	Push button switch 2
44	14	DACOUT2/AD5AN3/CVDAN8/CMP5A/IBIAS3/ISRC3/RP9/RA8	P44_AD5AN3_CVDAN8_RA8	P44_Cap_Touch_2	Capacitive touch pad 2
45	63	RP84/RF3	P45_RP84_RF3	P45_S1	Push button switch 1
46	13	AD5ANN2/AD5AN2/CVDAN11/CMPFN/CMP6C/RP12/RA11	P46_AD5AN2_CVDAN11_RA11	P46_Cap_Touch_1R	Capacitive touch pad 1 redundant
47	128	MCLR	P47_MCLR	P47_MCLR	device Master clear and MCLR switch
48	7	PGC2/DACOUT1/AD5AN1/CVDAN1/CMP4D/RP2/RA1	P48_AD5AN1_CVDAN1_RA1	P48_Cap_Touch_1	Capacitive touch pad 1
49	83	PGD3/RP38/PWM4L/IOMAD6/RC5	P49_PGD3	P49_PGD	ISCP Programming Data
50	92	RP46/PWM8L/IOMBD6/RC13	P50_RC13	P50_LED_5	General purpose LED 5
51	82	PGC3/RP35/PWM4H/IOMAD7/RC2	P51_PGC3	P51_PGC	ISCP Programming Clock
52	95	RP47/APWM3H/IOMBD9/RC14	P52_RC14	P52_LED_6	General purpose LED 6
53			NC	NC	NC
54	96	RP48/APWM3L/IOMBD8/RC15	P54_RC15	P54_LED_7	General purpose LED 7
55			NC	P55_Board_VDD_Select	Voltage Select pin. On 3.3V devices pin is not connected as 3.3V is default.

TABLE 1: dsPIC33AK512MPS512 DIM Mappings (CONTINUED)

DIM Pin #	Device Pin #	dsPIC33AK512MPS512 I/Os	DIM Net Name / Function	Curiosity Platform Board Net Name	Platform Board Function
56	19	CVDTX23/RP69/RE4	P56_RP69_RE4	P56_Cap_Touch_DS	Capacitive touch pad driven shield IO
57	10, 22, 38, 52, 69, 78, 94, 105, 113, 127	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
58	10, 22, 38, 52, 69, 78, 94, 105, 113, 127	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
59	10, 22, 38, 52, 69, 78, 94, 105, 113, 127	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
60	10, 22, 38, 52, 69, 78, 94, 105, 113, 127	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
61	9, 21, 37, 51, 68, 77, 93, 104, 112, 126	VSS	GND	GND	Ground
62	9, 21, 37, 51, 68, 77, 93, 104, 112, 126	VSS	GND	GND	Ground
63	9, 21, 37, 51, 68, 77, 93, 104, 112, 126	VSS	GND	GND	Ground
64	9, 21, 37, 51, 68, 77, 93, 104, 112, 126	VSS	GND	GND	Ground
65	125	CVDTX18/RP57/ASDA2/IOMAF3/RD8	P65_ASDA2_RD8	P65_mkB_A_USB_SDA	mikroBUS A pin 11 SDA multiplexed with I2C to USB Converter pin 8 SDA
66	5	AD5ANN1/AD5AN0/CVDAN7/CMP6B/RP8/SDA2/IOMAF1/RA7	P66_AD5AN0_CVDAN7_RA7	P66_POT	10kOhm Potentiometer
67	124	CVDTX17/RP56/ASCL2/IOMAF4/RD7	P67_ASCL2_RD7	P67_mkB_A_USB_SCL	mikroBUS A pin 12 SCL multiplexed with I2C to USB Converter pin 9 SCL
68	98	RP58/PWM6H/IOMBD3/IOMBF7/RD9	P68_PWM6H_RD9	P68_LED_R	Red LED control for RGB LED
69	17	CVDTX26/RP72/RE7	P69_RP72_RE7	P69_mkB_A_TX	mikroBUS A pin 13 TX
70	101	RP49/PWM2H/IOMAD3/RD0	P70_PWM2H_RD0	P70_LED_G	Green LED control for RGB LED
71	15	CVDTX27/RP73/RE8	P71_RP73_RE8	P71_mkB_A_RX	mikroBUS A pin 14 RX
72	106	TDO/RP51/PWM1H/IOMAD1/RD2	P72_PWM1H_RD2	P72_LED_B	Blue LED Control for RGB LED
73	11	CVDTX21/RP67/RE2	P73_RP67_RE2	P73_mkB_A_INT	mikroBUS A pin 15 INT
74	3	CVDAN12/RP13/RA12	P74_RP13_RA12	P74_QSPI_MOSI	Quad SPI Flash pin 5 MOSI
75	84	RP36/PWM3H/IOMAD5/RC3	P75_PWM3H_RC3	P75_mkB_A_PWM	mikroBUS A pin 16 PWM
76	2	CVDTX20/CMP8C/RP66/RE1	P76_RP66_RE1	P76_QSPI_SCK	Quad SPI Flash pin 6 SCK
77	4	PGD2/AD3AN5/CVDAN10/CMP6A/RP1/SCL2/IOMAF2/RA0	P77_AD3AN5_CVDAN10_RA0	P77_mkB_A_AN	mikroBUS A pin 1 AN
78	1	CVDTX19/CMP7C/RP65/RE0	P78_RP65_RE0	P78_QSPI_HOLD	Quad SPI Flash pin 7 HOLD
79	20	CVDAN15/RP16/RA15	P79_RP16_RA15	P79_mkB_A_RST	mikroBUS A pin 2 RST
80	6	CVDTX22/RP68/RE3	P80_RP68_RE3	P80_QSPI_WP	Quad SPI Flash pin 3 WP
81	26	CVDTX24/RP70/RE5	P81_RP70_RE5	P81_mkB_A_CS	mikroBUS A pin 3 CS
82	12	CVDAN13/CMP5D/RP14/RA13	P82_RP14_RA13	P82_QSPI_MISO	Quad SPI Flash pin 2 MISO
83	30	RP75/RE10	P83_RP75_RE10	P83_mkB_A_SCK	mikroBUS A pin 4 SCK

TABLE 1: dsPIC33AK512MPS512 DIM Mappings (CONTINUED)

DIM Pin #	Device Pin #	dsPIC33AK512MPS512 I/Os	DIM Net Name / Function	Curiosity Platform Board Net Name	Platform Board Function
84	123	RP64/APWM2L/IOMAD10/IOMBF5/RD15	P84_RP64_RD15	P84_QPSI_CS	Quad SPI Flash pin 1 CS
85	89	RP106/RG9	P85_RP106_RG9	P85_mkB_A_MISO	mikroBUS A pin 5 MISO
86	122	RP63/APWM2H/IOMAD11/RD14	P86_RP63_RD14	P86_CAN_STBY	CAN FD Transceiver pin 8 STBY
87	90	RP101/RG4	P87_RP101_RG4	P87_mkB_A_MOSI	mikroBUS A pin 6 MOSI
88	121	RP62/IOMBF4/RD13	P88_RP62_RD13	P88_CAN_TXD	CAN FD Transceiver pin 1 TXD
89			NC	P89_RMII_NRST	Ethernet RMII J20 pin 10 NRST
90	118	RP60/APWM1H/IOMAD9/IOMAF8/IOMBF8/RD11	P90_RP60_RD11	P90_CAN_RXD	CAN FD Transceiver pin 4 RXD
91			NC	P91_RMII_IRQ	Ethernet RMII J20 pin 9 IRQ
92	115	RP54/PWM5H/ASCL1/IOMBD1/RD5	P92_RP54_SCL1_RD5	P92_GPIO	General purpose IO header
93			NC	P93_RMII_MDIO	Ethernet RMII J20 pin 8 MDIO
94	116	RP55/PWM5L/ASDA1/IOMBD0/RD6	P94_RP55_SDA1_RD6	P94_GPIO	General purpose IO header
95			NC	P95_RMII_MDC	Ethernet RMII J20 pin 7 MDC
96	102	TCK/RP50/PWM2L/IOMAD2/RD1	P96_RP50_RD1	P96_UART_USB_RX	USB to UART Converter pin 5 RX
97			NC	P97_RMII_CRS_DV	Ethernet RMII J20 pin 6 CRS_DV
98	100	RP114/RH1	P98_RP114_RH1	P98_UART_USB_TX	USB to UART Converter pin 4 TX
99			NC	P99_RMII_RXER	Ethernet RMII J20 pin 5 RXER
100	99	RP59/PWM6L/IOMBD2/IOMAF9/IOMBF9/RD10	RP100_RP59_RD10	P100_UART_PKoB_RX	UART to USB back-channel through PKOB RX
101			NC	P101_RMII_RXD0	Ethernet RMII J20 pin 4 RXD0
102	97	RP113/RH0	RP102_RP113_RH0	P102_UART_PKoB_TX	UART to USB back-channel through PKOB TX
103			NC	P103_RMII_RXD1	Ethernet RMII J20 pin 3 RXD1
104			NC	P104_TRCLK	Trace pin 1 Clock line
105			NC	P105_RMII_TXEN	Ethernet RMII J19 pin 1 TXEN
106			NC	P106_TRDAT0	Trace pin 3 Data line 0
107			NC	P107_RMII_TXD0	Ethernet RMII J19 pin 2 TXD0
108			NC	P108_TRDAT1	Trace pin 5 Data line 1
109			NC	P109_RMII_TXD1	Ethernet RMII J19 pin 3 TXD1
110			NC	P110_TRDAT2	Trace pin 7 Data line 2
111			NC	P111_RMII_CLK_IN	Ethernet RMII J19 pin 8 CLK_IN

TABLE 1: dsPIC33AK512MPS512 DIM Mappings (CONTINUED)

DIM Pin #	Device Pin #	dsPIC33AK512MPS512 I/Os	DIM Net Name / Function	Curiosity Platform Board Net Name	Platform Board Function
112			NC	P112_TRDAT3	Trace pin 9 Data line 3
113	10, 22, 38, 52, 69, 78, 94, 105, 113, 127	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
114	10, 22, 38, 52, 69, 78, 94, 105, 113, 127	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
115	10, 22, 38, 52, 69, 78, 94, 105, 113, 127	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
116	10, 22, 38, 52, 69, 78, 94, 105, 113, 127	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
117	9, 21, 37, 51, 68, 77, 93, 104, 112, 126	VSS	GND	GND	Ground
118	9, 21, 37, 51, 68, 77, 93, 104, 112, 126	VSS	GND	GND	Ground
119	9, 21, 37, 51, 68, 77, 93, 104, 112, 126	VSS	GND	GND	Ground
120	9, 21, 37, 51, 68, 77, 93, 104, 112, 126	VSS	GND	GND	Ground

TABLE 2: dsPIC33AK512MPS512 MCU Mappings

Device Pin #	DIM Pin #	dsPIC33AK512MPS512 I/Os	DIM Net Name	Curiosity Platform Board Net Name	Platform Board Function
1	78	CVDTX19/CMP7C/RP65/RE0	P78_RP65_RE0	P78_QSPI_HOLD	Quad SPI Flash pin 7 HOLD
2	76	CVDTX20/CMP8C/RP66/RE1	P76_RP66_RE1	P76_QSPI_SCK	Quad SPI Flash pin 6 SCK
3	74	CVDAN12/RP13/RA12	P74_RP13_RA12	P74_QSPI_MOSI	Quad SPI Flash pin 5 MOSI
4	77	PGD2/AD3AN5/CVDAN10/CMP6A/RP1/SCL2/IOMAF2/RA0	P77_AD3AN5_CVDAN10_RA0	P77_mkB_A_AN	mikroBUS A pin 1 AN
5	66	AD5ANN1/AD5AN0/CVDAN7/CMP6B/RP8/SDA2/IOMAF1/RA7	P66_AD5AN0_CVDAN7_RA7	P66_POT	10kOhm Potentiometer
6	80	CVDTX22/RP68/RE3	P80_RP68_RE3	P80_QSPI_WP	Quad SPI Flash pin 3 WP
7	48	PGC2/DACOUT1/AD5AN1/CVDAN1/CMP4D/RP2/RA1	P48_AD5AN1_CVDAN1_RA1	P48_Cap_Touch_1	Capacitive touch pad 1
9	61, 62, 63, 64, 117, 118, 119, 120	VSS	GND	GND	Ground
10	57, 58, 59, 60, 113, 114, 115, 116	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
11	73	CVDTX21/RP67/RE2	P73_RP67_RE2	P73_mkB_A_INT	mikroBUS A pin 15 INT
12	82	CVDAN13/CMP5D/RP14/RA13	P82_RP14_RA13	P82_QSPI_MISO	Quad SPI Flash pin 2 MISO
13	46	AD5ANN2/AD5AN2/CVDAN11/CMPFN/CMP6C/RP12/RA11	P46_AD5AN2_CVDAN11_RA11	P46_Cap_Touch_1R	Capacitive touch pad 1 redundant
14	44	DACOUT2/AD5AN3/CVDAN8/CMP5A/IBIAS3/ISRC3/RP9/RA8	P44_AD5AN3_CVDAN8_RA8	P44_Cap_Touch_2	Capacitive touch pad 2
15	71	CVDTX27/RP73/RE8	P71_RP73_RE8	P71_mkB_A_RX	mikroBUS A pin 14 RX
16	42	UREF/AD1AN3/CVDAN9/CMP5B/CMP7A/IBIAS2/ISRC2/RP10/RA9	P42_AD1AN3_CVDAN9_RA9	P42_Cap_Touch_2R	Capacitive touch pad 2 redundant
17	69	CVDTX26/RP72/RE7	P69_RP72_RE7	P69_mkB_A_TX	mikroBUS A pin 13 TX
18	40	AD1ANN1/AD1AN4/CVDAN10/CMPEN/CMP5C/RP11/RA10	P40_AD1AN4_CVDAN10_RA10	P40_Cap_Touch_3	Capacitive touch pad 3
19	56	CVDTX23/RP69/RE4	P56_RP69_RE4	P56_Cap_Touch_DS	Capacitive touch pad driven shield IO
20	79	CVDAN15/RP16/RA15	P79_RP16_RA15	P79_mkB_A_RST	mikroBUS A pin 2 RST
21	61, 62, 63, 64, 117, 118, 119, 120	VSS	GND	GND	Ground
22	57, 58, 59, 60, 113, 114, 115, 116	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
25	38	OA1OUT/AD1AN0/CVDAN2/CMP1A/RP3/RA2	P38_AD1AN0_CVDAN2_RA2	P38_Cap_Touch_3R	Capacitive touch pad 3 redundant
26	81	CVDTX24/RP70/RE5	P81_RP70_RE5	P81_mkB_A_CS	mikroBUS A pin 3 CS
27	29	OA1IN-/AD1ANN2/AD1AN2/CVDAN3/CMPCN/CMP1C/RP4/RA3	P29_AD1AN2_CVDAN3_RA3	P29_mkB_B_AN	mikroBUS B pin 1 AN
28	26	OA1IN+/AD1AN1/AD5AN4/CVDAN4/CMP1B/RP5/RA4	P26_AD1AN1_CVDAN4_RA4	P26_XPRO2_6	XPLAINED PRO Extension 2 pin 6
29	24	OA3OUT/AD3AN0/CVDAN5/CMP3A/RP6/INT0/RA5	P24_AD3AN0_CVDAN5_RA5	P24_XPRO2_5	XPLAINED PRO Extension 2 pin 5

TABLE 2: dsPIC33AK512MPS512 MCU Mappings (CONTINUED)

Device Pin #	DIM Pin #	dsPIC33AK512MPS512 I/Os	DIM Net Name	Curiosity Platform Board Net Name	Platform Board Function
30	83	RP75/RE10	P83_RP75_RE10	P83_mkB_A_SCK	mikroBUS A pin 4 SCK
31	22	OA3IN-/AD3ANN2/AD3AN2/CVDAN6/CMPDN/CMP3C/RP7/RA6	P22_AD3AN2_C-VDAN6_RA6	P22_XPRO2_4	XPLAINED PRO Extension 2 pin 4
33	20	OA3IN+/AD3AN1/AD4AN5/CVDAN21/CVDTX5/CMP3B/RP22/RB5	P20_AD3AN1_C-VDAN21_RB5	P20_XPRO2_3	XPLAINED PRO Extension 2 pin 3
34	18	RP91/RF10	P18_RF10	P18_XPRO1_18	XPLAINED PRO Extension 1 pin 18
35	33	CVDAN28/CVDTX12/CMP3D/RP29/RB12	P33_RP29_RB12	P33_mkB_B_CS	mikroBUS B pin 3 CS
36	35	RP90/RF9	P35_RP90_RF9	P35_mkB_B_SCK	mikroBUS B pin 4 SCK
37	61, 62, 63, 64, 117, 118, 119, 120	VSS	GND	GND	Ground
38	57, 58, 59, 60, 113, 114, 115, 116	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
39	37	RP89/RF8	P37_RP89_RF8	P37_mkB_B_MISO	mikroBUS B pin 5 MISO
40	16	AD3ANN1/AD3AN3/CVDAN29/CVDTX13/RP30/RB13	P16_AD3AN3_C-VDAN29_RB13	P16_XPRO1_17	XPLAINED PRO Extension 1 pin 17
41	14	OA2OUT/AD2AN0/CVDAN16/CVDTX0/CMP2A/RP17/RB0	P14_AD2AN0_C-VDAN16_RB0	P14_XPRO1_16	XPLAINED PRO Extension 1 pin 16
42	39	RP92/RF11	P39_RP92_RF11	P39_mkB_B_MOSI	mikroBUS B pin 6 MOSI
43	12	TMS/OA2IN-/AD2ANN2/AD2AN2/CVDAN17/CVDTX1/CMP2C/RP18/RB1	P12_AD2AN2_C-VDAN17_RB1	P12_XPRO1_15	XPLAINED PRO Extension 1 pin 15
44	41	OA2IN+/AD2AN1/CVDAN18/CVDTX2/CMP2B/RP19/RB2	P41_RP17_RB2	P41_S3	Push button switch 3
45	13	AD2AN4/CVDAN24/CVDTX8/CMP2D/RP25/RB8	P13_AD2AN4_C-VDAN24_RB8	P13_XPRO1_3	XPLAINED PRO Extension 1 pin 3
46	11	AD2ANN1/AD2AN3/CVDAN25/CVDTX9/CMP8D/RP26/RB9	P11_AD2AN3_C-VDAN25_RB9	P11_XPRO1_4	XPLAINED PRO Extension 1 pin 4
47	9	AD2AN5/CVDAN31/CVDTX15/RP32/RB15	P9_AD2AN5_C-VDAN31_RB15	P9_XPRO1_5	XPLAINED PRO Extension 1 pin 5
48	43	AD3AN4/CVDTX29/RP81/RF0	P43_RP81_RF0	P43_S2	Push button switch 2
49	25	CVDTX30/RP82/RF1	P25_RP82_RF1	P25_mkB_B_INT	mikroBUS B pin 15 INT
51	61, 62, 63, 64, 117, 118, 119, 120	VSS	GND	GND	Ground
52	57, 58, 59, 60, 113, 114, 115, 116	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
55	7	PGD1/AD4AN3/CVDAN19/CVDTX3/CMP4A/RP20/SDA1/RB3	P7_AD4AN3_C-VDAN19_RB3	P7_XPRO1_6	XPLAINED PRO Extension 1 pin 6
57	5	PGC1/AD4AN0/CVDAN20/CVDTX4/CMP4B/RP21/SCL1/RB4	P5_AD4AN0_C-VDAN20_RB4	P5_XPRO1_7	XPLAINED PRO Extension 1 pin 7
58	3	AD4ANN2/AD4AN1/CVDAN22/CVDTX6/CMP/CMP7D/IBIAS0/ISRC0/RP23/RB6	P3_AD4AN1_C-VDAN22_RB6	P3_XPRO1_8	XPLAINED PRO Extension 1 pin 8
60	1	AD4ANN1/AD4AN2/CVDAN23/CVDTX7/CMP4C/IBIAS1/ISRC1/RP24/IOMAF0/RB7	P1_AD4AN2_CVDAN23_RB7	P1_XPRO1_9	XPLAINED PRO Extension 1 pin 9
61	2	AD4AN4/CVDAN26/CVDTX10/CMP8A/RP27/SCK2/IOMAF11/IOMBF11/RB10	P2_AD4AN4_C-VDAN26_RB10	P2_XPRO1_10	XPLAINED PRO Extension 1 pin 10
62	21	CVDAN27/CVDTX11/CMP7B/RP28/IOMAF10/IOMBF10/SDI2/RB11	P21_RP28_RB11	P21_mkB_B_TX	mikroBUS B pin 13 UART TX
63	45	RP84/RF3	P45_RP84_RF3	P45_S1	Push button switch 1
65	23	RP97/RG0	P23_RP97_RG0	P23_mkB_B_RX	mikroBUS B pin 14 UART RX

TABLE 2: dsPIC33AK512MPS512 MCU Mappings (CONTINUED)

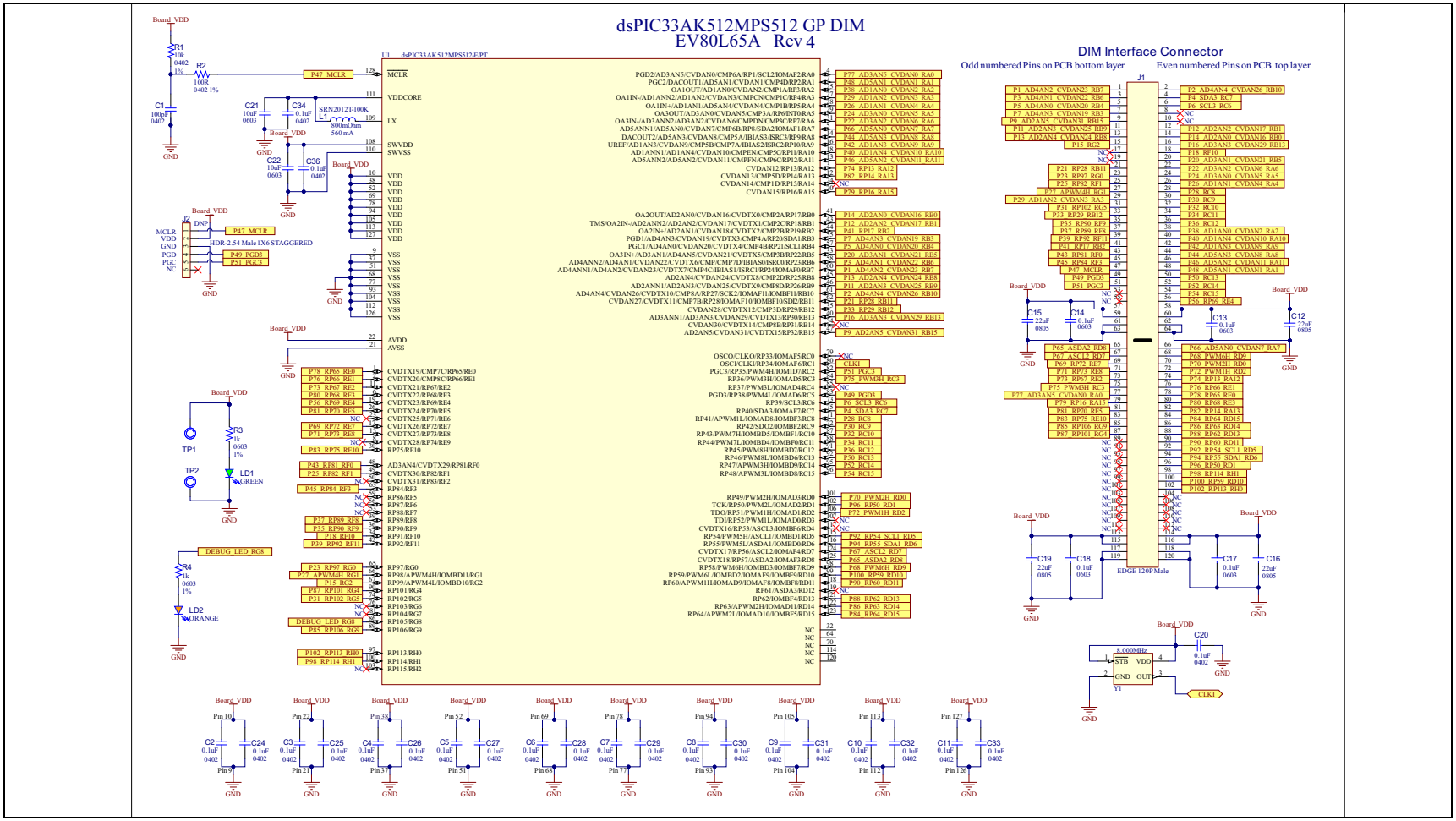
Device Pin #	DIM Pin #	dsPIC33AK512MPS512 I/Os	DIM Net Name	Curiosity Platform Board Net Name	Platform Board Function
66	27	RP98/APWM4H/IOMBD11/RG1	P27_APWM4H_RG1	P27_mkB_B_PWM	mikroBUS B pin 16 PWM
67	15	RP99/APWM4L/IOMBD10/RG2	P15_RG2	P15_XPRO1_1	XPLAINED PRO Extension 1 pin 1
68	61, 62, 63, 64, 117, 118, 119, 120	VSS	GND	GND	Ground
69	57, 58, 59, 60, 113, 114, 115, 116	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
71	28	RP41/APWM1L/IOMAD8/IOMBF3/RC8	P28_RC8	P28_LED_0	General purpose LED 0
72	30	RP42/SDO2/IOMBF2/RC9	P30_RC9	P30_LED_1	General purpose LED 1
73	6	RP39/SCL3/RC6	P6_SCL3_RC6	P6_mkB_B_SPRO1_SCL	mikroBUS B pin 12 SCL multiplexed with XPLAINED PRO Extension 1 pin 12 SCL
74	31	RP102/RG5	P31_RP102_RG5	P31_mkB_B_RST	mikroBUS B pin 2 RST
75	4	RP40/SDA3/IOMAF7/RC7	P4_SDA3_RC7	P4_mkB_B_XPRO1_SDA	mikroBUS B pin 11 SDA multiplexed with XPLAINED PRO Extension 1 pin 11 SDA
77	61, 62, 63, 64, 117, 118, 119, 120	VSS	GND	GND	Ground
78	57, 58, 59, 60, 113, 114, 115, 116	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
82	51	PGC3/RP35/PWM4H/IOMAD7/RC2	P51_PGC3	P51_PGC	ISCP Programming Clock
83	49	PGD3/RP38/PWM4L/IOMAD6/RC5	P49_PGD3	P49_PGD	ISCP Programming Data
84	75	RP36/PWM3H/IOMAD5/RC3	P75_PWM3H_RC3	P75_mkB_A_PWM	mikroBUS A pin 16 PWM
87	32	RP43/PWM7H/IOMBD5/IOMBF1/RC10	P32_RC10	P32_LED_2	General purpose LED 2
88	34	RP44/PWM7L/IOMBD4/IOMBF0/RC11	P34_RC11	P34_LED_3	General purpose LED 3
89	85	RP106/RG9	P85_RP106_RG9	P85_mkB_A_MISO	mikroBUS A pin 5 MISO
90	87	RP101/RG4	P87_RP101_RG4	P87_mkB_A_MOSI	mikroBUS A pin 6 MOSI
91	36	RP45/PWM8H/IOMBD7/RC12	P36_RC12	P36_LED_4	General purpose LED 4
92	50	RP46/PWM8L/IOMBD6/RC13	P50_RC13	P50_LED_5	General purpose LED 5
93	61, 62, 63, 64, 117, 118, 119, 120	VSS	GND	GND	Ground
94	57, 58, 59, 60, 113, 114, 115, 116	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
95	52	RP47/APWM3H/IOMBD9/RC14	P52_RC14	P52_LED_6	General purpose LED 6
96	54	RP48/APWM3L/IOMBD8/RC15	P54_RC15	P54_LED_7	General purpose LED 7
97	102	RP113/RH0	RP102_RP113_RH0	P102_UART_PKoB_TX	UART to USB back-channel through PKOB TX
98	68	RP58/PWM6H/IOMBD3/IOMBF7/RD9	P68_PWM6H_RD9	P68_LED_R	Red LED control for RGB LED
99	100	RP59/PWM6L/IOMBD2/IOMAF9/IOMBF9/RD10	RP100_RP59_RD10	P100_UART_PKoB_RX	UART to USB back-channel through PKOB RX

TABLE 2: dsPIC33AK512MPS512 MCU Mappings (CONTINUED)

Device Pin #	DIM Pin #	dsPIC33AK512MPS512 I/Os	DIM Net Name	Curiosity Platform Board Net Name	Platform Board Function
100	98	RP114/RH1	P98_RP114_RH1	P98_UART_USB_TX	USB to UART Converter pin 4 TX
101	70	RP49/PWM2H/IOMAD3/RD0	P70_PWM2H_RD0	P70_LED_G	Green LED control for RGB LED
102	96	TCK/RP50/PWM2L/IOMAD2/RD1	P96_RP50_RD1	P96_UART_USB_RX	USB to UART Converter pin 5 RX
104	61, 62, 63, 64, 117, 118, 119, 120	VSS	GND	GND	Ground
105	57, 58, 59, 60, 113, 114, 115, 116	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
106	72	TDO/RP51/PWM1H/IOMAD1/RD2	P72_PWM1H_RD2	P72_LED_B	Blue LED Control for RGB LED
112	61, 62, 63, 64, 117, 118, 119, 120	VSS	GND	GND	GND
113	57, 58, 59, 60, 113, 114, 115, 116	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
115	92	RP54/PWM5H/ASCL1/IOMBD1/RD5	P92_RP54_SCL1_RD5	P92_GPIO	General purpose IO header
116	94	RP55/PWM5L/ASDA1/IOMBD0/RD6	P94_RP55_SDA1_RD6	P94_GPIO	General purpose IO header
118	90	RP60/APWM1H/IOMAD9/IOMAF8/IOMBF8/RD11	P90_RP60_RD11	P90_CAN_RXD	CAN FD Transceiver pin 4 RXD
121	88	RP62/IOMBF4/RD13	P88_RP62_RD13	P88_CAN_TXD	CAN FD Transceiver pin 1 TXD
122	86	RP63/APWM2H/IOMAD11/RD14	P86_RP63_RD14	P86_CAN_STBY	CAN FD Transceiver pin 8 STBY
123	84	RP64/APWM2L/IOMAD10/IOMBF5/RD15	P84_RP64_RD15	P84_QPSI_CS	Quad SPI Flash pin 1 CS
124	67	CVDTX17/RP56/ASCL2/IOMAF4/RD7	P67_ASCL2_RD7	P67_mkB_A_USB_SCL	mikroBUS A pin 12 SCL multiplexed with I2C to USB Converter pin 9 SCL
125	65	CVDTX18/RP57/ASDA2/IOMAF3/RD8	P65_ASDA2_RD8	P65_mkB_A_USB_SDA	mikroBUS A pin 11 SDA multiplexed with I2C to USB Converter pin 8 SDA
126	61, 62, 63, 64, 117, 118, 119, 120	VSS	GND	GND	GND
127	57, 58, 59, 60, 113, 114, 115, 116	VDD	Board_VDD	DIM_VDD	Supply voltage of attached DIM
128	47	MCLR	P47_MCLR	P47_MCLR	device Master clear and MCLR switch

dsPIC33AK512MPS512 General Purpose Dual In-Line Module (DIM) Information Sheet

FIGURE 1: Schematic Revision 4.0



Appendix A. Bill of Materials (BOM)

This appendix contains the Bill of Materials (BOMs) for the dsPIC33AK512MPS512 GP DIM.

A.1 BILL OF MATERIALS – dsPIC33AK512MPS512 GP DIM

Table A-1 shows the Bill of Materials for the dsPIC33AK512MPS512 GP DIM.

TABLE A-1: dsPIC33AK512MPS512 GP DIM BOM

Qty	Designator	Description	Manufacturer	Part Number
1	C1	CAP CER 100pF 25V 10% X7R SMD 0402	Kyocera AVX	04023C101KAT2A
23	C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C20, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C36	CAP CER 0.1uF 25V 10% X7R SMD 0402	TDK Corporation	C1005X7R1E104K050BB
4	C12, C15, C16, C19	CAP CER 22uF 25V 20% X5R SMD 0805	Yageo	CC0805MKX5R8BB226
4	C13, C14, C17, C18	CAP CER 0.1uF 50V 10% X7R SMD 0603	Yageo	CC0603KRX7R9BB104
2	C21, C22	CAP CER 10uF 25V 20% X5R SMD 0603	TDK Corporation	C1608X5R1E106M080AC
1	L1	Inductor 10uH 800 mOhms 560 mA 10% SMD 2mmx1.2mm	Bourns® Inc.	SRN2012T-100K
1	LD1	DIO LED GREEN 2V 30mA 35mcd Clear SMD 0603	Lite-On®, Inc.	LTSTC190KGKT
1	LD2	DIO LED ORANGE 2V 30mA 90mcd Clear SMD 0603	Lite-On®, Inc.	LTST-C190KFKT
1	R1	RES TKF 10k 1% 1/16W SMD 0402	TE Connectivity	CRG0402F10K
1	R2	RES TKF 100R 1% 1/10W SMD 0402 AEC-Q200	KOA Speer Electronics, Inc.®	RK73H1ETTP1000F
2	R3, R4	RES TKF 1k 1% 1/10W SMD 0603	TE Connectivity	1622866-1
2	TP1, TP2	CON TP LOOP Silver 3.4x5 SMD	Keystone® Electronics Corp.	5016
Microchip Parts Listed Below				
1	U1	MCHP MCU 32-Bit 64KB Flash, 512KB, dsPIC33AK512MPS512-E/PT TQFP-128	Microchip Technology	dsPIC33AK512MPS512 - E/PT

TABLE A-1: dsPIC33AK512MPS512 GP DIM BOM (CONTINUED)

1	Y1	MCHP CLOCK OSCILLATOR SINGLE 8.000MHz DSC6011-JI2B-008.0000 VDFN-4	Microchip Technology	DSC6011JI2B-008.0000
Mechanical Parts to be Added in the Package				
1	LABEL1	LABEL PCBA 18x6mm Data-matrix Assy# / Rev / Serial / Date	ACT Logimark AS ®	505462
Do Not Populate Parts Listed Below				
1	J1	CON EDGE HSEC8 0.80mm 120P Male PCB R/A		
0	J2	CON HDR-2.54 Male 1x6 Staggered DNP	Sullins Connector Solutions	PBC36SAAN

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