dsPIC33CH512MP508

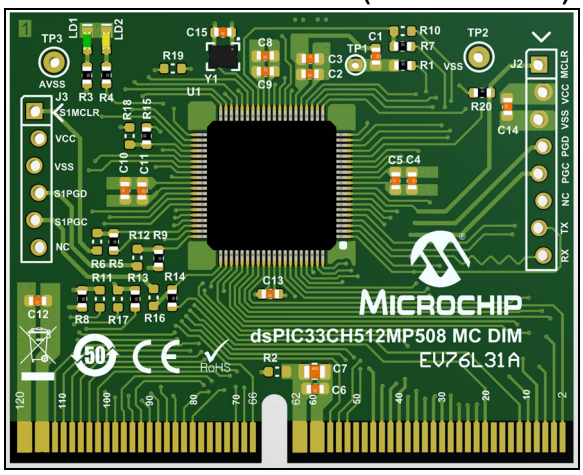
dsPIC33CH512MP508 Motor Control Dual In-Line Module (DIM) Information Sheet

The dsPIC33CH512MP508 Motor Control DIM (P/N: EV76L31A) is designed to demonstrate the motor control capabilities of the dsPIC33CH512MP508 device.

The devices from the dsPIC33CH512MP508 family are dual core DSCs. The dsPIC33CH512MP508 has two Digital Signal Controller (DSC) cores, namely the 'Main core' and the 'Secondary core', that can run independently at different device frequencies. This Motor Control DIM is designed to take advantage of the high-resolution PWM (with fine-edge placement) peripheral in the Main and Secondary cores of the device. The PWM, along with other peripherals, such as the ADC, enable motor control applications.

The DIM can be used to demonstrate and develop motor control applications by inserting it in the DIM interface header provided on the compatible motor control development boards (see Table 1). For additional information regarding development boards, refer to the respective user's guide available on the Microchip website (www.microchip.com). Table 1 provides information on the hardware versions of the motor control boards that are compatible with this DIM.

FIGURE 1: dsPIC33CH512MP508 MOTOR CONTROL DIM (P/N: EV76L31A)



The 8-pin header J2 is provided for programming/debugging U1 when DIM is used as stand-alone. This is not populated by default. An 8-pin connector is included with the DIM. This connector can be inserted when needed. Alternatively, any 8-pin, single row, 0.100" (2.54 mm) pitch, Unshrouded Male Header can be used (example, P/N: 61300811121).

The LED LD1 indicates the power-on status of the DIM. A general purpose LED LD2 is provided on the board for debug purposes. An RC filter (R1, C1) is provided on the DIM to filter the DC bus current before connecting it to the input of Comparator 1 (CMP1C), which is internal to the dsPIC® DSC. If needed, the filter cutoff frequency can be modified by changing the values of the filter components. The clock for the dsPIC DSC is generated by the MEMS Oscillator (Y1 – DSC6011JI2B-008.0000) provided on the DIM.

TABLE 1: HARDWARE COMPATIBILITY(1)

Compatible Development Board	Part Number	Compatible Hardware Revision
MCLV-48V-300W	EV18H47A	All Revisions

Note 1: The DIM is not compatible with earlier motor control development boards (e.g., dsPICDEM™ MCLV-2 Development Board, dsPICDEM MCHV-3 Development Board, etc.).

SECONDARY ICSP™ INTERFACE HEADER J3 FOR DEBUGGING THE SECONDARY CORE IN "DUAL DEBUG" MODE

The Main and Secondary cores of the dsPIC33CH512MP508 (U1) device can be debugged simultaneously (Dual Debug mode).

In Dual Debug mode:

- Two debugger tools must be interfaced with the device for debugging the Main and the Secondary cores independently
- The device pins, $\overline{\text{MCLR}}$/PGCx/PGDx (x = 1, 2 or 3), are used for debugging the Main core
- The device pins, $\overline{\text{S1MCLR}}$x/S1PGCx/S1PGDx (x = 1, 2 or 3), are used for debugging the Secondary core

The J3 header is provided to interface an additional debugger tool required for debugging the Secondary core in Dual Debug mode. To connect device pins, S1MCLR, S1PGD1 and S1PGC1, to the J3 header for debugging the Secondary core in Dual Debug mode (refer to **"Schematic Revision 1.0"**):

- Populate jumper resistors, R6, R12 and R16, and
- Remove jumper resistors, R5, R9 and R14

For single core debug of either the Main or Secondary, use the programmer/debugger interface provided on the development board (where the DIM is plugged in). For additional information on various Program/Debug modes of the device, and to know how to configure and use these modes in MPLAB® X IDE during development and testing, refer to Microchip application note *AN2721, "Getting Started with Dual Core"* (DS00002721).

WARNING

Do not connect non-isolated oscilloscope probes to the test points on the DIM when inserted in use with the High-Voltage Development Board. Failure to heed this warning could result in hardware damage.

Do not connect a non-isolated programmer/debugger to the ICSP™ Interface Headers, J2 and J3 (on the DIM), while using the DIM with the High-Voltage Development Boards.

Failure to heed these warnings could result in hardware damage.

Table 2 provides pin mapping from the 80-pin dsPIC33CH512MP508 device to the DIM interface connector.

TABLE 2: PIN MAPPING – dsPIC33CH512MP508 TO DIM INTERFACE CONNECTOR (SORTED BY DEVICE PIN NUMBER)

dsPIC33CH Pin #	Pin Function Main Core	Pin Function Secondary Core	DIM Pin #	Remarks
1	RP46/PWM1H/PMD5/RB14	S1RP46/S1RB14	DIM:052	Direct connection; also directly connected to Pin 7 of Header J2
2	RE0	S1RE0	DIM:038	Direct connection
3	RP47/PWM1L/PMD6/RB15	S1RP47/S1RB15	DIM:054	Direct connection; also directly connected to Pin 8 of Header J2
4	RE1	S1RE1	DIM:008	Direct connection
5	RP60/PWM4H/RC12	S1RP60/S1RC12	DIM:006	Direct connection
6	RP61/PWM4L/RC13	S1RP61/S1RC13	DIM:080	Direct connection
7	RP62/RC14	S1RP62/S1PWM7H/S1RC14	DIM:102	Direct connection
8	RP63/RC15	S1RP63/S1PWM7L/S1/RC15	DIM:104	Direct connection
9	$\overline{\text{MCLR}}$	—	DIM:047	Direct connection
			$\overline{\text{MCLR}}$	Connected to Pin 1 of Connector J2
10	PCI22/RD15	S1PCI22/S1RD15	DIM:040	Direct connection
11	VSS	VSS	DIM:061 to DIM:064, DIM:117 to DIM120	Digital Ground (VSS)
12	VDD	VDD	DIM:057 to DIM:60, DIM:113 to DIM:116	Digital Power (VCC)
13	PCI21/RD14	S1ANN1/S1PGA2N2/S1PCI21/S1RD14	DIM:068	Direct connection
14	RD13	S1ANN0/S1PGA1N2/S1RD13	DIM:070	Direct connection
15	AN12/IBIAS3/RP48/RC0	S1AN10/S1RP48/S1RC0	DIM:039	Direct connection
16	AN0/CMP1A/RA0	S1RA0	DIM:010	Direct connection
17	RE2	S1RE2	DIM:030	Direct connection
18	AN1/RA1	S1AN15/S1RA1	DIM:028	Direct connection
19	RE3	S1RE3	DIM:032	Direct connection
20	AN2/RA2	S1AN16/S1RA2	DIM:082	Direct connection
21	AN3/IBIAS0/RA3	S1AN0/S1CMP1A/S1PGA1P1/S1RA3	DIM:019	Direct connection
22	RE4	S1RE4	DIM:034	Direct connection
23	AN4/IBIAS1/RA4	$\overline{\text{S1MCLR3}}$/S1AN1/S1CMP2A/S1PGA2P1/S1PGA3P2/S1RA4	DIM:027	Direct connection
24	RE5	S1RE5	DIM:036	Direct connection
25	AVDD	AVDD	DIM:057 to DIM:60, DIM:113 to DM:116	Analog Power (AVCC) connected to VCC through Net Tie NT2
26	AVSS	AVSS	DIM:061 to DIM:064, DIM:117 to DIM:120	Analog Ground (AVSS) connected to VSS through Net Tie NT1
27	RD12	S1AN14/S1PGA2P2/S1RD12	DIM:009	Direct connection
28	AN13/ISRC0/RP49/RC1	S1ANA1/S1RP49/S1RC1	DIM:105	Connected via 0R (R8) resistor
			DIM:103	Can be connected via 0R (R11) resistor

TABLE 2: PIN MAPPING – dsPIC33CH512MP508 TO DIM INTERFACE CONNECTOR (SORTED BY DEVICE PIN NUMBER) (CONTINUED)

dsPIC33CH Pin #	Pin Function Main Core	Pin Function Secondary Core	DIM Pin #	Remarks
29	AN14/ISRC1/RP50/RC2	S1ANA0/S1RP50/S1RC2	DIM:095	Connected via 0R (R13) resistor
			DIM:101	Can be connected via 0R (R17) resistor
			DIM:067	Can be connected via 0R (R19) resistor
30	RP54/RC6	S1AN11/S1CMP1B/S1RP54/S1RC6	DIM:011	Direct connection
31	VDD	VDD	DIM:057 to DIM:60, DIM:113 to DIM:116	Digital Power (VCC)
32	VSS	VSS	DIM:061 to DIM:064, DIM:117 to DIM:120	Digital Ground (VSS)
33	CMP1B/RP51/RC3	S1AN8/S1CMP3B/S1RP51/S1RC3	DIM:026	Can be connected via 0R (R10) resistor
			DIM:024	Connected via 0R (R7) resistor
34	OSCI/CLKI/AN5/RP32/RB0	S1AN5/S1RP32/S1/RB0	CLKI	Clock Output of MEMS Oscillator (Y1) is connected as Input Clock
35	OSCO/CLKO/AN6/IBIAS2/RP33/RB1	S1AN4/S1RP33/S1RB1	DIM:071	Direct connection
36	RD11	S1AN17/S1PGA1P2/S1RD11	DIM:022	Direct connection
37	RE6	S1PGA3N2/S1RE6	DIM:086	Direct connection
38	ISRC3/RD10	S1AN13/S1CMP2B/S1RD10	DIM:035	Direct connection
39	RE7	S1RE7	DIM:088	Direct connection
40	AN15/ISRC2/RP55/RC7	S1AN12/S1RP55/S1RC7	DIM:084	Direct connection
41	DACOUT1/AN7/CMP1D/RP34/INT0/RB2	$\overline{\text{S1MCLR}}$2/S1AN3/S1ANC0/S1ANC1/S1CMP1D/S1CMP2D/S1CMP3D/S1RP34/S1INT0/S1RB2	DIM:035	Connected via RC (R1, C1) filter
42	RE8	S1RE8	DIM:085	Direct connection
43	PGD2/AN8/RP35/RB3	S1PGD2/S1AN18/S1CMP3A/S1PGA3P1/S1RP35/S1RB3	DIM:094	Direct connection
44	RE9	S1RE9	DIM:045	Connected via 0R (R15) resistor
			DIM:087	Can be connected via 0R (R18) resistor
45	PGC2/RP36/RB4	S1PGC2/S1AN9/S1RP36/S1PWM5L/S1RB4	DIM:020	Direct connection
46	RP56/ASDA1/SCK2/RC8	S1RP56/S1ASDA1/S1SCK1/S1RC8	DIM:098	Direct connection
47	RP57/ASCL1/SDI2/RC9	S1RP57/S1ASCL1/S1SDI1/S1RC9	DIM:100	Direct connection
48	PCI20/RD9	S1PCI20/S1RD9	DIM:066	Direct connection
49	SDO2/PCI19/RD8	S1SDO1/S1PCI19/S1RD8	DIM:041	Direct connection
50	VSS	VSS	DIM:061 to DIM:064, DIM:117 to DIM:120	Digital Ground (VSS)
51	VDD	VDD	DIM:057 to DIM:60, DIM:113 to DIM:116	Digital Power (VCC)
52	RP71/RD7	S1RP71/S1PWM8H/S1RD7	DIM:091	Direct connection
53	RP70/RD6	S1RP70/S1PWM6H/S1RD6	DIM:089	Direct connection
54	RP69/RD5	S1RP69/S1PWM6L/S1RD5	DIM:090	Direct connection

TABLE 2: PIN MAPPING – dsPIC33CH512MP508 TO DIM INTERFACE CONNECTOR (SORTED BY DEVICE PIN NUMBER) (CONTINUED)

dsPIC33CH Pin #	Pin Function Main Core	Pin Function Secondary Core	DIM Pin #	Remarks
55	PGD3/RP37/SDA2/RB5	S1PGD3/S1RP37/S1RB5	DIM:049	Direct connection
			PGD	Connected to Pin 4 of Connector J2
56	PGC3/RP38/SCL2/RB6	S1PGC3/S1RP38/S1RB6	DIM:051	Direct connection
			PGC	Connected to Pin 5 of Connector J2
57	RE10	S1RE10	DIM:056	Direct connection; also connected to a general purpose LED on the DIM
58	TDO/AN9/RP39/RB7	$\overline{\text{S1MCLR}}$/S1AN6/S1RP39/ S1PWM5H/S1RB7	DIM:081	Connected via 0R (R5) resistor
			$\overline{\text{S1MCLR}}$	Can be connected via 0R (R6) resistor to Pin 1 of Header J3
59	RE11	S1RE11	DIM:065	Direct Connection
60	PGD1/AN10/RP40/SCL1/ RB8	S1PGD1/S1RP40/S1SCL1/ S1RB8	DIM:083	Connected via 0R (R9) resistor
			S1PGD	Can be connected via 0R (R12) resistor to Pin 4 of Header J3
61	PGC1/AN11/RP41/SDA1/ RB9	S1PGC1/S1RP41/S1SDA1/ S1RB9	DIM:012	Connected via 0R (R14) resistor
			S1PGC	Can be connected via 0R (R16) resistor to Pin 5 of Header J3
62	ASCL2/RE12	S1RE12	DIM:097	Direct connection
63	RP52/RC4	S1RP52/S1PWM2H/S1RC4	DIM:005	Direct connection
64	ASDA2/RE13	S1RE13	DIM:099	Direct connection
65	RP53/RC5	S1RP53/S1PWM2L/S1RC5	DIM:007	Direct connection
66	RP58/RC10	S1RP58/S1PWM1H/S1RC10	DIM:001	Direct connection
67	RP59/RC11	S1RP59/S1PWM1L/S1RC11	DIM:003	Direct connection
68	RP68/RD4	S1RP68/S1PWM3H/S1RD4	DIM:002	Direct connection
69	RP67/RD3	S1RP67/S1PWM3L/S1RD3	DIM:004	Direct connection
70	VSS	VSS	DIM:061 to DIM:064, DIM:117 to DIM:120	Digital Ground (VSS)
71	VDD	VDD	DIM:057 to DIM:060, DIM:113 to DIM:116	Digital Power (VCC)
72	RP66/RD2	S1RP66/S1PWM8L/S1RD2	DIM:092	Direct connection
73	RP65/RD1	S1RP65/S1PWM4H/S1RD1	DIM:042	Direct connection
74	RP64/RD0	S1RP64/S1PWM4L/S1RD0	DIM:044	Direct connection
75	TMS/RP42/PWM3H/RB10	S1RP42/S1RB10	DIM:046	Direct connection
76	TCK/RP43/PWM3L/RB11	S1RP43/S1RB11	DIM:108	Direct connection
77	RE14	S1RE14	DIM:096	Direct connection
78	TDI/RP44/PWM2H/RB12	S1RP44/S1RB12	DIM:110	Direct connection
79	RE15	S1RE15	DIM:106	Direct connection
80	RP45/PWM2L/RB13	S1RP45/S1RB13	DIM:112	Direct connection

Table 3 provides pin mapping from the DIM interface connector to the 80-pin dsPIC33CH512MP508 device.

TABLE 3: PIN MAPPING – DIM INTERFACE CONNECTOR TO dsPIC33CH512MP508 (SORTED BY DIM PIN NUMBER)

Signal	dsPIC33CH Pin #	Pin Function Main Core	Pin Function Secondary Core	Remarks
DIM:001	66	RP58/RC10	S1RP58/S1PWM1H/S1RC10	Direct connection
DIM:002	68	RP68/RD4	S1RP68/S1PWM3H/S1RD4	Direct connection
DIM:003	67	RP59/RC11	S1RP59/S1PWM1L/S1RC11	Direct connection
DIM:004	69	RP67/RD3	S1RP67/S1PWM3L/S1RD3	Direct connection
DIM:005	63	RP52/RC4	S1RP52/S1PWM2H/S1RC4	Direct connection
DIM:006	5	RP60/PWM4H/RC12	S1RP60/S1RC12	Direct connection
DIM:007	65	RP53/RC5	S1RP53/S1PWM2L/S1RC5	Direct connection
DIM:008	4	RE1	S1RE1	Direct connection
DIM:009	27	RD12	S1AN14/S1PGA2P2/S1RD12	Direct connection
DIM:010	16	AN0/CMP1A/RA0	S1RA0	Direct connection
DIM:011	30	RP54/RC6	S1AN11/S1CMP1B/S1RP54/S1RC6	Direct connection
DIM:012	61	PGC1/AN11/RP41/SDA1/RB9	S1PGC1/S1RP41/S1SDA1/S1RB9	Connected via 0R (R14) resistor
DIM:013	—	—	—	Not connected
DIM:014	—	—	—	Not connected
DIM:015	—	—	—	Not connected
DIM:016	—	—	—	Not connected
DIM:017	—	—	—	Not connected
DIM:018	—	—	—	Not connected
DIM:019	21	AN3/IBIAS0/RA3	S1AN0/S1CMP1A/S1PGA1P1/ S1RA3	Direct connection
DIM:020	45	PGC2/RP36/RB4	S1PGC2/S1AN9/S1RP36/ S1PWM5L/S1RB4	Direct connection
DIM:021	—	—	—	Not connected
DIM:022	36	RD11	S1AN17/S1PGA1P2/S1RD11	Direct connection
DIM:023	—	—	—	Not connected
DIM:024	33	CMP1B/RP51/RC3	S1AN8/S1CMP3B/S1RP51/S1RC3	Can be connected via 0R (R10) resistor
DIM:025	—	—	—	Not connected
DIM:026	33	CMP1B/RP51/RC3	S1AN8/S1CMP3B/S1RP51/S1RC3	Connected via 0R (R7) resistor
DIM:027	23	AN4/IBIAS1/RA4	$\overline{\text{S1MCLR3}}$/S1AN1/S1CMP2A/ S1PGA2P1/S1PGA3P2/S1RA4	Direct connection
DIM:028	18	AN1/RA1	S1AN15/S1RA1	Direct connection
DIM:029	—	—	—	Not connected
DIM:030	17	RE2	S1RE2	Direct connection
DIM:031	—	—	—	Not connected
DIM:032	19	RE3	S1RE3	Direct connection
DIM:033	—	—	—	Not connected
DIM:034	22	RE4	S1RE4	Direct connection
DIM:035	38	ISRC3/RD10	S1AN13/S1CMP2B/S1RD10	Direct connection
	41	DACOUT1/AN7/CMP1D/RP34/INT0/ RB2	$\overline{\text{S1MCLR2}}$/S1AN3/S1ANC0/ S1ANC1/S1CMP1D/S1CMP2D/ S1CMP3D/S1RP34/S1INT0/S1RB2	Connected via RC (R1, C1) filter
DIM:036	24	RE5	S1RE5	Direct connection

TABLE 3: PIN MAPPING – DIM INTERFACE CONNECTOR TO dsPIC33CH512MP508 (SORTED BY DIM PIN NUMBER) (CONTINUED)

Signal	dsPIC33CH Pin #	Pin Function Main Core	Pin Function Secondary Core	Remarks
DIM:037	—	—	—	VREF (+1.65V) input from Motor Control Board
DIM:038	2	RE0	S1RE0	Direct connection
DIM:039	15	AN12/IBIAS3/RP48/RC0	S1AN10/S1RP48/S1RC0	Direct connection
DIM:040	10	PCI22/RD15	S1PCI22/S1RD15	Direct connection
DIM:041	49	SDO2/PCI19/RD8	S1SDO1/S1PCI19/S1RD8	Direct connection
DIM:042	73	RP65/RD1	S1RP65/S1PWM4H/S1RD1	Direct connection
DIM:043	—	—	—	Not connected
DIM:044	74	RP64/RD0	S1RP64/S1PWM4L/S1RD0	Direct connection
DIM:045	44	RE9	S1RE9	Connected via 0R (R15) resistor
DIM:046	75	TMS/RP42/PWM3H/RB10	S1RP42/S1RB10	Direct connection
DIM:047 (MCLR)	9	$\overline{\text{MCLR}}$	—	Direct connection; connected to Pin 1 of Connector J2
DIM:048	—	—	—	Not connected
DIM:049 (PGD)	55	PGD3/RP37/SDA2/RB5	S1PGD3/S1RP37/S1RB5	Direct connection; connected to Pin 4 of Connector J2
DIM:050	—	—	—	Not connected
DIM:051 (PGC)	56	PGC3/RP38/SCL2/RB6	S1PGC3/S1RP38/S1RB6	Direct connection; connected to Pin 5 of Connector J2
DIM:052	1	RP46/PWM1H/RB14	S1RP46/S1RB14	Direct connection; also directly connected to Pin 7 of Header J2
DIM:053	—	—	—	Not connected
DIM:054	3	RP47/PWM1L/RB15	S1RP47/S1RB15	Direct connection; also directly connected to Pin 8 of Header J2
DIM:055	—	—	—	VCC_SELECT – Signal to indicate microcontroller supply. If VCC_SELECT = HIGH, then 5V microcontroller, If VCC_SELECT = LOW, then 3.3V microcontroller.
DIM:056	57	RE10	S1RE10	Direct connection; also connected to a general purpose LED on the DIM
DIM:057	12, 31, 51, 71	VDD	VDD	Digital Power (VCC)
DIM:058	12, 31, 51, 71	VDD	VDD	Digital Power (VCC)
DIM:059	12, 31, 51, 72	VDD	VDD	Digital Power (VCC)
DIM:060	12, 31, 51, 72	VDD	VDD	Digital Power (VCC)
DIM:061	11, 32, 50, 70	VSS	VSS	Digital Ground (VSS)
DIM:062	11, 32, 50, 70	VSS	VSS	Digital Ground (VSS)

TABLE 3: PIN MAPPING – DIM INTERFACE CONNECTOR TO dsPIC33CH512MP508 (SORTED BY DIM PIN NUMBER) (CONTINUED)

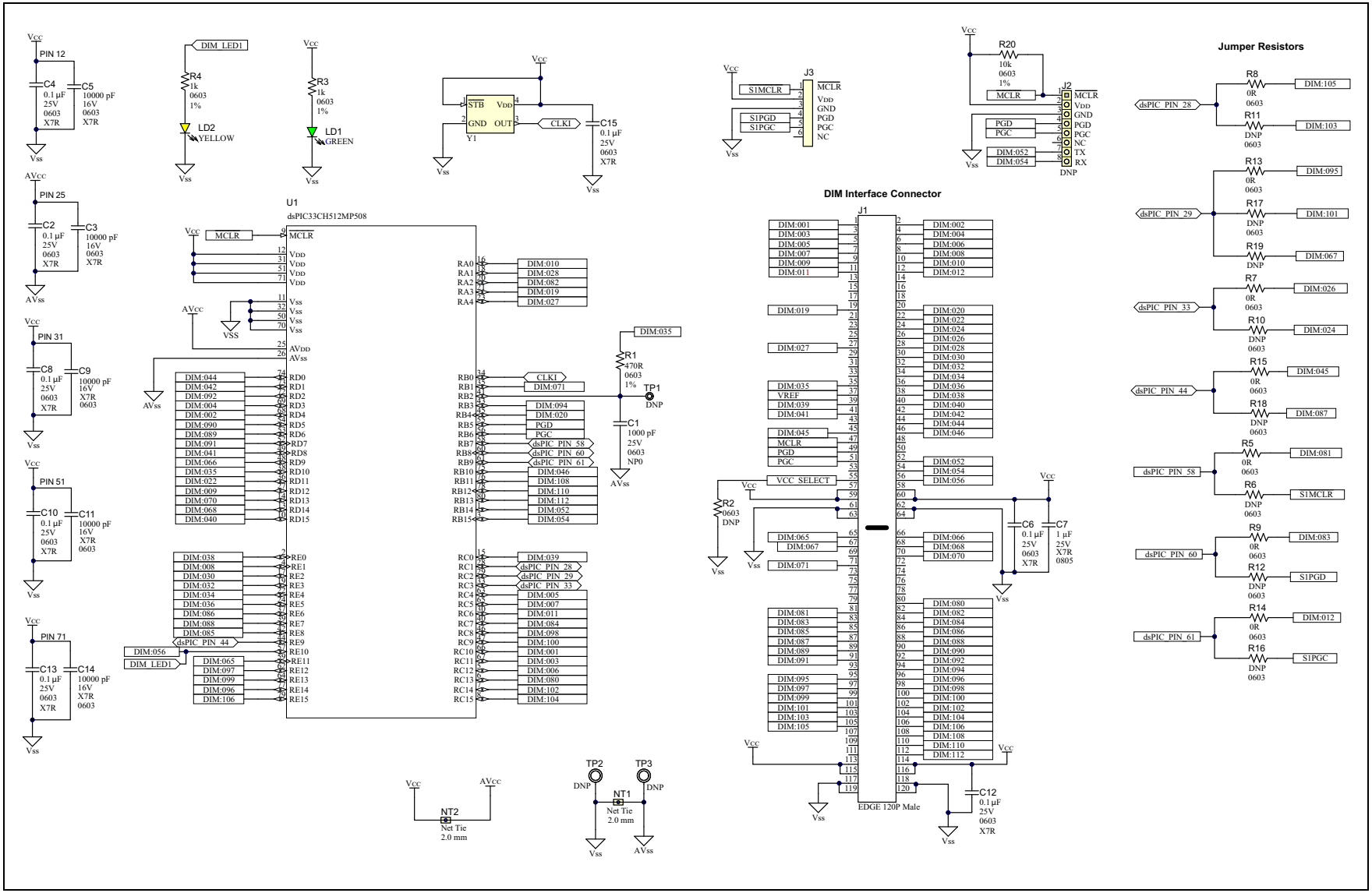
Signal	dsPIC33CH Pin #	Pin Function Main Core	Pin Function Secondary Core	Remarks
DIM:063	11, 32, 50, 71	Vss	Vss	Digital Ground (Vss)
DIM:064	11, 32, 50, 71	Vss	Vss	Digital Ground (Vss)
DIM:065	59	RE11	S1RE11	Direct connection
DIM:066	48	PCI20/RD9	S1PCI20/S1RD9	Direct connection
DIM:067	29	AN14/ISRC1/RP50/RC2	S1ANA0/S1RP50/S1RC2	Can be connected via 0R (R19) resistor
DIM:068	13	PCI21/RD14	S1ANN1/S1PGA2N2/S1PCI21/ S1RD14	Direct connection
DIM:069	—	—	—	Not connected
DIM:070	14	RD13	S1ANN0/S1PGAIN2/S1RD13	Direct connection
DIM:071	35	OSCO/CLKO/AN6/IBIAS2/RP33/RB1	S1AN4/S1RP33/S1RB1	Direct connection
DIM:072	—	—	—	Not connected
DIM:073	—	—	—	Not connected
DIM:074	—	—	—	Not connected
DIM:075	—	—	—	Not connected
DIM:076	—	—	—	Not connected
DIM:077	—	—	—	Not connected
DIM:078	—	—	—	Not connected
DIM:079	—	—	—	Not connected
DIM:080	6	RP61/PWM4L/RC13	S1RP61/S1RC13	Direct connection
DIM:081	58	TDO/AN9/RP39/RB7	$\overline{\text{S1MCLR1}}$/S1AN6/S1RP39/ S1PWM5H/S1RB7	Connected via 0R (R5) resistor
DIM:082	20	AN2/RA2	S1AN16/S1RA2	Direct connection
DIM:083	60	PGD1/AN10/RP40/SCL1/RB8	S1PGD1/S1AN7/S1RP40/S1SCL1/ S1RB8	Connected via 0R (R9) resistor
DIM:084	40	AN15/ISRC2/RP55/RC7	S1AN12/S1RP55/S1RC7	Direct connection
DIM:085	42	RE8	S1RE8	Direct connection
DIM:086	37	RE6	S1PGA3N2/S1RE6	Direct connection
DIM:087	44	RE9	S1RE9	Can be connected via 0R (R18) resistor
DIM:088	39	RE7	S1RE7	Direct connection
DIM:089	53	RP70/RD6	S1RP70/S1PWM6H/S1RD6	Direct connection
DIM:090	54	RP69/RD5	S1RP69/S1PWM6L/S1RD5	Direct connection
DIM:091	52	RP71/RD7	S1RP71/S1PWM8H/S1RD7	Direct connection
DIM:092	72	RP66/RD2	S1RP66/S1PWM8L/S1RD2	Direct connection
DIM:093	—	—	—	—
DIM:094	43	PGD2/AN8/RP35/RB3	S1PGD2/S1AN18/S1CMP3A/ S1PGA3P1/S1RP35/S1RB3	Direct connection
DIM:095	29	AN14/ISRC1/RP50/RC2	S1ANA0/S1RP50/S1/RC2	Connected via 0R (R13) resistor
DIM:096	77	RE14	S1RE14	Direct connection
DIM:097	62	ASCL2/RE12	S1RE12	Direct connection
DIM:098	46	RP56/ASDA1/SCK2/RC8	S1RP56/S1ASDA1/S1SCK1/S1RC8	Direct connection
DIM:099	64	ASDA2/RE13	S1RE13	Direct connection
DIM:100	47	RP57/ASCL1/SDI2/RC9	S1RP57/S1ASCL1/S1SDI1/S1RC9	Direct connection
DIM:101	29	AN14/ISRC1/RP50/RC2	S1ANA0/S1RP50/S1RC2	Can be connected via 0R (R17) resistor

TABLE 3: PIN MAPPING – DIM INTERFACE CONNECTOR TO dsPIC33CH512MP508 (SORTED BY DIM PIN NUMBER) (CONTINUED)

Signal	dsPIC33CH Pin #	Pin Function Main Core	Pin Function Secondary Core	Remarks
DIM:102	7	RP62/RC14	S1RP62/S1PWM7H/S1RC14	Direct connection
DIM:103	28	AN13/ISRC0/RP49/RC1	S1ANA1/S1RP49/S1RC1	Can be connected via 0R (R11) resistor
DIM:104	8	RP63/RC15	S1RP63/S1PWM7L/S1RC15	Direct connection
DIM:105	28	AN13/ISRC0/RP49/RC1	S1ANA1/S1RP49/S1RC1	Connected via 0R (R8) resistor
DIM:106	79	RE15	S1RE15	Direct connection
DIM:107	—	—	—	Not connected
DIM:108	76	TCK/RP43/PWM3L/RB11	S1RP43/S1RB11	Direct connection
DIM:109	—	—	—	Not connected
DIM:110	78	TDI/RP44/PWM2H/RB12	S1RP44/S1RB12	Direct connection
DIM:111	—	—	—	Not connected
DIM:112	80	RP45/PWM2L/RB13	S1RP45/S1RB13	Direct connection
DIM:113	12, 31, 51, 71	VDD	VDD	Digital Power (VCC)
DIM:114	12, 31, 51, 71	VDD	VDD	Digital Power (VCC)
DIM:115	12, 31, 51, 72	VDD	VDD	Digital Power (VCC)
DIM:116	12, 31, 51, 72	VDD	VDD	Digital Power (VCC)
DIM:117	11, 32, 50, 70	VSS	VSS	Digital Ground (VSS)
DIM:118	11, 32, 50, 70	VSS	VSS	Digital Ground (VSS)
DIM:119	11, 32, 50, 71	VSS	VSS	Digital Ground (VSS)
DIM:120	11, 32, 50, 71	VSS	VSS	Digital Ground (VSS)

dsPIC33CH512MP508 Motor Control Dual In-Line Module (DIM)

Schematic Revision 1.0



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