PCD-39E00

IPAC TERMINAL BOARD

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1 Introduction

The PCM-39E00 consists of universal screw terminals designed for field signal wiring in industrial applications. The PCM-39E00 was designed specifically to be connected to the 50 pin and 40 pin I/O rack compatible headers of the EMAC PCM-37E12, and the iPac Line of SBCs. When used with the PCM-37E12 or the iPac, the PCM-39E00 can be mounted above the using the same mounting holes or off to the side. When used with these boards two PCM-39E00 can be used stacked or off to the side in order to accommodate all the I/O these boards have to offer.

1.1 Features

- Screw-clamp terminal blocks allow easy and reliable connections
- Small PC/104 form factor
- 1x 40 pin 0.1 inch male pin header
- 2x 50 pin 0.1 inch male pin headers
- 8x 10-pin screw terminal connectors

2 Hardware

2.1 Specifications

- **Digital I/O:** Separate voltage and ground from header 1 (HDR1). HDR2A and HDR2B run to the same signals and are not meant to be simultaneously populated.
- **Analog I/O:** Separate voltage and ground from header 2 (HDR2A/HDR2B).

Mechanical and Environmental

- **Dimensions:** 3.55” x 3.79”
- **Temperature:** -40 to +85C

2.2 Packing List

- 1x PCD-39E00 PCB Assembly
- 1x 2, 50 pin 0.1" pitch ribbon cable
- 1x 2, 40 pin 0.1" pitch ribbon cable
- 1x Standoff kit (4 standoffs with screws)

2.3 General Purpose I/O Pinouts

Table 1: Analog I/O Header (HRD1)

Pin#	Signal	Screw Terminal	Pin#	Signal	Screw Terminal
1	ANL00	ST1-2	**2**	ANL01	ST1-3
3	ANL02	ST1-4	**4**	ANL03	ST1-5
5	ANL04	ST1-6	**6**	ANL05	ST1-7
7	ANL06	ST1-8	**8**	ANL07	ST1-9
9	ANL08	ST2-2	**10**	ANL09	ST2-3
11	ANL10	ST2-4	**12**	ANL11	ST2-5
13	ANL12	ST2-6	**14**	ANL13	ST2-7
15	ANL14	ST2-8	**16**	ANL15	ST2-9
17	GND	Multiple*	**18**	GND	Multiple*
19	DAC00	ST3-3	**20**	DAC01	ST3-4
21	GND	Multiple*	**22**	GND	Multiple*
23	DAC02	ST3-6	**24**	DAC03	ST3-7
25	DAC04	ST3-8	**26**	DAC05	ST3-9
27	GND	Multiple*	**28**	GND	Multiple*
29	ANL16	ST4-2	**30**	ANL17	ST4-3
31	ANL18	ST4-4	**32**	ANL19	ST4-5
33	ANL20	ST4-6	**34**	ANL21	ST4-7
35	ANL22	ST4-8	**36**	ANL23	ST4-9
37	GND	Multiple*	**38**	GND	Multiple*
39	HDR2_5V_VCC	Multiple*	**40**	+VIN	ST3-2

Note: The ground pins on screw terminals ST1, ST2, ST3, and ST4 share the same ground as header HRD1. The voltage source pin on screw terminals ST1, ST2, ST3, and ST4 share the same source as header HRD1.

Table 2: Connector (ST1)

Screw Terminal	Signal	Header (HRD1) Pin#
1	HDR2_5V_VCC	39
2	ANL00	1
3	ANL01	2
4	ANL02	3
5	ANL03	4
6	ANL04	5
7	ANL05	6
8	ANL06	7
9	ANL07	8
10	GND	Multiple*

Note: The ground pin on screw terminal ST1 shares the same ground as header HRD1.

Table 3: Connector (ST2)

Screw Terminal#	Signal	Header (HRD1) Pin#
1	HDR2_5V_VCC	39
2	ANL08	9
3	ANL09	10
4	ANL10	11
5	ANL11	12
6	ANL12	13
7	ANL13	14
8	ANL14	15
9	ANL15	16
10	GND	Multiple*

Note: The ground pin on screw terminal ST2 shares the same ground as header HRD1.

Table 4: Connector (ST3)

Screw Terminal#	Signal	Header (HRD1) Pin#
1	HDR2_5V_VCC	39
2	+VIN	40
3	DAC00	19
4	DAC01	20
5	GND	Multiple*
6	DAC02	23
7	DAC03	24
8	DAC04	25
9	DAC05	26
10	GND	Multiple*

Note: The ground pins on screw terminal ST3 share the same ground as header HRD1.

Table 5: Connector (ST4)

Screw Terminal#	Signal	Header (HRD1) Pin#
1	HDR2_5V_VCC	39
2	ANL16	29
3	ANL17	30
4	ANL18	31
5	ANL19	32
6	ANL20	33
7	ANL21	34
8	ANL22	35
9	ANL23	36
10	GND	Multiple*

Note: The ground pin on screw terminal ST4 shares the same ground as header HRD1.

Table 6: Digital I/O Header (HRD2A)

Pin	Signal	Screw Terminal	Pin	Signal
1	PH3	ST5-2	**2**	GND
3	PH2	ST5-3	**4**	GND
5	PP5	ST5-5	**6**	GND
7	PP4	ST5-6	**8**	GND
9	PP3	ST5-8	**10**	GND
11	PP2	ST5-9	**12**	GND
13	PP1	ST6-1	**14**	GND
15	PP0	ST6-2	**16**	GND
17	PT7	ST6-4	**18**	GND
19	PT6	ST6-5	**20**	GND
21	PT5	ST6-7	**22**	GND
23	PT4	ST6-8	**24**	GND
25	PT3	ST7-2	**26**	GND
27	PT2	ST7-3	**28**	GND
29	PT1	ST7-5	**30**	GND
31	PT0	ST7-6	**32**	GND
33	PA7	ST7-8	**34**	GND
35	PA6	ST7-9	**36**	GND
37	PA5	ST8-1	**38**	GND
39	PA4	ST8-2	**40**	GND
41	PA3	ST8-4	**42**	GND
43	PA2	ST8-5	**44**	GND
45	PA1	ST8-7	**46**	GND
47	PA0	ST8-8	**48**	GND
49	HDR3_5V_VCC	Multiple*	**50**	GND

Note: The ground pins on screw terminals ST5, ST6, ST7, and ST8 share the same ground as header HRD2A/HDR2B. The voltage source pin on screw terminals ST6 and ST8 share the same source as header HRD2A/HDR2B.

Table 7: Digital I/O Header (HRD2B)

Pin	Signal	Screw Terminal	Pin	Signal
1	PH3	ST5-2	**2**	GND
3	PH2	ST5-3	**4**	GND
5	PP5	ST5-5	**6**	GND
7	PP4	ST5-6	**8**	GND
9	PP3	ST5-8	**10**	GND
11	PP2	ST5-9	**12**	GND
13	PP1	ST6-1	**14**	GND
15	PP0	ST6-2	**16**	GND
17	PT7	ST6-4	**18**	GND
19	PT6	ST6-5	**20**	GND
21	PT5	ST6-7	**22**	GND
23	PT4	ST6-8	**24**	GND
25	PT3	ST7-2	**26**	GND
27	PT2	ST7-3	**28**	GND
29	PT1	ST7-5	**30**	GND
31	PT0	ST7-6	**32**	GND
33	PA7	ST7-8	**34**	GND
35	PA6	ST7-9	**36**	GND
37	PA5	ST8-1	**38**	GND
39	PA4	ST8-2	**40**	GND
41	PA3	ST8-4	**42**	GND
43	PA2	ST8-5	**44**	GND
45	PA1	ST8-7	**46**	GND
47	PA0	ST8-8	**48**	GND
49	HDR3_5V_VCC	Multiple*	**50**	GND

Note: The ground pins on screw terminals ST5, ST6, ST7, and ST8 share the same ground as header HRD2A/HDR2B. The voltage source pin on screw terminals ST6 and ST8 share the same source as header HRD2A/HDR2B.

Table 8: Connector (ST5)

Screw Terminal#	Signal	Header (HRD2A/HRD2B) Pin#
1	GND	Multiple*
2	PH3	1
3	PH2	3
4	GND	Multiple*
5	PP5	5
6	PP4	7
7	GND	Multiple*
8	PP3	9
9	PP2	11
10	GND	Multiple*

Note: The ground pins on screw terminal ST5 share the same ground as header HRD2A/HRD2B.

Table 9: Connector (ST6)

Screw Terminal#	Signal	Header (HRD2A/HRD2B) Pin#
1	PP1	13
2	PP0	15
3	GND	Multiple*
4	PT7	17
5	PT6	19
6	GND	Multiple*
7	PT5	21
8	PT4	23
9	GND	Multiple*
10	HDR3_5V_VCC	49

Note: The ground pins on screw terminal ST6 share the same ground as header HRD2A/HRD2B.

Table 10: Connector (ST7)

Screw Terminal#	Signal	Header (HRD2A/HRD2B) Pin#
1	GND	Multiple*
2	PT3	25
3	PT2	27
4	GND	Multiple*
5	PT1	29
6	PT0	31
7	GND	Multiple*
8	PA7	33
9	PA6	35
10	GND	Multiple*

Note: The ground pins on screw terminal ST7 share the same ground as header HRD2A/HRD2B.

Table 11: Connector (ST8)

Screw Terminal#	Signal	Header (HRD2A/HRD2B) Pin#
1	PA5	37
2	PA4	39
3	GND	Multiple*
4	PA3	41
5	PA2	43
6	GND	Multiple*
7	PA1	45
8	PA0	47
9	GND	Multiple*
10	HDR3_5V_VCC	49

Note: The ground pins on screw terminal ST8 share the same ground as header HRD2A/HRD2B.