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VMIACC-0577

CompactPCI® Rear Transition Board

Installation Guide

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522-800577-000 Rev. C



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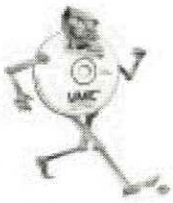
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Installation

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Introduction

The VMIACC-0577 is a passive backplane transition board, designed for used with VMIC's CompactPCI Single Board Computers (SBCs).

The VMIACC-0577 provides:

- IDE hard drive header
- Floppy drive header
- Two PMC I/O connectors (front panel)
- Two serial ports
- One USB port for external connection to the CPU through the CompactPCI rear I/O
- One ATX type power connector

The transition board uses a standard 40-pin header for the hard drive connector and a 34-pin header for the floppy drive connector. The serial ports are male DB9 connectors. The USB port uses a standard USB connector and the PMC I/O uses two 68-pin right angle headers. See Figure 1 on page 10 for an illustration of the board and connector layout.

The CompactPCI J3 and J5 connectors carry all associated signals. All signals are routed from the CPU (installed in the front of the chassis) through the backplane to the VMIACC-0577 J3 and J5 connectors. Figure 2 on page 11 is an illustration of the VMIACC-0577 installed in the CompactPCI rear I/O.

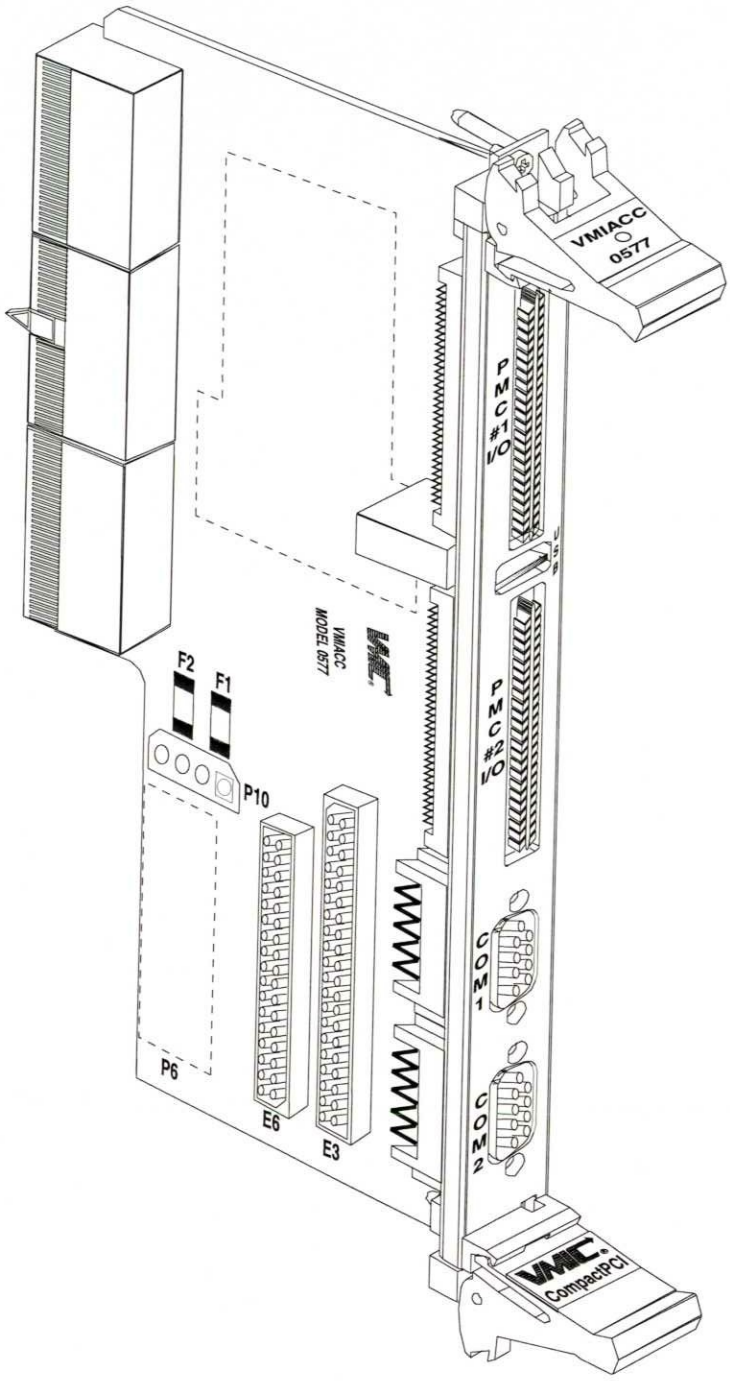


Figure 1 VMIACC-0577 CompactPCI Rear Transition Board

Installation of the VMIACC-0577 with the VMICPCI-7699 SBC

The VMIACC-0577 transition board installs into the rear of the CompactPCI chassis using the J3, J4 and J5 connectors. The board is designed for installation in a CompactPCI chassis that has rear panel I/O connectors. An example installation of the VMIACC-0577 and the VMICPCI-7699 is shown in Figure 2. J4 on the VMIACC-0577 is used for keying purposes only, and is not electrically connected to the SBC board in the front of the chassis.

The VMICPCI-7699 has two PMC sites designated PMC #1 and PMC #2 . The position of these sites are shown in Figure 2. The I/O connector for PMC site #1 is J8 and is routed to the P4 connector of the VMIACC-0577. The I/O connector for PMC site #2 is J12 and its signals are routed to the P3 connector of the VMIACC-0577.

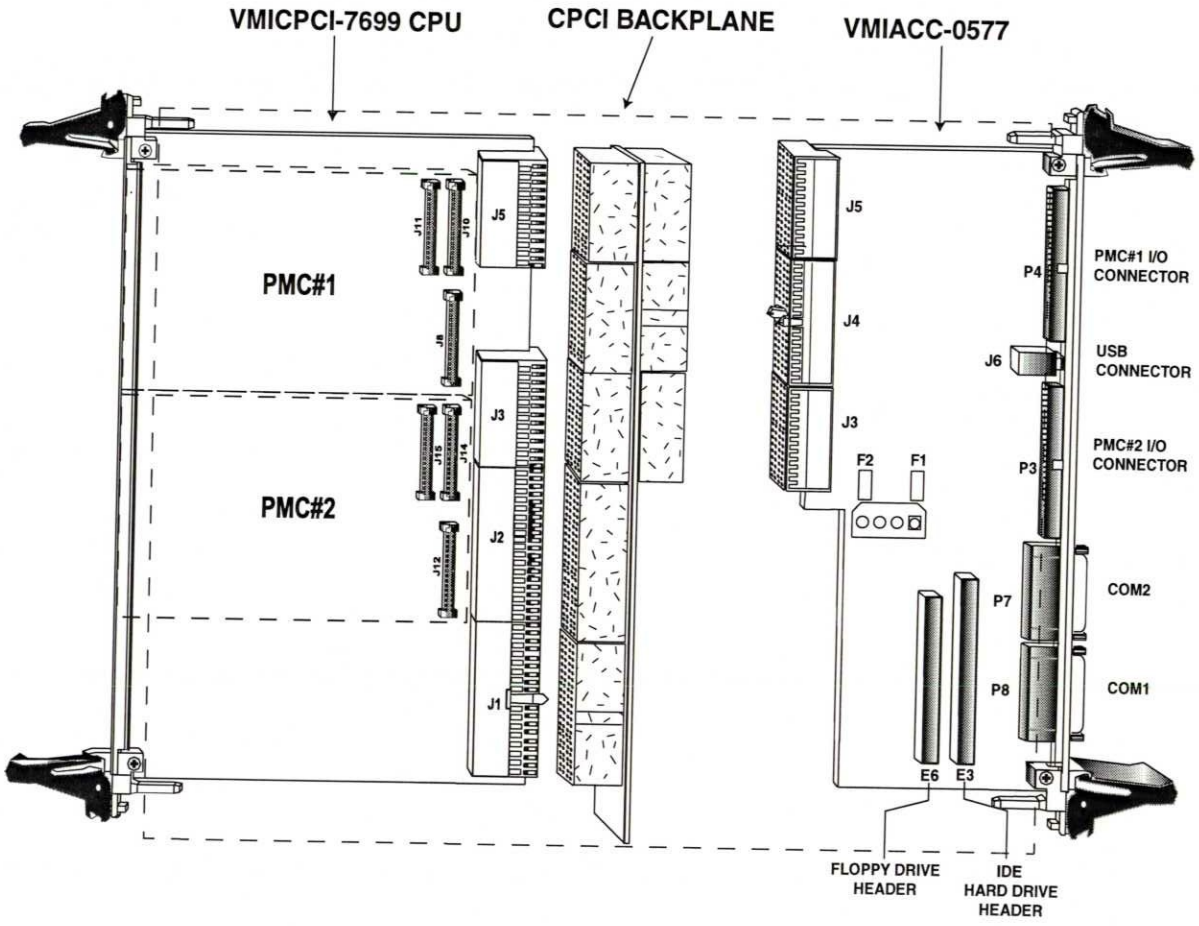


Figure 2 Example: Installation of the VMIACC-0577 Adapter Board with a VMICPCI-7699

NOTE: The VMIACC-0577 transition board is designed to be installed on backplanes with rear I/O connectors. Backplanes without rear I/O connectors cannot be used.

Connectors and Headers

There are eight connectors and two headers on the transition board. J3, J4 and J5 connectors are standard CompactPCI connectors. P6 and E6 are the 34-pin Floppy Drive headers, and E3 is the 40-pin IDE header. There are two DB9 connectors on the front panel used for COM1 (P7) and COM2 (P8) serial ports. The front panel connector J6 is a Universal Serial Bus (USB) connector. P3 and P4 are front panel PMC I/O connectors.

40-pin IDE Header (E3)

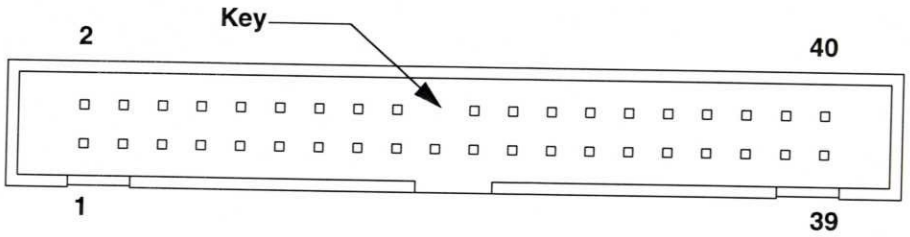


Figure 3 E3 40-pin IDE Header

Table 1 E3 40-pin IDE Header Pinout

Pin	Signal	Pin	Signal
1	Reset Drive	2	Signal Ground
3	Bidirectional Data [7]	4	Bidirectional Data [8]
5	Bidirectional Data [6]	6	Bidirectional Data [9]
7	Bidirectional Data [5]	8	Bidirectional Data [10]
9	Bidirectional Data [4]	10	Bidirectional Data [11]
11	Bidirectional Data [3]	12	Bidirectional Data [12]
13	Bidirectional Data [2]	14	Bidirectional Data [13]
15	Bidirectional Data [1]	16	Bidirectional Data [14]
17	Bidirectional Data [0]	18	Bidirectional Data [15]
19	Signal Ground	20	Key
21	Reserved	22	Signal Ground
23	Write Strobe	24	Signal Ground
25	Read Strobe	26	Signal Ground
27	Reserved	28	Address Latch Enable
29	Reserved	30	Signal Ground
31	Interrupt Request [14]	32	16-bit Data Word Size
33	Address Line [1]	34	Diagnostic Test Passed
35	Address Line [0]	36	Address Line [2]
37	Chip Select [0]	38	Chip Select [1]
39	Store/Activity Status	40	Signal Ground

34-pin Floppy Drive Headers (E6 and P6)

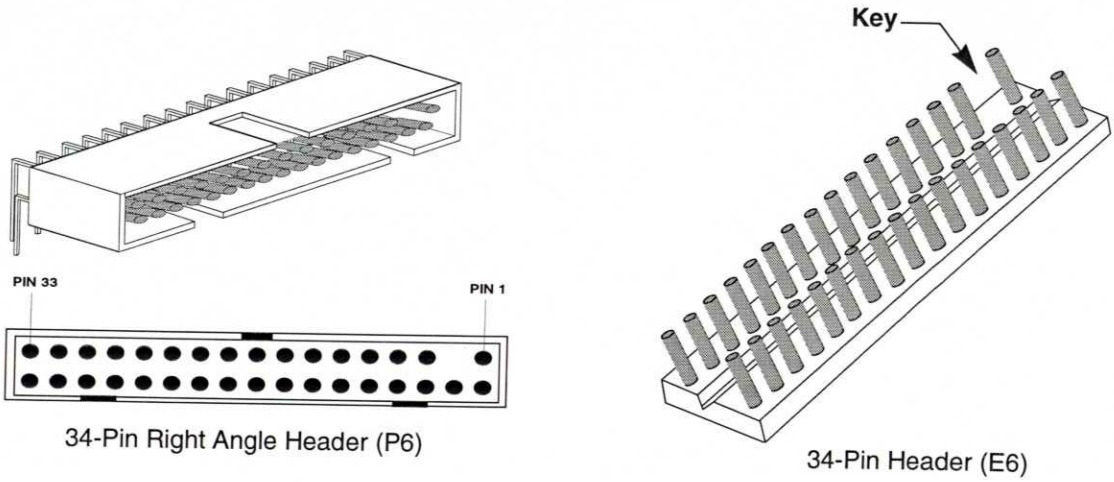


Figure 4 E6/P6 34-pin Floppy Drive Headers

Table 2 E6/P6 34-pin Floppy Drive Header Pinout

Pin	Signal	Pin	Signal
1	GND	2	Drive Density 0
3	GND	4	N/C
5	Key	6	Drive Density 1
7	GND	8	Index
9	GND	10	Floppy Motor Enable [A]
11	GND	12	Floppy Drive Select [B]
13	GND	14	Floppy Drive Select [A]
15	GND	16	Floppy Motor Enable [B]
17	GND	18	Floppy Step Motor Direction
19	GND	20	Floppy Step Pulse
21	GND	22	Floppy Write Data
23	GND	24	Floppy Write Enable
25	GND	26	Floppy Track [0]
27	GND	28	Floppy Write Protect
29	GND	30	Floppy Read Data
31	GND	32	Floppy Select Head [1]
33	GND	34	Floppy Disk Change

J4 Connector

Connector J4 is a standard CompactPCI connector with keying. Currently, J4 is not electrically connected and is used for keying and to support the board in the CompactPCI rear I/O.

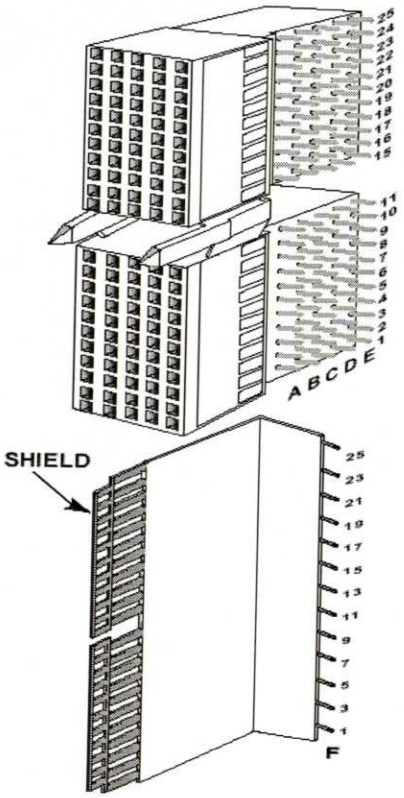


Figure 5 J4 Connector

J3 Connector Pinout

The J3 connector is a 2mm "Hard Metric" CompactPCI connector, with 5 rows of 19 pins each. An additional external metal shield labeled row F is also used. This connector is used to route the Serial Port 2 (COM2) and the Floppy Disk Drive (FDD) signals to the rear I/O. Figure 6 illustrates the J3 connector; Table 3 is the connector pinout.

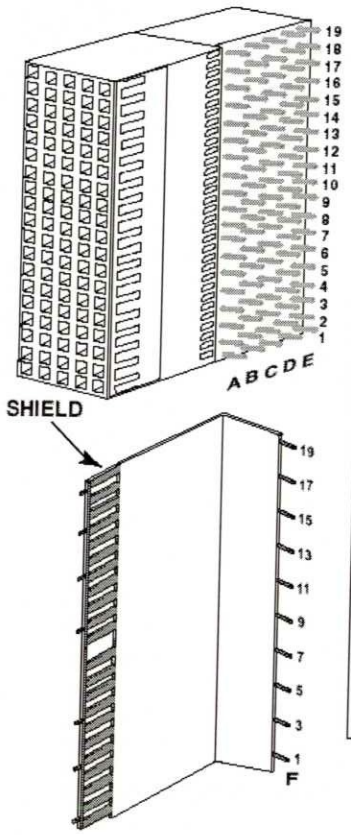


Table 3 J3 Connector Pinout

Pin No.	Row A	Row B	Row C	Row D	Row E	Row F
19	WGATE#	WDATA	STEP#	WPT#	DSKCHG#	GND
18	DRVSB#	DRATE0	TRK0#	RDATA#	DIR#	GND
17	MOTEA#	DRVSA#	INDEX#	SIDE1#	MOTEB#	GND
16	REDWC#	SP1_RX	SP1_RTS#	SP1_RI	SP1_DTR#	GND
15	VIO	SP1_TX	SP1_CTS#	SP1_DCD#	SP1_DSR#	GND
14	VCC_3.3	VCC_3.3	VCC_3.3	VCC_5.0	VCC_5.0	GND
13	J12_5	J12_4	J12_3	J12_2	J12_1	GND
12	J12_10	J12_9	J12_8	J12_7	J12_6	GND
11	J12_15	J12_14	J12_13	J12_12	J12_11	GND
10	J12_20	J12_19	J12_18	J12_17	J12_16	GND
9	J12_25	J12_24	J12_23	J12_22	J12_21	GND
8	J12_30	J12_29	J12_28	J12_27	J12_26	GND
7	J12_35	J12_34	J12_33	J12_32	J12_31	GND
6	J12_40	J12_39	J12_38	J12_37	J12_36	GND
5	J12_45	J12_44	J12_43	J12_42	J12_41	GND
4	J12_50	J12_49	J12_48	J12_47	J12_46	GND
3	J12_55	J12_54	J12_53	J12_52	J12_51	GND
2	J12_60	J12_59	J12_58	J12_57	J12_56	GND
1	VIO	J12_64	J12_63	J12_62	J12_61	GND

Figure 6 J3 Connector

J5 Connector Pinout

The J5 connector is a 2mm "Hard Metric" CompactPCI connector, with 5 rows of 22 pins each. An additional external metal shield labeled row F is also used. This connector is used to route the Serial Port1 (COM1), Hard Disk Drive (HDD) and the Universal Serial Port (USB) signals to the front panel P3 and P4 I/O connectors. Figure 7 illustrates the J5 connector and Table 4 shows the connector pinout.

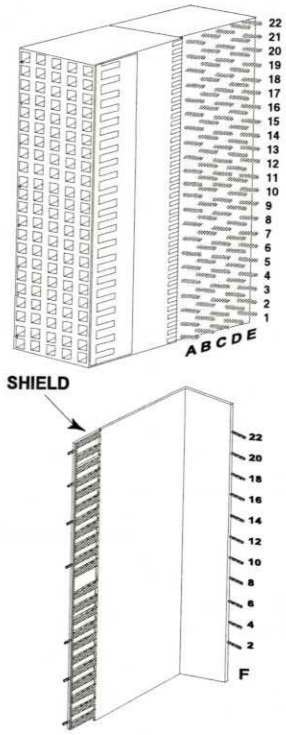


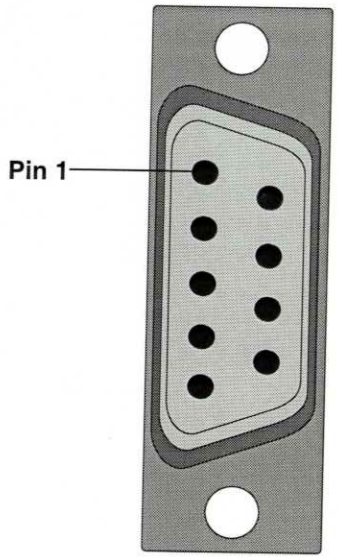
Figure 7 J5 Connector

Table 4 J5 Connector Pinout

Pin No.	Row A	Row B	Row C	Row D	Row E	Row F
22	J8_5	J8_4	J8_3	J8_2	J8_1	GND
21	J8_10	J8_9	J8_8	J8_7	J8_6	GND
20	J8_15	J8_14	J8_13	J8_12	J8_11	GND
19	J8_20	J8_19	J8_18	J8_17	J8_16	GND
18	J8_25	J8_24	J8_23	J8_22	J8_21	GND
17	J8_30	J8_29	J8_28	J8_27	J8_26	GND
16	J8_35	J8_34	J8_33	J8_32	J8_31	GND
15	J8_40	J8_39	J8_38	J8_37	J8_36	GND
14	J8_45	J8_44	J8_43	J8_42	J8_41	GND
13	J8_50	J8_49	J8_48	J8_47	J8_46	GND
12	J8_55	J8_54	J8_53	J8_52	J8_51	GND
11	J8_60	J8_59	J8_58	J8_57	J8_56	GND
10	VIO	J8_64	J8_63	J8_62	J8_61	GND
9	DDP[0]	DDP[1]	DDP[2]	DDP[3]	DDP[4]	GND
8	DDP[5]	DDP[6]	DDP[7]	DDP[8]	DDP[9]	GND
7	DDP[10]	DDP[11]	DDP[12]	DDP[13]	DDP[14]	GND
6	DDP[15]	IDEIOR0#	IDEIORDY0	IDEIOW0#	IDECS01#	GND
5	HD_ACTA#	IDECS03#	IRQ[14]	IDEDACK0#	IDEDRQ0	GND
4	IDERST#	DAP0	DAP1	DAP2	USBOC0#_C	GND
3	CBLDET	SP0_RI	SP0_TX	C_HEALTHY	USBP0-R_C	GND
2	N/C	SP0_DCD#	SP0_RX	SP0_CTS#	USBP0+R_C	GND
1	VCC_M12.0	SP0_DTR#	SP0_DSR#	SP0_RTS#	VCC_12.0	GND

COM1 (P7) and COM2 (P8) Connector Pinouts

The pinout and diagram for the two DB9 connectors used for COM1 and COM2 (serial ports) are shown in the following figure.

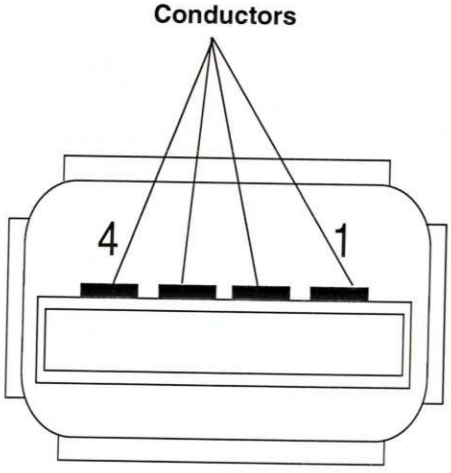


DB9 CONNECTOR (COM1 and COM2)	
PIN	**Signal Name**
1	Data Carrier Detect
2	Received Data
3	Transmitted Data
4	Data Terminal Ready
5	Signal Ground
6	Data Set Ready
7	Request to Send
8	Clear to Send
9	Ring Indicator

Figure 8 COM1/COM2 Connector Pinout

USB Connector (J6)

The Universal Serial Bus (USB) port uses an industry standard, four position shielded connector. Figure 9 shows the pinout of the USB connector.



Pin	Signal	Function
1	USBV	USB Power
2	USB-	USB Data -
3	USB+	USB Data +
4	USBG	USB Ground

Figure 9 USB Connector Pinout

PMC I/O Connector P3 (PMC#2)

The P3 and P4 connectors are used to access the I/O pins of the PMC sites (PMC#2 and PMC#1) respectively located on VMIC's SBCs (depending on the SBC used).

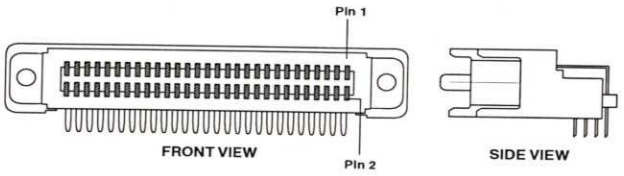


Figure 10 P3 PMC I/O Connector

Table 5 P3 PMC I/O Connector Pinout

Pin	Signal	PMC Site		Pin	Signal	PMC Site	
		Connector	Pin			Connector	Pin
1	J12_1	J12	1	35	J12_35	J12	35
2	J12_2	J12	2	36	J12_36	J12	36
3	J12_3	J12	3	37	J12_37	J12	37
4	J12_4	J12	4	38	J12_38	J12	38
5	J12_5	J12	5	39	J12_39	J12	39
6	J12_6	J12	6	40	J12_40	J12	40
7	J12_7	J12	7	41	J12_41	J12	41
8	J12_8	J12	8	42	J12_42	J12	42
9	J12_9	J12	9	43	J12_43	J12	43
10	J12_10	J12	10	44	J12_44	J12	44
11	J12_11	J12	11	45	J12_45	J12	45
12	J12_12	J12	12	46	J12_46	J12	46
13	J12_13	J12	13	47	J12_47	J12	47
14	J12_14	J12	14	48	J12_48	J12	48
15	J12_15	J12	15	49	J12_49	J12	49
16	J12_16	J12	16	50	J12_50	J12	50
17	J12_17	J12	17	51	J12_51	J12	51
18	J12_18	J12	18	52	J12_52	J12	52
19	J12_19	J12	19	53	J12_53	J12	53
20	J12_20	J12	20	54	J12_54	J12	54
21	J12_21	J12	21	55	J12_55	J12	55
22	J12_22	J12	22	56	J12_56	J12	56
23	J12_23	J12	23	57	J12_57	J12	57
24	J12_24	J12	24	58	J12_58	J12	58
25	J12_25	J12	25	59	J12_59	J12	59
26	J12_26	J12	26	60	J12_60	J12	60
27	J12_27	J12	27	61	J12_61	J12	61
28	J12_28	J12	28	62	J12_62	J12	62
29	J12_29	J12	29	63	J12_63	J12	63
30	J12_30	J12	30	64	J12_64	J12	64
31	J12_31	J12	31	65	GND	----	----
32	J12_32	J12	32	66	GND	----	----
33	J12_33	J12	33	67	GND	----	----
34	J12_34	J12	34	68	GND	----	----

PMC I/O Connector P4 (PMC#1)

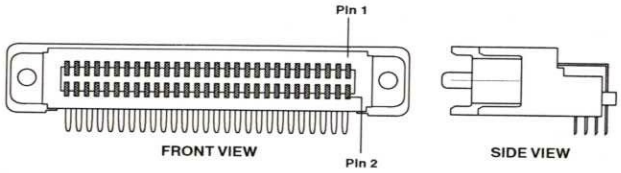


Figure 11 P4 PMC I/O Connector

Table 6 P4 PMC I/O Connector Pinout

Pin	Signal	PMC Site		Pin	Signal	PMC Site	
		Connector	Pin			Connector	Pin
1	J8_1	J8	1	35	J8_35	J8	35
2	J8_2	J8	2	36	J8_36	J8	36
3	J8_3	J8	3	37	J8_37	J8	37
4	J8_4	J8	4	38	J8_38	J8	38
5	J8_5	J8	5	39	J8_39	J8	39
6	J8_6	J8	6	40	J8_40	J8	40
7	J8_7	J8	7	41	J8_41	J8	41
8	J8_8	J8	8	42	J8_42	J8	42
9	J8_9	J8	9	43	J8_43	J8	43
10	J8_10	J8	10	44	J8_44	J8	44
11	J8_11	J8	11	45	J8_45	J8	45
12	J8_12	J8	12	46	J8_46	J8	46
13	J8_13	J8	13	47	J8_47	J8	47
14	J8_14	J8	14	48	J8_48	J8	48
15	J8_15	J8	15	49	J8_49	J8	49
16	J8_16	J8	16	50	J8_50	J8	50
17	J8_17	J8	17	51	J8_51	J8	51
18	J8_18	J8	18	52	J8_52	J8	52
19	J8_19	J8	19	53	J8_53	J8	53
20	J8_20	J8	20	54	J8_54	J8	54
21	J8_21	J8	21	55	J8_55	J8	55
22	J8_22	J8	22	56	J8_56	J8	56
23	J8_23	J8	23	57	J8_57	J8	57
24	J8_24	J8	24	58	J8_58	J8	58
25	J8_25	J8	25	59	J8_59	J8	59
26	J8_26	J8	26	60	J8_60	J8	60
27	J8_27	J8	27	61	J8_61	J8	61
28	J8_28	J8	28	62	J8_62	J8	62
29	J8_29	J8	29	63	J8_63	J8	63
30	J8_30	J8	30	64	J8_64	J8	64
31	J8_31	J8	31	65	GND	----	----
32	J8_32	J8	32	66	GND	----	----
33	J8_33	J8	33	67	GND	----	----
34	J8_34	J8	34	68	GND	----	----

PMC I/O Mating Connector

The VMIACC-0577 requires two (2) IDC type flat cables with one-touch locking ejector system (receptacle with strain relief, 68-pin). The ejectors are automatically locked by insertion in the mating headers. The latches remain within the connector outline to reduce the requirements for board space. The connector and cable assembly are available from Robinson Nugent Inc., and are not provided by VMIC.

The connector and cable assembly are available from:

Robinson Nugent Inc.
Part Number: P50E-068S-TG
800 East Eighth ST.,
New Albany, Indiana 47150
(312) 948-0564
FAX: 812-945-0804
www.robinsonnugent.com

Power Connector and Fuses

The VMIACC-0577 is equipped with an ATX type male connector for power and ground (see Figure 12 below). The fuse type and sizes are shown in Table 7. The fuses are automatically reset when power is removed (turned off).

Table 7 Fuse Type and Size

+12 V	P10 - Pin 1	500 mA
+5	P10 - Pin 4	1.1 A
	P10 - Pins 2 and 3	GND

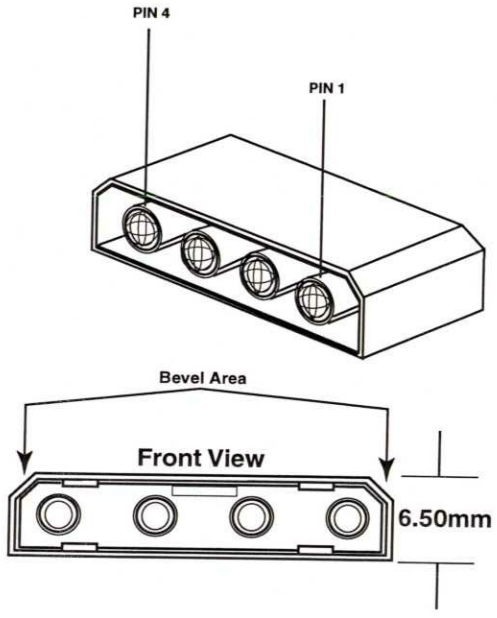


Figure 12 ATX Type Power Connector

Maintenance

Maintenance

This section provides information relative to the care and maintenance of VMIC's products. If the products malfunction, verify the following:

- Software
- System configuration
- Electrical connections
- Jumper or configuration options
- Boards are fully inserted into their proper connector location
- Connector pins are clean and free from contamination
- No components of adjacent boards are disturbed when inserting or removing the board from the chassis
- Quality of cables and I/O connections

If products must be returned, contact VMIC for a Return Material Authorization (RMA) Number. **This RMA Number must be obtained prior to any return.**

VMIC Customer Service is available at: 1-800-240-7782.
Or E-mail VMIC at customer.service@vmic.com.

Maintenance Prints

User level repairs are not recommended. The drawings and diagrams in this manual are for reference purposes only.

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