VMIACC-0578
CompactPCI Rear Transition Utility Board

Installation Guide

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Introduction

The VMIACC-0578 is a passive backplane transition board, designed for use with VMIC's CompactPCI Single Board Computers (SBCs).

The VMIACC-0578 provides:

- IDE hard drive header
- Floppy drive header
- One PMC I/O connector (front panel)
- Two serial ports (one on the front panel and one internal header)
- One parallel port
- 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 consist of: one male DB9 connector and one internal 10-pin header. The parallel port is a DB-25 connector. The USB port uses a standard USB connector, and the PMC I/O uses one 68-pin right angle header. See Figure 1-1 on page 10 for an illustration of the board and connector layout.

The CompactPCI J3, J4 and J5 connectors carry all associated signals. All signals are routed from the SBC (installed in the front of the chassis) through the backplane to the VMIACC-0578 J3, J4 and J5 connectors. Figure 1-2 on page 11 is an illustration of the VMIACC-0578 installed in the CompactPCI rear I/O.
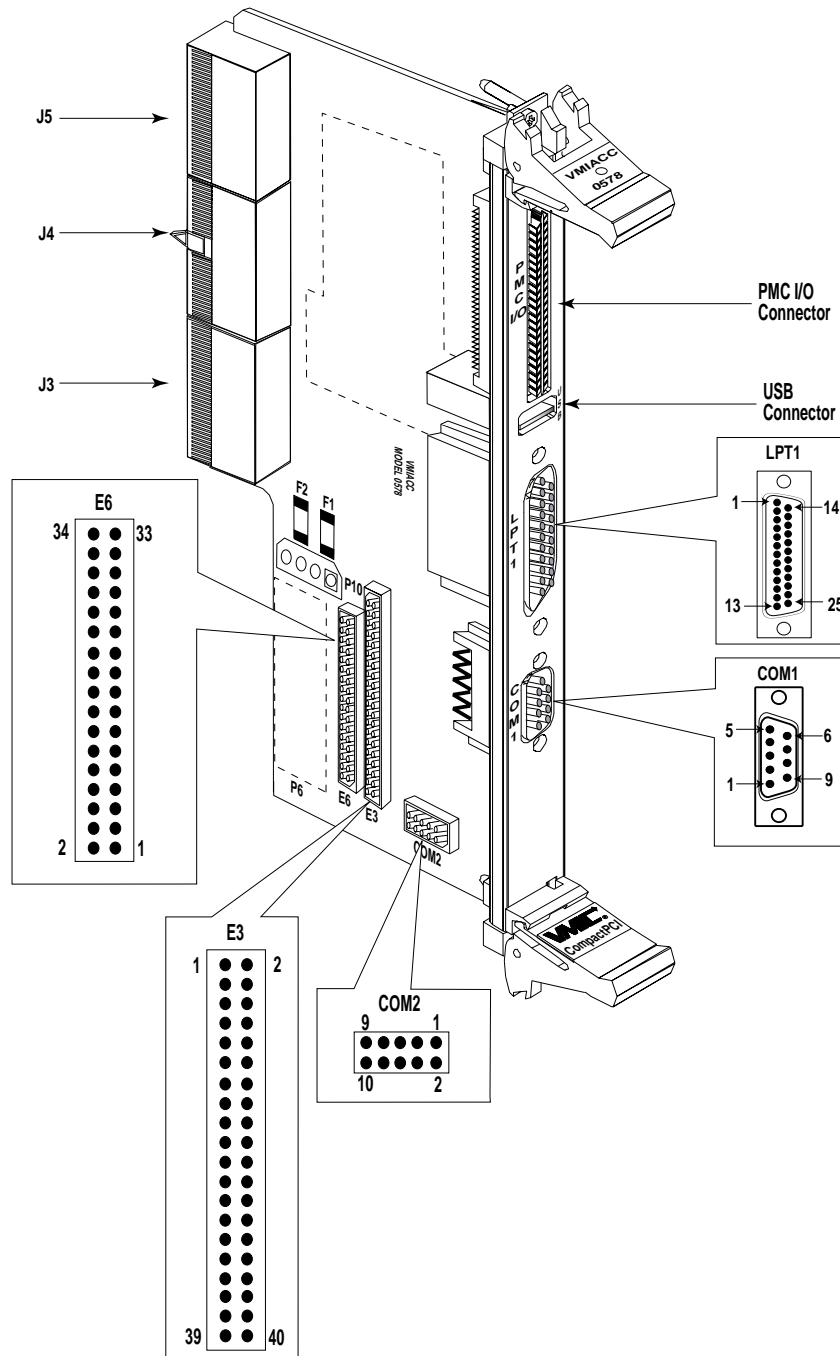
Figure 1-1 VMIACC-0578 CompactPCI Rear Transition Board

Installation of the VMIACC-0578 with the VMICPCI-7755 SBC

The VMIACC-0578 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-0578 and the VMICPCI-7755 is shown in Figure 1-2.

The VMICPCI-7755 has one PMC site designated PMC #1. The position of this site is shown in Figure 1-2. The I/O connector for PMC site #1 is J8 and is routed to the P4 connector of the VMIACC-0578. The I/O connector for PMC site #2 is J12 and its signals are not routed to the VMIACC-0578.
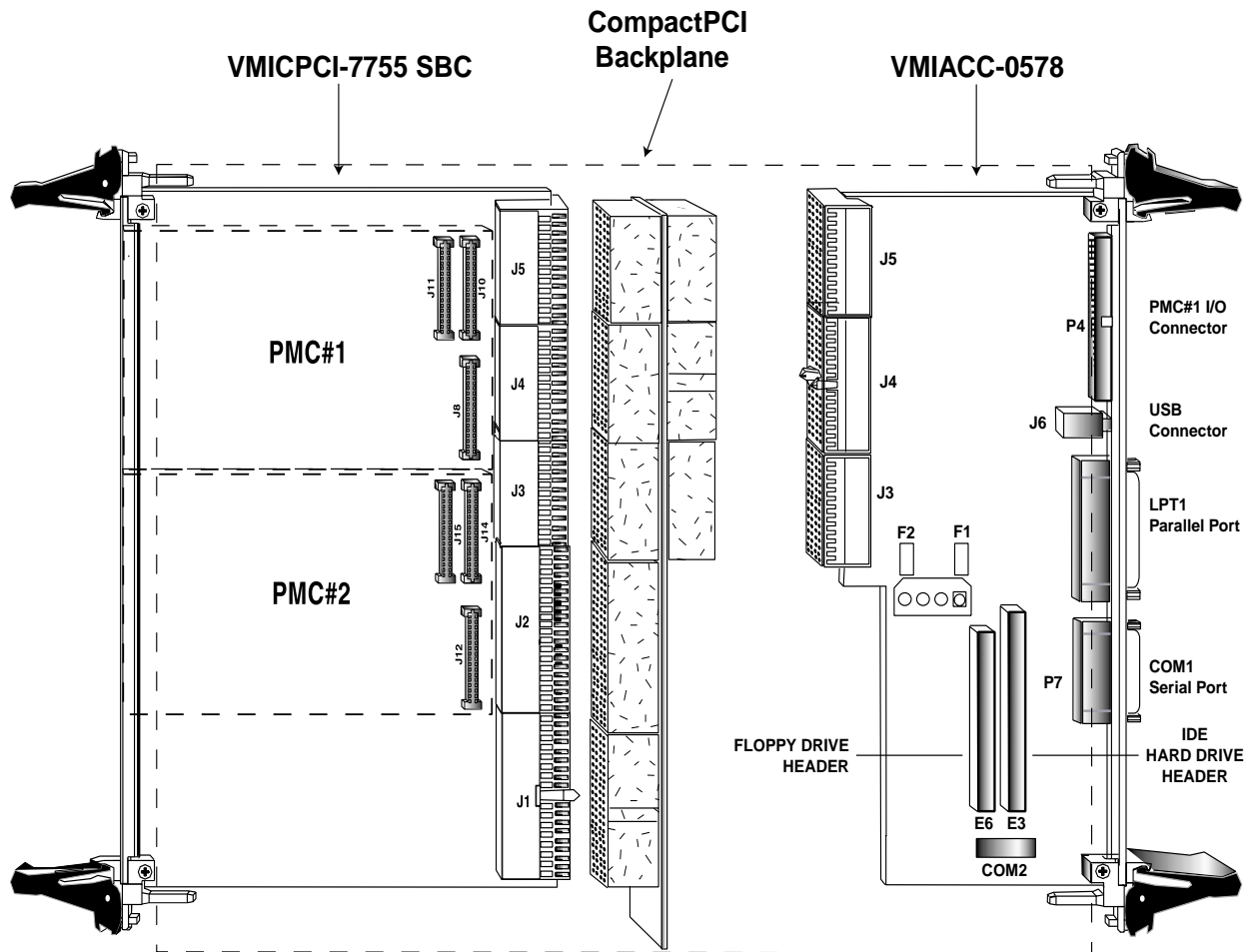
Figure 1-2 Example: Installation of the VMIACC-0578 Adapter Board with a VMICPCI-7755

NOTE: The VMIACC-0578 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 seven connectors and three headers on the transition board. J3, J4 and J5 connectors are standard CompactPCI connectors. E6 is the 34-pin Floppy Drive header, E3 is the 40-pin IDE header. There is one DB9 connector on the front panel used for COM1 (P7) and one internal 10-pin header (COM2) which are the serial ports. P11 is the front panel mounted parallel port. The front panel connector J6 is a Universal Serial Bus (USB) connector. P4 is the front panel PMC I/O connector.

40-pin IDE Header (E3)
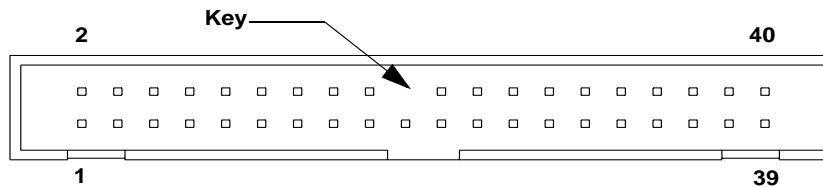
Figure 1-3 E3 40-pin IDE Header

Table 1-1 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)

Key
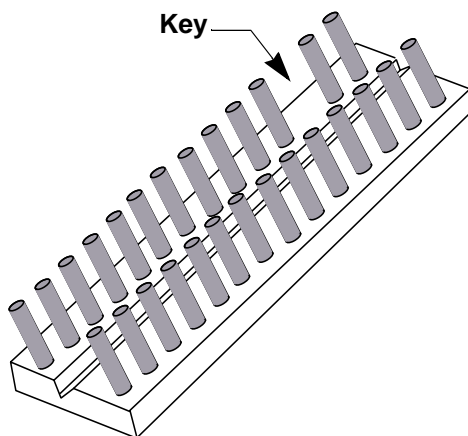
Figure 1-4 E6 34-pin Floppy Drive Header

Table 1-2 E6 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

J3 Connector and 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 1-5 below illustrates the J3 connector; Table 1-3 below is the connector pinout.
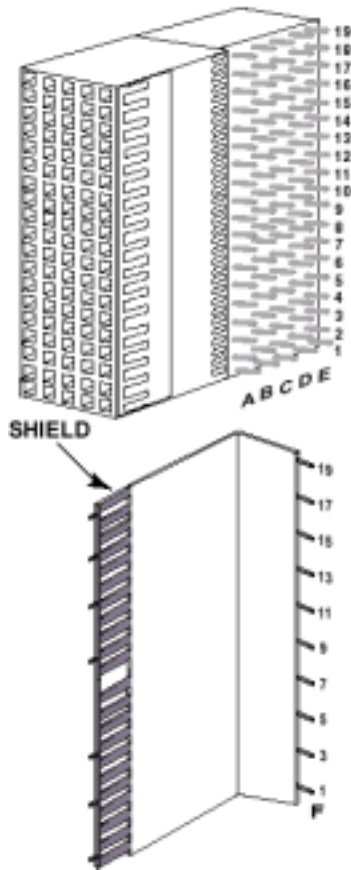
Table 1-3   J3 Connector Pinout
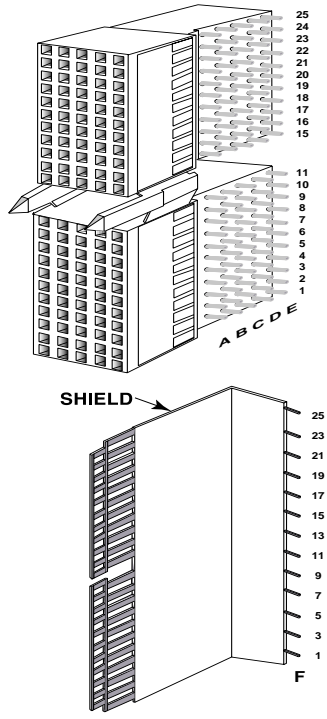
Pin No.	Row A	Row B	Row C	Row D	Row E	Row F
19	WGATE#	WDATA	STEP#	WPT#	DSKCHG#	GND
18	DRVSB#	DRATE0	TRK0#	RDATA#	DIR#	GND
17	MOTEA#	DRVSA#	INDEX#	SIDE1#	MOTEB#	GND
16	REDWC#	SP1_RX	SP1_RTS#	SP1_RI	SP1_DTR#	GND
15	VIO	SP1_TX	SP1_CTS#	SP1_DCD#	SP1_DSR#	GND
14	VCC_3.3	VCC_3.3	VCC_3.3	VCC_5.0	VCC_5.0	GND
13	N/C	N/C	N/C	N/C	N/C	GND
12	N/C	N/C	N/C	N/C	N/C	GND
11	N/C	N/C	N/C	N/C	N/C	GND
10	N/C	N/C	N/C	N/C	N/C	GND
9	N/C	N/C	N/C	N/C	N/C	GND
8	N/C	N/C	N/C	N/C	N/C	GND
7	N/C	N/C	N/C	N/C	N/C	GND
6	N/C	N/C	N/C	N/C	N/C	GND
5	N/C	N/C	N/C	N/C	N/C	GND
4	N/C	N/C	N/C	N/C	N/C	GND
3	N/C	N/C	N/C	N/C	N/C	GND
2	N/C	N/C	N/C	N/C	N/C	GND
1	VIO	N/C	N/C	N/C	N/C	GND

Figure 1-5 J3 Connector

J4 Connector and Pinout

Connector J4 is a standard CompactPCI connector with keying. Currently, J4 is used to route the parallel port signals from the SBC board to the front panel of the VMIACC-0578. Table 1-4 below is the pinout for the J4 connector.

Table 1-4 Connector J4 Pinout
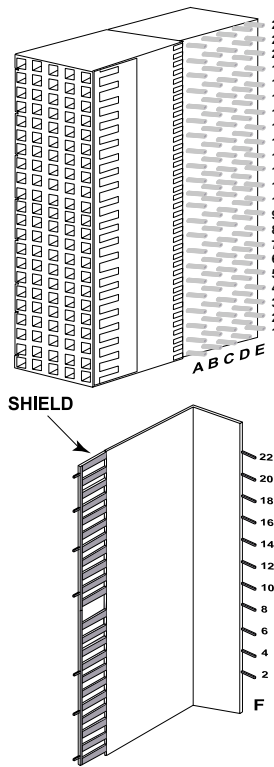
Pin No.	Row A	Row B	Row C	Row D	Row E	Row F
25	N/C	LPT_SLCT	N/C	N/C	N/C	GND
24	N/C	LPT_PE	N/C	N/C	N/C	GND
23	N/C	LPT_BUSY_WAIT#	N/C	N/C	N/C	GND
22	N/C	LPT_ACK#	N/C	N/C	N/C	GND
21	N/C	LPT_SLIN#	N/C	N/C	N/C	GND
20	N/C	LPT_INT#	N/C	N/C	N/C	GND
19	N/C	N/C	N/C	N/C	N/C	GND
18	LPT_STB#	N/C	N/C	N/C	N/C	GND
17	LPT_AFD#	N/C	N/C	N/C	N/C	GND
16	LPT_ERR#	N/C	N/C	N/C	N/C	GND
15	N/C	N/C	N/C	N/C	N/C	GND
14						GND
13			KEY			GND
12						GND
11	LPT_D7	N/C	N/C	N/C	N/C	GND
10	LPT_D6	N/C	N/C	N/C	N/C	GND
9	LPT_D5	N/C	N/C	N/C	N/C	GND
8	LPT_D4	N/C	N/C	N/C	N/C	GND
7	LPT_D3	N/C	N/C	N/C	N/C	GND
6	LPT_D2	N/C	N/C	N/C	N/C	GND
5	LPT_D1	N/C	N/C	N/C	N/C	GND
4	LPT_D0	N/C	N/C	N/C	N/C	GND
3	N/C	N/C	N/C	N/C	N/C	GND
2	N/C	N/C	N/C	N/C	N/C	GND
1	N/C	N/C	N/C	N/C	N/C	GND

Figure 1-6 J4 Connector

J5 Connector and 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), PMC I/O and the Universal Serial Port (USB) signals to the front panel connectors. Figure 1-7 below illustrates the J5 connector and Table 1-5 shows the connector pinout.

Table 1-5 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

Figure 1-7 J5 Connector

Serial Ports COM1 and COM2 Connector Pinouts

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

Serial Ports (COM1 and COM2)		
Pin	**Signal Name**	
	COM1	**COM2**
1	DCD	DCD
2	RXD	DSR
3	TXD	RXD
4	DTR	RTS
5	GND	TXD
6	DSR	CTS
7	RTS	DTR
8	CTS	RI
9	RI	GND
10		GND
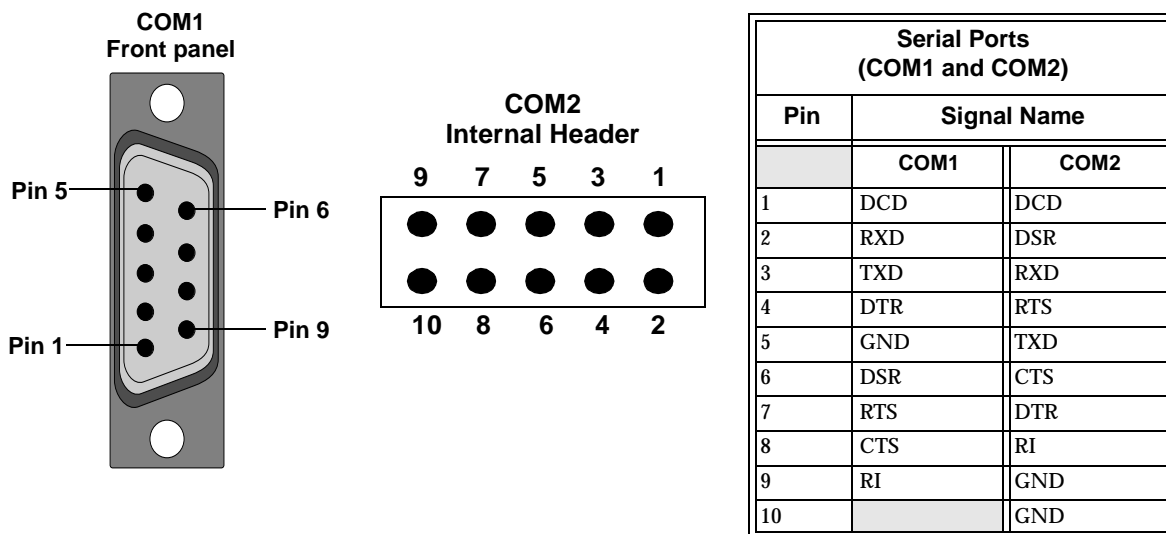
Figure 1-8 COM1/COM2 Connectors and Pinout

Parallel Port (LPT1)

The VMIACC-0578 has one parallel port located on the rear panel. The parallel port is a standard DB25 female connector. Figure 1-9 shows the connector and pinout for the parallel port.

Parallel Port Connector Pinout			
Pin	**Signal**	**Pin**	**Signal**
1	LPT_STB#	14	LPT_AFD#
2	LPT_D0	15	LPT_ERR#
3	LPT_D1	16	LPT_INT#
4	LPT_D2	17	LPT_SLIN#
5	LPT_D3	18	GND
6	LPT_D4	19	GND
7	LPT_D5	20	GND
8	LPT_D6	21	GND
9	LPT_D7	22	GND
10	LPT_ACK#	23	GND
11	LPT_BUSY_WAIT#	24	GND
12	LPT_PE	25	GND
13	LPT_SLCT		

Figure 1-9 Parallel Port Connector and Pinout

USB Connector (J6)

The Universal Serial Bus (USB) port uses an industry standard, four position shielded connector. Figure 1-10 shows the connector, while Table 1-6 shows the pinout of the USB connector.

Table 1-6 USB Connector Pinout

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

Figure 1-10 USB Connector Pinout
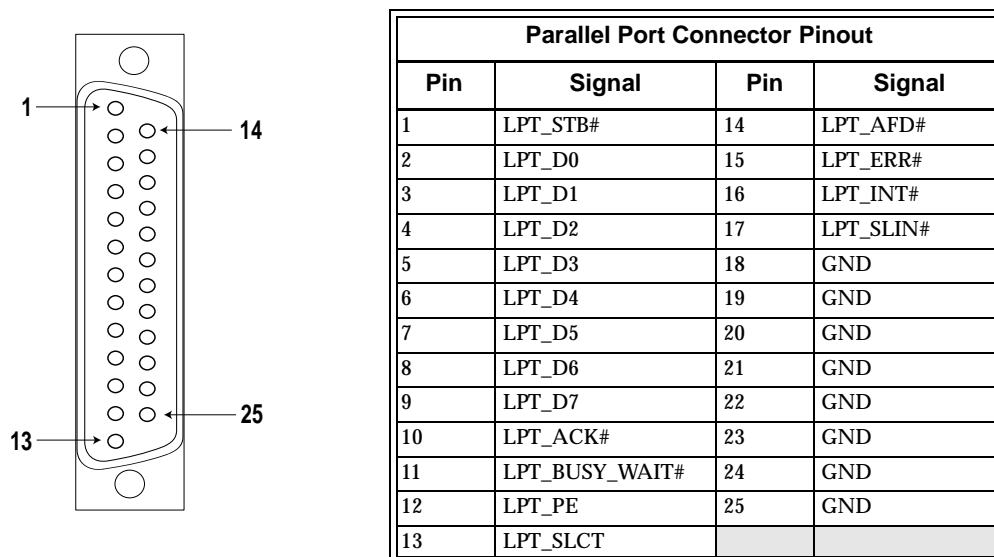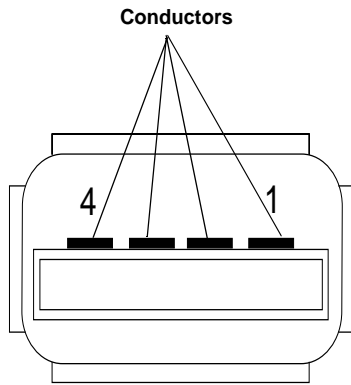
PMC I/O Connector P4 (PMC#1)
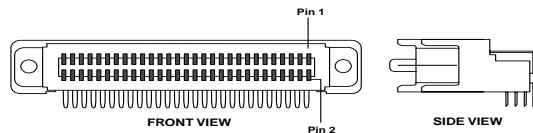
Figure 1-11 P4 PMC I/O Connector

Table 1-7 P4 PMC I/O Connector Pinout

Pin	Signal	PMC Site Connector	Pin	Pin	Signal	PMC Site 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

Table 1-7 P4 PMC I/O Connector Pinout (Continued)

Pin	Signal	PMC Site		Pin	Signal	PMC Site	
		Connector	Pin			Connector	Pin
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-0578 requires one (1) IDC type flat cable with one-touch locking ejector system (receptacle with strain relief, 68-pin). The ejectors are automatically locked by insertion in the mating header. 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, IN 47150

(312) 948-0564

FAX: 812-945-0804

www.robinsonnugent.com

Power Connector and Fuses

The VMIACC-0578 is equipped with an ATX type male connector for power and ground (see Figure 1-12 below). The fuse type and sizes are shown in Table 1-8. The fuses are automatically reset when power is removed (turned off).

Table 1-8 Fuse Type and Size

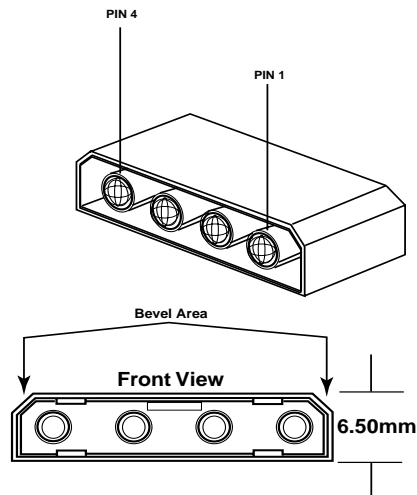| +12 V	P10 - Pin 1	500 mA
+5	P10 - Pin 4	1.1 A
	P10 - Pins 2 and 3	GND

Figure 1-12 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.