VMIACC-0320

CompactPCI Rear Transition Utility Board for the VMICPCI-7760 SBC

Installation Guide

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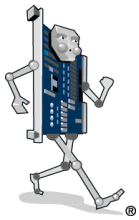

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Table of Contents

List of Figures

List of Tables

CHAPTER

1

Installation

Contents

Introduction

The VMIACC-0320 is a backplane adapter board, designed for use with VMIC's CompactPCI Dual Pentium III based VMICPCI-7760. The VMIACC-0320 provides an IDE hard drive header, floppy drive header and a Compact Flash connector. There are also two serial ports, two USB ports, two Ethernet ports, PS/2 Keyboard/Mouse port and a parallel port for external connection to the CPU through the CompactPCI rear I/O. The adapter board uses a standard 40-pin header for the hard drive connector, a 34-pin header for the floppy drive connector and a standard Type I/II compatible Compact Flash connector. The serial ports are male subminiature DB9 connectors. The USB ports use a standard USB connector. The parallel port connector is a standard 25-pin high-density D-subminiature connector. The Ethernet ports use a stacked RJ-45 connector. The PS/2 Keyboard/Mouse port is a 6-pin DIN type connector. See Figure 1-1 for an illustration of the board and connector layout.

The CompactPCI J3 and J4 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-0320 J3 and J4 connectors. Figure 1-2 is an illustration of the VMIACC-0320 installed on the CompactPCI rear I/O.

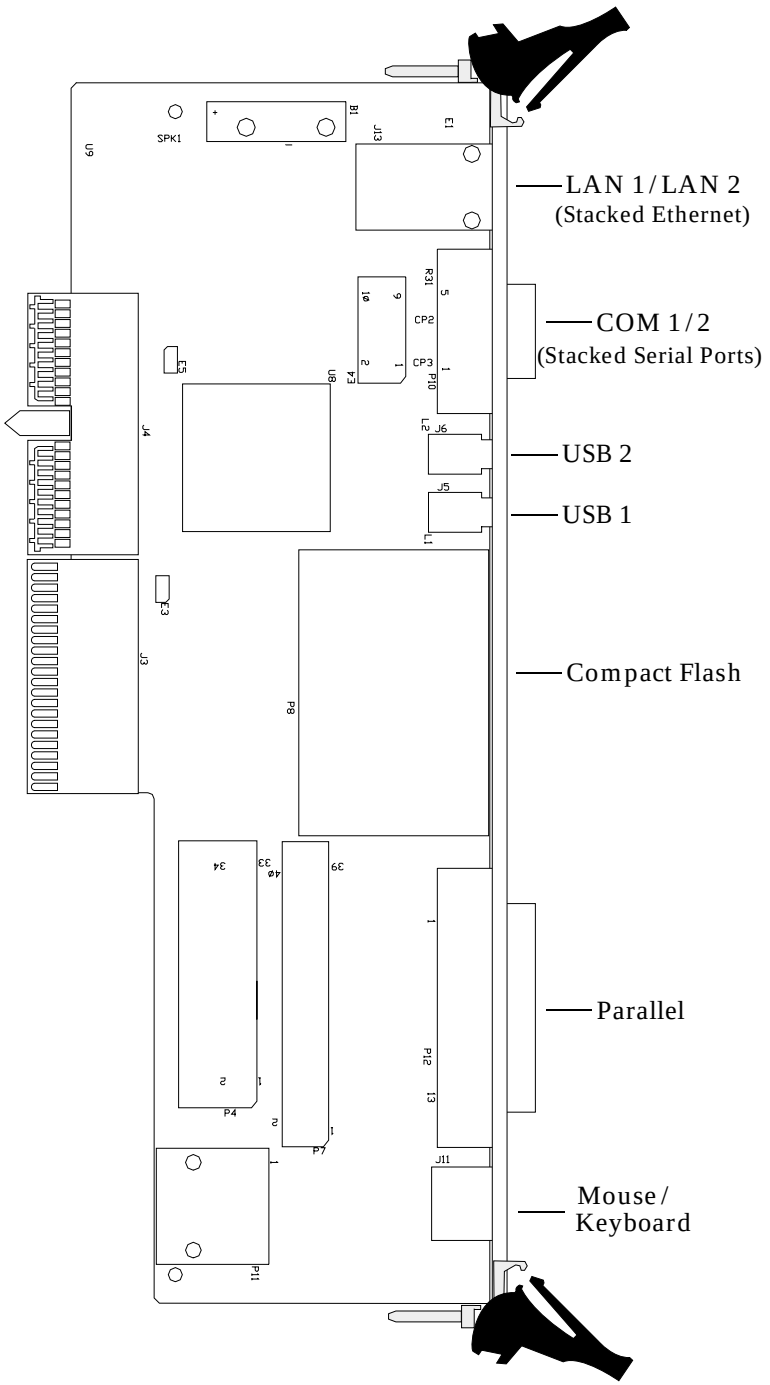


Figure 1-1 VMIACC-0320 CompactPCI Rear Transition Utility Board

Installation of the VMIACC-0320

The VMIACC-0320 adapter board installs onto the rear I/O of the CompactPCI chassis using the J3 and J4 connectors. The board is designed for installation in a CompactPCI chassis that has rear panel I/O connectors. Installation of the VMIACC-0320 is shown in Figure 1-2.

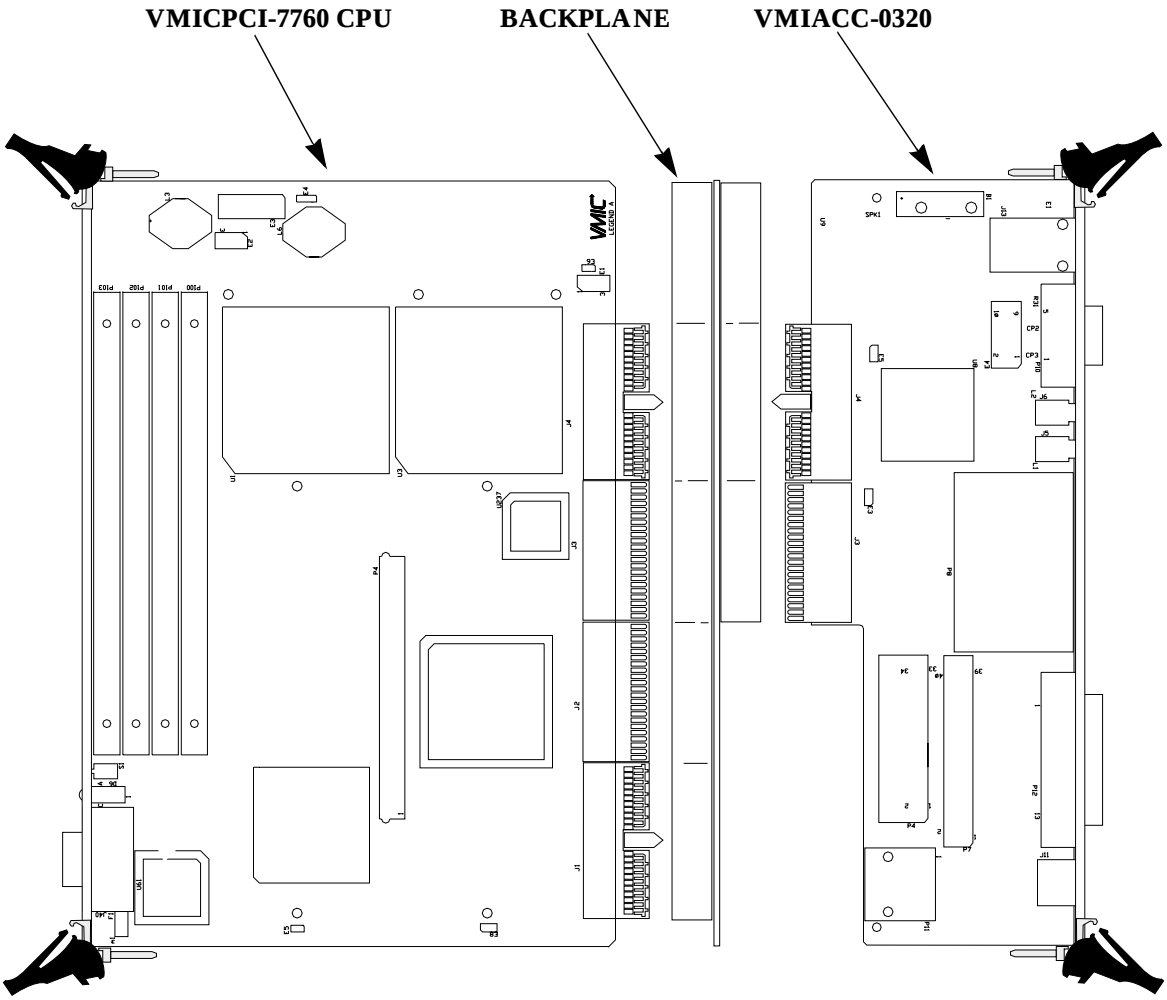


Figure 1-2 Installation of the VMIACC-0320 Adapter Board with a VMICPCI-7760

NOTE: The VMIACC-0320 adapter board is designed to be installed on backplanes with rear I/O connectors. Backplanes without rear I/O connectors cannot be used.

Connectors

There are nine connectors and five headers on the VMIACC-0320 utility board. J3 and J4 connectors are standard CompactPCI connectors. P4 is the 34-pin floppy drive header, and P7 is the 40-pin IDE hard drive header. E3 is reserved, header E5 is for the Watchdog Timer function. There are two DB9 connectors on the front panel that are used for COM1 and COM2 (P10, E4) serial ports. The front panel USB ports (J5, Port 1 and J6, Port 2) are USB connectors. P12 is the parallel port connector. J13 is the stacked Ethernet connector, and J11 is the Keyboard / Mouse port.

40-Pin IDE Header (P7)

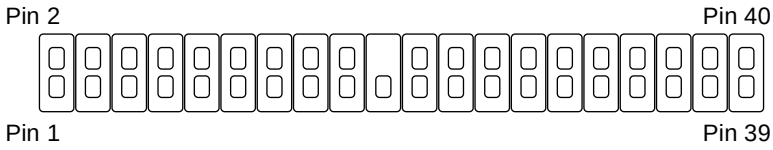


Figure 1-3 P7 40-pin IDE Header

Table 1-1 P7 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 Header (P4)

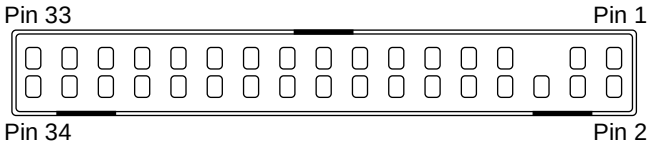


Figure 1-4 P4 34-pin Floppy Drive Header

Table 1-2 P4 34-pin Floppy Drive 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

CompactPCI Connector (J4)

The CompactPCI connector is labeled as a 5 Row, 25-pin per row connector. The actual physical makeup is 22 pins per row with space for an additional three pins. This space is used as a key. The CompactPCI connector is used to route signals to the adapter board.

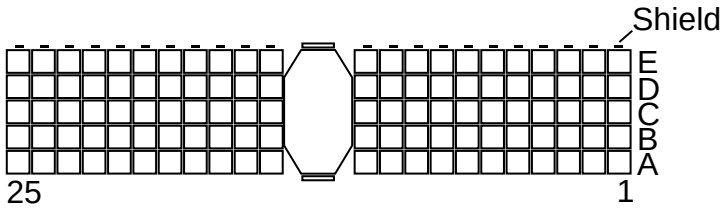


Figure 1-5 CompactPCI Connector (J4)

Table 1-3 CompactPCI Connector (J4) Pinout

Pin No.	Row E	Row D	Row C	Row B	Row A
25	ENET2_TDN	+5V	+3.3V	+3.3V	+3.3V
24	ENET2_TDP	+3.3V	GND	GND	GND
23	GND	+5V	+5V	+5V	+5V
22	ENET2_RDN	+3.3V	GND	GND	N/C
21	ENET2_RDP	+5V	+5V	+5V	+5V
20	GND	+3.3V	GND	GND	GND
19	ENET1_TDN	+5V	+5V	+5V	+5V
18	ENET1_TDP	+3.3V	GND	GND	GND
17	GND	+5V	+5V	+5V	+5V
16	ENET1_RDN	+3.3V	GND	GND	N/C
15	ENET1_RDP	+5V	+5V	-12V	+12V
14			Key		
13			Key		
12			Key		
11	I_DRQ(0)	I_SA(15)	I_SA(14)	I_SA(11)	I_SA(8)
10	I_DRQ(1)	GND	I_SA(13)	I_SA(10)	I_SA(7)
9	I_DRQ(2)	I_DAK#9(0)	I_SA(12)	I_SA(9)	I_SA(6)
8	I_DRQ(3)	I_DAK#9(1)	GND	GND	GND
7	ENET1_SPEEDLED#	I_DAK#(2)	I_NOWS#	I_SD(5)	I_SA(5)
6	ENET1_LILED#	I_DAK#(3)	SIO_AEN	I_SD(4)	I_SA(4)
5	GND	I_CHRDY	I_IORC#	I_SD(3)	I_SA(3)
4	USB_1+	I_TC	GND	GND	GND
3	USB_1-	SIO_IOWC	I_SD(7)	I_SD(2)	I_SA(2)
2	USB_0-	GND	I_SD(6)	I_SD(1)	I_SA(1)
1	USB_0+	USB_OC_01	RSTDRV	I_SD(0)	I_SA(0)

CompactPCI Connector (J3)

The J3 connector is a 2mm “Hard Metric” CompactPCI connector, with 5 rows of 19 pins each. This connector is used to route signals to the adapter board.

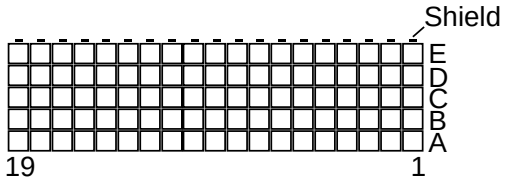


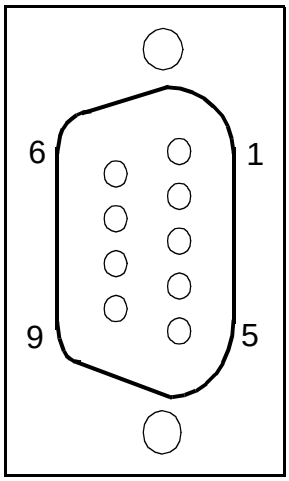
Figure 1-6 CompactPCI Connector (J3)

Table 1-4 CompactPCI Connector (J3) Pinout

Pin No.	Row E	Row D	Row C	Row B	Row A
19	PB_PWR_GOOD	I_IRQ15	IDE_RSTDRV	I_IRQ14	SIO_WAKEUP
18	ENET2_ACTLED#	IDE1_CS3#	IDE12_ACCESS#	IDE2_CS3#	C_ENUM#
17	IDE1_IORDY	IDE1_CS0#	IDE2_IORDY	IDE2_CS0#	N/C
16	GND	GND	GND	GND	POR#
15	N/C	IDE1_IOW#	IDE12_DA2	IDE2_IOW#	SIO_A20M#
14	SPKR	IDE1_IOR#	IDE12_DA1	IDE2_IOR#	FDC_WRPRT_0#
13	N/C	IDE1_DREQ#	IDE12_DA0	IDE2_DREQ#	SIO_KRST#
12	ENET1_ACTLED#	GND	N/C	GND	FDC_WRPRT_I#
11	IDE1_D(7)	IDE1_DACK#	IDE2_D(7)	IDE2_DACK#	I_IRQ12
10	IDE_D(6)	IDE1_D(15)	IDE2_D(6)	IDE2_D(15)	I_IRQ11
9	IDE1_D(5)	IDE1_D(14)	IDE2_D(5)	IDE2_D(14)	I_IRQ10
8	GND	GND	GND	GND	I_IRQ9
7	IDE1_D(4)	IDE1_D(13)	IDE2_D(4)	IDE2_D(13)	I_IRQ8#
6	IDE1_D(3)	IDE1_D(12)	IDE2_D(3)	IDE2_D(12)	I_IRQ7
5	IDE1_D(2)	IDE1_D(11)	IDE2_D(2)	IDE2_D(11)	I_IRQ6
4	GND	GND	GND	GND	I_IRQ5
3	ENET2_LILED#	IDE1_D(10)	ENET2_SPEEDLED#	IDE2_D(10)	I_IRQ4
2	IDE1_D(1)	IDE1_D(9)	IDE2_D(1)	IDE2_D(9)	I_IRQ3
1	IDE1_D(0)	IDE1_D(8)	IDE2_D(0)	IDE2_D(8)	I_IRQ1

COM1(P10) and COM2 (E4) Connector Pinouts

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

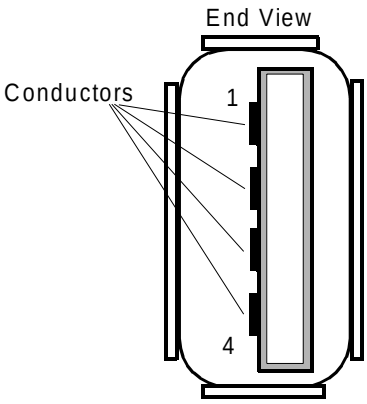


COM 1 and COM 2 SERIAL PORT CONNECTORS			
DB9 PIN	**DIR**	**RS-232 SIGNAL**	**FUNCTION**
1	In	DCD	Data Carrier Detect
2	In	RX	Receive Data
3	Out	TX	Transmit Data
4	Out	DTR	Data Terminal Ready
5		GND	Signal Ground
6	In	DSR	Data Set Ready
7	Out	RTS	Request to Send
8	In	CTS	Clear to Send
9	In	RI	Ring Indicator
Shield			Chassis Ground

Figure 1-7 COM1/COM2 Connector Pinout (P10/E4)

USB Connector (J5 and J6)

The Universal Serial Bus (USB) ports use an industry-standard 4-pin shielded connector. Figure 1-8 shows the pinout of the USB connectors.

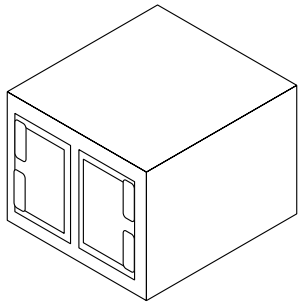


USB CONNECTOR		
PIN	**SIGNAL**	**FUNCTION**
1	USBV	USB Power
2	USB-	USB Data -
3	USB+	USB Data +
4	USBG	USB Ground

Figure 1-8 USB Connector Pinout (J5/J6)

Ethernet Connector Pinout (J13)

The pinout diagram for the Ethernet 10BaseT / 100BaseTx connector is shown in Figure 1-9.



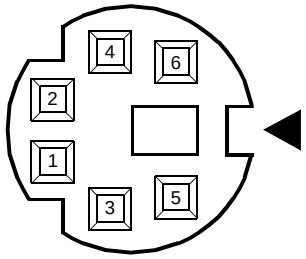
10BaseT/100BaseTx

ETHERNET CONNECTOR 10BaseT/100BaseTx		
PIN	**Signal Name**	
1A	TD+0	Transmit Data
2A	TD-0	Transmit Data
3A	RD+0	Receive Data
4A	NC	No Connection
5A	NC	No Connection
6A	RD-0	Receive Data
7A	NC	No Connection
8A	NC	No Connection
1B	TD+1	Transmit Data
2B	TD-1	Transmit Data
3B	RD+1	Receive Data
4B	NC	No Connection
5B	NC	No Connection
6B	RD-1	Receive Data
7B	NC	No Connection
8B	NC	No Connection

Figure 1-9 Ethernet Connector Pinout (J13)

Keyboard/Mouse Connector Pinout (J11)

The Keyboard / Mouse connector is a standard 6-pin female mini-DIN PS / 2 connector as shown in Figure 1-10. The Keyboard / Mouse Y-cable connects to the Keyboard / Mouse connector on the VMIACC-0320 and provides a separate connector for both Keyboard and Mouse. The pinout of these connectors is shown in Table 1-5.



Keyboard/Mouse* CONNECTOR		
PIN	**DIR**	**FUNCTION**
1	In / Out	Mouse Data
2	In / Out	Keyboard Data
3		Ground
4		+5 V
5	Out	Mouse Clock
6	Out	Keyboard Clock
Shield		Chassis Ground

*An adapter cable is included with the VMIACC-0320 to separate the Keyboard / Mouse Connector.

Figure 1-10 Keyboard Connector Pinout

Table 1-5 Keyboard/Mouse Y Splitter Cable

Keyboard			Mouse		
Pin	Dir	Function	Pin	Dir	Function
1	In/Out	Keyboard Data	1	In/Out	Mouse Data
2		Unused	2		Unused
3		Ground	3		Ground
4		+5V	4		+5V
5	Out	Keyboard Clock	5	Out	Mouse Clock
6		Unused	6		Unused
Shield		Chassis Ground	Shield		Chassis Ground

Parallel Port Connector (P12)

The parallel port uses a standard 25-pin D connector. Figure 1-11 illustrates the connector. The table shows the pinout of the parallel port connector.

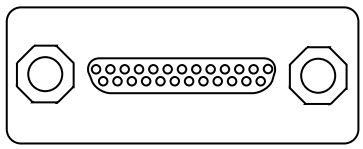


Figure 1-11 Parallel Port Connector

Table 1-6 P12 Parallel Port Connector Pinout

PARALLEL PORT CONNECTOR		
PIN	**DIRECTION**	**FUNCTION**
1	In / Out	Data Strobe
2	In / Out	Bidirectional Data D0
3	In / Out	Bidirectional Data D1
4	In / Out	Bidirectional Data D2
5	In / Out	Bidirectional Data D3
6	In / Out	Bidirectional Data D4
7	In / Out	Bidirectional Data D5
8	In / Out	Bidirectional Data D6
9	In / Out	Bidirectional Data D7
10	In	Acknowledge
11	In	Device Busy
12	In	Out of Paper
13	In	Device Selected
14	Out	Auto Feed
15	In	Error
16	Out	Initialize Device
17	In	Device Ready for Input
18		Signal Ground
19		Signal Ground
20		Signal Ground
21		Signal Ground
22		Signal Ground
23		Signal Ground
24		Signal Ground
25		Signal Ground
Shield		Chassis Ground

Reserved Header (E3)

Header E3 is reserved for factory use only.

Watchdog Timer Output Header (E5)

The VMIACC-0320 provides the Watchdog Timer Reset function for the VMICPCI-7760. This function can be hardware connected or disconnected using header E5. If a jumper is connected across the pins of E5, the Reset output of the Watchdog Timer will be connected to the VMICPCI-7760 Reset circuit. If the jumper is removed, then the output of the Watchdog Timer will be isolated and not connected to the Reset circuit of the VMICPCI-7760. Please refer to the VMICPCI-7760 manual for details on programming the Watchdog Timer.

Table 1-7 Watchdog Timer Header (E5)

Signal	Jumper Position
Watchdog Timer output connected to reset	In
Watchdog Timer output not connected to reset	**Out**

CHAPTER
2

Maintenance

If a VMIC product malfunctions, please verify the following:

1. System configuration
2. Electrical connections
3. Resister or configuration options
4. Boards are fully inserted into their proper connector location
5. Connector pins are clean and free from contamination
6. No components or adjacent boards were disturbed when inserting or removing the board from the chassis
7. Quality of cables and I/O connections

If products must be returned, obtain a RMA (Return Material Authorization) by contacting VMIC Customer Service. **This RMA must be obtained prior to any return**.

VMIC Customer Service is available at: 1-800-240-7782.
Or E-mail us 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.