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13U AdvancedTCA[®] Chassis User Manual



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1.0 General Information

1.1 Introduction

This document will describe the Second Generation 14 Slot AdvancedTCA[®] chassis. This chassis consist of an AdvancedTCA[®] Backplane, Redundant Shelf Mangers, Power Entry Modules, and Fan Trays.

1.2 References

- PICMG 3.0 Revision 2.0 AdvancedTCA[®] Base Specification.
- ELMA Electronic Shelf Manager Application Notes.
- ELMA Bustronic 14 Slot Dual Star AdvancedTCA[®] Backplane.
- ELMA Electronic Shelf Manager Technical Specifications.
- Pigeon Point Systems IPM Sentry Shelf-External Reference.

1.3 Company Overview

Elma Electronic Inc. is an industry innovator in the design and manufacture of electronic enclosures and passive electronic components. Elma USA has achieved a leading position in the CPCI, VME/VME64x, VXI, VXS, PXI, AdvancedTCA[®], Switched Fabrics, PCI and Rugged COTS packaging markets.

Elma's component products consist of switches, knobs, and LED arrays. Headquartered in Switzerland, with offices in 22 countries, Elma has the ability to respond rapidly, with superior solutions to the requirements of its customers.

Elma has a broad base of customers throughout the United States in diverse industries such as telecommunications, industrial control, medical electronics, military and defense.

Elma Electronic Inc. strives to provide products superior in quality, reliability, performance, and consistently presents new, innovative designs to the market. Elma's product line encompasses well over 16,000 parts, including enclosures, cabinets, high quality switches, LED arrays, knobs and much more. Elma also offers design/integration services backed by responsive and knowledgeable technical support.

Elma's leading quality level is reached through training of all employees and following of systematic procedures per ISO 9001 standards to which Elma has been certified.

1.4 Features of the 14 Slot AdvancedTCA[®] chassis.

- Dimensions 13 U X 15.75" X 17".
- Rack Mounting Brackets.
- Universal Handles.
- 14 slot Dual Star AdvancedTCA[®] Backplane.
- 2 dedicated Shelf Managers.
- Cooling for 240 Watts per Front Board.
- 3 removable fan trays.
- 2 Serial EEPROMs for Shelf FRU Information.
- 6 fans 330 CFM each.
- 4 Filtered Power Entry Modules.
- Front and Rear Cable Bracket.

2.0 System Specifications

2.1 Mechanical Dimensions

2.1.1 Front View

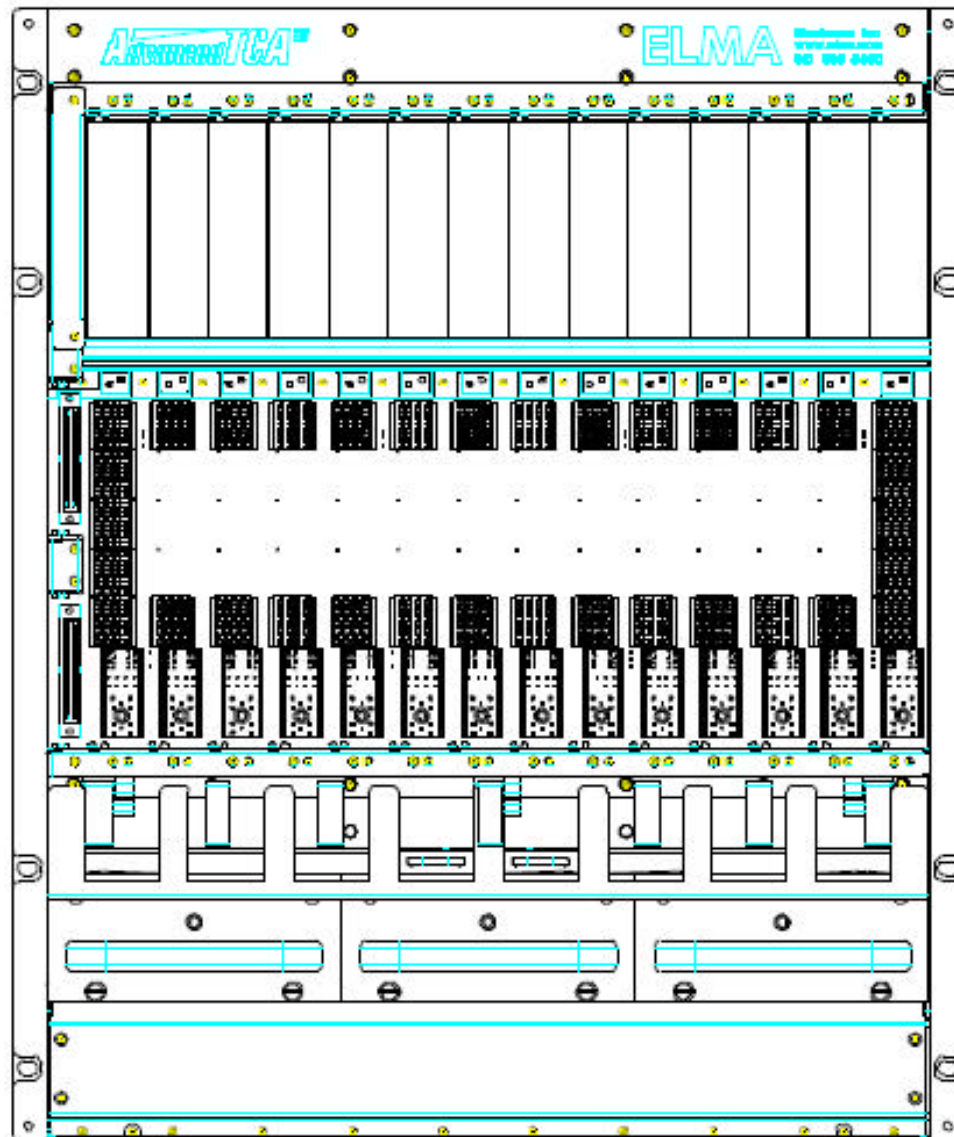


Figure 2_1 Chassis Front Mechanical View

2.1.2 Side View with side panel removed

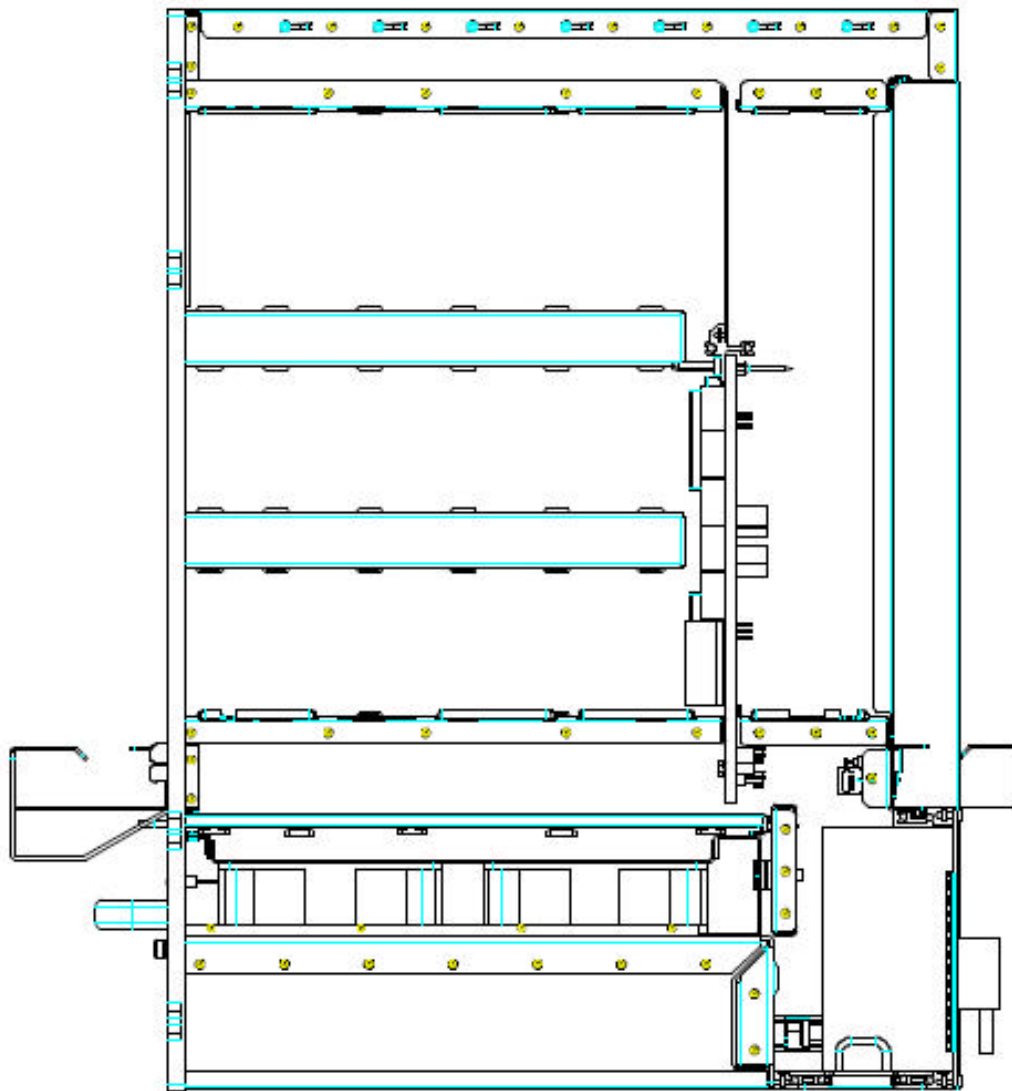


Figure 2_2 Chassis Side Mechanical View

2.1.3 Rear View

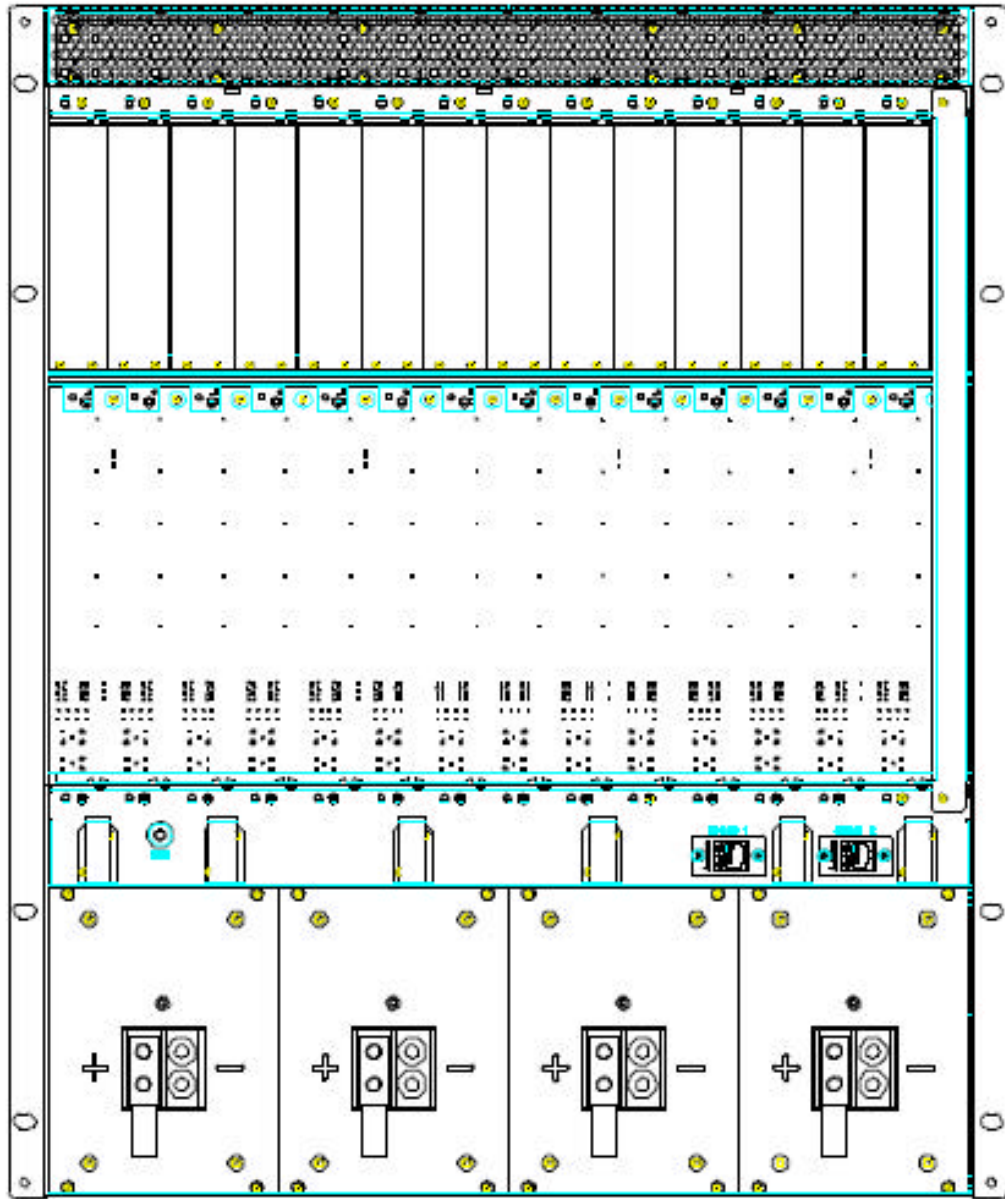


Figure 2_3 Chassis Rear Mechanical View

2.2 Cooling Capacity

This chassis has the capability to cool 240 Watts per slot. This is accomplished by using 6 330 CFM fans in 3 removable Fan Trays.

2.3 Removable Fan Trays

This chassis has 3 removable fan trays. Three Fan trays are located below the card cage. These fan trays have an LED to detect a fan failure.

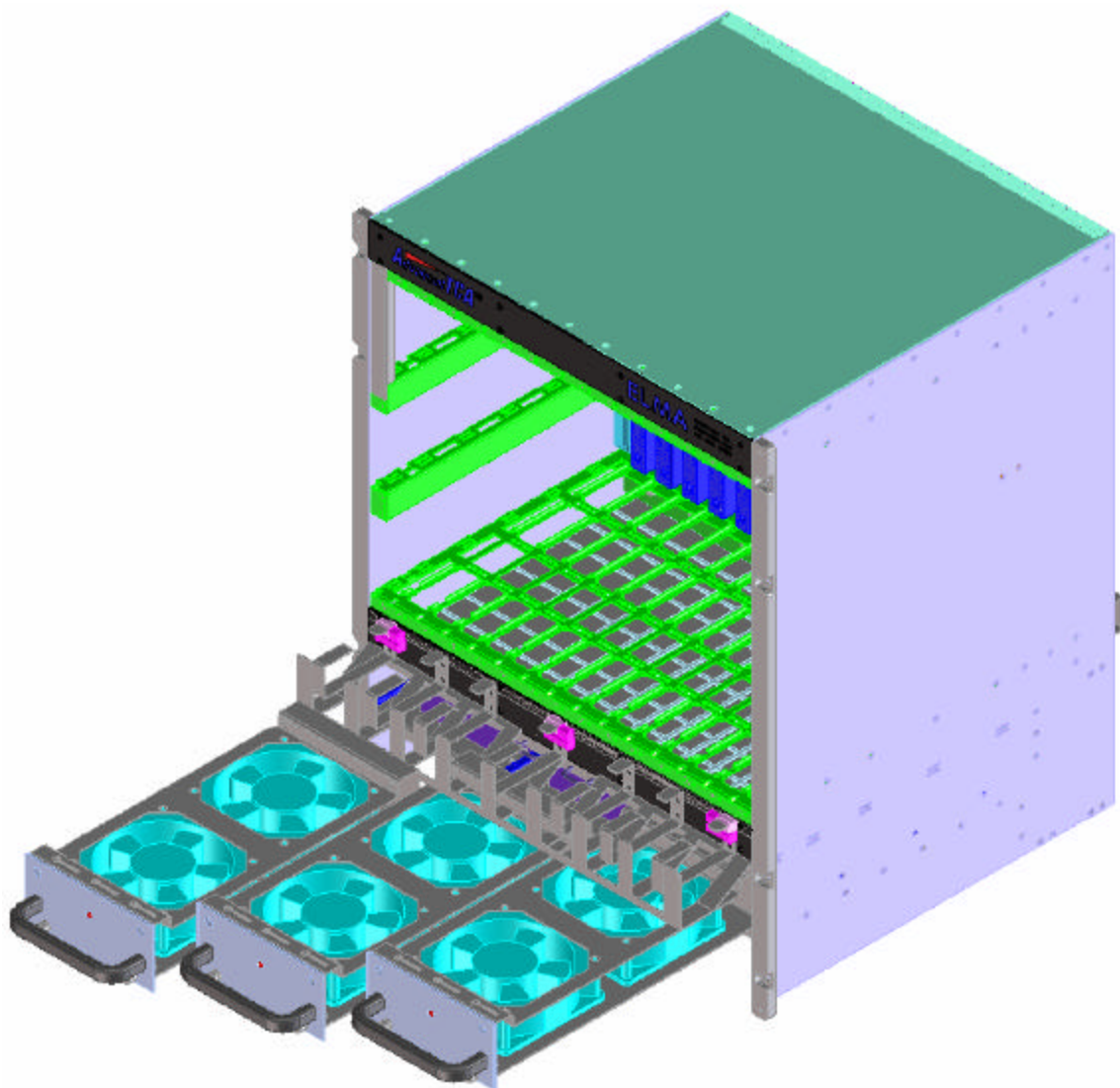


Figure 2_4 Fan Tray View

2.4 Fan Speed Control Signal

Combined with the shelf manager the chassis can control and monitor the speed of the fans.

2.5 Fan Tray Present Signals

Each Fan Tray has a signal that will alert the Shelf Manager. A low signal will alert that the Fan Tray is present. A high signal will alert that the Fan Tray has been removed.

3.0 Backplane Specifications

3.1 Mechanical Drawing

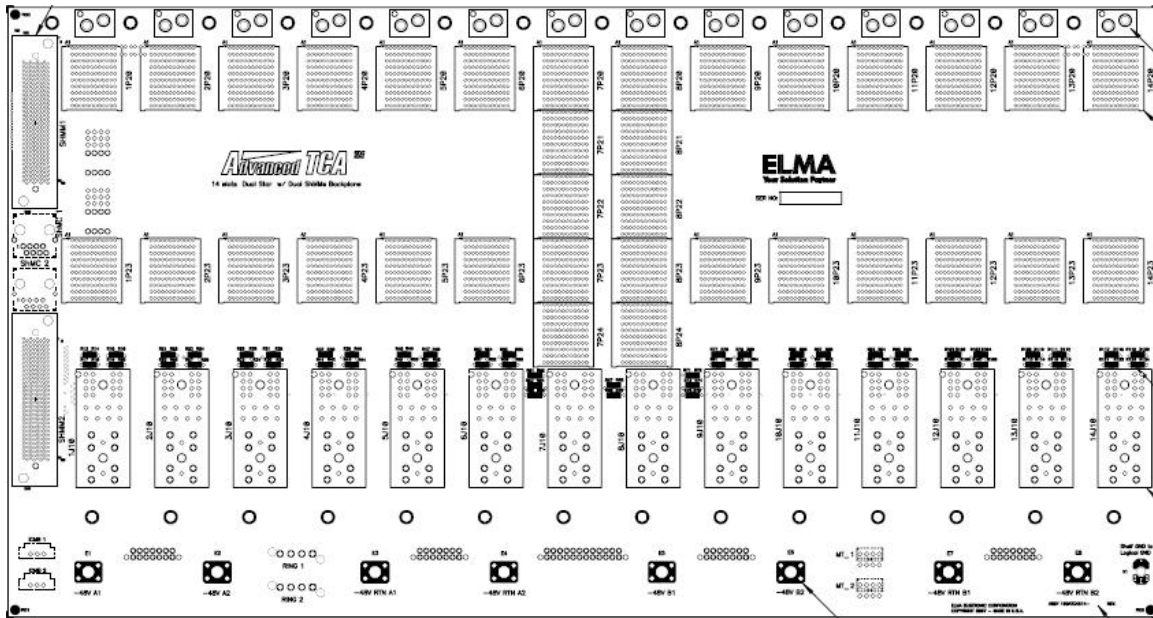


Figure 3_1 Backplane Mechanical Drawing

3.2 Logical to Physical Slot Mapping

The physical slots are numbered from left to right. The logical slots are numbered 1 through 14. See the table below for the physical to logical slot mapping.

Physical Slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Logical Slot	13	11	9	7	5	3	1	2	4	6	8	10	12	14
HW -Address (hex)	4D	4B	49	47	45	43	41	42	44	46	48	4A	4C	4E
IPMB- Address (hex)	9A	96	92	8E	8A	86	82	84	88	8C	90	94	98	9C

Table 3_1 Logical to Physical Slot Mapping

3.3 Base Interface

Logical slots 1 and 2 are the hub slots for the Dual Star Base Interface.

Logical Slot #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Base Ch. 1	ShMC	ShMC	1-3	1-4	1-5	1-6	1-7	1-8	1-9	1-10	1-11	1-12	1-13	1-14	1-15	1-16
Base Ch. 2	2-2	1-2	2-3	2-4	2-5	2-6	2-7	2-8	2-9	2-10	2-11	2-12	2-13	2-14	2-15	2-16
Base Ch. 3	3-1	3-2														
Base Ch. 4	4-1	4-2														
Base Ch. 5	5-1	5-2														
Base Ch. 6	6-1	6-2														
Base Ch. 7	7-1	7-2														
Base Ch. 8	8-1	8-2														
Base Ch. 9	9-1	9-2														
Base Ch. 10	10-1	10-2														
Base Ch. 11	11-1	11-2														
Base Ch. 12	12-1	12-2														
Base Ch. 13	13-1	13-2														
Base Ch. 14	14-1	14-2														
Base Ch. 15	15-1	15-2														
Base Ch. 16	16-1	16-2														

Table 3_2 Base Interface

3.4 Fabric Interface

Logical slots 1 and 2 are the hub slots for the Dual Star Base Interface.

Logical Slot #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Fabric Ch. 15	16-2	16-2														
Fabric Ch. 14	15-1	15-2														
Fabric Ch. 13	14-1	14-2														
Fabric Ch. 12	13-1	13-2														
Fabric Ch. 11	12-1	12-2														
Fabric Ch. 10	11-1	11-2														
Fabric Ch. 9	10-1	10-2														
Fabric Ch. 8	9-1	9-2														
Fabric Ch. 7	8-1	8-2														
Fabric Ch. 6	7-1	7-2														
Fabric Ch. 5	6-1	6-2														
Fabric Ch. 4	5-1	5-2														
Fabric Ch. 3	4-1	4-2														
Fabric Ch. 2	3-1	3-2	2-2	2-3	2-4	2-5	2-6	2-7	2-8	2-9	2-10	2-11	2-12	2-13	2-14	2-15
Fabric Ch. 1	2-1	1-1	1-2	1-3	1-4	1-5	1-6	1-7	1-8	1-9	1-10	1-11	1-12	1-13	1-14	1-15

Table 3_3 Fabric Interface

3.5 Update Channel Interface

	Node	Node	Node	Node	Node	Node	HUB	HUB	Node	Node	Node	Node	Node	Node
Physical Slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Logical Slot	13	11	9	7	5	3	1	2	4	6	8	10	12	14
Update Channel														

Table 3_4 Update Channel Interface

3.6 IPMB Interface

The IPMB interfaces are bused to each slot and to both Shelf Manager slots.

3.7 Shelf Manager Slots

There are two Shelf Manager slots located on the left side of the card cage. These Shelf Manager slots are configured for use with two Shelf Managers in redundant operation.

3.8 Serial EEPROMs

The AdvancedTCA[®] Backplane has two Serial EEPROMs. The Serial EEPROMs are used to keep the Shelf Fru Information for the Shelf Manager. Both EEPROMs are set to the same hex address (0xa4). These EEPROMs are accessed on two different I² C buses.

3.9 AdvancedTCA[®] Backplane Connectors

3.9.1 P1 PEM Connector

Pin	Signal
1	PEM 0
2	GND
3	GND
4	GND
5	GND
6	GND
7	I2C 2 SDA
8	I2C 2 SCL
9	GND
10	5V Out
11	I2C 3 SDA
12	I2C 3 SCL
13	GND
14	5V Out

Table 3_5 P1 PEM Connector

3.9.2 P2 PEM Connector

Pin	Signal
1	PEM 1
2	GND
3	GND
4	GND
5	GND
6	GND
7	I2C 2 SDA
8	I2C 2 SCL
9	GND
10	5V Out
11	I2C 3 SDA
12	I2C 3 SCL
13	GND
14	5V Out

Table 3_6 P2 PEM Connector

3.9.3 P3 PEM Connector

Pin	Signal
1	PEM 2
2	GND
3	GND
4	GND
5	GND

6	GND
7	I2C 2 SDA
8	I2C 2 SCL
9	GND
10	5V Out
11	I2C 3 SDA
12	I2C 3 SCL
13	GND
14	5V Out

Table 3_7 P3 PEM Connector

3.9.4 P4 PEM Connector

Pin	Signal
1	PEM 3
2	GND
3	GND
4	GND
5	GND
6	GND
7	I2C 2 SDA
8	I2C 2 SCL
9	GND
10	5V Out
11	I2C 3 SDA
12	I2C 3 SCL
13	GND
14	5V Out

Table 3_8 P4 PEM Connector

3.9.5 P5 Fan Tray Signals

Pin	Signal
1	Tach 0
2	Tach 1
3	Tach 2
4	Tach 3
5	Tach 4
6	Tach 5
7	Tach 6
8	PWM 0 Out
9	PWM 1 Out
10	PWM 2 Out
11	PWM 3 Out
12	FTP 0
13	FTP 1
14	FTP 2
15	FTP 3
16	FTP 4
17	FTP 5
18	Filter 0
19	Filter 1
20	Filter 2
21	FTF Out 0
22	FTF Out 1
23	FTF Out 2
24	GND

Table 3_9 P5 Fan Tray Signals

3.9.6 SHMC_1

Pin	Description
1	TX +
2	TX -
3	RX +

4, 5	Unused pair
6	RX -
7, 8	Unused pair

Table 3_10 ShMC 1

3.9.7 SHMC_2

Pin	Description
1	TX +
2	TX -
3	RX +
4, 5	Unused pair
6	RX -
7, 8	Unused pair

Table 3_11 ShMC 2

3.9.8 RING_1 and RING_2 Connectors

Pin	Signal
1	-RNG_A
2	RRTN_A
3	-RNG_B
4	RRTN_B

Table 3_12 RING Connectors

3.9.9 MT_1 Connector

Pin	Signal
1	MT1_TIP
2	MT1_TIP
3	MT1_RING
4	MT1_RING

Table 3_13 MT_1 Connector

3.9.10 MT_2 Connector

Pin	Signal
1	MT1_TIP
2	MT1_TIP
3	MT1_RING
4	MT1_RING

Table 3_14 MT_2 Connector

3.9.11 ICMB_1 Connector

Pin	Signal
1	SCL_A
2	GND
3	SDA_A
4	N/C
5	N/C

Table 3_15 IPMB_1 Connector

3.9.12 ICMB_2 Connector

Pin	Signal
1	SCL_A
2	GND
3	SDA_A
4	N/C

5	N/C
---	-----

Table 3_16 IPMB_2 Connector

3.9.17 EEPROM I2C_0_CFG and I2C_1_CFG Jumper Configuration

High	Low	Signal
	X	WP
X		A0
X		A1
	X	A2

Table 3_17 I²C Serial EEPROM Jumper Configuration

4.0 Power Distribution

4.1 Introduction

Four Power Entry Modules are used to provide power to the backplane. These modules are designated as A1, A2, B1, and B2. The table below shows the logical and physical slots where the Power Entry Module is assigned.

These four Power Entry Modules are intended to provide noise reduction in Telecommunications DC Power. The Filter is non-polarized. Markings indicate the polarity to be connected to the AdvancedTCA[®] Backplane.

4.2 Power Distribution diagram

Physical Slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Logical Slot	13	11	9	7	5	3	1	2	4	6	8	10	12	14
Power Source	A2 B2	A1 B1	A2 B2	A1 B1	A1 B1	A1 B1	A1 B1	A2 B2	A2 B2	A2 B2	A1 B1	A2 B2	A1 B1	A2 B2

Table 4_1 Power Distribution Table

5.0 Shelf Manager

5.1 Introduction

The Shelf Manager is an 18.4mm wide, 2.5U high, and 280mm deep card that incorporates the Pigeon Point IPM Sentry. The Shelf Managers are located on the left side in the card cage area.

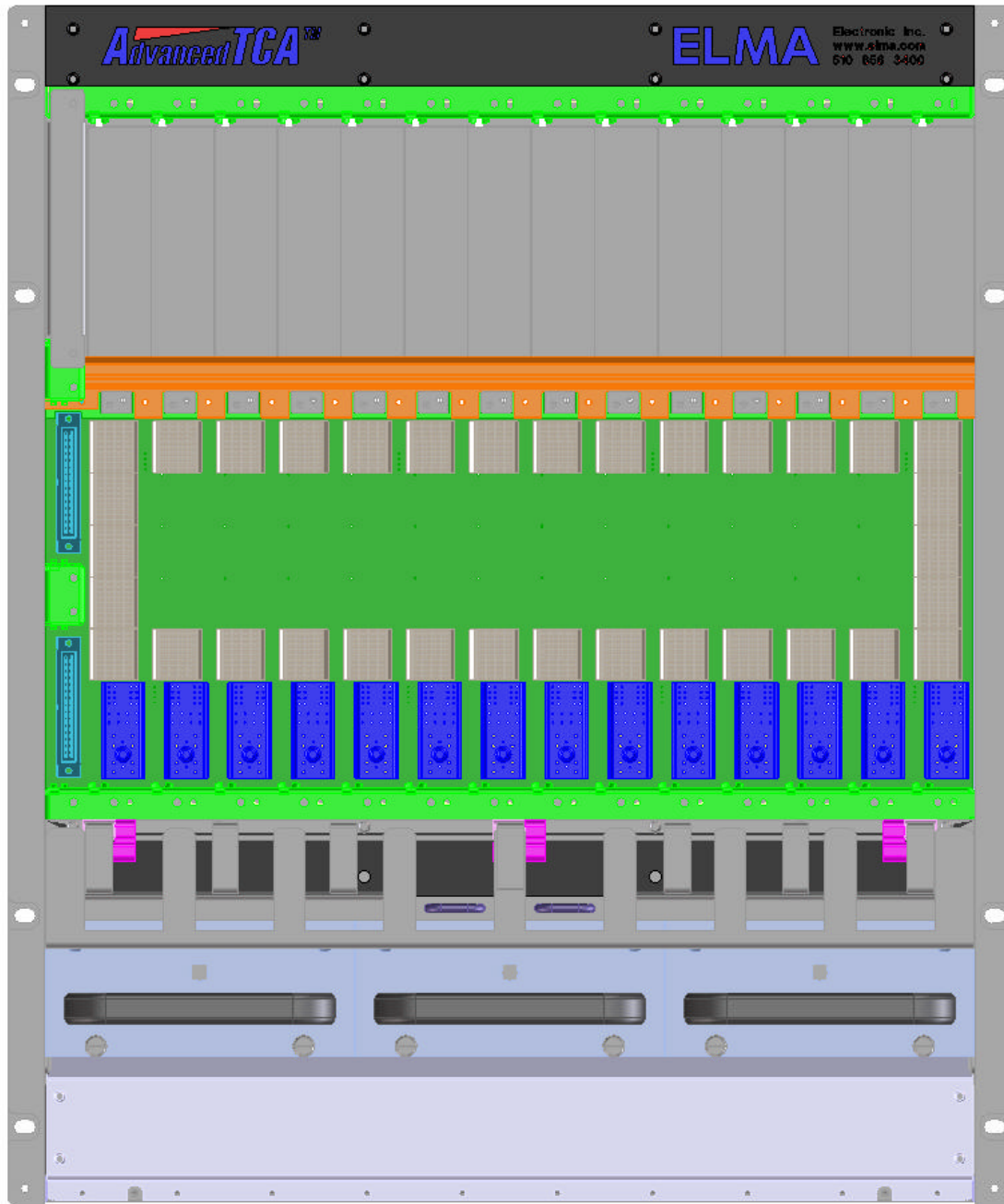


Figure 5_1 Shelf Manager Locations

5.2 Shelf Manager Layout

5.2.1 Front Panel Layout



Figure 5_2 Shelf Manager Front Panel

5.2.2 Top View

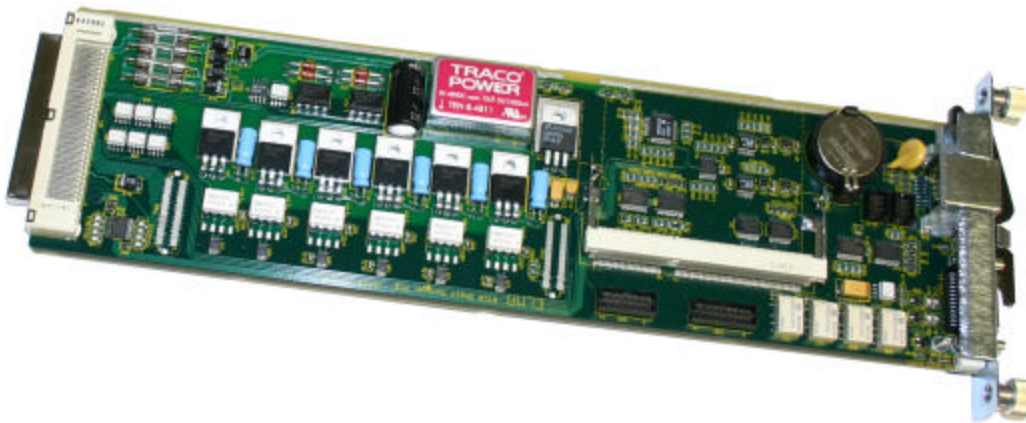


Figure 5_3 Shelf Manager Top View

5.3 Ethernet Channels

The carrier board provides two Ethernet 10/100 interfaces. The first interface can be routed to either the front panel or to the backplane through jumpers on the carrier card.

The second interface is intended for redundancy state updates between the two Shelf Managers.

These Ethernet signals are also routed to Logical Slots 1 and 2.

5.4 Shelf Manager Serial Interface

The Carrier Board provides a RS-232 interface using a front panel mini DB-25M (DTE) Connector.

For ShMM 500 configure serial port for 115200 BPS, 8, N, 1.

5.5 Thermal and System Management Controller

The ADM1026 is used to control and monitor the Fan trays. This device has Voltage Monitoring, Tachometer inputs, PWM outputs, and Fan Tray Present signals. This device will control the speed of the fans.

5.6 Temperature Monitor

The Shelf Manager has the ability to monitor I²C temperature sensors. The LM75 I²C temperature sensors are generally used for temperature monitoring.

5.7 Front Panel Reset

The carrier board provides a reset button on the front panel. Activation of the button results in a full board reset, which is equivalent of power cycling the board.

5.8 Hardware monitoring and control

The Shelf Manager can monitor input voltage, Temperature Sensors, Fan Tray Present Signals, Fan Tachometer inputs, and PWM Outputs.

5.9 Hot Swap Interface

The Shelf Manager has a hot swap interface. This interface has three components the Extraction Handle, The Present Signal (This signal indicates that the Shelf Manager is fully seated in the backplane), and the Hot Swap LED.

5.10 Hardware Address

The hardware address for the Shelf Manager is configured by the backplane. The Shelf Manager provides a pull up resistor for the address line and the backplane will configure the hardware address when the Shelf Manager is plugged in to the backplane.

HA [1]	HA [2]	Description
0	0	Error
1	0	First Management Slot
0	1	Second Management Slot
1	1	Error

Table 5_1 Hardware Address

If the hardware address is not configured the Shelf Manager will not become active.

5.11 Redundancy Control

The active Shelf Manager manages the IPMB and the IPM Controllers. The active Shelf Manager interacts with the backup System Manager over RMCP and other shelf external interfaces. The active Shelf Manager maintains an open TCP/IP connection (eth1) with the backup Shelf Manager. It communicates all changes in the state of managed objects to the backup Shelf Manager.

The backup Shelf Manager may become active as the result of a switchover. There are two types of switchover cooperative and forced. The cooperative switchover the active and backup Shelf Managers negotiate the transfer of

responsibilities from active to backup. The forced switchover happens when the backup Shelf Manager determines that the active Shelf Manager is no longer alive or healthy.

The backup Shelf Manager recognizes the departure of the active Shelf Manager by one of the following. TCP connection gets closed or the remote healthy or remote presence becomes inactive.

A watchdog timer is used to protect against being unresponsive. If the watchdog triggers the Shelf Manager will reset and the backup will activate. For the System Manager using RMCP the switchover is transparent.

5.12 Telco Alarm

The Shelf Manager provides Telco Alarm Functionality with the following aspects.

- Mini DB25 Telco Alarm Interface
- Telco Alarm LED's
- Telco Alarm Cutoff Push Button

5.13 Serial EEPROM

The Shelf Manager can load and store the Shelf FRU Information on the external Serial EEPROM. These serial EEPROMs have the same I²C Address but are on different I²C busses.

5.14 Shelf Manager Connectors

5.14.1 CN3 JTAG ARM Injectors

Pin	Signal	Description
1	N/C	No Connection
3	/TRST	Test Power Reset
5	TDI	Test Data In
7	TMS	Test Mode Select
8	TCK	Test Clock
11	TDO	Test Data Out
2, 4, 6, 8, 10, 12, 13, 14	NC / Ground	Ground

Table 5_2 CN3 JTAG Connector

5.14.2 CN8 AUX ARM Injector

Pin	Signal	Description
1	V5	+ 5 Volts
3	nMRST	Master Reset
4	GND	Ground
5	UMODE	User Mode
6	GND	Ground
7	NC	No Connection
8	GND	Ground
9	SEL_JTG_DEV	JTAG Target Control
10	GND	Ground
11	TD	Transmit Data
12	NC	No Connection
13	RD	Receive Data

14	NC	No Connection
15	NC	No Connection
2,16	GND	Ground

Table 5_3 CN8 AUX Connector

5.14.3 CN14 Serial and Telco Alarm Connector

Pin	Signal	Description
1	AMIR+	Minor Reset +
2	AMIR-	Minor Reset -
3	AMAR+	Major Reset +
4	AMAR-	Major Reset -
5	ACNO	Critical Alarm Normally Open
6	ACNC	Critical Alarm Normally Closed
7	ACCOM	Critical Alarm Common
8	AMINO	Minor Alarm Normally Open
9	CD	Carrier Detect
10	RxD	Receive Data
11	TxD	Transmit Data
12	DTR	Data Terminal Ready
13	SG	Signal Ground
14	AMINNC	Minor Alarm Normally Closed
15	AMINCOM	Minor Alarm Common
16	AMANO	Major Alarm Normally Open
17	AMANC	Major Alarm Normally Closed
18	AMACOM	Major Alarm Common
19	APRCO	Power Alarm Normally Open
20	APRCOM	Power Alarm Common
21	NC	No Connection
22	DSR	Data Set Ready
23	RTS	Request to Send
24	CTS	Clear to Send
25	RI	Ring Indicator

Table 5_4 CN14 Serial and Telco Alarm Connector

5.14.4 CN9 10/100 Ethernet Connector

Pin	Description
1	TX +
2	TX -
3	RX +
4,5	Unused pair
6	RX -
7,8	Unused pair

Table 5_5 CN9 10/100 Ethernet Connector

5.14.7 CN2 Battery Backup

Pin	Description
1	+3.3 V Battery
2	GND

Table 5_6 CN2 Battery

5.14.8 JP1 and JP2 Shelf Manager Ethernet Jumpers

JP1	JP2	Description
1-3, 2-4	1-3, 2-4	Ethernet 0 is routed to Front Panel
3-5, 4-6	3-5, 4-6	Ethernet 0 is routed to Backplane

Table 5_7 JP1 and JP2 Ethernet Jumpers

5.14.9 Backplane Interface Connector

Pin	Designation	Purpose	Pin	Designation	Purpose
1, 2	Gnd	Logic Ground	123	FTP_1	Fan Tray Present Signal
3	FTFOUT_0	Fan Tray Fail Signal	124	FTP_0	Fan Tray Present Signal
4	FTFOUT_1	Fan Tray Fail Signal	125	Filter 1	Air Filter Present Signal
5	FTFOUT_2	Fan Tray Fail Signal	126	Filter 2	Air Filter Present Signal
6	FTFOUT_3	Fan Tray Fail Signal	127	Filter 3	Air Filter Present Signal
7	FTFOUT_4	Fan Tray Fail Signal	128	SDA_B13	Radial IPMB
8	FTFOUT_5	Fan Tray Fail Signal	129	I ² C 1 SDA	Off Board I ² C Bus
9	FTFOUT_6	Fan Tray Fail Signal	130	I ² C 1 SCL	Off Board I ² C Bus
10	FTFOUT_7	Fan Tray Fail Signal	131, 132	Gnd	Logic Ground
11, 12	Gnd	Logic Ground	133	I ² C 3 SCL	Off Board I ² C Bus
13, 14	5V out	5 Volt Output	134	I ² C 2 INT	Off Board I ² C Bus
15	SDA_B16	Radial IPMB	135	SDA_A16	Radial IPMB
16	SCL_B16	Radial IPMB	136	SCL_A16	Radial IPMB
17	SCL_A13	Radial IPMB	137	SCL_B13	Radial IPMB
18	SDA_A11	Radial IPMB	138	SDA_A13	Radial IPMB
19	SCL_B11	Radial IPMB	139	SCL_A11	Radial IPMB
20	SDA_B8	Radial IPMB	140	SDA_B11	Radial IPMB
21, 22	Gnd	Logic Ground	141, 142	Gnd	Logic Ground
23	SCL_A8	Radial IPMB	143	SCL_B8	Radial IPMB
24	SDA_A6	Radial IPMB	144	SDA_A8	Radial IPMB
25	SCL_B6	Radial IPMB	145	SCL_A6	Radial IPMB
26	SDA_B3	Radial IPMB	146	SDA_B6	Radial IPMB
27	SCL_A3	Radial IPMB	147	SCL_B3	Radial IPMB
28	SDA_A11	Radial IPMB	148	SDA_A3	Radial IPMB
29	SCL_B2	Radial IPMB	149	SCL_A1	Radial IPMB
30	SDA_B1	Radial IPMB	150	SDA_B2	Radial IPMB
31, 32	Gnd	Logic Ground	151, 152	Gnd	Logic Ground
33	SCL_A15	Radial IPMB	153	SCL_B1	Radial IPMB
34	SDA_B15	Radial IPMB	154	SDA_A15	Radial IPMB
35	SCL_B15	Radial IPMB	155	HWA2	
36, 37	Gnd	Logic Ground	156, 157	Gnd	Logic Ground
38	E0RN	Ethernet 0 Rx -	158	TX1N	Ethernet 1 TX-
39	E0RP	Ethernet 0 Rx+	159	TX1P	Ethernet 1 TX+
40	RX1N	Ethernet 1 Rx -	160	USBDP	Secondary USB+
41	RX1P	Ethernet 1 Rx+	161	USBDM	Secondary USB-
42, 43	N/C	No Connection	162, 163	N/C	No Connection
44	Tach_1	Fan Tachometer Signal	164	Tach_6	Fan Tachometer Signal
45	Tach_0	Fan Tachometer Signal	165	Tach_7	Fan Tachometer Signal
46, 47	N/C	No Connection	166, 167	N/C	No Connection
48	-48B1 Sense	-48B1 Sense	168	-48B2 Sense	-48B2 Sense
49	-48B1 RTN Sense	-48B1 RTN Sense	169 - 171	N/C	No Connection
50, 51	N/C	No Connection	172	-48A2 Sense	-48A2 Sense
52	-48A1 Sense	-48A1 Sense	173 - 175	N/C	No Connection
53	-48A1 RTN Sense	-48A1 RTN Sense	176	PWM2 Out	Fan PWM Signal
54, 55	N/C	No Connection	177 - 179	N/C	No Connection
56	PWM0 Out	Fan PWM Signal	180	-48 B RTN	-48 B RTN
57, 58	N/C	No Connection	181	FTP 3	Fan Tray Present
59	-48V A	-48V A Input	182	FTP 2	Fan Tray Present
60	-48V A RTN	-48V A Return	183	PRES L L	Present Signal L
61, 62	Gnd	Logic Ground	184	PRES R L	Present Signal R
63	PEM0	PEM Present Signal	185	HLY R L	Healthy Signal R
64	PEM1	PEM Present Signal	186	HLY L L	Healthy Signal L
65	PEM2	PEM Present Signal	187	SWR R L	Switchover Signal R
66	PEM3	PEM Present Signal	188	SWR L L	Switchover Signal L
67	PEM4	PEM Present Signal	189	PRES L	Present Signal
68	PEM5	PEM Present Signal	190	SDA_B12	Radial IPMB
69	I ² C 0 SDA	Off Board I ² C Bus	191	FTP 4	Fan Tray Present
70	I ² C 0 SCL	Off Board I ² C Bus	192	FTP 5	Fan Tray Present
71, 72	Gnd	Logic Ground	193	Filter 0	Air Filter Present Signal
73	I ² C 2 SDA	Off Board I ² C Bus	194	I ² C 3 SDA	Off Board I ² C Bus
74	I ² C 2 SCL	Off Board I ² C Bus	195	I ² C 3 INT	Off Board I ² C Bus
75	SDA_B7	Radial IPMB	196	SCL_A2	Radial IPMB

Pin	Designation	Purpose	Pin	Designation	Purpose
76	SCL_B7	Radial IPMB	197	SDA_A2	Radial IPMB
77	SCL_B12	Radial IPMB	198	SCL_A7	Radial IPMB
78	SDA_A12	Radial IPMB	199	SDA_A7	Radial IPMB
79	SCL_B14	Radial IPMB	200	SDA_B14	Radial IPMB
80	SDA_A14	Radial IPMB	201	SCL_A12	Radial IPMB
81, 82	Gnd	Logic Ground	202	FTP 6	Fan Tray Present
83	SCL_A10	Radial IPMB	203	FTP 7	Fan Tray Present
84	SDA_B10	Radial IPMB	204	SDA_A10	Radial IPMB
85	SCL_B9	Radial IPMB	205	SCL_A14	Radial IPMB
86	SDA_A9	Radial IPMB	206	SDA_B9	Radial IPMB
87	SCL_A5	Radial IPMB	207	SCL_B10	Radial IPMB
88	SDA_B5	Radial IPMB	208	SDA_A5	Radial IPMB
89	SCL_B4	Radial IPMB	209	SCL_A9	Radial IPMB
90	SDA_A4	Radial IPMB	210	SDA_B4	Radial IPMB
91, 92	Gnd	Logic Ground	211	SCL_B5	Radial IPMB
93	SCL_A	IPMB A	212, 213	Gnd	Logic Ground
94	SDA_B	IPMB B	214	SDA_A	IPMB A Signal
95	SCL_B	IPMB B	215	SCL_A4	Radial IPMB
96, 97	Gnd	Logic Ground	216	HWA1	Hardware Address
98	E0TM	Ethernet 0 TX -	217, 218	Gnd	Logic Ground
99	E0TP	Ethernet 0 TX +	219	USB0P	Primary USB +
100 - 102	N/C	No Connection	220	USB0M	Primary USB -
103	Tach_5	Fan Tachometer Signal	221 - 223	N/C	No Connection
104	Tach_3	Fan Tachometer Signal	224	Tach_9	Fan Tachometer Signal
105	Tach_4	Fan Tachometer Signal	225	Tach_11	Fan Tachometer Signal
106	Tach_2	Fan Tachometer Signal	226	Tach_8	Fan Tachometer Signal
107, 108	N/C	No Connection	227	Tach_10	Fan Tachometer Signal
109	-48B2 RTN Sense	-48B2 RTN Sense	228, 229	N/C	No Connection
110 - 112	N/C	No Connection	230	-48B3 RTN Sense	-48B3 RTN Sense
113	-48A2 RTN Sense	-48A2 RTN Sense	231	-48B3 Sense	-48B3 Sense
114, 115	N/C	No Connection	232, 233	N/C	No Connection
116	PWM1 Out	Fan PWM Signal	234	-48A3 RTN Sense	-48A3 RTN Sense
117, 118	N/C	No Connection	235	-48A3 Sense	-48A3 Sense
119	-48V B	-48V B Input	236, 237	N/C	No Connection
120	N/C	No Connection	238	PWM3 Out	Fan PWM Signal
121, 122	Gnd	Logic Ground	239, 240	N/C	No Connection

Table 5_8 Backplane Interface Connector

6.0 Revision History

Description of Change Document	Document ID	Date
Initial release	Preliminary Revision A Version 0	05/18/07

Table 6_1 Revision History

Appendix A. Chassis Figures

