ACP-7000

19" RACKMOUNT 7U HEIGHT INDUSTRIAL CHASSIS

Users Manual

Part No. 20027K0000 1st Edition
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Contents

CHAPTER 1

General Information

Chapter 1 Introduction

1.1 Introduction

ACP-7000 is a high performance, high capacity-computing platform which meets a variety of needs including filing, printing, applications, e-mails and Web server. This powerful departmental server includes a full Disk Array of high availability features for minimizing the system down-time especially in mission-critical CT application and factory management. A wide range of standard computing peripherals can be integrated with the chassis to meet different application development under mission-critical environment 24 hours a day, 7 days a week.

The product delivers rack space optimization, features flexibility, expandability and extraordinary performance which you can rely on today and grow with tomorrow.

1.2 Specifications

Construction: Heavy-duty steel
Disk Drive Bay: Front accessible one slim type CD-ROM, one 3.5¨ & two 5.25" disk drivers.
RAID Storage: Supports six SCSI SCA hot-swappable HDD. Each 3.5" mobile drawer could offer a lock latch for protection and a pair of power, status LED. Status LED shows the HDD data accessing by blue color, HDD failure by red color and Array reconstructing by pink color blinking. RAID storage get abundance cooling by two cooling fans.
Cooling System: Supports abundance cooling by four hot-swappable fans
Security protection: The RAID storage system, power switch and CPU reset are all behind the lockable door.
Status indicators: Single-color LED(green) for 3.3V,+5V,+12V,-5V,-12V. Single-color LED(orange) for HDD activity. Bi-color LED(green/red) for system power failure, fan failure and overheating.
For each 3.5" mobile HDD drawer, single-color LED (green) for HDD power. Bi-color LED (blue/red) for HDD operating status.
Connectors: Front accessible USB and PS/2 keyboard
Dimension (WxHxD): 482mm x 307mm x 500mm (19"x 12.1" x 19.7"),
Weight: 35 kg (77ibs)
Paint Color: Pantone 4C 2X Black, textured

Operation Temperature:0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature: -40° to +60°C (-40° to +140°F)
Relative Humidity: 10 ~ 95%@40°C, non-condensing
Vibration (operating): 5Hz ~ 500Hz, 1G rams, 2G(non-operating)
Shock (non-operating): 30 G with 11m Sec duration, 1/2 sine wave
Altitude: 0 to 3048m (0 to 10,000 ft)
Slide Rail: General Device C-300 series supported
Safety: UL, cUL, CE

1.3 Passive Backplane Options

Single System Backplane models (refer appendix for details)
·PCA-6120
·PCA-6120P4
·PCA-6119P7
·PCA-6119P10
·PCA-6119P17
·PCA-6119P16X (16 PCI 64_bit)

Multi-System Backplane models
·PCA-6120D, PCA-6120DP4 (Dual segment)
·PCA-6120Q, PCA-6116QP2 (Quad segment)

1.4 Power Supply Options

Model name	Specification					
	Watt	Input	Output	Mini-load	Safety	MTBF
PS-400ATX-Z	400W ATX PFC	90/ 264Vac(Full-range)	+5V@ 42A+3.3V @20A+12V@14A-12V@1A-5V@1A+5Vsb@0.75A	+5V@2A+12V@0.5A+3.3V@0.2A	UL/cUL-TUV	100,000 hours @25°C 75% load
RPS-460H-Z	460W ATX PFC	100 ~ 240 Vac(Full-range)	+5V@ 40A+3.3V @30A+12V@27A-12V@1A-5V@0.8A +5Vsb@2A	+5 V @ 5 A+3.3 V @ 1A+12 V @ 2.5 A+5Vsb@ 0.1A	UL, CSA,TUV	148,000 hours @25°C (Full load)
RPS-570H	570W ATX PFC	100 ~ 240 Vac(Full-range)	+5V@ 50A+3.3V @40A+12V@34A-12V@1A-5V@1A+5Vsb@1.2A	+5 V @ 6A+3.3 V @ 2A+12 V @ 3 A-12 V @ 0.1A-5 V @ 0.1A+5Vsb @ 0.1A	UL, cUL-TUV	180,000 hours @25°C (Full load)
RPS-810H	810W ATX PFC	100 ~ 240Vac(Full-range)	+5V@ 75A+3.3V @60A+12V@51A-12V@1.5A-5V@1.5A +5Vsb@1.6A	+5 V @ 9A+3.3 V @ 3A+12 V @ 4.5 A-12 V @ 0.15A-5 V @ 0.15A+5Vsb @ 0.15A	UL, cUL-TUV	259,000 hours @25°C (Full load)

1.5 System Regulation

Model name	Specification	Safety
ACP-7000BP-00R	Without backplane, without Power Supply(20-B/P version, for redundant power)	-
ACP-7000BP-00N	Without backplane, without Power Supply(20-B/P version, for 2+1 or 3+1 power)	-
ACP-7000BP-46R	With 460W ATX PFC Redundant Power Supply without backplane (20-Slot backplane version)	UL.cULCE
ACP-7000BP-57N	With 570W ATX PFC 2+1 Redundant Power without backplane (20-Slot backplane version)	UL.cULCE
ACP-7000BP-81N	With 810W ATX PFC 3+1 Redundant Power Supply without backplane (20-Slot backplane version)	UL.cULCE
ACP-7000MB-00R	Without M/B, without Power Supply(M/B versipon & for Redundant Power)	-
ACP-7000MB-40Z	Without M/B, with 400W ATX PFC Power Supply(M/B versipon & for single PS/2 Power)	-
ACP-7000MB-46R	With 460W ATX PFC Redundant Power Supply without motherboard(M/B version)	UL.cUL,CE

1.6 Dimensions

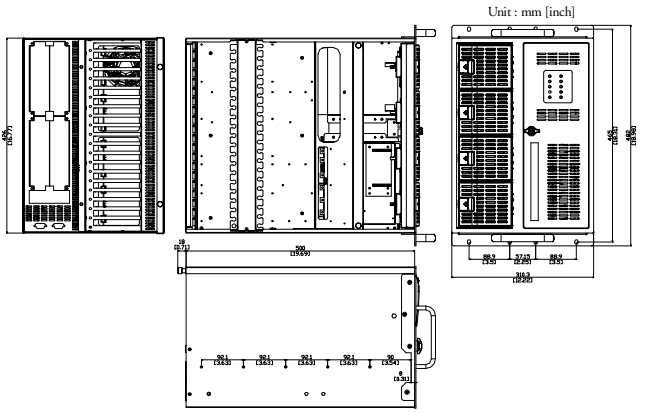


Figure 1.1: Dimensions

1.7 Exploded Diagram

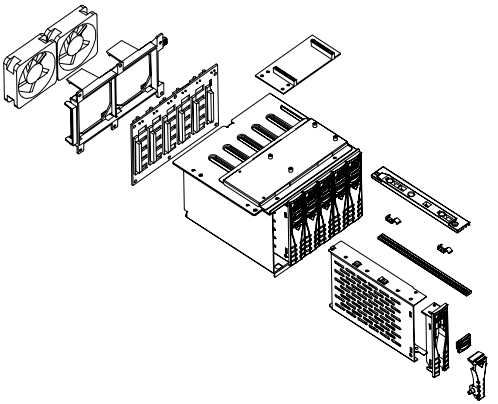


Figure 1.2: Exploded Diagram-1

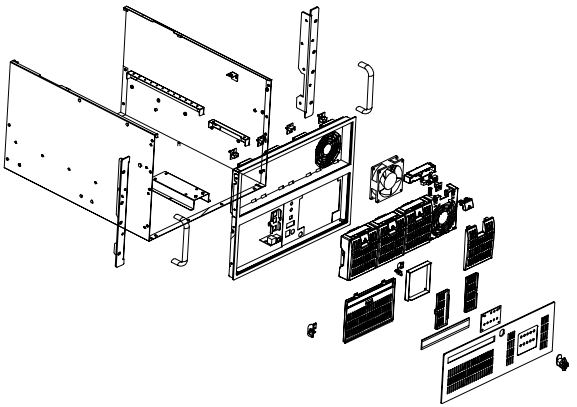


Figure 1.3: Exploded Diagram-2

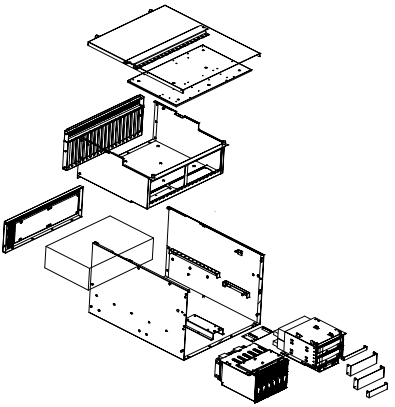


Figure 1.4: Exploded Diagram 3

CHAPTER 2

System Setup

Chapter 2 System Setup

2.1 System Installation

WARNING: Before starting the installation process, be sure to shut down all power from the chassis. Do this by turning off the power switch, and unplugging the power cord from the power outlet. When in doubt, consult with an experienced technician.

2.1.1 Attaching the handles.

The handles for the front panel are in the accessory box. To install the handles, simply secure them to the front panel with the provided screws.

2.1.2 Removing the top cover and backplane holder

First, remove the chassis cover. The top cover is fixed to the chassis by two thumbscrews.

1. Release two thumbscrews on the rear upper location of the chassis.
2. Lift the cover.

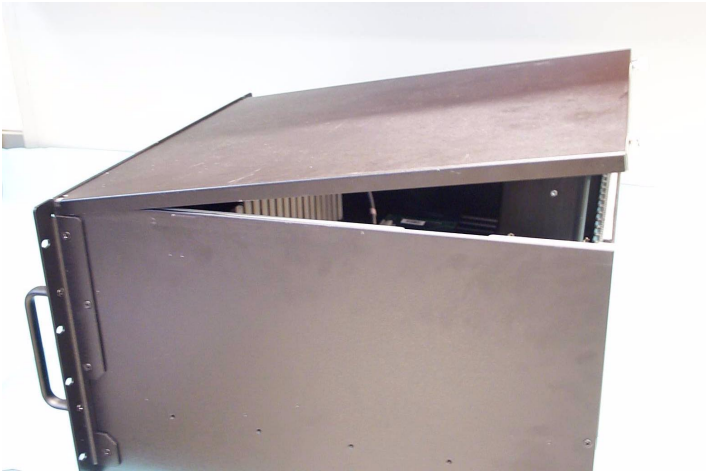


Figure 2.1: Top Cover

2.1.3 Chassis Front and Rear Sections

The front panel switches behind the door are used for system power, system reset 1, system reset 2 (option), alarm reset , power switch, USB and PS/2 keyboard. A multi-function key lock locks the door cover; user could lock the door cover by key or without key.

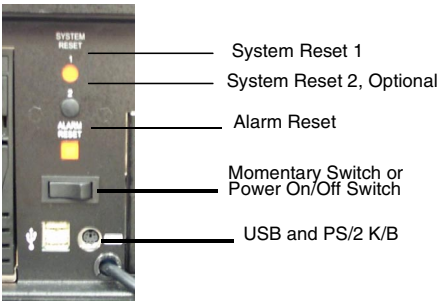


Figure 2.2: Front Panel Switches

Figure 2.3: Front View

Figure 2.4: Rear View

System Reset 1: Press this switch to reinitialize the system. This is the same as the hardware reset button. (Default setting)

System Reset 2: Press this switch to reinitialize the second system. (Optional for dual system)

Alarm Reset Switch: Press this switch to suppress or stop an audible alarm. Whenever a fault in the system occurs (e.g. fan failure, rising chassis temperature, backplane voltage problem), an audible alarm is activated. Pressing this switch will cause the alarm to stop.

Power On/Off Switch: Use this switch to turn on/off the system AT power.

Momentary Switch: Use this switch and by way of ATX (PS_ON) function to turn on system ATX power. Please use system shutdown to turn off system power automatic or press momentary switch for a while to turn off system power

USB connector: If you want to connect any USB interface device to the system, you could use this connector.

PS/2 connector: If you want to connect the PS/2 keyboard, you could use this connector.

The rear section of B/P version includes B/P rear window, 20-slot I/O brackets and the sheet metal kit for 1+1 or N+1 redundant power supply. The rear section of M/B version includes M/B rear window, 7-slot I/O brackets, ATX M/B I/O cover and sheet metal kit for single or 1+1 redundant power.

2.1.4 Drive Bay & SCSI Storage Installation

The Standard Drive Bay of the ACP-7000 can hold a slim type CD-ROM, 5.25"(x2) and 3.5" (x1) devices Installation disk drives

a. Remove the top cover

b. Release two thumbscrews to draw out the backplane holder until you have enough space to take out driver bay. See Figure 2.5

c. Undo the four screws of cushion.

d. Lift off the Standard Drive Bay. See Figure 2.6

e. Insert the drives into their proper locations in the drive bay and secure them with the screws provided.

f. Connect the disk drive power and signal cables.

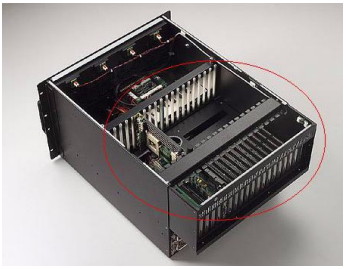


Figure 2.5: Backplane Holder

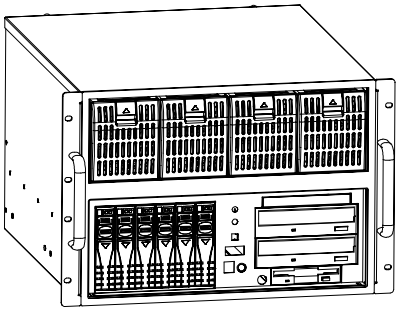


Figure 2.6: Driver Bay

The SCSI storage holds six 3.5" mobile drawer which is for 1" height SCSI SCA-2 80-pin 3.5" HDD, and with 6-slot SCA backplane. User could install 1" height SCSI SCA-2 80-pin 3.5" HDD into this SCSI storage and use RAID card or RAID controller as RAID system for ACP-7000

There is several type of SCSI 3.5" HDD, when in doubt, consult with an experienced technician before

SCSI SCA-2 80-pin HDD installation.

a. Open the front door by turning the key lock.

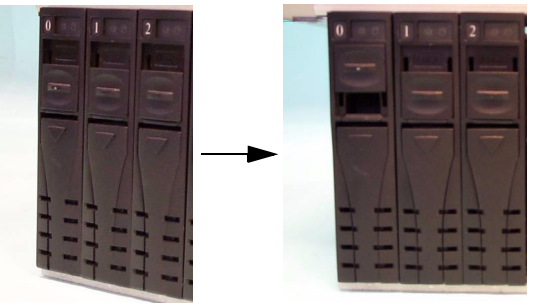
b. Find the latch of 3.5" HDD mobile drawer and push it to the up location. See the Figure 2.7.

c. Press down the handle of 3.5" HDD mobile drawer down until the end, then hold the handle and draw it out. Refer the Figure 2.8.

d. Install 1" height SCSI SCA-2 80-pin 3.5" HDD by four screws. Refer the Figure 2.9

e. Returning and push the mobile drawer within HDD toward to the SCSI storage until the handle of mobile drawer is moving up. See Figure 2.10

f. Push the handle of mobile drawer until the end, and then press the latch to the down location.



The Latch has to be on upper location

Figure 2.7: 3.5" Mobile Drawer Latch

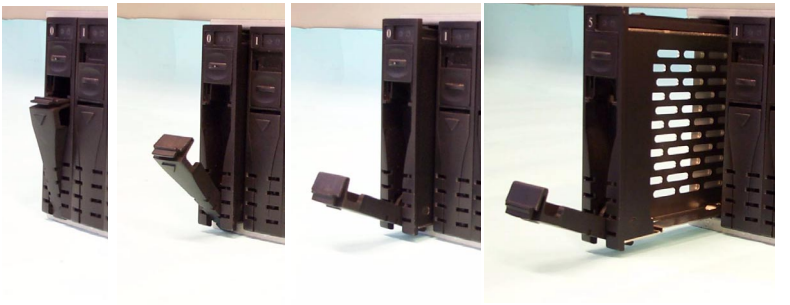


Figure 2.8: 3.5" Mobile Drawer Handle

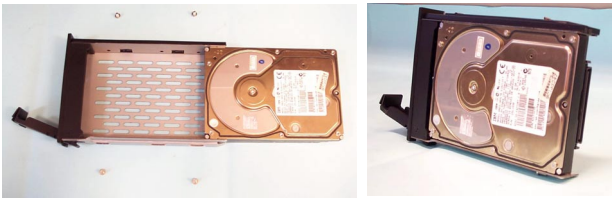


Figure 2.9: SCSI SCA-2 HDD

Figure 2.10: Returning 3.5" Mobile Drawer

2.1.5 CPU Card and Add-on Cards Installation

a. Open the top cover and move aside the cardholder by two screws

b. Find out the location of PICMG slot, take out I/O bracket first, and install SBC(CPU card)

c. Connect the 5Vsb and PS_ON cable of power supply to SBC. See Figure 2.11

d. Find the location of PCI or ISA slot, take out the I/O bracket first, and install add-on card.

e. After all the CPU card and add-on cards installation, fix them tightly with backplane holder by screw and fix them well by cardholder.

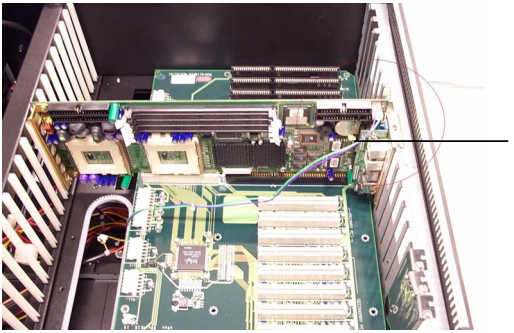


Figure 2.11: 5Vsb/PS_ON cable

2.1.6 ACP-7000BP-00R, ACP-7000BP-00N

ACP-7000BP-00R has a momentary switch on the front panel. It is 20-slot backplane version but without backplane and power supply inside; it is with the mechanical design for 1+1 redundant power supply. ACP-7000BP-46R, see Figure 2.12, is without backplane; but with 460W 1+1 redundant power supply inside. ACP-7000BP-00N, all are same with ACP-7000BP-00R but with the mechanical design for N+1 redundant power. ACP-7000BP-57N, see Figure 2.13, is without backplane; but with 570W 2+1 redundant power. ACP-7000BP-81N, see Figure 2.13, is without backplane, but with 810W 3+1 redundant power.

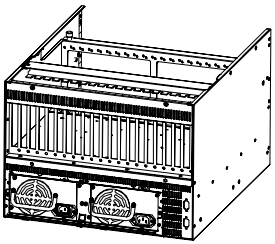


Figure 2.12: ACP-7000BP-46R

Figure 2.13: ACP-7000BP-57N/81N

Before starting to plug the power cord for ACP-7000BP-57N and ACP-7000BP-81N, be sure both "Inlet" of power cord have the same direction to plug into to power outlet. See Figure 2.14

Figure 2.14: Power Inlet and Outlet

2.1.7 ACP-7000MB-00X, ACP-7000MB-00R

ACP-7000MB-00X, has a momentary switch on the front panel and is for ATX M/B or two ways Server Board. It is without motherboard and power supply inside; and the mechanical design is for ATX single PS/2 type power supply. ACP-7000MB-00R is complete same as ACP-

7000MB-00X; but the mechanical design is for 1+1 redundant power supply. For ACP-7000MB-40Z, sees Figure 2.15, it is with 400W ATX PFC PS/2 single power supply. For the ACP-7000MB-46R, see Figure 2.16, you will understand it is with 460W 1+1 redundant power supply inside.

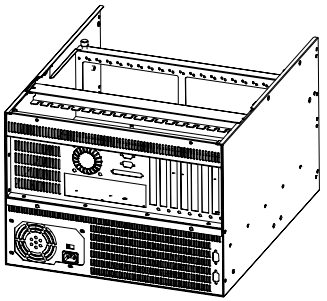


Figure 2.15: ACP-7000MB-00X

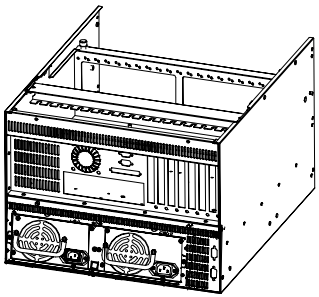


Figure 2.16: ACP-7000MB-46R

2.2 LED Indicators

2.2.1 System Status LED

The System Status LED shows as follows:

LED	Description	RED	GREEN or Orange
PWR	System Power	Abnormal	Normal
HDD	Hard Drive activity	No light	Data access
TEMP	Chassis Temperature	Abnormal	Normal
FAN	Cooling Fan status	Abnormal	Normal

When the PWR LED is RED, it indicates a redundant power supply failure. To stop the alarm buzzer, press the Alarm Reset button. Please check out the redundant power supply right away and replace failure power supply module with a good one.

When the FAN LED is RED and blinking, it indicates a failing cooling fan. An audible alarm is also activated. To stop the alarm buzzer, press the Alarm Reset button then replace the fan immediately.

If the TEMP LED is RED and blinking, the system detects rising temperature inside the chassis. An audible alarm is activated. To stop the alarm buzzer, press the Alarm Reset button. Inspect the rear section and fan filter immediately. Make sure airflow inside the chassis is smooth and not blocked by dust or other particles.

2.2.2 Power Status LED

The Power Status LED indicates the status of the backplane voltage signals.

LED	Description	Light	No light
+3.3V	+3.3V signal	Normal	No output
+5V	+ 5V signal	Normal	No output
+12V	+12V signal	Normal	No output
-5V	- 5V signal	Normal	No output
-12V	-12V signal	Normal	No output

When a LED fails to light, it indicates a problem with one of the voltage signals. An audible alarm is sounded. Check to make sure that the power supply connector is properly attached to the backplane. If problem persists, consult an experienced technician.

2.3 SCSI Storage

The SCSI storage is within the system data; please have to be very carefully to avoid damage the system data if you have to take the SCSI storage out from chassis. When in doubt, consult with an experienced technician.

a. Open the top cover and release two thumbscrews to draw out the backplane holder until you could take out the SCSI Storage.

b. Please move away the fan cable from CN5, CN6 of system alarm board

c. Please release four screws of system alarm board first and then move away alarm board, then move away three-power cable, which from power supply and SCSI cable which from RAID device. See Figure 2.17

d. Undo the four screws of cushion, and then take SCSI storage out carefully.

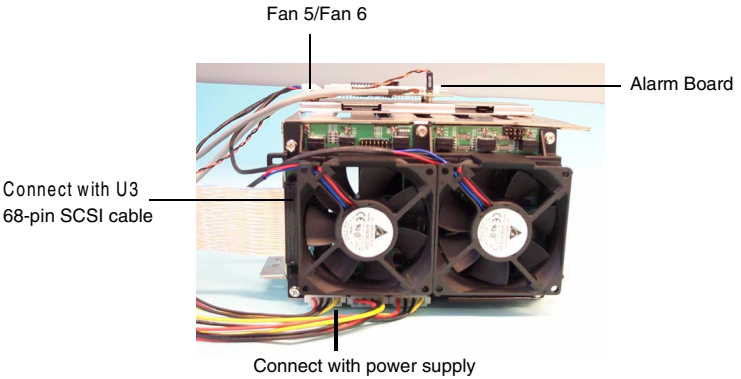


Figure 2.17: SCSI Storage Cabling

2.4 Cooling Fan & Filter

There are four (4) Cooling Fans located on the front of the chassis. The cooling fans are very easy to maintain since all of these four cooling fan are hot swappable, see Figure 2.18. There are two (2) cooling fans located inside chassis and on the rear of SCSI storage, these two cooling fans are with easy maintain design, see Figure 2.19. When anyone cooling fan breaks down, the system sounds a continuous alarm. To disable the alarm, press the Alarm Reset Switch on the front panel and replace the failing fan immediately.

There are three locations of front door with the filter. If the filter is blocked with dust or other particles, you can refer to Figure 2.20 for filter replacement. For each hot-swappable cooling fan is with filter inside. See Figure 2.21.

Figure 2.18: System H/S Cooling Fans

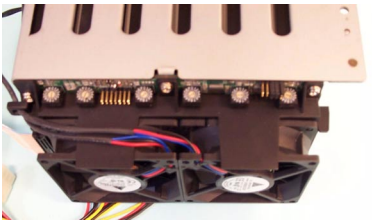


Figure 2.19: SCSI Storage Cooling Fans

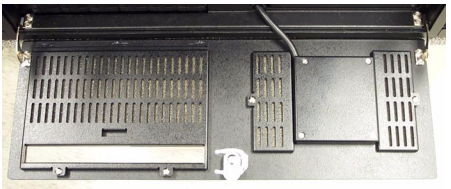


Figure 2.20: Front Door Filter

Figure 2.21: H/S Cooling Fan Filter

CHAPTER 3

Alarm Board

Chapter 3 Alarm Board

The alarm board is located under the cooling fan section. It gives an audible alarm when:

a. Any power supply module of redundant power supply fails

b. One of the cooling fans fai1s

c. Temperature inside the chassis rises over 50°C(default setting)

d. A problem occurs in one of the backplane voltage levels

The detailed layout and specification of the alarm board are as follows:

3.1 Alarm board layout

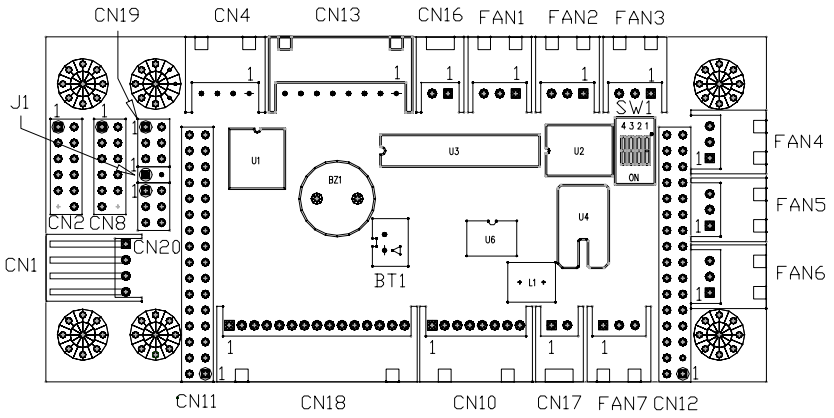


Figure 3.1: Alarm Board Layout

3.2 Alarm board Specification

Input Power:

+5V, +12V Input Signals:

- 7 FAN connectors (Pin 1: GND, Pin 2: +12V, Pin 3: FAN Signal)
- One thermal board connector (it can connect up to 8 thermal boards in a roll)
- One power good input
- One alarm reset input.
- One voltage signal connector (connect from back plane, includes ±12V, ±5V, 3.3V)
- One ATX power connector (connect from CPU card)
- One system reset connector (connect from CPU card)
- One Hard Disk LED connector (connect from CPU card)

Output Signals:

- One LED board connector
- One LCM board connector
- SNMP daughter board connector (connect to SNMP-1000 main board)
- One Buzzer output
- ATX power connector (connect to chassis)
- System reset connector (connect to chassis)

Other Interfaces:

- One pair of Watch dog input/output signals
- One pair of I2C Bus signals (DATA and CLK)
- One LAN connector
- One COM connector
- One Battery pack connector

Pin Definition

CN1 : External Power Connector, standard mini 4 Pin power connector

Pin 1 : +12V, 2A current maximumPin 2 : GND

Pin 3 : GND Pin 4 : +5V, 2A current maximum

CN2 : 10/100M LAN Connector

Pin 1 : SPLED	Pin 2 : TERMPLANE
Pin 3 : RX+	Pin 4 : RX-
Pin 5 : GND	Pin 6 : LVCC
Pin 7 : TX+	Pin 8 : TX-
Pin 9 : LILED	Pin 10 : TERMPLANE
Pin 11 : N/A	Pin 12 : NC

CN4 : I2C Sensor board (LM75) Connector

Pin 1 : +5V	Pin 2 : Sensor board I2C bus clock
Pin 3 : Sensor board I2C bus data	Pin 4 : GND

CN8 : RS-232 Connector

Pin 1 : DCD	Pin 2 : RX
Pin 3 : TX	Pin 4 : DTR
Pin 5 : GND	Pin 6 : DSR
Pin 7 : RTS	Pin 8 : CTS
Pin 9 : RI	Pin 10 : NC
Pin 11 : NC	Pin 12 : N/A

CN10 : LCM Display Board Connector

Pin 1 : LCM I2C bus data	Pin 2 : LCM I2C bus clock
Pin 3 : +12V	Pin 4 : GND
Pin 5 : +5V	Pin 6 : +5V
Pin 7 : Diagnostic LED	Pin 8 : GND

CN11 : SNMP-1000 Daughter Board Connector (Left side)

Pin 1 : SIN	Pin 2 : SOUT
Pin 3 : CTS#	Pin 4 : DCD#
Pin 5 : RTS#	Pin 6 : DTR#
Pin 7 : DSR#	Pin 8 : ID 0
Pin 9 : ATX ON	Pin 10 : DO 4
Pin 11 : GND	Pin 12 : DO 3
Pin 13 : Watchdog IN	Pin 14 : DO 2
Pin 15 : Watchdog OUT	Pin 16 : DO 1

Pin 17 : SPLED	Pin 18 : NC
Pin 19 : LILED	Pin 20 : NC
Pin 21 : GND	Pin 22 : NC
Pin 23 : TX+	Pin 24 : NC
Pin 25 : TX-	Pin 26 : NC
Pin 27 : RX+	Pin 28 : NC
Pin 29 : RX-	Pin 30 : NC
Pin 31 : TERMPLANE	Pin 32 : NC

CN12 : SNMP-1000 Daughter Board Connector (Right side)

Pin 1 : NC	Pin 2 : NC
Pin 3 : Power Good A	Pin 4 : NC
Pin 5 : NC	Pin 6 : NC
Pin 7 : Diagnostic LED	Pin 8 : FAN 1
Pin 9 : GND	Pin 10 : FAN 2
Pin 11 : GND	Pin 12 : FAN 3
Pin 13 : VCC	Pin 14 : FAN 4
Pin 15 : VCC	Pin 16 : FAN 5
Pin 17 : VCC	Pin 18 : FAN 6
Pin 19 : BEEP	Pin 20 : FAN 7
Pin 21 : 5VSB	Pin 22 : NC
Pin 23 : -5V	Pin 24 : NC
Pin 25 : +5V	Pin 26 : B_SCLK
Pin 27 : +3.3V	Pin 28 : B_SDAT
Pin 29 : -12V	Pin 30 : T_SCLK
Pin 31 : +12V	Pin 32 : T_SDAT

CN13 : Voltage Detect Input Connector

Pin 1 : 5VSB	Pin 2 : GND
Pin 3 : GND	Pin 4 : -5V
Pin 5 : +5V	Pin 6 : +3.3V
Pin 7 : -12V	Pin 8 : +12V

CN16 : 4 bit Power Good Input,

Pin 1 : Power GOOD A	Pin 2 : GND

CN17 : Alarm Reset

Pin 1: Reset	Pin 2 : GND

CN18 : LED Board Connector

Pin 1 : GND	Pin 2 : +5V Signal
Pin 3 : +12V Signal	Pin 4 : -5V Signal
Pin 5 : -12V Signal	Pin 6 : HDD Signal
Pin 7 : Power Good Signal	Pin 8 : Power Fail Signal
Pin 9 : Temperature Good Signal	Pin 10 : Temperature Fail Signal
Pin 11 : Fan Good Signal	Pin 12 : FAN Fail Signal
Pin 13 : NC	Pin 14 : +3.3V Signal
Pin 15 : 5VSB Signal	

CN19 : Connector bank from CPU card

Pin 1 : HDD LED Signal	Pin 2 : ATX soft power switch
Pin 3 : I2C Clock	Pin 4 : ATX soft power switch(-)
Pin 5 : I2C Data	Pin 6 : System Reset Signal

CN20 : Connector bank to Chassis

Pin 1 : ATX Momentary switch	Pin 2 : ATX Momentary switch(-)
Pin 3 : GND	Pin 4 : System Reset Signal
Pin 5 : Watch Dog IN	Pin 6 : Watch Dog OUT

J1 : External Speaker

Pin 1 : Buzzer	Pin 2 : +5V

3.3 Switch Setting

Table 1: Fan Number Setting

FAN NUMBER	SW1- 1	SW1 - 2	SW1 - 3	SW1 - 4
1	OFF	OFF	ON	OFF
2	OFF	ON	OFF	OFF
3	OFF	ON	ON	OFF
4	ON	OFF	OFF	OFF
5	ON	OFF	ON	OFF
6	ON	ON	OFF	OFF
7	ON	ON	ON	OFF

Table 2: Thermal Board Temperature Setting

TEMP INDEX	SW 1 - 1	SW 1 - 2	SW 1 - 3	SW 1- 4
TEMP 1	OFF	OFF	OFF	ON
TEMP 2	OFF	OFF	ON	ON
TEMP 3	OFF	ON	OFF	ON
TEMP 4	OFF	ON	ON	ON
TEMP 5	ON	OFF	OFF	ON
TEMP 6	ON	OFF	ON	ON
TEMP 7	ON	ON	OFF	ON
TEMP 8	ON	ON	ON	ON

3.4 Thermal Sensor, LED, USB and K/B

There is a temperature sensor inside the chassis, See Figure 3.2 to find the location and Figure 3.3 for the connection. When the temperature rises, the temperature sensor sends a signal to the alarm board and a continuous alarm is sounded. To stop the alarm, press the Alarm Reset Switch at the front panel.

Pin Definition

CN1~2: I2C Sensor board (LM75) Connector

Pin 1: +5V Pin 2: Sensor board I2C bus clock

Pin 3: Sensor board I2C bus data Pin 4: GND

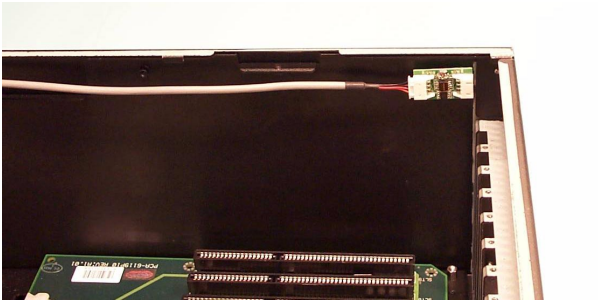


Figure 3.2: Thermal Sensor

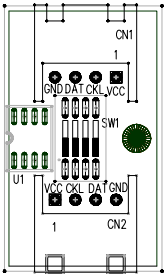


Figure 3.3: Thermal Sensor Layout

There is a system LED indicator on the front door. See Figure 3.4 for the connection.

Pin Definition

CN1: LED Board Connector

Pin 1: GND	Pin 2: +5V Signal
Pin 3: +12V Signal	Pin 4: -5V Signal
Pin 5: -12V Signal	Pin 6: HDD 1
Pin 7: Power Good Signal	Pin 8: Power Fail Signal
Pin 9: Temperature Good Signal	Pin 10: Temperature Fail Signal
Pin 11: Fan Good Signal	Pin 12: FAN Fail Signal
Pin 13: HDD 2	Pin 14: +3.3V Signal

Pin 15 : Option

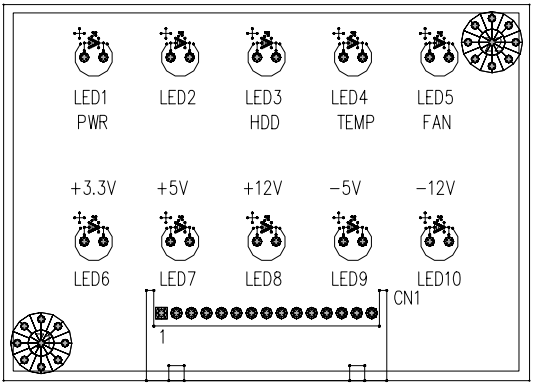


Figure 3.4: LED layout

The USB and PS/2 keyboard are behind the door. See Figure 3.5 for the connection.

CN1: Internal K/B Connector

Pin 1: KBCK	Pin 2: KBDT
Pin 3: N/C	Pin 4: GND
Pin 5: KBVCC	

CN2: Internal USB Connector

Pin 1: USBV0	Pin 2: USBD0-
Pin 3: USBD0+	Pin 4: USBG0
Pin 5: GND	Pin 6: USBV1
Pin 7: USBD1-	Pin 8: USBD1+
Pin 9: USBG1	

CN3: PS/2 Keyboard Connector

CN4: USB Connector

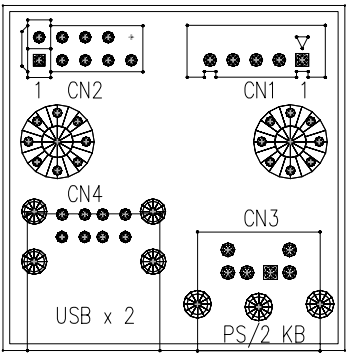


Figure 3.5: USB, PS/2 KB Layout

CHAPTER 4

SCSI Storage

Chapter 4 SCSI Storage

4.1 6-slot SCA Backplane Layout

Pin Definition

J1: On Board Terminator Enable/Disable

Enable: Pin 2-3 short Disable: Pin 1-2 short

J2: SAF-TE Chip ID Select

ID 6: Pin 2-3 short ID 8: Pin 1-2 short

J3: SAF-TE Enable/Disable

Enable: Pin 2-3 short Disable: Pin 1-2 short

J4: Reserved for system

JP1: HDD Spin up Option

Spin up when power is applied: Pin 3-4 open, Pin 1-2 open

Spin up after delay: Pin 3-4 open, Pin 1-2 short

Spin up start command reserved: Pin 3-4 short, Pin 1-2 open

JP2 ~ JP4: +5V, GND, GND, +12V

JP5: Pin 1: HDD FAIL 0 Pin 2: ALED 0

Pin 3: HDD FAIL 1 Pin 4: ALED 1

Pin 5: HDD FAIL 2 Pin 6: ALED 2

Pin 7: HDD FAIL 3 Pin 8: ALED 3

Pin 9: HDD FAIL 4 Pin 10: ALED 4

Pin 11: HDD FAIL 5Pin 12: ALED 5

Pin 13: GND Pin 14: GND

SW1 ~ SW2: ID selection from ID0 to ID 12

CON 7: 68-pin Ultra 160 SCSI Connector (default using)

CON 8: 68-pin Ultra 160 SCSI Connector (for extension)

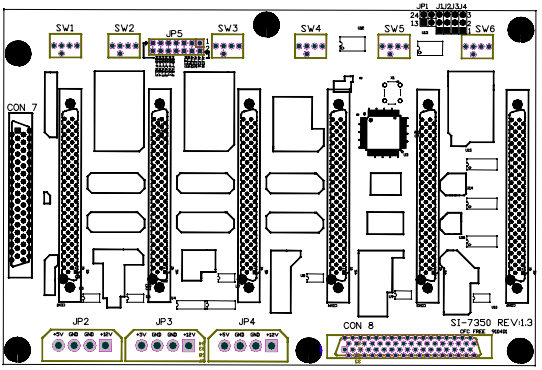


Figure 4.1: SCA Backplane Layout

4.2 SAF-TE

Stands for SCSI Accessed Fault-Tolerant Enclosure. The SCA backplane built-in GEM 318 which support SAF-TE provide a standard, non-proprietary way for third party disk and RAID controllers to be fully integrated with peripheral packing that supports status signals (LED's, audible alarm, LCD, etc), hot-swapping of hard drivers, and monitoring of enclosure components, such as disks, power supplies, temperature, fans, etc.). For ACP-7000, the GEM 318 checks the disks status only, for others as fans, temperature, power supply and voltage are monitored by alarm board.

4.3 RAID

RAID stands for Redundant Array of Independent/Inexpensive Disks. ACP-7000 could be integrated with RAID card, such as AMI, Adaptec, Intel and Mylex RAID card to perform Disk Array operations. The RAID controller is also a suitable selection to integrate into ACP-7000 but be careful the length limitation. The max length of your RAID controller has to be under "240mm" to install into ACP-7000. See the figure 4.2 to watch out the limitation.

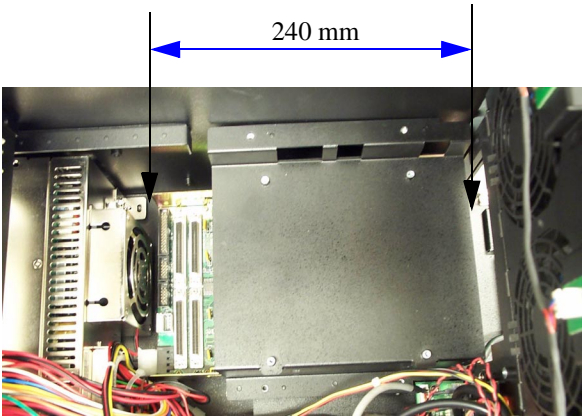


Figure 4.2: Length Limitations for RAID controller