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SR110 User's Manual

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Chapter 1: Introduction

1.1 Checklist

1.1.1 Standard Packing List

Chenbro Pedestal are designed with the utmost attention to detail to provide you with the highest standards in quality and performance. Please check that the following items have been included with your chassis. If you discover damaged or missing, contact your sales representative immediately.

SR110XX Chassis (90H211069-001) -----x1

Accessory Bag (70H211069-101) -----x1

Accessory Includes :

Part Number	Description	Q'ty
60H763103-010	STAND OFF,CU,#6-32,H5*6.5+5*6# for mother board	20
60H161103-031	SCREW,M.,HEX.,W/WASHER,NI,#6-32,1/4",	20

Table 1-1: Accessories Packing List

1.1.2 Optional Parts List

Chenbro provides several options as customer's choices as spare parts. Check below for the details:
(See appendix for some of items list details)

Category	Part Number	Description	Q'ty /Pack
HDD Cage	84H210910-010	5 in 3 Hotswap HDD Cage w/ SAS/SATAII BP , w/o fan , SATA cable ,LED board (Boxed, Black)	1
	84H210910-009	5 in 3 Hotswap HDD Cage w/ Ultra 320 SCSI BP w/o SAF-TE ,w/o fan , LED board (Boxed, Black)	1
PSU	83H322110-001	3Y YH-8112D Redundant 1140W, (3+1)*380W, w/PFC, EPS12V including power supply bracket)	1
	32H138007-001	PSU Module, Single, 380W,3Y(FSP) YM-7381CAP	1
Rackmount Bracket Kit	84H210710-035	Rackmount Ears (Black) : 2 pcs /box	1
Slide Rail	84H210710-024	King Slide 26" Rackmount slide rail	1
Power Cord	(See Below)		

Table 1-2: Optional Part Number list

1.1.3 Optional Power Cord List:

Part No.	Description
34H013100-001	POWER CORD,USA,3PIN,GENERAL
34H013100-002	POWER CORD,JAPAN(USA),3PIN,W/GROUND,GENERAL
34H023100-003	POWER CORD,AUSTRALIA ,3PIN,GENERAL
34H023100-004	POWER CORD,AUSTRALIA ,3PIN,GENERAL,KING CORD
34H032100-001	POWER CORD,EUROPEA,2PIN,GENERAL
34H043100-002	POWER CORD,UK,3PIN,W/GROUND,GENERAL
34H043100-003	POWER CORD,UK,3PIN,GENERAL
34H043100-004	POWER CORD,UK,3PIN,GENERAL, KING CORD
34H053100-001	POWER CORD,ITALY,3PIN,GENERAL
34H063100-001	POWER CORD,SWITZERLAND,3PIN,GENERAL
34H072100-001	POWER CORD,INDIA,2PIN,GENERAL
34H072200-001	POWER CORD,INDIA,2PIN,W/EMI FILTER, K5A031H5183BR,PLUG: KC-015A,(Gigabyte)
34H073100-002	POWER CORD,INDIA,3PIN,GENERAL
34H083100-001	POWER CORD,SOUTH AFRICA(S),3PIN,GENERAL
34H083100-002	POWER CORD,SOUTH AFRICA(S),3PIN, Y-Type GENERAL
34H083100-003	POWER CORD,SOUTH AFRICA(S),3PIN,GENERAL, KING CORD
34H093100-001	POWER CORD , ISRAEL, 3 PIN , GENERAL , KC-055 , 1830MM

Table 1-3: Power Cord List

1.2 Chassis Layout

1.2.1 Major Components

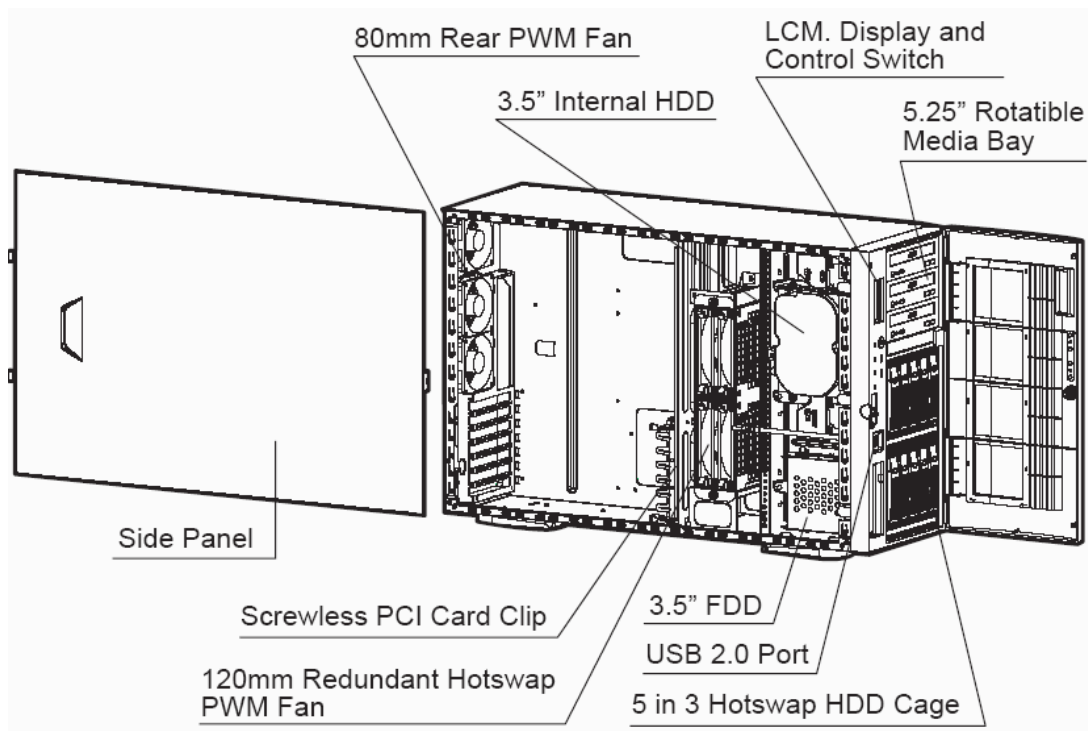


Figure 1-1: Chassis Layout

1.2.2 Front Panel Controls and Indicators

- | | | |
|------------------------------|-----------------|------------------------|
| A. System Power LED | D. NIC 2 LED | G. System Reset Button |
| B. Internal HDD Activity LED | E. LCM Display | H. Alert Mute Button |
| C. NIC 1 LED | F. Power Button | I. USB 2.0 Port |

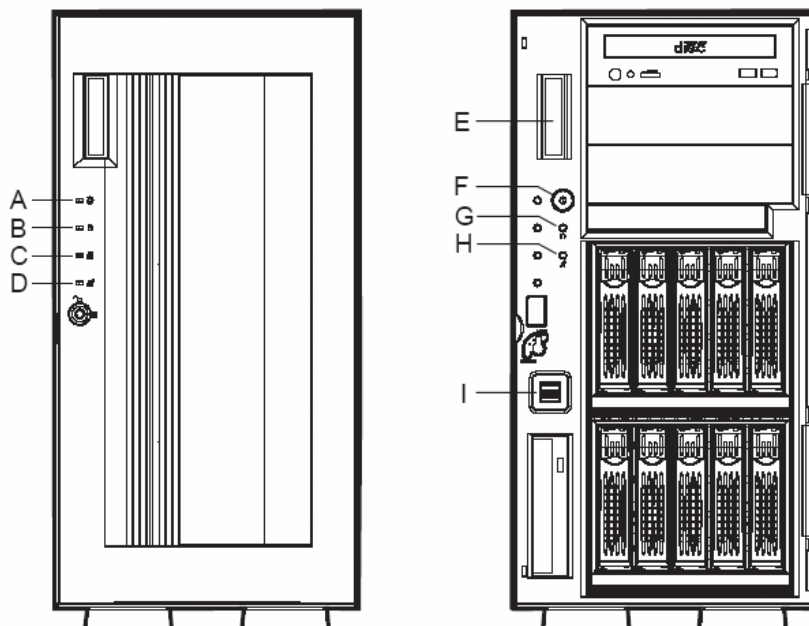


Figure 1-2: Chassis Front LED & Switch

1.2.3 Rear Window configuration

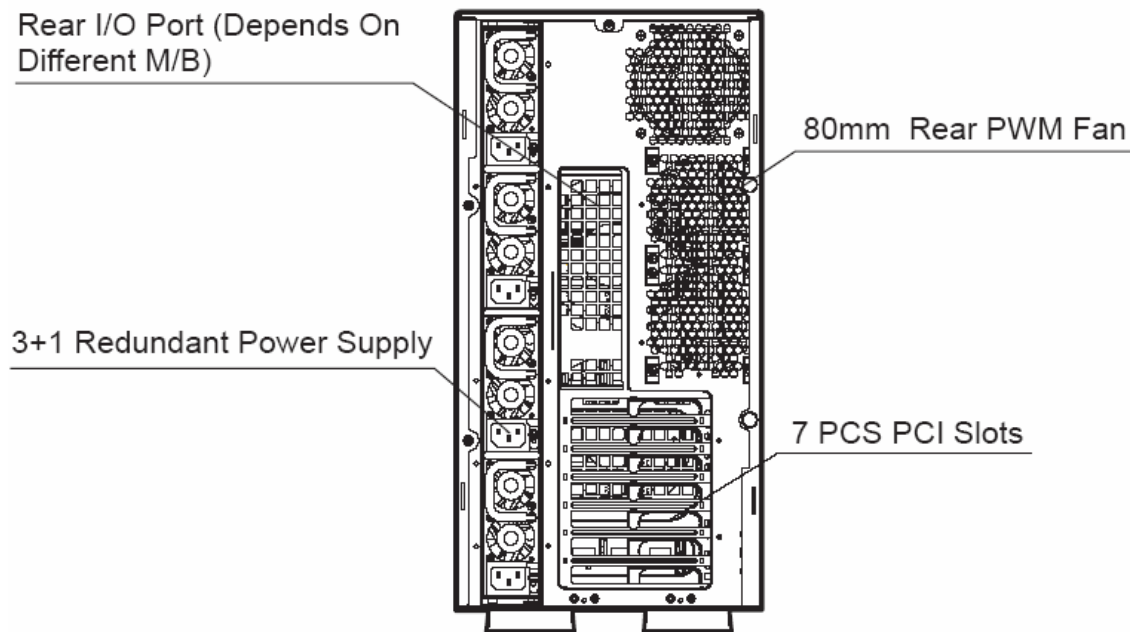


Figure 1-3: Standard Rear Window

1.3 Specifications and Features

Chenbro's new generation Pedestal chassis SR110 support a variety of high-performance system configurations with the latest server-chassis technology. **Also, offers premium cooling technology , flexible and scalable storage capability to meet the most demanding enterprise business solutions. that coupled with SAS(Serial Attached SCSI Serial ATA) HDD Cage to enhance overall performance.** And carries extended ATX Motherboard, powered by AMD Dual Core Opteron family processor.

The specifications and features of SR110 are listed as following:

Model Name			SR110
Standard			Pedestal or Rackmount 5U (EIA-RS310D)
M/B Form Factor			Extended ATX (16"x13")
CPU Type			AMD Opteron (Dual Core) / Socket F
Dimension (D×W×H)			660mmx220mmx432mm 26" x 8.7" x 16.9"
Drive Bays	External	5.25”	9
		3.5”	1 x STD FDD
	Internal	3.5”	1 x 3.5” HDD
		HDD Trays	
PSU	Form Factor		EPS12V 3+1 Redundant
	Watts		1140W
Indicators			LED for Power/HDD/LAN activity LCM for Power/Fan/Overheat failure warning
Front Controls			Power ON/OFF, System Reset, Alarm mute and USB2.0 port x 2
System Security			Front Bezel w/key lock and Intrusion SW.
Cooling Fan			4x120mm middle PWM fans (Redundant H/S)
			2x 80mm PWM fan (Fixed)
			N/A
Slot Opening			7
Riser Card			N/A
Material			SECC
Sheet Metal Thickness (mm)			1.0
Net weight (chassis only)			25 Kgs
Cubic Feet			7.56
Ref,Container loading		20’	120
		40’	240
Single packing w/Pallet			
Slide Rails Loading Capacity			180 lbs
HDD Cage Type			5 in 3 SAS/SATAII or SCSI Ultra 320

Table 1-4: Standard Specification

Side Panel And Front Bezel

- One Key Solution for front bezel and side panel opening
- Toolless side panel is easy for installation and maintenance
- Refer to chassis quick installation guide attached on the back of side panel

Front Bezel Controls and Indicators

- Front access USB2.0 ports for more flexible maintenance
- Power on/off button for system boot up
- Alarm mute button to disable failure (power / fan /overheat failure) beeping
- System reset button for system re-start
- LEDs for system Power/HDD/LAN1,LAN2 activity status
- LCM for system Power/Fan/Overheat failure notification

Drive Bays

- Up to 9 x 5.25" external bays support CD/VCD/DVD ROM , Tape Machine or 5 in 3 /3 in 2 HDD Cage ...
- 1 x 3.5" external FDD bay
- 1 x 3.5" internal HDD bay for operation system

Hard Drive Cage

- Support 3 pcs of 5 in 3 HDD Cage (Max. up to 15 hard drive trays) are available and those can provide high density server for NAS, RAID, or media streaming application server.
- Hot-swap trays for easy maintenance
- Support two options for SAS/SATAII or SCSI backplane

Motherboard

- Support Extended ATX form factor up to 16"×13"
- Refer to Appendix for mother board compatible list

CPU

- Support AMD Opteron (Dual Core)

PSU

- Support 3+1 redundant type power supply
- Power capacity is 1140W

Cooling Fan

- 4 x 120 mm middle ball-bearing PWM fans (Redundant Hotswap)
- 2 x 80mm rear ball-bearing PWM fan(Fixed)
- 1 x 80mm rear ball-bearing PWM fan(Fixed , option)

Slot Opening

- 7 x Full Length PCI slots for rear window

Chapter 2: Installation

2.1 Front Bezel and Side Panel Opening

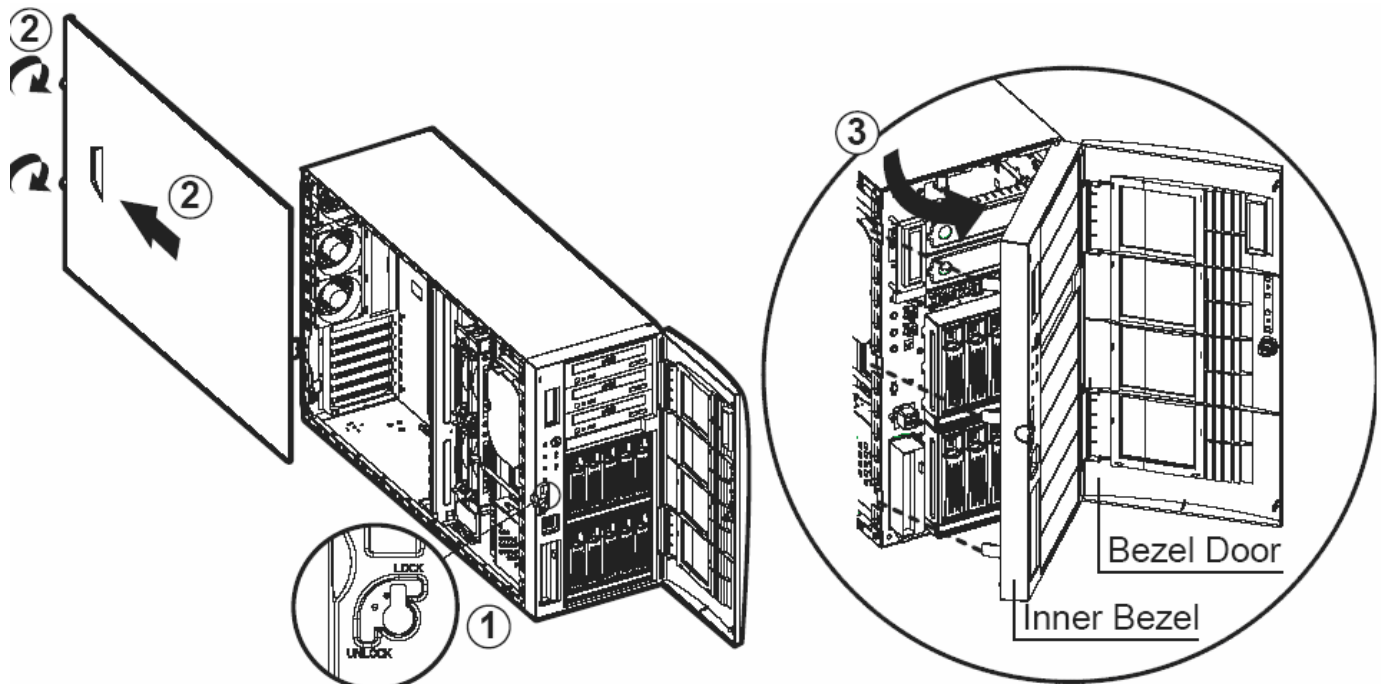
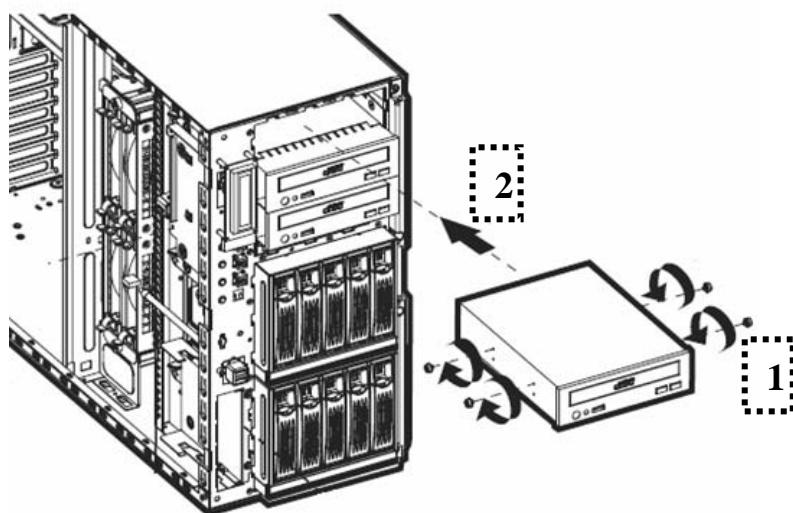


Figure 2-1: Front Bezel And Side Panel Opening

1. Switch the bezel locker to unlock position after open outer door
2. Release thumb screw , then push back to open side panel .
3. Release the bezel hook to open inner bezel

2.2 CD-ROM , FDD And Internal HDD Installation

2.2.1 CD-ROM installation



1. Install with four special screws from screw pool on both side of CD-ROM
2. Slide CD-ROM toward chassis until

Figure 2-2: CD-ROM Installation

2.2.2 FDD installation

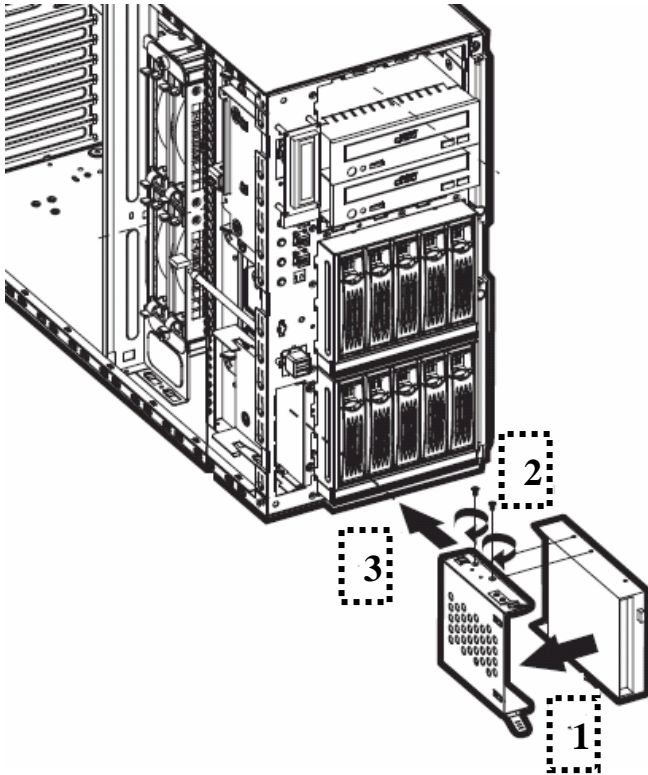


Figure 2-3: FDD Installation

1. Put 3.5" FDD on the FDD bracket
2. Install with two screws from screw pool on the top side of FDD bracket to fix FDD on the bracket
3. Slide FDD bracket toward chassis until tighten

2.2.3 Internal HDD installation

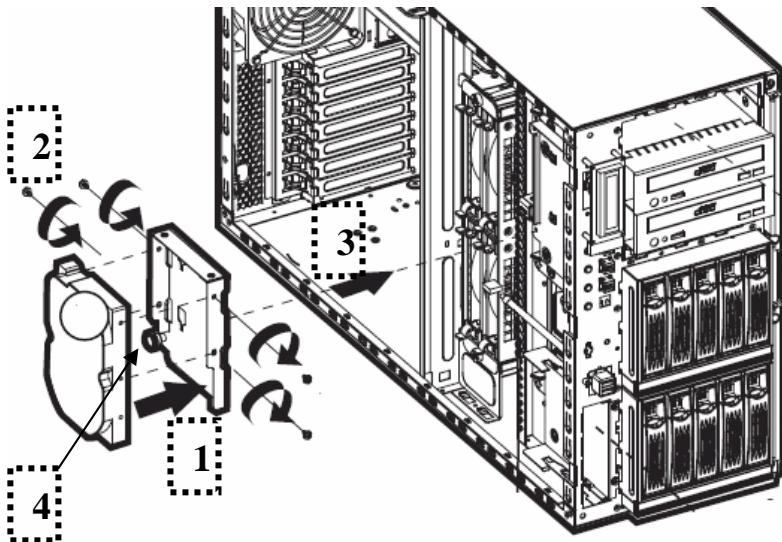
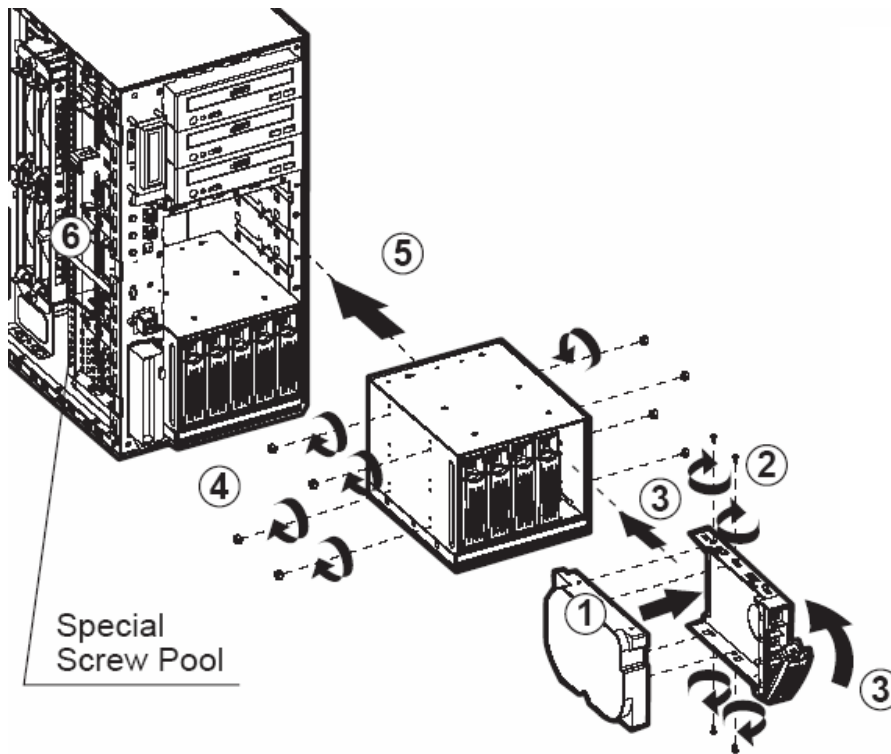


Figure 2-4: Internal HDD Installation

1. Put 3.5" HDD on the HDD bracket
2. Install with four screws from accessory bag on the both side of HDD bracket to fix HDD on the bracket
3. Install HDD bracket on the HDD bracket holder and slide up until tighten
4. Tighten thumb screw to fix HDD bracket

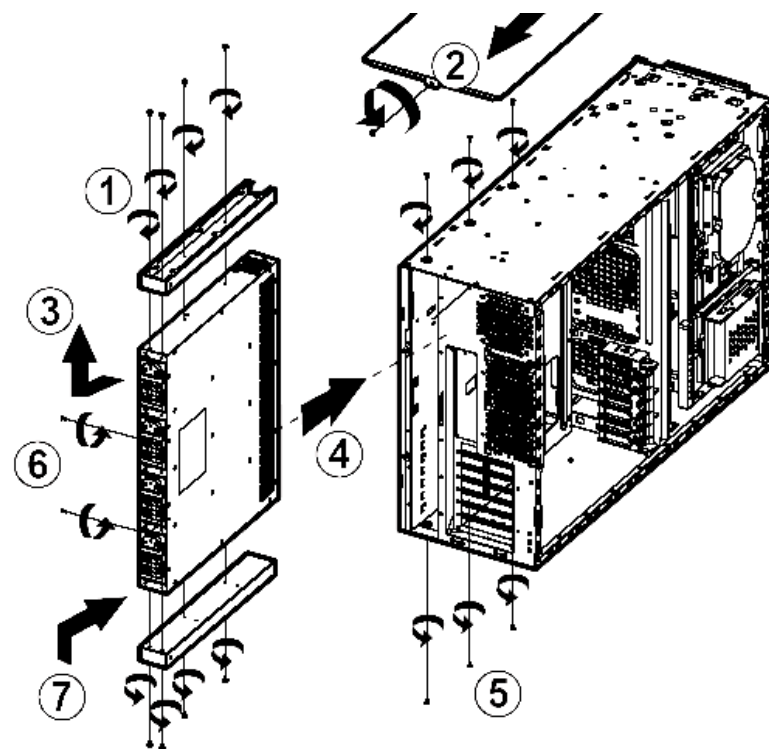
2.3 HDD Cage Installation



1. Put 3.5" HDD on the HDD tray
2. Install with four screws to fix HDD
3. Slide HDD tray into HDD cage until the level to latch HDD tray
4. Install with eight special screws from screw pool to HDD cage (make sure screw attached location)
5. Slide HDD cage toward chassis until blue latch hooking
6. Release the blue latch to pull out HDD cage (if need)

Figure 2-5: HDD Cage Installation

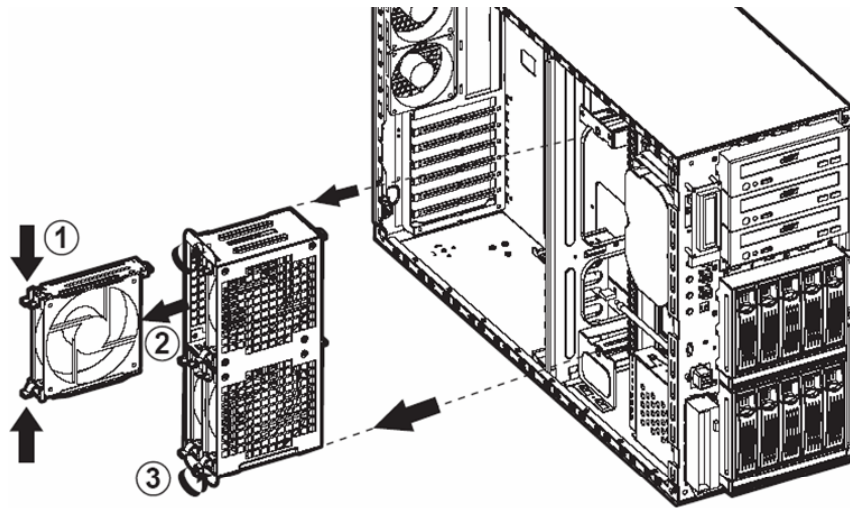
2.4 Power Supply Installation



1. Install with eight screws to fix power supply bracket on the both side of power supply
2. Release one screw then push back to remove top cover
3. Before install power supply , shall take out all power supply modules
4. Install power enclosure on the chassis until fasten
5. Install with six screws on the top and bottom site to fix power enclosure
6. Install with two screws on the rear site to fix power enclosure
7. Insert all power modules on power enclosure

Figure 2-6: Power Supply Installation

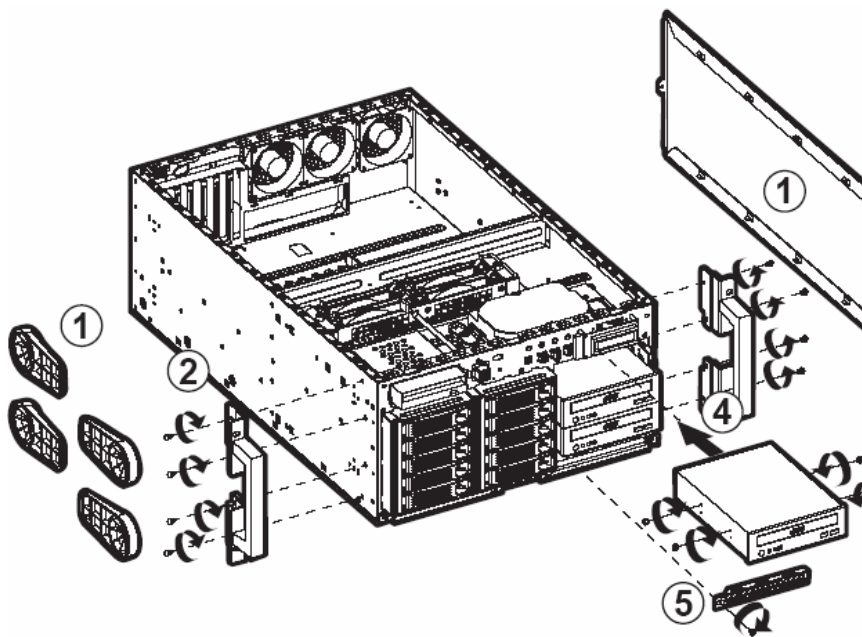
2.5 System Cooling Fan Removing



1. Press the latch until middle fan clip release
2. Follow item no.1 way to pull up four middle hotswap fan modules
3. Release the thumb screws then pull up whole middle fan bracket

Figure 2-7: Fan Module Removing

2.6 Rackmount Convertible Kit Installation



1. Remove foot stand and top cover (after release screws)
2. Install with four screws on the both side of chassis to fix rackmount convertible kit
3. Install with four screws to CD-ROM
4. Slide CD-ROM toward chassis until tighten (for rackbale conversion from pedestal)
5. Install with one screw to attach back metal cover for rackable conversion from pedestal

Figure 2-8: Rackmount Convertible Kit Installation

Note :

The Slide Rail and Rackmount Convertible Kit of SR110 is same as SR107 , Slide Rail installation Guide can refer to SR107

Chapter 3: Chassis Power Supply

3.1 Introduction

The SR110 can carry 1140W 3+1 Redundant Power Supply which features SSI (Rev. 3.0)-compliant server board connectors for AMD Dual Core Opteron processor family Server Board and redundant power supply supports four hot-swap modules inserted into a main housing (power supply cage). And Each TPS module has up to 380W output with an AC power cord receptacle.

The removable hot-swap power modules can be replaced in the event of a failure. The system will remain in operation during a failed voltage condition and remain online during a single module replacement for maximum up time. The AC power cord must be removed before removing a hot-swap module.

General Specification

1. TEMPERATURE RANGE : OPERATING 0°C ~ 50°C , STORAGE -40°C ~ 70°C
2. HOLD UP TIME : 17ms @ 115Vac/60Hz or 20ms @230Vac/50Hz INPUT VOLTAGE
3. DIELECTRIC WITHSTAND :
INPUT/OUTPUT 3000Vac For 1 minute
INPUT TO FRAME GROUND 1500Vac For 1 minute
4. EFFICIENCY : 70% @ TYPICAL (AT FULL LOAD)
5. POWER GOOD SIGNAL : ON DELAY 100mS TO 500mS , OFF DELAY 1mS
6. OVERLOAD PROTECTION : 110 ~ 160% MAX
7. OVER VOLTAGE PROTECTION :
+5V @ 5.7V ~ 6.5V
+3.3V @ 3.9V ~ 4.3V
+12V @ 13.3V ~ 14.3V
8. OVER CURRENT PROTECTION
9. EMI : FCC CLASS B , CISPR 22 CLASS B
10. SAFETY : UL 1950, CSA 22.2 NO/950, TUV IEC 950
11. REMOTE ON / OFF CONTROL
12. FAULTY ALARM METHODS: LED, BUZZER, TTL SIGNAL
13. MEET IEC-1000-3-2 CLASS D (ACTIVE PFC)
14. HOT-SWAPPABLE/HOT PLUGGABLE REDUNDANCY FUNCTION

3.2 Recommend Power Supply

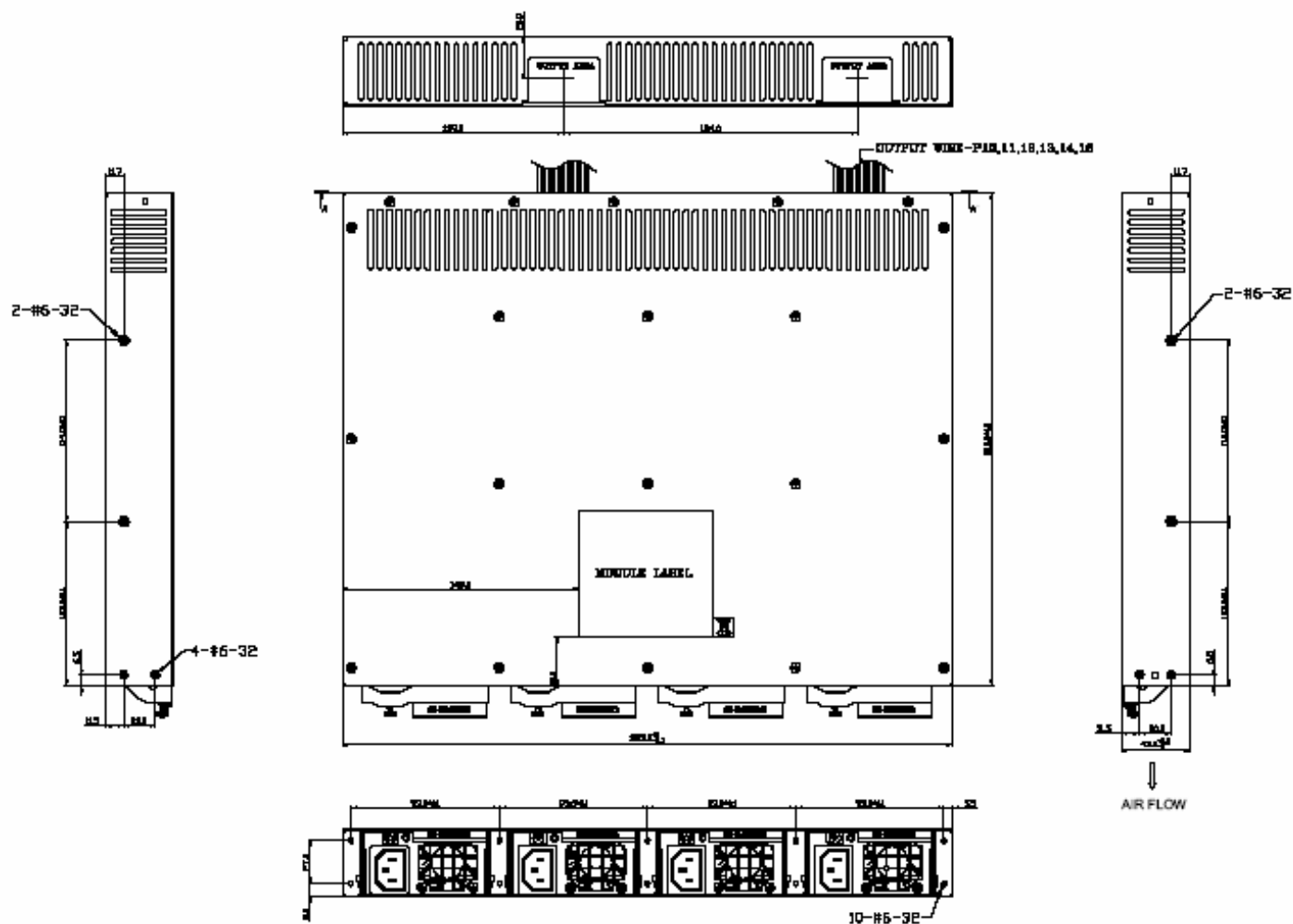
Redundant Power Supply : FSP (3Y) YH-8112DA 3+1 1140W

Chenbro Part no. Is Shown As Below (including Chenbro power supply bracket) :

Part No. : 83H322110-001

3.3 Mechanical Drawing

The approximate FSP (3Y) YH-8112DA 1140W 3+1 redundant power supply dimensions are 43mm height x 383mm width x 310mm. depth



3.4 AC Input Requirements

The power supply incorporates universal power input with active power factor correction, which shall reduce line harmonics in accordance with the EN61000-3-2 and JEIDA MITI standards.

3.4.1 INPUT CHARACTERISTICS

1. VOLTAGE : 90 ~ 264VAC FULL RANGE
2. FREQUENCY : 47 ~ 63HZ
3. INPUT CURRENT(Power Module) :
 - 4A (RMS) FOR 230VAC
 - 7A (RMS) FOR 115VAC
4. INRUSH CURRENT :
 - 60A MAX. FOR 115 VAC PER MODULE
 - 80A MAX. FOR 230 VAC PER MODULE

3.4.2 AC Inlet Connector

The AC input connector is an *IEC 320 C-14* power inlet. This inlet is rated for 15A / 250VAC.

3.4.3 AC Input Voltage Specification

The power supply operates within all specified limits over the following input voltage range, shown in below table. The power supply shall power off if the AC input is less than 75-80Vac ranges. The power supply operates properly starting at 80-85VAC input voltages.

3.4.4 AC Power Line

The system is specified to operate from 100-127VAC, 200-240VAC, at 50 or 60 Hz. The specified PFC power supplies are auto-ranging. The system is tested to meet these line voltages, and has been tested (but not specified) at 10% of the voltage ranges, and similarly 3 Hz on the line input frequency.

The system is specified to operate without error at full power supply output load, nominal input voltage, with line source interruptions not to exceed one period of the AC input power frequency (i.e., 20 milliseconds at 50 Hz).

3.4.5 Efficiency

The power supply shall have a **minimum** efficiency of **70%** at maximum load and over the specified AC voltage.

Notes :

**Regarding Detail Specification Of Above Mentioned Power Supply Models ,
Pls Contact To Your Geo-Account Manager For More Information !**

Chapter 4: Intelligent Chassis Management

4.1 Introduction

SR110 can provide **Intelligent Chassis Management** that supports enclosure alert functionality including power , cooling fan and overheat failure monitoring and friendly notification by LCM display for chassis real time status , meanwhile , special design-in redundant hot-swap PWM fan functionality to optimize whole chassis TA (thermal and Acoustic) control in order that highly reliable performance , Major benefits and features are shown as bellowing :

Benefits	Features
PWM Fan For TA (Thermal and Acoustic) Optimized Control	Double Twin PWM fans are controlled by different duty cycle (50% ,75% , 100% of rated speed) depends on Relative temperature level (~ 40℃ , 40℃~50℃ , 50℃~)
Enclosure Thermal Monitoring	From chassis thermal sensors
Reliable Redundant Fan Monitoring	Pre-install three thermal sensors in chassis for overheat monitoring and two options for overheat alert setting : 55℃ or 65℃
Human Friendly Alert Notification	Double Twin middle PWM fans , as one PWM fan of each twin is failure (below 1000 RPM) , another one will be up to 100% fully speed to back up system cooling simultaneously
System Handshaking	Audio-able and visible alert notification by front LCM for enclosure management (fan , overheat and power failure monitoring)
	Support I2C interface for communication with M/B (system software shall support this function)

4.2 PWM Fan Control Board

4.2.1 Specification

Specification	
Environment Monitor	Fan speed detect and temperature detect
Alarm system	Buzzer beeping in case of any event occurs. Ex:Fan speed too low or/and temperature too high(55C or 65C selectable)mute the beeping when pushed the mute sw.
Connectors	1.FAN HOTSWAP * 4 2.FAN CONNECTOR *2 3.Standard 4P Power connector x 2 for +5V, +12V from power supply
Dimension	257 (L) x 88 (W) x 2(H) mm
Material	FR4 2 layer

4.2.2 PWM Fan Control Board Layout

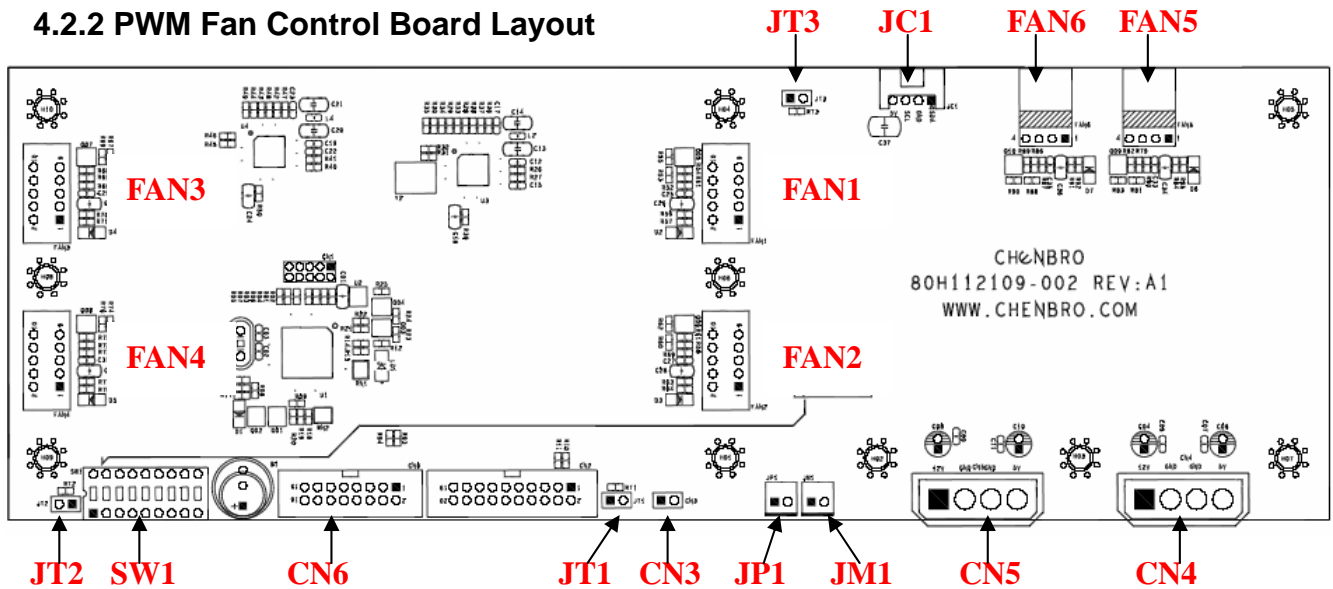


Figure 4-1: Fan Control Board Layout

4.2.3 Pin Assignment

No.	Description	No.	Description
JT1	chassis temperature sensor 1 (front –right)	CN6	LCM display flat cable
JT2	chassis temperature sensor 2 (front –left)	FAN1	Hotswap PWM Fan 1 edge connector (middle)
JT3	chassis temperature sensor 3 (rear)	FAN2	Hotswap PWM Fan 2 edge connector (middle)
JC1	I2C bus for communication with M/B	FAN3	Hotswap PWM Fan 3 edge connector (middle)
JP1	power supply TTL failure signal (input)	FAN4	Hotswap PWM Fan 4 edge connector (middle)
JM1	power supply alarm mute (output)	FAN5	Fixed PWM Fan 5 connector (rear)
CN3	alarm mute connector for front bezel alarm mute switch	FAN 6	Reserve for 6 th PWM Fan connector
CN4	4 pin power connector	SW1	DIP switch for functionality setting
CN5	4 pin power connector		

JT1 ~ JT3 : chassis temperature sensor 1~3 (2.54 pitch pin header)

Pin	Function	Pin	Function
1	Sensor +	2	Sensor -

JP1 : power supply TTL failure signal (input from power supply)

Pin	Function	Pin	Function
1	GND	2	TTL fail signal (active low)

JM1 : power supply alarm mute (output to power supply)

Pin	Function	Pin	Function
1	Mute -	2	Mute +

JC1: 4 pins I2C bus connector

Pin	Function	Pin	Function
1	SDA	2	GND
3	SCL	4	+5V

CN3 : alarm mute connector (2.54 pitch pin header)

Pin	Function	Pin	Function
1	Mute -	2	Mute +

CN4~CN5 : 4 pins power connector

Pin	Function	Pin	Function
1	+5V	2	GND
3	GND	4	+12V

CN6 : 2.54 pitch box header

Pin	Function	Pin	Function
1	+5V	2	GND
3	RS	4	VO
5	EN	6	RW
7	DB1	8	DB0
9	DB3	10	DB2
11	DB5	12	DB4
13	DB7	14	DB6
15	GND	12	+5V

Fan1~Fan4: Hotswap PWM Fan edge connector (middle)

Pin	Function	Pin	Function
1	NC	2	NC
3	GND	4	GND
5	+12V	6	+12V
7	FG signal	8	FG signal
9	Pulse width modulation (PWM)	10	Pulse width modulation (PWM)

Fan5~Fan6: PWM Fan connector (rear)

Pin	Function	Pin	Function
1	GND	2	+12V
3	FG signal	4	Pulse width modulation (PWM)

SW1: DIP switch for functionality setting

DIP	OFF	ON
SW1-1	FAN 2 sensor disable	FAN 2 sensor enable
SW1-2	FAN 4 sensor disable	FAN 4 sensor enable
SW1-3	FAN 5 sensor disable	FAN 5 sensor enable
SW1-4	FAN 6 sensor disable	FAN 6 sensor enable
SW1-5	Temp. sensor 1 disable	Temp. sensor 1 enable
SW1-6	Temp. sensor 2 disable	Temp. sensor 2 enable
SW1-7	Temp. sensor 3 disable	Temp. sensor 3 enable
SW1-8	Temperature setting 55°C	Temperature setting 65°C

4.3 LED Module (LCM)**4.3.1 Specification**

ITEM	STANDARD VALUE			UNIT
NUMBER OF CHARACTERS	16 CHARACTERS X 2 LINES			--
CHARACTER FORMAT	5 X 8 DOTS			--
MODULE DIMENSION	85.0 (W) X 36.0 (H) X 9.0 (T)	85.0 (W) X 36.0 (H) X 14.0 (T)		mm
VIEWING DISPLAY AREA	65.0 (W) X 16.0 (H)			mm
ACTIVE DISPLAY AREA	56.21 (W) X 11.50 (H)			mm
CHARACTER SIZE	2.96 (W) X 5.56 (H)			mm
CHARACTER PITCH	3.55 (W) X 5.94 (H)			mm
DOT SIZE	0.56 (W) X 0.66 (H)			mm
DOT PITCH	0.60 (W) X 0.70 (H)			mm
LMC-SSC2H16DRG-02	STN , Gray , 1/16 Duty , 6 O'clock			
LMC-SSC2H16DRY-02	STN , Yellow Green , 1/16 Duty , 6 O'clock			
LMC-SSC2H16DEGB-02	STN , Gray , 1/16 Duty , 6 O'clock , EL Backlight (color is Blue)			
LMC-SSC2H16DEYW-02	STN , Yellow Green , 1/16 Duty , 6 O'clock , EL Backlight (color is White)			
LMC-SSC2H16DLGY-02	STN , Gray , 1/16 Duty , 6 O'clock , LED Backlight			
LMC-SSC2H16DLYY-02	STN , Yellow Green , 1/16 Duty , 6 O'clock , LED Backlight			
LMC-SSC2H16DLGY-E02	STN , Gray , 1/16 Duty , 6 O'clock , E Mode LED Backlight			
LMC-SSC2H16DLYY-E02	STN , Yellow Green , 1/16 Duty , 6 O'clock , E Mode LED Backlight			
EL Use Inverter Type	SDEC-I001A			
Inverter Input	DC +5V	V	25	mA
Inverter Output	AC 90 ~ 110	V	400 ~ 700	Hz
Backlight Half-Lift Time	3,000			HR.
LED Backlight Color	Yellow Green			
Backlight Input	DC +4.2V	V	100	mA
Backlight Half-Lift Time	50,000			HR.
E Mode LED Backlight Color	Yellow Green			
Backlight Input	DC +4.2V	V	40	mA
Backlight Half-Lift Time	30,000			HR.

4.3.2 Mechanical Drawing

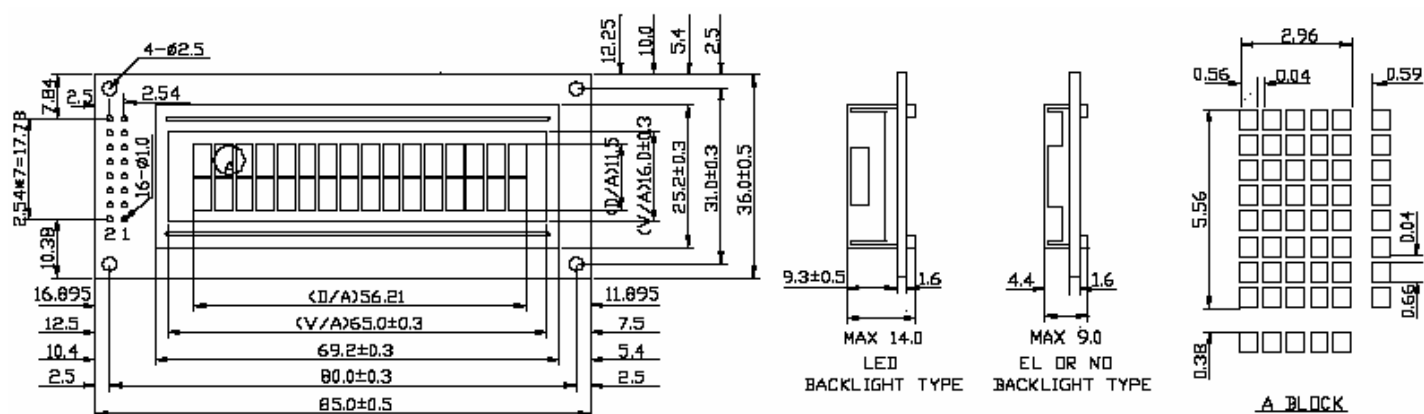


Figure 4-2: LCM Mechanical Drawing

4.4 Intelligent Chassis Management Wiring Diagram

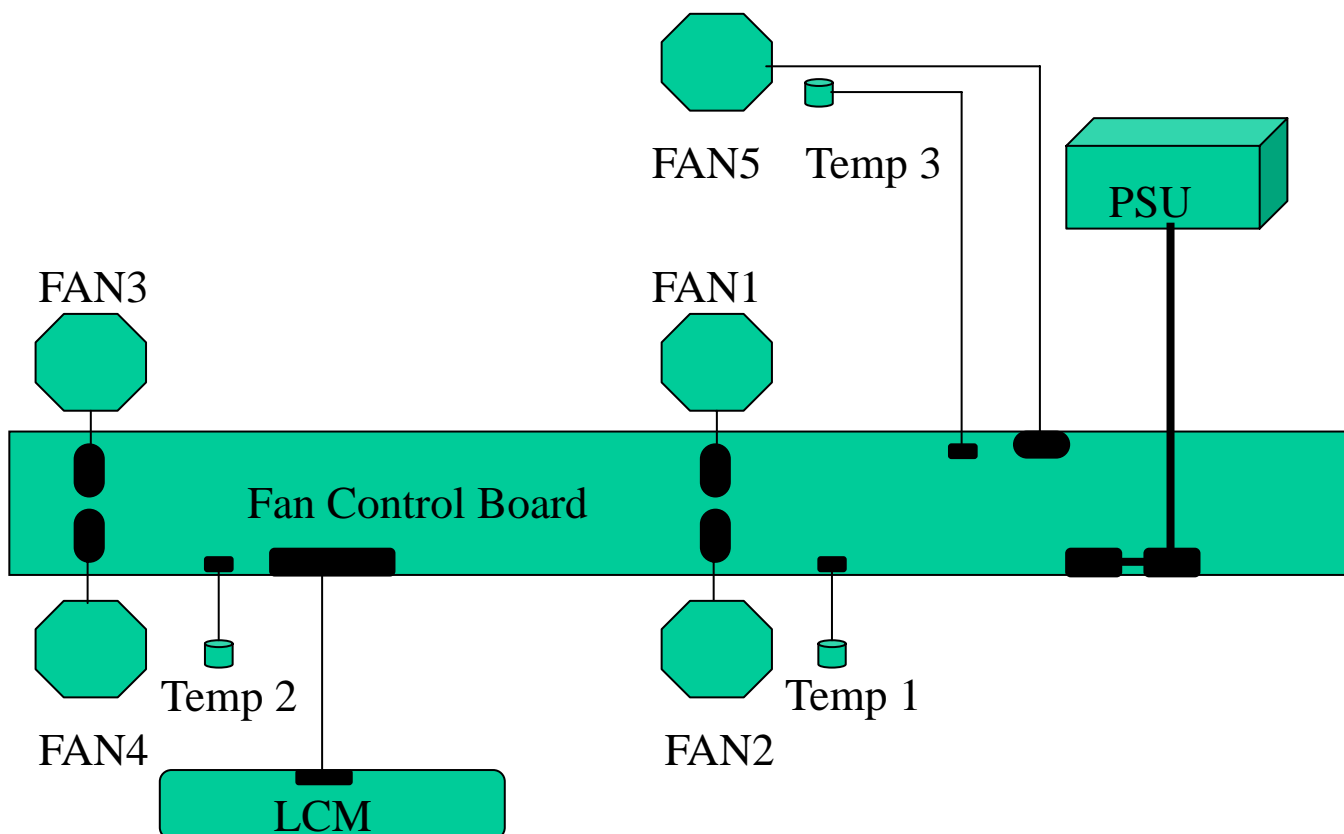


Figure 4-3: Wiring Diagram

4.5 LCM Display Flow Chart

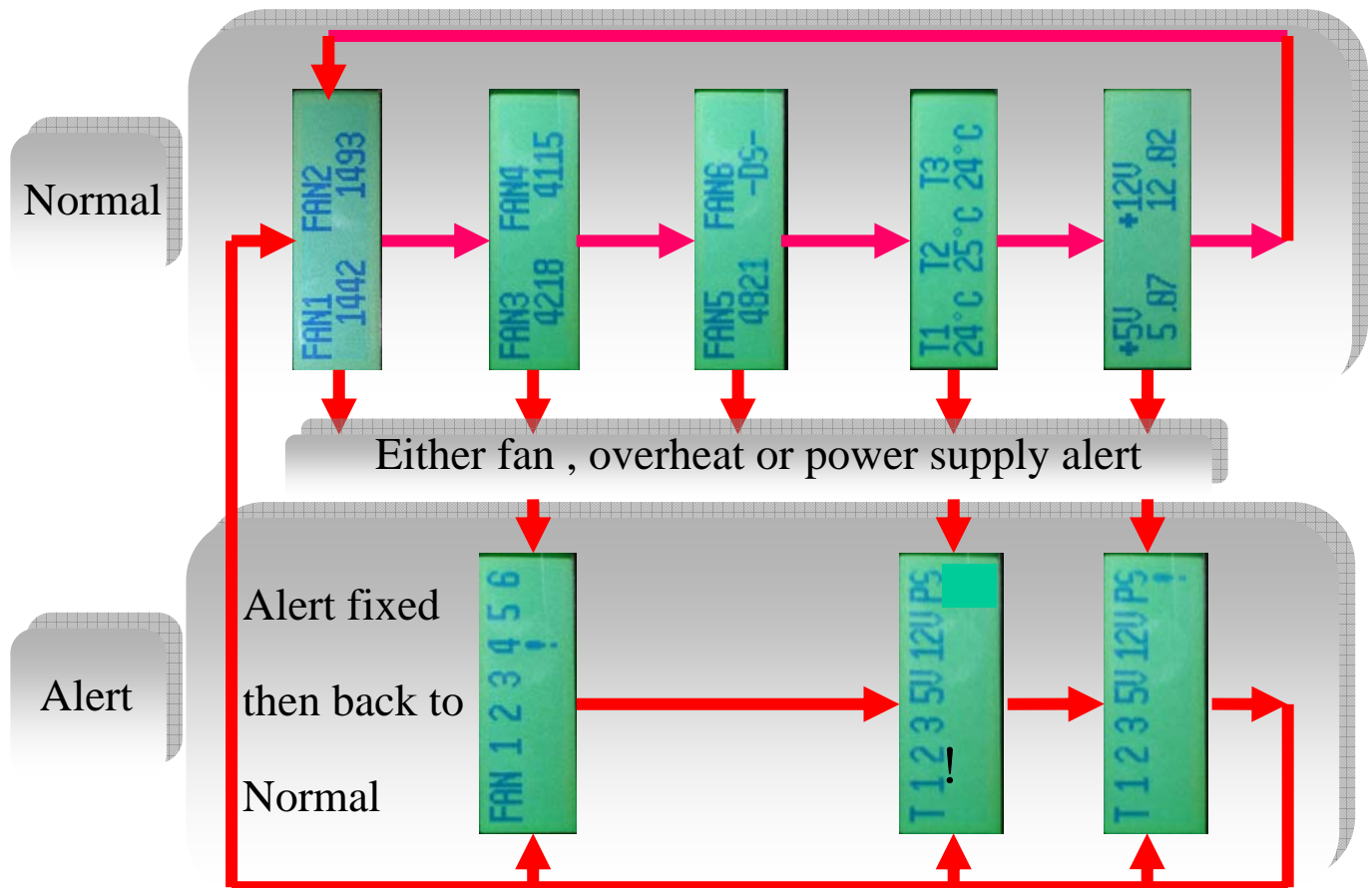


Figure 4-4: LCM Display Flow Chart

Appendix:

Chassis Optional Part

Category	Part Number	Description
HDD Cage	84H210910-010	5 in 3 Hotswap HDD Cage w/ SAS/SATAII BP , w/o fan , SATA cable ,LED board (Boxed, Black)
	84H210910-009	5 in 3 Hotswap HDD Cage w/ Ultra 320 SCSI BP w/o SAF-TE ,w/o fan , LED board (Boxed, Black)
PSU	83H322110-001	3Y YH-8112D Redundant 1140W, (3+1)*380W, w/PFC, EPS12V including power supply bracket)
	32H138007-001	PSU Module, Single, 380W,3Y(FSP) YM-7381CAP
Rackmount Bracket Kit	84H210710-035	Rackmount Ears (Black) : 2 pcs /box
Slide Rail	84H210710-024	King Slide 26" Rackmount slide rail

Mother Board Compatible List

M/B Brand	Model No.	Web Information	Board Size	CPU
Tyan	S4881	http://www.tyan.com/l_chinese/products/html/thunderk8qw.html	16"x13"	AMD
Tyan	S4882	http://www.tyan.com/l_chinese/products/html/thunderk8qspro.html	16"x13"	AMD
Tyan	S4882-D	http://www.tyan.com/l_chinese/products/html/thunderk8qsdpro.html	16"x13"	AMD
Tyan	S4985	http://www.tyan.com/l_chinese/products/html/thundern4250qe.html	16"x13"	AMD
Will	QF88	N/A	16"x 13"	AMD
Supermicro	H8QC8	http://www.supermicro.com/Aplus/motherboard/Opton/nForce/H8QC8.cfm	16"x13"	AMD
Supermicro	H8QC8+	http://www.supermicro.com/Aplus/motherboard/Opton/nForce/H8QC8+.cfm	16"x13"	AMD
Supermicro	H8QCE	http://www.supermicro.com/Aplus/motherboard/Opton/nForce/H8QCE.cfm	16"x13"	AMD
Supermicro	H8QCE+	http://www.supermicro.com/Aplus/motherboard/Opton/nForce/H8QCE+.cfm	16"x13"	AMD
Supermicro	H8QMB	http://www.supermicro.com/Aplus/motherboard/Opton8000/MCP55/H8QMB-2.cfm	16"x13"	AMD
Supermicro	H8QM8-2+	http://www.supermicro.com/Aplus/motherboard/Opton8000/MCP55/H8QM8-2+.cfm	16"x13"	AMD
Supermicro	H8QME-2	http://www.supermicro.com/Aplus/motherboard/Opton8000/MCP55/H8QME-2.cfm	16"x13"	AMD
Supermicro	H8QME-2+	http://www.supermicro.com/Aplus/motherboard/Opton8000/MCP55/H8QME-2+.cfm	16"x13"	AMD

Glossary

Term	Definition
AC	Alternating Current
ACPI	Advanced Configuration and Power Interface.
ATX	Advanced technology extended (motherboard type).
DC	Direct Current
EPS	Entry Power Supply; External Product Specification
ESD	Electrostatic Discharge
Hz	Hertz (1 cycle/second)
IDE	Integrated Drive Electronics
I/O	Input / Output
LAN	Local Area Network
LED	Light Emitting Diode
MTBF	Mean Time Between Failures
MTTR	Mean Time to Repair
NMI	Non-maskable Interrupt
OEM	Original Equipment Manufacturer
OS	Operating System
PCI	Peripheral Component Interconnect
PFC	Power Factor Correction
RPM	Revolutions Per Minute
RPS	Redundant Power Supply
SCA	Single connector attachment.
SSI	Server System Infrastructure ?Organization which defines and promotes specifications for the server market
TPS	Thin Power Supply;
USB	Universal Serial Bus