TYAN® FT72

B7015

Service Engineer's Manual

PREFACE

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Version 2.1a

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

- This device must not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesirable operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Notice for Canada

This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

Notice for Europe (CE Mark)

This product is in conformity with the Council Directive 2004/108/EC.

CAUTION: Lithium battery included with this board. Do not puncture, mutilate, or dispose of battery in fire. There will be danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by manufacturer. Dispose of used battery according to manufacturer instructions and in accordance with your local regulations.

About this Manual

This manual provides you with instructions on installing your FT72-B7015. This Manual is intended for experienced users and integrators with hardware knowledge of personal computers.

This manual is consisted of the following parts:

Chapter1: Provides an introduction to the FT72-B7015 bare--bones, standard parts list, describes the external components, gives a table of key components, and provides block diagrams of the system.

Chapter2: Covers procedures on installing the CPU, memory modules, add on card and hard drives.

Chapter3: Covers removal and replacement procedures for pre-installed components.

Appendix : Describes the differences between motherboard BIOS and system BIOS; list the cable connection and FRU part tables for reference of system setup; and technical support in case a problem arises with your system.

For information on the mainboard, please refer to the attached mainboard user's manual. You can find the detailed description about jumper and BIOS settings from the mainboard manual.

SAFETY INFORMATION

Before installing and using FT72-B7015, take note of the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Do not block the slots and opening on the unit, which are provided for ventilation.
- Only use the power source indicated on the marking label. If you are not sure, contact the power company.
- The unit uses a three-wire ground cable, which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the pur--pose of this pin. If you outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
- Do not place anything on the power cord. Place the power cord where it will not be in the way of foot traffic.
- Follow all warnings and cautions in this manual and on the unit case.
- Do not push objects in the ventilation slots as they may touch high volta--ge components and result in shock and damage to the components.
- When replacing parts, ensure that you use parts specified by the manuf--acturer.
- When service or repairs have been done, perform routine safety checks to verify that the system is operating correctly.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- Cover the unit when not in use.

Table of Contents

Chapter 1: Overview

1.1 About the TYAN FT72-B7015

Congratulations on your purchase of the TYAN® FT72-B7015, a highly optimized rack-mountable 4U barebone system. FT72-B7015 is designed to support dual Intel® Nehalem-EP/Nehalem-WS 2S processors and up to 6 channels with 18 DDR3 DIMMs, providing a rich feature set and incredible performance. Leveraging advanced technology from Intel®, FT72-B7015 server system is capable of offering scalable 32 and 64-bit computing, high-bandwidth memory design, and lightning-fast PCI-E bus implementation. FT72-B7015 not only enpowers your company in today's demanding IT environment but also offers a smooth path for future application usage.

FT72-B7015 uses rack-mountable 4U chassis featuring a robust structure and a solid mechanical enclosure. All of this provides FT72-B7015 the power and flexibility to meet the needs of nearly any server application.

1.2 Product Models

Model	HDD Bays	Power supply
B7015F72V2	Support 2 internal 2.5” SATAII HDD	2400W(1200W+1200W) PWR supply

1.3 Features

TYAN FT72B7015 (B7015F72V2)

System	Form Factor	4U Rackmount
	Chassis Model	FT72
	Dimension (D x W x H)	27.96" x 17.245" x 6.93" (710 x 438 x 176mm)
	Motherboard	S7015
	Board Dimension	16"x19" (406.4x482.6mm)
	Gross Weight	32KG
Front Panel	Buttons	(1) PWR / (1) RST / (1) NMI / (1) ID
	LEDs	(1) PWR / (1) HDD / (1) Warning
	I/O Ports	(2) USB ports
Internal Drive Bay	Type / QTY	(2) 2.5" fixed
	Supported HDD Interface	SATA-II 3.0Gb/s
System Cooling Configuration	FAN	(3) 12cm fans
Power Supply	Type	ERP1U
	Input Range	Full-range AC(100-240V)
	Frequency	60 Hertz
	Output Watts	2400 Watts(1200W+1200W)
	Efficiency	PFC
	Redundancy	2+1(Optional)
	Serviceability	Hot-swap
Processor	Supported CPU Series	Intel Xeon Processor 5500 Series
	Socket Type / QTY	LGA1366 / (2)
	Thermal Design Power (TDP) wattage	Max up to 130W
	System Bus	Up to 4.8/ 5.86/ 6.4GT/s with Intel Quick Path Interconnect (QPI) support
Chipset	IOH / ICH	Intel (2) 5520 / ICH10R
	Super I/O	Winbond W83627
	PCI-E Switch	PLX PEX8647
Memory	Supported DIMM Qty	(9)+(9) DIMM slots
	DIMM Type / Speed	DDR3 800/1066/1333* RDIMM/UDIMM / * limit 1 per channel for 1333MHz speed
	Capacity	Up to 144GB at launch w/ dual rank RDIMMs
	Memory channel	3 Channels per CPU
	Memory voltage	1.5V

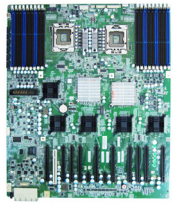
Expansion Slots	**PCI-E**	(8) PCI-E Gen.2 x16 slots
LAN	**Port QTY**	(4)
	Controller	Intel 82574L
Graphic	**Connector type**	D-Sub 15-pin
	Resolution	1600x1200
	Chipset	Aspeed AST2050
I/O Ports	**USB**	(2) ports
	VGA	(1) D-Sub 15-pin port
	RJ-45	(4) ports
System Monitoring	**Chipset**	Winbond W83793G
	Voltage	Monitors voltage for CPU, memory, chipset & power supply
	Temperature	Monitors temperature for CPU & system environment
	LED	Fan fail LED indicator / Over temperature warning indicator
Server Management	**Onboard Chipset**	Onboard Aspeed AST2050
	AST2050 IPMI Feature	IPMI 2.0 compliant baseboard management controller (BMC) / BIOS update / USB 2.0 virtual hub
	AST2050 iKVM Feature	24-bit high quality video compression / Dual 10/100 Mb/s MAC interfaces
BIOS	**Brand / ROM size**	AMI / 4MB
	Feature	Plug and Play (PnP) /PCI2.3 /WfM2.0 /SMBIOS2.3 /PXE boot / ACPI 2.0 power management /Power on mode after power recovery / User-configurable H/W monitoring
Operating System	**OS supported list**	Please refer to our OS supported list.
Regulation	**FCC (DoC)**	Class A
	CE (DoC)	Yes
Operating Environment	**Operating Temp.**	0° C ~ 55° C (32° F~ 131° F)
	Non-operating Temp.	- 40° C ~ 70° C (-40° F ~ 158° F)
	In/Non-operating Humidity	90%, non-condensing at 35° C
RoHS	**RoHS 6/6 Complaint**	Yes
Package Contains	**Barebone**	(1) F72-B7015 Barebone
	Manual	(1) BB User's manual
	Installation CD	(1) TYAN installation CD
	Heatsink / Cooler	(2) CHSK-0410, 1366-pin CPU heatsinks

Package Contains	**Rail kit**	(1) CRAL-0150, sliding rail kit
	Mounting Ear	(1) CEAR-0150, mounting ear kit for FT72
	Others	(1) 2.5" HDD screw pack
	Cable/Power Cord	(2) CCBL-0312, US type power cord / (2) CCBL-0313, EU type power cord (8) CCBL-146I, 2*4pin PWR cable for GPU card (8) CCBL-146H,2*3pin PWR cable for GPU card

1.4 Standard Parts List

This section describes FT72-B7015 package contents and accessories. Open the box carefully and ensure that all components are present and undamaged. The product should arrive packaged as illustrated below.

1.4.1 Box Contents

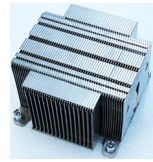
Component	Description
	4U FT72 Chassis
	Main Board,S7015-CA
	1200W Power Supply

	120 x120 x38 MM Fan
	M1008 Front LED control Board(R02)
	M7015 Rear I/O Board
	M7015-PBP PWR Backplane Board(R01)
	M7015-PDB PWR Distribution board for PCI-E card(R02)

1.4.2 Accessories

If any items are missing or appear damaged, contract your retailer or browse to TYAN®'s website for service: http://www.tyan.com. The Web site also provides information on other TYAN® products, plus FAQs, compatibility lists, BIOS settings, and more.

1 x TYAN® Motherboard Drive CD



2 x Heatsink

HDD Screws

Power Cables
Left to right: Europe, US

Mounting Ears & Screws

Barebone Manual

Rail Kit

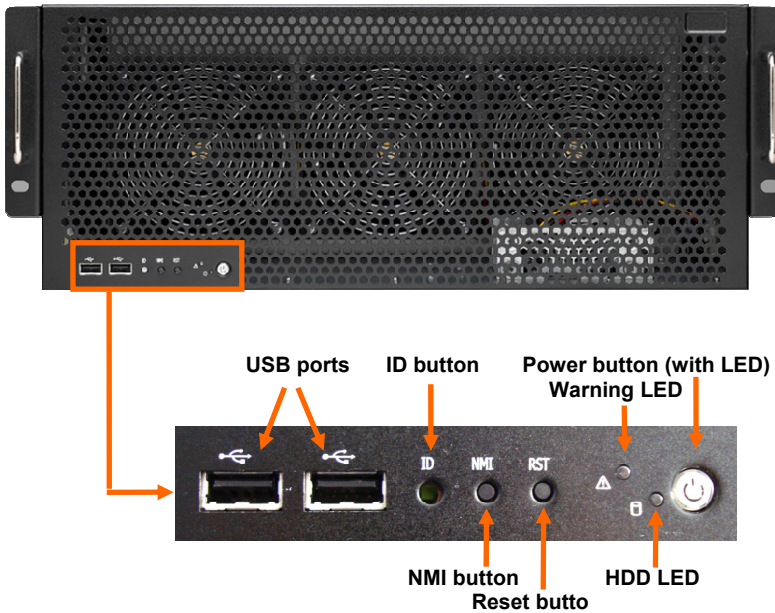
Rail with Bracket x 2

Screw Sack

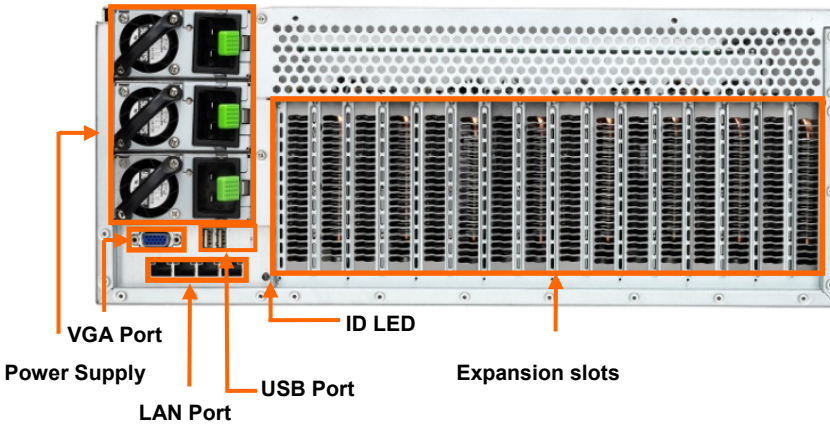
1.5 About the Product

The following views show you the product.

1.5.1 System Front View



1.5.2 System Rear View



1.5.3 LED Definitions

Front Panel

LED	State	Color	Description
Power LED	On	Green	System is turned on
	Off	Off	Power off
HDD LED	On	Green	HDD power on
	Blinking	Green	HDD active
Warning LED	On	Red	Fan fail/PSU fail/Over temperature/Over voltage

Rear I/O LED

LED	State	Color	Description
RJ-45 Linkage/ Activity(Left)	On	Green	10Mb/100Mb/1000Mb linked
	Blinking	Green	10Mb/100Mb/1000Mb activity
	Off	Off	No LAN linked
RJ-45 Linkage/ Activity(Right)	On	Amber	1000Mb linked/ activity
	On	Green	100Mb linked/activity
	Off	Off	10Mb mode or No LAN linked

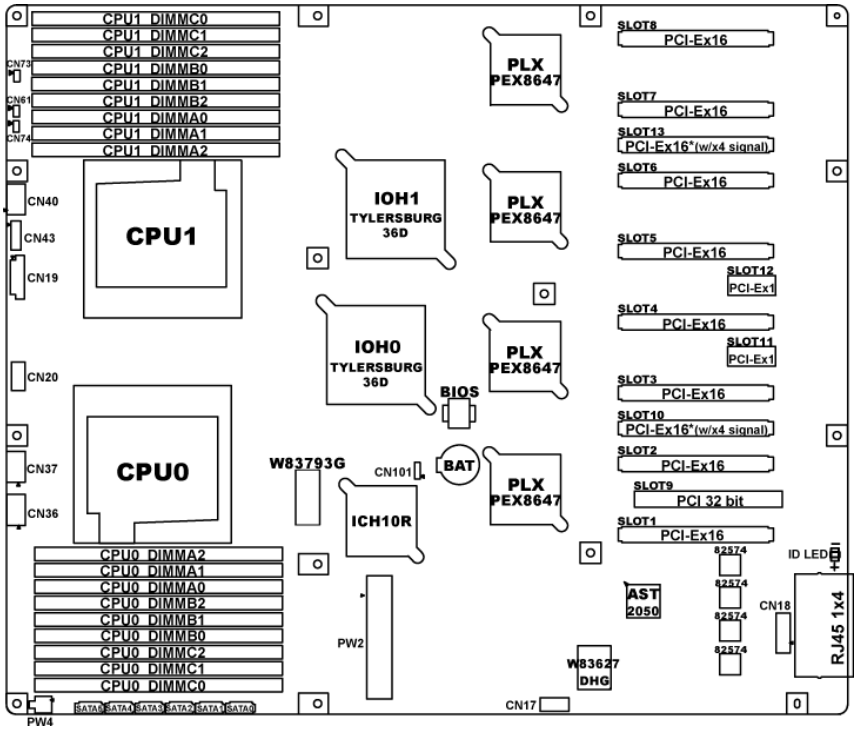
NOTE: "Left" and "Right" are viewed from the rear panel.

ID LED

LED	State	Color	Description
ID LED	On	Blue	System identified
	Off	Off	System not identified

NOTE: Press ID button when the system is AC (Alternating Current) on, then ID LED will show the system is identified with emitting blue light. Users from remote site could also activate ID LED by input a few commands in IPMI, detailed software support please visit http://www.tyan.com for latest AST 2050 user guide.

1.5.4 Motherboard Layout

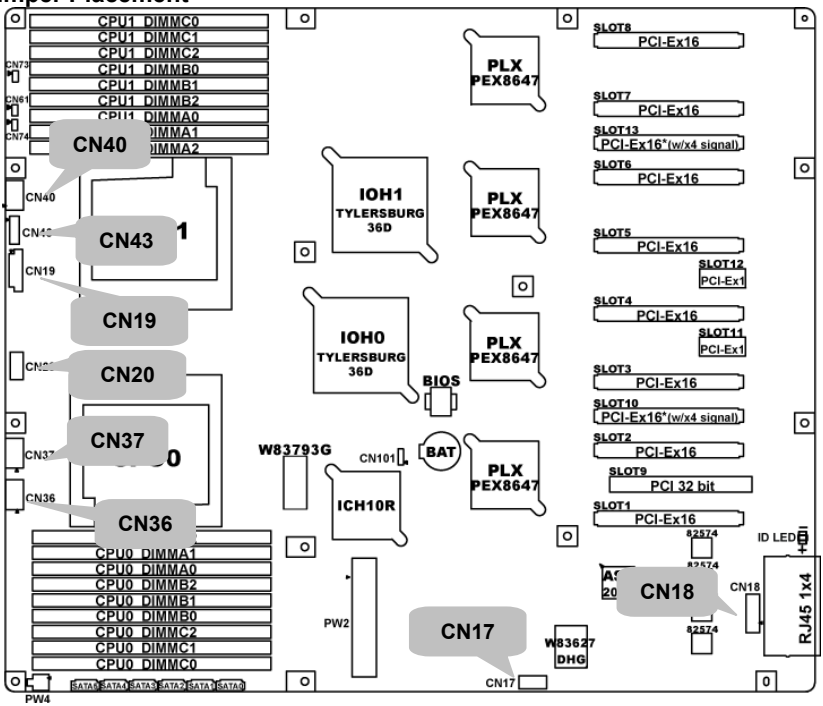


The diagram is representative of the latest board revision available at the time of publishing. The board you receive may not look exactly like the above diagram.

1.5.5 Jumpers & Connectors

Jumper/Connector	Function
CN17/CN20	COM port
CN18	Board-to-Board Receptacle connector
CN19	USB header
CN43	Front Panel header
CN36/CN37/CN40	FAN connector
CN101	Clear CMOS
CN61	System Intrusion header
CN73	NMI button header
CN74	ID button header

Jumper Placement



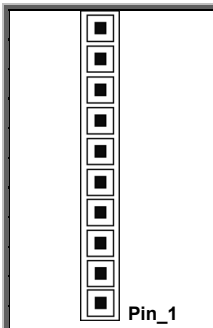
CN43: Front Panel header

Pin	Signal
1	GND
2	PW_LED+
3	PW_LED-
4	WLED+
5	HDD_LED+
6	GND
7	PWR_SW#
8	P3V3_SB
9	RST_SW#
10	GND
11	SDA
12	SCL
13	GND
14	RXD
15	TXD

CN18: Board-to-Board Receptacle connector

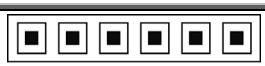
Signal	Pin	Pin	Signal
GND	1	2	GND
RED	3	4	USB0-
GND	5	6	USB0+
GREEN	7	8	GND
GND	9	10	USB1-
BLUE	11	12	USB1+
GND	13	14	GND
HSYNC	15	16	USB2-
VSYNC	17	18	USB2+
GND	19	20	GND
DDC_DATA	21	22	USB3-
DDC_CLK	23	24	USB3+
GND	25	26	GND
NC	27	28	NC
Vcc5_VGA	29	30	Vcc_USB
NC	31	32	Vcc_USB
GND	33	34	Vcc_USB
GND	35	36	Vcc_USB
GND	37	38	Vcc_USB
GND	39	40	Vcc_USB

CN19: USB header

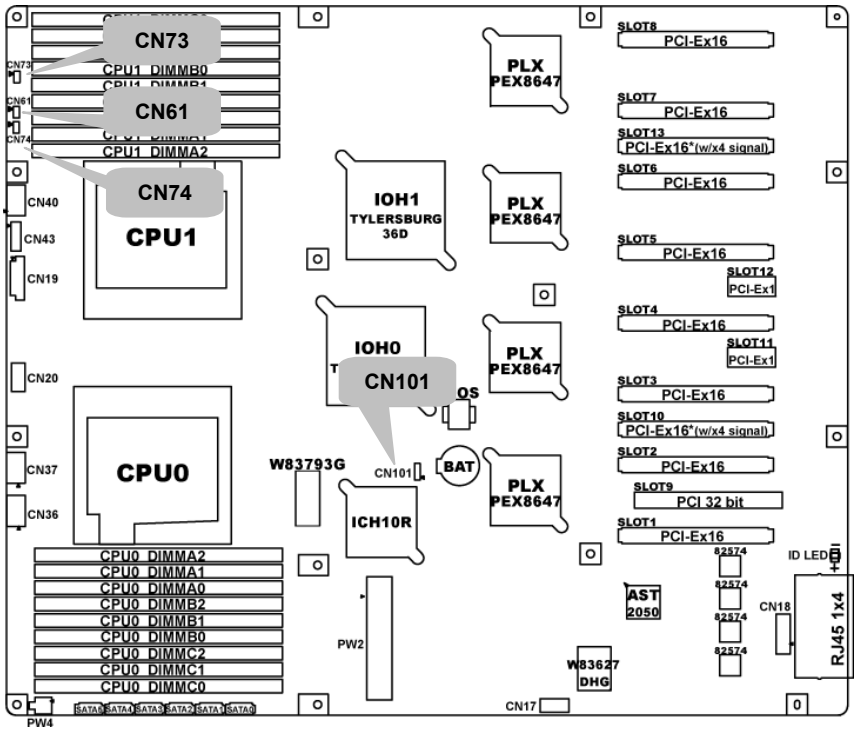


Pin	Signal
1	VCC_USB
2	USB6-
3	USB6+
4	GND
5	GND
6	VCC_USB
7	USB7-
8	USB7+
9	GND
10	GND

CN36/ CN37/ CN40: FAN connector



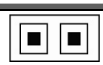
Pin	1	2	3	4	5	6
Signal	GND	P12V	TACH	PWM	GND	P12V



CN101: Clear CMOS

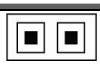
Pin_3 Pin_1 **Normal (Default)**	You can reset the CMOS settings by using this jumper if you have forgotten your system/setup password or need to clear system BIOS setting. - Power off system and disconnect both power connectors from the motherboard - Put jumper cap back to Pin_1 and Pin_2 (default setting) - Use jumper cap to close Pin_2 and Pin_3 for several seconds to Clear CMOS Reconnect power and power on system
Pin_3 Pin_1 **Clear CMOS**	

CN61: System Intrusion header



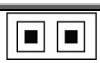
Pin	1	2
Signal	GND	INTRUDER_N

CN73: NMI button header



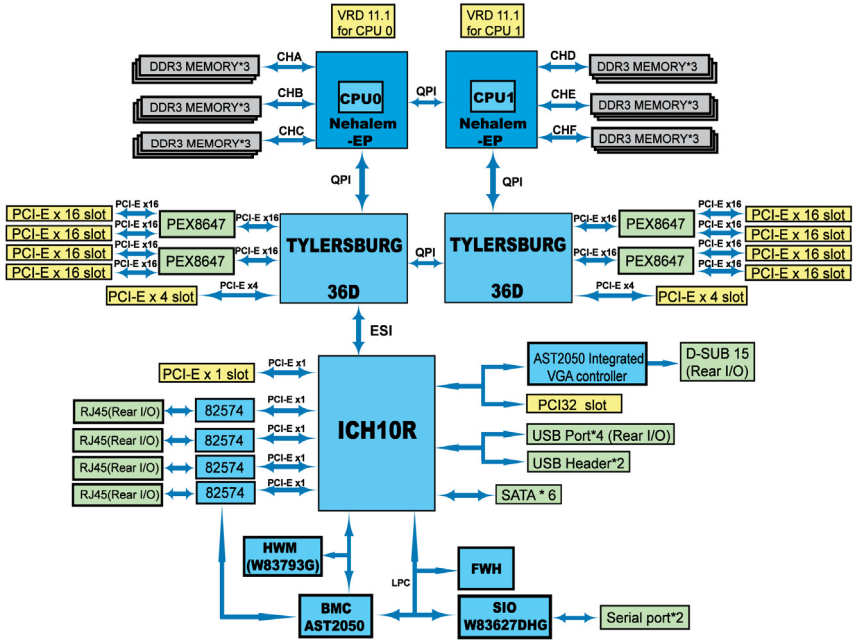
Pin	1	2
Signal	FP_NMI_N	GND

CN74: ID button header



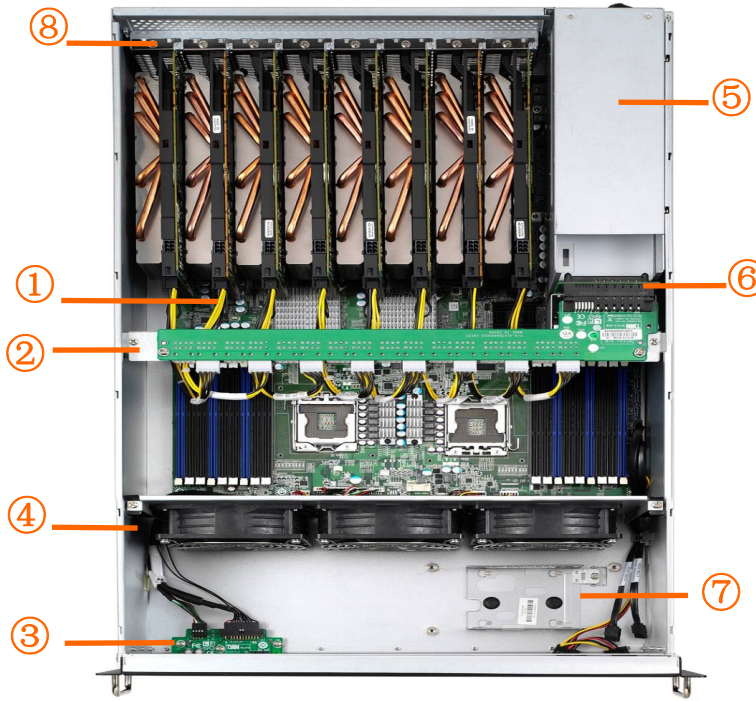
Pin	1	2
Signal	ID_BUTTON_N	GND

1.5.6 System Block Diagram



S7015 Block Diagram

1.5.7 Internal View



①	S7015 Main Board	⑤	Power Cage
②	M7015 -PDB PWR Distribution board	⑥	M7015 -PBP PWR Backplane Board
③	M1008 Front LED control Board	⑦	HDD Bracket
④	System Fan	⑧	PCI-E Slot Shield

Chapter 2: Setting Up

2.0.1 Before you Begin

This chapter explains how to install the CPUs, CPU heatsinks, memory modules, and hard drives. Instructions on inserting add on cards are also given.

2.0.2 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers prevents them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

2.0.3 Tools

The following procedures require only a few tools, including the following:

- A cross head (Phillips) screwdriver
- A grounding strap or an anti-static pad

Most of the electrical and mechanical connections can be disconne--cted using your fingers. It is recommended that you do not use nee--dlenosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

2.0.4 Precautions

Components and electronic circuit boards can be damaged by discharges of static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to FT72-B7015 or injury to yourself.

- Ground yourself properly before removing the top cover of the system. Unplug the power from the power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.

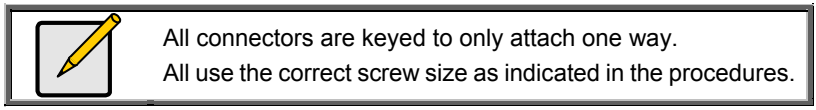
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.

- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.

- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.

- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.

- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.



2.1 Installing Motherboard Components

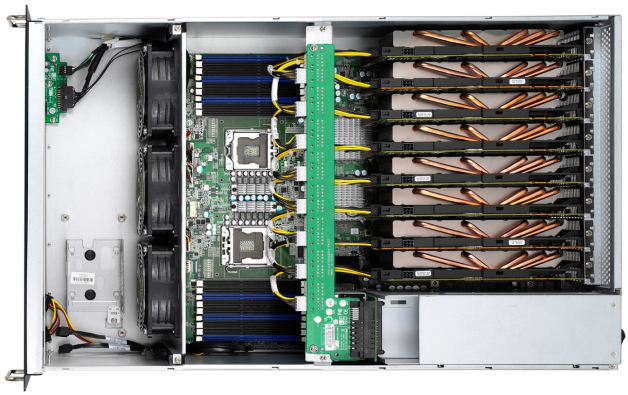
This section describes how to install components on to the motherboard，including CPUs, memory modules and add on cards.

2.1.1 Removing the Chassis Cover

Follow these instructions to remove FT72-B7015 chassis cover.

1. Thumb two screws on the back side as show in the small diagram. Then slide the top cover out.

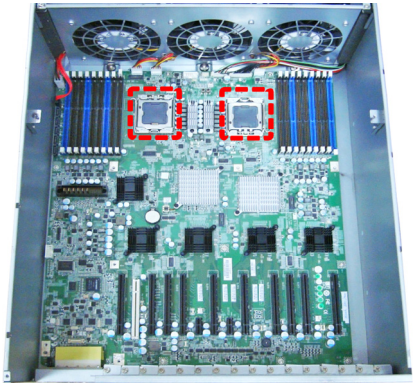
2. Here is the overview after the chassis cover was removed.

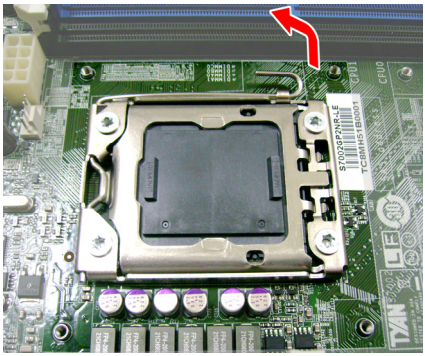


2.1.2 Installing the CPU and Heatsink

Follow the steps below on installing CPUs and CPU heatsinks.

1. Locate the CPU socket.

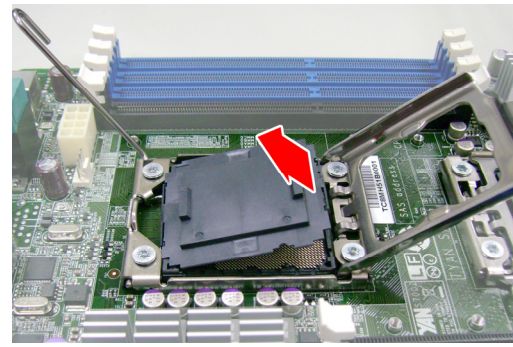


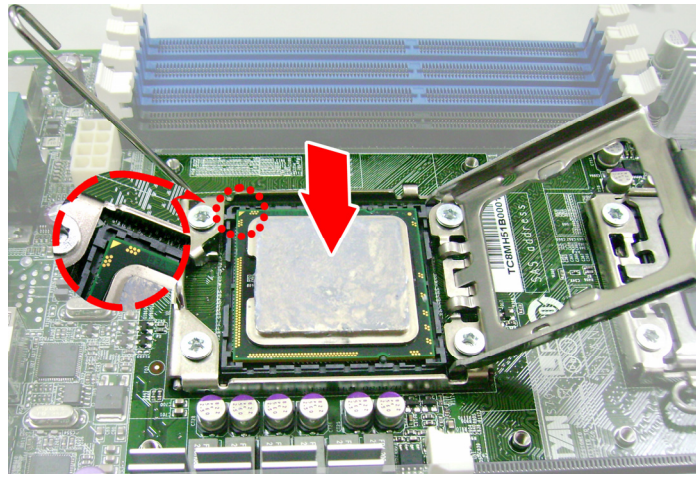


2. Press the lever and unlock the CPU socket.

A

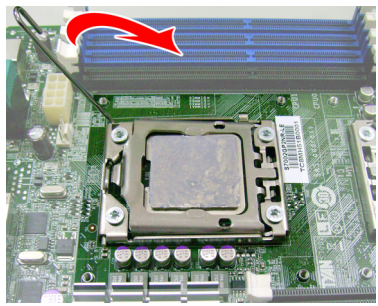
3. Lift the CPU protection cap up and lay the CPU into the socket(A), ensuring pin1 is correctly located(B);

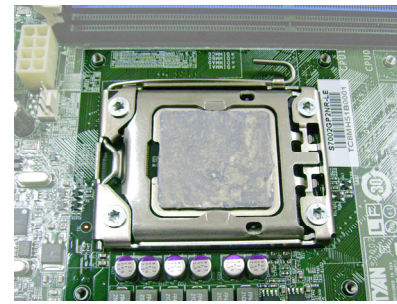




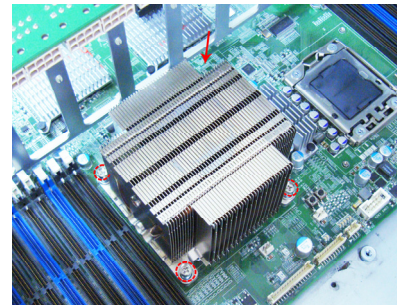
B

4. Close the socket cover and press the CPU lever down to secure the CPU;





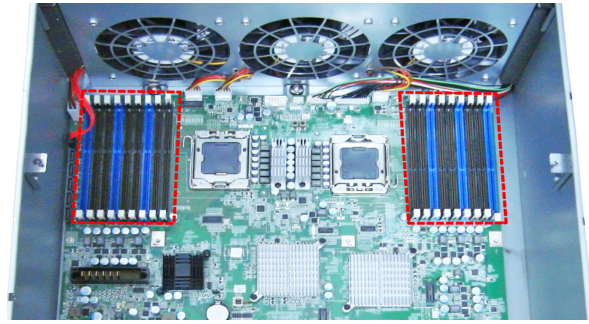
5. Place the heatsink on top of the CPU and secure it with 4 screws.



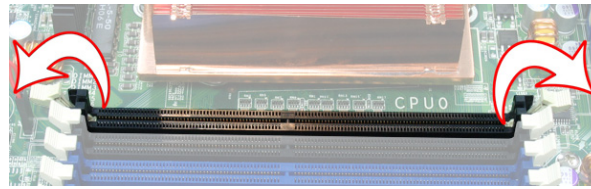
2.1.3 Installing the Memory

Follow these instructions to install the memory modules onto the motherboard.

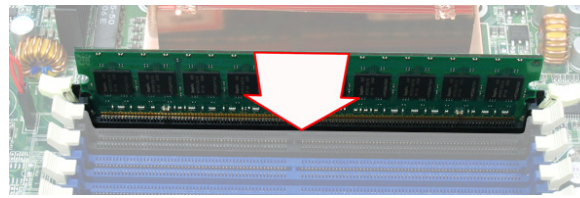
1. Locate the memory slots on the motherboard.

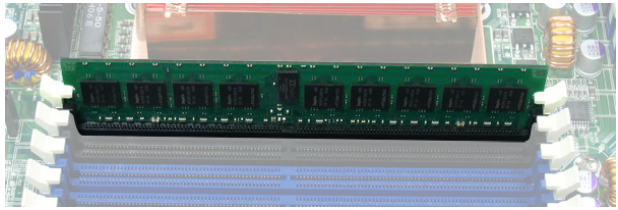


2. Press the memory slot locking levers in the direction of the arrows as shown in the following illustration.



3. Align the memory module with the slot. When inserted properly, the memory slot locking levers lock automatically onto the indentations at the ends of the module.





1). For the DIMM number please refer to "Chapter 1.5.4 – Motherboard Layout" for memory installation.

2). Refer to the memory population option table for recommended memory installation instruction.

3). " √ " indicates a populated DIMM slot.

Memory Population Option Table

To achieve the best performance, TYAN® strongly recommended memory installation configuration as listed below:

1. Single CPU installed (CPU0 Only)

Quantity of memory DIMM Slot	1	3	6	9
CPU0 DIMMA 0	√	√	√	√
CPU0 DIMMA 1			√	√
CPU0 DIMMA 2				√
CPU0 DIMMB 0		√	√	√
CPU0 DIMMB 1			√	√
CPU0 DIMMB 2				√
CPU0 DIMMC 0		√	√	√
CPU0 DIMMC 1			√	√
CPU0 DIMMC 2				√
CPU1 DIMMA 0				
CPU1 DIMMA 1				
CPU1 DIMMA 2				
CPU1 DIMMB 0				
CPU1 DIMMB 1				
CPU1 DIMMB 2				
CPU1 DIMMC 0				
CPU1 DIMMC 1				
CPU1 DIMMC 2				

2. Single CPU installed (CPU1 Only)

Quantity of memory DIMM Slot	1	3	6	9
CPU0 DIMMA 0				
CPU0 DIMMA 1				
CPU0 DIMMA 2				
CPU0 DIMMB 0				
CPU0 DIMMB 1				
CPU0 DIMMB 2				
CPU0 DIMMC 0				
CPU0 DIMMC 1				
CPU0 DIMMC 2				
CPU1 DIMMA 0	√	√	√	√
CPU1 DIMMA 1			√	√
CPU1 DIMMA 2				√
CPU1 DIMMB 0		√	√	√
CPU1 DIMMB 1			√	√
CPU1 DIMMB 2				√
CPU1 DIMMC 0		√	√	√
CPU1 DIMMC 1			√	√
CPU1 DIMMC 2				√

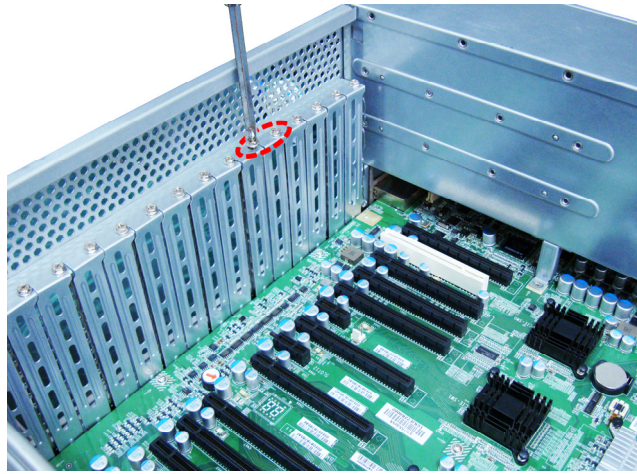
3. Dual CPU installed (CPU0 & CPU1)

Quantity of memory DIMM Slot	1	2	6	12	18
CPU0 DIMMA 0	√	√	√	√	√
CPU0 DIMMA 1				√	√
CPU0 DIMMA 2					√
CPU0 DIMMB 0			√	√	√
CPU0 DIMMB 1				√	√
CPU0 DIMMB 2					√
CPU0 DIMMC 0			√	√	√
CPU0 DIMMC 1				√	√
CPU0 DIMMC 2					√
CPU1 DIMMA 0		√	√	√	√
CPU1 DIMMA 1				√	√
CPU1 DIMMA 2					√
CPU1 DIMMB 0			√	√	√
CPU1 DIMMB 1				√	√
CPU1 DIMMB 2					√
CPU1 DIMMC 0			√	√	√
CPU1 DIMMC 1				√	√
CPU1 DIMMC 2					√

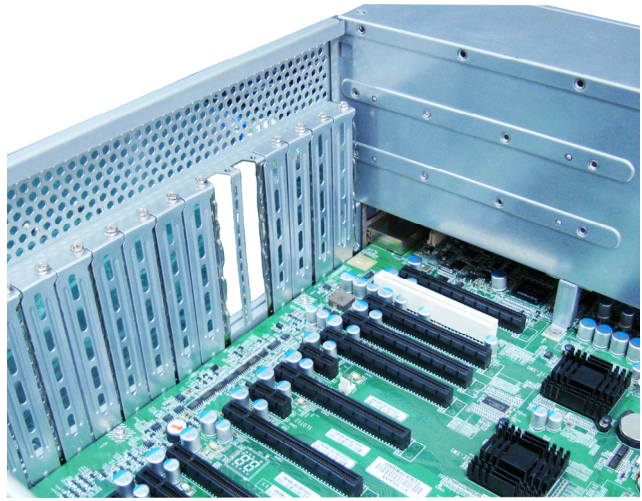
2.1.4 Installing Expansion Cards

FT72-B7015 has **eight** expansion slots which can support GPU (Graphic Processing Unit) card. Follow these instructions to install expansion cards.

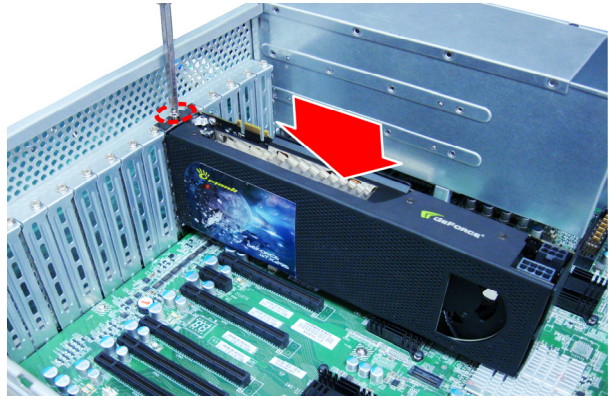
1. Locate the expansion slot on the motherboard, unscrew the bracket from the slot you want to use.



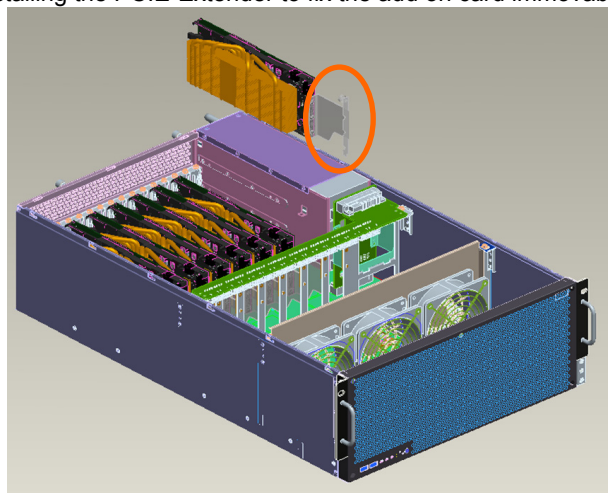
2. Take the brackets out from the slot.



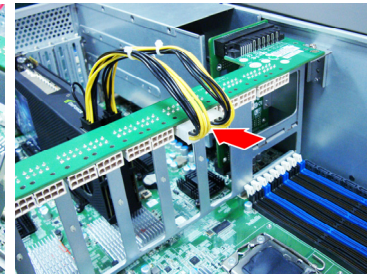
3. Insert the card into the slot and secure it with the screws you removed from the bracket.



4. Installing the PCIE-Extender to fix the add on card immovable.

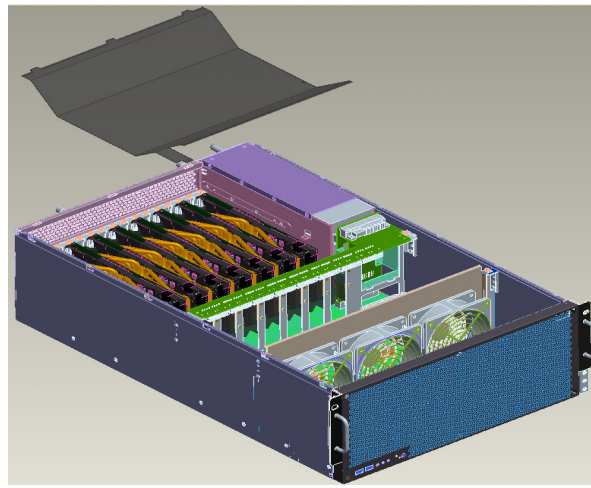


5. Connect the cables between the expansion card and the power distribution board, the connectors you use should match with the slot you add the card with.

6. Retighten the bracket to make add on card stable.

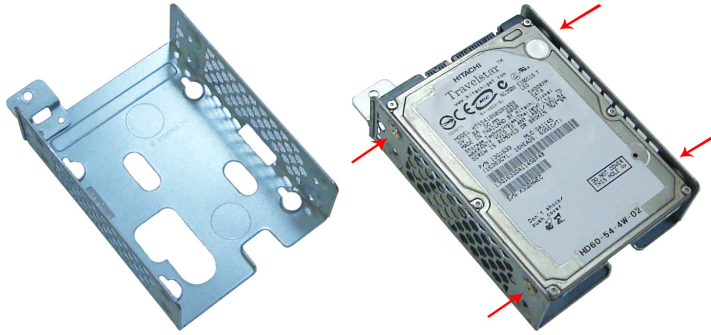
7. Here is the last step to install the air duct.



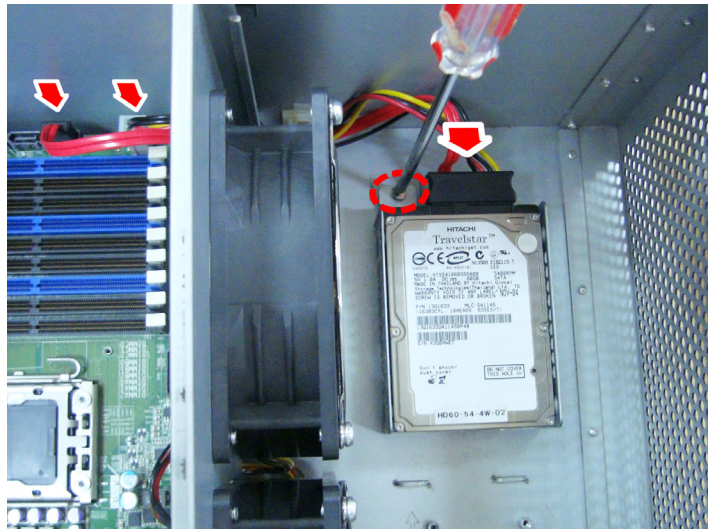
2.1.5 Installing Hard Drives

The FT72-B7015 supports two internal 2.5" SATAII hard disks. Follow these instructions to install a hard drive.

1. Unscrew the 2.5'' bracket out from the chassis, place a 2.5'' hard drive into the HDD tray and secure it using four flat screws.



2. Reinsert the HDD bracket into the chassis, secure it with one screw and connect both power cable and SATA cable.



2.2 Rack Mounting

After installing the necessary components, FT72-B7015 can be mounted in a rack using the supplied rack mounting kit.

Rack mounting kit

Rail with Bracket x 2

Mounting Ears x 2

Screw Sack x 1

2.2.1 Installing the Server in a Rack

Follow these instructions to mount the FT72-B7015 into an industry standard 19" rack.

Before mounting FT72-B7015 in a rack, ensure that all internal components have been installed and that the unit has been fully tested. Maintenance can be performed on the unit while in a rack but it is preferable to install the device in a fully operational condition.

Screw Sack

A **B** **C**

Including:

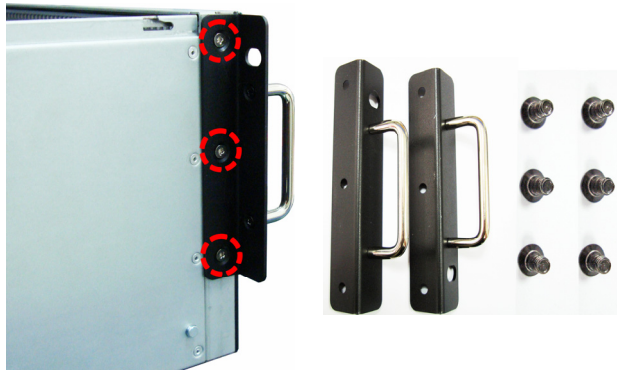
A: M5 Washer------ 8pcs

B: M5 x 10 ----------8pcs

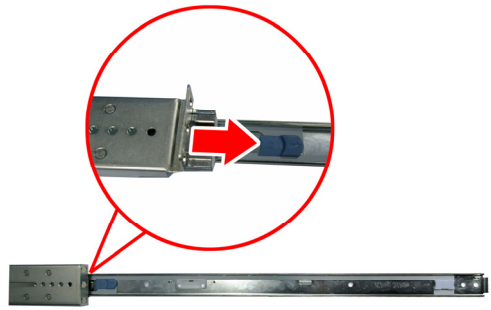
C: M5 x13 ----------2pcs

2.2.2 Installing the inner Rails to the Chassis

1. Screw the mounting ear to each side of FT72 as shown using 3 screws from the supplied screws kit.



2. Push the latch key and draw out the inner rails from sliding rails.



3. Secure inner rails to both sides of the chassis, be sure the five mounting holes are correctly matched.

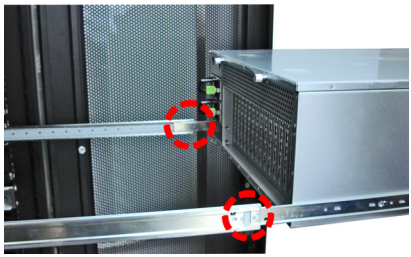
2.2.3 Installing the Outer Rails to the Rack

Secure the outer rail to the rack using the rail and 4 M5 x 10 screws with washer for each side.

2.2.4 Rack mounting the Server

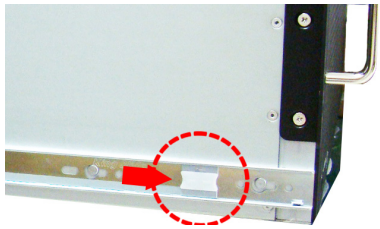
1. Draw out the middle rail till the latch position.

2. Lift the chassis and then insert the inner slide rails into the middle rails.



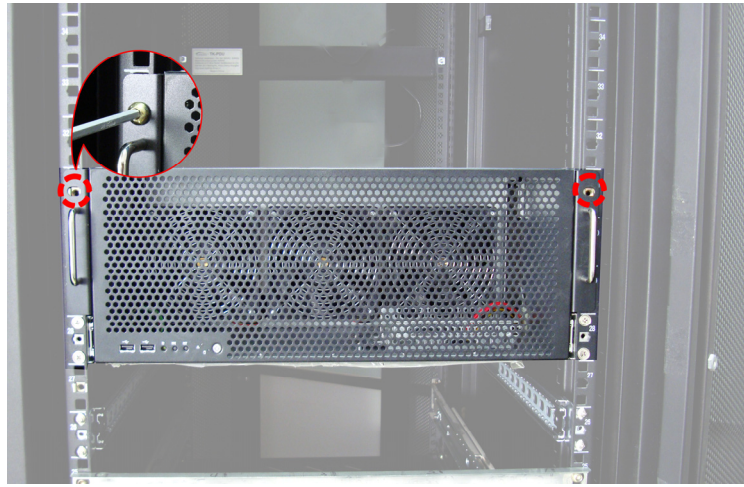
3. Push the chassis in and pull the latch key (A). Then push the whole system into the rack (B).

A



B

4. Secure the mounting ears of chassis to the rack with 2 M5 x 13 screws.



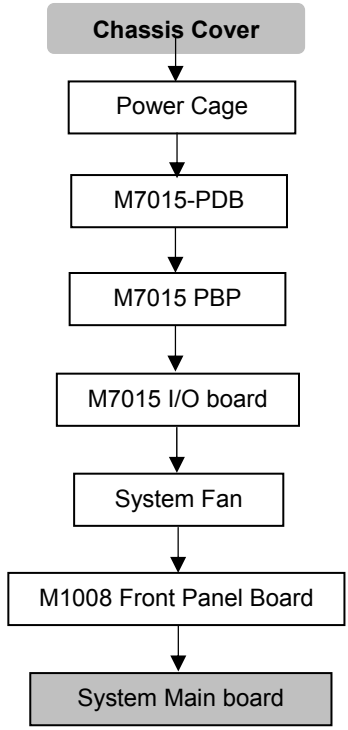
Chapter 3: Replacing Pre-Installed Components

3.1 Introduction

This chapter explains how to replace the pre-installed components, including the Motherboard, M1008 front panel board, M7015 power distribution board, M7015 power backplane, system fan, power cage etc.

3.2 Disassembly Flowchart

The following flowchart outlines the disassembly procedure.



3.3 Removing the Cover

Before replacing any parts you must remove the chassis cover.

Follow **Chapter 2.1.1** to remove the cover of FT72-B7015.

3.4 Replacing the Power Supply

3.4.1 Replace the power supply

To replace the power supply follow these instructions.

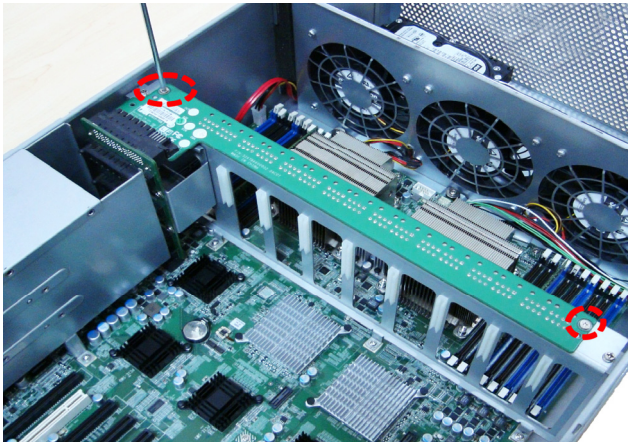
1. Press the tab as shown in the diagram and pull out the power.

2. Free the power from the power socket.

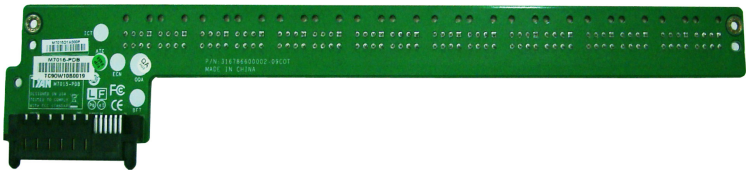
3. Replace a new single power (FRU NO: CPSU-0420) and reinsert it into the power socket following the above steps in reverse.

3.4.2 Replacing M7015 Power Distribution Board

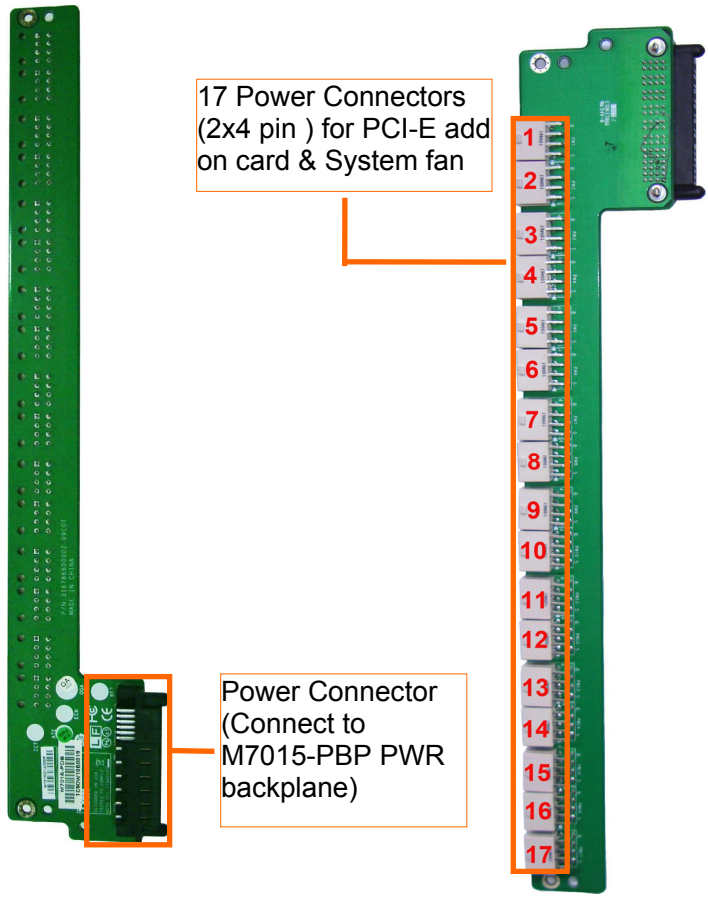
1. Remove the 2 screws securing M7015-PDB to the bracket.



2. Renew the M7015-PDB and fix it to the chassis following the step in reverse.

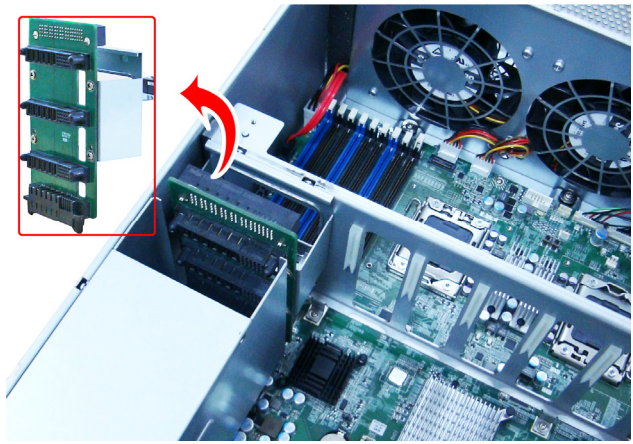


3.4.3 M7015 Power Distribution Board Features

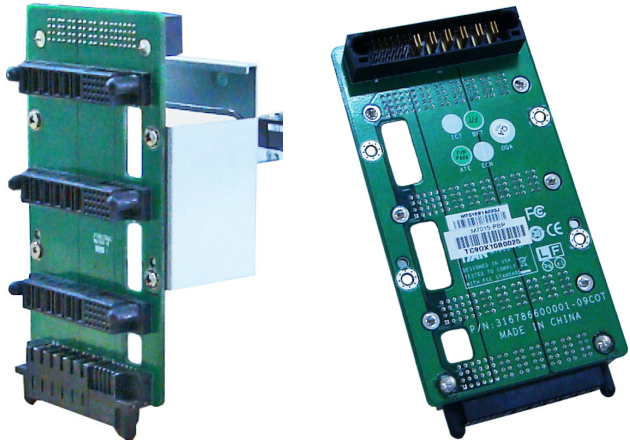


3.4.4 Replace the M7015 power backplane

1. Lift out the M7015- PBP bracket after pulling out the power Supplies and M7015-PDB.



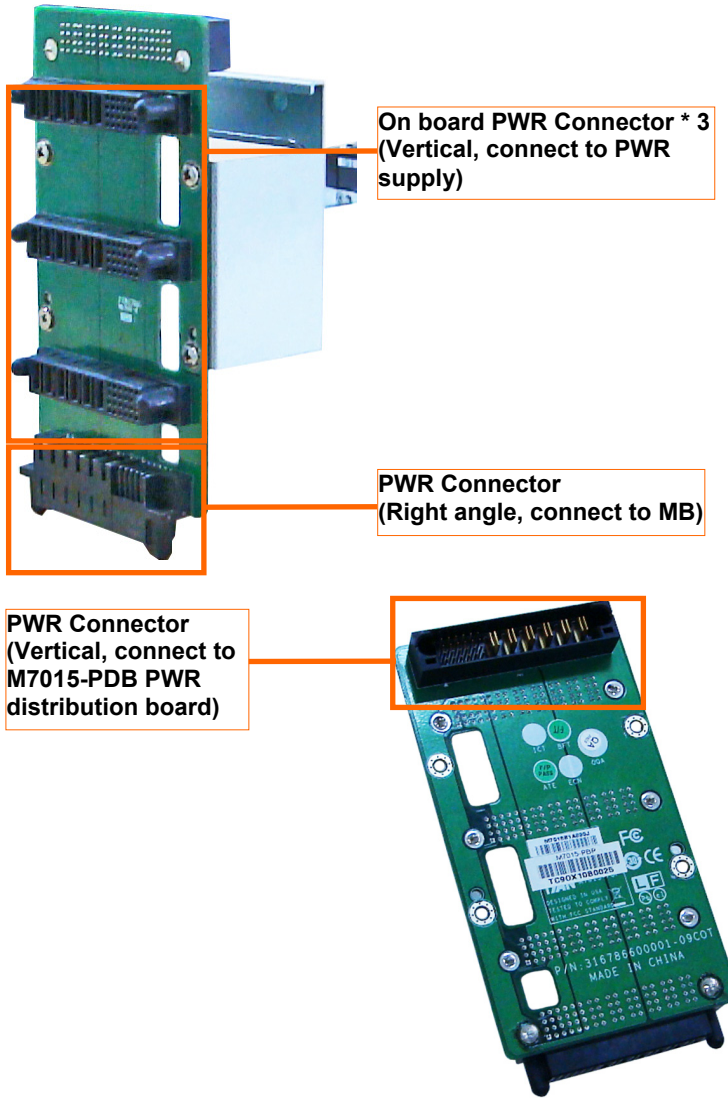
2. Remove the 4 screws securing M7015-PBP to the bracket.



3. Renew the M7015-PBP and fix it to the chassis following the steps in reverse.

3.4.5 M7015 power backplane Features

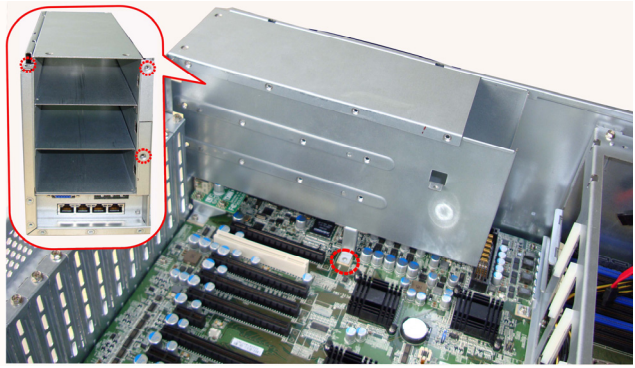
M7015-PBP Power backplane support FT72-B7015 with EMERSON DC1200-3 power supply.



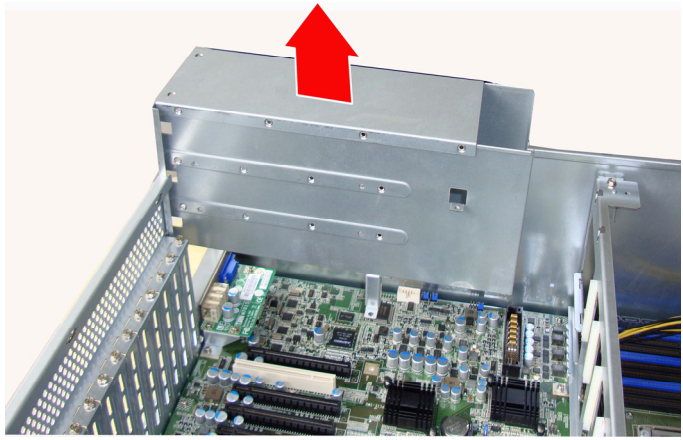
3.5 Replacing M7015 I/O Board

After remove power supplies and M7015 PBP, you can replace the M7015 I/O board follow these instructions.

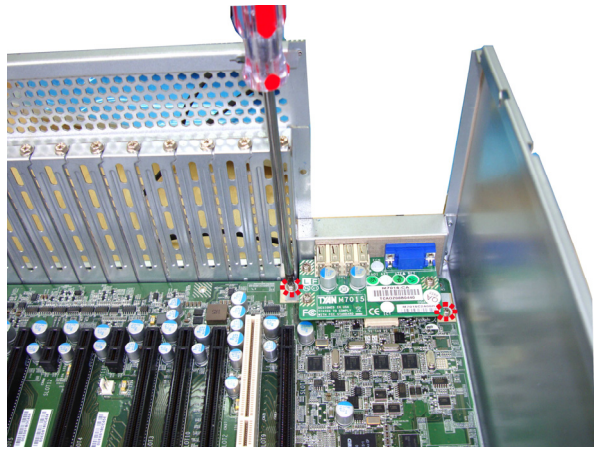
1. Remove the power cage from the chassis with four screws.



2. Lift the power cage out of the chassis and locate the M7015 I/O board.



3. Unscrew M7015 I/O board with its bracket and carefully pull it up.



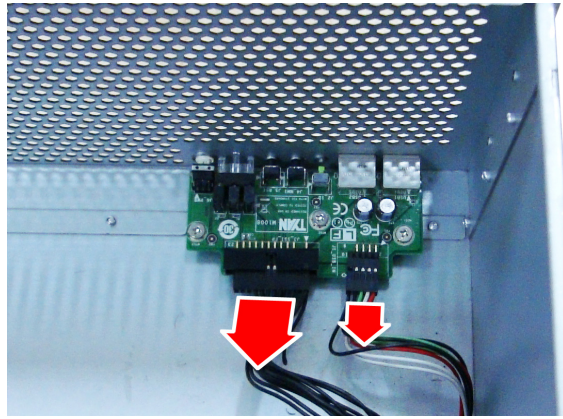
4. Renew the M7015 I/O board and fix it to the chassis following the step in reverse.

3.6 Replacing the LED Control Board

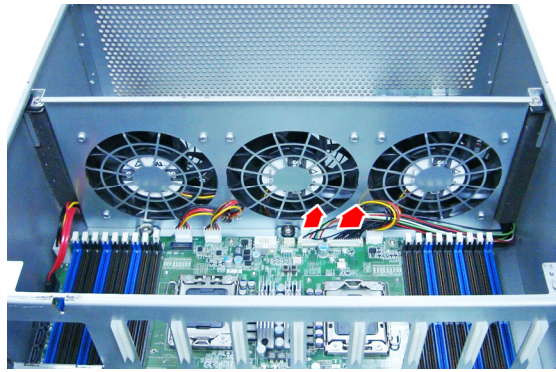
Follow these instructions to replace the M1008 LED control board.

1. Unplug the cables from the connectors on M1008 and main board.

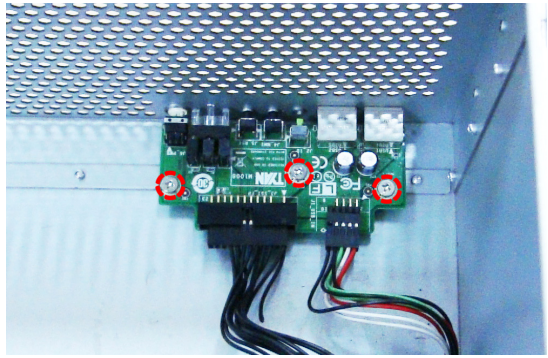
A: From M1008



B: From S7015

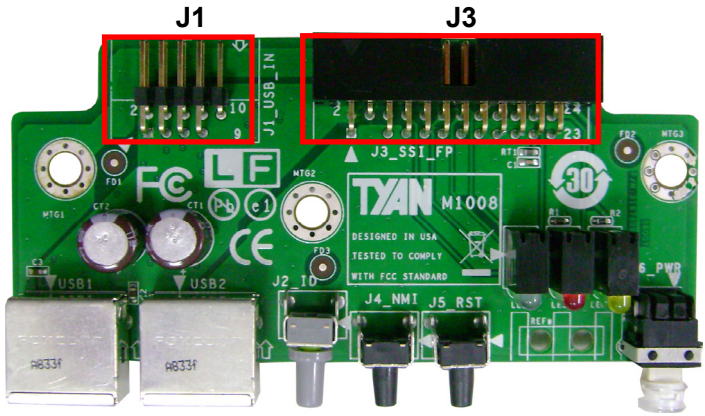


2. Remove the three screws securing the LED control board unit to the chassis.



3. Renew the board and place it back to the chassis following the above procedures in reverse.

3.6.1 M1008 LED Control Board Features



3.6.2 M1008 LED Control Board Connector Pin Definition

J1: USB Header

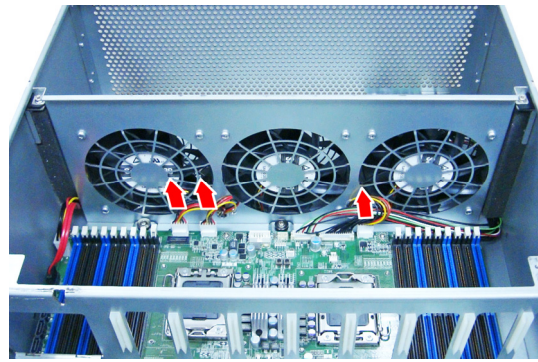
Definition	Pin	Pin	Definition
VCC	1	2	VCC
USB1-	3	4	USB2-
USB1+	5	6	USB2+
GND	7	8	GND
Key	9	10	GND

J3: SSI

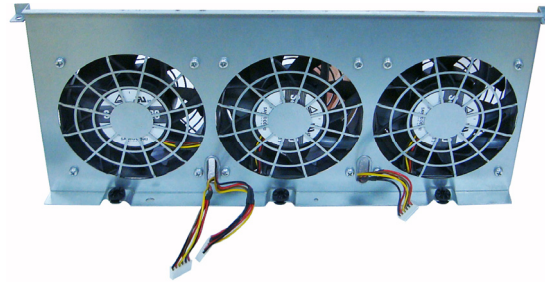
Definition	Pin	Pin	Definition
PW_LED+	1	2	VCC
KEY	3	4	ID_LED+
PW_LED-	5	6	ID_LED-
HD/LAN3 LED+	7	8	SYS_FAULT1-
HD/LAN3 LED-	9	10	SYS_FAULT2-
PWR_SW+	11	12	LAN1_LED+
PWR_SW-	13	14	LAN1_LED-
RESET+	15	16	ICH_SMBDAT
RESET-	17	18	ICH_SMBCLK
ID_SW+	19	20	INTRU#
TEMP_SENSER	21	22	LAN2_LED+
EXT_INT	23	24	LAN2_LED-

3.7 Replacing the System Fan

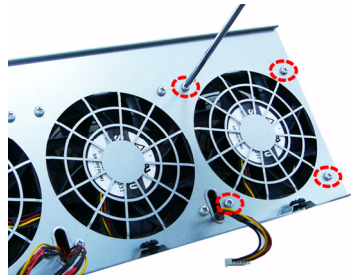
1. Disconnect system fan cables from the chassis.



2. Remove the three screws securing the fan holder into the chassis and lift the fan holder out.



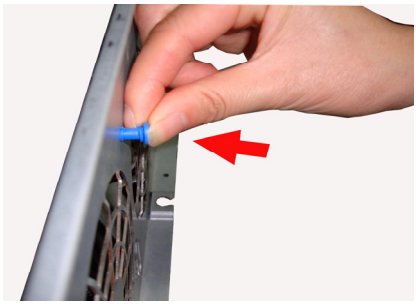
3. Remove the four screws securing the fan to the fan holder.



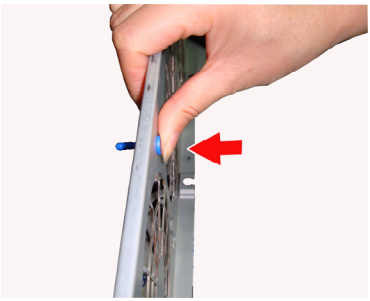
4. Renew the fan and reinsert the fan holder into the chassis and fix it with four screws.

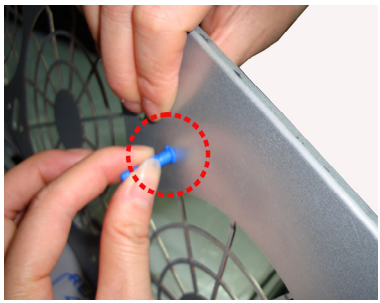
3.7.1 replacing the rubber screws

1. Insert the rubber screw into the fan holder.

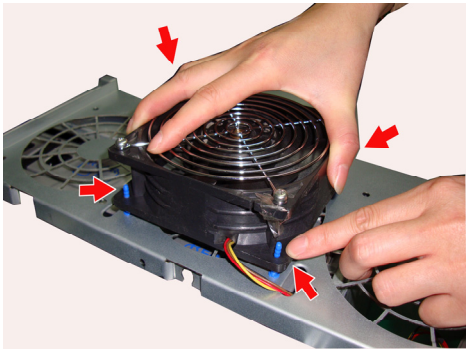


1. Pull the rubber screw through the fan holder and make its projecting part stuck at the fan holder.

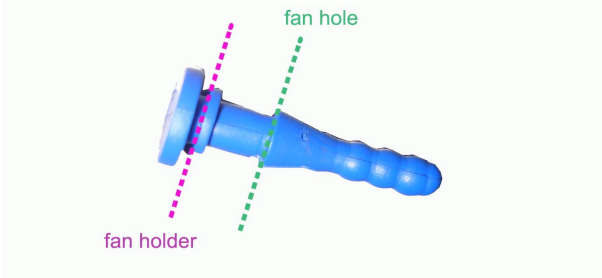




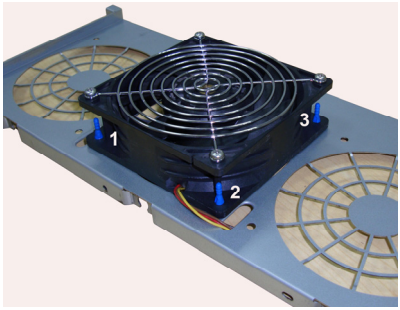
2. Insert the four rubber screws into the fan hole.

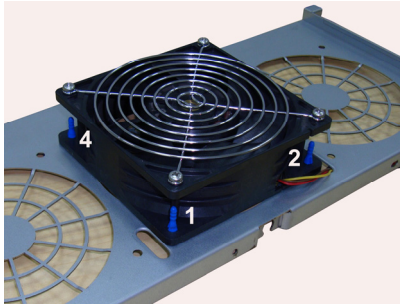


3. Pull the rubber screws with plier and make the screw stuck in the fan hole.



4. The same method to pull out the other three rubber screws.

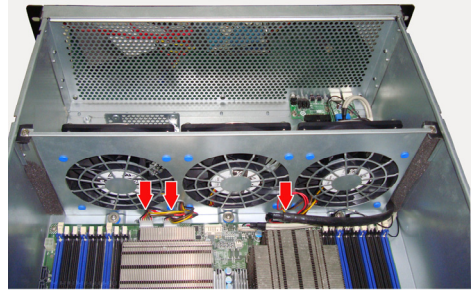




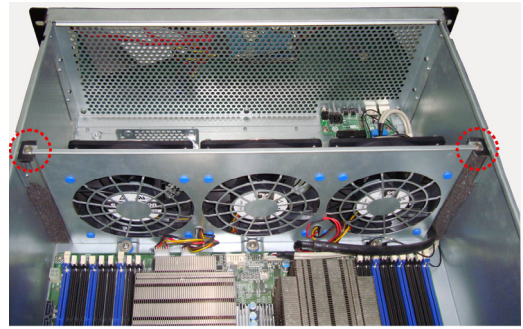
NOTE：When use pliers or relatively sharp tool, preferable to wrap sharp pliers with some tape or paper tape or the like, to prevent damage to the rubber.
As the rubber screw is a one-time product, the assembly can not be repetitive, it would be best not have removed after replacement.

5. Installing the 3 fan with rubber screws as the same procedure.

6. Connect the system fan cables and secure the three screws.



7. Secure the two screws on the fan holder.

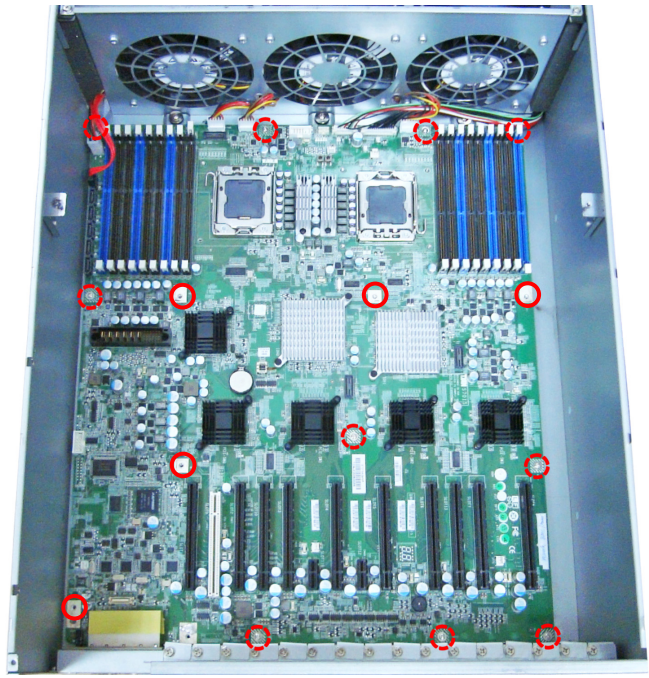


NOTE：As replacing fan mount is to increase the 2.5 'HDD performance, only if clients have no such demand or only request install 3.5' HDD, the replacement need not be carry out.

3.8 Removing the Motherboard

After removing all of the aforementioned cables, follow these instructions to remove the motherboard from the chassis.

1. Remove the heat sinks and processors if installed.
2. Remove the 15 screws securing the motherboard to the chassis.

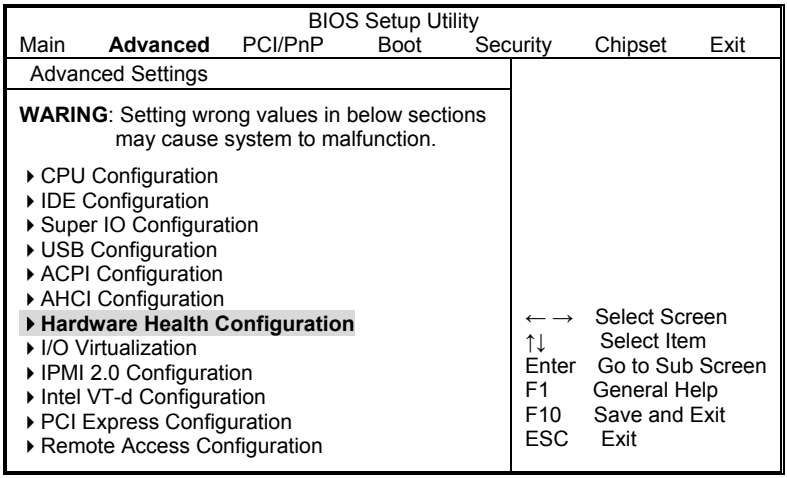


3. Carefully lift the motherboard from the chassis as S7015 is too large to lift straight out .Lift the front edge of the board to an angle of about 45 then slides the whole board out.

Appendix I: BIOS Differences

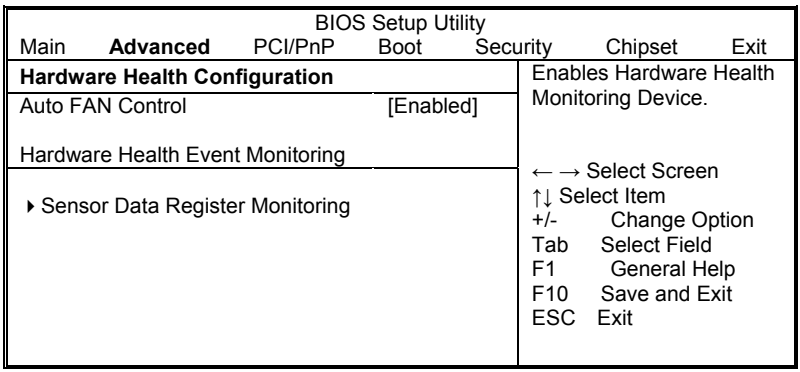
The BIOS for FT72-B7015 is similar to S7015 while there are some differences in menus. The following table displays those differences in details. You can select item ***Hardware Health Configuration*** in the Advanced Settings to configure Auto Fan Control Function.

Hardware Health Configuration Sub-Menu



Hardware Health Configuration Sub-Menu

You can use this screen to view the Hardware Health Configuration Settings.



Feature	Option	Description
Hardware Health Configuration		
Auto FAN Control	Disabled	FAN power duty cycle is auto dynamic programmed in selected temperature range. Disabled: Fan Power On Enabled: Fan Power Duty Cycle is controlled by Tcontrol.
	Enabled	

Sensor Data Register Monitoring Sub-Menu

BIOS Setup Utility

Advanced

ID#	NAME	READING	STATUS	
0F	CPU0 Below Tmax	: xx°C	OK	
11	CPU1 Below Tmax	: xx°C	OK	
12	Board Temp1	: xx°C	OK	
13	Board Temp2	: xx°C	OK	
14	Board Temp3	: xx°C	OK	
0A	CPU0 Vcore	: x.xxx V	OK	
0B	CPU1 Vcore	: x.xxx V	OK	
05	1.5V(near ICH)	: x.xxx V	OK	
06	1.1V(near IOH)	: x.xxx V	OK	
04	5V	: x.xxx V	OK	← → Select Screen
01	3.3V	: x.xxx V	OK	↑↓ Select Item
02	12V	: x.xxx V	OK	+/- Change Option
03	VBattary	: x.xxx V	OK	Tab Select Field
22	FAN1	: xxxx RPM	OK	F1 General Help
23	FAN2	: xxxx RPM	OK	F10 Save and Exit
24	FAN3	: xxxx RPM	OK	ESC Exit

Read only. It can not be modified in user mode.

Appendix II: Redundant Power Behavior

The FT72-B7015 has all three PSUs for which two of them could boot up. When the voltage is 110 volts, the output power is less than 2000w and the voltage is 220 volts the output power is less than 2400w, FT72-B7015 can support the redundant power.
If the voltage is 110 volts, the output power is greater than 2000w and voltage is 220 volts, the output power is greater than 2400w. BMC firmware will alarm via PM bus, system can't support redundant power.

Alarm will be in the following ways:

1. **Generate event log**
2. **Warning led glimmer**
3. **sending warning message to user**
4. **Buzzer beep(if installed)**

Note:

When the input voltage is between 100v~127v. it requires the current at 12.0 Amp MAX, or between 200v~240v, it requires at 7.0 Amp MAX.

Appendix III: Cable Connection Tables

1. FP Ctrl & USB Cable

M1008 FP board to S7015 MB		
M1008 FP board	**Connect to**	**S7015 MB**
J3	→	CN43
J1	→	CN19

2. System Fan Cable

System Fan to S7015 MB		
System Fan	**Connect to**	**S7015 MB**
System Fan1	→	CN36
System Fan2	→	CN37
System Fan3	→	CN40

3. SATA & SATA PWR Cable

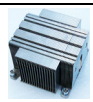
HDD device to S7015 MB		
HDD device	**Connect to**	**S7015 MB**
SATA cable 1 for HDD1	→	CN14
SATA cable 2 for HDD2	→	CN15
SATA PWR cable for HDD1 & HDD2	→	PW4

4. GPU PWR Cable

M7015-PDB to GPU Card		
M7015-PDB	**Connect to**	**GPU card**
PW1 or PW2	→	GPU card 1
PW3 or PW4	→	GPU card 2
PW5 or PW6	→	GPU card 3
PW7 or PW8	→	GPU card 4
PW9 or PW10	→	GPU card 5
PW11 or PW12	→	GPU card 6
PW13 or PW14	→	GPU card 7
PW15 or PW16	→	GPU card 8

Appendix IV: FRU Parts Table

FT72-B7015 FRU Parts

Item	Model Number	Part Number	Picture	Quantity	Description
Power Supply	CPSU-0420	471100600034		3	1200W,Power Supply, EMERSON DS1200-3
FAN	CFAN-0350	336252012362		3	120X120X38MM FAN;12V,9GV1212P1J031
Cable Set	CCBL-146H	422786600003		8	CABLE ASSY;PCI-E CARD PWR CABLE,2*3P /2*3P
	CCBL-146I	422786600004		8	CABLE ASSY;PCI-E CARD PWR CABLE,2*4P /2*4P
	CCBL-0312	332810000347		3	PWR CORD;US,250V,EL302+711,3PIN,16AWG,13A,SPECIAL SOCKET,BLACK,L=1830MM
	CCBL-0313	332810000348		3	PWR CORD;EU,250V,EL202+711,3PIN.1.5MM2,16A,SPECIAL SOCKET,BLACK,L=1830MM
Heat Sink & Cooler	CHSK-0410	343786600001		2	HEATSINK;AL/CU,SOLDERLING+PIPE,1366-CPU-PASSIVE
Rack Mounting Parts	CRAL-0150	340783300039		1	Sliding-Rail Assy
	CEAR-0150	452786600002		1	Mounting ear kit with right and left ear

Note:

The table is subject to change without notice. Please visit our web site at http://www.tyan.com for latest update.

Appendix V: Technical Support

If a problem arises with your system, you should first turn to your dealer for direct support. Your system has most likely been configured or designed by them and they should have the best idea of what hardware and software your system contains. Hence, they should be of the most assistance for you. Furthermore, if you purchased your system from a dealer near you, take the system to them directly to have it serviced instead of attempting to do so yourself (which can have expensive consequences).

If these options are not available for you then TYAN Computer Corporation can help. Besides designing innovative and quality products for over a decade, TYAN has continuously offered customers service beyond their expectations. TYAN's website (www.tyan.com) provides easy-to-access resources such as in-depth Linux Online Support sections with downloadable Linux drivers and comprehensive compatibility reports for chassis, memory and much more. With all these convenient resources just a few keystrokes away, users can easily find the latest software and operating system components to keep their systems running as powerful and productive as possible. TYAN also ranks high for its commitment to fast and friendly customer support through email. By offering plenty of options for users, TYAN serves multiple market segments with the industry's most competitive services to support them.

"TYAN's tech support is some of the most impressive we've seen, with great response time and exceptional organization in general" - Anandtech.com

You can contact TYAN Technical Support by using our Online Support System:

http://12.230.196.231/helpstar/hsPages/login.aspx?ReturnUrl=%2fhelpstar%2fhsPages%2fDefault.aspx

Help Resources:

1. See the beep codes section of this manual.
2. See the TYAN website for FAQ's, bulletins, driver updates, and other information: http://www.tyan.com
3. Contact your dealer for help BEFORE calling TYAN.
4. Check the TYAN user group: alt.comp.periphs.mainboard.TYAN

Returning Merchandise for Service

During the warranty period, contact your distributor or system vendor FIRST for any product problems. This warranty only covers normal customer use and does not cover damages incurred during shipping or failure due to the alteration, misuse, abuse, or improper maintenance of products.

NOTE: A receipt or copy of your invoice marked with the date of purchase is required before any warranty service can be rendered. You may obtain service by calling the manufacturer for a Return Merchandise Authorization (RMA) number. The RMA number should be prominently displayed on the outside of the shipping carton and the package should be mailed prepaid. TYAN will pay to have the board shipped back to you

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