FT65T-B8030

Tower Server Engineer's Manual

Copyright

Version 1.0

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● FCC Declaration

Notice for the USA

Compliance Information Statement (Supplier's Declaration of Conformity, SDoC) FCC Part 15: This device complies with part 15 of the FCC Rules.

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

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

Notice for Canada

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

● Notice for Europe (CE Mark)

This product is in conformity with the Council Directive 2014/30/EU and 2014/35/EU.

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.

● VCCI-B

この装置は、クラスＢ機器です。この装置は、住宅環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。 VCCI-B

● Safety: IEC/EN 62368-1

This equipment is compliant with CB/LVD of Safety: IEC/EN 62368-1:2014.

About this Manual

This manual is intended for trained service technician/personnel with hardware knowledge of computers. Components inside the compartments should be serviced only by a trained service technician/personnel. This manual is aimed to provide you with instructions on installing your TYAN FT65T-B8030.

How this guide is organized

This guide contains the following parts:

Chapter 1: Overview
This chapter provides an introduction to the TYAN FT65T-B8030 barebones and standard parts list, describes the external components, gives an overview of the product from different angles.

Chapter 2: Setting Up
This chapter covers procedures on installing the processors, memory modules, hard drivers and other optional parts.

Chapter 3: Replacing the Pre-installed Components
This chapter covers the removal and replacement procedures for pre-installed components.

Appendix:
This chapter provides the cable connection table, the FRU parts list for reference of system setup, and technical support in case a problem arises with your system.

Safety and Compliance Information

Before installing and using TYAN FT65T-B8030, 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 purpose of this pin. If your 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 voltage components and result in shock and damage to the components.
- When replacing parts, ensure that you use parts specified by the manufacturer.
- 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.

Safety Information

Retain and follow all product safety and operating instructions provided with your equipment. In the event of a conflict between the instructions in this guide and the instructions in equipment documentation, follow the guidelines in the equipment documentation.

Observe all warnings on the product and in the operating instructions. To reduce the risk of bodily injury, electric shock, fire and damage to the equipment, observe all precautions included in this guide.

You must become familiar with the safety information in this guide before you install, operate, or service TYAN products.

Symbols on Equipment

	**Caution**. This symbol indicates a potential hazard. The potential for injury exists if cautions are not observed. Consult equipment documentation for specific details.
	**Caution.** Slide-mounted equipment is not to be used as a shelf or a work space.
	**Warning.** This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.
	**Warning**. This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists. To reduce risk of injury from a hot component, allow the surface to cool before touching.
	**CAUTION:** Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions. **ATTENTION:** Risque d'explosion si la batterie est remplacée par un type incorrect. Mettre au rebus les batteries usagées selon les instructions.
	**Multiple power connections.** Prior to servicing, disconnect all power cords. **Raccordements de puissance multiples.** Avant l'entretien, vous devez débranchez tous les cordons d'alimentation.

General Precautions

- Follow all caution and warning instructions marked on the equipment and explained in the accompanying equipment documentation.

Machine Room Environment

- Make sure that the area in which you install the system is properly ventilated and climate-controlled.
- Ensure that the voltage and frequency of your power source match the voltage and frequency inscribed on the electrical rating label of the equipment.
- Do not install the system in or near a plenum, air duct, radiator, or heat register.
- Never use the product in a wet location.

Equipment Chassis

- Do not block or cover the openings to the system.
- Never push objects of any kind through openings in the equipment. Dangerous voltages might be present.
- Conductive foreign objects can produce a short circuit and cause fire, electric shock, or damage to your equipment.
- Lift equipment using both hands and with your knees bent.

Equipment Racks

To avoid injury or damage to the equipment:

- Observe local occupational health and safety requirements and guidelines for manual materials handling.
- Do not attempt to move a rack by yourself; a minimum of two people are needed to move a rack.
- Do not attempt to move a fully loaded rack. Remove equipment from the rack before moving it.
- Do not attempt to move a rack on an incline that is greater than 10 degrees from the horizontal.

- Make sure the rack is properly secured to the floor or ceiling.
- Make sure the stabilizing feet are attached to the rack if it is a single-rack installation.
- Make sure racks are coupled together if it is a multiple-rack installation.
- Make sure the rack is level and stable before installing an appliance in the rack.
- Make sure the leveling jacks are extended to the floor.
- Make sure the full weight of the rack rests on the leveling jacks.
- Always load the rack from the bottom up. Load the heaviest component in the rack first.
- Make sure the rack is level and stable before pulling a component out of the rack.
- Make sure only one component is extended at a time. A rack might become unstable if more than one component is extended.

To avoid damage to the equipment:

- The rack width and depth must allow for proper serviceability and cable management.
- Ensure that there is adequate airflow in the rack. Improper installation or restricted airflow can damage the equipment.
- The rack cannot have solid or restricted airflow doors. You must use a mesh door on the front and back of the rack or remove the doors to ensure adequate air flow to the system.
- If you install the Model in a rack, do not place equipment on top of the unit. It will cause restricted airflow and might cause damage to the equipment.
- Make sure the product is properly matted with the rails. Products that are improperly matted with the rails might be unstable.
- Verify that the AC power supply branch circuit that provides power to the rack is not overloaded. This will reduce the risk of personal injury, fire, or damage to the equipment. The total rack load should not exceed 80 percent of the branch circuit rating. Consult the electrical authority having jurisdiction over your facility wiring and installation requirements.

Equipment Power Cords

- Use only the power cords and power supply units provided with your system. The system might have one or more power cords.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- In all European electrical environments, you must ground the Green/Yellow tab on the power cord. If you do not ground the Green/Yellow tab, it can cause an electrical shock due to high leakage currents.
- Do not place objects on AC power cords or cables. Arrange them so that no one might accidentally step on or trip over them.
- Do not pull on a cord or cable. When unplugging from the electrical outlet, grasp the cord by the plug.
- To reduce the risk of electrical shock, disconnect all power cords before servicing the appliance.

Equipment Batteries

- The system battery contains lithium manganese dioxide. If the battery pack is not handled properly, there is risk of fire and burns.
- Do not disassemble, crush, puncture, short external contacts, or dispose of the battery in fire or water.
- Do not expose the battery to temperatures higher than 60°C (140°F).
- The system battery is not replaceable. If the battery is replaced by an incorrect type, there is danger of explosion. Replace the battery only with a spare designated for your product.
- Do not attempt to recharge the battery.
- Dispose of used batteries according to the instructions of the manufacturer. Do not dispose of batteries with the general household waste. To forward them to recycling or proper disposal, use the public collection system or return them to TYAN, your authorized TYAN partner, or their agents.

Equipment Modifications

- Do not make mechanical modifications to the system. TYAN is not responsible for the regulatory compliance of TYAN equipment that has been modified.

Equipment Repairs and Servicing

• The installation of internal options and routine maintenance and service of this product should be performed by individuals who are knowledgeable about the procedures, precautions, and hazards associated with equipment containing hazardous energy levels.

• Retain all screws or other fasteners when removing access cover(s). Upon completion of accessing inside the product, refasten access cover with original screws or fasteners.

• Do not exceed the level of repair specified in the procedures in the product documentation. Improper repairs can create a safety hazard.

• Allow the product to cool before removing covers and touching internal components.

• Remove all watches, rings, or loose jewelry when working before removing covers and touching internal components.

• Do not use conductive tools that could bridge live parts.

• Use gloves when you remove or replace system components; they can become hot to the touch.

• If the product sustains damage requiring service, disconnect the product from the AC electrical outlet and refer servicing to an authorized service provider. Examples of damage requiring service include:

– The power cord, extension cord, or plug has been damaged.

– Liquid has been spilled on the product or an object has fallen into the product.

– The product has been exposed to rain or water.

– The product has been dropped or damaged.

– The product does not operate normally when you follow the operating instructions.

• Retain all screws or other fasteners when removing access cover(s). Upon completion of accessing inside the product, refasten access cover with original screws or fasteners.

Table of Contents

Chapter 1: Overview

1.1 About the TYAN FT65T-B8030

Congratulations on your purchase of the TYAN® FT65T-B8030, a highly optimized Tower Server barebone system. The FT65T-B8030 is designed to support single AMD®EPYC™ 7002/7003 Series Processors and up to 2TB RDIMM/LRDIMM 3200 DDR4 memory, providing a rich feature set and incredible performance. Leveraging advanced technology from AMD®, the FT65T-B8030 Tower Server system is capable of offering scalable 32 and 64-bit computing, high bandwidth memory design, and lightning-fast PCI-E bus implementation. The FT65T-B8030 not only empowers your company in nowadays IT demand but also offers a smooth path for future application usage.

TYAN® also offers the FT65T-B8030 in a version that can support up to eight 3.5”/2.5” hot-swap SSD/HDD and two 2.5” hot-swap NVMe SSD/HDDs. The FT65T-B8030 uses TYAN’s latest chassis featuring a robust structure and a solid mechanical enclosure. All of this provides FT65T-B8030 the power and flexibility to meet the needs of nowadays server application.

1.2 Product Models

The system board within the Tyan Barebone is defined by the following models:

- **B8030F65TV8E2H-2T-N**: AMD-based platform
- **B8030F65TV8E2H-N**: AMD-based platform
- **B8030F65TV8E2H-G**: AMD-based platform

SKU Differences

Model Name	FT65T-B8030		
SKU Name	**B8030F65TV8E2H-2T-N**	**B8030F65TV8E2H-N**	**B8030F65TV8E2H-G**
Rear FANs	Yes	Yes	No
LAN Ports	5	3	3

NOTE: Rear FANs is only for Tesla Passive GPU cards

1.3 Features

B8030F65TV8E2H-G Specifications

System	Form Factor	Tower Server
	Chassis Model	FT65T
	Dimension (D x W x H)	25.59" x 17.245" x 6.93" (650 x 438 x 176mm)
	Motherboard Name	S8030GM2NE
Front Panel	Buttons	(1) ID / (1) PWR w/ LED / (1) RST
	LEDs	(1) HDD / (1) ID / (1) System Event / (2) LAN activity
	I/O Ports	(2) USB 3.0 ports
External Drive Bay	Q'ty / Type	(2) 2.5" Hot-Swap NVMe HDD/SSDs / (8) 2.5"/3.5" Hot-Swap HDD/SSDs
	HDD Backplane Support	SAS 12Gb/s /SATA 6Gb/s /NVMe
	Supported HDD Interface	(2) SATA 6Gb/s / NVMe / (8) SATA 6Gb/s / SAS 12Gb/s
System Cooling Configuration	FAN	(3) easy-swap 12038 fans
Power Supply	Type	ATX 12V
	Input Range	AC 100~240V/15~12A
	Frequency	50-60 Hz
	Output Watts	2000W @ AC Input 200-240Vac 1500W @ AC input 115-200Vac 1200W @ AC input 100-115Vac
	Efficiency	80 plus Platinum
Processor	Q'ty / Socket Type	(1) AMD Socket SP3
	Supported CPU Series	(1) AMD EPYC™ 7002/7003 Series Processor
	Configurable Thermal Design Power (cTDP) Wattage	Max up to 240W
Memory	Supported DIMM Qty	(8) DIMM slots
	DIMM Type / Speed	DDR4 RDIMM/LRDIMM 3200
	Capacity	Up to 2TB
	Memory channel	8 Channels per CPU
	Memory voltage	1.2V
Expansion Slots	PCIe	(5) PCIe Gen.4 x16 slots
	Pre-installed TYAN Riser Card (PCIe Gen.4)	(1) M7129F83A-L16 riser card for (1) PCIe Gen.4 x16 slot with PCIe Gen.4 x8 lane
LAN	Q'ty / Port	(2) GbE ports + (1) GbE dedicated for IPMI
	Controller	Intel i210
	PHY	Realtek RTL8211E
Storage SATA	Connector	(2) SFF-8643 for (8) front SATA drives
	Controller	Direct from AMD EPYC CPU
	Speed	6Gb/s
	RAID	N/A
Storage NVMe	Connector (M.2)	(2) 22110/2280 (by PCIe Gen.4 interface)

	Connector (U.2)	(1) SFF-8654 for (2) NVMe ports
Graphic	**Connector type**	D-Sub 15-pin
	Resolution	Up to 1920x1200
	Chipset	Aspeed AST2500
I/O Ports	**USB**	(2) USB3.0 ports (@ rear)
	COM	(1) DB-9 COM port
	VGA	(1) D-Sub 15-pin port
	RJ-45	(2) GbE ports + (1) dedicated GbE for IPMI
TPM (Optional)	**TPM Support**	Please refer to our TPM supported list.
System Monitoring	**Chipset**	Aspeed AST2500
	Temperature	Monitors temperature for CPU & memory & system environment
	Voltage	Monitors voltage for CPU, memory, chipset & power supply
	LED	Over temperature warning indicator / Fan & PSU fail LED indicator
	Others	Watchdog timer support
Server Management	**Onboard Chipset**	Onboard Aspeed AST2500
	AST2500 iKVM Feature	24-bit high quality video compression / Supports storage over IP and remote platform-flash / USB 2.0 virtual hub
	AST2500 IPMI Feature	IPMI 2.0 compliant baseboard management controller (BMC) / 10/100/1000 Mb/s MAC interface
BIOS	**Brand / ROM size**	AMI / 32MB
	Feature	Hardware Monitor / FAN speed control automatic / Boot from USB device/PXE via LAN/Storage / Console Redirection / SMBIOS 3.0/PnP/Wake on LAN / ACPI sleeping states S0, S5
Operating System	**OS supported list**	Please refer to our AVL support lists.
Regulation	**FCC (SDoC)**	Class B
	CE (DoC)	Class B
	RCM	Class B
	VCCI	Class B
Operating Environment	**Operating Temp.**	10° C ~ 35° C (50° F~ 95° F)
	Non-operating Temp.	- 40° C ~ 70° C (-40° F ~ 158° F)
	In/Non-operating Humidity 90	90%, non-condensing at 35° C
RoHS	**RoHS 6/6 Compliant**	Yes
Package Contains	**Barebone**	(1) FT65T-B8030 Barebone
	Manual	(1) Quick Installation Guide

B8030F65TV8E2H-N Specifications

System	Form Factor	Tower Server
	Chassis Model	FT65T
	Dimension (D x W x H)	25.59" x 17.245" x 6.93" (650 x 438 x 176mm)
	Motherboard Name	S8030GM2NE
Front Panel	Buttons	(1) ID / (1) PWR w/ LED / (1) RST
	LEDs	(1) HDD / (1) ID / (1) System Event / (2) LAN activity
	I/O Ports	(2) USB 3.0 ports
External Drive Bay	Q'ty / Type	(2) 2.5" Hot-Swap NVMe HDD/SSDs / (8) 2.5"/3.5" Hot-Swap HDD/SSDs
	HDD Backplane Support	SAS 12Gb/s /SATA 6Gb/s /NVMe
	Supported HDD Interface	(2) SATA 6Gb/s / NVMe / (8) SATA 6Gb/s / SAS 12Gb/s
System Cooling Configuration	FAN	(2) 8038 hot-swap FAN module at rear / (3) easy-swap 12038 fans
Power Supply	Type	ATX 12V
	Input Range	AC 100~240V/15~12A
	Frequency	50-60 Hz
	Output Watts	2000W @ AC Input 200-240Vac 1500W @ AC input 115-200Vac 1200W @ AC input 100-115Vac
	Efficiency	80 plus Platinum
Processor	Q'ty / Socket Type	(1) AMD Socket SP3
	Supported CPU Series	(1) AMD EPYC™ 7002/7003 Series Processor
	Configurable Thermal Design Power (cTDP) Wattage	Max up to 240W
Memory	Supported DIMM Qty	(8) DIMM slots
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LAN	Q'ty / Port	(2) GbE ports + (1) GbE dedicated for IPMI
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	PHY	Realtek RTL8211E
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	Controller	Direct from AMD EPYC CPU
	Speed	6Gb/s
	RAID	N/A
Storage NVMe	Connector (M.2)	(2) 22110/2280 (by PCIe Gen.4 interface)
	Connector (U.2)	(1) SFF-8654 for (2) NVMe ports
Graphic	Connector type	D-Sub 15-pin
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	RCM	Class B
	VCCI	Class B
Operating Environment	**Operating Temp.**	10° C ~ 35° C (50° F~ 95° F)
	Non-operating Temp.	- 40° C ~ 70° C (-40° F ~ 158° F)
	In/Non-operating Humidity 90	90%, non-condensing at 35° C
RoHS	**RoHS 6/6 Compliant**	Yes
Package Contains	**Barebone**	(1) FT65T-B8030 Barebone
	Manual	(1) Quick Installation Guide

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	LEDs	(1) HDD / (1) ID / (1) System Event / (3) LAN activity
	I/O Ports	(2) USB 3.0 ports
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	Controller	Intel i210, X550-AT2
	PHY	Realtek RTL8211E
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Storage NVMe	Connector (M.2)	(2) 22110/2280 (by PCIe Gen.4 interface)
	Connector (U.2)	(1) SFF-8654 for (2) NVMe ports
Graphic	Connector type	D-Sub 15-pin

	Resolution	Up to 1920x1200
	Chipset	Aspeed AST2500
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Operating Environment	**Operating Temp.**	10° C ~ 35° C (50° F~ 95° F)
	Non-operating Temp.	- 40° C ~ 70° C (-40° F ~ 158° F)
	In/Non-operating Humidity 90	90%, non-condensing at 35° C
RoHS	**RoHS 6/6 Compliant**	Yes
Package Contains	**Barebone**	(1) FT65T-B8030 Barebone
	Manual	(1) Quick Installation Guide

1.4 Standard Parts List

This section describes FT65T-B8030 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

FT65T-B8030 Box Content

- 4U Chassis
- (1) 2000W PSU 80+gold
- (1) M1309F65T-BP12-8 HDD Backplane
- (1) M1298T65-BP12E-2 HDD Backplane
- (1) M7129F83A-L16 Riser Card
- (3) system FAN + (2) rear FAN for –2T/-N SKU
- (3) system FAN for –G SKU
- (1) M1713G24-FPB Front Panel Board
- (1) S8030 R03 MB

FT65T-B8030 Accessories

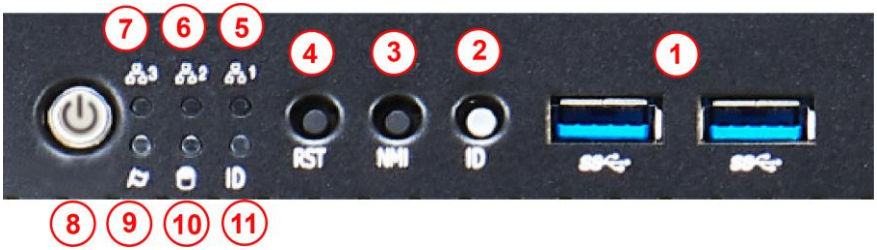
- (1) CPU heatsink
- (1) US power cord
- (1) EU power cord
- (3) Screw pack
- (4) GPU HOLDER BKT
- (1) GPU SUPPORT BKT
- (2) M.2 LATCH
- (1) Rail kit and SKU
- (1) QIG

1.5 About the Product

The following views show you the product.

1.5.1 System Front View

Front Control Panel (M1713G24-FPB pre-installed)



1	USB 3.1 Ports
2	ID Button
3	NMI Button
4	Reset Button
5	LAN1 LED
6	LAN2 LED
7	LAN3 LED
8	Power on/off Button with LED
9	IPMI LED/Fault LED
10	HDD LED
11	ID LED

M1713G24-FPB Front Panel Board

Switch and LED Indication

M1713G24-FPB R01 LED Definitions			
LED	**STATE**	**COLOR**	**DESCRIPTION**
Power LED	ON	GREEN	system is turn on
	ON	GREEN	system is under S1 or S3 state
	OFF	OFF	power off
NIC1	Blinking	GREEN	LAN active
	ON	GREEN	LAN linked
	OFF	OFF	LAN not linked
NIC2	Blinking	GREEN	LAN active
	ON	GREEN	LAN linked

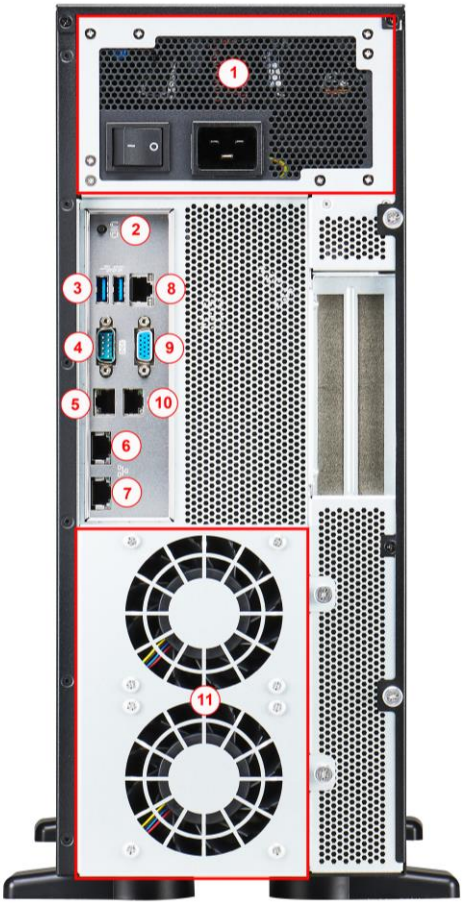
	OFF	OFF	LAN not linked
NIC3 (NO function, Reserved for OEM customer)	Blinking	GREEN	LAN active
	ON	GREEN	LAN linked
	OFF	OFF	LAN not linked
HDD LED	ON	GREEN	HDD accessed
	OFF	OFF	NO HDD access
ID LED	ON	BLUE	system identified
	OFF	OFF	system no identified
BMC LED	ON	AMBER	Fan fail/Over temperature/Over voltage/PSU fail
	ON	AMBER	PSU alert
	OFF	OFF	No failure
Button Indication			
Power On/Off	Power up and power off the system(Use a pin)		
ID(UID)	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 AST2500 user guide.		
RST	Press to reset the system.		

HDD LED Definitions

Drive State	Active LED (Green)	Failure LED (Red)
Drive present, no activity	Green Solid On	Off
Drive present, with activity	Green Blinking	Off
Drive Failed	Don't care	Red Solid On
Drive dentify	Don't care	Red Blinking @1 Hz
Drive Rebuild	Don't care	Red Blinking @4 Hz

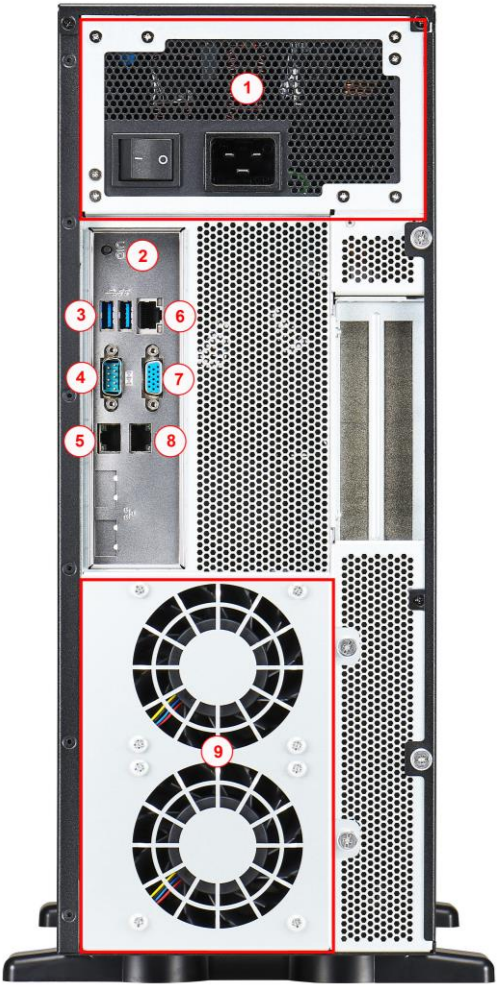
1.5.2 System Rear View

B8030F65TV8E2H-2T-N



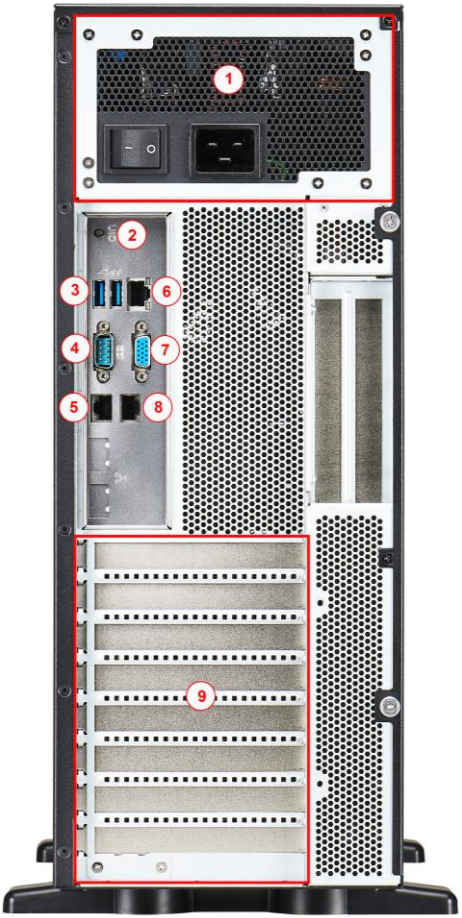
1	PSU	7	RJ45 LAN Port#1(LAN1)
2	ID Button	8	Dedicated IPMI RJ45 LAN Port#5(LAN5)
3	USB3.1 Portx2	9	VGA Port
4	COM Port	10	RJ45 LAN Port#4(LAN4)
5	RJ45 LAN Port#3(LAN3)	11	Rear Fans
6	RJ45 LAN Port#2(LAN2)		

B8030F65TV8E2H-N



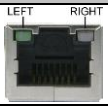
1	PSU	6	Dedicated IPMI RJ45 LAN Port#3(LAN3)
2	ID Button	7	VGA Port
3	USB3.1 Portx2	8	RJ45 LAN Port#2(LAN2)
4	COM Port	9	Rear Fans
5	RJ45 LAN Port#1(LAN1)		

B8030F65TV8E2H-G



1	PSU	6	Dedicated IPMI RJ45 LAN Port#3(LAN3)
2	ID Button	7	VGA Port
3	USB3.1 Portx2	8	RJ45 LAN Port#2(LAN2)
4	COM Port	9	Expansion Slots
5	RJ45 LAN Port#1(LAN1)		

The five (5) onboard Ethernet ports have green and yellow LEDs to indicate LAN status. The chart below illustrates the different LED states.

10Mbps/100Mbps/1Gbps/10Gbps LAN Link/Activity LED Scheme			
		**Left LED**	**Right LED**
No Link		Off	Off
10Mbps	**Link**	Green	Off
	Active	Blinking Green	Off
100Mbps	**Link**	Green	Solid Green
	Active	Blinking Green	Solid Green
1Gbps	**Link**	Green	Solid Yellow
	Active	Blinking Green	Solid Yellow
10Gbps	**Link**	Yellow	Solid Yellow
	Active	Blinking Yellow	Solid Yellow

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

ID LED Definition

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

NOTE:
Press the ID button when the system AC (Alternating Current) is on, then the ID LED will light blue if the system is identified. Users from remote sites can also activate the ID LED by entering a few commands in IPMI. For detailed software support, please visit http://www.tyan.com for the latest AST2500 user guide.

Power LED Definitions

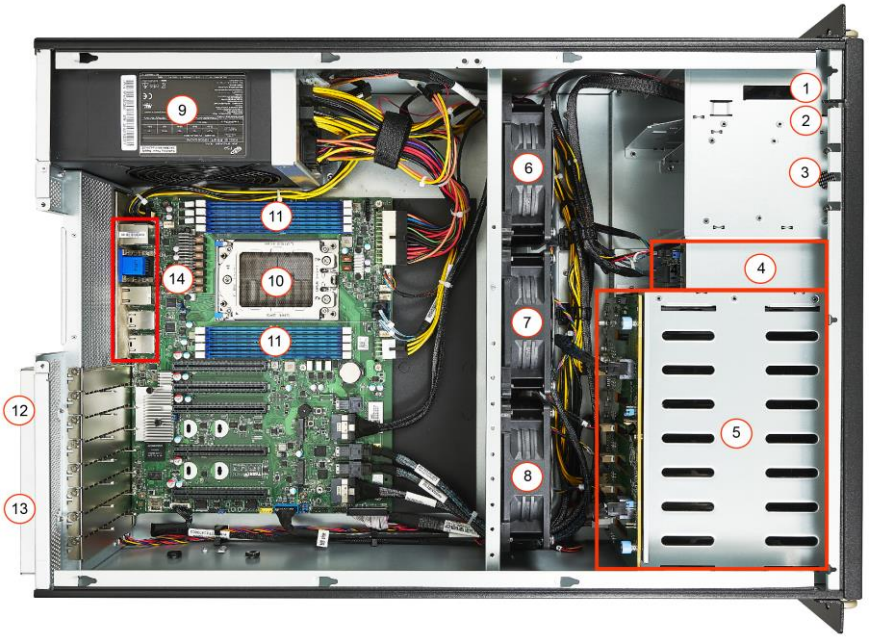
System PSU Output Power Limit

The system total output power limit varies in accordance with PSU redundancy and AC input range. Please refer to the following table for details.

AC input	100-240V~ 15-12A 60-50Hz				
DC Output	+3.3V	+5V	+12V	-12V	+5Vsb
Max Output Current	25A	25A	166.6A	0.3A	4A
Max Combined Power	150W		2000W	6W	20W
Total Power	2000W@200-240Vac 1500@115-200Vac 1200@100-115Vac				

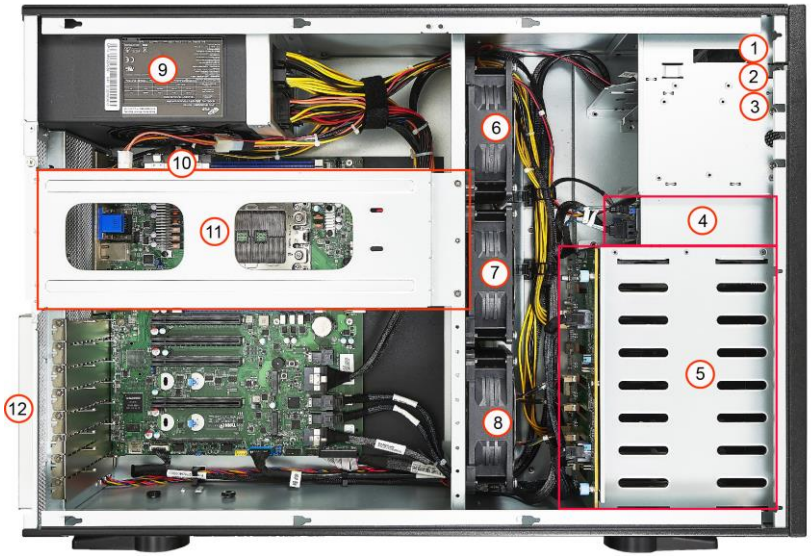
1.5.3 System Top View

B8030F65TV8E2H-2T-N



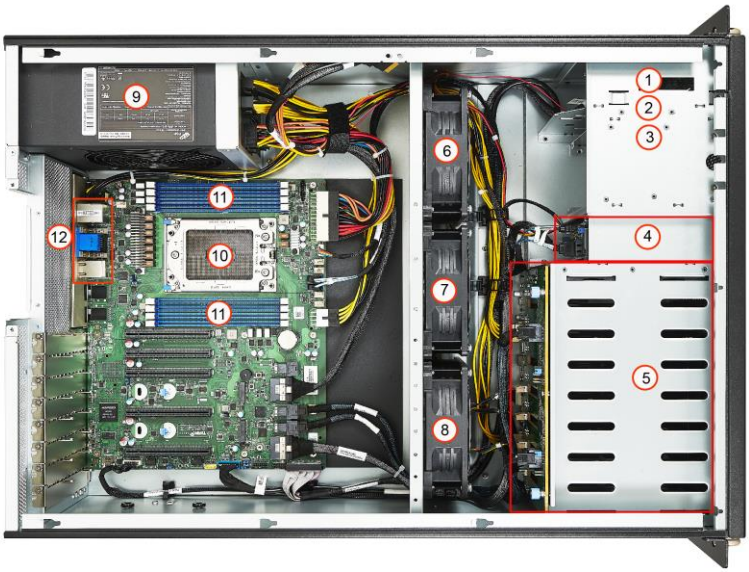
1.	M1713G24-FPB Front Panel Board pre-installed	8	FAN3
2.	Reserved space for slim CD dummy	9	Power supply
3.	Reserved space for 2.5” HDD trays	10.	CPU Socket
4.	(2) 2.5”HDD trays (M1298T65-BP12E-2 HDD Backplane pre-installed)	11.	Memory Slots
5.	(8) 3.5”HDD trays (M1309F65T-BP12-8 HDD Backplane pre-installed)	12.	FAN4
6.	FAN1	13.	FAN5
7.	FAN2	14.	IO Ports(with 5 LAN)

B8030F65TV8E2H-N



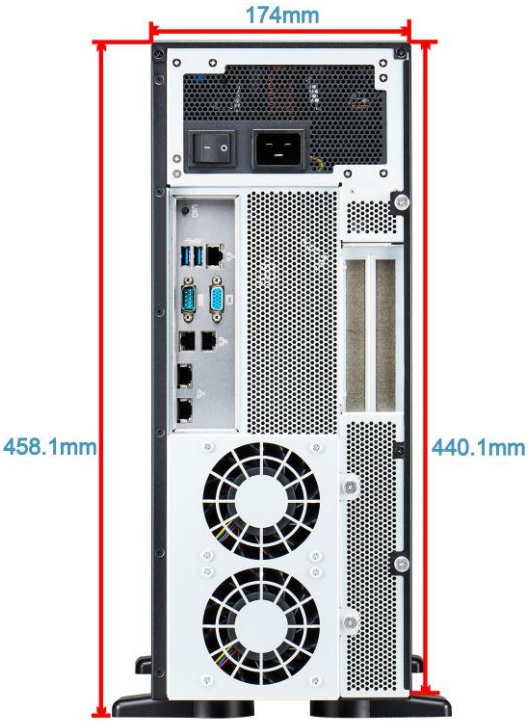
1.	M1713G24-FPB Front Panel Board pre-installed	7.	FAN2
2.	Reserved space for slim CD dummy	8	FAN3
3.	Reserved space for 2.5” HDD trays	9	Power supply
4.	(2) 2.5”HDD trays (M1298T65-BP12E-2 HDD Backplane pre-installed)	10.	M7129F83A-L16 Riser Card
5.	(8) 3.5”HDD trays (M1309F65T-BP12-8 HDD Backplane pre-installed)	11.	Riser Bracket
6.	FAN1	12	Rear Fans

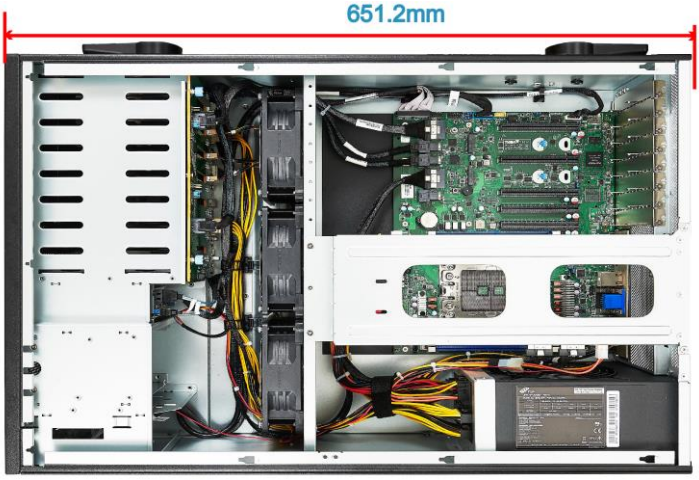
B8030F65TV8E2H-G



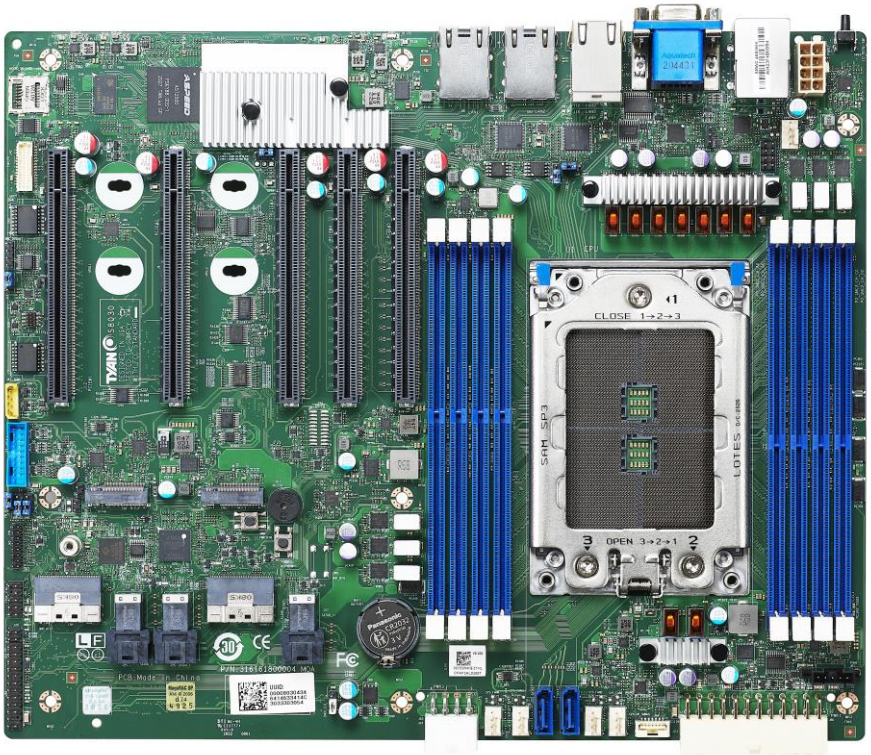
1.	M1713G24-FPB Front Panel Board pre-installed	7.	FAN2
2.	Reserved space for slim CD dummy	8	FAN3
3.	Reserved space for 2.5” HDD trays	9	Power supply
4.	(2) 2.5”HDD trays (M1298T65-BP12E-2 HDD Backplane pre-installed)	10.	CPU Socket
5.	(8) 3.5”HDD trays (M1309F65T-BP12-8 HDD Backplane pre-installed)	11.	Memory Slots
6.	FAN1	12.	IO Ports(with 3 LAN)

1.5.4 Chassis Dimensions





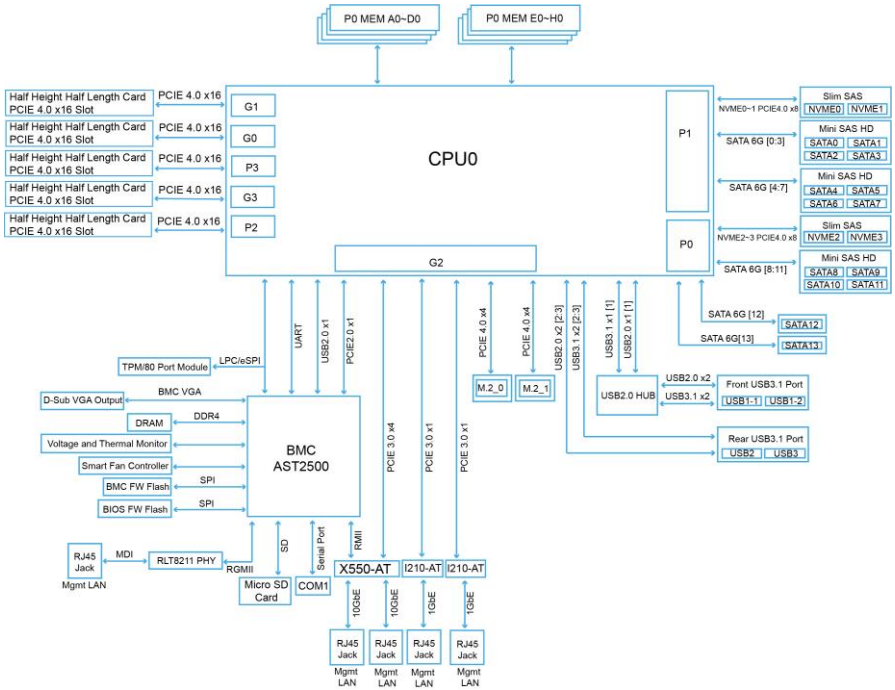
1.5.5 Board Image



S8030

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

1.5.6 Block Diagram



S8030 Block Diagram

NOTE: Please refer to Tyan S8030 User Guide for more MB details.

Chapter 2: Setting Up

2.0.1 Before you Begin

This chapter explains how to install the CPUs, CPU heatsinks, memory modules, and SSD/HDD. 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
- A T30 Security Torx screwdriver

Most of the electrical and mechanical connections can be disconnected with your hands. It is recommended that you do not use pliers to remove connectors as it may damage the soft metal or plastic parts of the connectors.

Caution!

1. To avoid damaging the motherboard and associated components, do not use torque force greater than **5~7 kgf/cm (4.35 ~ 6.09 lb/in)** on each mounting screw for motherboard installation.
2. Do not apply power to the board if it has been damaged.

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 FT65T-B8030 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.

CAUTION: Please note that the following illustrations may not look exactly like the rackmount server you purchased. Therefore, the illustrations should be held for your reference only.

2.1 Installing Motherboard Components

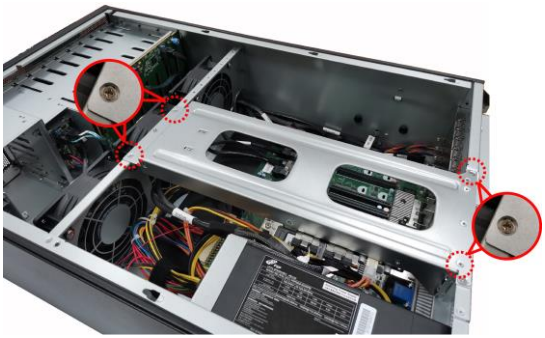
This section describes how to install components on to the motherboard, including CPUs, memory modules, SSD/HDD and PCI-E cards.

2.1.1 Removing the Chassis Cover

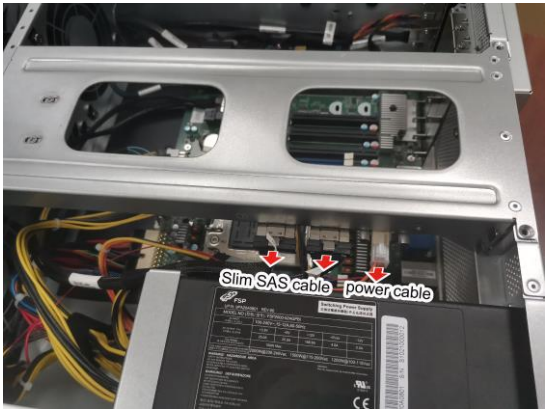
Follow these instructions to remove the FT65T-B8030 chassis cover.

1. Loosen one screw and two thumb screws to slide the top cover off.

2. Unscrew the PCIE bracket as in the image.



3. Disconnect the cables.



4. Remove the bracket from the chassis.

NOTE: When installing the top cover, pay attention to the diagonal direction as Shown by the arrow can easily buckle the top cover.

2.1.2 Installing the CPU and Heatsink

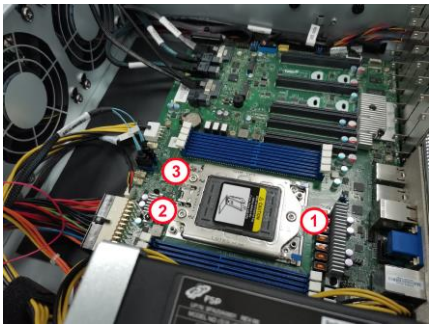
Follow the steps below on installing CPUs and CPU heatsinks.

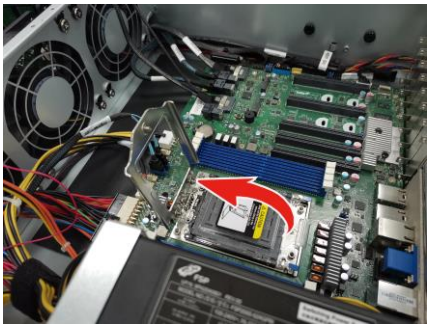
Processor Installation for AMD Socket SP3

Follow the steps below to install the processors and heat sinks.
NOTE: Please save and replace the CPU protection cap when returning for service.

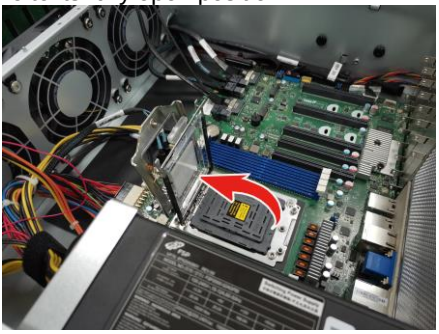
1. Use a T20 Torx screwdriver to loosen the screws securing the force frame in a sequential order (3→2→1).

   NOTE: The force frame will automatically eject after the captive screws are being released.

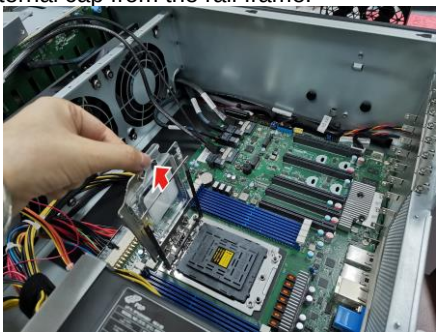




2. By placing your both index fingers on the sides on the metal handle, pull to release the rail frame. Then lift the rail frame to its fully open position.

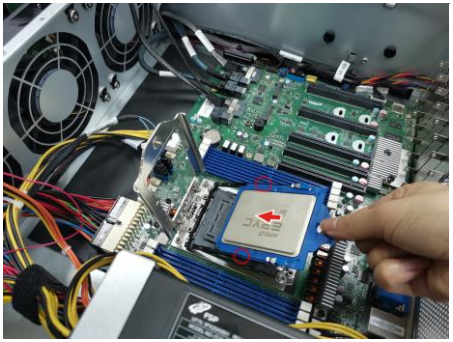
3. Remove the external cap from the rail frame.



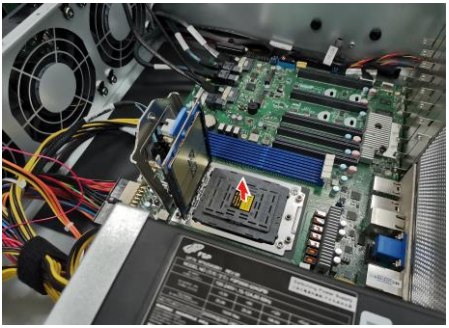
4. Align and install the carrier frame with package into the slot on the rail frame.

NOTE: During installation, observe the following:

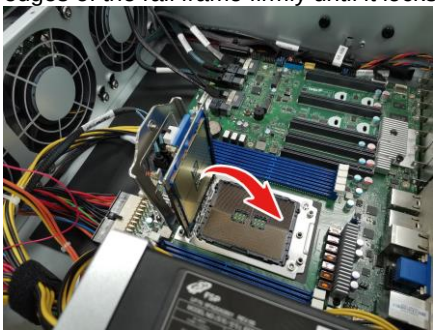
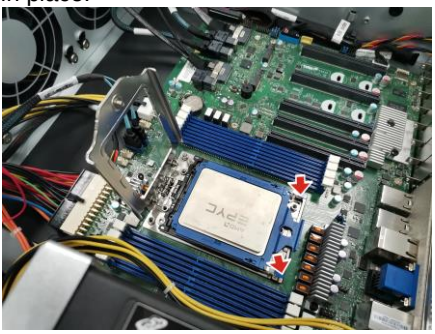
- Make sure to push the carrier frame with package towards the end of the rail frame until it clicks into place.
- Do not drop the carrier frame or touch the package pad to avoid component damage.



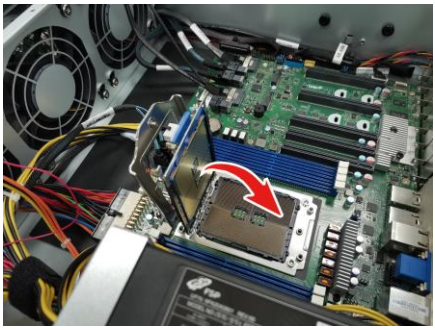
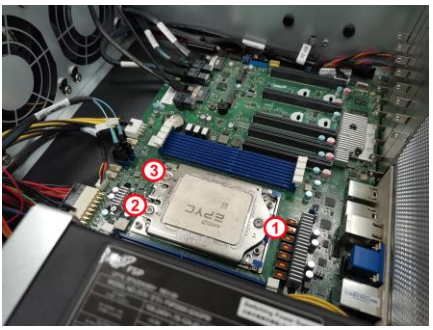
5. Using your thumb and forefinger, remove the PnP cap by lifting it up vertically.



6. Carefully close the rail frame with the installed package. Then push both edges of the rail frame firmly until it locks in place.

7. Close the force frame. Then use a T20 Torx screwdriver to tighten the screws to secure the force frame in a sequential order (1→2→3).

8. Align and install the CPU heatsink onto the top of the CPU socket.

9. Use a T20 Torx screwdriver to tighten the heatsink screws.

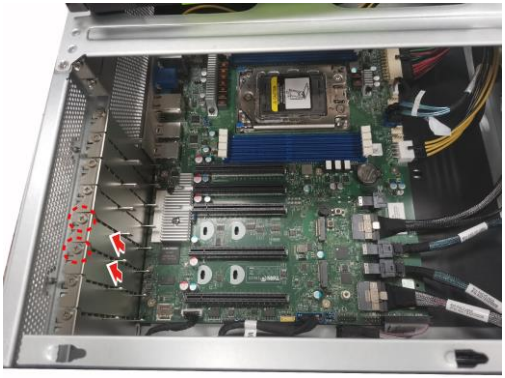
10. Connect the heatsink power cable to the mainboard connector.

NOTE: Always check with the manufacturer of the heat sink & processor to ensure that the thermal interface material is compatible with the processor and meets the manufacturer's warranty requirements.

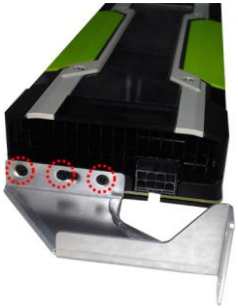
2.1.3 Installing the Expansion Cards

Follow the instructions to install the expansion cards.

1. Locate the PCI-E Gen.4 slots on the motherboard. Unscrew to take out the dummy brackets.



2. Screw the GPU bracket to the GPU card.



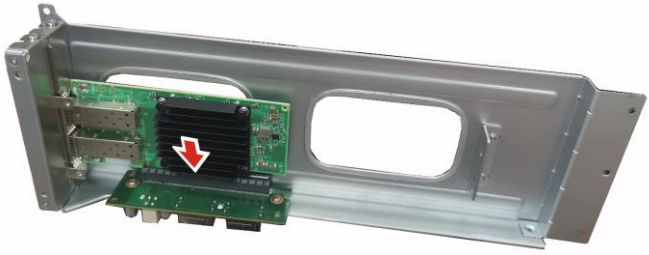
3. Insert the GPU card into the PCIE slot and screw the GPU card to the chassis.

4. Connect the GPU Power cable.

External Riser Bracket

Follow the instructions to install the expansion cards to the external expansion cage.

1. Insert a Mini-SAS card to the riser card.(PCIE Gen.4 x8 signal recommend to use LAN card and SAS card.)



2. Place the bracket to the chassis and connect the cables to the riser bracket.

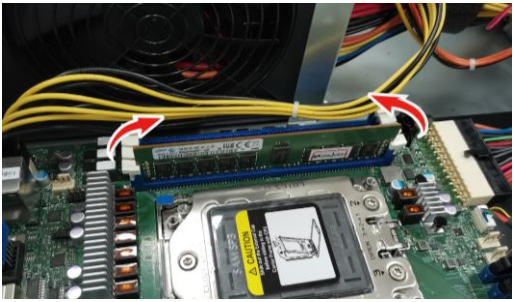
3. Secure the riser bracket to the chassis with 4 screws.

2.1.4 Installing the Memory

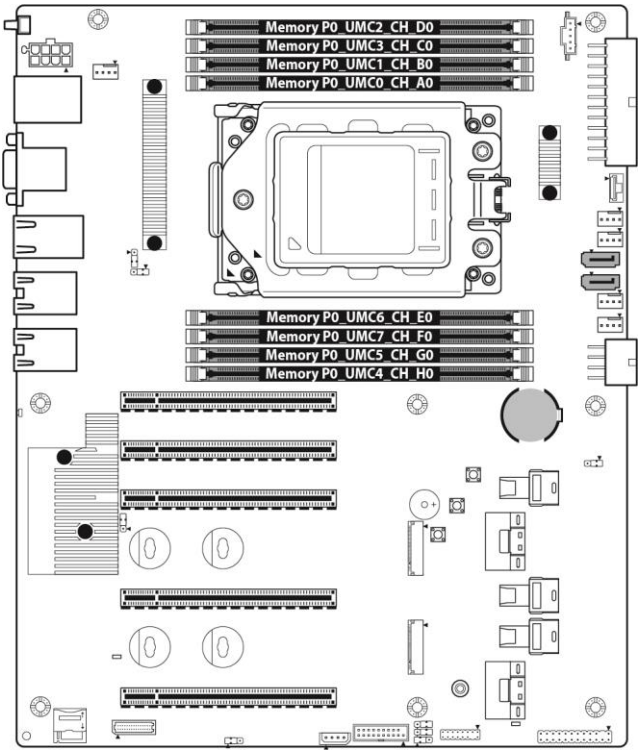
Follow these instructions to install the memory modules onto the motherboard.

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. Follow the recommended memory population table to install the other memory modules.



DIMM Location



NOTE:

1. √ indicates a populated DIMM slot.
2. Use paired memory installation for max performance.
3. Populate the same DIMM type in each channel, specifically
   - Use the same DIMM size
   - Use the same # of ranks per DIMM
4. Always install with CPU0 Socket first.

Memory Population Table

Single CPU Populated (CPU0)	Quantity of Memory Module Populated			
	1	2	4	8
P0_UMC0_CH_A0	Not Recommended			v
P0_UMC1_CH_B0				v
P0_UMC3_CH_C0			v	v
P0_UMC2_CH_D0			v	v
P0_UMC6_CH_E0				v
P0_UMC7_CH_F0				v
P0_UMC5_CH_G0			v	v
P0_UMC4_CH_H0			v	v

2.1.5 Installing Hard Drives

The FT65T-B8030 can support up to eight (8) 3.5”/2.5” SSD/HDD，two (2) 2.5” NVMe HDD. Follow these instructions to install a hard drive.

Warning!!! Always install the hard disk drive to the chassis after the chassis is secured on the rack.

3.5” HDD

Follow these instructions to install the 3.5” HDDs into the chassis.

1. Press the locking lever latch and pull the locking lever open.

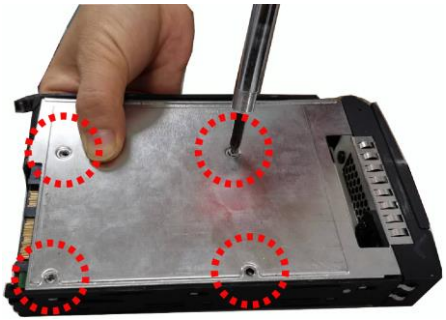
2. Slide the HDD tray out.

3. Place a 3.5"/2.5” SSD/HDD into the HDD tray.

3.5” HDD

2.5” SSD/HDD

4. Turn over the HDD unit and secure the SSD/HDD using 4 HDD screws.



5. Reinsert the HDD tray into the chassis and press the locking lever to secure the tray. Close the front bezel.

2.5” NVMe HDD

Follow these instructions to install the 2.5” NVMe HDDs into the chassis.

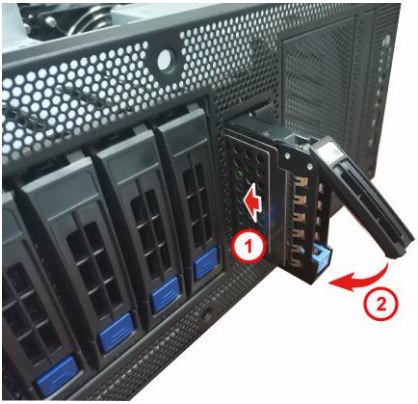
1. Press the locking lever latch and pull the locking lever open.

2. Slide the HDD tray out.

3. Open the lock to place the 2.5” NVMe hard disk drive into the NVMe HDD tray.

4. Lock the tray lever to secure NVMe HDD.

5. Reinsert the NVMe HDD tray into the chassis and press the locking lever to secure the tray. Close the front bezel.



NOTE: When installing a 2.5” NVMe HDD, the tray must be push to the end and then press down the lever locking the tray. If the tray is not pushed to the end and pull down the lever, the tray cannot be installed in the place.

2.2 Rack Mounting

After installing the necessary components, the TYAN FT65T-B8030 can be mounted in a rack using the supplied rack mounting kit

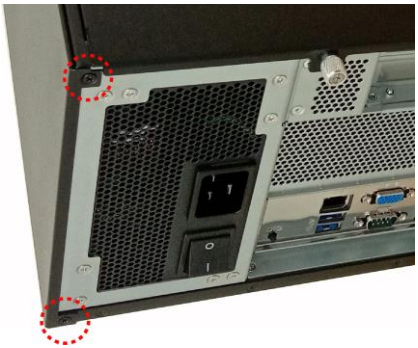
2.2.1 Installing the FT65T-B8030 chassis in a Rack

Follow these instructions to mount the TYAN FT65T-B8030 into an industry standard 19" rack.

NOTE: Before mounting the TYAN FT65T-B8030 in a rack, ensure that all internal components have been installed and that the unit has been fully tested. However, to make the installation easier, we suggest that you remove all HDD trays before you insert the chassis to the rack.

Installing the Inner Rails to the Unit

1. Unscrew to remove the side cover.



2. Push the side cover in the direction to step one and take off the side cover.

3. Screw the mounting ears to the FT65T-B8030 as shown using six M4-L5 screws (black).

Left

Right

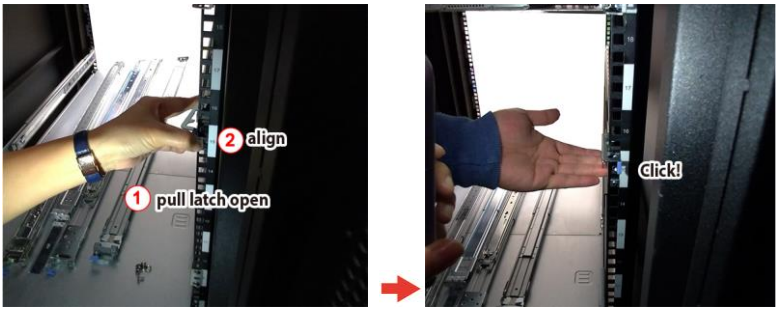
4. Press the latch to draw out the inner rails from each rail assembly.

5. Install the inner sliding rail to each side of the server using four M4-L5 screws.

Installing the Outer Rails to the Rack

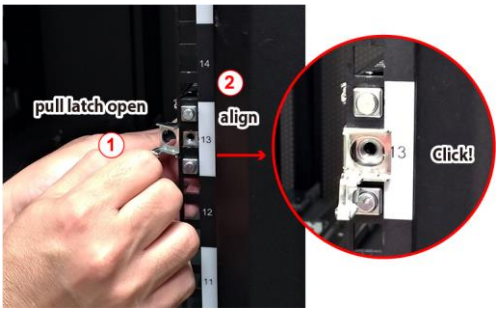
1. Attach the outer rail to the rack. Pull the latch open and align the square stud with the square hole on the rack rail. Please note that the square stud must be fully attached inside the square hole and then close the latch to lock.

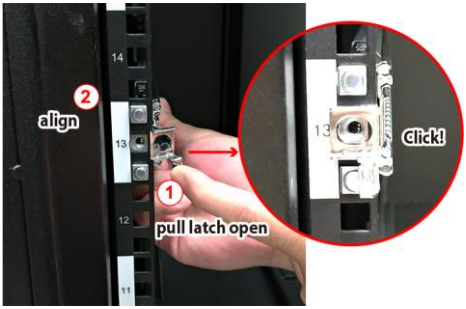
Rear

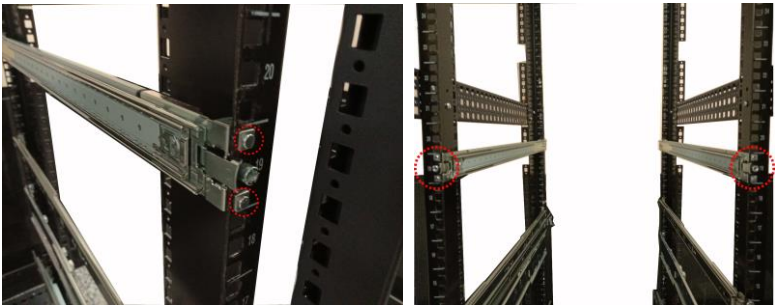



2
align
1
pull latch open
Click!

Front


pull latch open
1
2
align
Click!


2
align
1
pull latch open
Click!



2.2.2 Rack Mounting the Server

1. Lift the unit and then insert the inner slide rails into the middle rails.

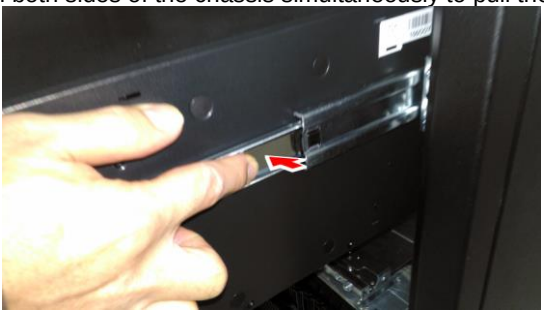
2. Push the whole system in.

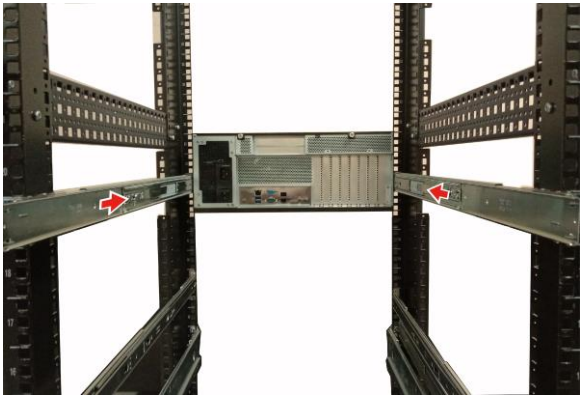
3. Secure the mounting screw to the rack.

2.2.3 Removing the Server from Rack

1. Use a screw driver to unscrew the chassis.

2. Push the latch on both sides of the chassis simultaneously to pull the system out.





3. Pull out the chassis half way to the lock position. Push the white locking tabs forwards to slide the chassis all out from the rack. **Caution:** Remove the server from the rack carefully. Must be done with at least 2 people.

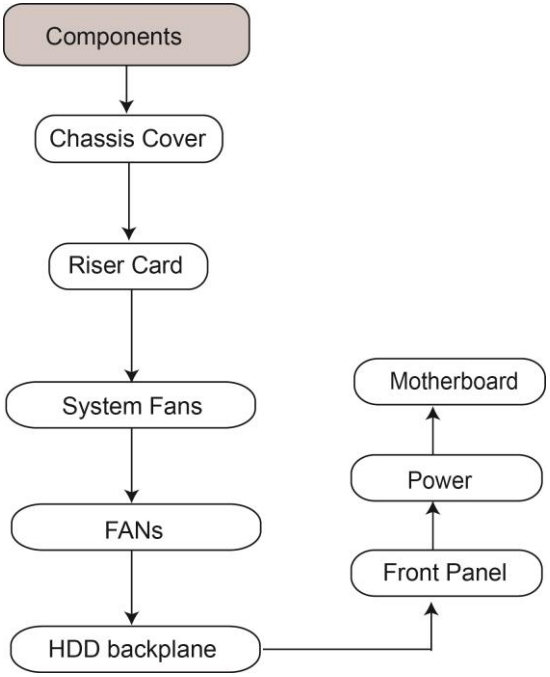
Chapter 3: Replacing Pre-Installed Components

3.0.1 Introduction

This chapter explains how to replace the pre-installed components, including the S8030 Motherboard, M1713G24-FPB Front Panel Board, M1309F65T-BP12-8/ M1298T65-BP12E-2 HDD Backplane, M7129F83A-L16 Riser Card, System Fan and Power Supply Unit etc.

3.0.2 Disassembly Flowchart

The following flowchart outlines the disassembly procedures.



3.1 Removing the Cover

Before replacing any parts you must remove the chassis cover. Follow Section ***2.1.1 Removing the Chassis Cover*** (page ***39***) to remove the cover of the FT65T-B8030.

3.2 Replacing Motherboard Components

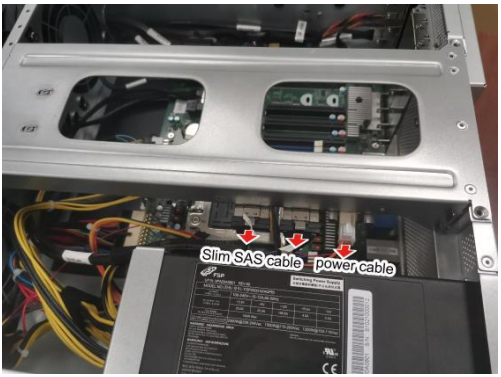
Follow these instructions to replace motherboard components, including the motherboard.

3.2.1 Replacing the Riser Card

Follow these instructions to replace the M7129F83A-L16 Riser cards.

1. Unscrew the Riser cage.

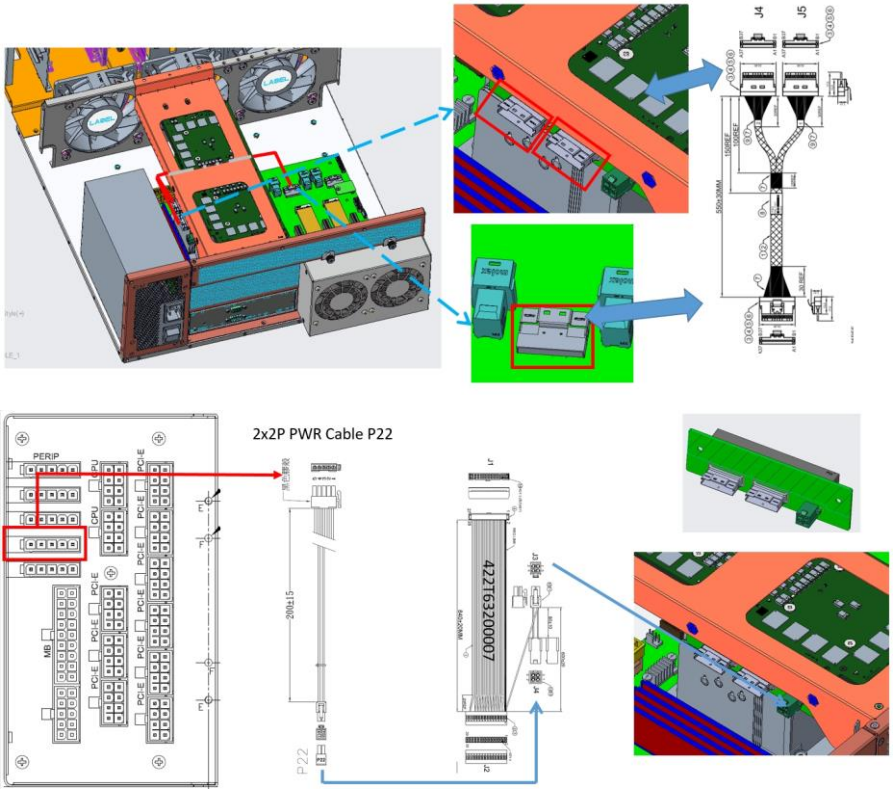
2. Disconnect the Riser card cables.



3. Unscrew the M7129F83A-L16 riser card to replace with a new one.

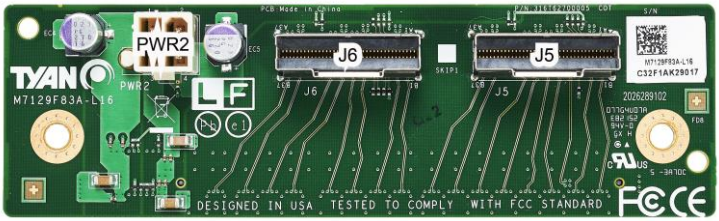
4. Follow the steps described earlier in reverse to reinstall the riser card bracket.

Riser Card Cable Connection：

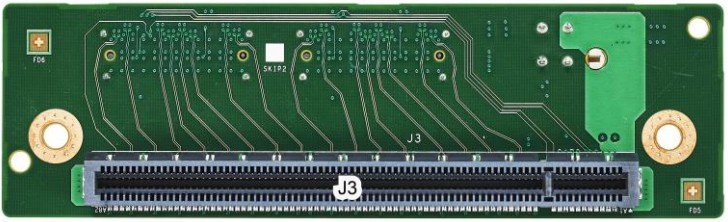


3.2.2 PCI-E Riser Cards Specification

Front View



Rear View



M7129F83A-L16 IO Bridge Board	
Specifications	(2) Slim SAS Connector(J5/J6) (1) 2*2 Power Connector(PWR2) (1) PCIE Slot x16 (J3)

3.3 Replacing the System Fan

Follow these instructions to replace the system fan.

1. Take out the failed fans.

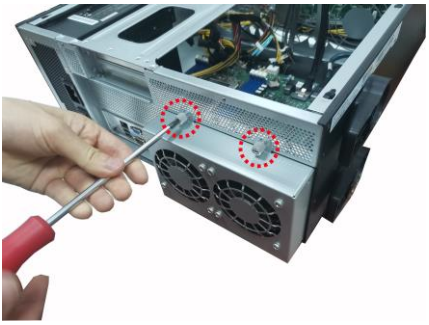
2. Unscrew to replace a new fan.

3. Prepare new fans and insert them into the fan cage.

Replacing Rear Fans

Follow these instructions to replace the system fan.

1. Release two thumb screws with the screwdriver.



2. Turn over the rear fan module.

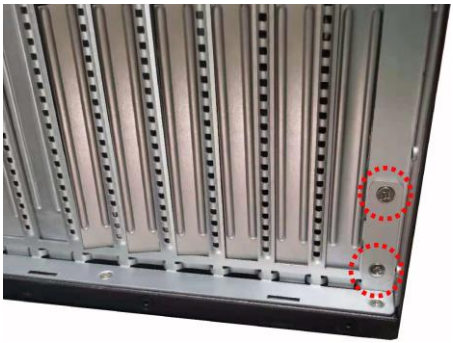
3. Disconnect the fans cables.

4. Release the eight screws of the fans module.

5. Take out the fans.

5. Follow the steps described earlier in reverse to reinstall a new fan. Tighten the thumb screws of rear fan module with a screwdriver after rear fans are replaced.

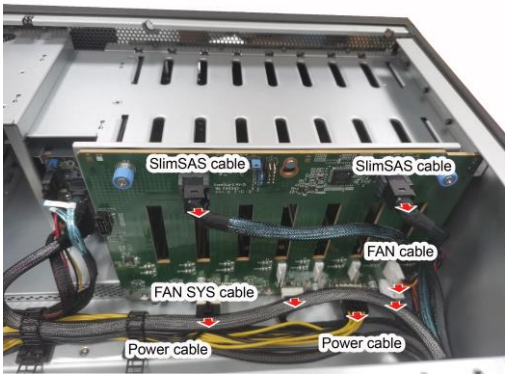
6. Install a small piece of iron to block the loophole of the fan cable.



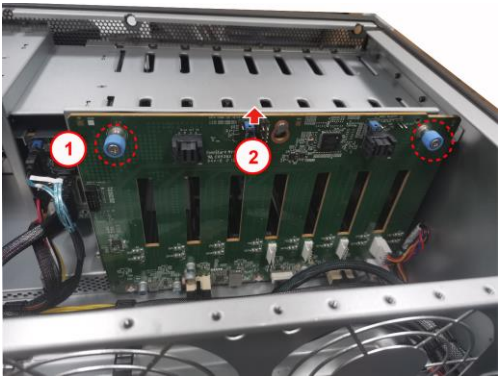
3.4 Replacing the HDD Backplane Board

Follow these instructions to replace the M1309F65T-BP12-8 HDD Backplane Board.

1. Disconnect all cables attached to the HDD BP Board.



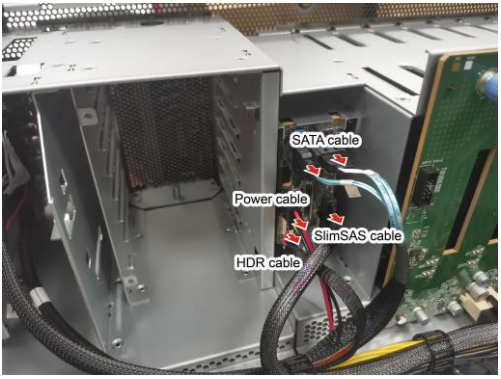
2. Unscrew to take it out.



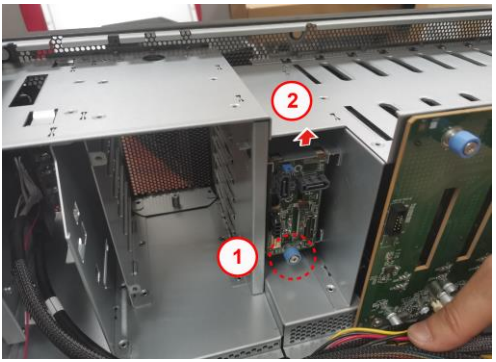
3. Prepare a new HDD BP Board and reinstall it into the chassis following the steps in reverse.

Follow these instructions to replace the M1298T65-BP12E-2 HDD Backplane Board.

1. Disconnect all cables attached to the HDD BP Board.



2. Unscrew to take it out.

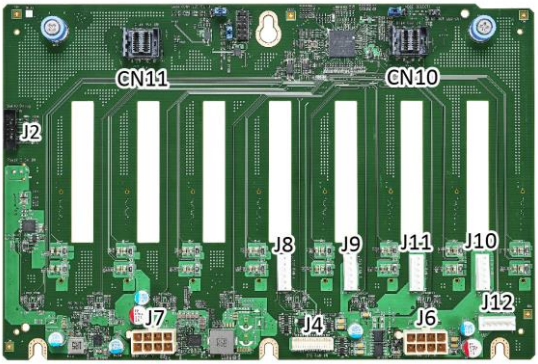


3. Prepare a new HDD BP Board and reinstall it into the chassis following the steps in reverse.

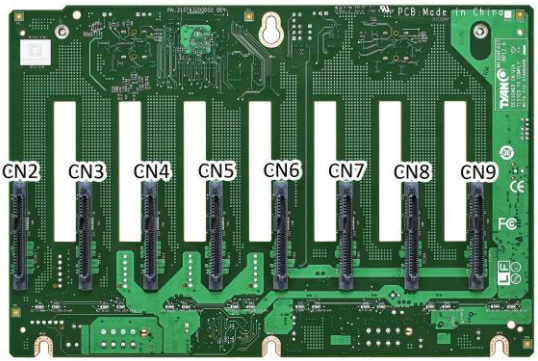
3.4.1 HDD BP Board Features

Here shows the M1309F65T-BP12-8 HDD Backplane Board in details.

Front view:



Rear view:



M1309F65T-BP12-8 HDD Backplane Board	
Specifications	(2) Mini SAS HD Connectors (CN10/CN11) (1) FAN System Connector (J4) (8) SATA HDD Connector (CN2/CN3/CN4/CN5/CN6/CN7/CN8/CN9) (5) FAN Connectors (J8/J9/J10/J11/J12) (2) Power Connector (J6/J7) (1) SGPIO Debug Connector (J2)

3.4.2 Connector Pin Definitions

CN2/CN3/CN4/CN5/CN6/CN7/CN8/CN9: Pin Out (connector to SATA HD)

DEFAULT	PIN	PIN	DEFAULT
	E7	S1	GND
	E8	S2	SAS[0…7]_TX_DP0
	E9	S3	SAS[0…7]_TX_DN0
	E10	S4	GND
	E11	S5	SAS[0…7]_RX_DN0
	E12	S6	SAS[0…7]_RX_DP0
	E13	S7	GND
GND	S8	E4	
NC	S9	E5	
NC	S10	E6	
GND	S11	P1	NC
NC	S12	P2	NC
NC	S13	P3	NC
GND	S14	P4	NC
	S15	P5	GND
	S16	P6	GND
	S17	P7	VDD_5_RUN(PRECHARGE)
	S18	P8	VDD_5_RUN
	S19	P9	VDD_5_RUN
	S20	P10	PRSNTN[0…7]
	S21	P11	RDYLED[0…7]
	S22	P12	GND
	S23	P13	VDD_12_RUN(PRECHARGE)
	S24	P14	VDD_12_RUN
	S25	P15	VDD_12_RUN

CN10/CN11" MiniSAS HD connector (BP to MB)

DEFAULT	PIN	PIN	DEFAULT
GND	B3	D3	GND
SAS[0/4]_TX_DP0	B4	D4	SAS[0/4]_RX_DP0
SAS[0/4]_TX_DN0	B5	D5	SAS[0/4]_RX_DN0
GND	A3	C3	GND
SAS[1/5]_TX_DP0	A4	C4	SAS[1/5]_RX_DP0
SAS[1/5]_TX_DN0	A5	C5	SAS[1/5]_RX_DN0
GND	A6	C6	GND
SGPIO_CLK_[A/B]	A1	A2	BMC_SDA3_SAS[03/47]
SGPIO_LOAD_[A/B]	B1	B2	NC
NC	C1	C2	SGPIO_DATAOUT_[A/B]
BMC_SCL3_SAS[03/47]	D1	D2	SGPIO_DATAIN_[A/B]
GND	B6	D6	GND
SAS[2/6]_TX_DP0	B7	D7	SAS[2/6]_RX_DP0
SAS[2/6]_TX_DN0	B8	D8	SAS[2/6]_RX_DN0
GND	B9	D9	GND
SAS[3/7]_TX_DP0	A7	C7	SAS[3/7]_RX_DP0
SAS[3/7_TX_DN0	A8	C8	SAS[3/7]_RX_DN0
GND	A9	C9	GND

J4: SYSTEM FAN connector (BP to MB)

DEFAULT	PIN	PIN	DEFAULT
FAN_TACH1	1	2	FAN_TACH6
FAN_TACH2	3	4	FAN_TACH7
FAN_TACH3	5	6	FAN_TACH8
FAN_TACH4	7	8	FAN_TACH9
FAN_TACH5	9	10	FAN_TACH10
GND	11	12	GND
CON_PWM2	13	14	CON_PWM1
FAN_TACH11	15	16	BMC_FAN_SDA
FAN_TACH12	17	18	BMC_FAN_SCL
V3V3_AUX	19	20	CON_PWM3
V3V3_AUX	21	22	GND
FAN_TACH13	23	24	FAN_TACH15
FAN_TACH14	25	26	FAN_TACH16
CON_PWM4	27	28	CON_PWM5
CON_PWM0	29	30	GND

J8/J9/J11/J10/J12: FAN connector (BP to FAN)

DEFAULT	PIN
VDD_12_[FAN/FAN1]	1
GND	2
FAN[1…5]_PWM_R	3
FAN_TACH[1…5]	4
VDD_12_[FAN/FAN1]	5
GND	6

J1: FPGA JTAG Pin Header

DEFAULT	PIN	PIN	DEFAULT
FPGA_JTAG_TCK	1	2	GND
FPGA_JTAG_TDO	3	4	VCC3_AUX
FPGA_JTAG_TMS	5	6	NC
NC	7	8	KEY pin
FPGA_JTAG_TDI	9	10	GND

J2: DEBUG SGPIO Pin Header

DEFAULT	PIN	PIN	DEFAULT
DBG_BMC_SMB_SCL	1	2	DBG_SGPIO_DOUT1
DBG_BMC_SMB_SDA	3	4	DBG_SGPIO_DOUT0
GND	5	6	DBG_SGPIO_LOAD
KEY pin	7	8	DBG_SGPIO_CLK
3V_AUX	9	10	HD_ERR_LED

J3: MODE SELECT1 Jump setup Header. (SGPIO Mode Intel/AMD)

DEFAULT	PIN
NC	1
INTEL_AMD#_SEL	2
GND	3
1_2 : INTEL MODE **2_3 : AMD MODE**	

J5: I2C SETUP FROM Jump setup Header. (I2C setup from SAS/SYSTEM FAN connector)

DEFAULT	PIN
VCC_AUX	1
CKB_SELECT	2
GND	3
1_2 : BY SAS CONN **2_3 : BY SYSTEM FAN CONN**	

J13: SATA CONN I2C SETUP Jump setup Header. (I2C setup from SATA CONN connector)

DEFAULT	PIN
VCC_AUX	1
CKB_SELECT	2
GND	3
1_2: BY SAS03 CONN(CN10) **2_3: BY SAS03 CONN(CN11)**	

J7: ATX Power connector. (Power supply to BP)

DEFAULT	PIN	PIN	DEFAULT
VDD_12_RUN	5	1	GND
VDD_12_RUN	6	2	GND
VDD_12_RUN	7	3	GND
VDD_12_RUN	8	4	GND

J6: ATX Power connector. (Power supply to BP)

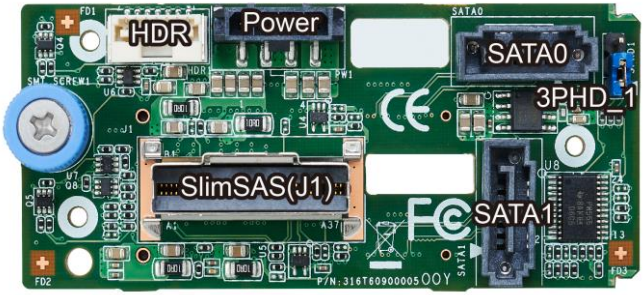
DEFAULT	PIN	PIN	DEFAULT
VDD_12_FAN	5	1	GND
VDD_12_FAN	6	2	GND
VDD_12_FAN	7	3	GND
VDD_12_FAN	8	4	GND

J14: SATA HDD ACT LED OUT.

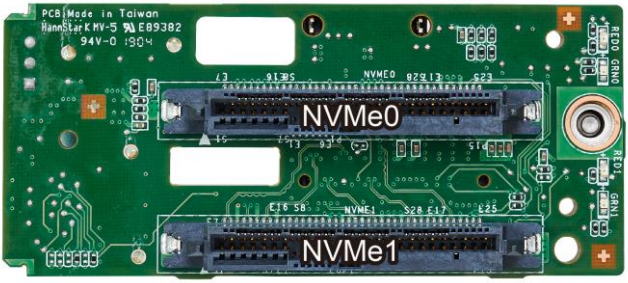
DEFAULT	PIN
HDD_BP_ACT_LED_OUT	1
GND	2

Here shows the M1298T65-BP12E-2 HDD Backplane Board in details.

Front View



Rear View



PCB Dimensions:	76mm*33.5mm*3mm
Thickness:	3mm
Layer:	8 layers
Integrated I/O	Slimsas Connector (J1) SATA + NVMe Connector(NVME0) SATA + NVMe Connector(NVME1) SATA Connector(SATA0) SATA Connector(SATA1) 4P Power CON (PW1) Header for PCA9544 SMBUS address Select (3PHD-1)
The rear 2 SATA SSDs/HDDs (SATA0 & SATA1) are not available when AMD EPYC™ 7002/7003 Series Processors deployed in all configurations. Please contact Tyan Technical Support for more details.	

3.5 Replacing the Front Panel Board

Follow these instructions to replace the M1713G24-FPB Front Panel Control Board.

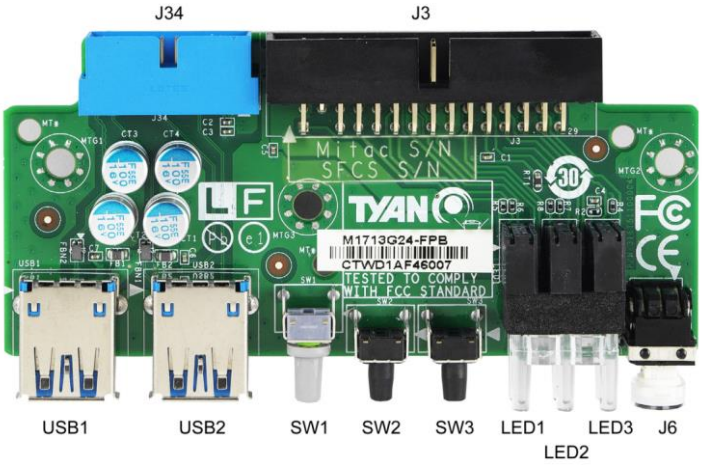
1. Unscrew the front panel unit.

2. Slide the LED control board unit out of the chassis.

3. Disconnect the cables and remove three screws securing the mylar and LED control board to the bracket.

4. After replacement, insert the unit into the chassis following the above procedures in reverse.

3.5.1 Front Panel Board Features



Integrated I/O	● 10*2 USB3.0 Header connect to MB ● 15*2 Header connect to MB ● (2) USB3.0 connector
LEDs	● 1 GREEN/BLUE LED for LAN1 and ID ● 1 GREEN/GREEN LED for LAN2 and HDD ● 1 GREEN/AMBER LED for LAN3 and BMC ● 1 power LED
Board size	● 97*45.2MM

3.5.2 Pin Definition

J34: USB3.0 Header

Definition	Pin	Pin	Definition
VCC_USB	1	2	FP_USB3_RX_N0
FP_USB3_RX_P0	3	4	GND
FP_USB3_TX_N0	5	6	FP_USB3_TX_P0
GND	7	8	USB0-
USB0+	9	10	NC
USB1+	11	12	USB1-
GND	13	14	FP_USB3_TX_P1
FP_USB3_TX_N1	15	16	GND
FP_USB3_RX_P1	17	18	FP_USB3_RX_N1
VCC_USB	19	20	key

J3: 15*2 Header

Definition	Pin	Pin	Definition
PW_LED+	1	2	VCC
key	3	4	ID_LED+
PW_LED-	5	6	ID_LED-
HDD_LED+	7	8	SYS_FAULT1-
HDD_LED-	9	10	SYS_FAULT2-
PWR_SW-	11	12	LAN1_LED+
GND	13	14	LAN1_LED-
RESET-	15	16	ICH_SMBDAT
GND	17	18	ICH_SMBCLK
ID_SW-	19	20	INTRU#
TEMP_SENSOR	21	22	LAN2_LED+
NMI_SW	23	24	LAN2_LED-
NC	25	26	NC
LAN3_LED+	27	28	LAN3_LED-
NC	29	30	NC

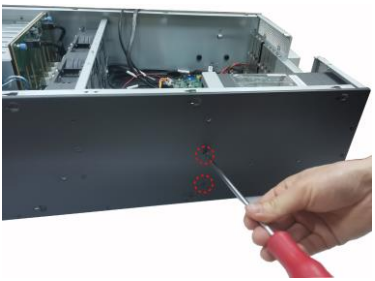
3.6 Replacing the Power Supply

The system has one pre-installed Power Supply Units. Please unplug the power cord before you follow these instructions to replace the power supply units.

1. Disconnect the power supply cable.

2. Unscrew to release the power supply unit.

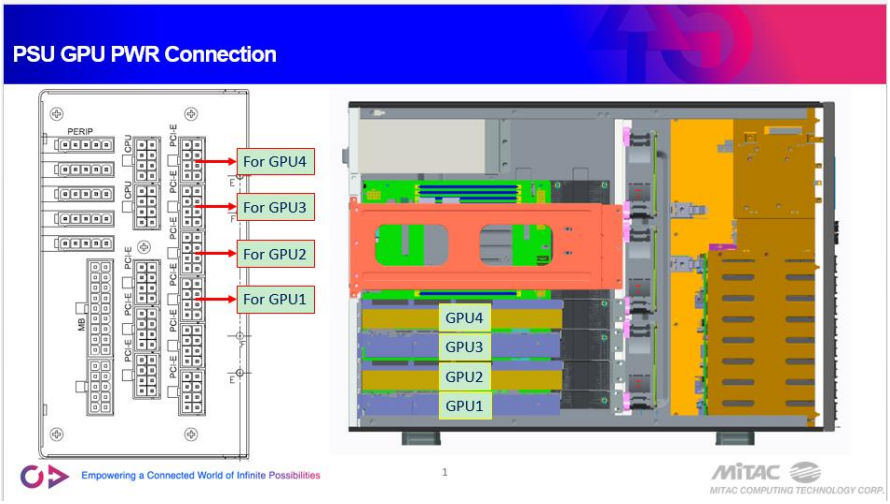
3. Unscrew to release the power supply unit.

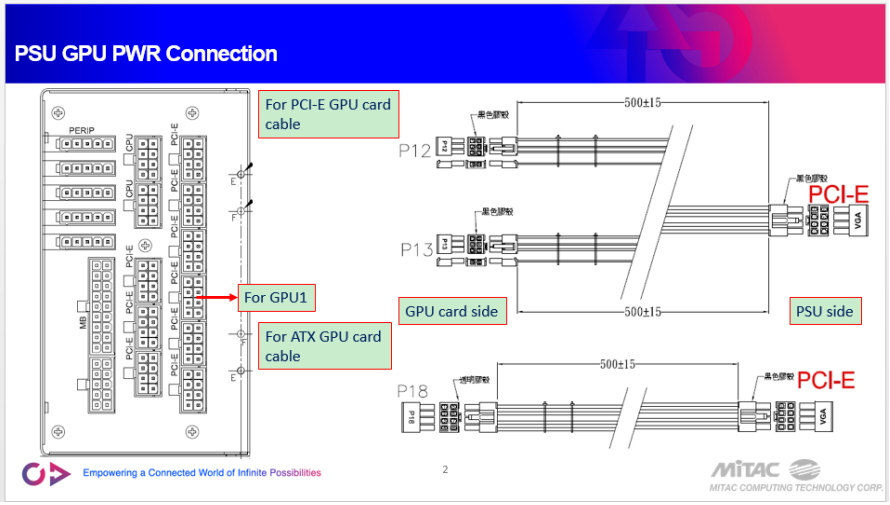


4. Take out the power supply unit.

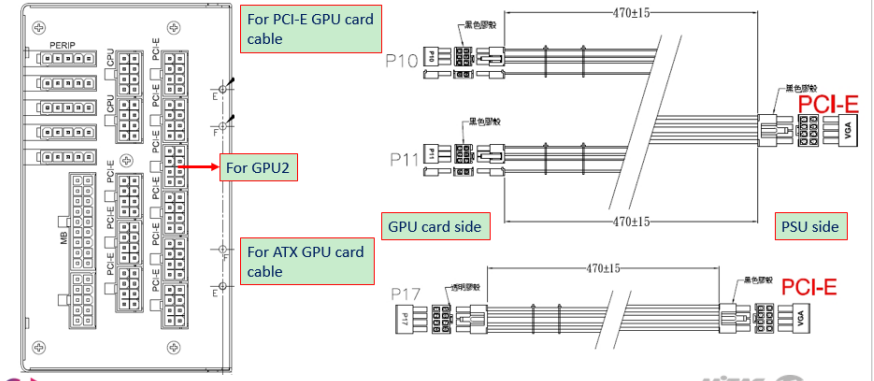
5. To replace a new power supply. And follow the procedures in reverse order to install a new power supply.

Power supply Unit GPU PWR Connection

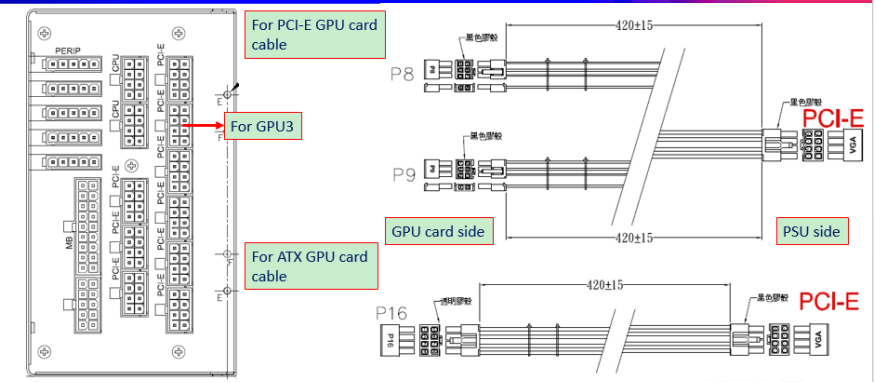




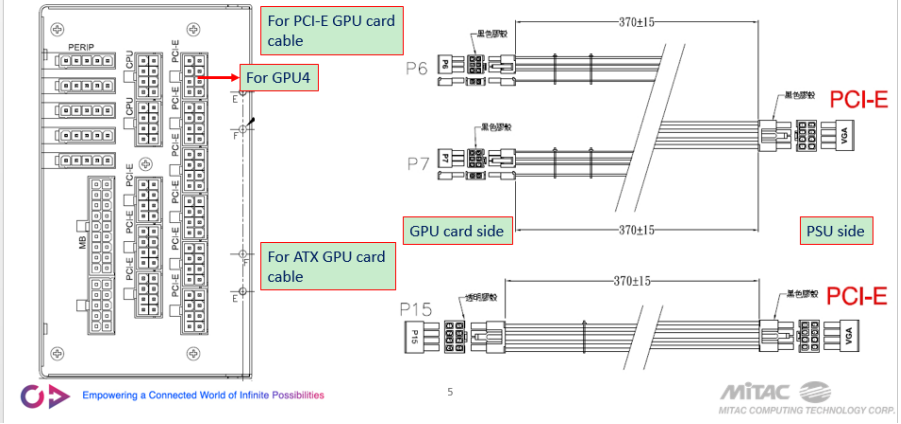
PSU GPU PWR Connection



PSU GPU PWR Connection



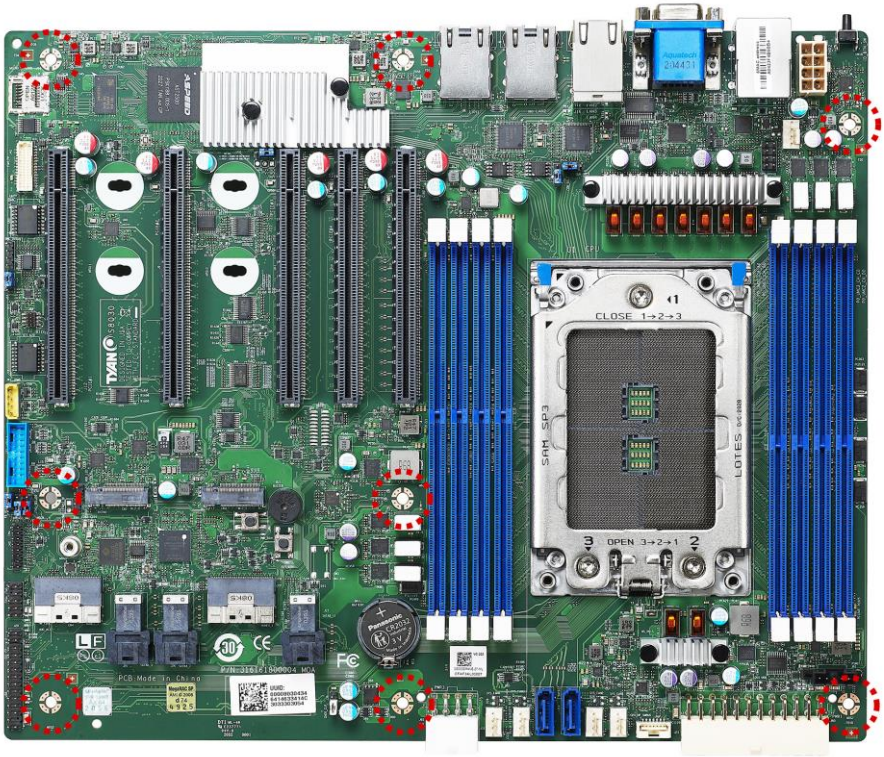
PSU GPU PWR Connection



3.7 Removing the Motherboard

Follow these instructions to replace the S8030 Motherboard.

1. Refer to the sections described earlier to remove all cables and components on the motherboard.
2. Unscrew the motherboard.



3. Carefully lift the motherboard from the chassis.
4. Prepare a new motherboard and follow the steps described earlier in reverse order to reinstall the motherboard into the chassis.

NOTE

Appendix I: How to recover UEFI BIOS

Important Notes:

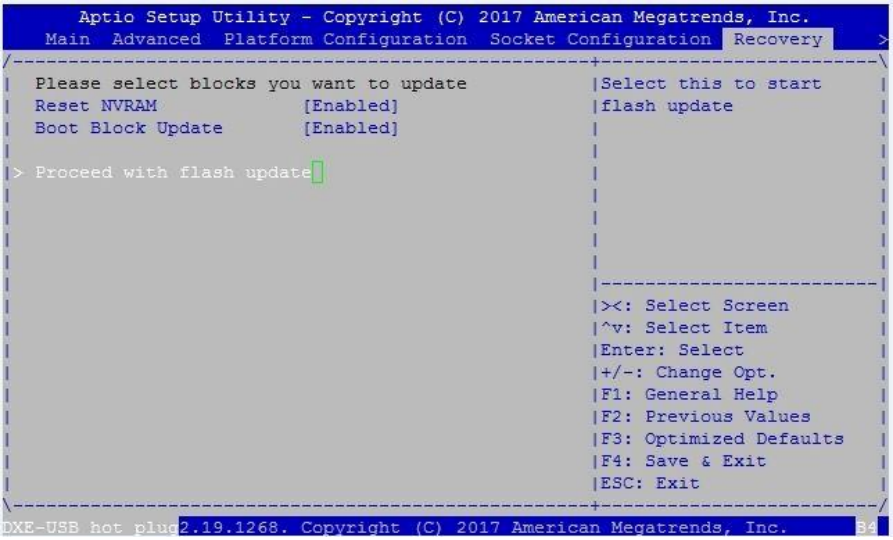
The emergency UEFI BIOS Recovery process is only used to rescue a system with a failed or corrupted BIOS image that fails to boot to an OS. It is not intended to be used as a general purpose BIOS flashing procedure and should not be used as such. Please do not shutdown or reset the system while the BIOS recovery process is underway or there is risk of damage to the UEFI recovery bootloader that would prevent the recovery process itself from working. In no event shall Tyan be liable for direct, indirect, incidental, special or consequential damages arising from the BIOS update or recovery.

The BIOS Recovery file is named xxxx.cap, where the 'xxxx' portion is the motherboard model number. Examples: 5630.cap, 7106.cap, 7109.cap, etc. Please make sure that you are using the correct BIOS Recovery file from Tyan's web site.

BIOS Recovery Process

1. Place the recovery BIOS file (xxxx.cap) in the root directory of a USB disk.
2. Ensure that the system is powered off.
3. Insert the USB disk to any USB port on the motherboard or chassis.
4. Power the system on while pressing “Ctrl” and “Home” simultaneously on the keyboard. Continue to hold these keys down until the following Tyan screen is displayed on the monitor:

5. The system will boot to BIOS setup. A new menu item will appear at the far right of the screen. Scroll to the 'Recovery' tab, move the curser to “Proceed with flash update” and press the "Enter" key on the keyboard to start the BIOS recovery process.



6. IMPORTANT: Do not power off or reboot the server during the BIOS recovery process. This can damage the BIOS recovery bootloader and prevent it from loading a subsequent time.
7. Wait for the BIOS recovery procedure to complete. Completion is signified with the message “Flash update completed. Press any key to reset the system” displayed on screen.
8. Remove the USB disk and reboot.

If your system does not have video output or the POST code halts at “FF” on the right-lower portion of the screen, please contact Tyan representatives for RMA service.

Appendix II: Cable Connection Tables

1. FP Ctrl & USB Cable

M1713F77C-FPB to S8030 MB		
M1713F77C-FPB	**Connect to**	**S8030 M/B**
FP ctrl cable J3	→	J38 P/N: 422T63200007
USB cable J34	→	J32 P/N: 422T56500001

2. Slim-SAS to Mini-SAS HD & Fan ctrl Cable

M1309F65T to S8030 MB		
M1309F65T	**Connect to**	**S8030 M/B**
Slim-SAS to Mini-SAS HD Cable-1 CN10	→	J25 P/N: 422T63200009
Slim-SAS to Mini-SAS HD Cable-2 CN11	→	J26 P/N: 422T53400017
Fan Ctrl Cable J4	→	J42 P/N: 422T53400003

3. Slim-SAS & SATA Cable

M1298T65-BP12E-2 to S8030 MB		
M1298T65-BP12E-2	**Connect to**	**S8030 M/B**
Slim-SAS Cable J1	→	CN4 P/N: 422T63200008
Slim-SAS Cable 7P HDR1	→	CN4 P/N: 422T60900011
SATA Cable-1 SATA0	→	J14 P/N: 422T53400008
SATA Cable-2 SATA1	→	J22 P/N: 422T53400008

4. Slim-SAS to Slim-SAS(2) Cable

M7129F83A-L16 to S8030 MB		
M7129F83A-L16	**Connect to**	**S8030 M/B**
Slim-SAS Cable J5 & J6	→	CN2 P/N: 422T63200005

5. 2x12P & 2x4P MB PWR Cable

PSU to S8030 MB		
PSU	**Connect to**	**S8030 M/B**
2x12P PWR Cable MB	→	J23
2x4P PWR Cable P2 CPU CPU	→	J24
2x4P PWR Cable P3 CPU CPU	→	J63

6. 2x4P 3.5” HDD BP PWR Cable

PSU to M1309F65T-BP12-8		
PSU	**Connect to**	**M1309F65T-BP12-8**
2x4P PWR Cable P19 VGA PCI-E	→	J6
2x4P PWR Cable P20 VGA PCI-E	→	J7

7. 4P 2.5” HDD BP PWR Cable

PSU to M1298T65-BP12E-2		
PSU	**Connect to**	**M1298T65-BP12E-2**
4P PWR Cable P21	→	PW1

8. 2x2P PWR Cable

PSU to M7129F83A-L16		
PSU	**Connect to FP ctrl cable**	**M7129F83A-L16**
2x2P PWR Cable P22	→FP ctrl cable 2x2P Conn	FP ctrl cable 2x2P to M7129 PW2

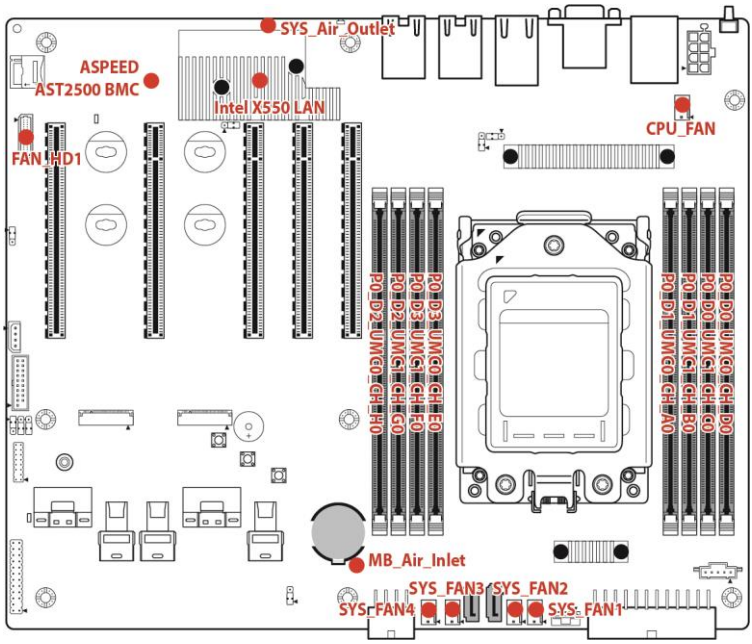
9. System & Rear FAN extend Cable

System & Rear FAN to M1309F65T-BP12-8		
FAN	**Connect to**	**M1309F65T-BP12-8**
System FAN1	→	J8
System FAN2	→	J9
System FAN3	→	J10
Real FAN4 (Need to FAN extend cable)	→	J11 P/N: 422T63200006
Real FAN5 (Need to FAN extend cable)	→	J12 P/N: 422T63200006

Appendix III: Fan and Temp Sensors

This section aims to help readers identify the locations of some specific FAN and Temp Sensors on the motherboard. A table of BIOS Temp sensor name explanation is also included for readers' reference.

Figure 1: Sensor Location

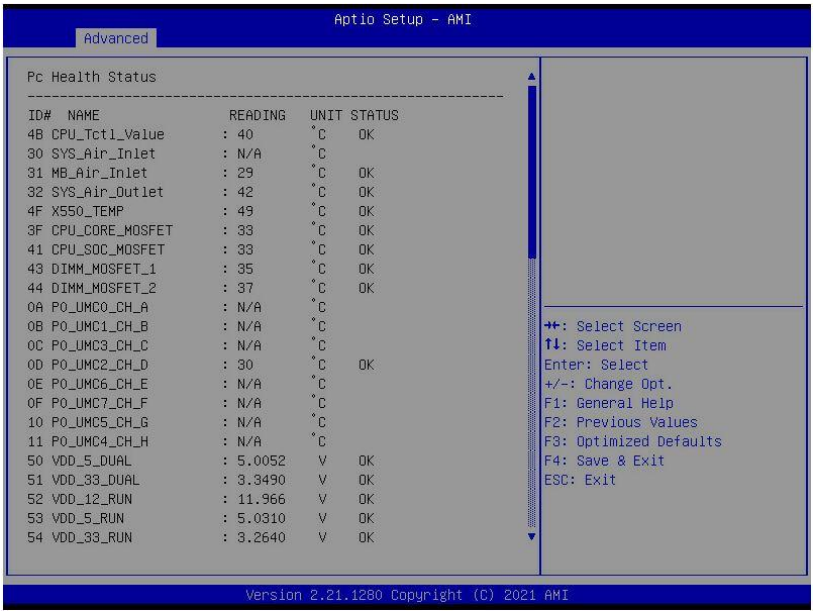


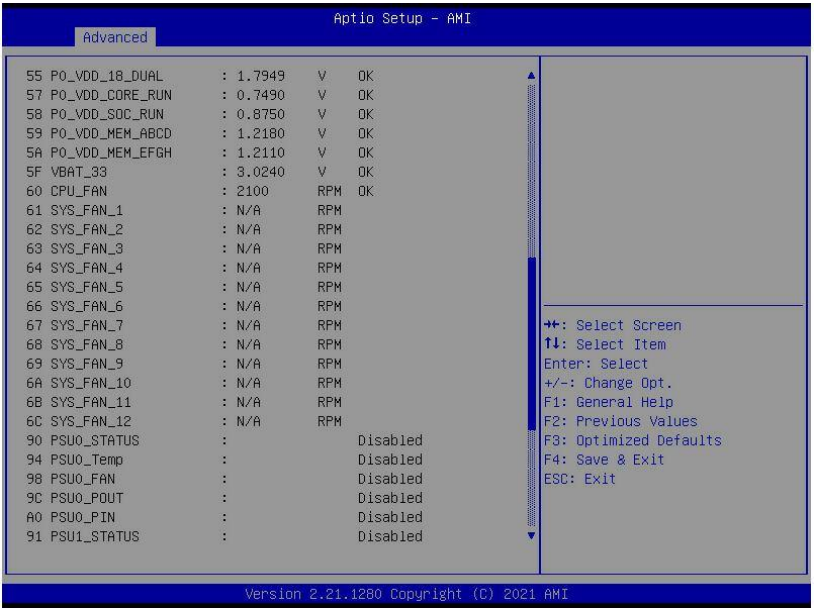
NOTE: The red spot indicates the sensor.

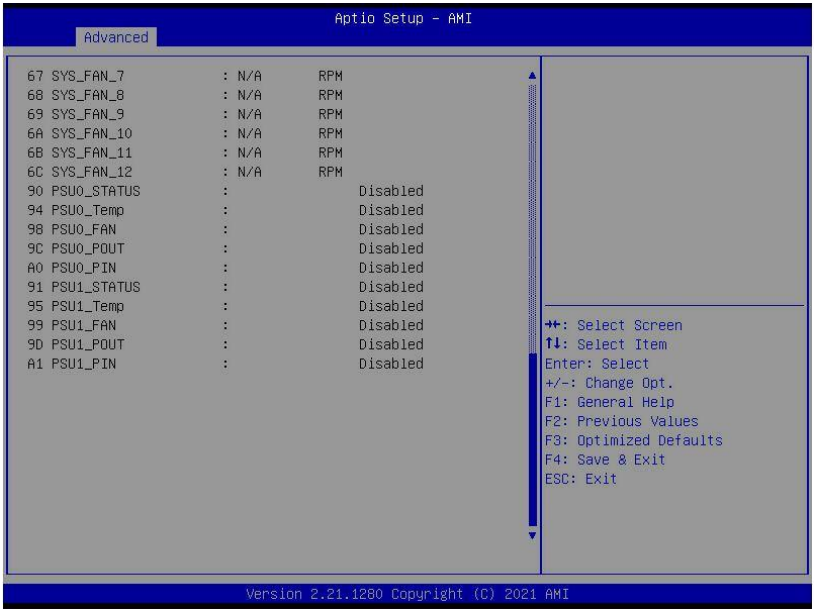
Fan and Temp Sensor Location:

1. Fan Sensor: It is located in the third pin of the fan connector, which detects the fan speed (rpm)
2. Temp Sensor: refer to Figure 1: Sensor Location. They detect the system temperature around.

BIOS Temp Sensor Name Explanation:







BIOS Temp Sensor	Name Explanation
CPU_Tctl_Value	CPU Temperature
SYS_Air_Inlet	Sensor connected to the Front Panel
MB_Air_Inet	Temperature of the M/B Air Inlet Area
SYS_Air_Outlet	Temperature of the System Air Outlet Area
X550_Temp	Temperature of Intel LAN X550 chipset
CPU_CORE_MOSFET	Max Temperature of CPU_CORE_MOSFET
CPU_SOC_MOSFET	Max Temperature of CPU_SOC_ MOSFET
DIMM_MOSFET_1	Max Temperature of CPU DIMM Area1 MOSFET
DIMM_MOSFET_2	Max Temperature of CPU DIMM Area2 MOSFET
P0_UMC0_CH_A	Temperature of CPU0 DIMM Channel A
P0_UMC1_CH_B	Temperature of CPU0 DIMM Channel B
P0_UMC3_CH_C	Temperature of CPU0 DIMM Channel C
P0_UMC2_CH_D	Temperature of CPU0 DIMM Channel D
P0_UMC6_CH_E	Temperature of CPU0 DIMM Channel E
P0_UMC7_CH_F	Temperature of CPU0 DIMM Channel F
P0_UMC5_CH_G	Temperature of CPU0 DIMM Channel G
P0_UMC4_CH_H	Temperature of CPU0 DIMM Channel H
CPU_FAN	Fan Speed of CPU_FAN
SYS_FAN_1	Fan Speed of SYS_FAN_1
SYS_FAN_2	Fan Speed of SYS_FAN_2
SYS_FAN_3	Fan Speed of SYS_FAN_3
SYS_FAN_4	Fan Speed of SYS_FAN_4
SYS_FAN_5	Fan Speed of SYS_FAN_5

SYS_FAN_6	Fan Speed of SYS_FAN_6
SYS_FAN_7	Fan Speed of SYS_FAN_7
SYS_FAN_8	Fan Speed of SYS_FAN_8
SYS_FAN_9	Fan Speed of SYS_FAN_9
SYS_FAN_10	Fan Speed of SYS_FAN_10
SYS_FAN_11	Fan Speed of SYS_FAN_11
SYS_FAN_12	Fan Speed of SYS_FAN_12
PSU0_STATUS	Current status of PSU0
PSU0_Temp	Temperature of PSU0
PSU0_FAN	Fan Speed of PSU0
PSU1_STATUS	Current status of PSU1
PSU1_Temp	Temperature of PSU1
PSU1_FAN	Fan Speed of PSU1

Appendix IV: FRU Parts Table

FT65T-B8030 FRU Parts				
Item	**Model Number**	**Part Number**	**Picture**	**Description**
Power Supply	FRU-PS-0390	471100000498		2000 W,FSP,FSP2000-52AGPBI
CPU Heatsink	FRU-TH-0380	343T63200001		HF-HEATSINK;SBU,AL,SOLDERLING+PIPE, SP3-2U-ACTIVE-HEATSINK, MICROLOOPS, TSM-001988-NS, 120.0X80.0X64.5MM, SCREW,FT65T-B8030
FAN module	FRU-TH-0390	422T63200001		System FAN, 120*120*38mm,6PIN
Rear FAN module	FRU-TH-0400	336210000065		80*80*38mm,4 PIN
Riser board	FRU-RC-1260	411T62700036		M7129F83A-L16,R01
rack mount FRU kit	FRU-AS-9230	5412T6320006		FT65T-B8030 SLIDE RAIL KIT+HANDLE R+HANDLE L
Cable	FRU-CS-1790	422T63200005		550 mm,SlimSAS 8i to 2*SlimSAS 8i CABLE,SlimSAS 8i 74P/2*SlimSAS 8i 74P
	FRU-CS-1800	422T63200009		350 mm,MINI-SAS HD CABLE, SHORT MINI-SAS HD 36P/SHORT MINI-SAS HD 36P
	FRU-CS-1670	422T53400017		500 mm,MINI-SAS HD CABLE, SHORT MINI-SAS HD 36P/SHORT MINI-SAS HD 36P
	FRU-CS-1810	422T63200008		600 mm,SlimSAS 8i to SlimSAS 8i Cable,Short SlimSAS 8i 74P/Short SlimSAS 8i 74P
	FRU-CS-1820	422T53400008		650 mm,SATA CABLE (SAS WIRE),SATA
	FRU-CS-0880	332810000555		US,125V,12 AWG(3.31mm²),1800mm，PWR CORD
	FRU-CS-1830	332810000348		EU,250V,EL202+711,3PIN.1.5MM2,16A，PWR CORD

NOTE

Appendix VI: 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 consequence).

If these options are not available for you then MITAC COMPUTING TECHNOLOGY CORPORATION can help. Besides designing innovative and quality products for over a decade, MITAC has continuously offered customers service beyond their expectations. TYAN's website (http://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 their latest software and operating system components to keep their systems running as powerful and productive as possible. MITAC also ranks high for its commitment to fast and friendly customer support through email. By offering plenty of options for users, MITAC serves multiple market segments with the industry's most competitive services to support them.

Please feel free to contact us directly for this service at tech-support@tyan.com

Help Resources:

1. See the beep codes section of this manual.
2. See the TYAN's website for FAQ's, bulletins, driver updates, and other information: http://www.tyan.com
3. Contact your dealer for help before calling 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.

TYAN® FT65T-B8030 Service Engineer's Manual V1.0

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