# TS65A-B8036

# Service Engineer's Manual

# PREFACE

## Copyright



Version 1.0i

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## ● FCC Declaration

**Notice for the USA**

Compliance Information Statement (Declaration of Conformity Procedure) DoC 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 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 2014/30/EU and 2014/35/EU.

**Warning**

This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

**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-A

この装置は、クラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

## ● Safety: IEC/EN 62368-1

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

## 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 TS65A-B8036.

## How this guide is organized

This guide contains the following parts:

**Chapter 1: Overview**
This chapter provides an introduction to the TYAN TS65A-B8036 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 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, how to install IO plate for OCP Card, 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 TS65A-B8036, 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.<br>To reduce risk of injury from a hot component, allow the surface to cool before touching. |

### General Precautions

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

### Machine Room Environment

- This device is for use only in a machine room or IT room.

- 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 trained service technicians/personnel who are knowledgeable about the procedures, precautions, and hazards associated with equipment containing hazardous energy levels.
- 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.

Therefore, as long as (a) the ITE will not be used in a home, school, or other public area where the general population will not have access to it, and (b) the manufacturer specifies that the thumbscrews normally should be tightened with a screwdriver, use of thumbscrews is not considered to compromise the basic principles of safety associated with the Standard.

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# NOTE

# Chapter 1: Overview

## 1.1 About the TYAN TS65A-B8036

Congratulations on your purchase of the TYAN® TS65A-B8036, a highly optimized rack-mountable barebone system. The TS65A-B8036 is designed to AMD® Zen® Naples series Processor, and Up to 1,024GB RDIMM/LRDIMM/NVDIMM DDR4 2667 MHz memory. Leveraging advanced technology from AMD®, TS65A-B8036 server system is capable of offering scalable 32 and 64-bit computing, high bandwidth memory design, providing a rich feature set and incredible performance, and lightning-fast PCI-E bus implementation. The TS65A-B8036 not only empowers your company in nowadays IT demand but also offers a smooth path for future application usage.

TYAN® also offers the TS65A-B8036 in a version that can support up to twenty hot-swap 2.5" SATA HDD/SSD or sixteen NVMe SSD plus four hot-swap 2.5" SATA HDD/SSD and eight hot-swap 2.5" HDD. The TS65A-B8036 uses TYAN®'s latest chassis, featuring a robust structure and a solid mechanical enclosure. All of this provides TS65A-B8036 the power and flexibility to meet the needs of nowadays server application.

## 1.2 Product Model

The system boards within the Tyan barebone systems contain different features and chipsets, which are defined by the following models:

- **B8036T65AV28HR-LE**: Intel-based platform, support (20) 2.5''SATA HDD + (8) 2.5''SATA HDD with SAS card
- **B8036T65AV12E16HR**: Intel-based platform, support (16) U.2 NVME SSD + (8) 2.5''HDD/SSD with SAS card + (4) 2.5'' SATA HDD
- **B8036T65AV4E24HR**: Intel-based platform, support (16) U.2 NVME SSD + (8) 2.5'' HDD/SSD with PCIE card/OCP card + (4) 2.5'' SATA HDD

## 1.3 Features

### B8036T65AV28HR-LE Specifications

| | | |
|---|---|---|
| **System** | **Form Factor** | 2U Rackmount |
| | **Chassis Model** | TS65A |
| | **Dimension (D x W x H)** | 25.59" x 17.32" x 3.43" (650 x 440 x 87mm) |
| | **Motherboard Name** | S8036GM2NE-LE |
| | **Gross Weight** | 30 kg (66 lbs) |
| | **Net weight** | 19 kg (42 lbs) |
| **Front Panel** | **Buttons** | (1) RST, (1) ID, (1) PWR w/ LED |
| | **LEDs** | (2) LAN, (1) ID, (1) System Event |
| | **I/O Ports** | (2) USB 3.1 Gen1 ports |
| **External Drive Bay** | **Q'ty / Type** | (26) 2.5" Hot-Swap SSD/HDD (@ front) + (2) 2.5" Hot-Swap SSD/HDD (@ rear) |
| | **HDD Backplane Support** | SAS 12Gb/s, SATA 6Gb/s |
| | **Supported HDD Interface** | (26) SATA 6Gb/s (@ front) + (2) SATA 6Gb/s (@ rear) |
| | **Notification** | The SAS/SATA HDD backplane is connected to onboard SATA connection by default. Please contact Tyan technical support if a discrete SAS HBA/RAID adapter installed is required. |
| **System Cooling Configuration** | **FAN** | (3) 8cm fans |
| **Power Supply** | **Type** | CRPS |
| | **Input Range** | AC 200-240V/7A/<br>AC 100-127V/13A |
| | **Per Inlet** | 13A/7A |
| | **Frequency** | 50-60 Hz |
| | **Output Watts** | 1,000 Watts (100-127Vac input) / 1,200Watts (200-240Vac input) |
| | **Efficiency** | 80 plus Platinum |
| | **Redundancy** | 1+1 |
| **Processor** | **Q'ty / Socket Type** | (1) AMD Socket SP3 |
| | **Supported CPU Series** | (1) AMD EPYC™ 7002 Series |

| | | | |
|---|---|---|---|
| | Processor | | |
| | **Configurable Thermal Design Power (cTDP) Wattage** | | Max up to 225W |
| **Memory** | **Supported DIMM Qty** | | (16) DIMM slots |
| | **DIMM Type / Speed** | | DDR4 ECC RDIMM/RDIMM 3DS/LRDIMM/LRDIMM 3DS 3200 |
| | **Capacity** | | Up to 1,024GB RDIMM, 4,096GB LRDIMM 3DS |
| | **Memory channel** | | 8 Channels per CPU |
| | **Memory voltage** | | 1.2V |
| **Expansion Slots** | **PCI-E** | | (2) PCI-E Gen4 x8 slots (HH, HL w/ tall bracket), (4) PCI-E Gen4 x8 slots (FH, HL) |
| | **Pre-install TYAN Riser Card (PCI-E Gen4)** | | (1) M8036-L24-3F riser card for (2) FH/HL + (1) HH/HL PCI-E Gen4 x8 slots (left),<br>(1) M8036-R24-3F riser card for (2) FH/HL + (1) HH/HL PCI-E Gen4 x8 slots (right) |
| | **Others** | | (1) PCI-E Gen3 x16 OCP 2.0 slot (conn.A+conn.B),<br>*Conn. B of OCP 2.0 mezzanine is mux'd with the HH/HL PCI-E x8 slot on M8036-R24-3F riser |
| **LAN** | **Q'ty / Port** | | (2) GbE ports + (1) GbE dedicated for IPMI |
| | **Controller** | | Broadcom BCM5720 |
| | **PHY** | | Realtek RTL8211E |
| **Storage** | **SATA** | **Connector** | (2) SFF-8654 connectors for up to (16) SATA ports |
| | | **Controller** | Direct from AMD EPYC CPU |
| | | **Speed** | 6Gb/s |
| | | **RAID** | N/A |
| | **Additional SATA** | **Connector** | (4) SATA |
| | | **Controller** | Marvell 9235 |
| | | **Speed** | 6Gb/s |
| | | **RAID** | N/A |
| | **NVMe** | **Connector** | (2) 22110/2280(by PCI-E Gen3 |

| | | |
|---|---|---|
| | (M.2) | interface) |
| **Graphic** | **Connector type** | D-Sub 15-pin |
| | **Resolution** | Up to 1920x1200 |
| | **Chipset** | Aspeed AST2500 |
| **I/O Ports** | **USB** | (2) USB3.1 Gen1 ports (@ rear),<br>(2) USB3.1 Gen1 ports (via Cable),<br>(1) USB3.1 Gen1 port (Type-A) |
| | **COM** | (1) DB-9 port (COM1) +<br>(1) header (COM2) |
| | **VGA** | (1) D-Sub 15-pin port |
| | **RJ-45** | (2) GbE ports,<br>(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, SMBIOS 3.0/PnP/Wake on LAN, Boot from USB device/PXE via LAN/Storage, Console Redirection, ACPI 6.1, ACPI sleeping states S0, S5, FAN speed control automatic |
| **Operating System** | **OS supported list** | Please refer to our AVL support lists. |

| | | |
|---|---|---|
| **Regulation** | **FCC (SDoC)** | Class A |
| | **CE (DoC)** | Class A |
| | **CB/LVD** | Yes |
| | **RCM** | Class A |
| | **VCCI** | Class A |
| **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%, non-condensing at 35° C |
| **RoHS** | **RoHS 6/6 Compliant** | Yes |
| **Package Contains** | **Barebone** | (1) TS65A-B8036 Barebone |
| | **Manual** | (1) Quick Installation Guide |

**B8036T65AV12E16HR Specifications**

| | | |
|---|---|---|
| **System** | **Form Factor** | 2U Rackmount |
| | **Chassis Model** | TS65A |
| | **Dimension (D x W x H)** | 25.59" x 17.32" x 3.43" (650 x 440 x 87mm) |
| | **Motherboard Name** | S8036GM2NE |
| | **Gross Weight** | 30 kg (66 lbs) |
| | **Net weight** | 19 kg (42 lbs) |
| **Front Panel** | **Buttons** | (1) RST, (1) ID, (1) PWR w/ LED |
| | **LEDs** | (2) LAN, (1) ID, (1) System Event |
| | **I/O Ports** | (2) USB 3.1 Gen1 ports |
| **External Drive Bay** | **Q'ty / Type** | (26) 2.5" Hot-Swap SSD/HDD (@ front) + (2) 2.5" Hot-Swap SSD/HDD (@ rear) |
| | **HDD Backplane Support** | SAS 12Gb/s, SATA 6Gb/s, NVMe |
| | **Supported HDD Interface** | (10) SATA 6Gb/s + (16) NVMe (@ front) + (2) SATA 6Gb/s (@rear) |
| | **Notification** | The SAS/SATA HDD backplane is connected to onboard SATA connection by default. Please contact Tyan technical support if a discrete SAS HBA/RAID adapter installed is required. |
| **System Cooling Configuration** | **FAN** | (3) 8cm fans |
| **Power Supply** | **Type** | CRPS |
| | **Input Range** | AC 200-240V/7A/<br>AC 100-127V/13A |
| | **Per inlet** | 13A/7A |
| | **Frequency** | 50-60 Hz |
| | **Output Watts** | 1,000 Watts (100-127Vac input) / 1,200Watts (200-240Vac input) |
| | **Efficiency** | 80 plus Platinum |
| | **Redundancy** | 1+1 |
| **Processor** | **Q'ty / Socket Type** | (1) AMD Socket SP3 |
| | **Supported CPU Series** | (1) AMD EPYC™ 7002 Series Processor |
| | **Configurable Thermal** | Max up to 225W |

| | | | |
|---|---|---|---|
| | **Design Power (cTDP) Wattage** | | |
| **Memory** | **Supported DIMM Qty** | | (16) DIMM slots |
| | **DIMM Type / Speed** | | DDR4 ECC RDIMM/RDIMM 3DS/LRDIMM/LRDIMM 3DS 3200 |
| | **Capacity** | | Up to 1,024GB RDIMM, 4,096GB LRDIMM 3DS |
| | **Memory channel** | | 8 Channels per CPU |
| | **Memory voltage** | | 1.2V |
| **Expansion Slots** | **PCI-E** | | (2) PCI-E Gen4 x8 slots (HH, HL w/ tall bracket), (4) PCI-E Gen4 x8 slots (FH, HL) |
| | **Pre-install TYAN Riser Card (PCI-E Gen4)** | | (1) M8036-L24-3F riser card for (2) FH/HL + (1) HH/HL PCI-E Gen4 x8 slots (left), (1) M8036-R24-3F riser card for (2) FH/HL + (1) HH/HL PCI-E Gen4 x8 slots (right) |
| | **Others** | | (1) PCI-E Gen3 x16 OCP 2.0 slot (conn.A+conn.B),<br>*Conn. B of OCP 2.0 mezzanine is mux'd with the HH/HL PCI-E x8 slot on M8036-R24-3F riser |
| **LAN** | **Q'ty / Port** | | (2) GbE ports +<br>(1) GbE dedicated for IPMI |
| | **Controller** | | Broadcom BCM5720 |
| | **PHY** | | Realtek RTL8211E |
| **Storage** | **Additional SATA** | **Connector** | (4) SATA |
| | | **Controller** | Marvell 9235 |
| | | **Speed** | 6Gb/s |
| | | **RAID** | N/A |
| | **NVMe** | **Connector (M.2)** | (2) 22110/2280(by PCI-E Gen3 interface) |
| | | **Connector (Slim SAS)** | (8) SFF-8654 for (16) NVMe ports |
| **Graphic** | **Connector type** | | D-Sub 15-pin |
| | **Resolution** | | Up to 1920x1200 |
| | **Chipset** | | Aspeed AST2500 |
| **I/O Ports** | **USB** | | (2) USB3.1 Gen1 ports (@ rear), |

| | | |
|---|---|---|
| | | (2) USB3.1 Gen1 ports (via Cable), (1) USB3.1 Gen1 port (Type-A) |
| | **COM** | (1) DB-9 port (COM1) + (1) header (COM2) |
| | **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, SMBIOS 3.0/PnP/Wake on LAN, Boot from USB device/PXE via LAN/Storage, Console Redirection, ACPI 6.1, ACPI sleeping states S0, S5, FAN speed control automatic |
| **Operating System** | **OS supported list** | Please refer to our AVL support lists. |
| **Regulation** | **FCC (SDoC)** | Class A |
| | **CE (DoC)** | Class A |
| | **CB/LVD** | Yes |
| | **RCM** | Class A |
| | **VCCI** | Class A |

| | | |
|---|---|---|
| **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%, non-condensing at 35° C |
| **RoHS** | **RoHS 6/6 Compliant** | Yes |
| **Package Contains** | **Barebone** | (1) TS65A-B8036 Barebone |
| | **Manual** | (1) Quick Installation Guide |

## B8036T65AV4E24HR Specifications

| | | |
|---|---|---|
| **System** | **Form Factor** | 2U Rackmount |
| | **Chassis Model** | TS65A |
| | **Dimension (D x W x H)** | 25.59" x 17.32" x 3.43" (650 x 440 x 87mm) |
| | **Motherboard Name** | S8036GM2NE |
| | **Gross Weight** | 30 kg (66 lbs) |
| | **Net weight** | 19 kg (42 lbs) |
| **Front Panel** | **Buttons** | (1) RST, (1) ID, (1) PWR w/ LED |
| | **LEDs** | (1) HDD, (2) LAN, (1) ID, (1) System Event |
| | **I/O Ports** | (2) USB 3.1 Gen1 ports |
| **External Drive Bay** | **Q'ty / Type** | (26) 2.5" Hot-Swap SSD/HDD (@ front) + (2) 2.5" Hot-Swap SSD/HDD (@ rear) |
| | **HDD Backplane Support** | SAS 12Gb/s, SATA 6Gb/s, NVMe |
| | **Supported HDD Interface** | (2) SATA 6Gb/s + (24) NVMe (@ front) + (2) SATA 6Gb/s (@ rear) |
| **System Cooling Configuration** | **FAN** | (3) 8cm fans |
| **Power Supply** | **Type** | CRPS |
| | **Input Range** | AC 200-240V/7A ,<br>AC 100-127V/13A |
| | **Frequency** | 50-60 Hz |
| | **Output Watts** | 1,000 Watts(100-127Vac input),<br>1,200Watts (200-240Vac input) |
| | **Efficiency** | 80 plus Platinum |
| | **Redundancy** | 1+1 |
| **Processor** | **Q'ty / Socket Type** | (1) AMD Socket SP3 |
| | **Supported CPU Series** | (1) AMD EPYC™ 7002 Series Processor |
| | **Configurable Thermal Design Power (cTDP) Wattage** | Max up to 240W |
| **Memory** | **Supported DIMM Qty** | (16) DIMM slots |
| | **DIMM Type / Speed** | DDR4 ECC RDIMM/RDIMM 3DS/LRDIMM/LRDIMM 3DS 3200 |

| | | | |
|---|---|---|---|
| | **Capacity** | | Up to 2,048GB RDIMM, 4,096GB LRDIMM 3DS |
| | **Memory channel** | | 8 Channels per CPU |
| | **Memory voltage** | | 1.2V |
| **Expansion Slots** | **PCI-E** | | (2) PCI-E Gen4 x8 slots (HH, HL w/ tall bracket), (4) PCI-E Gen4 x8 slots (FH, HL) |
| | **Pre-install TYAN Riser Card (PCI-E Gen4)** | | (1) M8036-L24-3F riser card for (2) FH/HL + (1) HH/HL PCI-E Gen4 x8 slots (left), (1) M8036-R24-3F riser card for (2) FH/HL + (1) HH/HL PCI-E Gen4 x8 slots (right) |
| | **Others** | | (1) PCI-E Gen3 x16 OCP 2.0 slot (conn.A+conn.B),<br>*Conn. B of OCP 2.0 mezzanine is mux'd with the HH/HL PCI-E x8 slot on M8036-R24-3F riser |
| | **Physical Dimension Abbreviation** | | FH/FL (Full-height, Full-length): 4.4" x 12.3" (111.2 x 312mm) |
| **LAN** | **Q'ty / Port** | | (2) GbE ports +<br>(1) GbE dedicated for IPMI |
| | **Controller** | | Broadcom BCM5720 |
| | **PHY** | | Realtek RTL8211E |
| **Storage** | **Additional SATA** | **Connector** | (2) 7-pin SATA for (2) rear SATA drives, (2) 7-pin SATA for (2) front SATA drives |
| | | **Controller** | Marvell 9235 |
| | | **Speed** | 6Gb/s |
| | | **RAID** | N/A |
| | **NVMe** | **Connector (M.2)** | (2) 22110/2280 (by PCI-E Gen3 & SATA interface) |
| | | Connector (Slim SAS) | (8) SFF-8654 for (16) NVMe ports, (4) SFF-8612 from (1) M2093 storage mezz. and (1) M7106R-4E storage mezz. for (8) NVMe ports |
| **Graphic** | **Connector type** | | D-Sub 15-pin |

| | | |
|---|---|---|
| | **Resolution** | Up to 1920x1200 |
| | **Chipset** | Aspeed AST2500 |
| **I/O Ports** | **USB** | (2) USB3.1 Gen1 ports (@ rear),<br>(2) USB3.1 Gen1 ports (via Cable),<br>(1) USB3.1 Gen1 port (Type-A) |
| | **COM** | (1) DB-9 port (COM1) +<br>(1) header (COM2) |
| | **VGA** | (1) D-Sub 15-pin port |
| | **RJ-45** | (2) GbE ports,<br>(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, SMBIOS 3.0/PnP/Wake on LAN, Boot from USB device/PXE via LAN/Storage, Console Redirection, ACPI 6.1, ACPI sleeping states S0, S5, FAN speed control automatic |
| **Operating System** | **OS supported list** | Please refer to our AVL support lists. |
| **Regulation** | **FCC (SDoC)** | Class A |
| | **CE (DoC)** | Class A |

| | | |
|---|---|---|
| | **CB/LVD** | Yes |
| | **RCM** | Class A |
| | **VCCI** | Class A |
| **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%, non-condensing at 35° C |
| **RoHS** | **RoHS 6/6 Compliant** | Yes |
| **Package Contains** | **Barebone** | (1) TS65A-B8036 Barebone |
| | **Manual** | (1) Quick Installation Guide |

**NOTE:**

1. The specifications are subject to change without prior notice.
2. Please visit our website for the latest specifications.

## 1.4 Standard Parts List

This section describes TS65A-B8036 package contents and accessories. Open the box carefully and ensure that all components are present and undamaged. The product should arrive with packaged as illustrated below.

### 1.4.1 Box Contents

If any items are missing or appear damaged, contact your retailer or browse to TYAN's website for service: http://www.tyan.com

**B8036T65AV12E16HR**

- (2) TF-PWR ASSY;SBU,1200W PSU MODULE (pre-installed)
- (3) 80*80*38mm Fan (pre-installed)
- (1) S8036GM2NE MB
- (1) M1718T65-FPB Front Panel Board
- (1) M1717T65-USB USB Board
- (1) M7100F48B-PDB Power Distribution Board
- (1) M7063F86-PBP Power Backplane Board
- (1) M8036-R24-3F riser card#1
- (1) M8036-L24-3F riser card#2
- (1) M1295T65-BP12-8 HDD Backplane Board
- (2) M1296T65-BP12E-8 HDD Backplane Board
- (1) M1298T65-BP12E-2 Backplane Board

**B8036T65AV28HR-LE**

- (2) TF-PWR ASSY;SBU,1200W PSU MODULE (pre-installed)
- (3) 80*80*38mm Fan (pre-installed)
- (1) S8036GM2NE-LE MB
- (1) M1718T65-FPB Front Panel Board
- (1) M1717T65-USB USB Board
- (1) M7100F48B-PDB Power Distribution Board
- (1) M7063F86-PBP Power Backplane Board
- (1) M8036-R24-3F riser card#1
- (1) M8036-L24-3F riser card#2
- (3) M1295T65-BP12-8 HDD Backplane Board
- (1) M1298T65-BP12E-2 Backplane Board

### 1.4.2 Accessories

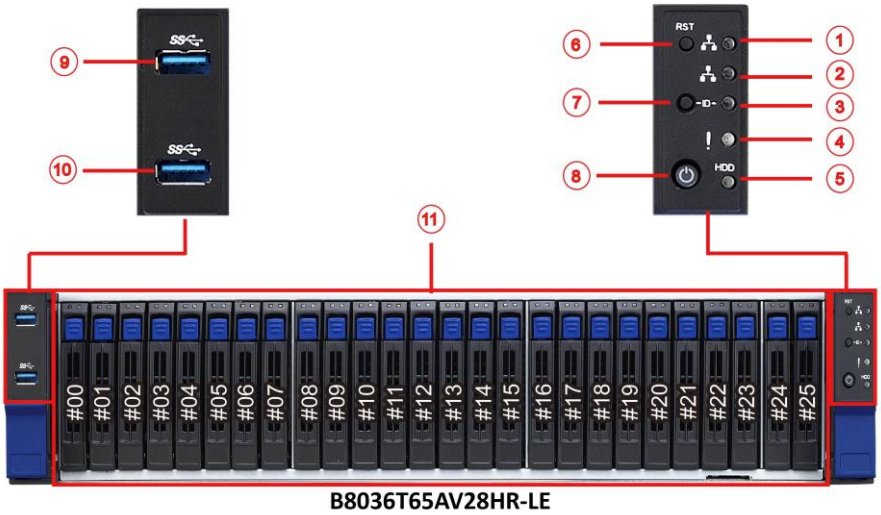
If any items are missing or appear damaged, contact your retailer or browse to TYAN's website for service: http://www.tyan.com

- (1) Rail kit and screws
- (2) Power Wire Mount
- (2) CPU Heatsink
- (2) US power cord
- (2) EU power cord
- (1) IO PLATE LAN Kit (with gasket)
- (1) IO PLATE SFP Kit
- (1) 2.5" HDD screw pack
- (1) TYAN Quick Installation Guide
- (1) M.2 Screw

## 1.5 About the Product

The following views show you the product.

### 1.5.1 System Front View




B8036T65AV28HR-LE


B8036T65AV12E16HR


B8036T65AV4E24HR

| M1718T65-FPB Front Panel Board/ M1717T65-USB USB Board | | | |
|---|---|---|---|
| 1 | LAN1LED | 7 | ID Button |
| 2 | LAN2 LED | 8 | Power Button with green LED |
| 3 | ID LED | 9 | USB 3.1 Port |
| 4 | Warning LED | 10 | USB 3.1 Port |
| 5 | HDD LED | 11 | 3.5” /2.5” SSD/HDD/NVMe bays |
| 6 | RESET Button | | |
| **NVMe SKU** | | | |
| **B8036T65AV12E16HR** | | | |
| | #00~#15 from M/B NVMe port | | #16 ~ #23 from SAS card (option) |
| | #24~ #25 from M/B SATA port | | |
| **B8036T65AV4E24HR** | | | |
| | #00~ #23 from M/B NVMe port | | #16 ~ #23 from riser card/OCP card (option) |
| | #24~ #25 from M/B SATA port | | |
| **LE SKU** | | | |
| | #00 ~ #19 from M/B SATA port | | #20~#25 from SAS card (option) |

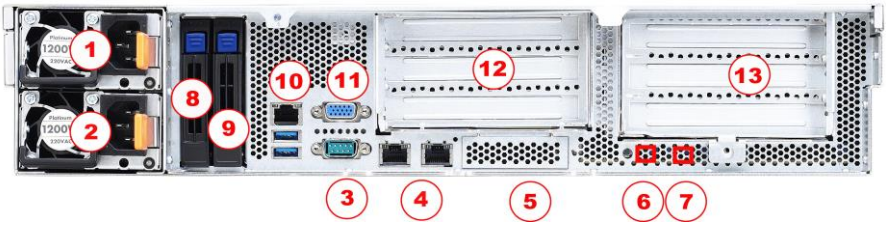
## M1718T65-FPB Front Panel LED Control Board

Switch and LED Indication

| Field | QTY | Color | Behavior |
|---|---|---|---|
| Power | 1 | Green | System Power off / off<br>System Power On / solid on<br>System under S1 or S3 / Blinking (TBD) |
| LAN1/LAN2 | 2 | Green | Offline / LED Off<br>Linking / Solid on<br>Access / Blinking |
| ID | 1 | Blue | Normal / Off<br>Located / Solid on |
| Warning | 1 | Red/Green/Blue | System normal /All off<br>Memory warning / Green blinking<br>PSU warning / Blue solid on<br>FAN warning / Blue blinking<br>System fault / Red solid on |
| HDD LED | 1 | Green/Red | HDD present / Green solid on<br>HDD activity / Green blinking<br>HDD fail / Red solid on |


| DRIVE STATE | Active LED (Green) | Status LED (Red) |
|---|---|---|
| Drive Present, No Active | Solid on | Off |
| Drive Present with Active | Blinking | Off |
| Drive Failure | NA | Solid on |
| RAID Rebuild | NA | Blinking @4 Hz |
| Drive Locate Identifier | NA | Blinking @1 Hz |

### 1.5.2 System Rear View



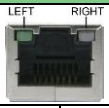

| | | | |
|---|---|---|---|
| 1 | PSU1 | 8 | HDD0 |
| 2 | PSU0 | 9 | HDD1 |
| 3 | Serial Port (COM1)USB3.1 Ports | 10 | Dedicate to IPMI Port (LAN3) |
| 4 | RJ45 LAN Port (LAN2/LAN1) | 11 | VGA Port |
| 5 | Dedicate to OCP Card | 12 | Add-On Card field |
| 6 | ID Button | 13 | Add-On Card field |
| 7 | ID LED (Blue) | | |

**ID LED**

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

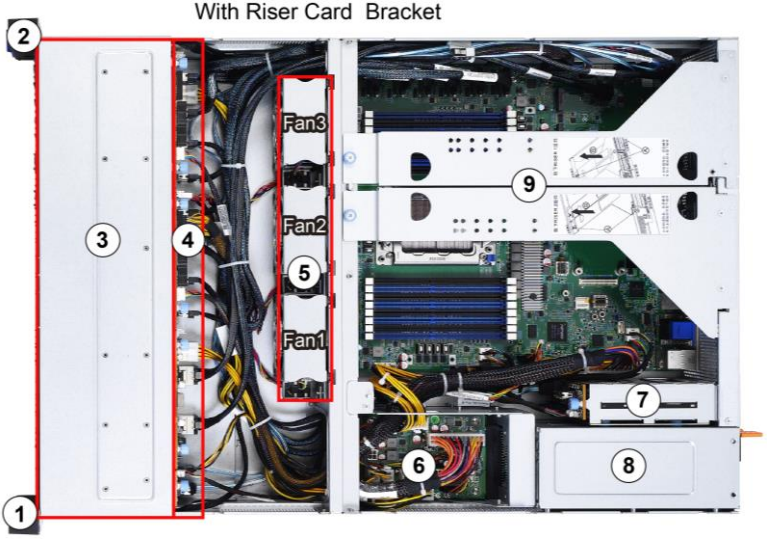
**Rear I/O: Onboard LAN LED Color Definition**

The **three (3)** onboard Ethernet ports have green and amber LEDs to indicate LAN status. The chart below illustrates the different LED states.

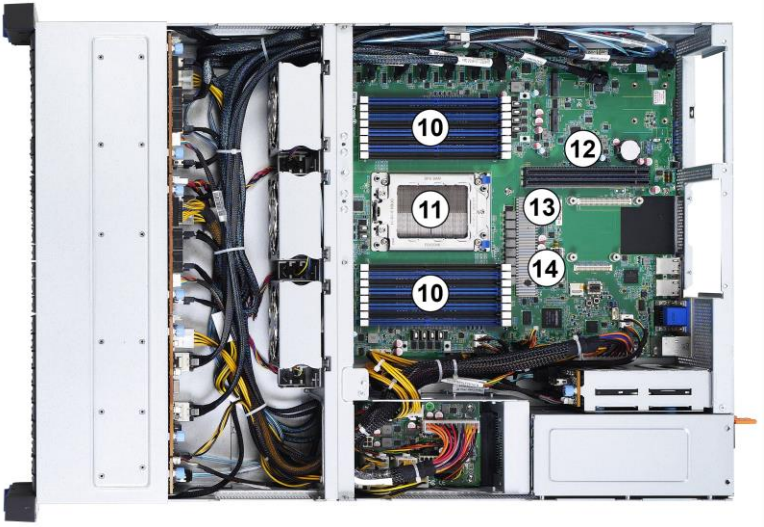
| 10/100/1000 Mbps LAN Link/Activity LED Scheme | | | |
|---|---|---|---|
|  | | **Left LED** | **Right LED** |
| **10 Mbps** | **Link** | Green | Off |
| | **Active** | Blinking Green | Off |
| **100 Mbps** | **Link** | Green | Green |
| | **Active** | Blinking Green | Green |
| **1000 Mbps** | **Link** | Green | Amber |
| | **Active** | Blinking Green | Amber |
| **No Link** | | Off | Off |

### 1.5.3 System Top View

With Riser Card Bracket




Without Riser Card Bracket



| | |
|---|---|
| 1 | (1) M1717T65-USB USB Board |
| 2 | (1) M1718T65-FPB Front Panel Board |
| 3 | HDD Module |
| 4 | M1295TS65-BP12-8/M1296TS65-BP12E-8/M1298T65-BP12E-2<br>HDD Backplane Board |
| 5 | (3) System fans |
| 6 | M7100F48B-PDB Power Distribution Board |
| 7 | M7063F86-PBP Power Backplane Board |
| 8 | Power Module |
| 9 | Riser Card Bracket (M8036-L24-3F, M8036-R24-3F pre-installed) |
| 10 | Memory Slots |
| 11 | CPU Sockets |
| 12 | PCIE3.0 SLOT x24 |
| 13 | OCP A Slot (OCP1_A) |
| 14 | OCP B Slot (OCP1_B) |

# 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
- A T20 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, use torque force within the range **7 kgf/cm (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 TS65A-B8036 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.

**NOTE:** All connectors are keyed to only attach one way.
All use the correct screw size as indicated in the procedures.

## 2.1 Installing Motherboard Components

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

### 2.1.1 Removing the Chassis Cover

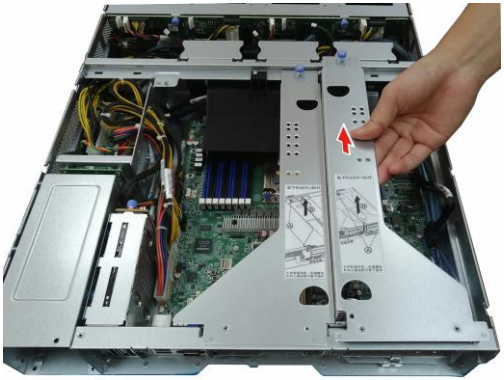
Follow these instructions to remove TS65A-B8036 chassis cover.

1. Release the latch on the left side.

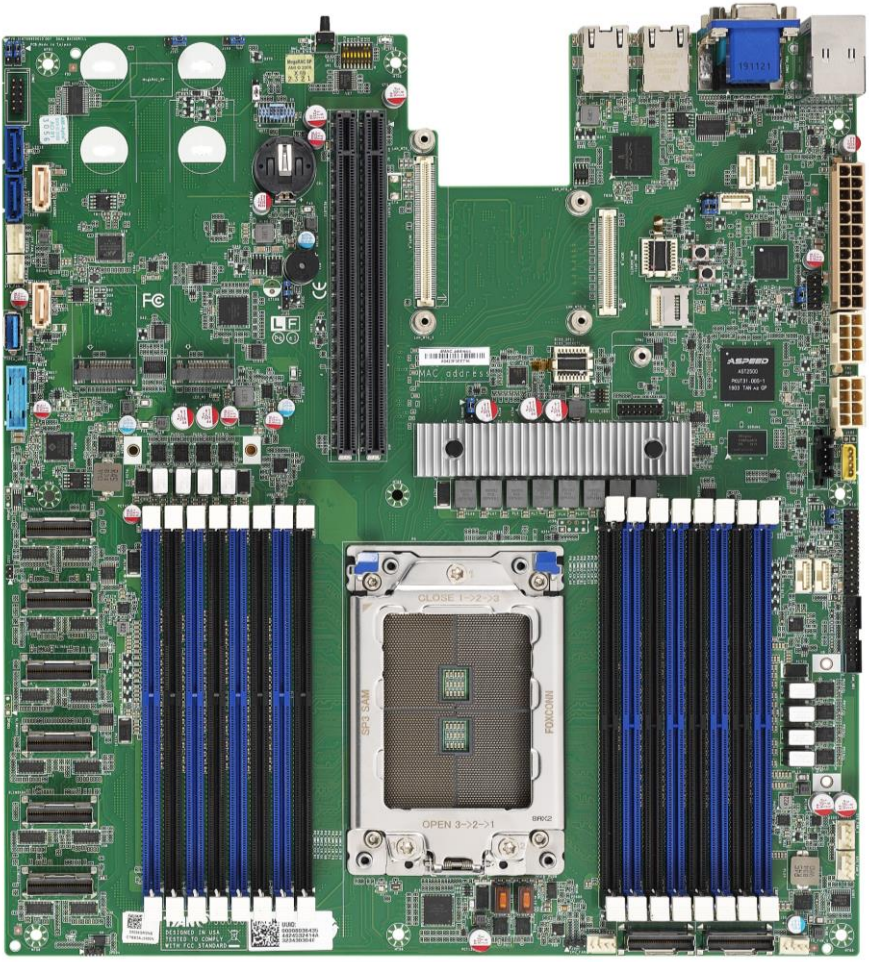
2. Slide to lift the rear top cover up.


### 2.1.2 Removing the Air Duct

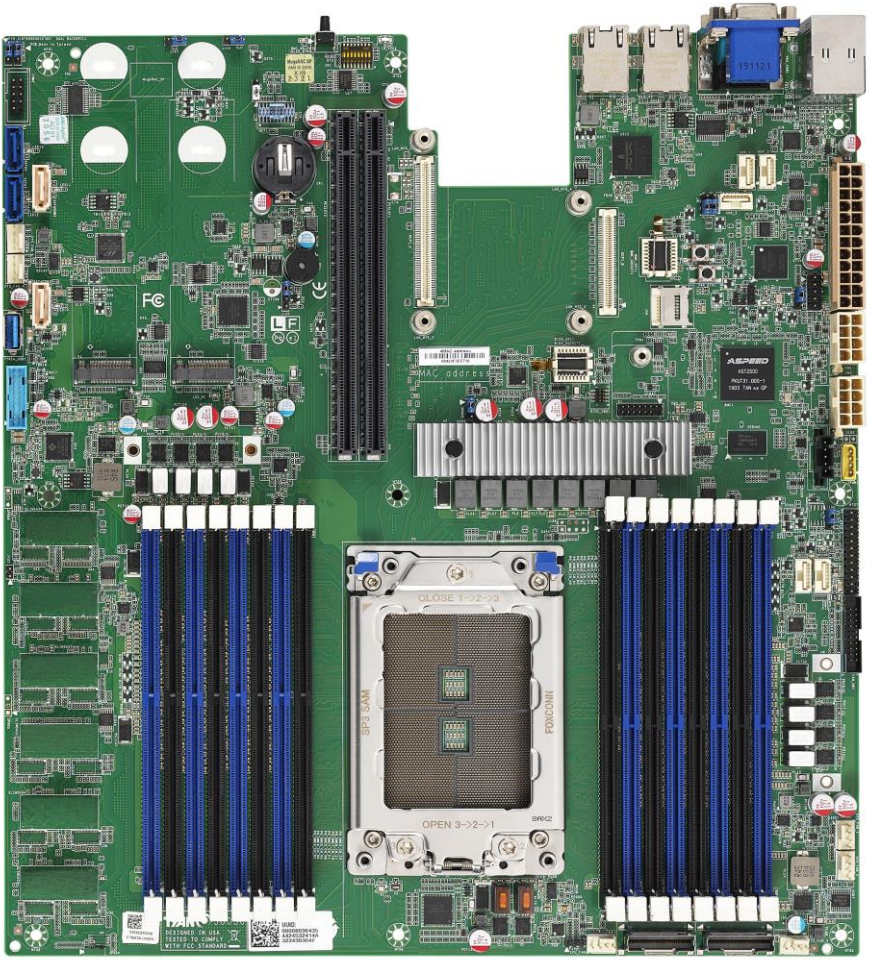
**1.** Remove two PCIE bracket and the air duct from the chassis.



### 2.1.3 Board Image



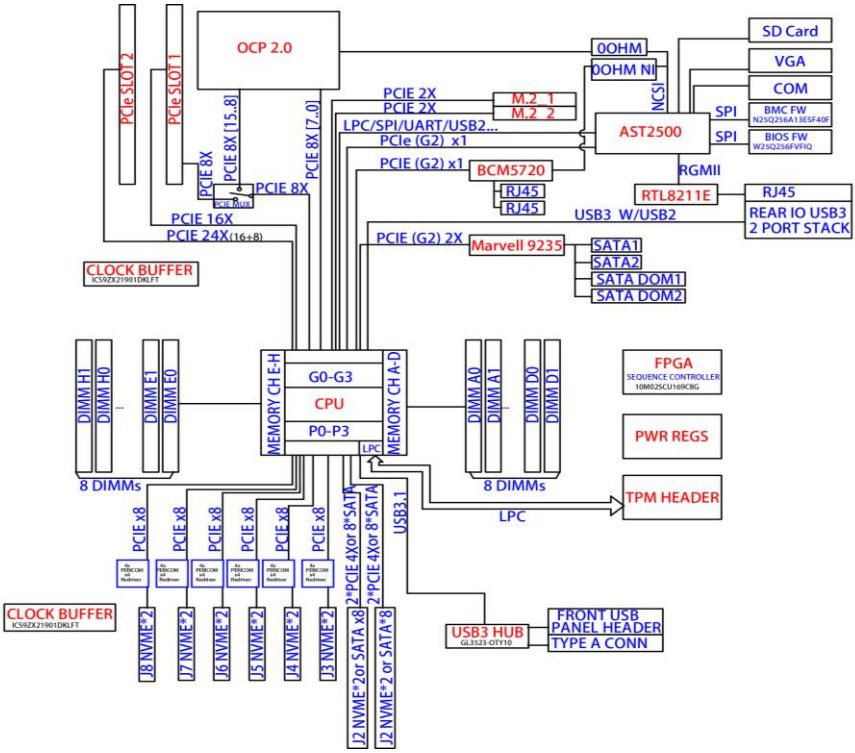

**S8036GM2NE**




**S8036GM2NE-LE**

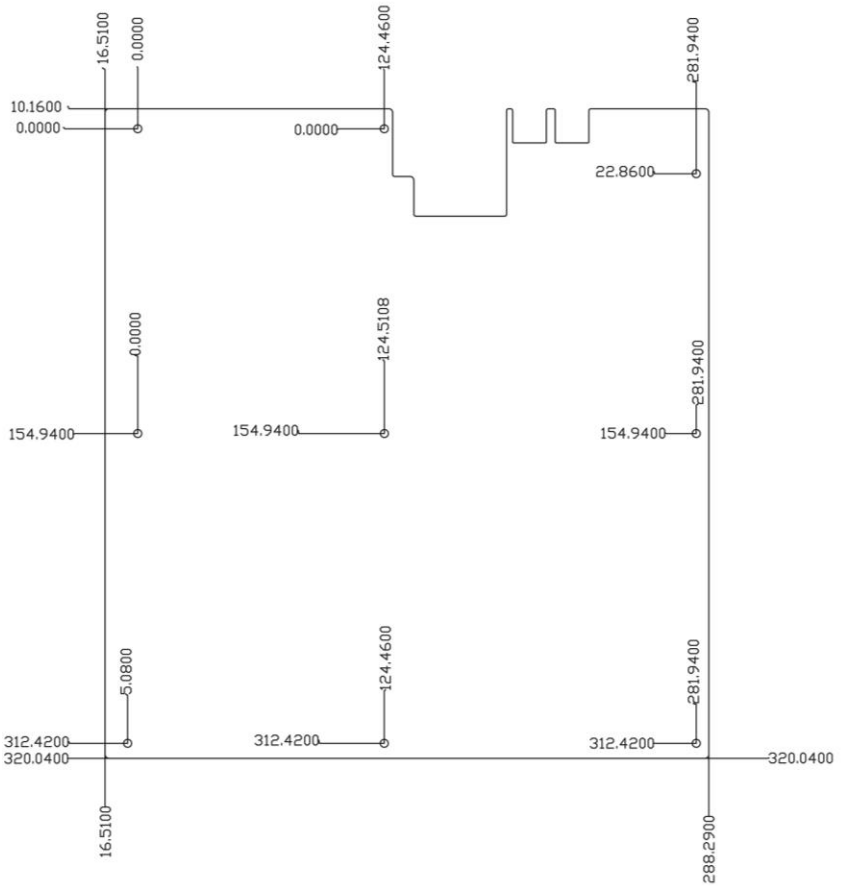
This picture is representative of the latest board revision available at the time of publishing. The board you receive may not look exactly like the above picture.

### 2.1.4 Block Diagram

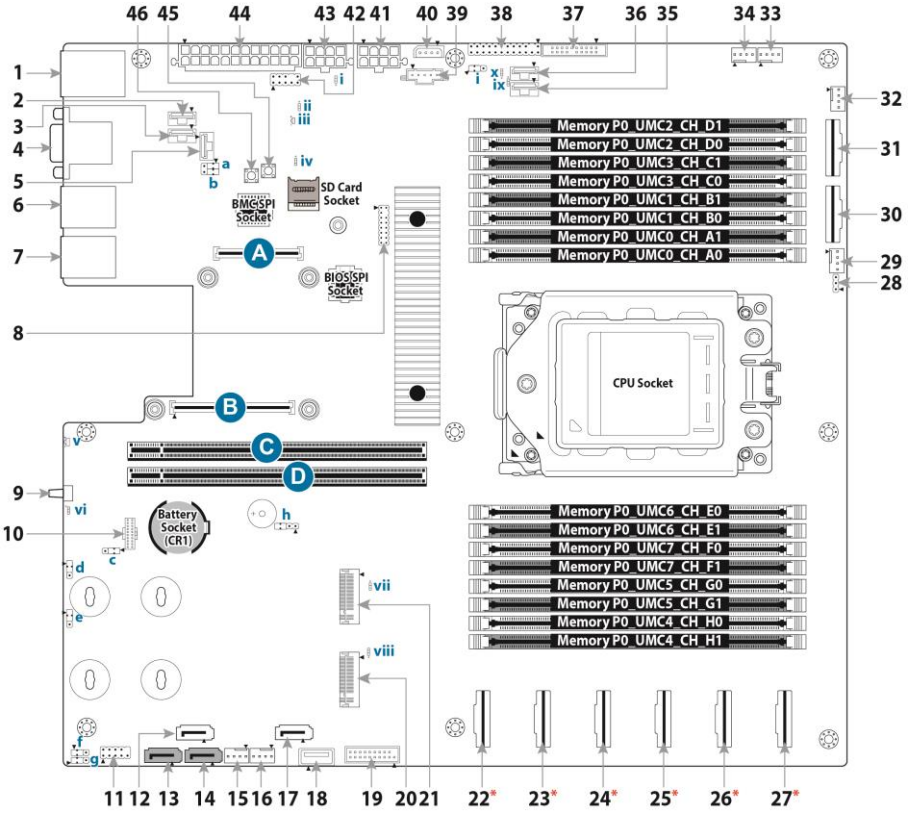



**S8036 Block Diagram**

## 2.1.5 Motherboard Mechanical Drawing



### 2.1.6 Board Parts, Jumpers and Connectors




This 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. The DIMM slot numbers shown above can be used as a reference when reviewing the DIMM population guidelines shown later in the manual. For the latest board revision, please visit our web site at **http://www.tyan.com.**

## Motherboard Components

| Connectors | |
|---|---|
| 1. Dedicated IPMI port+USB3.0 x 2(LAN1) | 24. PCIE 74P SlimSAS Connector (SLIMSAS 7 removed on LE-sku) |
| 2. CPU SMBUS Header (HDR_2) | 25. PCIE 74P SlimSAS Connector (SLIMSAS 5 removed on LE-sku) |
| 3. CPU SMBUS Header (HDR_1) | 26. PCIE 74P SlimSAS Connector (SLIMSAS 4 removed on LE-sku) |
| 4. VGA + COM Port (VGA_COM1) | 27. PCIE 74P SlimSAS Connector (SLIMSAS 3 removed on LE-sku) |
| 5. CPU SMBUS Header (HDR_3) | 28. Power SMBUS Header (PJ1) |
| 6. BCM5720 RJ45 LAN Connector (LAN2) | 29. CPU_FAN (CPU_FAN) |
| 7. BCM5720 RJ45 LAN Connector (LAN3) | 30. PCIE/SATA 74P SLIMSAS Connector (SLIMSAS2) |
| 8. TYAN Module Header (DBG_HD1) | 31. PCIE/SATA 74P SLIMSAS Connector (SLIMSAS1) |
| 9. Rear ID LED Button (ID LED_BTN1) | 32. Front Fan_3 (SYS_FAN_3) |
| 10. HDT Header (HDT1) | 33. Front Fan_2 (SYS_FAN_2) |
| 11. COM2 Header (COM2) | 34. Front Fan_1 (SYS_FAN_1) |
| 12. SATA Connector (SATA 3.0 signals) 7Pin+2Power(SATADOM2) | 35. CPU SMBUS Header (HDR_5) |
| 13. SATA Connector (SATA4) | 36. CPU SMBUS Header(HDR_4) |
| 14. SATA Connector (SATA3) | 37. FAN Header (FAN_HD1) |
| 15. RearFan_2 (SYS_FAN_5) | 38. Front Panel Header (FPIO_2) |
| 16. RearFan_1 (SYS_FAN_4) | 39. PSMI Header (PSMI_HD1) |
| 17. SATA Connector(SATA 3.0 signals) 7Pin+2Power (SATADOM1) | 40. IPMB Header (IPMB1) |
| 18. Vertical Type A USB Connector (TYPEA_USB1) | 41. 8-pin Power Connector (PW3) |
| 19. FPB USB2.0/USB3.0*2 Header (USB3_FPIO1) | 42. CPLD JTAG Connector (JTAG1) |
| 20. NGFF 32x80mm & 32x110mm M.2 Connector (NGFF2) | 43. 8-pin Power Connector (PW2) |
| 21. NGFF 32x80mm & 32x110mm M.2 Connector (NGFF1) | 44. ATX Power Connector (24p)(PW1) |
| 22. PCIE 74P SlimSAS Connector (SLIMSAS 8 removed on LE-sku) | 45. Power Button (PWR_BTN1) |
| 23. PCIE 74P SlimSAS Connector (SLIMSAS 6 removed on LE-sku) | 46. Reset Button (COLD_RST_BTN1) |
| **Jumpers** | |
| a. J1 NVMe or SATA Select (J9_13) | e. BMC CPU COM1 (RX) (J197) |
| b. J1 NVMe or SATA Select (J9_24) | f. BMC COM PORT2 (TX) (J191) |
| c. CMOS Clear Jumper (J194) | g. BMC COM PORT2 (RX) (J190) |
| d. BMC CPU COM1 (TX) (J193) | h. PC BEEP (J120) |
| | I. System RESET (J192) |
| **PCIE Slots** | |

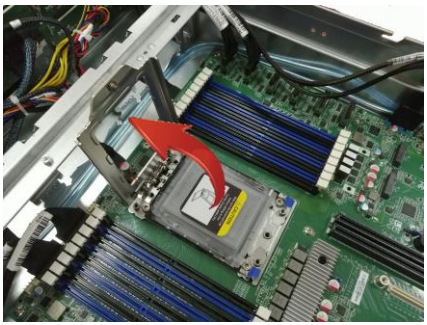
| | |
|---|---|
| **A** OCP B Slot (OCP1_B) | **C.** PCIE3.0 Slot x24 （PESLOT1） |
| **B.** OCP B Slot (OCP1_A) | **D.** PCIE3.0 Slot x24 （PESLOT2） |
| LEDs | |
| **i** PSU_ALERT_N LED (PSMI_LED1) | **vi** BMC Heartbeat LED (BMC_HBLED) |
| **ii** PWR_GOOD_LED (LED5) | **vii** NGFF1_LED(LED_M1) |
| **iii** RESET_LED_LED (LED7) | **viii** NGFF2_LED(LED_M2) |
| **iv** P0_PROCHOT_ LED (LED4) | **ix** Onboard BMC IPMI ALERT LED (IPMI__LED2) |
| **v** Rear ID LED (ID_LED2) | **x** HDD_ACT_LED (HDD_LED3) |

**NOTE**:
1. SD card socket is an OEM-reserved feature which is not enabled on current product offering.
2. HDR_1-5: NVME Hotplug I2C connector for NVME HDD backplane.

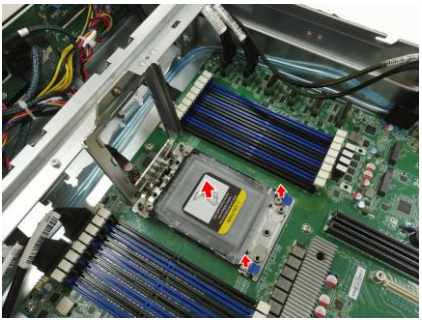
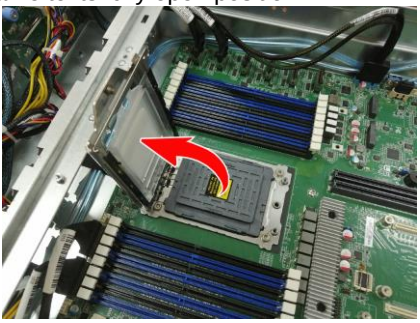
### 2.1.7 Installing the CPU and Heatsink

Follow the steps below on installing CPUs and CPU heat sinks.

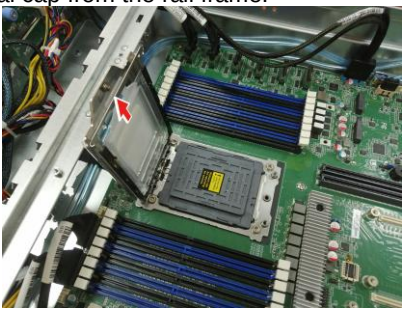
1. Use a T20 Torx screwdriver to loosen the screws securing the force frame in a sequential order (3->2->1).
   Note: The force frame will automatically eject after the captive screws are being released.



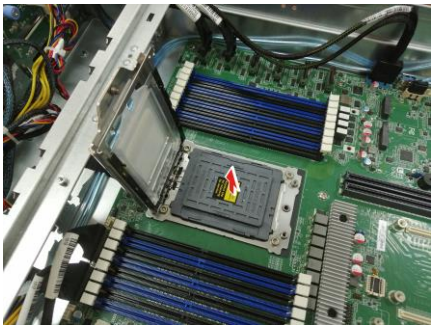
2. By placing your both index fingers on the sides on the metal handle, pull to release the rail frame. Then lift the rail frame to its fully open position.

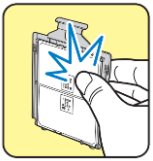
3. Remove the external cap from the rail frame.



4. Using your thumbs and forefinger, remove the PnP cap by lifting it up vertically.



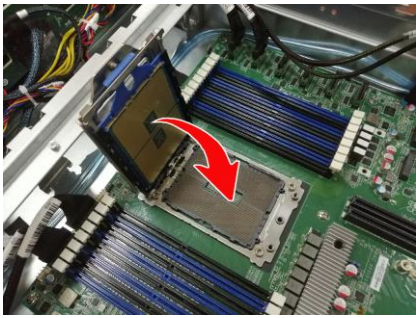
5. Align and install the carrier frame with package into the slot on the rail frame.
Note: During installation, observe the following:

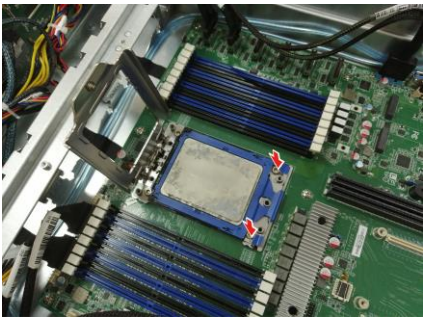


**NOTE:**

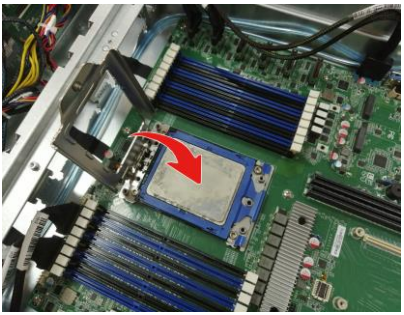
During installation, observe the following:
1. Make sure to push the carrier frame with package towards the end of the rail frame until it clicks into place.
2. Do not drop the carrier frame or touch the package pad to avoid component damage.

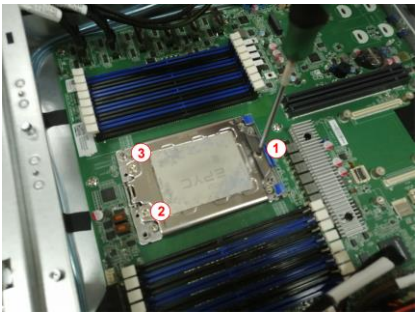
6. Carefully close the rail frame with the installed package. Then push both edges of the rail frame firmly until it locks in place.



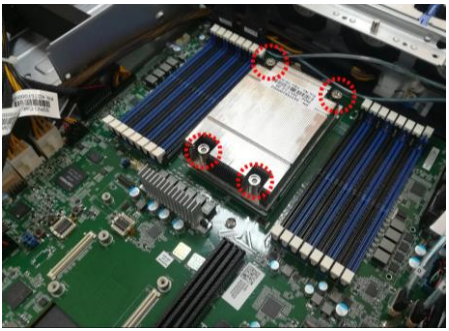


7. Close the force frame. Then use a T20 Torx screwdriver to tighten the screws to secure the force frame in a sequential order (1 ->2->3).






8. To secure the heatsink, use a T30 Security Torx to tighten the screws. Tighten the four screws in a diagonal sequence to secure the heat sink.



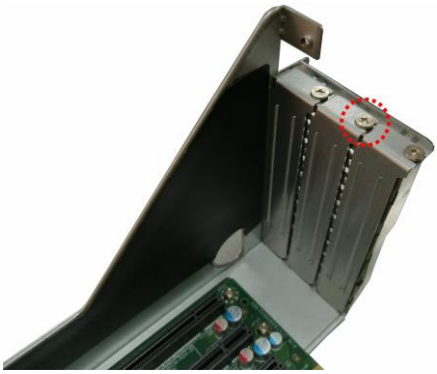
### 2.1.8 Installing the PCI-E Card

Follow these instructions to install the PCI-E card.

**1.** Unscrew the riser card bracket.

**2.** Remove the riser card bracket from the chassis.

**3.** Unscrew to remove the dummy brackets.



**4.** Insert the PCI-E card into the riser card bracket and screw it firmly. Follow the same procedures to insert the card to the other side of the riser card bracket if necessary.

**5.** The same procedure to install the PCIE card to the second riser card.

**6.** Reposition and screw the riser card bracket into the chassis.

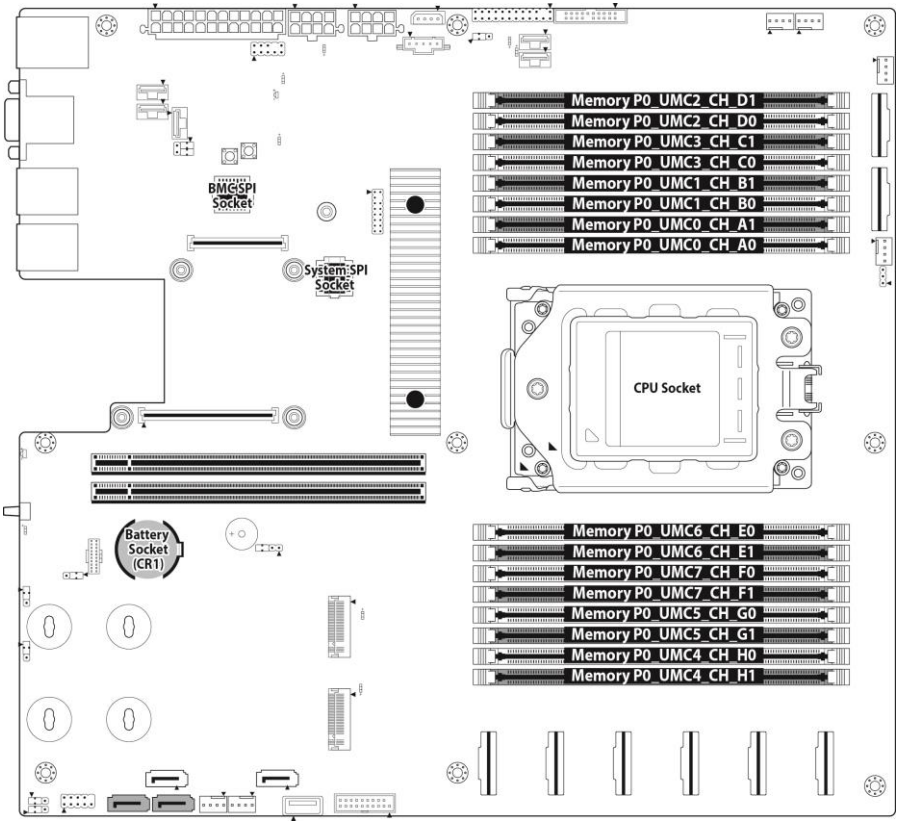
### 2.1.9 Installing the Memory

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

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

2. 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.

## Memory Population table



## AMD SP3Families Support

| Table1.DIMM Interleaving Guidelines | | | | | |
|---|---|---|---|---|---|
| DIMM Population | Channel B | | Channel A | | Notes |
| | DIMM0 | DIMM1 | DIMM0 | DIMM1 | |
| Populating NVDIMMs only | | | | NV | NV-NVDIMM |
| | | NV | | NV | NVDIMMs are identical per channel pair. |
| | NV | NV | NV | NV | |
| Populating NVDIMMs with RDIMMs or LRDIMMs | | D | | NV | D-R,LR, or 3DS DIMM type |
| | | $D_a$ | $D_a$ | NV | |
| | $D_a$ | $D_a$ | $D_b$ | NV | $D_b$ capacity-2x $D_a$ capacity |
| | | NV | D | NV | |
| | $D_a$ | NV | $D_a$ | NV | |

| Table2.RDIMM Max Freq Support SP3 Package Motherboard Type1 | | | | |
|---|---|---|---|---|
| Slots | DIMMs Populated | DIMM | | Frequency(MT/s) |
| | | 1R | 2R 2DR | 1.2V |
| 1 | 1 | 1 | - | 3200 |
| | | - | 1 | 3200 |
| 2 | 1 | 1 | - | 3200 |
| | | - | 1 | 3200 |
| | 2 | 2 | - | 2933 |
| | | 1 | 1 | 2933 |
| | | - | 2 | 2933 |

### 2.1.10 Installing Hard Drives

The TS65A-B8036 supports twenty-six 2.5” hot-swap HDD/NVMe SSDs and two 2.5” hot-swap SSDs.

**Installing 2.5” Hot-Swap Hard Drives**

Follow these instructions to install a 2.5” HDD.

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

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” hard disk drive into the HDD tray.

4. Lock the tray lever to secure HDD.

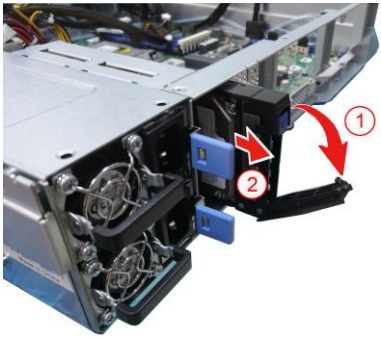
5. Reinsert the HDD tray into the chassis. Push to secure the locking lever until it clicks into place.


**Installing 2.5” Hot-Swap Hard Drives**

Follow these instructions to install a 2.5” SSD/HDD.

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

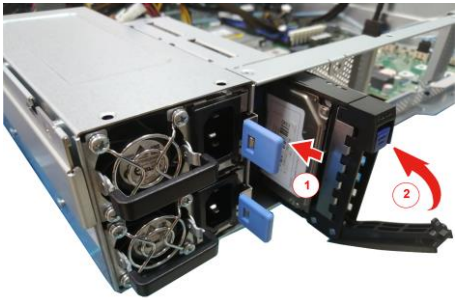
1. Press the locking lever latch and pull the locking lever open.




2. Open the lock to place a 2.5” hard disk drive into the HDD tray.

3. Lock the tray lever to secure HDD.

4. Reinsert the HDD tray into the chassis. Push to secure the locking lever until it clicks into place.




## 2.2 Rack Mounting

After installing the necessary components, the TYAN TS65A-B8036 can be mounted in a rack using the supplied rack mounting kit.

**Sliding Rail Kit**

- Sliding Rails x 2
- Rail screw Pack x 1

### 2.2.1 Installing the Server in a Rack

Follow these instructions to mount the TYAN TS65A-B8036 into an industry standard 19" rack.

**NOTE**: Before mounting the TYAN TS65A-B8036 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 into the rack.

**Installing the Inner Rails to the Chassis**

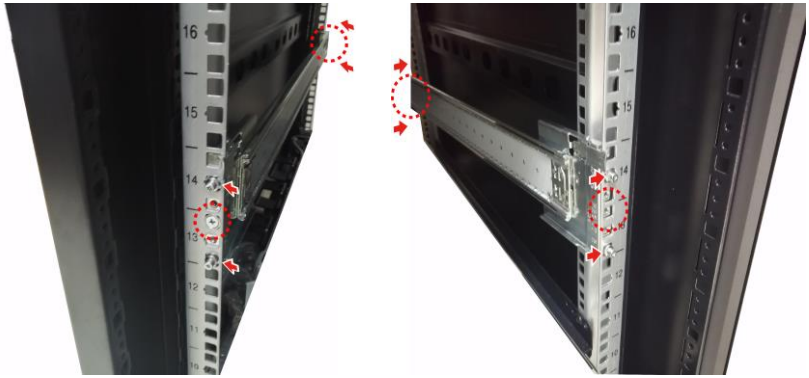
1. Draw out the inner rail from the rail assembly. When the rail comes to a stop pull the tab to release the latch and completely draw the inner rail out.

2. Align the inner sliding rail on the side of the server, and pull towards the arrow to secure the hooks

3. Repeat steps 2 to 4 to secure the sliding rail to the other side of the server.

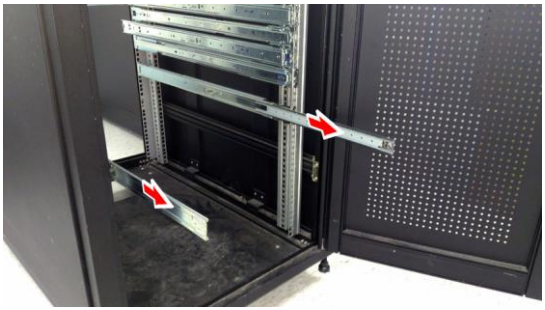
**Installing the Outer Rails to the Unit**

1. Secure the outer rails to the rack on each side.



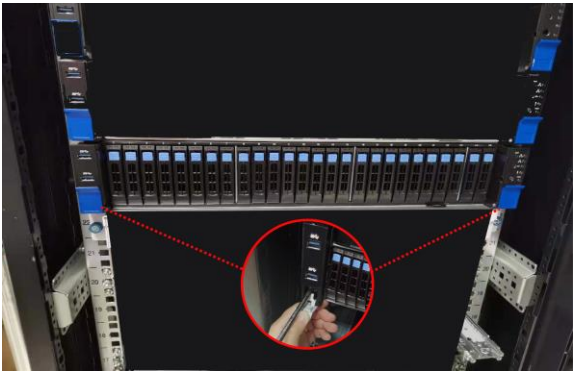
**Rack Mounting the Server**

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



2. When the inner rails come to a stop, pull the tab to release the latch and push the whole system in.

3. Secure the unit to the rack.



# NOTE

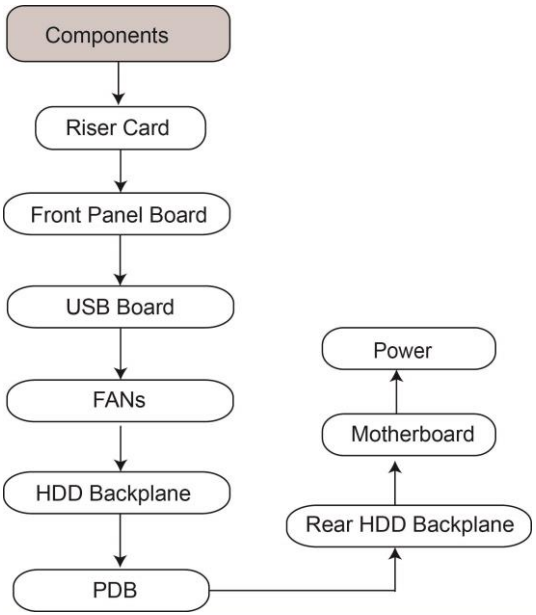
# Chapter 3: Replacing Pre-Installed Components

## 3.1 Introduction

This chapter explains how to replace the pre-installed components, including the Motherboard, M1717T65-FPB Front Panel Board, M1718T65-USB Board, M1295T65-BP12-8/ M1296T65-BP12E-8 HDD Backplane, M1298T65-BP12-2 HDD Backplane, M7100F48B-PDB Power Distribution board, M7063F86-PBP Power Backplane Board. M8036-L24-3F and M8036-R24-3F Riser cards, System fan and Power supply unit 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 first.
Follow **Chapter 2.1.1** to remove the cover of the TS65A-B8036.

## 3.4 Replacing Motherboard Components

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

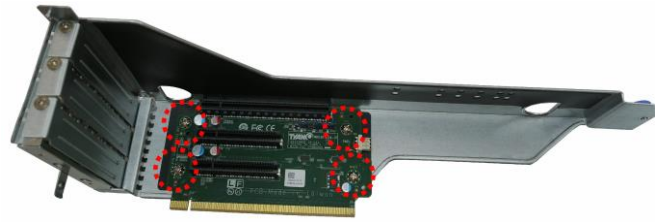
### 3.4.1 Replacing the Riser Card

Follow these instructions to replace the M8036-L24-3F and M8036-R24-3F Riser cards.

1. Unscrew the riser card bracket.

2. Remove the riser card bracket from the chassis.

**3.** Unscrew the M8036-L24-3F riser card to replace with a new one.



**4.** Unscrew the M8036-R24-3F riser card to replace with a new one.

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

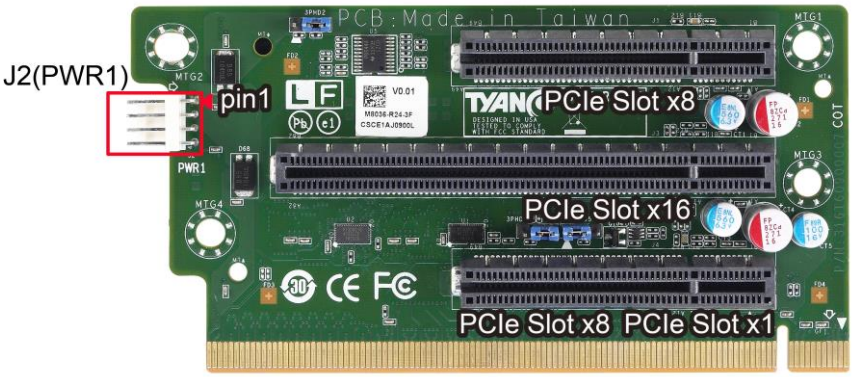
### 3.4.2 PCI-E Riser Cards Specification

**M8036-L24-3F Riser Card**


### 3.4.3 Connector Pin Definition (M8036-L24-3F)

| Location | Definition |
|---|---|
| J1 | PCIe X16 SLOT |
| J2 | 4P Power Connector |
| J3 | PCIe X8 SLOT |
| J4 | PCIe X8 SLOT |

**M8036-R24-3F Riser Card**




### 3.4.4 Connector Pin Definition (M8036-R24-3F)

| Location | Definition |
|---|---|
| J1 | PCIe X8 SLOT |
| J2 | 4Pin Power Connector |
| J3 | PCIe X16 SLOT |
| J4 | PCIe X8 SLOT |
| J6 | PCIe X1 SLOT |

| | Pin | Signal | Pin | Signal |
|---|---|---|---|---|
| J2 (PWR1) | 1 | +12V | 2 | GND |
| | 3 | GND | 4 | +5V |

## 3.5 Replacing the Front Panel Board

Follow these instructions to replace the M1718T65-FPB Front Panel Board.

1 Unscrew to release the Front Panel Board cover.

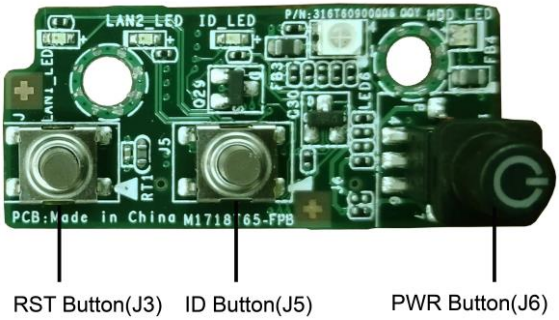
2 Remove the Front Panel Board cover.

3 Unscrew the Front Panel Board to replace a new one.

4 Disconnect the Front Panel Board to replace a new one.

5 Follow the steps described earlier in reverse to reinstall the Front Panel Board.

### 3.5.1 Front Panel Board Specifications



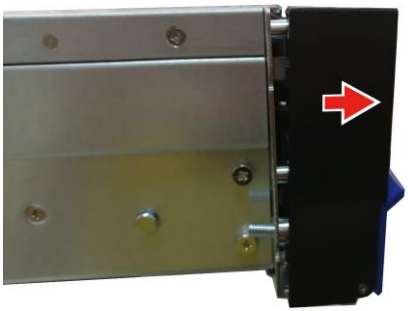

| M1718T65-FPB Front Panel Board | |
|---|---|
| **Form Factor** | ● PCB Dimensions: 40.00*18.00*1.6mm<br>● Thickness: 1.6mm<br>● Layer: 4 layers |
| **Specifications** | ● power button with LED<br>● reset button<br>● ID button<br>● LED: LAN1 LED (green), LAN2 LED (green), ID LED (blue), HDD LED (green/Red), FAULT LED (Red/green/Blue), Power LED |

## 3.6 Replacing the USB Board

Follow these instructions to replace the M1717T65-USB Board.

1 Unscrew to release the USB front cover.

2 Remove the USB front cover.

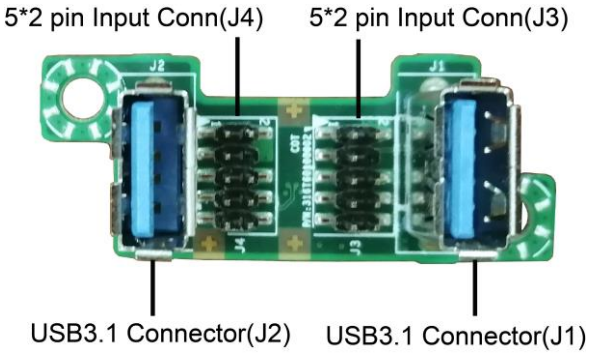


3 Unscrew the USB Board.

4 Disconnect the USB Board to replace a new one.

5 Follow the steps described earlier in reverse to reinstall the USB Board.

### 3.6.1 USB Board Specifications




| M1717T65-USB USB Board | |
|---|---|
| **Form Factor** | ● PCB Dimensions: 48.00*19.00*1.6mm<br>● Thickness: 1.6mm<br>● Layer: 4 layers |
| **Specifications** | ● USB 3.1 Connector<br>● 5*2PIN input Connector |

## 3.7 Replacing the System Fan

Follow these instructions to replace the fan.

1. Take out the fan from the chassis.

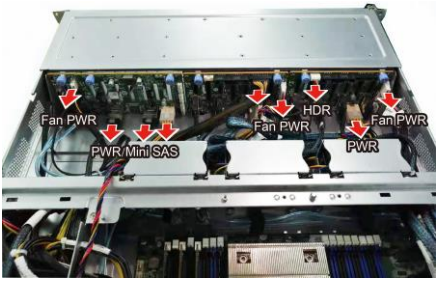
2. Replace a new fan to the chassis.

3. Reinstall a new fan to the chassis.

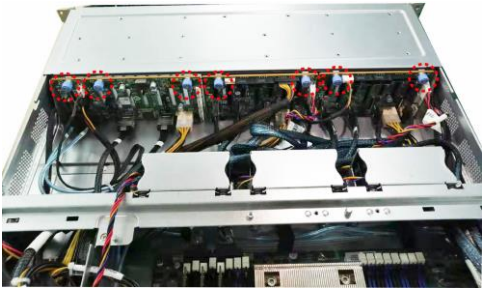
## 3.8 Replacing the HDD Backplane Board

**NOTE:** Before detach the HDD backplane, please remove all the HDD trays with HDDs, otherwise the HDD backplane will be damage when strains at the disassembly.

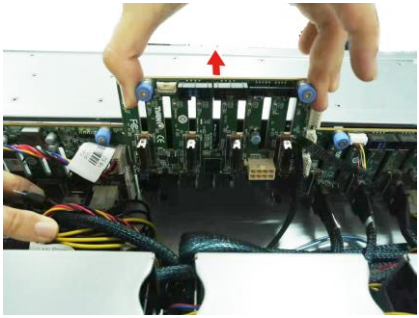
1. Disconnect all cables connected to the M1295T65-BP12-8/ M1296T65-BP12E-8 HDD backplane Board.




2. Unscrew the HDD BP Board.



3. Release the HDD Backplane from the hook.

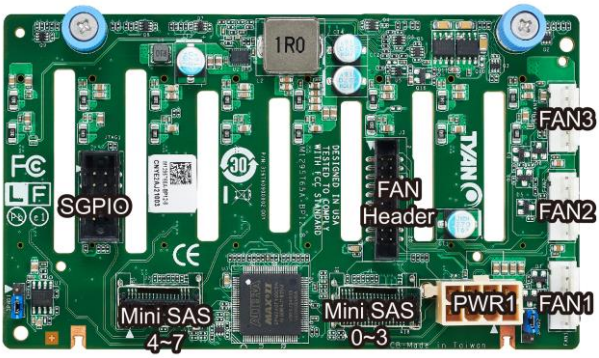


4. Follow the procedures described earlier to reinstall the HDD backplane board bracket into the chassis.

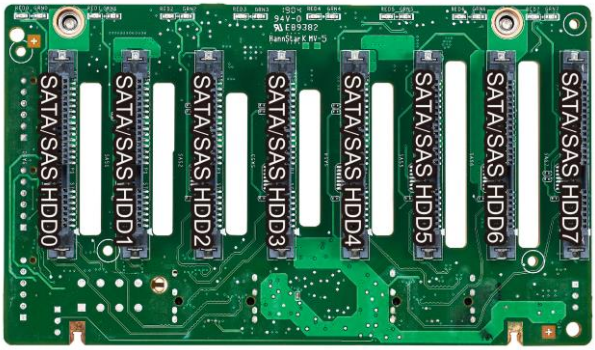
### 3.8.1 HDD Backplane Board Features

M1295T65-BP12-8

**Front View**




**Rear View**

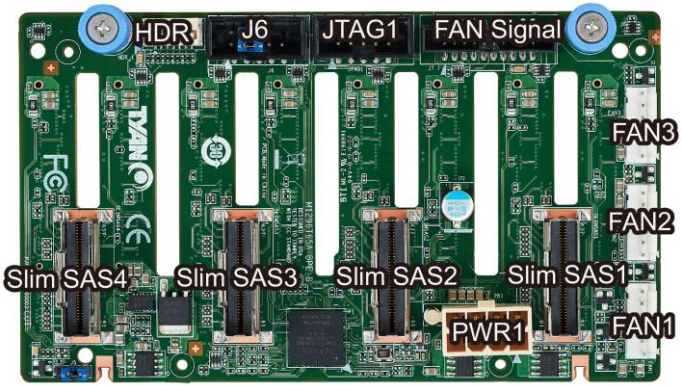



| | |
|---|---|
| **Form Factor** | PCB Dimensions: 131mm*76mm*3mm<br>Thickness: 3mm<br>Layer: 6 layers |
| **Specifications Overview** | 10-Pin FAN Header x 1<br>Mini SAS HD Connector x 2 (Input)<br>5-Pin SGPIO Header x 1<br>SATA/SAS HDD x 8 (Output) |

### 3.8.2 Connector Definition

| Location | Definition |
|---|---|
| HDD0 | SATA Connector |
| HDD1 | SATA Connector |
| HDD2 | SATA Connector |
| HDD3 | SATA Connector |
| HDD4 | SATA Connector |
| HDD5 | SATA Connector |
| HDD6 | SATA Connector |
| HDD7 | SATA Connector |
| SATA0_3 | Mini SAS HD Connector |
| SATA4_7 | Mini SAS HD Connector |
| PW1 | Power Connector |
| SGPIO0 | SGPIO Header for HDD0~7 |
| SGPIO1 | Reserved |

**Front View**



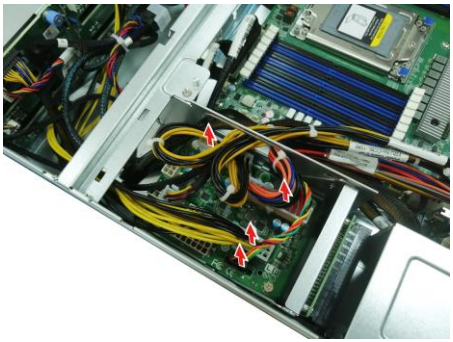

**Rear View**


| | |
|---|---|
| **Form Factor** | PCB Dimensions: 131mm*76mm*3mm<br>Thickness: 3mm<br>Layer: 8 layers |
| **Specifications Overview** | 10 Pin FAN Header x 1<br>SlimSAS Connector x4 Input<br>5Pin SGPIO Header x 2<br>NVMe HDD x 8 (Output)<br>Smbus Header x1 (HDR_1)<br>FAN Connector x 3 |

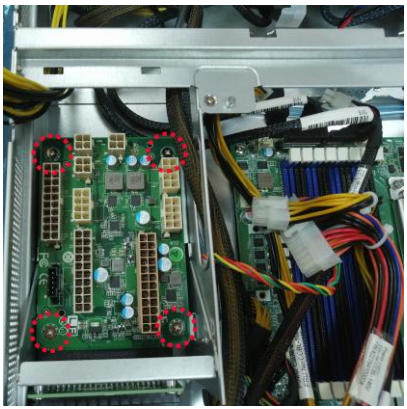
## 3.9 Replacing the Power Distribution Board

Follow these instructions to replace the M7100F48B-PDB Power Distribution Board in your system.

1. Disconnect all cables connected to the power distribution board.

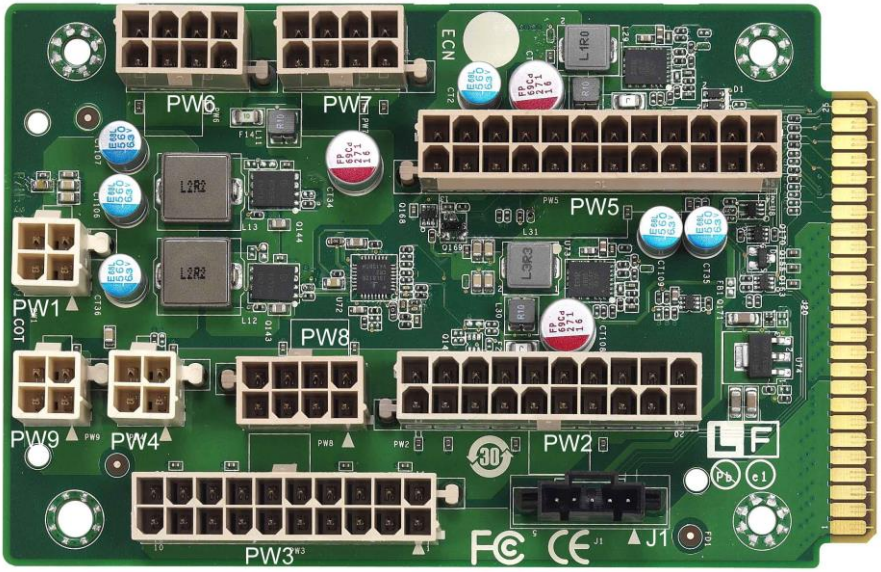


2. Unscrew to take off the power distribution board and replace with a new one.



3. Insert the PDB into the chassis following the above procedures in reverse.

### 3.9.1 Power Distribution Board Features




| M7100F48B-PDB Power Distribution Board | |
|---|---|
| **Board Size** | 82mm x 127.3mm, 6-layer PCB |
| **Integrated I/O** | (3) 8-pin power connector<br>(3) 4-pin power connector<br>(2) 20-pin power connector<br>(1) 24-pin power connector<br>(1) PSMI connector<br>(1) 50-pin golden finger |

### 3.9.2 Pin Definitions

**J1: PSMI Connector**

| Definition | Pin | Pin | Definition |
|---|---|---|---|
| SMBUS_Clock | 1 | 2 | SMBUS_Data |
| SMBUS_Alert | 3 | 4 | GND |
| NA | 5 | | |

**PW1/PW4/PW9: 4-pin Power Connector**

| Definition | Pin | Pin | Definition |
|---|---|---|---|
| GND | 1 | 2 | GND |
| 12V | 3 | 4 | 5V |

**PW6/PW7/PW8: 8-pin Power Connector**

| Definition | Pin | Pin | Definition |
|---|---|---|---|
| GND | 1 | 5 | 12V |
| GND | 2 | 6 | 12V |
| GND | 3 | 7 | 12V |
| GND | 4 | 8 | 12V |

**PW2/PW3: 20-Pin Power Connector**

| Definition | Pin | Pin | Definition |
|---|---|---|---|
| GND | 1 | 11 | 12V |
| GND | 2 | 12 | 12V |
| GND | 3 | 13 | 12V |
| GND | 4 | 14 | 12V |
| GND | 5 | 15 | 12V |
| GND | 6 | 16 | 12V |
| GND | 7 | 17 | 12V |
| GND | 8 | 18 | 12V |
| GND | 9 | 19 | 12V |
| GND | 10 | 20 | 12V |

**PW5: 24-pin Power Connector**

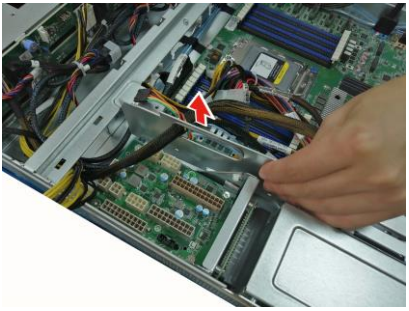
| Definition | Pin | Pin | Definition |
|---|---|---|---|
| 3.3V | **1** | **13** | 3.3V |
| 3.3V | **2** | **14** | NA |
| GND | **3** | **15** | GND |
| 5V | **4** | **16** | PS_ON |
| GND | **5** | **17** | GND |
| 5V | **6** | **18** | GND |
| GND | **7** | **19** | GND |
| PW_GD | **8** | **20** | NA |
| 5VSB | **9** | **21** | 5V |
| 12V | **10** | **22** | 5V |
| 12V | **11** | **23** | 5V |
| 3.3V | **12** | **24** | GND |

## 3.10 Replacing the Power Backplane Board

Follow these instructions to replace the M7063F86-PBP Power Backplane Board.

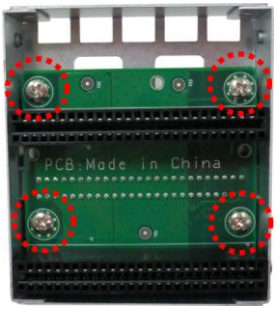
1. Unscrew the Power BP Board bracket from the chassis.

2. Remove the bracket beside and release the power distribution tray.



3. Slide to take out the power backplane board tray.

4. Unscrew to replace with a new power backplane board.

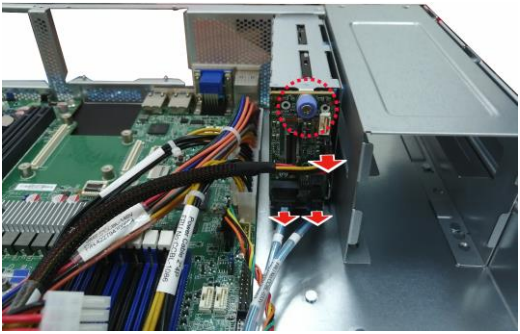



5. Follow the steps described earlier in reverse order to reinstall the power backplane board tray into the chassis.

## 3.11 Replacing the Rear HDD Backplane Board

Follow the instructions to replace the M1298T65-BP12-2 HDD backplane Board

1. Disconnect all cables and unscrew the power distribution board.



### 3.11.1 HDD Backplane Features

**Front View**


**Rear View**


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

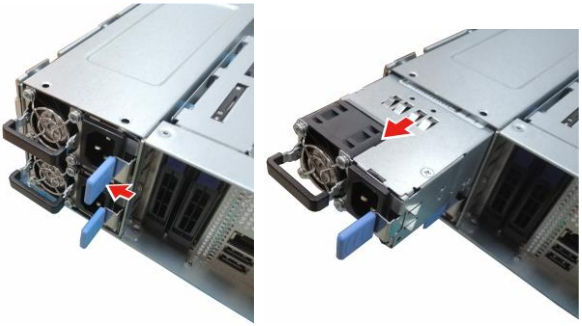
### 3.11.2 HDD LED Definition

| LED | Color | State | Description |
|---|---|---|---|
| HDD fail LED | Red | ON | NA |
| | | OFF | |
| HDD Power/Access LED | Green | ON | NVME/SATA/SAS HDD ready |
| | | Blinking | NVME/SATA/SAS HDD access activity |
| | | OFF | Power disconnected |

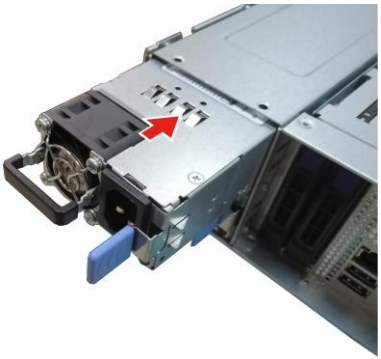
## 3.12 Replacing the Power Supply

Follow these instructions to replace the power supply module in your system.

1. Press the latch to pull the power supply out.

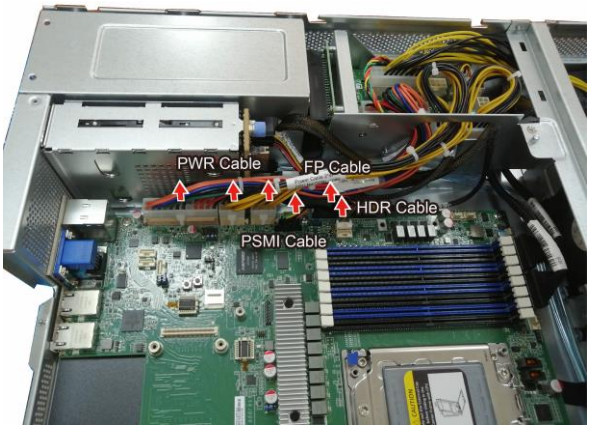


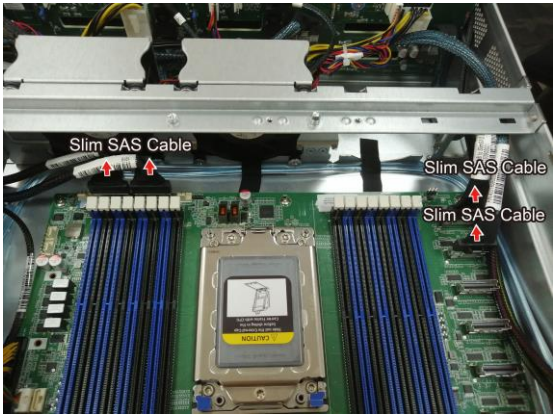
2. After replacing a new power supply, press and hold the latch to push the power supply back into the chassis.



## 3.13 Disconnecting All Motherboard Cables

1. Disconnect all cables connected to the motherboard.

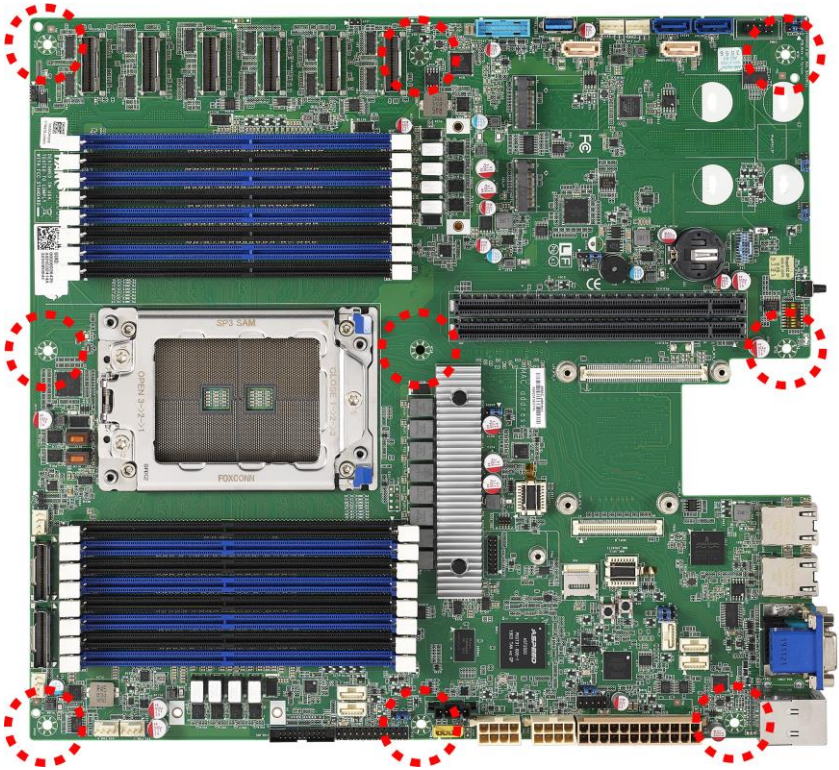


### 3.13.1 Removing the Motherboard

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

1. Remove the air duct, processor and heatsink if installed.
2. Remove nine screws securing the motherboard to the chassis.



3. Carefully lift the motherboard from the chassis.

# NOTE

# Appendix I: Installing IO Plate for OCP Card

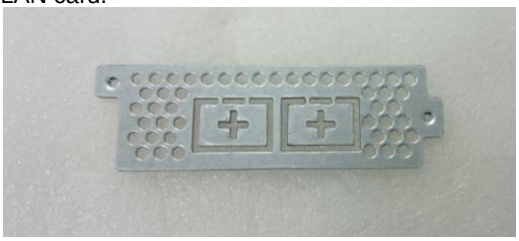
Follow these instructions to install the IO Plate for OCP Card. Here shows how to install the IO Plate for the dual-port LAN card M7062-I599-2T.

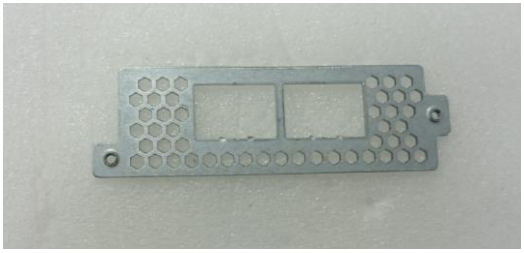
1. Unscrew the riser card bracket.

2. Remove the riser card bracket from the chassis.

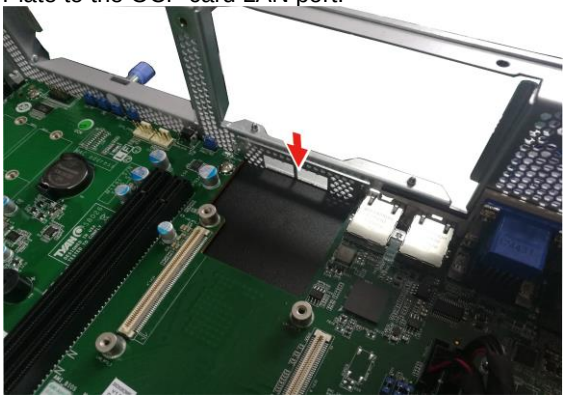
3. Use a screwdriver to break the semi-shearing for the OCP card slot. Discharge the metal slug.

4. Take out the IO plate for LAN card. Use a screwdriver to break the LAN port's semi shearing. Break one semi-shearing if a single-port LAN card is installed. Break both for a dual-port LAN card.

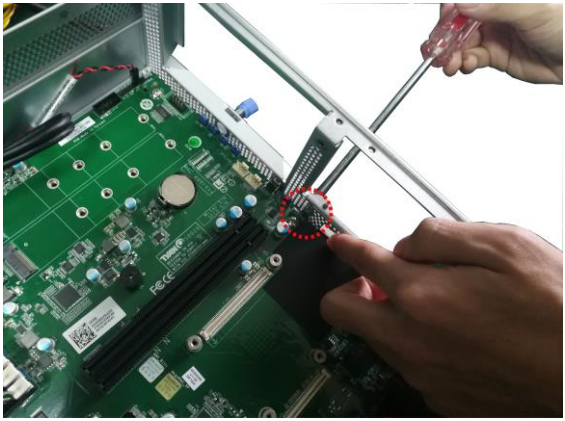




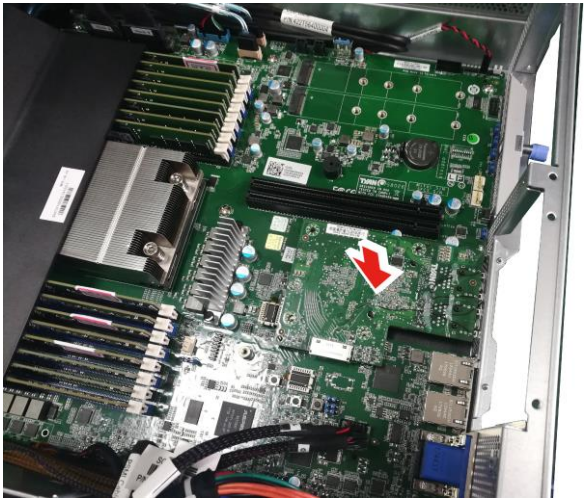
5. Insert the IO Plate to the OCP card LAN port.



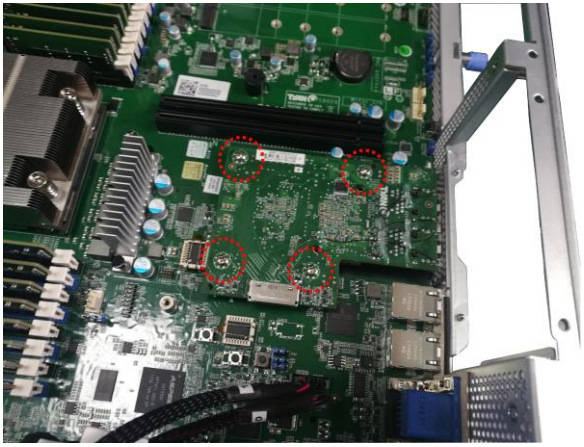
6. Screw the IO Plate to the chassis



7. Insert the LAN card into the OCP slot



8. Secure the LAN card to the chassis



# Appendix II: Cable Connection Tables

1. SlimSAS 8I Cable

**B8036T65AV12E16HR** SKU

| Front Backplane (BP) Board to S8036MB | | | |
|---|---|---|---|
| **Cable** | **HDD BP 1 M1296T65A-BPE-8** | **Connect to** | **S8036GM2NE/MB** |
| SlimSAS 8I to SlimSAS 8I | SLIMSAS1 | → | SLIMSAS1 |
| SlimSAS 8I to SlimSAS 8I | SLIMSAS2 | → | SLIMSAS3 |
| SlimSAS 8I to SlimSAS 8I | SLIMSAS3 | → | SLIMSAS2 |
| SlimSAS 8I to SlimSAS 8I | SLIMSAS4 | → | SLIMSAS4 |
| HDR cable | HDR 1 | → | HDR_4 |

| Front Backplane (BP) Board to S8036MB | | | |
|---|---|---|---|
| **Cable** | **HDD BP 2 M1296T65A-BPE-8** | **Connect to** | **S8036GM2NE/MB** |
| SlimSAS 8I to SlimSAS 8I | SLIMSAS1 | → | SLIMSAS5 |
| SlimSAS 8I to SlimSAS 8I | SLIMSAS2 | → | SLIMSAS6 |
| SlimSAS 8I to SlimSAS 8I | SLIMSAS3 | → | SLIMSAS7 |
| SlimSAS 8I to SlimSAS 8I | SLIMSAS4 | → | SLIMSAS8 |
| HDR cable | HDR 1 | → | HDR_5 |

| Front Backplane (BP) Board to S8036MB | | | |
|---|---|---|---|
| **Cable** | **HDD BP 3 M1295T65A-BP12-8** | **Connect to** | **S8036GM2NE/MB** |
| | Mini-SAS 1 | → | Not connected |
| | Mini-SAS 2 | → | |

**B8036T65AV28HR-LE** SKU

| Front Backplane (BP) Board to S8036MB | | | |
|---|---|---|---|
| **Cable** | **HDD BP 1 M1295T65A-BP12-8** | **Connect to** | **S8036GM2NE-LE/MB** |
| SlimSAS 8I to Mini-SAS | J1 | → | SLIMSAS1 |
| SlimSAS 8I to Mini-SAS | J2 | → | |

| Front Backplane (BP) Board to S8036MB | | | |
|---|---|---|---|
| **Cable** | **HDD BP 2 M1295T65A-BP12-8** | **Connect to** | **S8036GM2NE-LE/MB** |
| SlimSAS 8I to Mini-SAS | J1 | → | SLIMSAS2 |
| SlimSAS 8I to Mini-SAS | J2 | → | |

| Front Backplane (BP) Board to S8036MB | | | |
|---|---|---|---|
| **Cable** | **HDD BP 3 M1295T65A-BP12-8** | **Connect to** | **S8036GM2NE-LE/MB** |
| | Mini-SAS 1 | → | Not connected |
| | Mini-SAS 2 | → | |

| Front Backplane (BP) Board to S8036MB | | | |
|---|---|---|---|
| **Cable** | **Front HDD BP M1298T65-BP12E-2** | **Connect to** | **S8036GM2NE/MB** |
| SATA 7P to SATA 7P | SATA0 | → | SATADOM1 |
| SATA 7P to SATA 7P | SATA1 | → | SATADOM2 |
| HDR cable | HDR1 | → | HDR3 |

| Rear Backplane (BP) Board to S8036MB | | | |
|---|---|---|---|
| **Cable** | **Rear HDD BP M1298T65-BP12E-2** | **Connect to** | **S8036GM2NE/MB** |
| SATA 7P to SATA 7P | SATA0 | → | SATA3 |
| SATA 7P to SATA 7P | SATA1 | → | SATA4 |
| HDR cable | HDR1 | → | HDR4 |

**2. System FAN cable**

| FAN | Connect to | HDD BP M1297T65-BP12E-12 |
|---|---|---|
| FAN1 | → | J2 |
| FAN2 | → | J4 |
| FAN3 | → | J5 |

**3. FAN Ctrl Cable**

| HDD BP M1296T65A-BPE-8 | Connect to | S8036GM2NE/MB |
|---|---|---|
| J7 | → | FAN_HD1 |

**4. FAN Ctrl Cable**

| HDD BP M1295T65A-BP12-8 | Connect to | S8036GM2NE-LE/MB |
|---|---|---|
| J3 | → | FAN_HD1 |

**5. Front Panel Control Cable**

| Front Panel M1701T70-FPB | Connect to | S8036GM2NE/MB S8036GM2NE-LE/MB |
|---|---|---|
| J1 | → | FPIO_2 |

**6. Front Panel USB Cable**

| Front Panel M1702T70-USB | Connect to | S8036GM2NE/MB S8036GM2NE-LE/MB |
|---|---|---|
| J2 | → | USB3_FPIO1 |

**7. Power Supply Cables**

| M7100F48B-PDB | Connect to | S8036GM2NE/MB<br>S8036GM2NE-LE/MB |
|---|---|---|
| PW5 | → | PW1 |
| PW6 | → | PW2 |
| PW7 | → | PW3 |
| J1 | → | PSMI HD1 |

**8. Power Supply Cables**

| M7100F48B-PDB | Connect to | HDD BP M1297T65-BP12E-12 |
|---|---|---|
| PW2 | → | PW1, PW2 |

**9. Power Supply Cables**

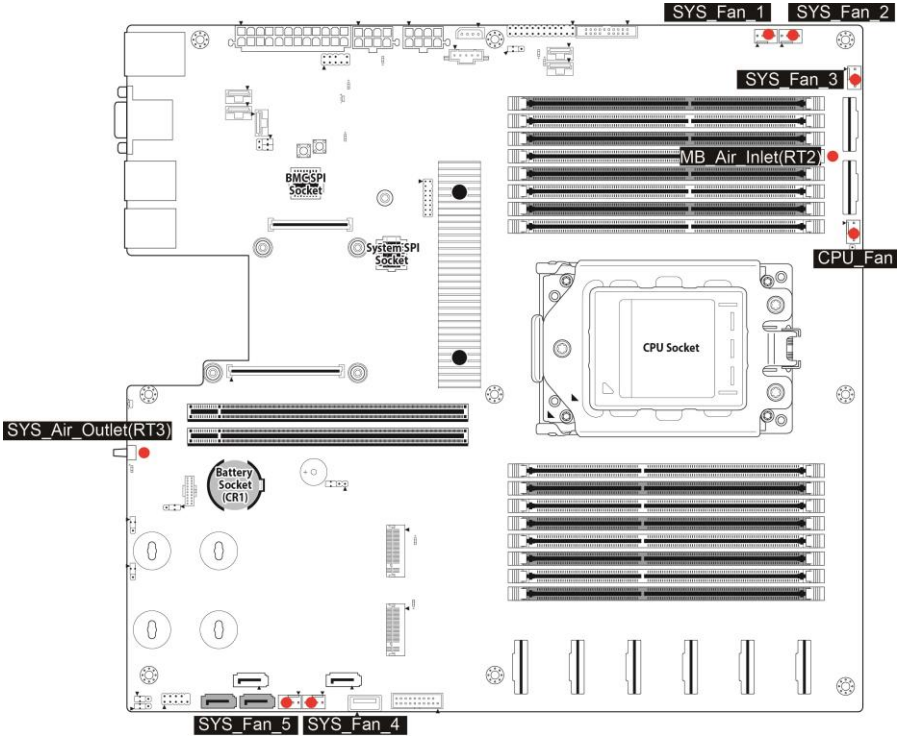
| M7100F48B-PDB | Connect to | Front HDD BP<br>M1298T65-BP12E-2 |
|---|---|---|
| PW9 | → | PW1 |

**10. Power Supply Cables**

| M7100F48B-PDB | Connect to | Rear HDD BP<br>M1298T65-BP12E-2 |
|---|---|---|
| PW9 | → | PW1 |

# 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.

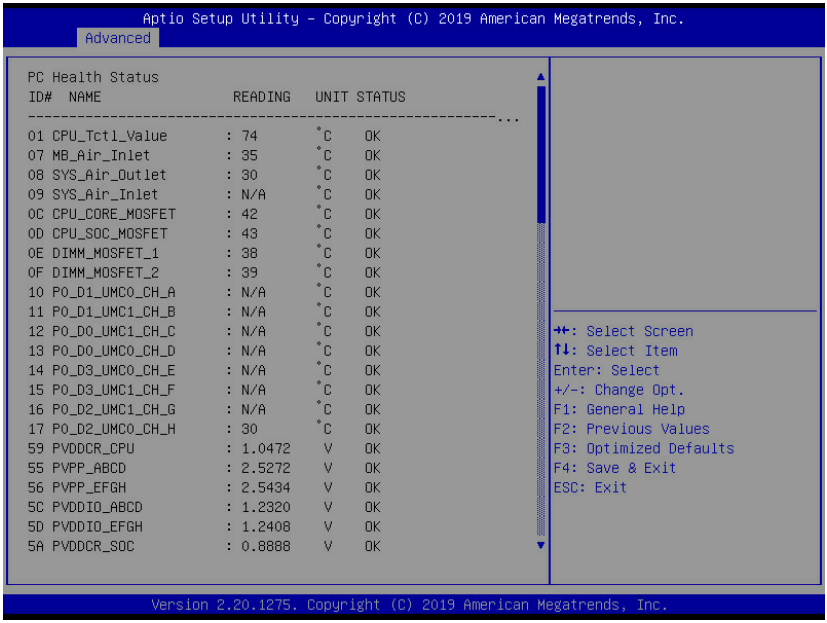


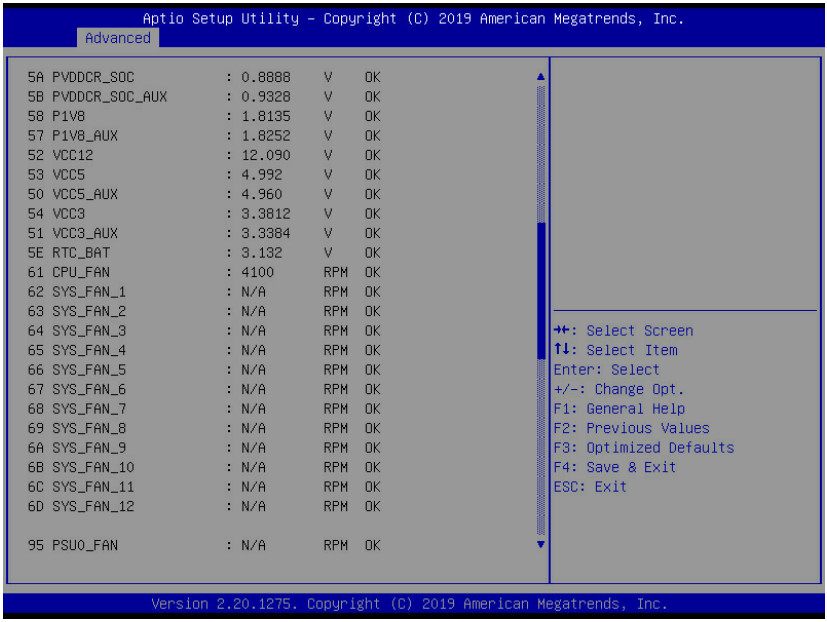

**NOTE:** The red dot indicates the sensor.

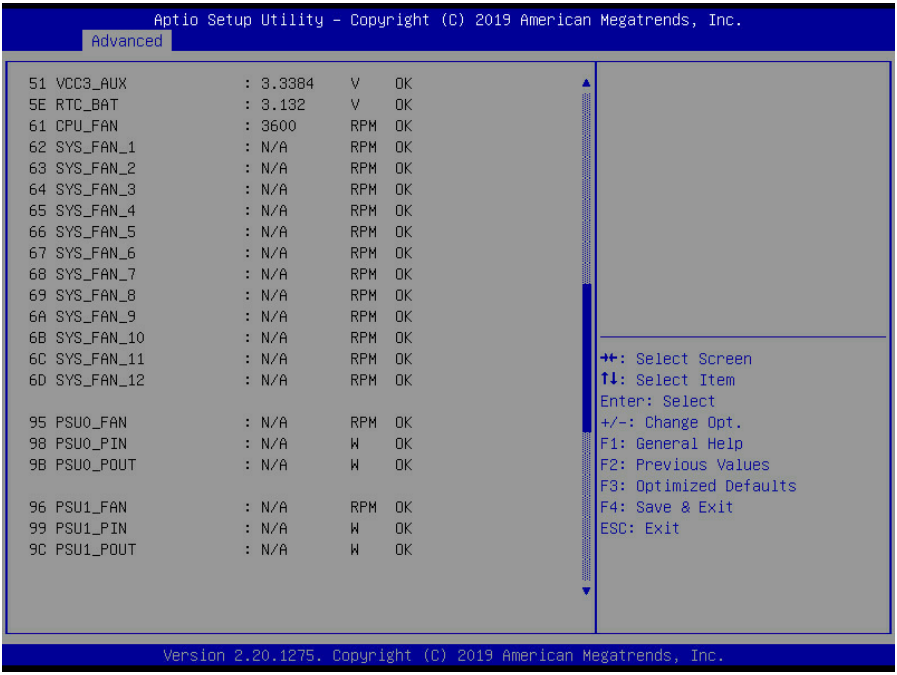
**Fan and Temp Sensor Location:**

1. Fan Sensor: It is located in the third pin of the fan connector, which detects the fan speed (rpm)
2. Temp Sensor: SYS_Air_Outlet(RT3) ,and MB_Air_Inlet(RT2) etc. They detect the system temperature around.
   **NOTE:** The system temperature is measured in a scale defined by **AMD**, not in Fahrenheit or Celsius.

## BIOS Temp Sensor Name Explanation:






| | |
|---|---|
| CPU_Tct1_Value | Temperature of the CPU_Tct1 |
| MB_Air_Inlet | Temperature of the MB_Air_Inlet Area |
| SAS_Air_Outlet | Temperature of the SAS_Air_Outlet Area |
| SAS_Air_Inlet | Temperature of the SAS_Air_Inlet Area |
| CPU_CORE_MOSFET | Temperature of the CPU_ CORE_MOSFET |
| CPU_SOC_MOSFET | Temperature of the CPU_ SOC_MOSFET |
| DIMM_MOSFET_1 | Temperature of the DIMM MOSFET_1 |
| DIMM_MOSFET_2 | Temperature of the DIMM MOSFET_2 |
| P0_D1_UMC0_CH_A | The highest temperature of CPU0 D1UMC0 channel A slot |
| P0_D1_UMC1_CH_B | The highest temperature of CPU0 D1 UMC1 channel B slot |
| P0_D0_UMC1_CH_C | The highest temperature of CPU0 D0 UMC1 channel C slot |
| P0_D0_UMC0_CH_D | The highest temperature of CPU0 D0 UMC0 channel D slot |
| P0_D3_UMC0_CH_E | The highest temperature of CPU0 D3 UMC0 channel E slot |
| P0_D3_UMC1_CH_F | The highest temperature of CPU0 D3 UMC1 channel F slot |
| P0_D2_UMC1_CH_G | The highest temperature of CPU0 D2 UMC1 channel G slot |
| P0_D2_UMC0_CH_H | The highest temperature of CPU0 D2 UMC0 channel H slot |
| **BIOS FAN Sensor** | **Name Explanation** |
| CPU0_FAN | Fan speed of CPU0_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 |

# Appendix IV: FRU Parts Table

| TS65A-B8036 FRU Parts | | | | |
|---|---|---|---|---|
| **Item** | **Model Number** | **Part Number** | **Picture** | **Description** |
| Power Supply | FRU-PS-0320 | 471100000417 |  | 1200 W,CHICONY |
| FAN | FRU-TH-0270 | 336210000065 |  | 22000RPM,40*40*28MM |
| Heatsink | FRU-TH-0310 | 343T60900003 |  | Heatsink |
| Air duct | FRU-TA-0180 | 344T60900011 |  | Air duct |
| PCBA | FRU-RC-1000 | 5411T6090008 |  | M8036-L24-3F Riser Card |
| | FRU-RC-1010 | 5411T6090007 |  | M8036-R24-3F Riser Card |
| Rack Mounting Parts | FRU-AS-0200 | 452T60900002 |  | TF-SLIDE RAIL KIT;SBU,SGCC+ STEEL+SCREW,TOOL-LESS, WITH LOCKIN,A5612650,KINGSLIDE,TS65-B8036 |
| Cable | FRU-CS-1210 | 422T60900001 |  | 250 mm,SlimSAS 8i to SlimSAS 8i CABLE,SlimSAS 8i 74P/SlimSAS 8i 74P |
| | FRU-CS-1170 | 422T60900002 |  | 550 mm,SlimSAS 8i to SlimSAS 8i CABLE,SlimSAS 8i 74P/SlimSAS 8i 74P |
| | FRU-CS-1220 | 422T60900005 |  | 550 mm,SlimSAS 8i to MiniSAS HD CABLE,SlimSAS 8i 74P/MiniSAS HD 36P*2 |
| | FRU-CS-0330 | 332810000514 |  | A/C Power Cord, L=1800mm, US type |
| | CCBL-0300 | 332810000281 |  | A/C Power Cord, L=1830mm, EU type |
| I/O PLATE SFP KIT | FRU-SI-0040 | 452T57200007 |  | TF-I/O PLATE SFP KIT;SBU,VIA LED ,SGCC+SCREW,GT62F-B5630 |
| I/O PLATE LAN KIT | FRU-SI-0120 | 452T57200001 |  | TF-I/O PLATE X557 KIT;SBU,SGCC+GASKET+SCREW ,FOR M7106-X557,GT62F-B5630 |

# 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 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.

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

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

**Help Resources:**

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

TYAN® TS65A-B8036 Service Engineer's Manual V1.0i

Document No.: D2480 - 100