TN70E-B8026

Service Engineer's Manual

PREFACE

Copyright

Version 1.0

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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 60950-1

This equipment is compliant with CB/LVD of Safety: IEC/EN 60950-1.

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 TN70E-B8026.

How this guide is organized

This guide contains the following parts:

Chapter 1: Overview
This chapter provides an introduction to the TYAN TN70E-B8026 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 TN70E-B8026, 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.

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.

Table of Contents

NOTE

Chapter 1: Overview

1.1 About the TYAN TN70E-B8026

Congratulations on your purchase of the TYAN® TN70E-B8026, a highly optimized rack-mountable barebone system. The TN70E-B8026 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®, TN70E-B8026 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 TN70E-B8026 not only empowers your company in nowadays IT demand but also offers a smooth path for future application usage.

TYAN® also offers the TN70E-B8026 in a version that can support up to twelve hot-swap 2.5”/3.5” SATA HDD/SSD or NVMe SSD and two hot-swap 2.5” SSD. The TN70E-B8026 uses TYAN®'s latest chassis, featuring a robust structure and a solid mechanical enclosure. All of this provides TN70E-B8026 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:

- **B8026T70EV10E4HR**: Intel-based platform, support (8) 3.5"/2.5" Hot-Swap HDD/SSD + (4) NVMe, (2) hot-swap 2.5” HDD/SSD

1.3 Features

B8026T70EV10E4HR Specifications

System	Net weight	19 kg (42 lbs)
	Form Factor	2U Rackmount
	Chassis Model	TN70E
	Dimension (D x W x H)	27.56" x 17.72" x 3.43" (700 x 450 x 87mm)
	Motherboard	S8026GM2NRE
	Gross Weight	30 kg (66 lbs)
Front Panel	Buttons	(1) RST, (1) PWR w/ LED, (1) ID
	LEDs	(1) ID, (1) BMC event
	I/O Ports	(2) USB 2.0 ports
External Drive Bay	Type / Q'ty	3.5"/2.5" Hot-Swap SSD/HDD + NVMe/ (8) + (4)
	HDD Backplane Support	SAS 12Gb/s, SATA 6Gb/s, NVMe
	Supported HDD Interface	(8) SATA 6Gb/s + (4) NVMe
Internal Drive Bay	Type / Q'ty	(2) 2.5" Hot-swap HDD/SSDs
	Supported HDD Interface	(2) SATA 6Gb/s
System Cooling Configuration	FAN	(8) 6cm fans
Power Supply	Type	RPSU
	Input Range	AC 100-127V/10A, AC 200-240V/5A
	Frequency	50-60 Hz
	Output Watts	770 Watts
	Efficiency	80 plus Platinum
	Redundancy	1+1
Processor	Socket Type / Q'ty	AMD Socket SP3/ (1)
	Average CPU Power (ACP) wattage	Max up to 180W
	Supported CPU Series	(1) AMD EPYC™ 7000 Series Processor

Memory	**Supported DIMM Qty**		(16) DIMM slots
	DIMM Type / Speed		DDR4 ECC RDIMM/LRDIMM/NVDIMM 2667
	Capacity		Up to 1,024GB RDIMM/LRDIMM
	Memory channel		8 Channels
	Memory voltage		1.2V
Expansion Slots	**PCI-E**		(2) PCI-E Gen3 x8 slots, (2) PCI-E Gen3 x8 slots (w/ x0 link or x8 link), (2) PCI-E Gen3 x16 slot (w/ x16 link or x8 link), *Without using OCP 2.0 Mezz card, please contact with Tyan technical support for details.
	Pre-install TYAN Riser Card		M7106-L24-3F, M7106-R24-3F
	Others:		(1) PCI-E Gen3 x16 OCP 2.0 slots (conn.A+conn.B)
LAN	**Port Q'ty**		(2) GbE ports, (1) PHY dedicated for IPMI
	Controller		Broadcom BCM5720
	PHY		Realtek RTL8211E
Storage	**SATA**	**Connector**	(2) SFF-8612 for (16) SATA ports
		Controller	Direct from AMD CPU
		Speed	6.0 Gb/s
		RAID	N/A
	NVMe	**Connector (M.2)**	(2) 22110/2280/2260/2242 (by PCI-E & SATA interface)
		Connector (OCuLink)	(4) SFF-8612 for (8) NVMe ports
Graphic	**Connector type**		D-Sub 15-pin
	Resolution		Up to 1920x1200
	Chipset		Aspeed AST2500
I/O Ports	**USB**		(3) USB3.0 ports (2 at rear, 1 TYPE-A)/ (2) USB2.0 ports (2 at front)
	COM		(1) DB-9 port (COM1) + (1) header (COM2)
	VGA		(1) D-Sub 15-pin port

	RJ-45	(2) GbE ports, (1) GbE dedicated for IPMI
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	**AST2500 iKVM Feature**	IPMI 2.0 compliant baseboard management controller (BMC), Supports storage over IP and remote platform-flash, USB 2.0 virtual hub
	AST2500 IPMI Feature	24-bit high quality video compression, 10/100/1000 Mb/s MAC interface
	Onboard Chipset	Onboard Aspeed AST2500
BIOS	**Brand / ROM size**	AMI, 32MB
	Feature	Hardware Monitor, Boot from USB device/PXE via LAN/Storage, User Configurable FAN PWM Duty Cycle, Console Redirection, ACPI 6.1, SMBIOS 3.1/PnP/Wake on LAN, ACPI sleeping states S5
Operating System	**OS supported list**	Please refer to our AVL support lists.
Regulation	**CB/LVD**	Yes
	RCM	Class A
	FCC (DoC)	Class A
	CE (DoC)	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	**Manual**	(1) Quick Installation Guide
	Installation CD	(1) TYAN Device Driver CD
	Barebone	(1) TN70A-B8026 Barebone

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 TN70E-B8026 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

- (1) 2U chassis
- (2) DELTA, DPS 770GB C 770W Power Supply (pre-installed)
- (8) 60x38mm Fan (pre-installed)
- (1) S8026GM2NRE MB
- (1) M1701T70-FPB Front Panel Board
- (1) M1702T70-USB USB Board
- (1) M1806G70-FB Fan Board
- (1) M1601T70E-D-PDB Power Distribution Board
- (1) M7106-R24-3F riser card#1
- (1) M7106-L24-3F riser card#2
- (1) M1290T70E-BP12E-12-1 HDD Backplane
- (1) M1287G88-BP12-2 HDD Backplane

1.4.2 Accessories

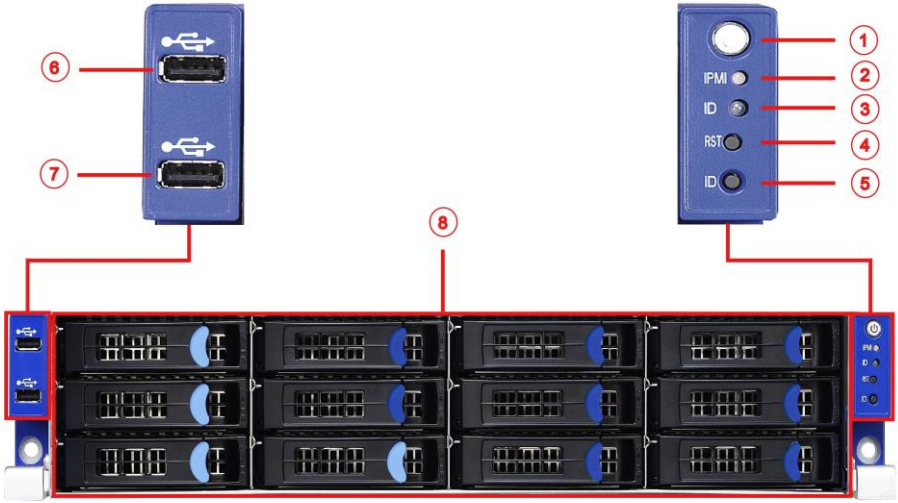
If any items are missing or appear damaged, contact your retailer or browse to TYAN's website for service: http://www.tyan.com

- (1) Rail kit
- (2) CPU Heatsink
- (2) CPU Clip
- (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) TYAN Driver CD
- (1) M.2 Screw

1.5 About the Product

The following views show you the product.

1.5.1 System Front View



HDD/NVMe Sequence

NVMe2/HDD2	SSD/HDD5	SSD/HDD8	SSD/HDD11
NVMe1/HDD1	SSD/HDD4	SSD/HDD7	SSD/HDD10
NVMe0/HDD0	NVMe3/HDD3	SSD/HDD6	SSD/HDD9

M1701T70-FPB Front Panel Board			
1	Power Button with green LED	5	ID Button
2	IPMI LED	6	USB 2.0 Port
3	ID LED	7	USB 2.0 Port
4	RESET Button	8	3.5” /2.5” SSD/ HDD bays

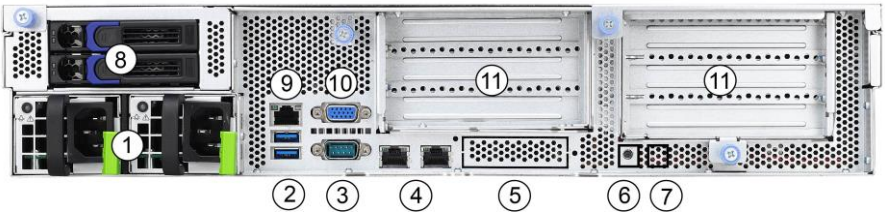
Front Panel LED Definitions (M1701T70-FPB)

LED	State	Color	Description
Power On/Off LED	On	Green	System is turned on
	Blinking	Green	System is under S1 or S3 state
	Off	Off	Power off
Warning (IPMI) LED	On	Amber	Fan fail / Over temperature / Over Voltage / PSU fail
	On	Green	No failure
ID LED	On	Blue	System identified remotely on the server, by clicking the Chassis Locate LED key.*
	Off	Off	System not identified

HDD LED

LED	Color	State	Description
HDD fail LED	Red	ON	NVME/SATA/SAS HDD fail
		OFF	No failure found
HDD Power/ Access LED	Green	ON	NVME/SATA/SAS HDD ready
		Blinking	NVME/SATA/SAS HDD access acivity
		OFF	Power disconnected

1.5.2 System Rear View



1	(2)770GB C 770W Power Supply	7	ID LED (Blue)
2	(2)USB3.0 Ports	8	(2)2.5” Hot-swap HDD/SSD bays
3	Serial Port	9	RJ45(LAN3) dedicate to BMC
4	RJ45(LAN1)&RJ45(LAN2)	10	VGA Port
5	Mezz Card I/O (reserved for OCP2.0 Mezz card)	11	Expansion Slots(Gen3 x16 via 2 riser cards)
6	ID Button		

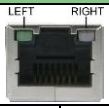
ID LED

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.

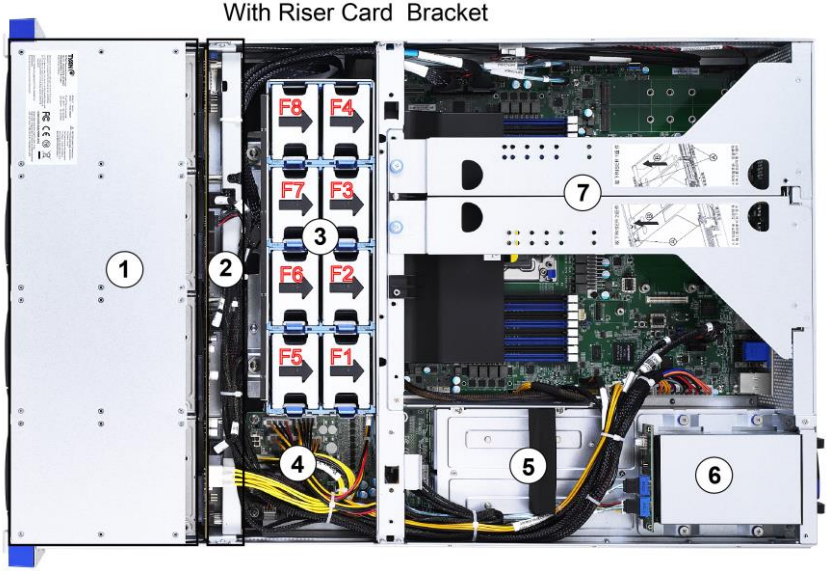
Rear I/O: Onboard LAN LED Color Definition

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

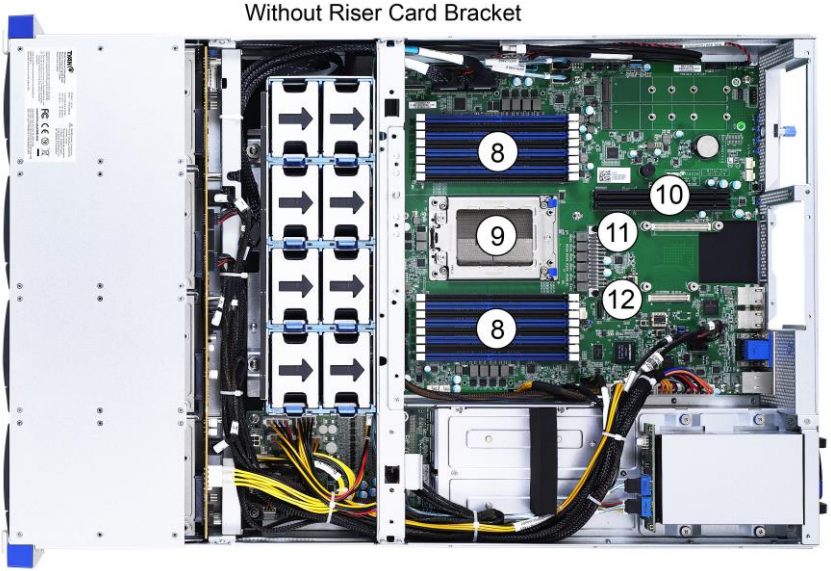
10/100/1000 Mbps LAN Link/Activity LED Scheme			
		**Left LED**	**Right LED**
10 Mbps	**Link**	Green	Off
	Active	Blinking Green	Off
100 Mbps	**Link**	Green	Green
	Active	Blinking Green	Green
1000 Mbps	**Link**	Green	Amber
	Active	Blinking Green	Amber
No Link		Off	Off

1.5.3 System Top View

With Riser Card Bracket



Without Riser Card Bracket



1	(12) Hot-swap 3.5’/2.5’ HDD trays
2	M1290T70E-BP12E-12-1 HDD Backplane Board
3	(8) System fans
4	M1601T70E-D-PDB Power Distribution Board
5	DELTA, DPS 770GB C 770W Power Supply
6	(2) Hot-swap 2.5” SSD trays
7	Riser Card Bracket (M7106-L24-3F, M7106-R24-3F pre-installed)
8	Memory Slots
9	CPU Sockets
10	PCIE3.0 SLOT x24
11	OCP A Slot (OCP1_A)
12	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 TN70E-B8026 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 TN70E-B8026 chassis cover.

1. Remove the screw on the left side, and unscrew the rear top cover on the back side.

2. Slide to lift the rear top cover up.

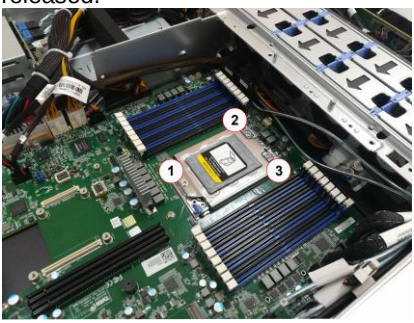
2.1.2 Removing the Air Duct

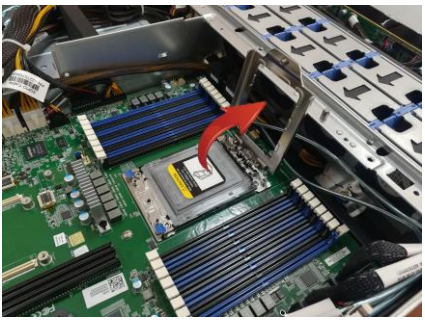
1. Remove the air duct from the chassis.

2.1.3 Installing the CPU and Heatsink

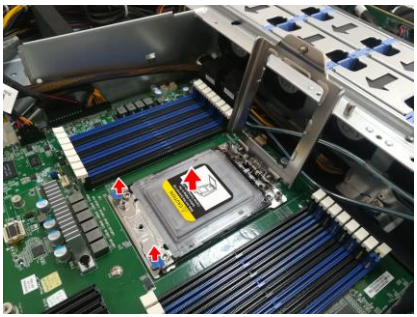
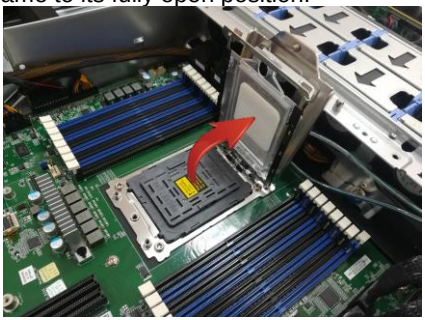
Follow the steps below on installing CPUs and CPU heat sinks.

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.

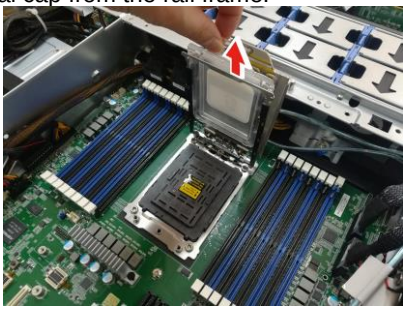




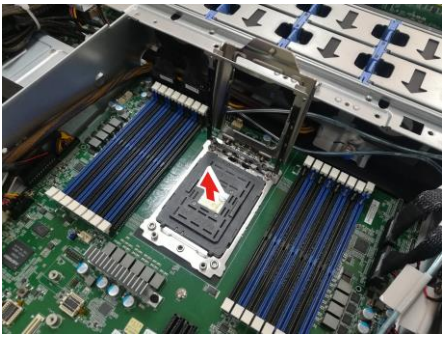
2. By placing your both index fingers on the sides on the metal handle, pull to release the rail frame. Then lift the rail frame to its fully open position.

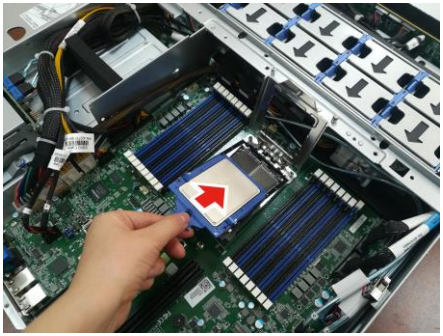
3. Remove the external cap from the rail frame.

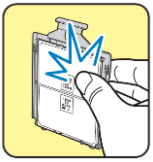


4. Using your thumbs and forefinger, remove the PnP cap by lifting it up vertically.



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



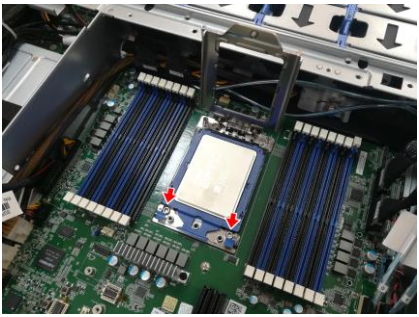


NOTE:

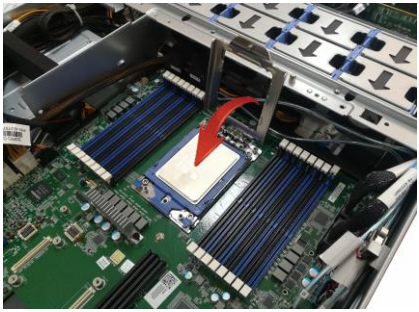
During installation, observe the following:

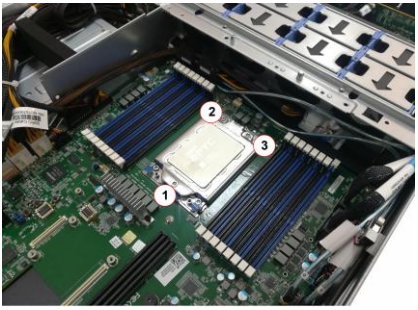
1. Make sure to push the carrier frame with package towards the end of the rail frame until it clicks into place.
2. Do not drop the carrier frame or touch the package pad to avoid component damage.

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

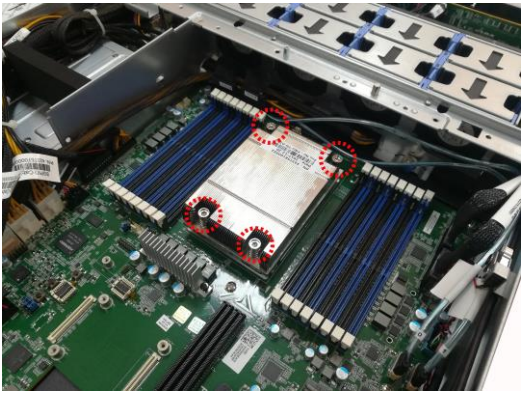


7. Close the force frame. Then use a T20 Torx screwdriver to tighten the screws to secure the force frame in a sequential order (1 ->2->3).





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.



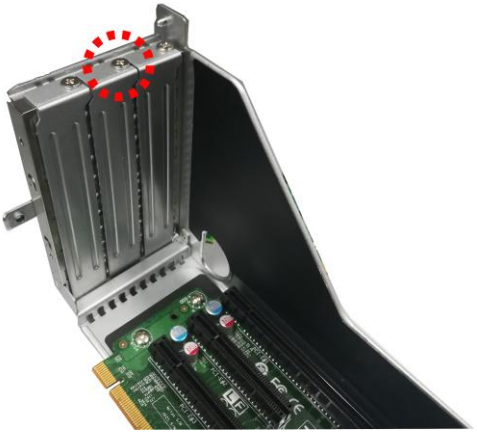
2.1.4 Installing the PCI-E Card

Follow these instructions to install the PCI-E card.

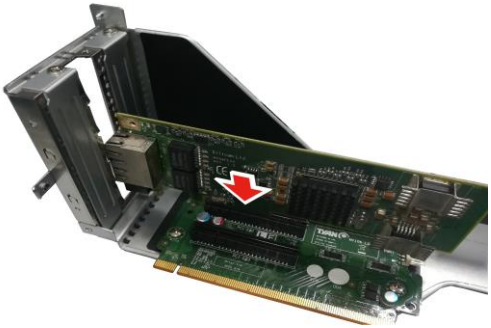
1. Unscrew the riser card bracket.

2. Remove the riser card bracket from the chassis.

3. Unscrew to remove the dummy brackets.

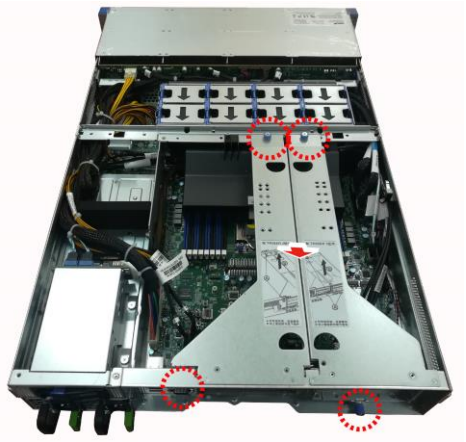


4. Insert the PCI-E card into the riser card bracket and screw it firmly. Follow the same procedures to insert the card to the other side of the riser card bracket if necessary.



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.

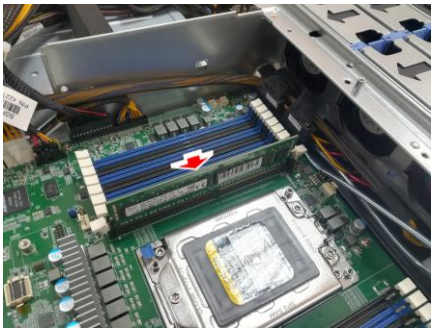


2.1.5 Installing the Memory

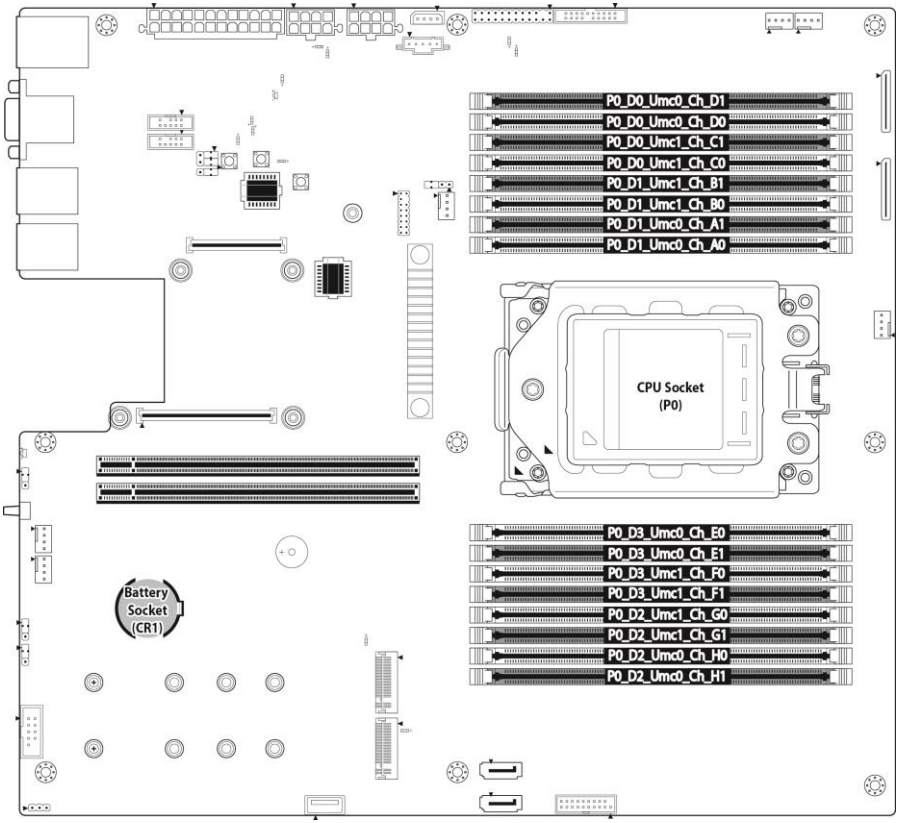
Follow these instructions to install the memory modules onto the motherboard.

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



2.1.6 Installing Hard Drives

The TN70E-B8026 supports twelve 3.5”/2.5” hot-swap HDD/SSDs and two 2.5” hot-swap SSDs.

Installing 3.5” Hot-Swap Hard Drives

Follow these instructions to install a 3.5” 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. Place the 3.5” hard disk drive into the HDD tray and secure the HDD to the HDD tray using 4 screws.

4. 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” HDD/SSD.

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. Place the 2.5” HDD/SSD into the HDD tray and align the 2.5” HDD/SSD with its guide pins.

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

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

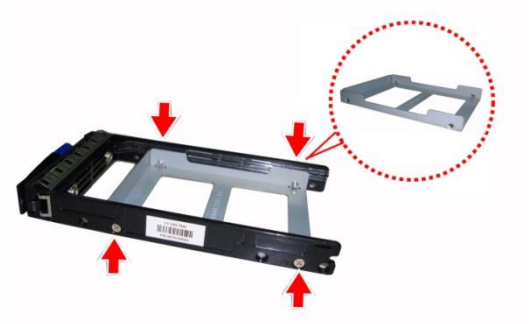
Installing 2.5” Hot-Swap Hard Drives

Follow these instructions to install a 2.5” SSD.

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. Remove the 4 screws to detach HDD tray bracket.



3. Secure one side HDD screws.

4. Secure the other side HDD screws.

5. 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 TN70E-B8026 can be mounted in a rack using the supplied rack mounting kit.

Sliding Rail Kit

- Sliding Rails x 2
- Rail screw Pack x 1

A	B
	
M5 screw + Washer (8 pairs)	M5 black screw (2 pcs)

Mounting Ear Kit

- Mounting Ears x 2
- Mounting Ears screw Pack x 1

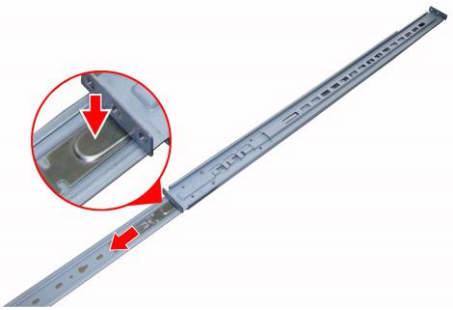
2.2.1 Installing the Server in a Rack

Follow these instructions to mount the TYAN TN70E-B8026 into an industry standard 19" rack.

NOTE: Before mounting the TYAN TN70E-B8026 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.

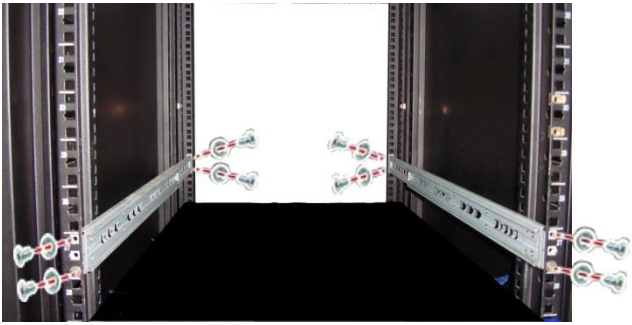


2. Align the inner sliding rail on the side of the server, and pull towards the arrow to secure the hooks

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

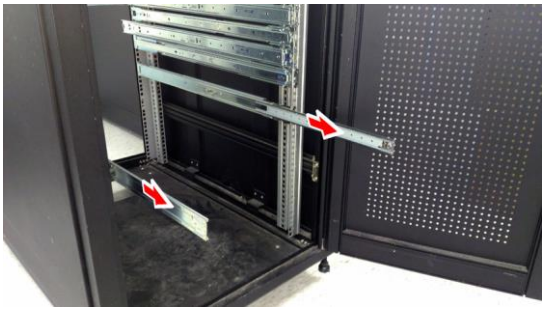
Installing the Outer Rails to the Unit

Secure the outer rails to the rack using four M5 screws and four washers (A) 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 mounting ears of the unit to the rack using two M5 x 20L screws (C).

NOTE

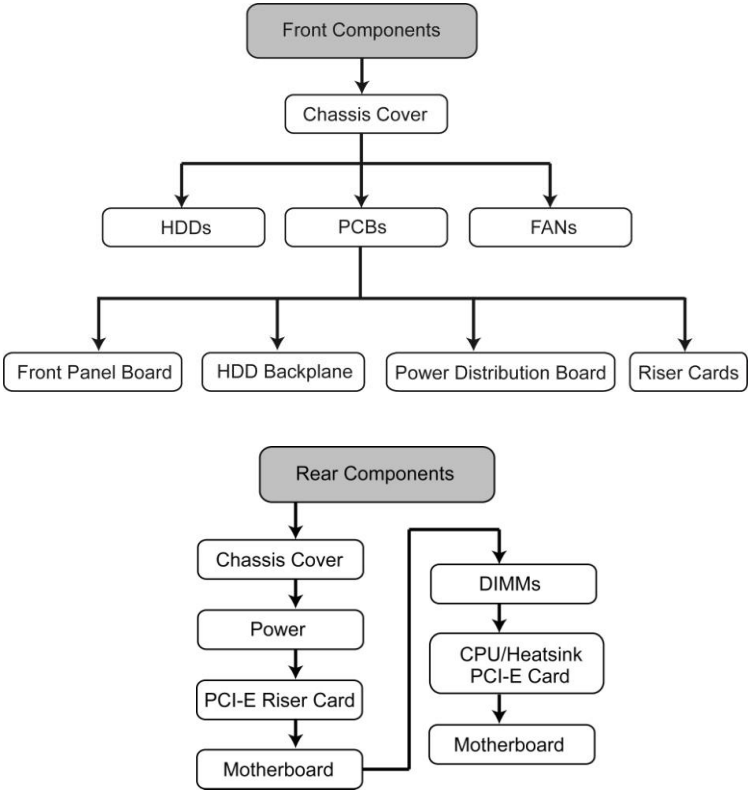
Chapter 3: Replacing Pre-Installed Components

3.1 Introduction

This chapter explains how to replace the pre-installed components, including the Motherboard, M1701T70-FP Front Panel Board, M1702T70-USB Board, M1290T70E-BP12E-12-1 HDD Backplane, M1287G88-BP12-2 HDD Backplane, M1601T70-D-PDB Power Distribution board, M7106-L24-3F and M7106-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 TN70E-B8026.

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 M7106-L24-3F and M7106-R24-3F Riser cards.

1. Unscrew the riser card bracket.

2. Remove the riser card bracket from the chassis.

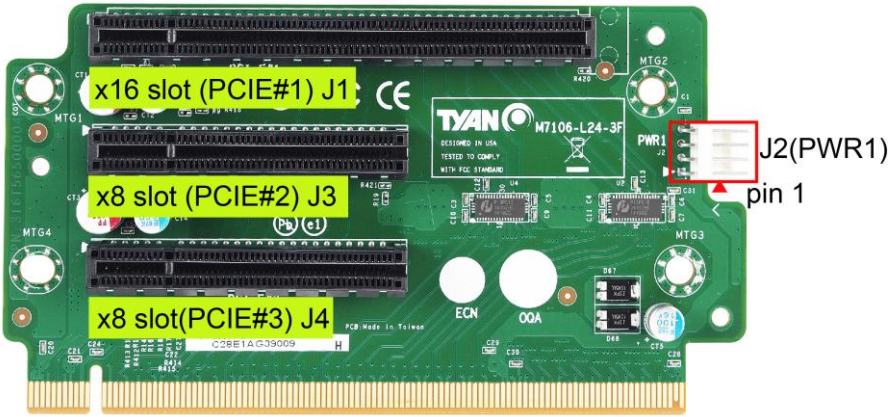
3. Unscrew the M7016-L24-3F riser card to replace with a new one.

4. Unscrew the M7016-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

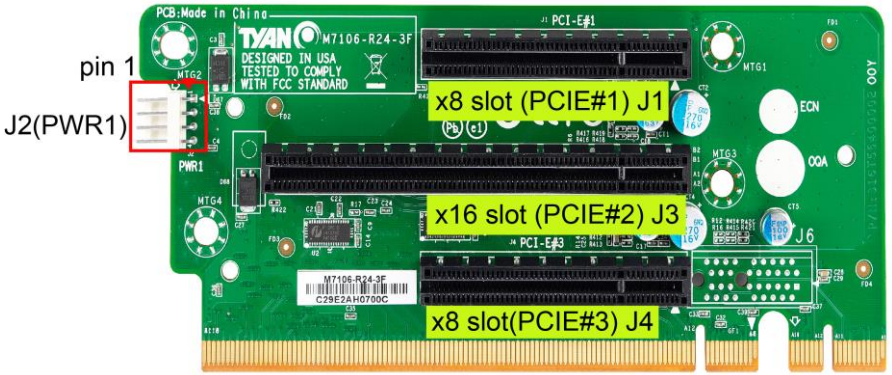
M7106-L24-3F Riser Card



3.4.3 Connector Pin Definition (M7106-L24-3F)

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

M7106-R24-3F Riser Card



3.4.4 Connector Pin Definition (M7106-R24-3F)

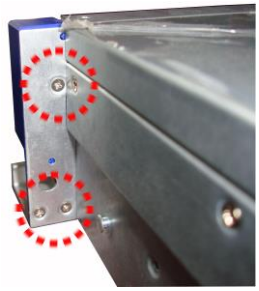
Location	Definition
J1	PCIe X8 SLOT
J2	4Pin Power Connector
J3	PCIe X16 SLOT
J4	PCIe X8 SLOT

	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 M1701T70-FP Front Panel Board.

1 Unscrew to release the Front Panel Board cover.



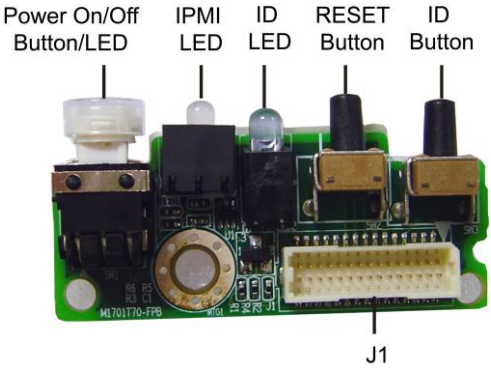
2 Remove the Front Panel Board cover.

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



Form Factor	➢ 18.5MMx44.2MM, 4-layer PCB
Connectors	➢ One 2x15 pin header for front panel connector of motherboard and HDD backplane board
LEDs	➢ Power On/Off LED Color: Green (after power on) ➢ ID LED Color: Blue ➢ Warning (IPMI) LED Dual Color: Amber (Warning) / Green (Normal)
Push buttons	➢ RESET button ➢ ID button ➢ Power On/Off button with Power On/Off LED

3.5.2 FPB LED and Connector Pin Definition

LED	State	Color	Description
Power On/Off LED	On	Green	System is turned on
	Blinking	Green	System is under S1 or S3 state
	Off	Off	Power off
Warning (IPMI) LED	On	Amber	Fan fail / Over temperature / Over Voltage / PSU fail
	On	Green	No failure
ID LED	On	Blue	System identified remotely on the server, by clicking the Chassis Locate LED key.*
	Off	Off	System not identified

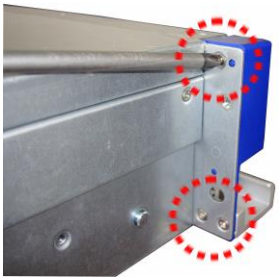
J1: FPIO connector

Definition	Pin	Pin	Definition
PW_LED+	1	2	+5VSB
Key	3	4	ID_LED+
PW_LED-	5	6	ID_LED-
HD_LED+	7	8	LED_FAULT1-
HD_LED-	9	10	LED_FAULT2-
PWR_SW+	11	12	LAN_ACT
PWR_SW-	13	14	LAN_LINK#
RESET+	15	16	SMB_DAT
RESET-	17	18	SMB_CLK
ID_SW-	19	20	NC
Temp_sensor	21	22	NC
NC	23	24	NC
SMB_ALR	25	26	FPB_HDD_ACTIVITY_G-
SMB_CLK	27	28	FPB_HDD_FAULT_R-
SMB_DAT	29	30	GND

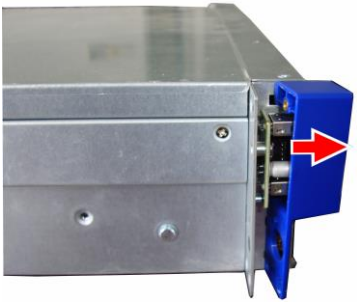
3.6 Replacing the USB Board

Follow these instructions to replace the M1702T70-USB Board.

1 Unscrew to release the USB front cover.



2 Remove the USB front cover.

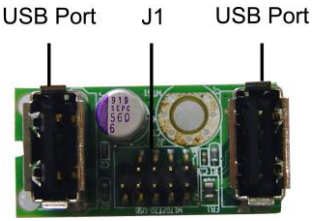


3 Unscrew the USB Board.

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



Form Factor	➢ 35 mmx17 mm, 4-layer PCB
Connectors	➢ One 2x5 pin header for front panel connector of motherboard ➢ 2 USB ports

3.6.2 USB Board Connector Pin Definition

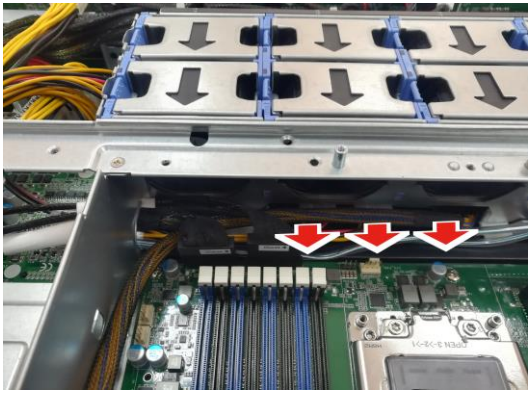
J2: 2x5-pin Connector for FP Connector of Motherboard

Pin	Definition	Description	Pin	Definition	Description
1	VCC_USB	USB power	2	VCC_USB	USB power
3	USB_P0_N	Port1(J1) USB-	4	USB_P1_N	Port2(J3) USB-
5	USB_P0_P	Port1(J1) USB+	6	USB_P1_P	Port2(J3) USB+
7	GND1	Ground	8	GND2	Ground
9	NP		10	NC	No connect

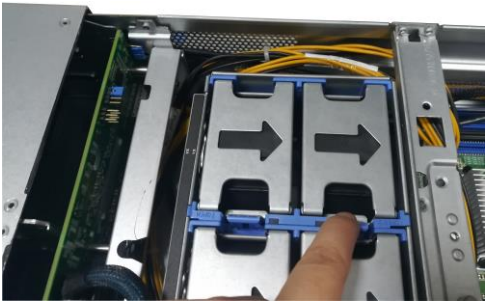
3.7 Replacing the System Fan

Follow these instructions to replace the fan.

1. Disconnect the power cable.

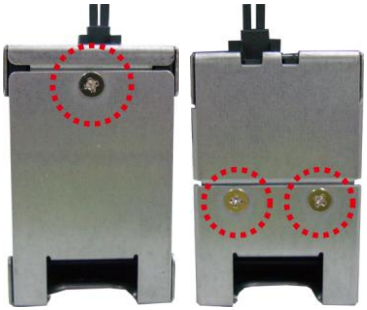


2. Press the button to take out the fan from the chassis.

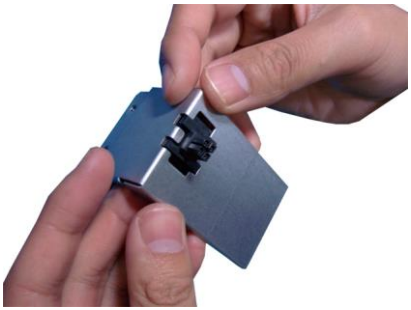


3. Release the rubber screws from the fan.

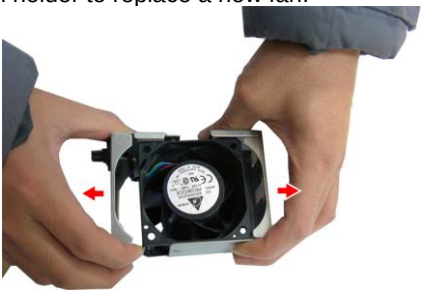
4. Loose the screws on both sides.



5. Push the latch in the direction as the arrow shown to release the fan from the iron holder.



6. Remove the iron holder to replace a new fan.

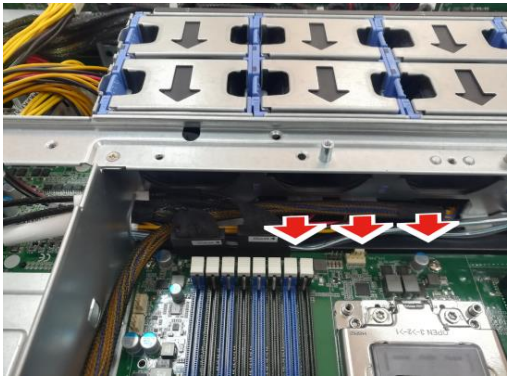


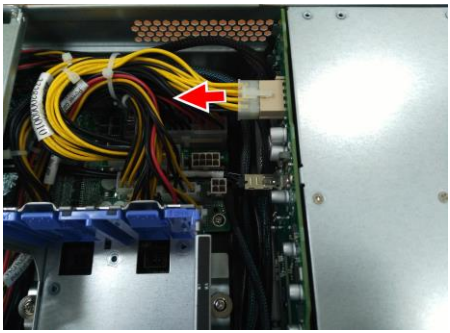
7. After replacing a new one, put the fan unit back into the cage.

3.8 Replacing the Fan Backplane Board

Follow these instructions to replace the M1806G70-FB Fan Board in your system.

1. Disconnect all the fan power cable.

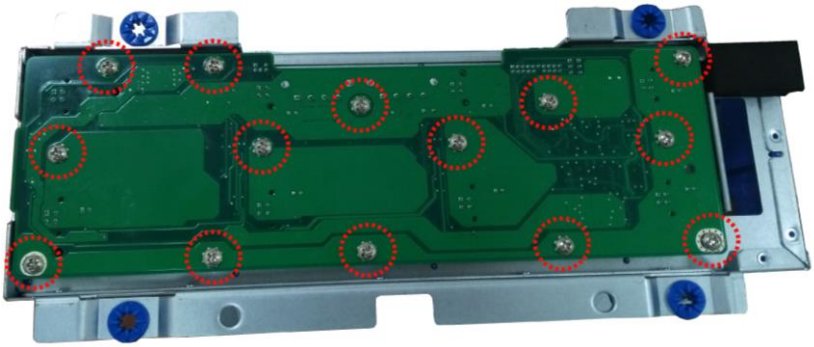




2. Use a screw driver to unscrew the fan cage.

3. And lift it up from the chassis.

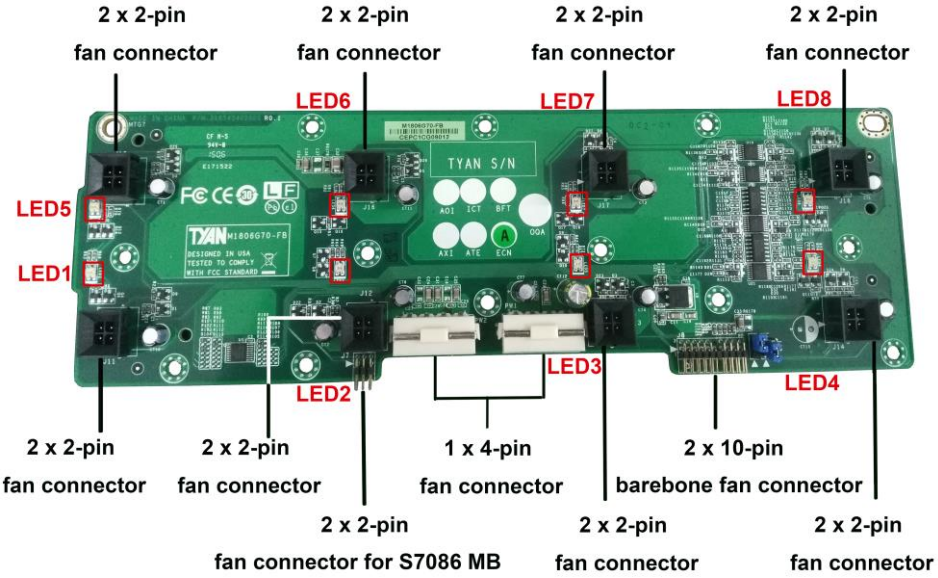
4. Release the 14 screws on the Fan Backplane Board to replace a new one.



5. Follow the steps described in reverse order to reinstall the fan cage.

3.8.1 Fan BP Board Specifications

Here shows the M1806G70-FB Fan Backplane Board in details.



Form Factor	➢ 254 mm x 82 mm, 4-layer PCB
Integrated I/O	➢ (2) 1x4pin R/A Power Connector ➢ (8) 2x2pin Fan Connectors ➢ (1) 2x10pin Barebone Fan Connector ➢ (1) 2x2pin Connector for S7086

3.8.2 Fan BP Board LED Definitions

	FAN Status	Green LED(Right)	Red LED(Left)
	With Fan	On	Off
	Without Fan	Off	On

3.8.3 Connector Pin Definitions

Power Connector (PWR1/PWR2)

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

Barebone Fan Connector (J8)

Definition	Pin	Pin	Definition
FANIN1	1	2	FANIN6
FANIN2	3	4	FANIN7
FANIN3	5	6	FANIN8
FANIN4	7	8	SIO_FANIN1
FANIN5	9	10	SIO_ FANIN2
GND	11	12	Key
MB_PWM2	13	14	MB_PWM1
SIO_ FANIN3	15	16	SMBUS_3V3_DATA
SIO_ FANIN4	17	18	SMBUS_3V3_CLK
VDD_3.3_AUX	19	20	MB_PWM3

3.9 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 M1290T70E-BP12E-12-1 HDD Backplane. Remove the fan cage.

1. Unscrew the HDD BP Board.

2. Lift up the HDD Backplane bracket.

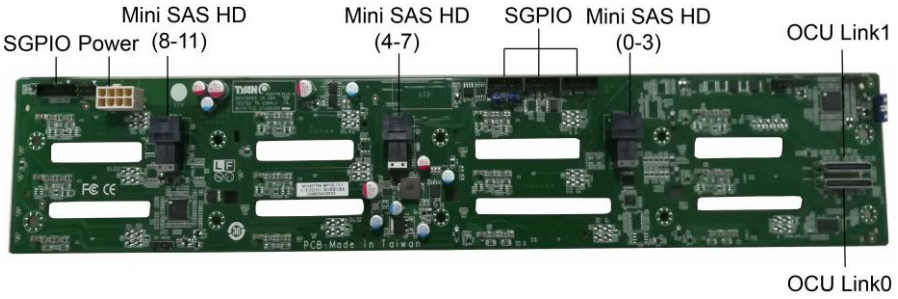
3. The HDD BP Board bracket is as shown below.

4. Unscrew the backplane and replace with a new HDD backplane board.

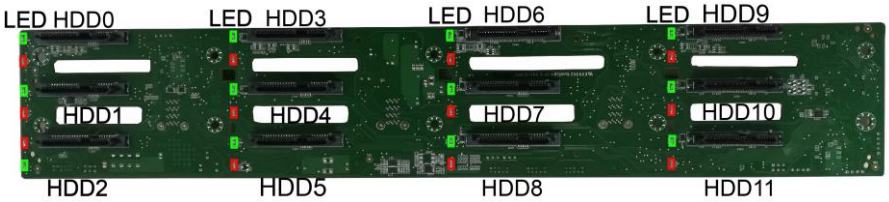
5. Follow the procedures described earlier to reinstall the HDD backplane board bracket into the chassis.

3.9.1 HDD Backplane Board Features

Front View



Rear View



Form Factor	Dimension: 422.4*29.8mm
Specifications Overview	(2) OCU Link Connector Input (3) Mini SAS HD Connector Input (4) SGPIO Header (12) SATA HDD or (8) SATA HDD + (4) NVMe Output

3.9.2 Connector Definition

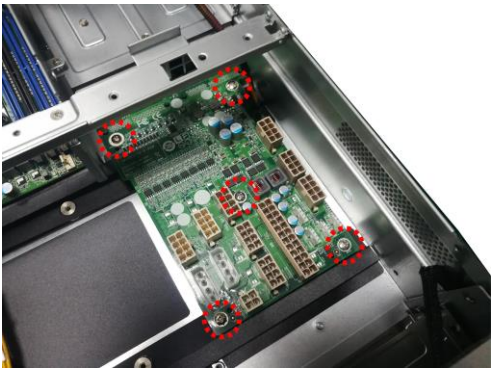
Location	Definition
HDD0	SATA + NVMe Connector
HDD1	SATA + NVMe Connector
HDD2	SATA + NVMe Connector
HDD3	SATA + NVMe Connector
HDD4	SATA Connector
HDD5	SATA Connector
HDD6	SATA Connector
HDD7	SATA Connector
HDD8	SATA Connector
HDD9	SATA Connector
HDD10	SATA Connector
HDD11	SATA Connector
SATA0_3	Mini SAS HD Connector
SATA4_7	Mini SAS HD Connector
SATA8_11	Mini SAS HD Connector
NVME01	OCULink Connector
NVME23	OCULink Connector
PW1	Power Connector

3.10 Replacing the Power Distribution Board

Follow these instructions to replace the M1601T70E-D-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.

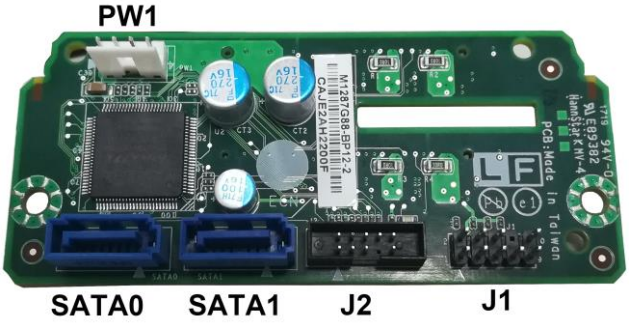
3.11 Replacing the Rear HDD Backplane Board

Follow the instructions to replace the M1287G88-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:	93*36*2mm
Layer:	4 layers
Integrated I/O	(2) SATA Connectors (1) JTAG Jumper(J1) (1) SGPIO Connector(J2) (2) 7-pin SATA connector (1) 4 Pin Power connector

3.11.2 Connector Definition

HDD0: HDD Connector

Definition	Pin	Pin	Definition
SAS_TX0+	S2	S3	SAS_TX0-
GND	S4	S5	SAS_RXBN0
SAS_RXBP0	S6	S7	GND
SAS0_PRESENT_L	S8	S9	NC
NC	S10	S11	GND
NC	S12	S13	NC
GND	S14	P1	NC
NC	P2	P3	NC
GND	P4	P5	GND
GND	P6	P7	HD0_V5
VDD_5_RUN	P8	P9	VDD_5_RUN
HD0_PRS_L	P10	P11	SAS0_LED
GND	P12	P13	HD0_V12HD
VDD_5_RUN	P14	P15	VDD_5_RUN
GND	S1	GND1	GND
GND	GND2		

HDD1: HDD Connector

Definition	Pin	Pin	Definition
SAS_TX1+	S2	S3	SAS_TX1-
GND	S4	S5	SAS_RXBN1
SAS_RXBP1	S6	S7	GND
SAS0_PRESENT_L	S8	S9	NC
NC	S10	S11	GND
NC	S12	S13	NC
GND	S14	P1	NC
NC	P2	P3	NC
GND	P4	P5	GND
GND	P6	P7	HD1_V5
VDD_5_RUN	P8	P9	VDD_5_RUN
HD1_PRS_L	P10	P11	SAS1_LED
GND	P12	P13	HD1_V12HD
VDD_5_RUN	P14	P15	VDD_5_RUN
GND	S1	GND1	GND
GND	GND2		

SATA0: SATA Connector

Definition	Pin	Pin	Definition
GND	1	2	SAS_TX0+
SAS_TX0-	3	4	GND
SAS_RXBN0	5	6	SAS_RXBP0
GND	7		

SATA1: SATA Connector

Definition	Pin	Pin	Definition
GND	1	2	SAS_TX1+
SAS_TX1-	3	4	GND
SAS_RXBN1	5	6	SAS_RXBP1
GND	7		

J1: JTAG Connector

Definition	Pin	Pin	Definition
CPLD_JTAG_TCK	1	2	GND
CPLD_JTAG_TDO	3	4	VDD_3P3_RUN
CPLD_JTAG_TMS	5	6	NC
NC	7	8	NC
CPLD_JTAG_TDI	9	10	GND

J2: SGPIO Connector

Definition	Pin	Pin	Definition
SMBUS_3V3_CLK	1	2	SAS_SIO_DIN_A
SMBUS_3V3_DATA	3	4	SAS_SIO_DOUT_A
GND	5	6	SAS_SIO_END_A
NC	7	8	SAS_SIO_CLK_A
VCC3_AUX	9	10	NC

PW1: Power Connector

Definition	Pin	Pin	Definition
VDD_12_RUN	1	2	GND
GND	3	4	VDD_5_RUN

3.12 Replacing the Power Supply

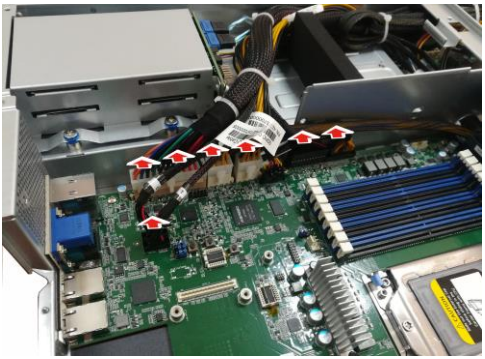
Follow these instructions to replace the power supply module in your system.

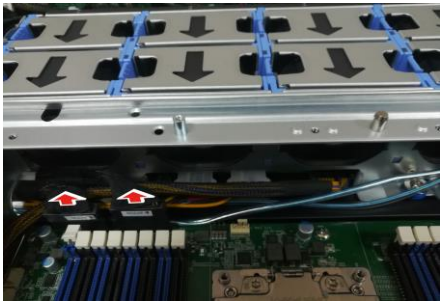
1. Press the latch to pull the power supply out.

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.

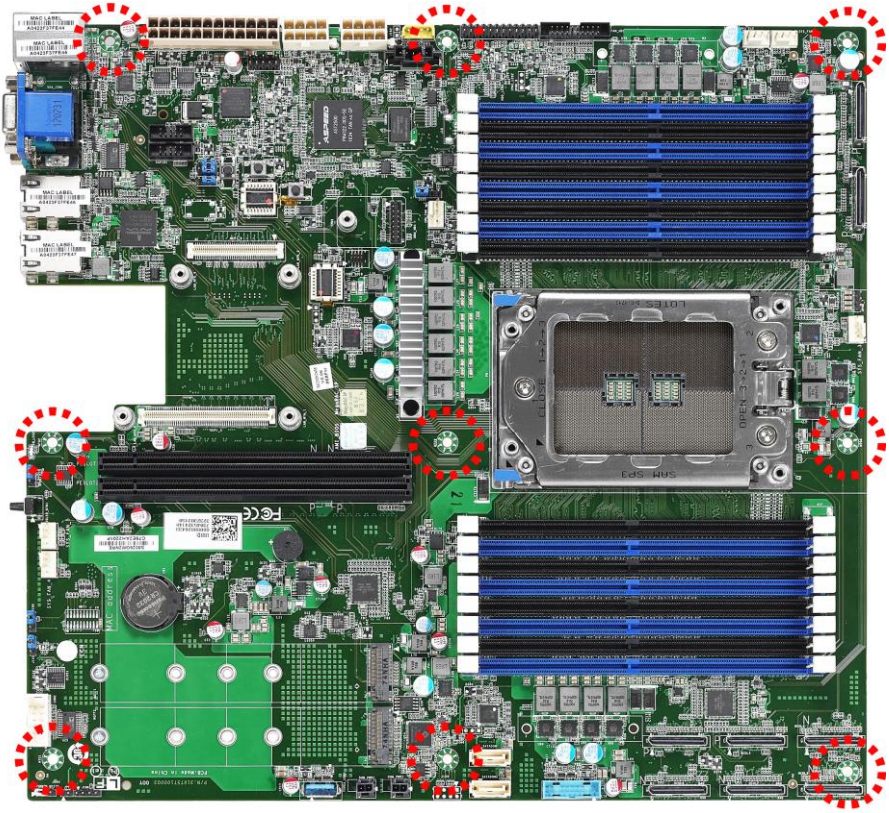




3.13.1 Removing the Motherboard

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

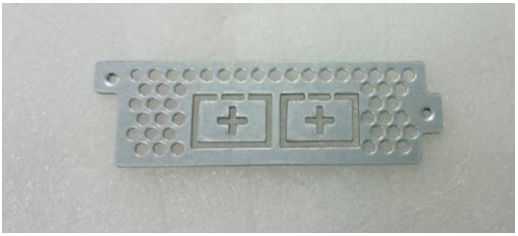
Follow these instructions to install the IO Plate for OCP Card. Here shows how to install the IO Plate for the dual-port LAN card M7062-I599-2T.

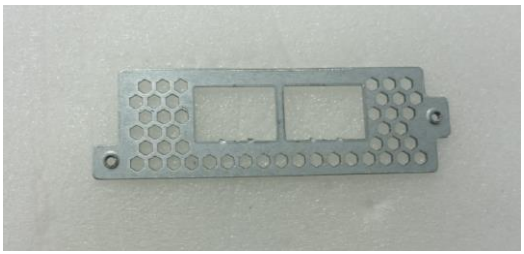
1. Unscrew the riser card bracket.

2. Remove the riser card bracket from the chassis.

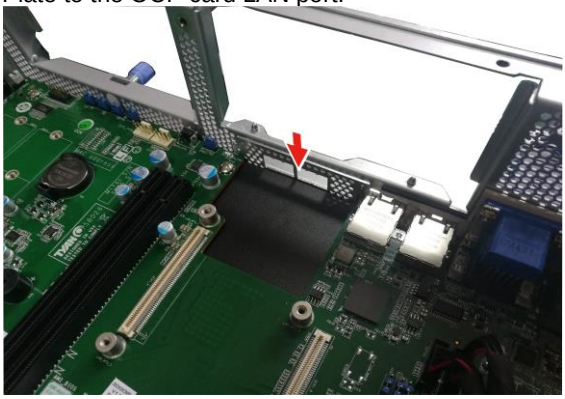
3. Use a screwdriver to break the semi-shearing for the OCP card slot. Discharge the metal slug.

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.

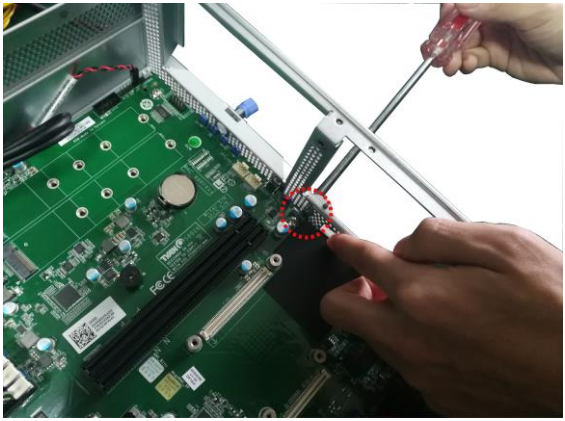




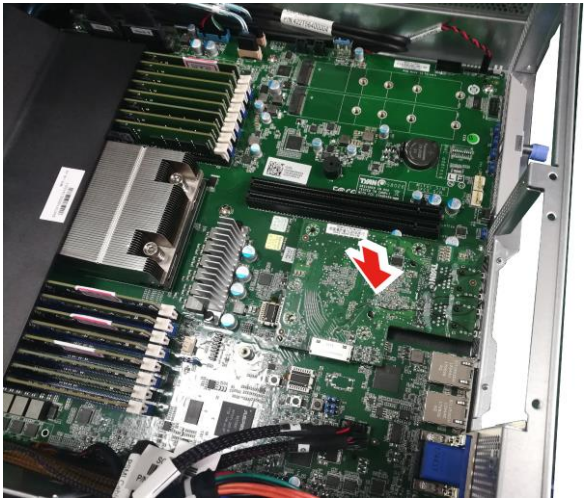
5. Insert the IO Plate to the OCP card LAN port.



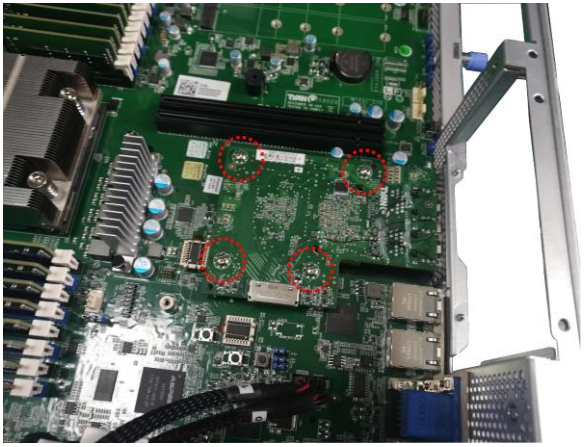
6. Screw the IO Plate to the chassis



7. Insert the LAN card into the OCP slot



8. Secure the LAN card to the chassis



Appendix II: Cable Connection Tables

1. Mini-SAS HD Cable

B8026T70EV10E4HR SKU

M1290T70E-BP12E-12 Backplane (BP) Board to S8026MB			
Cable	**HDD BP M1290T70E-BP12E-12**	**Connect to**	**S8026MB**
OCuLink	NVME 01	→	OCUL5
OCuLink	NVME 23	→	OCUL6
Mini-SAS HD	SATA 0-3	→	OCUL1
Mini-SAS HD	SATA 4-7	→	OCUL1
Mini-SAS HD	SATA 8-11	→	OCUL2

2. System FAN Ctrl cable

FAN M1806G70-FB	**Connect to**	**S8026 MB**
J8	→	FAN_HD1

3. Front Panel Control Cable

Front Panel M1701T70-FPB	**Connect to**	**S8026 MB**
J1	→	FPIO_2

4. Front Panel USB Cable

Front Panel M1702T70-USB	**Connect to**	**S8026 MB**
J2	→	USB3_FPIO1

5. Power Supply Cables

M1601T70-D-PDB	**Connect to**	**S8026 MB**
PW1 (MB)	→	PW1
PATX1 (MB1)	→	PW2
PATX2 (MB2)	→	PW3
J7 (PSMI)	→	PSMI_HD1

6. Power Supply Cables

M1601T70-D-PDB	**Connect to**	**M1806G70-FB**
PW4(FAN BD1)	→	PW1
PW5(FAN BD2)	→	PW2

7. Power Supply Cables

M1601T70-D-PDB	Connect to	M1290T70E-BP12E-12 HDD BP
PATX6,7 (HDD BP1,2)	→	HDD BP1 PW1

8. Power Supply Cables

M1601T70-D-PDB	Connect to	M1287G88-BP12-2-1 Rear HDD BP
J3(DVD)	→	PW1

9. SATA HDD Cable

S8026 MB	Connect to	M1287G88-BP12-2-1 Rear HDD BP
SSATADOM1	→	SSATA0
SSATADOM2	→	SSATA1

10. SGPIO Cable

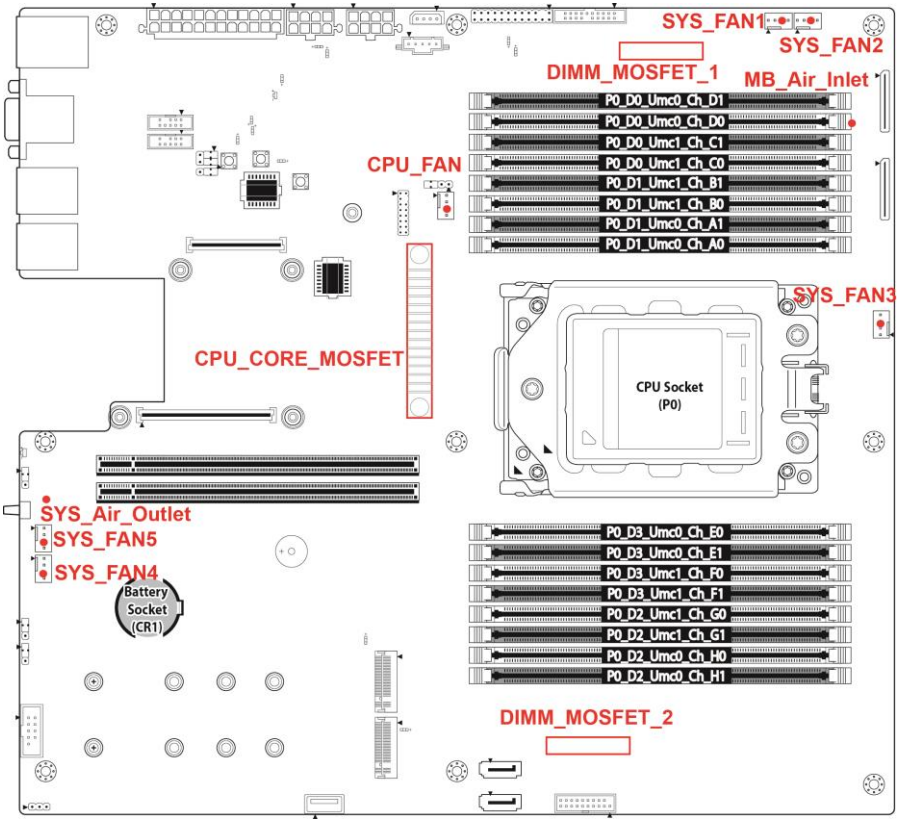
S8026 MB	Connect to	M1290T70E-BP12E-12-1 HDD BP
SGPIO0		SGPIO0
SGPIO1	→	SGPIO2

11. Control Internal cable

S8026 MB	Connect to	Chassis
J122	→	Chassis

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.



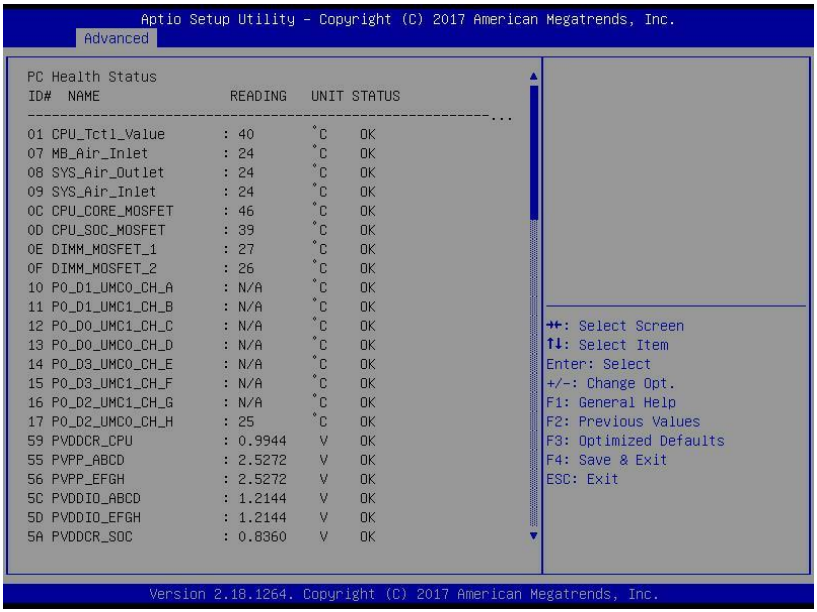
NOTE: The red dot indicates the sensor.

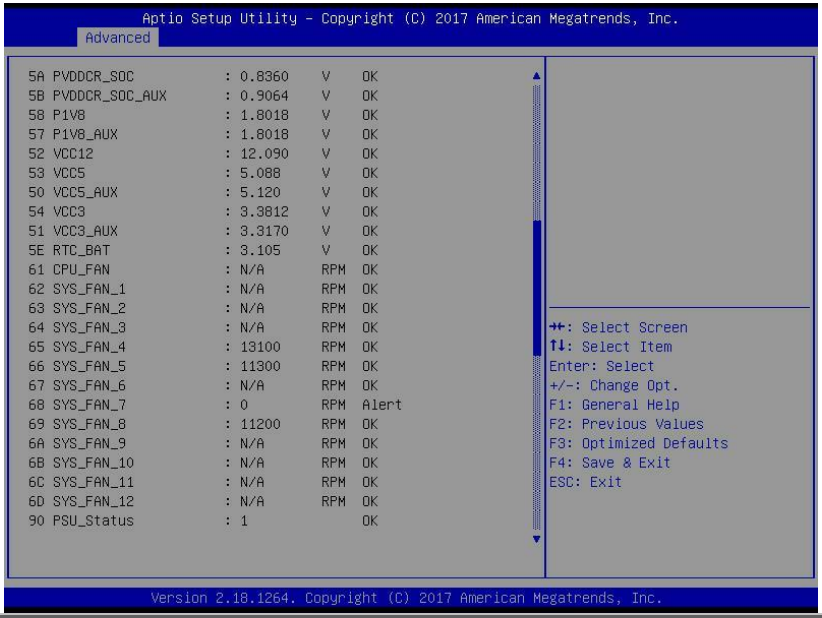
Fan and Temp Sensor Location:

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 ,and MB_Air_Inlet 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

TN70E-B8026 FRU Parts				
Item	Model Number	Part Number	Picture	Description
Power Supply	FRU-PS-0100	471100000247		TF-POWER SUPPLY;SBU,770 W,DELTA,DPS-770GB C,(S0F),1U MODULE,REV.S0F
FAN	FRU-TS-0080	336252012309		TF-FAN;SBU,12V,PFC0612DE-7N51,2BALL ,1.68A,12000RPM,61.5dBA,60*60*38M M,4PIN
Heatsink	FRU-TH-0200	343T58100002		TF-HEATSINK;SBU,AL/CU,SOLDERLING+PI PE,SP3-PASSIVE-1U-HEATSINK,SF4A9100 01-1,78.9X119.3X25.0MM, SCREW,TN70A-B8026
PCIE Riser Card	FRU-C-0490	411T56400041		TF-PWA;SBU,TN70E-B7106,M7106-L24-3 F,R02,For BB,TYAN
	FRU-RC-0500	411T56400046		TF-PWA;SBU,TN70E-B7106,M7106-R24-3 F,R02,For BB,TYAN
HDD BP	FRU-RC-0700	411T56400129		TF-PWA;SBU,TN70E-B7106,M1290T70E-B P12E-12-1,R02,FOR BB,TYAN
Rack Mounting	CRAL-0170	340786900010		TF-SLIDE RAIL MIC ASSY;SBU,YELLOW RIVER DP,B7018Y190X2
Cable	FRU-CS-0330	332810000514		TF-POWER CORD;SBU,US,125 V,16 AWG(1.31mm²),1800mm,AC PWR CORD
	CCBL-0300	332810000281		TF-PWR CORD;EU,250V,H05VV-FX3C,10A,0.75M M,1830MM
	FRU-CS-0270	422T53400006		MINI-SAS HD CABLE
	FRU-CS-0781	422T57100005		TF-CABLE ASSY;SAS INTERNAL,SBU,32 AWG,600 mm,OCuLink 8X to OCuLink 8X CABLE,OCuLink 8X 80P/OCuLink 8X 80P,Normal Signal,No Reserved pin,TN70A-B8026
	FRU-CS-0800	422T57200001		TF-CABLE ASSY;SAS INTERNAL,SBU,34 AWG,750 mm,OCuLink 8X CABLE, OCuLink 8X 80P/OCuLink 8X 80P, GT62F-B5630
	FRU-CS-0780	422T57100001		TF-CABLE ASSY;SAS INTERNAL,SBU,34 AWG,600 mm,OCuLink 8X CABLE, OCuLink 8X 80P/OCuLink 8X 80P,TN70A-B8026

	FRU-CS-0581	422T56400007		TF-CABLE ASSY;SAS INTERNAL,SBU,32 AWG,700 mm,OCuLink 8X to Mini-SAS HD CABLE,OCuLink 8X 80P/SHORT MINI-SAS HD 36P*2,TN70E-B7106
	FRU-CS-0580	422T56400002		TF-CABLE ASSY;SAS INTERNAL,SBU,34 AWG,700 mm,OCuLink 8X CABLE, OCuLink 8X 80P/SHORT MINI-SAS HD 36P*2,TN70E-B7106
	FRU-CS-0890	332820000010		TF-AC/DC POWER CABLE;SBU,18 AWG,200mm,2*4P PWR Y CABLE,2*4P(M),P4.2/2*4P(M),P4.2+2*4P (M),P4.2,TN70-B7016
	FRU-CS-0900	422T56700003		TF-AC/DC POWER CABLE;SBU,24 AWG,350MM,S4P PWR CABLE,1*4P(M),P2.54/1*4P(M),P2.54,GA 88-B5631
Air Duct	FRU-TA-0070	344T57100002		TF-AIRDUCT;SBU,PC+ABS, TN70A-B8026
I/O PLATE LAN KIT	FRU-SO-0160	452T57200005		TF-I/O PLATE LAN KIT;SBU,SGCC+SCREW +GASKET,GT62F-B5630
I/O PLATE SFP KIT	FRU-SO-0150	452T57200006		TF-I/O PLATE SFP KIT;SBU, SGCC+SCREW,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® TN70E-B8026 Service Engineer's Manual V1.0

Document No.: D2425 - 100