BrainSphere P5 F10 SE_15L
Lifecycle Extension Guide

Self-Repair

This product offers limited customer self-repair capabilities.

Prior performing self-repair, familiarize yourself with the Safety Guidelines and Recommended Equipment sections first as described in the chapter "**Disassembly Procedures**".

Due to complexity of circuit boards, electronic components which are embedded to the motherboard or daughterboard(s) are strongly not advised to self-repair.

NOTE:

Before handling components, wear anti-static gloves to avoid damaging them due to static electricity.

NOTE:

For replacement parts, always use only Altos certified components in order to safeguard quality, optimum system performance, stability and reliability of the product.

NOTE:

Any damage to the product that occur during self-repair, or which has occurred as a result of a careless or unsuccessful self-repair attempt, is not covered by the standard product warranty.

Disassembly Procedure

Safety Guidelines

This chapter contains step by step procedures on how to remove and de-install components from the computer. Use the following safety guidelines to ensure your personal safety. Each procedure included in this chapter assumes that you are preparing your computer for recycling and disposal. By performing any of these procedures you acknowledge that any remaining warranty applicable to your computer will be voided if any damage is done to the unit or components during the repair. Before you start any of the procedures in this chapter, make sure to read the following safety guidelines and the respective instructions within the chapter.

CAUTION!

- Turn off your computer and disconnect all power sources before opening the computer cover or panels.
- To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface at the same time as touching a connector on the back of the computer.
- Take off any metal objects on your arms or fingers such as bracelets, rings or watches and make sure your hands are completely dry. Even if your unit is unplugged, there may still be some remaining electric charge.
- If a component does not come out easily, do not forcefully remove it. Instead, check that you are removing it correctly and that no wires or other parts are in the way.
- When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable.

Recommended Equipment

The following equipment are recommended to do the following maintenance procedures:

- Wrist grounding strap and conductivemat
- Flat screwdriver
- Philips screwdriver
- Polydrive screwdriver
- Plastic tweezers
- Flat plastic pry

WEEE Annex VII Component

These components are classified as requiring selective treatment.

Pre-disassembly Instructions

Do the following prior to starting any maintenance procedures:

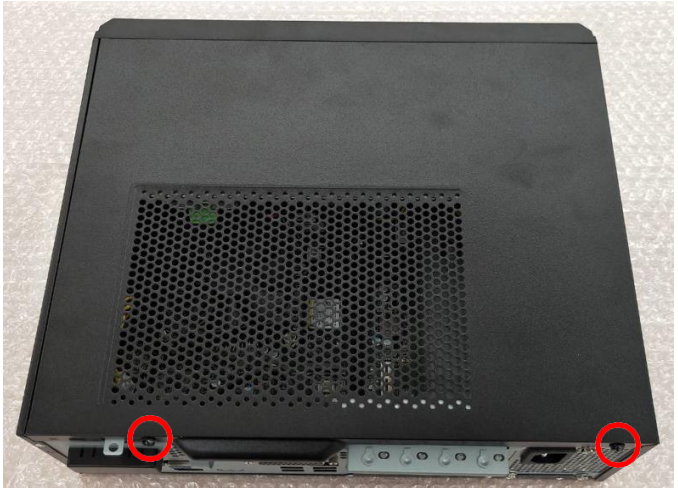
1. Place the system on a stable work surface.
2. Remove AC power cord from the system and peripherals
3. Remove all cables from the system.

Make sure the system is completely powered off.

Chassis Door Removal

1. Open the chassis

1.1 Remove the two screws fixed from the side-panel.

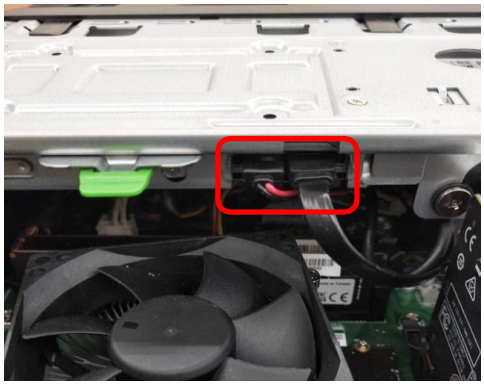


1.2 Shift the left side-panel and take out it

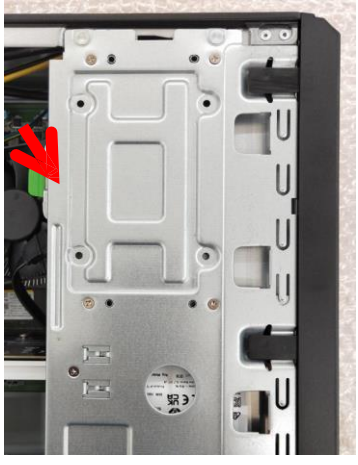
ODD Removal

2. Remove the Slim ODD

2.1 Disconnect SATA cable and SATA power cable from slim ODD



2.2 Press the plastic cover of slim ODD



2.3 Remove the ODD

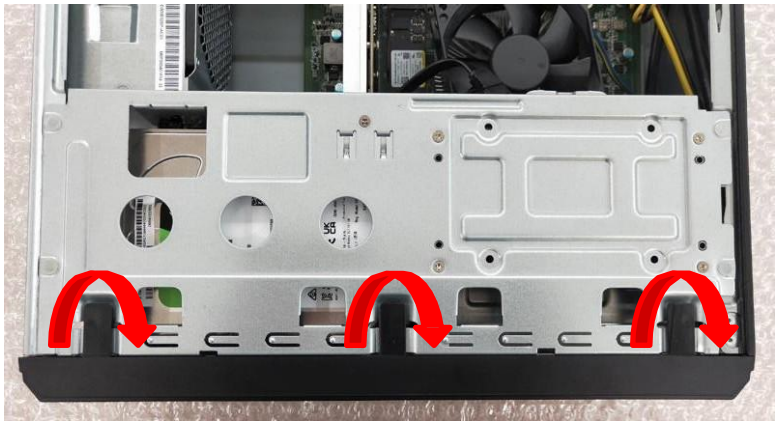
NOTE: ODD has been highlighted with the yellow rectangle as above image shows. WEEE Annex VII component.

HDD Removal

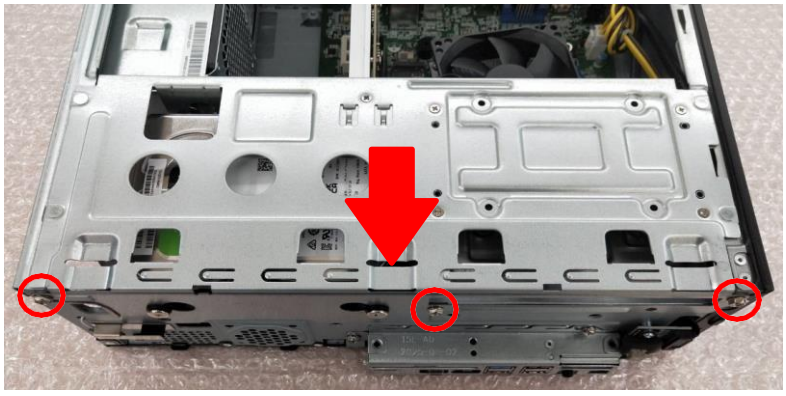
3. Remove 3.5” HDD

3.1 Disconnect SATA cable and SATA power cable from HDD

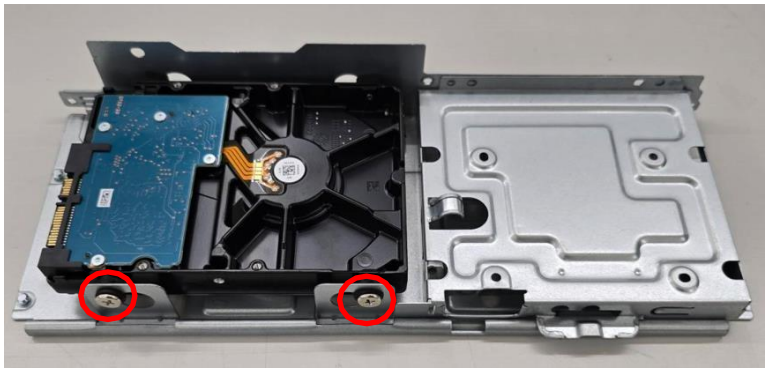
3.2 Relax three hooks and remove the main bezel from case



3.3 Remove three screws of HDD-ODD bracket, and take out it from chassis



3.4 Remove four screws, and take out HDD from HDD-ODD bracket

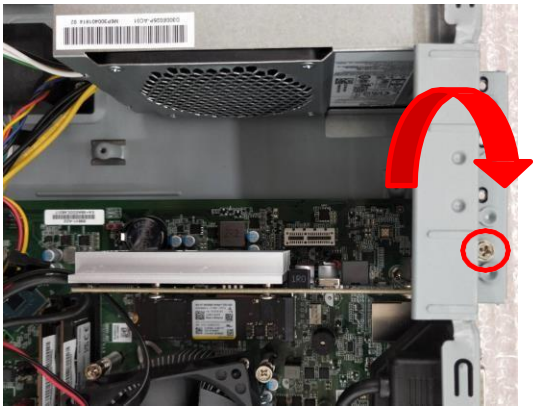


NOTE: HDD has been highlighted with the yellow rectangle as above image shows.
WEEE Annex VII component.

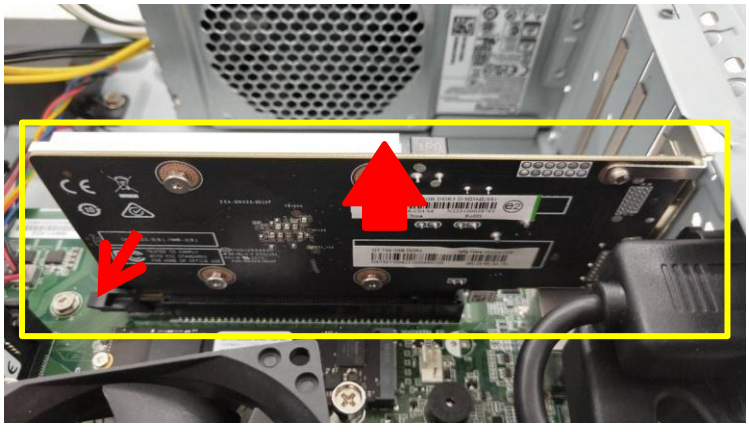
VGA card Removal

4. Remove VGA Card

4.1 Remove the screw of VGA then open the PCI cover



4.2 Disassemble VGA from MB

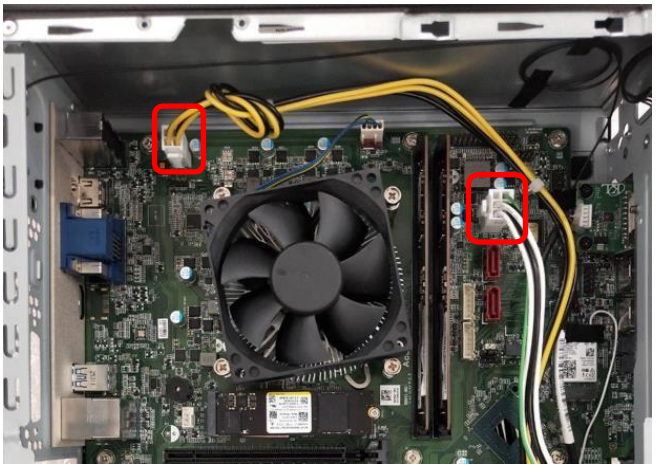


NOTE: VGA card has been highlighted with the yellow rectangle as above image shows.
WEEE Annex VII component.

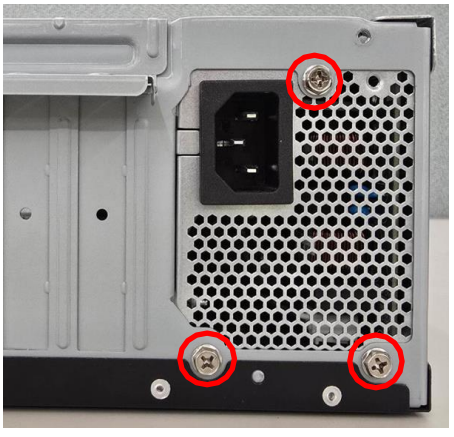
PSU Removal

5. Disassemble the PSU

5.1 Disconnect the PSU cable with MB



5.2 Remove four screws

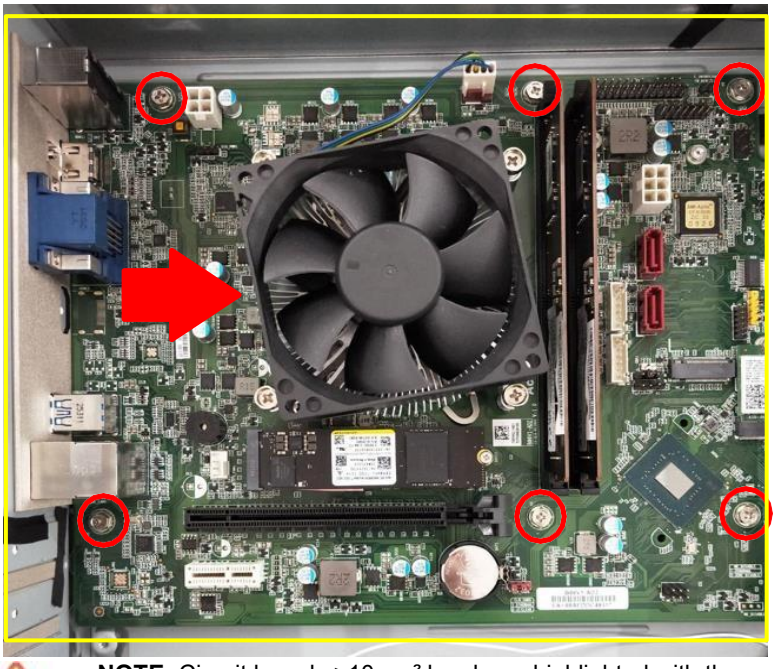


5.3 Take out the PSU from chassis

NOTE: PSU MB/PSU FAN/PSU CAPACITOR have been highlighted with the yellow rectangle as above image shows.
WEEE Annex VII component.

6. Disassemble mother board

6.1 Remove the six screws from MB then take out MB from chassis



NOTE: Circuit boards >10 cm² has been highlighted with the yellow rectangle as above image shows. Please detach the Circuit boards and follow local regulations for disposal.

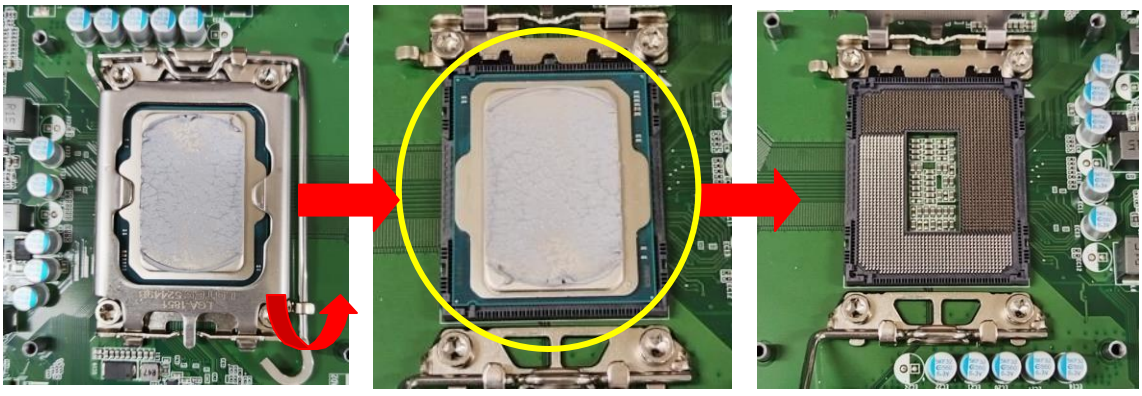
7. Remove Memory

7.1 Remove the memory

NOTE: MEMORY has been highlighted with the yellow rectangle as above image shows.
WEEE Annex VII component.

8. Remove the CPU

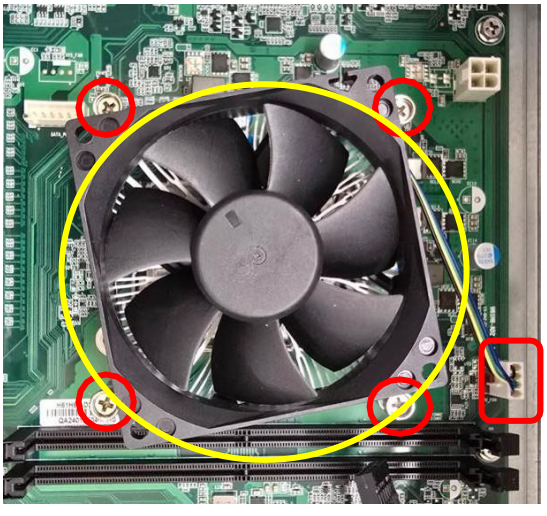
8.1 Disassemble CPU



NOTE: CPU has been highlighted with the yellow rectangle as above image shows.
WEEE Annex VII component.

9. Disassemble the cooler

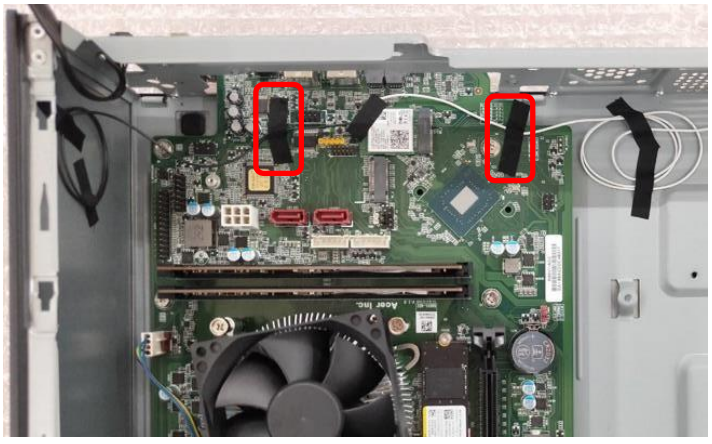
9.1 Loosen these four screws and disconnect CPU fan connector

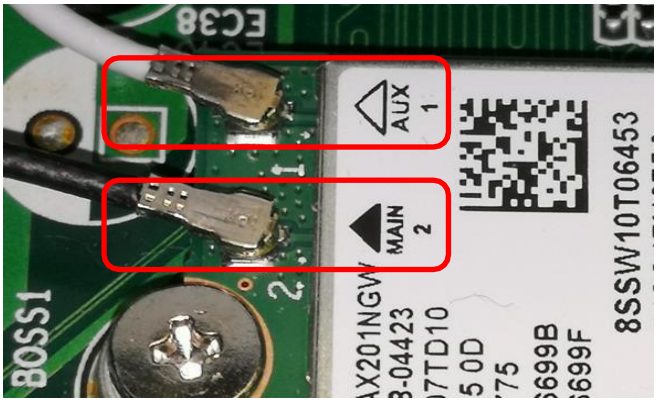


NOTE: CPU cooler has been highlighted with the yellow circle as above image shows. WEEE Annex VII component.

10. Remove the WLAN Card

10.1 Remove acetate tape of WLAN antenna





10.2 Remove the screw and take out the WLAN card from MB

NOTE: WLAN card has been highlighted with the yellow rectangle as above image shows.
WEEE Annex VII component.

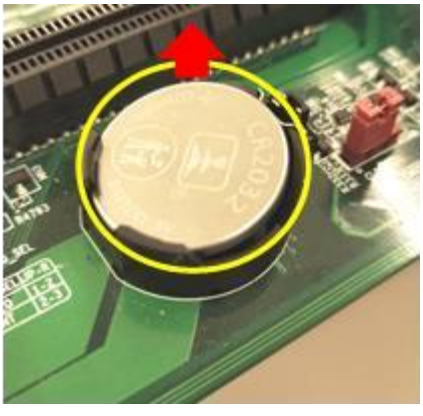
11. Remove the M.2 SSD module

11.1 Remove the screw and take out M.2 SSD card from MB

NOTE: SSD has been highlighted with the yellow rectangle as above image shows.
WEEE Annex VII component.

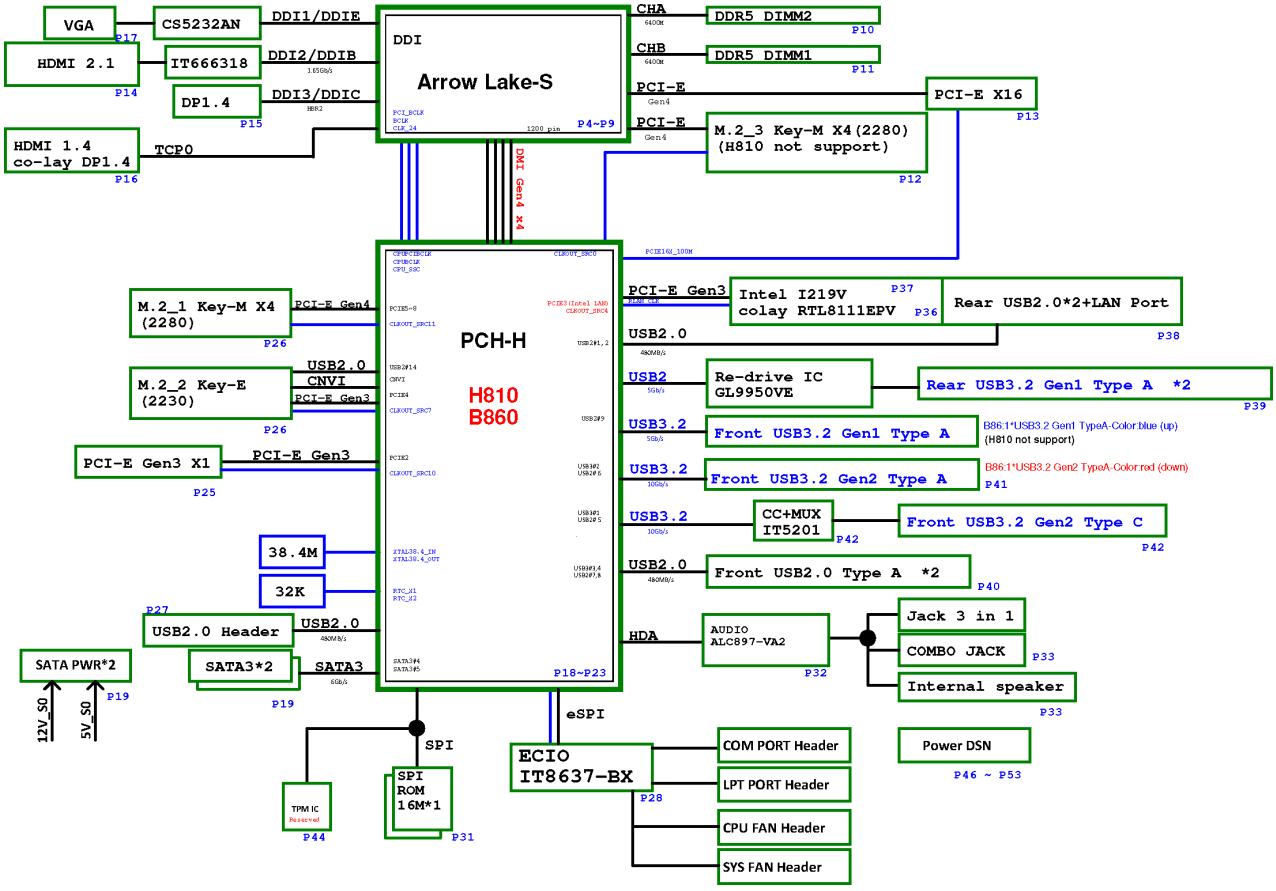
12. Remove the RTC battery

12.1 Push socket hook & remove the battery from MB



NOTE: RTC battery has been highlighted with the yellow circle as above image shows. WEEE Annex VII component.

Electronic Boards Diagrams



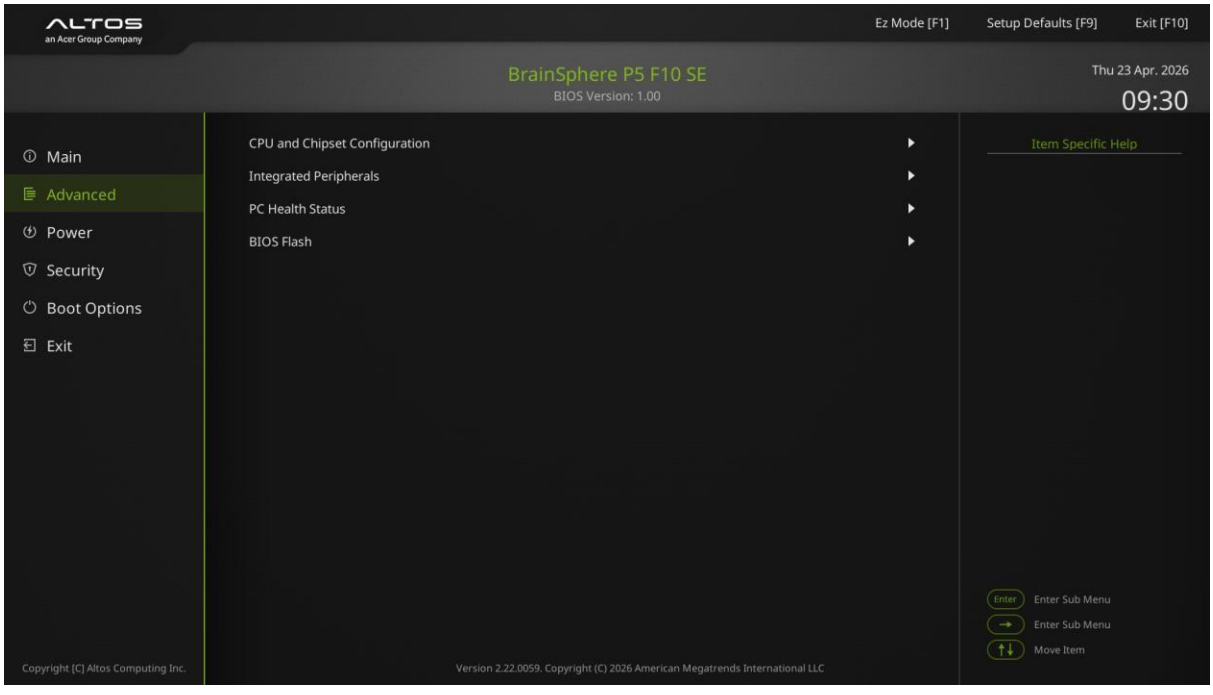
BIOS Set Up Utility

Main Menu

The main menu appears, giving you an overview of the basic system information. Select an item and press <Enter> to display the submenu.

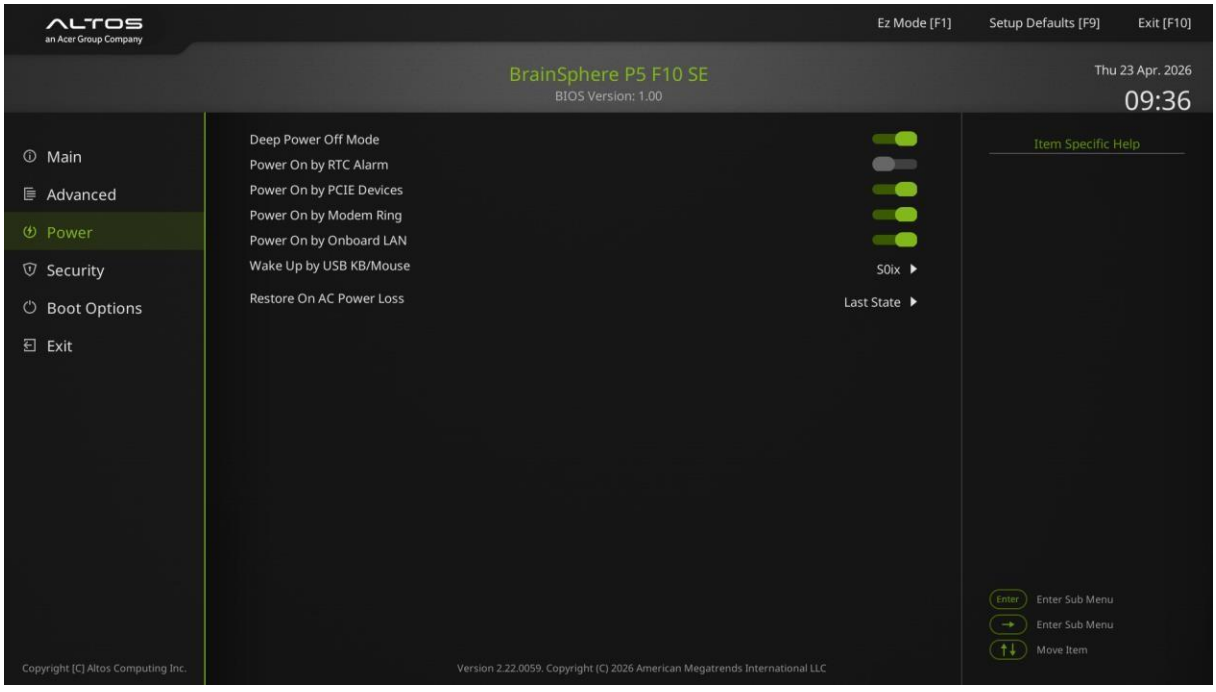
Advanced Menu

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.



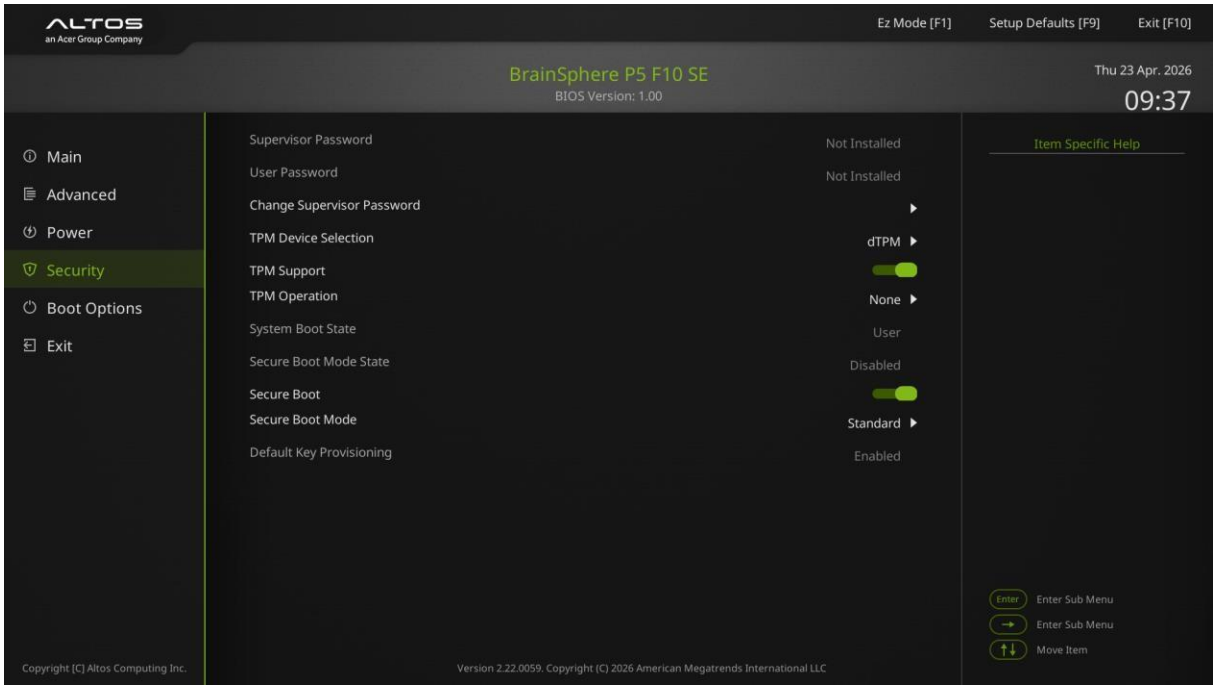
Power Menu

This page sets up some parameters for system power management operation.



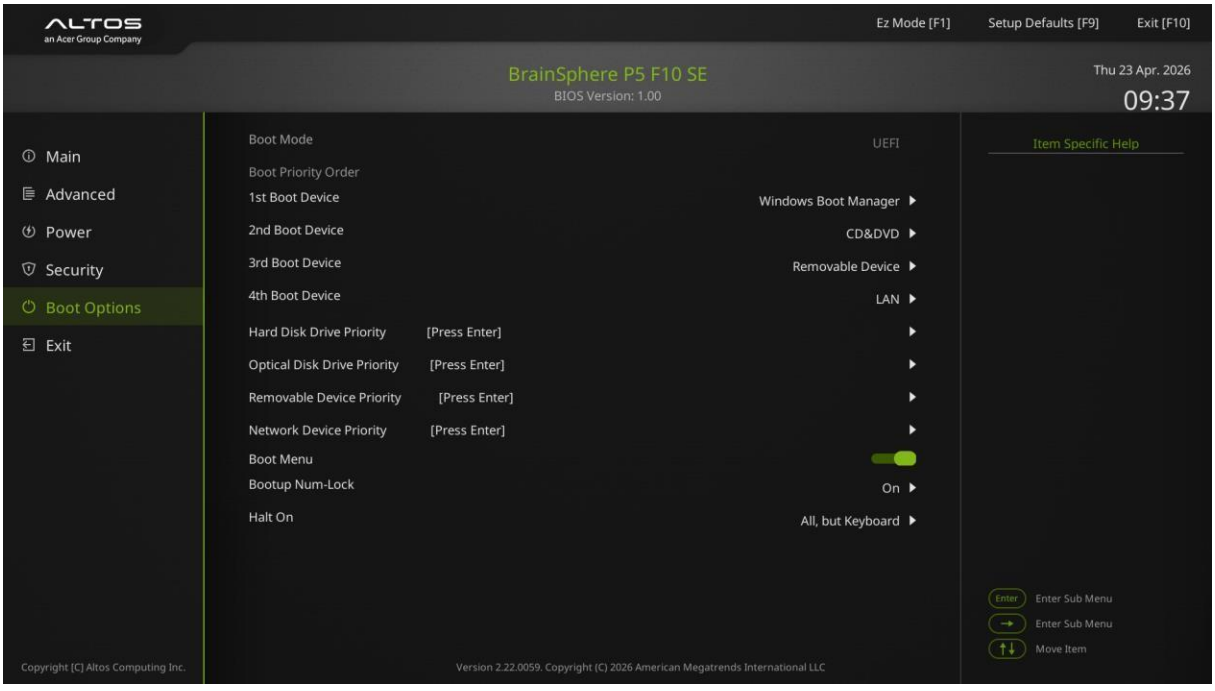
Security Menu

This page enables you to set setup administrator and password.



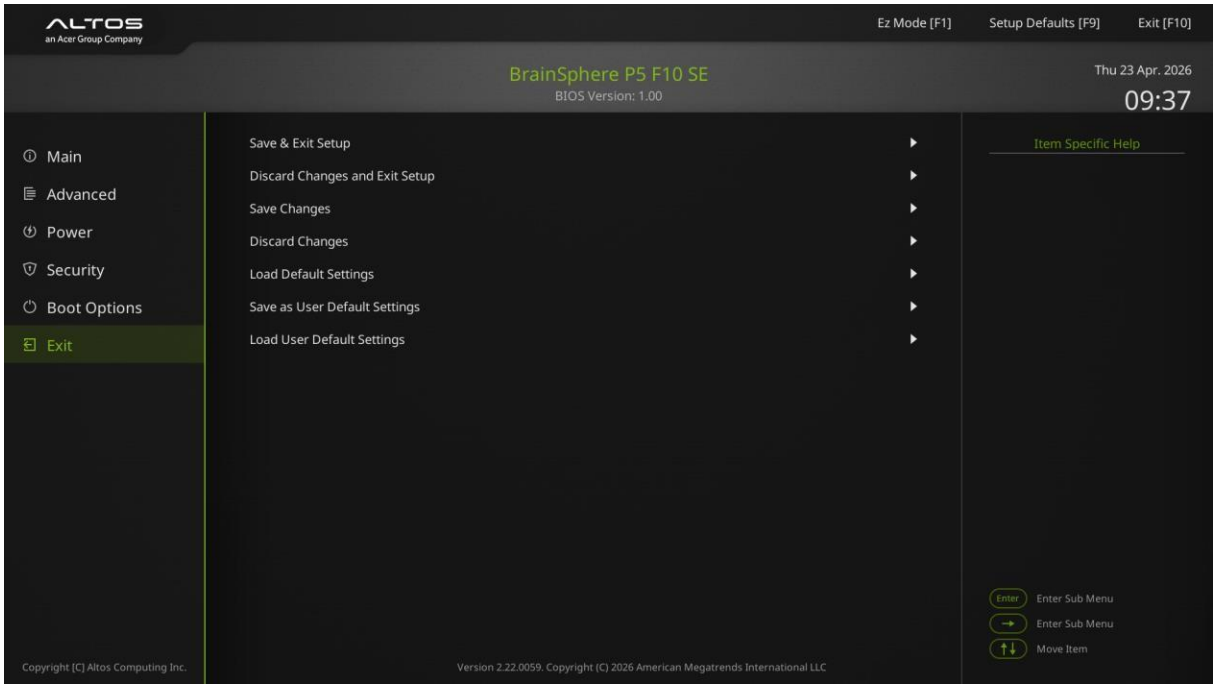
Boot Options Menu

This page allows you to change the system boot options. Select an item then press <Enter> to display the sub-menu.



Exit Menu

This page enables you to exit system setup after saving or without saving the changes.



Troubleshooting

This chapter provides troubleshooting information for the Altos BrainSphere P5 F10 SE Service Guide

- Power-On Self-Test (POST)
- POST Error Messages List

Power-On Self-Test (POST)

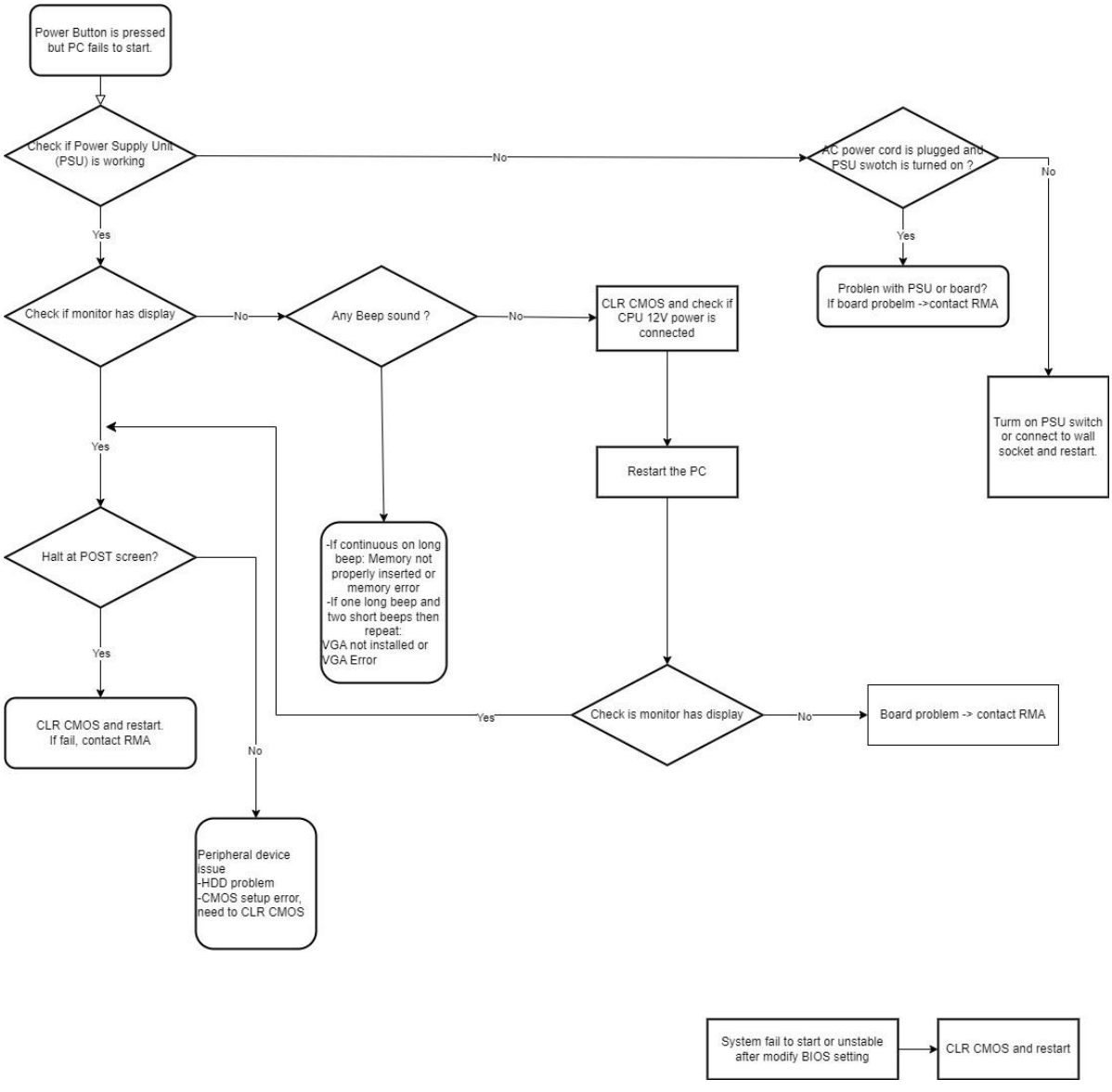
Each time you turn on the system, the Power-on Self Test (POST) is initiated. Several items are tested during POST, but for the most part transparent to the user.

The Power-On Self Test (POST) is a BIOS procedure that boots the system, initializes and diagnoses the system components, and controls the operation of the power-on password option. If POST discovers errors in system operations at power-on, it displays error messages on screen, generates a check point code at port 80h or even halts the system if the error is fatal.

The main components on the main board that must be diagnosed and/or initialized by POST to ensure system functionality are as follows:

- Microprocessor with built-in numeric co-processor and cache memory subsystem
- Direct Memory Access (DMA) controller
- Interrupt system
- Three programmable timers
- ROM subsystem
- RAM subsystem
- CMOS RAM subsystem and real time clock/calendar with battery backup
- Onboard parallel interface controller
- Embedded hard disk interface and one diskette drive interface
- Keyboard and auxiliary device controllers
- I/O ports
    - One parallel port
    - One PS/2-compatible mouse port
    - One PS/2-compatible keyboard port

Basic Troubleshooting Flowchart



POST Error Messages List

If you cannot run the diagnostics program tests but did receive a POST error message, use “POST Error Messages List "to diagnose system problems. If you did not receive any error message, look for a description of your error symptoms in “Error Symptoms List”.

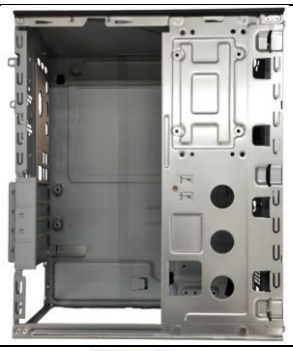
If you are unable to correct the problem by using the “BIOS Messages List” table and “Error Symptoms List” table, go to “Undetermined Problems”.

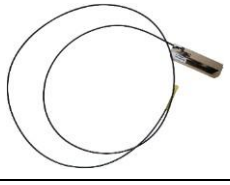
To diagnose a problem, first find the BIOS error messages in the left column. If directed to a check procedure, replace the FRU indicated in the check procedure. If no check procedure is indicated, the first Action/FRU listed in right column is the most likely cause.

Error Symptom	Action/FRU
BIOS Messages	
Bad Date/Time	The CMOS date and/or time are invalid. This error can be resolved by readjusting the system time in AMIBIOS Setup.
Keyboard Error	Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are pressed during POST. To purposely configure the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. The BIOS then ignores the missing keyboard during POST.
Setup settings error, CMOS checksum error or CMOS battery loss occurs. Default settings loaded.	CMOS contents failed the Checksum check. Indicates that the CMOS data has been changed by a program other than the BIOS or that the CMOS is not retaining its data due to malfunction. This error can typically be resolved by using Setup load default.
There is an Error in the SMART detection	A S.M.A.R.T. capable hard disk sends this message when it detects an imminent failure. This message can be reported by an ATAPI device using the S.M.A.R.T. error reporting standard. S.M.A.R.T. failure messages may indicate the need to replace the hard disk.
ECC Memory Correctable Error was detected during previous boot	This message will only occur on systems using ECC enabled memory modules. ECC memory has the ability to correct single-bit errors (Correctable Error) that may occur from faulty memory modules.
ECC Memory Uncorrectable Error was detected during previous boot	This message will only occur on systems using ECC enabled memory modules. A multiple bit corruption (Uncorrectable Error) of memory has occurred, and the ECC memory algorithm cannot correct it. This may indicate a defective memory module.
ECC Memory Correctable & Uncorrectable Errors were detected during previous boot	This message will only occur on systems using ECC enabled memory modules. ECC Both correctable and uncorrectable error of memory has occurred, and the ECC memory algorithm cannot correct it. This may indicate a defective memory module.
Warning! Your chassis has been opened	If the chassis is opened under POST, OS run time, system sleep (ACPI S4), system off (ACPI S5) or AC power loss (ACPI G3). The security feature uses a mechanical switch on the chassis that attaches to the chassis intrusion connector. When the chassis is opened, the mechanical switch will be in the open position. And if the chassis is opened, the system BIOS should record it as a log and display the warning message during BIOS POST. The BIOS default setting of item “Chassis Opened Warning” is enabled, and if the end user selects “Clear” to clear the chassis intrusion flag, the system BIOS should restore this item to be enabled after system reboots. If this item is disabled, the system BIOS will ignore the chassis status, no warning message will be displayed even the chassis is opened.

FRU (Field Replaceable Unit) List

This list is for reference only, please contact Altos local service to order the correct replacement part and availability.

CATEGORY	PARTNAME
CHASSIS	
	CHASSIS HX54DHP_TFX
	PANEL..(BUY-ACER).BLACK.FRONT..AX241WW.W/AUDIO,USB*4,TYPE C,SD PORT....ATSP5_F10_SE_EX.W/ALTOS LOGO ... LEAD-FREE.3NOD
CASE/COVER/BRACKET ASSEMBLY	
	BRACKET
	ODD BRACKET T0.6MM 3NOD
	ODD HOLDER 3NOD
	ODD BEZEL BLACK
	ODD BEZEL BLACK W/BOTTON
	ANTENNA COVER

CATEGORY	PARTNAME
	ODD CAGE
MAINBOARD	
	MB Kit VX2735G Intel H810 Intel Arc graphics I219-V with TPM_CN
CABLE	
	CABLE SATA 7P L220MM
	CABLE SATA 7P*2 220MM TCO10
	CABLE.SATA..7P L300MM
	CABLE SATA 7P*2 L300MM TCO10.0
	POWER SATA CABLE L200+150MM
	CABLE.SATA POWER L380+70MM
	ANTENNA AUX (WHITE)
	ANTENNA MAIN (BLACK)
FAN SINK/SPEAK/EARPHONE/RTC	
	Cooler Master 24Q2 Intel 65W cooler DF0802512RFUN pitch 78mm, HS-90*18-AL, FAN 80*80*25, 7blade Rifel bearing, L110mm(12V) 40000hrs
	ForceTake 24Q2 Intel 65W cooler CI-08025S-NSE01-AR 78mm/BN-G500, HS-6063-18H-AL, FAN-8025, square frame 7blade F.D.B bearing, L110mm(12V) 40000hrs

CATEGORY	PARTNAME
MISCELLANEOUS	
	THERMAL PAD 30*20*3MM
POWER SUPPLY	
	PSU HUNTKEY HK280-75PP 180W Active PFC TFX 100-127v/220v-240V, single-rail design
	PSU FSP FSP260-10TBA 260W Active PFC 100-127V/200-240V TFX TCO 10.0
	PSU Chicony Power D19-300P1A 300W Active PFC 100-127V/200-240V 2024 TFX TCO10.0
CPU	
	Intel® Core Ultra 5 processor 225
	Intel® Core Ultra 7 processor 265
ODD	
	Super-Multi DRIVE HLDS Super-Multi DRIVE 9.0mm Tray 8X GUE1N LF+HF W/O bezel SATA
HDD	
	Flash Disk APACER SSD NAND 256GB 3D TLC AP2JPB4480E-O301 LF+HF
	Flash Disk SANDISK SSD NAND 512GB SN5100s SDFQNSM-512G-1014 LF+HF
	Flash Disk WD SSD NAND 1024GB SN5000S SDEQNSJ-1T00-1014 LF+HF
	Flash Disk HYNIX SSD NAND 2048GB M.2 2280 PC801 2048G HFS002TEJ9X125N

CATEGORY	PARTNAME
	HDD TOSHIBA 3.5" 7200rpm 2000GB DT02ACA200 SATA III 256MB LF default
MEMORY	
	Memory A-DATA UNB-DIMM DDRV 5600 8GB AM2V56WC8W1-BWHS LF+HF SP-Y52K DT own
	Memory A-DATA UNB-DIMM DDRV 5600 16GB AM2V56WCSV1-BWIS LF+HF SP-Y4CA DT own
	Memory A-DATA UNB-DIMM DDRV 5600 32GB AM2V56WCTV2-BWNS LF+HF SP-Y4CA DT own
VGA CARD	
	VGA Card Intel DG2-SK6 GDDRVI 6GB Low Profile PCI-Ex16 DP HDMI
WIRELESS LAN	
	Wireless LAN Intel Wi-Fi 6E BT5.2 AX211.NGWG.NV Intel 2x2 M.2 2230 CNVi GFP2 No vPro
	Wireless LAN Intel Wi-Fi 7 BE200.NGWG.NV Intel 2x2 M.2 2230 PCIe
Keyboard	
	WiredKeyboard_KB802

CATEGORY	PARTNAME
Mouse	
	WiredMouse_MS100
CARD READER	
	CR06_SD_MX_340_TCO10 330320101001 340mm, support TCO10.0
	CR06_SD_MX_340_TCO10 340mm, support TCO10.0
SPEAKER	
	Acer Speaker_option ASK020 internal Speaker for tower ;short version ;5W;same as DC.10611.00F; with 450mm cable length
POWER CORD	
	POWER CORD 10A 250V UK BK 1.8M
	POWER CORD 10A 250V EU BK 1.8M
	POWER CORD 10A 125V US BK 1.8M
SCREW	
	SCREW.I.H.M2*0.4*3.0mm D4.8 H1
	SCREW.I.H UNC.#6-32*4mm D10 H1.8/d4.4 h8
	SCREW.F.H UNC.#6-32*5MM D5
	SCREW.H.H UNC.#6-32*5mm D8 H2.7.....NI..W/FL ....LEAD-FREE..GREAT GOLD

CATEGORY	PARTNAME
	SCREW.I.H.M2*0.4*5MM D3.8 H0.7
	SCREW.I.H.M3*0.5*3.5mm D7 H1.2 LEAD-FREE(RoHS)..GREAT GOLD
	SCREW.H.H UNC.#6-32*6.35mm D8.6 H3.2..NI...

Exploded Diagrams

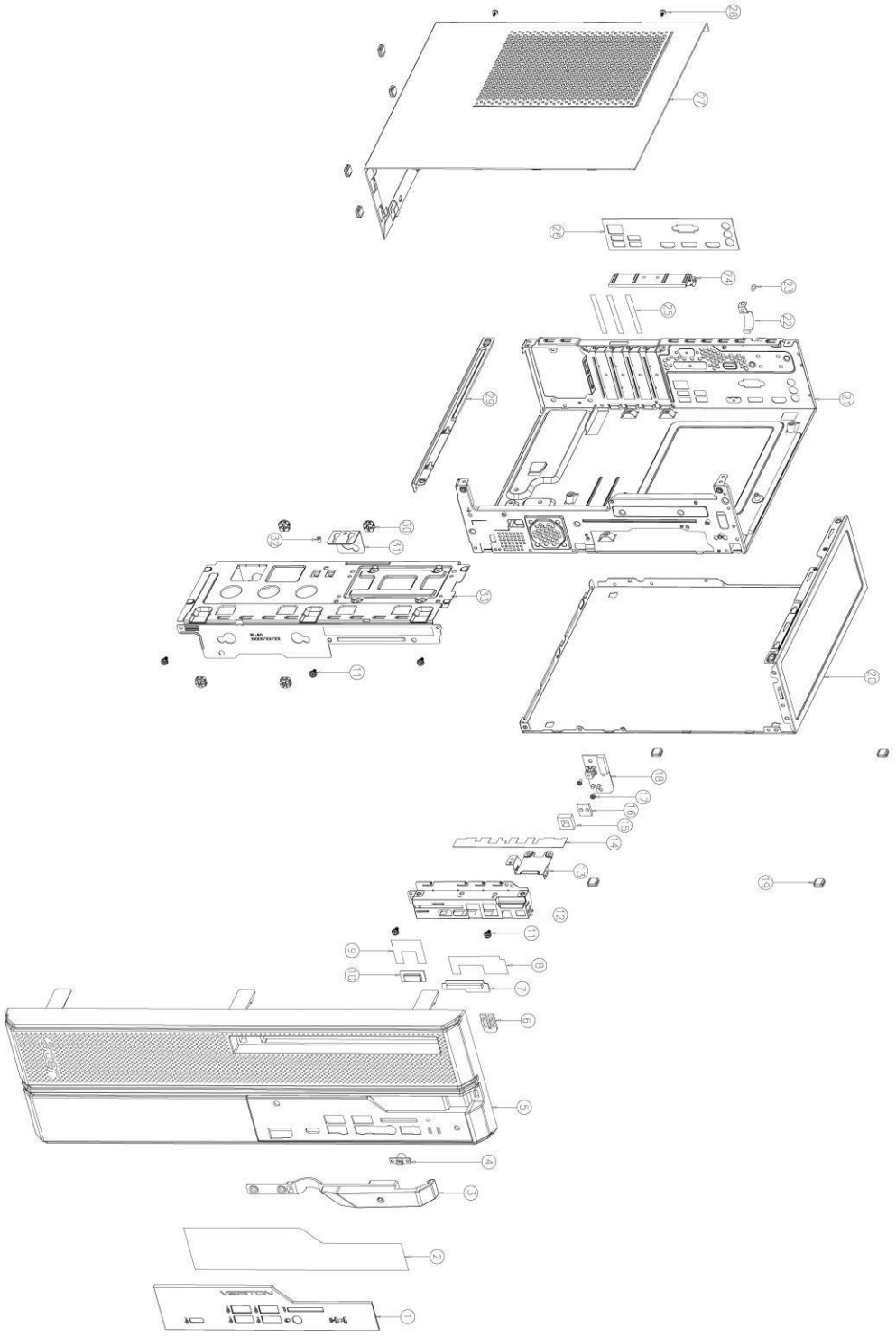


Figure 1 System Exploded Diagram

Item	Description	Item	Description
1	Front IO cover	18	Power switch PCB
2	Front IO cover adhesive tape	19	Foot rubber
3	Power switch button	20	Main chassis
4	Power lens	21	MB metal bracket
5	Front bezel	22	Metal clip
6	HDD lens	23	FH#6-32*5mm screw for metal clip
7	SD rubber	24	PCI cover
8	Acetate tape for SD rubber	25	EMI gasket
9	Acetate tape for USB rubber	26	Rear IO gasket
10	USB rubber	27	Left side cover
11	#6-32 screw NI	28	HH #6-32*5mm screw for side cover
12	FIO metal bracket	29	Metal bracket for side cover
13	SD card metal bracket	30	HDD rubber
14	FIO Mylar	31	HDD rubber metal bracket
15	sponge	32	FH #6-32*4mm
16	EVA sponge	33	HDD tray
17	M3*5mm screw blue ZN		

Software Update

System BIOS & Driver Updates

Visit **https://www.altoscomputing.com/en-US/** to discover the available system BIOS and Drivers for this product. After selecting the desired country/language, either enter the model name or product serial number, or select the product from the list of suggested models in order to get access to product-specific software and documentation.

Updating the System BIOS:

- Download the desired system BIOS version from the website.
- Unzip the downloaded file to your computer.
- Double-click the extracted file in order to initiate the update process.
- The update process itself is fully automated and its progress is visualized by means of a progress indicator.
- A visual notification is shown when the update is complete.

NOTE:

Upgrading the system BIOS incorrectly, or intermittence of the system BIOS update process could harm the product.

NOTE:

System BIOS upgrades or downgrades, if not performed by an Altos Service Center or authorized Service Partner, are at own risk.

Updating the Drivers:

Run Windows Update in order to get the latest drivers from Altos:

- Select the **Start** button.
- Go to **Settings** > **Update & Security** > **Windows Update** .
- Available Drivers will be automatically listed on the screen.
- Press **Download** to start the download of the respective driver.
- Installation of the driver will start automatically once the download is completed.

Should a particular driver not be installed via Windows Update then it is also available for download from the Altos Support website.

To download and install Drivers from the Altos Support website:

- Go to https://www.altoscomputing.com/en-US/ and navigate to **Support**
- Click on **Drivers and Manuals**
- Enter the device serial number, SNID or model number and press **Find**
- Click on **Drivers** to get access to all available drivers for the respective product
- Find the desired driver and click **Download**
- Extract the file and start the installation
- On-screen instructions will provide guidance through the installation process

After successful driver installation, reboot the device before using it to ensure that the new or updated driver is successfully loaded.

Software Recovery

This product has embedded software recovery tools which can be used to either perform a partial or full software recovery, but also to create a Factory Default recovery media.
For more information about software recovery options, how to perform a software recovery or creating a Factory Default recovery media, please refer to chapter "**Recovery**" which is available in the User Manual of the product.

NOTE:

In the event of not being able to create a Factory Default recovery media, it is possible to obtain a copy of the recovery media through Altos Customer Service (**https://www.altoscomputing.com/en-US/**).
This is not a free of charge service.

Personal Data Removal

Whichever option chosen, you are then asked if you want to keep your files or delete everything. To delete your files select **Remove Everything,** click **Next**, then click **Reset**.

- Option 1: Select **Start** > **Settings** > **Update & Security** > **Recovery**. Under **Reset this PC**, select **Get started**. Open Recovery settings.
- Option 2: Restart your PC to get to the sign-in screen, then press and hold down the **Shift key** while you select the **Power** icon > **Restart** in the lower-right corner of the screen. After your computer restarts, select **Troubleshoot** > **Reset this PC**.
- Option 3: Select **Start** , then press and hold down the **Shift key** while you select the **Power** icon > **Restart** to restart your computer into Recovery Mode. After your computer restarts, select **Troubleshoot** > **Reset this PC**.