Veriton N4690GT / Veriton VN4690GT Mini PC Service Manual (re-assembling guide)

> Service Manual (re-assembling guide) V1.0 20220125

| Self-Repair | 3 |
|-----------------------------------|----|
| Disassembly Procedures | 5 |
| Reassembly Procedures | |
| Troubleshooting | 72 |
| Exploded Diagrams | 75 |
| FRU (Field Replaceable Unit) List | 76 |
| To remove your personal data | 77 |

Self-Repair

This chapter highlights the limited self-repair capabilities of the product.

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

Depending on model, the following key components are eligible for self-repair (if applicable):

- PSU module
- HDD / SSD module
- DIMM module(s)
- WLAN module
- ODD module

If a particular key component is listed and thus would be eligible for self-repair, but is not described in the "Disassembly Procedures" section, then this component is either not present on the respective model, or it is present but embedded on the motherboard and therefore not eligible for self-repair.

NOTE:

Do not attempt to replace other components than those listed above.

NOTE:

For replacement parts, always use only Acer 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 Procedures

Please refer to the "Disassembly Procedures" chapter for step by step disassembly instructions.

System BIOS & Driver Updates

Visit <u>http://www.acer.com/support</u> 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.

DOTE:

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

DINOTE:

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

Updating the Drivers:

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

- Select the Start 📲 button.
- Go to Settings \Im > Update & Security \bigcirc > Windows Update \bigcirc .
- 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.

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.



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 Acer Customer Service (<u>http://www.acer.com/support</u>). This is not a free of charge service.

Disassembly Procedures

• 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. 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.

⇒ NOTE:

Make sure the system is completely powered off.

1. Remove the Expansion Box 2 Cover

1.1. Remove the screw securing the expansion box 2 cover to the expansion box.



1.2. Detach the expansion box 2 cover from the expansion box.



2. Remove the VGA Card

2.1. Remove the VGA card from its slot.





3. Remove the Chassis Cover

3.1. Remove the screw securing the chassis cover to the chassis.



3.2. Detach the chassis cover from the chassis.

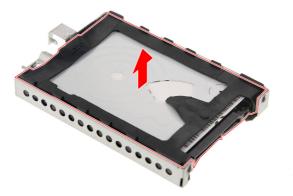


4. Remove the HDD1

4.1. Slide the HDD1 module out of the chassis.



4.2. Detach the HDD from the bracket.

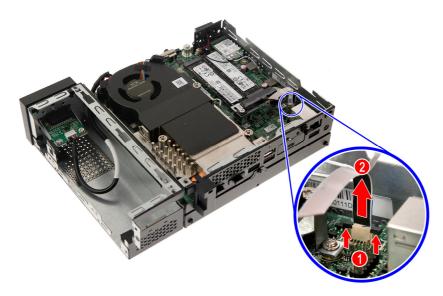


4.3. Detach the rubber gaskets from the HDD.



5. Remove the HDD1 cable

5.1. Disconnect the HDD1 cable from the mainboard.



5.2. Remove the two screws securing the HDD1 cable to the HDD support bracket.



5.3. Detach the HDD1 cable from the HDD support bracket.

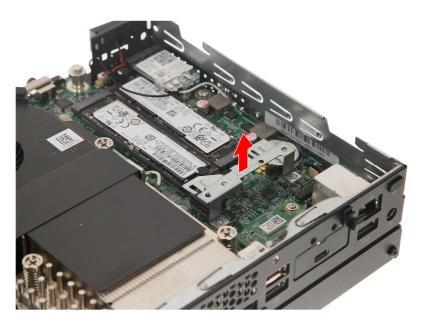


6. Remove the HDD1 Support Bracket

6.1. Remove the three screws securing the HDD1 support bracket to the mainboard.



6.2. Detach the HDD1 support bracket from the mainboard.



7. Remove the WLAN module

7.1. Remove the screw securing the WLAN module to the mainboard.



7.2. Detach the WLAN bracket from the WLAN module.



7.3. Disconnect the WLAN antenna cables from the WLAN module.



NOTE: For reference during machine reassembly, note which cable color corresponds to the main and auxiliary connectors.

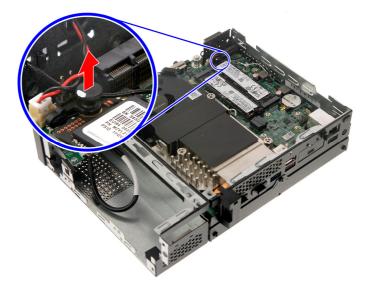
7.4. Remove the WLAN module from the mainboard.



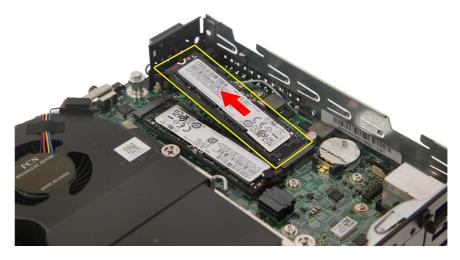


8. Remove the SSD modules

8.1. Disconnect the plastic tab securing the SSD2 module to the mainboard.



8.2. Remove the SSD2 module from the mainboard.





8.3. Detach the thermal pad from the SSD2 module.

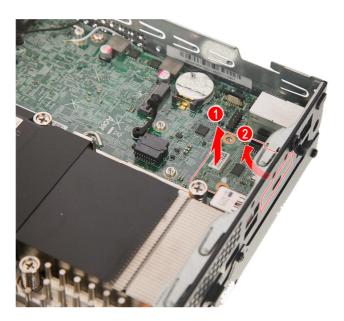


8.4. Repeat Steps 8.1~8.3 to remove the SSD1 module.

- 9. Remove the Optional Port Module (Display Port / HDMI / D-SUB / USB Type A/C)
 - **9.1.** Remove the two screws securing the optional port module to the mainboard.



9.2. Detach the optional port module from the mainboard.



9.3. Remove the screw securing the optional port module to the port bracket.



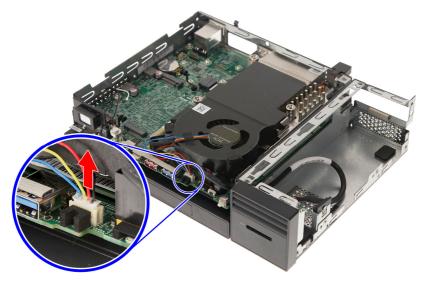
9.4. Remove the optional port module from the bracket.



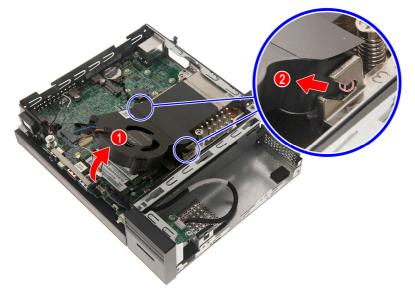


10. Remove the Heatsink Fan

10.1. Disconnect the heatsink fan cable from the mainboard.

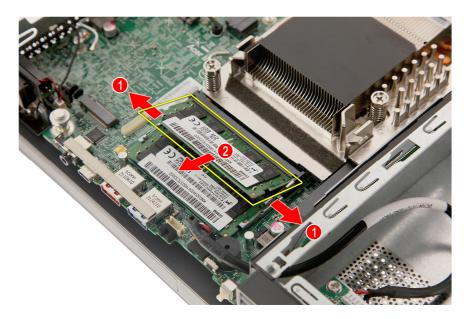


10.2. Detach the heatsink fan from the mainboard.



11. Remove the Memory modules

11.1. Release the latch on both sides of the DIMM slot (1) and remove the DIMM module from the slot (2).





Note: WEEE Annex VII component. A circuit board >10 cm2 has been highlighted with the yellow rectangle as shown above. Please follow local regulations for disposal of detached circuit boards.

11.2. Repeat Step **11.1** to remove the remaining memory module.

Thermal Module Removal

WARNING: The heatsink becomes very hot when the system is on. Wait for the heatsink to cool off before proceeding with below steps.

12. Remove the Thermal Module

12.1. Loosen the three (3) captive screws securing the thermal module to the mainboard.



12.2. Remove the thermal module from the mainboard.



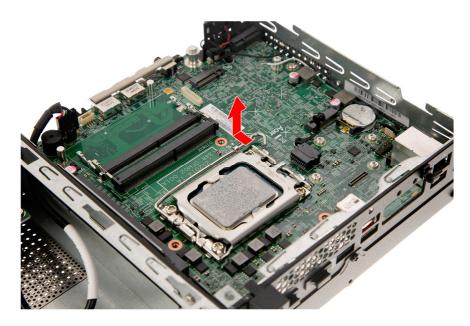
CPU Removal

IMPORTANT: Before removing the CPU from the mainboard, make sure to create a backup file of all important data.

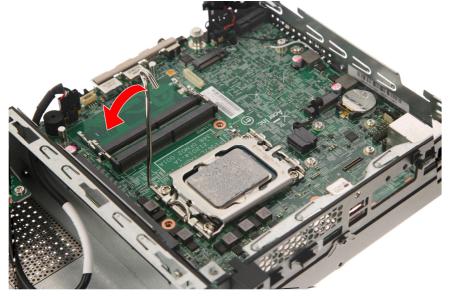
WARNING: The CPU becomes very hot when the system is on. Allow it to cool off first before handling.

13. Remove the CPU

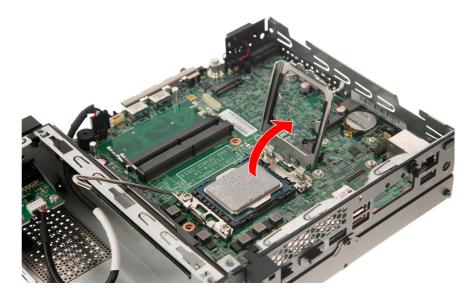
13.1. Press the load lever and move it to the left to release the load lever from the retention tab.



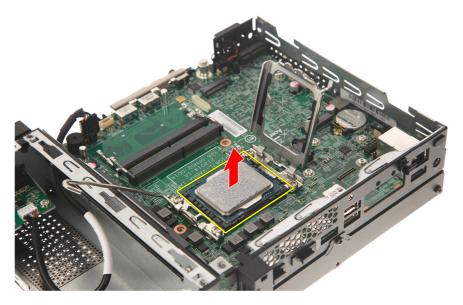
13.2. Pull the load lever to release the CPU cover plate.



13.3. Open the CPU cover plate.



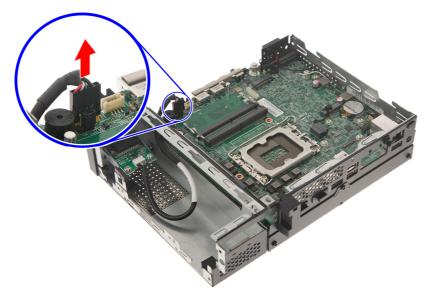
13.4. Lift the CPU from the socket.



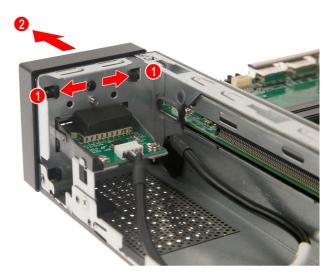


14. Remove the Card Reader Assembly

14.1. Disconnect the card reader cable from the mainboard.



14.2. Disengage the latches securing the front bezel to the expansion box 2 chassis (1) then detach the front bezel from the expansion box 2 chassis (2).



14.3. Remove the screw securing the card reader bracket to the expansion box 2 chassis.



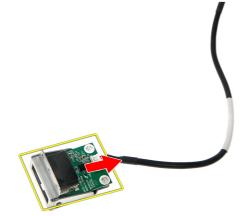
14.4. Pull the bracket with the cables out of the chassis.



14.5. Remove the two screws securing the card reader board to the bracket.



14.6. Remove the card reader board from the bracket.





15. Remove the Expansion Box 2

15.1. Remove the screw securing the expansion box 2 to the chassis.



15.2. Detach the expansion box 2 from the chassis.

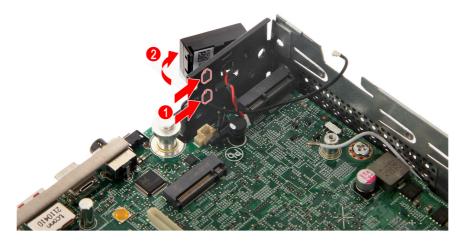


16. Remove the Speaker

16.1. Disconnect the speaker cable from the mainboard.



16.2. Detach the speaker from the chassis.



17. Remove the Expansion Box 1 Cover

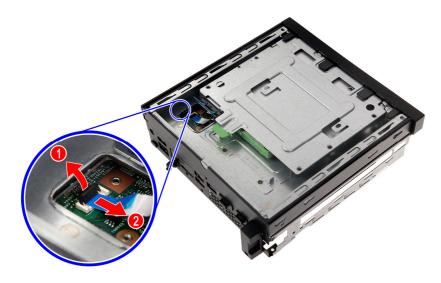
17.1. Remove the three screws securing the expansion box 1 cover to the expansion box.



17.2. Detach the expansion box 1 cover from the expansion box.



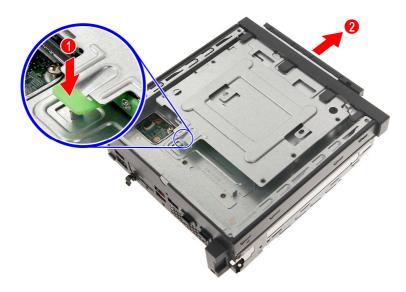
- 18. Remove the ODD (for models with ODD module on Expansion Box 1 only)
 - **18.1.** Disconnect the cable from the mainboard.



18.2. Disconnect the cable from the ODD module.



18.3. Press the retaining latch (1) and slide the ODD module out of the expansion box 1 (2).



18.4. Remove the two screws securing the ODD rear bracket to the ODD.



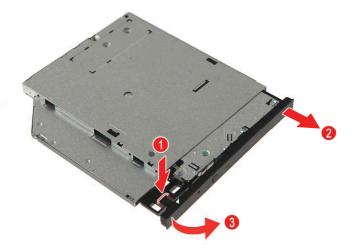
18.5. Detach the ODD rear bracket from the ODD.



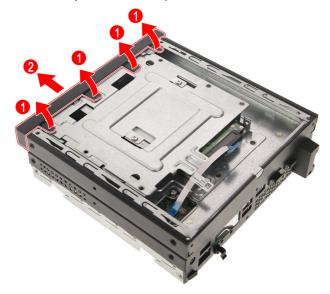
18.6. Force eject the ODD tray by inserting a thin metal object into the ODD emergency eject hole.



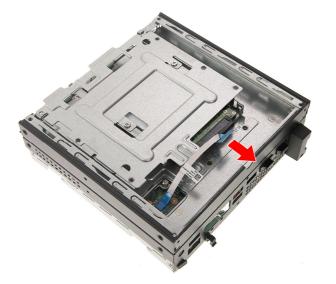
18.7. Disengage the latch securing the ODD bezel to the ODD tray, then remove the ODD bezel.



- 19. Remove the HDD2 (for models with HDD2 module on Expansion Box 1 only)
 - **19.1.** Detach the ODD dummy door from the expansion box 1.



19.2. Disconnect the cable from the HDD2 module.



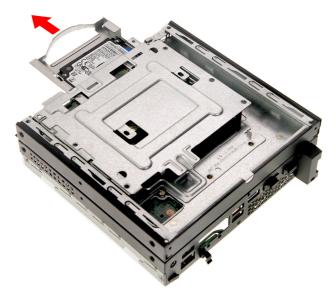
19.3. Disconnect the cable from the mainboard.



19.4. Remove the two screws securing the HDD2 module to the expansion box 1.



19.5. Gently pull out the HDD2 module from the expansion box 1.



19.6. Remove the four screws securing the HDD2 to the HDD bracket.



19.7. Gently pull out the HDD2 module from the bracket.

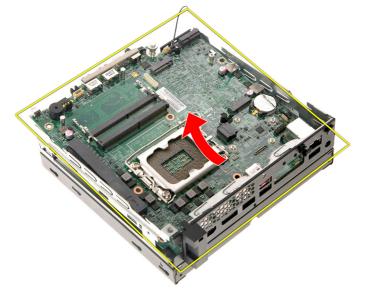


20. Remove the Mainboard

20.1. Remove the four screws securing the mainboard to the chassis.



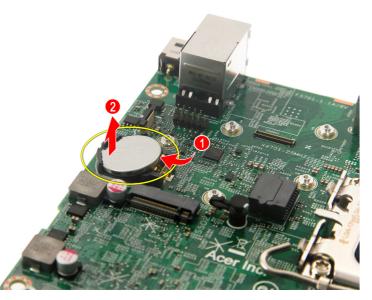
20.2. Gently lift the mainboard off the chassis.





21. Remove the RTC battery

21.1. Gently push the RTC battery sideways (1), then lift it off the mainboard (2).





Note: WEEE Annex VII component. The RTC battery has been highlighted with the yellow circle as shown above. Please follow local regulations for disposal of used batteries.



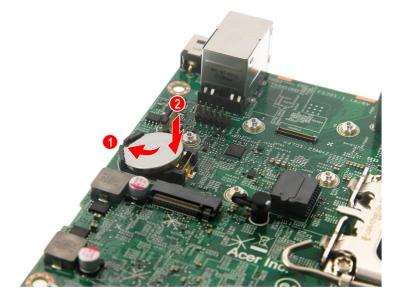
Caution: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Reassembly Procedures

RTC Battery Installation

1. Install the RTC battery

1.1. Slide the RTC battery into its socket in the mainboard (1) then push it down (2) until it latches into place.



2. Install the Mainboard

2.1. Gently place the mainboard into the chassis.



2.2. Secure the mainboard to the chassis using four screws.



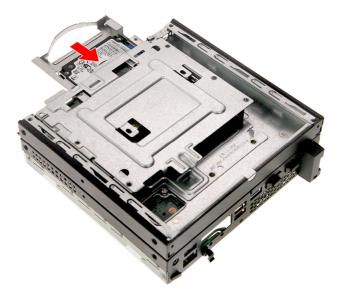
- 3. Install the HDD2 (for models with HDD module on Expansion Box 1 only)
 - **3.1.** Gently insert the HDD2 module into the bracket.



3.2. Secure the HDD2 to the HDD bracket using four screws.



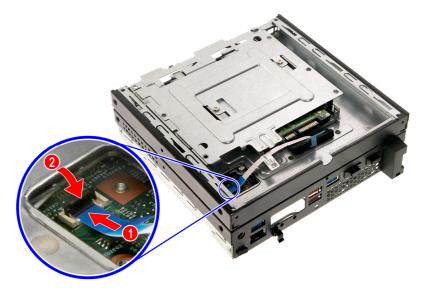
3.3. Slide the HDD2 module into the expansion box 1 until it latches into place.



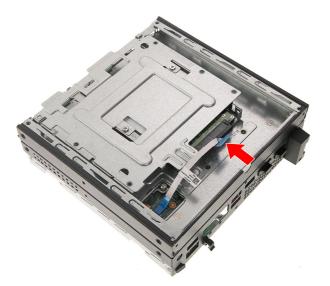
3.4. Secure the HDD2 module to the expansion box 1 using two screws.



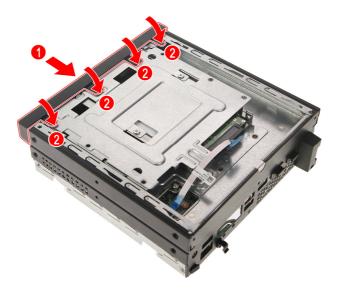
3.5. Connect the cable to the mainboard.



3.6. Connect the cable to the HDD2 module.



3.7. Insert the ODD dummy door into the expansion box 1 and press it down until it latches into place..



4. Install the ODD (for models with ODD module on Expansion Box 1 only)

4.1. Force eject the ODD tray by inserting a thin metal object into the ODD emergency eject hole.



4.2. Place the bezel into the ODD module (1), then press (2) until the latches lock into place.



4.3. Push back the ODD tray until it latches into place.



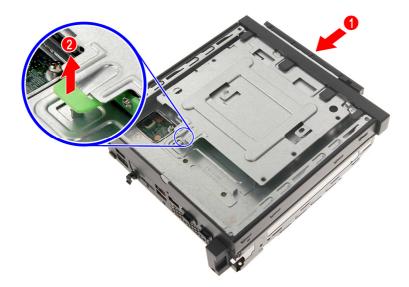
4.4. Insert the ODD rear bracket into the ODD.



4.5. Secure the ODD rear bracket to the ODD using two screws.



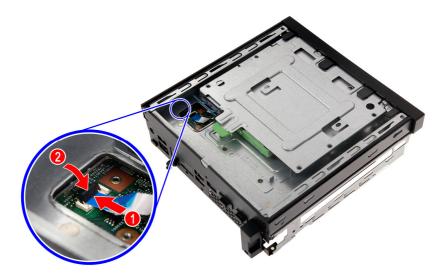
 $\textbf{4.6.} \hspace{0.1in} \text{Slide the ODD module into the expansion box 1 until it latches into place.}$



4.7. Connect the cable to the ODD module.



4.8. Connect the cable to the mainboard.



5. Install the Expansion Box 1 Cover

5.1. Insert the expansion box 1 cover into the expansion box and slide it towards the front until it latches into place.

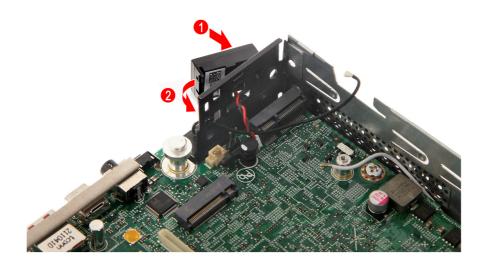


5.2. Secure the expansion box 1 cover to the expansion box using three screws.



6. Install the Speaker

6.1. Insert the speaker into the chassis.



6.2. Connect the speaker cable to the mainboard.

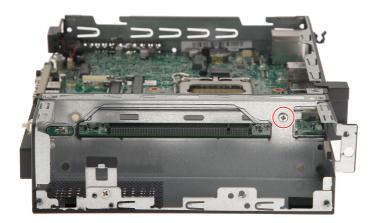


7. Install the Expansion Box 2

7.1. Insert the expansion box 2 into the chassis.



7.2. Secure the expansion box 2 to the chassis using one screw.



- 8. Install the Card Reader Assembly
 - **8.1.** Insert the card reader board into the bracket.



8.2. Secure the card reader board to the bracket using two screws.



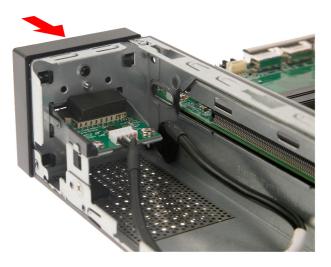
8.3. Insert the bracket with the cables into the chassis.



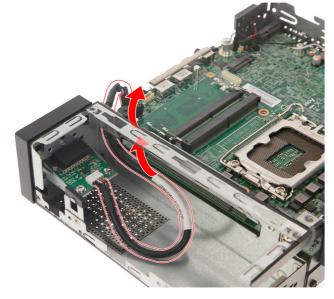
8.4. Secure the card reader bracket to the chassis using one screw.



8.5. Insert the front bezel into the expansion box 2 chassis and push it down until it latches into place.



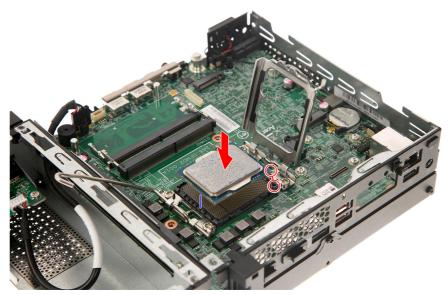
8.6. Connect the card reader cable to the mainboard.



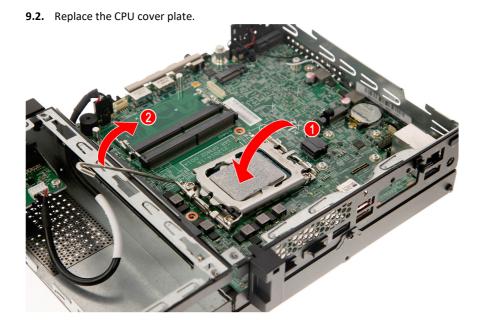
CPU Installation

9. Install the CPU

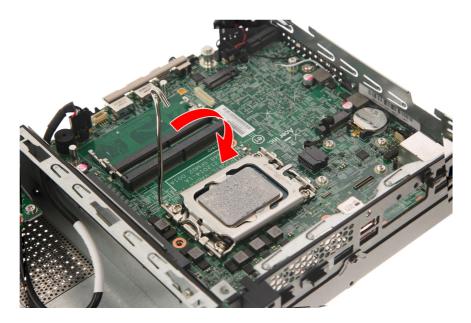
9.1. Place the CPU into its socket.



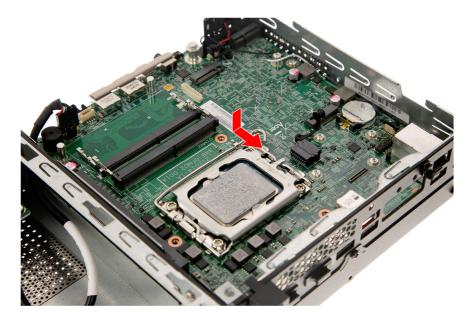
NOTE: Make sure the gold arrow on the corner of the processor is aligned with the beveled corner of the socket. The processor will easily fit into the socket if it is properly oriented.



9.3. Pull down the load lever, making sure the cover plate latches properly.



9.4. Slide the load lever to the right until it latches into the retention tab.

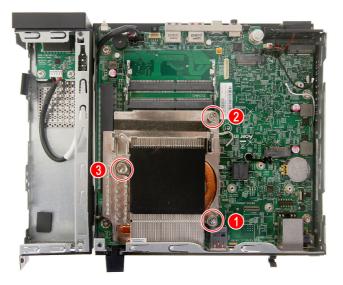


10. install the Thermal Module

10.1. Place the thermal module into the mainboard.

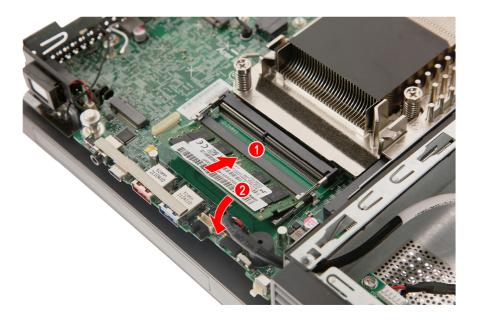


10.2. Tighten the three captive screws to secure the thermal module to the mainboard.



11. Install the Memory modules

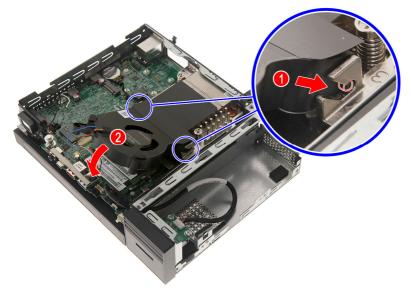
11.1. Insert the memory module into the DIMM slot (1) then press it down until it latches into place (2).



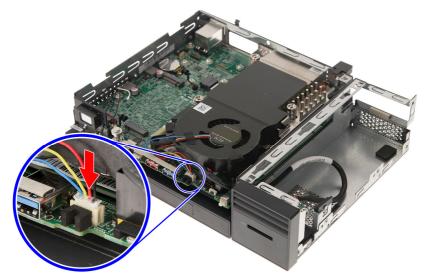
11.2. Repeat Step **11.1** to install the other memory module.

12. Install the Heatsink Fan

12.1. Place the heatsink fan into the mainboard, and push it down until it latches into place.



12.2. Connect the heatsink fan cable to the mainboard.



13. Install the Optional Port Module (Display Port / HDMI / D-SUB / USB Type A/C)

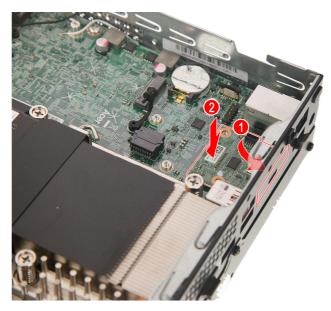
13.1. Insert the optional port module into the bracket.



13.2. Secure the optional port module to the port bracket using one screw.



13.3. Insert the optional port module into the mainboard and press it down until it latches into place.



13.4. Secure the optional port module to the mainboard using two screws.



14. Install the SSD modules

14.1. Place the thermal pad into the SSD1 module.



14.2. Insert the SSD1 module into its slot in the mainboard.



14.3. Use the plastic tab to secure the SSD1 module to the chassis.



14.4. Repeat Steps 14.1~14.3 to install SSD2 module.

15. Install the WLAN module

15.1. Insert the WLAN module into its slot in the mainboard.



15.2. Connect the WLAN antenna cables to the WLAN module.

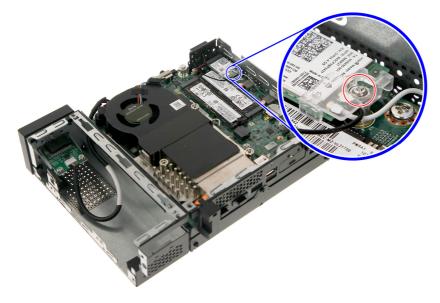


NOTE: Refer to your machine disassembly note to determine which cable color corresponds to the main and auxiliary connectors.

15.3. Insert the WLAN bracket into the WLAN module.

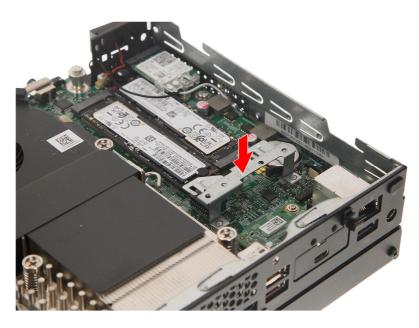


 $\ensuremath{\textbf{15.4.}}$ Secure the WLAN module to the chassis using one screw.



16. Install the HDD1 Support Bracket

16.1. Insert the HDD support bracket into the mainboard.



16.2. Secure the HDD support bracket to the mainboard using three screws.



17. Install the HDD1 cable

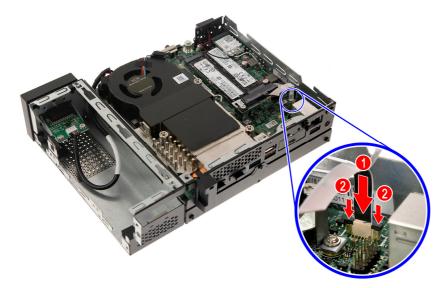
17.1. Insert the HDD1 cable into the HDD support bracket.



17.2. Secure the HDD1 cable to the HDD support bracket using two screws.

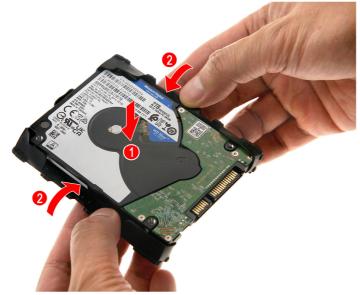


17.3. Connect the HDD1 cable to the mainboard.



18. Install the HDD

18.1. Place the rubber gaskets into the HDD.



18.2. Place the HDD into the bracket.



18.3. Place the HDD module into the chassis and push it until it latches into place.



19. Install the Chassis Cover

19.1. Place the chassis cover into the chassis.



19.2. Secure the chassis cover to the chassis using one screw.



20. Install the VGA Card

20.1. Insert the VGA card into its socket and push until it latches into place.



21. Install the Expansion Box 2 Cover

21.1. Insert the expansion box 2 cover into the expansion box.



21.2. Secure the expansion box 2 cover to the expansion box using one screw.



Troubleshooting

This chapter provides troubleshooting information for the Veriton VN6660G/4660G Mini PC 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

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".

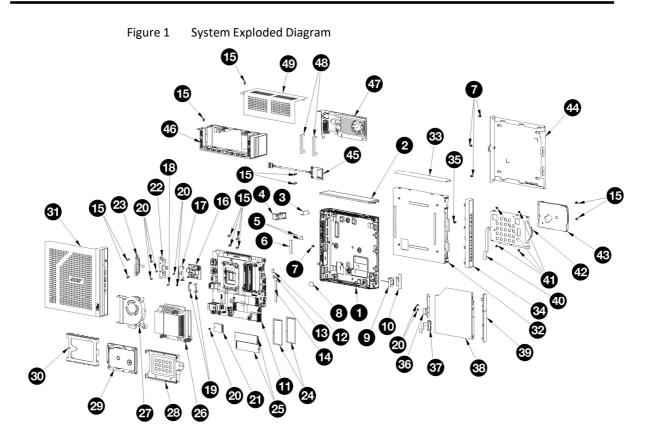
If you are unable to correct the problem by using the "BIOS Messages List" table and "Error Symptoms List" table, go to "Undetermined Problems".

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.

| BIOS Messages | Action/FRU |
|--|--|
| BIOS ROM checksum error - System halted | The checksum of the BIOS code in the BIOS chip is incorrect, indicating the BIOS code may have become corrupt. Contact your system dealer to replace the BIOS. |
| CMOS Battery Failed | The CMOS battery is no longer functional. Contact your system dealer for a replacement the BIOS. |
| CMOS Checksum Error- defaults loaded | Checksum of CMOS is incorrect, so the system loads the default equipment configuration. A checksum error may indicate that CMOS has become corrupt. A weak battery may have caused this error. Check the battery and replace if necessary. |
| CPU at run | Displays the running speed of CPU. |
| Display switch is set incorrectly | The display switch on the motherboard can be set to either monochrome or color. This message indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the Video selection. |
| Press ESC to skip memory test | The user may press Esc to skip the full memory test. |
| HARD DISK initializing - Please wait a | Some hard drives require extra time to initialize. |
| HARD DISK INSTALL FAILURE | Cannot find or initialize the hard drive controller or the drive. Make sure the controller is installed correctly. If no hard drives are installed, be sure the Hard Drive Selection in Setup is set to NONE. |
| Hard disk(s) diagnosis fail | The system may run specific disk diagnostic Routines. This message appears if one or more hard disks return an error when the diagnostics run. |
| Keyboard Error Or No Keyboard Present | 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. |
| Keyboard is locked out - Unlock the key | This message usually indicates that one or more keys have been pressed during the keyboard tests. Be sure no objects are resting on the keyboard. |
| Memory Test: | This message displays during a full memory test, counting down the memory areas being tested. |

| Memory test fail | If POST detects an error during memory testing, additional information appears giving specifics about the type and location of the memory error. |
|---------------------------------------|---|
| Override enabled - Defaults loaded | If the system cannot boot using the current CMOS configuration, the BIOS can override the current configuration with a set of BIOS defaults designed for the most stable, minimal-performance system operations. |
| Press TAB to show POST screen | System OEMs may replace the Phoenix Technologies Award BIOS POST display with their own proprietary display. Including this message in the OEM display permits the operator to switch between the OEM display and the default POST display. |
| Primary master hard disk fail | POST detects an error in the primary master hard drive. |
| Primary slave hard disk fail | POST detects an error in the secondary master hard drive. |
| Secondary master hard disk fail | POST detects an error in the primary slave hard drive. |
| Secondary slave hard disk fail | POST detects an error in the secondary slave hard drive. |

Exploded Diagrams



Please contact your local service center to find out how to obtain the part or replace your device

- Option 1: Select Start ■ > Settings ◇ > Update & Security > Recovery. Under Reset this PC, select Get started. <u>Open Recovery settings</u>.
- 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⁽¹⁾ icon > Restart in the lower-right corner of the screen. After your computer restarts, select Troubleshoot > Reset this PC.
- Option 3: Select Start I , 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.