an Acer Group Company

Altos BrainSphere™ T15 F6 使用手冊

Rev. 1.0

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Altos Computing Inc. (abbr. Altos) is established in 2017 and it is a subsidiary of Acer Inc. The business model of Altos is to provide the best streamlined and cost-effective integrated solutions thru in-house R&D working with ODM/IHV/ISV on servers, workstations, thin client, network and storage. In the era of demanding speed, Altos provides leading solution included, but not limited to High Performance Computing, Virtual Desktop Infrastructure, Cloud Infrastructure and Software Defined Storage, etc.

FCC Statement: This equipment has been tested and found to comply with the limits for a Class A or Class B 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 industrial environment for Class A device or in residential environment for Class B device. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Manual Revision 1.0

Release Date: April 15, 2024

系統設定

系統注意事項

感謝您購買 Altos 伺服器。 本使用手冊專供專業的伺服器技術人員參考用，並詳細說明 Altos 伺服器所擁有的眾多功能。 如需任何特定元件或軟體解決方案的詳細資訊，請參閱該應用程式的技術規格或使用手冊。

注意：在打開或取出任何元件之前，請先聯絡當地經過認證的 Altos 客服人員。

警告！ 未經認證的技術人員在更換元件期間造成的任何零件或元件毀損，將不在保固涵蓋範圍內。 如需詳細資訊，請參閱系統內的保固手冊。

注意：

額定電氣規格:

- 500W 電源供應器(FSP500-50AAC): 100-240Vac, 7A-3A, 50-60Hz
- 450W 電源供應器(FSP450-50EGN): 100-240Vac, 6A-3A, 50-60Hz

Rating (AC Input)	100-240Vac, 7A-3A, 50-60Hz 100-240Vac, 6A-3A, 50-60Hz
Operating Temperature	10°C to 35°C
Non-operating temperature	-40°C to 60°C
Operating humidity	8%-80% (non-condensing)
Non-operating humidity	20%-95% (non-condensing)

設定系統

安裝前需求

選擇擺置地點

在拆開和安裝系統之前，請先選擇一個適當的擺置地點，如此可讓系統發揮最大效益。選擇地點時，請考慮下列因素：

- 靠近接地電源插座。
- 乾淨且無塵。
- 堅固且不會震動的表面。
- 通風良好且遠離熱源。
- 遠離電子裝置(例如空調機、收音機和電視傳輸器等)所產生的電磁場。

檢查包裝盒內容

請先檢查下列包裝盒中的產品項目：

- 系統
- 配件盒

上述的任何一項物品若有損壞或缺失，應盡速與經銷商聯絡。

請妥善保存所有產品包裝盒與其他包材，以利未來運送時使用。

打開系統電源

確認系統安裝正確，使用合適電源，並且已連接所有必需週邊設備後，即可打開電腦電源。請依照以下步驟進行。

按下電源按鈕⏻。
系統開始啟動並顯示歡迎訊息。然後，會出現連續的開機自我測試 (POST) 訊息。POST 訊息說明了系統是否運作正常。

附註： 若在按下電源鈕之後，系統仍未啟動，請參閱下一節中啟動失敗之可能原因說明。

除了開機自我測試 (POST) 的訊息外，您還可根據下列情況判斷系統是否處於良好狀態：

- 前面板上的電源指示燈是否亮起。
- 鍵盤上的 Num Lock、Caps Lock 和 Scroll Lock 指示燈是否亮起。

開機問題

在提供電源後，若系統仍無法啟動，請檢查下列可能原因：

- 已連接的外接電源線可能鬆掉了。
- 詳細檢查從電源插座到後面板上電源插孔的電線連接情形。請確認每一條電線都已連接電源。
- 接地電源插座沒有電源。請電機人員檢查電源總開關。
- 內部電纜連接鬆脫或連接錯誤。

檢查內部電纜連接。如果不確定是否可執行這項檢查步驟，請求合格的技術人員協助檢查。

警告！在進行這項檢查工作前，請確認所有電源線均已拔掉。

附註： 若您已進行上述的檢查項目，而系統仍

無法啟動，請聯絡經銷商或合格的技術人員，
以取得更多的協助。

關閉系統

有兩種關閉工作站的方式，透過軟體或硬體。下列的軟體關閉步驟適用於執行 Windows 作業系統的系統。如需其他作業系統的關閉步驟，請參閱相關的使用者說明文件。

透過軟體關閉系統

1. 同時按下鍵盤上的 **<Ctrl> + <Alt> + <Del>** 鍵或按一下 Windows 工作列上的「**開始**」。
2. 選擇「**關機**」。
3. 從下拉視窗中選擇「**關機**」，然後按一下「**確定**」。

透過硬體關閉系統

如果無法使用軟體關閉工作站，請按住電源按鈕不放至少四秒鐘。如果少於四秒鐘，只能讓工作站進入暫停模式。

系統故障排除

重新啟動系統

在進行進階的故障排除之前，請先嘗試使用下列方法重新啟動系統。

執行	目的	動作
暖開機	清除系統記憶體，並重新載入作業系統。	按下 <Ctrl> + <Alt> + <Del>
冷開機	清除系統記憶體，重新啟動 POST，並重新載入作業系統。本操作將中斷所有週邊設備的電源。	先按下系統電源鍵關閉電源，接著再次按下該鍵重新打開電源。

初始系統啟動故障

初始系統啟動故障常由錯誤安裝或配置所引起。由硬體而導致此故障的可能性較小。 如果您遇到的故障和特定應用程式相關，請參閱「軟體程式故障」。

使用下列檢查列表排除故障原因。

- 牆壁上的電源插座是否可使用？
- 電源供應器模組的安裝方式是否正確？
- 系統電源線是否正確插入電源供應器模組的插座？並和 100-120 V 的 NEMA 5-15R 插座或 200-240 V 的 NEMA 6-15R 插座連接？
- 所有的週邊設備纜線是否連接正確並固定？
- 您是否曾按下系統電源鍵開啟工作站 (電源指示燈應該亮起綠色)？
- 所有裝置的驅動程式是否安裝正確？
- 硬碟的格式化與組態設定是否正確？
- BIOS 設定公用程式中的 BIOS 組態設定是否正確？
- 作業系統是否正確載入？請參閱作業系統的說明文件。
- 所有的硬體元件是否符合被檢測的元件清單？
- 所有內部纜線是否連接正確並固定？
- 處理器是否完全固定安裝在主機板插槽上？
- 所有處於正確位置，且未接觸任何元件的支架，是否可能引起潛在短路？
- 所有外接擴充卡是否完全固定安裝在主機板插槽上？
- 所有的系統跳線設定是否正確？
- 外接板和週邊裝置上的所有開關設定是否正確？

硬體診斷測試

本章節將提供一種詳細方法，用來確認硬體故障並找出原因。

檢查開機狀態

小心！要將週邊設備纜線從工作站上拔掉前，
先關閉系統與所有外接週邊裝置的電源。
若未如此，將對系統和 / 或週邊裝置造成
永久性損壞。

1. 關閉系統與所有週邊裝置的電源。
2. 除了鍵盤與顯示器外，請拔掉與系統連接的各個裝置纜線。
3. 確認系統電源線二端各插入正確接地的 AC 電源插座，以及電源供應器模組的插孔中。
4. 確認顯示器與鍵盤已正確連接至系統。
5. 打開顯示器。
6. 設定顯示器的亮度與對比度，設定值至少為最大範圍的三分之二。請參閱顯示器隨附的說明文件。
7. 如果要正常從硬碟載入作業系統，請先確認軟碟機中沒有磁片和光碟。
8. 如果電源指示燈亮起，請嘗試從軟碟機啟動。
9. 打開系統電源。

如果控制面板上的電源指示燈不亮，請參閱「電源指示燈不亮」。

檢查儲存裝置的狀態

由於 POST 會確認系統組態，它會測試系統安裝的每個大容量儲存裝置的狀態。當檢查每個裝置時，它的活動指示燈會暫時亮綠燈。檢查硬碟其他已安裝裝置的活動指示燈。

如果這些指示燈都不亮，請參閱「特定故障和相應解決方法」。

確認作業系統的載入

一旦系統啟動，螢幕會出現作業系統的提示。不同作業系統會有不同提示。如果沒出現作業系統提示，請參閱「監視器上沒有出現字元」。

特定故障和相應解決方法

下列為使用工作站過程中，出現的特定故障以及相應的解決方法。

電源指示燈不亮

依下列步驟檢查：

- 確認電源供應器模組安裝正確。
- 確認電源線連接正確。
- 確認牆壁插座有電。您可插入其他裝置確認檢查。
- 確認前面板的電源指示燈亮綠燈。
- 拆下所有外接擴充卡，看看系統是否可啟動。
  如果成功重新啟動，再重新裝回擴充卡，每重裝一塊卡就就重新啟動系統，檢查是否有那塊卡造成故障。
- 確認安裝的記憶體模組是否為系統相同，並且安裝方式正確無誤。
- 確認安裝的處理器是否為系統相同，並且安裝方式正確無誤。

無法偵測到新安裝的記憶體模組

依下列步驟檢查：

- 確認記憶體模組的規格與系統相容。
- 確認記憶體模組已照指南方式正確安裝。
- 確認記憶體模組已正確安裝於主機板插槽上。

網路連線指示燈不亮

依下列步驟檢查：

- 檢查所有接線和網路設備，確認其狀態正常。
- 重新安裝網路驅動程式。
- 嘗試換接交換機上的其他連接埠或集線器。

網路活動指示燈不亮

依下列步驟檢查：

- 確認系統載入正確的網路驅動程式。
- 網路可能處於閒置狀態。

連接到 USB 連接埠的週邊裝置無法工作

依下列步驟檢查：

- 減少連接到 USB 集線器的外接裝置數量。
- 請參閱裝置隨附的說明文件。

軟體程式故障

依下列步驟檢查：

- 檢查系統軟體組態設定是否正確。
  請參閱該軟體的安裝與操作說明文件，了解軟體設定和使用說明。
- 嘗試使用另一版本的軟體，確認是否問題出現在使用的軟體拷貝。 如果軟體的其他版本可以正常執行，請聯絡該軟體廠商討論軟體瑕疵事宜。

監視器上沒有出現字元

依下列步驟檢查：

- 鍵盤運作是否正常？檢查方法為：打開和關閉 Num Lock 功能，檢查相應的指示燈是否亮起。
- 監視器是否插電並也打開電源？如果您使用切換器，是否切換到正確的系統了？
- 監視器上的亮度與對比度的設定值是否合適？
- 監視器的訊號線連接是否正確？
- 如果將監視器換接到另一不同系統，監視器運作是否正常？
- 拆下所有外接擴充卡，看看系統是否可啟動。
  如果成功重新啟動，再重新裝回擴充卡，每重裝一塊卡就就重新啟動系統，檢查是否有那塊卡造成故障。
- 確認安裝的記憶體模組是否為系統相同，並且安裝方式正確無誤。
- 確認安裝的處理器是否為系統相同，並且安裝方式正確無誤。

如果您正在使用外接的視訊控制卡，請執行下列步驟：

1. 檢查監視器是否能使用內建視訊控制卡運作。
2. 檢查外接的視訊控制卡是否完全固定安裝在插槽上。
3. 重新啟動系統，讓變更生效。
4. 如果重新啟動系統後，監視器仍然沒出現任何字元，請再次重新啟動系統。

注意：POST 過程發出的嗶聲 (Beep) 代碼。
如果您需要客服技術支援，需要提供此代碼資訊。
如果 POST 過程沒有任何嗶聲 (Beep) 代碼，
監視器也沒有任何字元，那麼監視器或視訊控制卡可能有問題。
請聯絡您當地的客服或授權經銷商，尋求協助。

注意事項

安全與舒適性的相關資訊

重要安全指示

請仔細閱讀本安全指示，並妥善保管本文件以便日後查詢使用。 請務必遵守標示在本產品上的所有警告與指示訊息。

在清潔前請先關閉本產品的電源

請先將本產品從牆上插座拔除後，再進行清理工作。請勿使用液狀或噴霧清潔劑， 使用微濕的布擦拭清潔本產品。

接上中斷連線裝置的注意事項

在將電源連接至電源供應器或從電源供應器移除時，請遵守以下指南：

- 在連接電源線到 AC 電源插座之前，請先安裝電源供應器。
- 從電腦移除電源供應器之前，請先拔下電源線。
- 如果系統有多個電力來源，請從電源供應器拔下所有的電源線，以中斷系統電源。

協助工具注意事項

請確認您要接上電源插頭的插座，其位置是盡可能靠近設備操作人員，並且容易使用。當您需要切斷設備的電源時，請確認將電源線從插座上拔下。

警告

- 勿靠近水邊使用本產品。
- 勿將本產品放置在不穩固的平台、支架或桌面上使用。 本產品可能因掉落而導致嚴重受損。
- 本產品的插槽和通風孔均做為通風之用，以確保本產品操作的可靠性，並預防過熱，絕不可堵塞或蓋住這些通風孔。請勿將本產品放置在床上、沙發、地毯等類似地點上，因為這樣可能會堵塞通風孔。除非有適當的通風，否則絕對不要將本產品放

在靠近電暖爐或暖氣機的地方，或是採用嵌入式的安裝方式。

- 請勿將任何物體從通風槽中插入產品中，因為可能會觸電或造成短路，並導致火災或產生電擊。切勿潑灑任何液體到產品上。
- 請勿將本產品置於易震動的平面上，以避免內部零件的損壞並防止電池液的漏出。

- 在運動、行動或任何震動環境中請勿使用，因為其可能引起突如其來的短電流或是損壞轉輪裝置、硬碟，甚至是鋰電池漏液的危險。

電力使用

- 本產品僅可使用電源線標籤所規定的電壓。若不確定可供使用的電壓種類，請洽詢經銷商或當地的電力公司。
- 請勿在電源線上面放置任何重物。電源線的走線或配置要特別小心，避免放在會被物品或腳絆到的地方。
- 使用延長線時，請注意其電流負荷量。插在同一延長線的電器設備使用電量不可超過延長線的電流負荷量。同時，同一插座的耗電量也不可超過保險絲的負荷量。
- 請勿將電源插座、延長線或插頭與太多裝置連接，以免負荷量過重。整體的系統負載量不得超過分支電路功率的 80%。如果使用的是延長線，則其負載量不應超過延長線輸入功率的 80%。
- 產品隨附的 AC 電源轉換器配備有三線式接地插頭。此插頭僅適合用於與接地插座連接。請在插入 AC 電源轉接器插頭前，確認該插座已接地。請勿將插頭插入一個非接地式的插座。如需詳細資訊，請與電氣技師洽詢。

警告！插頭的接地腳是一個安全防護功能。
在使用電源插座時如果接地不完全，
可能會發生電擊並 / 或造成身體傷害。

注意：接地腳同時提供了良好的保護，避免
鄰近電子裝置對產品性能產生干擾及製造噪音。

僅使用本產品專用電源線組合 (隨配件盒附贈的)。此電源線組合屬

可分離式：
UL 安全規定 / CSA 認證、SPT-2 類、最小功率設定 7 A 125 V、VDE 認可或同等認可。最大的長度為 4.6 公尺 (15 呎)。

產品維護

請勿自行維修本產品，因為打開或移除機殼時，會讓您曝露在危險的電壓或其他風險之中。 應由專業合格的維修人員進行維修工作。

當發生下列情形時，請拔掉本產品的電源插頭，並由專業人員進行維修：

- 當電源線或插頭損壞、切開或磨損時。
- 曾有液體潑灑在產品上。
- 產品曾遭雨淋或浸在水中。
- 產品曾經掉落，或機殼已經損壞。
- 產品的效能出現極大的改變，則表示產品需要維修。
- 在遵守操作指示之後產品還是不能正常運作。

備註：請遵照操作指示來進行調整控制，不當的控制調整會損壞產品，使專業合格的維修人員花費更長的時間，才能讓產品恢復正常情形。
本工作站應安置在有限制門禁管理處或同樣妥善位置。

警告：如果電池未正確更換，將有爆炸的危險。只能更換相同品牌或者製造廠商推薦相同類型的電池。使用過的電池要按照製造廠商的指示加以處理。

廢物處理指示

請勿在丟棄本電子設備時將其當作一般垃圾處理。為確保能將污染降至最低，且對全球環境保護作出最大貢獻，請重複回收再利用。

Restriction of Hazardous Substances (RoHS) Directive Statement
Altos products have not intended to add and safe from hazardous substances (Cd, Pb, Hg, Cr+6, PBDE and PBB). The parts and components have been carefully selected to meet RoHS requirement. Moreover, we at Altos are continuing our efforts to develop products that do not use internationally banned toxic chemicals.

限制使用有害物質 (RoHS) 指令聲明
Altos產品未故意添加和使用有害物質（Cd、Pb、Hg、Cr+6、PBDE和PBB）。所有部件和元件均經過嚴格挑選，符合RoHS要求。此外，我們Altos一直致力於開發不使用國際上禁止的有毒化學品的產品。

設備名稱： 伺服器 Equipment name				，型號（型式）：BrainSphere T15 F6; Altos T15 F6 Type designation (Type)		
單元Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
金屬機構件	—	○	○	○	○	○
塑料機構件	○	○	○	○	○	○
電路板組件	—	○	○	○	○	○
電源供應器	—	○	○	○	○	○
電源線/其他線材	—	○	○	○	○	○
風扇	—	○	○	○	○	○
散熱模組(金屬部分)	—	○	○	○	○	○
儲存設備	—	○	○	○	○	○

備考1. 〝○〞係指該項限用物質之百分比含量未超出百分比含量基準值。
Note 1：“○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.
備考2. 〝—〞係指該項限用物質為排除項目。
Note 2：The “–” indicates that the restricted substance corresponds to the exemption.

規範和安全注意事項

雷射產品相容聲明

CLASS 1 LASER PRODUCT
CAUTION: INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.

適用於歐盟國家的符合聲明

特此，宣告此電腦系列符合 Directive 1999/5/EC 條款的基本要求和相關規定。

可應用的國家清單

本裝置的使用必須嚴格遵守所在國家內的法規及限制。 如需詳細資訊，請聯絡裝置使用國家當地的辦公處。 請參閱 http://ec.europa.eu/enterprise/rtte/implem.htm，以取得最新的國家清單。

警告:為避免電磁干擾，本產品不應安裝或使用於住宅環境。

注意：下列章節只適用於 A 級系統。

FCC A 級注意事項

本產品經測試並判定符合 A 級數位設備限制，且遵照 FCC 條例第 15 節。該限制是為提供合理保護，避免住宅安裝時引起有害干擾而設計的使用條件。本產品會產生、使用並發射無線電頻率能量，若您未按指示來安裝與使用，可能會對無線電通訊造成有害干擾。

然而，我們無法保證一些特定安裝方式不會發生干擾。如本產品對收音機或電視接收造成有害干擾（可經由打開或關閉本產品而確認），則使用者可嘗試利用下列方式進行調整：

- 移動接收天線的角度或位置
- 拉開裝置與接收器間的距離
- 不要共用裝置與接收器的電源插座
- 如需協助，請洽詢經銷商或專業收音機 / 電視技術人員

注意：遮蔽型電線

本產品與其它電腦裝置間的連接，必須使用遮蔽型電線以符合 FCC 規定。為符合 FCC 規範，請使用屏蔽纜線連接其他運算裝置。建議使用雙連結纜線進行 DVI 輸出。

注意：週邊裝置

僅通過認證且符合 A 級限制週邊裝置 (輸入 / 輸出裝置、終端機、印表機等) 方能與本產品搭售。若與其他未經認證週邊裝置共同使用時，可能會干擾收音機與電視接收。

警告

未經製造廠商許可的變更或修改可能導致使用者喪失操作本電腦的權利，此授權係由聯邦通訊委員會 (Federal Communications Commission) 所賦予。

使用條件

本產品符合 FCC 條例第 15 節限制。操作時，請遵循下列 2 項條件：(1) 本產品不得產生傷害性干擾，且 (2) 本產品必須接受任何接收到的干擾訊號，包括可能導致非預期操作的干擾。

目錄

Chapter 1 硬體安裝

1-1 安裝注意事項

The motherboard/system contain numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the user manual and follow these procedures:

- Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.
- When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely.
- When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
- Prior to installing the motherboard, please have it on top of an antistatic pad or within an electrostatic shielding container.
- Before unplugging the power supply cable from the motherboard, make sure the power supply has been turned off.
- Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
- Before using the product, please verify that all cables and power connectors of your hardware components are connected.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
- Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- Do not place the computer system on an uneven surface.
- Do not place the computer system in a high-temperature environment.
- Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

1-2 產品規格

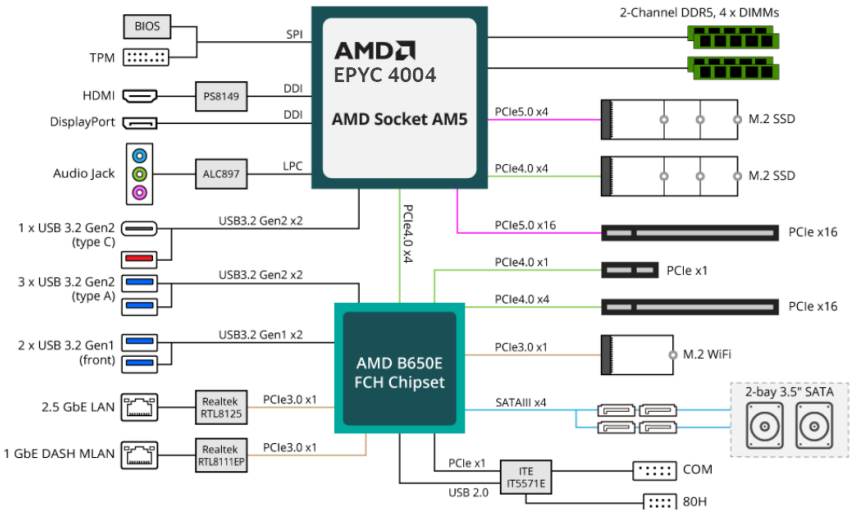
NOTE:
We reserve the right to make any changes to the product specifications and product-related information without prior notice.

System Dimension	◆ Mini-Tower ◆ 375 x 198 x 370 mm
CPU	◆ AMD® Ryzen™ 7000 Series Processors
Chipset	◆ AMD® B650E
Memory	◆ 4 x DDR5 DIMM sockets supporting up to 128 GB (32 GB single DIMM capacity) of system memory ◆ Dual channel memory architecture ◆ Supported ECC Un-buffered DIMM 1Rx8/2Rx8 memory modules ◆ Supported non-ECC Un-buffered DIMM 1Rx8/2Rx8/1Rx16 memory modules ◆ Memory speed: Up to 5200MHz for 1DPC ; up to 3600MHz for 2DPC
LAN	◆ 2 x LAN ports ◆ - Realtek® 2.5GbE LAN (RTL8125) ◆ - Realtek® GbE DASH LAN (RTL8111EP)
Video	◆ 1 x DP port: supporting maximum resolution of 4096x2160 @60Hz; Support for DP 1.2 version ◆ 1 x HDMI port: supporting maximum resolution of 4096x2160 @60Hz; Support for HDMI 2.1 version, HDCP 2.3, HDR
Audio	◆ Realtek® ALC897 audio codec ◆ High Definition audio; 2/4/5.1/7.1-channel ◆ 3 ports Audio Jack (Line in/Line out/Mic)
Storage	◆ 2 x 3.5" fixed drive bays
RAID	◆ RAID 0, 1, 10
Peripheral Drives	◆ ODD drive in option

Expansion Slot	◆ 1 x PCIe x16 (Gen5 x16) slot; integrated in CPU ◆ 1 x PCIe x16 (Gen4 x4) slot; integrated in chipset ◆ 1 x PCIe x1 (Gen4 x1) slot; integrated in chipset ◆ 2 x M.2 slot for storage: - M-key - PCIe Gen5 x4 from CPU; PCIe Gen4x4 from chipset - Supports NGFF-2242/2280 card ◆ 1 x M.2 slot for Wi-Fi: - E-key - Supports NGFF-2230 card
Internal I/O	◆ 1 x 24-pin ATX main power connector ◆ 1 x 8-pin ATX 12V power connector ◆ 4 x SATA III 6Gb/s ports ◆ 1 x CPU fan header ◆ 3 x System fan headers ◆ 1 x Serial header (COM) ◆ 1 x Front panel header ◆ 1 x Front Audio header ◆ 1 x Front USB3.2 Gen1 header ◆ 1 x M.2 slot (PCIe gen5 x4, M-key, support NGFF-2280) ◆ 1 x M.2 slot (PCIe gen4 x4, M key, support NGFF-2280) ◆ 1 x M.2 slot (for Wi-Fi/BT module; E-key; support NGFF-2230)
Front I/O	◆ 2 x USB3.2 Gen1 ports ◆ 1 x Line out port ◆ 1 x Mic in port ◆ 1 x Power Button ◆ 1 x Hard drives status LED ◆ 1 x Reset Button
Rear I/O	◆ 1 x Display port ◆ 1 x HDMI port ◆ 2 x Antenna ports ◆ 3 x USB 3.2 Gen2 type A ◆ 1 x USB 3.2 Gen2 type C ◆ 2 x 2.5 GbE RJ45 LAN ports ◆ 3 x Audio Jacks (Line in / Line out / Mic in)
TPM	◆ On board with SPI interface

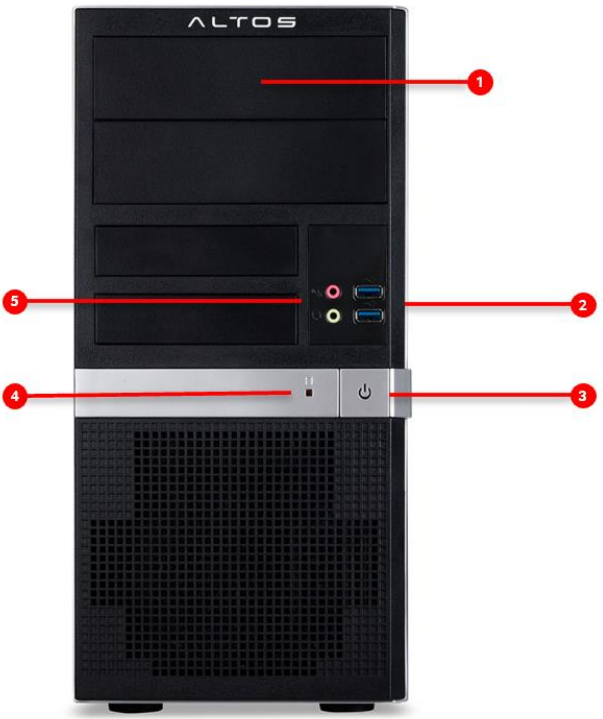
Power Supply	◆ 1 x 500W PSU ◆ 80 PLUS Bronze ◆ AC Input: - 90-264V; 115V/7A, 230V/3A; 47-63Hz ◆ DC Output: - Max. 500W +12V/ 41.66A +5V/ 20A +3.3V/ 20A +5Vsb/ 2.5A
System Management	Realtek® DASH Remote Management ◆ Power state settings (on, off, restart, hibernate, or sleep) ◆ View hardware, firmware or BIOS versions ◆ Retrieve system health status ◆ USB device redirection ◆ Boot device selection ◆ View event logs ◆ Apply updates and security patches ◆ Text Console Redirection ◆ Software KVM
Operating Properties	◆ Operating temperature: 10°C to 35°C ◆ Operating humidity: 8-80% (non-condensing) ◆ Non-operating temperature: -40°C to 60°C ◆ Non-operating humidity: 20%-95% (non-condensing)

1-3 系統方塊圖


BIOS
TPM
SPI
AMD
EPYC 4004
AMD Socket AM5
2-Channel DDR5, 4 x DIMMs
HDMI
DisplayPort
PS8149
DDI
DDI
PCIe5.0 x4
M.2 SSD
Audio Jack
ALC897
LPC
PCIe4.0 x4
M.2 SSD
1 x USB 3.2 Gen2 (type C)
USB3.2 Gen2 x2
PCIe4.0 x4
PCIe5.0 x16
PCIe x16
3 x USB 3.2 Gen2 (type A)
USB3.2 Gen2 x2
PCIe4.0 x1
PCIe x1
PCIe4.0 x4
PCIe x16
2 x USB 3.2 Gen1 (front)
USB3.2 Gen1 x2
AMD B650E
FCH Chipset
PCIe3.0 x1
M.2 WiFi
2.5 GbE LAN
Realtek RTL8125
PCIe3.0 x1
SATAIII x4
2-bay 3.5" SATA
1 GbE DASH MLAN
Realtek RTL8111EP
PCIe3.0 x1
PCIe x1
ITE IT5571E
COM
USB 2.0
80H

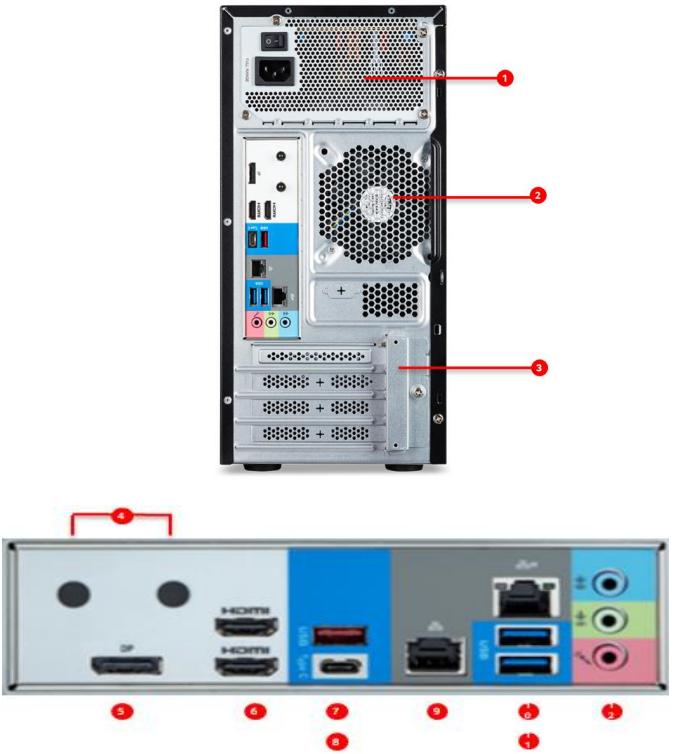
Chapter 2 系統外觀

2-1 正視圖



No.	Description	No.	Description
1.	5.25” 擴充槽	4.	硬碟狀態 LED
2.	USB 3.2 連接埠	5.	麥克風接口
3.	電源按鈕		

2-2 後視圖

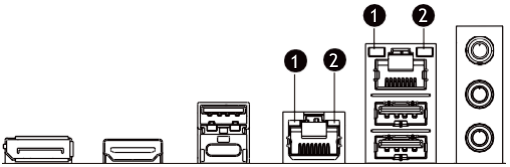


No.	Description	No.	Description
1.	輸出電源線接口	7.	USB 3.2 連接埠
2.	80x80x25 mm 系統風扇	8.	USB 3.2 連接埠 (Type C)(5V/1.5A)
3.	PCIe 擴充槽	9.	2.5GBE 連接埠
4.	天線連接埠	10.	GBE連接埠
5	DP 連接埠	11.	USB 3.2 連接埠
6.	2 HDMI 2.0 連接埠	12.	連接埠

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

The HDMI port is HDCP 2.3 compliant and supports Dolby TrueHD and DTS HD Master Audio formats. It also supports up to 192KHz/24bit 7.1-channel LPCM audio output. You can use this port to connect your HDMI-supported monitor. The maximum supported resolution is 4096x2160@60Hz, but the actual resolutions supported are dependent on the monitor being used.

2-3 背板系統網路 LED 燈號



No.	Name	Color	Status	Description
1.	1GbE Speed LED	Yellow	On	1 Gbps data rate
		Green	On	100 Mbps data rate
		N/A	Off	10 Mbps data rate
2.	1GbE Link / Activity LED	Green	On	Link between system and network or no access
			Blink	Data transmission or reception is occurring.
		N/A	Off	No data transmission or reception is occurring.

Chapter 3 系統硬體安裝

Pre-installation Instructions

Computer components and electronic circuit boards can be damaged by electrostatic discharge.

Working on computers that are still connected to a power supply can be extremely dangerous. Follow the simple guidelines below to avoid damage to your computer or injury to yourself.

- Always disconnect the computer from the power outlet whenever you are working inside the computer case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal system of the computer case, or the bare metal body of any other grounded appliance.
- 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 the circuit board.
- Leave all components inside the static-proof packaging until you are ready to use the component for the installation.

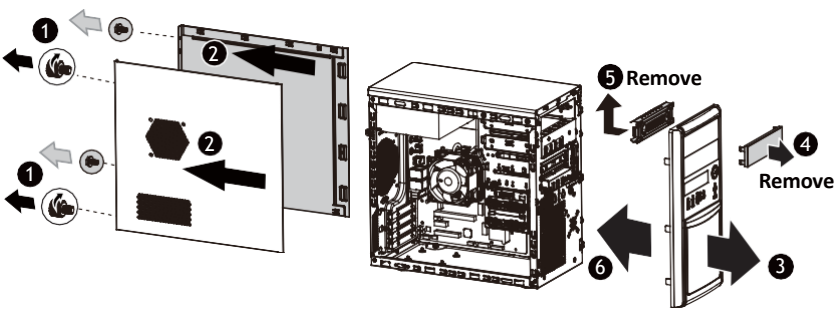
3-1 機殼移除與安裝

Before you remove or install the chassis cover

- Make sure the system is not turned on or connected to AC power.

Follow these instructions to remove/install the chassis side cover and front bezel:

1. Remove the screw securing the chassis side cover.
2. Slide the cover towards the rear of the system and then remove the cover in the direction indicated by the arrow.
3. Remove the front bezel.
4. Remove the dummy cover.
5. Remove the EMI shielding.
6. Reinstall the front bezel.
7. Follow steps 1-2 in reverse order to re-install the chassis side cover.



3-2 安装 CPU

Read the following guidelines before you begin to install the CPU:

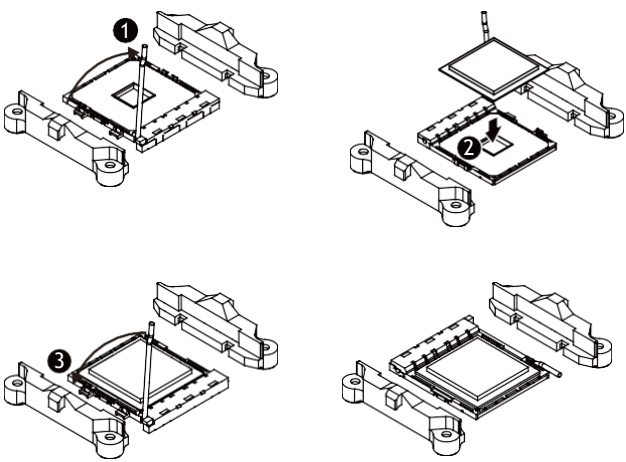
- Make sure that the motherboard supports the CPU.
- Always turn off the computer and unplug the power cord from the power outlet before installing the CPU to prevent hardware damage.
- Unplug all cables from the power outlets.
- Disconnect all telecommunication cables from their ports.
- Place the system unit on a flat and stable surface.
- Open the system according to the instructions.

WARNING!

Failure to properly turn off the server before you start installing components may cause serious damage. Do not attempt the procedures described in the following sections unless you are a qualified service technician.

Follow these instructions to Install the CPU:

1. Lift up the CPU socket locking lever.
2. Align the CPU pin one (triangle marking) with the pin one corner of the CPU socket. Install the CPU onto the socket.
3. Ensure the CPU is positioned into its socket and secure the CPU socket lever.



3-3 安裝記憶體

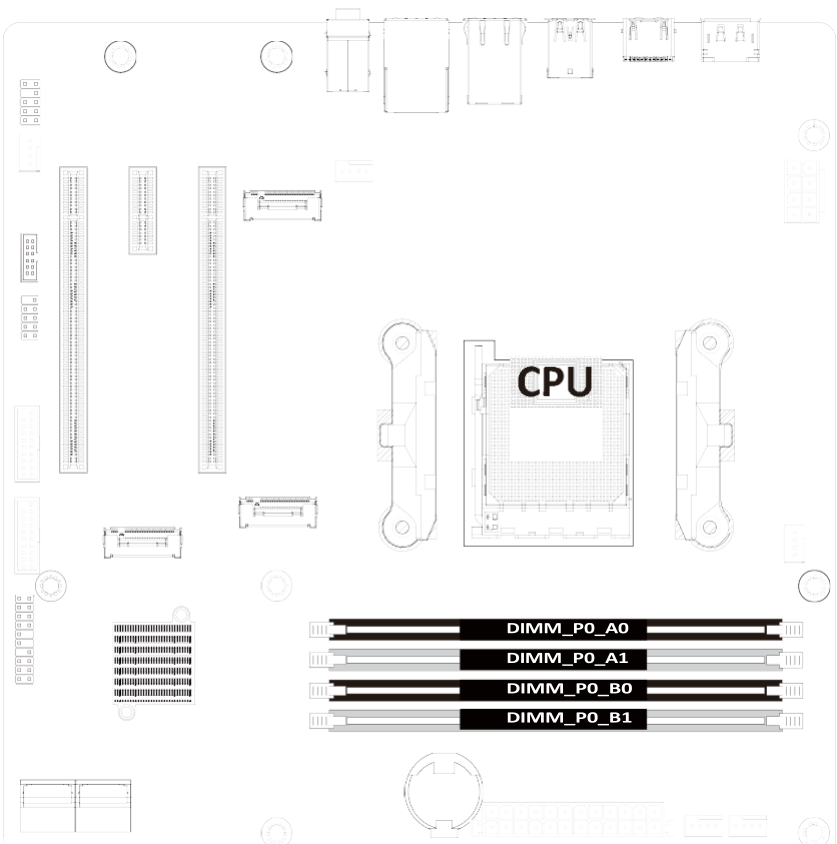
Read the following guidelines before you begin to install the memory:

- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
- Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction.

3-3-1 雙通道記憶體設定

This motherboard provides 4 DDR4 memory slots and supports Dual Channel Technology. After the memory

is installed, the BIOS will automatically detect the specifications and capacity of the memory.

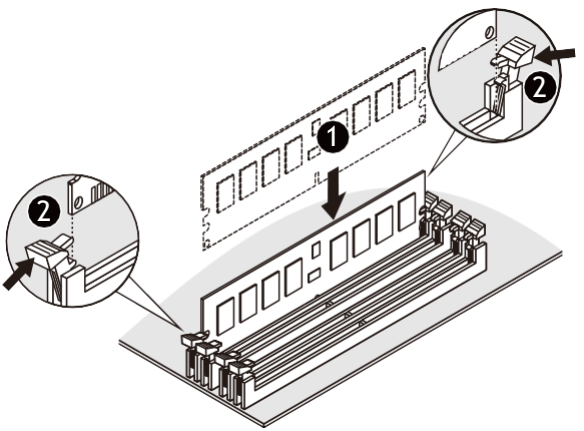


3-3-2 安裝記憶體

Before installing a memory module, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module.
Be sure to install DDR4 DIMMs on this motherboard.

Follow these instructions to install the Memory:

1. Insert the DIMM memory module vertically into the DIMM slot, and push it down.
2. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.
3. Reverse the installation steps when you want to remove the DIMM module.



Memory Type	DDR4
Voltage (V)	1.2V
Connector	UDIMM
Speed (MT/s)	2933 | 2666
Channels	1,2
DIMM Per Channel	1,2
DIMM Capacity (GB)	2,4,8,16,32

Note:

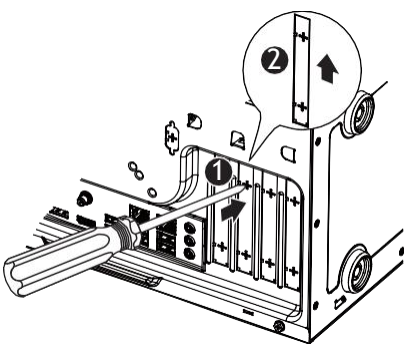
- DIMM must be populated in sequential alphabetic order, starting with DIMM2 (DDR4_A2).
- When only one DIMM is used, it must be populated in memory slot DIMM2 (DDR4_B2).

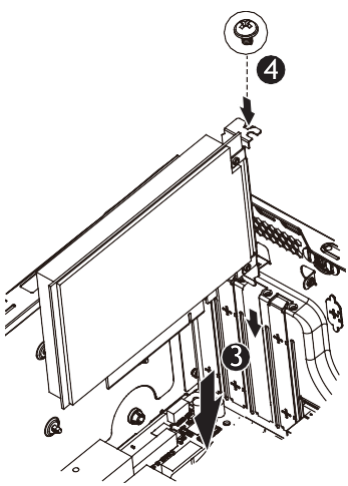
3-4 安裝 PCIe 卡

- Voltages can be present within the server whenever an AC power source is connected. This voltage is present even when the main power switch is in the off position. Ensure that the system is powered-down and all power sources have been disconnected from the server prior to installing a PCIe card.
- Failure to observe these warnings could result in personal injury or damage to equipment.

Follow these instructions to install the PCI Expansion card:

1. Use a screw driver to push the slot cover.
2. Remove the slot cover from the PCIe bracket.
3. Align the PCIe card onto the slot and push in the direction of the arrow until the PCIe card sits in the PCIe card connector.
4. Secure the PCIe card with the screw.
5. Reverse the previous steps to remove the PCIe card.





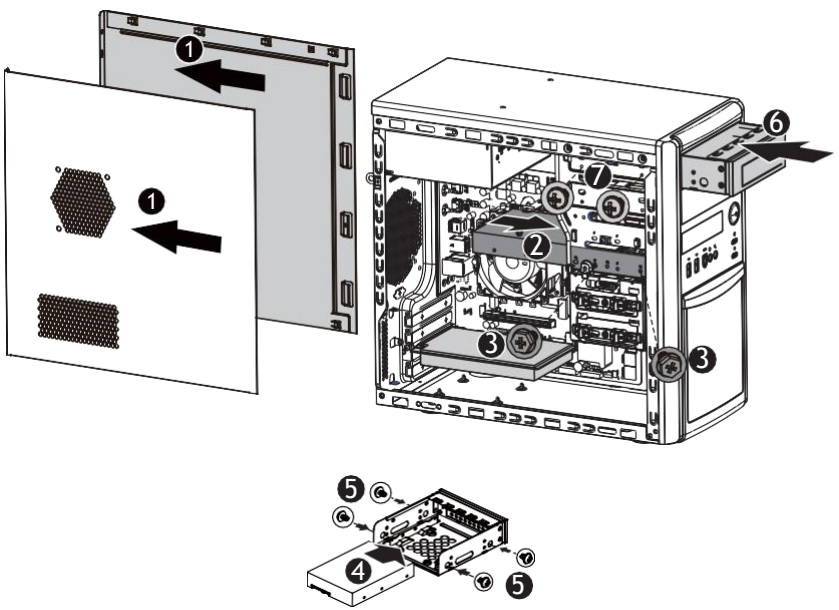
3-5 安裝硬碟

Read the following guidelines before you begin to install the hard disk drive:

- Take note of the drive tray orientation before sliding it out.
- The tray will not fit back into the bay if inserted incorrectly.
- Make sure that the hard disk drive is connected to the hard disk drive connector on the backplane.

Follow these instructions to install 3.5" hard disk drives:

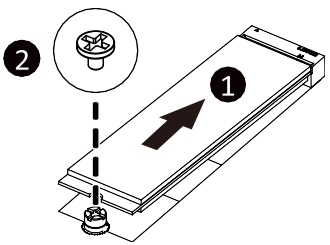
1. Remove both side covers.
2. Slide the first hard disk drive into the slot.
3. Mount it with two screws on each side.
4. Slide the second hard disk drive into the dedicated HDD tray. (Note: Connect your GIGABYTE sales representative with any order requests.)
5. Screw the hard disk drive with four screws.
6. Insert the HDD tray into the slot.
7. Mount it with two screws on each side.
8. Reinstall both side covers.



3-6 安裝與移除 M.2 SSD

Follow the steps below to install an optional M.2 SSD module on your motherboard.

Step1. Insert the M.2 SSD module into the slot.
Step2. Secure it with the screw, tightening as necessary to fasten the M.2 SSD module in place.

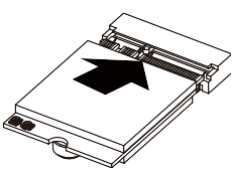


3-7 安裝與移除 Wi-Fi 卡

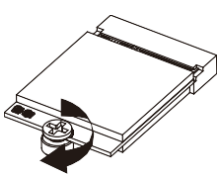
Follow the steps below to install a M.2 WiFi module on your

motherboard. Step1. Carefully Insert the M.2 WiFi module into

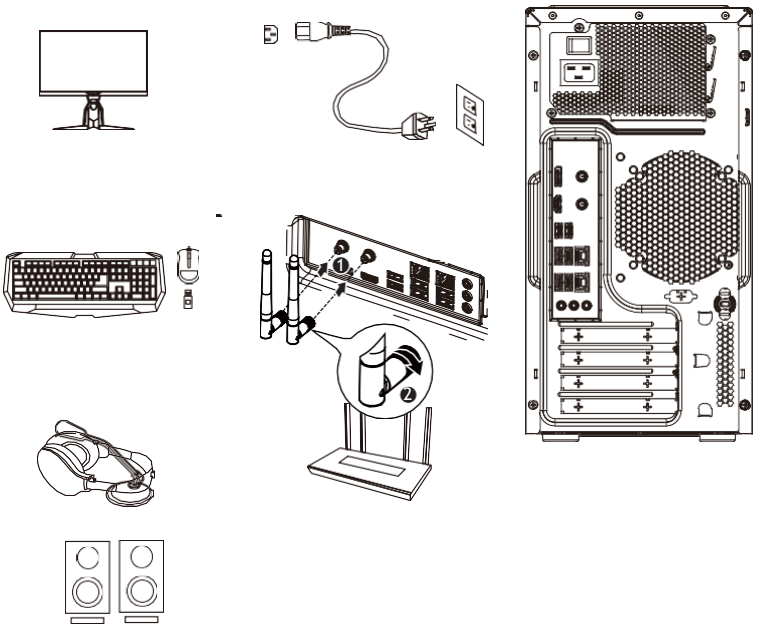
the slot.



Step2. Secure it with the screw, tightening as necessary to fasten the M.2 WiFi module in place.

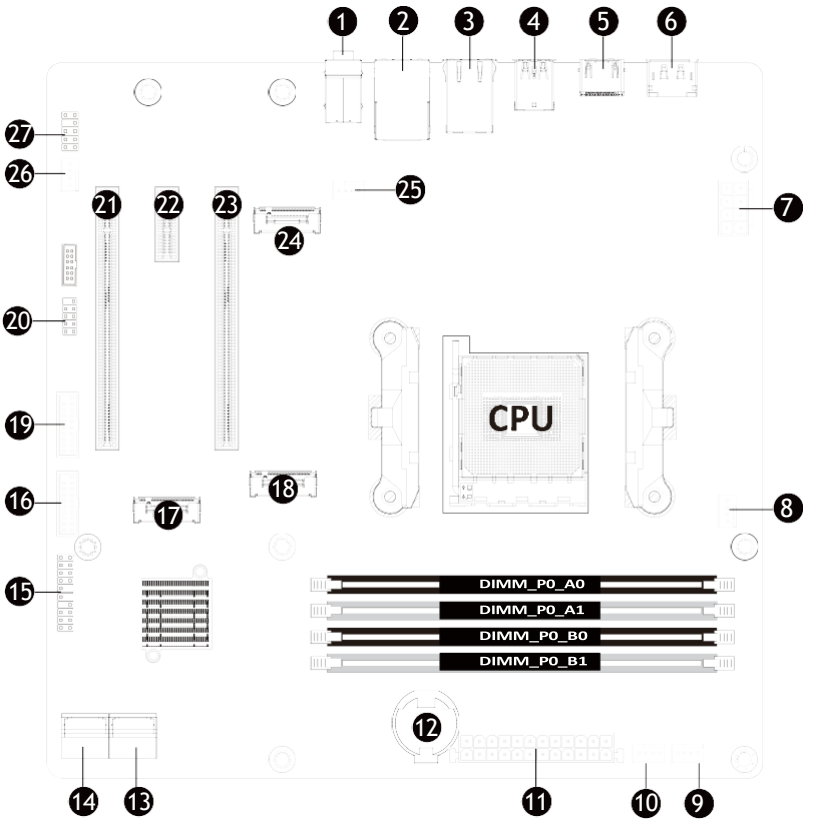


3-8 連接外部裝置



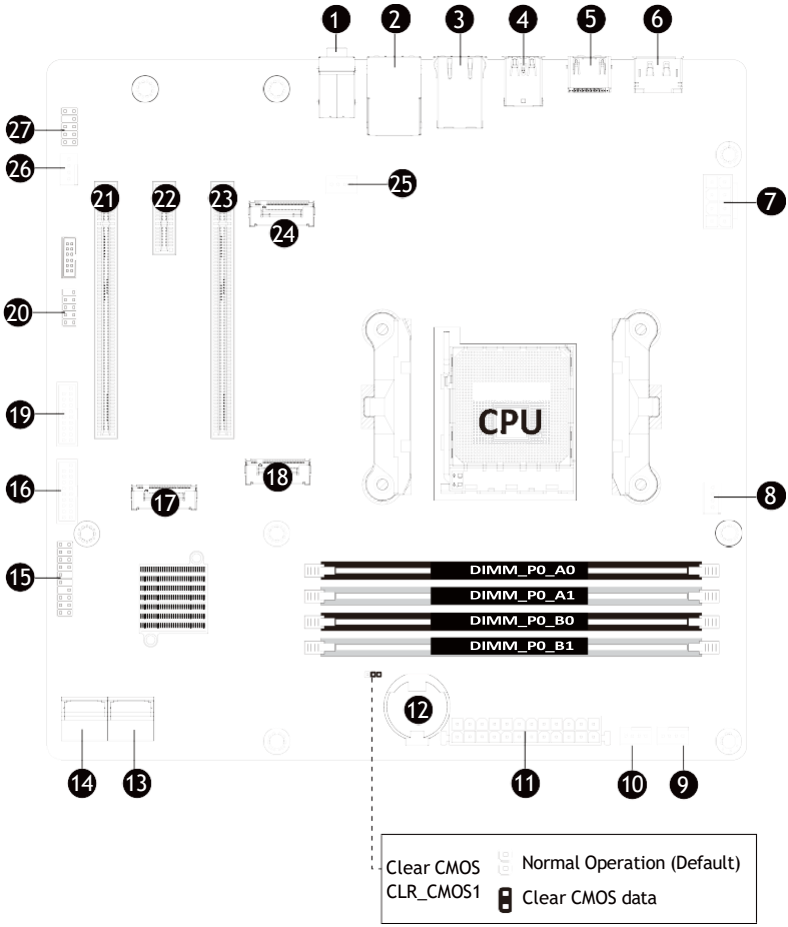
Chapter 4 主機板元件

4-1 主機板元件



Item	Description
1	Audio Connectors
2	GbE LAN Port #1 (Top)/USB 3.2 Ports (Bottom)
3	GbE LAN Port #2
4	USB 3.2 Port Type A(Top)/USB 3.2 Type C Port (Bottom)
5	HDMI 2.0 Port
6	Display Port
7	2x4 Pin 12V Power Connector
8	CPU Fan Connector
9	System Fan Connector #4
10	System Fan Connector #2
11	2x12 Pin Main Power Connector
12	Battery Socket
13	SATA III 6Gb/s Connector #0/#1
14	SATA III 6Gb/s Connector #2/#3
15	Front Panel Header
16	Front Panel USB 3.2 Connector#2
17	M.2 Slot (PCIe Gen3 x2, Support NGFF-2280)
18	M.2 Slot (PCIe Gen4 x4, Support NGFF-2280)
19	Front Panel USB 3.2 Connector #1
20	COM1
21	PCIe x4 Slot (Gen3 x4)
22	PCIe x1 Slot (Gen3 x1)
23	PCIe x16 Slot (Gen5 x16)
24	M.2 Slot (WiFi/BT module, Support NGFF-2230)
25	System Fan Connector #1
26	System Fan Connector #3
27	Front Audio IO #1

4-2 跳線設定


CPU
DIMM_P0_A0
DIMM_P0_A1
DIMM_P0_B0
DIMM_P0_B1
Clear CMOS
CLR_CMOS1
Normal Operation (Default)
Clear CMOS data

Chapter 5 BIOS 設定

BIOS (Basic Input and Output System) records hardware parameters of the system in the EFI on the motherboard. Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters, loading the operating system etc. The BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features. When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS.

To access the BIOS Setup program, press the <DEL> key during the POST when the power is turned on.

- BIOS flashing is potentially risky, if you do not encounter any problems when using the current BIOS version, it is recommended that you don't flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction.
- It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in system's failure to boot. If this occurs, try to clear the CMOS values and reset the board to default values. (Refer to the **Exit** section in this chapter or introductions of the battery/clearing CMOS jumper in Chapter 4 for how to clear the CMOS values.)

BIOS Setup Program Function Keys

<←><→>	Move the selection bar to select the screen
<↑><↓>	Move the selection bar to select an item
<+>	Increase the numeric value or make changes
<->	Decrease the numeric value or make changes
<Enter>	Execute command or enter the submenu
<Esc>	Main Menu: Exit the BIOS Setup program Submenus: Exit current submenu
<F1>	Show descriptions of general help
<F3>	Restore the previous BIOS settings for the current submenus
<F9>	Load the Optimized BIOS default settings for the current submenus
<F10>	Save all the changes and exit the BIOS Setup program

- **Main**
  This setup page includes all the items of the standard compatible BIOS.
- **Advanced**
  This setup page includes all the items of AMI BIOS special enhanced features.
  (ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)
- **Chipset**
  This setup page includes all the submenu options for configuring the functions of the onboard controller.
- **Security**
  Change, set, or disable supervisor and user password. Configuration supervisor password allows you to restrict access to the system and BIOS Setup.
  A supervisor password allows you to make changes in BIOS Setup.
  A user password only allows you to view the BIOS settings but not to make changes.
- **Boot**
  This setup page provides items for configuration of the boot sequence.
- **Save & Exit**
  Save all the changes made in the BIOS Setup program to the CMOS and exit BIOS Setup. (Pressing
  <F10> can also carry out this task.)
  Abandon all changes and the previous settings remain in effect. Pressing <Y> to the confirmation message will exit BIOS Setup. (Pressing <Esc> can also carry out this task.)

5-1 BIOS 主選單

Once you enter the BIOS Setup program, the Main Menu (as shown below) appears on the screen. Use arrow keys to move among the items and press <Enter> to accept or enter other sub-menu.

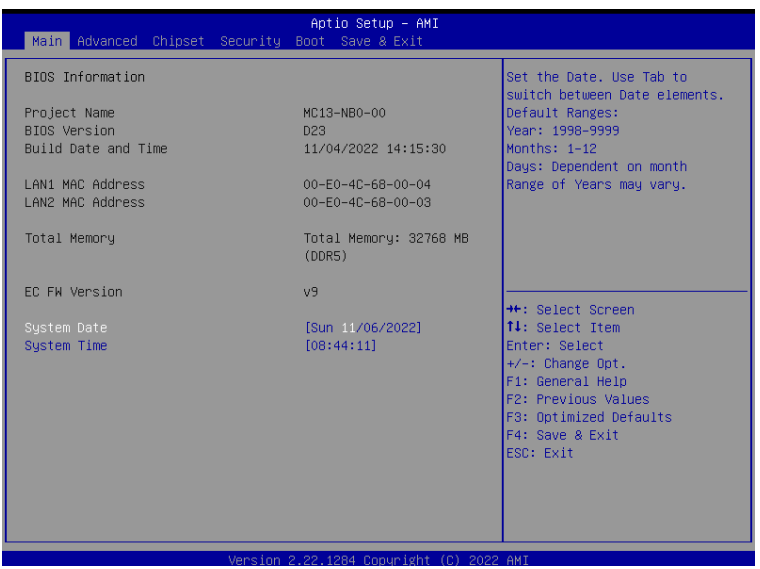
Main Menu Help

The on-screen description of a highlighted setup option is displayed on the bottom line of the Main Menu.

Submenu Help

While in a submenu, press <F1> to display a help screen (General Help) of function keys available for the menu. Press <Esc> to exit the help screen. Help for each item is in the Item Help block on the right side of the submenu.

- When the system is not stable as usual, select the **Restore Defaults** item to set your system to its defaults.
- The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version.



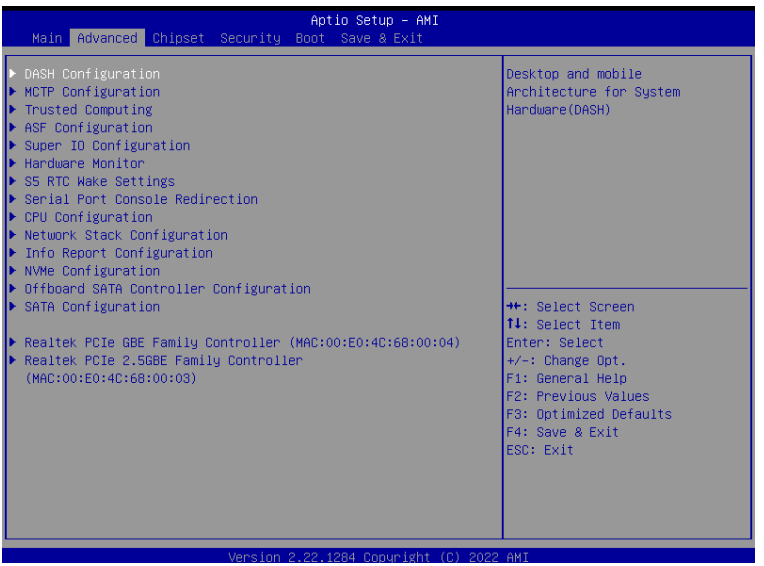
Parameter	Description
BIOS Information	
Project Name	Displays the project name information.
BIOS Version	Displays version number of the BIOS setup utility.
Build Date and Time	Displays the date and time when the BIOS setup utility was created.
LAN# MAC Address(Note1)	Displays LAN MAC address information.
Total Memory(Note2)	Displays the total memory size of the installed memory.
System Date	Sets the date following the weekday-month-day-year format.
System Time	Sets the system time following the hour-minute-second format.

(Note1) The number of LAN ports listed will depend on the motherboard / system model.

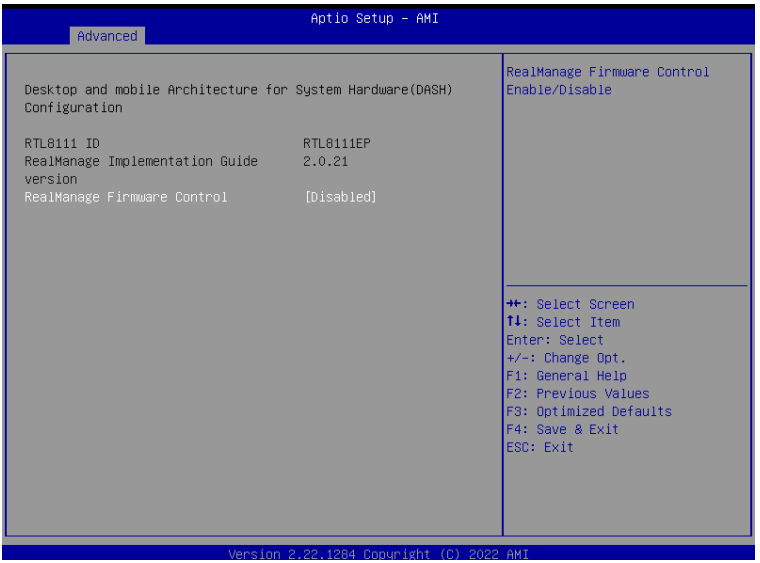
(Note2) This section will display capacity and frequency information of the memory that the customer has installed.

5-2 進階選單

The Advanced Menu displays submenu options for configuring the function of various hardware components. Select a submenu item, then press <Enter> to access the related submenu screen.



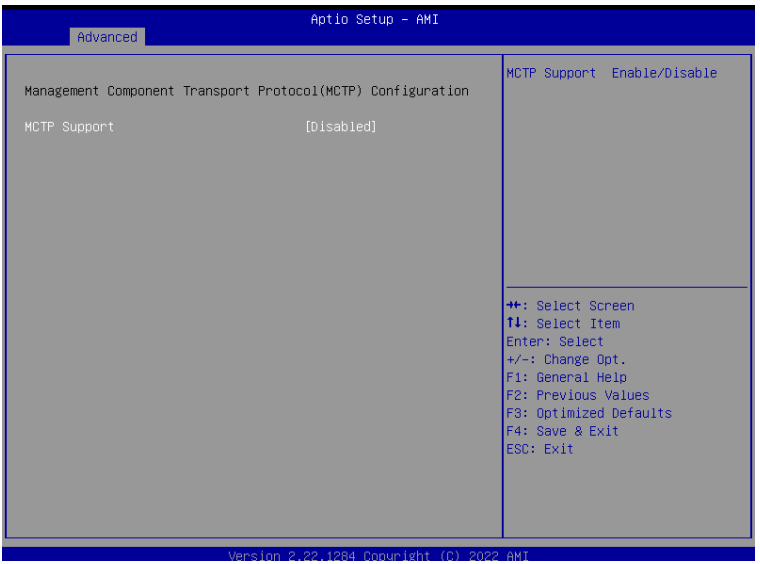
5-2-1 DASH 選單



Parameter	Description
Desktop and mobile Architecture for System Hardware (DASH) Configuration	
RTL8111 ID	Displays the vendor ID information.
RealManage Implementation Guide version	Displays the utility version.
RealMange Firmware Control(Note)	Enable/Disable RealMange Firmware Control. Options available: Enabled, Disabled. Default setting is **Disabled**.
DASH Support	Enable/Disable DASH Support. Options available: Enabled, Disabled. Default setting is **Disabled**.

(Note) Advanced items prompt when this item is defined.

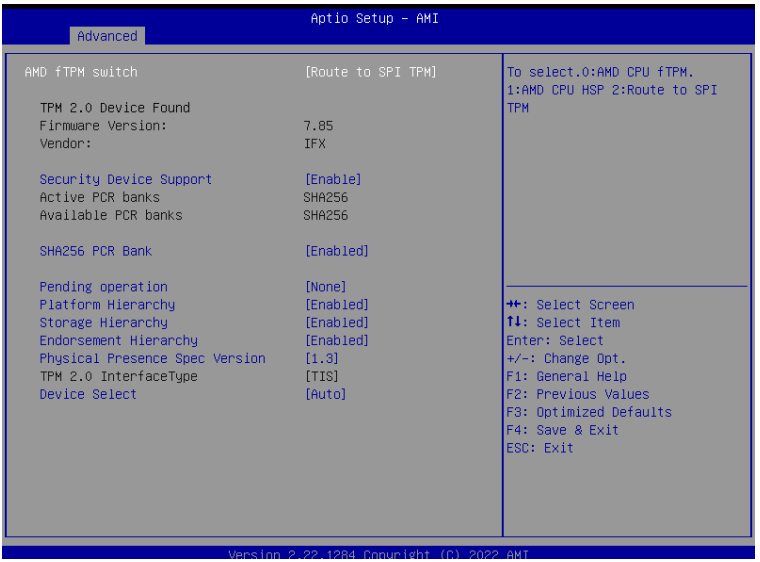
5-2-2 MCTP 設定



Parameter	Description
Management Component Transport Protocol (MCTP) Configuration	
MCTP Support(Note)	Enable/Disable MCTP Support. Options available: Enabled, Disabled. Default setting is **Disabled**.
PLDM for SMBIOS	Enable/Disable PLDM Support for SMBios. Options available: Enabled, Disabled. Default setting is **Enabled**.
PLDM for BIOS Control and Configuration	Enable/Disable PLDM Support for BIOS Control. Options available: Enabled, Disabled. Default setting is **Enabled**.
PLDM for Platform Monitoring	Enable/Disable PLDM for Platform Monitoring. Options available: Enabled, Disabled. Default setting is **Enabled**.

(Note) Advanced items prompt when this item is defined.

5-2-3 TPM 設定

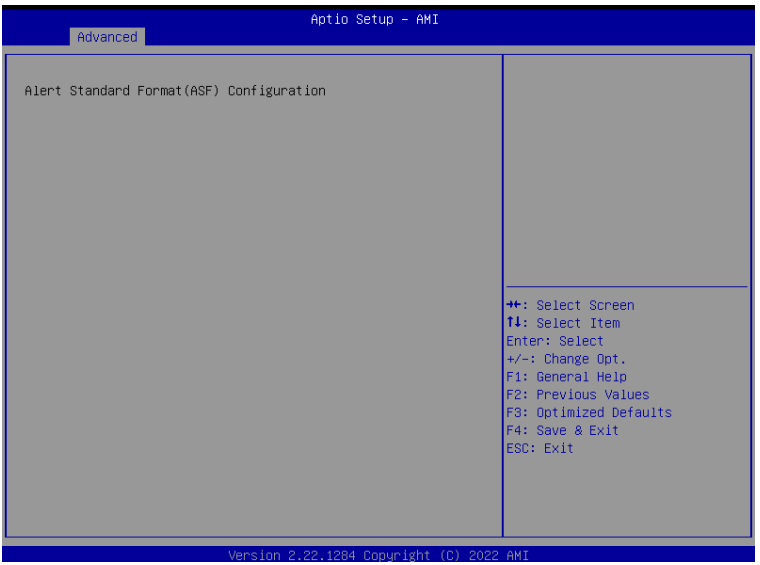


Parameter	Description
AMD fTPM switch	Options available: AMD CPU ftPM, Route to SPI TPM. Default setting is **Route to SPI TPM**.
TPM 2.0 Device Found	
Firmware Version	Displays the firmware version information.
Vendor	Displays the vendor information.
Security Device Support	Enable/Disable BIOS support for security device. OS will not show security device. TCG EFI protocol and INT1A interface will not be available. Options available: Enable, Disable. Default setting is **Enable**.
Active PCR banks	Displays active Platform Configuration Register (PCR) banks.
Available PCR banks	Displays available PCR banks.
SHA-1 PCR Bank	Enable/Disable SHA-1 PCR bank. Options available: Enabled, Disabled. Default setting is **Enabled**.
SHA256 PCR Bank	Enable/Disable SHA256 PCR bank. Options available: Enabled, Disabled. Default setting is

	Enabled.

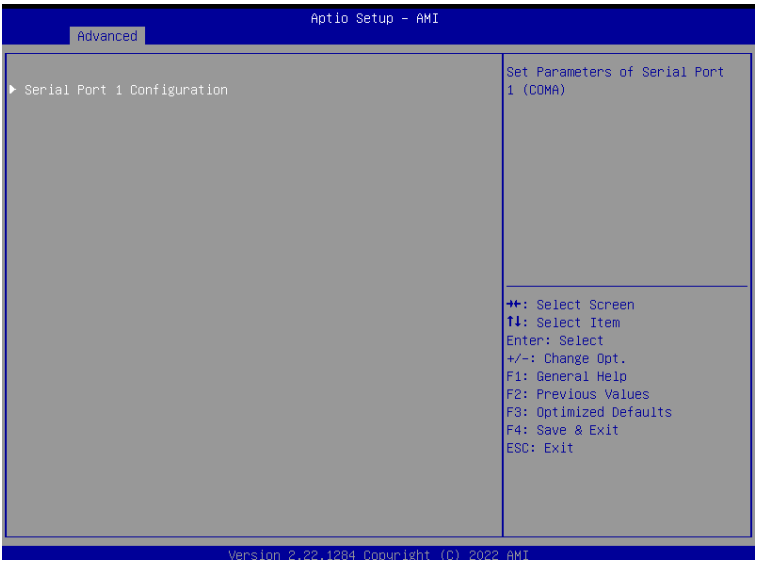
Parameter	Description
Pending operation	Schedule an operation for the security device. NOTE: Your computer will reboot during restart in order to change the state of a security device. Options available: None, TPM Clear. Default setting is **None**.
Platform Hierarchy	Enable/Disable platform hierarchy. Options available: Enabled, Disabled. Default setting is **Enabled**.
Storage Hierarchy	Enable/Disable storage hierarchy. Options available: Enabled, Disabled. Default setting is **Enabled**.
Endorsement Hierarchy	Enable/Disable endorsement hierarchy. Options available: Enabled, Disabled. Default setting is **Enabled**.
TPM2.0 UEFI Spec Version	Selects the TCG2 spec version support. Options available: TCG_1_2, TCG_2. Default setting is **TCG2**.
Physical Presence Spec Version	Selects the physical presence spec version. Options available: 1.2, 1.3. Default setting is **1.3**.
TPM 20 InterfaceType	Displays the TPM 2.0 interface type.
Device Select	Selects the TPM device. Default setting is **TPM 2.0**.

5-2-4 ASF 設定



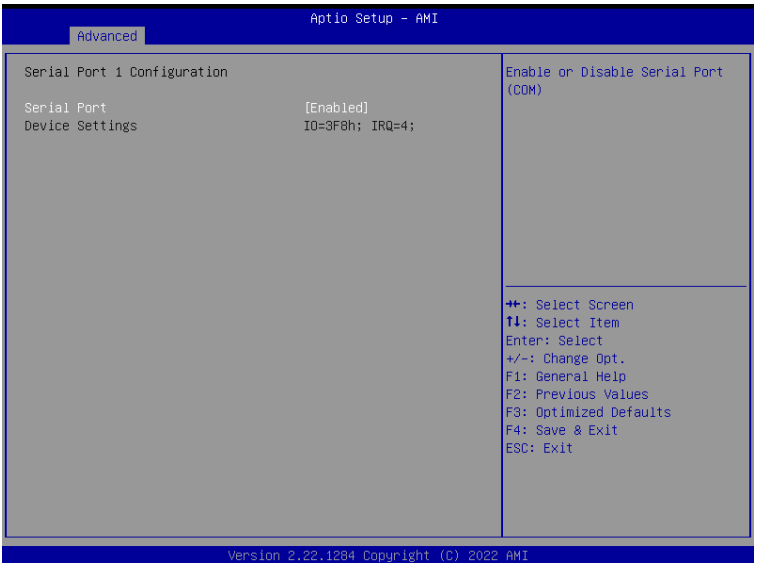
Parameter	Description
Alert Standard Format (ASF) Configuration	
ASF BIOS Mode	Options available: OFF, On, Alert Only. Default setting is **On**.
ASF WatchDog Timer	Enable/Disable WatchDog Timer. Options available: Enabled, Disabled. Default setting is **Disabled**.

5-2-5 Super IO 設定



Parameter	Description
Super IO Configuration	
Super IO Chip	Displays the super IO chip information
Serial Port 1 Configuration	Press [Enter] for configuration of advanced items.

5-2-5-1 串行埠 1 配置

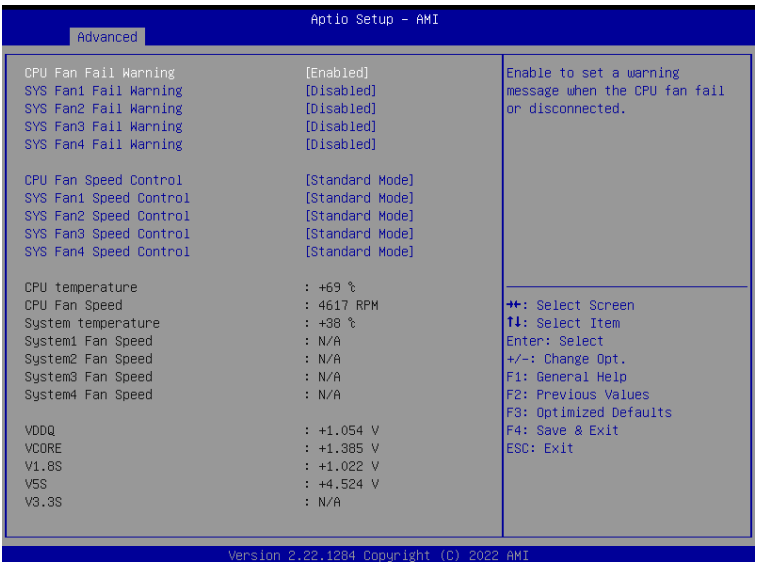


Parameter	Description
Serial Port 1 Configuration	
Serial Port(Note1)	Enable/Disable the Serial Port (COM). When set to Enabled allows you to configure the Serial port 1 settings. When set to Disabled, displays no configuration for the serial port. Options available: Enabled, Disabled. Default setting is **Enabled**.
Devices Settings(Note2)	Displays the Serial Port 1 device settings.
Change Settings(Note2)	Select an optimal settings for Super IO Device. Options available for Serial Port 1: Auto IO=3F8h; IRQ=4; IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12; Default setting is **Auto**.

(Note1) Advanced items prompt when this item is defined.

(Note2) This item appears when **Serial Port** is set to **Enabled**.

5-2-6 硬體監控

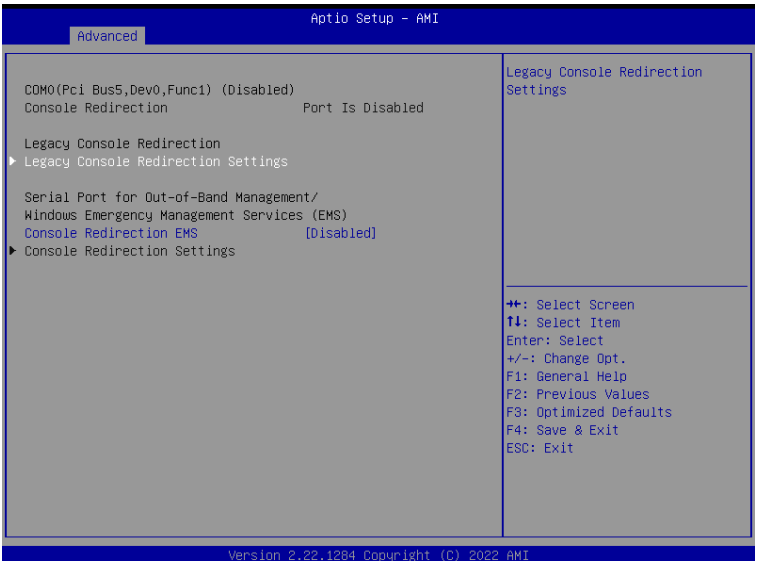


Parameter	Description
CPU FAN Fail Warning	Options available: Enabled, Disabled. Default setting is **Enabled**.
SYS FAN1/2/3 Fail Warning	Options available: Enabled, Disabled. Default setting is **Disabled**.
CPU FAN Speed Control	Options available: Full Speed, Standard Mode. Default setting is **Standard Mode**.
SYS FAN1/2/3 Speed Control	Options available: Full Speed, Standard Mode. Default setting is **Standard Mode**.

5-2-7 S5 自動喚醒設定

Parameter	Description
Wake System from S5	Enable/Disable system wake on alarm event. Options available: Disabled, Fixed Time. When Fixed Time is selected, system will wake on the hr::min::sec specified. Default setting is **Disabled**.

5-2-8 Serial Port 設定



Parameter	Description
COM Console Redirection(Note)	Select whether to enable console redirection for specified device. Console redirection enables the users to manage the system from a remote location. Options available: Enabled, Disabled. Default setting is **Disabled**.
COM Console Redirection Settings	Press [Enter] to configure advanced items. **Please note that this item is configurable when COM Console Redirection is set to Enabled.** ◆ Terminal Type – Selects a terminal type to be used for console redirection. – Options available: VT100, VT100+, ANSI, VT-UTF8. Default setting is **ANSI**. ◆ Bits per second – Selects the transfer rate for console redirection. – Options available: 9600, 19200, 38400, 57600, 115200. Default setting is **115200**. ◆ Data Bits – Selects the number of data bits used for console redirection. – Options available: 7, 8. Default setting is **8**.

(Note) Advanced items prompt when this item is defined.

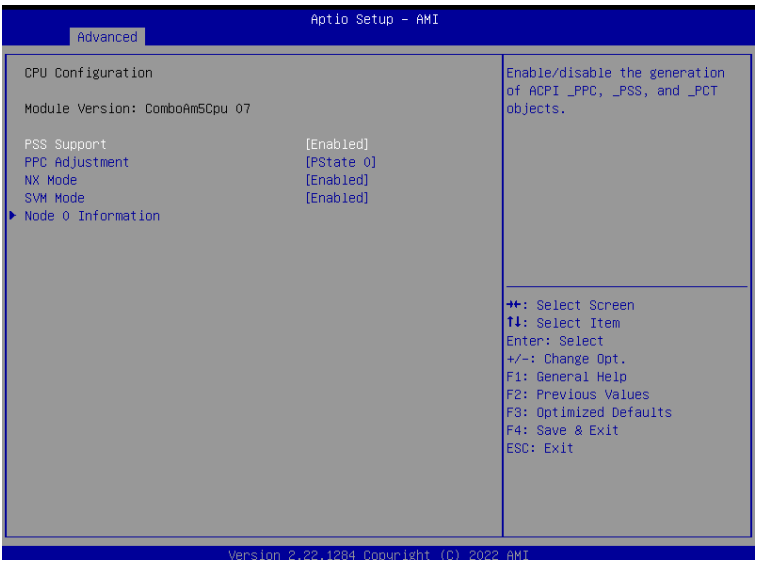
Parameter	Description
COM Console Redirection Settings (continued)	◆ Parity – A parity bit can be sent with the data bits to detect some transmission errors. – Even: parity bit is 0 if the num of 1's in the data bits is even. – Odd: parity bit is 0 if num of 1's in the data bits is odd. – Mark: parity bit is always 1. Space: Parity bit is always 0. – Mark and Space Parity do not allow for error detection. – Options available: None, Even, Odd, Mark, Space. Default setting is **None**. ◆ Stop Bits – Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit. – Options available: 1, 2. Default setting is **1**. ◆ Flow Control – Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals. – Options available: None, Hardware RTS/CTS. Default setting is **None**. ◆ VT-UTF8 Combo Key Support – Enable/Disable the VT-UTF8 Combo Key Support. – Options available: Enabled, Disabled. Default setting is **Enabled**. ◆ Recorder Mode – When this mode enabled, only texts will be send. This is to capture Terminal data. – Options available: Enabled, Disabled. Default setting is **Disabled**. ◆ Resolution 100x31 – Enable/Disable extended terminal resolution. – Options available: Enabled, Disabled. Default setting is **Enabled**. ◆ Putty KeyPad – Selects FunctionKey and KeyPad on Putty. – Options available: VT100, LINUX, XTERMR6, SC0, ESCN, VT400. Default setting is **VT100**.

Parameter	Description
Legacy Console Redirection	
Legacy Console Redirection Settings	Press [Enter] to configure advanced items. ◆ Redirection COM Port – Selects a COM port for Legacy serial redirection. ◆ Resolution – Selects the number of rows and columns used in Console Redirection for legacy OS support. – Options available: 80x24, 80x25. Default setting is **80x24**. ◆ Redirect After POST – When Bootloader is selected, then Legacy Console Redirection is disabled before booting to legacy OS. When Always Enable is selected, then Legacy Console Redirection is enabled for legacy OS. – Options available: Always Enable, BootLoader. Default setting is **Always Enable**.
Serial Port for Out-of-Band Management / Windows Emergency Management Services (EMS) Console Redirection(Note)	EMS console redirection allows the user to configure Console Redirection Settings to support Out-of-Band Serial Port management. Options available: Enabled, Disabled. Default setting is **Disabled**.
Serial Port for Out-of-Band EMS Console Redirection Settings	Press [Enter] to configure advanced items. **Please note that this item is configurable when Serial Port for Out-of-Band Management EMS Console Redirection is set to Enabled.** ◆ Out-of-Band Mgmt Port – Microsoft Windows Emergency Management Service (EMS) allows for remote management of a Windows Server OS through a serial port. ◆ Terminal Type EMS – Selects a terminal type to be used for console redirection. – Options available: VT100, VT100+, ANSI, VT-UTF8. Default setting is **VT-UTF8**. ◆ Bits per second EMS – Selects the transfer rate for console redirection. – Options available: 9600, 19200, 38400, 57600, 115200. Default setting is **115200**.

(Note) Advanced items prompt when this item is defined.

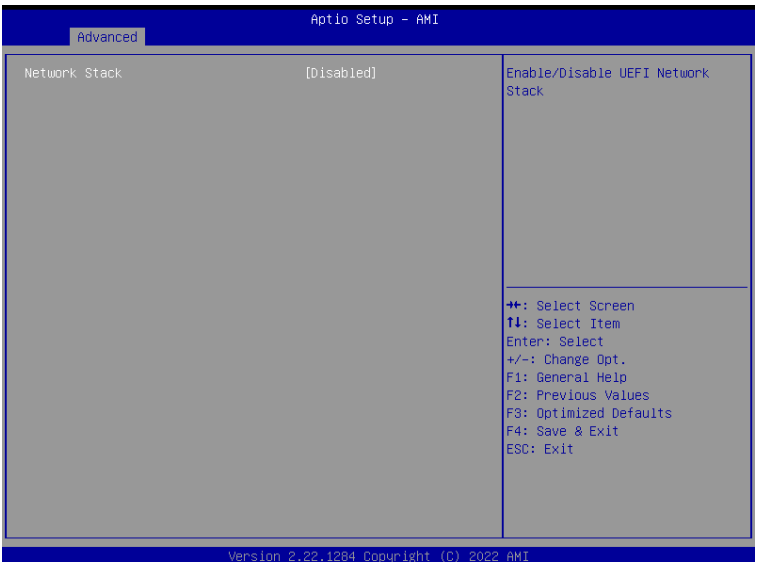
Parameter	Description
Serial Port for Out-of-Band EMS Console Redirection Settings(continued)	◆ Flow Control EMS – Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals. – Options available: None, Hardware RTS/CTS, Software Xon/Xoff. Default setting is **None**.

5-2-9 CPU 設定



Parameter	Description
CPU Configuration	
Module Version	Displays the module version information.
AGESA Version	Displays the AGESA version information.
PSS Support	Enable/Disable the generation of ACPI_PPC, _PSS, and _PCT objects. Options available: Enabled, Disabled. Default setting is **Enabled**.
PPC Adjustment	Options available: PState 0, PState 1, PState 2. Default setting is **PState 0**.
NX Mode	Enable/Disable No-execute page protection Function. Options available: Enabled, Disabled. Default setting is **Enabled**.
SVM Mode	Enable/Disable the CPU Virtualization. Options available: Enabled, Disabled. Default setting is **Enabled**.
C-state	Controls IO based C-state generation and DF C-states. Options available: Enabled, Disabled, Auto. Default setting is **Auto**.
Node 0 Information	Press [Enter] to view the information related to Node 0.

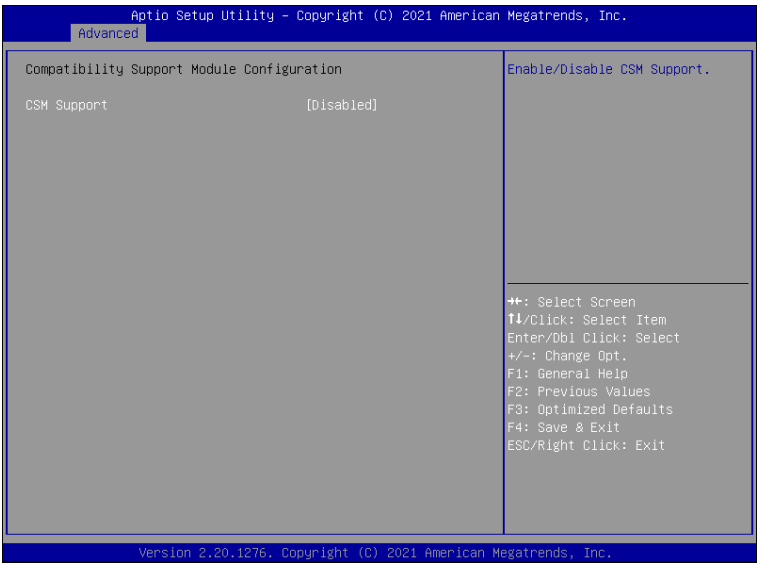
5-2-10 Network Stack 設定



Parameter	Description
Network Stack	Enable/Disable the UEFI network stack. Options available: Enabled, Disabled. Default setting is **Disabled**.
Ipv4 PXE Support(Note)	Enable/Disable the Ipv4 PXE feature. Options available: Enabled, Disabled. Default setting is **Enabled**.
Ipv4 HTTP Support(Note)	Enable/Disable the Ipv4 HTTP feature. Options available: Enabled, Disabled. Default setting is **Disabled**.
Ipv6 PXE Support(Note)	Enable/Disable the Ipv6 PXE feature. Options available: Enabled, Disabled. Default setting is **Enabled**.
Ipv6 HTTP Support(Note)	Enable/Disable the Ipv6 HTTP feature. Options available: Enabled, Disabled. Default setting is **Disabled**.
PXE boot wait time(Note)	Wait time in seconds to press ESC key to abort the PXE boot. Press the <+> / <-> keys to increase or decrease the desired values.
Media detect count(Note)	Number of times the presence of media will be checked. Press the <+> / <-> keys to increase or decrease the desired values.

(Note) This item appears when **Network Stack** is set to **Enabled**.

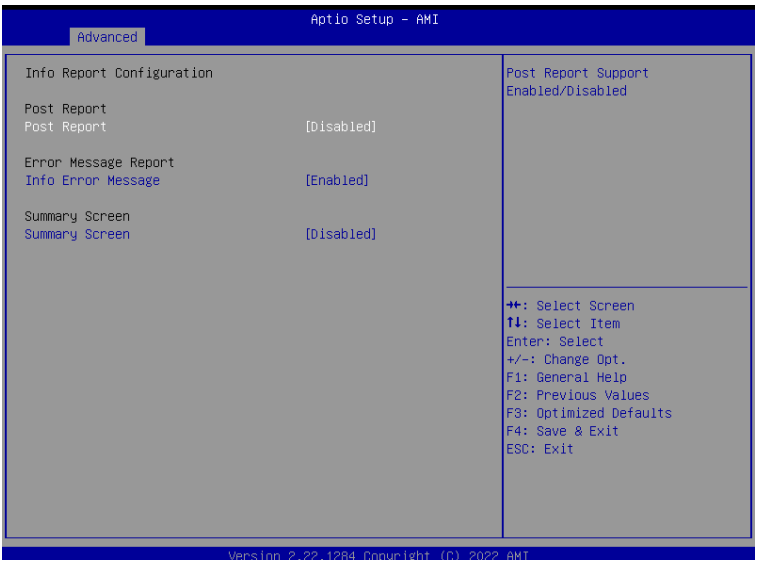
5-2-11 CSM 設定



Parameter	Description
Compatibility Support Module Configuration	
CSM Support(Note)	Enable/Disable CSM support. Options available: Enabled, Disabled. Default setting is **Disabled**.
CSM16 Module Version	Displays the module version information.
GateA20 Active	Options available: Upon Request, Always. Default setting is **Upon Request**.
Option ROM Messages	Sets display mode for Option ROM. Options available: Force BIOS, Keep Current. Default setting is **Force BIOS**.
INT19 Trap Response	Options available: Immediate, Postponed. Default setting is **Immediate**.
HDD Connection Order	Options available: Adjust, Keep. Default setting is **Adjust**.
Boot option filter	Controls Legacy/UEFI ROMs priority. Options available: UEFI and Legacy, Legacy only, UEFI only. Default setting is **Disabled**.
Option ROM execution	Controls the execution of UEFI and Legacy Network OpROM. Options available: UEFI, Legacy.

(Note) Advanced items prompt when this item is defined.

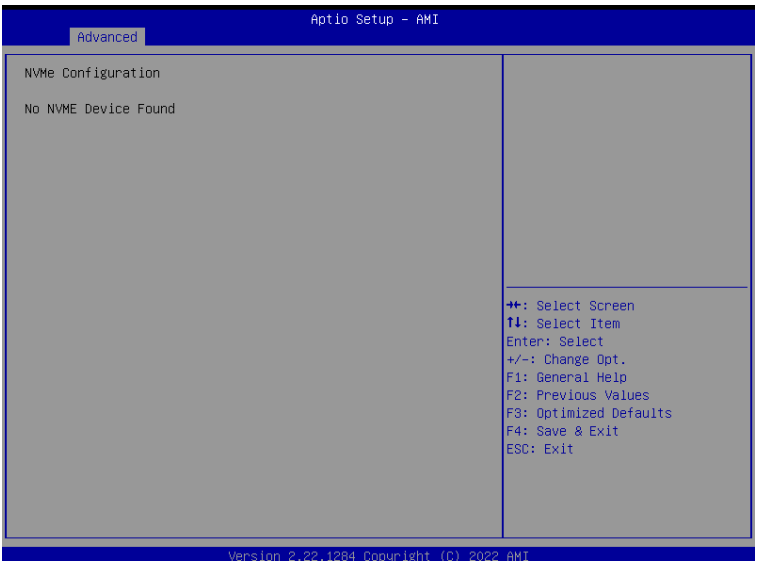
5-2-12 報告設定



Parameter	Description
Info Report Configuration	
Post Report(Note)	Enable/Disable Post Report support. Options available: Enabled, Disabled. Default setting is **Disabled**.
Delay Time	Sets the POST Report wait time. Options available: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, Until Press ESC. Default setting is **5**.
Error Message Report	
Info Error Message	Enable/Disable Info Error Message support. Options available: Enabled, Disabled. Default setting is **Enabled**.
Summary Screen(Note)	Enable/Disable Summary Screen support. Options available: Enabled, Disabled. Default setting is **Disabled**.
Delay Time	Sets the POST Report wait time. Options available: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, Until Press ESC. Default setting is **5**.

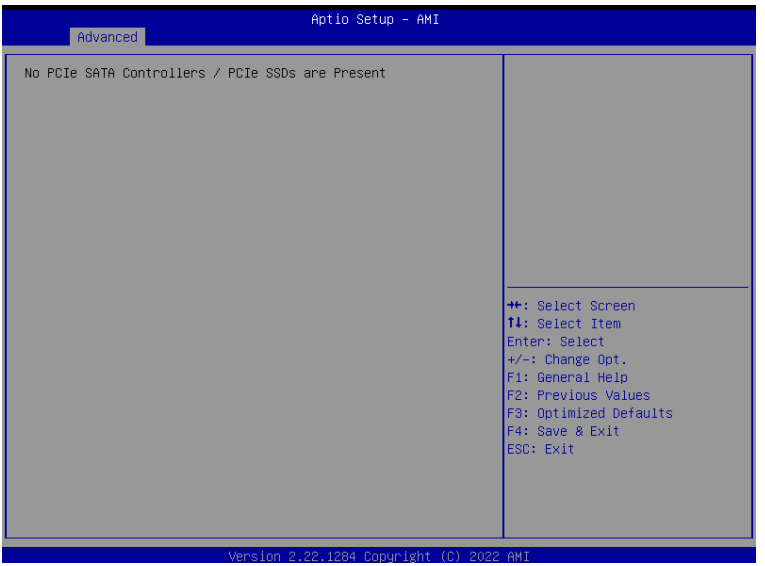
(Note) Advanced items prompt when this item is defined.

5-2-13 NVMe 設定



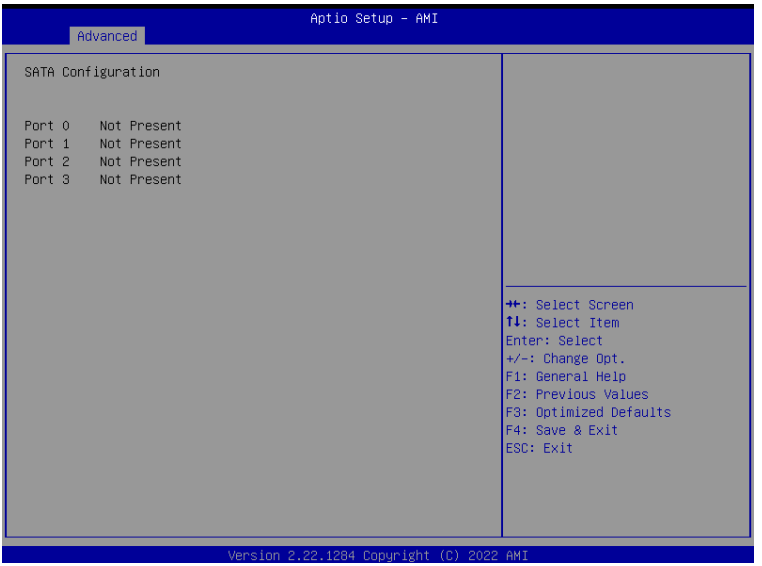
Parameter	Description
NVMe Configuration	Displays the NVMe devices connected to the system.

5-2-14 Offboard SATA 控制設定



Parameter	Description
Offboard SATA Controller Configuration	Displays the information on your PCIe SATA controllers/ PCIe SSD if installed.

5-2-15 SATA 設定



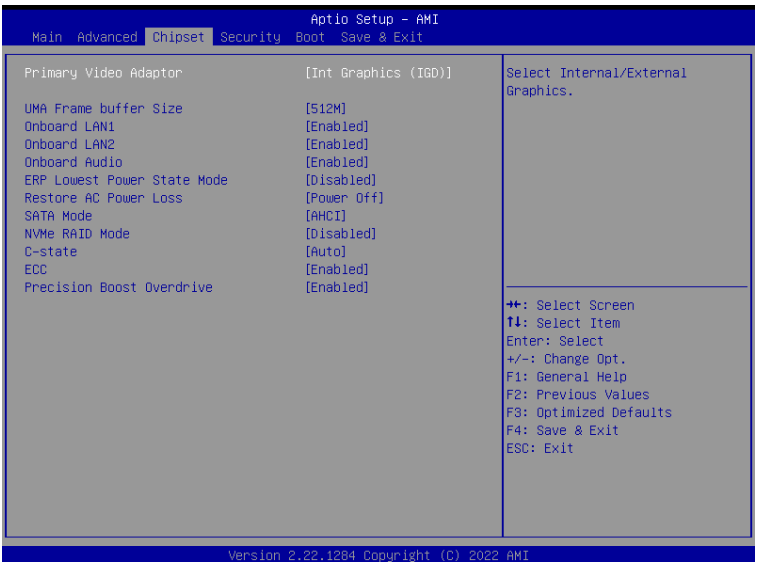
Parameter	Description
SATA Configuration	Displays the installed HDD devices information. System will automatically detect HDD type.

5-2-16 Realtek PCIe GBE 控制設定

Parameter	Description
Realtek PCIe GBE Family Controller	Press [Enter] to view the Network Interface Controller information.

5-3 晶片組設定選單

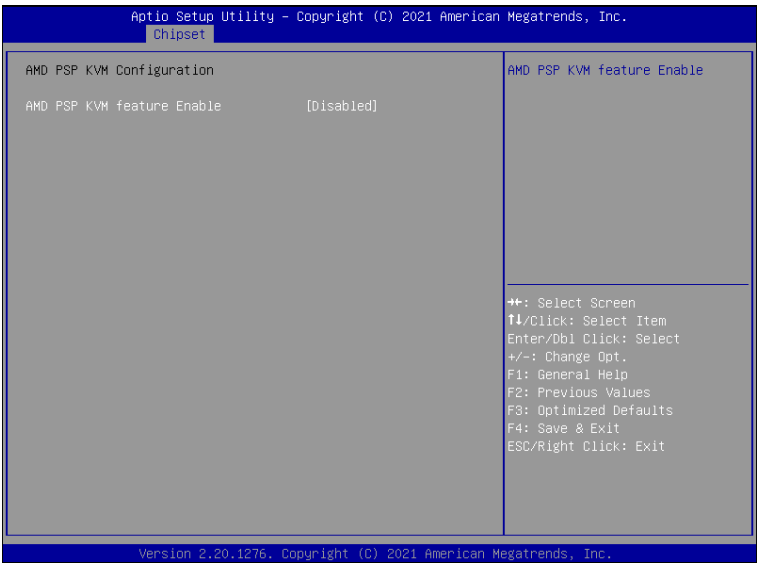
Chipset Setup menu displays submenu options for configuring the function of the onboard controller.



Parameter	Description
Integrated Graphics Controller	Enable/Disable Integrated Graphics controller. Options available: Disabled, Forces, Auto. Default setting is **Forces**.
UMA Frame buffer Size	Options available: Auto, 64M, 128M, 256M, 512M. Default setting is **Auto**.
Primary Video Adaptor	Options available: Int Graphics (IFD), Ext Graphics (PEG). Default setting is **Ext Graphics (PEG)**.
Onboard LAN1/2	Enable/Disable Onboard LAN. Options available: Disabled, Enabled. Default setting is **Enabled**.
Onboard Audio	Enable/Disable Onboard audio. Options available: Disabled, Enabled. Default setting is **Enabled**.
Restore AC Power Loss	Selects AC power state when power is re-applied after a power failure. Options available: Power Off, Power On, Last State. Default setting is **Power Off**.
Case Open	Enable/Disable case open function. Options available: Disabled, Enabled, Clear. Default setting is **Disabled**.

SATA Mode	Selects the SATA type. Options available: AHCI, RAID. Default setting is **AHCI**.
Parameter	**Description**
NVMe RAID Mode	Options available: AHCI, RAID. Default setting is **AHCI**.
CPU Performance	Changes CPU performance mode. Options available: Standard Mode, Performance Mode. Default setting is **Standard Mode**.
AMD PSP KVM Configuration	Press [Enter] to configure advanced items.

5-3-1 AMD PSP KVM 設定

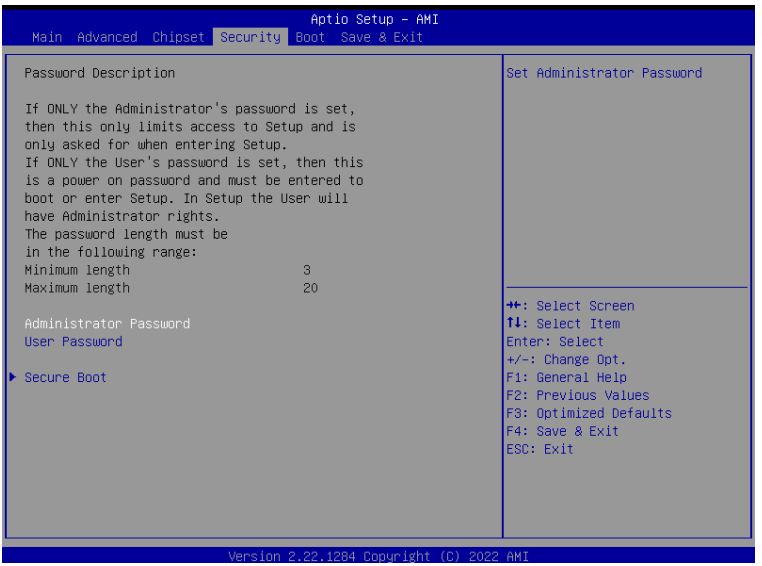


Parameter	Description
AMD PSP KVM Configuration	
AMD PSP KVM feature Enable(Note)	Enable/Disable AMD PSP KVM feature. Options available: Disabled, Enabled, Clear. Default setting is **Disabled**.
Resolution select for AMD PSP KVM feature	Options available: 1280 x 1024, 1024 x 768. Default setting is **1024 x 768**.
IPv4 IP Assignment	Options available: Dynamic, Static. Default setting is **Dynamic**.

(Note) Advanced items prompt when this item is defined.

5-4 安全設定選單

The Security menu allows you to safeguard and protect the system from unauthorized use by setting up access passwords.



There are two types of passwords that you can set:

- Administrator Password

  Entering this password will allow the user to access and change all settings in the Setup Utility.

- User Password

  Entering this password will restrict a user's access to the Setup menus. To enable or disable this field, a Administrator Password must first be set. A user can only access and modify the System Time, System Date, and Set User Password fields.

Parameter	Description
Administrator Password	Press [Enter] to configure the administrator password.
User Password	Press [Enter] to configure the user password.
Secure Boot	Press [Enter] to configure advanced items.

5-4-1 安全開機

The Secure Boot submenu is applicable when your device is installed the Windows® 8 (or above) operating system.

Parameter	Description
System Mode	Displays if the system is in User mode or Setup mode.
Secure Boot	Enable/ Disable the Secure Boot function. Options available: Enabled, Disabled. Default setting is **Enabled**.
Secure Boot Mode(Note)	Secure Boot requires all the applications that are running during the booting process to be pre-signed with valid digital certificates. This way, the system knows all files being loaded before Windows loads to the login screen have not been tampered with. When set to Standard, it will automatically load the Secure Boot keys form the BIOS databases. When set to Custom, you can customize the Secure Boot settings and manually load its keys from the BIOS database. Options available: Standard, Custom. Default setting is **Standard**.
Restore Factory Keys	Forces the system to user mode and installs factory default Secure Boot key database.
Reset to Setup Mode	Press [Enter] to reset the system mode to Setup mode.

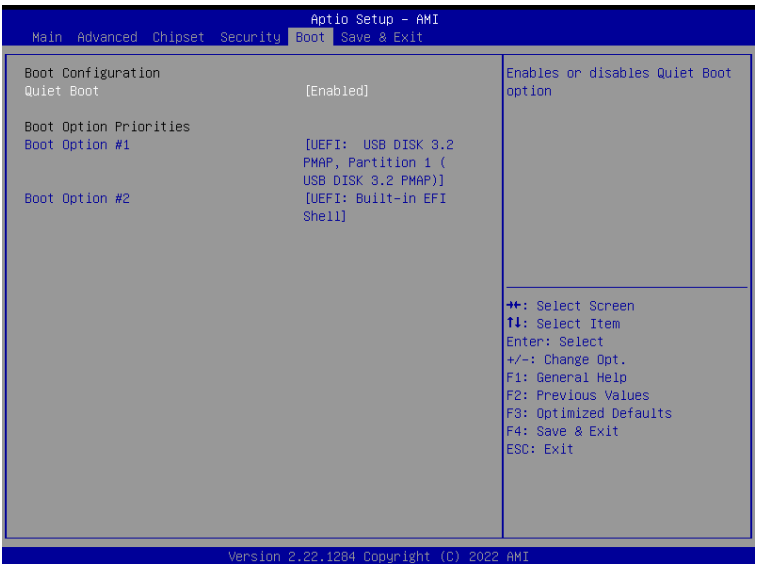
(Note) Advanced items prompt when this item is set to **Custom**.

Parameter	Description
Key Management	Press [Enter] to configure advanced items. **Please note that this item is configurable when Secure Boot Mode is set to Custom.** ◆ Factory Key Provision – Allows to provision factory default Secure Boot keys when system is in Setup Mode. – Options available: Enabled, Disabled. Default setting is **Disabled**. ◆ Restore Factory Keys – Installs all factory default keys. It will force the system in User Mode. – Options available: Yes, No. ◆ Enroll Efi Image – Press [Enter] to enroll SHA256 hash of the binary into Authorized Signature Database (db). ◆ Restore DB defaults – Restore DB variable to factory defaults. ◆ Secure Boot variable – Displays the current status of the variables used for secure boot. ◆ Platform Key (PK) – Displays the current status of the Platform Key (PK). – Press [Enter] to configure a new PK. – Options available: Update. ◆ Key Exchange Keys (KEK) – Displays the current status of the Key Exchange Key Database (KEK). – Press [Enter] to configure a new KEK or load additional KEK from storage devices. – Options available: Update, Append. ◆ Authorized Signatures (DB) – Displays the current status of the Authorized Signature Database. – Press [Enter] to configure a new DB or load additional DB from storage devices. – Options available: Update, Append. ◆ Forbidden Signatures (DBX) – Displays the current status of the Forbidden Signature Database. – Press [Enter] to configure a new dbx or load additional dbx from storage devices. – Options available: Update, Append. ◆ Authorized TimeStamps (DBT) – Displays the current status of the Authorized TimeStamps Database. – Press [Enter] to configure a new DBT or load additional DBT from storage devices.

5-5 開機選單

The Boot menu allows you to set the drive priority during system boot-up. BIOS setup will display an error

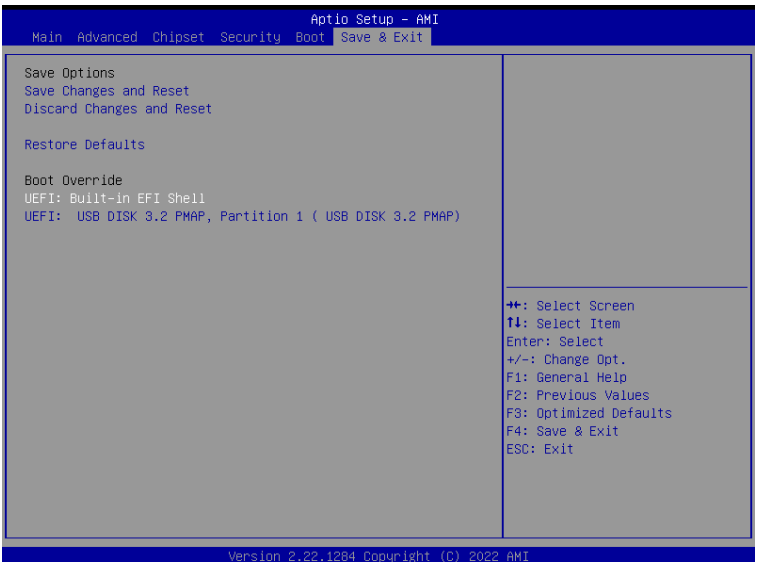
message if the legacy drive(s) specified is not bootable.



Parameter	Description
Boot Configuration	
Setup Prompt Timeout	Number of seconds to wait for setup activation key. 65535 (0xFFFF) means indefinite waiting. Press the numeric keys to input the desired values.
Bootup NumLock State	Enable/Disable the Bootup NumLock function. Options available: On, Off. Default setting is **On**.
Full Screen LOGO Show	Enable/Disable showing the logo during POST. Options available: Enabled, Disabled. Default setting is **Enabled**.
BOOT Option Priorities	
Boot Option #1 / #2	Press [Enter] to configure the boot priority.

5-6 儲存與離開選單

The Save & Exit menu displays the various options to quit from the BIOS setup. Highlight any of the exit options then press <Enter>.



Parameter	Description
Save Options	
Save Changes and Reset	Saves changes made and closes the BIOS setup. Options available: Yes, No.
Discard Changes and Reset	Discards changes made and exits the BIOS setup. Options available: Yes, No.
Restore Defaults	Loads the default settings for all BIOS setup parameters. Setup Defaults are quite demanding in terms of resources consumption. If you are using low-speed memory chips or other kinds of low-performance components and you choose to load these settings, the system might not function properly. Options available: Yes, No.
Boot Override	Press [Enter] to configure the device as the boot-up drive.

5-7 BIOS 蜂鳴器代碼

5-7-1 PEI 蜂鳴器代碼

# of Beeps	Description
1	Memory not Installed.
1	Memory was installed twice (InstallPeiMemory routine in PEI Core called twice)
2	Recovery started
3	DXEIPL was not found
3	DXE Core Firmware Volume was not found
4	Recovery failed
4	S3 Resume failed
7	Reset PPI is not available

5-7-2 DXE 蜂鳴器代碼

# of Beeps	Description
1	Invalid password
4	Some of the Architectural Protocols are not available
5	No Console Output Devices are found
5	No Console Input Devices are found
6	Flash update is failed
7	Reset protocol is not available
8	Platform PCI resource requirements cannot be met

HEVC