FAQ / Application Note

Subject: How to check if the storage device exists	
FAQ Document No: H21002	**Date: 2021/12/14**
Model Name. All Model	**Rev. A1**
Category: ☐General ■H/W ☐S/W ☐Others, Storage	

Purpose:

If you always check whether the storage device exists in the Boot Option Priority in the BIOS settings, it is not a good idea. When the storage is not installed with any operating system and BIOS be set as UEFI boot mode, it will not be displayed on Boot Option Priority. Because it only show the bootable device and operating system information on this place, and we have made a difference table for your information.

- **Display difference table for Boot Option Priority (BIOS Setup)**

The current BIOS architecture is based on the signal type of the storage device, and its existence is shown in different menus. Below we present this menu path and display method to you. (Apply to all x86 platform model)

1. **PCIe signal type: NVMe SSD**
   BIOS Setup --> Advanced --> NVMe Configuration
2. **SATA signal type: mSATA / M.2 SATA SSD:**
   BIOS Setup --> Chipset --> PCH-IO Configuration --> SATA And RST Configuration
   Or BIOS Setup --> Advanced --> SATA Configuration

Test Environment:

MB1: EMX-SKLUP (BIOS version: XSKLU00X)

MB2: EMS-TGL-15-A1-1R (BIOS version: BTGLS00N)

M.2 SATA SSD: Transcend TS64GMTS400 64GB M.2 2240, ACC-M2-42-64G-02R

NVMe SSD1: Innodisk 3TE6 128GB NVMe M.2 2280 PCIe (Key B+M)

NVMe SSD2: Innodisk 3ME2 32GB NVMe M.2 2280 PCIe, ACC-M2-80-32G-01R (Key B+M)

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Display difference table for Boot Option Priority (BIOS Setup)

The Boot Optin Priority be used on display the bootable device on this menu. According to the define for Legacy Boot mode and UEFI Boot mode, it has the difference below:

- Boot Option Priority of Legacy Boot mode:
  It will display all available storage devices on this menu. Even if you install the operating system, it will not display the description of the operating system.

- Boot Option Priority of UEFI Boot mode:
  It only display all bootable storage devices and operating system description on this menu. If the storage device has no install operating system yet, it will not display on here.

Therefore, if you always check the storage device under Boot Option Priority, it will based on boot mode (Legacy Boot/UEFI Boot) and disk format to show you the difference description. Especailly, you cannot check the storeage deivce is exist or not when this storage device is empty or no install operating system and you set BIOS as UEFI Boot mode (Like below green words). Because it needs to install operating system first, and then you are able to found the storage device in Boot Option Priority in the BIOS Setup when BIOS boot mode be set as UEFI.

BIOS Setup --> Boot --> Boot Option Priority		mSATA / M.2 SATA SSD	NVMe SSD
Legacy Boot	Empty (no format)	[P0: TS64GMTS400]	[P0: M.2 (P80) 3TE6]
	Format as FAT32 (Empty)	[P0: TS64GMTS400]	[P0: M.2 (P80) 3TE6]
	Format as NTFS (Empty)	[P0: TS64GMTS400]	[P0: M.2 (P80) 3TE6]
	Win10 (Windows Boot Manager)	[P0: TS64GMTS400]	[P0: M.2 (P80) 3TE6]
	Linux (Ubuntu 20.04.1)	[P0: TS64GMTS400]	[P0: M.2 (P80) 3TE6]
UEFI Boot	Empty (no format)	None	None
	Format as FAT32 (Empty)	None	None
	Win10 (Windows Boot Manager)	[Windows Boot Manager (P0: TS64GMTS400)]	[Windows Boot Manager (M.2 (P80) 3TE6)]
	Linux (Ubuntu 20.04.1)	[ubuntu (P0: TS64GMTS400]	[ubuntu (M.2 (P80) 3TE6)]

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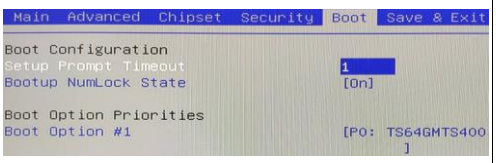
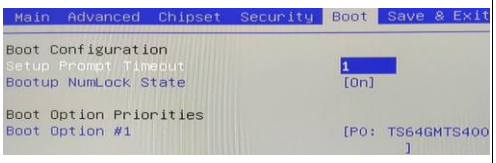
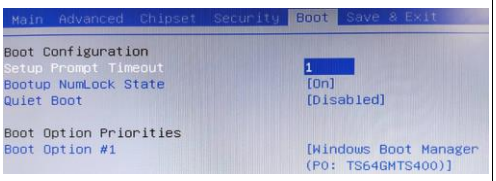
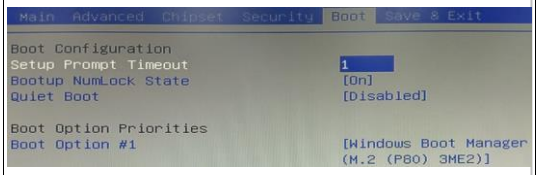
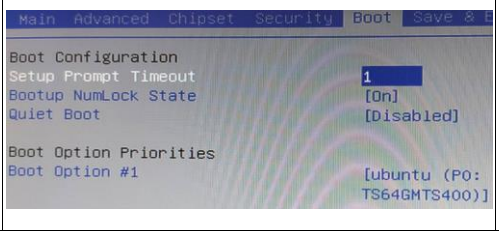
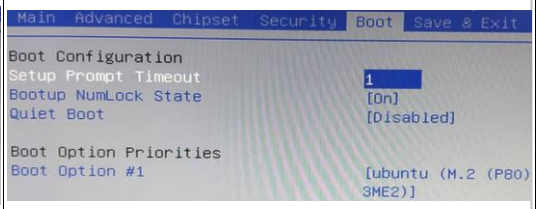
Picture:

BIOS Setup --> Boot --> Boot Option Priority		mSATA / M.2 SATA SSD	NVMe SSD
Legacy Boot	Win10 (Windows Boot Manager)		[P0: M.2 (P80) 3TE6]
	Linux (Ubuntu 20.04.1)		[P0: M.2 (P80) 3TE6]
UEFI Boot	Win10 (Windows Boot Manager)		
	Linux (Ubuntu 20.04.1)		

The above storage device check method is no longer applicable to the BIOS of the current x86 platform PC. Due to the BIOS already changed to UEFI format that it based on the device signal type to check the storage device information from the different paths in the BIOS Setup. Following operation will based on the signal type let you know where you can check the device information in the BIOS Setup, and it can be used on all x86 platform products.

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Storage Device: NVMe SSD (M.2, PCIe signal type)

1. Sample Model: ECM-WHL/EPC-WHL/EMX-WHLGP/EMS-TGL

   Checking Path: BIOS Setup --> Advanced --> NVMe Configuration

   (Apply to all Whiskey Lake/Tiger Lake/Alder Lake/Coffee Lake platform products)

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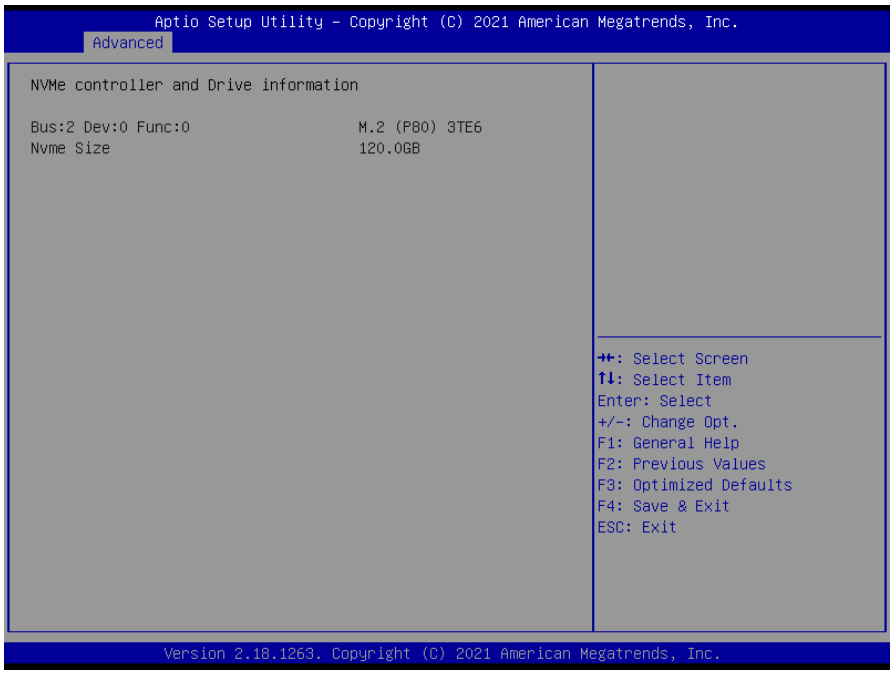
2. Sample Model: EMX-SKLUP/EMX-KBLUP

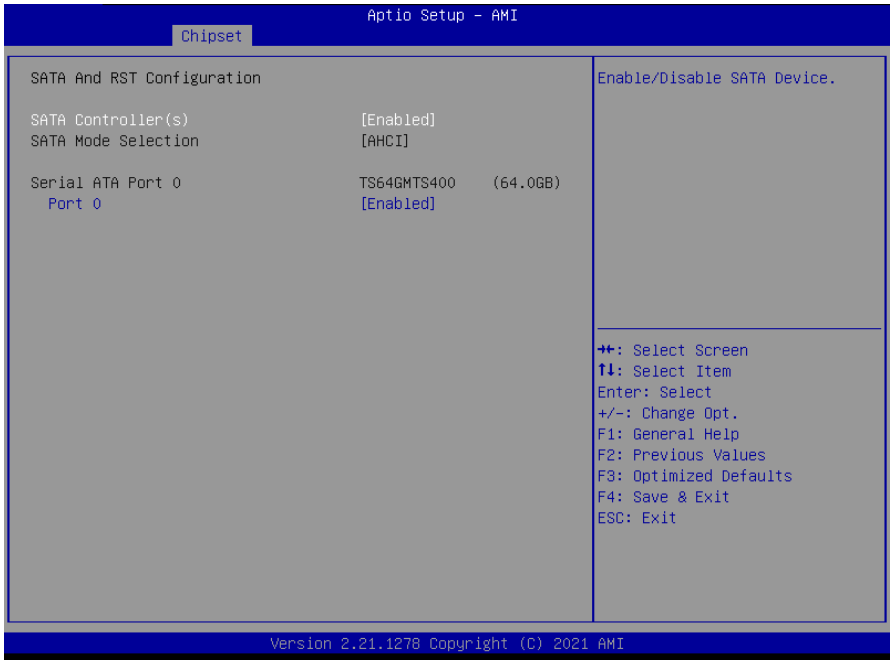
   Checking Path: BIOS Setup --> Advanced --> NVMe Configuration

   (Apply to all Sky Lake/Kaby Lake/Cedarview/BayTrail/Apollo Lake platform products)



Storage Device: mSATA (mini PCIe, SATA signal type) / M.2 SATA SSD (M.2, SATA signal type)

1. Sample Model: ECM-WHL/EPC-WHL/EMX-WHLGP/EMS-TGL
   Checking Path: BIOS Setup --> Chipset --> PCH-IO Configuration --> SATA And RST Configuration
   (Apply to all Sky Lake/Kaby Lake/Cedar View/Bay Trail/Apollo Lake/ Whiskey Lake/Tiger Lake/Alder Lake/Coffee Lake platform products)



2. Sample Model: EMX-SKLUP/EMX-KBLUP

   Checking Path: BIOS Setup --> Advanced --> SATA Configuration

   (Apply to all Sky Lake/Kaby Lake/Cedar View/Bay Trail/Apollo Lake platform products)