# F35-MTU1

# **RAID Installation Guide**

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### 1. Introduction

RAID (Redundant Array of Independent Disks) is a technology that enhances performance and data security by combining multiple hard drives. Depending on different needs, RAID offers various configurations, each with its specific advantages and disadvantages. This manual provides a detailed overview of the characteristics, operational processes, and setup methods of different RAID types.

# 2. Overview of RAID Types

### 2.1 RAID 0

RAID 0 improves performance by distributing data across multiple hard drives but does not provide data redundancy, making it a higher risk option. Since data is split and stored across different drives, the system can access multiple disks simultaneously, increasing read and write speeds. This configuration is ideal for applications that require high performance but do not need data security.

• Required Number of Drives: At least 2

#### 2.2 RAID 1

RAID 1 ensures data security through mirroring technology. All data is written to two or more hard drives, so even if one drive fails, the data remains intact on the other. While RAID 1 provides high data security, its storage efficiency is low since only half of the total disk capacity is usable.

• Required Number of Drives: At least 2

### 2.3 Comparison of RAID Types

RAID Type	Advantages	Disadvantages
RAID 0	- High performance	- No data redundancy, high risk
RAID 1	- High data security	- Low storage efficiency, high cost

#### 3. RAID Installation Guide

# Step 1: Hardware Preparation

Ensure you have enough hard drives based on the selected RAID type:

- **RAID 0**: Requires at least 2 hard drives.
- **RAID 1**: Requires at least 2 hard drives.

Make sure all hard drives are functioning properly and have the same or similar capacities to achieve optimal RAID performance and stability.

# Step 2: Access BIOS Settings

• Press the designated key < Del > during startup to enter the BIOS settings interface.

# Step 3: Configuration Method

# 3-1. BIOS Navigation:

• Go to BIOS > Chipset > System Agent (SA) Configuration > VMD setup menu.

Chipset	Aptio Setup — AMI	
VMD Configuration		Enable/Disable to VMD
Enable VMD controller	[Disabled]	
		<pre> ++: Select Screen  f4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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Change Enable VMD Controller and Enable VMD Global Mapping from [Disabled] to [Enabled].

Chipset	Aptio Setup — AMI	
VMD Configuration		Enable/Disable to VMD
Enable VMD controller	[Enabled]	Controller
Enable VMD Global Mapping	[Enabled]	
Map SOC SATA Controller Under VMD	[Enabled]	
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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• Save Changes and Reset to allow the system to restart.

Aptio Setup – AM Main Advanced Chipset Security Boot Save & Exit	I MEB×
Save Changes and Reset Discard Changes and Reset Restore Defaults Save as User Defaults Restore User Defaults Boot Override UEFI: Built-in EFI Shell	Reset the system after saving the changes.
	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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# **3-2. Create RAID Volume:**

• Navigate to BIOS > Advanced > Intel(R) Rapid Storage Technology.

Aptio Setup – AMI Main Advanced Chipset Security Boot Save & Exit MEBx	
<ul> <li>Connectivity Configuration</li> <li>CPU Configuration</li> <li>Power &amp; Performance</li> <li>PCH-FW Configuration</li> <li>Trusted Computing</li> <li>Wake-up Function Settings</li> <li>Super IO Configuration</li> <li>PC Health Status</li> <li>Serial Port Console Redirection</li> <li>USB Configuration</li> <li>Network Stack Configuration</li> <li>NVMe Configuration</li> <li>Intel(R) Rapid Storage Technology</li> <li>Intel(R) Ethernet Controller I226-LM - 00:30:18:A0:00:79</li> <li>Intel(R) Ethernet Controller I226-V - 00:30:18:A0:00:7A</li> </ul>	This formset allows the user to manage RAID volumes on the Intel(R) RAID Controller ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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3-3. Supported M.2 SATA + SATA port	

# 3-3. Supported M.2 SATA + SATA port

Aptio Setup – AMI Advanced	
Intel(R) RST 20.1.0.5808 RST VMD Driver ▶ Create RAID Volume	This page allows you to create a RAID volume
Non-RAID Physical Disks: SATA 0.0, Patriot Burst A32D0709197000050021, 111.7GB SATA 0.1, KINGSTON SA400M8120G 50026B76845D503F, 111.7GB	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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#### 3-5. Note: M.2 PCIe + SATA port combinations cannot create RAID.



### 3-6. Fill in the details for Create RAID Volume:

- 1. Name
- 2. RAID Level (RAID 0 and 1)
- 3. Select Disks.

Advanced	Aptio Setup - AMI	
Create RAID Volume Name: RAID Level:	Volume1 [RAIDO (Stripe)]	Create a volume with the settings specified above
Select Disks: SATA 0.0, Patriot Burst 0709190900064759, 111.7GB SATA 0.1, M.2 (S80) 3TE7 CA12501160180001, 447.1GB	[X] [X]	
Strip Size: Capacity (MB): ▶ Create Volume	[64KB] 228942	<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values E2: Select Stream St</pre>
		F3: Optimized Defaults F4: Save & Exit ESC: Exit
	Version 2.22.1293 Copyright (C) 203	25 AMI

#### 3-7. Confirm the RAID Volume.



3-8. Save Changes and Reset to allow the system to restart.

Main Advanced Chipset Security	otio Setup – AMI Save & Exit MEBX
Save Options Save Changes and Reset Discard Changes and Reset Default Options Restore Defaults Save as User Defaults Restore User Defaults Boot Override	Reset the system after saving the changes.
	<pre> ++: Select Screen  14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
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# Step 4: Driver Preparation

- Download the RAID controller driver in advance and place it on a USB flash drive.
- Download the RST Driver from <u>Jetway IPC</u>, then unzip the file and place it in the USB.

					C □ → ESD-USB (E:) →
					0 🚺 🖄 🕬 …
MTX-MTH1	IME	Windows 11 (64bit)	ß	ត្រ	名稱 類型
MTX-MTH1	RST	Windows 11 (64bit)		ß	rst_mtl     檔案資料夾       響 rst_mtl.zip     WinRAR ZIP 壓縮檔
MTX-MTH1	SIO	Windows 11 (64bit)	ľ	ľ	
					•
		•			
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		U			
.0					

# Step 5: Operating System Installation

• On the operating system installation screen, click "Load driver."

Name	Total size Free space Type
<b>∳</b> ⊅ <u>R</u> efresh Load driver	Drive options ( <u>a</u> dvanced)
A We couldn't find any drives. To get a storage driv	er, click Load driver. <u>N</u> ext

• Click "Browse."

Selec	t the driver to install
	Load driver To install the device driver for your drive, insert the installation media containing the driver files, and then click OK. Note: The installation media can be a CD, DVD, or USB flash drive.
⊡ Hid	Browse OK Cancel
Bro	wse <u>R</u> escan <u>N</u> ext
ollecting information	

• Select USB: rst\_mtl\RST\_PV\_20.0.0.1038.5\_PreOS\_5785\_pv\F6\Drivers, then click "OK."

<pre>     ESD-058_0(1)     * inst_mtl     * RST_PV_20.0.0.1038.5_PreOS_5785_p     * instComponent     HsaComponent     HsaExtension     *     Hide drivers that     OK Cancel     Next </pre>
---

Load the Intel RST VMD Controller, then click "Next."

🚱 🔬 Windows Setup	
Select the driver to install	
Intel RST VMD Controller 7D0B (C:\rst_mtl\RST_PV_20.0.0.1038.5_PreOS_5785_pv\F6\Drivers\iaStor Intel RST VMD Managed Controller 09AB (C:\rst_mtl\RST_PV_20.0.0.1038.5_PreOS_5785_pv\F6\Driv	
<	
Hide drivers that aren't compatible with this computer's hardware.	
Browse Rescan	Next
1 Collecting information 2 Installing Windows	

• You can now install the operating system.

🚱 💰 Windows Setup Where do you want to install Window	vs?		
Name Drive 1 Unallocated Space	Total size 223.6 GB	Free space Type 223.6 GB	
<mark>∻</mark> ⊅ <u>R</u> efresh ऒ Load driver		Drive options ( <u>a</u> dvanced)	
			ext
cting information 2 Installing Windows			

	ietup	🚮 Windows Setup
	Windows	Installing Windows
	er will restart several times. This might take a while.	Your computer will restart s
Ø	Nindows files <b>iles ready for installation (19%)</b> features drivers up	Copying Windows files Getting files ready for Installing features Installing drivers Finishing up
	O Installing Windows	formation <b>7</b> Installing

# Step 6: Post-Installation

• After Windows installation is complete, please install the drivers from our website: Jetway IPC.

Aptio Setup – AMI Main Advanced Chipset Security Boot <mark>Save &amp; Exit</mark> MEBx					
Save Changes and Reset Discard Changes and Reset Restore Defaults Save as User Defaults Restore User Defaults Boot Override UEFI: Built-in EFI Shell	Reset the system after saving the changes.				
Windows Boot Manager (Intel Volume1)					
	<pre> ++: Select Screen  1↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>				
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