Date	2020/ 4 /23	Release Note	Internal External
Category	□FAQ ■SOP	Related OS	N/A
Abstract	How to enable CPU Turbo mode in BIOS of UNO-247?		
Keyword	Turbo mode, UNO-247		
Related Product	UNO-247.		

Advantech AE Technical Sharing Document

Problem Description:

CPU Turbo mode is set to "disable" by default in BIOS with version V2.01 or previous ones. It makes basic frequency of CPU to be held at 1.5GHz and could impact performance in some application.

The document introduces users to manually enable CPU Turbo mode in BIOS. Turbo mode will be enabled as default setting in the next standard version.

Brief Analysis and Solution :

1. Enter BIOS of UNO-247 by pressing "Del" button frequently right after system boot up.

Aptio Setup Utility – Main Advanced Chipset Security	Copyright (C) 2020 American Boot Save & Exit	Megatrends, Inc.
BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time Access Level	American Megatrends 5.12 0.57 x64 UEFI 2.5; PI 1.4 UNO 247X205 01/31/2020 15:20:03 Administrator	Choose the system default language
Memory Information Total Memory Memory Speed System Language System Date System Time	4096 MB 1600 MHz [English] [Wed 03/25/2020] [17:44:09]	<pre>++: Select Screen t1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
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2. Go to "CPU Configuration" in "Advanced" page.

Aptio Setup Utility – Copyright (C) 2020 American Main Advanced Chipset Security Boot Save & Exit	Megatrends, Inc.
 Trusted Computing ACPI Settings NCT6116D Super IO Configuration Hardware Monitor S5 RTC Wake Settings CPU Configuration USB Configuration Network Stack Configuration CSM Configuration 	CPU Configuration Parameters
	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
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3. Go to "CPU Power Management".

Aptio Setup Utility - Advanced	Copyright (C) 2020 American	Megatrends, Inc.
CPU Configuration		CPU Power Management options
▶ Socket 0 CPU Information		
Speed 64-bit	1500 MHz Supported	
 CPU Power Management Active Processor Cores Intel Virtualization Technology VT-d 	[Disabled] [Enabled] [Disabled]	<pre>→+: Select Screen t↓: Select Item Enter: Select +/-: Change Opt. F1: General Help</pre>
		F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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4. Switch "Turbo mode" to "enabled".

Aptio Setup Utility – Advanced	Copyright (C) 2020 American	Megatrends, Inc.
CPU Power Management Configuration EIST Turbo Mode C-States Power Limit 1 Enable	[Enabled] [Disabled] [Disabled] [Disabled]	Turbo Mode.
	Turbo Mode — Disabled Enabled	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit FSC: Exit</pre>

5. After setting, remember to "save changes and reset". Then system will reboot to activate the change.

Aptio Setup Utility – Copyright (C) 2020 American Main Advanced Chipset Security Boot <mark>Save & Exit</mark>	Megatrends, Inc.	
Save Options Save Changes and Exit Discard Changes and Reset Discard Changes Discard Changes Default Options Restore Defaults Save as User Defaults Restore User Defaults Boot Override UEFI: Built-in EFI Shell UEFI: JetFlashTranscend 16GB 8.01, Partition 1	Reset the system after saving the changes.	
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■ <u>Comparison</u>:

The CPU benchmark scores 1687.5 with CPU Turbo mode disabled. (BIOS default setting)



CPU benchmark scores 2370 which is much higher after enabling Turbo mode.



■ <u>Contact Window</u>:

If you need further information from headquarter, please contact Product AE team.

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