

Advantech Product FAQ

PCIE-2221 NVM upgrade from V6.01 to V7.1

Applicable model list	PCIE-2221 series
Model name version	N/A
NVM Version	V6.01 (0x80003498)

Attention please:

The nvupdate utility only supports NMC's NVM upgraded, it doesn't support NVM downgraded.

Description:

1. Following step is upgrading PCIE-2221 NVM from V6.01 (0x80003498) to V7.1 (0x8000644E) by Intel nvupdate utility (UEFI Version).

Flashing step:

1. Please decompress PCIE-2221BP_0305.zip in USB, insert this USB in system and power on system.
2. We recommend customer to execute PCIE-2221BP NVM upgrading in BIOS UEFI shell, please login BIOS and choose "UEFI: Built-in EFI Shell" in Save & Exit

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Main Platform Hardware Server Mgmt Post & Boot Security Save & Exit

Save Changes and Exit
Discard Changes and Exit
Save Changes and Reset
Discard Changes and Reset

Save Options
Save Changes
Discard Changes
Restore Defaults
Save as User Defaults
Restore User Defaults

Boot Override
UEFI: Built-in EFI Shell
UEFI: UFD 3.0 Silicon-Power16G1.00, Partition 1
UEFI: UFD 3.0 Silicon-Power16G1.00

|>>: Select Screen
|^v: Select Item
|Enter: Select
|+/-: Change Opt.
|F1: General Help
|F2: Previous Values
|F3: Optimized Defaults
|F4: Save & Exit
|ESC: Exit

Version 2.20.1275. Copyright (C) 2019 American Megatrends, Inc.
```

Following picture is BIOS UEFI shell.

```
UEFI Interactive Shell v2.2
EDK II
UEFI v2.70 (American Megatrends, 0x0005000E)
Mapping table
  FS0: Alias(s):HD0q0b;;BLK1:
      PciRoot(0x0)/Pci(0x14,0x0)/USB(0x6,0x0)/HD(1,MBR,0x028B5E23,0x3F,0x1CE
7FC1)
  BLK0: Alias(s):
      PciRoot(0x0)/Pci(0x14,0x0)/USB(0x6,0x0)
Press ESC in 5 seconds to skip startup.nsh or any other key to continue.
Shell>
```

3. Please key-in following command to check PCIE-2221 NVM version in Linux before executing NVM upgraded

Attention: "PCIE-2221BP_0305.zip" only supports V6.01 (0x80003498) to V7.1 (0x8000644E), if showing NVM version is not V6.01 (0x80003498), please don't execute this utility.

```
# ethtool -i <PCIE-2221BP network device name>
```

Ex:

```
# ethtool -i b3bp0
```

```
driver: i40e
```

```
version: 2.7.29
```

```
firmware-version: 6.01 0x80003498 0.0.0
```

```
expansion-rom-version:
```

```
bus-info: 0000:3b:00.0
```

```
supports-statistics: yes
```

```
supports-test: yes
```

```
supports-eprom-access: yes
```

```
supports-register-dump: yes
```

```
supports-priv-flags: yes
```

4. Please refer following commands to check PCIE-2221BP NVM files in BIOS UEFI shell, and we suggest system only insert a USB flash and PCIE-2221BO network card,

```
Shell> fs0:
```

```
FS0:\> cd PCIE-2221BP_0305
```

```
FS0:\PCIE-2221BP_0305\> ls
```

```
Directory of: FS0:\PCIE-2221BP_0305\
```

```
03/09/2020 16:30 <DIR>          8,192 .
```

```
03/09/2020 16:30 <DIR>           0 ..
```

```
01/14/2020 09:00             4,194,304 2080008765.bin
```

```
03/09/2020 08:46              282 FVL_Adapter_VPD_MAP.txt
```

```
03/09/2020 08:46              314 nvupdate.cfg
```

```
03/09/2020 08:47           5,411,520 nvupdate64e.efi
```

03/09/2020 08:47 1,124 PF_Alloc.txt

5 File(s) 9,607,544 bytes

5. Please refer following command instruction to execute nvupdate utility in BIOS UEFI shell.

```
FS0:\PCIE-2221BP_0305\> nvupdate64e.efi -l PCIE-2221BP.log
```

```
Intel(R) Ethernet NVM Update Tool
NVMUpdate version 1.34.17.7
Copyright (C) 2013 - 2019 Intel Corporation.
```

WARNING: To avoid damage to your device, do not stop the update or reboot or power off the system during this update.

Inventory in progress. Please wait [***-.....]

Num	Description	Ver. (hex)	DevId	S:B	Status
01)	Intel(R) I210 Gigabit Network Connection	3.37(3.25)	1533	00:001	Update not available
02)	Intel(R) I210 Gigabit Network Connection	3.37(3.25)	1533	00:002	Update not available
03)	Intel(R) I210 Gigabit Network Connection	3.37(3.25)	1533	00:005	Update not available
04)	Intel(R) Ethernet Connection X722 for 10GbE SFP+	3.51(3.33)	37D3	00:028	Update not available
05)	Intel(R) Ethernet Controller X710 for 10GbE SFP+	6.01(6.01)	1572	00:059	Update available

Options: Adapter Index List (comma-separated), [A]ll, e[X]it

Enter selection: **05** ←choose PCIE-2221BP device (X710)

Would you like to back up the NVM images? [Y]es/[N]o: Y ←please key-in "Y" to backup older NVM

Update in progress. This operation may take several minutes.

[...+*****]

Num	Description	Ver. (hex)	DevId	S:B	Status
01)	Intel(R) I210 Gigabit Network Connection	3.37(3.25)	1533	00:001	Update not available
02)	Intel(R) I210 Gigabit Network Connection	3.37(3.25)	1533	00:002	Update not available
03)	Intel(R) I210 Gigabit Network	3.37(3.25)	1533	00:005	Update not

Connection				available
04) Intel(R) Ethernet Connection X722 for 10GbE SFP+	3.51(3.33)	37D3	00:028	Update not available
05) Intel(R) Ethernet Controller X710 for 10GbE SFP+	7.16(7.10)	1572	00:059	Update successful

Power Cycle is required to complete the update process.

Tool execution completed with the following status: All operations completed successfully.

6. When utility reports “**All operations completed successfully**”, it means successful to upgrade NVM, please press any key to exit, and power off system.
7. If it reports error message during NVM flashing, please send “PCIE-2221BP.log” to Advantech NCG TSE team (support@advantech-ncg.zendesk.com).
8. Please power on system and login Linux, key-in following command to check PCIE-2221BP NVM version again, the NVM version will show V7.1 (0x8000644E) after upgrade NVM

```
# ethtool -i <PCIE-2221 network device name>
Ex:
# ethtool -i b3bp0
driver: i40e
version: 2.7.29
firmware-version: 7.10 0x8000644e 0.0.0
expansion-rom-version:
bus-info: 0000:3b:00.0 <- network card BUS ID
supports-statistics: yes
supports-test: yes
supports-eprom-access: yes
supports-register-dump: yes
supports-priv-flags: yes
```

Your may key-in following command to check NVM info from Advantech network card

```
# ethtool -s <PCIE-2221 network device BUS ID > -vvv | grep -i "Vendor specific"
Ex:
# lspci -s 03b:00 -vvv | grep -i "Vendor specific"
[V0] Vendor specific: N242
[V1] Vendor specific: V7.1
[V2] Vendor specific: V7.1.01
[V0] Vendor specific: N242
[V1] Vendor specific: V7.1
[V2] Vendor specific: V7.1.01
```

