

# ASM2464PD USB4 Device Controller MP Tool User Manual

Rev: 0.5

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Environmentally hazardous materials are not used in this product.

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## Revision History

Rev.	Date	Description
0.1	2022/11/21	Formal release
0.2	2023/08/30	Support PDX FW
0.3	2023/10/12	Add appendix B
0.4	2024/01/23	Support command line /V
0.5	2025/01/21	Support command line /CC

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## Scope:

Customers can easily manufacture ASM2464PD related products.

## Operation environment:

Win10 and later version.

## MP Tool Interface Overview

Port#	Status	VID	PID	Serial Number	FW Version	CC	U4 Mode	Capacity	Update	ReLink	Partition	R/W Test	Preload	PD
0	SUPERx1	174C	2463	AAAA BBBB 0000	22072981ed00	2	Legacy	232 GB						
1														
2														
3														
4														
5														
6														
7														
8														
9														

MP tool have 5 major function areas.

Area A: Device Configuration and Device Firmware.

Area B: USB4 Configure device information.

Area C: Device function.

Area D: Status and results.


Area E: Switch configures mode or un-configures mode and save/load ini file.

## Area A: Device Configuration and Device Firmware

The screenshot shows the 'Device Configuration' window of the ASM246x MP Tool. It contains several input fields and a dropdown menu for configuring device parameters. Below the configuration fields is the 'FW Browser' section, which displays a file named 'AS\_USB4\_220616\_81\_00\_00.bin' with a USB icon.

Device Configuration			
Vendor ID	174C	Product ID	2463
Device Revision		0100	
Serial Number			
AAAABBBB000D		1.Increase HEX	<input type="radio"/> S/N CHK HEX
EP0 M.String	ASMedia	T10 M.String	ASMT
EP0 P.String	ASM246X series	T10 P.String	ASM246X
Idle Timer	Never		

**FW Browser**

 AS\_USB4\_220616\_81\_00\_00.bin

### 1. Vendor ID, Product ID and Device Revision:

You can type 4 characters. ("0"~"9" and "A"~"F")

### 2. Serial Number:

You can type 20 characters ("0"~"9" and "A"~"F")

#### 2-1. S/N Increase Hex or Dec:

You can select auto increase serial number or remain by Hex or Dec .

#### 2-2. Input from Barcode:

The radio is a function that you can input serial number by barcode scanner. There is a limitation is that it is only support one device operation.

#### 2-3. Input from HDD SN:

the radio is a function that the S/N number will use HDD's serial number.

#### 2-4. S/N CHK HEX:

The radio is a function that MPTool will check S/N number is valid or not.

**3. Manufacturer String and Product String:**

All characters are allowed.

**4. Device Firmware:**

The FW directory must be selected if update FW in area B is checked.

The Preload path must be selected if preload file in area B is checked.

**5. Idle Timer:**

It allows user to select idle timer to trigger the function of HDD standby.

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## Area B: USB4 Configure device information

The screenshot shows the 'USB4 Device Configuration' window. It contains the following fields and values:

- Vendor Name:** ASMedia
- Model Name:** 246x
- U4 Mode:** 3:Auto (selected from a dropdown menu)
- Vendor ID:** 174C
- Product ID:** 2463
- Test ID:** C0000666
- BCD Product FW:** 1234
- Product HW:** 5A
- TBT3 Section:**
  - Vendor ID:** 00B8
  - Model ID:** 2463
  - Model Rev:** E3

1. **Vendor Name, Model Name:**  
You can type 32 characters.
2. **U4 Mode:**
  - 0: PD + PCIe:**  
PD + PCIe tunneling
  - 1: PD + PCIe + Lgcy:**  
PD + PCIe tunneling + legacy USB
  - 2: PD + U3 + Lgcy:**  
PD + USB3 tunneling + legacy USB
  - 3: Auto:**  
Auto by reference host PD PCIe Supported bit
3. **Vendor ID, Product ID, Test ID:**  
You can type 4 characters. ("0"~"9" and "A"~"F")
4. **Test ID:**  
You can type 8 characters. ("0"~"9" and "A"~"F")
5. **BCD Product FW:**  
Set USB4\_BcdSync=0 in ini file first for customer setting
6. **Product HW:**  
You can type 2 characters.
7. **TBT3 Vendor ID, Model ID, Model Rev:**  
You can type 4, 4 and 2 ("0"~"9" and "A"~"F")



## Area C: Device Function

The screenshot shows the 'Device Function' window with the following settings:

- USB Status:** USB 2.0 (dropdown)
- MP Auto Mode:** 1 (dropdown)
- Update FW:** (radio button, selected)
- Reload FW:** (radio button, unselected)
- Config Check:** (radio button, unselected)
- Partition / Format:** (radio button, unselected)
  - Partition Type:** MBR (dropdown)
  - Format Type:** FAT32 (dropdown)
  - Drive Label:** Test (text field)
- W/R Test:** (radio button, unselected)
- Preload Files:** (radio button, unselected)
- Speed Test:** (radio button, unselected)
  - Read:** (text field)
  - Write:** (text field)
- Auto Safe Remove After:** 0 (text field) Seconds

1. **USB Status:**  
Check device status. USB device only.
2. **MP Auto Mode:**  
In MP Auto Mode, only one ASM246x device is supported.
3. **Update FW:**  
Update new firmware and configuration setting.
4. **Reload FW:**  
Reload new firmware and new configuration. Do not supported now.
5. **Config Check:**  
Check device's PID、VID、Manufacture string、Product String, and Serial number are same with MP tool's setting.
6. **Format Type:**  
You can select format type **NTFS**、**FAT32** or **EXFAT**  
Drive Label support **11** characters in FAT32 type, **32** characters in NTFS type.  
USB device only.
7. **Partition Type**  
You can select MBR or GPT. USB device only.
8. **W/R Test:**  
MP tool will Write, Read and compare test file on HDD.  
The limit size of test pattern file is 180MB.

The file name of test pattern is "rwtest.bin".

USB device only.

**9. Speed Test:**

Test for device read/write speed.USB device only.

**10. Preload Files:**

MP tool will copy the files to the HDD.USB device only.

**11. Auto Safe remove after ?? second:**

this function will auto safely remove after a few second after MP operation success. USB device only.

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## Area D: Status and Results

Port#	Status	VID	PID	Serial Number	FW Version	CC	U4 Mode	Capacity	Update	ReLink	Partition	R/W Test	Preload	PD
0	SUPERx1	174C	2463	AAAABBBB0001	22072981fb08	2	Legacy	476 GB						
1														
2														
3														
4														
5														
6														
7														
8														
9														

Pass

0

Fail

0

Total

0

Progress Bar

0%

ASM2464PD MPTool will show basic information such as Port Number, Status, PID, VID, Serial Number, FW Version and Capacity and test results.

## Area E: Mode select



### Lock Mode:

Initially, ASM2464PD MPTool work in Lock Mode. It will load INI file and ready to run.

### Unlock Mode:

If you want to enter into Unlock Mode, you must key in password. Password is "asmedia". When you are in Unlock Mode, you can modify Device Configuration, Device Function, Device Firmware, clean test result and save INI.

Password is **"asmedia"**

## Operation Procedure:

ASM2464PD MPTool will auto load configuration from "as\_mp\_toolv0.6.ini". You can edit "as\_mp\_toolv0.6.ini" by notepad or other edit tool. Please refer to Appendix A.

The standard Operation Procedure is described as followed.

--

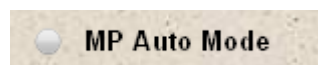
Step1. Please open ASM2464PD MPTool and press Unlock button to modify setting.

Step2. ASM2464PD MPTool will show Login Dialog. Please key in "asmedia".

Step3. You can modify configuration or clean test result.

Step4. Check test configuration items when you begin to test.

### Manual Mode

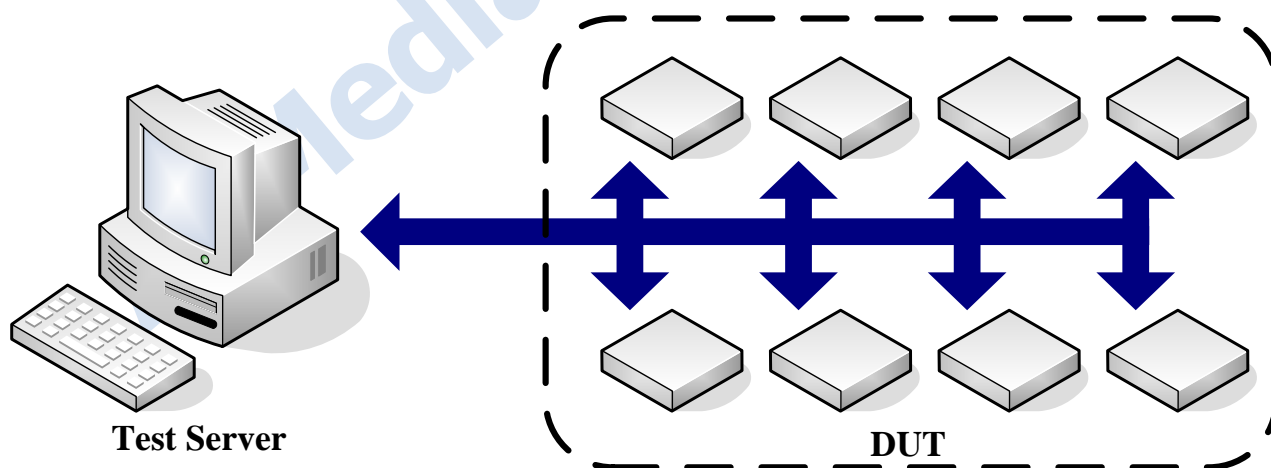


If MP Auto Mode item is not selected, ASM2464PD MPTool will run in Manual Mode.

In Manual Mode, It support Max eight DUTs to test at the same time.

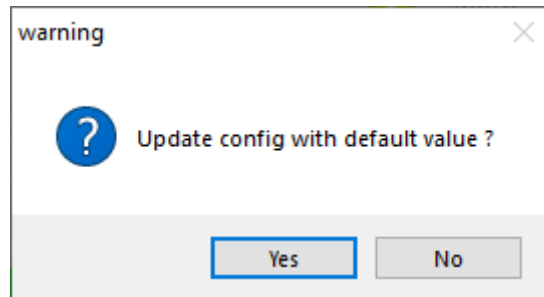
All of USB Ports **can't** connect any other **Mass Storage Device** on test server.

#### 1.1 Connect DUT to platform.



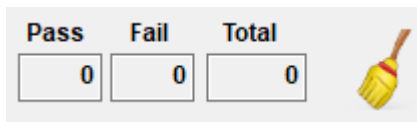
#### 1.2 Press **start** in bottom left.

1.2.1 if user didn't change the default config setting, tool will pop-up warning msg box.



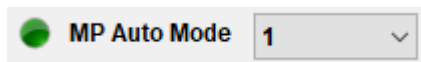
It is not recommended to use default value for config setting.

- 1.3 The progress can be monitored from Progress Bar or % in bottom right.
- 1.4 When the test is finished, users can see pass count, fail count and total count in the screen.



- 1.5 Press safely Remove and change next DUT
- 1.6 ASM2464PD MPTool will save the test result in file named "YYYYMMDD.log"

### Auto Mode

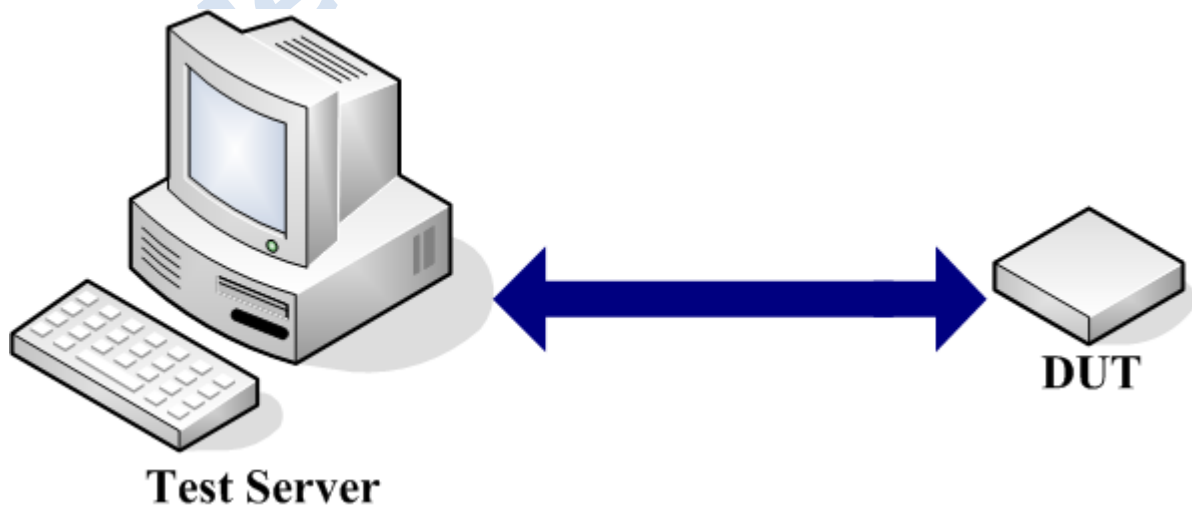


If MP Auto Mode is selected, ASM2464PD MPTool will run in Auto Mode.

In Auto Mode, it only supports one DUT to test at the same time.

All of USB Ports **can't** connect any other **Mass Storage Device** on test server.


- 2.1 Plug DUT to USB port, after entered MP Tool window.



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- 2.2 ASM2464PD MPTool will automatically test when the USB device is plugged into test server.
- 2.3 You can monitor the progress through Progress Bar or % in bottom right.
- 2.4 When the test is finished, users can see pass count, fail count and total count in the screen.

Pass	Fail	Total
0	0	0



- 2.5 Press safely remove and change next DUT
- 2.6 ASM2464PD MPTool will save the test result in file named "YYYYMMDD.log"

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## Appendix A:

### INI file Description:

=====INI file Start=====

### INI file Description:

```
[usb_func]
format_enable=0           //0: Disable; 1: Enable Format disk
format_drive_type=1       //0: NTFS; 1: FAT32; 2: exFAT
partition_drive_type=0    //0: MBR; 1:GPT
drive_label_name=Test     //Setup Disk label name
wr_test_enable=0          //0: Disable; 1: Enable Read/Write test
wr_test_binary_name=rwtest.bin //File name for read/write test
wr_test_count=1           //Loop count for read/write test
auto_mp=0                 //0: Disable; 1: Enable Auto MP mode
auto_mp_DevNum=1          //1~8: When Auto MP mode enable, determine how many
                           devices plug-in will trigger MP process

preload_enable=0          //0: Disable; 1: Enable Preload load file
preload_folder_path=D:\temp //File folder path for preload
Check_USBStatus_enable=0  //0: Disable; 1: Enable Check USB status
Check_USBStatus=0         //0: USB2.0; 1: USB3.0; 2: USB3.1
Check_SerialNumber=0      //0: Disable; 1: Enable check input serial
number is hex
Auto_Safe_Remove=0        //0: Disable; 1: Enable auto safe remove after MP
process
Scan_BarCode=0            // Do not support now
uiRemove_after_finish=0   //if Auto_Safe_Remove enable, wait X sec, remove
device
Speed_test_enable=0       //0: Disable; 1: Enable read write speed test
Scan_HDDSN=0              //0: Disable; 1: Enable this item is not used
currently
check_config=0            //0: Disable; 1: Enable check PID, VID, Manufacture
```

string, Product string, and serial number

SN\_EditType=1 //input serial number edit type:  
0: user define;  
1: Increase Hex;  
2: Increase Dec;  
3: serial number from barcode scanner;  
4: serial number from HDD SN

USB4\_ComponentID\_EditType=5 //Only for Asmedia internal test

CmdLineTimeOut=35 //the timeout while executing tool by commandline  
(unit:second)

USB4\_BcdSync=1 //0: customer can modify U4 BCD Product FW; 1: U4  
BCD Product FW use ASmedia default value

[usb\_fw]

fw\_enable=1 //0: Disable; 1: Enable Firmware update

fw\_binary\_name=AS\_USB4\_220616\_81\_00\_00.bin // Firmware file path for Firmware  
update

fw\_reload=0 //0: Disable; 1: Enable relink

rescan\_after\_relink=0 //Only for Asmedia internal test always set to 0

ext\_fw\_enable=0 //Only for Asmedia internal test always set to 0

pd\_fw\_enable=0 //Only for Asmedia internal test always set to 0

mcu\_fw\_enable=0 //Only for Asmedia internal test always set to 0

pd\_binary\_name= //Only for Asmedia internal test always set to NULL

mcu\_binary\_name= //Only for Asmedia internal test always set to NULL

[usb\_config]

config\_format=4 //Always set to format 4

vendor\_id=174C //Setup for vender ID

product\_id=2463 //Setup for product ID

device\_revision=0100 //Setup for revision

manufacturer\_string=ASMedia //Setup for manufacturer string EP0

product\_string=ASM246X series //Setup for product string EP0

manufacturer\_string\_T10=ASMT //Setup for manufacturer string T10

product\_string\_T10=ASM246X //Setup for product string T10

serial\_number=AAAABBBB000D //Setup for serial number



serial number shall contain 12 ~ 20 valid digits

serial\_number\_increase=1 // Do not support now

serial\_number\_increase\_HEX=1 // Do not support now

serial\_number\_increase\_DEC=0 // Do not support now

SN\_fix\_length=0 //0~20: tool will check if input serial number' s length is equal

the setting before MP process

SN\_remain\_value\_enable=0 //0: Disable; 1: Enable the serial number remain value

SN\_remain\_value\_length=8 //if enable serial number increase hex or dec, MP tool will auto increase the serial number without the setting digits

e.g. serial\_number\_increase\_HEX=1, serial\_number=AABBCCDD0000, SN\_remain\_value\_length=8, MP tool will keep the 8 digits value "AABBCCDD" , and increase the last 4 digits, from 0000 to FFFF

standby\_timer=0 //Only for Asmedia internal test always set to 0

hdd\_standby=0 //Only for Asmedia internal test always set to 0

image0=1 //Only for Asmedia internal test always set to 1

image1=0 //Only for Asmedia internal test always set to 0

crc32=0 //Only for Asmedia internal test always set to 0

#### [USB4\_Config]

USB4\_VendorName=ASMedia //Setup for USB 4 vender Name

USB4\_ModelName=246x //Setup for USB 4 Model Name

USB4\_VendorID=174C //Setup for USB 4 Model ID

USB4\_ProductID=2463 //Setup for USB 4 Product ID

USB4\_TestID=C0000666 //Setup for USB 4 Test ID

USB4\_BcdProductFWRevision=1234 //Setup for USB 4 BCD ID

USB4\_ProductHWRevision=5A //Setup for USB 4 Prodcut HW Revision

USB4\_TBT3VendorID=00B8 //Setup for thunderbolt 3 Vendor ID

USB4\_TBT3ModelID=2463 //Setup for thunderbolt 3 Model ID

USB4\_TBT3ModelRevision=E3 //Setup for thunderbolt 3 Model Revesion

USB4\_U4Mode=3 //Setup for USB4 Mode

- 0: Support PD + PCIe tunneling
- 1: Support PD + PCIe tunneling + Legacy USB
- 2: Support PD + USB3 tunneling + Legacy USB
- 3: Auto by reference host PD PCIe Supported bit

(default)

[PCIe]

PCIe_Scan=1	//0: Disable; 1: Enable pcie scanning
PCIe_VendorID=1B21	//Setup for PCIe scan Vendor ID
PCIe_DeviceID=2463	//Setup for PCIe scan Device ID
PCIe_SSRelinkTime=10	//Only for Asmedia internal test

=====INI file End=====

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## Appendix B:

### MPTool in command line mode:

User can execute MP tool without GUI by using command line window

Currently available commands as below:

/?, /DBG, /S, /C:YYMMDDAABBCC, /SPD

/? // Pop-up a message box, to show the available commands  
// e.g. ASM246xMPTool.exe /?

/DBG // Set the debug message level(0~4)  
It will display GUI and user can monitor the debug  
message by  
DebugView.exe(a windows tool to capture debug messages)  
// e.g. ASM246xMPTool.exe /DBG 4

/S // Execute the MP tool without GUI  
Tool setting depend on ini  
return 0 if success  
// e.g. ASM246xMPTool.exe /S

/C:YYMMDDAABBCC // Check FW version if equal YYMMDDAABBCC  
Return 0 if same FW version, return -2 if FW unmatched  
// e.g. ASM246xMPTool.exe /C: 230801850000

/SPD // Get current speed  
Return value:  
0: Legacy USB2.0  
1: Legacy USB3 Gen1x1  
2: Legacy USB3 Gen1x2  
3: Legacy USB3 Gen2x1  
4: Legacy USB3 Gen2x2  
5: USB3 Tunnel Gen2x1

6: USB3 Tunnel Gen2x2  
7: USB3 Tunnel Gen3x1  
8: USB3 Tunnel Gen3x2  
9: PCIE Tunnel Gen2x1  
10: PCIE Tunnel Gen2x2  
11: PCIE Tunnel Gen3x1  
12: PCIE Tunnel Gen3x2  
13: TBT3 Tunnel Gen2x1  
14: TBT3 Tunnel Gen2x2  
15: TBT3 Tunnel Gen3x1  
16: TBT3 Tunnel Gen3x2  
255: UNKNOWN

// e.g. ASM246xMPTool.exe /SPD

/V // Output FW version to ASM2464Version.txt  
// e.g. ASM246xMPTool.exe /V

/CC Return value:  
4: CC1  
5: CC2  
// e.g. ASM246xMPTool.exe /CC