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**UT165**

**USB2.0 Flash Disk Controller**

**Mass Production Tool User Manual**

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*Version 4.0*

*AUGUST 13, 2008*



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### **1. System Requirements:**

OS: Windows 2000 SP4 above、 Windows XP SP2 above.

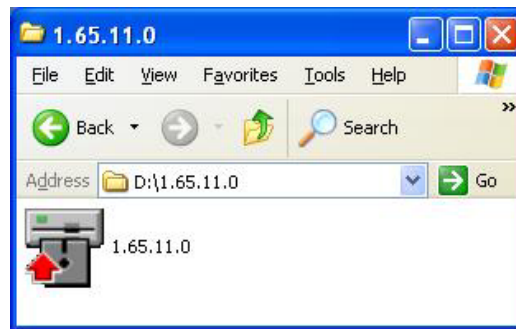
Hardware: USB 2.0 Host、 USB HUB (Optional).

### **2. Multilingual supporting:**

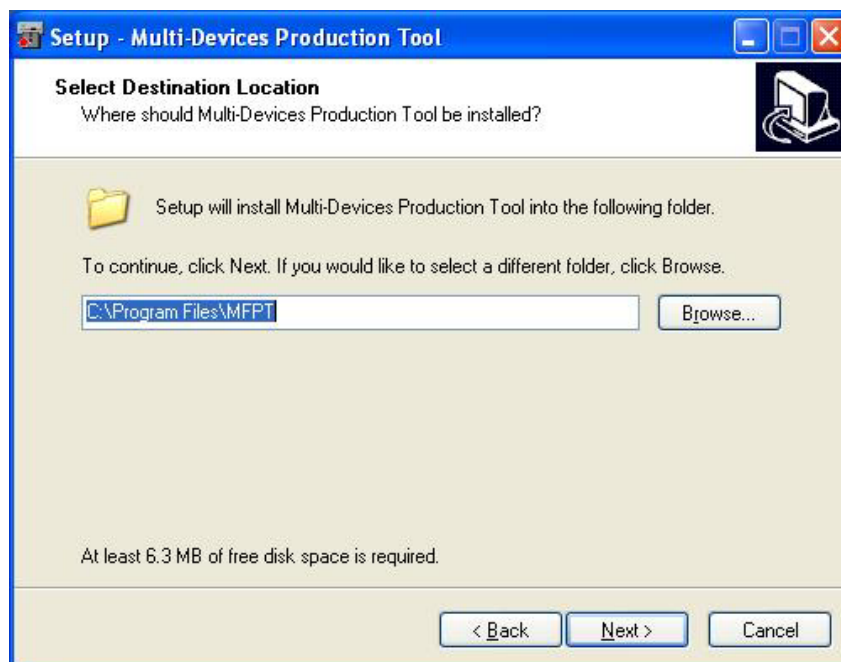
Simplified & Traditional Chinese, Japanese and English.

### **3. Installation procedures:**

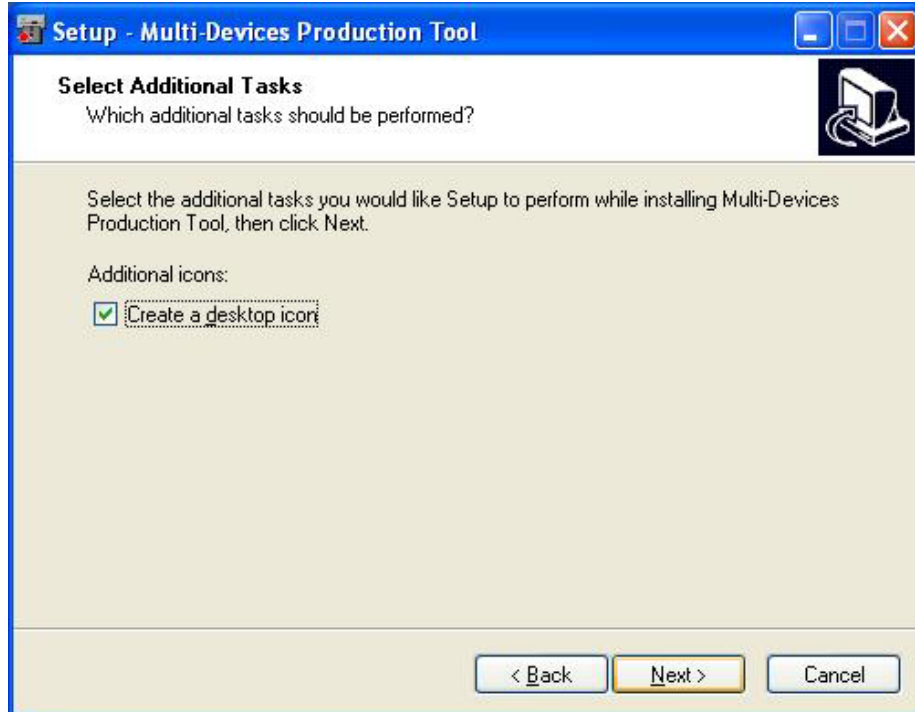
**STEP 1:** Double click [setup] to execute the program as below.



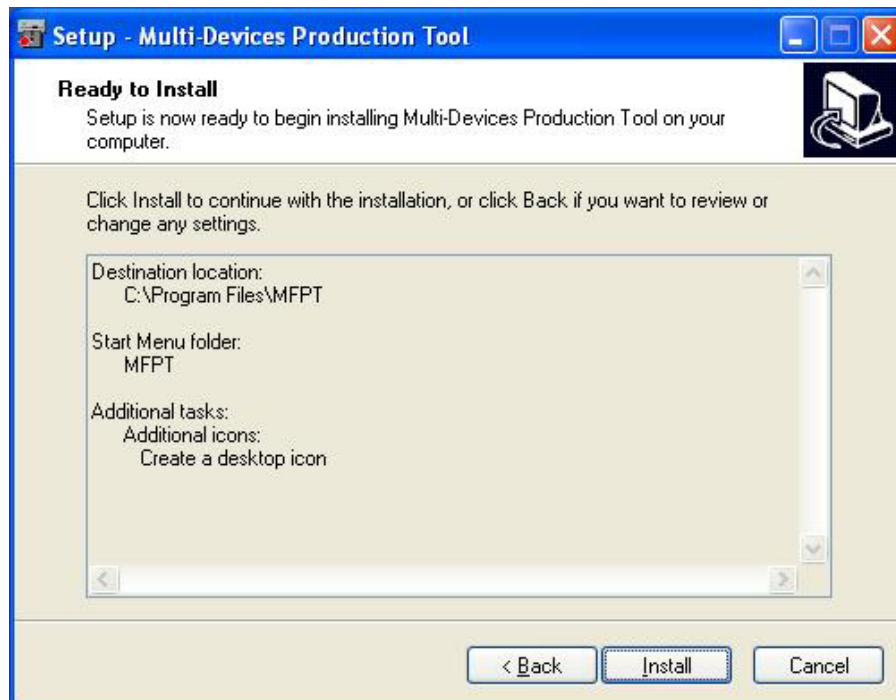
**STEP 2:** Setup will install Multi-Devices Production Tool into the following folder. If you would like to select a different folder, click [Browse] to select the path. Click “Next” to continue.



**STEP 3:** If want to create a shortcut on the desktop, please check the box in [Create a desktop icon], otherwise uncheck it. Click “Next” to continue.



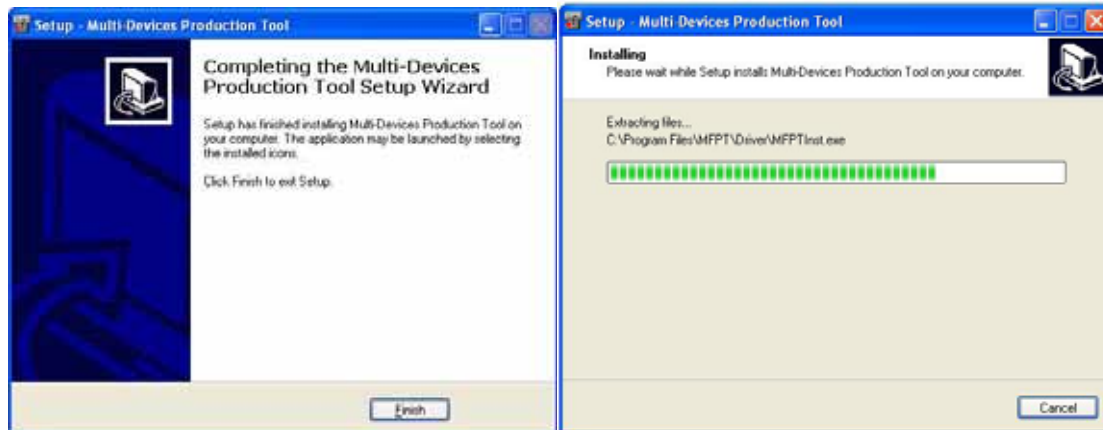
**STEP 4:** Click [Install] to continue installation if all setting is correct, or click [<Back] if you want to modify any setting.





**STEP 5:** Installation in process.

Installation completed successfully.

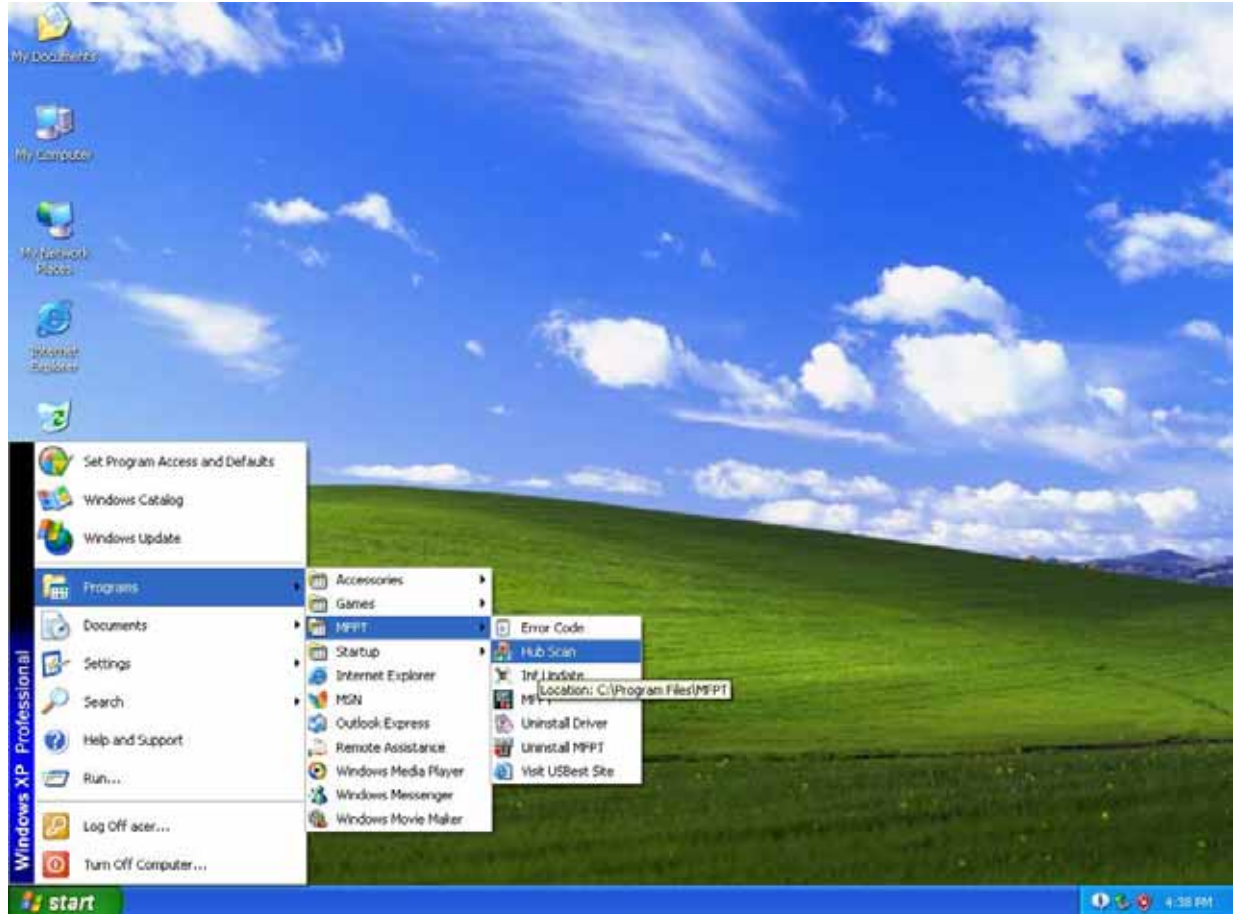


**STEP 6:** You can find folder name <MEPT> at start menu or a shortcut in the desktop (see figure below, depends on the setting at STEP 2&3). Now you are ready to use Multi-Devices Production Tool.



#### **4. Scan Hub location sequence:**

Step 1: According to user request to locate USB port sequential. Execute “Hub Scan” before open MP tool.



Step 2: Press Reset first to clean up early setup.







Step 3: Insert flash disk to the first USB connector of Hub.



Step 4: Make sure PC had found device.



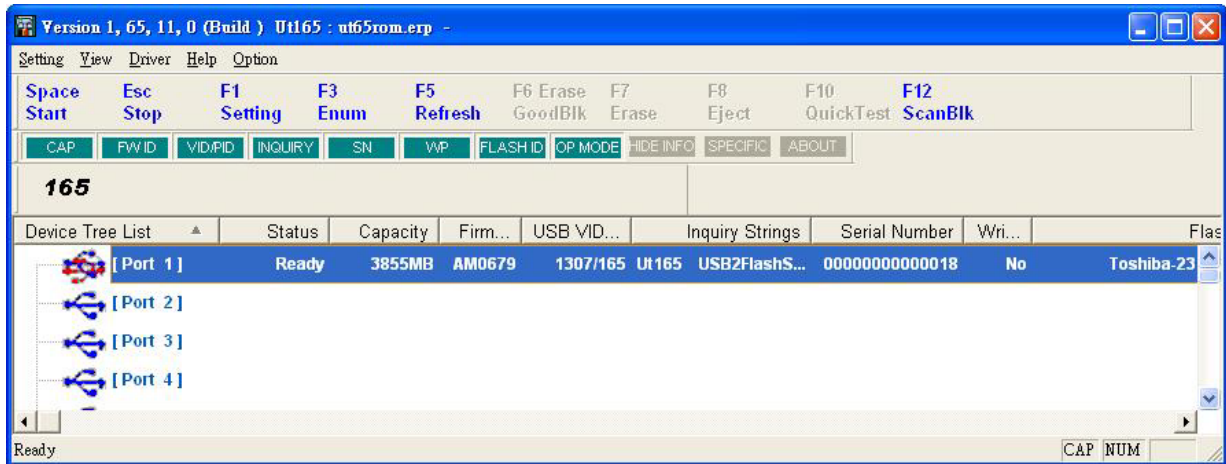
Step 5: Press the port number (1 in this case) you want to show in the MP tool and press Save.



Step 6: When execute MP tool this Hub first USB port will fix to port 1. User can locate other USB connector location as above step.



## 5. MP Tool Function Descriptions:

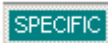
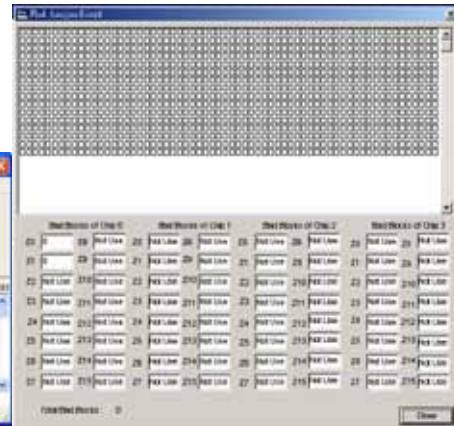


- CAP** Show flash disk capacity, only show the first partition capacity if flash disk format to multiple partitions. (as shown on [Capacity])
- FWID** Show the Firmware version (as shown on [Firmware ID])
- VID/PID** Show the product vendor ID and product ID (as shown on [USB VID/PID])
- INQUIRY** Show vendor name and product name (as shown on [Inquiry Strings])
- SN** Show the product serial number (as shown on [Serial Number])
- WVP** Show the flash disks is under write protecting (Yes) or not (No) (as shown on [Write Protect])
- FLASH ID** Show Flash vendor, Capacity and quantities soldered on the board (as shown on [Flash ID])
- OP MODE** Show the USB port operating mode is 1.1 or 2.0 and Single or Dual channel (as shown on [Operating Mode])





Enable it will not allow user to view flash bad block distribution table. Disable [HIDE INFO] and double click on the information bar (as highlighted in the figure below) to view flash bad block distribution table. No bad block distribution information available before executing format or press F12 (ScanBlk).



Enable it will change F7 (Erase) function from hidden to applicable.

**DO NOT** enable this function during production **TO AVOID** operator misuse cause flash permanent damage.



Show the tool version.



## 6. Icon Descriptions:

Space Start	Esc Stop	F1 Setting	F3 Enum	F5 Refresh	F6 Erase GoodBlk	F7 Erase	F8 Eject	F10 QuickTest	F12 ScanBlk
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Space  
Start

Press keyboard Space key or this icon to start format disk.

Esc  
Stop

Press keyboard Esc key or this icon to stop operation.

F1  
Setting

Press keyboard F1 key or this icon for production environment setting.

F3  
Enum

Press keyboard F3 key or this icon to re-detect all devices in USB ports.

F5  
Refresh

Press keyboard F5 key or this icon to refresh USB devices information.

F6 Erase  
GoodBlk

Press keyboard F6 key or this icon to erase all Good blocks in Flash.

F7  
Erase

Press keyboard F7 key or this icon to erase all blocks in Flash.

F8  
Eject

Press keyboard F8 key or this icon to eject all test devices in USB ports.

F10  
QuickTest

Press keyboard F10 key or this icon for quick test (performance is almost the same as tested with [Space] bottom).

F12  
ScanBlk

Press keyboard F12 key or this icon to scan flash block to create bad block distribution table.

### Chip Information Setting:

**F1 Setting:** You can press keyboard F1 key to start device setting. The “Select Device” box will pop-up and user should select properly device. After select press “OK” to start device parameters setting.



## 7. Vendor Data:

**Inquiry Data Input:** Provides user to input the vendor name, product name and its revision.

**Device Information:** Please input Vendor ID (certified by the USB-IF organization), and Product ID (self-controlled product serial numbers).

**String Descriptor:** Provides user to input the manufactures and product information.

**Disk Type:** Select flash disk type is  hard disk or  removable disk.

**LED Mode:** Setting LED ON or OFF when idle. [Blink Interval] can provide user to adjust the LED blink interval (1Sec or 0.5Sec or 0.25Sec or always on).



**Auto Refresh Option:** Enable this function will refresh flash disk information after executing [Space Start], otherwise information remains the same as before.

**Boot Disk Option:** Enable flash disk boot function.

**Master Boot Record (MBR) Option:** Enable or disable MBR function.



## 8. Parameter Input:

Device Parameters Setting ( ut65rom.erp )

Vendor Data   Parameter Input   Partition Setting

Hotkey : F5 - OK ; F6 - Save as ; F7 - Load ; Esc - Cancel

**Disk Check Option**

Capacity:  MBytes   Flash:  Chips

Operate:    Channel: USB      Mode:

**Serial Number Option**

Serial Number:

Note : It can't be partitioned if choosing Clear Device Serial Number

Custom Define (Hex):

SN Mask:

SN Interval (DEC):  (1-99)   ☐ Decimal SN

**Capacity Tolerance Option** (0 = default, min = by flash, max = 1000)

Capacity Tolerance   ☐ BIN Select

<input type="text" value="0"/> /1024 MB	<input type="text" value="0"/> /1024 MB
<input type="text" value="0"/> /1024 MB	<input type="text" value="0"/> /1024 MB
<input type="text" value="0"/> /1024 MB	<input type="text" value="0"/> /1024 MB
<input type="text" value="0"/> /1024 MB	<input type="text" value="0"/> /1024 MB

**ReBuild TBL Option**

☒ Random   ☐ FF00   ☒ ErAll

☐ Seq   ☐ 55AA   ☐ SkipOrg

☐ 00FF   ☐ AA55

Revert Timing:

Revert Voltage:

Level:

Bit error tolerance:

IO Ctrl:

**Prescan option**:

**Stress Option**:

Stress %:  %

**Voltage Setting**:  Voltage

**R/W Cycle Option**:  ns

**Flash Write**:

**Power Consumption**(0=default):  mA (max=510,min=80)

**USB Mode Setting**:

**Flash Parameters**:

Save as   Load   OK   CANCEL

### Disk Check Option:

- Capacity: Check flash disk capacity with selected capacity specifies in here or select 'Auto' to ignore.
- Flash: Check flash disk quantity with selected quantity specifies in here or select 'Auto' to ignore.
- Operate: Check channel setting (Single or Dual) or select 'Non Check' to ignore.
- USB: USB mode setting (1.1 or 2.0) or select 'Non Check' to ignore.

### Serial Number Option:

- Enable serial Number Generation: Serial number will incremental by hexadecimal according to the value in the [Customer Define].
- Don't Change Serial Number: Only available for the flash disk had been executed by MP tool with serial numbers. It will read original serial number before test and format. After format will write original serial number back to flash disk. (Attention: Do not select this option for new Flashes.)



- Clear Device Serial Number: Will no serial numbers appear in the flash disk after production.
- Random Serial Number Generation: PC generated serial number randomly.





- **Enable Serial Number Customer Define:** To combine alphabetical string and numbers at serial number by user's setting.

Custom Define : 00000000000001

SN Mark : USBest#####

“#” means changeable number, when it reaches to “USBestFFFFFFFF” will offsets to “USBest00000000” automatically.

- **Enable Random Serial Number with data:** This function is used to generated serial number.

For example:

SN Mark: 20070815#####

“#” means changeable number, PC generated serial number randomly.

- **DEC/HEX Serial Number with data:** This function is used to generated serial number. For example:

Custom Define: 000000000000001

SN Mark : USBest#####

“#” means changeable number, Add DEC/HEX serial number.

### **Capacity Option:**

Define the capacity after initial. When set to default value the tool will set it to the USBest default capacity. When enable BIN select function the tool can provide 4 different capacity options when production. It's use when flash bad block number abnormal but customer wants to set fix capacity. Usually BIN1 setting capacity should large than BIN2 and BIN2 should large than BIN3, and so on. If flash cannot set as BIN1 capacity the tool will check BIN2 capacity. If still cannot fit BIN2 capacity the tool will check next BIN capacity. The tool will show 0x48 error code if tool still cannot found available capacity till last BIN. The setting value should not over 500 otherwise error code may happen. When enable BIN select function the user must set value for each BIN. Please reference to below information for how to setting the capacity.



256MB example:

Capacity Tolerance Option (0 = default, min = by flash, max = 1000)

Capacity Tolerance	BIN Select
961 /1024 MB	601 /1024 MB
841 /1024 MB	501 /1024 MB
801 /1024 MB	401 /1024 MB
701 /1024 MB	201 /1024 MB

X: Flash capacity. (For 256MB flash X=256)

Y: Setting value.

$$\text{Capacity} = (X/1024) * (Y-1)$$

$$Y = [\text{Capacity} * (1024/X)] + 1$$

Ex :

BIN1 capacity=	$(256/1024) * (961-1)$	240MB
BIN2 capacity=	$(256/1024) * (841-1)$	210MB
BIN3 capacity=	$(256/1024) * (801-1)$	200MB
BIN4 capacity=	$(256/1024) * (701-1)$	175MB
BIN5 capacity=	$(256/1024) * (601-1)$	150MB
BIN6 capacity=	$(256/1024) * (501-1)$	125MB
BIN7 capacity=	$(256/1024) * (401-1)$	100MB
BIN8 capacity=	$(256/1024) * (201-1)$	50MB



1024MB example:

Capacity Tolerance Option (0 = default, min = by flash, max = 1000)

Capacity Tolerance		<input checked="" type="checkbox"/> BIN Select	
<input type="text" value="961"/>	/1024 MB	<input type="text" value="601"/>	/1024 MB
<input type="text" value="841"/>	/1024 MB	<input type="text" value="501"/>	/1024 MB
<input type="text" value="801"/>	/1024 MB	<input type="text" value="401"/>	/1024 MB
<input type="text" value="701"/>	/1024 MB	<input type="text" value="201"/>	/1024 MB

X: Flash capacity. (For 1024MB flash X=1024)

Y: Setting value.

$$\text{Capacity} = (X/1024) * (Y-1)$$

$$Y = [Capacity * (1024/X)] + 1$$

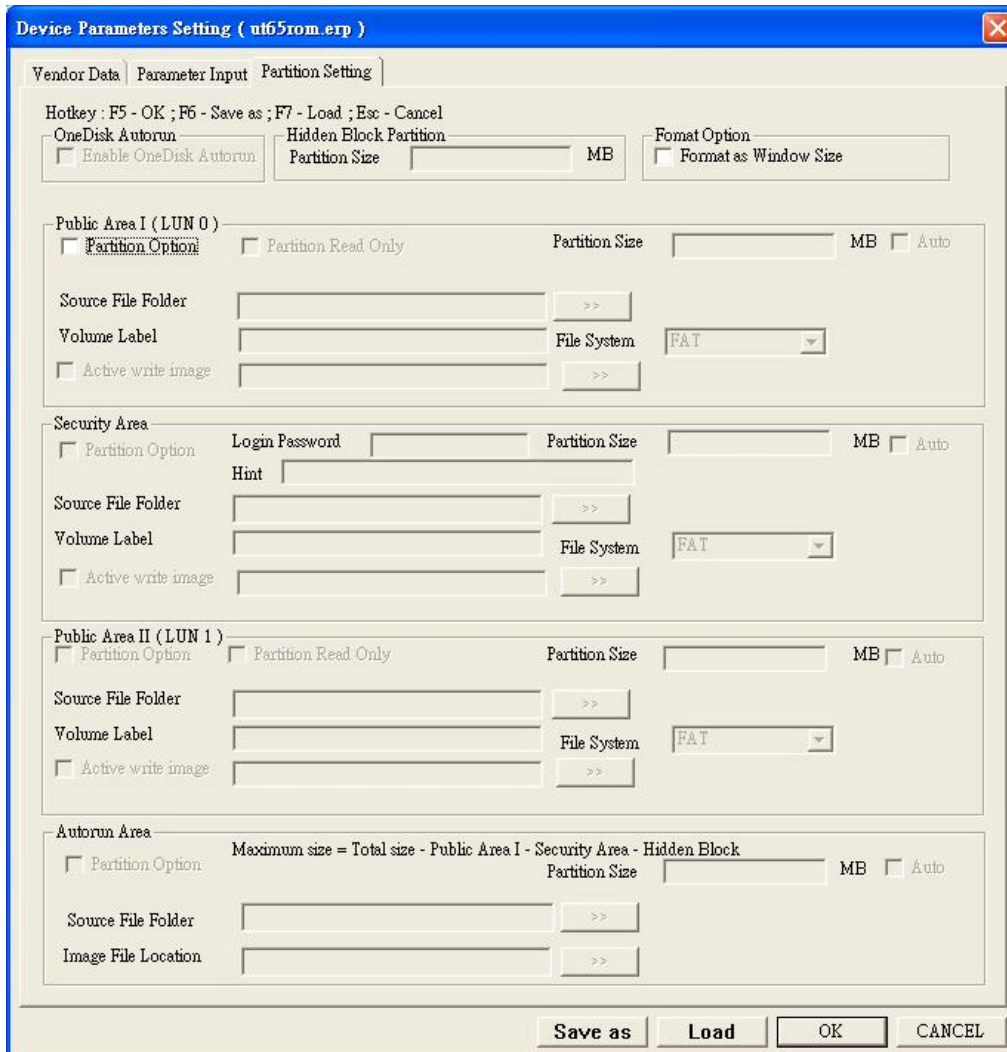
Ex :

BIN1 capacity=	$(1024/1024) * (961-1)$	960MB
BIN2 capacity=	$(1024/1024) * (841-1)$	840MB
BIN3 capacity=	$(1024/1024) * (801-1)$	800MB
BIN4 capacity=	$(1024/1024) * (701-1)$	700MB
BIN5 capacity=	$(1024/1024) * (601-1)$	600MB
BIN6 capacity=	$(1024/1024) * (501-1)$	500MB
BIN7 capacity=	$(1024/1024) * (401-1)$	400MB
BIN8 capacity=	$(1024/1024) * (201-1)$	200MB

**Rebuild TBL Option:** Rebuild Flash bad block.

**Stress Option:** Data copy and compare.

## 9. Partition Setting:



Device Parameters Setting ( ut65rom.erp )

Vendor Data | Parameter Input | Partition Setting

Hotkey : F5 - OK ; F6 - Save as ; F7 - Load ; Esc - Cancel

OneDisk Autorun  
☐ Enable OneDisk Autorun

Hidden Block Partition  
 Partition Size  MB

Format Option  
☐ Format as Window Size

Public Area I ( LUN 0 )  
☐ Partition Option ☐ Partition Read Only Partition Size  MB ☐ Auto

Source File Folder  >>

Volume Label  File System

☐ Active write image  >>

Security Area  
☐ Partition Option Login Password  Partition Size  MB ☐ Auto

Hint

Source File Folder  >>

Volume Label  File System

☐ Active write image  >>

Public Area II ( LUN 1 )  
☐ Partition Option ☐ Partition Read Only Partition Size  MB ☐ Auto

Source File Folder  >>

Volume Label  File System

☐ Active write image  >>

Autorun Area  
☐ Partition Option Maximum size = Total size - Public Area I - Security Area - Hidden Block

Partition Size  MB ☐ Auto

Source File Folder  >>

Image File Location  >>

Save as Load OK CANCEL

**Hidden Block Partition:** Partition invisible in OS.

**Auto:** The “Partition Size” will show -1 if choose “Auto” option. MP tool will calculate this area size automatically by flash total size minus other partition size.

**File System:** File system can be format to “FAT” or “FAT32”, when the flash capacity is smaller than 64MB cannot choose “FAT32”.

**Volume Label:** Input the disk volume name or leave blank.

**Format as Windows Size:** Format size same as Windows OS format size once checked.



**Active write image:** When enable this option the source file write speed will be faster by using image files. Especially is for big file copy. For example:

1. After input target partition size and source file path start MP.

The screenshot shows the UT165 MP Tool interface. The 'Public Area I (LUN 0)' section has the following settings:   
☒ Partition Option, ☐ Partition Read Only, Partition Size: 1000 MB, ☐ Auto.   
 Source File Folder: C:\Documents and Settings\paul.chen\桌面, Volume Label: (empty), File System: FAT.   
☐ Active write image.   
 The 'Security Area' section has:   
☒ Partition Option, Login Password: (empty), Hint: (empty), Partition Size: -1 MB, ☒ Auto.   
 Source File Folder: (empty), Volume Label: (empty), File System: FAT.   
☐ Active write image.

Partition size must be equal or larger than image file size.

2. Close MP tool and insert disk into computer. Execute DrvGhost.exe and select the disk want to generate image files. After press start and select file save path the tool will create dgo file.

The screenshot shows the DrvGhost application window. The 'DRIVE:' dropdown menu is set to '[F]: 1000.0 MB, Ut165 USB2FlashStorage, x2 (Single)'. There is a 'Refresh' button next to it. Below the drive selection, there is a large empty text area. At the bottom, the 'TIME(min/sec) = 000 / 000' is displayed. There is a 'Create Drive Image' dropdown menu and a 'Start' button.

3. Dialogue appeared after procedures finished successfully. You can locate dgo file in designated location.



4. After open MP Tool select “Active write image” and specify dgo file path. After setting MP tool will write image files as a source during MP procedures.

Public Area I (LUN 0)			
<input checked="" type="checkbox"/> Partition Option	<input type="checkbox"/> Partition Read Only	Partition Size	1000 MB <input type="checkbox"/> Auto
Source File Folder			>>
Volume Label		File System	FAT
<input checked="" type="checkbox"/> Active write image	C:\Documents and Settings\paul.chen\桌面\	>>	121356288 Bytes (115.73 MB)
Security Area			
<input checked="" type="checkbox"/> Partition Option	Login Password	Partition Size	-1 MB <input checked="" type="checkbox"/> Auto
	Hint		
Source File Folder			>>
Volume Label		File System	FAT
<input type="checkbox"/> Active write image		>>	





**Partition Setting:** This “Partition Setting” function is used to create multi-partition or copy file to flash disk. For example:

1. Do not check the “Partition Option” box if request only one partition and not copy any files to flash disk.
2. To copy file from “Source File Folder” to disk after the disk formation, please check the “Partition Option” box and select source folder by click.

3. Two disk partitioning: The first one is public disk and the other is security disk.

Example: To partition a 240MB disk into a 100MB public disk and remain size for security disk (140MB in this case). Copies unlock AP to public disk also for unlocking security disk.

is the path of the unlock AP source file to copy into public disk, is the login password of the security disk, is the hint of the password, is the path of the file want to copy into the security disk. After format only one disk appears in the computer, the other one is invisible. To switching between the Public disk and security disk by using unlock AP copy at public disk. User can unplug flash disk from USB port to lock the disk again.



4. Three Disk Partitioning: The first is public disk I, the second is security disk and the third is public disk II.

Example of a 240MB disk: The public disk I is 100MB, the security disk is 50MB and remain size for public disk II (90MB in this case). After format and plug flash disk into USB port it will show 2 disks; public disk I (100MB) and public disk II (90MB) respectively. Security disk is same as above “Two disk partitioning” description.

<b>Public Area I (LUN 0)</b>			
<input checked="" type="checkbox"/> Partition Option	<input type="checkbox"/> Partition Read Only	Partition Size	100 MB <input type="checkbox"/> Auto
Source File Folder	D:\Autorun1	>>	847285 Bytes ( 0.81 MB)
Volume Label		File System	FAT
<input type="checkbox"/> Active write image		>>	
<b>Security Area</b>			
<input checked="" type="checkbox"/> Partition Option	Login Password	Partition Size	50 MB <input type="checkbox"/> Auto
	Hint		
Source File Folder		>>	
Volume Label		File System	FAT
<input type="checkbox"/> Active write image		>>	
<b>Public Area II (LUN 1)</b>			
<input checked="" type="checkbox"/> Partition Option	<input type="checkbox"/> Partition Read Only	Partition Size	-1 MB <input checked="" type="checkbox"/> Auto
Source File Folder	D:\skype2.0	>>	19953112 Bytes ( 19.03 MB)
Volume Label		File System	FAT
<input type="checkbox"/> Active write image		>>	

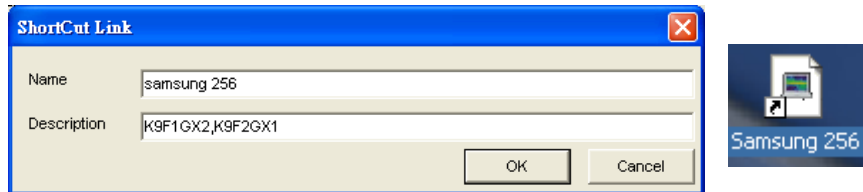
5. To use Autorun area you need select “Partition Option” first. Select autorun source file folder path to create ISO file, volume name and path if you don’t have it. If have ISO file already please use image file location to select file path. It’s no necessary to use source file folder create ISO file again. You can use the tool calculate size as partition size (3 in this case because must be integer and large than 2.62MB) or select “Auto” option.

<b>Autorun Area</b>			
<input checked="" type="checkbox"/> Partition Option	Maximum size = Total size - Public Area I - Security Area - Hidden Block		Partition Size
			3 MB <input type="checkbox"/> Auto
Source File Folder	C:\Documents and Settings\paul.chen\桌面\	>>	847285 Bytes ( 0.81 MB)
Image File Location	C:\Documents and Settings\paul.chen\桌面\	>>	1220608 Bytes ( 1.16 MB)



**Save as:** After completing all setting user can save setting to a specify file or press [OK] as default setting.

1. Press [Save as] to save the file. As figure shown below, please input the file name and click [OK] if you need a short cut on the desktop. Once a shortcut is created, user can start the MP tool with all settings by just clicking the icon.



2. Press [OK] to save current setting as default setting.

**ATTENTION:**

Hotkey: **F5**-OK; **F6**-Save as; **F7**-Load; **Esc**-Cancel

One Disk Autorun: not support Samsung 4k Pages Flash.



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