



MP Tool

User Manual

2012/01/12

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Table 1 : Version

Version	Date	Description	Author	Note
0.9	2012/04/30	Initialization	Dennis Hsiao	Initialization
0.91	2012/05/01	Add Fixed 32K Cluster	Dennis Hsiao	

I. Introduction

This document is the manual for MP tool of Skymedi Flash Controller SK6221&SK6222.

II. System Requirement

Table 2 : Recommend System Requirement

No	Item	Requirement
1	C P U	X86 CPU
2	R A M	512MB
3	H D D	1G
4	O S	Microsoft Windows XP SP1 or above

III. Operation

(一) Execution

Open the folder that MP Tool locates as Figure-1. Double click MPTool.exe. Main dialog is shown as Figure-2.

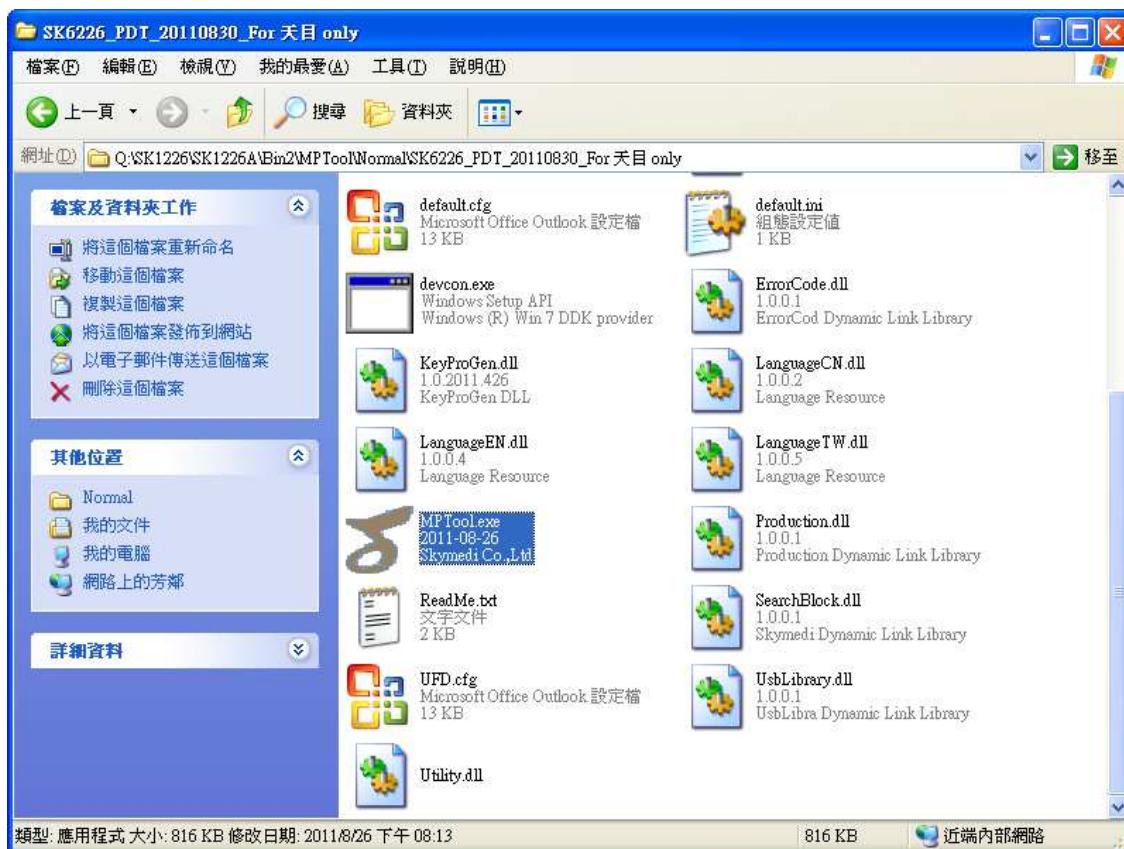


Figure-1 : Folder of MP Tool

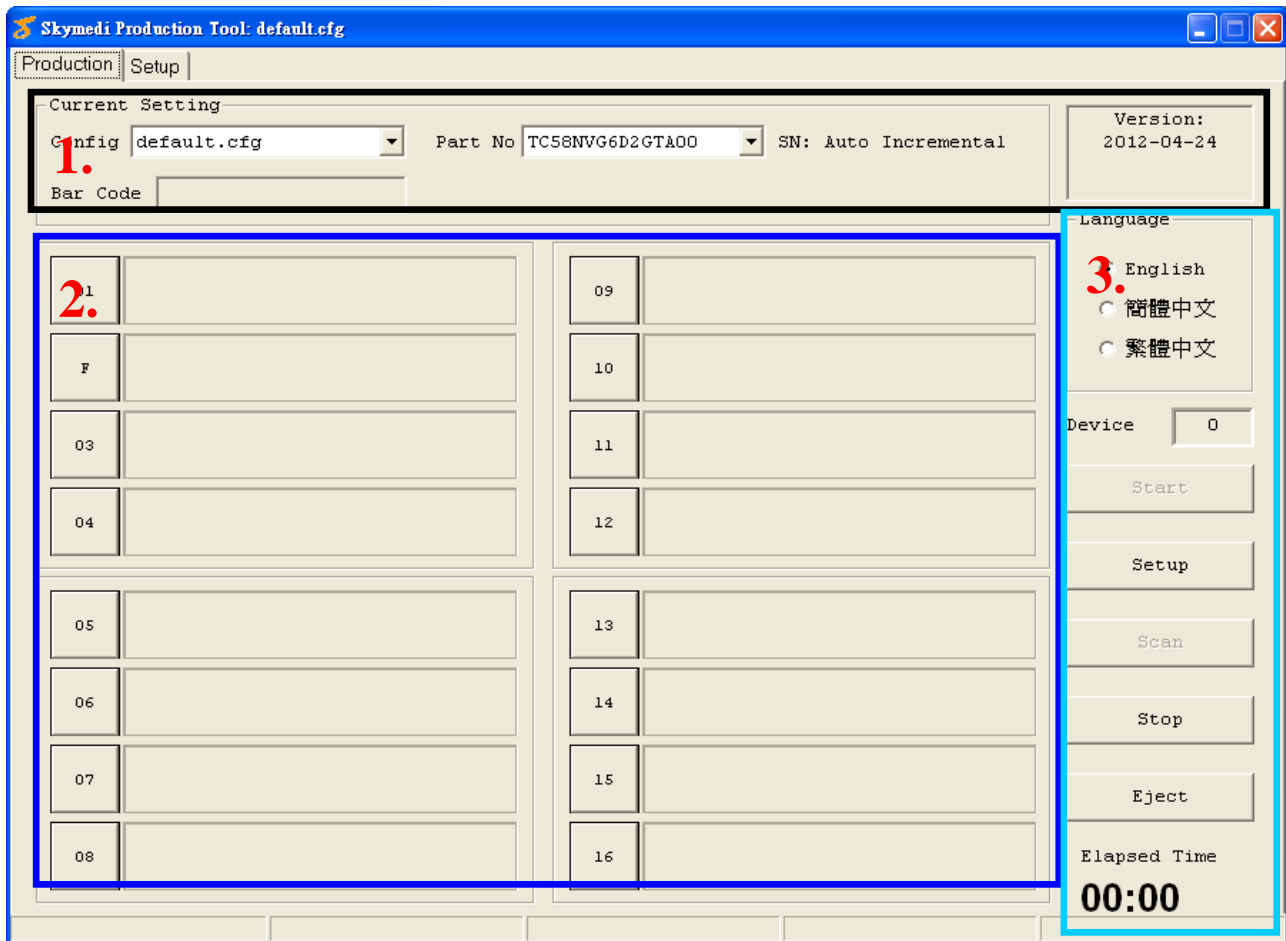


Figure-2 : MPTool Main Dialog

(二) Illustration of Main Dialog

There are three major parts of main dialog. They are

1. Current Setting
2. Slot Information
3. Function Area & Elapsed Time Display

Current Setting

Current Setting area has four major functions.

1. Load configuration file.
2. Select flash type.
3. Bar code function.
4. Display Serial Number (SN) mode

Figure-3 : Current Setting

User may select different configuration files by the drop menu of “Config”. MP tool lists all configuration files in current folder.

Figure-4 : Selecting configuration file

Box of “Part No” lists all possible flash types which can be selected. It relates to Production page of Setup. If Flash is in Auto Detect mode, user may find multiple items that can be selected. If Flash type is fixed, there is only one flash in this box.

Figure-5 : Selecting Flash Part No

Bar Code box load the indicated configuration file. If the loading is successful, Config box display the configuration file name and user can see the file name with large blue font as Figure-6. If it fails, MP tool pops a warning dialog for user.

Figure-6 : Bar Code

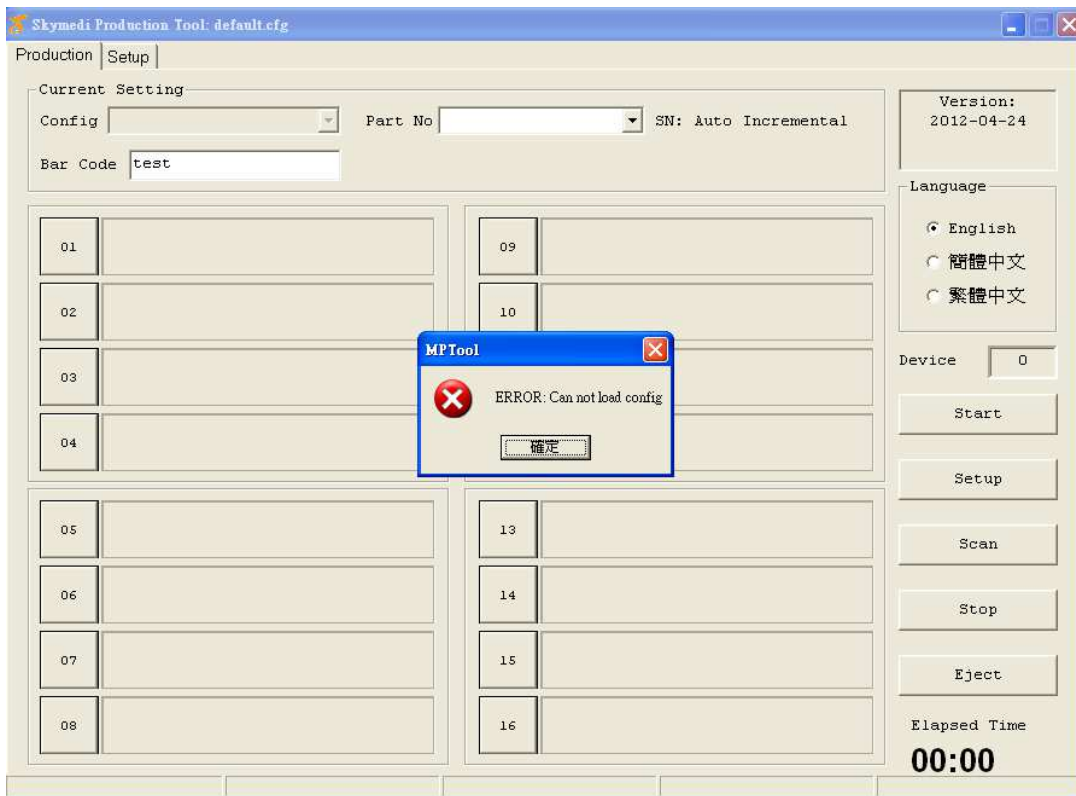


Figure-7 : Bar Code Loading Failed

Slot Information

Slot information (Figure-8) displays the state and information for each UFD in production. It has three major states:

1. Slot detected (Figure-9 & Figure-10)
2. Under production (Figure-11)
3. The result, pass or fail (Figure-12)

01		09	
F	SK6221, Channel:2 TC58NVG6D2GTA00, CE:1	10	
03		11	
04		12	
05		13	
06		14	
07		15	
08		16	

Figure-8 : Slot Information

F	SK6221, Channel:2 TC58NVG6D2GTA00, CE:1
---	--

Figure-9 : Slot detected

04	Unknown Device	04	Unknown Flash
----	----------------	----	---------------

Figure-10 : Slot detected, but unsupported

F	SK6221, Channel:2 TC58NVG6D2GTA00, CE:1
---	--

Figure-11 : Under production

F	SK6221 TC58NVG6D2GTA00, CE: 1 Operation is OK	F	SK6221 TC58NVG6D2GTA00, CE: 1 Error Code: 6000
---	---	---	--

Figure-12 : The result, pass and fail

User may double click the slot for detail information as shown in Figure-13.

Detail Info

Flash

Flash: 98de94827656 Part No: TC58NVG6D2GTA00

Controller

Controller: 12211494 Part No: SK6221

Channel Mode: Word Mode Quantity: 1

Path: \\?\usbstor#disk&ven_skymedi&prod_usb3_pen_drive

ID00: 98-DE-94-82-76-56
 ID01: 98-DE-94-82-76-56
 ID02: 00-00-00-00-00-00
 ID03: 00-00-00-00-00-00
 ID04: 00-00-00-00-00-00
 ID05: 00-00-00-00-00-00

Item	Value
Error Code:	0000
Description:	OK
VID:	1516
PID:	6221
Serial No:	OBCEC5D8201AAC41A1170049
Vendor Name:	Skymedi
Production Name:	USB3_Pen_Drive

OK

Figure-13 : Detail Information

Button in each slot performs production for its UFD. If user wants to perform all UFDs production, he may click “Start” button.

Function Area and Elapsed Time Display

Users can control production by Function Area. Currently, MPTool provides below functions as Table-3 shows.



Figure-14 : Function Area

Table-3 : Function Area List

No.	Item	Description
1	Language	For language switching
2	Start	Start all slots production
3	Setup	User can modify parameters here
4	Scan	Scan UFD manually
5	Stop	Stop production
6	Eject	Eject all UFD

System Menu

User may use right click to open system menu as following Figure-15



Figure-15 : System Menu

Table-4 : System Menu List

項目	功能	說明
1	<u>L</u> oad config file...	For users to load configuration file
2	<u>S</u> ave config file	For users to save configuration file
3	Save <u>A</u> s...	For users to save configuration file with different name or different location, Figure-16
4	About	Display MPTool version, Figure-17

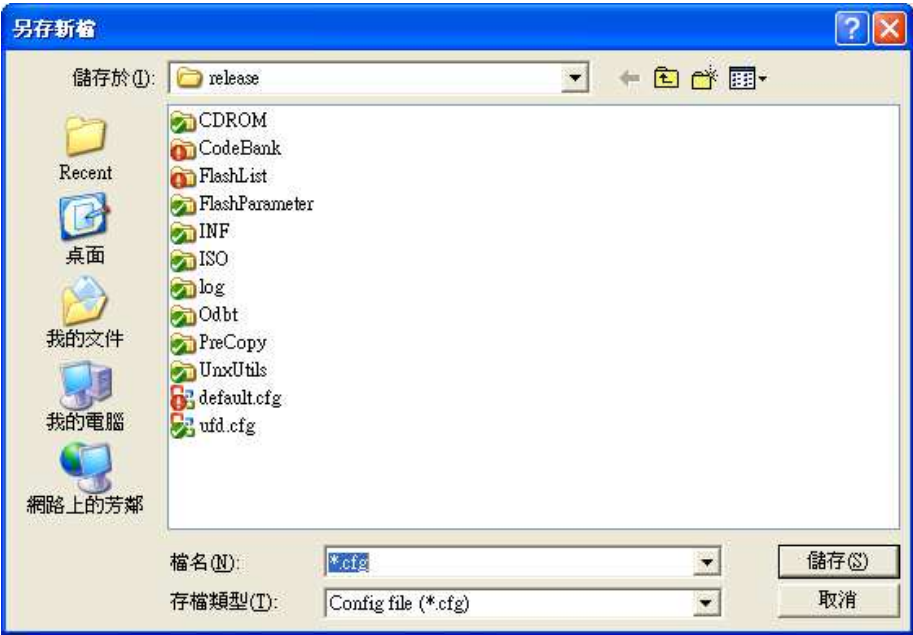


Figure-16 : Save as other configuration file

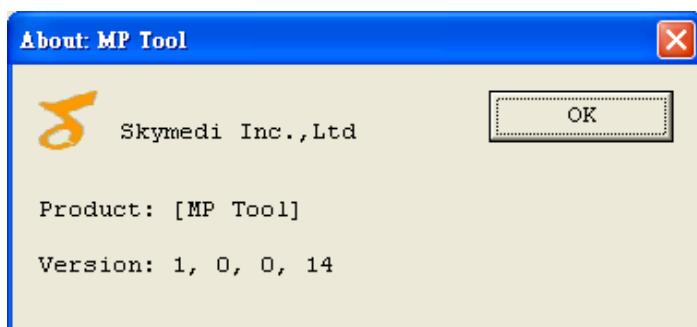


Figure-17 : MPTool Version

(三) Setup

Users may enter Setup dialog by Clicking Setup Button in Function Area or Setup Page. A password check box will pop up immediately. In default, the password is empty. User can click OK to enter. It has several pages for different purposes.

1. Production
2. Vendor
3. Partition
4. Port Mapping
5. MISC
6. Auto Handler

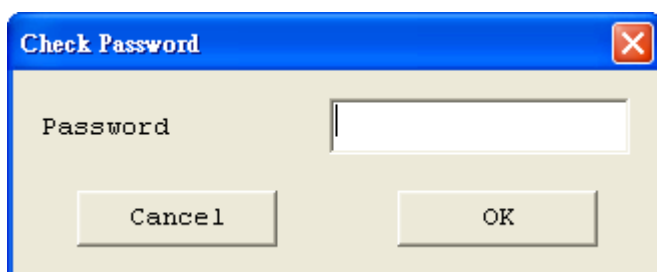


Figure-18 : Password Checkbox

1. Production

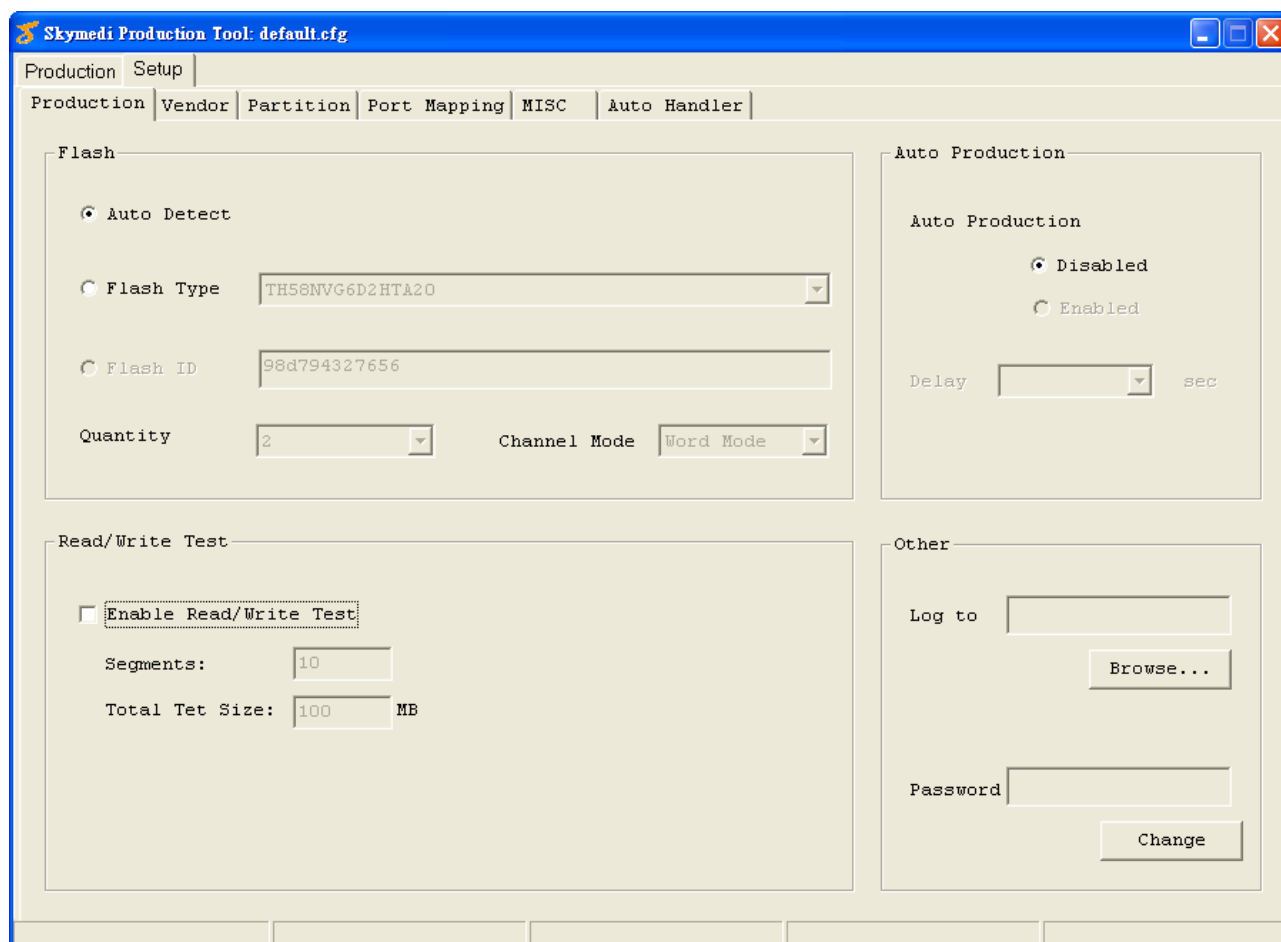


Figure-19 : Production Setting

MPTool provides two kind of flash recognition.

1. Auto Detect: MPTool detects flash ID and its part number automatically. In some cases, user may need to manually select flash part because some flash memory has the same ID. (Figure-5)

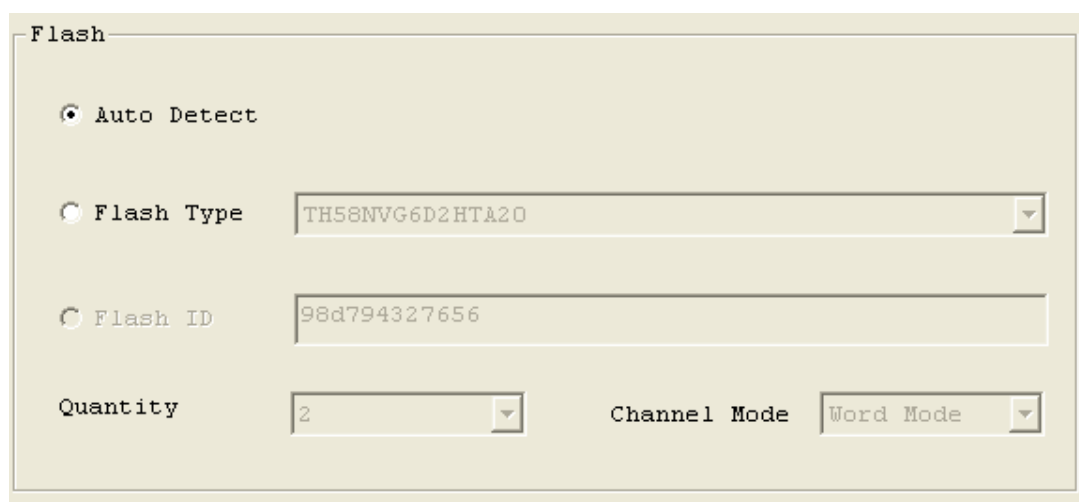


Figure-20 : Flash in AutoDetect

2. Fixed Flash Type: User can fix flash type by enabling Flash Type. (Figure-21) In this mode, MPTool products UFD by fixed setting. If flash ID does not match, error occurs and MPTool stops the production of the UFD.

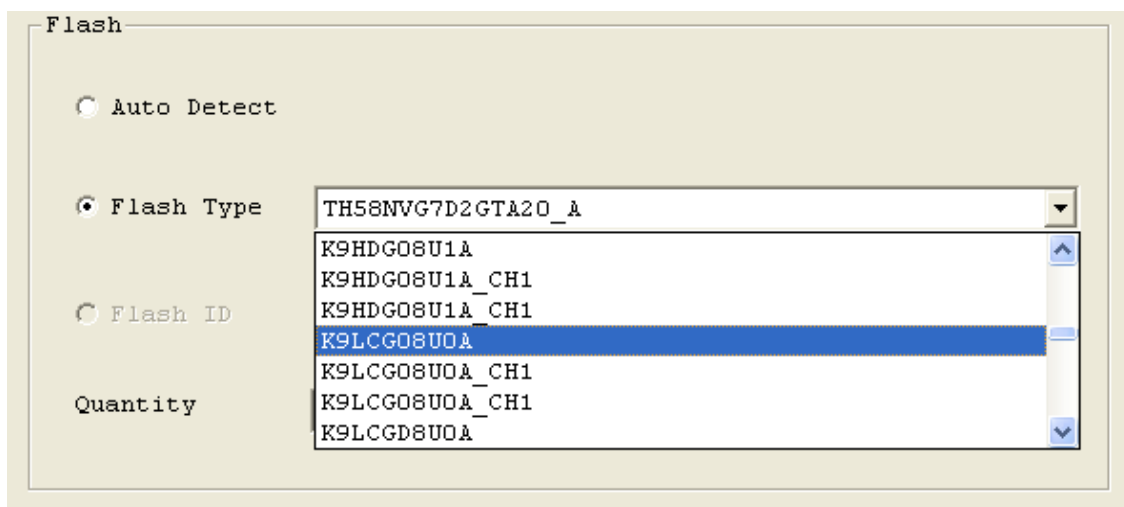


Figure-21 : Fixed Flash Type

After Flash Type is selected, its ID will be shown in Flash ID box. Furthermore, its CEs (Quantity) and Channel Mode are shown as well. (Figure-22)

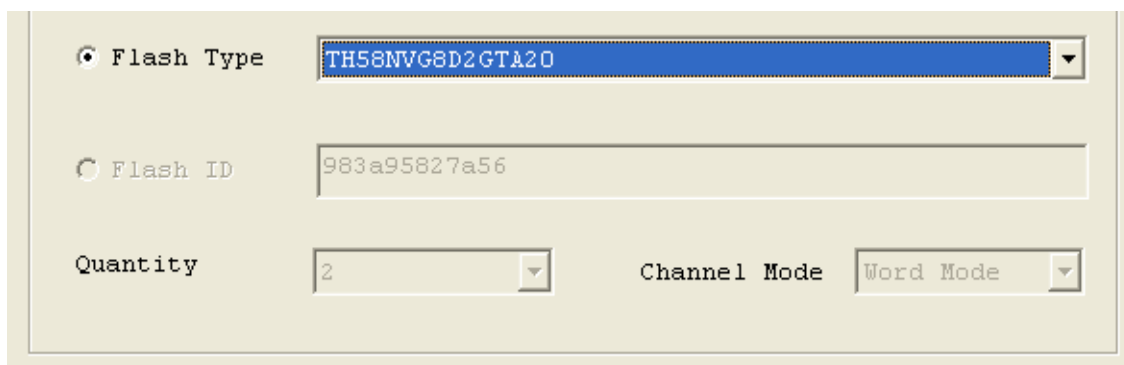


Figure-22 : Selected Flash Type

To ensure the quality, users may set R/W test in production. We take Figure-23 as an example. It divides the whole flash by 10 segments. Each segment has 10MB to do R/W test.

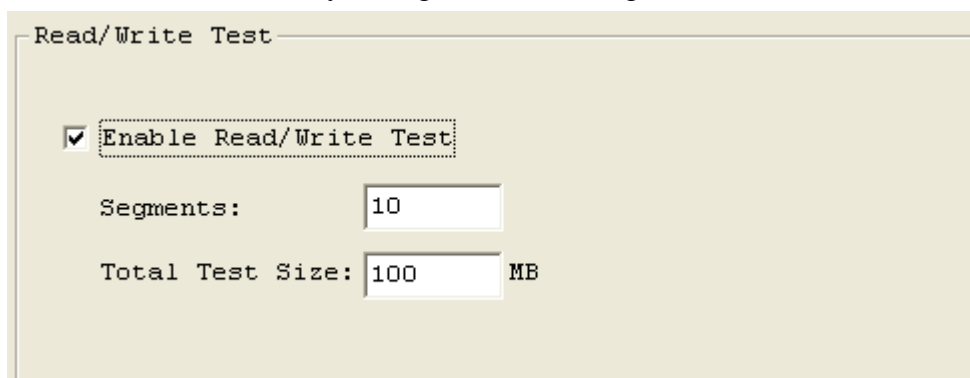
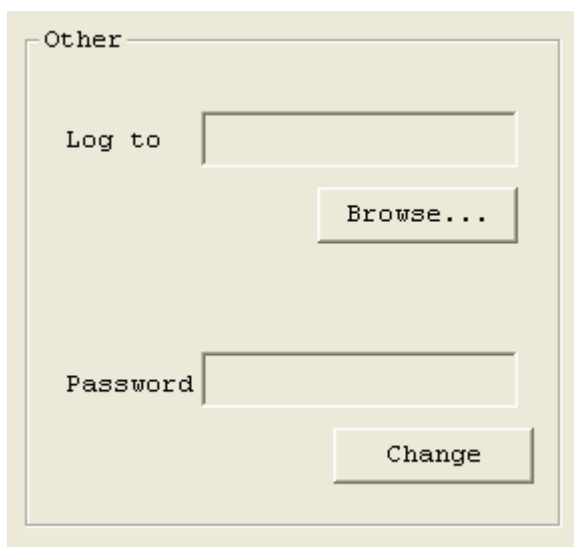


Figure-23 : Read/Write Test

In “Other” setting, users may set log file location and password here. Note that default folder for log file is “/log” and default password is empty.



Other

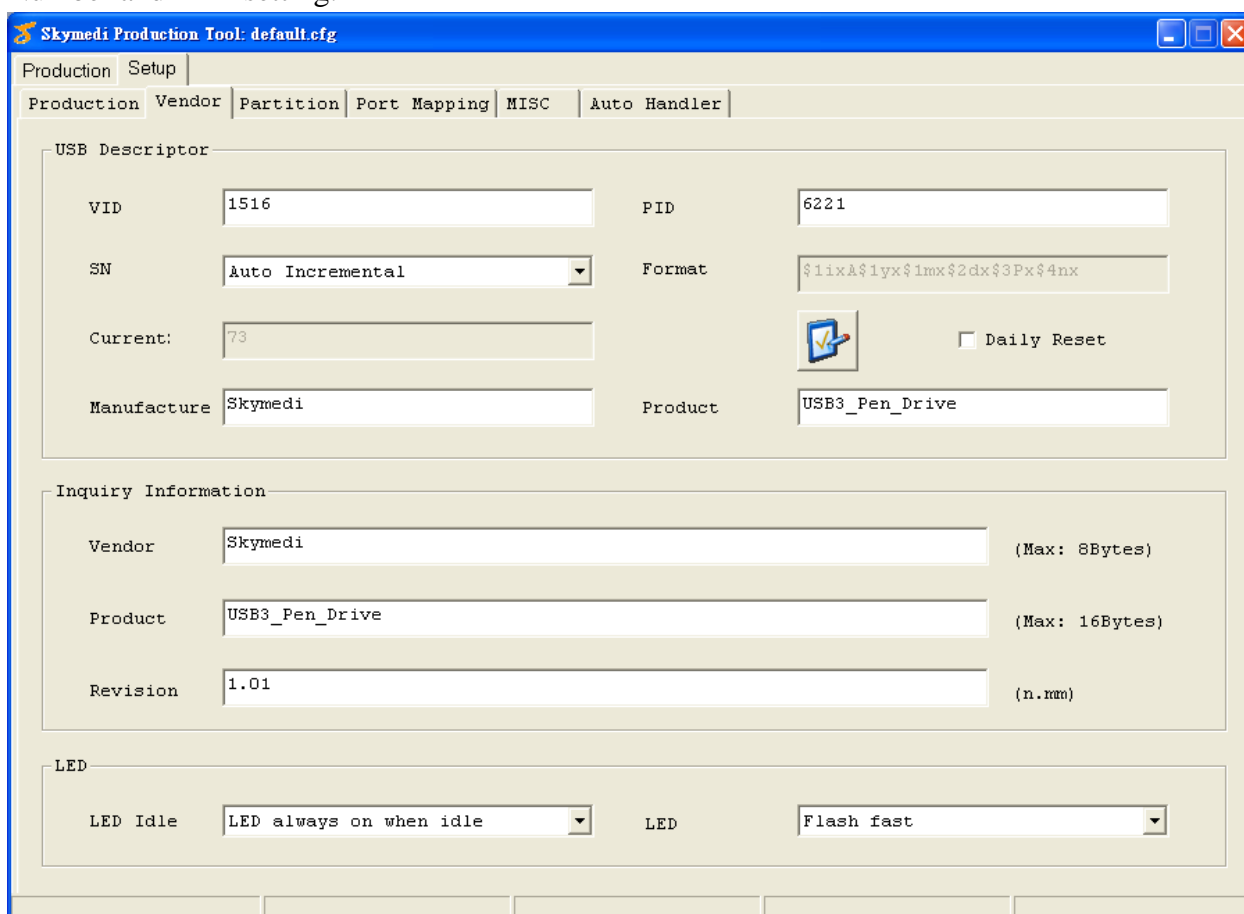
Log to

Password

Figure-24 : Other Setting

2. Vendor

This page stores the Vendor information. It contains VID, PID, Vendor String, Product String, Serial Number and LED setting.



Skymedi Production Tool: default.cfg

Production Setup

Production Vendor Partition Port Mapping MISC Auto Handler

USB Descriptor

VID PID

SN Format

Current: ☐ Daily Reset

Manufacture Product

Inquiry Information

Vendor (Max: 8Bytes)

Product (Max: 16Bytes)

Revision (n.mm)

LED

LED Idle LED

Figure-25 : Vendor Setting

USB Descriptor is for users to set USB related information as VID, PID, Manufacture String (30 bytes), Product String (30 bytes), and Serial Number (SN).

Serial Number Rules:

Skymedi MPTool provides various combinations for user to customize their own serial number. The combined serial number will be displayed on the caption of the dialog.

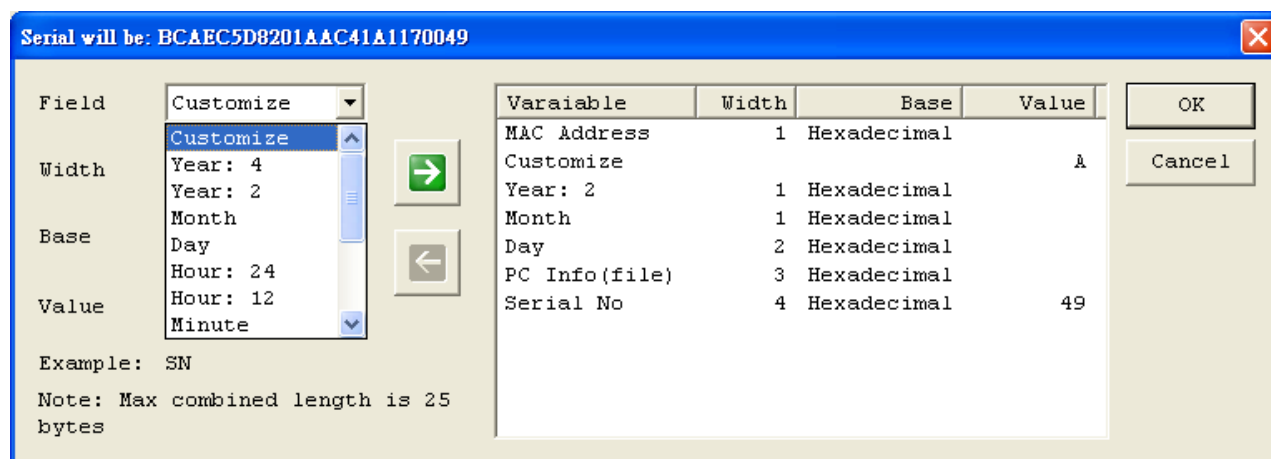


Figure-26 : Serial Number Wizard

Field Description

Tabl-5 : Field Description

No.	Item	Description
1	Customize	Customized value
2	Year: 4	Four digit for year, ex:2012
3	Year: 2	Two digit for year, ex:12
4	Month	Month, hex or decimal
5	Day	Day, hex or decimal
6	Hour: 24	24 hour, 21 for 9 PM
7	Hour: 12	12 hour, 9 for 9 PM
8	Minute	Minute, ex:59
9	Second	Second, ex:59
10	MAC Address	The MAC Address of first Ethernet adapter. Take Figure-27 as an example, the value is 78E3B59A5248 Note: This value does consider Width or Base in SN setting.
11	PC Info (file)	MPTool read the vale in C:\ pcinfo.ini. This filed is used to track the production PC. Note: This value does consider Width or Base in SN setting.

12	USB Slot	The value is USB slot number.
13	Product Line	For user to customize product line
14	Serial No	<p>To set the initial value of serial number. Only the value of this field can be incremented or decremented.</p> <p>If Daily Reset is selected, it reset the filed to 0 when day changes.</p>

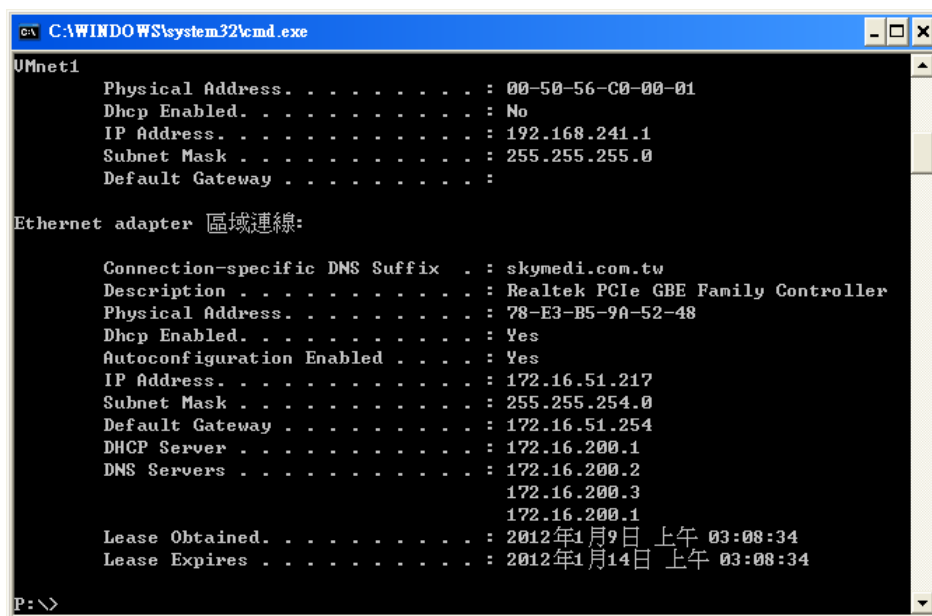


Figure-27 : Ethernet Adapter

Width: It sets the width of Filed. For example, in year 2012, user selects Year:4 and sets Width by 4. The value would be 2012. If user selects Year:4 and sets Width by 3. The value is 012. If user selects Year:2 and sets Width by 2. The value is 12. Furthermore, if users changes Base to Hexadecimal, in year 2012, the value would be 7DC.

We illustrate SN by three cases.

1. **MAC Address** + **A** (Customize value to distinguish vendor) + **1 digit year** (Hexadecimal) + **1 digit month** (Hexadecimal) + **2 digit day** (Hexadecimal) + **PC Info** + **4 digit serial number** (Hexadecimal) with incremental mode. The result is shown as Figure-28.

Serial will be: AC10A9750000

Field: Serial No

Width: 4

Base: Hexadecimal

Value:

Variable	Width	Base	Value
MAC Address	1	Hexadecimal	
Customize			A
Year: 2	1	Hexadecimal	
Month	1	Hexadecimal	
Day	2	Hexadecimal	
PC Info(file)	1	Decimal	
Serial No	4	Hexadecimal	0

OK Cancel

Figure-28 : SN Example-1

2. **4 digit year** (Decimal) + **2 digit month** (Decimal) + **2 digit day** (Decimal) + **2 digit hour** (Decimal, in 24 Hour) + **2 digit minute** (Decimal) + **2 digit second** (Decimal) + **6 digit serial number** (Decimal) with incremental mode. The result is shown as Figure-29.

Serial will be: 20120110202627000001

Field: Serial No

Width: 6

Base: Decimal

Value:

Variable	Width	Base	Value
Year: 4	4	Decimal	
Month	2	Decimal	
Day	2	Decimal	
Hour: 24	2	Decimal	
Minute	2	Decimal	
Second	2	Decimal	
Serial No	6	Decimal	000001

OK Cancel

Figure-29 : SN Example-2

3. **DEC** (Customize value) + **2 digit product line** (Decimal) + **2 digit year** (Decimal) + **1 digit month** (Decimal) + **2 digit day** (Decimal) + **5 digit serial number** (Decimal) with incremental mode. The result is shown as Figure-30.

Serial will be: DEC091211000001

Field: Serial No

Width: 5

Base: Decimal

Value:

Variable	Width	Base	Value
Customize			DEC
Product Line	2	Decimal	09
Year: 2	2	Decimal	
Month	1	Decimal	
Day	2	Decimal	
Serial No	5	Decimal	00001

OK Cancel

Figure-30 : SN Example-3

User may modify Inquiry Information to name their disk, Figure-31.



Inquiry Information	
Vendor	Skymedi (Max: 8Bytes)
Product	USB3_Pen_Drive (Max: 16Bytes)
Revision	1.01 (n.nnn)

Figure-31 : Inquiry Information .

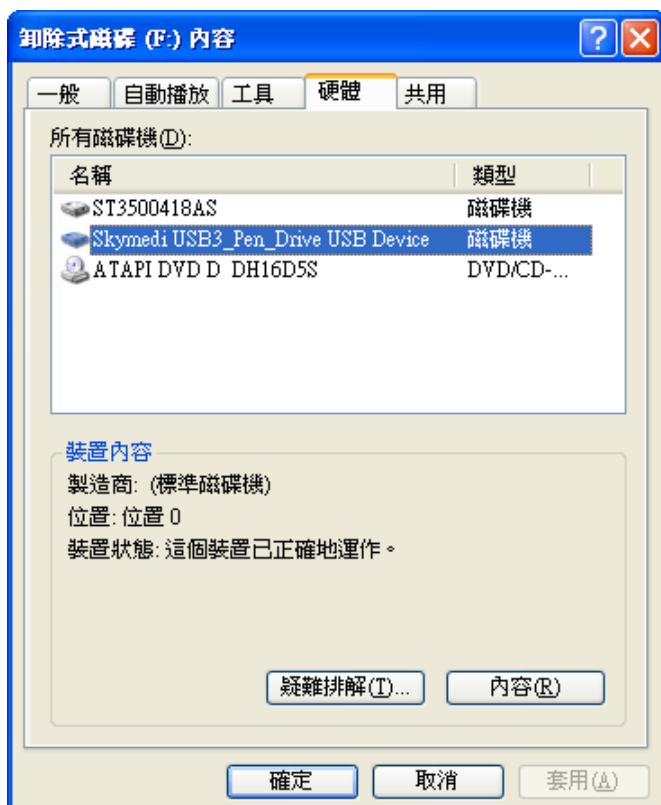
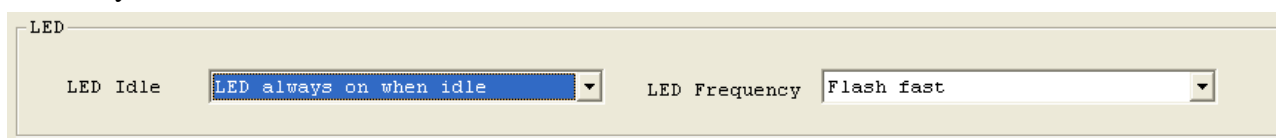


Figure-32 : Name of USB Device

User may set LED behavior here.



LED

LED Idle LED always on when idle LED Frequency Flash fast

Figure-33 : LED Setting

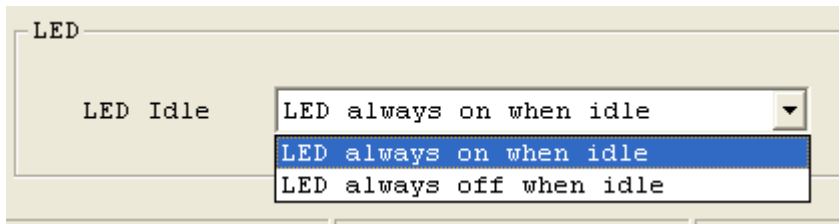


Figure-34 : LED Idle

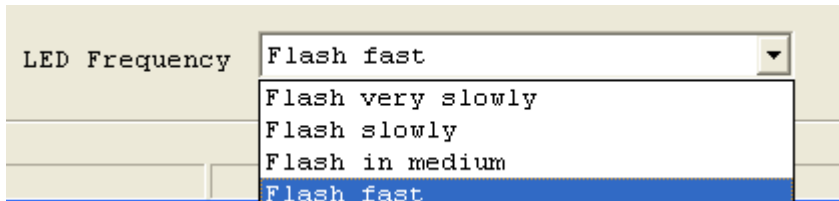


Figure-35 : LED Frequency

3. Partition

Partition setting provides four areas of storage for users to utilize.

1. Hidden
2. CDROM
3. LUN0
4. LUN1

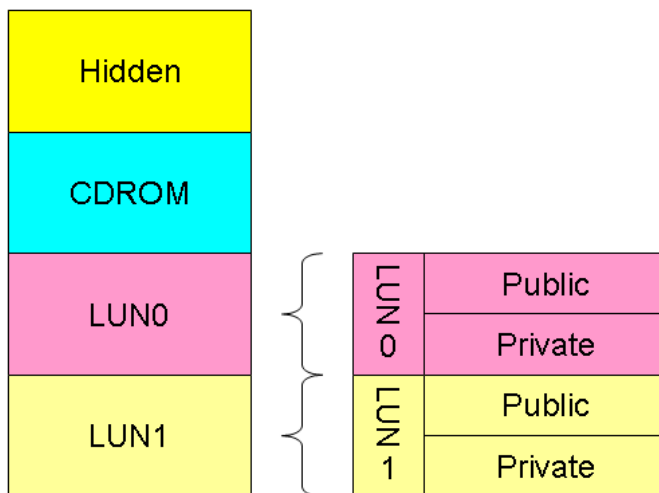


Figure-36 : Partition Setting

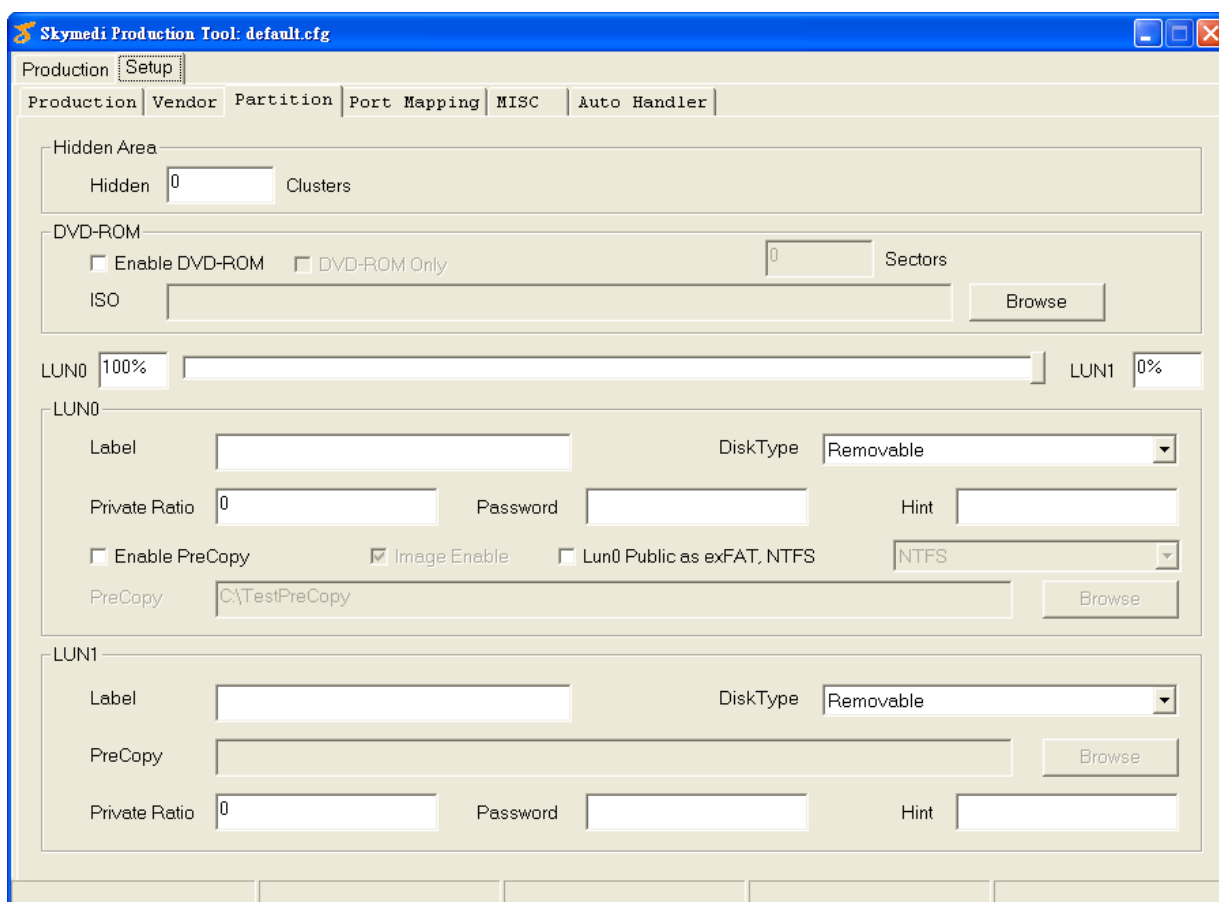


Figure-37 : Partition Setting

Hidden area can not be seen by end users. It is reserved for vendors to utilize, and its size is in clusters.



Figure-38 : Hidden Area

DVDROM, LUN0 and LUN1 can be seen by system. If users want to enable DVDROM function, click “Enable DVD-ROM” check box. Then select the target ISO file. MPTool will calculate its size and display in Sectors box. Note that user may reserve a larger size here for future usage.

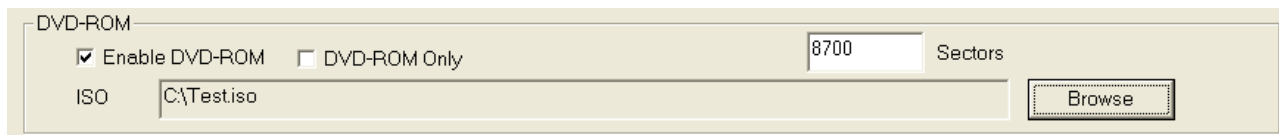


Figure-39 : DVD-ROM

User may adjust LUN0 and LUN1 ratio by setting below. The default format for them is FAT32. LUN0 provides additional format of exFAT and NTFS, if users enable them. MPTool also provides password and hint here for users to set to create additional private area of

LUN0 and LUN1. If users want to activate the private area, they need a proprietary tool provided by Skymedi.

The screenshot displays the MP Tool configuration window. At the top, there are sliders for LUN0 (set to 100%) and LUN1 (set to 0%). Below these are two main sections for LUN0 and LUN1 settings.

LUN0 Section:

- Label:** An empty text field.
- Private Ratio:** A text field containing '0'.
- Password:** An empty text field.
- Hint:** An empty text field.
- DiskType:** A dropdown menu currently showing 'Removable'.
- Enable PreCopy:** An unchecked checkbox.
- Image Enable:** A checked checkbox.
- Lun0 Public as exFAT, NTFS:** An unchecked checkbox.
- PreCopy:** A text field containing 'C:\TestPreCopy'.
- Browse:** A button next to the PreCopy field.
- NTFS:** A dropdown menu showing 'NTFS'.

LUN1 Section:

- Label:** An empty text field.
- Private Ratio:** A text field containing '0'.
- Password:** An empty text field.
- Hint:** An empty text field.
- DiskType:** A dropdown menu currently showing 'Removable'.
- PreCopy:** An empty text field.
- Browse:** A button next to the PreCopy field.

Figure-40 : LUN0 and LUN1 Setting

This is a close-up of the 'DiskType' dropdown menu. The menu is open, showing two options: 'Removable' (which is highlighted with a blue background) and 'Fixed'.

Figure-41 : Disk Type

4. Port Mapping

Port Mapping is for manufacture usage for an easier USB ports recognition.

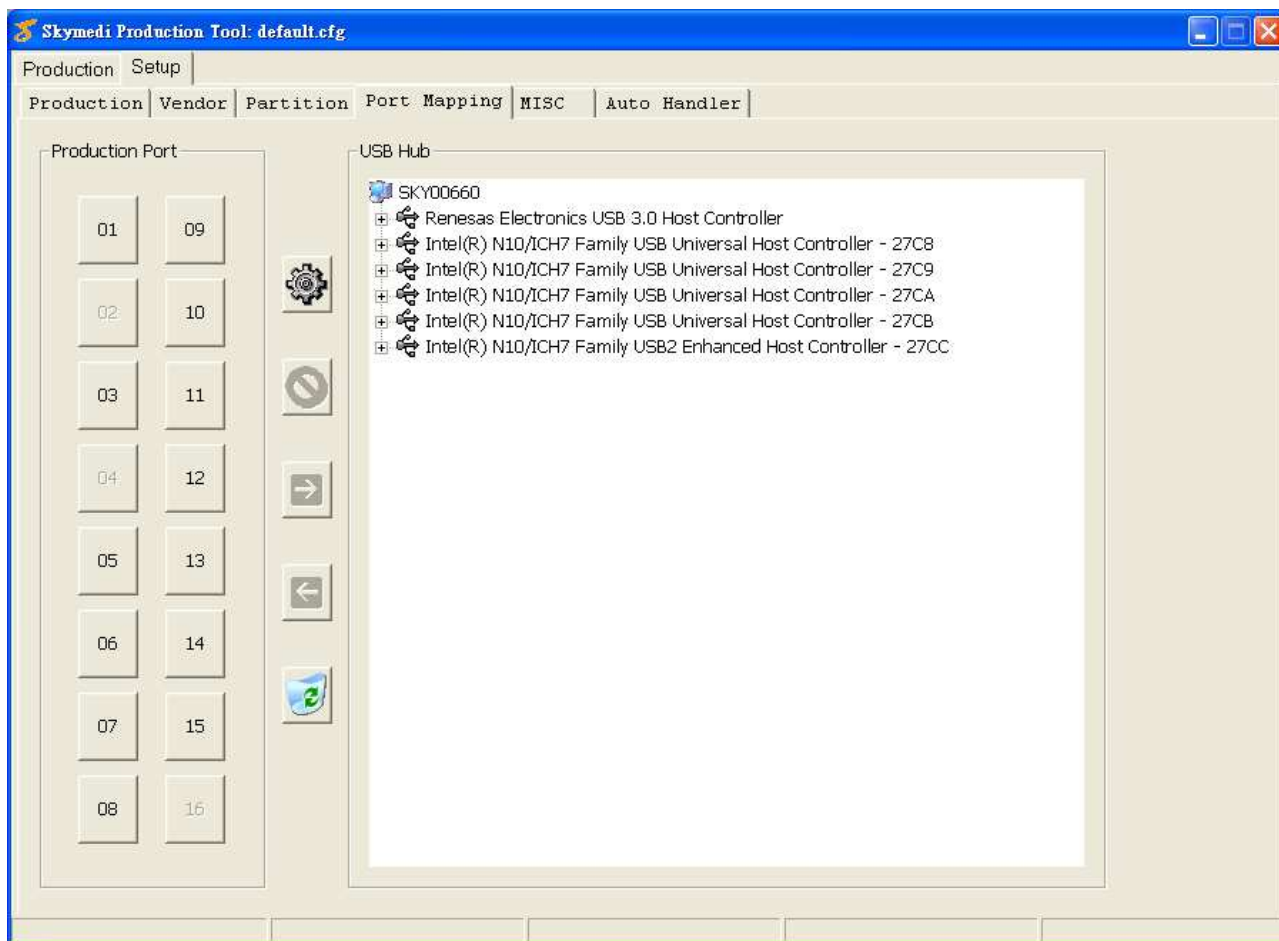


Figure-42 : Port Mapping

Auto Port Map: MPTool decide the port mapping by hub.

Manual Port Pap:

1. Select the physical port to map as Figure-43

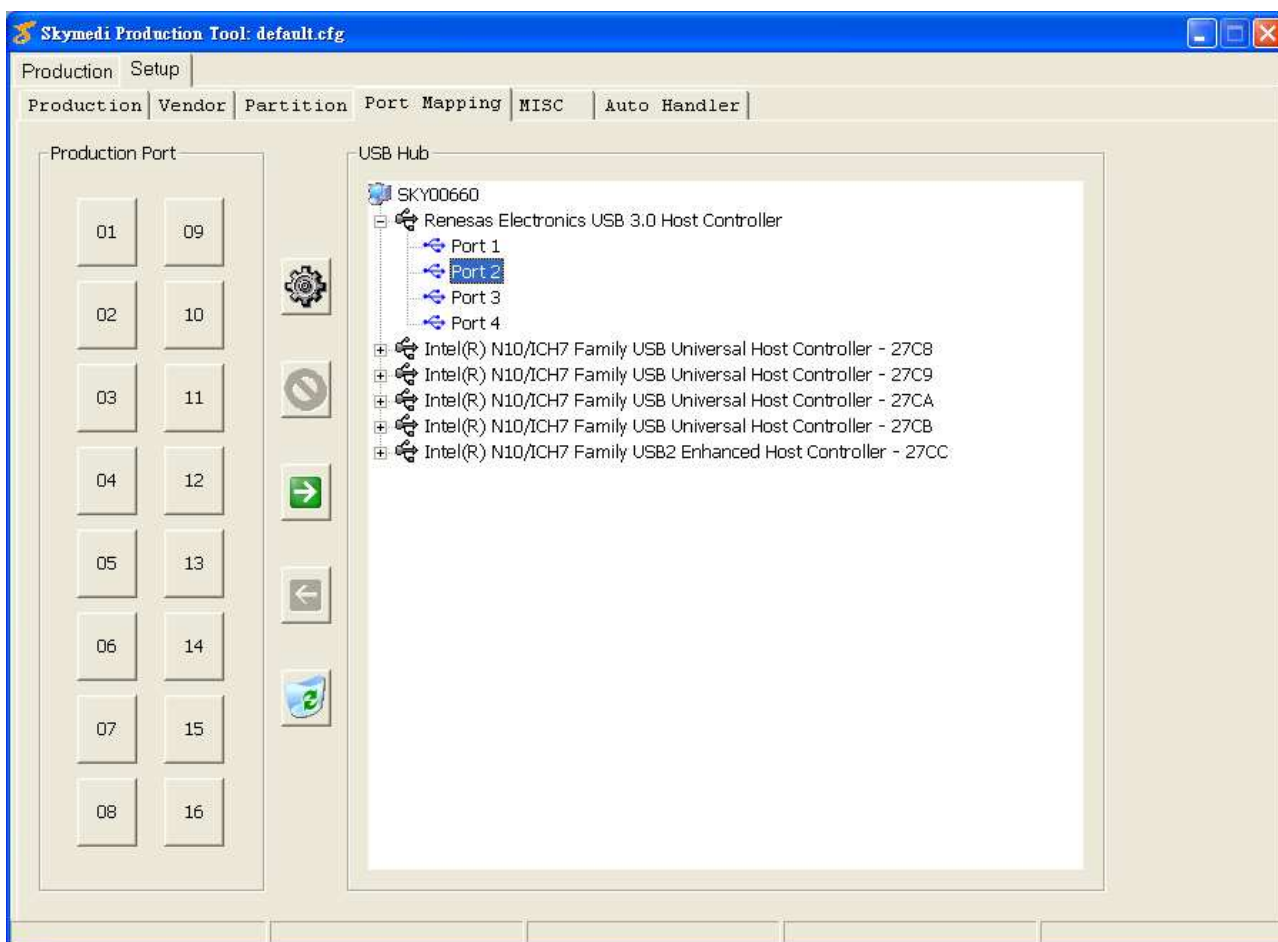


Figure-43 : Manual Port Mapping-1

2. Select the mapped logical port (port1 ~ port16) as Figure-44

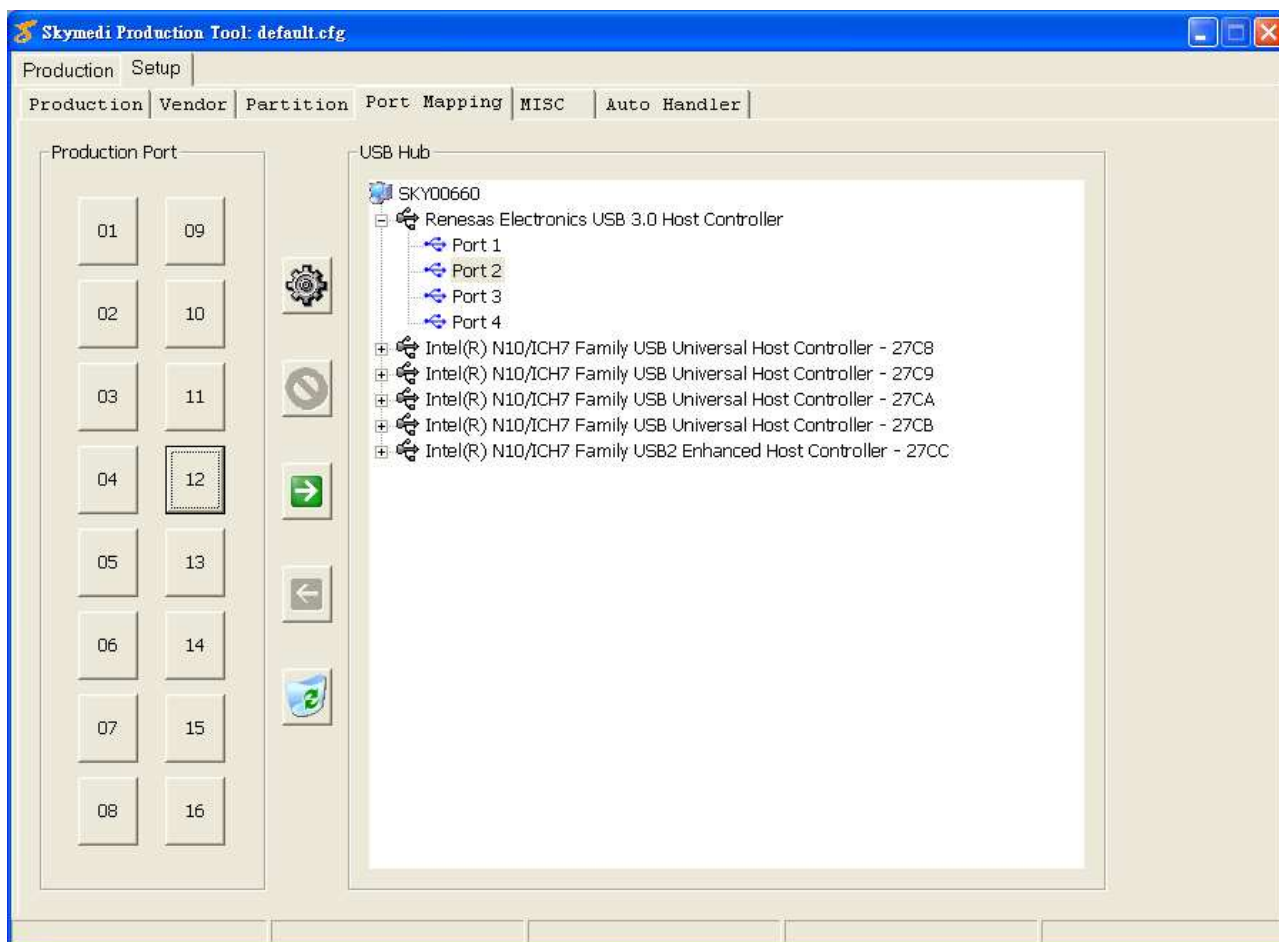


Figure-44 : Manual Port Mapping-2

3. Click the arrow to assign as Figure-45.

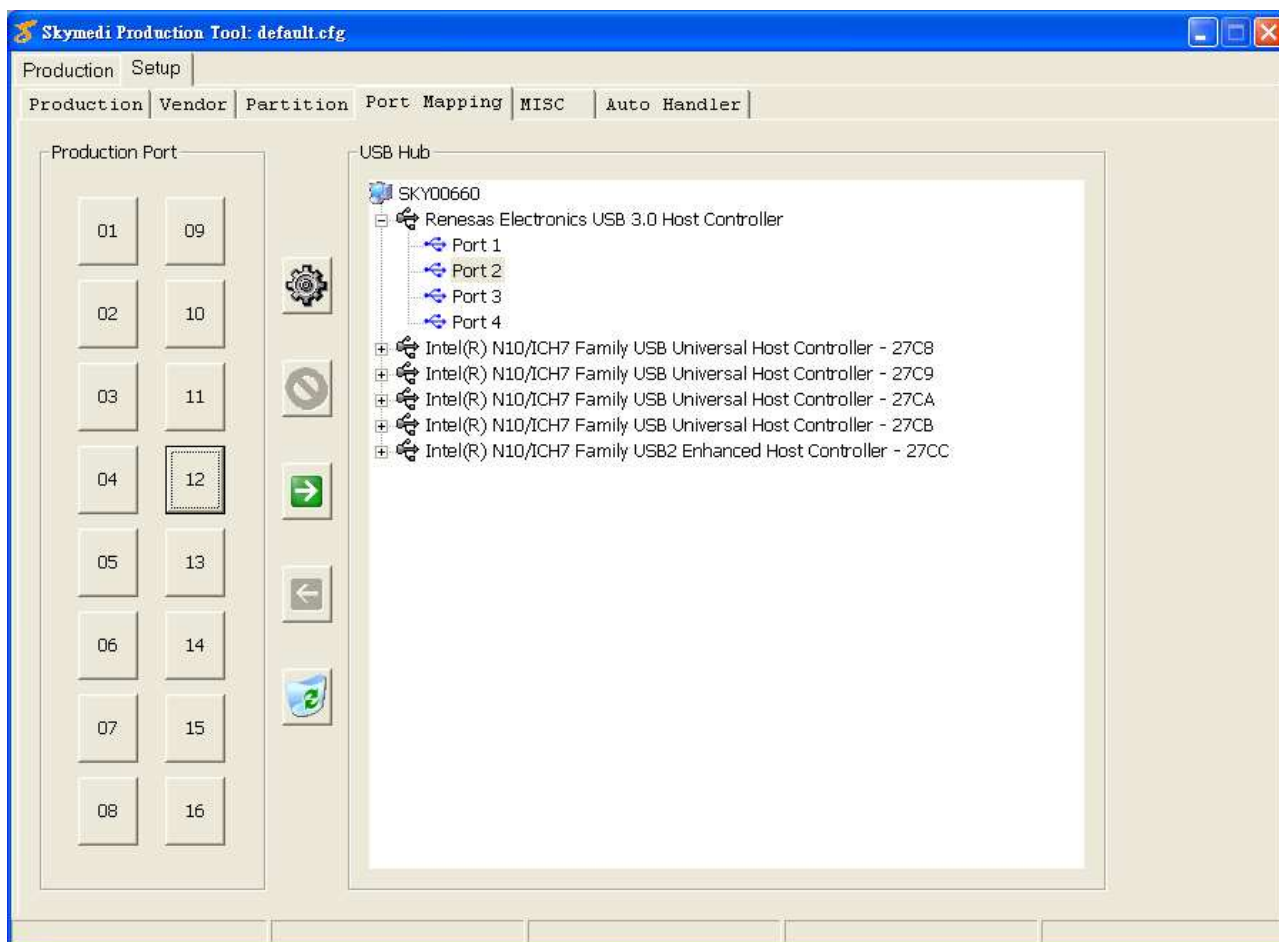


Figure-45 : Manual Port Mapping-3

4. User may see the mapping result as Figure-46

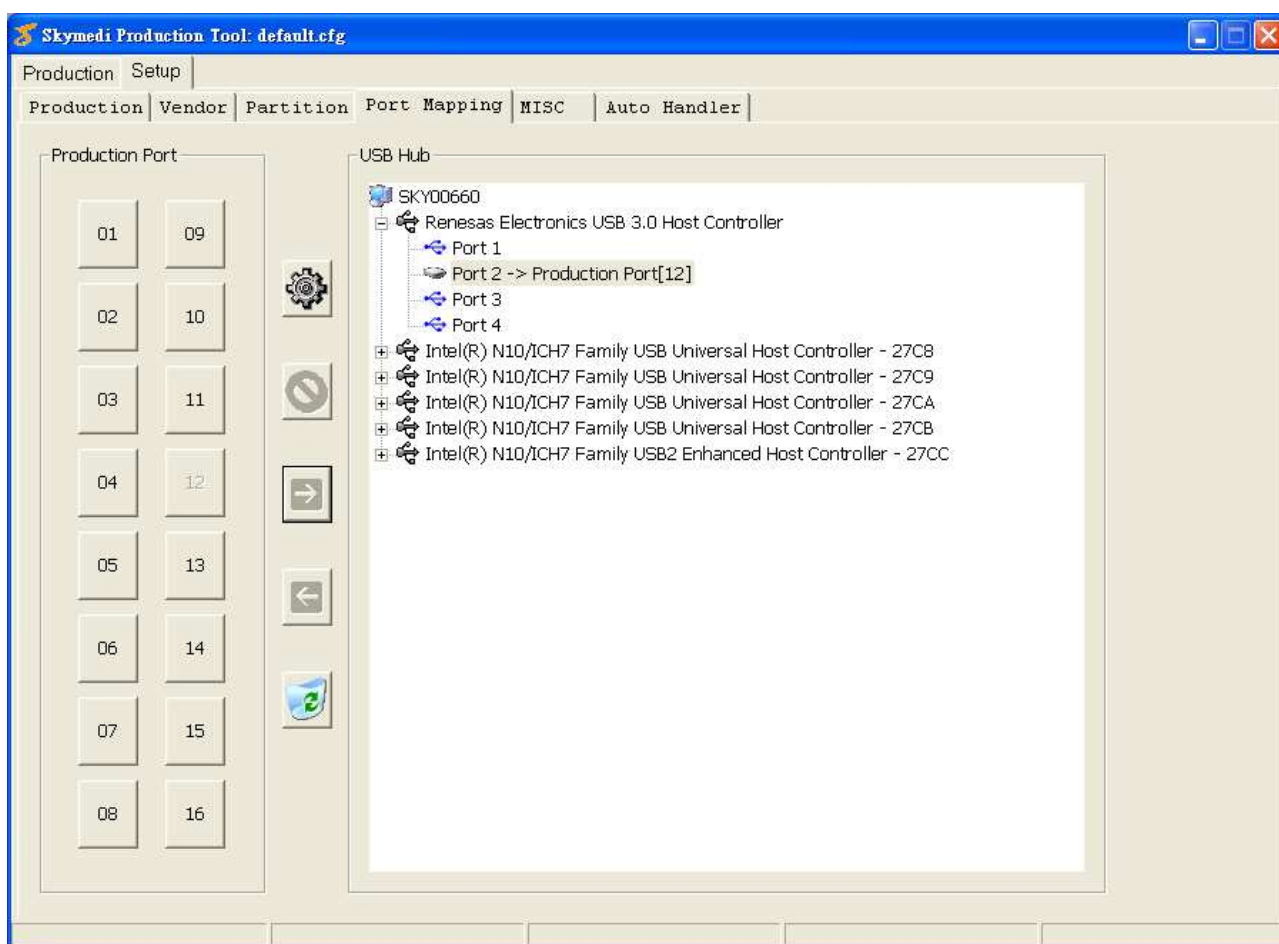


Figure-46 : Manual Port Mapping-4

5. Slot Mapping on production page, Figure-47

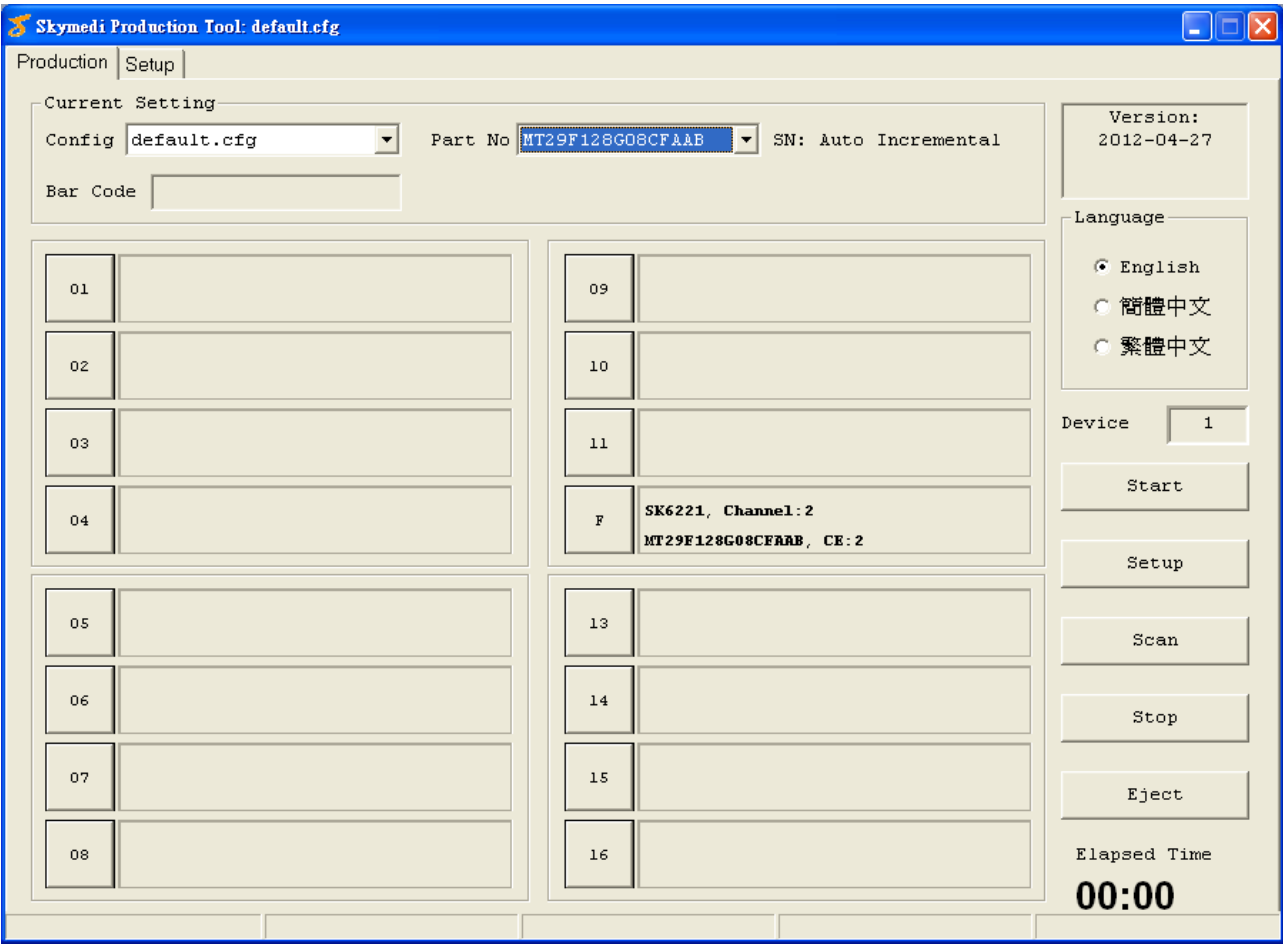


Figure-47 : Manual Port Mapping-5

5. MISC

MISI page provides miscellaneous setting here.

Figure-48 : MISC page

MP Option has three modes for the behavior of main page.

1. Erase + MP (Erase good then MP, hot key “Space”)
2. Erase Good (Only Erase good blocks, not key “Ctrl + F4”)
3. Erase All (Only Erase all blocks, not key “Ctrl + F6”)

User may also enable Password Silo function below.

MPTool provides fixed capacity for users. They may adjust the required the ratio of the edit box. If the produced capacity is under the requirement, MPTool would report ErrorCode by 6004 or 6005.

MPTool provide MBR written in production.

☐ Write MBR

MPTool for SK6221 provides write protect function. Note that once WP is enabled, users may not update the storage content anymore.

☐ Enable WP Function

MPTool for SK6221 provides fixed 32K cluster size for optimal performance. When users enable this item, the cluster size is fixed by 32K. If this item is disabled, the cluster size varies by flash capacity, Table-6.

☒ Fixed 32K Cluster

Table-6 : Flash Capacity and Cluster Size

Flash Capacity	Cluster Size
512MB	4KB
1GB	4KB
2GB	4KB
4GB	4KB
8GB	4KB
16GB	8KB
32GB	16KB
64GB	32KB

For USB power information, users may edit below edit box. For U3 compatibility issue, MPTool provides SSC and U1/U2 enable option for users to set.

USB Info

USB 2.0 Max Power: mA

USB 3.0 Max Power: mA

☐ Enable SSC

☒ Disable U1/U2

Appendix

1. MPTool Error Code List

Table-7 : MPTool Error Code List

代碼	Description	Solution
6000	USER_STOP_ERROR	User made. Rescan to re-production.
6001	LLF_CE_ERROR	Check Flash, Check soldering
6002	LLF_ERASE_FAIL	Check Flash, Check soldering
6003	LLF_FORMAT_FAIL	Check Flash, Check soldering
6004	LLF_CAPACITY_UNDER_CRITERIA	Check Configuration. Replace Flash with a new one
6005	LLF_CAPACITY_ERROR	Check Configuration. Replace Flash with a new one
6006	LLF_RELOAD_ERROR	Check Flash, Check soldering
6007	LLF_WRITE_DBLK_ERROR	Check Flash, Check soldering
6008	LLF_WRITE_SBLK_ERROR	Check Flash, Check soldering
6009	LLF_WRITE_PBLK_ERROR	Check Flash, Check soldering
600A	LLF_WRITE_SENTRYBLK_ERROR	Check Flash, Check soldering
600B	LLF_WRITE_UBLK_ERROR	Check Flash, Check soldering
600C	LLF_WRITE_CODEBLK_ERROR	Check Flash, Check soldering
600D	SDR_DDR_ERROR	Check Configuration. Check Flash type
600E	WRITE_CDROM_ERROR	Check Flash, Check soldering
600F	FAT_FORMAT_FAIL	Check Flash, Check soldering
6101	LLF_UPDATE_SN_ERROR	Check Flash, Check soldering
6102	LLF_VERIFY_SN_ERROR	Check Flash, Check soldering
6103	LLF_LED_ERROR	Check soldering, check board
6200	QC_NO_PREFORMAT_FLAG	Not formatted yet. Re-MP
6201	QC_RELOAD_FAIL	Not formatted yet. Re-MP
6202	QC_RUNTIME_DEFECT_ERROR	Not formatted yet. Re-MP
6203	QC_SYSTEM_BLOCKS	Not formatted yet. Re-MP
6204	QC_CAPACITY_UNDER_CRITERIA	Check Flash, Check soldering
6205	QC_DBLK_MISSING_ERROR	Not formatted yet. Re-MP
6206	QC_DBLK_ERROR	Not formatted yet. Re-MP
6207	QC_SBLK_ERROR	Not formatted yet. Re-MP
6208	QC_PBLK_ERROR	Not formatted yet. Re-MP
6209	QC_SENTRYBLK_ERROR	Not formatted yet. Re-MP
620A	QC_UBLK_ERROR	Not formatted yet. Re-MP
620B	QC_CODEBLK_ERROR	Not formatted yet. Re-MP

620B	QC_CDROM_ISO_ERROR	Not formatted yet. Re-MP
620D	QC_USB_SPEED_ERROR	Check controller. Check board
6300	ReadWriteTestERROR	Check Flash, Check soldering