



MICROCHIP

**BLUETOOTH
MASS PRODUCTION (MP) TOOL
SOFTWARE USER GUIDE**

BLUETOOTH MASS PRODUCTION (MP) TOOL SOFTWARE USER GUIDE

NOTES:

Quick Link:

- For the Merge Tool for EEPROM Configuration users, please visit [MPET](#)
- For the MP Script file editor and MSF generator users, please visit [MPSE](#)
- For the MPBT usage, please visit [MPBT](#)
- For the Multiple Update Device's Flash users, please visit [MPMF](#)

Table of Contents

Table of Contents

NOTES:	2
Table of Contents	3
Chapter 1 Preface	6
Chapter 2 Overview	7
2.1 MP Tool Overview	7
2.2 Test Instrument Overview	8
2.2.1 Personal Computer (PC)	8
2.2.2 MP Fixtures	8
2.2.3 RF Instruments (Option)	9
2.2.4 Audio USB Soundcard	10
Chapter 3 Installation	11
3.1 MP Tool Package	11
3.2 MPBT Environment Setup	11
3.3 MPMF Environment Setup	12
3.4 USB to UART driver	12
Chapter 4 Mass Production EEPROM Tool (MPET)	15
4.1 MPET Introduction	15
4.2 MPET Related File	15
4.3 Generate a Binary File of Full EEPROM	16
4.3.1 Welcome page	16
4.3.2 Select output file format	17
4.3.3 Select base bin file	18
4.3.4 Add / Remove Merge Files	19
4.3.5 Select Output Destination	19
4.3.6 Generate Binary File	20
4.3.7 Complete Info	21
4.4 Generate a Patch File of Part of EEPROM	22
4.4.1 Welcome page	22
4.4.2 Select output file format	23
4.4.3 Select base bin file	23
4.4.4 Add / Remove Merge Files	24

4.4.5	Select Output Destination	25
4.4.6	Generate Patch File.....	26
4.4.7	Calibration Parameter Check.....	27
4.4.8	Complete Info.....	28
4.5	Error Message	30
4.5.1	Project Name Not Match	30
4.5.2	Device ID Not Match.....	30
Chapter 5	Mass Production Script Editor (MPSE)	31
5.1	Introduction.....	31
5.2	Graphical User Interface.....	32
5.2.1	Solution Area	32
5.2.2	Test Item Area.....	32
5.2.3	Condition Area.....	32
5.2.4	Input / Output Area	32
5.3	Test Items Overview	33
5.4	Generate MP Script File Step by Step.....	34
5.4.1	Select your solution	34
5.4.2	Give your own product name	35
5.4.3	Select RF test instrument	35
5.4.4	Choose test items for MP	37
5.4.5	Configure test item's parameter and limitation	37
5.4.6	Save MP Script File (MSF)	40
5.5	FAQ.....	40
Chapter 6	Mass Production Board level test Tool (MPBT)	46
6.1	Introduction.....	46
6.2	Testing environment Setup.....	46
6.2.1	Single-Site.....	46
6.2.2	Dual-Site.....	47
6.2.3	Sound Card connection	48
6.2.4	VICTOIRA Identification	48
6.3	Configuration.....	49
6.3.1	SYSTEM Page	49
6.3.2	DEVICE Page.....	51
6.3.3	INSTRUMENT Page	52
6.3.4	BT ADDRESS Page.....	53
6.3.5	RF METER Page	57

6.3.6	HANDLER Page	58
6.3.7	MANUFACTURE INFO Page	59
6.3.8	APPLY Page	60
6.4	Run the Test	61
6.4.1	Put Device Under Test (DUT) in Socket	61
6.4.2	Single-Site Test Page	61
6.4.3	Dual-Site Test Page	63
6.4.4	Dual-Site Test Page for Special Bar Code COM Port	64
6.4.5	Auto-Handler Test Page	65
6.5	Error-Code	66
6.6	Test Log	66
6.7	FAQ	66
Chapter 7	Mass Production Multi Flash (MPMF)	70
7.1	Introduction	70
7.2	Graphical User Interface	70
7.3	Configuration Dialog	71
7.4	Write the Flash with Multiple DUTs	72
7.5	FAQ	74
Appendix A.	Revision History	76
Appendix B.	MPBT Communicate with Customer's tool	77

Chapter 1 Preface

MP Tool is a Windows XP and Win7 compatible software package that supports rapid the production on Microchip's BT ICs and Modules.

MP Tool simplifies the manufactory process by providing a high-level, menu-driven environment that allows the users to quickly and easily develop a Test Script and an automatic MP Testing.

This user's guide will explain how to setup the tool and configure it with an applicable example of creating a MP testing. This document will help the user become familiar with the purpose and functionality of the Microchip's ICs and Modules and be able to use the MP Tool with ease.

Chapter 2 Overview

This chapter provides an overview of the Bluetooth MP Tool and identifies the instrument of MP test environment. Topics covered include:

- MP Tool Overview
- Test Instrument Overview

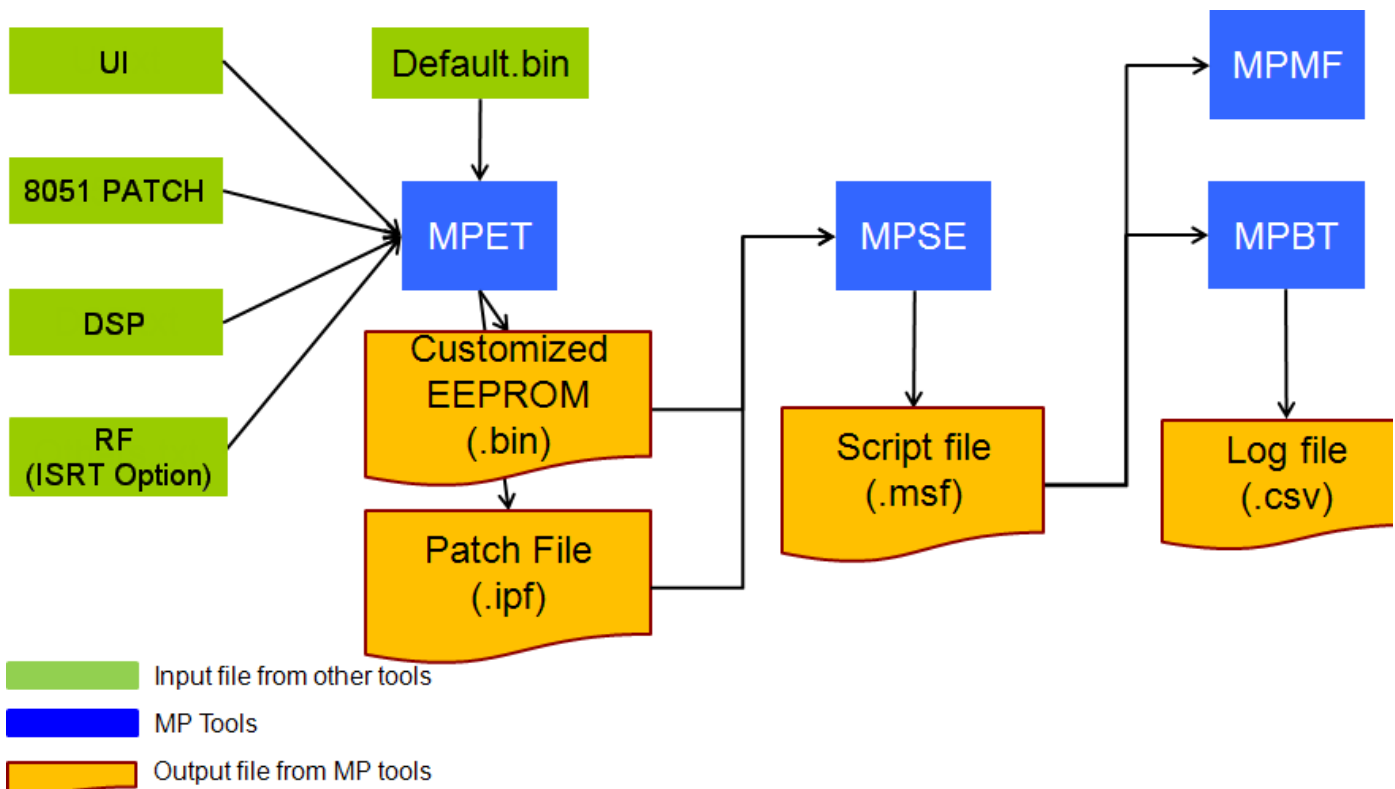
2.1 MP Tool Overview

The MP Tool consists of four tools include: Mass Production EEPROM Tool (**MPET**), Mass Production Script Editor (**MPSE**), Mass Production Board Level Test Tool (**MPBT**) and Mass Production Multi Flash (**MPMF**).

That can have their own functions and related to others (FIGURE 2-1). This provides greater flexibility and potential in MP process.

The following chapter will describe more detail of these tools.

FIGURE 2-1 MP Tool Overview



2.2 Test Instrument Overview

This section will provide MP related instruments overview.

2.2.1 Personal Computer (PC)

- The Operation System (OS) with Windows XP or 7 (32bit)
- Must two or more RS232 port interface
- Must four or more USB port interface
- NI GPIB-USB-HS is option and depend on RF test item selection

2.2.2 MP Fixtures

The MP Fixture is a device to hold the DUT (Device Under Test). Which can be easily fix and remove the DUT. Allow it to be tested by being subjected to controlled electronic test signals.

Two kind of fixture:

- MPBT fixture for MPBT usage (FIGURE 2-2)
- MPMF fixture for MPMF usage (FIGURE 2-3)

FIGURE 2-2 MPBT fixture

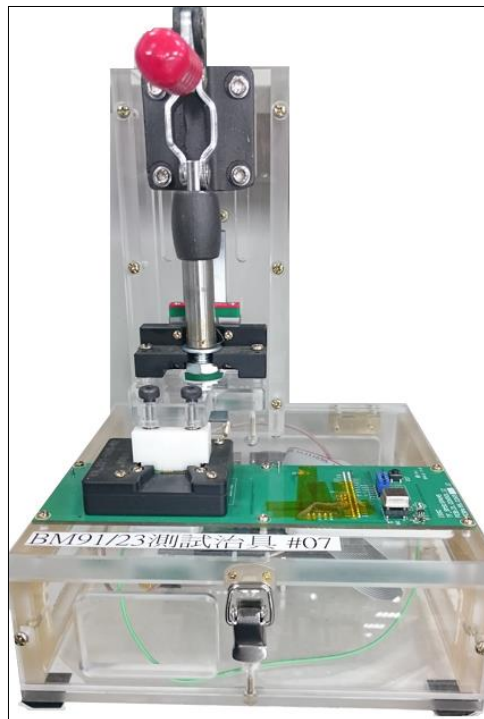
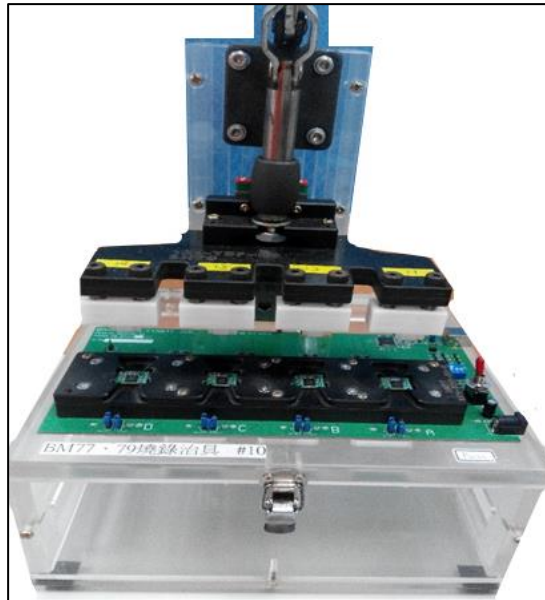


FIGURE 2-3 MPMF one to four fixture



2.2.3 RF Instruments (Option)

MP Tool is support three kind of RF testers:

- Anritsu MT8852 (FIGURE 2-4) (Visit: [Anritsu](#))
- Agilent N4010 (FIGURE 2-5) (Visit: [Agilent](#))
- Lite-Point IQview / IQflex (FIGURE 2-6) (Visit: [Lite-Point](#))

FIGURE 2-4 Anritsu MT8852



FIGURE 2-5 Agilent N4010



FIGURE 2-6 Lite-Point IQview



2.2.4 Audio USB Soundcard

MP Tool only supported one USB soundcard and type is:

- INTOPIC JAZZ-UB80 USB Sound Card (FIGURE 2-7) (Visit: [INTOPIC](#))

FIGURE 2-7 INTOPIC JAZZ-UB80 USB Sound Card



Chapter 3 Installation

This chapter provides a setup of MP (Mass Production) test environment, which includes MP fixture, test environment. Topics covered include:

- MP Tool package
- MPBT environment setup
- MPMF environment setup
- USB to UART driver

3.1 MP Tool Package

Figure 3-1 shows MP related tools and files when you un-zip the MP Tool package. Includes:

- DOC folder: User Manuals of MP Tools.
- DS folder: The Default Setting for MPSE used.
- issc_default_bin folder: Binary file of default EEPROM, used to merge other EEPROM by MPSE.
- ftd2xx.dll: USB driver.
- MPBT2: Mass Production Board level Test
- MPET: Mass Production EEPROM Tool
- MPSE: Mass Production Script Editor
- MPMF: Mass Production Multi Flash

FIGURE 3-1 Un-Zip MP Tool Package

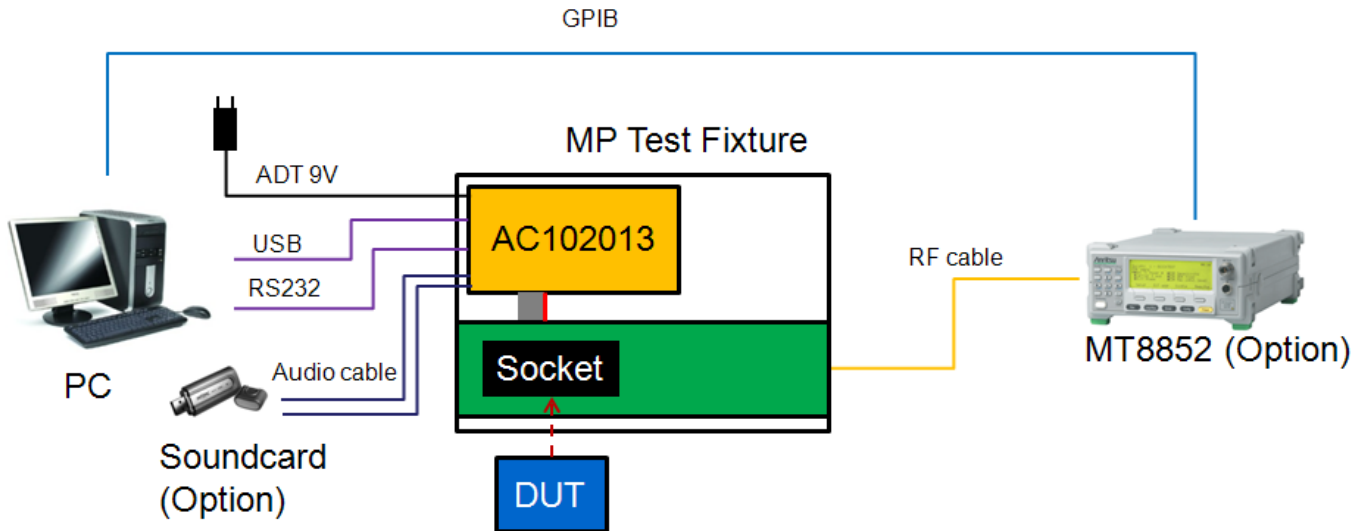


3.2 MPBT Environment Setup

Figure 3-2 illustrates overview of MPBT test environment. The Power supply (+9V) is a source and plugged into the MP Fixture. USB and RS232 are connected between PC and MP fixture for communication.

In RF BT test, you can choose extension RF BT testers to instead of GU like Anritsu MT8852, Lite-point IQ View or Agilent N4010.

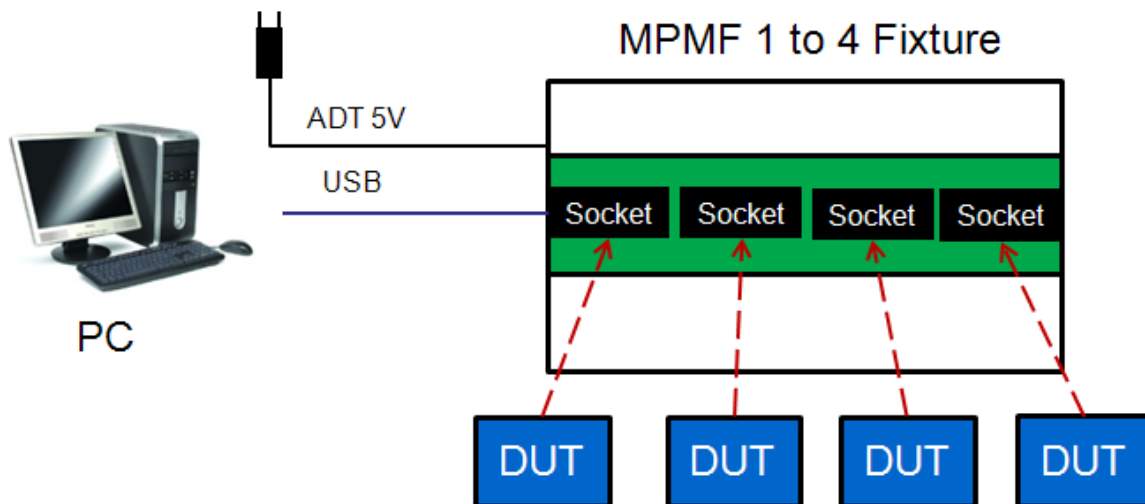
FIGURE 3-2 Overview of MPBT test Environment



3.3 MPMF Environment Setup

Figure 3-3 illustrates overview of MPMF test environment. The Power supply (+5V) is a source and plugged into the MPMF 1 to 4 Fixture. USB is connected between PC and MPMF 1 to 4 fixture for communication.

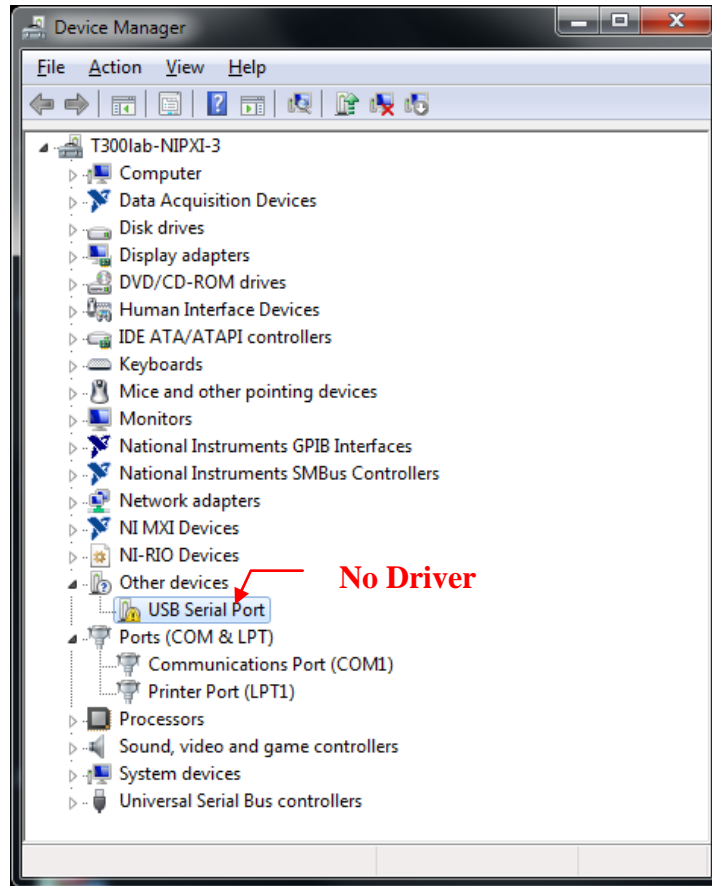
FIGURE 3-3 Overview of MPMF test Environment



3.4 USB to UART driver

You may get the notice of driver when you first setup MP Fixture with you test PC. That means your test PC doesn't have MP Fixture driver. Please follow below steps to finish USB to UART driver installation.

FIGURE 3-4 Device Manager



Open *Device Manager* (Figure 3-4) to check the MP Fixture’s driver is installed correct or not. If not, Please download MP Fixture driver from FTDI web site. You can visit <http://www.ftdichip.com/Drivers/D2XX.htm> and check section **Currently Supported D2XX Drivers** (Figure 3-5) download it via your IE.

FIGURE 3-5 Download FTDI D2xxx Driver

Currently Supported D2XX Drivers:

Operating System	Release Date	Processor Architecture							Comments
		x86 (32-bit)	x64 (64-bit)	PPC	ARM	MIPSII	MIPSIV	SH4	
Windows*	2014-09-29	Available as setup executable Contact support1@ftdichip.com if looking to create customised drivers	-	-	-	-	-	-	2.12.00 WHQL Certified Available as setup executable Release Notes

Click here download

Execute as administrator (Figure 3-6). And flow the Wizard to finish MP Fixture driver installation. After that, you will get new COM port number of MP Fixture on your Device Manager (Figure 3-7).

FIGURE 3-6 Open FTDI D2XXX Driver

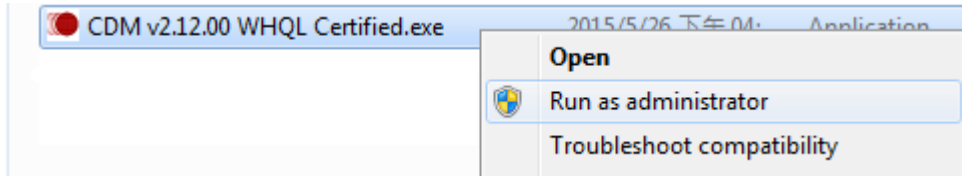
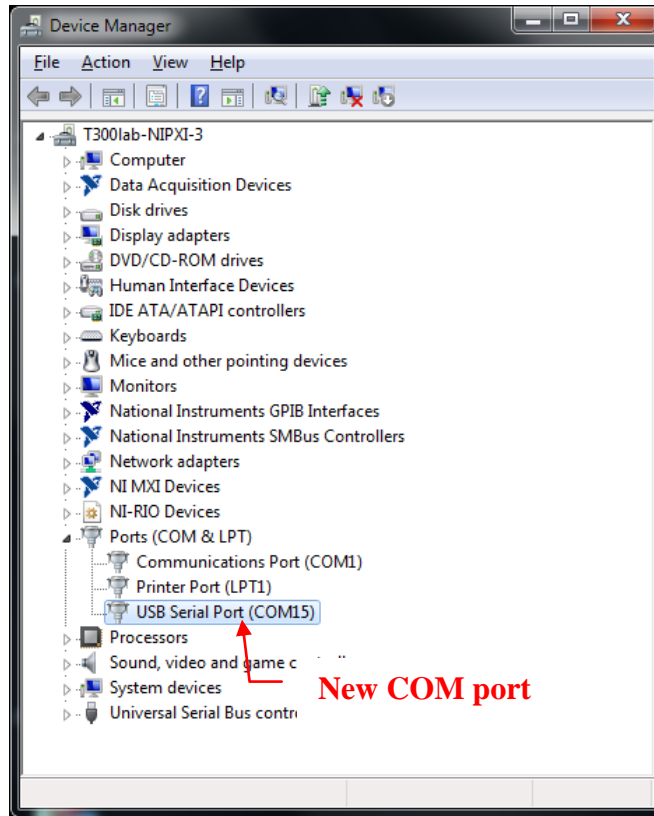


FIGURE 3-7 USB to UART Driver Finish



Chapter 4 Mass Production EEPROM Tool (MPET)

The MPET is EEPROM merge tool. This chapter provides an Introduction and operation of MPET. Topics covered include:

- Introduction
- Related File
- Generate Bin
- Generate IPF
- Generate IPF for UI
- Error Message

4.1 MPET Introduction

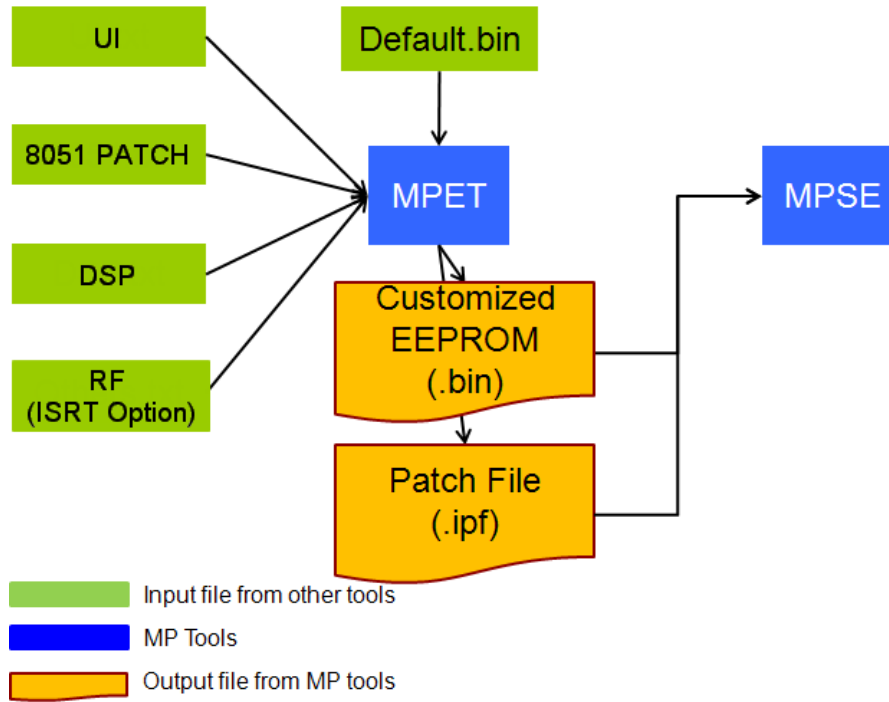
This tool is used to merge variety customer setting like User Interface (UI), DSP (Digital Signal Processing), 8051 and so on. The end result of using the tool will be a generated Binary File (.bin) or Patch File (.ipf), which can be written into a BT device both IC and Module by MPBT.

4.2 MPET Related File

Figure 4-1 illustrates the related files of MPET.

The Input (green color) includes default.bin as a base file, UI (User Interface).txt, 8051.txt, DSP (Digital Signal Processor).txt, and others.txt as customize file. After that, Output (orange color) binary file of fully EEPROM or patch file (ipf) of part of EEPROM depend of what kind of operation mode you selected.

FIGURE 4-1 MPET Files Relationship



4.3 Generate a Binary File of Full EEPROM

4.3.1 Welcome page

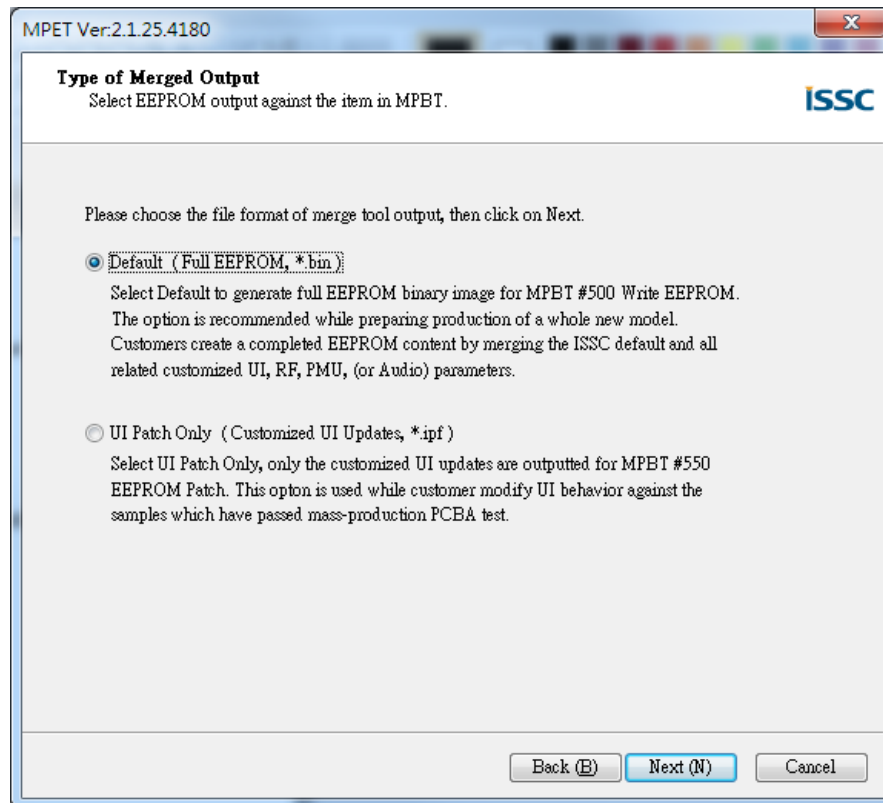
FIGURE 4-2 MPET Wizard - Welcome Page



4.3.2 Select output file format

Select output file format as Default (Full EEPROM, *.bin) tool will output *.bin and *.txt after merge success. Please select “Next” for next step.

FIGURE 4-3 MPET Wizard – Output Selection Page



4.3.3 Select base bin file

Press “Browse” button to open file browser to select base bin file. The bin file description will show below information. And make sure that Solution Name is corrected. Please select “Next” for next step.

Load default bin into IPF: Load default bin content into IPF. Please note that once enable (checked) this option while EEPROM data will be overwrite except MP calibrated data. (MPET didn't support this function in the output bin file mode.)

Format Version: Show merge base bin file format version.

Solution Name: Show merge base bin file solution name.

EEPROM Version: Show merge base bin file EEPROM version.

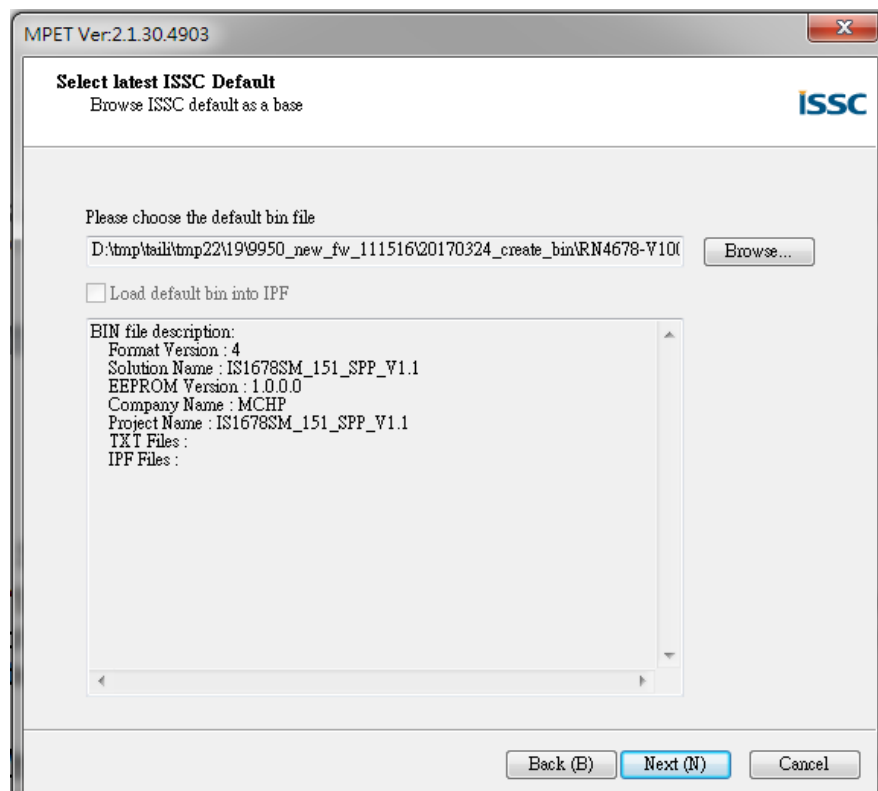
Company Name: file contain company name

Project Name: file contain product name.

TXT files: Show merge base bin file contain all txt files' name.

IPF files: Show merge base bin file contain all ipf files' name.

FIGURE 4-4 MPET Wizard – Default Binary File Selection Page



4.3.4 Add / Remove Merge Files

Customized setting in selected BIN

This list shows files that included by bin file. If the bin file you selected is default that will be empty. Please select “Next” for next step.

Merge List

This list show all files that you want to merge with base bin file. Output file will content all in this list box.




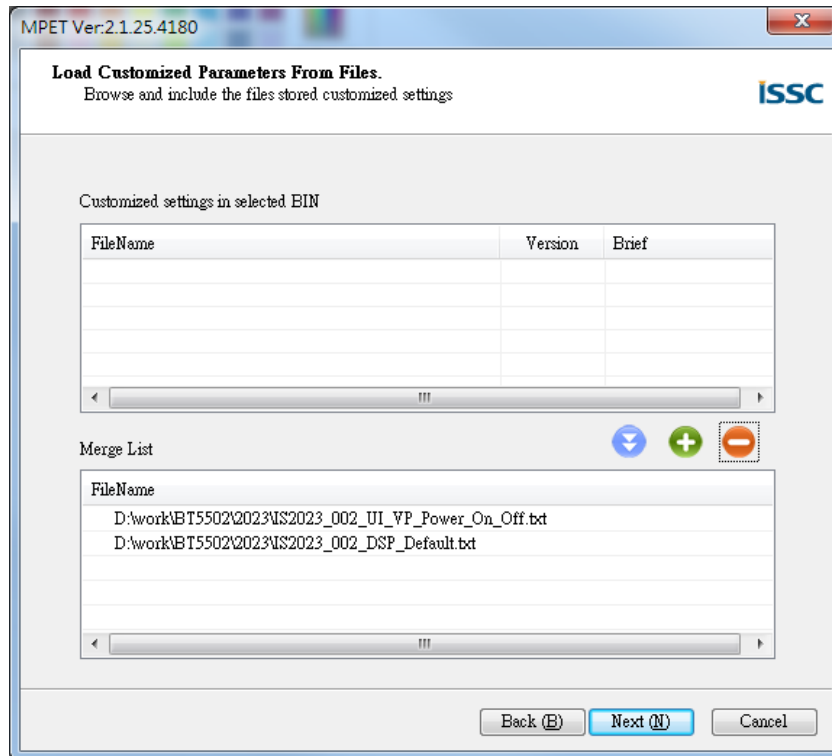
	Press this button to move file from customized bin to merge list
	Press this button to open file browser dialog to select new file to merge list
	Press this button to remove merge list selected file.

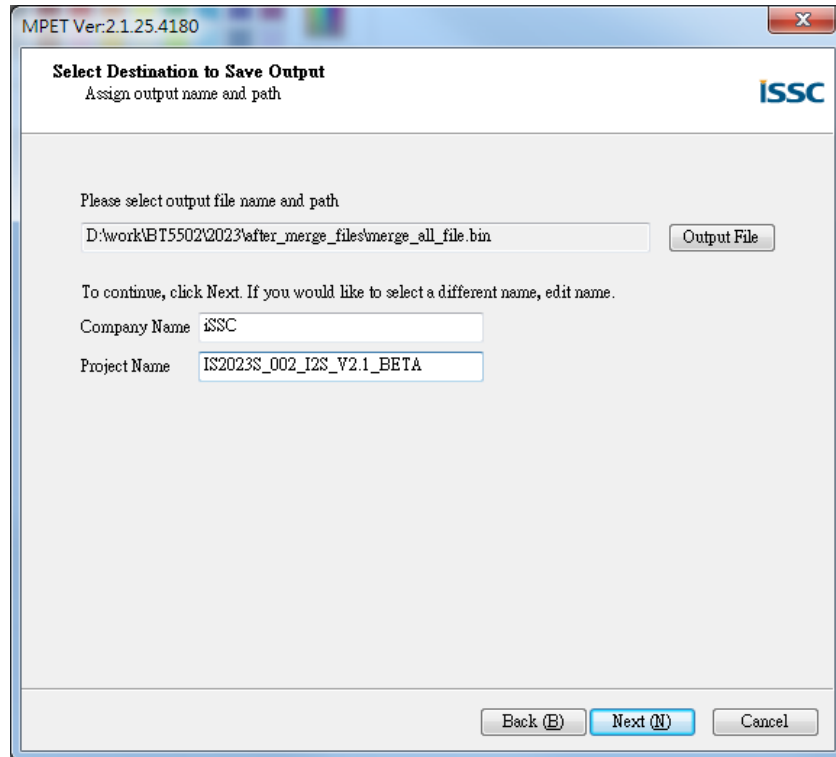
FIGURE 4-5 MPET Wizard – Add/Remove File Page



4.3.5 Select Output Destination

Press “Output File” button to open file browser to select output destination. Tool will bring out the default Company Name and Project Name and that can be changed by users. Please select “Next” for next step.

FIGURE 4-6 MPET Wizard – Output Destination Page



4.3.6 Generate Binary File

Press “Generate” button to generate binary file of full EEPROM. And page shows merged information. Please select “Next” for next step.

Merge Type: output file type, bin or ipf.

Solution (IC): solution name of base bin file

Source File: path of base bin file

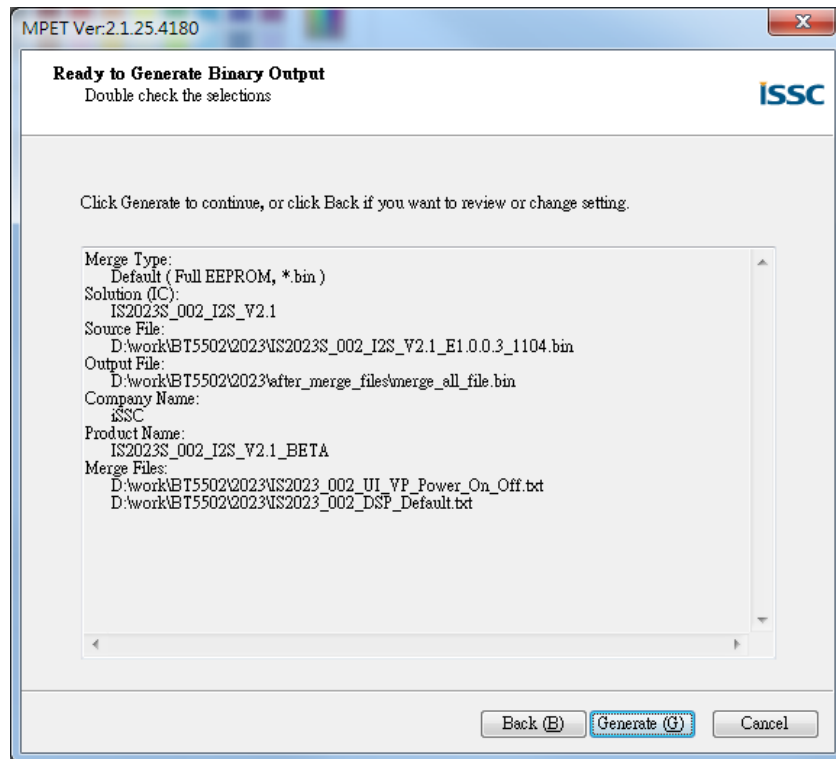
Output File: path of output file

Company Name: company name

Product Name: product name

Merge Files: merge file list

FIGURE 4-7 MPET Wizard – Generate Page



4.3.7 Complete Info

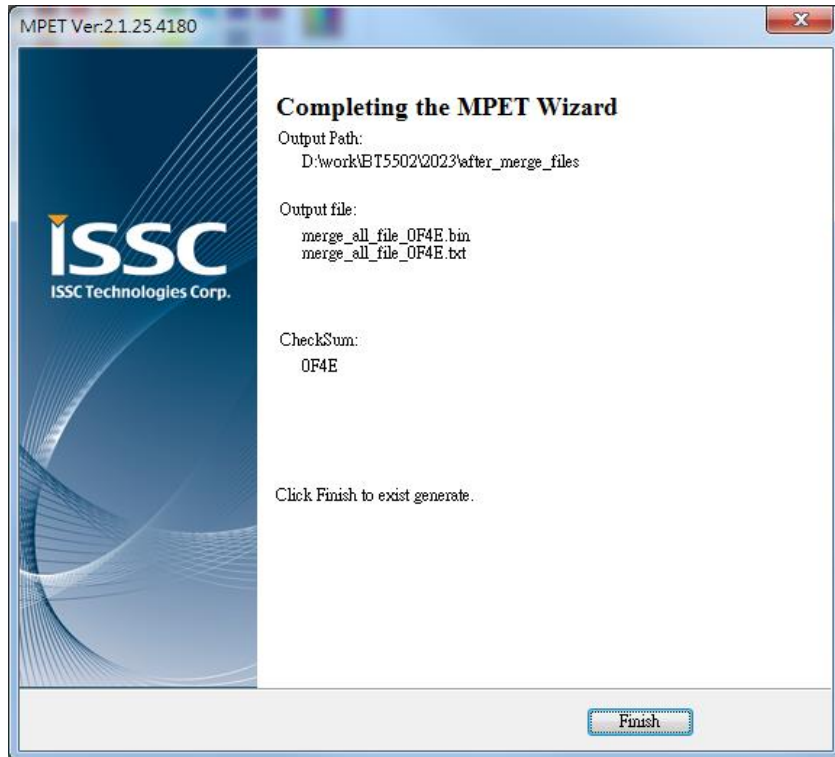
Press “Finish” button to close tool. And page shows output file information.

Output Path: output file path

Output File: output file name of bin and txt.

Checksum: File check sum number.

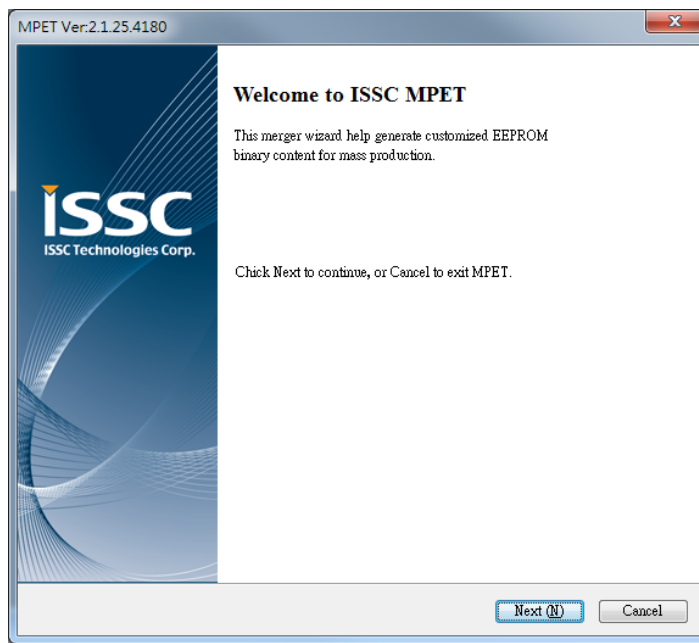
FIGURE 4-8 MPET Wizard – Finish Page



4.4 Generate a Patch File of Part of EEPROM

4.4.1 Welcome page

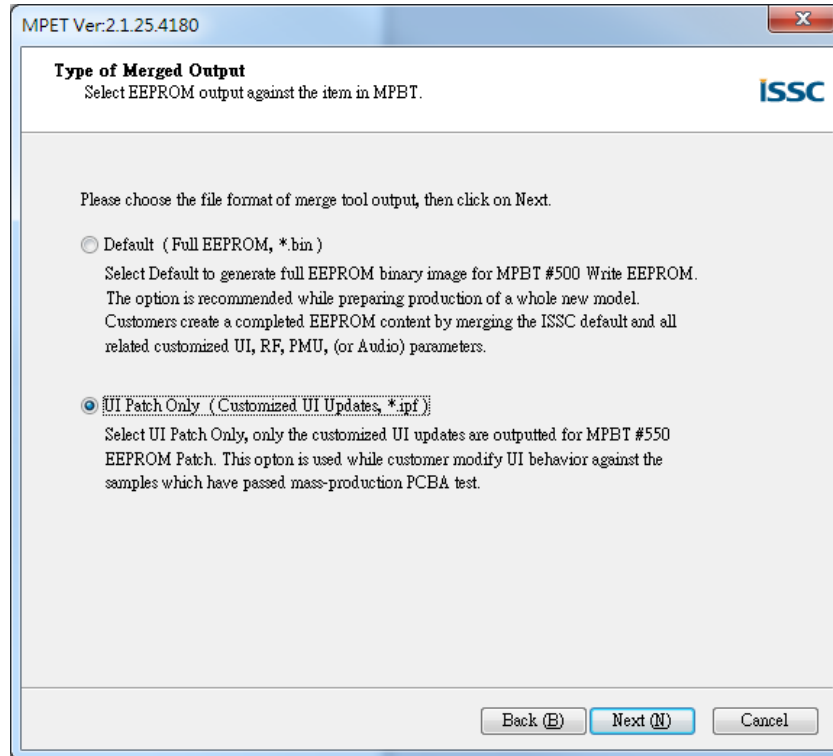
FIGURE 4-9 MPET Wizard - Welcome Page



4.4.2 Select output file format

Select output file format as UI Patch Only (Customized UI Updates, *.ipf), tool will output *.ipf after merge success. Please select “Next” for next step.

FIGURE 4-10 MPET Wizard – Output Selection Page



4.4.3 Select base bin file

Press “Browse” button to open file browser to select base bin file. The bin file description will show below information. And make sure that Solution Name is corrected. Please select “Next” for next step.

Load default bin into IPF: Load default bin content into IPF. Please note that once enable (checked) this option while EEPROM data will be overwrite except MP calibrated data.

Format Version: Show merge base bin file format version.

Solution Name: Show merge base bin file solution name.

EEPROM Version: Show merge base bin file EEPROM version.

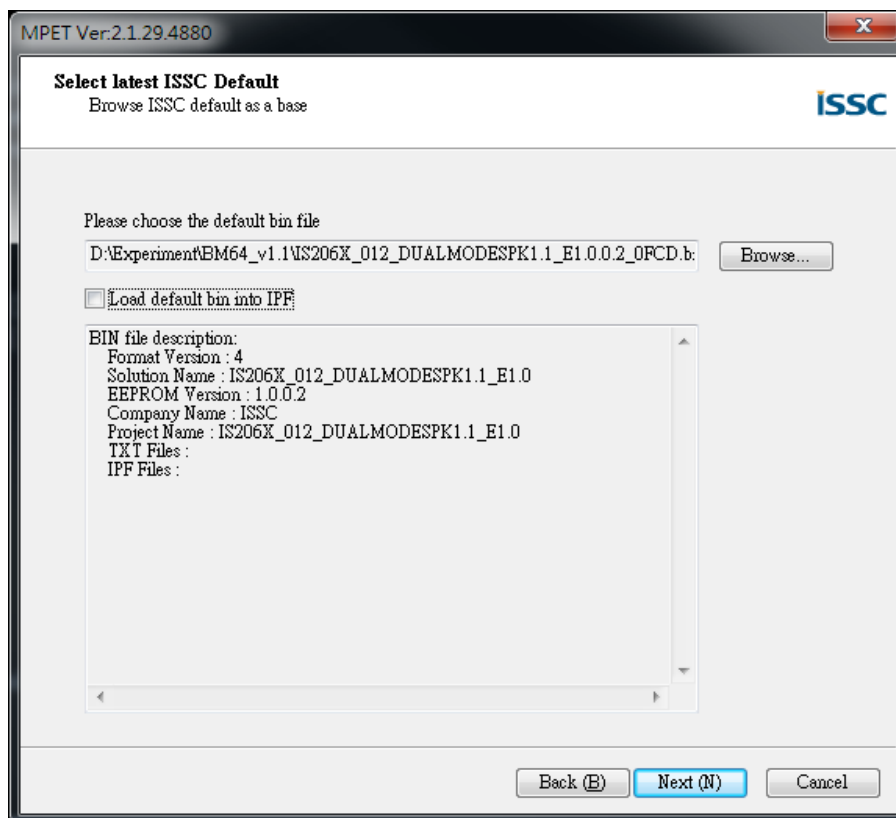
Company Name: file contain company name

Project Name: file contain product name.

TXT files: Show merge base bin file contain all txt files’ name.

IPF files: Show merge base bin file contain all ipf files' name.

FIGURE 4-11 MPET Wizard – Default Binary File Selection Page



4.4.4 Add / Remove Merge Files

Customized setting in selected BIN

This list shows files that included by bin file. If the bin file you selected is default that will be empty. Please select “Next” for next step.

Merge List

This list show all files that you want to merge with base bin file. Output file will content all in this list box.




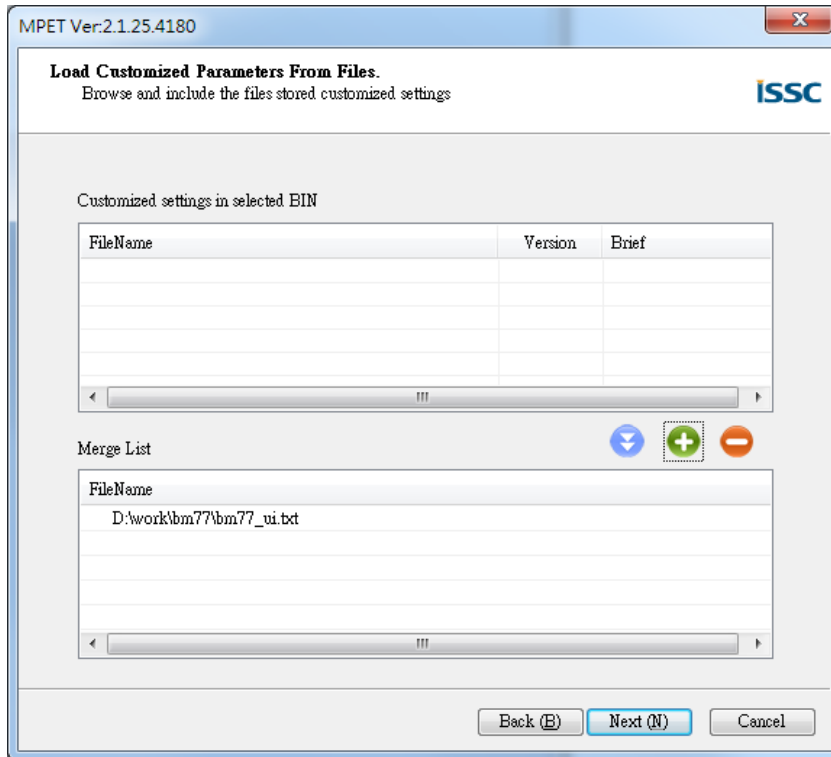
	Press this button to move file from customized bin to merge list
	Press this button to open file browser dialog to select new file to merge list
	Press this button to remove merge list selected file.

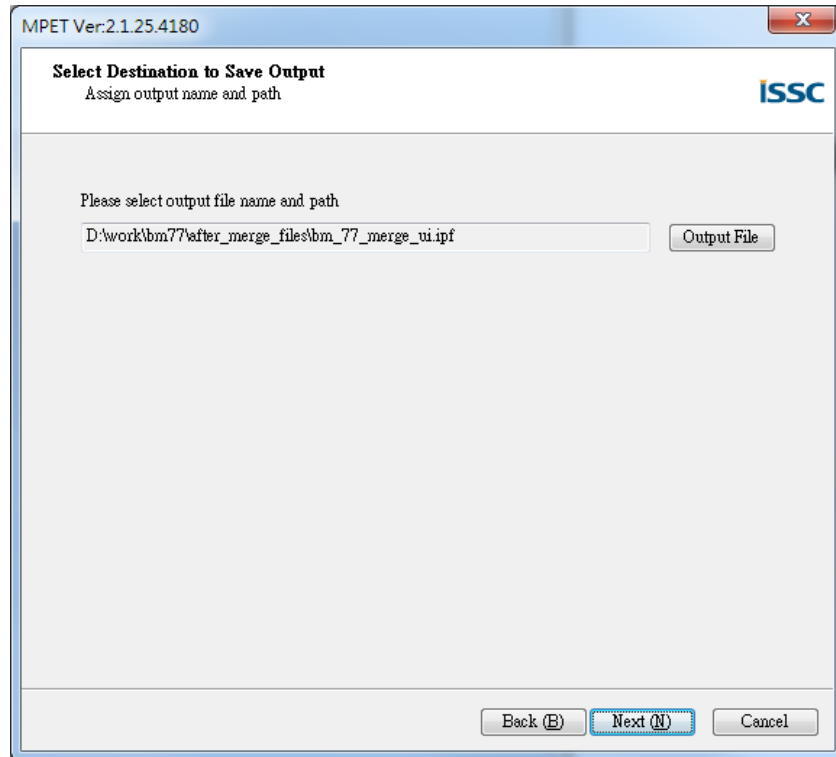
FIGURE 4-12 MPET Wizard – Add/Remove File Page



4.4.5 Select Output Destination

Press “Output File” button to open file browser to select output destination. Tool will bring out the default Company Name and Project Name and that can be changed by users. Please select “Next” for next step.

FIGURE 4-13 MPET Wizard – Output Destination Page



4.4.6 Generate Patch File

Press “Generate” button to generate patch file of part of EEPROM. And page shows merged information. Please select “Next” for next step.

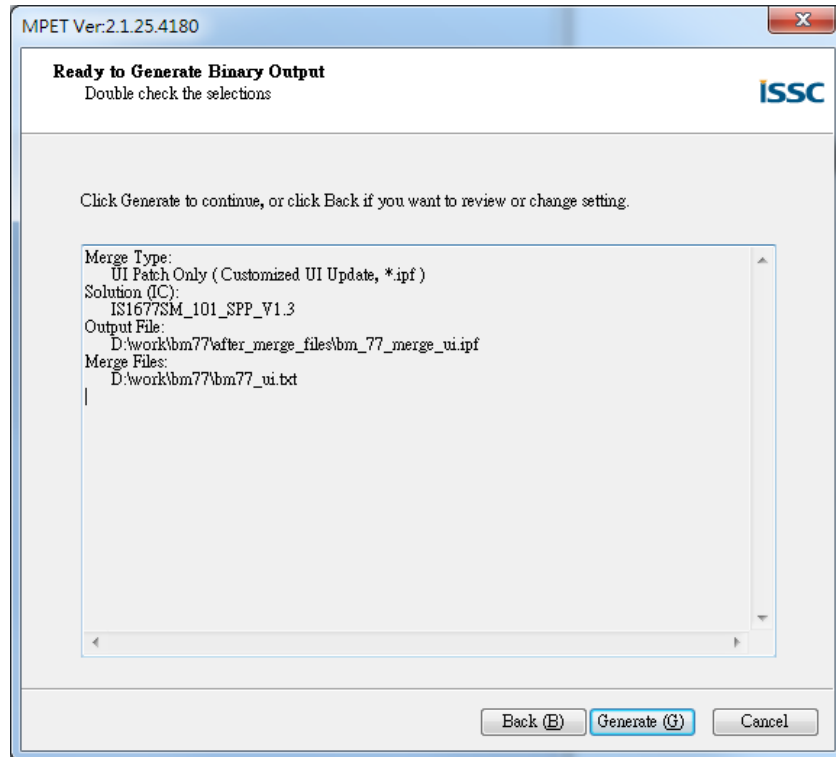
Merge Type: output file type, bin or ipf.

Solution (IC): solution name of base bin file

Output File: path of output file

Merge Files: merge file list

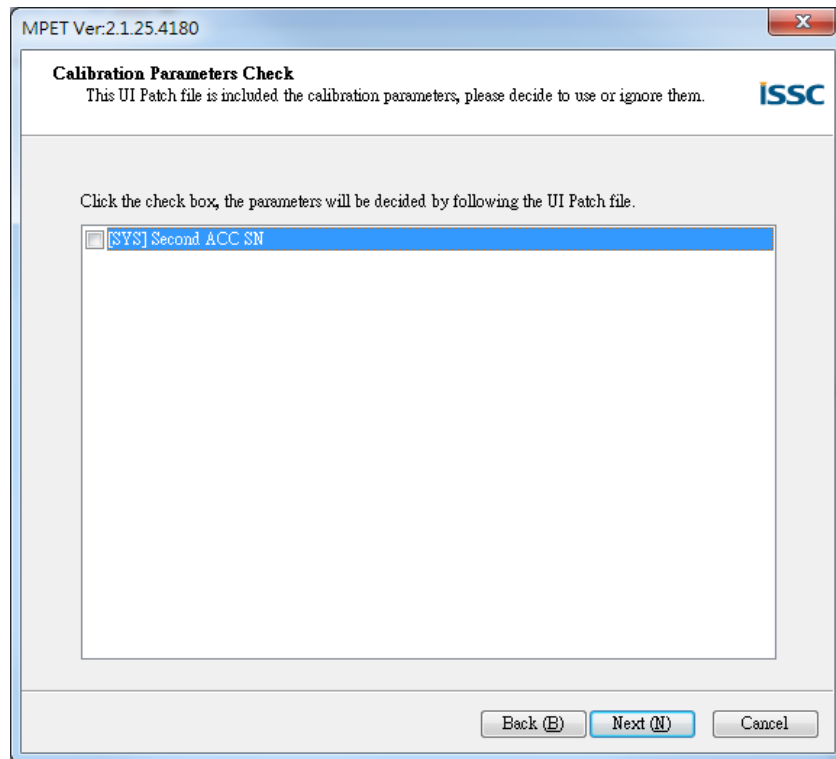
FIGURE 4-14 MPET Wizard – Generate Page



4.4.7 Calibration Parameter Check

This page will appear when UI patch cover with calibration address. If you want to replace it with merge file, please check box. Then press “Next” button to generate output file.

FIGURE 4-15 MPET Wizard – Calibration Parameter Check Page



4.4.8 Complete Info

Press "Finish" button to close tool. And page shows output file information.

Output Path: output file path

Output File: output file name of bin and txt.

Checksum: File check sum number.

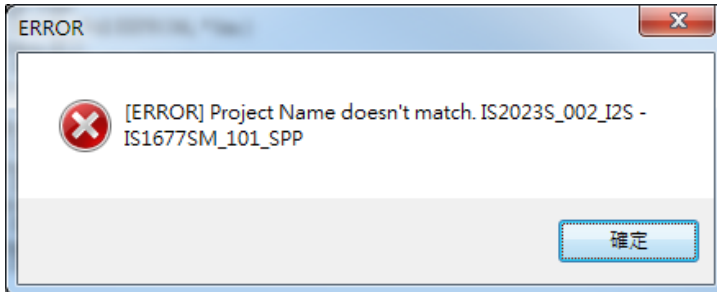
FIGURE 4-16 MPET Wizard – Finish Page



4.5 Error Message

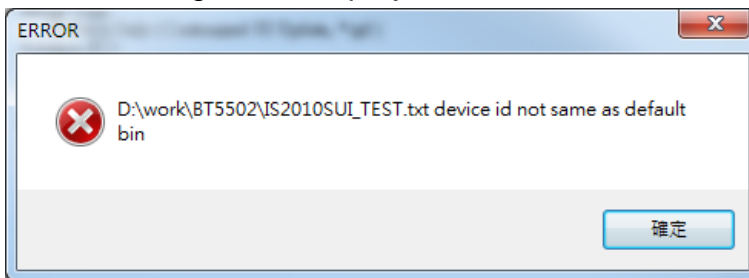
4.5.1 Project Name Not Match

If you see this dialog as bellow, that means the merge base bin file project information not match merge list files project information.



4.5.2 Device ID Not Match

If you see this dialog as bellow, that means the merge base bin file device id not same as merge list files project information. This check only on BT5502 series device.



Chapter 5 Mass Production Script Editor (MPSE)

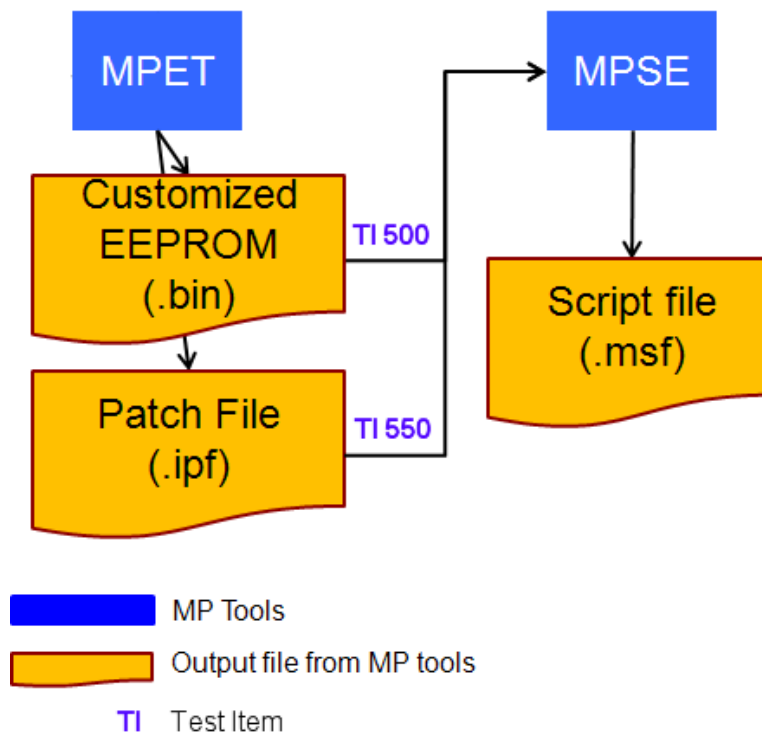
The MPSE is a script editor tool. This chapter provides an Introduction and operation of MPSE. Topics covered include:

- Introduction
- Graphical User Interface
- Test Items Overview
- Generate MP Script File (MSF) Step By Step
- FAQ

5.1 Introduction

This tool is used to create test script file (called .msf) for MPBT. Which file includes MP test items, sequence, conditions and DUT (Device Under Test) information. So that, MPBT knows that what DUT version is, which test items have, and judge the DUT with test conditions.

FIGURE 5-1 MPSE Files Relationship



5.2 Graphical User Interface

This section split up MPSE GUI into four areas for description. Please refer following subsection.

5.2.1 Solution Area

- Product Name: Product name (changeable).
- Solution: List of all Microchip solutions.
- RFinDevice: The selection of RF test instrument.
- V-MeterDevice: Power supply and meter

5.2.2 Test Item Area

How many test items supported is depend on what solution and RF test Instrument you selected. Each test item was designed at RD stage. You can only change parameters and limitations in Condition Area. And have some default recommend basic test item.

- Support Test Item (Left): The solution supported test items but not selected yet.
- MP Test Item (Right): These test items will save into MP Script File (MSF) when you press "SAVE" button. You can modify it depend on your request.
- ADD --> Add selected item from Support Test Item to MP Test Item.
- DEL <-- Remove selected item from MP Test Item list to Support Test Item.

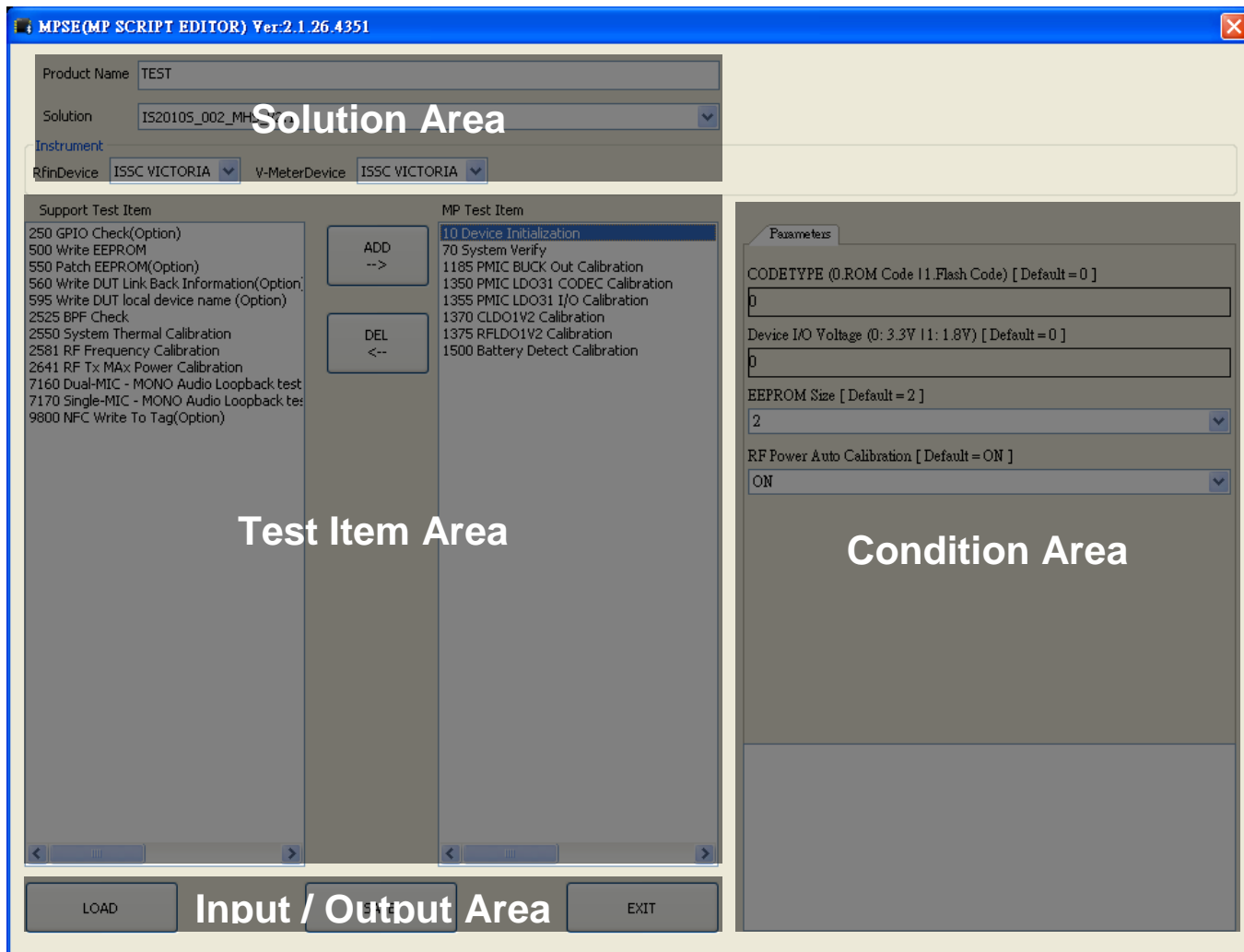
5.2.3 Condition Area

- Selection: List of defined value is select only
- Editor: You can input parameter, but be careful the valid range.

5.2.4 Input / Output Area

- SAVE: Save all of test setting as MP Script File (*.msf) for MPBT uses.
- LOAD: Load back all of test setting from Script File (*.msf) for modification.
- EXIT: Exit tool

FIGURE 5-2 MPSE GUI



5.3 Test Items Overview

This Table indicates the most popular used case that may change in the future. If you're abnormal case doesn't on the test list. Please contact your FAE for clarification.

Table 5-1 Test Item

Category	ID	Name	Description	Requirement
SYSTEM	10	Initialization		MP Fixture
	20	Write Flash		
	5x 7x	System verify		
	25x	GPIO test		
	26x	LED test		
	500	Write EEPROM	The Bin File usually from	

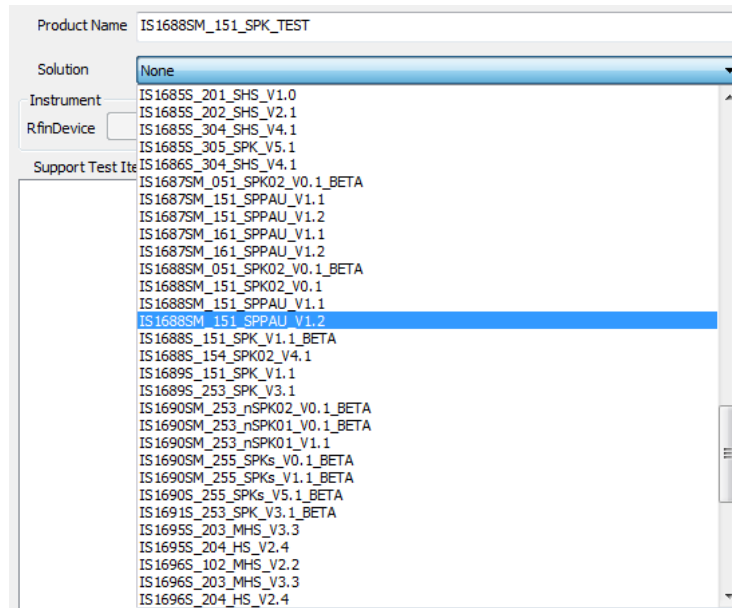
			MPET	
	550	Patch EEPROM	The Patch file usually from MPET	
PMU	1000 ~ 1400	System power calibration		MP Fixture
	15xx	Battery Detect Calibration		
RF Calibration	2000 ~ 2070	RF loopback self-test		MP Fixture RF Tester
	208x 258x	Frequency Calibration		
	21xx 26xx	Tx Power Calibration		
	27xx	Tx DEVM check		
	28xx	Rx Sensitivity Test		
Audio Test	7000 ~ 7500	Audio test		USB soundcard
RF Test	77xx 8xxx	BT test		RF Tester
Peripheral	9xxx	NFC, External Flash		

5.4 Generate MP Script File Step by Step

5.4.1 Select your solution

You can see all of solution when you drop-down the list. To select the solution that suits your DUT (Device Under Test).

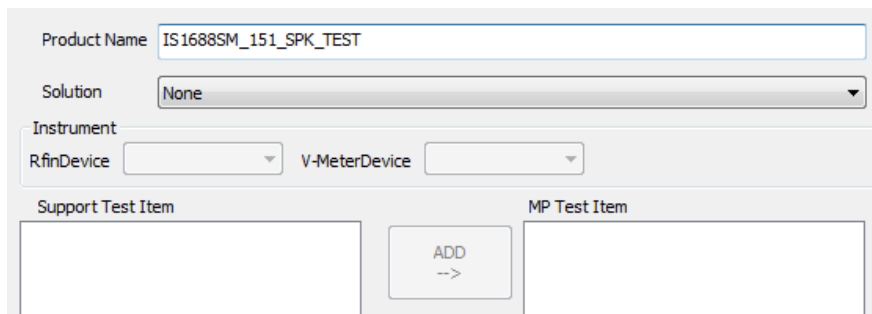
FIGURE 5-3 MPSE Solution



5.4.2 Give your own product name

After selection of solution, MPSE will bring out the default Production Name You can change it with your own production name.

FIGURE 5-4 MPSE Product Name



5.4.3 Select RF test instrument

Base on your test environment to select RF test instrument. If your RF instrument doesn't show on the list, please contact your FAE to get more supporting.

The kind of RF test items will different when you changed RF instrument type.

FIGURE 5-5 MPSE RF Instrument

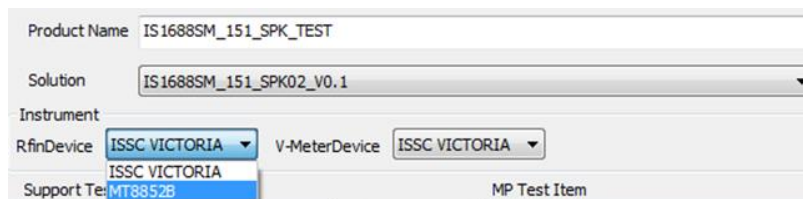


FIGURE 5-6 MPSE RF GU Test Item

Product Name IS1688SM_151_SPK_TEST

Solution IS1688SM_151_SPK02_V0.1

Instrument

RfnDevice ISSC VICTORIA V-MeterDevice ISSC VICTORIA

Support Test Item

- 8 Check PMU Status at BOOT(Optional)
- 15 Check RAM Status at BOOT(Optional)
- 20 Write and Verify Flash(Optional)
- 60 MFB Signal Check(Optional)
- 100 Check Big-Num Calculate(Optional)
- 250 GPIO Check(Optional)
- 550 Patch EEPROM(Optional)
- 1010 LED Check(Optional)
- 1310 Codec LDO VOut Calibration(Optional)
- 1330 VDD_IO LDO31 Calibration(LDO)(Optional)
- 1400 Buck Check(Optional)
- 2101 RF Tx Power Calibration(0)(Optional)
- 2111 RF Tx Power Calibration(1)(Optional)
- 2121 RF Tx Power Calibration(2)(Optional)
- 2131 RF Tx Power Calibration(3) EDR MAX(C)
- 2141 RF Tx Power Calibration(4) BDR MAX(C)
- 7270 Audio Electrical Test 2CH(Optional)
- 7300 Line In Audio Electrical Test(Optional)
- 7400 CVSD Loopback with DSP Test(Optional)

ADD -->

DEL <--

FIGURE 5-7 MPSE RF 8852 Test Item

Product Name IS1688SM_151_SPK_TEST

Solution IS1688SM_151_SPK02_V0.1

Instrument

RfnDevice MT8852B V-MeterDevice ISSC VICTORIA

Support Test Item

- 8 Check PMU Status at BOOT(Optional)
- 15 Check RAM Status at BOOT(Optional)
- 20 Write and Verify Flash(Optional)
- 60 MFB Signal Check(Optional)
- 100 Check Big-Num Calculate(Optional)
- 250 GPIO Check(Optional)
- 550 Patch EEPROM(Optional)
- 1010 LED Check(Optional)
- 1310 Codec LDO VOut Calibration(Optional)
- 1330 VDD_IO LDO31 Calibration(LDO)(Optional)
- 1400 Buck Check(Optional)
- 2100 RF Tx Power Calibration(0)(Optional)
- 2110 RF Tx Power Calibration(1)(Optional)
- 2120 RF Tx Power Calibration(2)(Optional)
- 2130 RF Tx Power Calibration(3) EDR MAX(C)
- 2140 RF Tx Power Calibration(4) BDR MAX(C)
- 2180 RF Tx Power Calibration(ALL)(Optional)
- 2200 RF TX Power Verify(Optional)
- 7270 Audio Electrical Test 2CH(Optional)
- 7300 Line In Audio Electrical Test(Optional)
- 7400 CVSD Loopback with DSP Test(Optional)
- 8000 MT8852 Environment Setting(Optional)
- 8050 MT8852 BDR Output Power Test(Optional)
- 8100 MT8852 BDR Power Control Test(Optional)
- 8150 MT8852 BDR Initial Carrier Test(Optional)
- 8200 MT8852 BDR Carrier Drift Test(Optional)
- 8250 MT8852 BDR Single Slot Sensitivity Test
- 8300 MT8852 BDR Multi Slot Sensitivity Test
- 8350 MT8852 BDR Modulation Index Test(Optional)
- 8400 MT8852 BDR Max Input Power Test(Optional)
- 8605 MT8852 EDR Relative Transmit Power Test
- 8610 MT8852 EDR Carrier Frequency Stability Test
- 8615 MT8852 EDR Differential Phase Encodir
- 8620 MT8852 EDR Sensitivity Test(Optional)
- 8625 MT8852 EDR BER Floor Sensitivity Test
- 8630 MT8852 EDR Maximum Input Power Test

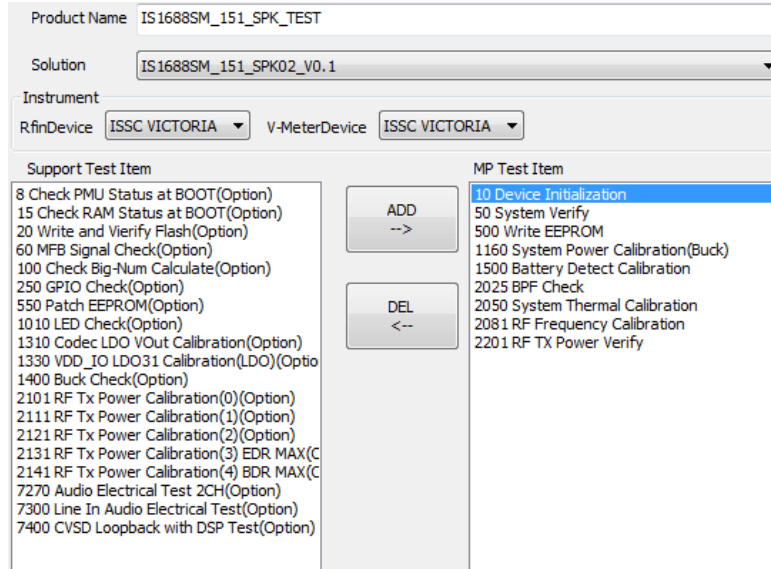
ADD -->

DEL <--

5.4.4 Choose test items for MP

Move the mouse cursor to test item in Support Test Item and left click. And then Press “ADD” button to add item into MP Test Item. Repeat it until the items is enough for your tests. Otherwise you can remove items you don’t want in MP Test Item with “DEL” button.

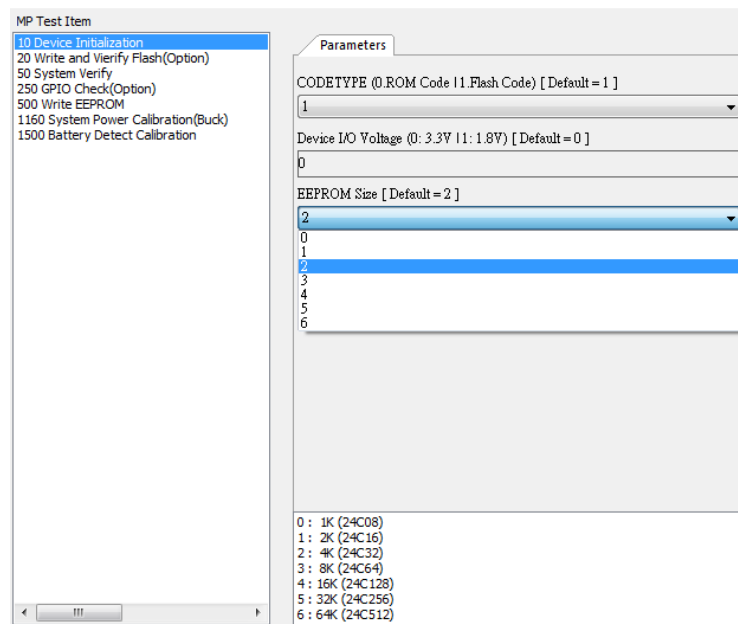
FIGURE 5-8 MPSE Add Test Item



5.4.5 Configure test item’s parameter and limitation

Move the mouse cursor to test item in MP Test Item and left click. The item’s parameters and limitation will show on Condition Area. That has default setting, you can change it.

FIGURE 5-9 MPSE Test Condition

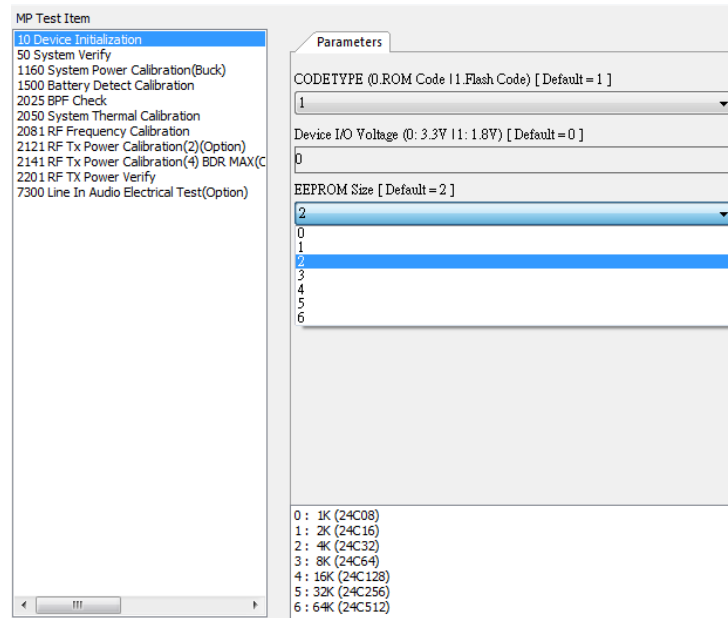


The MPSE has four type of editor:

- **Select type**

The option values are defined at RD stage. You just choose a fit one.

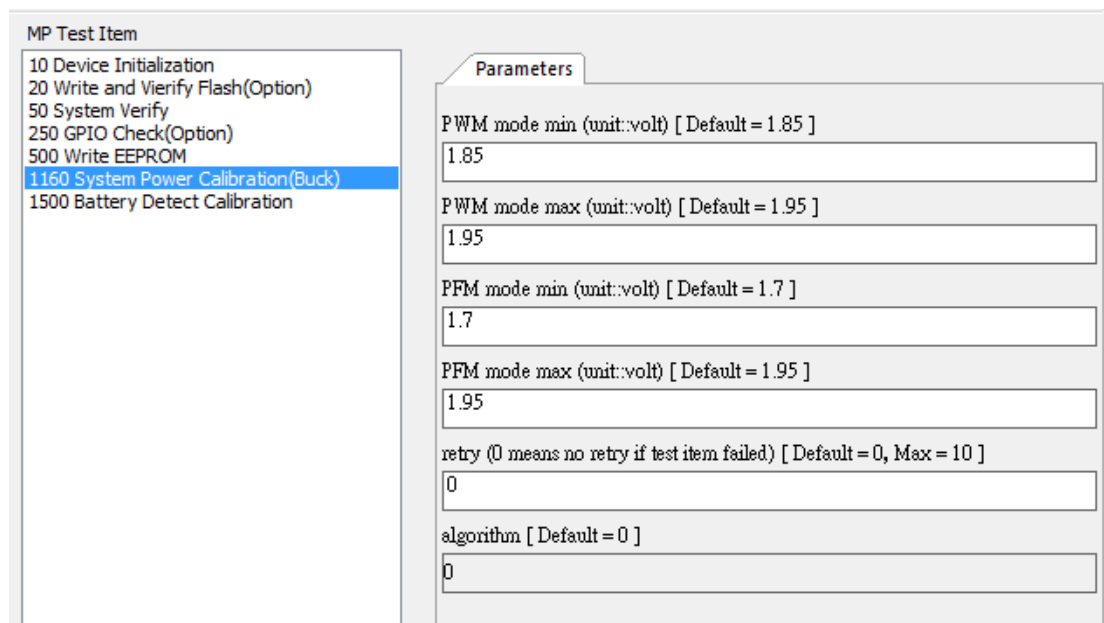
FIGURE 5-10 MPSE Editor Type - Select



- **Edit type**

In this type, you can key value in editor. And tool will check validation after “SAVE” button clicked.

FIGURE 5-11 MPSE Editor Type - Edit



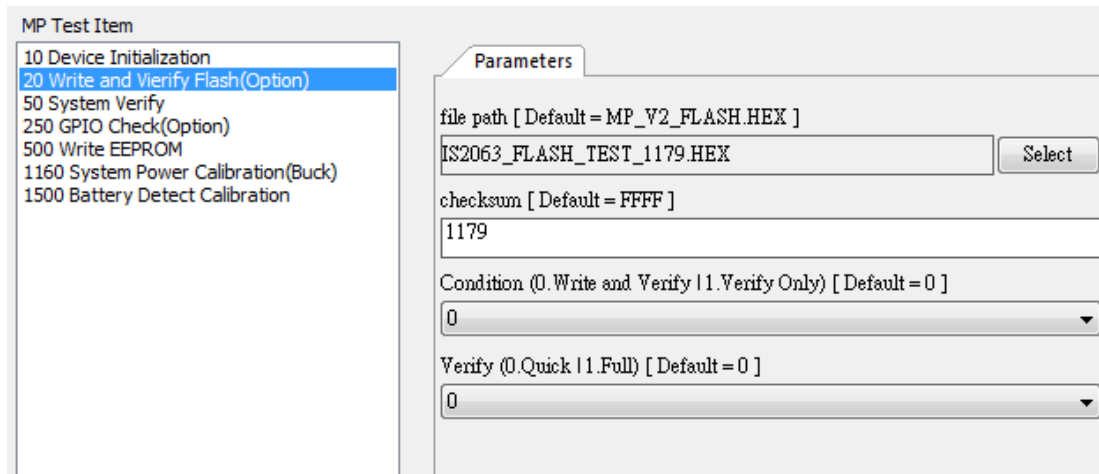
- **File type**

In this type, you need input specific file and key-in checksum.

Table 5-2 MPSE File Type

Extension File Name	ITEMs	Comment
HEX	20,9850,9870	Write Flash
BIN	500	Write EEPROM
IPF	550	Patch EEPROM

FIGURE 5-12 MPSE Editor Type - File



- **GPIO type**

This type is for Item 250 GPIO Check. Refer following comment:

OUTPUT/ INPUT: GPIO PIN selection.

CONNECT: test type Open/Short

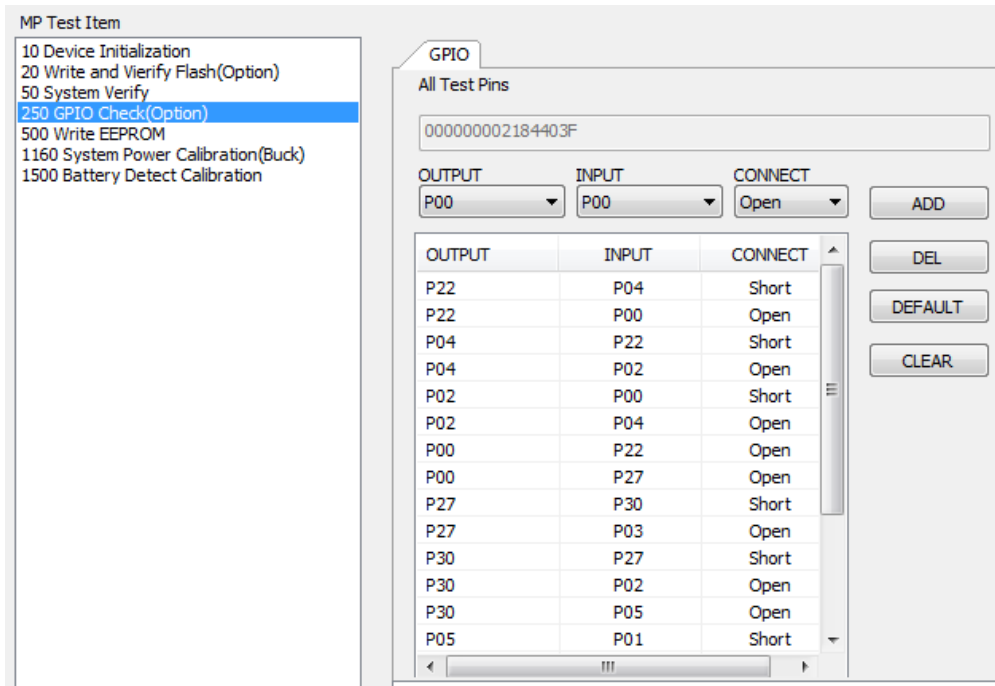
ADD: add one test case in the list

DEL: delete selected test case in list

DEFAULT: Load back the default test cases list

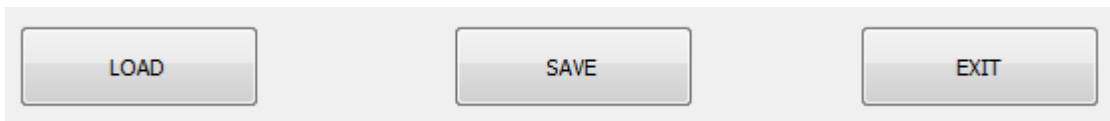
CLEAR: clear test cases list

FIGURE 5-13 MPSE Editor Type - GPIO



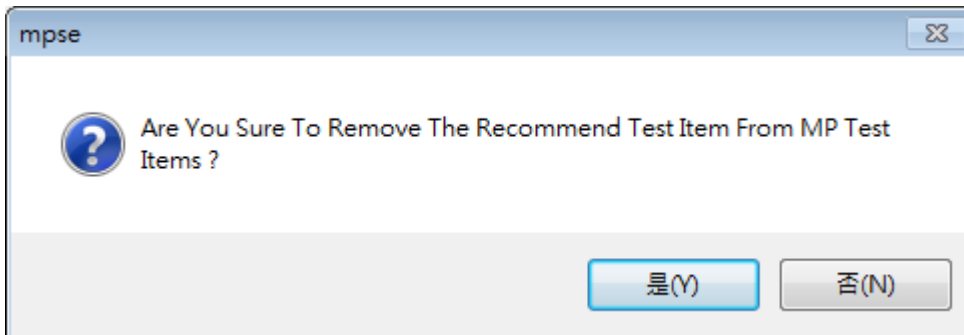
5.4.6 Save MP Script File (MSF)

Click “SAVE” button to save configuration as MSF. And you can click “LOAD” button when you want to load back MSF. Click “EXIT” to close the tool.



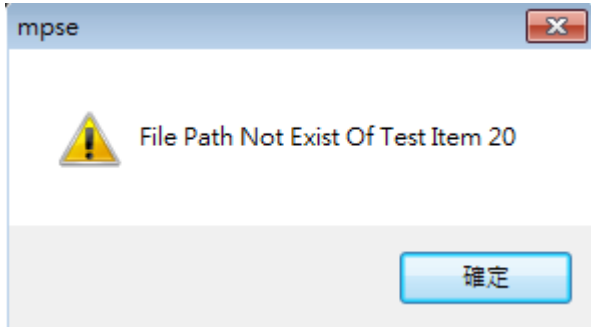
5.5 FAQ

Q1 Why is there a warning message when we remove default test item from MP Test Item list? How can I do?

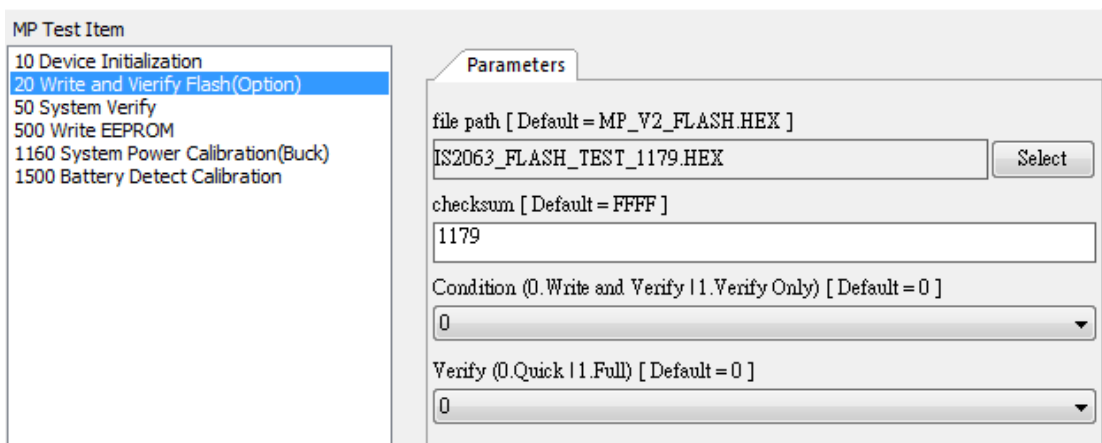


A1 Because those test items are Microchip recommend that the basic test items. This message just want user double check match your request. Click (Y) to remove test item. Otherwise click (N) to keep this test item.

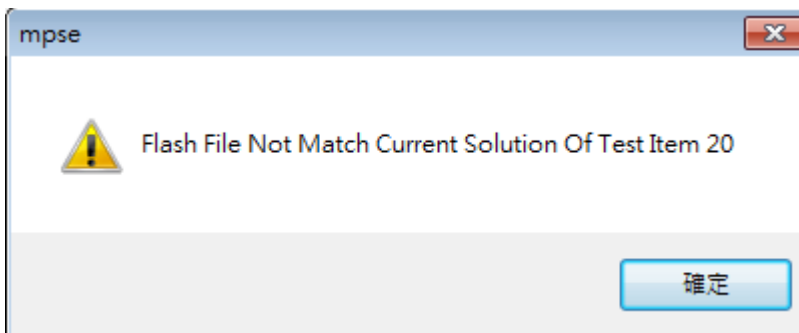
Q2 Why is there an error message when I save file?



A2 Please check Item 20 file path & checksum. File path can't use default file. User need select Flash.HEX file. Checksum can't use default value. User need key-in Flash.HEX checksum.

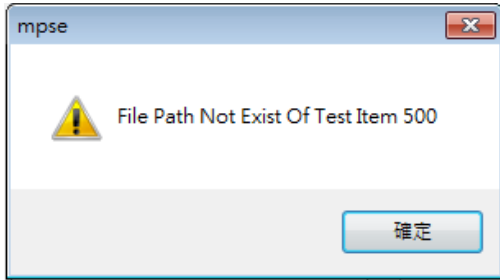


Q3 Why is there an error message when I save file?

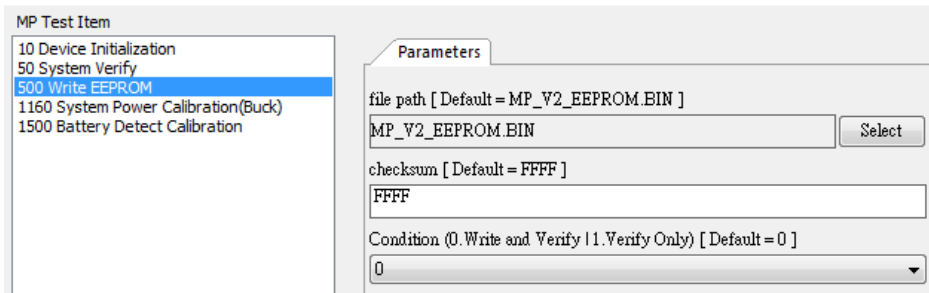


A3 Please confirm the correct of the Flash.hex file.
The Flash.hex file didn't match Solution name

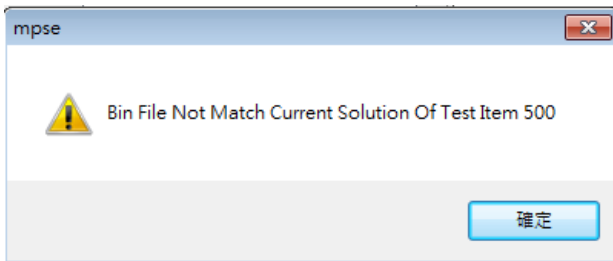
Q4 Why is there an error message when I save file?



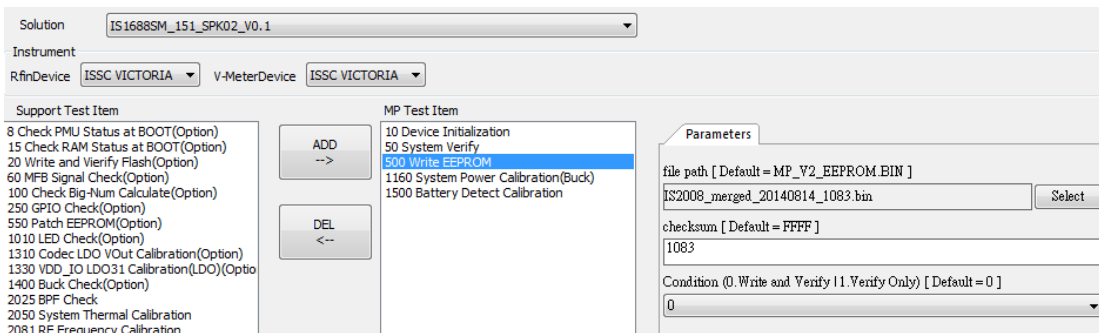
A4 Please check Item 500 file path & checksum. File path can't use default file. User need select EEPROM.BIN file. Checksum can't use default value. User need key-in EEPROM.BIN checksum.



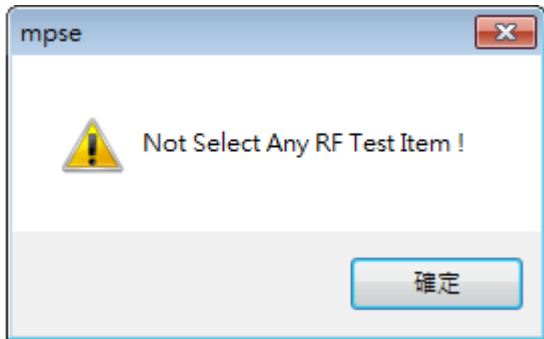
Q5 Why is there an error message when I save file?



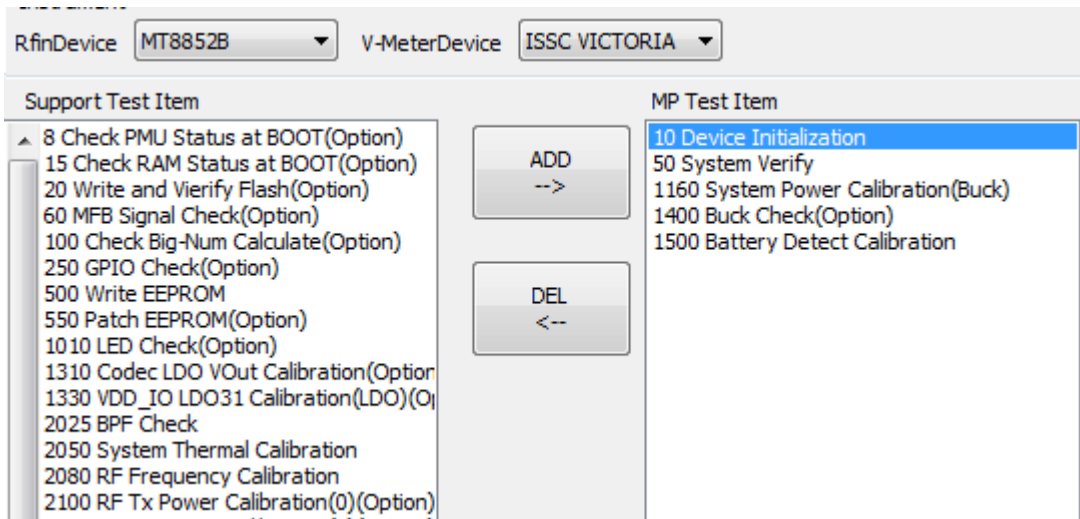
A5 Please confirm the correct of the EEPROM.BIN file.
The EEPROM.BIN file didn't match Solution name.



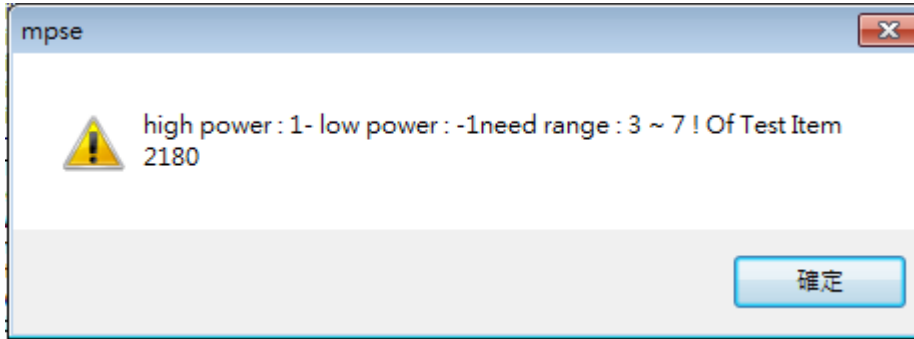
Q6 Why is there an error message when I save file?



A6 Please select any RF test item into MP Test Item list when you select MT8852B instrument.



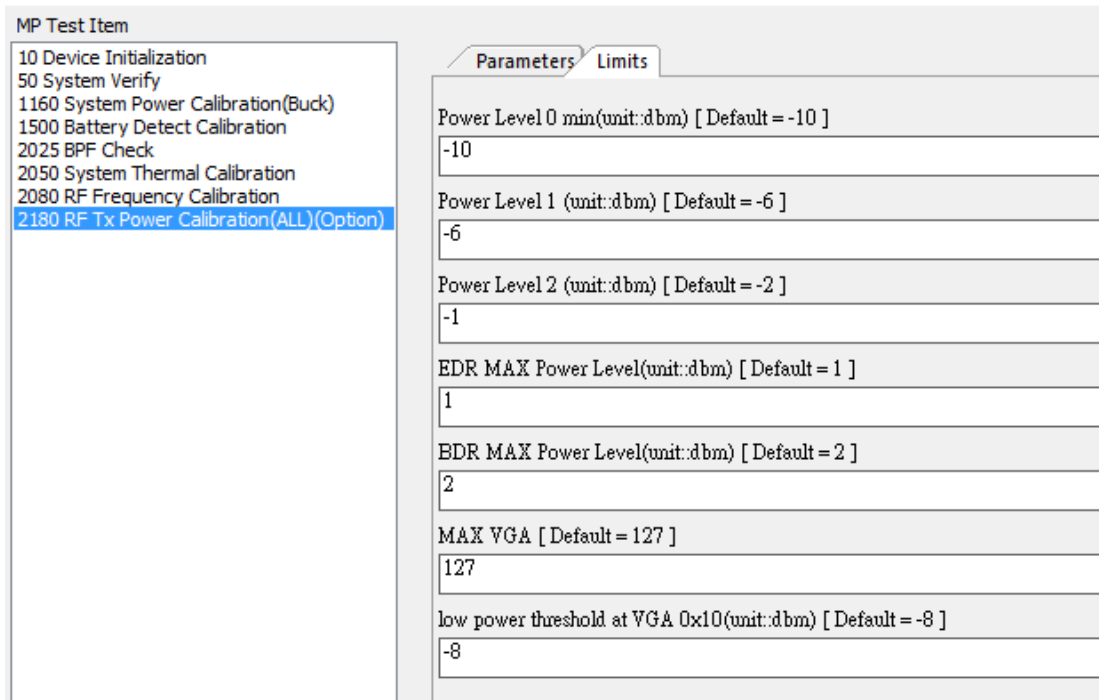
Q7 Why is there an error message when I save file?



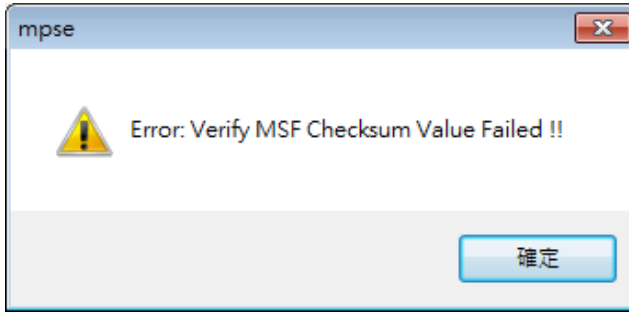
A7 Please check Item 2180 Power level 0, 1, 2, EDR, BDR values. Please find High power : 1 is EDR Max Power and Low power: -1 is power level 2.

EDR Power minus Power level2 to less than 7 and more than 3

The difference between each of power level need had 3 ~ 7

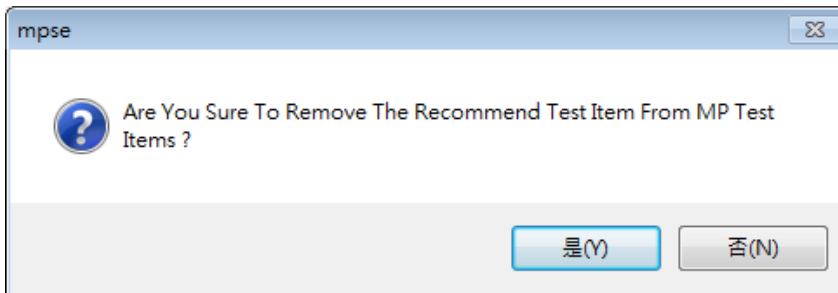


Q8 Why is there an error message when I load file?



A8 The *.msf file had been modified without use the MPSE tool.
Please create new *.msf file.

Q9 Why I got this warning message?



A9 When you remove the recommend test item from Microchip tool will show warning message.

Chapter 6 Mass Production Board level test Tool (MPBT)

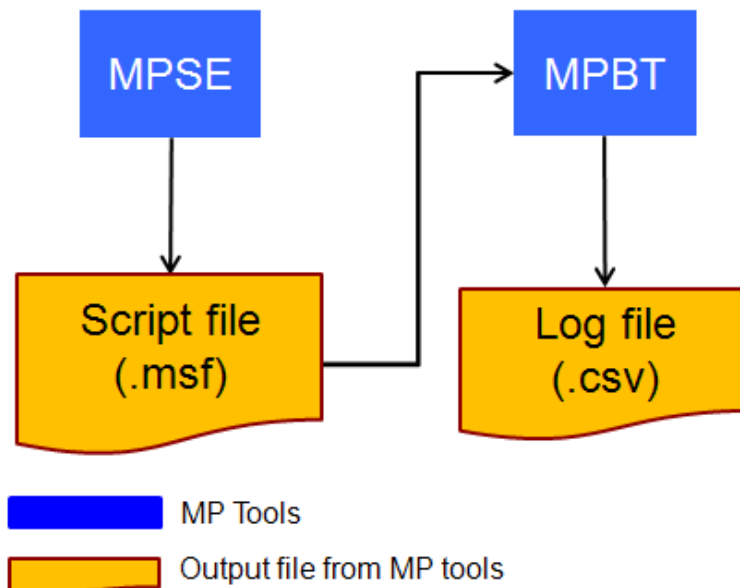
The MPBT is major of MP tool. That executes testing and judges DUT by test result. This chapter provides an Introduction and operation of MPBT. Topics covered include:

- Introduction
- Testing Environment Setup
- Configuration
- Run the Test
- FAQ

6.1 Introduction

This tool is used test DUT with MP Fixture. It will follow the script file (.msf) automatically testing and calibration. After that, it will show result of DUT and save testing log.

FIGURE 6-1 Relationship of MPBT



6.2 Testing environment Setup

6.2.1 Single-Site

FIGURE 6-2 RF Test with GU at Single-Site

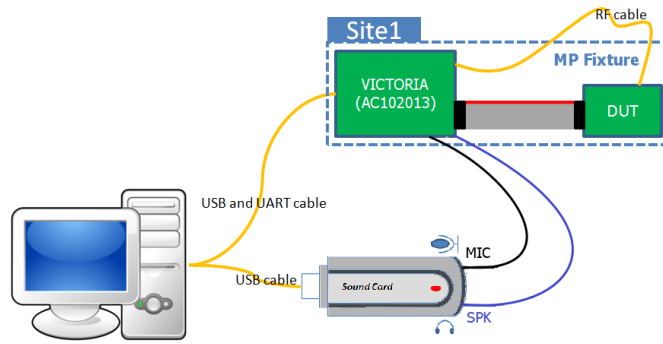
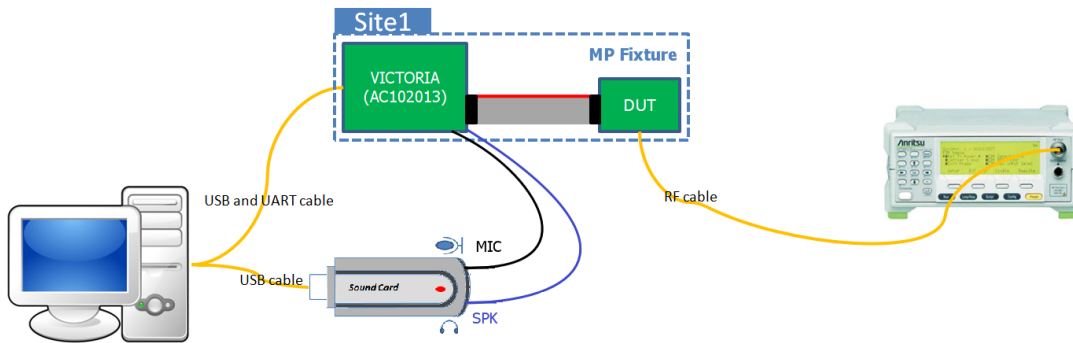


FIGURE 6-3 RF Test with RF Tester at Single-Site



6.2.2 Dual-Site

FIGURE 6-4 RF Test with GU at Dual-Site

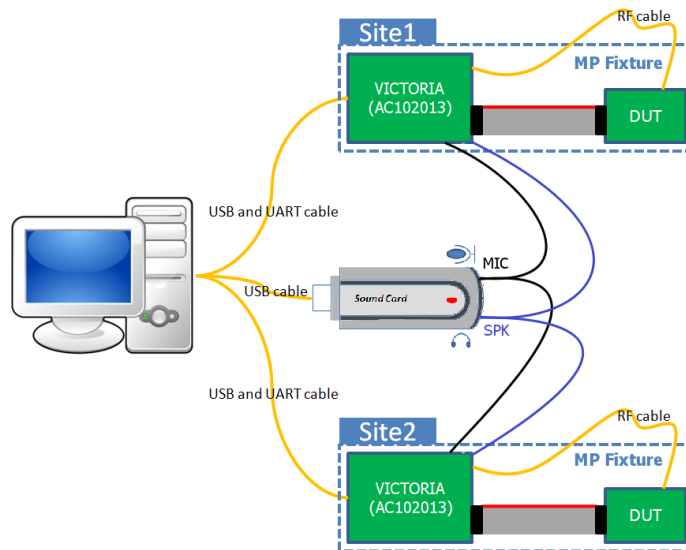
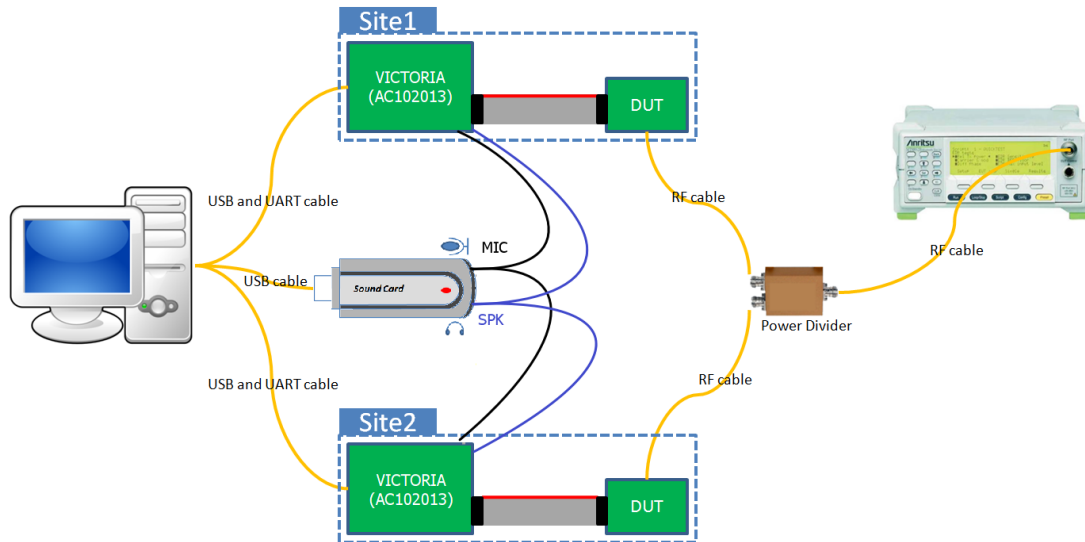
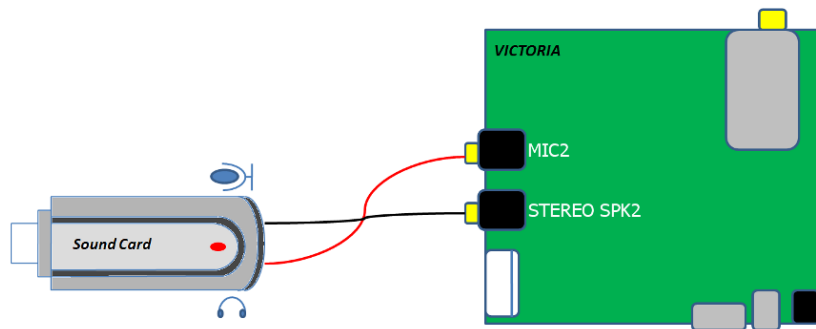


FIGURE 6-5 RF Test with RF Tester at Dual-Site



6.2.3 Sound Card connection

FIGURE 6-6 Connection audio cable between Soundcard and AC102013



6.2.4 VICTOIRA Identification

In Dual-Site test environment, you need configure the switch (SW) for identification of VICTORIA. Please refer Table 6-1.

FIGURE 6-7 VICTORIA Overview

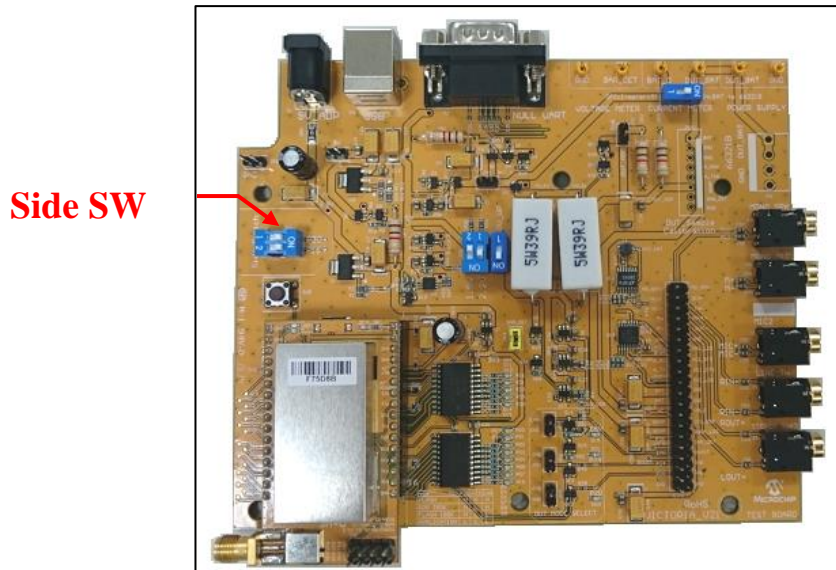



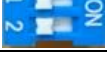


Table 6-1 VICTORIA Identification

Site Number	Side Switch	1	2
1 (default)		ON	ON
2		OFF	ON
3		ON	OFF
4		OFF	OFF

More details for VICTORIA (PN: AC102013), please refer Bluetooth MP Board AC102013 User Guide you find it from Microchip web site.

6.3 Configuration

The MPBT configuration is divided into several tabbed pages. Each page includes a parameter summary which allows the user to keep track of the changes made.

6.3.1 SYSTEM Page

TEST SCRIPT

LOAD FILE button: Input .msf file, after load file show other pages

File Path: file location of msf

Product Name: name of product

Device Name: name of DUT

② SETTING

Save Output Log: Enable MP testing log

BROWSE button: Select log file location

Enable Dump EEPROM When The Test Is Successful: Dump EEPROM table when test result is Pass.

Enable save individual file for each DUT: Save every individual test log file into Pass folder or Fail folder when test finish.

Enable Pass Alarm: Alarm when test result is Pass

Enable Failure Alarm: Alarm when test result is Fail.

③ S/N

Begin of Serial Number

④ ACCESSORY SN

Product Serial Number (Maximum is 10 numbers)

⑤ LOCAL DEVICE NAME

When .msf has ITEM 595 Write Local Device Name, It will enable

Customer Prefix: Set Device Name

Start Of SN: When enable Device Name with SN, it will enable

⑥ PASSWORD

CHANGE button: Changes the password of LOAD FILE

⑦ STATUS of configurations

FIGURE 6-8 SYSTEM Configure Page

The screenshot shows the 'Configure' page for the SYSTEM. On the left is a sidebar with icons for SYSTEM, DEVICE, Instrument, BT ADDRESS, RF METER, HANDLER, MANUFACTURE INFO, and APPLY. The main content area is divided into several sections, each highlighted with a red box and a numbered callout (1-7) on the right:

- 1 TEST SCRIPT**: Includes 'File Path' (D:\tmp\mail\tmp21\IS1690S_255_SPKs_V5.1__MT8852B.msf), 'Product Name' (IS1690S_255_SPKs_V5.1__MT8852B), 'Device Name' (IS1690S_255_SPKs_V5.1), and a 'LOAD FILE' button.
- 2 SETTING**: Includes 'Save Output Log' (checked), a file path field (d:\project\Upload_mp\testmp\bt\DebugLog), a 'BROWSE' button, and checkboxes for 'Enable Dump EEPROM or Info.Block When The Test Is Successfu', 'Enable save individual file for each DUT', 'Enable Pass Alarm', and 'Enable Failure Alarm'.
- 3 S/N**: A text input field containing '4'.
- 4 ACCESSORY SN (Max Length 10)**: A text input field containing '0'.
- 5 LOCAL DEVICE NAME**: Includes 'Customer Prefix' and 'Start Of SN' text input fields, both containing '0'.
- 6 PASSWORD**: A text input field and a 'CHANGE' button.
- 7 LOAD SCRIPT SUCCESS**: A status message box.

6.3.2 DEVICE Page

❶ Site Number: Select platform number, 1: Single-Site, 2: Dual-Site

❷ Shielding Box:

NONE_SBOX: No uses

GIT_SBOX: Use kind of GIT_SBOX shielding box. Global Instrument Tech

❸ SITE 1

Access Port

COM Port: Set DUT's UART port number

Baud Rate: Set DUT's UART baud rate

Information: Set SITE1 information, this data will save in Log.

Box Port

COM Port: Set shielding box UART port number

Baud Rate: Set shielding box UART baud rate

GIT_BOX baud rate is 9600

❹ SITE 2 is as above SITE1.

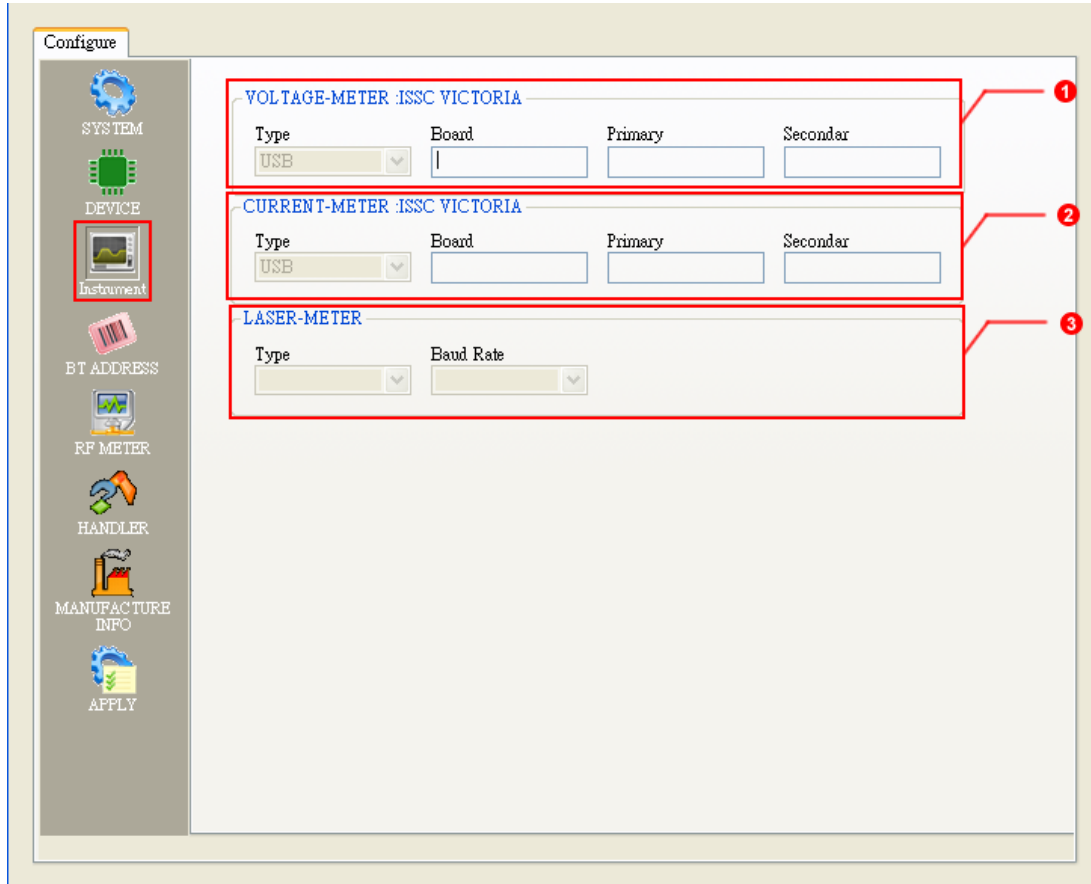
FIGURE 6-9 DEVICE Configure Page

The screenshot shows the 'Configure' page for a device. On the left is a sidebar with icons for SYSTEM, DEVICE, Instrument, BT ADDRESS, RF METER, HANDLER, MANUFACTURE INFO, and APPLY. The main area is titled 'Configure' and contains two sections: SITE1 and SITE2. At the top, there are two dropdown menus: 'Site Number' (set to 1) and 'Shielding Box' (set to NONE_SBOX). Below these are two sections, SITE1 and SITE2, each containing 'Access Port' and 'Box Port' sub-sections. The 'Access Port' sub-sections have 'COM Port' (set to COM3) and 'Baud Rate' (set to 115200) dropdowns, and an 'Information' text box (set to 1 for SITE1 and 2 for SITE2). The 'Box Port' sub-sections have 'COM Port' (set to COM3) and 'Baud Rate' (set to 9600) dropdowns. Red boxes and numbers 1-4 highlight these fields: 1 points to Site Number, 2 to Shielding Box, 3 to the SITE1 Access Port section, and 4 to the SITE2 Access Port section.

6.3.3 INSTRUMENT Page

- ❶ VOLTAGE-METER: Only support Microchip BT MP Test Board AC102013.
- ❷ CURRENT-METER: Only support Microchip BT MP Test Board AC102013.
- ❸ LASER-METER: No Use.

FIGURE 6-10 INSTRUMENT Configure Page



6.3.4 BT ADDRESS Page

❶ BT ADDRESS: MPBT supports six type of DUT's BT address writing. Please refer following description

NO WRITE:

No write (no change) DUT BD Address after testing.

Confirm BT Address: This option used to verifies DUT's existing BT Address connection. And it needs Barcode Reader. About Barcode configuration, please refer BAR-CODE type.

The screenshot shows the 'BT ADDRESS' configuration interface. A dropdown menu is set to 'NO WRITE'. To its right, 'Search Type' is set to 'INDEX'. Below these, there is a checked checkbox for 'Confirm BT Address (only for Barcode)'. To its right, the 'Index' field contains the value '0'. Below that, the 'Add-on Prefix' field is empty. At the bottom, there is an unchecked checkbox for 'Address Has Delimiter' with an example 'Ex: 001122A&BBCC'.

RANGE:

Start: Beginning of BT Address

Count: Amount of BT Address

Current: Current use BT Address

The screenshot shows the 'BT ADDRESS' configuration interface with the dropdown menu set to 'RANGE'. To its right, the 'Start' field contains the value '00:11:67:11:11:73'. Below that, the 'Count' field contains the value '997'. At the bottom, the 'Current' field contains the value '00:11:67:11:11:73'.

BAR-CODE:

Ask Device Ready Dialog: When option is enabled (checked) MPBT will appear a dialog to ask operator to start the test. Therefore, operator has time to input DUT in fixture when barcode label is hard to read.

Enable Check BT Address Range: User can define the "Check BT Range Start" and "Check BT Range Stop" range. After run finish, MP will check input Barcode need in the Range. The Site1 range and Site2 range can't repeat region.

***Enable Special Bar Code COM Port:** User can define the “Bar Code COM Port” and “Bar Code Baud Rate”. MP will inquire this com port data. If MP get data (BT Address) from COM port, MP will used this data and start test flow.

***Note:** 1. This function just for special bar code scanner.(SUNITEC)
 2. This function only available in the dual mode.

Search Type: The parser for BT address in Barcode label.

INDEX: BT Address start point (index origin = 0)

KEYWORD: Keyword of BT Address in Barcode label

Add-on Prefix: Input fixed BT Address, it will merged with read data of Barcode label (maximum is 12 numbers)

Ex: Add-on Prefix 001167, Barcode read 123456 => 001167123456

Address Has Delimiter: Barcode and Add-on Prefix has delimiter symbol.

BT ADDRESS

BAR-CODE Search Type INDEX

Index 4

Ask Device Ready Dialog Add-on Prefix 0011

Enable Check BT Address Range Address Has Delimiter
 Ex: 001122AABBCC

Enable Special Bar Code COM Port

	SITE1	SITE2
Check BT Range Start	00:11:67:11:11:11	00:11:67:11:11:12
Check BT Range Stop	00:11:67:11:11:11	00:11:67:11:11:12
Bar Code COM Port	COM1	COM1
Bar Code Baud Rate	9600	9600

FIX ADDR:

BT Address: Input fixed BT Address.

BT ADDRESS

FIX ADDR

BT Address 00:00:00:00:00:00

FROM TAG:

Read BT Address from NFC Tag. Note that, this type needs NFC Reader. MPBT support NFC Reader: ACS ACR 122 (visit: [ACS](#))

BT ADDRESS

FROM TAG

FROM HANDLER:

If Auto-Handler can provide a BT Address, you can choose this type. That also needs Barcode parser. (Please refer BAR-CODE type)

BT ADDRESS

FROM HANDLER

Search Type INDEX

Index 0

Add-on Prefix

Address Has Delimiter
Ex: 001122AABBCC

🔊 NFC READER

Detect Timeout: limited detect tag. (sec)

Data Area Size (DAS): Set NFC tag's size. When .msf include ITEM 9800 it will enable

SITE1: Select model of NFC reader

SITE2: As above SITE1

FIGURE 6-11 BT ADDRESS Configure Page

Configure

SYSTEM
DEVICE
Instrument
BT ADDRESS
RF METER
HANDLER
MANUFACTURE INFO
APPLY

BT ADDRESS

BAR-CODE Search Type INDEX

Index 0

Ask Device Ready Dialog Add-on Prefix

Enable Check BT Address Range
 Enable Special Bar Code COM Port

Address Has Delimiter
Ex: 001122AABECC

	SITE1	SITE2
Check BT Range Start	00:11:67:11:11:11	00:11:67:11:11:12
Check BT Range Stop	00:11:67:11:11:11	00:11:67:11:11:12
Bar Code COM Port	COM3	COM5
Bar Code Baud Rate	9600	9600

NFC READER

Detect Timeout (Sec) 10

Data Area Size (DAS)(bytes) 0

SITE1	SITE2
Model	Model

1

2

6.3.5 RF METER Page

- ❶ RF METER: RF instrument setting
- ❷ MT8852 RS232: MT8852 COM port and Baud rate setting
- ❸ RF CABLE LOSS: SITE 1 and SITE2 RF cable loss
- ❹ RF Frequency Calibration: Channel of Frequency calibration. (Enable depend on MSF setting)
- ❺ RF Tx Power Verify: Channel of Tx power. (Enable depend on MSF setting)
- ❻ RF Rx Sensitivity: Channel of Rx sensitivity. (Enable depend on MSF setting)

FIGURE 6-12 RF METER Configure Page

The screenshot displays the 'Configure' page for the RF METER. A sidebar on the left contains navigation icons for SYSTEM, DEVICE, Instrument, BT ADDRESS, RF METER (highlighted), HANDLER, MANUFACTURE INFO, and APPLY. The main content area is divided into several sections, each with a red box and a circled number (1-6) on the right side:

- 1 RF Instrument :ISSC VICTORIA**: Includes fields for Type (GPIB), Board (0), Primary (27), and Secondary (0).
- 2 MT8852 RS232**: Includes fields for COM Port (COM2) and Baud Rate (115200).
- 3 RF CABLE LOSS**: Includes fields for Site1 (1.00 dbm) and Site2 (1.00 dbm).
- 4 RF CHANNEL**: Includes a section for RF Frequency Calibration with checkboxes for Primary CH, Second CH, and Third CH, and corresponding dropdown menus (2441, 2402, 2480).
- 5 RF Tx Power Verify for iSSC GU**: Includes checkboxes for Primary CH, Second CH, and Third CH, and corresponding dropdown menus (2441, 2402, 2480).
- 6 RF Rx Sensitivity for iSSC GU**: Includes checkboxes for Primary CH, Second CH, and Third CH, and corresponding dropdown menus (2441, 2402, 2480).

6.3.6 HANDLER Page

❶ **MODE:** Select DUT exchange type. MPBT support three modes. Please refer Table 6-2 Auto-Handler

Table 6-2 Auto-Handler Name and Interface

Name	Interface	Parameter	Note
MANUAL	N/A	N/A	Operator changed by hand
HT3000	RS232	COM port	
GIT_ATS	.ini file	Ini Folder	Refer Appendix B more detail

Handler No: Set Handler number. This number will save in Log.

COM Port: UART COM port number

Baudrate: UART baud rate

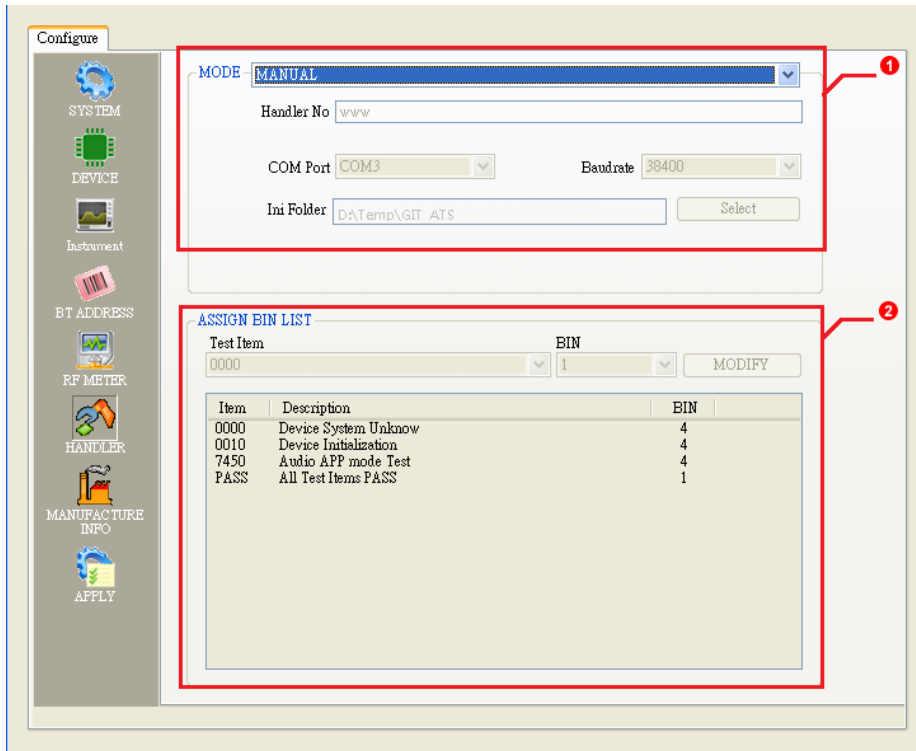
*Ini Folder: .ini files location. (Barcode.ini, EOT.ini, SOT.ini, Status.ini)

***Note:** After APPLY process will auto create SITE1 folder to store these .ini files. (SITE2 folder for second site if site number is 2. Refers 6.3.2 DEVICE Page)

❷ **ASSIGN BIN LIST:** BIN table. Table change flow:

1. Select Test Item
2. Select BIN number
3. Click MODIFY button to save new setting on list

FIGURE 6-13 HANDLER Configure Page



6.3.7 MANUFACTURE INFO Page

① INFORMATION: Save the list data in Log's title

Ex: WorkingOrder:WO123

Load button: Input Manufacture Information text file

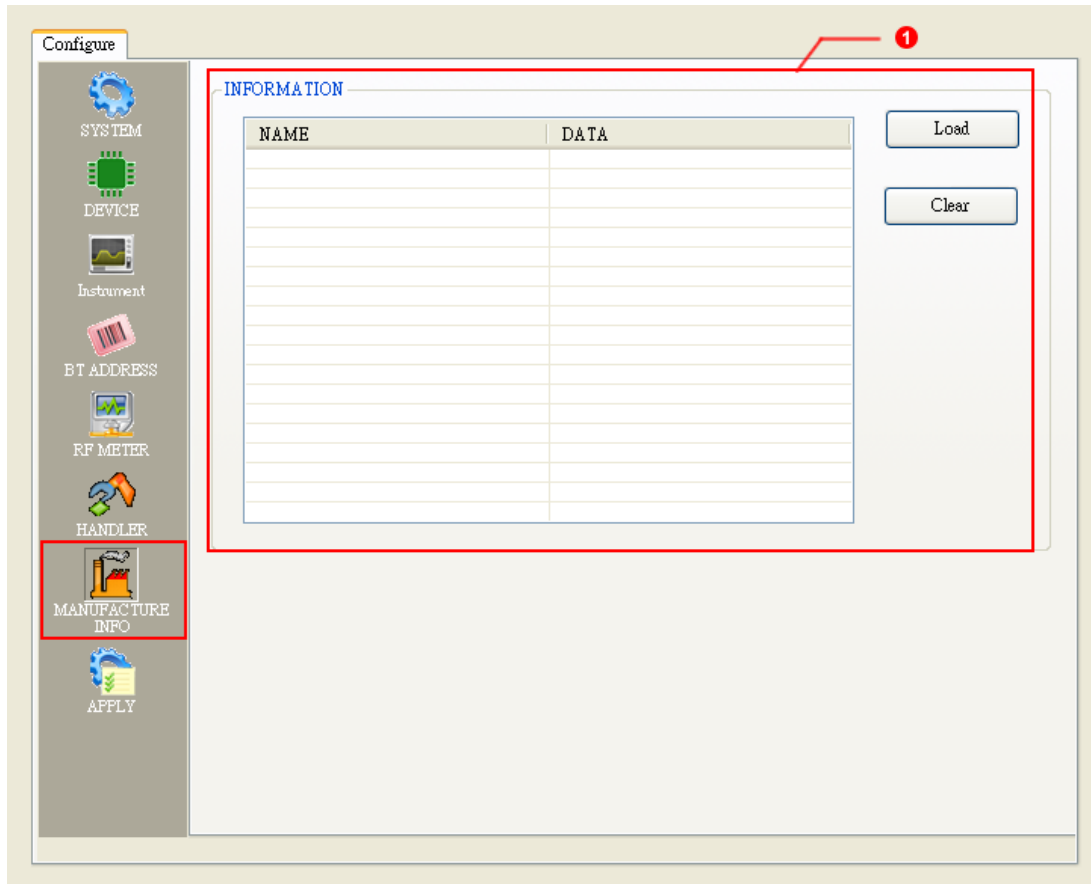
Text Format: [Name], [Data]

EX: WorkingOrder, WO123

ManufactureOrder, MO456

Clear button: Clear list

FIGURE 6-14 MANUFACTURE INFO Configure Page

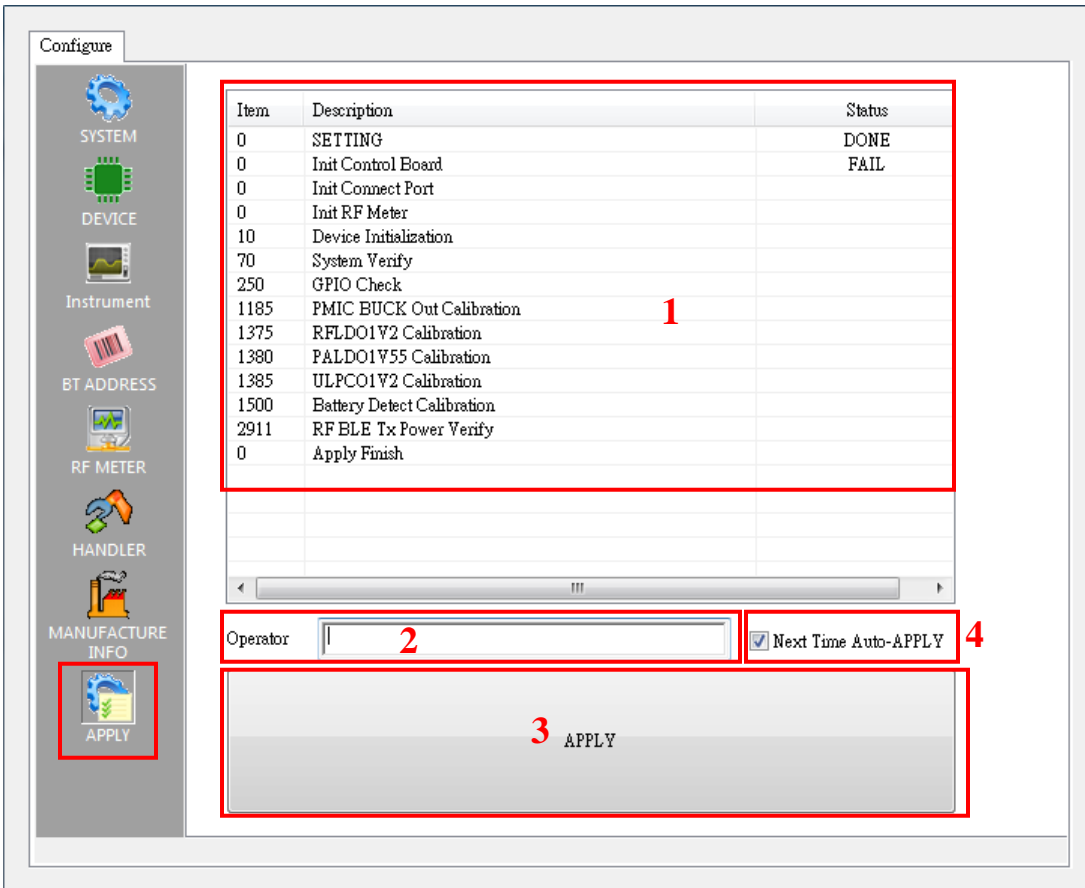


6.3.8 APPLY Page

1. List of test item and test environment check result
2. OPERATOR: Input Operator's ID, This ID will save in Log
3. APPLY button: Apply all of setting.
4. Next Time Auto-APPLY: auto apply last setting when this option enabled.

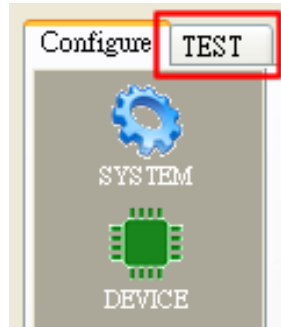
Click TEST Page start test

FIGURE 6-15 APPLY Configure Page



TEST page will appeared next to Configure page when all setting is OK.

FIGURE 6-16 TEST Page

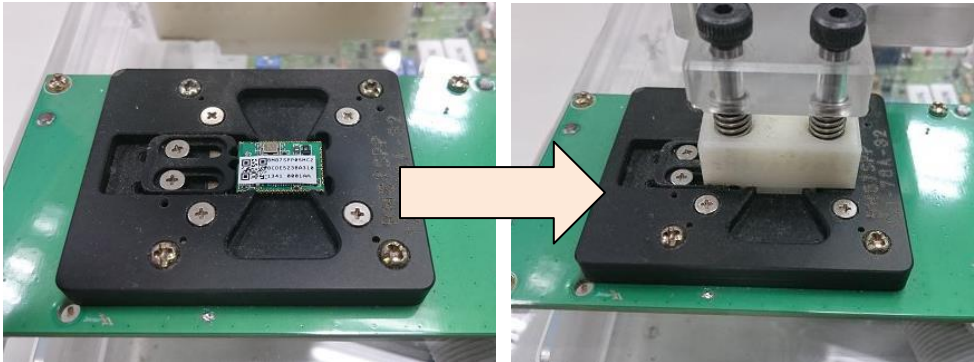


6.4 Run the Test

6.4.1 Put Device Under Test (DUT) in Socket

Put DUT in MP fixture's socket before you run the MP testing.

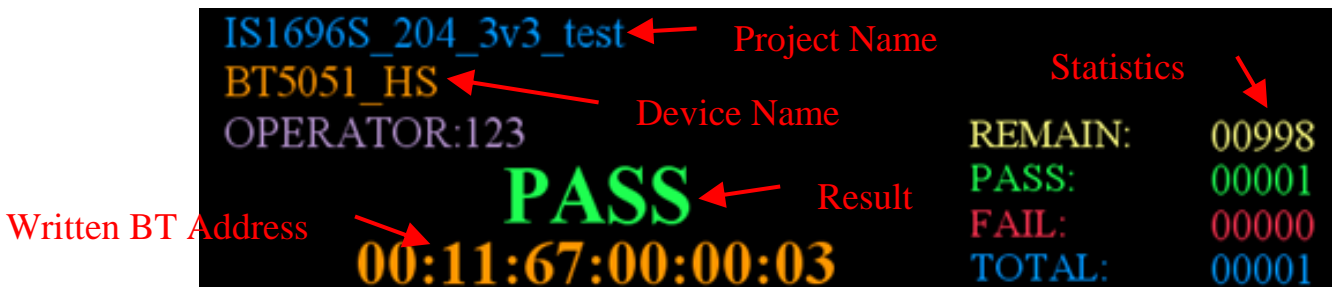
FIGURE 6-17 DUT Into Socket



6.4.2 Single-Site Test Page

- 1 RUN button: Start test button
- 2 Testing information

FIGURE 6-18 Single-Site Testing Information



(REMAIN enabled when BT ADDRERSS type is RANGE)

- 3 Test items and status.

- ④ Bar-Code input area, when BD Address type is BAR-CODE.

FIGURE 6-18 Single-Site TEST Page

Configure TEST

IS1696S_204_3v3_test
 BT5051_HS
 OPERATOR:123

PASS
 00:11:67:00:00:03

REMAIN: 00998
 PASS: 00001
 FAIL: 00000
 TOTAL: 00001

ID	DESCRIPTION	STATUS
50	System Verify	PASS
100	Check Big-Num Calculate	PASS
500	Write EEPROM	PASS
1160	System Power Calibration(Buck)	PASS
1500	Battery Detect Calibration	PASS
2025	BPF Check	PASS
2050	System Thermal Calibration	PASS

1
 RUN

4
 BT Address Input

6.4.3 Dual-Site Test Page

❶ SITE1:

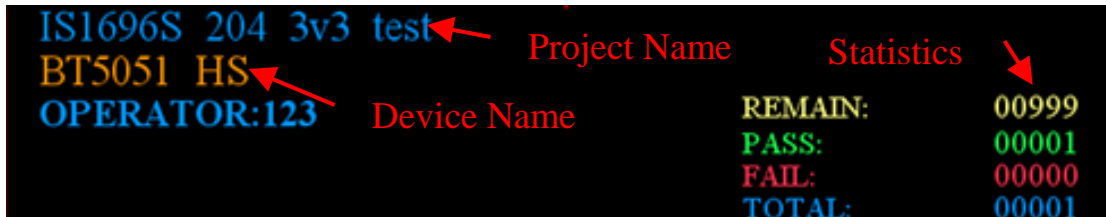
RUN: Start test.

SITE1 test result and written BT Address.

❷ SITE2 : As above SITE1

❸ Information

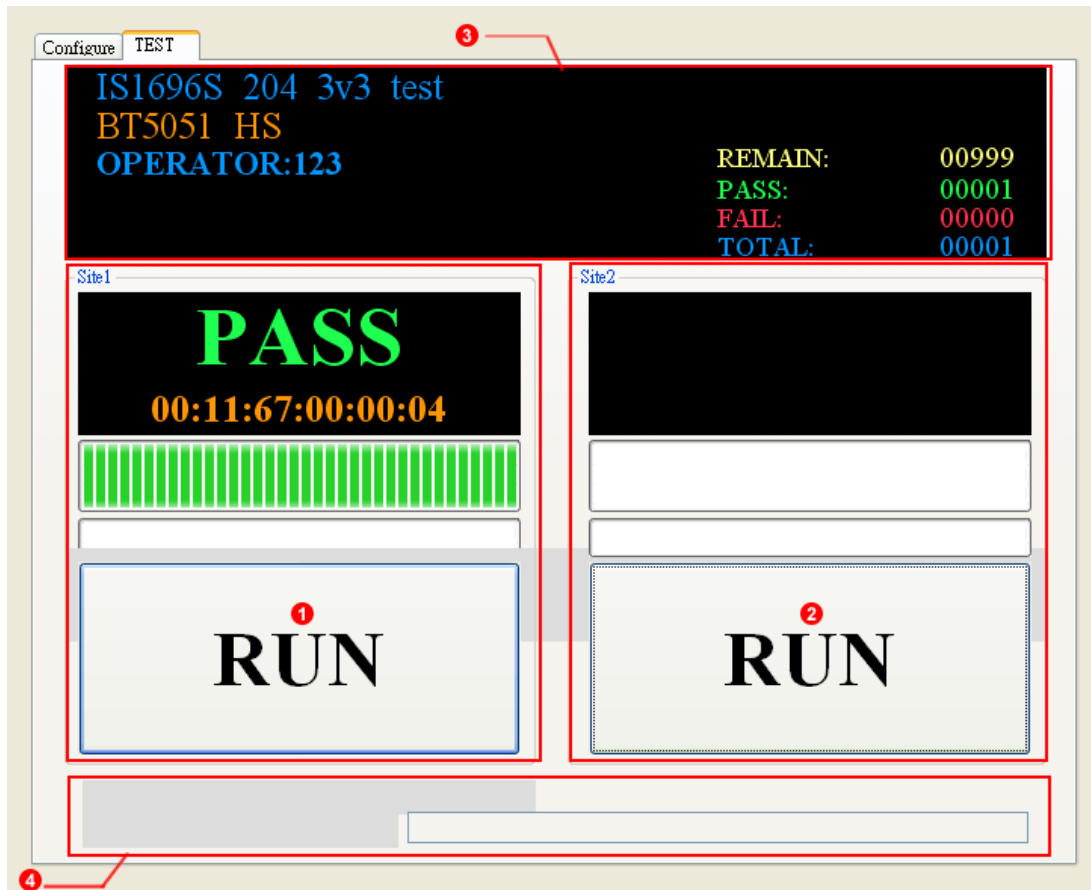
FIGURE 6-20 Dual-Site Testing Information



(REMAIN enabled when BT ADDRERSS type is RANGE)

❹ Bar-Code input area, when BD Address is BAR-CODE mode.

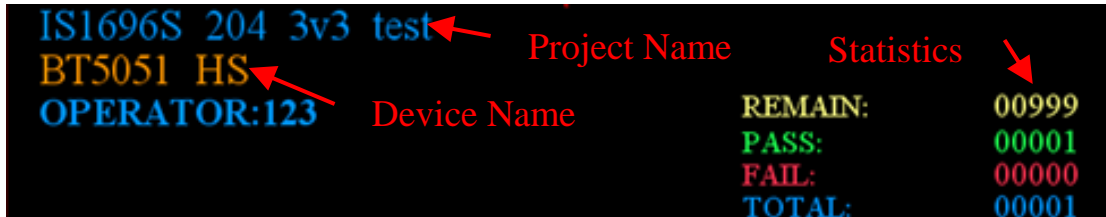
FIGURE 6-21 Dual-Site Test Page



6.4.4 Dual-Site Test Page for Special Bar Code COM Port

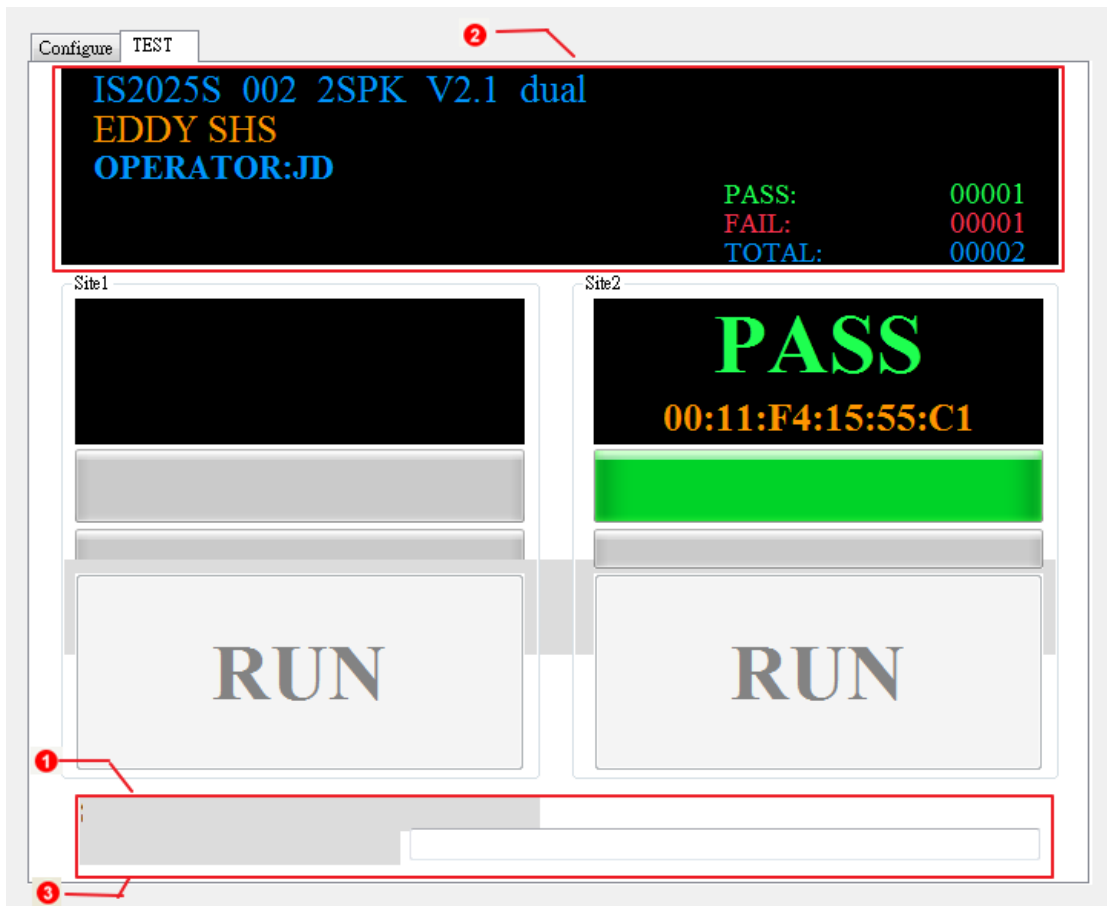
- ① Key-in "START". MP start to inquire bar code data.
 SITE1: bar code scanner input BT Address to start test.
 SITE1 test result and written BT Address.
 SITE2: As above SITE1.
- ② Information
- ③ Key-in "STOP". MP stop to inquire bar code data.

FIGURE 6-22 Dual-Site Testing Information



(REMAIN enabled when BT ADDRERSS type is RANGE)

FIGURE 6-23 Dual-Site Test Page



6.4.5 Auto-Handler Test Page

❶ SITE1:

Test result and Information
 Result statistic includes PASS, FAIL and TOTAL.
 Binning information the blue color means last one

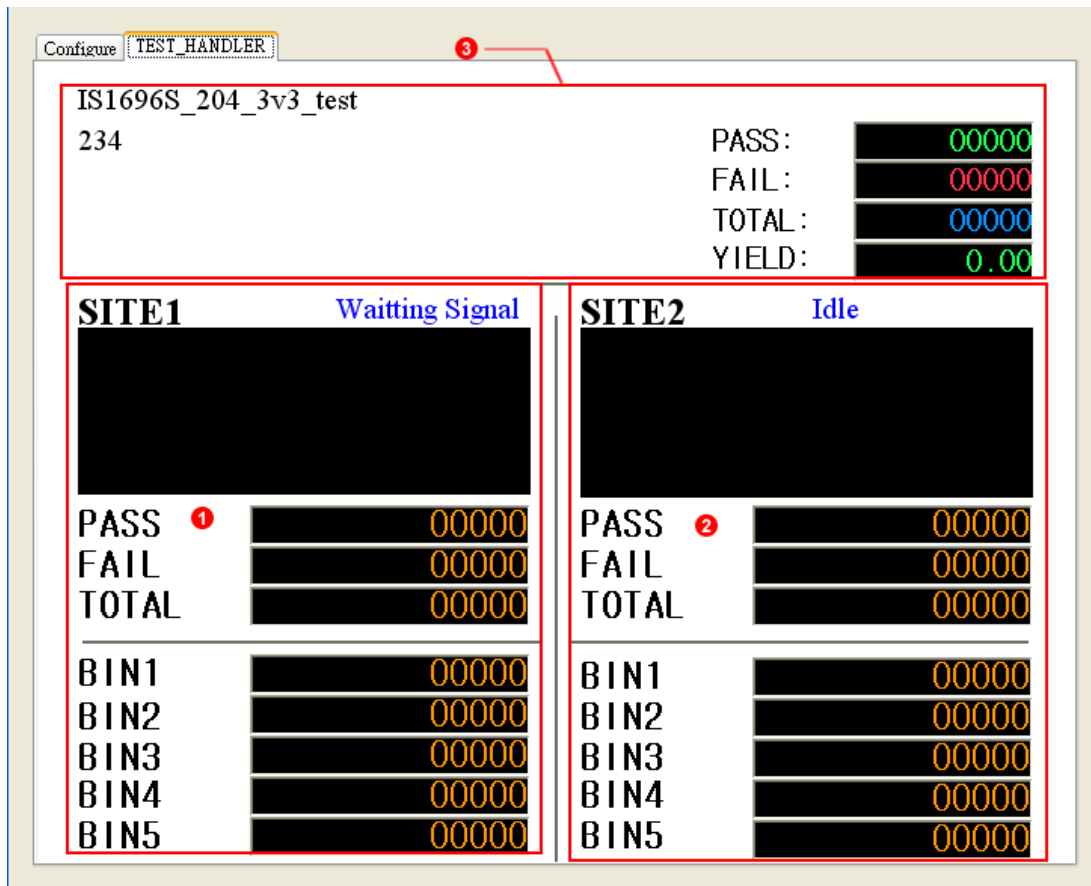
❷ SITE2: As above SITE1

❸ Test information

FIGURE 6-24 Auto-Handler Testing Information



FIGURE 6-25 Auto Handler Test Page



6.5 Error-Code

When DUT occurs some error at testing process, MPBT will show error-code on test information area.

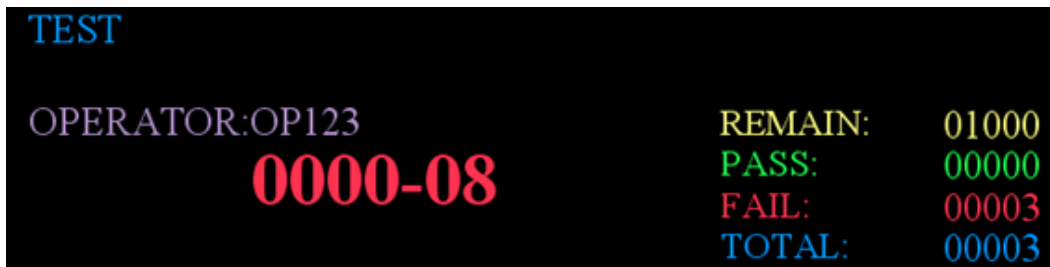
The Error-Code consists of Main Error Code and Sub Error Code. Main Error Code is equal the test item number. Sub Error Code represents that what kind of error type. For example, Error code 1500-00.

Table 6-3 Error-Code Description Sample

	Error Code	Description
Main	1500	Battery Detect Calibration test item
Sub	00	Calibration value Out of limitation

Please refer *Mass Production Test Tool release note.pdf* section MPBT Error Code for more details

FIGURE 6-26 Error-Code



6.6 Test Log

File name consist of *ProjectName-YYMMDDHHMMSS*.csv. You can change the file path at SYSTEM configure page.

The log has all of test data, like test result, error-code, testing time, measured data and pass condition. And append each test item at left site. The log's order is depend on MP script file (MSF).

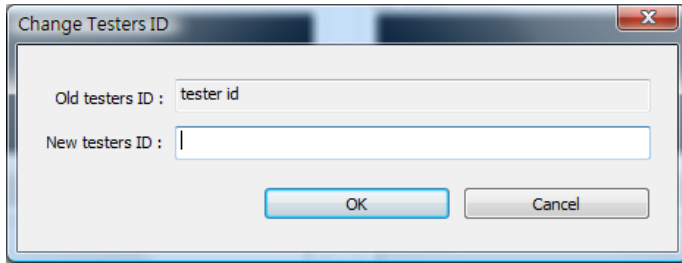
Table 6-25 Test Log sample

BTADDRESS	RESULT	ERRORCODE	ITEM	VALUE	ITEM	VALUE	ITEM	VALUE	...
DUT NO1	PASS	0	500	xx	1500	xx	2080	xx	...
DUT NO2	FAIL	1500-00	500	xx	1500	xx	2080	xx	...
DUT NO3	PASS	0	500	xx	1500	xx	2080	xx	...
...

6.7 FAQ

Q1 How to change Operator's ID after APPLY?

A1 On TEST page push F8 Key, and shows dialog of operator ID

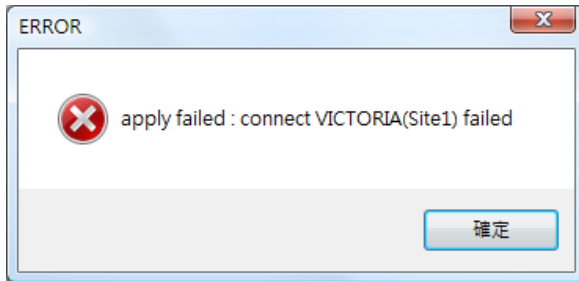


Q2 What can I do if show “Please First Input Tester Id” on APPLY page?



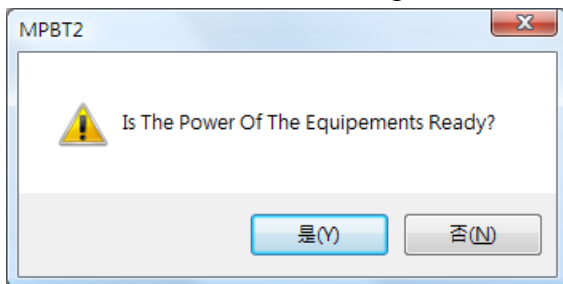
A2 Please input the Operator ID before push APPLY button

Q3 It shows “connect VICTORIA (Site1/Site2) failed” on APPLY page, How can I do?



A3 Please check the SITE1 (SITE2) fixture (VICTORIA/VENUS) is power on, connected and switch (switch please refer 3. Control Board Setting)

Q4 What mean is this dialog on APPLY?



A4 Please makes sure all of instrument is ready before you press APPLY button. Ex: Device, Audio Card, MT8852 and so on.

Q5 When I use BAR-CODE mode to input BT Address, I already scan the barcode of BT Address but it doesn't run test?

A5 Because MPBT support multi-site test, so you need to notice MPBT which Site is on

test by scan barcode of SITE1 or SITE2 again.

Q6 My barcode length is small than 12 bytes, How to solve it?

A6 You can use the Add-on Prefix to full the BD Address to 12 bytes.

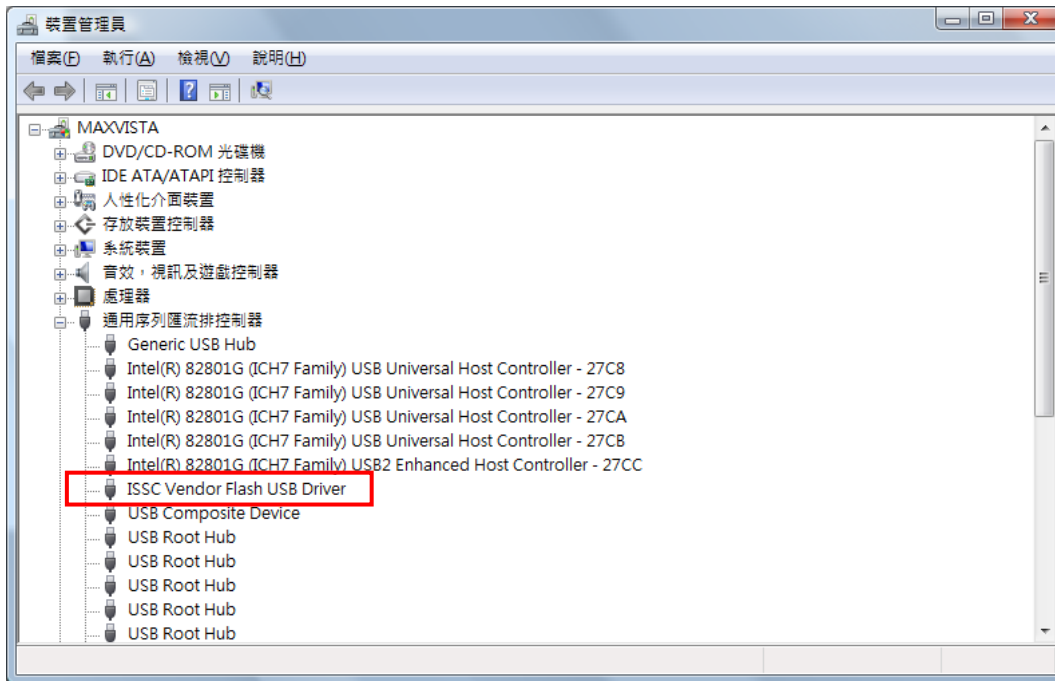
Ex: Barcode Address is “7808DF0”. You can input “00116” as Add-on Prefix, finally MPBT will merge both to “001167808DF0”.

Q7 How to know Control board (VICTORIA) is ready?

A7 Have two versions:

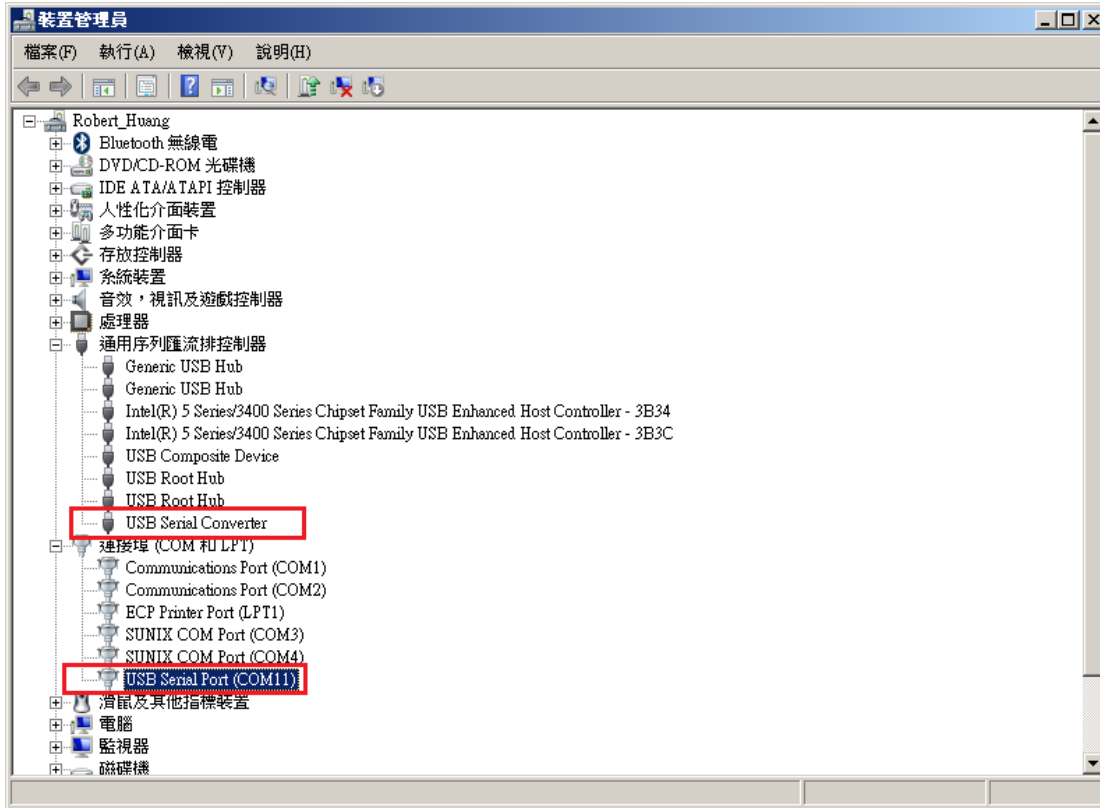
VICTORIA 2.1:

You can see the Device Manager -> USB bus, If Control Board is ready, it will show name of *ISSC Vendor Flash USB Driver*. If you have two or more Control Board and you can see two names of *ISSC Vendor Flash USB Driver*, and so on.



VICTORIA 2.15/2.5:

Device Manager -> COM and LPT, If Control Board is ready, it will shows *USB Serial Port(COMx)*. (x means COM's number). Just like USB bus, if you have two or more Control Board you can see two names of COMx and so on.



Q8 What is means of error code?

A8

Error Code	Description
0000-10	The input BD Address is error
0000-50	The test item does not support
0000-51	Initial parameter error
0000-70	Create Log error
0000-71	Open Log error
****-98	Load test parameters error(*.msf)

More error code you can refer Release Note of each MP tools released:

ISSC Mass Production Test Tool_release_note.pdf

Q9 How many supported Test item MPBT have?

A9 Please refers Release Note of each MP tools released.

ISSC Mass Production Test Tool_release_note.pdf

Chapter 7 Mass Production Multi Flash (MPMF)

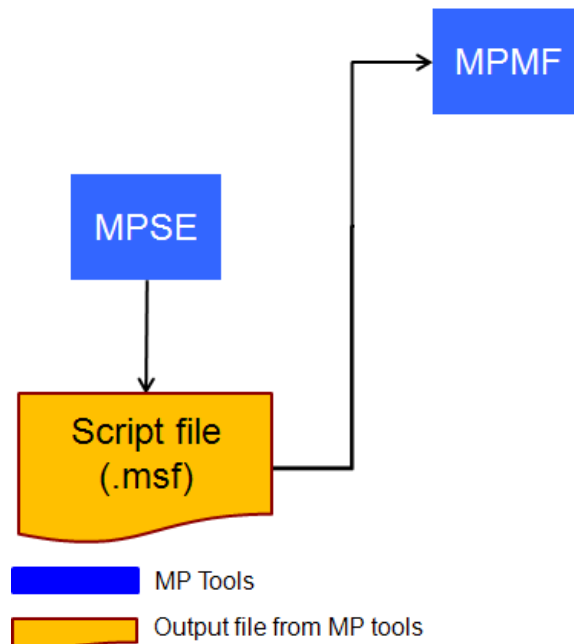
The MPMF is a write multiple flash tool. This chapter provides an Introduction and operation of MPBT. Topics covered include:

- Introduction
- Graphical User Interface
- Configuration
- Write the flash with multiple DUT
- FAQ

7.1 Introduction

This tool is used to write flash of multiple DUTs, and maximum to 8 DUTs at once. Duo to write a flash take a lot of time, this is cost efficiency way to update the flash.

FIGURE 7-1 Relationship of MPMF



7.2 Graphical User Interface

Product Name: Product's name, changeable by MPSE.

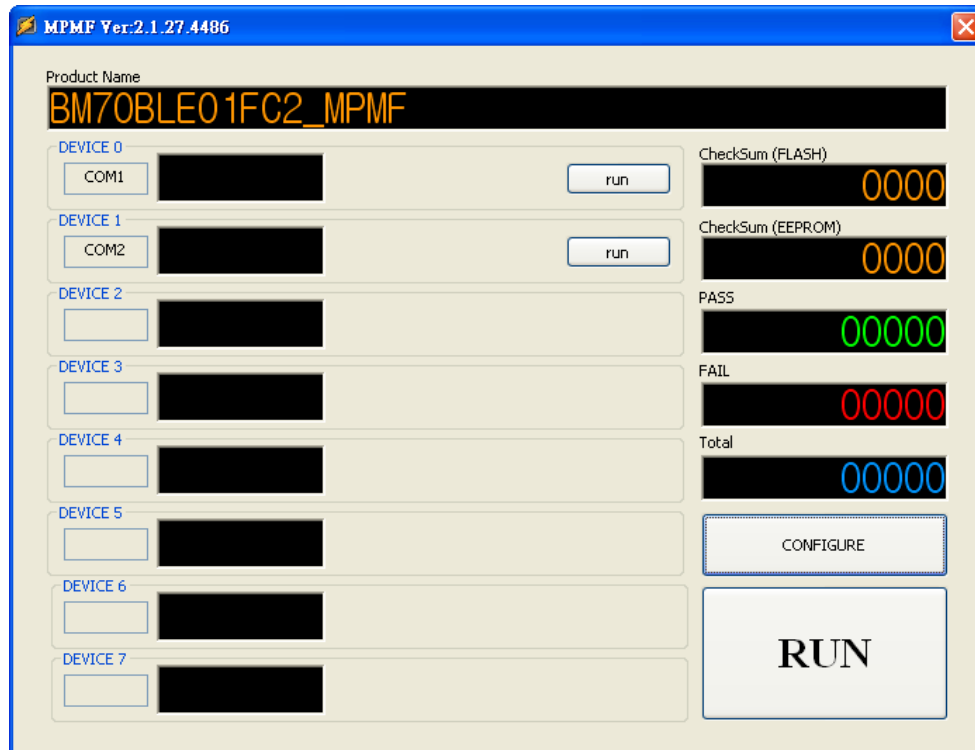
Checksum (FLASH): Checksum of FLASH file

Checksum (EEPROM): Checksum of bin file

PASS: Counter of Pass

- FAIL: Counter of Fail
- Total: Counter of total
- CONFIGURE button: Open configuration dialog
- RUN: Execute all of device testing
- DEVICE 0~7
 - COM Port: Show Device's COM Port
 - Result: Show testing result
 - run button: Single run

FIGURE 7-2 MPMF Main Page



7.3 Configuration Dialog

- Browse button: Select path of MP Script File
- Write Mode: MPMF supports two modes IBDK and BOOT to write the flash. Confirm the device mode before your running.
- Support Item Indicator: This table indicates that MPMF supported test item from MP Script File (MSF).
- DEVICE 0~7
 - Check: Enable (checked) select what Device you want to test
 - Port: Configure Device's COM Port
 - Log Directory: Enable save log when test finish

Browse button: Select path of Log file

Enable Failed Alarm: Alarm when test fail

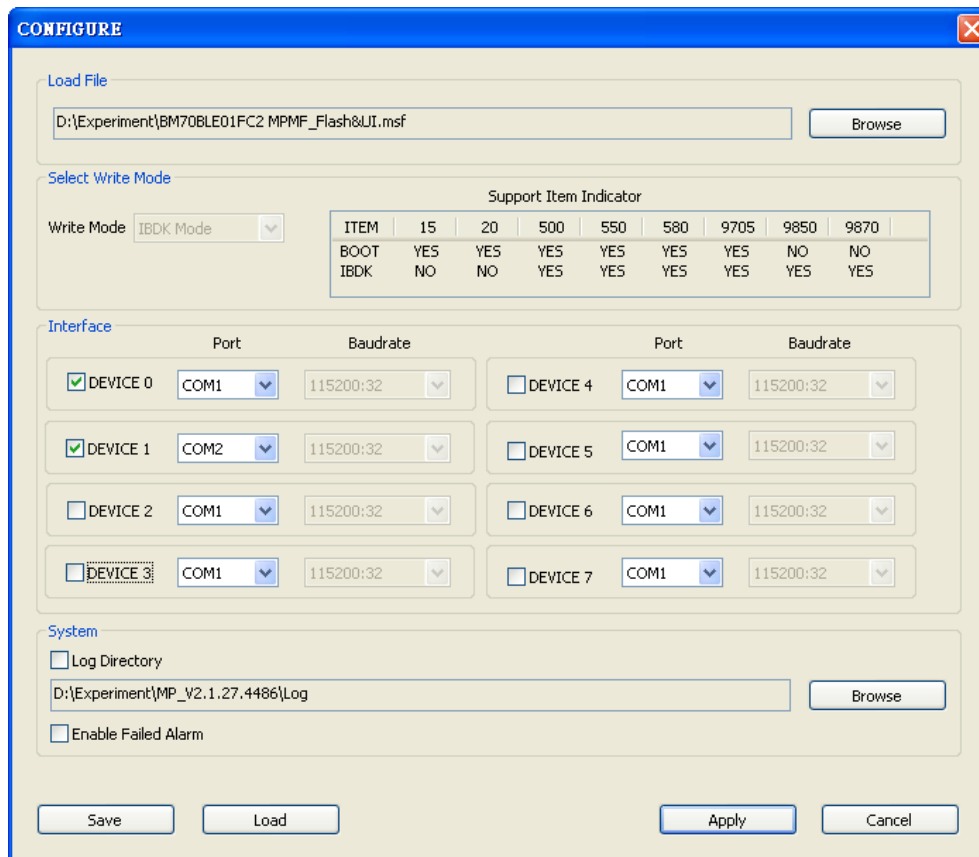
Save: Save current configuration into .ini file

Load: Load back configuration from .ini file

Apply button: Apply all of settings and leave configuration dialog.

Cancel button: Cancel the settings and leave configuration dialog.

FIGURE 7-3 MPMF Configure Page



7.4 Write the Flash with Multiple DUTs

After configuration, please flow below step to write flash

1. Put DUTs into socket of MPMF fixture
2. Power on by switch
3. Press MPMF RUN button to write flash
4. Wait test result and change DUTs

FIGURE 7-4 MPMF 1 to 4 Fixture

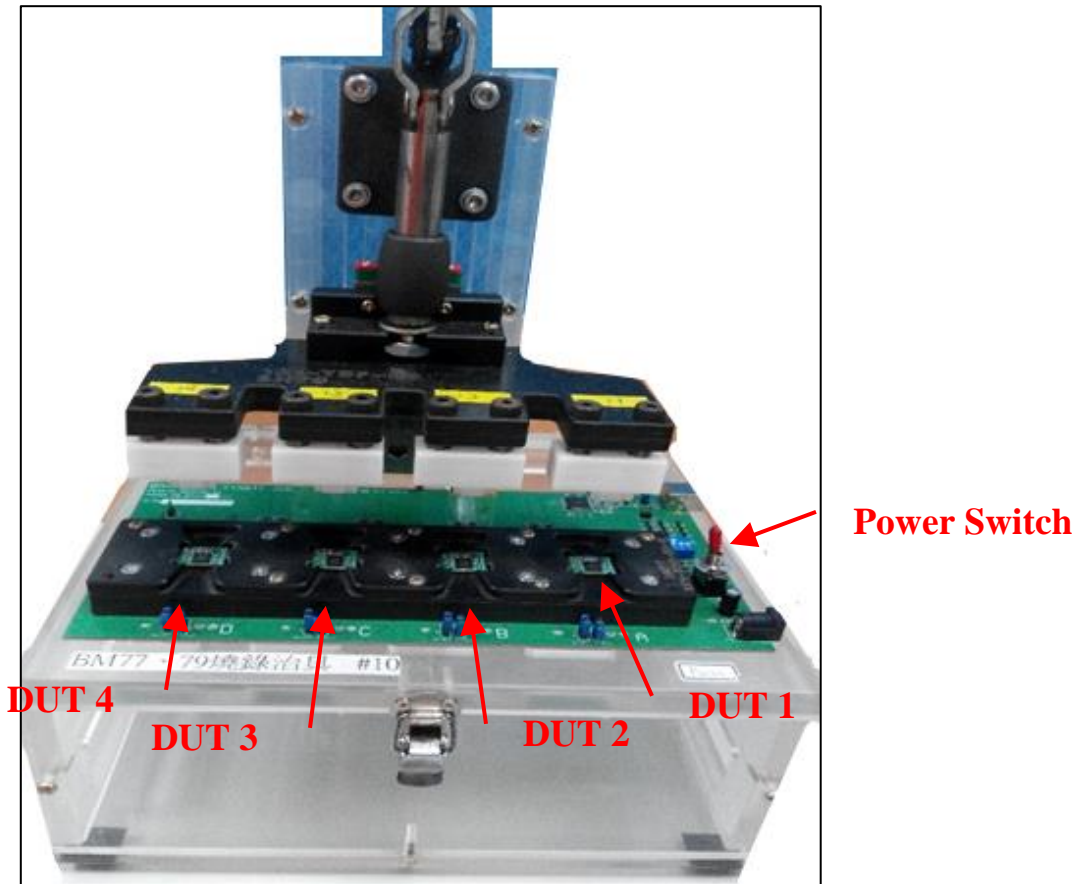
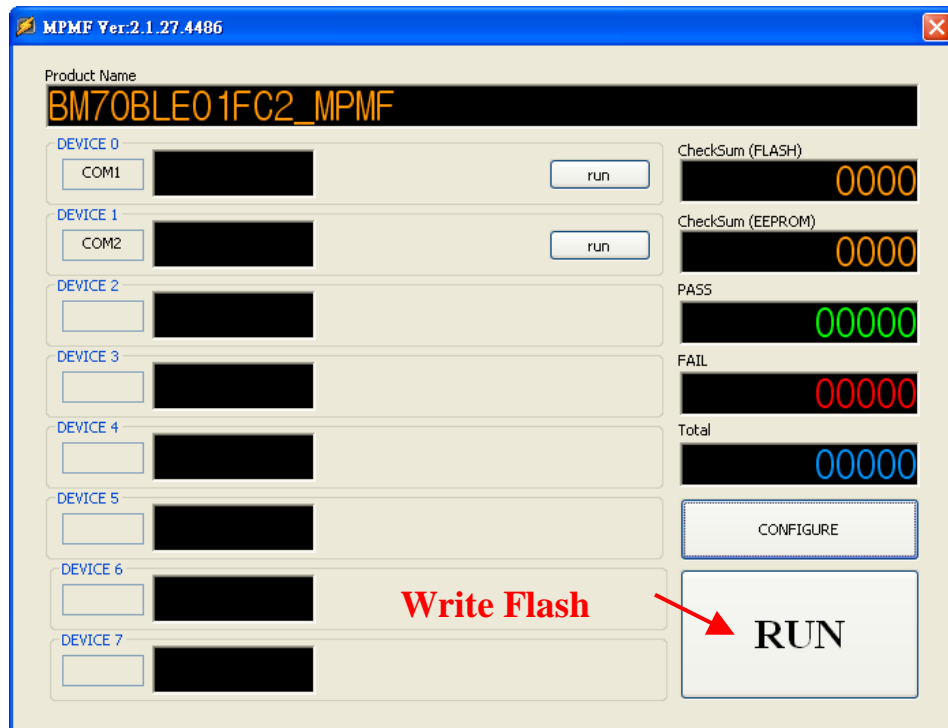


FIGURE 7-5 MPMF Main Page



7.5 FAQ

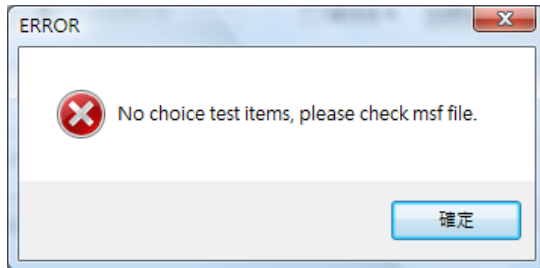
Q1 Is MPMF support all of MPBT test item?

A1 No. Only support Write Flash and Write EEPROM related item. Please refer Support Item Indicator at Configuration Dialog.

Q2 How to create .msf file?

A2 MPSE can creates .msf

Q3 How to solve this problem?



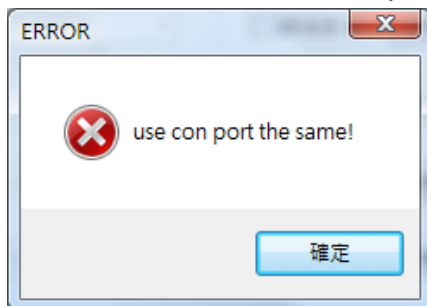
A3 The .msf does not have any item of MPMP supported. Please confirm your test items with MPSE

Q4 How to solve “Not be select any Device”?



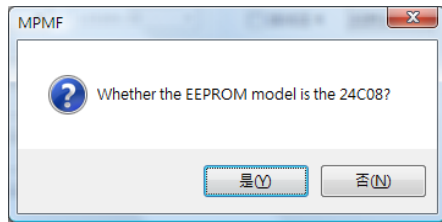
A4 You have no select any device (Device 0~7) on Configuration dialog

Q5 How to solve “Use con port the same”



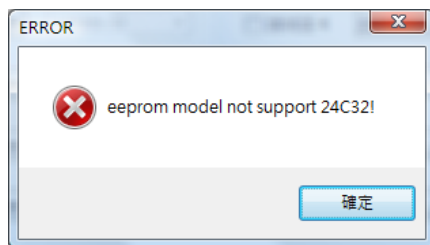
A5 The selected test Devices has same COM Port number. Please change COM Port.

Q6 What is “Whether the EEPROM model is the 24C08”?



A6 This message is notice. Please double confirm your DUT's EEPROM size is 1k bytes (24C08).

Q6 How to solve “EEPROM model not support 24C32”?



A6 MPMF does not support write EEPROM size over 1k bytes at BOOT mode



BLUETOOTH MP TOOL SOFTWARE USER'S GUIDE

Appendix A. Revision History

REVISION HISTORY

Revision 3 (May, 2016)

- ✧ Add Appendix B MPBT communicate with customer' tool for automatically testing.
- ✧ Add Auto-Apply feature at MPBT APPLY page section.

Revision 2 (Oct, 2015)

- ✧ Added the Quick Link page at cover to link each sub MP tool quickly.
- ✧ Renamed the Figure of MP Tool overview

Revision 1 (Aug, 2015) Initial Release of this document



BLUETOOTH MP TOOL SOFTWARE USER GUIDE

Appendix B. MPBT Communicate with Customer's tool

PREFACE

The GIT_ATS (Global Instrument Tech – Auto Test Station) is one of MPBT communication types to communicate with outside tool (such as customer's testing tool and robot handler). And then, become an automatic testing system.

When this feature enable, MPBT will be entering standby mode and wait customer's tool instruction through the .ini file. Once testing finish, MPBT log testing data and notice customer' tool through .ini as well.

Please refer following sections for more detail description.

INI FILES

EOT.ini: (End of Test)

Create by MPBT after Status.ini setting done.
No any content.

Status.ini:

Create by MPBT when testing finish to save the testing results.
Content:

```
[Status]
TestResult=FAIL          # test result

BIN=1                   # BIN number, which Tray DUT in
SN=1                    # Serial Number the same with Barcode.ini
YieldRate=90            # Yield Rate = YieldPass / YieldTotal * 100
YieldPass=9             # amount of PASS
YieldTotal=10           # amount of Tests

ErrorMessage=Error      # Error Message when TestResult FAIL
ErrorCode=0000          # Error Code when TestResult FAIL

TestTime=3              # Testing Time (sec)

LogFilepath =d:\Log\xxx.csv # log path and file name.
```

SOT.ini: (Start of Test)

Create by Customer's Tool after Barcode.ini setting done.
No any content.

Barcode.ini:

Create by Customer's Tool to set testing data (OP ID, BT ADDR...) to instruct MPBT to start tests.

```
[Data]

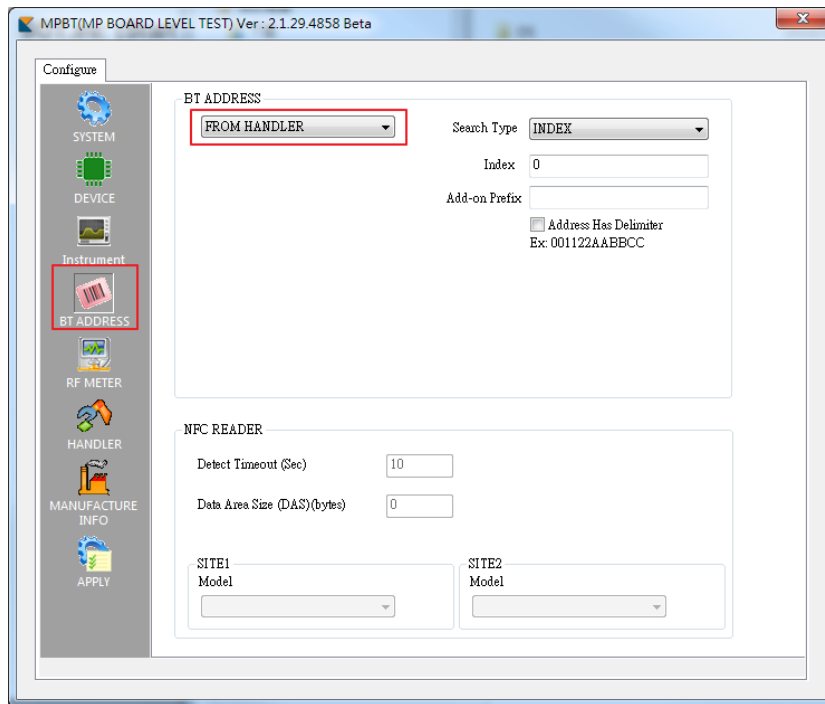
*MAC=001167123456 # BT Address will be update by this when test pass

OP_ID=10305001     # Operator's ID

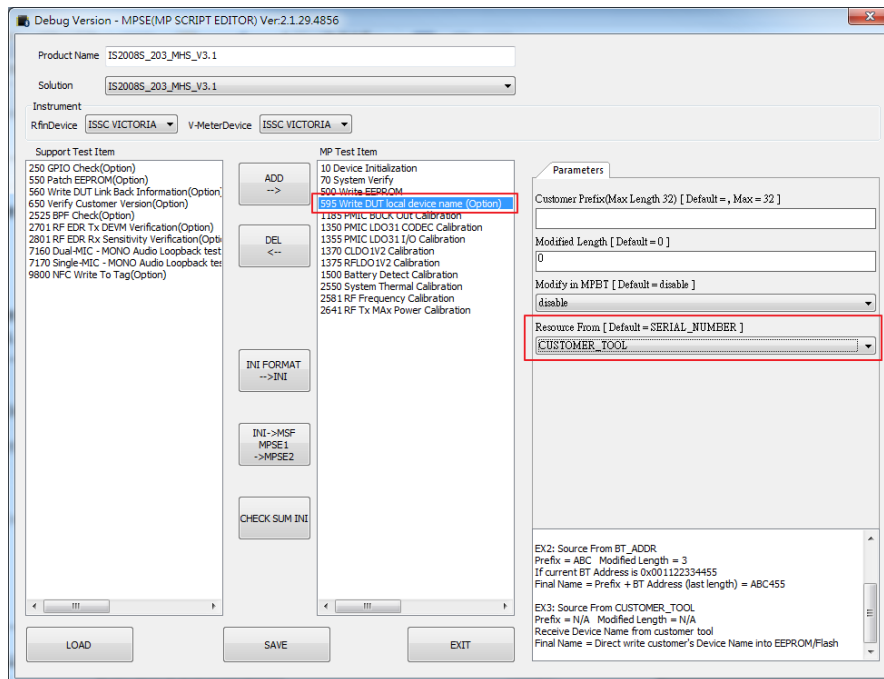
SN=1               # Serial Number

**DEVICE_NAME=name # Device Name will be update by this when test pass
```

***Note:** To send MAC address to MPBT via GIT_ATS protocol. You also need to configure MPBT BT ADDRESS Page -> FROM HANDLER. Please refers below screenshot

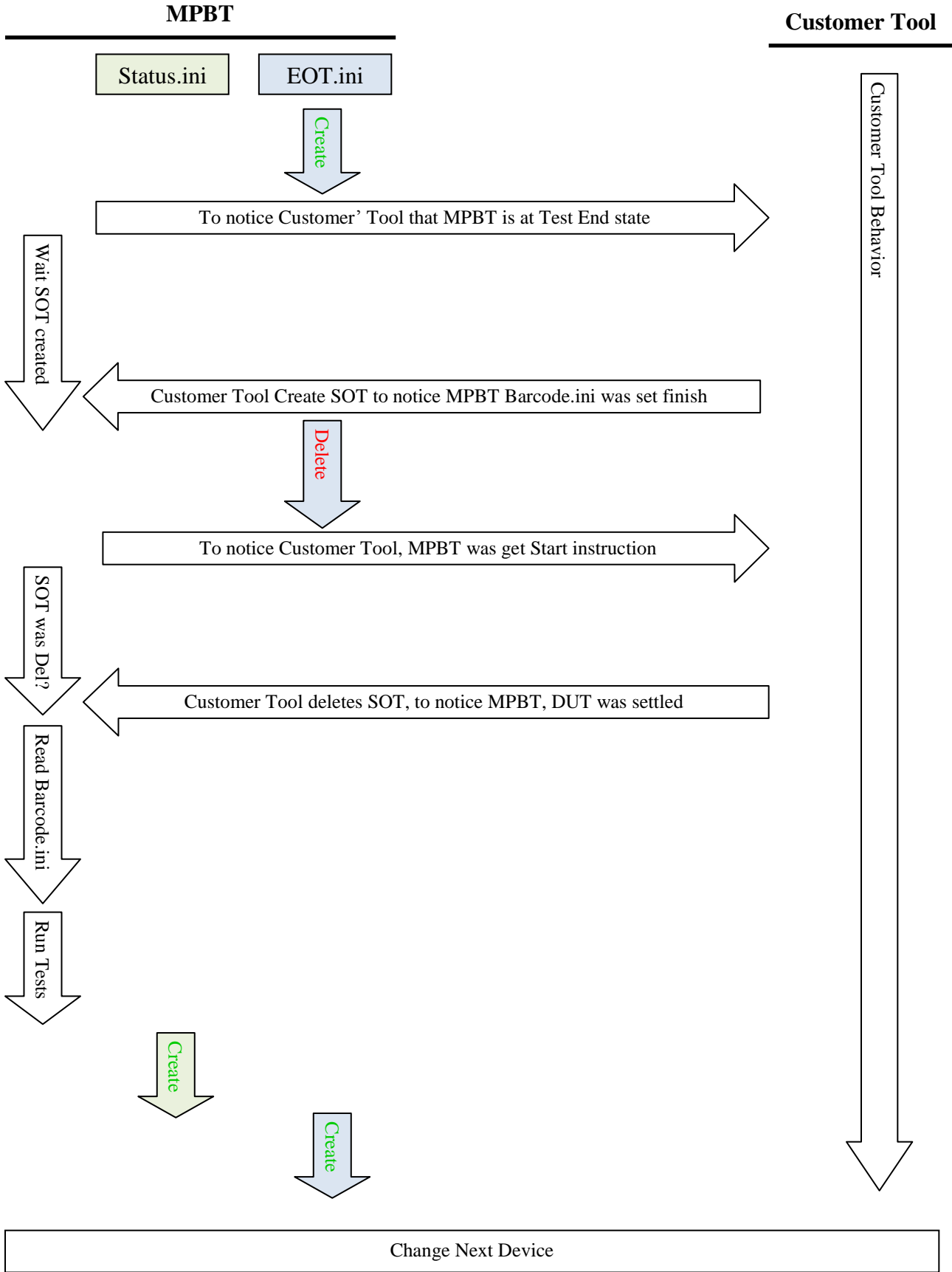


****Note:** To send Device Name to MPBT via GIT_ATS protocol. You also need to select Test Item “595 Write DUT local device name” and configure as Resource From -> CUSTOMER_TOOL at MPSE. Please refers below screenshot

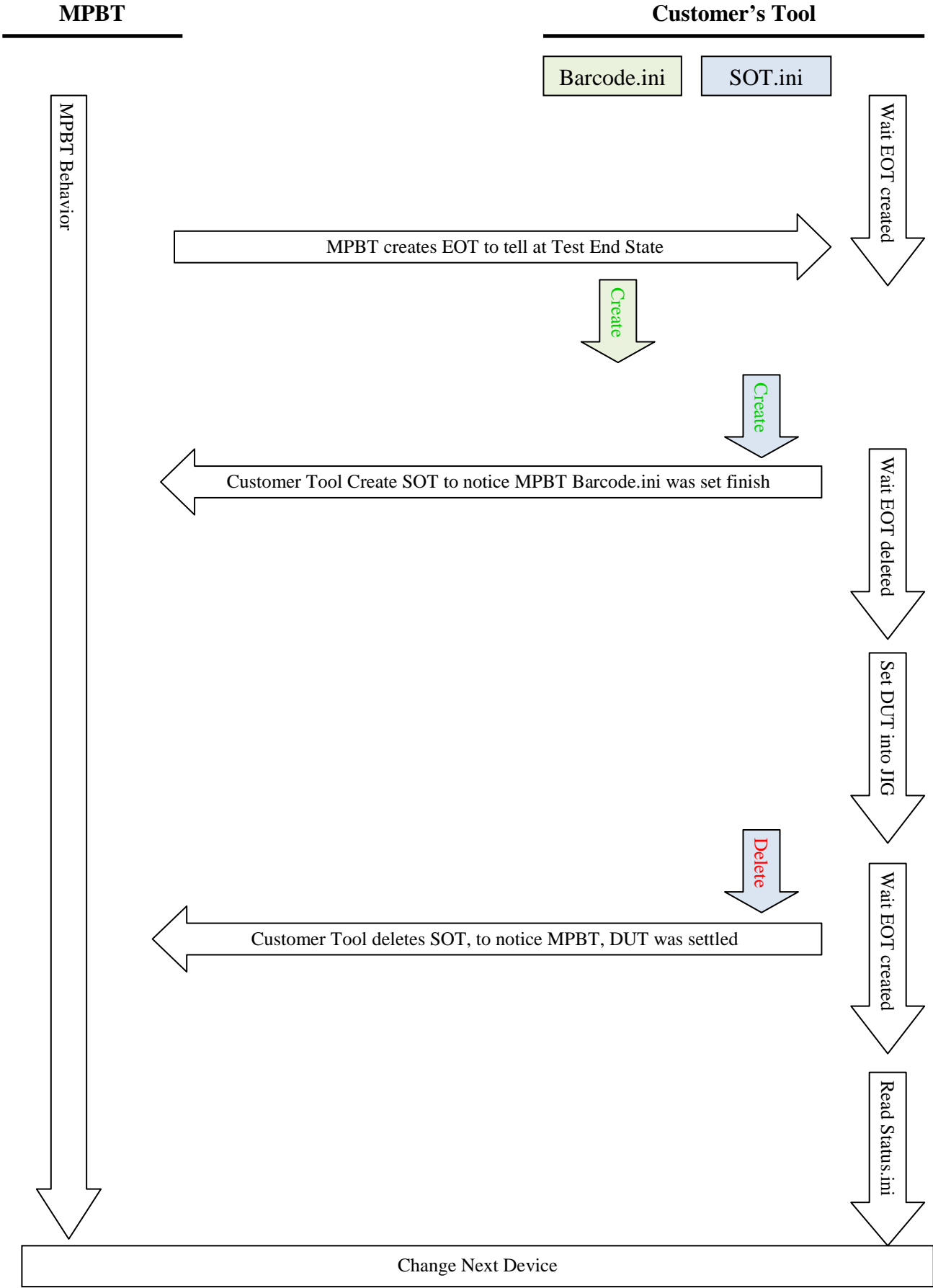


TIMING/ROLE DIAGRAM

MPBT Aspect:



Customer's Tool Aspect:





MICROCHIP

Worldwide Sales and Service

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Corporate Office
2355 West Chandler Blvd.
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Fax: 774-760-0088

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Fax: 630-285-0075

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Tel: 216-447-0464
Fax: 216-447-0643

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Addison, TX
Tel: 972-818-7423
Fax: 972-818-2924

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Novi, MI
Tel: 248-848-4000

Houston, TX
Tel: 281-894-5983

Indianapolis Noblesville, IN
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Fax: 317-773-5453

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Tel: 949-462-9523
Fax: 949-462-9608

New York, NY
Tel: 631-435-6000

San Jose, CA
Tel: 408-735-9110

Canada-Toronto
Tel: 905-673-0699
Fax: 905-673-6509

ASIA/PACIFIC

Asia Pacific Office Suites 3707-14, 37th Floor Tower 6, The Gateway Harbour City, Kowloon Hong Kong
Tel: 852-2943-5100
Fax: 852-2401-3431

Australia-Sydney
Tel: 61-2-9868-6733
Fax: 61-2-9868-6755

China-Beijing
Tel: 86-10-8569-7000
Fax: 86-10-8528-2104

China-Chengdu
Tel: 86-28-8665-5511
Fax: 86-28-8665-7889

China-Chongqing
Tel: 86-23-8980-9588
Fax: 86-23-8980-9500

China-Hangzhou
Tel: 86-571-8792-8115
Fax: 86-571-8792-8116

China-Hong Kong SAR
Tel: 852-2943-5100
Fax: 852-2401-3431

China-Nanjing
Tel: 86-25-8473-2460
Fax: 86-25-8473-2470

China-Qingdao
Tel: 86-532-8502-7355
Fax: 86-532-8502-7205

China-Shanghai
Tel: 86-21-5407-5533
Fax: 86-21-5407-5066

China-Shenyang
Tel: 86-24-2334-2829
Fax: 86-24-2334-2393

China-Shenzhen
Tel: 86-755-8864-2200
Fax: 86-755-8203-1760

China-Wuhan
Tel: 86-27-5980-5300
Fax: 86-27-5980-5118

China-Xian
Tel: 86-29-8833-7252
Fax: 86-29-8833-7256

China-Xiamen
Tel: 86-592-2388138
Fax: 86-592-2388130

China-Zhuhai
Tel: 86-756-3210040
Fax: 86-756-3210049

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India-Bangalore
Tel: 91-80-3090-4444
Fax: 91-80-3090-4123

India-New Delhi
Tel: 91-11-4160-8631
Fax: 91-11-4160-8632

India-Pune
Tel: 91-20-3019-1500

Japan-Osaka
Tel: 81-6-6152-7160
Fax: 81-6-6152-9310

Japan-Tokyo
Tel: 81-3-6880-3770
Fax: 81-3-6880-3771

Korea-Daegu
Tel: 82-53-744-4301
Fax: 82-53-744-4302

Korea-Seoul
Tel: 82-2-554-7200
Fax: 82-2-558-5932 or
82-2-558-5934

Malaysia-Kuala Lumpur
Tel: 60-3-6201-9857
Fax: 60-3-6201-9859

Malaysia-Penang
Tel: 60-4-227-8870
Fax: 60-4-227-4068

Philippines-Manila
Tel: 63-2-634-9065
Fax: 63-2-634-9069

Singapore
Tel: 65-6334-8870
Fax: 65-6334-8850

Taiwan-Hsin Chu
Tel: 886-3-5778-366
Fax: 886-3-5770-955

Taiwan-Kaohsiung
Tel: 886-7-213-7830

Taiwan-Taipei
Tel: 886-2-2508-8600
Fax: 886-2-2508-0102

Thailand-Bangkok
Tel: 66-2-694-1351
Fax: 66-2-694-1350

EUROPE

Austria-Wels
Tel: 43-7242-2244-39
Fax: 43-7242-2244-393

Denmark-Copenhagen
Tel: 45-4450-2828
Fax: 45-4485-2829

France-Paris
Tel: 33-1-69-53-63-20
Fax: 33-1-69-30-90-79

Germany-Dusseldorf
Tel: 49-2129-3766400

Germany-Munich
Tel: 49-89-627-144-0
Fax: 49-89-627-144-44

Germany-Pforzheim
Tel: 49-7231-424750

Italy-Milan
Tel: 39-0331-742611
Fax: 39-0331-466781

Italy-Venice
Tel: 39-049-7625286

Netherlands-Drunen
Tel: 31-416-690399
Fax: 31-416-690340

Poland-Warsaw
Tel: 48-22-3325737

Spain-Madrid
Tel: 34-91-708-08-90
Fax: 34-91-708-08-91

Sweden-Stockholm
Tel: 46-8-5090-4654

UK-Wokingham
Tel: 44-118-921-5800
Fax: 44-118-921-5820