MP Script File (or MSF) Format Description

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Preface

The MP Script File (or MSF) was created by MP Script Edit Tool (or MPSE), which file contains a MP Testing items, parameters and limitations.

This document will explain where data location of Flash and EEPROM is, therefore, users can updates a Device Under Test (or DUT)’s Flash and EEPROM by themselves.

Overview

MSF is Text file type and can be opened with each Text tools. The file contain consist of three parts:

First part: Device Info in top of file and descripts the Product Name, DUT ID and Instrument IDs. These IDs are defined internally and usually use between MP Tools to recognize the DUT and Instrument.

Second part: MP Test Items in middle of file and descripts how many MP Testing Items it has. Each item has testing parameters and limitations.

Final part: Extend Data in bottom of file and descripts extend data such as Flash Data, EEPROM Data, EEPROM patch data…etc.

The following section provides more detail description.

2.1 MSF File Contain Overview

FIGURE 2-1 MSF File Overview

```
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;
; MPSE Version : 2.1.29.4792
; Date : 2016/05/18 11:10:14
;
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;

PRODUCTNAME IS1677SM_101_SPP_V1.3
GU 1
DUT 0371A014
RFINDEVICE 2003
METERDEVICE 2003
SUPPLYDEVICE 2003
I-METERDEVICE 2003
```

Device and Instrument Info

```
;Device Initialization
ITEM 10 CODETYPE "1"

;Write and Vierify Flash at BOOT Mode
ITEM 20 PATH "IS1677SM_101_SPP_V1.3_V916_0D7A .HEX" CHECKSUM "0D7A" VFYONLY "0" VERIFY "0" FLASHDATA "573BDD09" DELAY_TIME "FFFFFFFF"

;Write EEPROM
ITEM 500 PATH "IS1677SM_101_SPP_V1.3_E3.5.4.0_0F0B.bin" CHECKSUM "0F0B" VFYONLY "0" RAW "573BDD0C"
```

MP Test Items

```
EXTDATA 573BDD09
:020000040000FA
:10298C00FF00210200000000FF1F350000000000C6
:10299C00FFAFE500000000000FFD5690101000000059
:1029AC00FFB5EC01020000000FFF12E010000000059
:0A08A80060DDA3A3A3A3A3A380CAED
:0608B2008A838982E473D1
:1008B800BC000BBE0029EF8DF084FFADF022E4CC24
:1008C800F875F008EF2FFFEE33FEEC33FCEE9DECED
:1008D800984005FCEE9DFE0FD5F0E9E4CEFD22ED33
:050908000FD5F0EA220A
:0D090D00E6FB08E6F908E6FA08E6CBF8225A
:10091A00E493F8740193F9740293FA740393FB2233
:0C092A00ECF608EDF608EEF608EFF622F9
:00000001FF
EXTDATAEND 573BDD09

EXTDATA 573BDD0C
4548563404000000371A01403050400
3841CC5569535343000000000000000
0000000000000000000000000000000
0000000000000000424D373712080000
0000000000000000000000000000000
0000000000000000000000000000000
0000000000000AA559443AF67
EXTDATAEND 573BDD0C

ENDS 879
```

Extend Datas

Test Item

Each MP Test Item has unique ID when test item was created. The format in MSF, one Pair represents one parameter. Left one is KEYWORD on the other hand is VALUE and follows another parameter (Pair). And SPACE split up each word.

For example, if we have two parameters bin file name: test.bin and checksum: 1234. In MSF will be

```
PATH “test.bin” CHECKSUM “1234”
```

3.1 Test Item #20 Write/Verify Flash at ※BOOT Mode

KEYWORD	VALUE	COMMENT
ITEM	20	ID number of write flash
PATH	xxxxx.HEX	Input Hex file name
CHECKSUM	xxxx	The checksum calculate from bin file’s contain
VFYONLY	0/1	0: both write and verify 1: verify only (for QC)
VERIFY	0/1	0: QUICK (verify with Checksum) 1: FULL (verify Byte by Byte)
FLASHDATA	xxxxxxxx	EXTDATA ID. Use this ID to find out real Flash Data in Extend Data section at file bottom. Note: Fixed this keyword for MCU
DELAY_TIME		Delay after flash writing finish

※BOOT Mode: Refer Appendix A for more information.

Ex:
ITEM 20 PATH "IS1677SM_101_SPP_V1.3_V916_0D7A .HEX" CHECKSUM "0D7A" VFYONLY "0" VERIFY "0" FLASHDATA "573BDD09" DELAY_TIME "FFFFFFFF"

Test Item: #20 Write Flash at BOOT mode
File name: IS1677SM_101_SPP_V1.3_V916_0D7A .HEX
Checksum: 0D7A
Behavior: Write and Verify
Verify Type: QUICK
Extend Data ID: 573BDD09

3.2 Test Item #500 Write/Verify EEPROM at ※IBDK Mode

KEYWORD	VALUE	COMMENT
ITEM	500	ID number of write EEPROM
PATH	xxxxx.bin	Input bin file name
CHECKSUM	xxxx	The checksum calculate from bin file's contain
VFYONLY	0/1	0: both write and verify 1: verify (for QC)
RAW	xxxxxxxx	EXTDATA ID. Use this ID to find out real EEPROM Data in Extend Data section at file bottom.

※**IBDK** Mode: Refer Appendix A for more information.

Ex:
ITEM 500 PATH "IS1677SM_101_SPP_V1.3_E3.5.4.0_0F0B.bin" CHECKSUM "0F0B" VFYONLY "0" RAW "573BDD0C"

Test Item: #500 Write EEPROM at IBDK mode
File name: IS1677SM_101_SPP_V1.3_E3.5.4.0_0F0B.bin
Checksum: 0F0B
Behavior: Write and Verify
Extend Data ID: 573BDD0C

3.3 Test Item #550 Patch EEPROM at ※IBDK Mode

KEYWORD	VALUE	COMMENT
ITEM	550	ID number of write EEPROM
PATH	xxxxx.ipf	Input IPF (ISSC Patch File) file name
VFYONLY	0/1	0: both write and verify 1: verify (for QC)
PATCHDATA	xxxxxxxx	EXTDATA ID. Use this ID to find out real Patch EEPROM Data in Extend Data section at file bottom. Note: Fixed this keyword for MCU

※**IBDK** Mode: Refer Appendix A for more information.

Ex:
ITEM 550 PATH "IS1677_Patch_demo.ipf" VFYONLY "0" PATCHDATA "57481077"

Test Item: #550 Patch EEPROM at IBDK mode
File name: IS1677_Patch_demo.ipf
Behavior: Write and Verify
Extend Data ID: 57481077

3.4 Test Item #9850 Write/Verify Flash at ※IBDK Mode

KEYWORD	VALUE	COMMENT
ITEM	9850	ID number of write flash
PATH	xxxxx.HEX	Input Hex file name
CHECKSUM	xxxx	The checksum calculate from bin file's contain
VFYONLY	0/1	0: both write and verify 1: verify only (for QC)
VERIFY	0/1	0: QUICK (verify with Checksum) 1: FULL (verify Byte by Byte)
FLASHDATA	xxxxxxxx	EXTDATA ID. Use this ID to find out real Flash Data in Extend Data section at file bottom. Note: Fixed this keyword for MCU
DELAY_TIME		Delay after flash writing finish

※IBDK Mode: Refer Appendix A for more information.

Ex:
ITEM 20 PATH "IS1677SM_101_SPP_V1.3_V916_0D7A .HEX" CHECKSUM "0D7A" VFYONLY "0" VERIFY "0" FLASHDATA "573BDD09" DELAY_TIME "FFFFFFFF"

Test Item: #20 Write Flash at IBDK mode
File name: IS1677SM_101_SPP_V1.3_V916_0D7A .HEX
Checksum: 0D7A
Behavior: Write and Verify
Verify Type: QUICK
Extend Data ID: 573BDD09

Extend Data

Extend Data usually stores bigger data something like Flash Data and EEPROM Data.

These data are saved like a Block. Each Block has a Begin Flag to represent data beginning and End Flag to represent data ending as well. The Flags includes Extend Data ID related to MP Test Item. So that, you can find out which data belong to the test item.

For example:

```
Ex:
ITEM 20 PATH "IS1677SM_101_SPP_V1.3_V916_0D7A .HEX" CHECKSUM "0D7A" VFYONLY "0"
VERIFY "0" FLASHDATA "573BDD09" DELAY_TIME "FFFFFFFF"
Extend Data ID: 573BDD09

EXTDATA 573BDD09 (Data Begin Flag)
:020000040000FA
:10298C00FF00210200000000FF1F350000000000C6
:10299C00FFAFE50000000000FFD569010100000059
……
……
……
:10091A00E493F8740193F9740293FA740393FB2233
:0C092A00ECF608EDF608EEF608EFF622F9
:00000001FF
EXTDATAEND 573BDD09 (Data End Flag)
```

4.1 Extend Flash Data

The Extend Flash Data format was defined as Intel HEX Format.

And we use 0x04 of Record Type to descript Flash Bank No. Please get more information from above link.

4.2 Extend EEPROM Data

The Extend EEPROM Data consist of two parts, Header and Data.

The Header including Manufacturing Information such as DUT ID, Product Name, Build Time …etc.

Example:

```
ITEM 500 PATH "IS1677SM_101_SPP_V1.3_E3.5.4.0_0F0B.bin" CHECKSUM "0F0B" VFYONLY "0"
RAW "573BDD0C"

EXTDATA 573BDD0C
4548563404000000371A01403050400
3841CC5569535343000000000000000
00000000000000000000000000000000
00000000495331363737534D5F313031
5F5350505F56312E3300000000000000
…
…
…
00000000000000000000000000000000
00000000000000000000000000000000
000000000000AA559443AF67
EXTDATAEND 573BDD0C
```

Header Format Table [256 bytes]:

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Signature [4 bytes]				FV	R	R	R	Device ID [4 bytes]				E2P Version[4 bytes]			
Built Time [4 bytes]															
Company Name [32 Bytes]															
Product Name [32 Bytes]															
				Customer No.				※Data Length				Ext-Data Reserve			
Ext-Data Reserve				Reserve				Reserve [8 bytes]							
Reserve [112 bytes]															
Reserve and Random numbers [32 Bytes]															

FV: Format Version
R: Reserve

※Data Length [4 bytes]: Order is Little Endian; ex: 00 04 00 00 => 0x400

4.3 Extend IPF Data

The Extend EEPROM Data consist of two parts, Header and Data.
The Header includes Manufacturing Information such as DUT ID and Version.

Example:

```
ITEM 550 PATH "IS1677_Patch_demo.ipf" VFYONLY "0" PATCHDATA "57481077"


EXTDATA 57481077
DEVICE 0371A014
VERSION 00000000

;update BT Address as 001167123456
ADDR 0000 DATA "00 11 67 12 34 56"

CHECKSUM 6F910EDB
EXTDATAEND 57481077
```

Header

DEVICE: Device ID
VERSION: Patch Version

Patch Data

; = Comment
ADDR = Patch Location of EEPROM Address
DATA = Patch Data, DON'T change data order

CHECKSUM = Checksum of content.

Appendix A. Mode Configuration

The DUT mode control was configured by GPIO. Please refer below Table and Timing Diagram to configure you DUT into right mode before you programing the Flash or EEPROM.

GPIO Pin Configure Table

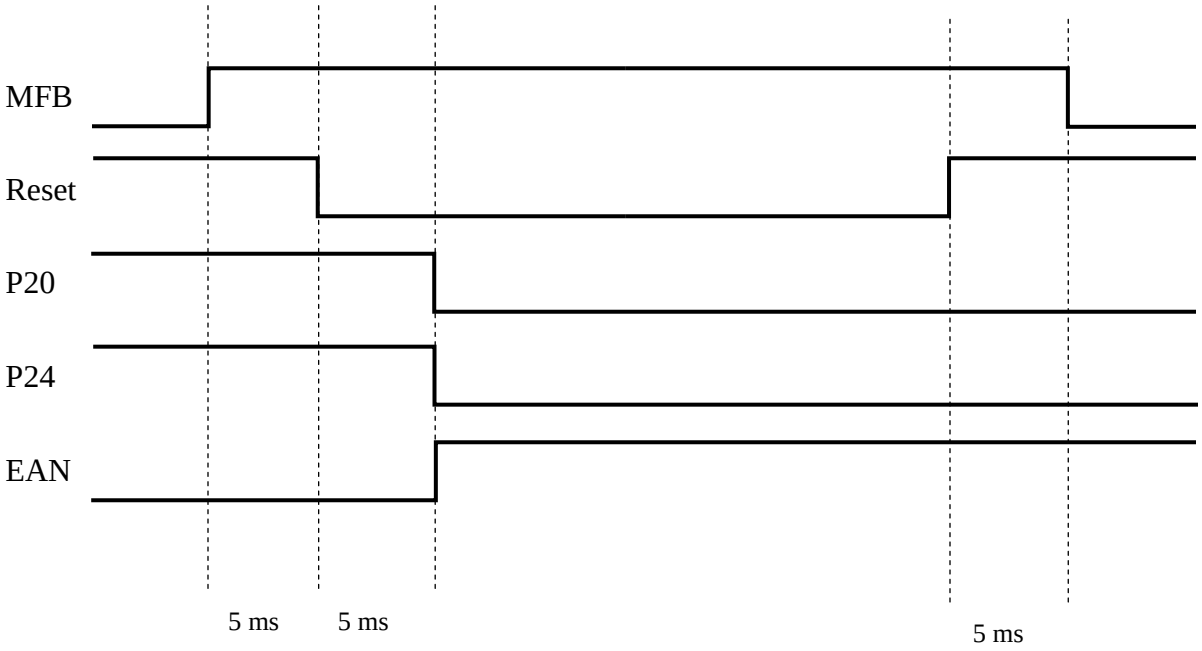
MODE	P20	P24	EAN (P17)
BOOT	L	L	H
IBDK	L	H	L

H: High

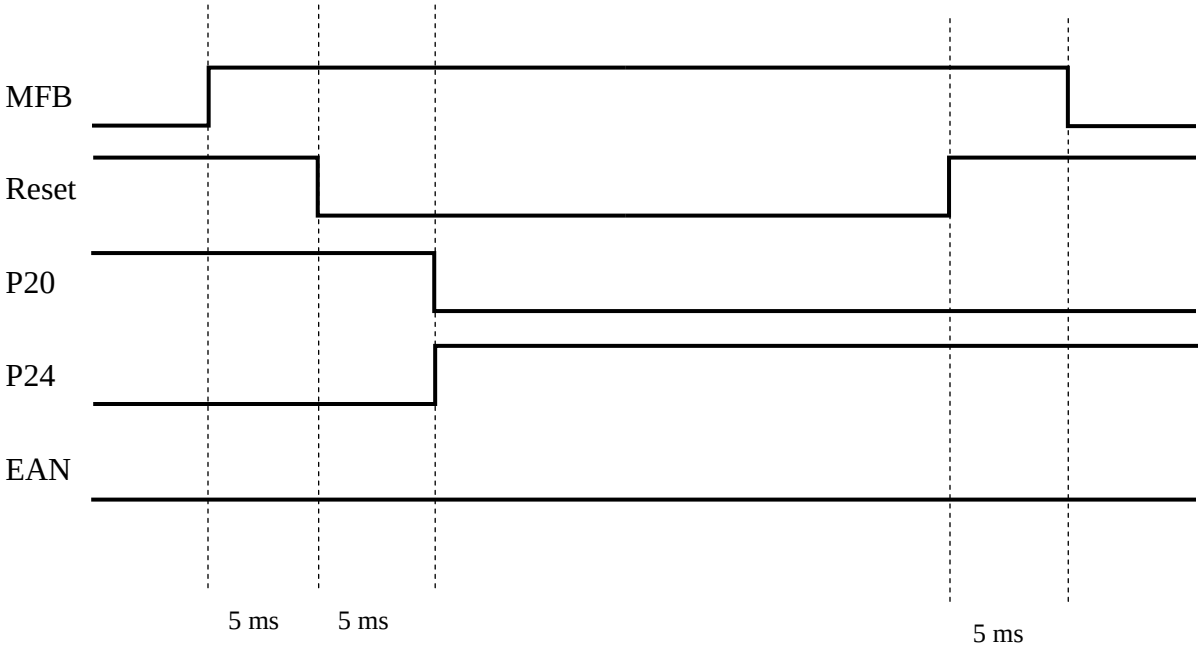
L: Low

Timing Diagram

BOOT Mode



IBDK Mode



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Fax:81-6-6152-9310

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Fax:45-4485-2829

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Fax:33-1-69-30-90-79

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