

# Application Note



## F<sup>2</sup>MC16 - S-Format Adjuster

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### History

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### Introduction

Inside Softune Workbench Development Environment for F<sup>2</sup>MC-16 series, there is a tool called S-Format Adjuster.

This S-Format Adjuster is used to add fill Bytes or re-format the \*.mhx file.

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# **1 S-Format Adjuster**

## **1.1 General introduction**

The S-Format Adjuster can be used to insert fill Bytes (padding data) into the \*.hex file, or to convert to another format (S7, S8 or S9 record).

## **1.2 Where to find**

The S-Format Adjuster Program is located in Softune\bin\m2ms.exe

## **1.3 Why using this tool?**

The S-Format Adjuster can be used e.g. for Mask Releases.

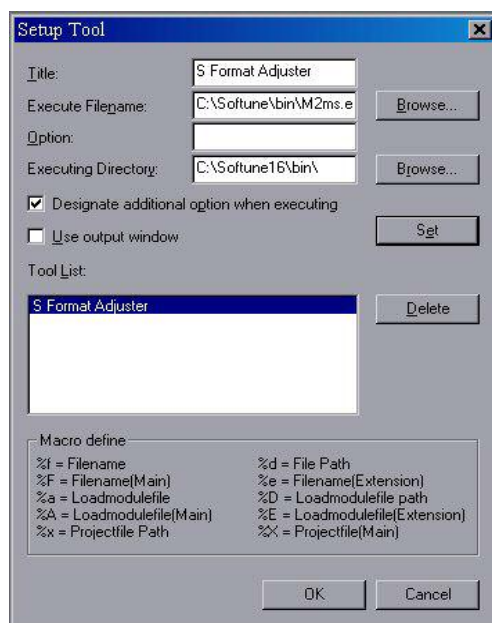
The normal way is, customers sending their code the Fujitsu. Before starting the mask production customer got back the code in order to check if it's correct.

In this sent back code, unused areas are filled with 0xFF. So, when using the S-Format Adjuster, you can choose another Fill pattern and it is also easier to check the sent back code, when using fill bytes before.

## 2 Insert S-Format Adjuster into Softune Workbench for FFMC-16 series

### 2.1 Insert S-Format Adjuster into SWB

- Open in Softune Workbench the Tool Selector (Setup/Tool)
- Insert in the Title field a name for the program
- Use the Browse button to search for the exe file (Softune/bin/m2ms.exe)
- Activate the 'Designate additional option when executing' entry
- Activate the 'Use output window' when the messages of the S-Format Adjuster should be outputted in the output Window of Softune Workbench.
- Click on 'Set' button to store the settings and get an entry in the tool list



**Picture 1: Setup Tool**

Now the S-Format Adjuster is plugged into Softune Workbench.

## 2.2 Using the Macro defines for the options

In 2.1 it is explain how to plug-in the S-Format Adjuster. But, you have to set all the time manually the source file (\*.mhx) destination.

Following Options are available:

%f	=	Filename
%F	=	Filename (Main)
%a	=	Loadmodulefile
%A	=	Loadmodulefile(Main)
%x	=	Projectfilepath
%X	=	Projectfilepath (Main)
%d	=	File Path
%e	=	Filename (Extension)
%D	=	Loadmodulefile path
%E	=	Loadmodulefile (Extension)

When inserting in the Option box: “%D%A.mhx “ automatically the path of the \*.mhx file of the currently opened project is set.

So, just the conversion options in the additionally option must be set, if there are not also specified in the option file.

Example:

The project is in the folder C:\Myproject\myproject.prj.

Normally inside this folder you will find an ABS folder for the \*.abs and \*.mhx

The Loadmodule file is named as myfile.abs.

%D will insert the loadmodule path.

→ C:\Myproject\Abs

%A insert the name of the Loadmodule file without extension.

→ myfile

Result: “C:\Myproject\myfile”

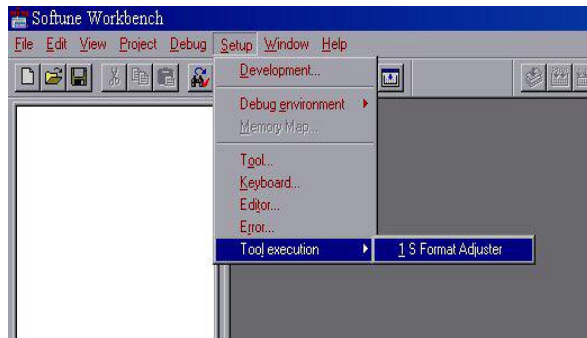
Further the file extension must be added “.mhx “

Final Result: “C:\Myproject\myfile.mhx ”

Note: Don't forget the blank after “.mhx” when using the additional option window.

## 2.3 Start S-Format Adjuster in the Softune Workbench

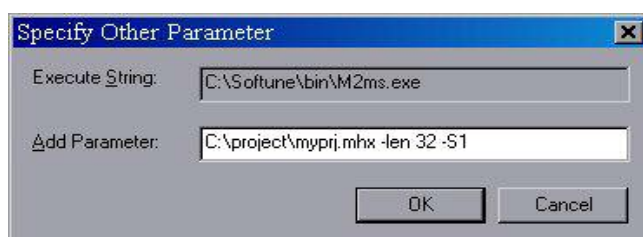
To start the program use the S-Format Adjuster entry in the Tool execution list. (Setup/Tool execution/S Format Adjuster)



**Picture 2: Open S Format Adjuster**

When starting the S-Format Adjuster a dialog box is coming up.

- Insert in the 'add parameter' box, the path of the .mhx file and the parameter to specify the conversion
- Click on 'OK' button to start the conversion
- The new file is stored as .ahx file

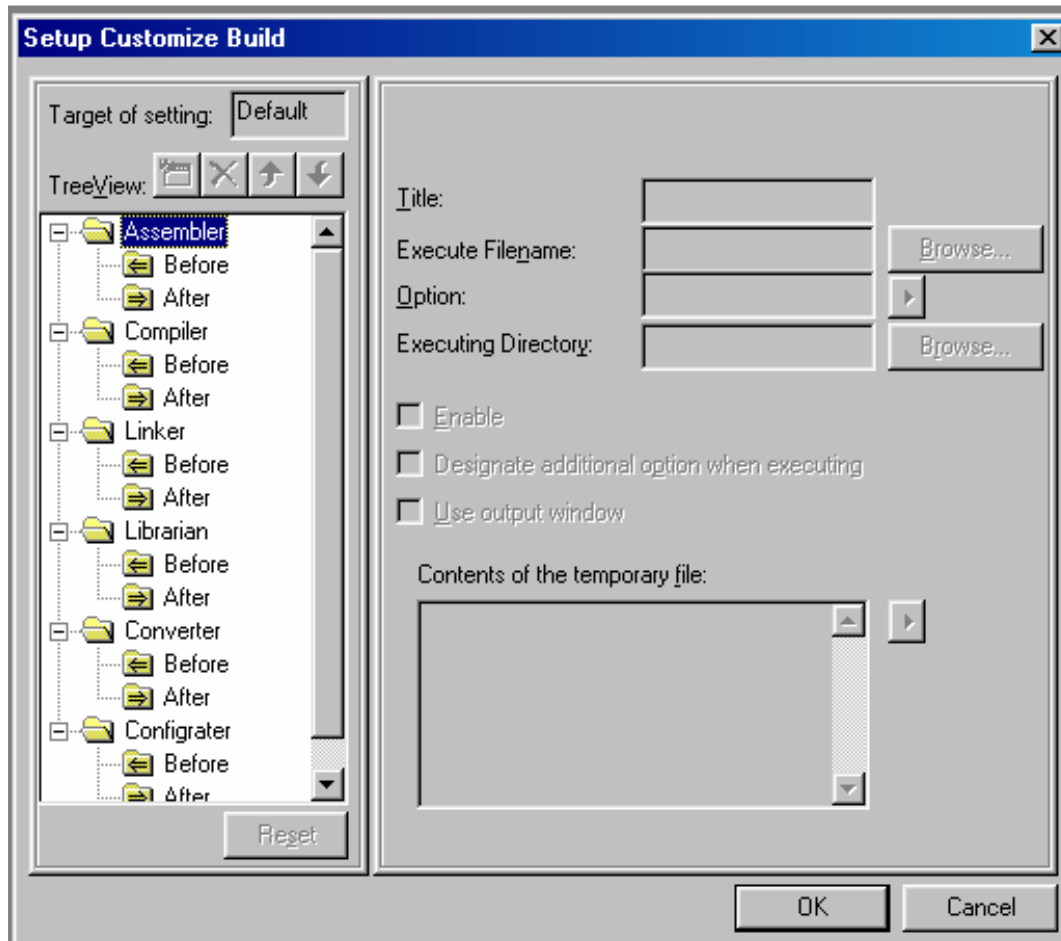


**Picture 3: Add Parameter**

### 3 Using Customised build to start S-Format Adjuster

Since the Softune Workbench Version V30L26 it is possible to set customised options.

Under Project/customized Build the selection can be done.



Picture 4: Customised Build

### 3.1 How to insert S-Format Adjuster

- Select Converter/After
- Use 'CTRL+N' to create new setting
- Execute Filename, browse to \bin\m2ms.exe
- Title: Insert the name of the tool (S-Format Adjuster)
- Select the Executing Directory
- Click on the Enable box, so after conversion to \*.mhx the S-Format Adjuster will be started
- Activate 'Designate additional option when executing' to insert manually options at every start of S-Format Adjuster
- Activate 'Use output Window' to get S-Format messages in the Softune Worbench output Window
- Click on button 'O.K.' the store the settings

After every make or build (when linker is started) the S-Format Adjuster will be started automatically.

At the moment the source destination and options must be insert manually.  
See next chapter when using macros.

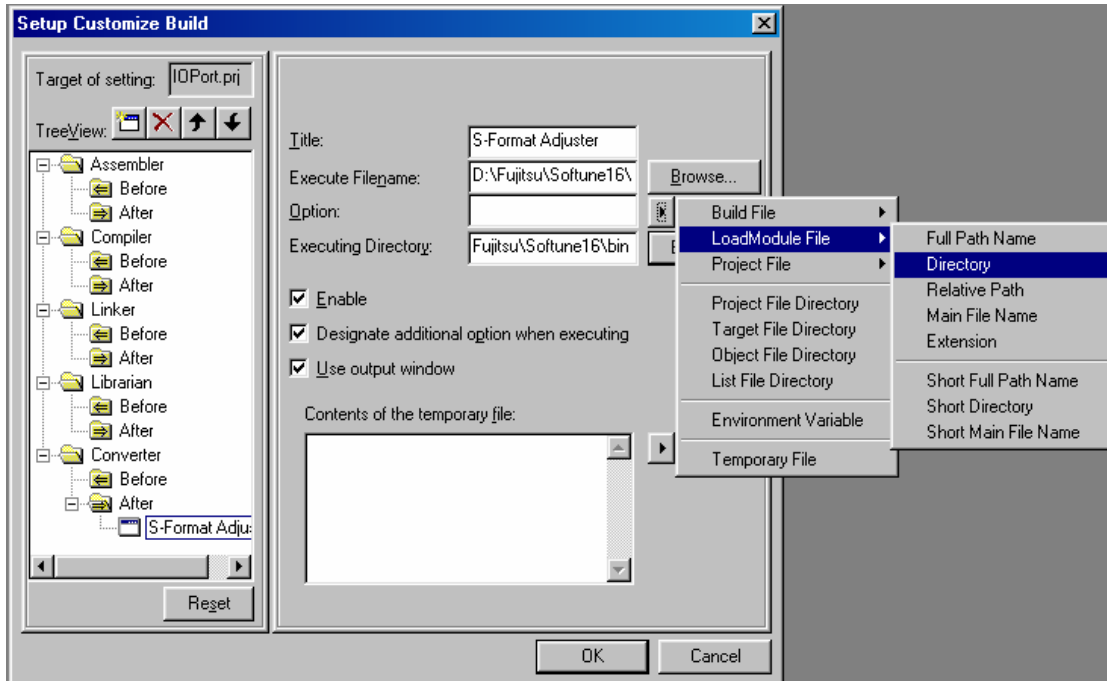
### 3.2 Using Macro defines for the options

In the customise build window, there is also an option box.

There the source destination can be insert.

- Click on the '►' button
- Select "Loadmodulefile\Directory"
- Insert manually a "\" after the macro
- Select "Loadmodulefile\Main File Name"
- Insert manually the extension ".mhx "
- Don't forget the blank, when using additional option box

Now the source destination of the opened project is selected.



**Picture 5: Select source destination by macro defines**

## 4 Functions of the S-Format Adjuster

### 4.1 List of Options

Function	Option	Remarks
Specifying the output data length	-len	
Specifying the output range	-ran	
Specifying the S1 format output	-S1	
Specifying the S2 format output	-S2	
Specifying the S3 format output	-S3	
Specifying changes to the S record starting address	-ST	

**Table 1: Option of S-Format Adjuster**

Function	Option	Remarks
Changing output file name	-o	*Common option of a converter
Specifying padding data	-p	*Common option of a converter
Specifying not to read the default option file	-Xdof	*Common option
Specifying to read an option file	-f	*Common option
Specifying to display help messages	-help	*Common option
Specifying to output the version and messages	-V	*Common option
Specifying not to output the version and messages	-XV	*Common option
Specifying to display a termination message	-cmsg	*Common option
Specifying not to display a termination message	-Xcmsg	*Common option

**Table 2: Common Options of Softune Workbench Converter**

## 4.2 Details of Common Options

Following chapter describes the options for all converter inside the Softune Workbench development tools.

All the examples are using the S-Format Adjuster.

### 4.2.1 Specifying padding data

#### 4.2.1.1 Syntax

-p <padding data>

#### 4.2.1.2 Parameter

<padding data> insert the fill data

#### 4.2.1.3 Description

The option can be used to fill the unused areas in the record with the specified pattern.

The datas in the will be formatted and outputted in the S-record.

All unused area in the Datarange will be filled with the specified pattern in the S-record.

#### 4.2.1.4 Precautions

If no -p parameter is used, no fill bytes are added.

#### 4.2.1.5 Example

```
m2ms.exe myfile -ran 0x0000, 0xFFFF -p 0xAA
```

The file is converted in the range of 0x0000 – 0xFFFF.

The pattern 0xAA is insert in all unused area's in the range of 0x0000-0xFFFF.

## 4.2.2 Changing output file name

### 4.2.2.1 Syntax

-o <new filename>

### 4.2.2.2 Parameter

<new filename> insert the new name of the file

### 4.2.2.3 Description

It is possible to use another filename for the converted file.

### 4.2.2.4 Precautions

The default value is <original filename>.ahx.

### 4.2.2.5 Example

```
m2ms.exe myfile.mhx -o newfile.mhx -ran 0x100,0x1FFF,
```

The data in Myfile.mhx are converted in the range of 0x100 to 0x1FFF.  
The converted file is stored as newfile.mhx.

```
m2ms.exe myfile.mhx -ran 0x100, 0x1FFF
```

Default value used, myfile.mhx I converted in the range of 0x100 to 0x1FFF.  
The converted file is stored as myfile.ahx.

## **4.2.3 Specifying not to read the default option file**

### **4.2.3.1 Syntax**

-Xdof

### **4.2.3.2 Parameter**

none

### **4.2.3.3 Description**

When using this option, the default option file is ignored.  
The default option file can be stored in the Softune library directory.

### **4.2.3.4 Precautions**

There are still the default options of the tool. However, the default option FILE is not processed. If there are options in this file, these options overwrite the default options of the tool.

### **4.2.3.5 Example**

```
m2ms.exe myfile.mhx -ran 0xFE0000, 0xFFFFFFFF -Xdof
```

The file is converted in the range of 0xFE0000 – 0xFFFFFFFF. All other default values are ignored.

## **4.2.4 Specifying to read an option file**

### **4.2.4.1 Syntax**

-f <filename>

### **4.2.4.2 Parameter**

<filename> the path and the filename of the used option file must be insert.

### **4.2.4.3 Description**

When using often the S-Format Adjuster the options can be stored in an option file. So the options must not be written every use of the S-Format Adjuster.

### **4.2.4.4 Precautions**

### **4.2.4.5 Example**

```
m2ms.exe myfile.mhx -f C:\myoptions.txt
```

The file myfile.mhx is converted corresponding the option inside myoptions.txt.

## **4.2.5 Specifying to display help messages**

### **4.2.5.1 Syntax**

-help

### **4.2.5.2 Parameter**

none

### **4.2.5.3 Description**

Using this options displays all possible options for this tool.

### **4.2.5.4 Precautions**

Calling the tool without any option will also display all options.

### **4.2.5.5 Example**

```
m2ms.exe myfile.mhx -help
```

```
m2ms.exe
```

All possible options are listed in the output window.

## 4.2.6 Specifying to output the version and messages

### 4.2.6.1 Syntax

-V

### 4.2.6.2 Parameter

none

### 4.2.6.3 Description

When specifying the '-V' option the S-Format Adjuster or other converter output it's version.

### 4.2.6.4 Precautions

When not using the option, no version is outputted.

### 4.2.6.5 Example

```
m2ms.exe myfile.mhx -ran 0xFF0000, 0xFFFFFFF -V
```

The S-Format Adjuster convert myfile.mhx in the range of 0xFF0000 – 0xFFFFFFF and outputs the S-Format Adjuster version.

The S-Format Adjuster Will output following message:

```
“S-FORMAT Adjuster V30L04  
ALL RIGHTS RESERVED, COPYRIGHT (C) FUJITSU LIMITED 1997  
LICENSED MATERIAL - PROGRAM PROPERTY OF FUJITSU LIMITED”
```

## 4.2.7 Specifying not to output the version and messages

### 4.2.7.1 Syntax

-XV

### 4.2.7.2 Parameter

none

### 4.2.7.3 Description

When using this option, no version of the Converter is outputted.

### 4.2.7.4 Precautions

none

### 4.2.7.5 Example

```
m2ms.exe myfile.mhx -ran 0xFF0000, 0xFFFFFFFF -XV
```

The S-Format Adjuster convert myfile.mhx in the range of 0xFF0000 – 0xFFFFFFFF and no version of the S-Format Adjuster is outputted.

## 4.2.8 Specifying to display a termination message

### 4.2.8.1 Syntax

-cmsg

### 4.2.8.2 Parameter

none

### 4.2.8.3 Description

This option can be used to output the termination message. So, it can be checked if the conversion was successful.

### 4.2.8.4 Precautions

none

### 4.2.8.5 Example

```
m2ms.exe myfile.mhx -ran 0xFF0000, 0xFFFFFFFF -cmsg
```

The S-Format Adjuster outputs following message after a successful operation:

“M2MS COMPLETED, FOUND NO ERROR”

## **4.2.9 Specifying not to display a termination message**

### **4.2.9.1 Syntax**

-Xcmsg

### **4.2.9.2 Parameter**

none

### **4.2.9.3 Description**

If no termination message should be outputted use this option.

### **4.2.9.4 Precautions**

Default value is not display a message.

### **4.2.9.5 Example**

```
m2ms.exe myfile.mhx -ran 0xFF0000, 0xFFFFFFFF -Xcmsg
```

```
m2ms.exe myfile.mhx -ran 0xFF0000, 0xFFFFFFFF
```

No termination message is displayed in the output window.

## 4.3 Details of S-Format Adjuster Options

Following chapter describes the special S-Format Adjuster options.

### 4.3.1 Specifying the output data length (-len)

#### 4.3.1.1 Syntax

-len <datalength>

#### 4.3.1.2 Parameter

<datalength> : select 16, 32 64 or 128

#### 4.3.1.3 Description

The option can be used to specify the number of bytes of a data to be output into one record when a S format file is formatted.

The default value is 16.

#### 4.3.1.4 Precautions

This option specifies the number of bytes contained in one record, not the record length itself.

The option is valid for S1, S2 and S3 records.

#### 4.3.1.5 Example

```
m2ms.exe myfile.mhx -len 64
```

The file myfile.mhy is formatted and 64-byte data is outputted per record.

```
m2ms.exe myfile.mhx (default value)
```

The file myfile.mhy is formatted and 16-byte data is outputted per record.

## 4.3.2 Specifying the Output Range ( -ran )

### 4.3.2.1 Syntax

-ran <start address> [,<end address>]

### 4.3.2.2 Parameters

<start address> insert start address of the file

<end address> insert end address of the file

### 4.3.2.3 Description

Use the option to specify the range of formatting a S format file using addresses. the options must be specified in order to convert.

The end address may be omitted. If no end address is insert, the formatting range is 64K.

The max. possible conversion size 2Gbyte.

### 4.3.2.4 Example

m2ms.exe myfile.mhx (no range is insert)

An error occurs when no output range is given.

m2ms.exe myfile.mhx -ran 0xF00000, 0xFFFFFFFF

The data is converted in the range of 0xF00000 – 0xFFFFFFFF.

m2ms.exe myfile.mhx -ran 0x4000 (no end address)

The data is converted in the range of 0x4000 – 0x013FFF.

### 4.3.3 Specifying an Output Record (-S1/-S2/-S3)

#### 4.3.3.1 Syntax

-S1  
-S2  
-S3

#### 4.3.3.2 Parameter

None

#### 4.3.3.3 Description

Use this options to specify a S record to be used when data contents are output.

The S Format Adjuster outputs the data contents using one of the S1, S2 and S3 records.

If more than one of the -Sx options are specified, the most recently specified is valid. The default value is -S3 record.

#### 4.3.3.4 Precautions

If the specification in this option and the output range are not consistent with each other, the S Format Adjuster reports an error and performs no processing.

Specification	Data Range output	Terminator record	Remarks
-S1	0x0000 – 0xFFFF	S9 record	
-S2	0x000000 – 0xFFFFFF	S8 record	
-S3	0x00000000 – 0xFFFFFFFF	S7 record	(Default)

**Table 3 List of output record specifications**

#### 4.3.3.5 Example

```
m2ms.exe myfile.mhx -ran 0xD000, 0x10000 -S1
```

The output range given in the -ran option is larger than an S1 record. The S-Format Adjuster outputs an error.

```
m2ms.exe myfile.mhx -ran 0x100 -0xFFFF -S1
```

The data from 0x100 – 0xFFFF is formatted and output in the S1 record.

## 4.3.4 Specifying changes to the S record starting address (-ST)

### 4.3.4.1 Syntax

-ST <start address>

### 4.3.4.2 Parameters

<start address> insert starting address of the file

### 4.3.4.3 Description

Use the option to specify the start address of the S format file using addresses.

### 4.3.4.4 Example

```
m2ms.exe myfile.mhx -ST 0xF80000--ran 0xF00000, 0xFFFFFFFF
```

The data is converted in the range of 0xF80000 – 0xFFFFFFFF.