FGF8D4P-AC
05/03/2009

# CSB6 FAMILY PRODUCTS

# Firmware upgrade procedure

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| **AB** | 03/02/09 | ECL | LTX | LTX | | Moved to SpringCard template |
| **AC** | 02/03/09 | JDA | | | JDA | Added introduction chapter, a few minor corrections, and approval. |

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# 1. INTRODUCTION

## 1.1. ABSTRACT

**SpringCard CSB6 Family** is a group of contactless smartcard readers, offering various functions and three different operating modes : PC/SC (CCID), Legacy (virtual communication port), RFID scanner (keyboard emulation).

All these products share a common hardware platform, based on the same USB-enabled microcontroller.

This document explain how to upgrade the firmware of this microcontroller, using the flash upgrade software provided by the manufacturer of the microcontroller.

## 1.2. COVERED PRODUCTS

At the date of writing, this document refers to the four products in the CSB6 Family :

- CSB6,
- Prox'N'Roll,
- CrazyWriter,
- EasyFinger.

Please read the datasheet of every product for specifications and the detailed list of features.

## 1.3. AUDIENCE

This manual is designed for use by technical support or after-sale teams. It assumes that the reader has expert knowledge of electronics.

## 1.4. SUPPORT AND UPDATES

Interesting related materials (product datasheets, application notes, sample software, HOWTOs and FAQs…) are available at SpringCard's web site :

www.springcard.com

Updated versions of this document and others will be posted on this web site as soon as they are made available.

For technical support enquiries, please refer to SpringCard support page, on the web at address www.springcard.com/support .

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# 2. GETTING STARTED WITH RENESAS FDT

The microcontroller **SpringCard CSB6 Family** is based on is Renesas H8S/2212UF.

This microcontroller is upgradeable on the field, through its USB link, thanks to Renesas Flash Development Toolkit (FDT) version 4 or newer.

FDT is a Windows program, that installs and runs on 2000/XP/Vista.

## 2.1. DOWNLOAD AND INSTALL FDT

Latest version of FDT is available free of charge at Renesas' :

- Go to www.renesas.com .
- Navigate to Development Tools → Flash and PROM Programming → Flash Development Kit.
- Choose « Download the latest version of FDT free of charge ».

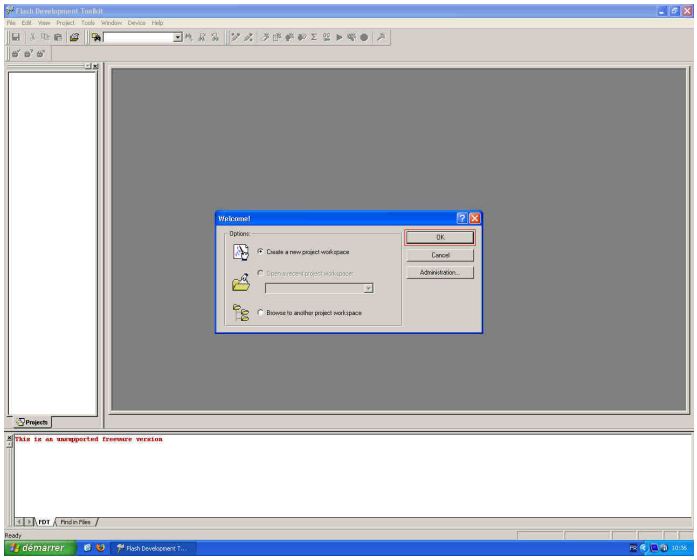
You'll be prompted for your company details before accessing the download.

**Note :** Renesas' web site changes frequently, and its URLs are not « user friendly », therefore preventing us to give the actual link here. Alternatively, you may temporarily download FDT 4.00 (R00) at

www.springcard.com/download/tmp/fdtv400r00.exe

## 2.2. CREATE A WORKSPACE

- Launch FDT from Start Menu.



- Choose « create a new project workspace », and click « OK »

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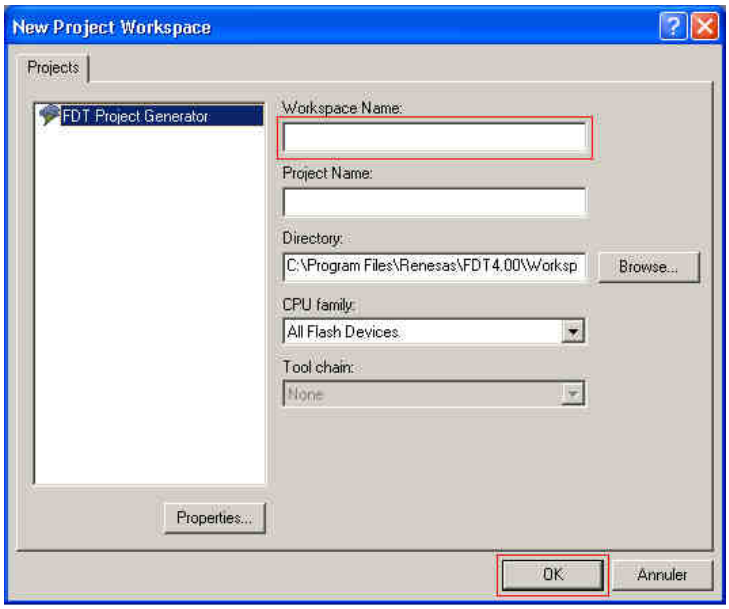
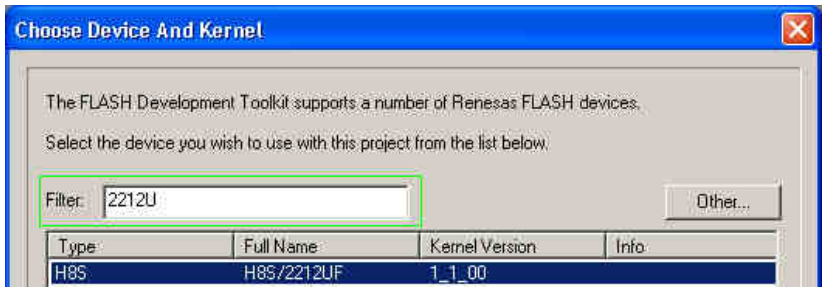



- Enter a name for your new project workspace (for instance, *CSB6 Family*), and click « OK ». If left blank, the project name defaults to the same value as the workspace name

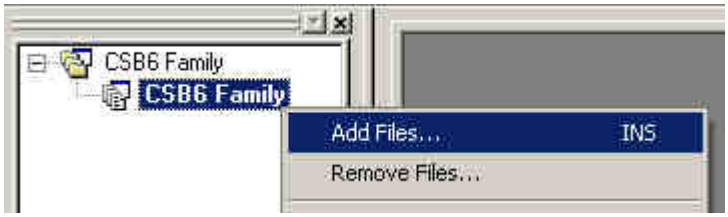



- Enter *2212U* in the filter field, and choose H8S/2212UF in the list. Click « Next » to continue

- Choose port « USB Direct », and click « Next »
- In the following pages, click « Next » (leaving all options to their default value), until « Finished »

## 2.3. ADD A FIRMWARE TO YOUR WORKSPACE

- In the tree on the left, right click on the project.




- In the popup menu, click on « Add Files… »
- Browse to the firmware file you want to download in the product (firmware files have the « .mot » extension).

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# 3. HOW TO FLASH YOUR PRODUCT

## 3.1. SELECT THE RIGHT FIRMWARE FOR YOUR PRODUCT

All products in the **SpringCard CSB6 Family** share a large part of their hardware including their microcontroller, but of course they behave differently, due both to their hardware specificities and to their own specifications.

Generally speaking, putting the wrong firmware in any product is possible, and may appear to work, but this is not the way the product is intend to operate.

Please make sure to always put the appropriate firmware in the actual product you have.

## 3.2. PUT THE MICROCONTROLLER IN FLASH UPGRADE MODE

Every product has a configuration switch, or a set of 4 configuration switches, that must be moved to put the device in flash upgrade mode.

Unplug the device from USB (and unplug the external power jack for products having one) before opening the device and moving the configuration switches.

### 3.2.1. Open the device

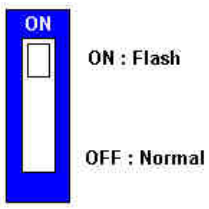
The first step is to open the device (remove the cover) to access the configuration switches.

Please refer to product's detailed documentation for this part.

### 3.2.2. Put the switches in "flash upgrade" position

#### *a. Devices having only one switch*

Move the switch to the ON position.

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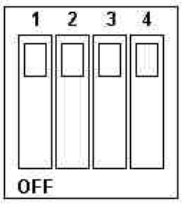
#### b. *Devices having four switches*

**Before proceeding, note the current position of all the switches.**

Move all four switches to the ON position.

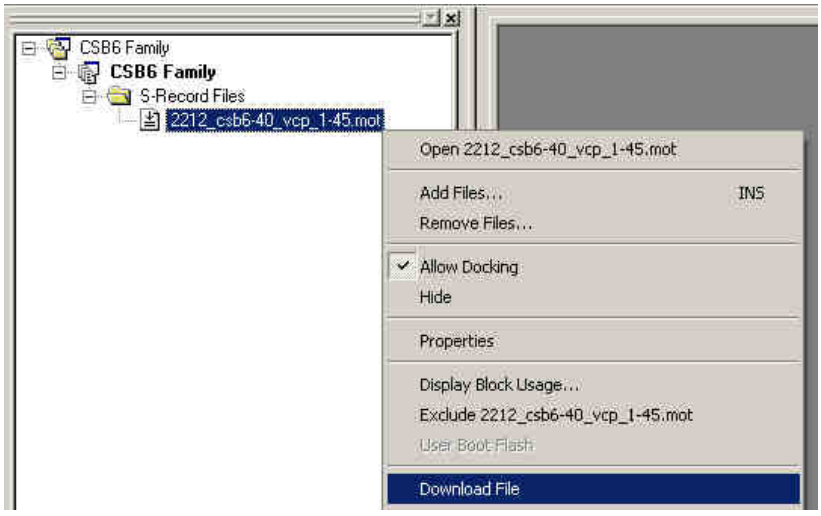



### 3.2.3. Plug the device on

Connect device's USB port to your computer. Put back power connector in case your device has an external power supply (EasyFinger).

## 3.3. FLASH THE PRODUCT

- Back to FDT screen, right click on the file you want to download in the device.




- In the popup menu, click « Download File ».
- FDT now prompts you to select the target USB device. If you've plugged only one product at a time, there must be only one target !

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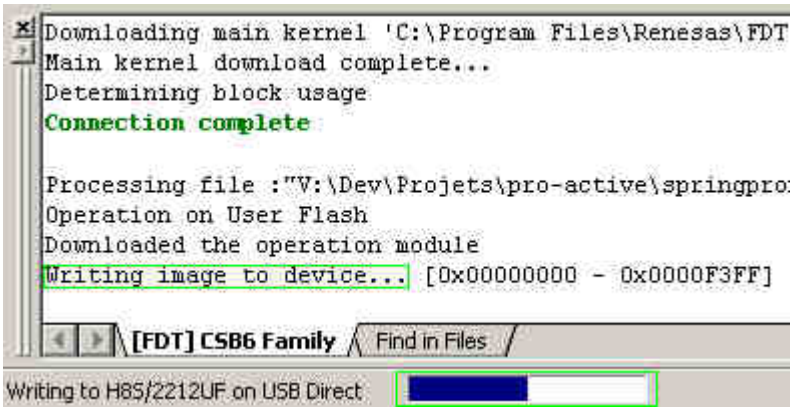
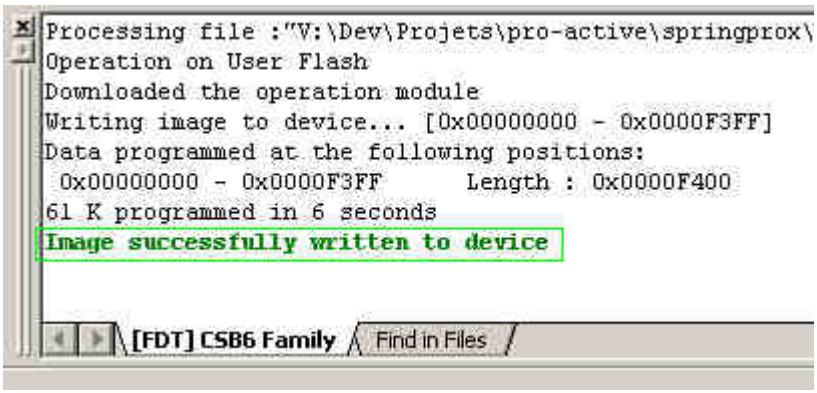
- Select the only target, and click « OK »
- Wait during the flash operation (this takes 20 to 60 seconds)




- When done, FDT displays this message :




- End the procedure by clicking « Disconnect » in the « Device » menu

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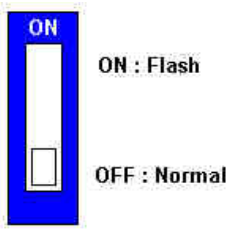
## 3.4. PUT THE MICROCONTROLLER BACK IN OPERATION MODE

Unplug the device from USB again (and unplug the external power jack for products having one) before proceeding.

### 3.4.1. Put the switches in "normal" position

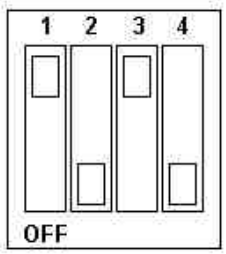
#### *a. Devices having only one switch*

Move the switch back to the OFF position.




#### *b. Devices having four switches*

Put back the switches in the position you've noted in 3.2.2.b.




The positions listed below are informative only. Please refer to the detailed product documentation for details.

| Product | Normal position of the switches | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| **CSB6** | ON | OFF | ON | OFF |
| **CrazyWriter** | ON | OFF | ON | OFF |
| **EasyFinger** | ON | OFF | OFF | OFF |

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