

# RH850\_DataFlash

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## Introduction

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RH850 DataFlash.

For understand how Dataflash is organised and how work you can read this informations

Data Flash in RH850 physical and logical is difrent as most other MCU dataflash .

Every cell has additional state "Blank". In other MCU when cell is blank it has stored "FF" or sometimes "00" in cell.

Everyone cell which are "Blank" at read process give back random value. Another say when we read dataflash where cells are BLANK

we can get different value at each time read. It is reason why at read process verify not pass and some cells are not verified.

Some manufacture of ECU use this properties and can do some trick . Effect of this trick is when we try to write same dump what we read before module are not work properly.

MCU in programmer mode not permit program each cell. We must erase or program one block .

For erase programmer must erase multiple 0x40 bytes.

For program programmer must write multiple 0x10 bytes.

Address start for erase must be multiple 0x40. Mean we can't erase are 0xA0-0xEF !!. Permitted is for example are 0xC0-0xFF.

Address start for write must be multiple 0x10. Mean we can't erase are 0xA5-0xB4 !!. Permitted is for example are 0xA0-0xAF.

In jtag when you select Dataflash in each RH850 MCU you can see on main panel "DataFlash Prog mode" or right side of Multiprog.

On this panel you have 2 checkboxes:

- "Skip Program empty Dataflash"

- "Show Empty Area"

When is checked box "Skip Program empty Dataflash" then at programm dataflash all ares which are multiple 0x40 and include only "FF" are will be not program.

If this checkbox is unched then all dataflash will be progmed with data from editor included all areas with values "FF"

When is checked "Show Empty Area" at read proccess blank ares of dataflash will be mark in editor "BLANKBLANKBLANK!"

When this checkbox is unchecked all blank ares are showed as "FF". In this case user can not be sured that cells contain value "FF" or "Blank"

This is usefull smetimes when we want to program dataflash with other programmer which are not support this functionalities.

Important : if we have dump read with box "Show Empty Area" checked then always ares marked "BLANKBLANKBLANK!" will be skiped and will be not program.

If you dont need to program all area of dataflash always you can check checkbox "Program Address Range" and will be proram only range which you set. All others addresses will be not affected.

## What's new