SMH Technologies®

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Driver v. 1.00

Diego Piccinin

Interfacing FlashRunner 2.0 with HC12

SMH Technologies S.r.l.

UNIVERSAL PRODUCTION IN-SYSTEM PROGRAMMING

HQ and Registered Office
Via Giovanni Agnelli 1
33083 Villotta di Chions (PN) Italy
Società Unipersonale

Capitale sociale €102.040
P.I. 01697470936
C.F. 01697470936
REA PN-97255

D-U-N-S® 51-724-9350
T + 39 0434 421 111
F + 39 0434 639 021

→smh-tech.com

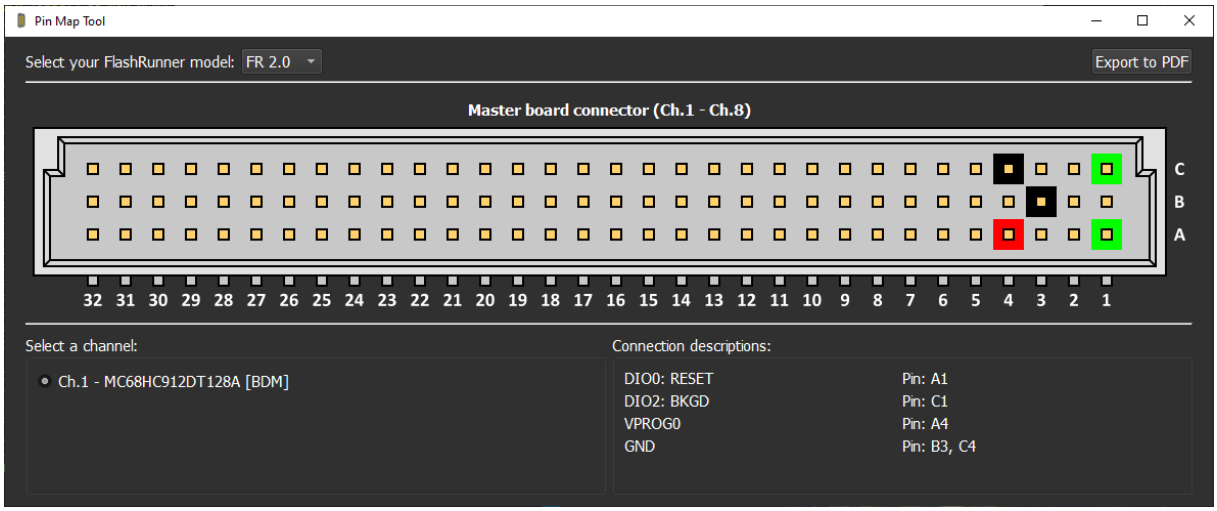
info@smh-tech.com

HC12 Protocols and PIN maps

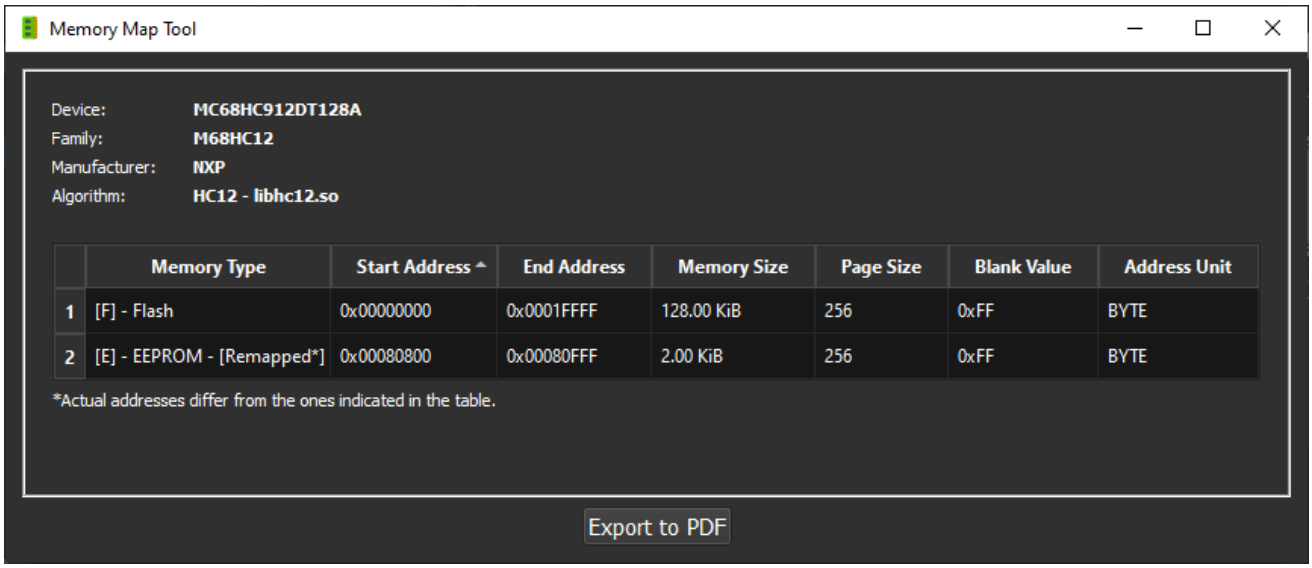
HC12 devices support the BDM protocol.

This protocol consents to enable debug mode on the device, making it programmable in an easier way.

BDM PIN MAP



HC12 Memory map



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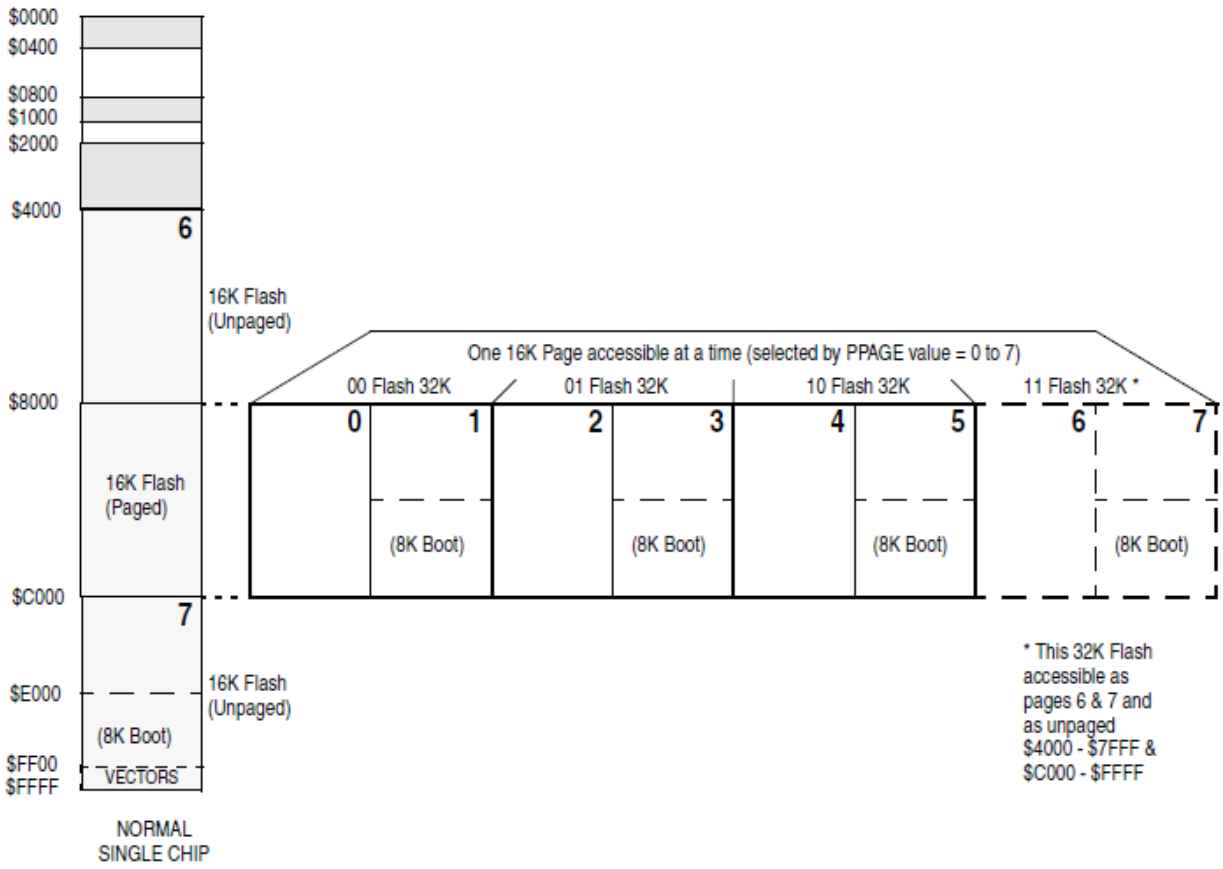
Paged addresses

HC12 devices use paged addresses, as shown in the picture below.



This means that the whole Flash memory, with a size of 128KB, is split into 8 different pages of 16KB each. The access to each page is done by setting which one is used before operating on it.

This is managed internally by the FlashRunner and the user should not worry about it. The customer should only take into account to consider the memory as if it were a continuous 128KB memory, starting from address 0x0000_0000 and ending at address 0x0001_FFFF, with each page having size 0x4000.

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HC12 Driver Commands

HC12 Standard Commands

Here you can find the complete list of all available commands for the HC12 driver.

```
Memory type:

F → FLASH
E → EEPROM
```

#TPCMD CONNECT

```
#TPCMD CONNECT
```
This function performs the entry and is the first command to be executed when starting the communication with the device.

#TPCMD MASSERASE

```
#TPCMD MASSERASE <F|E>
```
F: Masserase command for Flash memory of target device.
E: Masserase command for EEPROM memory of target device.

#TPCMD ERASE

```
#TPCMD ERASE <F> <start address>
```
This function performs a page erase of Flash memory.
The command will erase the corresponding page in a paged address configuration.
Enter the Start Address in hexadecimal format.

#TPCMD BLANKCHECK

```
#TPCMD BLANKCHECK <F|E>
```
Blankcheck is available for Flash and EEPROM memory.
Verify if all memory is erased.

```
#TPCMD BLANKCHECK <F|E> <start address> <size>
```
Blankcheck is available for Flash and EEPROM memory.
Verify if selected part of memory is erased.
Enter the Start Address and Size in hexadecimal format.

#TPCMD PROGRAM

```
#TPCMD PROGRAM <F|E>
```
Program is available for Flash and EEPROM memory.
Programs all memory of the selected type based on the data in the FRB file.

```
#TPCMD PROGRAM <F|E> <start address> <size>
```
Program is available for Flash and EEPROM memory.
Programs selected part of the memory of the selected type based on the data in the FRB file.
Enter the Start Address and Size in hexadecimal format.

#TPCMD VERIFY

```
#TPCMD VERIFY <F|E> <R>
```
R: Readout Mode.
Verify Readout is available for Flash and EEPROM memory.
Verify all memory of the selected type based on the data in the FRB file.

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#TPCMD READ

`#TPCMD READ <F|E>`
Read is available for all memories.
Read all memory of the selected type.
The result of the read command will be visible in the Terminal.

`#TPCMD READ <F|E> <start address> <size>`
Read is available for all memories.
Read selected part of memory of the selected type.
The result of the read command will be visible in the Terminal.

#TPCMD DUMP

`#TPCMD DUMP <F|E>`
Dump is available for all memories.
Dump all memory of the selected type.
The result of the dump command will be stored in the FlashRunner 2.0 internal memory.

`#TPCMD DUMP <F|E> <start address> <size>`
Dump is available for all memories.
Dump selected part of the memory of the selected type.
The result of the dump command will be stored in the FlashRunner 2.0 internal memory.

#TPCMD RUN

`#TPCMD RUN`
Run the customer program.

#TPCMD DISCONNECT

`#TPCMD DISCONNECT`
Disconnect function. Power off and exit.

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HC12 Driver Parameters

The additional parameters are used to configure some specific options inside the HC12 driver.

HC12 Standard Additional Parameters:

#TCSETPAR BKGD_PULLUP

Syntax: `#TCSETPAR BKGD_PULLUP <Value>`

`<Value>` Accepted parameters YES / NO

Description: Enables Pullup for BKGD line

Note: Default value YES

HC12 Driver Changelog

Info about driver version 1.00 - 20/02/2024
Supported Flash and EEPROM memory Commands for HC12 devices.

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