SMH Technologies®

27/05/2024

Driver v. 1.00

Diego Piccinin

Interfacing FlashRunner 2.0 with Microchip PIC32C

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

PIC32_CORTEX Introduction

PIC32_CORTEX driver allows the support of the PIC32C devices manufactured by Microchip®.

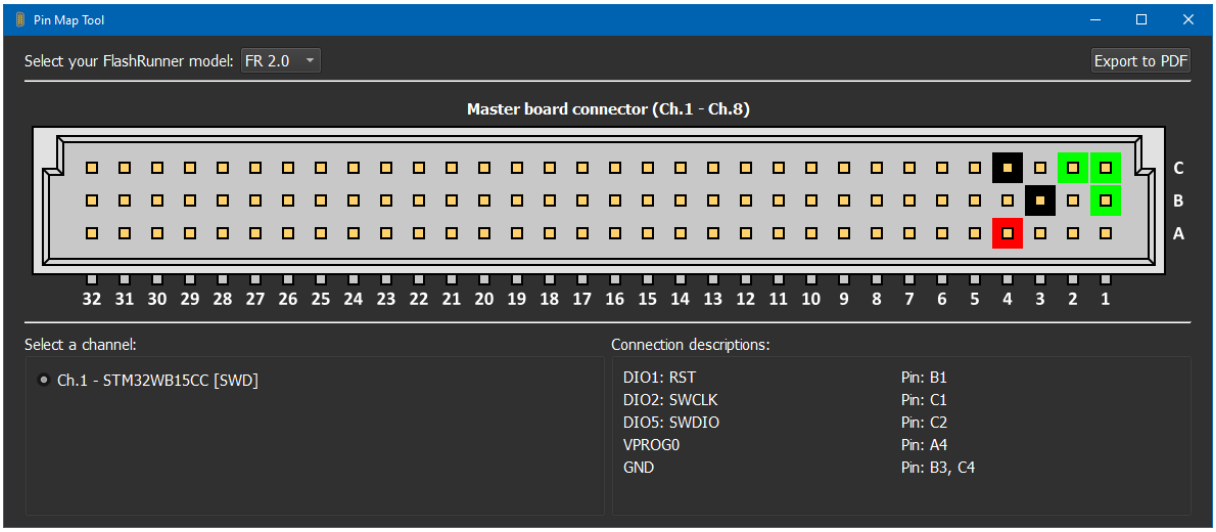
These new devices are built starting from the already existing (and supported by Flashrunner) SAM and PIC32M MCUs. PIC32C are powered by Arm® Cortex® core architectures and they deliver a unified and simplified development experience that includes powerful peripherals and advanced analog features.

PIC32_CORTEX Protocols and PIN maps

All the PIC32_CORTEX devices support the SWD protocol.

```
#TCSETPAR CMODE <SWD>
```

SWD PIN MAP



PIC32_CORTEX Available Commands

PIC32CMxxxxMC and PIC32CMxxxxJH Series

MEMORY	MASSERASE	ERASE PAGE	BLANKCHECK	PROGRAM	VERIFY READOUT	VERIFY CHECKSUM	READ	DUMP
Flash [F]	✓	✓	✓	✓	✓	✓	✓	✓
Dataflash [D]	✓	✓	✓	✓	✓	✓	✓	✓
User row [U]				✓	✓	✓	✓	✓

Additional Commands

#TPCMD PROTECT

#TPCMD UNPROTECT

#TPCMD MASSERASE C

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

#TPCMD READ_REGISTER <address> <size>

#TPCMD RUN <time>

#TPCMDSECTOR_ERASE <memory> <address> <size>

PIC32_CORTEX Driver Commands

PIC32_CORTEX Standard Commands

Here you can find the complete list of all available commands for PIC32_CORTEX driver.

```
Memory type:

F → FLASH
D → DATAFLASH
U → USER ROW
```

#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|D>
```

F: Masserase command for Flash memory of target device.
D: Masserase command for Dataflash memory of target device.

#TPCMD ERASE

```
#TPCMD ERASE <F|D>
#TPCMD ERASE <F|D> <start address> <size>
```

This function performs a page/sector erase of Flash memory or Dataflash memory.
Enter the Start Address and Size in hexadecimal format.

#TPCMD BLANKCHECK

```
#TPCMD BLANKCHECK <F|D>
```

Blankcheck is available for Flash and Dataflash memory.
Verify if all memory is erased.

```
#TPCMD BLANKCHECK <F|D> <start address> <size>
```

Blankcheck is available for Flash and Dataflash memory.
Verify if selected part of memory is erased.
Enter the Start Address and Size in hexadecimal format.

#TPCMD PROGRAM

```
#TPCMD PROGRAM <F|D|U>
```

Program is available for Flash, Dataflash and User row memory.
Programs all memory of the selected type based on the data in the FRB file.

```
#TPCMD PROGRAM <F|D|U> <start address> <size>
```

Program is available for Flash, Dataflash and User row memory.
Programs selected part of memory of the selected type based on the data in the FRB file.
Enter the Start Address and Size in hexadecimal format.

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

#TPCMD VERIFY

#TPCMD VERIFY <F|D|U> <R>
R: Readout Mode.
Verify Readout is available for Flash, Dataflash and User row memory.
Verify all memory of the selected type based on the data in the FRB file.

#TPCMD VERIFY <F|D|U> <R> <start address> <size>
R: Readout Mode.
Verify Readout is available for Flash, Dataflash and User row memory.
Verify selected part of memory of the selected type based on the data in the FRB file.
Enter the Start Address and Size in hexadecimal format.

#TPCMD VERIFY <F|D|U> <S>
S: Checksum 32 Bit Mode.
Verify Checksum is available for Flash, Dataflash and User row memory.
Verify all memory of the selected type based on the data in the FRB file.

#TPCMD VERIFY <F|D|U> <S> <start address> <size>
S: Checksum 32 Bit Mode.
Verify Checksum is available for Flash, Dataflash and User row memory.
Verify selected part of memory based on the data in the FRB file.
Enter the Start Address and Size in hexadecimal format.

#TPCMD READ

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

#TPCMD READ <F|D|U> <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 into the Terminal.

#TPCMD DUMP

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

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

#TPCMD DISCONNECT

#TPCMD DISCONNECT
Disconnect function. Power off and exit.

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

PIC32_CORTEX Additional Commands

The additional commands are specific commands that perform particular functions.

Typically, all additional commands are available in the last section of the Graphical User Interface when creating a project.

#TPCMD PROTECT

`#TPCMD PROTECT`

Activate device read/write protection.
Execute Unprotect to unlock it.

#TPCMD UNPROTECT

`#TPCMD UNPROTECT`

Execute a chip erase to unlock device functionality.

#TPCMD MASSERASE C

`#TPCMD MASSERASE C`

Erases all Flash and Dataflash memory.
This is usually around 10 times faster than doing it manually for single memories.

#TPCMD READ_REGISTER

`#TPCMD READ_REGISTER <address <size>`

Allows single register read
Enter the Start Address and Size in hexadecimal format.

#TPCMD RUN

`#TPCMD RUN <time>`

Moves the Reset line down and high, then waits for the entered time.
This command typically can be used to execute the firmware programmed in the device.
Time is expressed in seconds.

#TPCMD SECTOR_ERASE

`#TPCMD SECTOR_ERASE <F|D> <address> <size>`

Erases single sectors of Flash or Dataflash memory of the device.
Enter the Start Address and Size in hexadecimal format.

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

PIC32_CORTEX Driver Changelog

Info about driver version 1.00 - 21/05/2024
Supported Flash, Dataflash, and User row memory operations for PIC32CMxxxxMC and PIC32CMxxxxJH devices.

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