SMH Technologies®

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Diego Piccinin

Interfacing FlashRunner 2.0 with NXP NCK29_RCI

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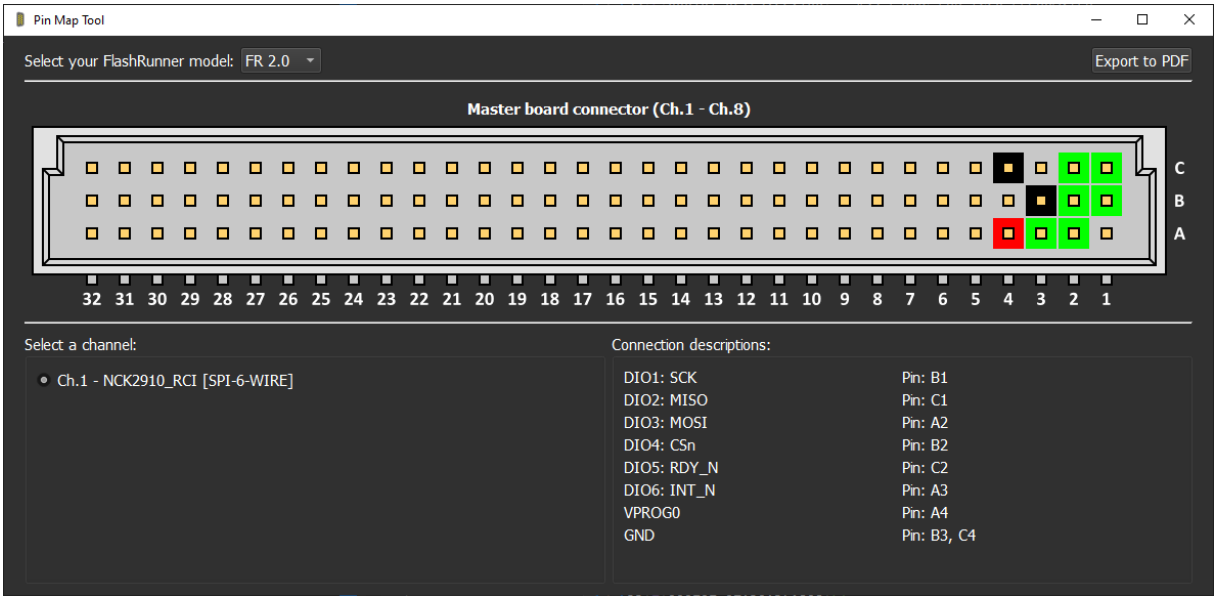
NCK29_RCI Protocols and PIN maps

All the NCK29_RCI devices support the SPI-6-Wire and SPI protocols.

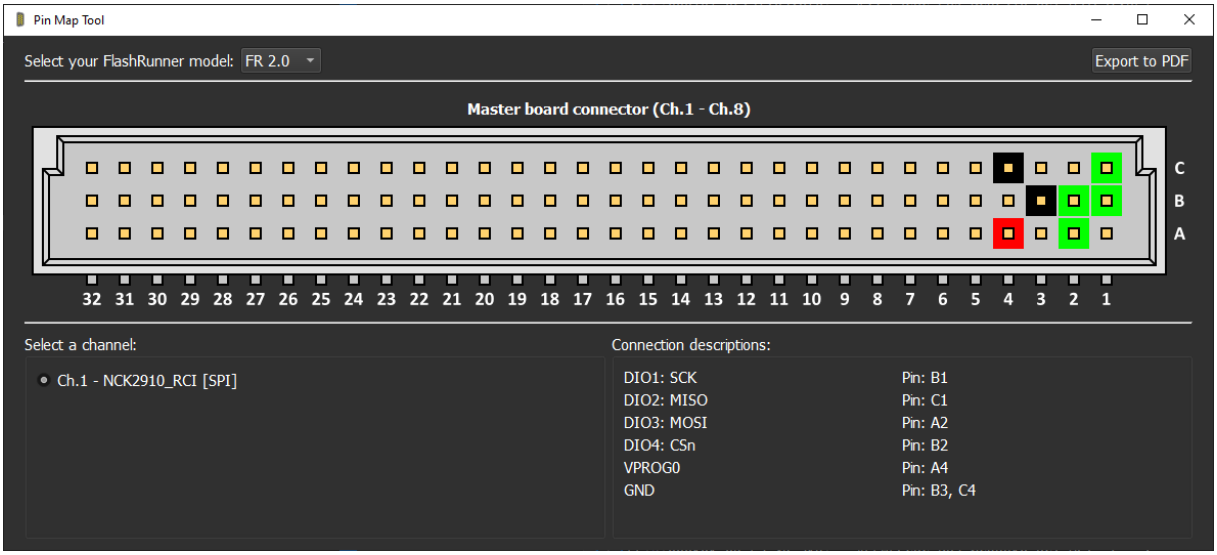
```
#TCSETPAR CMODE <SPI-6-WIRE/SPI>
```

SMH Technologies suggests using the SPI-6-Wire protocol because it is more reliable and optimized.

SPI-6-WIRE PIN MAP



SPI PIN MAP



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NCK29_RCI Available Commands

NCK29_RCI Standard Commands

MEMORY	MASSERASE	ERASE PAGE	BLANKCHECK	PROGRAM	VERIFY READOUT	VERIFY CHECKSUM	READ	DUMP
Configuration File [F]				✓	✓		✓	✓

NCK29_RCI Additional Commands

Commands for device:

#TPCMD WRITE_READ

NCK29_RCI Additional Parameters

Commands for device:

#TCSETPAR CPHA
#TCSETPAR CPOL
#TCSETPAR ONLY_EROM_COMMANDS

NCK29_RCI Configuration File

NCK29_RCI uses .cl files to generate FRBs. These files will not contain actual data to be stored in the device, but instead they will have a sequence of commands that will be executed with the PROGRAM F command. For additional information on how these commands will be executed, check also the TCSETPAR ONLY_EROM_COMMANDS parameter.

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NCK29_RCI Driver Commands

NCK29_RCI Standard Commands

Here you can find the complete list of all available commands for NCK29_RCI driver.

```
Memory type:

F → Configuration File
```

#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 PROGRAM

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

#TPCMD VERIFY

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

#TPCMD READ

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

#TPCMD DUMP

```
#TPCMD DUMP <F>
```
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> <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.

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NCK29_RCI Additional Commands

These commands are used to perform some specific operations on NCK29_RCI.

#TPCMD WRITE_READ <Command>

Syntax: `#TPCMD WRITE_READ <Command>`

`<Command>` Command to be sent to the target device via SPI/SPI-6-WIRE protocol.

Prerequisites: none

Description: This operation will send the specified command to the device. The transferred packet and the answer from the device will be visible in both the terminal and the log.

Note: Due to a limitation for every command, the maximum length of the Command parameter is 40 characters. If you need to send longer commands, you must use a combination of Dynamic Memory and Program operation. See example below.

Examples: WRITE_READ command execution:

```
---#TPCMD WRITE_READ 0x0402334493
Write: 0x0402334493
Read: 0x0402BBCC3C
```

DYNMEMSET2 example:

```
#DYNMEMSET2 0x0 0x5 0402334493
#TPSETSRC DYNMEM
#TPCMD PROGRAM F
#DYNMEMCLEAR
```

NCK29_RCI Driver Parameters

The additional parameters are used to configure some specific options inside the NCK29_RCI driver.

NCK29_RCI Additional Parameters:

#TCSETPAR CPHA

Syntax: `#TCSETPAR CPHA <0/1>`

`<0/1>` Data is sampled on the Leading/Trailing Edge

Description: Set the sampling point on the Leading/Trailing Edge, based on the value of the parameter.

Note: Default value 0.

#TCSETPAR CPOL

Syntax: `#TCSETPAR CPOL <0/1>`

`<0/1>` Clock is Low/High when inactive

Description: Set the logical level of the clock when it is not active based on the value of the parameter.

Note: Default value 1.

#TCSETPAR ONLY_EROM_COMMANDS

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Syntax: **#TCSETPAR** ONLY_EROM_COMMANDS <YES/NO>

<YES/NO> Enable/Disable the feature

Description: This parameter will change the behaviour of the PROGRAM operation. If set to YES, the PROGRAM command will execute only the commands contained in the FRB that will store data inside the EROM memory. This is particularly useful when loading a *.cl* file, since it will contain a set of commands that are not necessary for flashing the device parameters in EROM.
If set to NO, the PROGRAM will execute every command present in the FRB file, giving an output in both the Log and the Terminal. This last option should be used if the user wants to have a manual check on the device's response, and the Verify operation will still check only the values stored in the EROM memory.

Note: Default value YES.

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