

Interfacing FlashRunner 2.0 with RNSS_A devices

Below the protocol supported:

- UART

Optional Command List:

- Read/Dump
- Enable
- Disable

Additional settings:

List of additional settings:

- KEY_CODE_CONST → manually set the key code for the device;
- CKP_VALUE → multiplier of the peripheral clock frequency;
- CKM_VALUE → multiplier of the internal/operating clock frequency;
- TXD_PULLUP → set software pullup for TXD line.

Commands List

Memory types:

F → Flash

L → Lockbits

MASSERASE

MASSERASE <F>

This function performs a Masserase for Flash.

BLANKCHECK

BLANKCHECK <F>

Blankcheck command for Flash - Auto or Manual mode allowed

PROGRAM

PROGRAM <F> or PROGRAM <F> <start_addr> <size> or PROGRAM <L> <start_addr>

Program command for Flash - Auto or Manual mode allowed.

VERIFY

VERIFY <F> <R|S> or VERIFY <F> <R> <start_addr> <size>

Verify command for Flash

R – Normal verify with Read-Out method. Auto or Manual mode allowed

S – Verify with Checksum method - Only Auto mode allowed. An optional parameter can be added

to the command, the `<expected_checksum>`. If added, to compare the value with the answer of the device is used the `expected_checksum`. Example: `VERIFY F S 0x5566`.

READ

`READ <F> <start_addr> <size>`

Read function for Flash

DUMP

`DUMP <F> <start_addr> <size>`

Dump function for Flash

ENABLE

`ENABLE <L>`

Enable LockBits

DISABLE

`DISABLE <L>`

Disable LockBits

CALC_FRB_CHKSUM

Calculate the checksum of the data inside the FRB. This command can be executed without a device connected. It can be used to retrieve the checksum that will be used for the `VERIFY F S <expected_cheksum>`. The cheksum algorithm used is the same of the `VERIFY` cheksum, hence only the Auto mode is allowed.

CONNECT

Connect function: Power on and entry

DISCONNECT

Disconnect function: Power off and exit

Custom Parameters Notes

There are a bunch of custom parameters that need to be explained.

The first is named `DIO_BOOT_MASK_VALUES`. It is a bitwise mask that tells if the corresponding DIO should be driven either HIGH or LOW for boot purposes.

This is necessary in order to manage the different configurations for SCI boot. Those configurations can be found in the specific device hardware manual.

The second and third ones are `VDD_HOLE_FROM` and `VDD_HOLE_TO` which indicates the values not admitted in the total range for multi powered devices.

The fourth is `BE_DEVICE_ID` that is the alternative device id to be passed to the MCU in order to select Big Endian order for its memories. This is present in RX devices.

In order to discover this value, query the device with `INFO` command.