

Interfacing FlashRunner 2.0 with Nuvoton M4xx devices



M4xx Introduction

M4xx driver allows the support of the M4xx devices manufactured by Nuvoton®.

These new devices are powered by Arm® Cortex® core architectures and they deliver a unified and simplified development experience that includes powerful peripherals and advanced analogic features.

M4xx Protocols and PIN maps

All the M4xx devices support the SWD protocol.

#TCSETPAR CMODE <SWD>

SWD PIN MAP

The screenshot shows the 'Pin Map Tool' interface. At the top, it says 'Select your FlashRunner model: FR 2.0' and has an 'Export to PDF' button. The main area is titled 'Master board connector (Ch.1 - Ch.8)' and displays a 32-pin connector layout. The pins are numbered 32 down to 1 from left to right. The connector is divided into three rows: C (top), B (middle), and A (bottom). Several pins are highlighted: pin 4 is red, pin 3 is black, pin 2 is green, pin 1 is green, pin 31 is black, and pin 30 is green. Below the connector, there are two sections: 'Select a channel:' with a dropdown menu showing 'Ch.1 - M487SIDAE [SWD]', and 'Connection descriptions:' which lists the following connections:

Connection descriptions:	
DIO1: RST	Pin: B1
DIO2: SWCLK	Pin: C1
DIO5: SWDIO	Pin: C2
VPROG0	Pin: A4
GND	Pin: B3, C4

M4xx memories and available commands

M48x, M46x, M43x

MEMORY	MASSERASE	SECTOR ERASE	BLANKCHECK	PROGRAM	VERIFY READOUT	VERIFY CHECKSUM	READ	DUMP
Application ROM [A]	✓	✓	✓	✓	✓	✓	✓	✓
Loader ROM [L]	✓		✓	✓	✓	✓	✓	✓
User Configuration Block [U]	✓			✓	✓		✓	✓
OTP [O]				✓	✓		✓	✓

M45x

MEMORY	MASSERASE	SECTOR ERASE	BLANKCHECK	PROGRAM	VERIFY READOUT	VERIFY CHECKSUM	READ	DUMP
Application ROM [A]	✓	✓	✓	✓	✓	✓	✓	✓
Loader ROM [L]	✓		✓	✓	✓	✓	✓	✓
User Configuration Block [U]	✓			✓	✓		✓	✓

M4xx Driver Commands

#TPCMD CONNECT

#TPCMD CONNECT

This function performs the entry and it is the first command to be executed when starting the communication with the device. It powers on the boards or give reference to the ISP lines and then connects to the device.

#TPCMD MASSERASE

#TPCMD MASSERASE <A|L|U>

A: Completely erases the Application ROM memory.

L: Completely erases the Loader ROM memory

U: Completely erases the User Configuration Block memory

#TPCMD SECTOR_ERASE

#TPCMD SECTOR_ERASE <A> <start address> <size>

Erases the selected part of the Application ROM memory.

#TPCMD BLANKCHECK

#TPCMD BLANKCHECK <A|L>

Verify if the Application ROM or the Loader ROM memories are erased.

#TPCMD BLANKCHECK <A> <start address> <size>

Verify if the selected part of the Application ROM or of the Loader ROM memories is erased.

#TPCMD PROGRAM

#TPCMD PROGRAM <A|L|U|O>

Program is available all the memories supported by FlashRunner for these devices.

Programs the data in the FRB file in the related memory area.

#TPCMD VERIFY

#TPCMD VERIFY <A|L|U|O> <R>

R: Readout Mode.

Verify Readout is available for all the memories supported by FlashRunner for these devices.

Verifies the data in the FRB file programmed in the related memory area.

#TPCMD VERIFY <A|L> <S>

S: Checksum 32 Bit Mode.

Verify Checksum is available for Application ROM and Loader ROM memories.

Verifies the data in the FRB file programmed in the related memory area.

#TPCMD READ

#TPCMD READ <A|L|U|O>

Read is available for all memories.

Reads all the selected memory.

The result of the read command will be visible into the Terminal.

#TPCMD READ <A|L|U|O> <start address> <size>

Reads the selected part of related memory.

The result of the read command will be visible into the Terminal.

#TPCMD DUMP

#TPCMD DUMP <A|L|O>

Dump is available for Application ROM, Loader ROM and OTP memories.
Dump all the selected memory.
The result of the dump command will be stored in the FlashRunner 2.0 internal memory.

#TPCMD DUMP <A|L|O> <start address> <size>

Dump is available for Application ROM, Loader ROM and OTP memories.
Dump the selected part of related memory.
The result of the dump command will be stored in the FlashRunner 2.0 internal memory.

#TPCMD DISCONNECT

#TPCMD DISCONNECT

Disconnect function.



M4xx Driver Changelog

Info about driver version 1.00 - 21/05/2024

Supported Application ROM, Loader ROM, User Configuration Block and OTP for M43x, M46x and M48x families.

Supported Application ROM, Loader ROM, User Configuration for M45x family.

M47x family available upon request in 15 days.