Technical Note

Cypress S70FS01GS: Sector Map Configuration

May 2023

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This Technical Note describes how to configure sector map of S70FS01GS Flash device with a Python script.

Tool requirements:
✓ winIDEA 9.17.160 or newer
✓ BlueBox iC5700, iC5000
✓ Active Probe or Debug Adapter

Cypress S70FS01GS Flash non-volatile memory device implements JEDEC standard supporting Serial Flash Discoverable Parameters (SFDP). However, the S70FS01GS device is a dual die stack of two FS512S dies with consecutive memory addresses and prior to the first use initial formatting is required.

To use the S70FS01GS Flash Device, sector map needs to be configured. Configuration is set in the Configuration Register 3 Non-volatile (CR3NV). To configure the device, at least one of the 20h_NV bits in CR3NV registers of each die needs to be set.

The following index value combinations are supported for each die:

Index Value	Low Address CR3NV[3]	High Address CR3NV[3]	Description
01h	0	1	4 KB sectors at bottom with remainder 256 KB sectors
02h	1	0	4 KB sectors at top with remainder 256 KB sectors
03h	1	1	Uniform 256 KB sectors

If the device is configured to one of the first two options, only one CR3NV register has been modified. In this case the device can still be configured to uniform 256 KB sectors.

BlueBox debugger can configure Sector Map by running a Python script via winIDEA or automation isystem.connect API.

CR3NV bits are the One-Time Programmable (OTP) type. Refer to the Flash device data sheet for more information about Sector Map Parameters and Configuration.

Python script example

Download and unzip the script example via the link below:

S70FS01GS_sector_map_config.7z	

The script includes all 3 available configurations. By default, script configures the 4 KB sectors at bottom, while the other two options are commented out. To select any other configuration, comment out the default configuration and uncomment the required configuration.

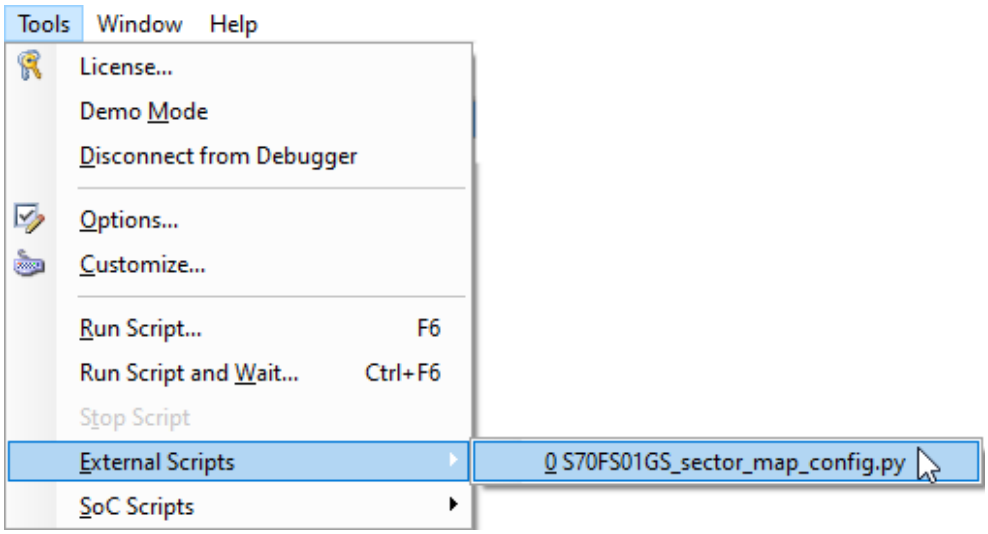
winIDEA Configuration

1. Modify the script according to the required configuration.

2. Save it in the same folder as winIDEA workspace.

3. Start Debug session (Debug status must be STOP).

4. Select your Python script in *Tools / External Scripts*. The script will execute the required operation.



For more information on how to run Python scripts in winIDEA refer to winIDEA Help. You can use isystem.connect API for running Python scripts.