Noise generator module

The software folder contains the prepared file “slg47004_config.h” with the NVM settings for the Renesas module, the instructions at the bottom of this document are just in case you want to recreate it.

To program the SLG47004V-DIP module, open the noise_generator_program_1 folder, compile and download the .ino file, immediately after the download is completed open the serial monitor.

The screen will show the detected I2C devices, they should be 0X08, 0X09, 0X0A and 0X0B, do not proceed if these are not detected. They will also show up on the serial monitor.

Press the rotary encoder knob long to start the process.

The serial monitor will show:

- The data from the config file
- The current NVM data
- The 4 isolated rheostat factory calibration bytes
- Consolidated config file and rheostat bytes
- NVM data after programming, it should match the consolidated file except pages (lines) 8 and 15, they are protected pages and will not be overwritten.

After this the module will go to sleep. Now open the final module code “noise_generator_1 “ and download.

Generating slg47004_config.h

To generate the file we first need the Renesas software.

Download and install the go configure software hub.

Load the application note code:

AN-CM-351_True_White_Noise_Generator_with_Pink_and_Brown_Noise_Outputs.

File->export->export NVM

This will create a nonvolatile memory bit file with all 2048 bits and their value.

Open pycharm and run the program converter.py.

Select the exported NVM file.

This will generate the slg47004_config.h file for inclusion in the esp32 code, it has 256 bytes.

Include this file in the noise_generator_program_1 folder.