SI4432 Interactive Viewer

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0:09

Introduction

This is a small program for interactive writing and reading the registers of the SI4432.
This program might be very valuable in finding some tricky bugs. As an example, I was running with a bad power supply and some instructions (e.g. setting Tx-Power to max, changing GPIO-settings) were hanging the SI4432 so that no reliable SPI communication was possible. Software reset doesn't work either, because you will write to the wrong register. With this program it was discovered very quickly. One of the weird things you could see in this situation is that reading of all the registers, all the values are shifted.

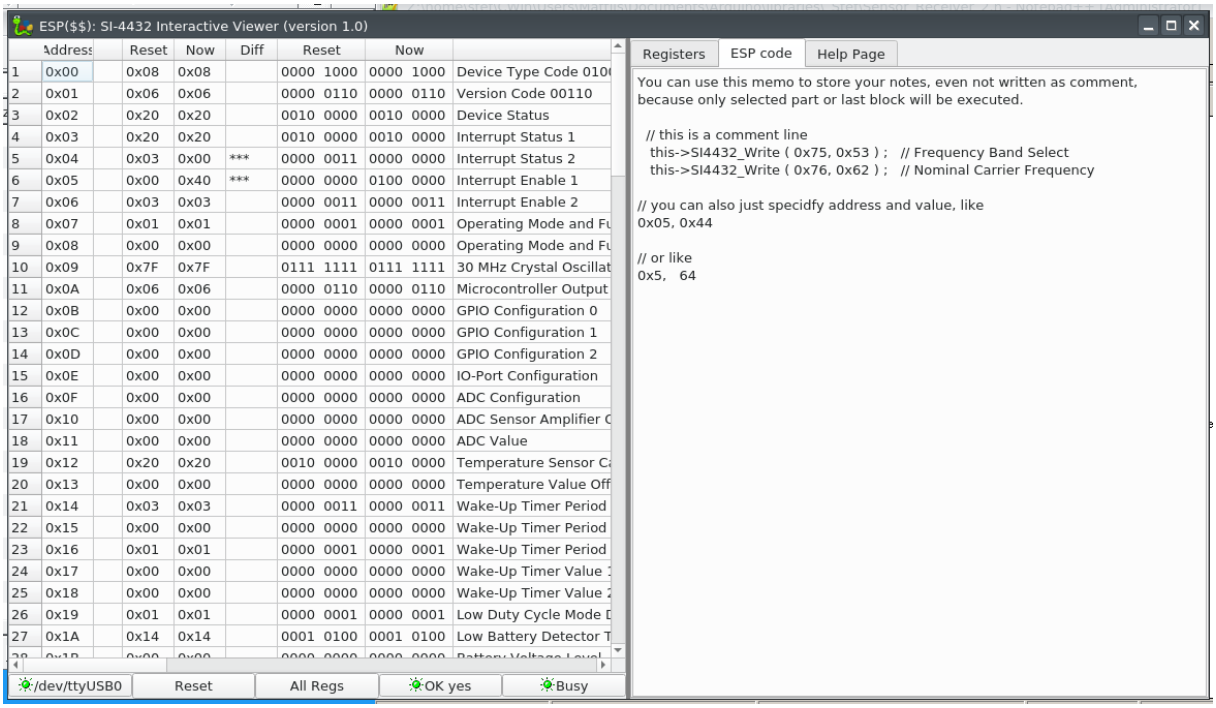
You can program the registers with the textcontrol on the right side. The content of this text control is automatically saved in the config file.
You can either use

- short cut: just type the addresse of the register and the value to program, like "0x05 0xBB" or "0x05,187"
- Official Arduino C-code, by using the function call this->SI4432_Write (Address, Value), as shown in the picture below

Comment "//" is allowed.
Pressing F9 executes

- the selected code, if there is a selection in the textcontrol
- the last block of code otherwise (last blok is determined by an empty line)

After the code is executed, all the registers are read from SI4432 and displayed in the column "Now".



Buttons:

- /Dev/ttyUSB0 : toggle to connect or release the CommPort (so you can reprogram the device). Shows GREEN if connected, RED if disconnected. Reconnecting genereates a reset off the ESP and thus of the SI4432.
- Reset: Send a reset command tot the ESP. If the ShutDown pin of the SI4432 is connected, a hardware reset will be performed, otherwise reset is done through register 0x07
- All Regs : Get the current value of all registers
- OK Yes: checks if the communication with the ESP is working correctly
- Busy: indicates RED if a command is still in progress, otherwise GREEN

Commands

PC	ESP	Description
AA BB C2	AA BB C2	ID handshake so the computer program can find the USB port where the ESP is connected (AA BB C2 = 170 187 194)
FA 00 xx … FA 7E xx		Write value xx to register 00 … Write value xx to register 7E
FA F0	AA BB CC Register 00 …. Register 7E AA BB DD	Reset + Init + Dump all registers
FA F1	AA BB CC Register 00 …. Register 7E AA BB DD	Dump registers
FA F2	44 if OK 33 if not	Hangup Test