ADE7913 SPI problem: I am only able to do 1 read operation in burst mode, after one burst the MISO line stays low.

jorisdt *on Apr 13, 2017*

Hello,

I am using a lopy in an energy metering project, the lopy should receive digital values from the ADE7913 over SPI. Whenever I power up the ADE7913 and execute a read operation, I get the data from all the registers as expected. However when I try to execute a second or third read operation I get no answer at all, the MISO line stays low. I am using a lopy to communicate with the ADE7913 and for now I am just typing commands in a terminal. After the first and only succesfull read operation I toggle the /CS pin twice to set and clear it again. I do this by also typing a toggle command in the terminal, this means that there are several seconds inbetween the setting/clearing and the previous/next read operation attempt. Could this be causing the problem I am encountering? As said before I can only do 1 succesfull read operation after powering up the ADE7913, afterwards the chip does not respond anymore to my commands, please help me solve this issue, thanks in advance for any replies!!

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Nouredine *Apr 13, 2017* +1

Hi,

sorry could you please tell me which language (code C or Python) did you use ? and which SPI settings (mode : 0, 1, 2 or 3 & f

thanks in advance for your reply.
...

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Nouredine *on Apr 13, 2017 6:52 PM over 4 years ago*

Hi,

sorry could you please tell me which language (code C or Python) did you use ? and which SPI settings (mode : 0, 1, 2 or 3 & frequency) that did you use ?

thanks in advance for your reply.

Nour

+1 Reply

jorisdt *on Apr 13, 2017 8:26 PM over 4 years ago*

I am using the following command to set up the spi-connection, this is in (micro)python) :

```
spi = SPI(0, mode=SPI.MASTER, baudrate=500000, polarity=1, phase=1, firstbit=SPI.MSB, bits=8)

As you can see the polarity and phase are set to 1, this is as described in the datasheet if I interpret it correctly.
The first parameter '0' I honestly have no idea what this does, is this the spi mode? I also tried other frequencies but if I understand corre
```

Thanks for commenting I really look forward to having this issue solved.

Kind regards,

Joris

0 Reply

jorisdt *on Apr 18, 2017 4:18 PM over 4 years ago*

I still encounter the same problem, is there nobody who has any idea how to solve this? Thanks in advance!!

0 Reply

Nouredine *on Apr 19, 2017 11:35 AM over 4 years ago*

hi,

I don't know if you use your own board with ADE7913 or the analog devices evaluation board ?

in the second case, when you use analog devices evaluation board, you should pay attention of the recommendations about jumpers and solders that you need to do.

NB : you should fix your SPI communication mode using a specific register. to be sure that this SPI mode is still enable.

best regards,

Nour

0 Reply

dlath *on Apr 19, 2017 10:43 PM over 4 years ago*

Hi,

It would be good to step through a few tests to see where the problem lies. If you have an oscilloscope, please check the SPI communication lines to see if the data being sent is correct and that each line is behaving like you would expect it to according to Page 9 and 26 of the ADE7913 Data Sheet.

First off, with a multimeter, verify that VDD is getting the correct voltage. Then check the VDDiso, LDO and REF pins to make sure they are at 2.8V, 2.5V and 1.2V respectively.

Then try reading registers one register at a time without using the burst function to see if it is working. Make sure that the values being sent back are roughly correct and not something like all 0's or 0xF's. If there is already an issue at this point then you will need to go ahead and probe the SPI lines to verify correct communication. Make sure that the CS pin is being toggled after every individual communication

If it is working then try writing to a register such as CONFIG and verifying that you can read it back correctly.

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