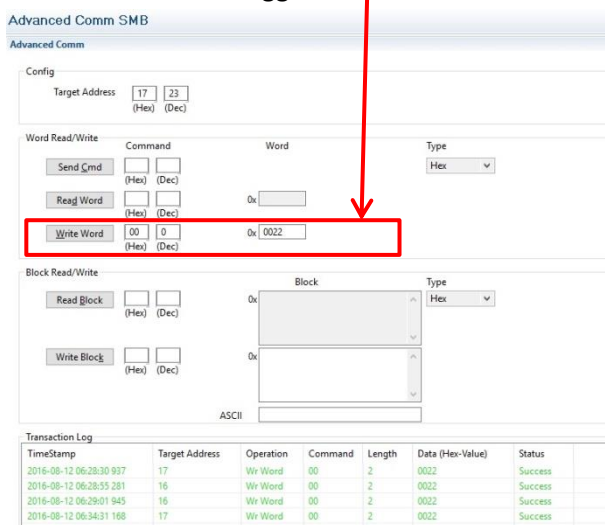


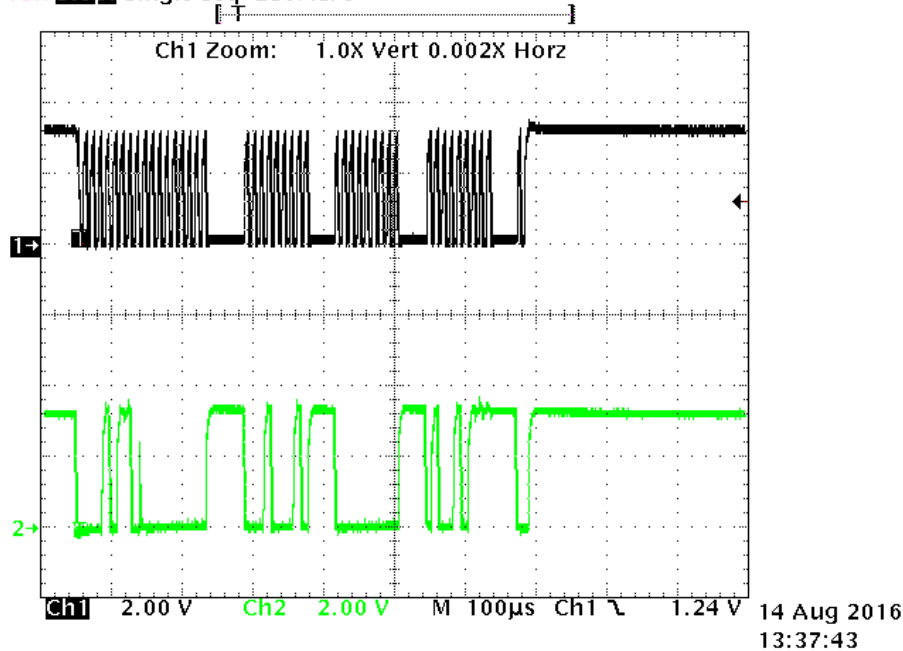
Test situation:

- USB-Module [EV2400](#) connected to my PC.
- EVA-Board [bq76930EVM](#) connected to [EV2400](#) via SMB ([bq78350-R1](#))
- Gas Gauge [bq78350-R1](#) talks to Analog Front End [bq76930](#), via i2c on the EVA-Board
- bqStudio running on my PC, refresh cycles inactive
- bqStudio tab „Advanced Comm SMB“ active
- Send command 0x0022 (ManufacturerAccess() - FETControl) via „Write Word“ in order to toggle FETs on EVA Board. Command works fine, FETs do toggle!



With oscilloscope I observe the command and can see 4 burst with a gap of about 50us in between.

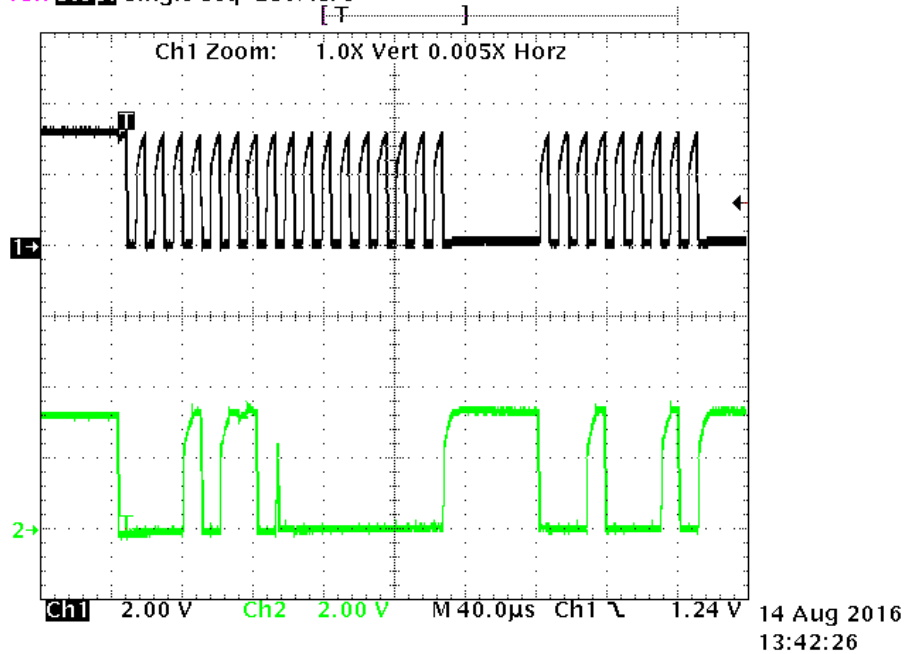
Tek Stop: Single Seq 250MS/s



It seems, that burst 1 contains 2 bytes and burst 2-4 one byte each. **Mostly strange is, and I do consider this a violation of the SMB/i2c protocol, that burst 1 has only 17 clock pulses for 2 bytes instead of 18!**

Zoom 1st part of the recording:

Tek Stop: Single Seq 250MS/s



Burst 1: (17clocks !!!)

Start 0001-0110 0 0000-0000

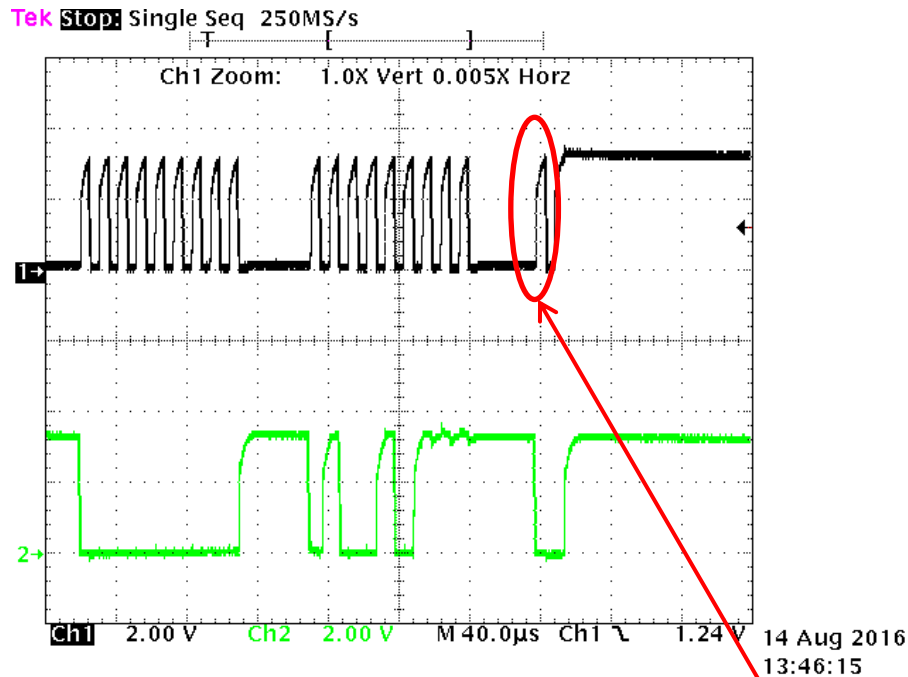
Start 0x16 ack 0x00 **2nd ack missing!**

Burst 2: (9 clocks)

0001-0001 0

0x11 ack **this value does not make sense at all!**

Zoom 2nd part of the recording:



Burst 3: (9 clocks)

0000-0000 0
0x00 ack

Burst 4: (9 clocks)

0100-1011 1
0x4B nack

The following 1st interpretation of the recording above does not make sense.

Start 0x16 ACK 0x00 ! 0x11 ACK 0x00 ACK 0x4B NACK STOP

I suppose the whole problem is a misplaced gap between the pulses and maybe the single pulse before the stop condition is the solution. When taking the missing ack pulse of burst 1 from burst 2 the occurring bit-shift leads to the following:

Start 0x16 ACK 0x00 ACK 0x22 ACK 0x00 ACK 0x97 ACK STOP

This fits better to the command 0x0022 (ManufacturerAccess() - FETControl)

Now 2 minor questions do remain?

- What is the meaning of the last byte 0x97?
- Why is there a difference when setting 0x16 or 0x17 as device address in bqStudio?