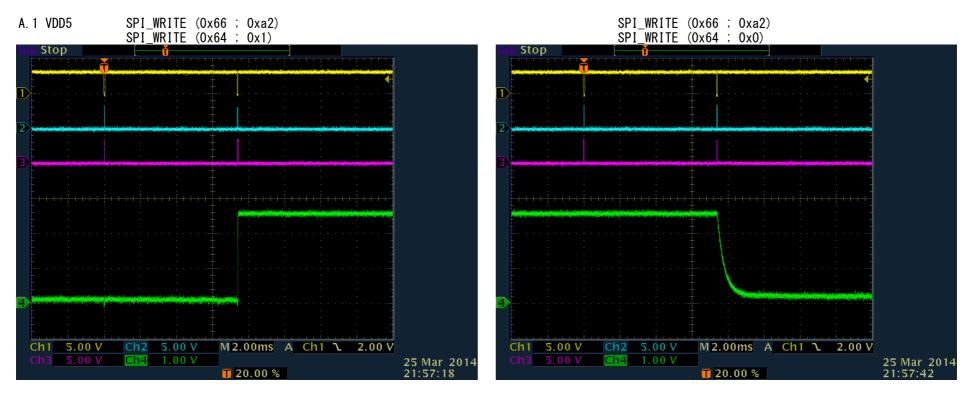
TPS65381 AMUX (Analog Multiplex) parameters out from DIAG\_OUT pin at VBATP=12V and 14V  $\,$ 

	Voltage Rail / Signal Name	Description	Divide Ratio	Voltage range / Accuracy	Measured Voltage @VBATP=12V	Measured Voltage @VBATP=14V
A.1	VDD5	Linear VDD5 Regulator output	2±1.5%	2.5V±2%	2.511	2.512
A.2	VDD6	Switching-Mode Pre- Regulator	3±2.2%	2V±5%	2.012	2.012
A.3	VCP	External Charge Pump	13.5±2%	0.6V 4V	1.564	1.845
A.4	VSOUT1	Sensor Supply Output Voltage	4±0.5%	0.825 2.375 ±2%	1.245	1.245
A.5	VBAT_SAFING	Safing Battery Supply	10±2%	0.4V 4V	1.206	1.409
A.6	VBATP	Battery Supply	10±2%	0.4V 4V	1.206	1.409
A.7	MAIN_BG	Regulators Main Bandgap Reference	1	2.5V±2%	2.498	2.496
A.8	VMON_BG	Voltage Monitor Bandgap	1	2.5V±2%	2.494	2.495



AMUX -> DIAG\_OUT waveform without series resistor (BENCH + TIGER board + GUI software) A. 2 VDD6 SPI\_WRITE (0x66; 0xa2) SPI\_WRITE (0x66; 0xa2) SPI\_WRITE (0x64; 0x2) SPI\_WRITE (0x64; 0x0) Stop Stop M 2.00ms A Ch1 \ 2.00 V Ch1 5.00 V Ch2 5.00 V Ch1 5.00 V Ch2 5.00 V M 2.00ms A Ch1 \ 2.00 V Ch3 5.00 V Ch4 1.00 V Ch3 5.00 V Ch4 1.00 V 25 Mar 2014 21:58:56 25 Mar 2014 21:58:06

AMUX -> DIAG\_OUT waveform without series resistor (BENCH + TIGER board + GUI software) A. 3 VCP SPI\_WRITE (0x66; 0xa2) SPI\_WRITE (0x66; 0xa2) SPI\_WRITE (0x64; 0x4) SPI\_WRITE (0x64; 0x0) Stop Stop Ch1 5.00 V Ch2 5.00 V M 2.00ms A Ch1 \ 2.00 V Ch1 5.00 V Ch2 5.00 V M 2.00ms A Ch1 \ 2.00 V Ch3 5.00 V Ch4 1.00 V Ch3 5.00 V Ch4 1.00 V 25 Mar 2014 21:59:31 25 Mar 2014 22:00:05

AMUX -> DIAG\_OUT waveform without series resistor (BENCH + TIGER board + GUI software)

A. 4 VSOUT1 SPI\_WRITE (0x66 : 0xa2)
SPI\_WRITE (0x64 : 0x8)

SPI\_WRITE (0x64 : 0x0)

SPI\_WRITE (0x64 : 0x0)

25 Mar 2014 22:11:49 Ch1 5.00 V

Ch2 5.00 V

Ch4 1.00 V

M 2.00ms A Ch1 \ 2.00 V

**1** 20.00 %

25 Mar 2014 22:12:18

Ch1 5.00 V

Ch2 5.00 V

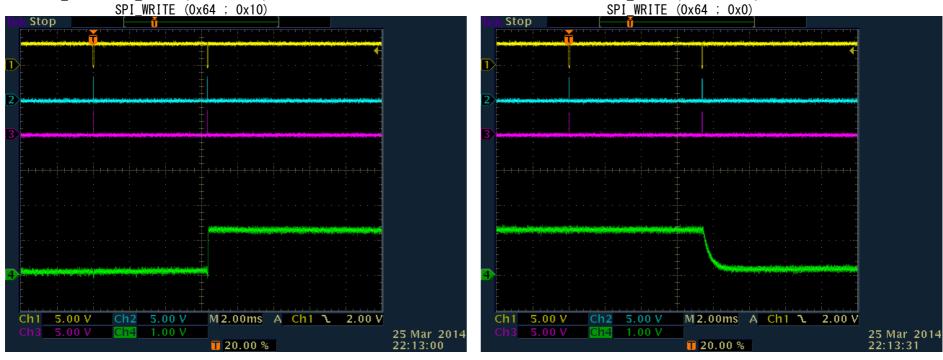
Ch4 1.00 V

M 2.00ms A Ch1 λ 2.00 V

AMUX -> DIAG\_OUT waveform without series resistor (BENCH + TIGER board + GUI software)

A. 5 VBAT\_SAFING SPI\_WRITE (0x66; 0xa2)

SPI\_WRITE (0x66; 0xa2)



25 Mar 2014 22:14:06 Ch1 5.00 V

Ch3 5.00 V

Ch2 5.00 V

Ch4 1.00 V

M 2.00ms A Ch1 \ 2.00 V

**1** 20.00 %

25 Mar 2014 22:14:31

Ch1 5.00 V

Ch3 5.00 V

Ch2 5.00 V

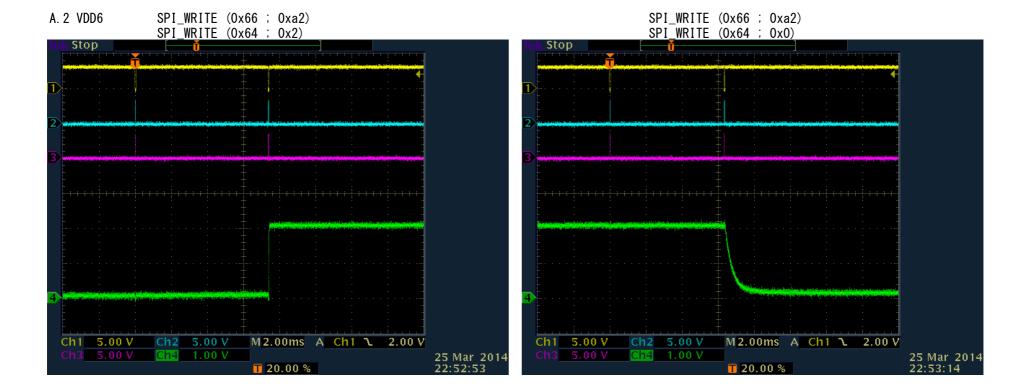
Ch4 1.00 V

M 2.00ms A Ch1 1 2.00 V

AMUX -> DIAG\_OUT waveform without series resistor (BENCH + TIGER board + GUI software) A. 7 MAIN\_BG SPI\_WRITE (0x66; 0xa2) SPI\_WRITE (0x66; 0xa2) SPI\_WRITE (0x64; 0x40) SPI\_WRITE (0x64; 0x0) Stop Stop Ch1 5.00 V Ch2 5.00 V M 2.00ms A Ch1 \ 2.00 V Ch1 5.00 V Ch2 5.00 V M 2.00ms A Ch1 \ 2.00 V Ch3 5.00 V Ch4 1.00 V Ch3 5.00 V Ch4 1.00 V 25 Mar 2014 22:15:09 25 Mar 2014 22:15:44

AMUX -> DIAG\_OUT waveform without series resistor (BENCH + TIGER board + GUI software) A. 8 VMON\_BG SPI\_WRITE (0x66; 0xa2) SPI\_WRITE (0x66; 0xa2) SPI\_WRITE (0x64; 0x0) SPI\_WRITE (0x64 ; 0x80) Stop Stop Ch1 5.00 V Ch2 5.00 V M 2.00ms A Ch1 \ 2.00 V Ch1 5.00 V Ch2 5.00 V M 2.00ms A Ch1 \ 2.00 V Ch3 5.00 V Ch4 1.00 V Ch3 5.00 V Ch4 1.00 V 25 Mar 2014 22:16:33 25 Mar 2014 22:17:01 **1** 20.00 % **1** 20.00 %





AMUX -> DIAG\_OUT waveform with 1k-ohm series resistor (BENCH + TIGER board + GUI software) A. 3 VCP SPI\_WRITE (0x66; 0xa2) SPI\_WRITE (0x66; 0xa2) SPI\_WRITE (0x64; 0x4) SPI\_WRITE (0x64; 0x0) Stop Stop M 2.00ms A Ch1 \ 2.00 V Ch1 5.00 V Ch2 5.00 V Ch1 5.00 V Ch2 5.00 V M 2.00ms A Ch1 \ 2.00 V Ch3 5.00 V Ch4 1.00 V Ch3 5.00 V Ch4 1.00 V 25 Mar 2014 22:53:50 25 Mar 2014 22:54:16

25 Mar 2014 22:54:47 Ch3 5.00 V

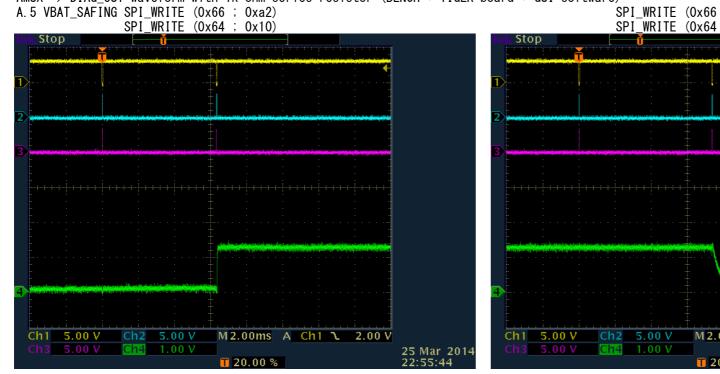
Ch4 1.00 V

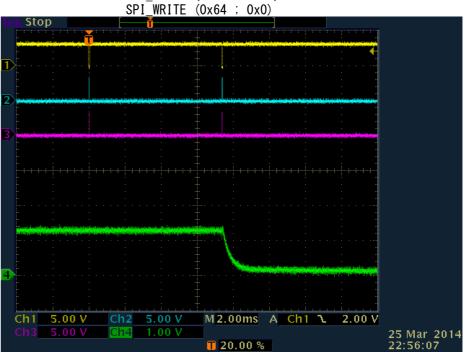
**1** 20.00 %

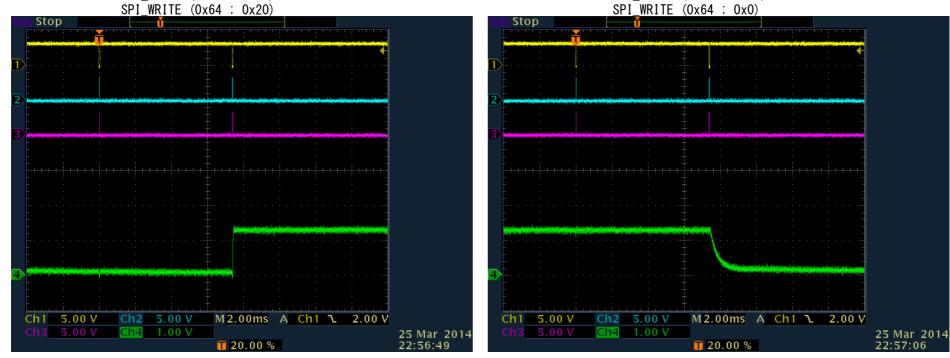
25 Mar 2014 22:55:06

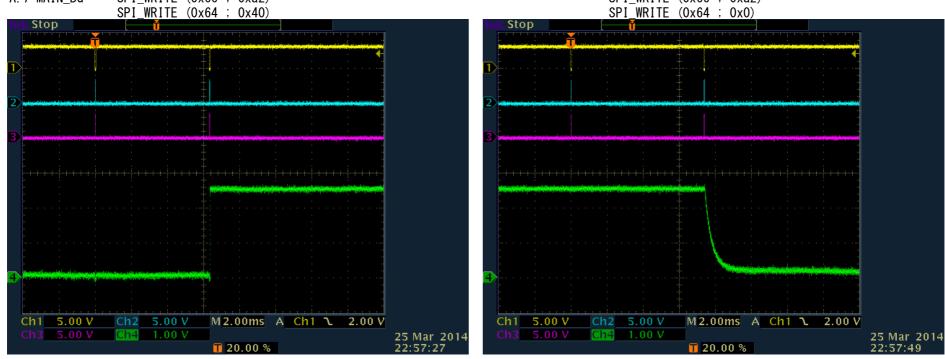
Ch3 5.00 V Ch4 1.00 V

AMUX -> DIAG\_OUT waveform with 1k-ohm series resistor (BENCH + TIGER board + GUI software) SPI\_WRITE (0x66; 0xa2)









25 Mar 2014 22:58:12 Ch3 5.00 V Ch4 1.00 V

**1** 20.00 %

25 Mar 2014 22:58:35

Ch3 5.00 V Ch4 1.00 V