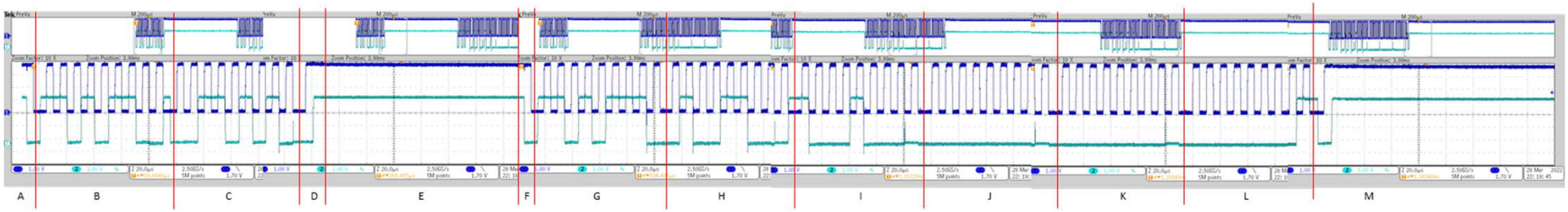
Slide 1

Captured on I2Cm after communicating directly on I2Cm bus to BQ25792



Interpretation of above I2C signals: 107, 53 instructs read, then there is a stop start followed by read of 76, 136
BQ25792 reg53 (0x35) is VBUS… 76, 136 equates to 19.592V which is what I am measuring on the board
(also in line with Arduino output on right)

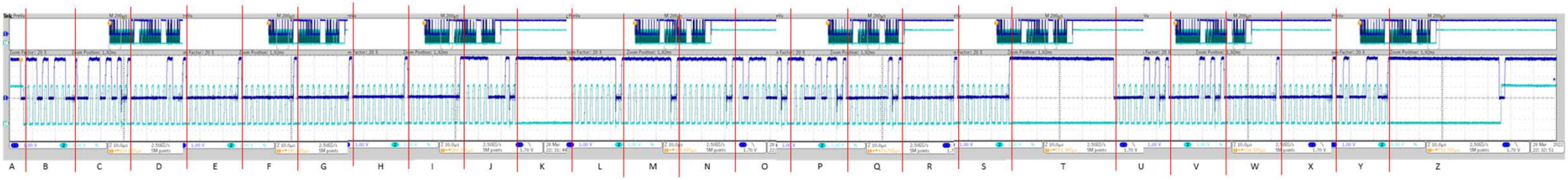
A	B	C	D	E	F	G	H	I	J	K	L	M
start	1	0	stop	break	start	1	0	1	0	0	0	stop
	1	0				1	1	0	0	0	0	
	0	1				0	0	0	0	0	0	
	1	1				1	0	0	0	0	0	
	0	0				0	1	1	0	0	0	
	1	1				1	1	0	0	0	0	
	1	0				1	0	0	0	0	0	
r/w	0	1				1	0	0	0	0	0	
ACK	0	0				0	0	0	0	0	1	
	6	1				6	2	4	0	0	0	
	B	A				B	6	4	0	0	0	
	w	r				r	w	w	w	w	w	
		3					4	8	0	0	0	
		5					C	8	0	0	0	
	address	register				address	5 bytes					
	107	53				107	76	136	0		0	
								19592	mV on VBUS			

Arduino output:

22:43:28.047 -> Read DEVICE FOUND, device=107 register=53
22:43:28.082 -> Byte0: 76
22:43:28.082 -> Byte1: 136
22:43:28.082 -> Byte2: 0
22:43:28.133 -> Byte3: 0
22:43:28.133 -> Byte4: 0

Slide 2

Captured on I2Cm after communicating indirectly to BQ25792 via I2Cs bus
DATA1 (0x09) set to 64, 107, 53, 2 followed by CMD1 (0x08) set to 4, 73, 50, 67, 114



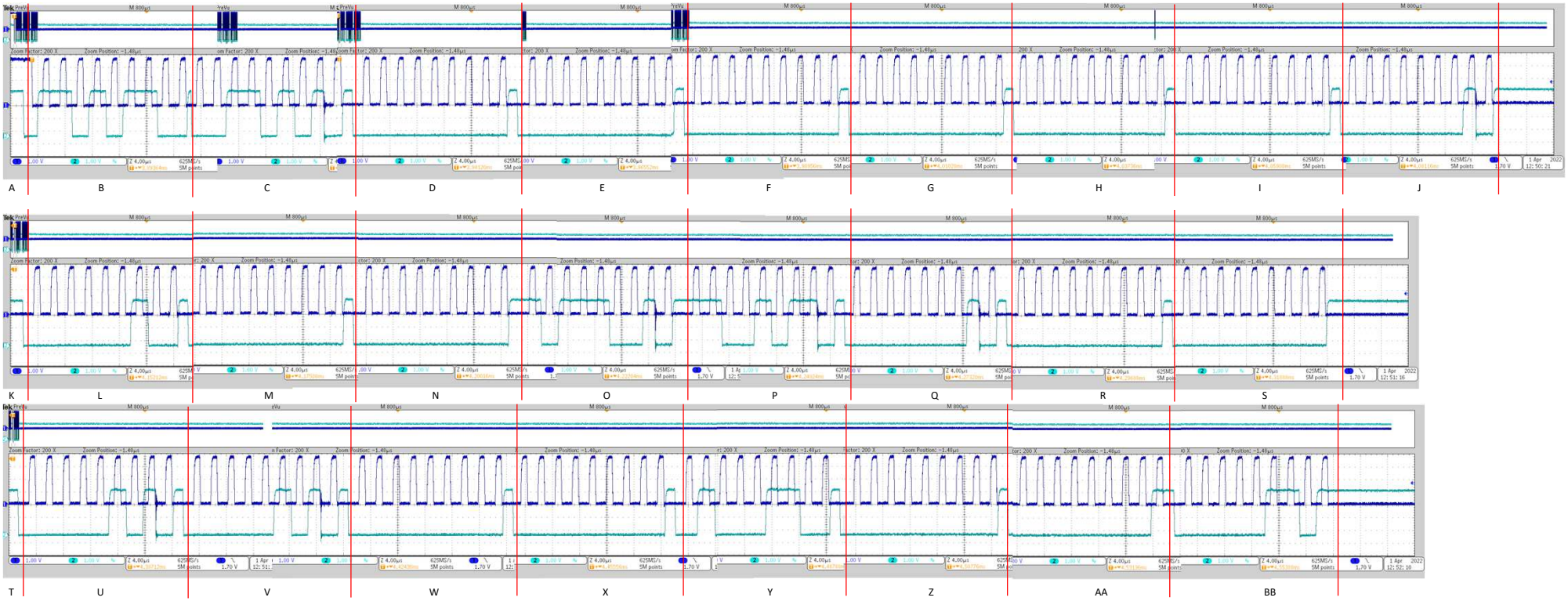
Interpretation of above I2C signals: 107, 53 transfers to the I2Cm bus however

1) There is an additional character '2' transmitted after this
2) No read request and no data comes back (expect 76, 136 based on previous slide)
3) No stop start in between

B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	0	0	0	0	0	0	0	1	break	1	1	1	1	1	0	0	0	break	0	0	0	0	0	stop
1	0	0	0	0	0	0	0	1		1	1	1	0	1	0	0	0		0	0	0	0	1	
0	1	0	0	0	0	0	0	1		1	1	1	1	0	0	0	0		0	0	0	0	0	
1	1	0	0	0	0	0	0	1		1	1	1	1	0	0	0	0		0	0	0	0	0	
0	0	0	0	0	0	0	0	0		1	1	1	1	1	0	0	0		0	0	0	0	0	
1	1	0	0	0	0	0	0	0		1	1	1	0	0	0	0	0		1	1	0	0	1	
1	0	1	0	0	0	0	0	0		1	1	1	0	1	0	0	0		0	0	0	0	1	
0	1	0	0	0	0	0	0	1		1	1	1	1	1	1	0	0		1	1	0	0	0	
0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0		0	0	0	0	0	
6	1	0	0	0	0	0	0	7		7	7	7	5	6	0	0	0		0	0	0	0	2	
B	A	1	0	0	0	0	0	8		F	F	F	C	5	0	0	0		2	2	0	0	3	
w	r	w	w	w	w	w	w	r		r	r	r	r	r	r	w	w		r	r	w	w	w	
	3	0	0	0	0	0	0	F		F	F	F	B	C	0	0	0		0	0	0	0	4	
	5	2	0	0	0	0	0	1		F	F	F	9	B	1	0	0		5	5	0	0	6	
address	register	byte_count																						
107	53	2	0	0	0	0	0	241		255	255	255	185	203	1	0	0		5	5	0	0	70	

Slide 3

Not sending 2 at the end. Sending read request to I2Cs and monitoring I2Cm
DATA1 (0x09) set to 64, 107, 53 followed by CMD1 (0x08) set to 4, 73, 50, 67, 114



Interpretation of above I2C signals on next slide…

Slide 4

Not sending 2 at the end. Sending read request to I2Cs and monitoring I2Cm
DATA1 (0x09) set to 64, 107, 53 followed by CMD1 (0x08) set to 4, 73, 50, 67, 114

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
start	1	0	0	0	0	0	0	0	0	Break	0	0	0	1	1	0	0	0	break	0	0	0	0	0	0	0	0
	1	0	0	0	0	0	0	0	0		0	0	0	0	1	0	0	0		0	0	0	0	1	0	0	0
	0	1	0	0	0	0	0	0	0		0	0	0	1	0	0	0	0		0	0	0	0	0	0	0	0
	1	1	0	0	0	0	0	0	0		0	0	0	1	0	0	0	0		0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0		0	0	0	1	1	0	0	0		0	0	0	0	0	0	0	0
	1	1	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0		1	1	0	0	1	0	0	1
	1	0	0	0	0	0	0	0	0		1	0	0	0	1	0	1	0		0	0	0	0	1	0	0	1
r/w	0	1	0	0	0	0	0	0	1		0	0	0	1	1	1	0	0		1	1	0	0	0	0	0	0
ACK	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0		0	0	0	0	0	0	1	1
	6	1	0	0	0	0	0	0	0		0	0	0	5	6	0	0	0		0	0	0	0	2	0	0	0
	B	A	0	0	0	0	0	0	0		1	0	0	C	5	0	1	0		2	2	0	0	3	0	0	3
	w	r	w	w	w	w	w	w	r		w	w	w	r	r	r	w	w		r	r	w	w	w	w	w	w
		3	0	0	0	0	0	0	0		0	0	0	B	C	0	0	0		0	0	0	0	4	0	0	0
		5	0	0	0	0	0	0	1		2	0	0	9	B	1	2	0		5	5	0	0	6	0	0	6
	address	register																									
	107	53	0	0	0	0	0	0	1		2	0	0	185	203	1	2	0		5	5	0	0	70	0	0	6

```
Arduino output:
00:22:49.721 -> Write DEVICE FOUND, device=33 register=9
00:22:49.758 ->  DataBytes: 64 Data: 107 53
Write DEVICE FOUND, device=33 register=8
00:22:50.275 ->  DataBytes: 4 Data: 73 50 67 114
00:22:50.308 -> Read DEVICE FOUND, device=33 register=8
00:22:50.341 -> Byte0: 4
00:22:50.341 -> Byte1: 73
00:22:50.376 -> Byte2: 50
00:22:50.376 -> Byte3: 67
00:22:50.426 -> Byte4: 114
00:22:50.426 -> Byte5: 0
00:22:50.426 -> Read DEVICE FOUND, device=33 register=9
00:22:50.476 -> Byte0: 64
00:22:50.476 -> Byte1: 107
00:22:50.476 -> Byte2: 53
00:22:50.476 -> Byte3: 0
00:22:50.526 -> Byte4: 0
00:22:50.526 -> Byte5: 0
```

Interpretation: 107, 53 transfers to the I2Cm bus however

1) ~~There is an additional character '2' transmitted after this~~
2) No read request (6Br) and no data comes back (expect 76, 136 based on previous slide)
3) No stop start in between

Slide 5

Set REG09 to 107-w, 53, 107-r
Sending read request to I2Cs and monitoring I2Cm
DATA1 (0x09) set to 64, 107, 53, 215 followed by CMD1 (0x08) set to 4, 73, 50, 67, 114

start	1	0	1	0	0	0	0	0	0	Break	0	0	0	1	1	0	0	0
	1	0	1	0	0	0	0	0	0		0	0	0	0	1	0	0	0
	0	1	0	0	0	0	0	0	0		0	0	0	1	0	0	0	0
	1	1	1	0	0	0	0	0	0		0	0	0	1	0	0	0	0
	0	0	0	0	1	0	0	0	0		0	0	0	1	1	0	0	0
	1	1	1	0	1	0	0	0	0		0	0	0	0	0	0	0	0
	1	0	1	0	0	0	0	0	0		0	0	0	0	1	0	0	0
r/w	0	1	1	0	0	0	0	0	0		0	0	0	1	1	1	0	0
ACK	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0
	6	1	6	0	0	0	0	0	0		0	0	0	5	6	0	0	0
	B	A	B	0	6	0	0	0	0		0	0	0	C	5	0	0	0
	w	r	r	w	w	w	w	w	w		w	w	w	r	r	r	w	w
		3	D	0	0	0	0	0	0		0	0	0	B	C	0	0	0
		5	7	0	C	0	0	0	0		0	0	0	9	B	1	0	0
	address	register																
	107	53	107	0	12	0	0	0	0		0	0	0	185	203	1	0	0

```
Arduino Output:
13:11:41.005 -> Write DEVICE FOUND, device=33 register=9
13:11:41.055 ->  DataBytes: 64 Data: 107 53 215
13:11:41.521 -> Write DEVICE FOUND, device=33 register=8
13:11:41.555 ->  DataBytes: 4 Data: 73 50 67 114
13:11:41.604 -> Read DEVICE FOUND, device=33 register=8
13:11:41.638 -> Byte0: 4
13:11:41.638 -> Byte1: 73
13:11:41.638 -> Byte2: 50
13:11:41.672 -> Byte3: 67
13:11:41.672 -> Byte4: 114
13:11:41.705 -> Byte5: 0
13:11:41.837 -> Read DEVICE FOUND, device=33 register=9
13:11:41.837 -> Byte0: 64
13:11:41.870 -> Byte1: 107
13:11:41.870 -> Byte2: 53
13:11:41.870 -> Byte3: 215
13:11:41.906 -> Byte4: 0
```

Interpretation: 107, 53 transfers to the I2Cm bus however

1) ~~There is an additional character '2' transmitted after this~~
2) ~~No read request (6Br) and~~ no data comes back (expect 76, 136 based on previous slide)
3) No stop start in between