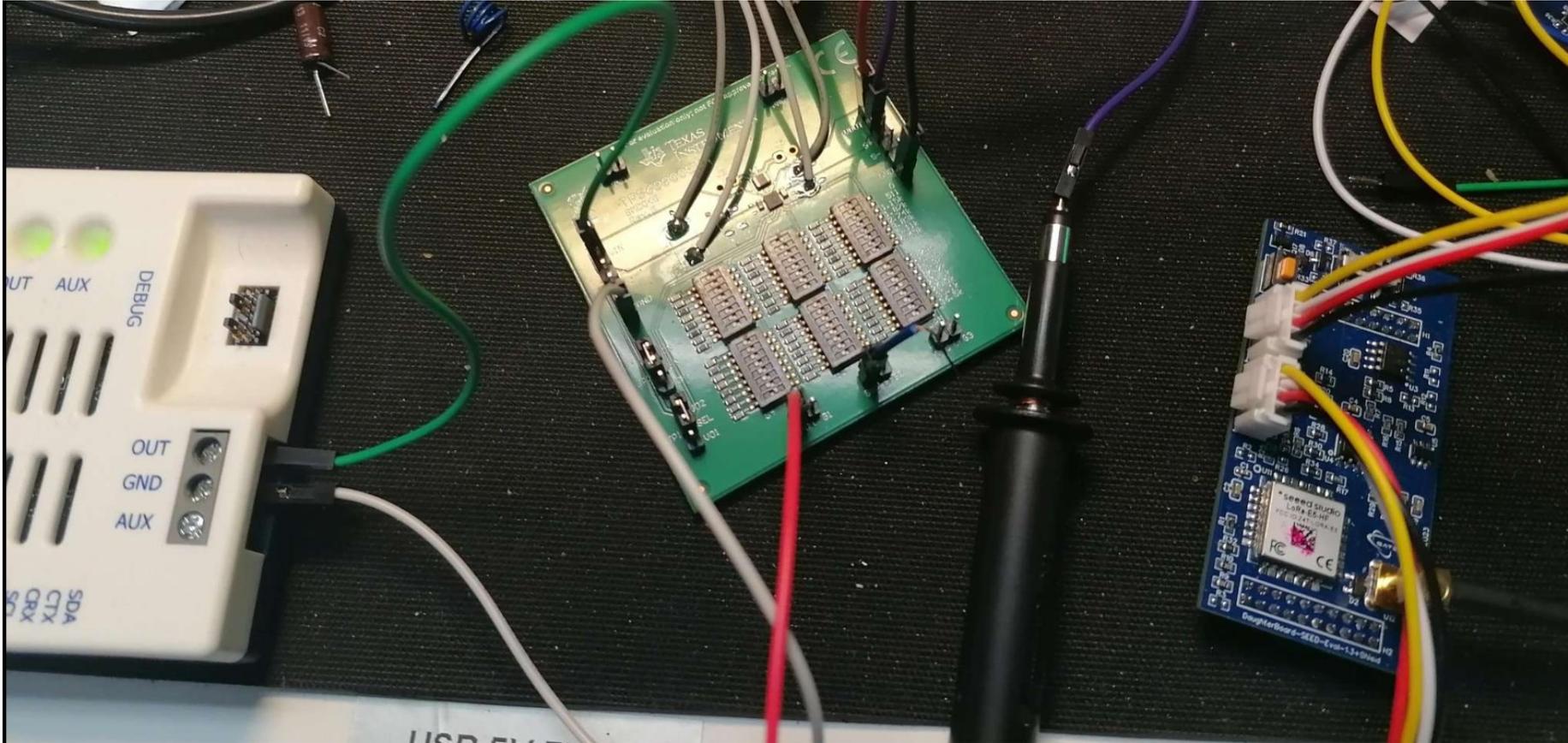


FISRT test with TPS63900 EVM + LORA Board
with ADC+ PC power meter from STM

Real time current is Measured by STM power meter

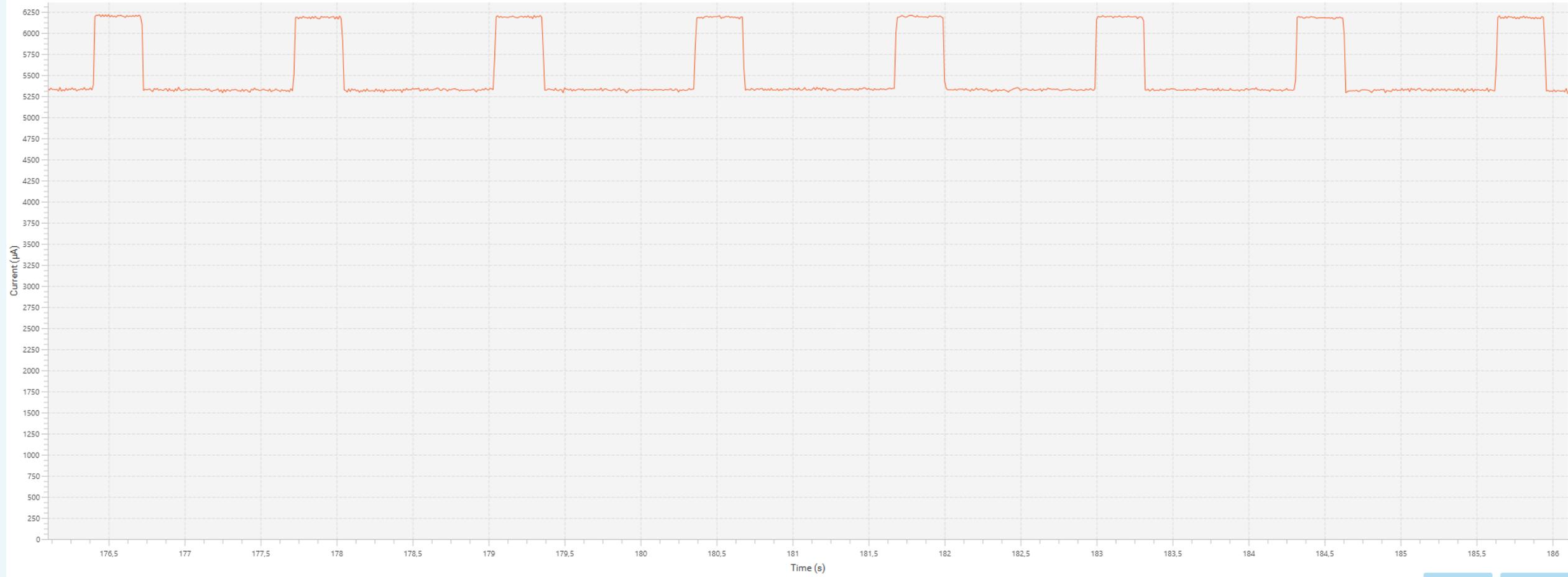


VIN is configurable from 2.8VDC to 3.6VDC

Ref Voltage (average value 500 samples at 1kHz) –
measured by MCU ADC (calibrated)
followed by min –max value which give sthe peak-
to-peak value

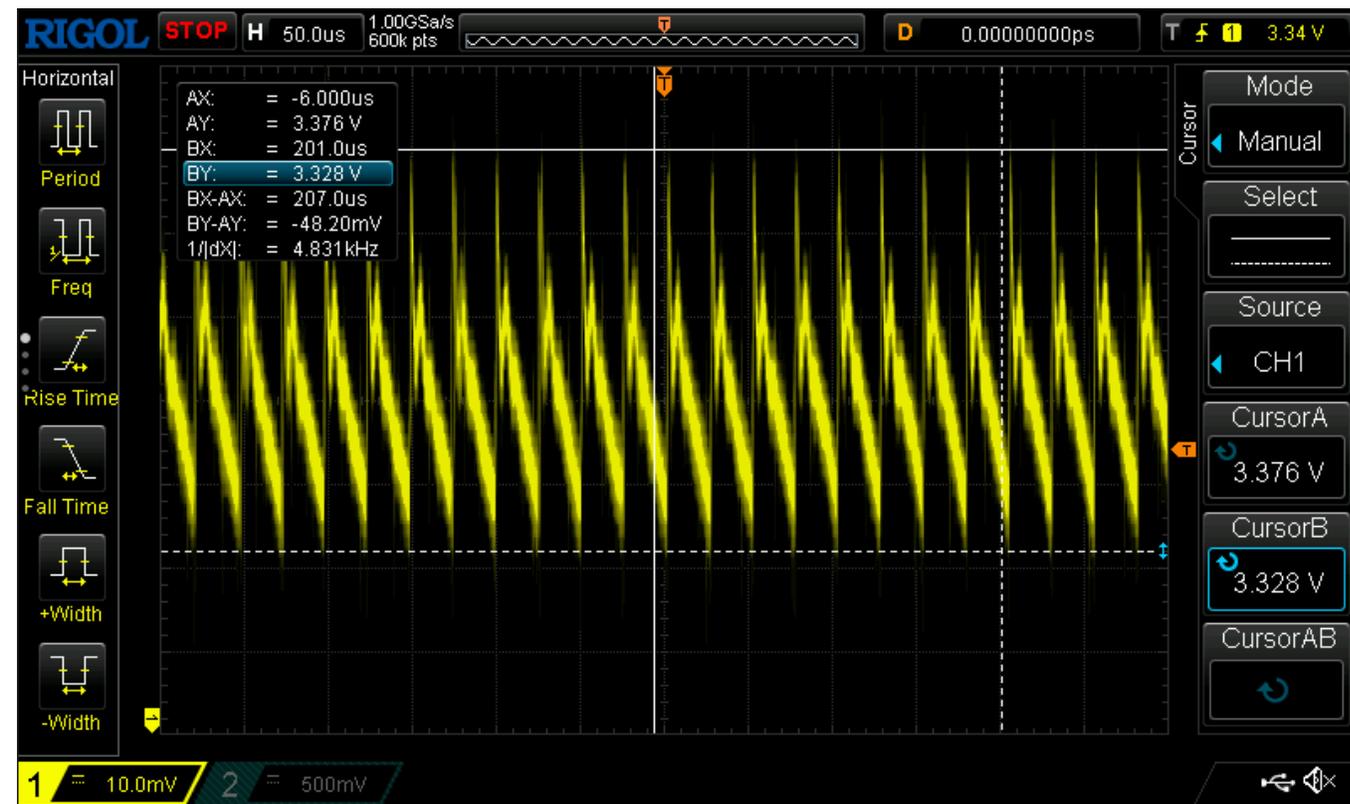
```
Voltage measure points 1472 , Min 1076 pcs , Max 1507 pcs  
Ref Voltage 3313 mV , Min 3275 mV , Max 3340 mV  
usBatVoltage 6049
```


Buck Boost VIN = 3.6VDC , Vout = 3.3VDC



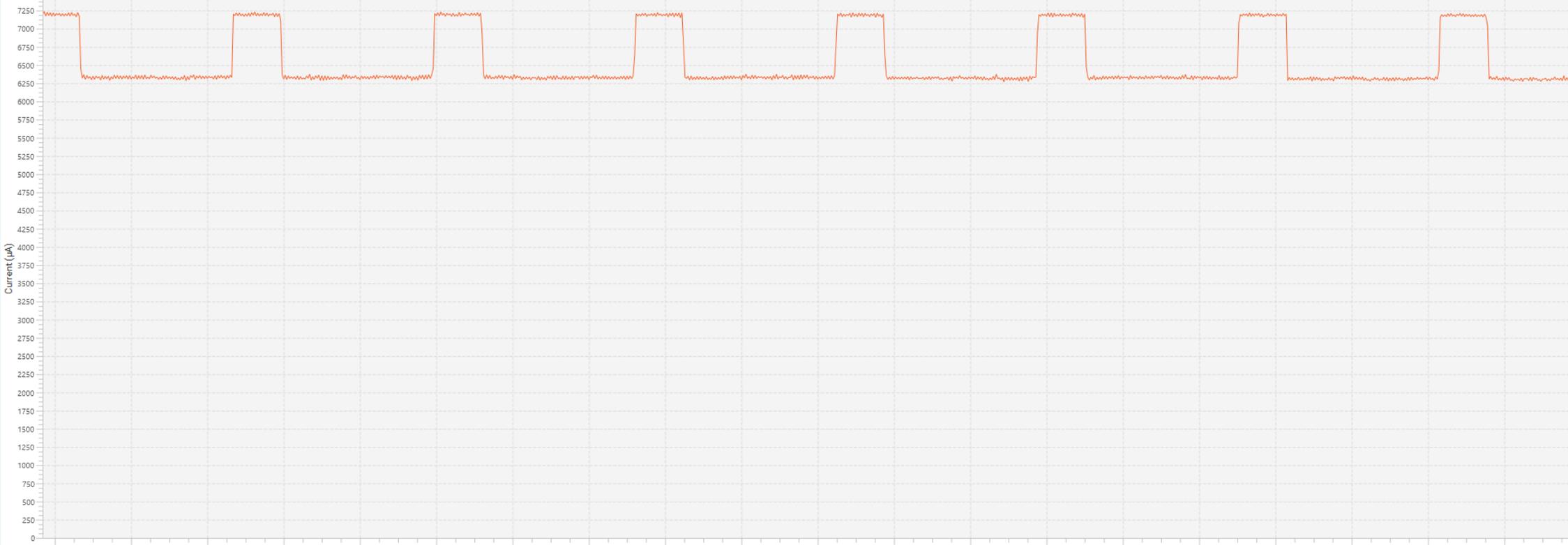
$V_{in} = 3.4\text{Vdc}$

Measured by MCU ADC Peak-To-Peak = 46mV

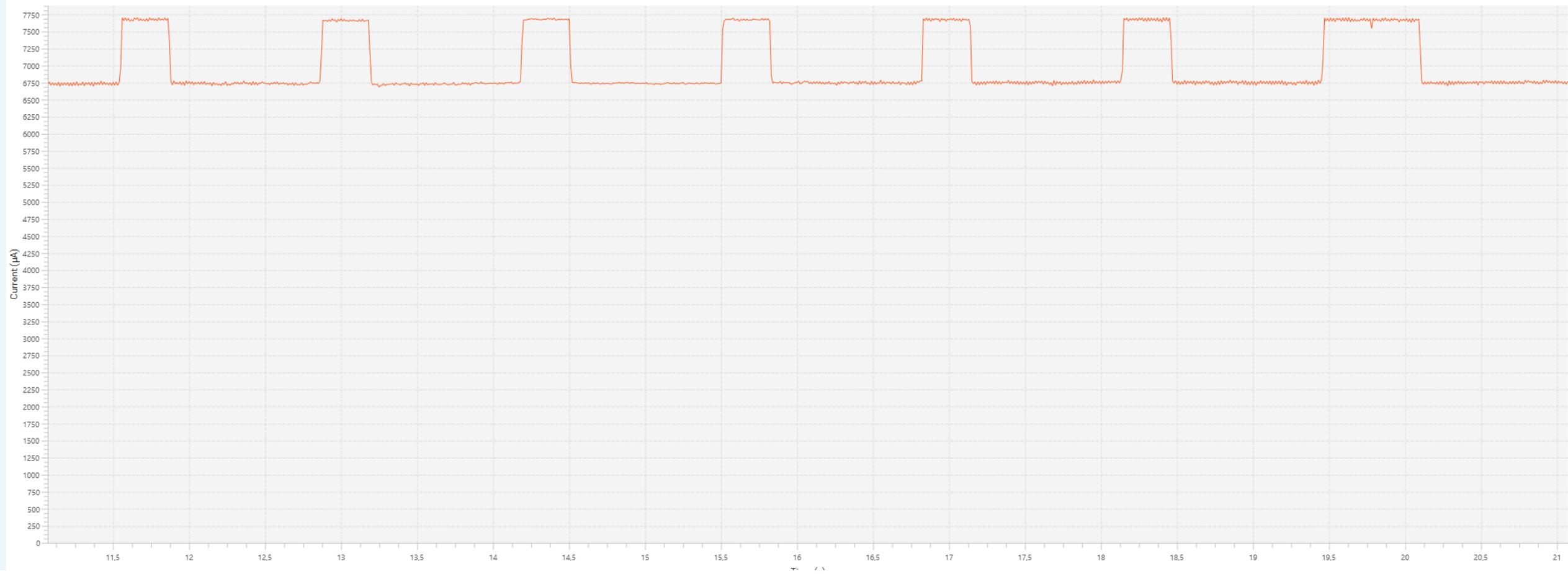


```
usBatVoltage 6049
Ref Voltage 3313
Voltage Measure-Points 1492 , Min 1104 pts, Max 1501 pts
Ref Voltage 3313 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6049
Ref Voltage 3313
Voltage Measure-Points 1492 , Min 1104 pts, Max 1501 pts
Ref Voltage 3313 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6049
Ref Voltage 3311
Voltage Measure-Points 1491 , Min 1104 pts, Max 1501 pts
Ref Voltage 3311 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6044
Ref Voltage 3311
Voltage Measure-Points 1491 , Min 1104 pts, Max 1501 pts
Ref Voltage 3311 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6039
Ref Voltage 3310
Voltage Measure-Points 1491 , Min 1104 pts, Max 1501 pts
Ref Voltage 3310 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6044
Ref Voltage 3311
Voltage Measure-Points 1491 , Min 1104 pts, Max 1501 pts
Ref Voltage 3310 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6039
Ref Voltage 3310
Voltage Measure-Points 1491 , Min 1104 pts, Max 1501 pts
Ref Voltage 3311 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6044
Ref Voltage 3311
Voltage Measure-Points 1491 , Min 1103 pts, Max 1501 pts
Ref Voltage 3311 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6044
Ref Voltage 3311
Voltage Measure-Points 1491 , Min 1103 pts, Max 1501 pts
Ref Voltage 3310 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6039
Ref Voltage 3310
Voltage Measure-Points 1491 , Min 1103 pts, Max 1501 pts
Ref Voltage 3310 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6049
Ref Voltage 3311
Voltage Measure-Points 1492 , Min 1103 pts, Max 1501 pts
Ref Voltage 3311 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6049
Ref Voltage 3311
Voltage Measure-Points 1491 , Min 1103 pts, Max 1501 pts
Ref Voltage 3310 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6039
Ref Voltage 3310
Voltage Measure-Points 1492 , Min 1103 pts, Max 1501 pts
Ref Voltage 3311 mV , Min 3291 mV, Max 3337 mV
usBatVoltage 6049
Ref Voltage 3311
```

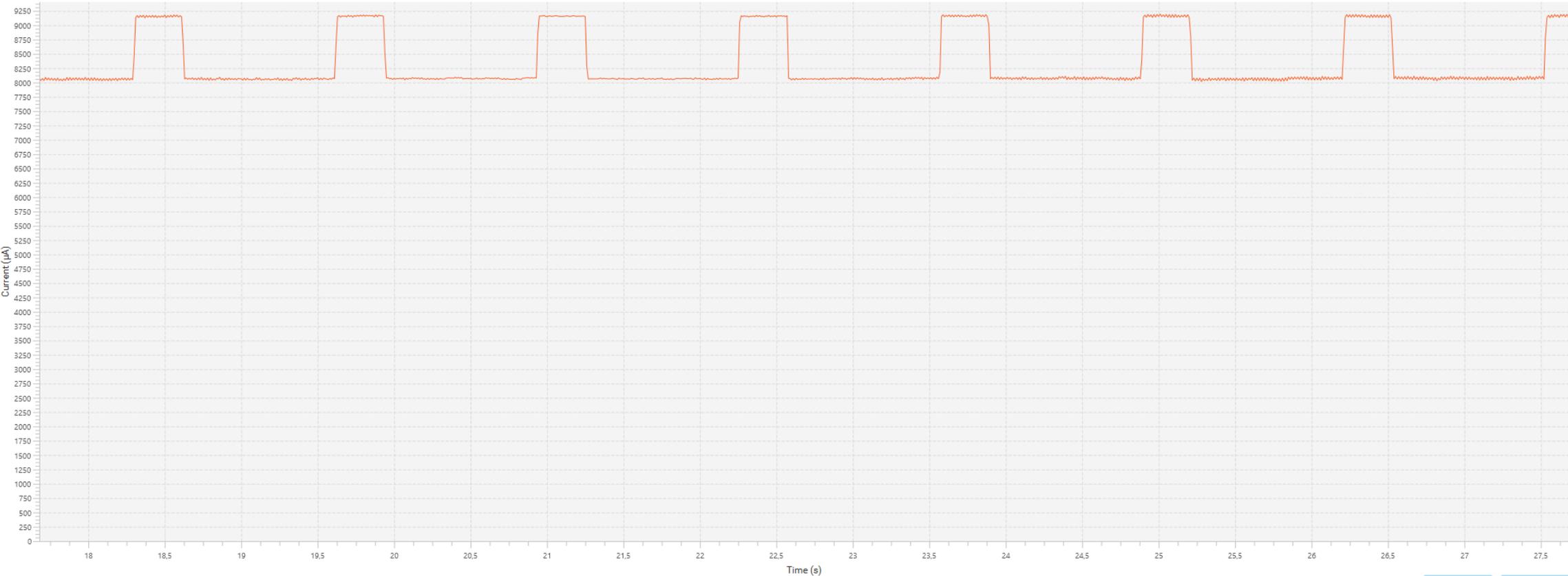
Buck Boost VIN = 3.4VDC , Vout = 3.3VDC



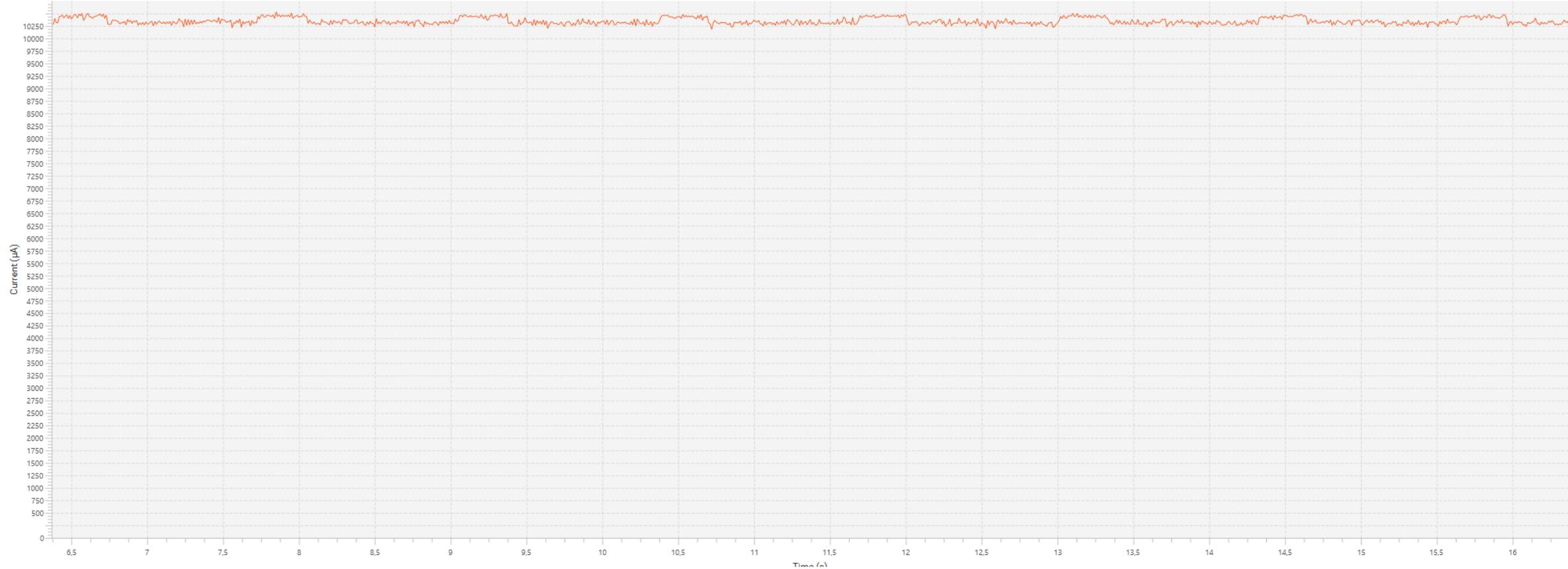
Buck Boost VIN = 3.3VDC , Vout = 3.3VDC



Buck Boost VIN = 3.1VDC , Vout = 3.3VDC

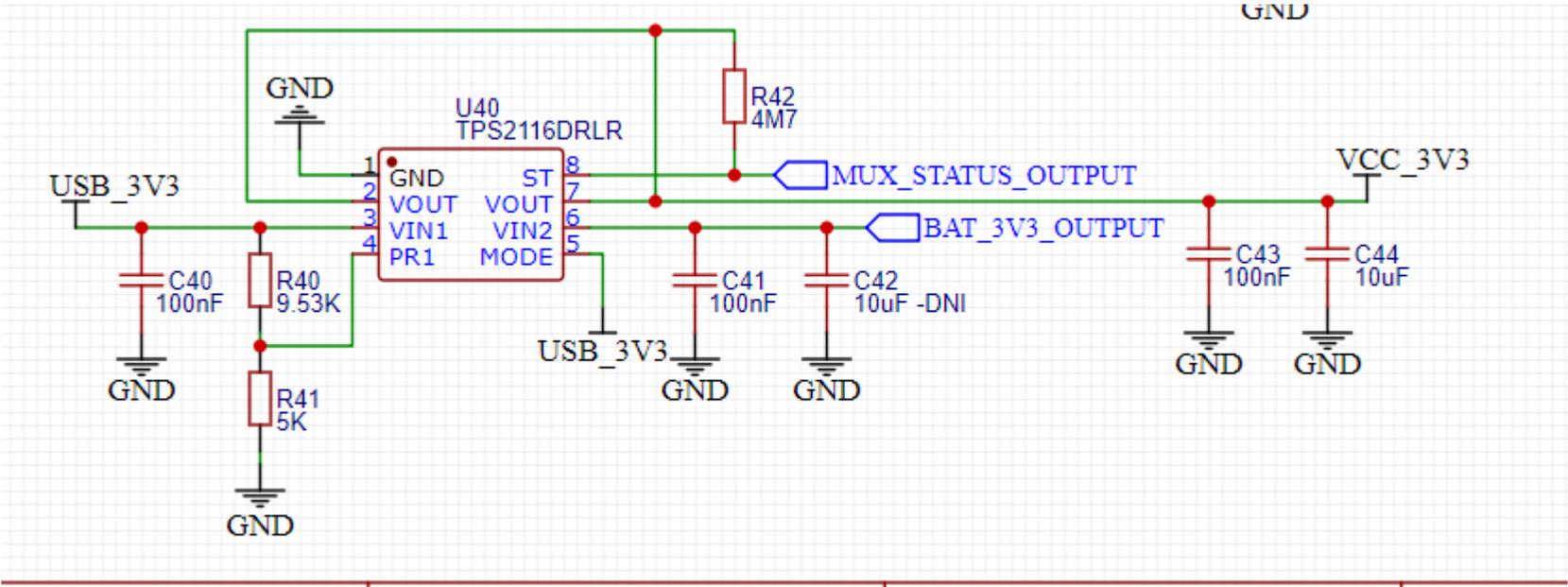


Buck Boost VIN = 2.8VDC , Vout = 3.3VDC



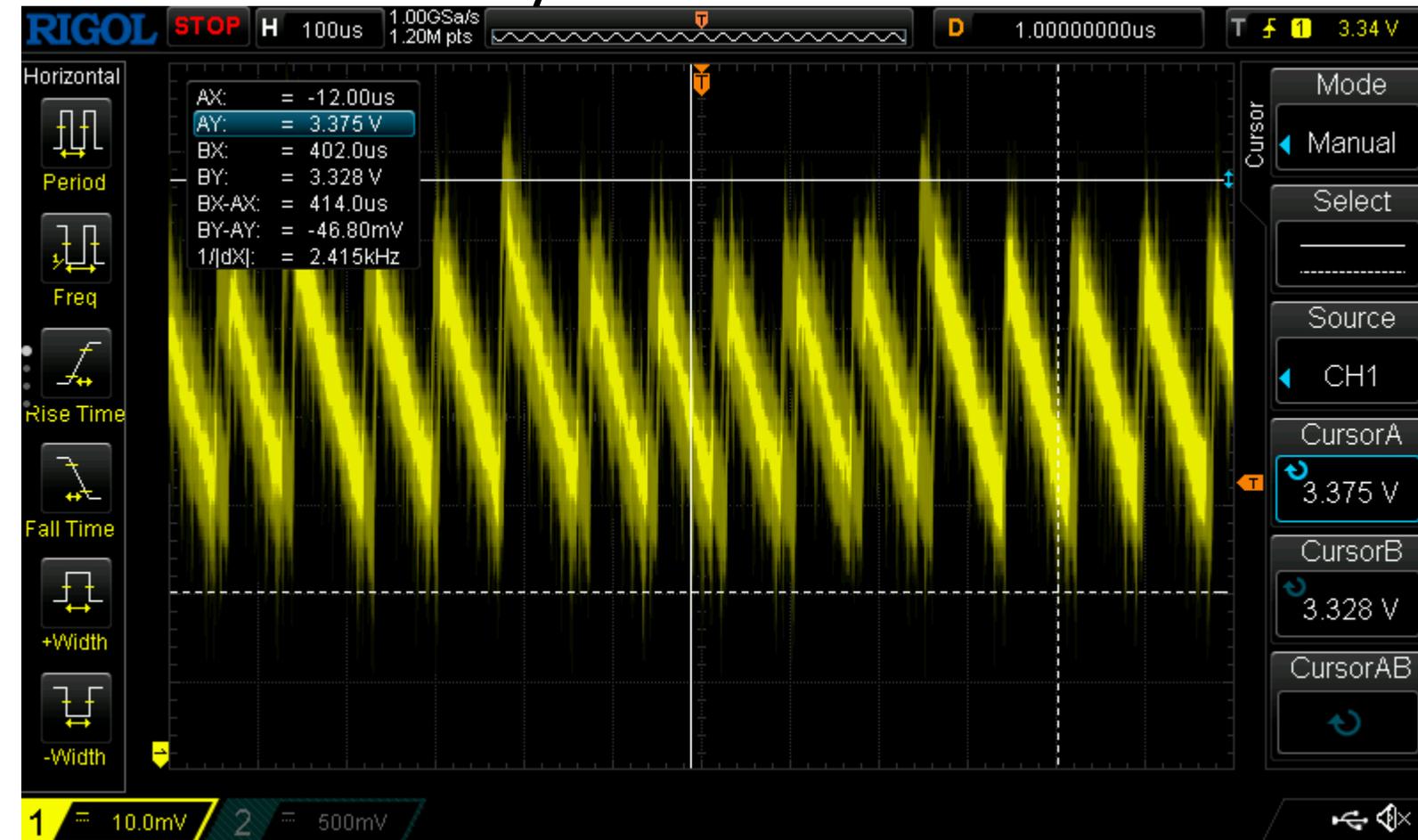
Tests performed with our board design

BAT_3V3_VOUT GOES TO A POWER mux from TI



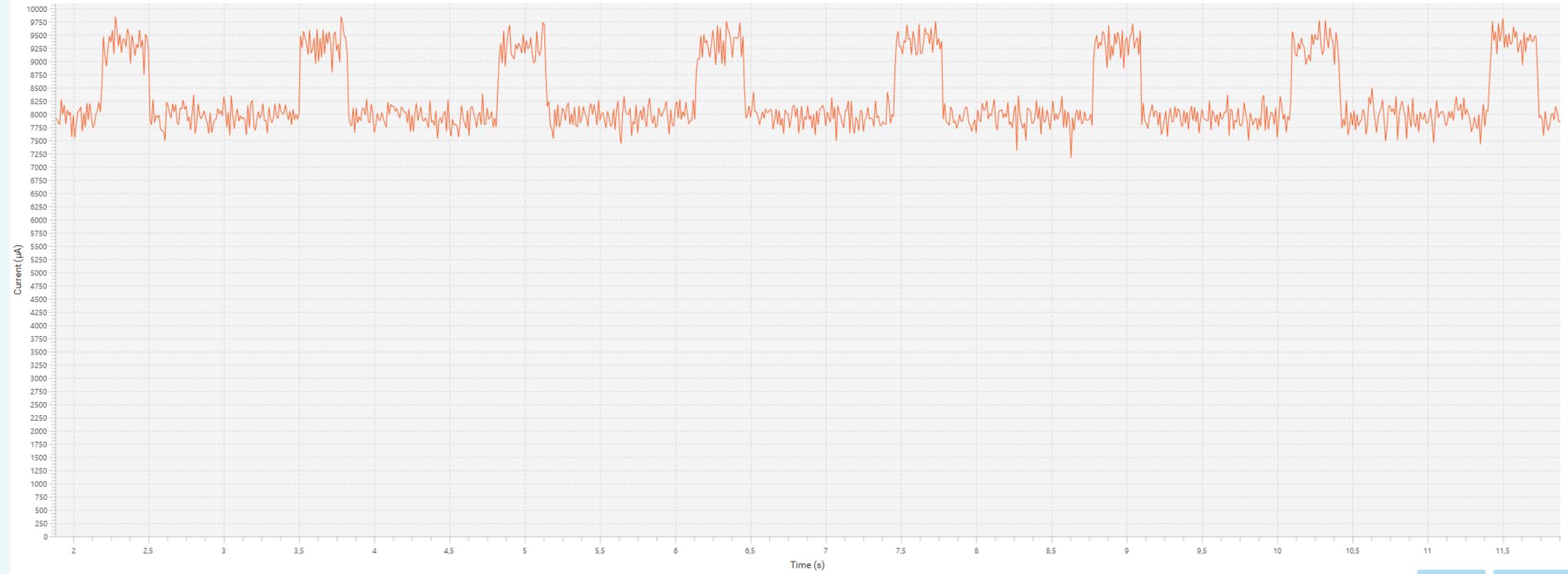
$V_{in} = 3.6\text{Vdc}$

Measured by MCU ADC = 154mV



```
Ref Voltage 3358
Voltage Measure-Points 867 , Min 731 pts, Max 1028 pts
Ref Voltage 3359 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3561
Ref Voltage 3359
Voltage Measure-Points 867 , Min 731 pts, Max 1028 pts
Ref Voltage 3356 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3561
Ref Voltage 3356
Voltage Measure-Points 866 , Min 731 pts, Max 1028 pts
Ref Voltage 3360 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3561
Ref Voltage 3360
Voltage Measure-Points 867 , Min 731 pts, Max 1028 pts
Ref Voltage 3360 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3566
Ref Voltage 3360
Voltage Measure-Points 866 , Min 731 pts, Max 1028 pts
Ref Voltage 3353 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3551
Ref Voltage 3353
Voltage Measure-Points 867 , Min 731 pts, Max 1028 pts
Ref Voltage 3355 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3561
Ref Voltage 3355
Voltage Measure-Points 867 , Min 731 pts, Max 1028 pts
Ref Voltage 3359 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3561
Ref Voltage 3359
Voltage Measure-Points 866 , Min 731 pts, Max 1028 pts
Ref Voltage 3356 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3556
Ref Voltage 3356
Voltage Measure-Points 868 , Min 731 pts, Max 1028 pts
Ref Voltage 3363 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3571
Ref Voltage 3363
Voltage Measure-Points 867 , Min 731 pts, Max 1028 pts
Ref Voltage 3361 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3566
Ref Voltage 3361
Voltage Measure-Points 865 , Min 731 pts, Max 1028 pts
Ref Voltage 3356 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3551
Ref Voltage 3356
Voltage Measure-Points 866 , Min 731 pts, Max 1028 pts
Ref Voltage 3358 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3556
Ref Voltage 3358
Voltage Measure-Points 867 , Min 731 pts, Max 1028 pts
Ref Voltage 3360 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3566
Ref Voltage 3360
Voltage Measure-Points 865 , Min 731 pts, Max 1028 pts
Ref Voltage 3355 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3551
Ref Voltage 3355
Voltage Measure-Points 867 , Min 731 pts, Max 1028 pts
Ref Voltage 3361 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3566
Ref Voltage 3361
Voltage Measure-Points 867 , Min 731 pts, Max 1028 pts
Ref Voltage 3360 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3566
Ref Voltage 3360
Voltage Measure-Points 866 , Min 731 pts, Max 1028 pts
Ref Voltage 3352 mV , Min 3278 mV, Max 3432 mV
usBatVoltage 3551
Ref Voltage 3352
```

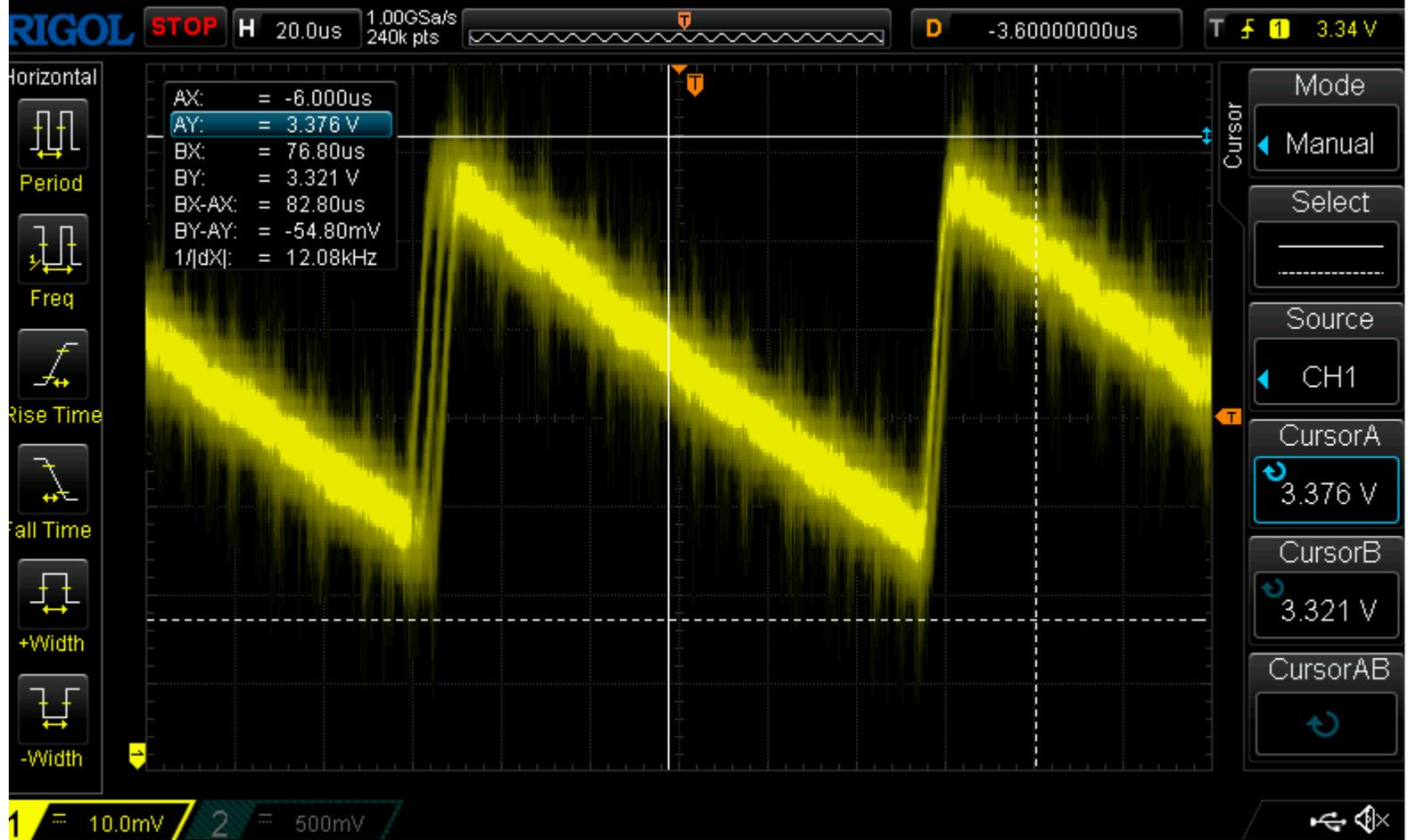
Vin = 3.6vdc



SAVE GRAPH ADD DATA LOG

Vin = 3.4vdc

Measured by MCU ADC = 114mV



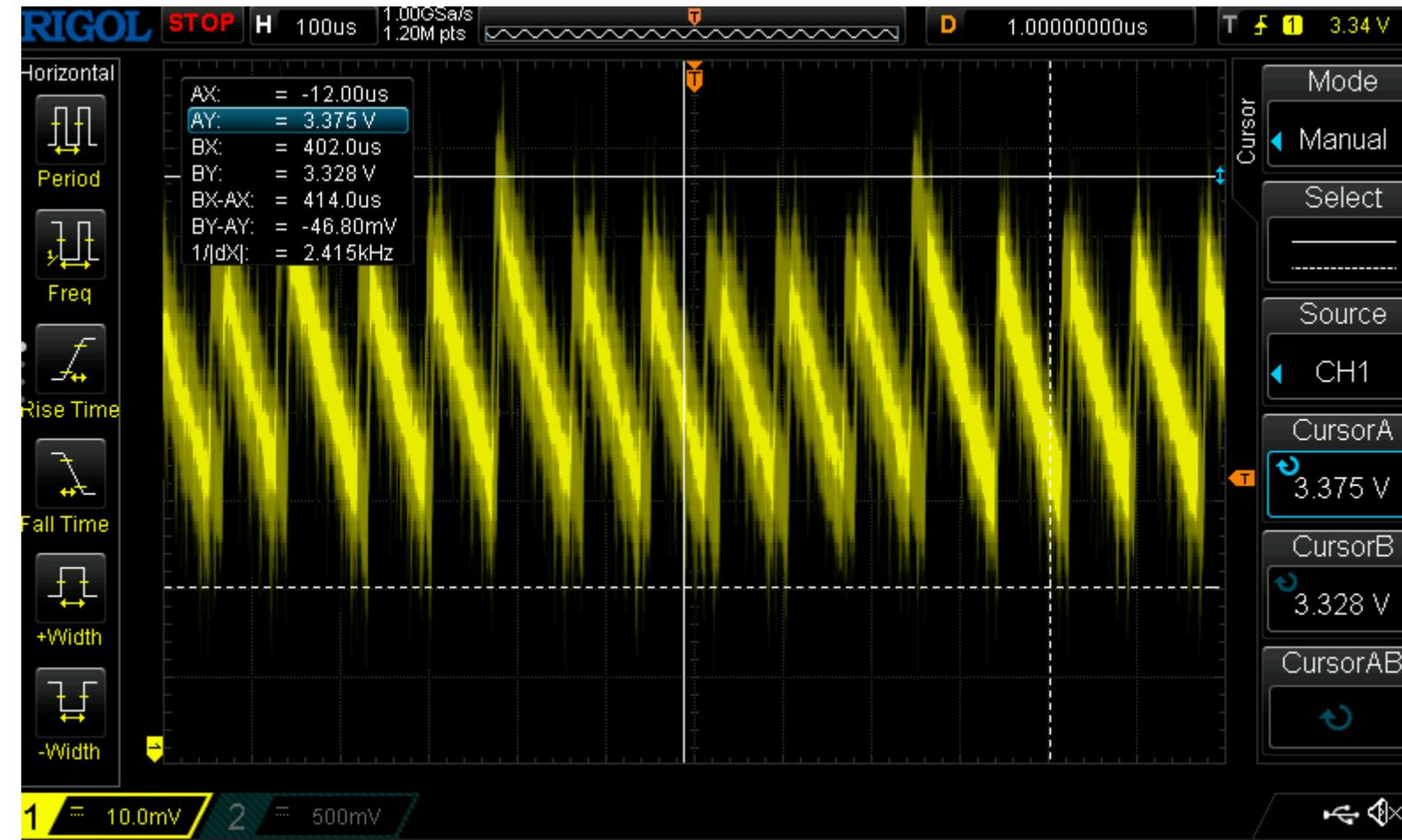
oltage Measure-Points 837 , Min 712 pts, Max 962 pts
ef Voltage 3315 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3395
Ref Voltage 3315
oltage Measure-Points 837 , Min 712 pts, Max 962 pts
ef Voltage 3315 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3395
Ref Voltage 3315
oltage Measure-Points 838 , Min 712 pts, Max 962 pts
ef Voltage 3316 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3400
Ref Voltage 3316
oltage Measure-Points 832 , Min 712 pts, Max 962 pts
ef Voltage 3339 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3400
Ref Voltage 3339
oltage Measure-Points 837 , Min 712 pts, Max 962 pts
ef Voltage 3316 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3395
Ref Voltage 3316
oltage Measure-Points 838 , Min 712 pts, Max 962 pts
ef Voltage 3316 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3400
Ref Voltage 3316
oltage Measure-Points 838 , Min 712 pts, Max 962 pts
ef Voltage 3315 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3400
Ref Voltage 3315
oltage Measure-Points 838 , Min 712 pts, Max 962 pts
ef Voltage 3316 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3400
Ref Voltage 3315
oltage Measure-Points 837 , Min 712 pts, Max 962 pts
ef Voltage 3315 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3395
Ref Voltage 3315
oltage Measure-Points 838 , Min 712 pts, Max 962 pts
ef Voltage 3315 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3400
Ref Voltage 3315
oltage Measure-Points 837 , Min 712 pts, Max 962 pts
ef Voltage 3315 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3395
Ref Voltage 3315
oltage Measure-Points 838 , Min 712 pts, Max 962 pts
ef Voltage 3316 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3400
Ref Voltage 3316
oltage Measure-Points 838 , Min 712 pts, Max 962 pts
ef Voltage 3315 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3400
Ref Voltage 3315
oltage Measure-Points 837 , Min 712 pts, Max 962 pts
ef Voltage 3316 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3395
Ref Voltage 3315
oltage Measure-Points 837 , Min 712 pts, Max 962 pts
ef Voltage 3316 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3395
Ref Voltage 3316
oltage Measure-Points 838 , Min 712 pts, Max 962 pts
ef Voltage 3316 mV , Min 3280 mV, Max 3394 mV
sBatVoltage 3400
Ref Voltage 3316

Vin = 3.4vdc



$V_{in} = 3.3\text{Vdc}$

Measured by MCU ADC = 53mV



```
Ref Voltage 3314
Voltage Measure-Points 813 , Min 757 pts, Max 838 pts
Ref Voltage 3313 mU , Min 3280 mU, Max 3333 mU
usBatVoltage 3295
Ref Voltage 3313
Voltage Measure-Points 813 , Min 757 pts, Max 838 pts
Ref Voltage 3313 mU , Min 3280 mU, Max 3333 mU
usBatVoltage 3295
Ref Voltage 3313
Voltage Measure-Points 813 , Min 757 pts, Max 838 pts
Ref Voltage 3313 mU , Min 3280 mU, Max 3333 mU
usBatVoltage 3295
Ref Voltage 3314
Voltage Measure-Points 813 , Min 757 pts, Max 838 pts
Ref Voltage 3314 mU , Min 3280 mU, Max 3333 mU
usBatVoltage 3295
Ref Voltage 3314
Voltage Measure-Points 813 , Min 757 pts, Max 838 pts
Ref Voltage 3314 mU , Min 3280 mU, Max 3333 mU
usBatVoltage 3295
Ref Voltage 3312
Voltage Measure-Points 813 , Min 757 pts, Max 838 pts
Ref Voltage 3313 mU , Min 3280 mU, Max 3333 mU
usBatVoltage 3295
Ref Voltage 3313
Voltage Measure-Points 813 , Min 757 pts, Max 838 pts
Ref Voltage 3314 mU , Min 3280 mU, Max 3333 mU
usBatVoltage 3295
Ref Voltage 3314
Voltage Measure-Points 813 , Min 757 pts, Max 838 pts
Ref Voltage 3314 mU , Min 3280 mU, Max 3333 mU
usBatVoltage 3295
Ref Voltage 3314
Voltage Measure-Points 813 , Min 757 pts, Max 838 pts
Ref Voltage 3314 mU , Min 3280 mU, Max 3333 mU
usBatVoltage 3295
Ref Voltage 3313
Voltage Measure-Points 813 , Min 757 pts, Max 838 pts
Ref Voltage 3313 mU , Min 3280 mU, Max 3333 mU
usBatVoltage 3295
Ref Voltage 3313
```

$V_{in} = 3.3\text{vdc}$

ACQUISITION & REPLAY

ULP BENCH

CONFIGURATION

- Sampling Frequency [Hz] 100
- Acquisition Time [s] 100
- Current threshold [μA] 1000
- Trigger source 100
- Trigger delay [ms] 1
- Input Voltage [mV] 3300
- Functional Mode 10000

STOP ACQUISITION



SAVE GRAPH

ADD DATA LOG

Vin = 3.1vdc



$V_{in} = 2.8\text{vdc}$

