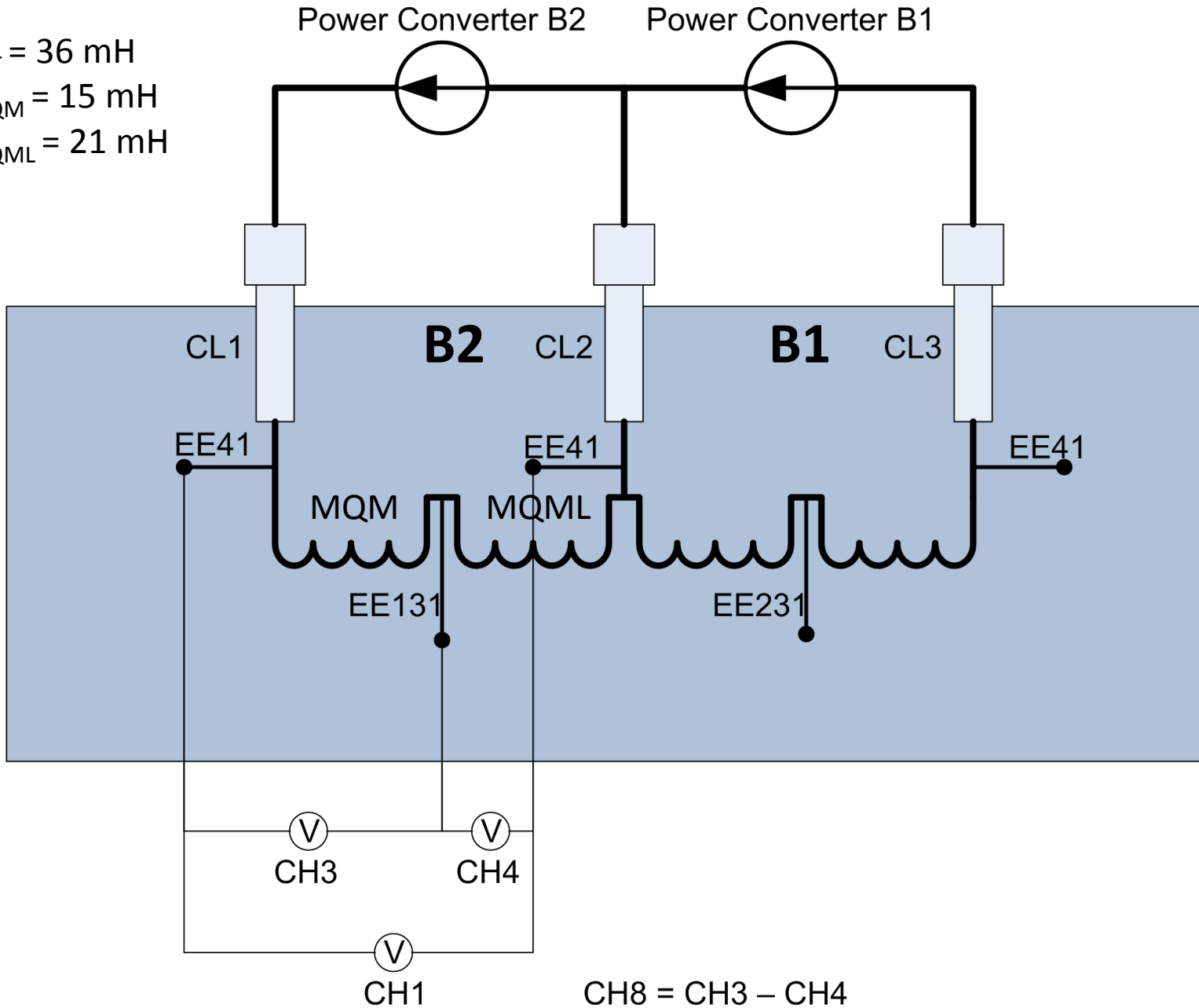


Q6 quench test

Events analysis

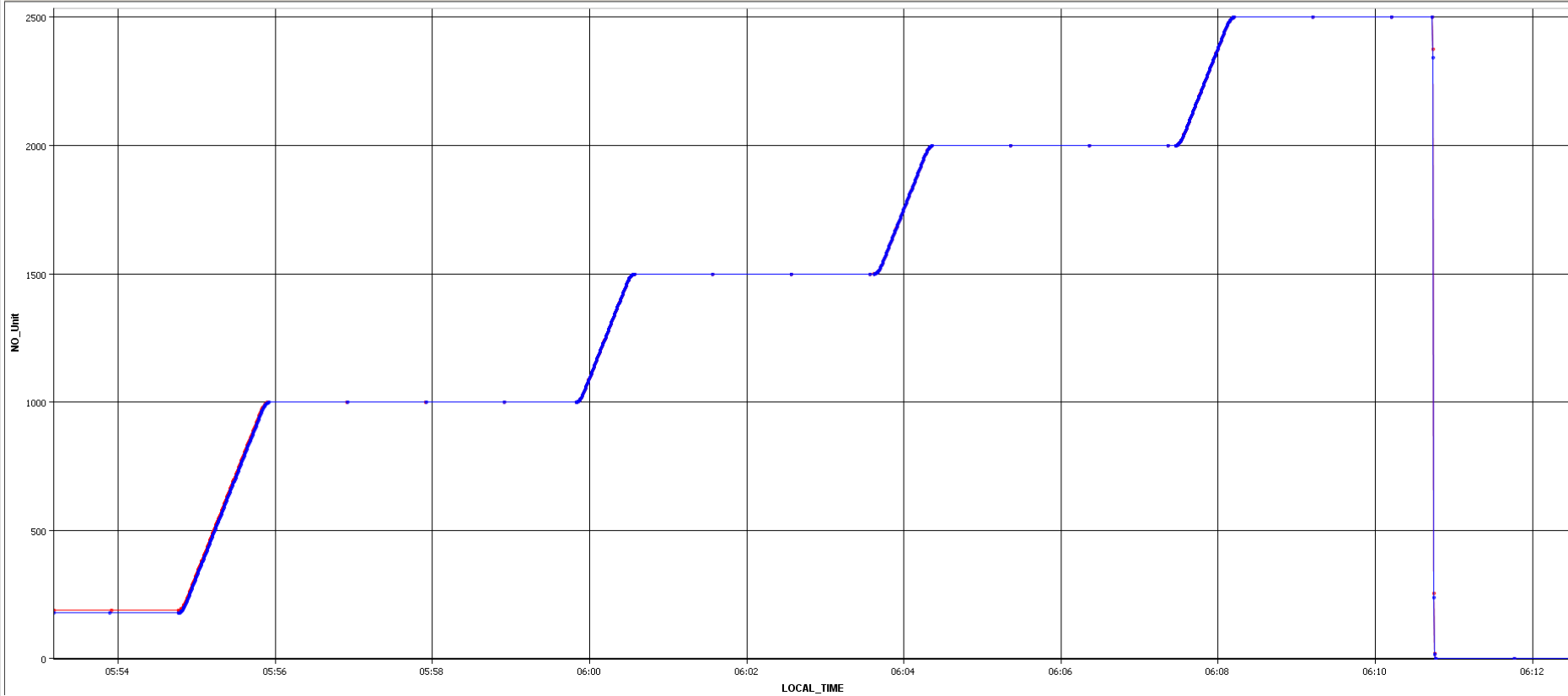
Channel assignment

$L_{TOT} = 36 \text{ mH}$
 $L_{MQM} = 15 \text{ mH}$
 $L_{MQML} = 21 \text{ mH}$



Timeseries Chart between 2013-02-15 00:00:00.000 and 2013-02-20 23:59:00.000 (LOCAL_TIME)

RPH6B_UA83.RQ6.L8B1_I_MEAS RPH6B_UA83.RQ6.L8B2_I_MEAS



Experiments with the beam finished by quenching the magnet (B2 aperture).

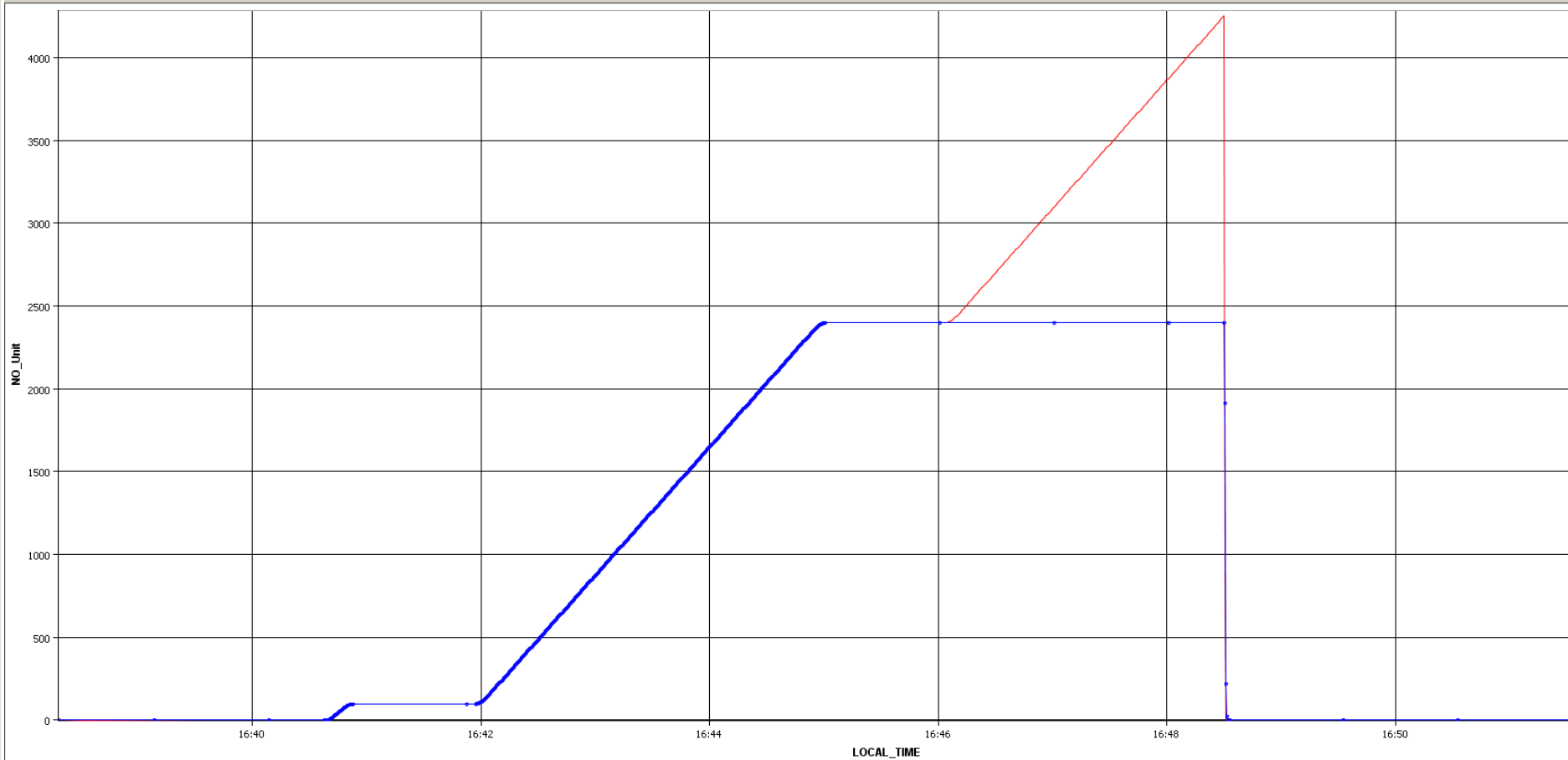


Current cycles



Timeseries Chart between 2013-02-15 00:00:00.000 and 2013-02-20 23:59:59.000 (LOCAL_TIME)

→ RPHGB.UA83.RQ6.L8B1:1_MEAS → RPHGB.UA83.RQ6.L8B2:1_MEAS

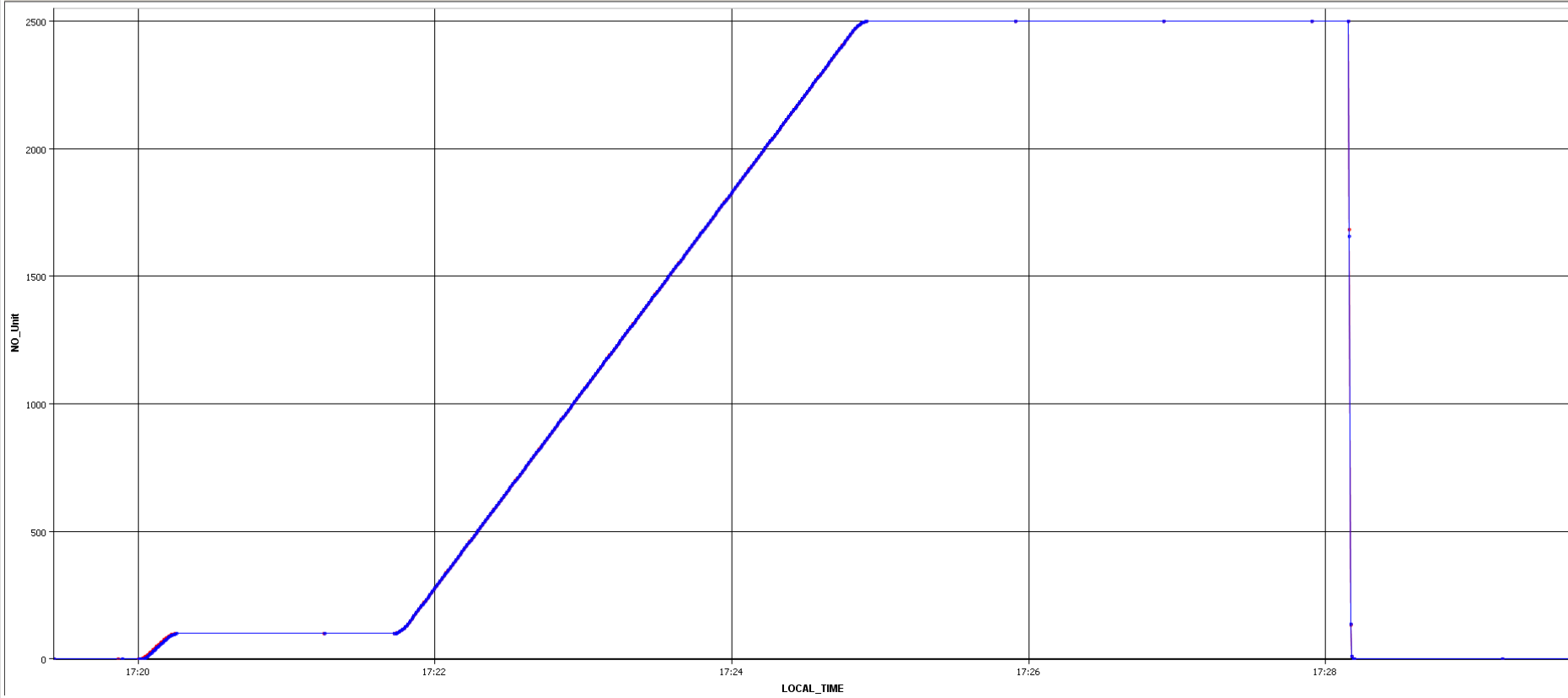


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Training quench on B1 aperture

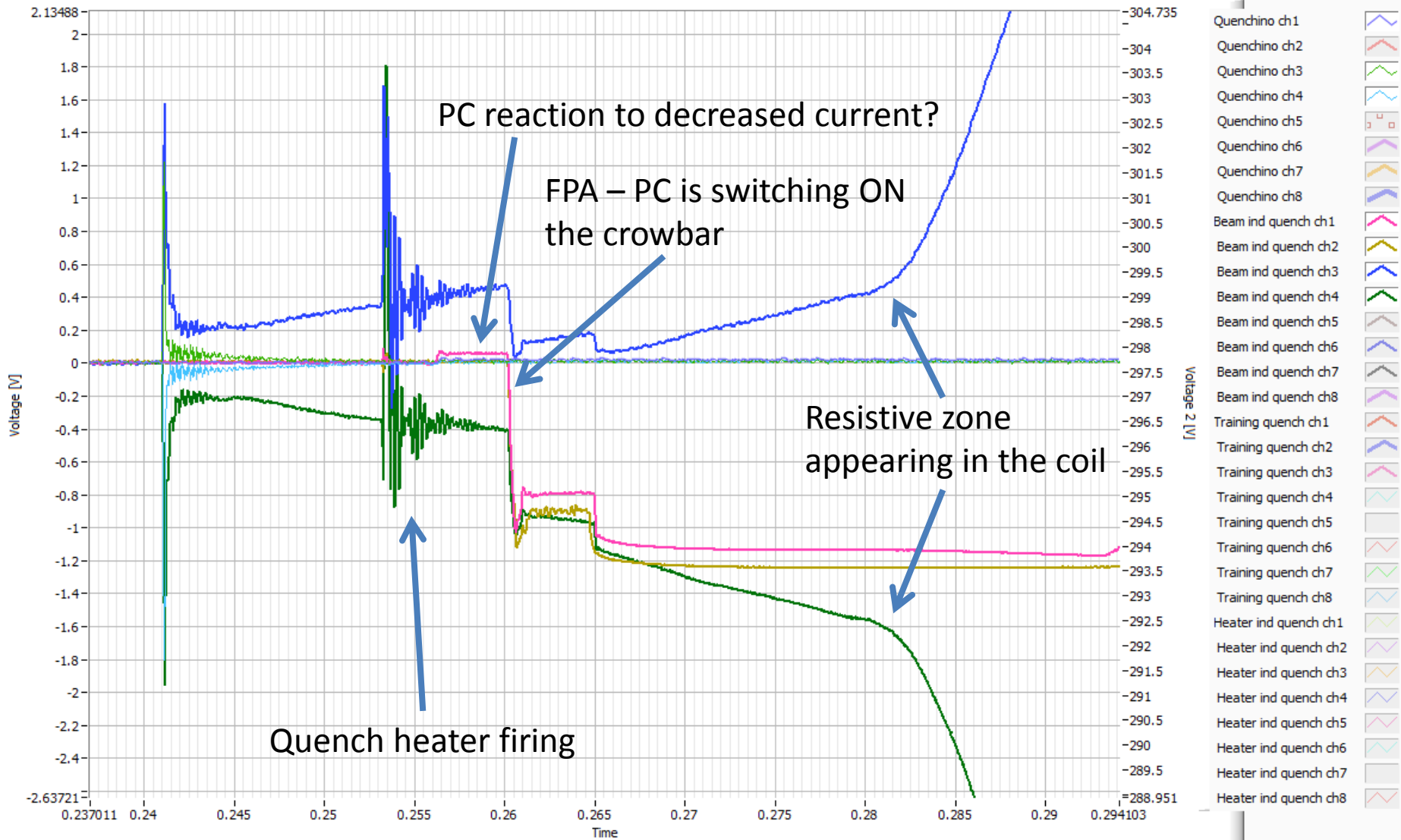
Timeseries Chart between 2013-02-15 00:00:00.000 and 2013-02-20 23:59:00.000 (LOCAL_TIME)

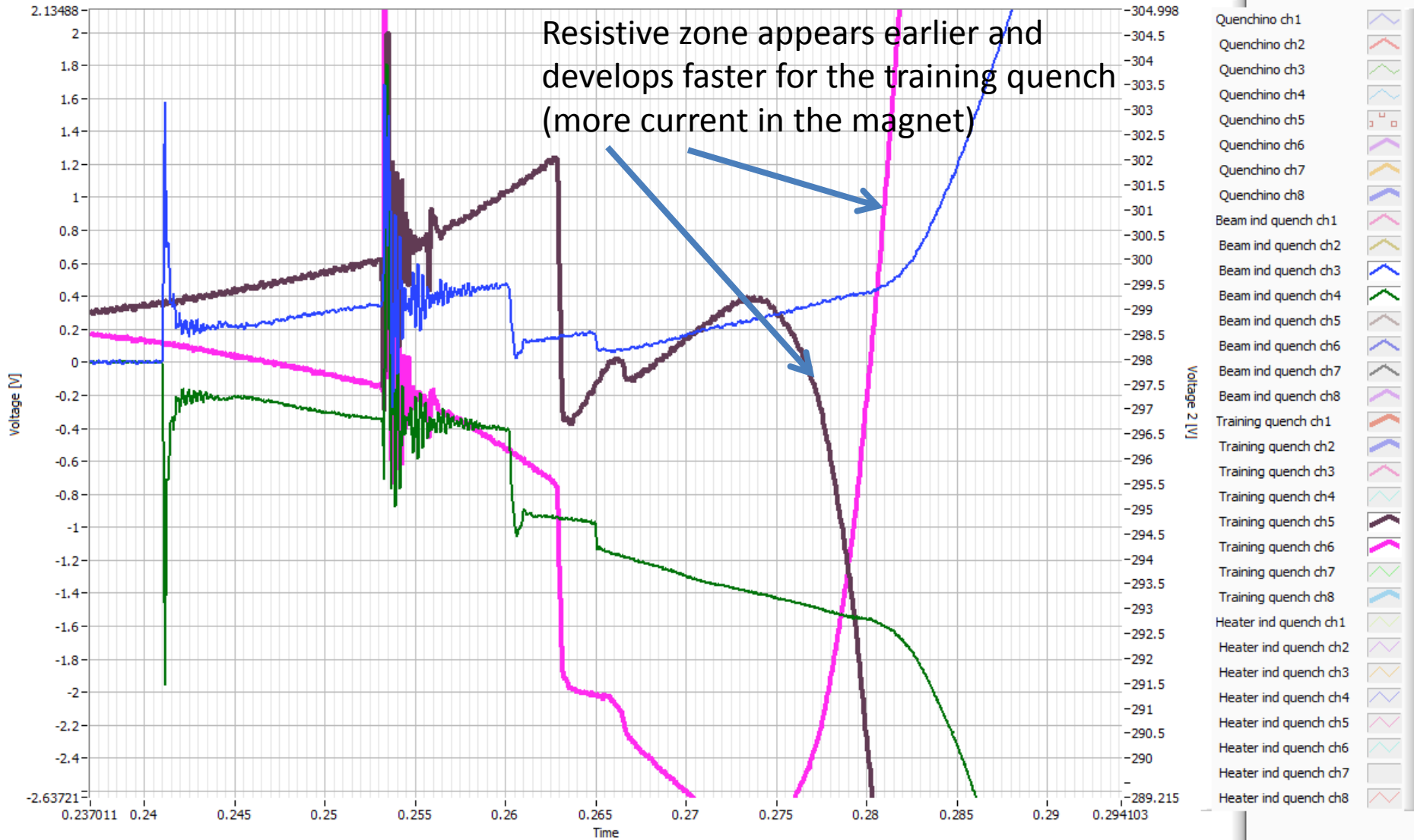
RPH6B_UA83_RQ6_L8B11_MEAS RPH6B_UA83_RQ6_L8B21_MEAS



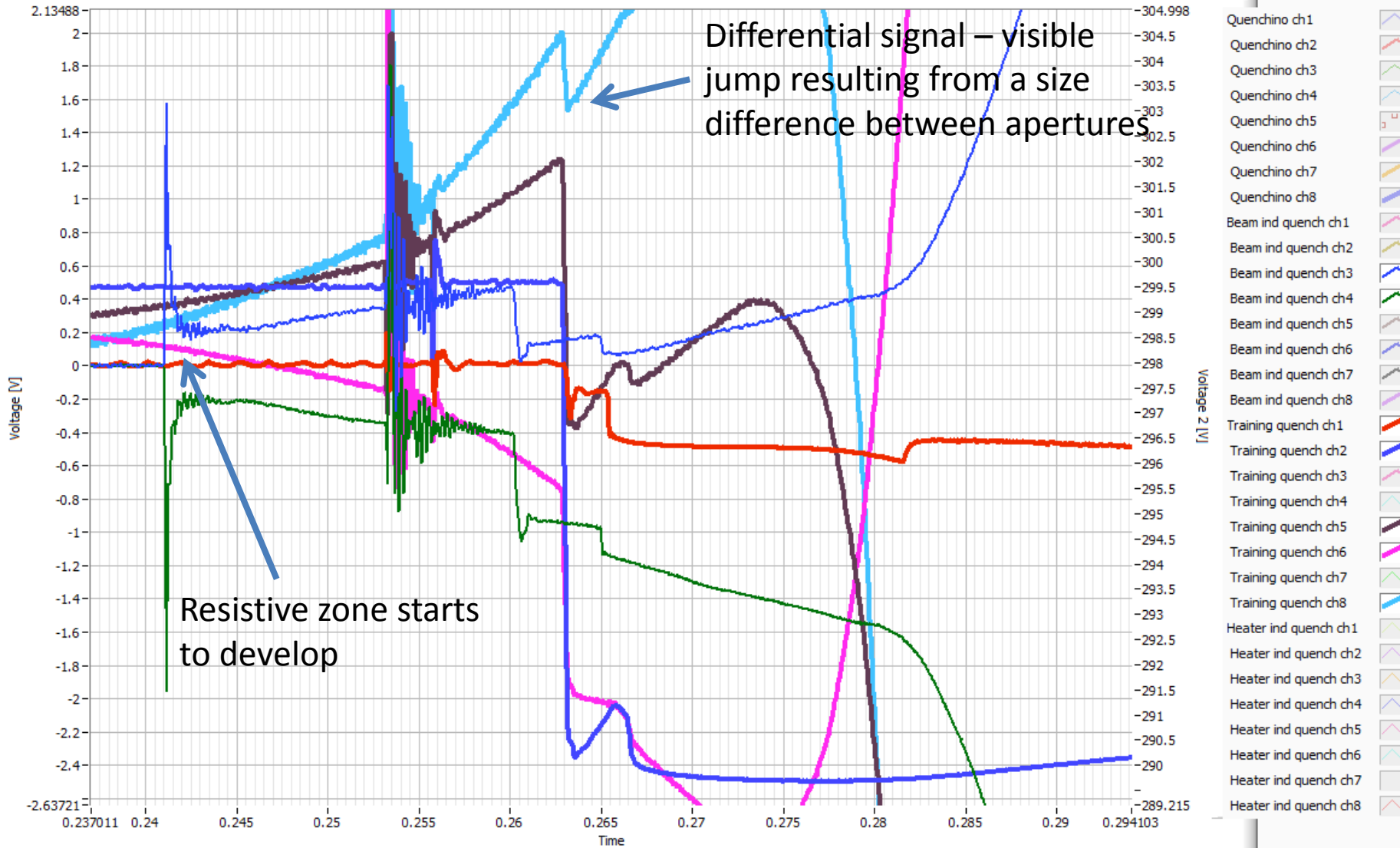
Heater induced quench

Quenchino (?) vs. quench



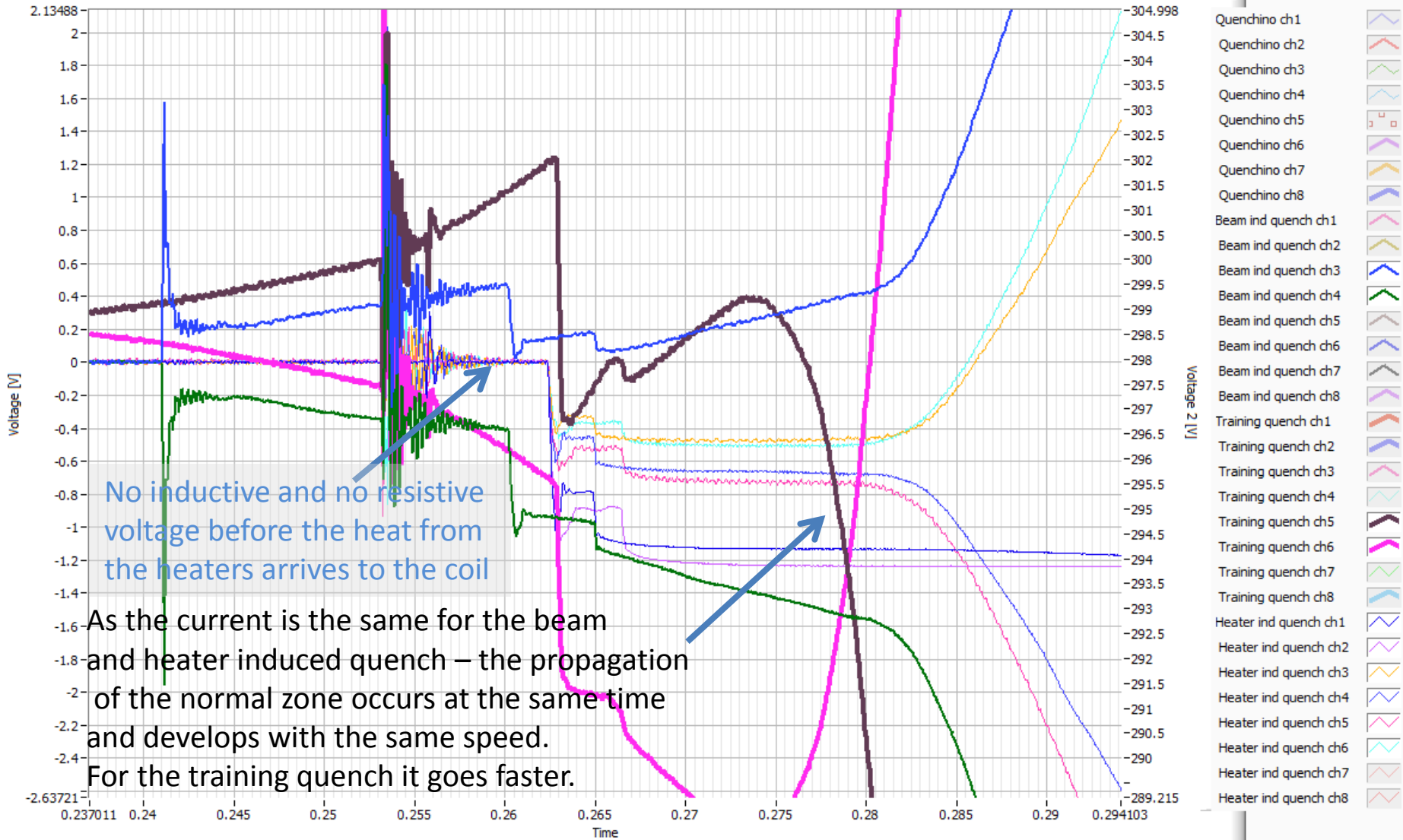


Different aperture initiates the quench



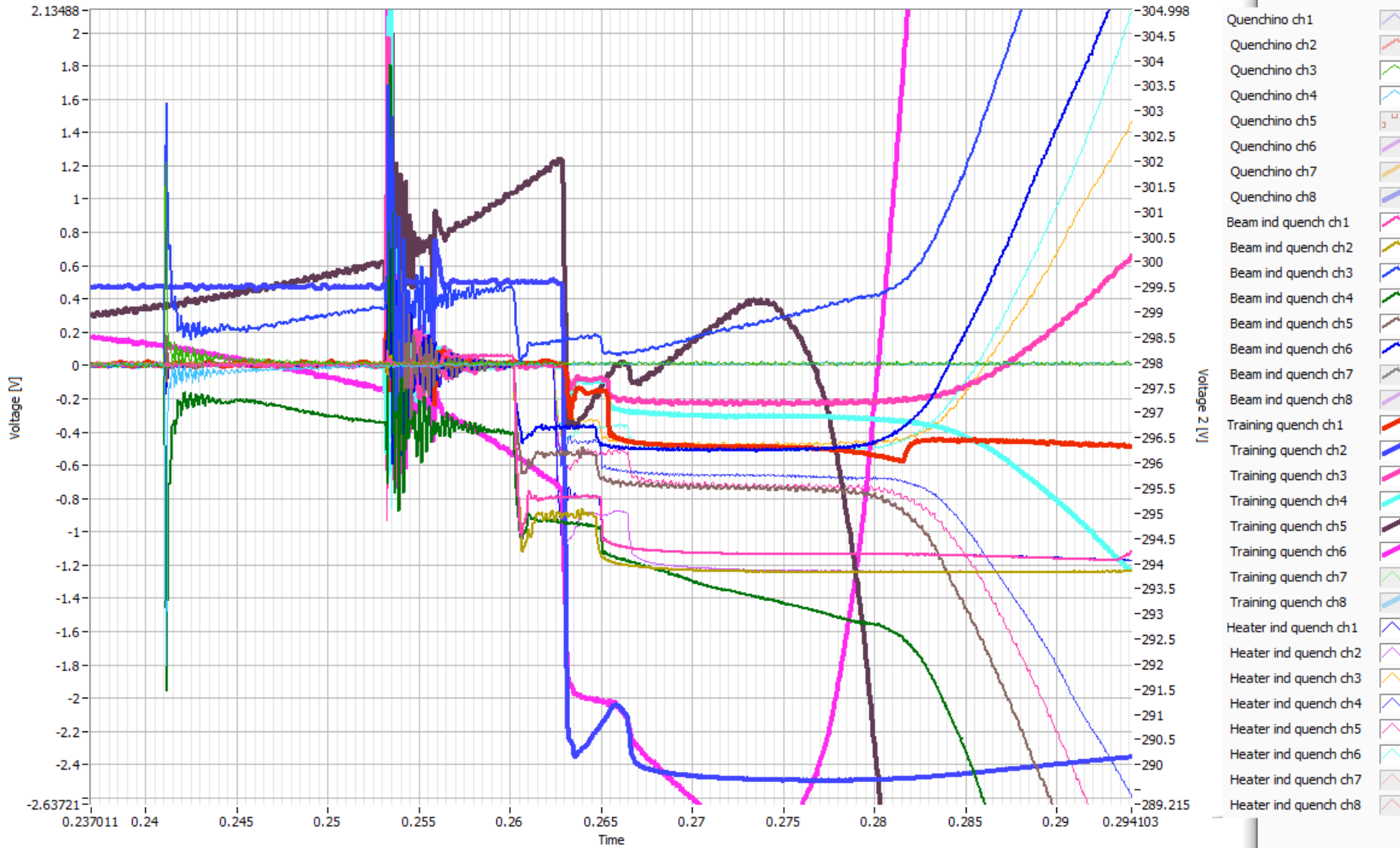
The quenching aperture is ramping up -> offset in voltage across each coil

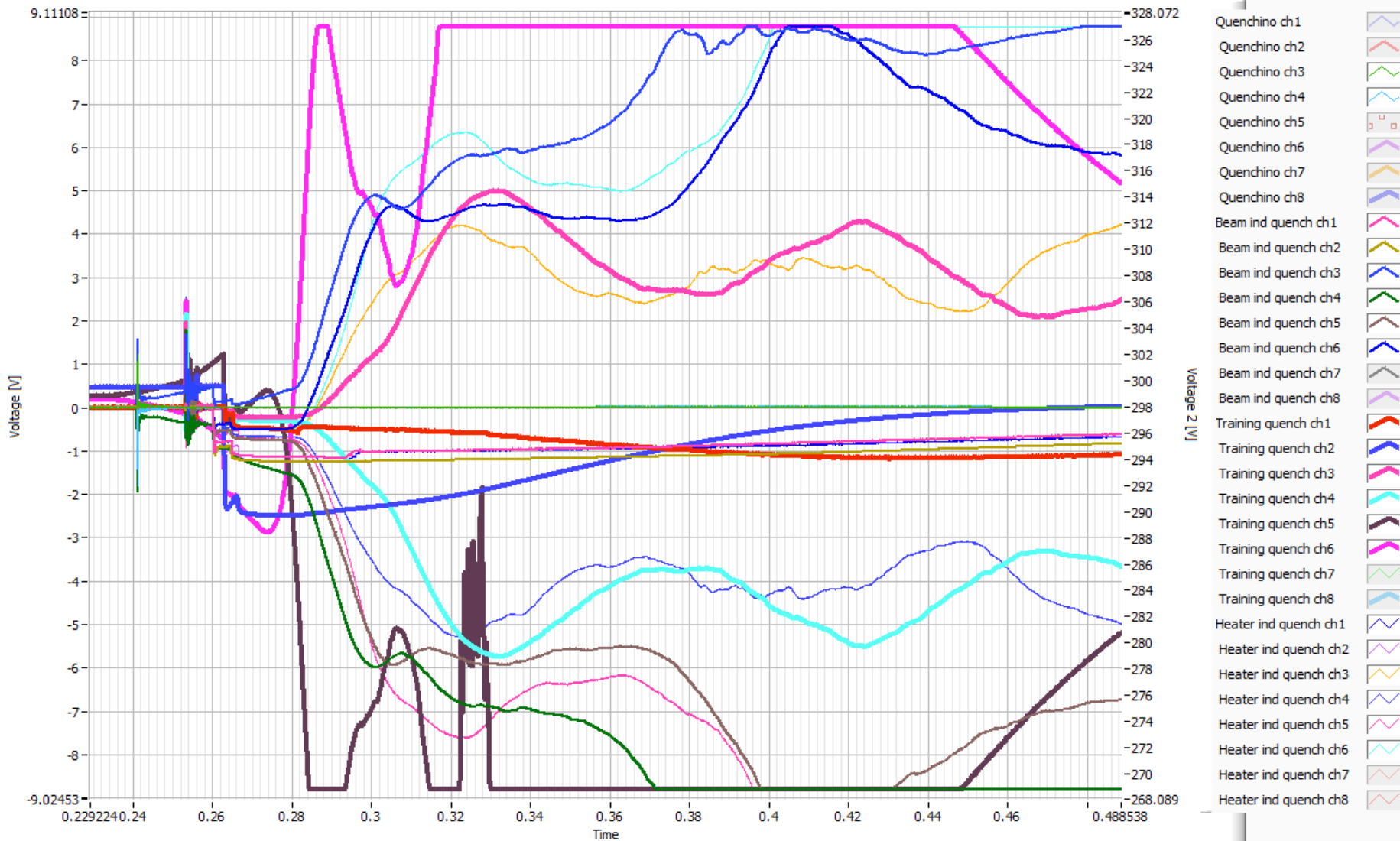
Heater induced quench added





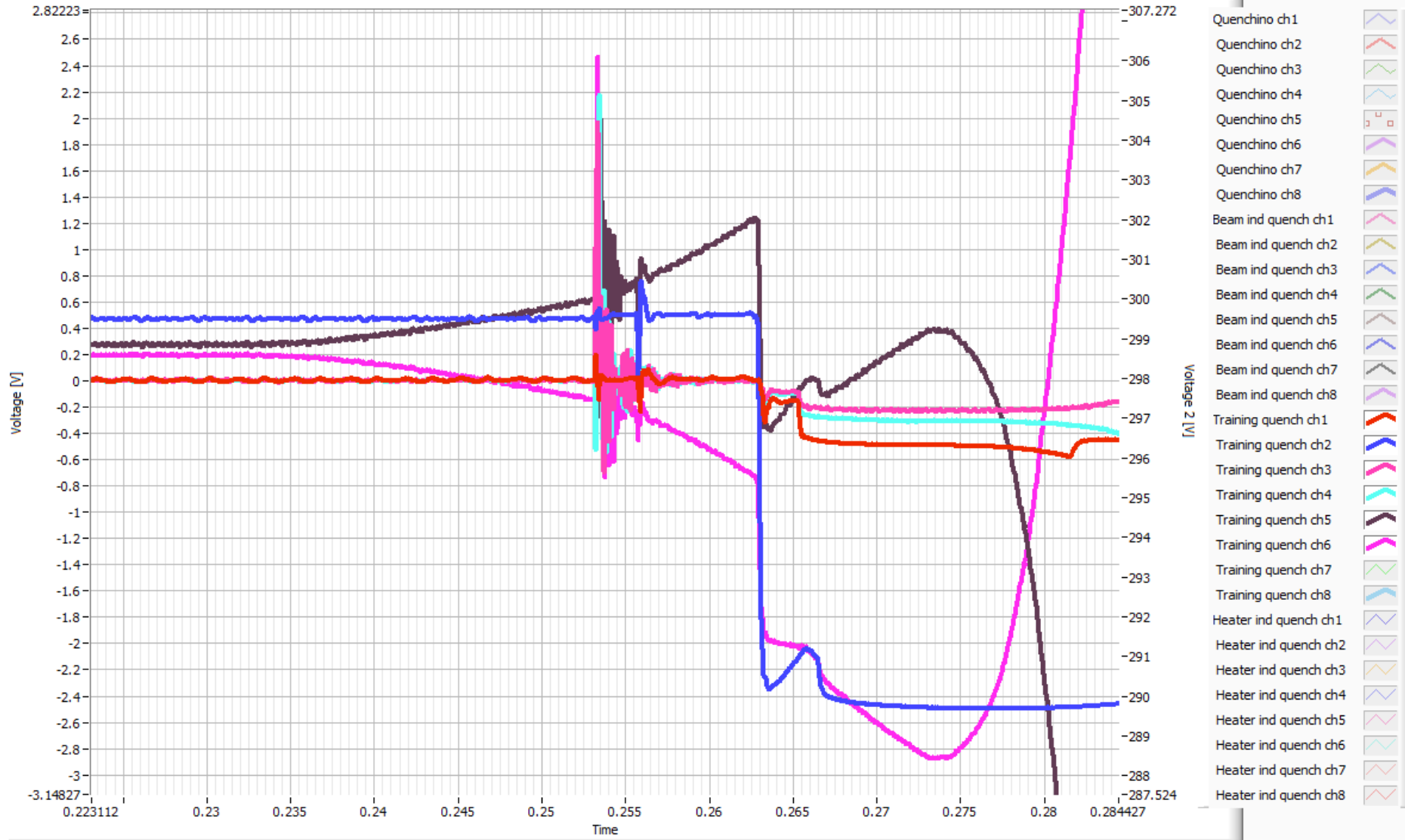
All signals together...



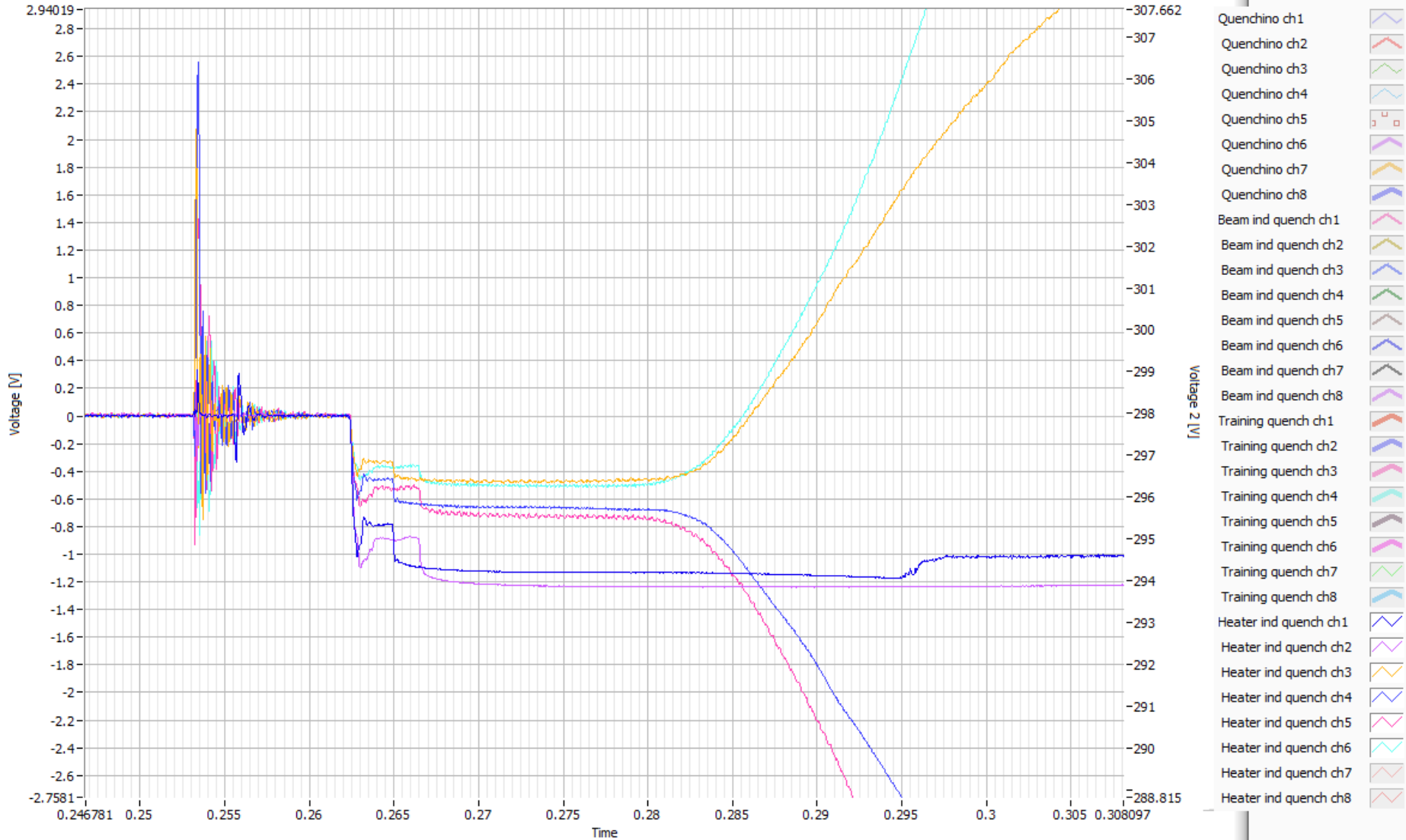




Training quench alone

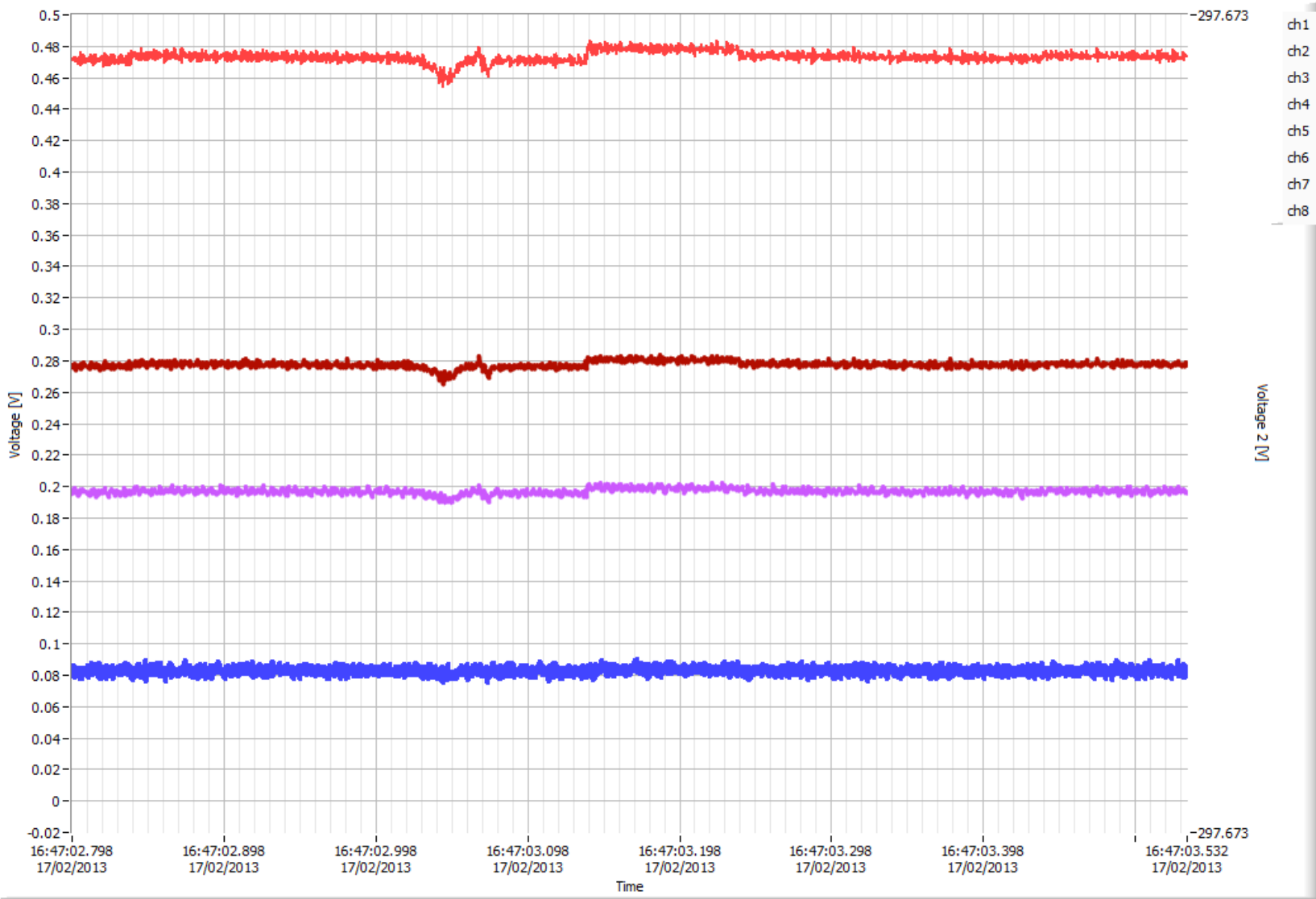


Heater induced quench alone

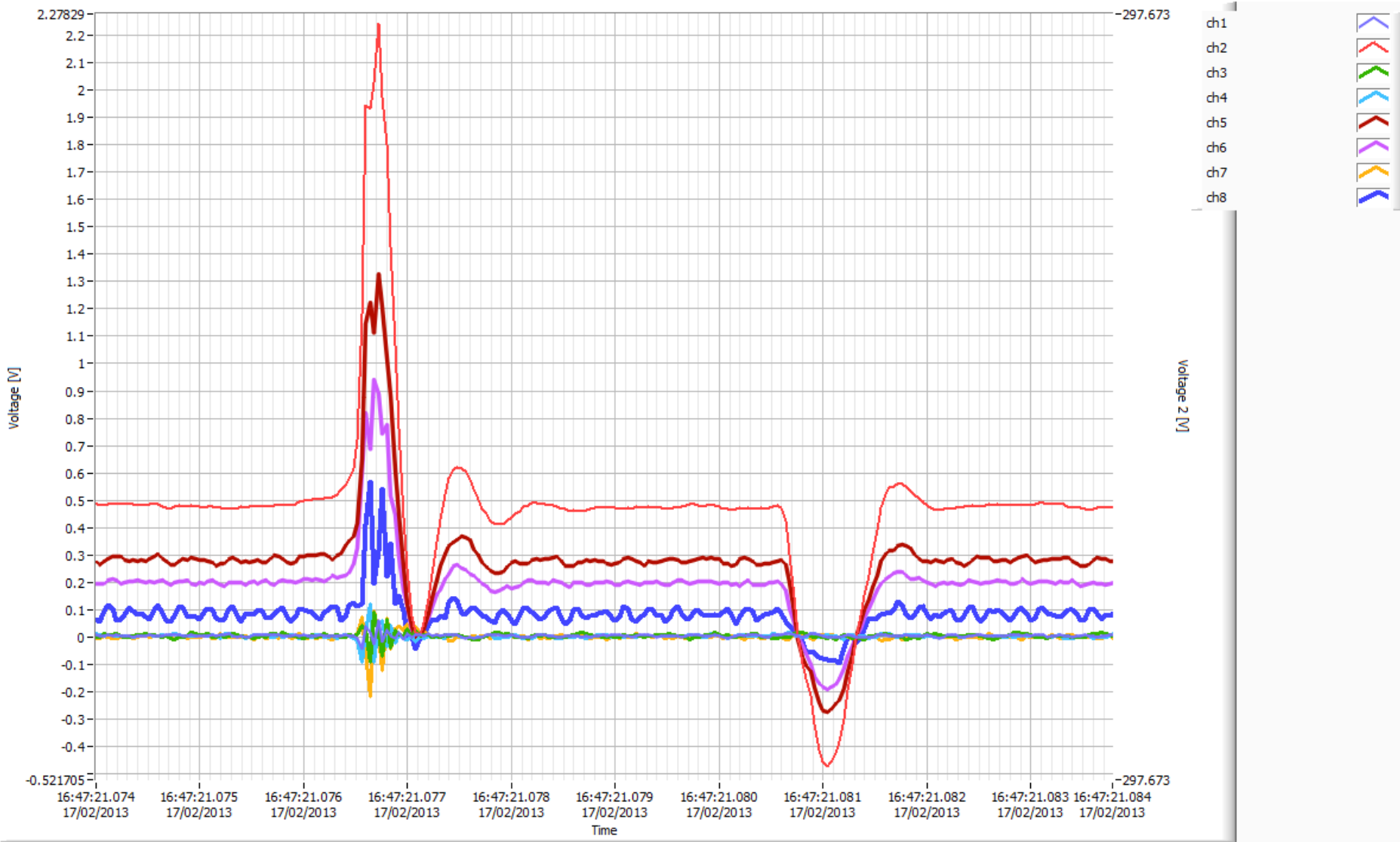




First event before the training quench



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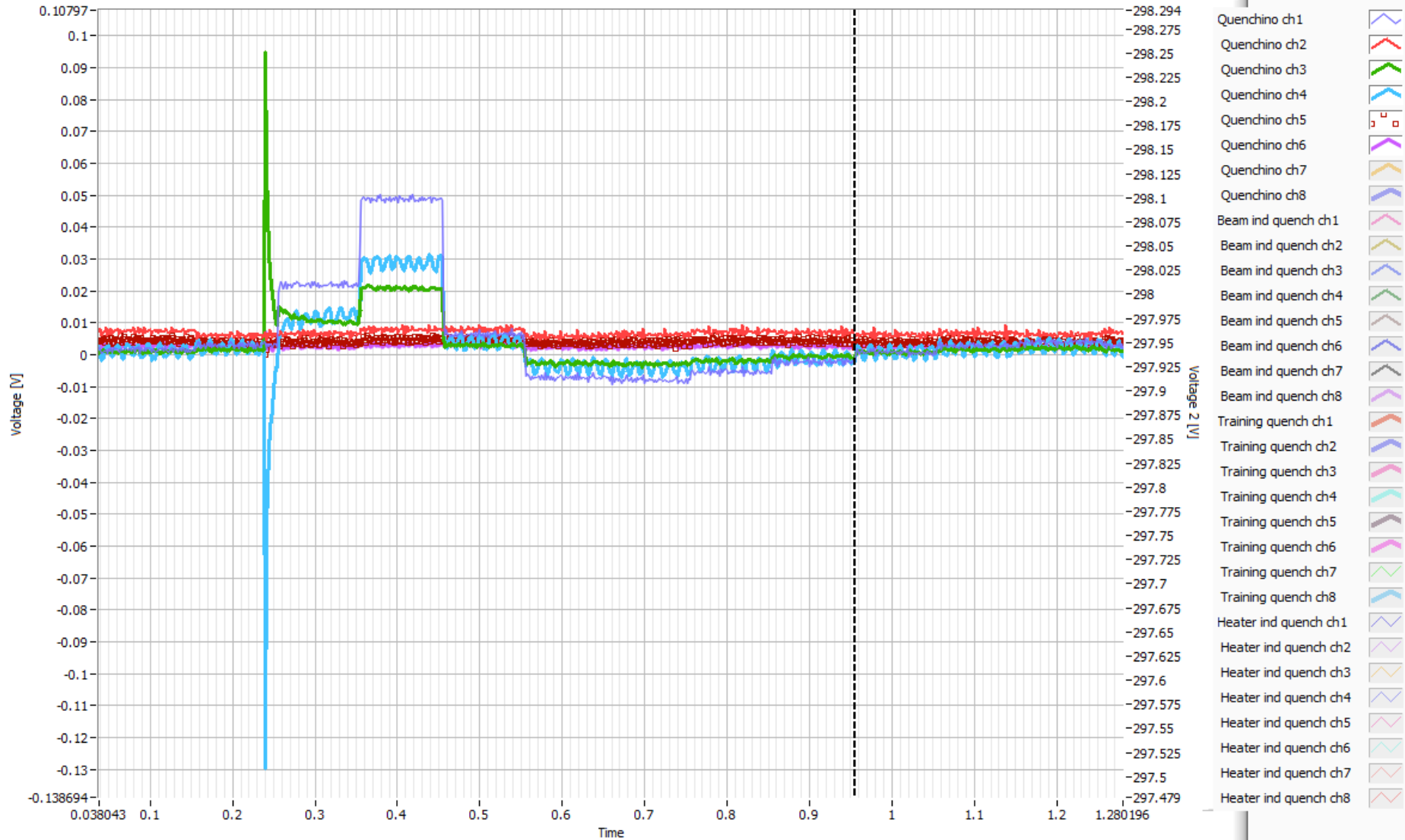


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This event occurred about 200 ms before the magnet quenched.
Nothing special is visible on the current readout in TIMBER.

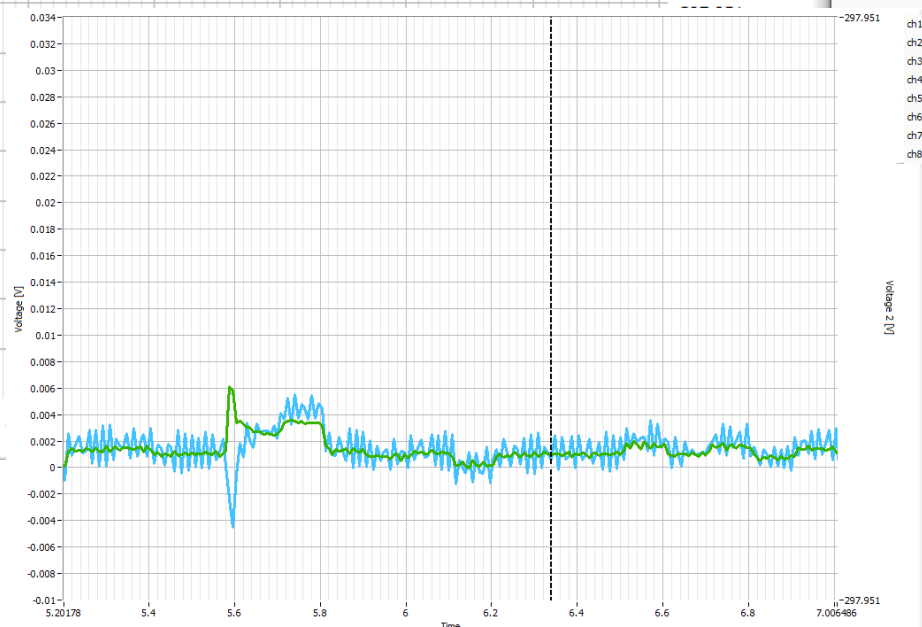
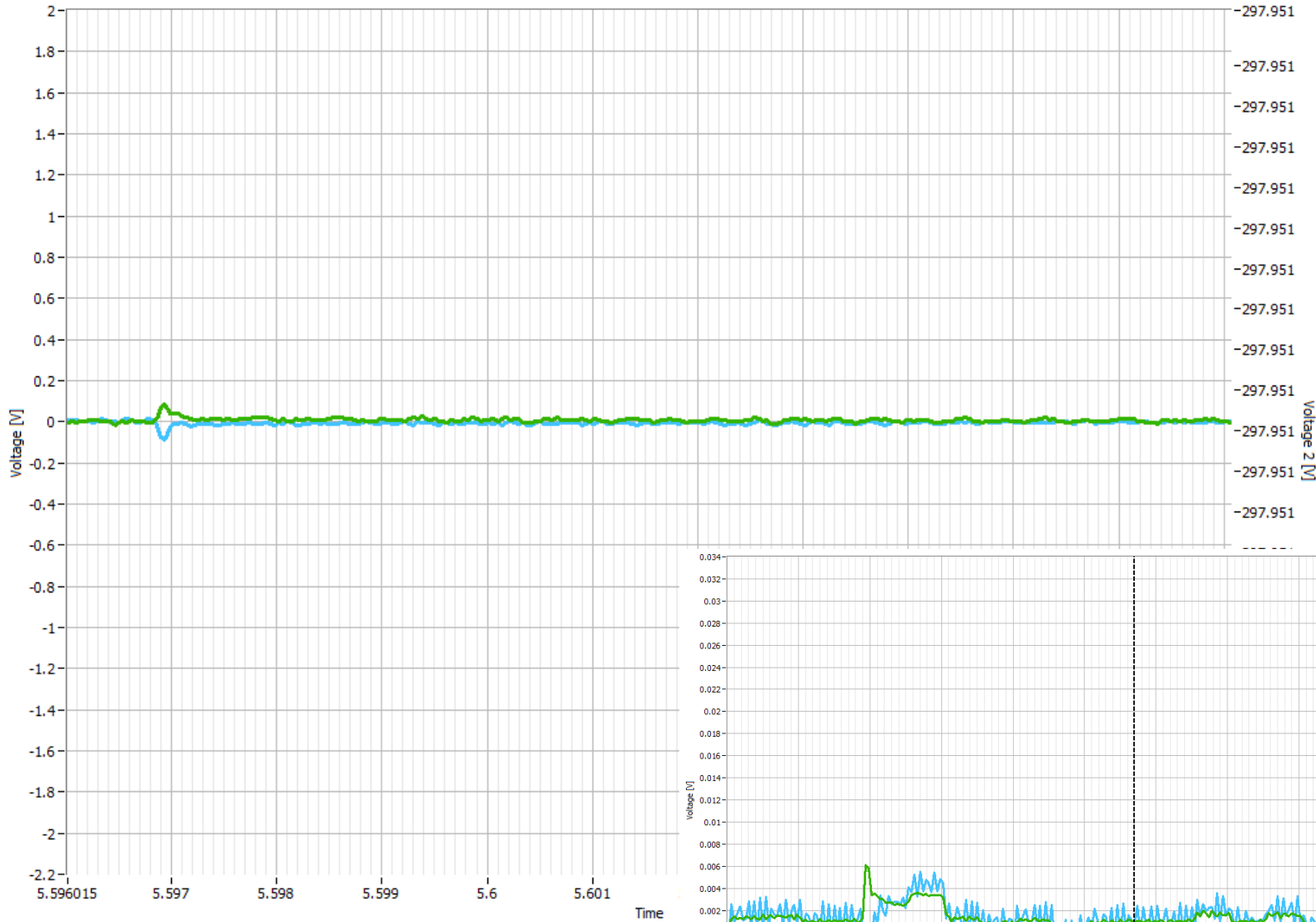


Quenchino ???





Injection (178 A)

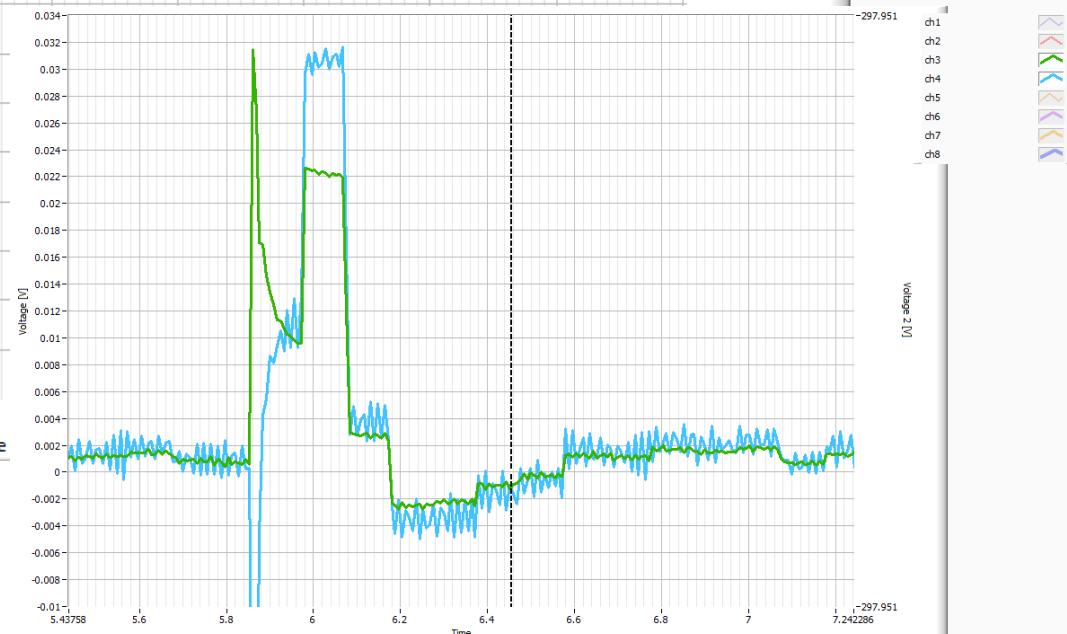
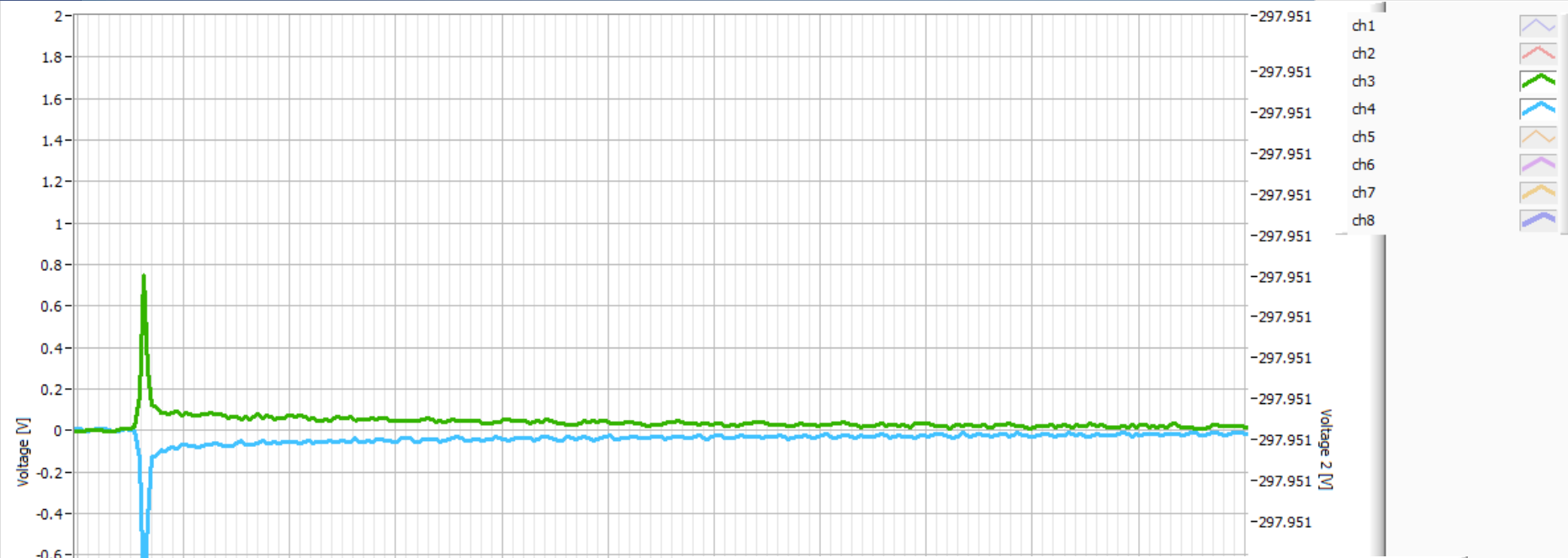


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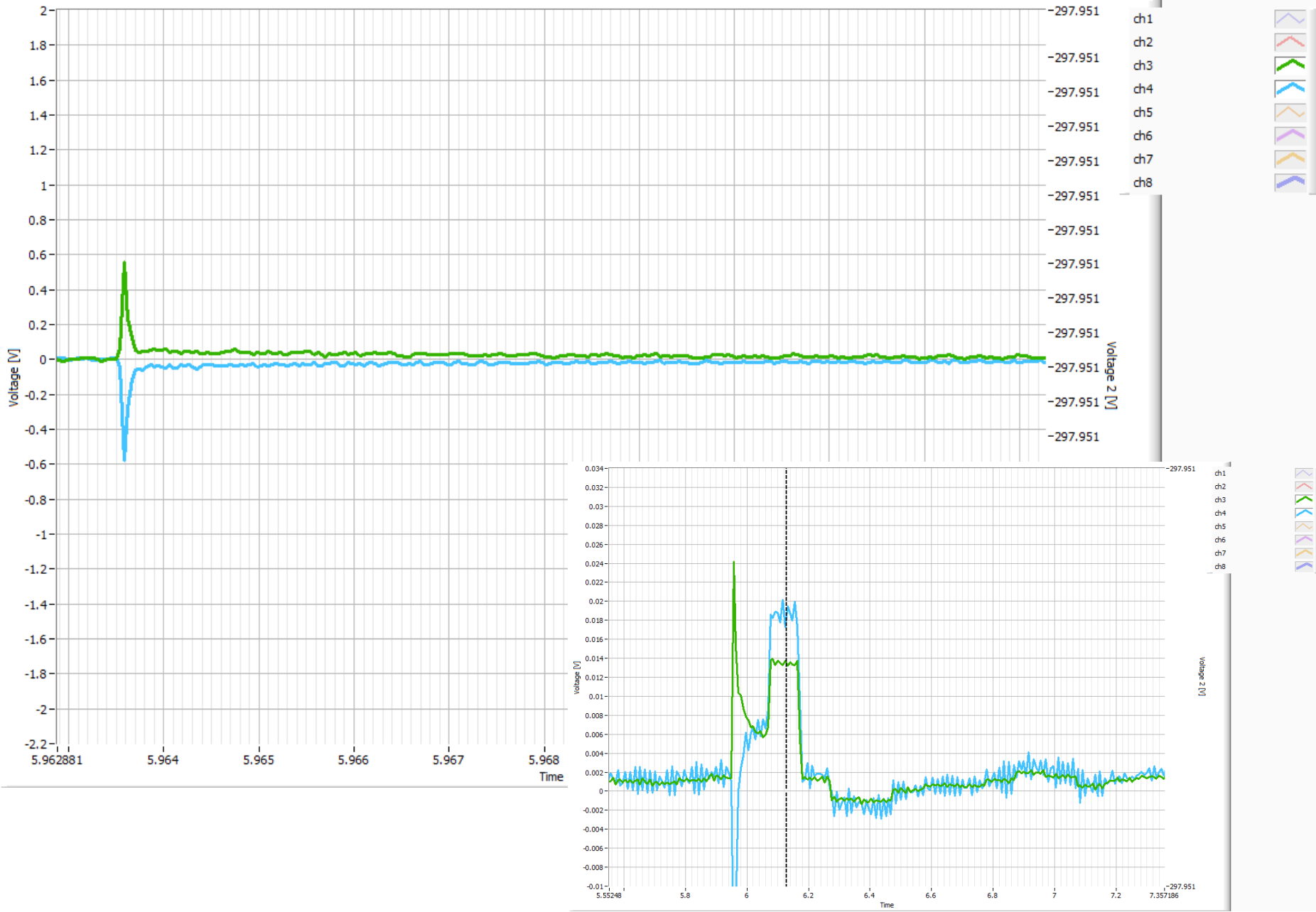
Injection (178 A)

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Injection (178 A)

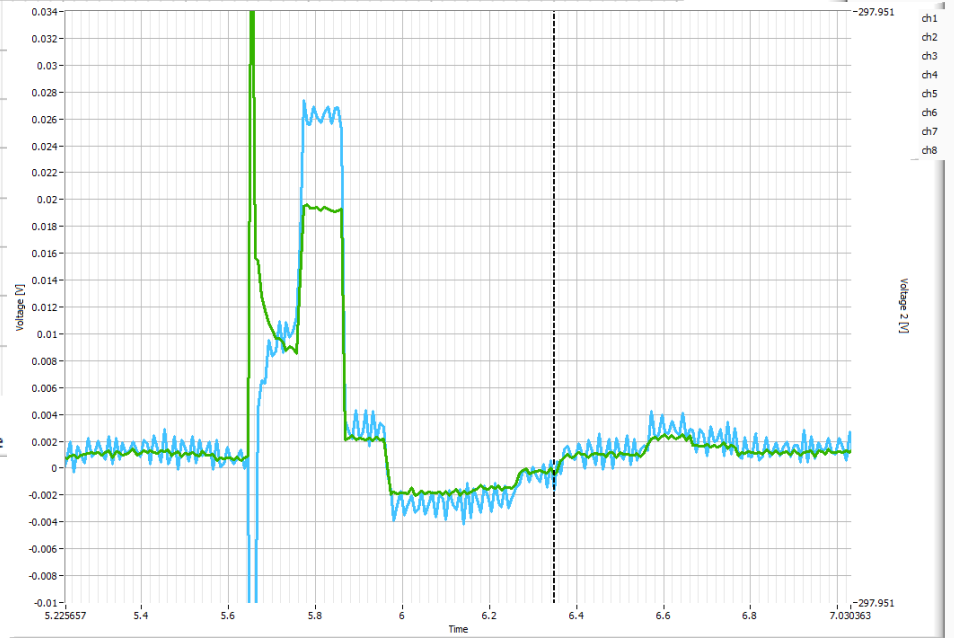
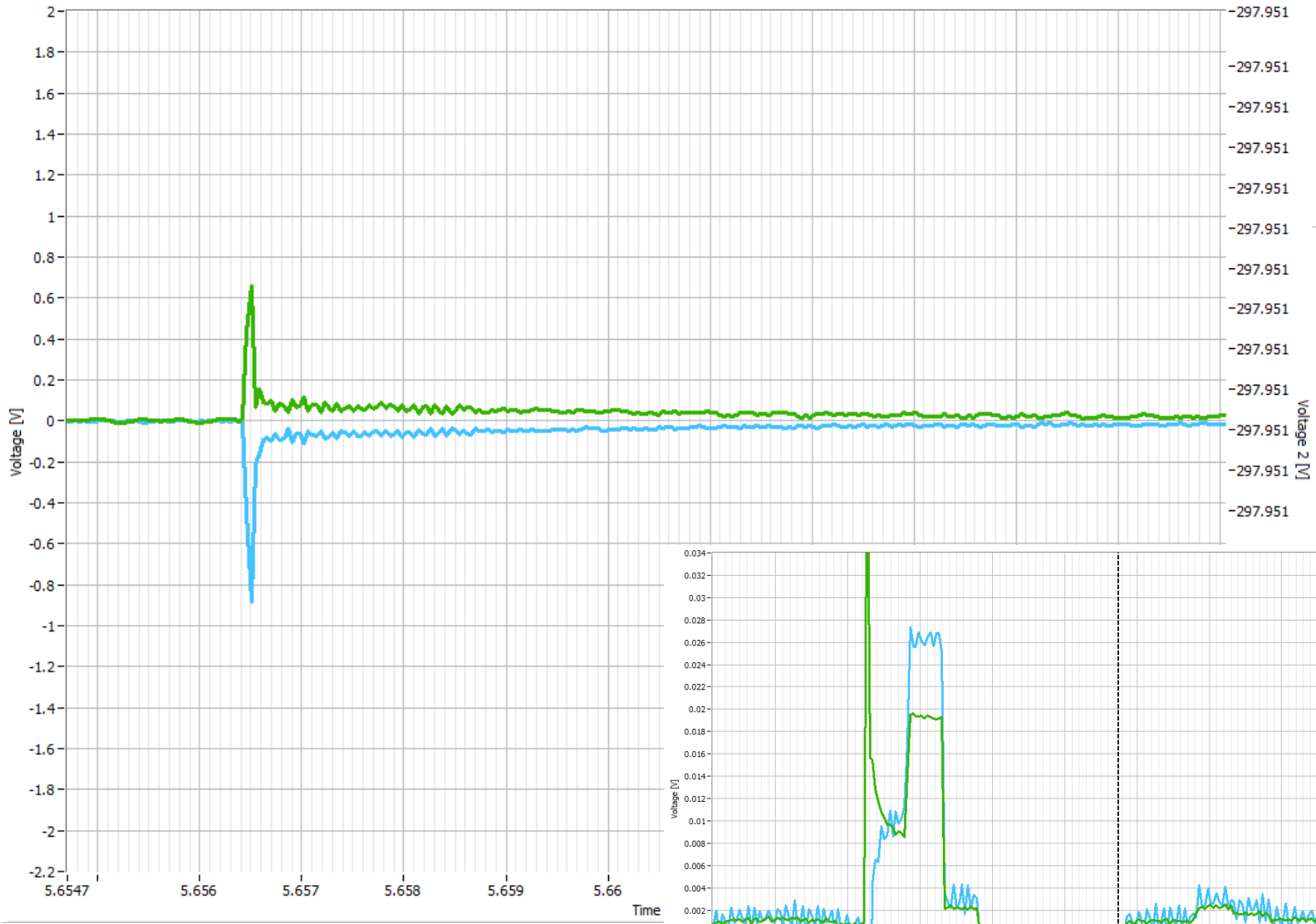




1000 A



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- ch1
- ch2
- ch3
- ch4
- ch5
- ch6
- ch7
- ch8

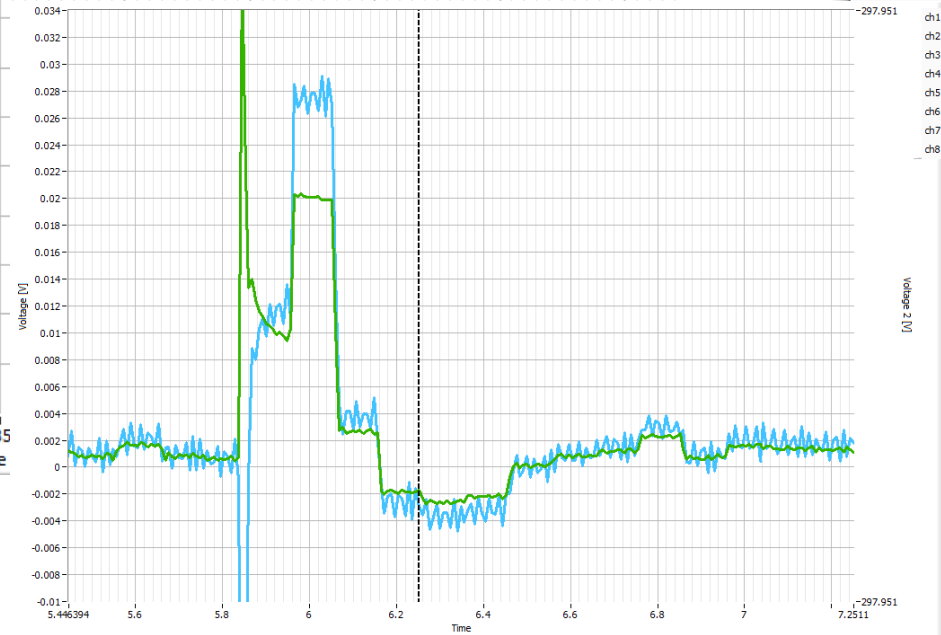
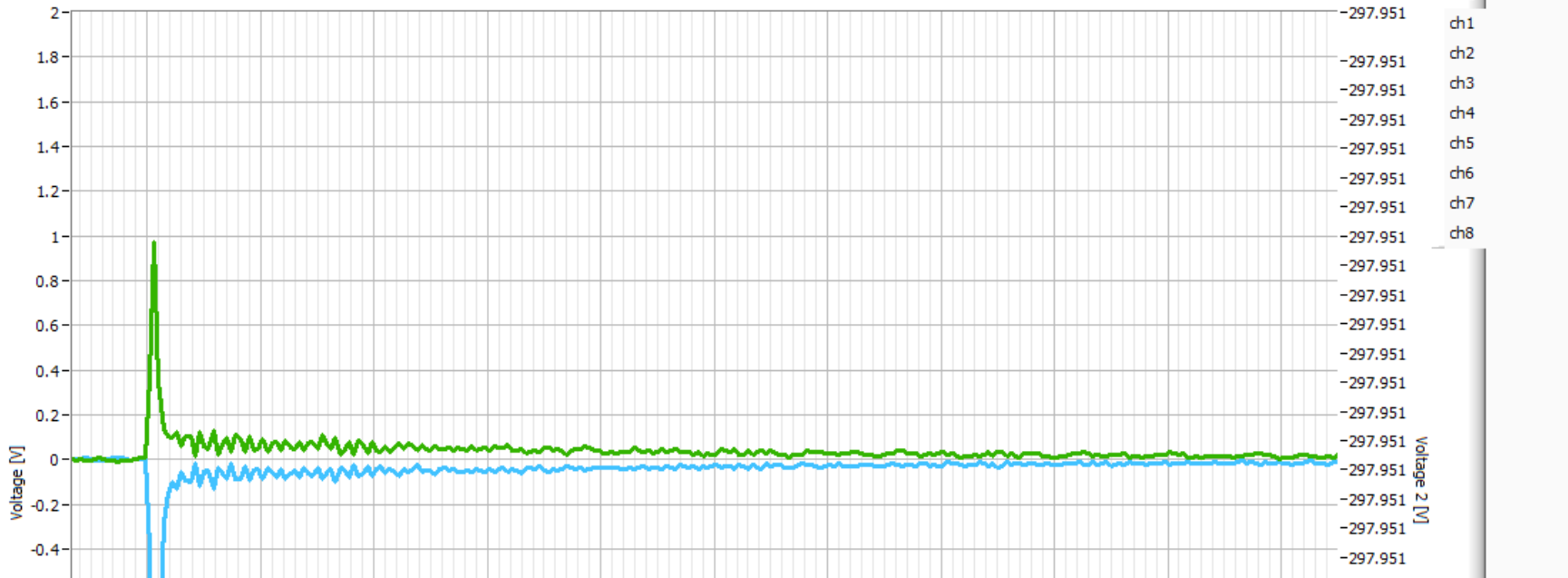


Voltage 2 [V]

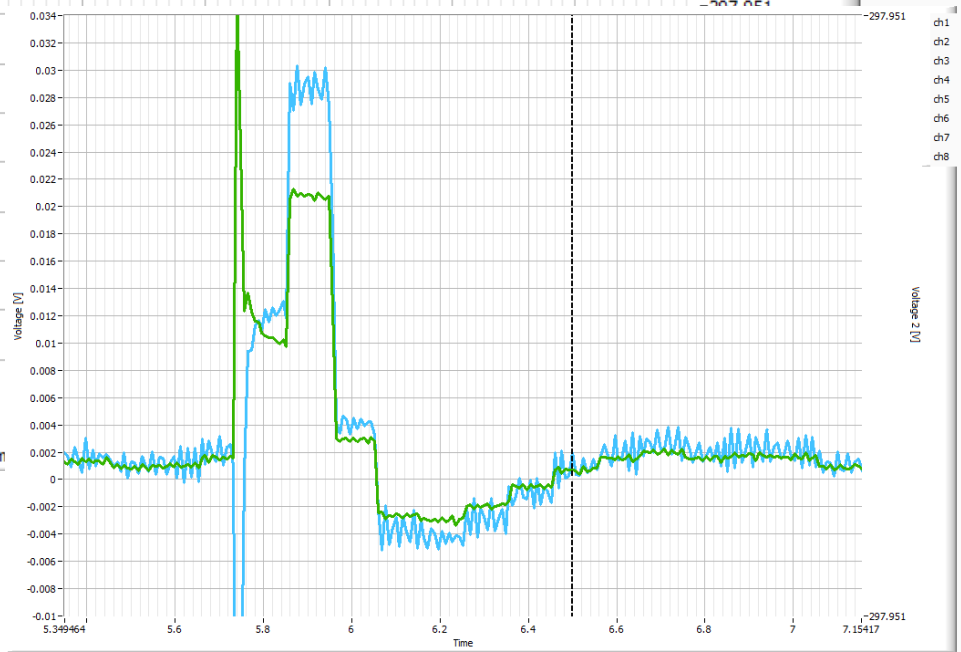
Voltage 2 [V]



1500 A



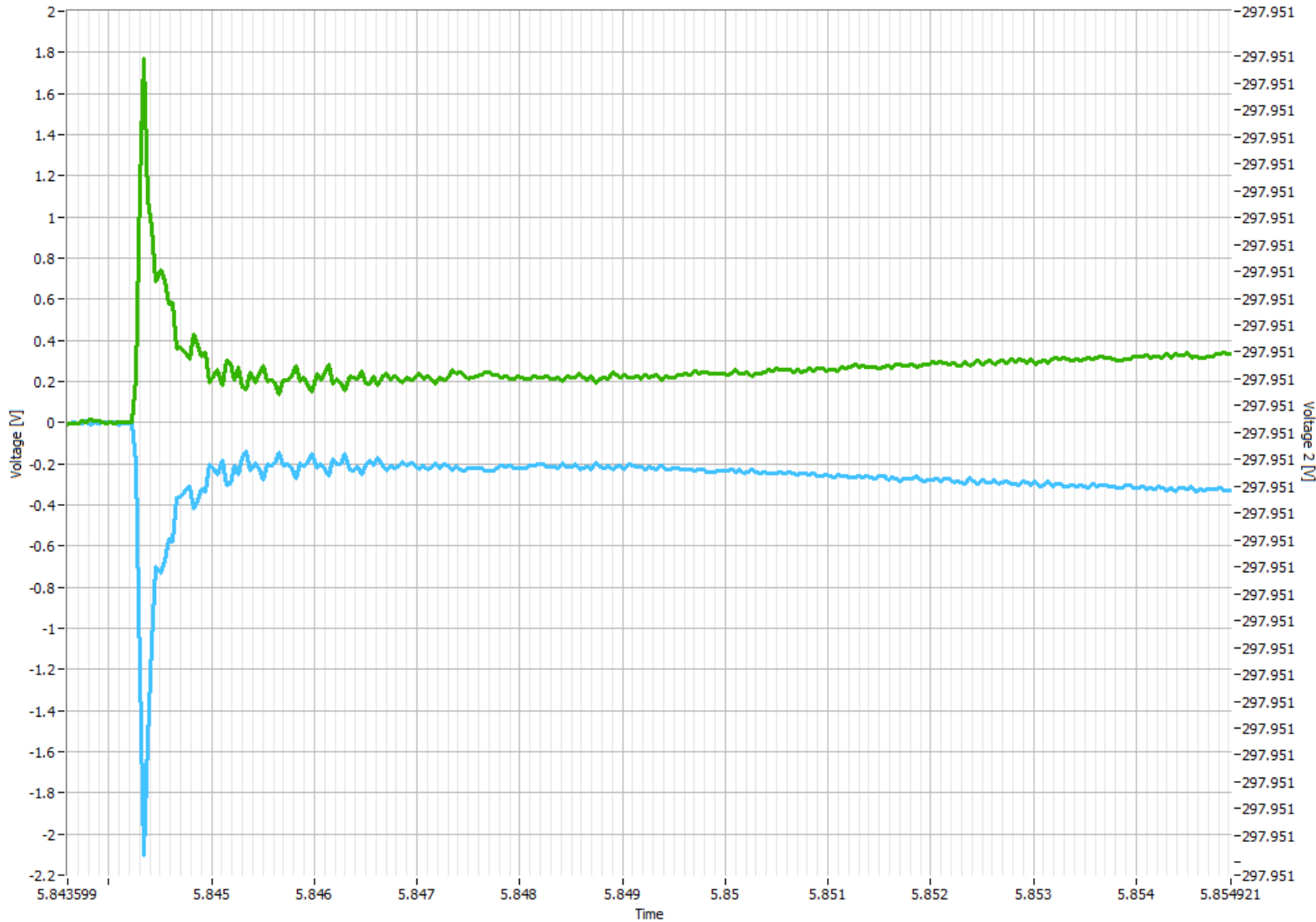
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This event can be seen in PM files.

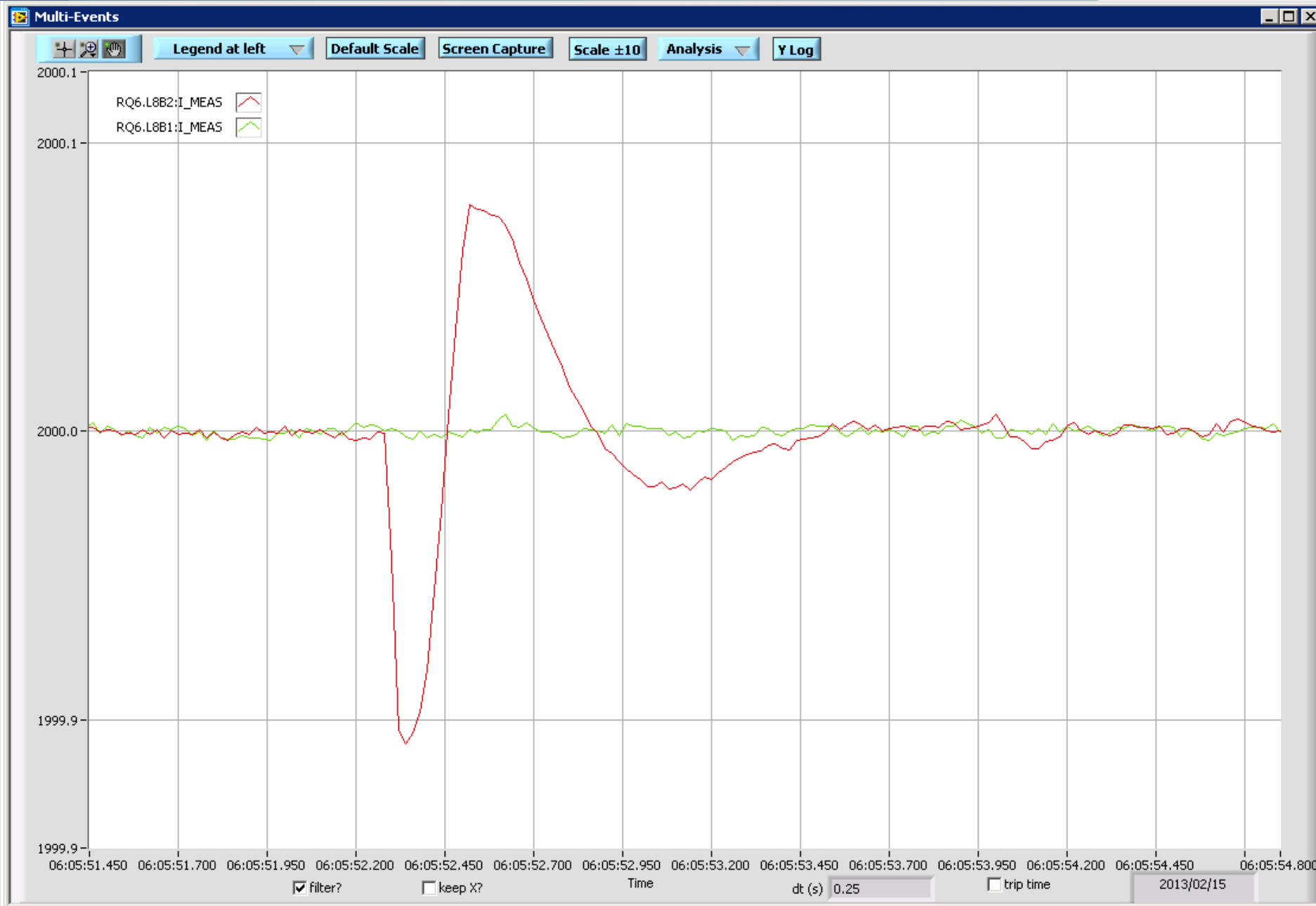


2500 A, quench



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PC can really see decreased current



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- Lost particles really interact with the coil and an electrical signal is visible across it.
- Mechanisms that drive the current change and the voltage spike are not yet explained.
- The two effects might have different causes.
- After the heater firing all seems to be clear.