



RCO.A45B1

Circuit of 77 octupole spool pieces in MBA dipoles (part of combined MCOB)

120 A circuit using a 120 A converter (RPLB type) with QPS input (exceptionally)

3 events:

11 Feb 2011 00h24

13 Feb 2011 00h59

13 Feb 2011 16h59

See also presentation Markus on the RSS.A78B1



ed by CERN

navigators.aspx&stopid=0&version=STUDY&navigator=electrical

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GENERAL INFORMATION | POWER CONVERTERS | QPS | WARM CABLES | MP

RCO.A45B1 : Octupole spool pieces, in series per sector only in MBA dipoles (Part of combined MCOD magnet type) [Link to MTF](#)

ID : 254295, Circuit version : STUDY, Layout version : STUDY

Power Converters in the Circuit	PC Location	Rack Name/Slot
RPLB.UA47.RCO.A45B1 (MTF, TE-EPC Database)	UA47	RYLC03=UA47 1.1

Magnets in the Circuit	Number
MCO	77

Current Leads in the Circuit
DFLFS.7R4.1
DFLFS.7R4.2

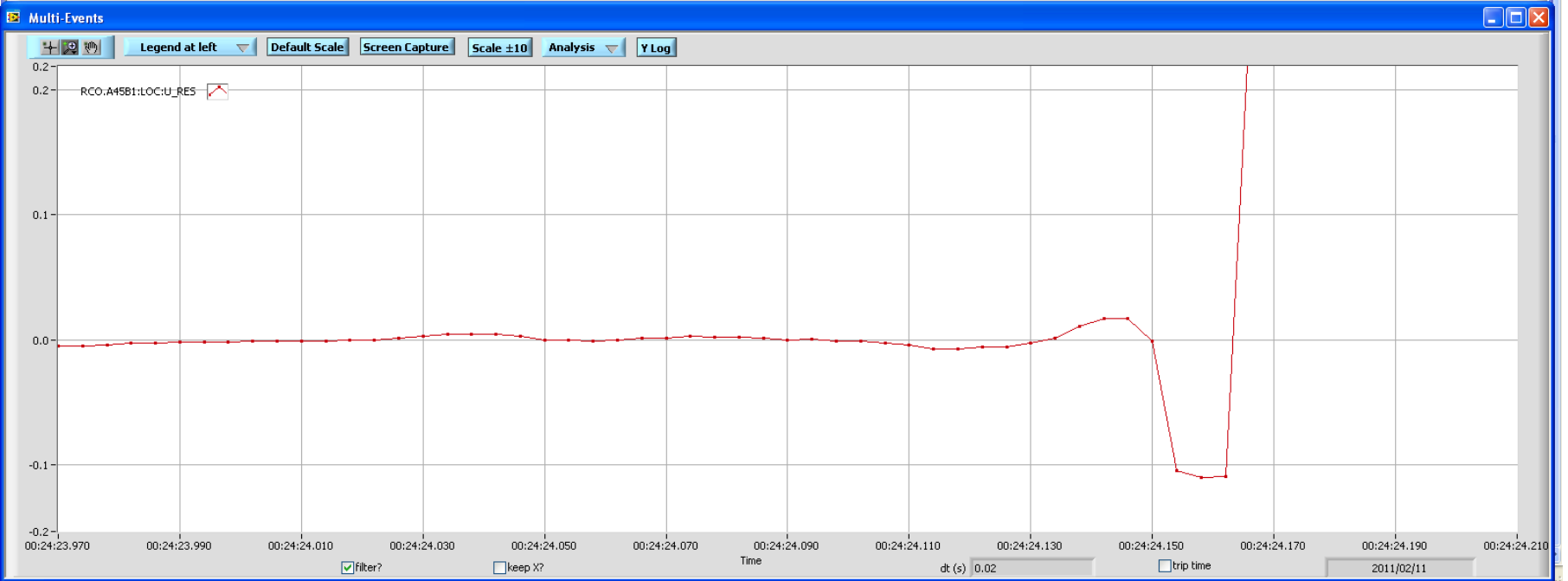
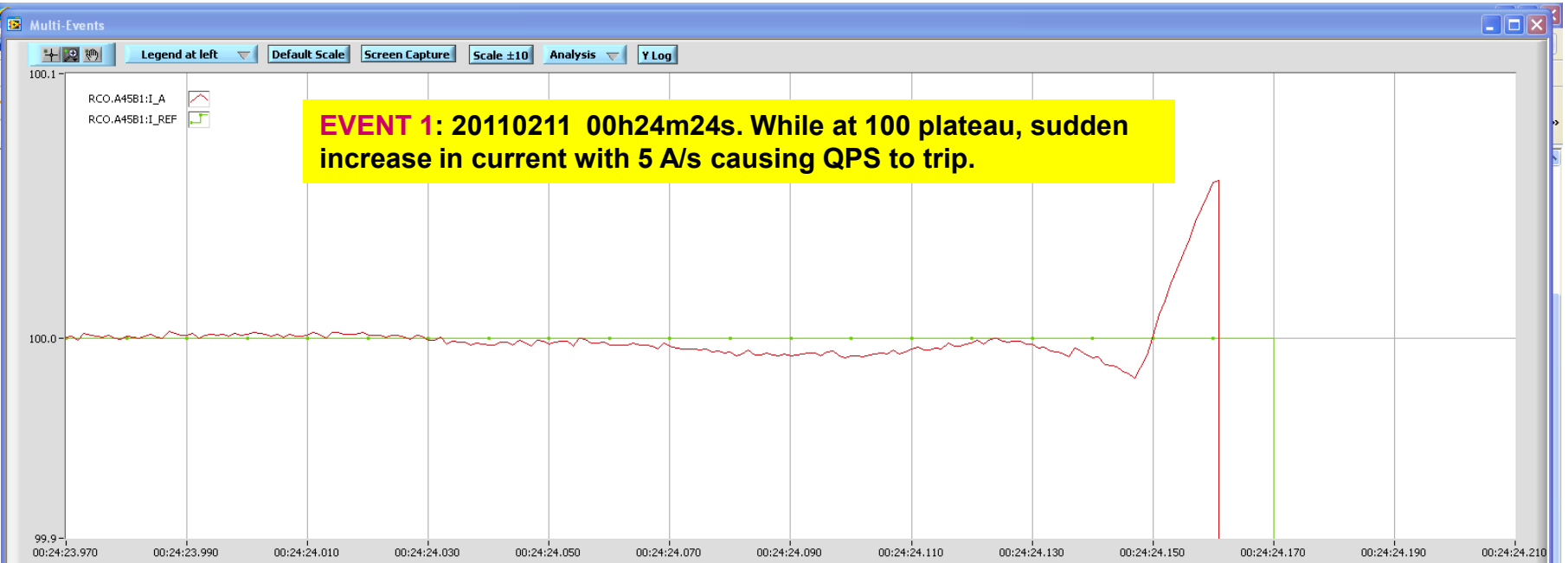
Magnets per Power Converter
RPLB.UA47.RCO.A45B1

MCO		77	
I Nominal :	100 A	I Ultimate :	110 A
I Offset :	.0 A	I Overload :	126 (+-3%) A
L tot :	.031 H	R tot :	.031160 Ohm
Ramp Time :	40.00 s	max(di/dt) :	3.000 A/s
U leads :	.100 V	U Extr :	.000 V
U Boost :	.092 V	U Coll :	3.739 V
Warm Cable Verification :	✓	I Min Op :	.0 A
		R tot Measured :	.030370 Ohm
		Time Constant :	.988 s
		U Peak Circ :	3.832 V

Circuit Parameters	
Operational Temperature :	1.90 K
Beam Dump Request :	NO
Powering Subsector Abort :	NO

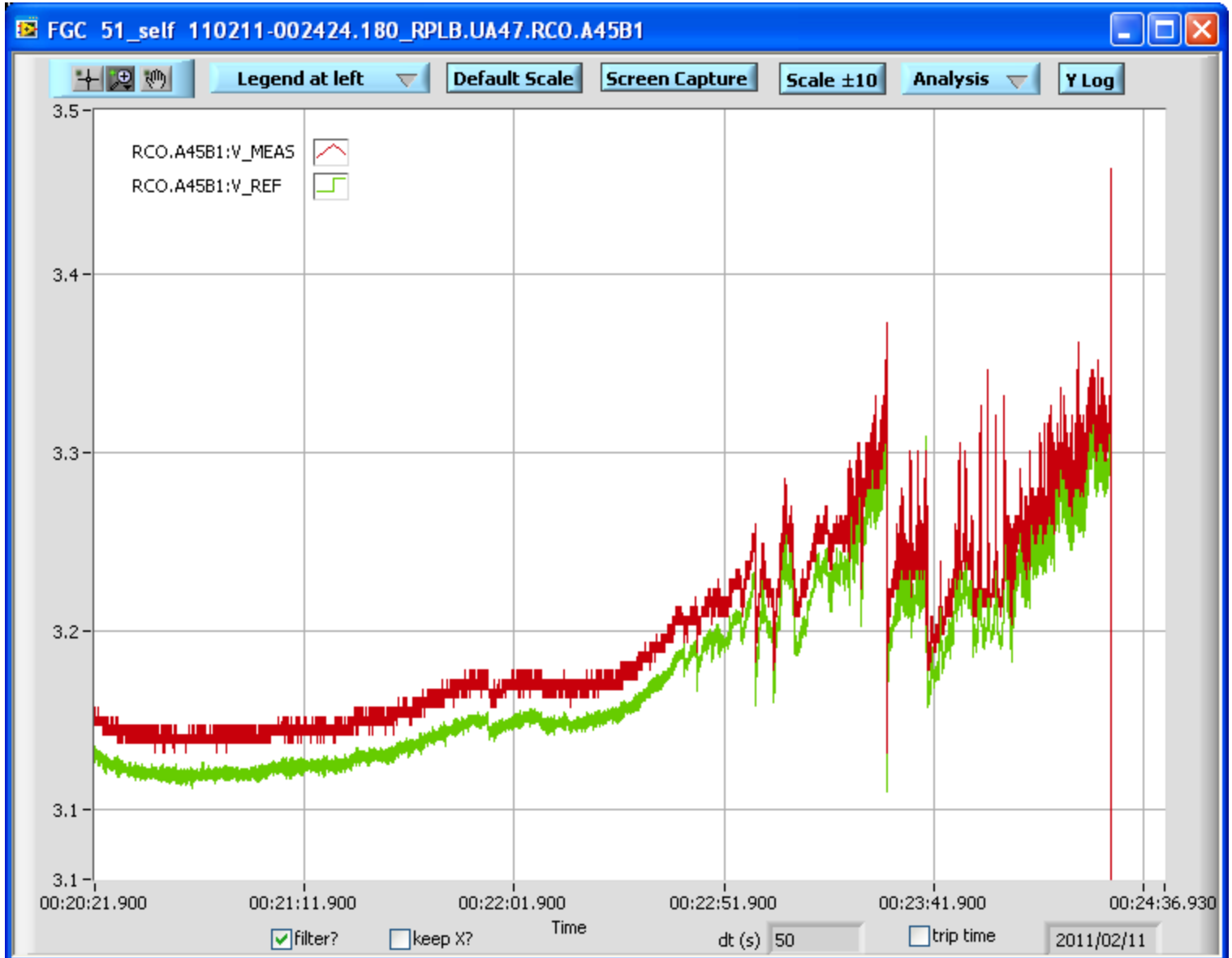
[Download the XML circuit definition of the circuit RCO.A45B1](#)

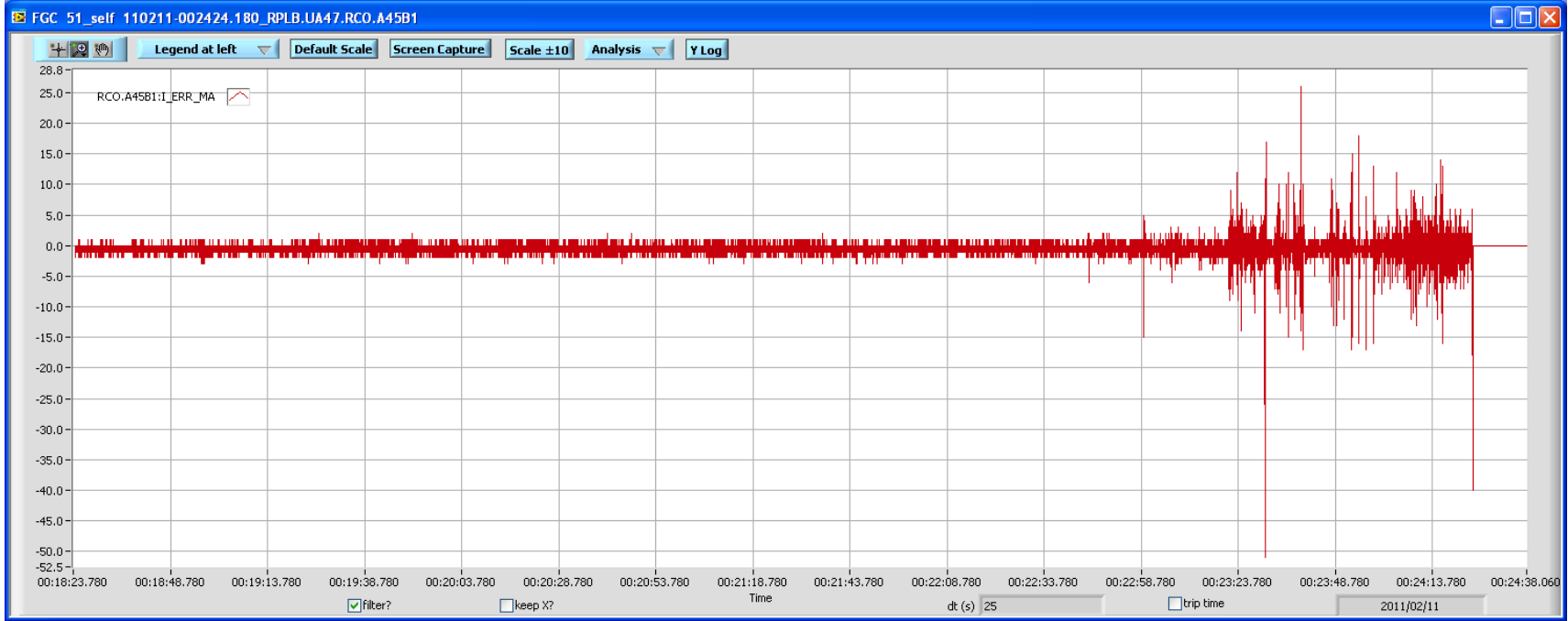
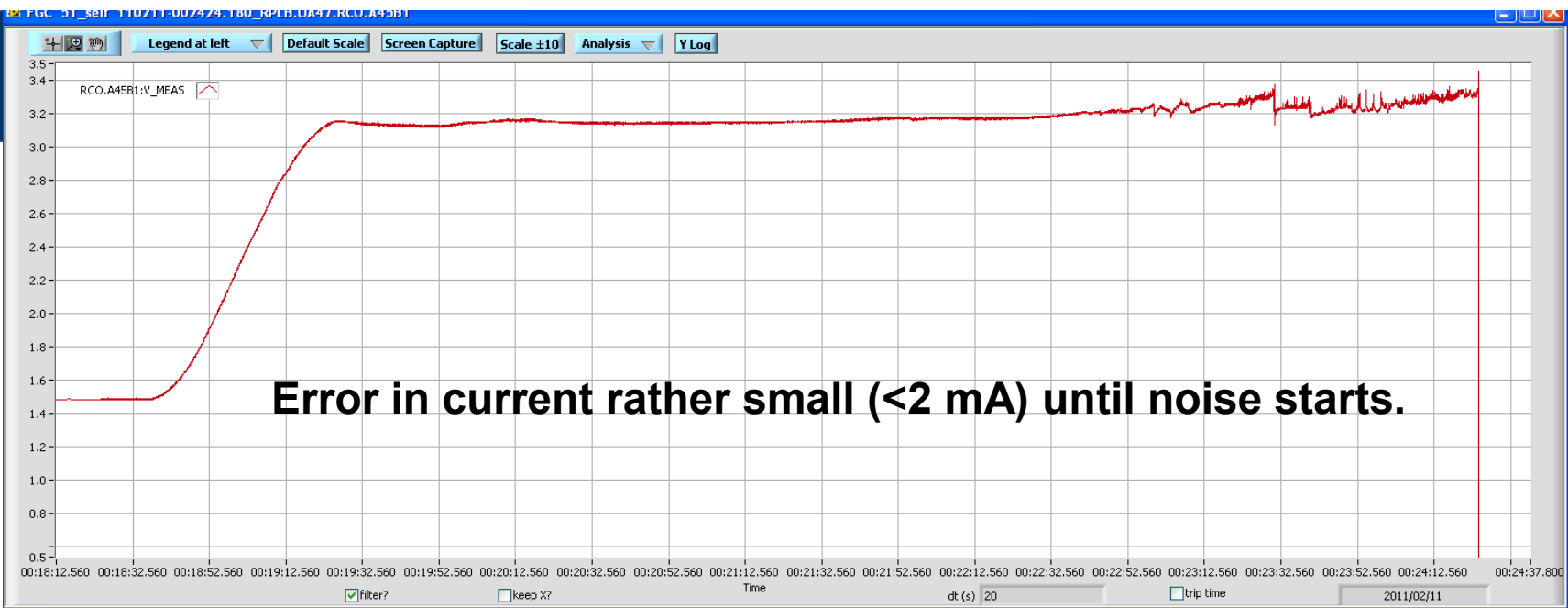
LAYOUT_DB
Friday, March 04, 2011 5:19:47 PM

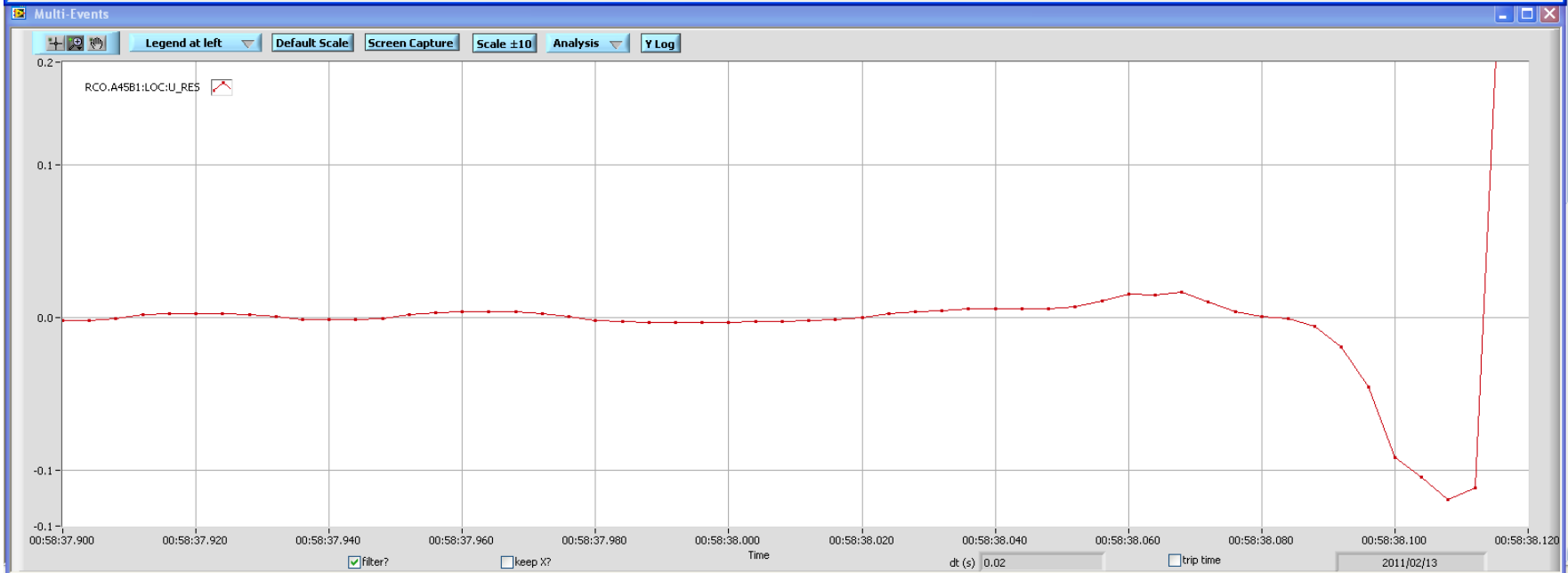
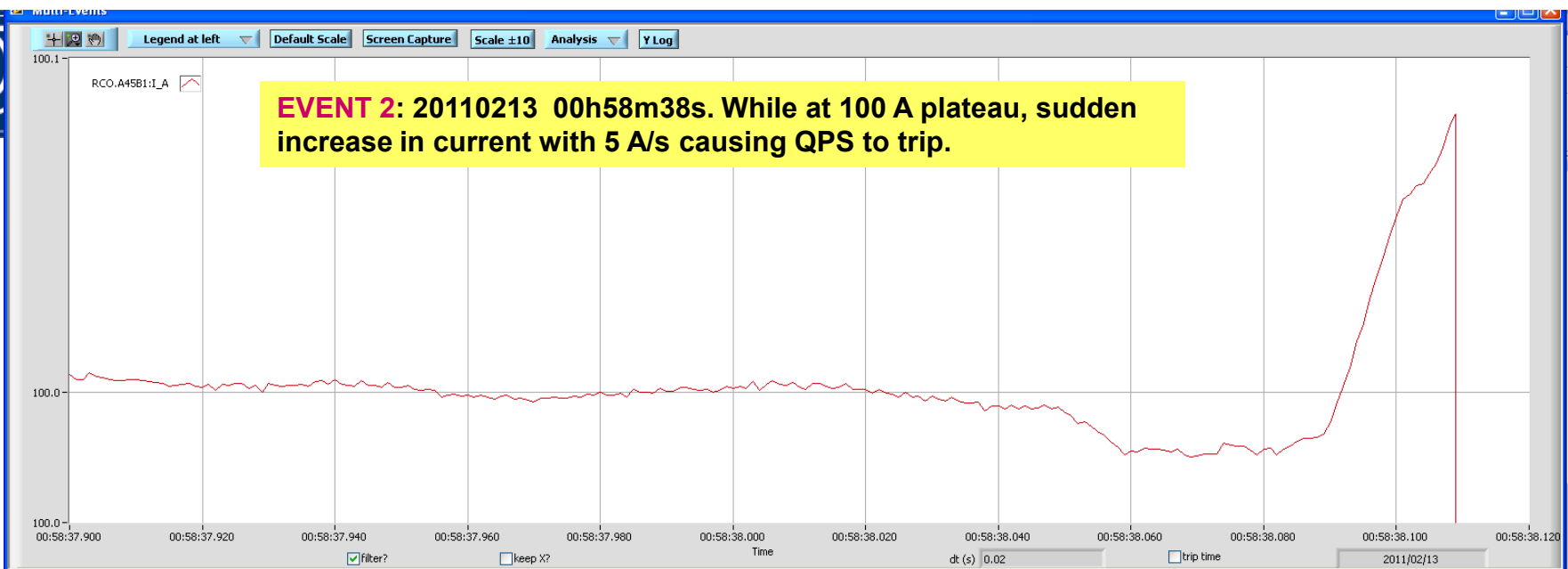




Strong noise in V_meas and V_ref already present during 100 s before the trip

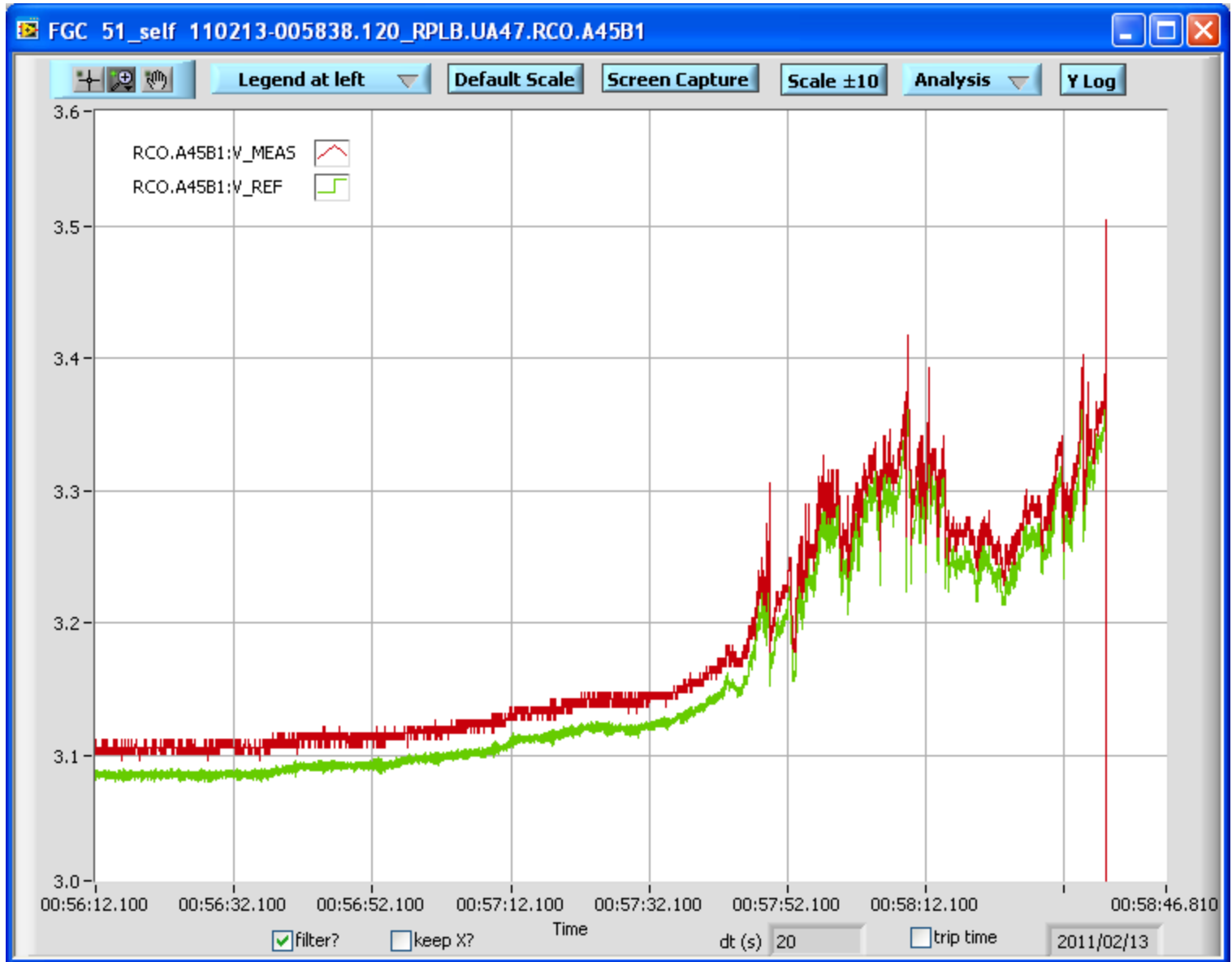






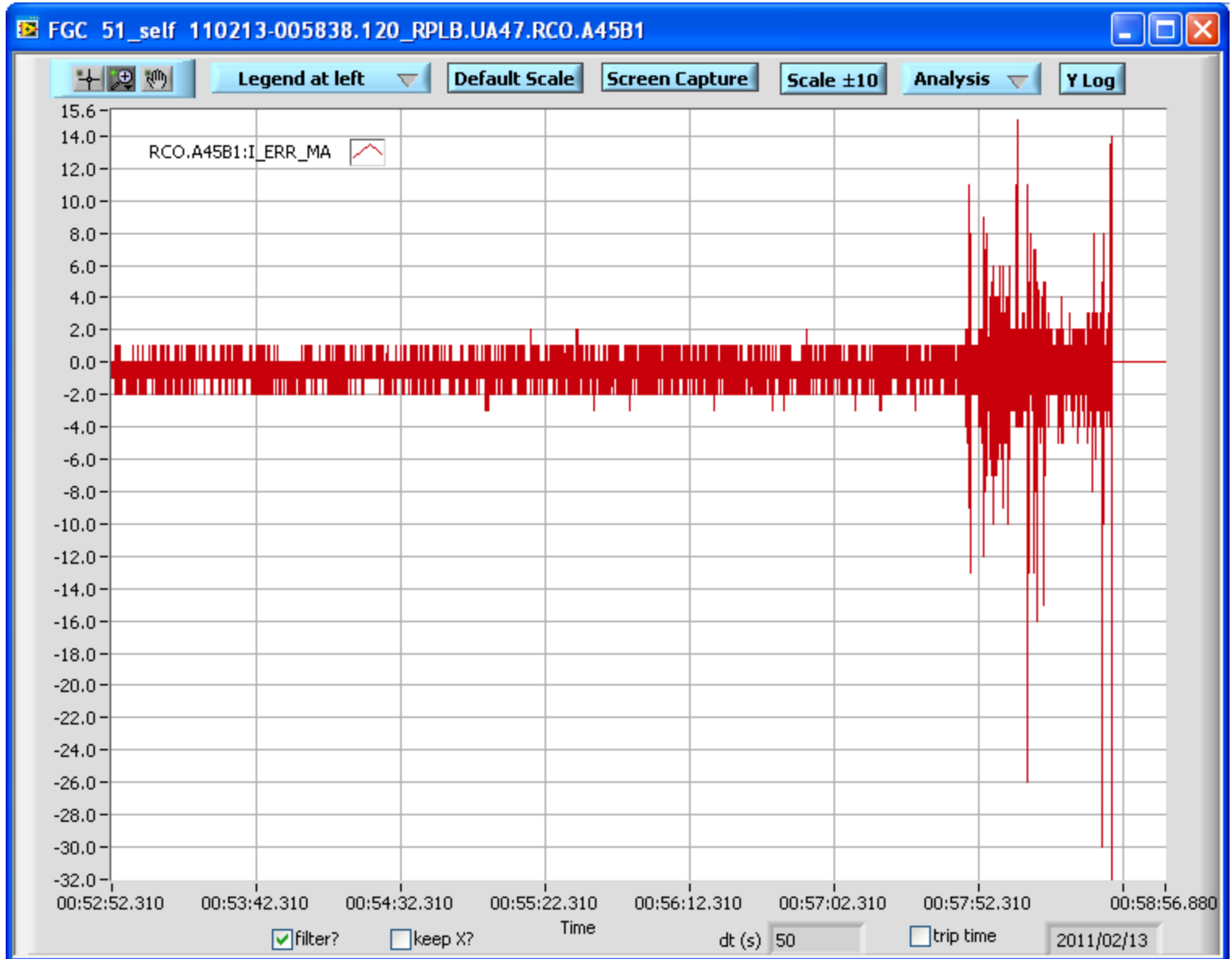


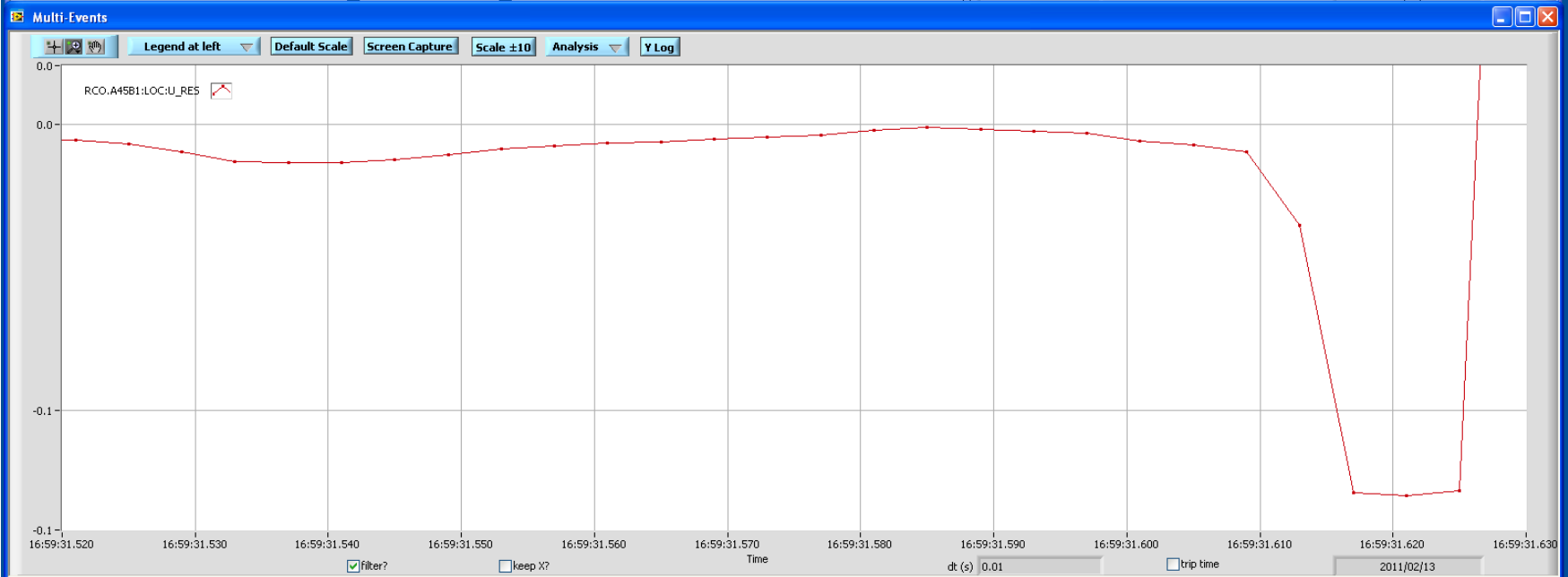
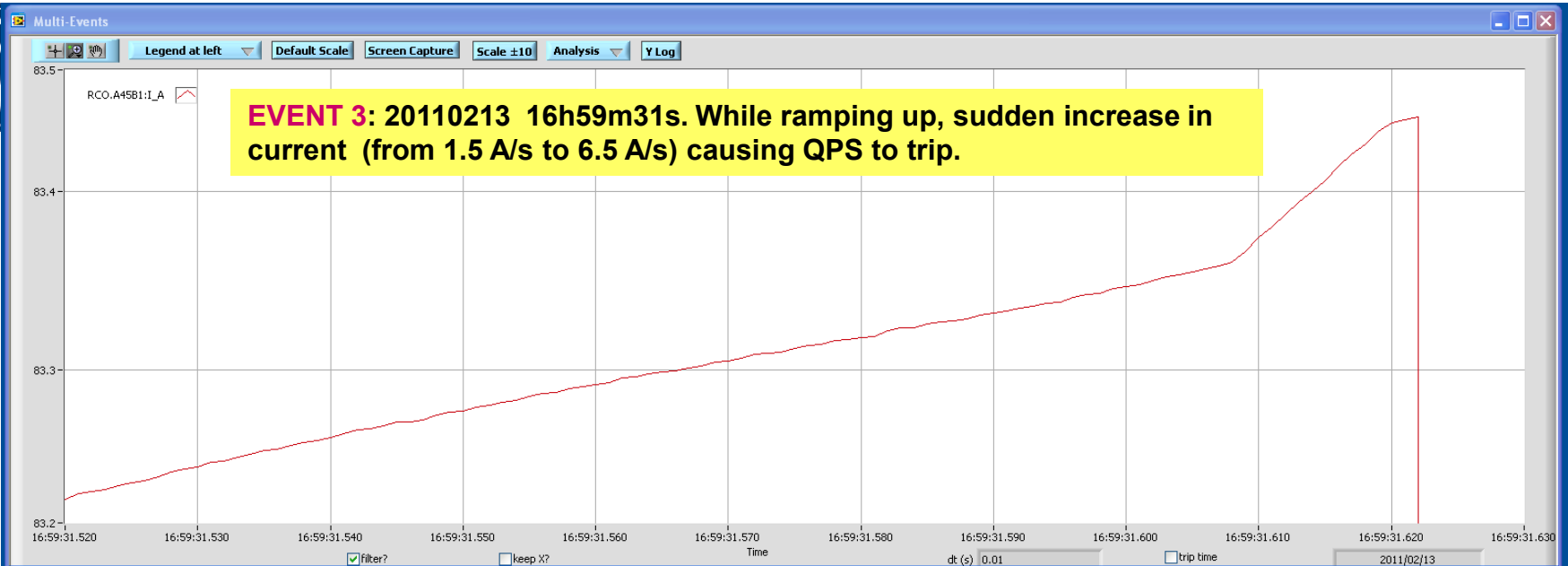
Strong noise in V_meas and V_ref already present during 50 s before the trip





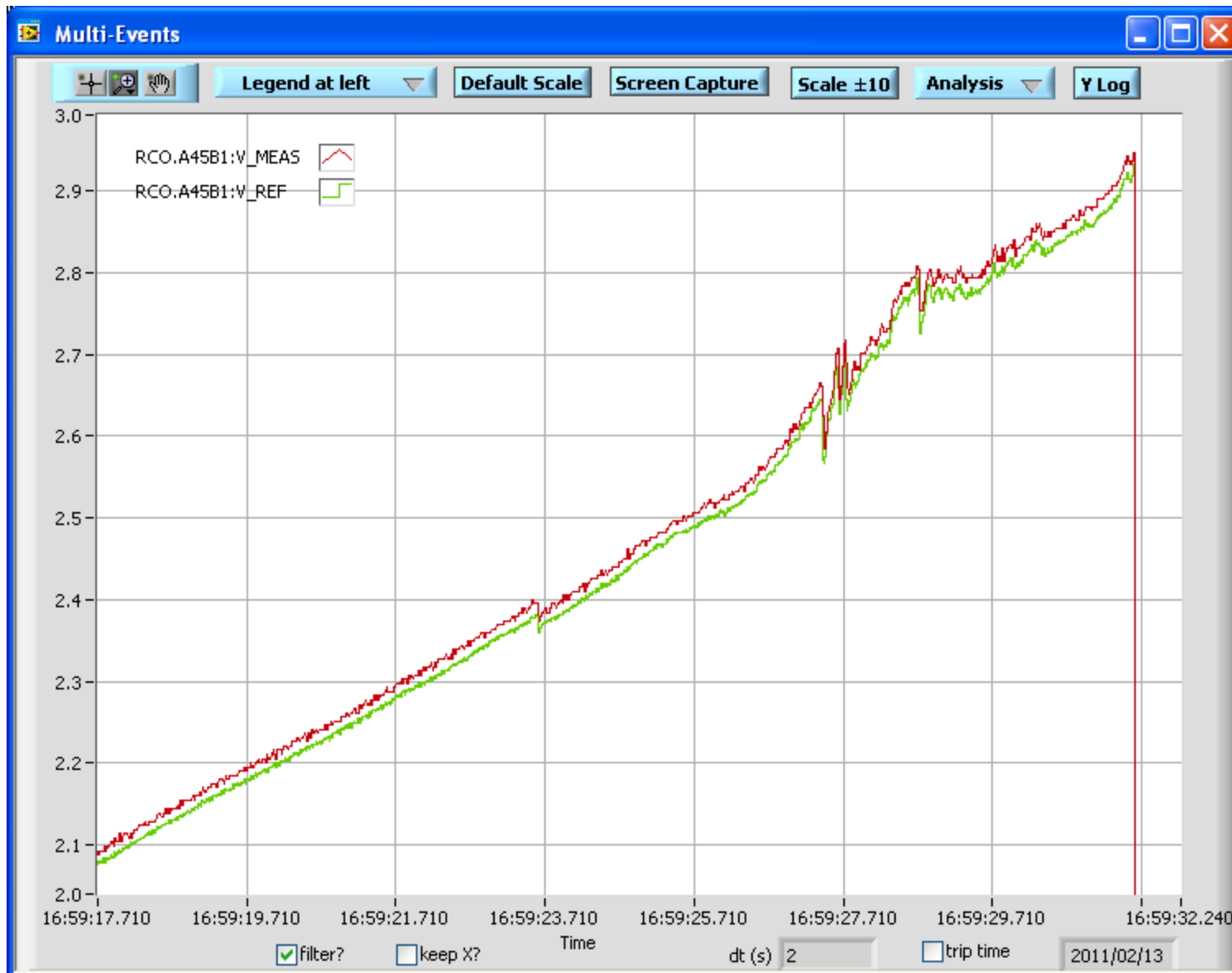
Error in current rather small (<2 mA) until noise starts.





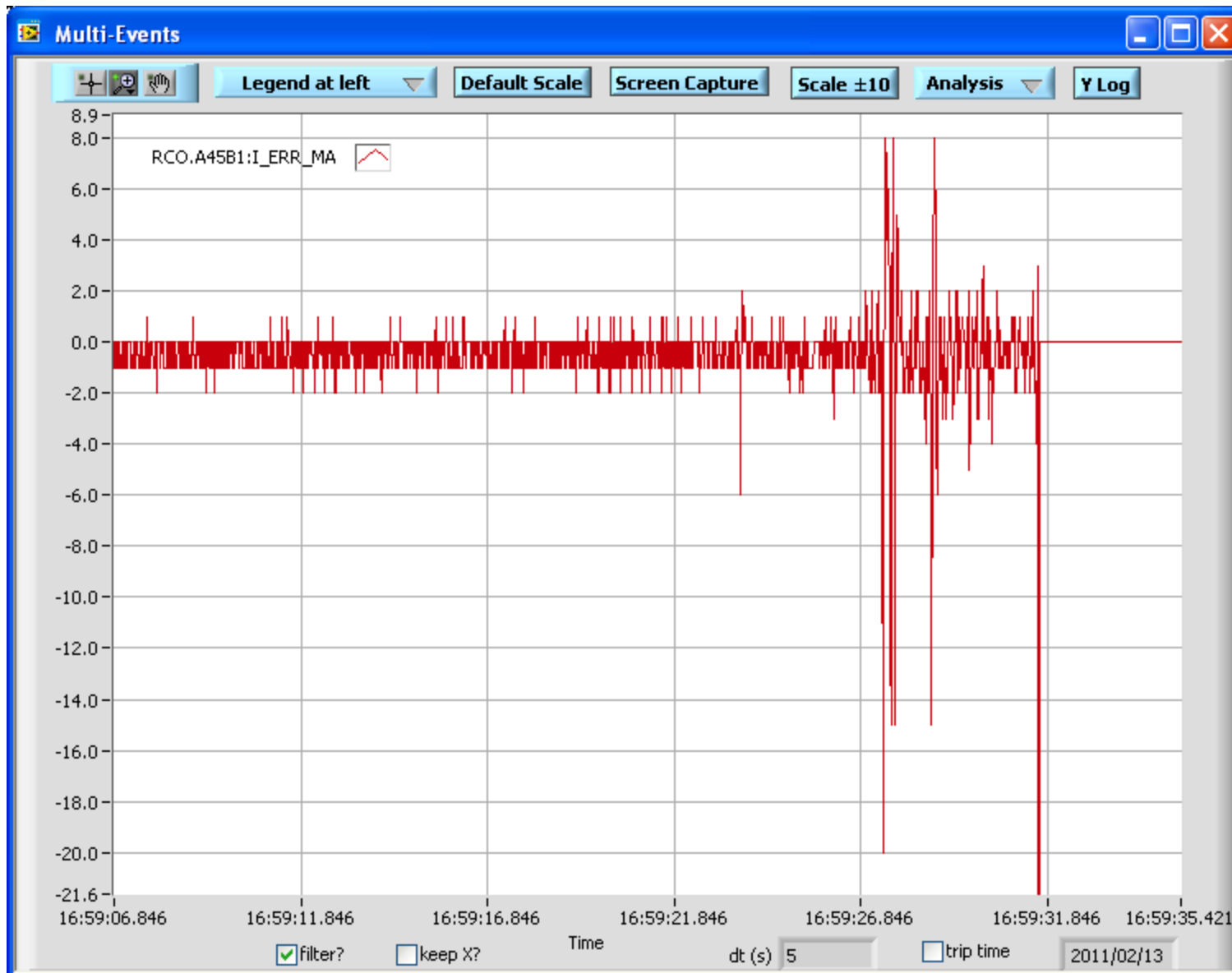


Noise in V_meas and V_ref already starting 4 s before the trip





Error in current rather small (<2 mA) until noise starts.





<https://edms.cern.ch/file/1131600/1/LHC-bad-connexion-signature.pptx>

**LHC Circuit
Connections
badly Screwed TOGETHER
analyze**



CERN

Yves Thurel, 7 March 2011



Conclusion from EPC

A connection badly screwed together:

- Is not easy to detect in operation: no huge I.error expected, and very long period of very acceptable errors
- Will not obviously be detected by a increase of the cable resistance (sometimes it decreases with time).
- Is erratic and can disappear for very long period.

Analyzing it on a particular event:

- V_{meas} is the best curve to be used, even if low sample rate.
- Keep in mind that V_{meas} observed is equal to V_{ref} and is never a loose event, but is always the loop reaction.

Detection elsewhere in the machine: see presentation Markus



Number: 1130233 v.1 RCO.A45B1 PNO.a3 110213-165315
EDMS Id: 1130233 v.1 VERWEIJ ARJAN
Initiated Report - Non conformity 2011-02-13
RESTRICTED

Summary Sub-Documents Approval & Comments Used in Access Rights Versions & other info

Actions: Edit Put File Set reservation Delete Doc. Add to cartline Notify Clone

Description, External Reference and Keywords
Description PNO.a3. Quench during ramp up at 83 A, and circuit seems to degrade. In-dept analysis is needed!!! Circuit superlocked for the moment.
External Reference
Keywords

Special Properties
Class Cold performance
Disposition Decision Pending
Importance Critical

Files of the Document

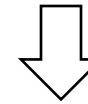
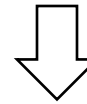
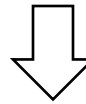
Sub-Documents

Associated URL (CDD Drawing Folder, Library...)

Context
What's next ? List of Local Administrators for any questions regarding this document (access rights, lifecycle...)
Context LHC-HWC-MTF: General Context for Hardware Commissioning slots and jobs in MTF
Release Procedure Release Procedure for NCRs
Equipment Code -

EDMS Hyperlinks
This page <https://edms.cern.ch/document/1130233/1>

Non conformity opened
on 13 Feb, and closed
on 4 March



Number: 1130233 v.1 RCO.A45B1 PNO.a3 110213-165315
EDMS Id: 1130233 v.1 VERWEIJ ARJAN
Closed Report - Non conformity 2011-02-13
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INFO Your comments have been stored

Summary Sub-Documents Approval & Comments Used in Access Rights Versions & other info

Actions: Change Status Give Comments

Current situation & next steps Hide
Current status of this Version is Closed.

Files of the document and associated URL

Status History & Comments
Created by Arjan VERWEIJ on 2011-02-13, 18:57
Status changed to Closed by Arjan VERWEIJ on 2011-03-04, 17:40

Given Comments (2 records) Hide
Normal display Text display Show all pages Hide all pages Sort: Date Reviewer Page

Arjan VERWEIJ on 2011-03-07, 10:33 said:
It was a pb of the converter. Converter has been changed and powering was already authorized on 13 feb by Sandrine. Closed comm

Arjan VERWEIJ on 2011-03-07, 17:40 said:
To be more precise: Problem with the insufficient tightening of the bolts on the converter. Closed comm

EDMS Hyperlinks
This page <https://edms.cern.ch/document/1130233/1/TAB3>