

# MP3 Workshop

## March 2011

# Status after Hardware Commissioning 2011

## RQTL9.L7B1

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# RQTL9.L7B1

Circuit name: RQTL9.L7B1

[Link to circuit in MTF](#)

[Click to access EDMS Powering Procedure document](#)

Operational parameters for Power Converter:  
RPMBB.RR73.RQTL9.L7B1

PARAMETER NAME	VALUE	UNIT
ACC_PCS	.1	A/s^2
ACC_PNO	.1	A/s^2
DIDT_PCS	1.5	A/s
DIDT_PCS_LOW	1	A/s
DIDT_PNO	1.5	A/s
I_EARTH_MAX	.01	A
I_ERR_MAX	.018	A
I_ERR_PCC_MAX	.36	A
I_HARDWARE	528	A
I_INTERM_2	200	A
I_PCC	45	A
I_PCC_MID	10	A
I_PCS	200	A
I_PCS_MID	80	A
I_PNO	400	A
TIME_ACTIVATION	259.179	s
TIME_CROWBAR	2	s
TIME_PCC	10	s
TIME_PCS	240	s
TIME_PCS_MID	240	s
TIME_PNO	1500	s
TIME_PNO_CL	1500	s
TIME_ZERO	30	s

## RQTL9.L7B1 : Dispersion suppressor quad [Link to MTF](#)

ID : 256050, Circuit version : STUDY, Layout version : STUDY

**Power Converters in the Circuit** PC Location

RPMBB.RR73.RQTL9.L7B1 (MTF, TE-EPC Database) RR73

**Magnets in the Circuit** Number

MQTLI 2

**Current Leads in the Circuit**

DFLBS.7L7.5

DFLBS.7L7.6

**Magnets per Power Converter**

RPMBB.RR73.RQTL9.L7B1

MQTLI 2

I Nominal :	550 A	I Ultimate :	600 A
I Offset :	.0 A	I Overload :	660 (+-3%) A
L tot :	.240 H	R tot :	.002778 Ohm
Ramp Time :	120.00 s	max(di/dt) :	5.000 A/s
U leads :	.120 V	U Extr :	.510 V
U Boost :	1.200 V	U Coll :	1.667 V
Warm Cable Verification :	✓		

**Circuit Parameters**

Operational Temperature : 1.90 K

Beam Dump Request : NO

Powering Subsector Abort : NO

[Download the XML circuit definition of the circuit RQTL9.L7B1](#)

LAYOUT DB

# RQTL9.L7B1

No non-conformity attached to the circuit in MTF, No issue in MP3 tracking

The screenshot displays the MTF (Equipment Management Folder) web application interface. The browser title is "MTF Application. Slot Main Page (RQTL9.L7B1)". The user is identified as "User: JTOCK". The main content area is titled "Slot Folder: Documents" and shows a list of documents for the slot "RQTL9.L7B1 - Superconducting 600 A". The document list includes:

Document ID	Document Name	Status
938658 v.1	091-HCA PCL Current Leads Verification-RQTL9.L7B1	In Work
<a href="#">Doc. page</a>	20080716072112664_RQTL9.L7B1_MANUAL_TEST.txt (355 bytes)	

The interface also features a navigation tree on the left with categories like Cooling, EIQA, Energy Extraction, Power Cables, Power Converters, Powering Interlock Controller, and Quench Protection. The top navigation bar includes links for Home, Help, EDMS Portal, News, and Login. The bottom navigation bar shows tabs for Main, Slot data, Installation & Commissioning, Operation, Documents, History, and Map. The "Documents" tab is currently active, and the "Attach document" action is visible.

# RQTL9.L7B1

## 2008 commissioning campaign:

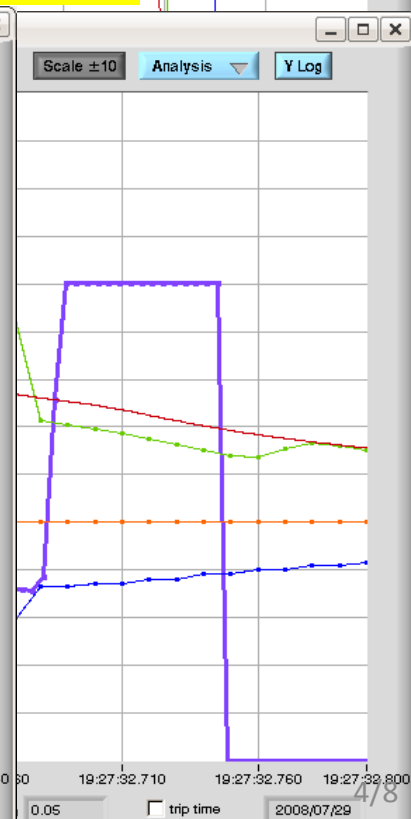
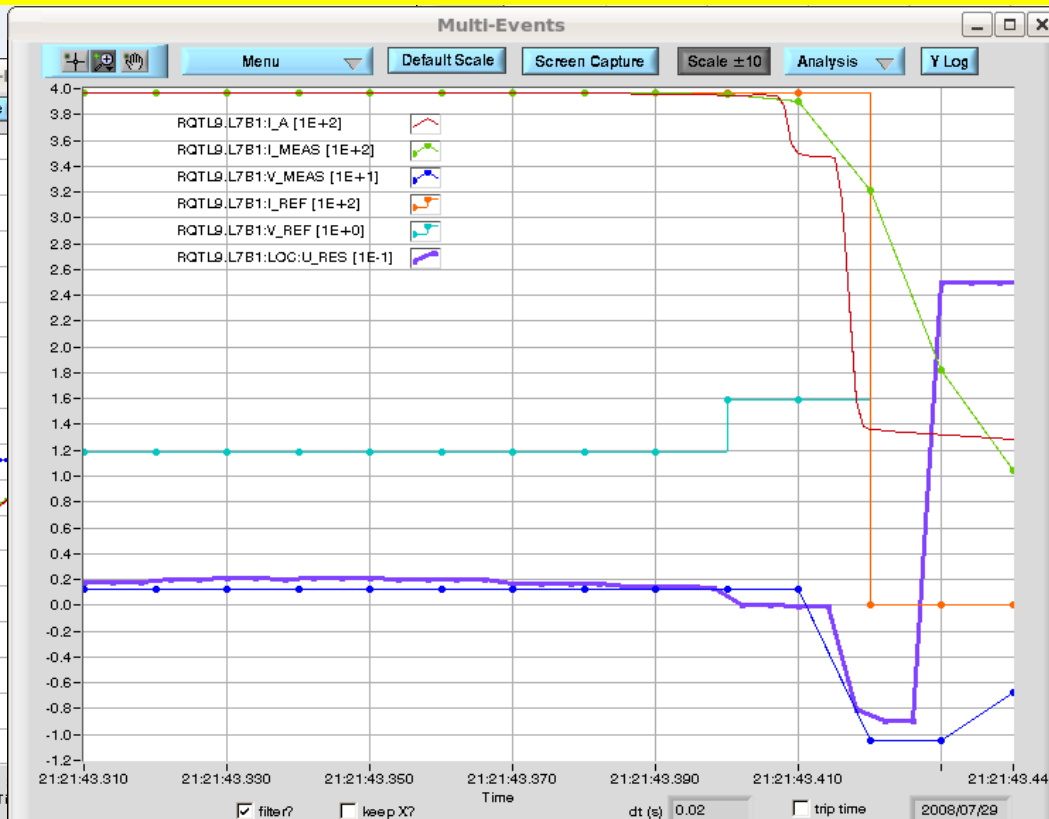
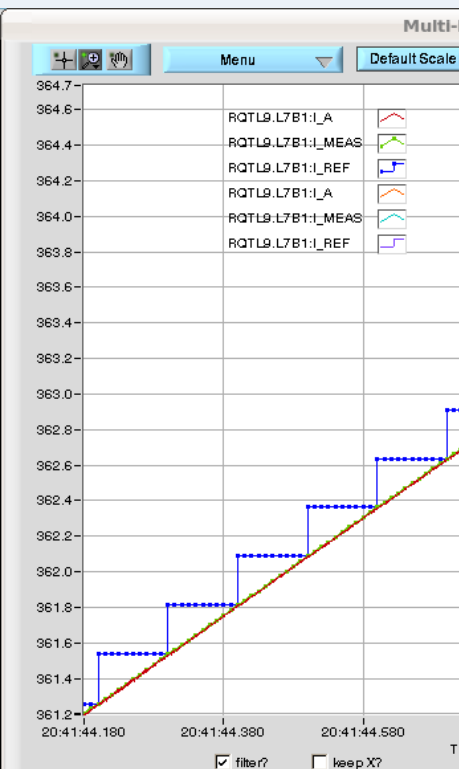
29/07/2008: 17h47 : Trip at 400 A during PNO.a3

29/07/2008: 19h27 : Trip at 400 A during PNO.a3

29/07/2008: 20h41 : Trip (quench) at 364 A during PNO.a3

29/07/2008: 21h21 : Trip (quench) at 397 A during PNO.a3

MPP logbook: "Quenched" twice at PNO.a3 after PNO.d3 ... to be closely watched



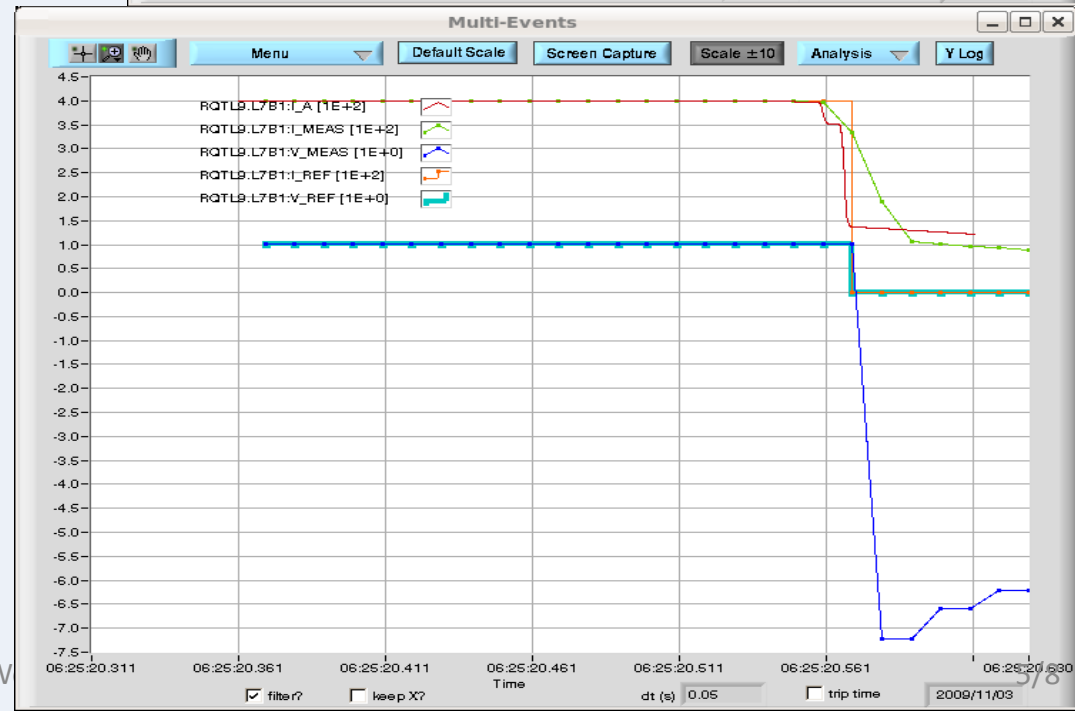
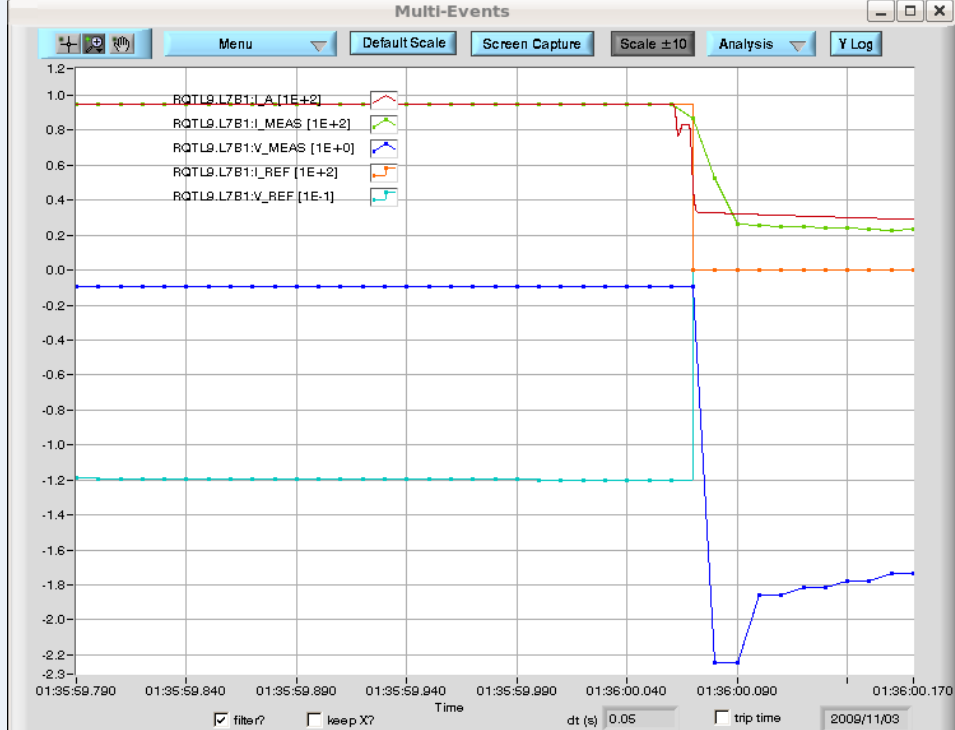
# RQTL9.L7B1

## 2009/10 commissioning campaign:

03/11/2009: 01h47 : Trip at 95 A during PCS at rampdown

03/11/2009: 06h25 : Trip at 400 A during PNO.b1 at flatop [Some files missing]

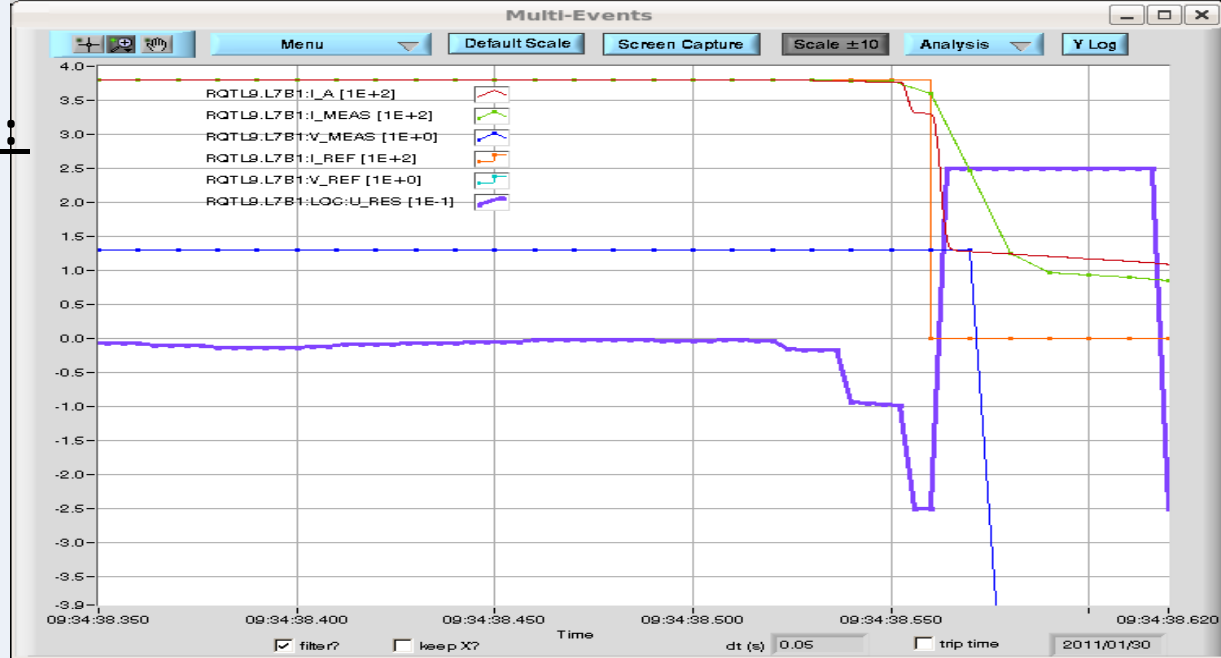
MPP logbook: Slight issues mentioned about CL regulation



# RQTL9.L7B1

## 2011 commissioning campaign:

30/01/2011: 09h34 :  
 Trip/Quench at 380 A  
 during PNO.d3 (only  
 signed by PO) during  
 ramp-up



History Buffer

Mode: [pic\_1]  
 History [x] Snapshot [x] Online [x]  
 Disable the Query optimisation [x]  
 Lines displayed: 300

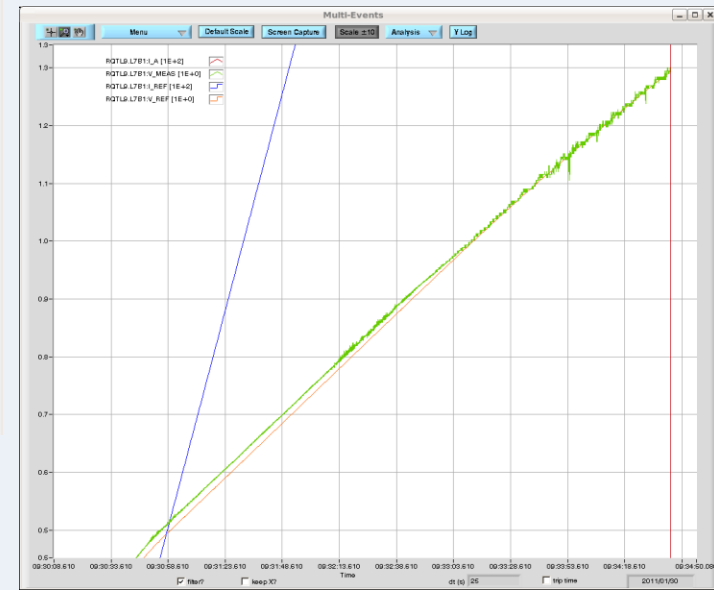
Time Filter (LOCAL TIME)  
 From: 2011/1/30 9:30:16 Now  
 To: 2011/1/30 9:43:50 Now  
 Entity Filter: A67

Buffer: 216 Position 1 to 50  
 Events: 50

Filter: Source Type Item Message Status Invalid

Local Time	Source	Type	Item	Description	Message	Status	Invalid
2011.01.30 09:36:30.995	Output	B1	RQTD.A67B1	Tune shift quads in series (Q15R6 Q17R6 Q19R6 C	CMD_ABORT_PIC	OK	<input type="checkbox"/>
2011.01.30 09:36:30.997	Input	B1	RQTD.A67B1	Tune shift quads in series (Q15R6 Q17R6 Q19R6 C	ST_ABORT_PIC	OK	<input type="checkbox"/>
2011.01.30 09:36:37.600	Input	B1	RSD2.A67B1	Chromaticity sextupoles in series per sector (Q11R6	ST_FAILURE_PIC	BAD	<input type="checkbox"/>
2011.01.30 09:36:37.601	Output	B1	RSD2.A67B1	Chromaticity sextupoles in series per sector (Q11R6	CMD_PWR_PERM_PIC	BAD	<input type="checkbox"/>
2011.01.30 09:36:37.609	Input	B1	RSD2.A67B1	Chromaticity sextupoles in series per sector (Q11R6	ST_ABORT_PIC	BAD	<input type="checkbox"/>
2011.01.30 09:36:37.610	Output	B1	RSD2.A67B1	Chromaticity sextupoles in series per sector (Q11R6	CMD_ABORT_PIC	BAD	<input type="checkbox"/>
2011.01.30 09:36:38.133	External Systems	CMW	RSD2.A67B1	Power Permit from QPS to start powering of circuit	ST_QPS_OK_BOOL	BAD	<input type="checkbox"/>
2011.01.30 09:37:18.139	External Systems	CMW	RQT12.L7B2	Power Permit from QPS to start powering of circuit	ST_QPS_OK_BOOL	BAD	<input type="checkbox"/>

Vmeas becomes noisy 2 minutes  
 before trip



# RQTL9.L7B1

19/02/2011: 06h54 : Quench at 400 A during flat top

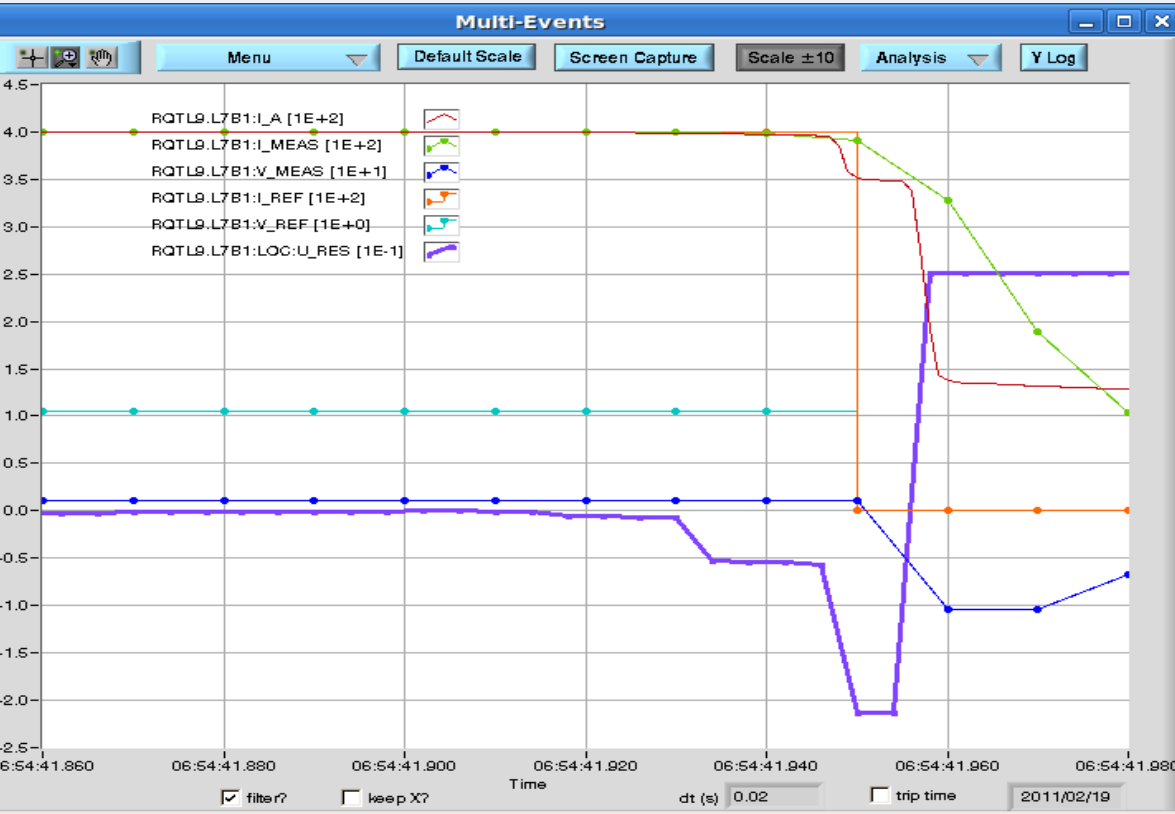
## 2011 quench after commissioning

History Buffer

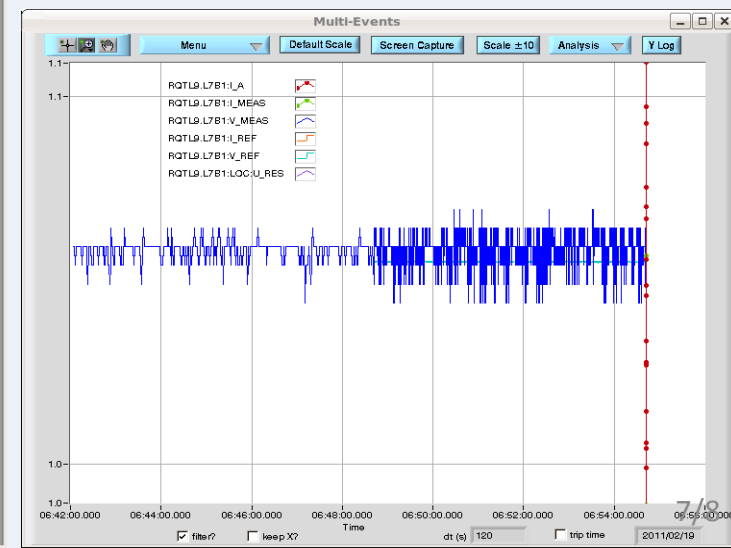
Mode: [pic\_1] Time Filter (LOCAL TIME) From: 2011/02/19 04:13:27 To: 2011/02/19 09:12:42 Entity Filter: [ ] Lines displayed: 100 Buffer: 5395 Position: 2103 to 5357 Events: 12

Filter: Source: [ ] Type: [ ] Item: RQTL9.L7B1 Message: [ ] Status: [ ] Invalid: [ ]

Local Time	Source	Type	Item	Description	Message	Status	Invalid
2011.02.19.05:58.09.825	External Systems	CMW	RQTL9.L7B1	Power Permit from QPS to start powering of circuit	ST_QPS_OK_BOOL	BAD	<input type="checkbox"/>
2011.02.19.05:58.15.025	External Systems	CMW	RQTL9.L7B1	Power Permit from QPS to start powering of circuit	ST_QPS_OK_BOOL	OK	<input type="checkbox"/>
2011.02.19.05:58.35.042	External Systems	CMW	RQTL9.L7B1	Power Permit from QPS to start powering of circuit	ST_QPS_OK_BOOL	BAD	<input type="checkbox"/>
2011.02.19.05:58.39.843	External Systems	CMW	RQTL9.L7B1	Power Permit from QPS to start powering of circuit	ST_QPS_OK_BOOL	OK	<input type="checkbox"/>
2011.02.19.06:54:41.948	Input	B1	RQTL9.L7B1	Dispersion suppressor quad	ST_ABORT_PIC	BAD	<input type="checkbox"/>
2011.02.19.06:54:41.949	Output	B1	RQTL9.L7B1	Dispersion suppressor quad	CMD_PWR_PERM_PIC	BAD	<input type="checkbox"/>
2011.02.19.06:54:41.949	Output	B1	RQTL9.L7B1	Dispersion suppressor quad	CMD_ABORT_PIC	BAD	<input type="checkbox"/>
2011.02.19.06:54:41.949	Input	B1	RQTL9.L7B1	Dispersion suppressor quad	ST_FAILURE_PIC	BAD	<input type="checkbox"/>
2011.02.19.06:54:42.276	External Systems	CMW	RQTL9.L7B1	Power Permit from QPS to start powering of circuit	ST_QPS_OK_BOOL	BAD	<input type="checkbox"/>
2011.02.19.08:56:28.111	Output	B1	RQTL9.L7B1	Dispersion suppressor quad	CMD_ABORT_PIC	OK	<input type="checkbox"/>
2011.02.19.08:56:28.112	Input	B1	RQTL9.L7B1	Dispersion suppressor quad	ST_ABORT_PIC	OK	<input type="checkbox"/>
2011.02.19.08:56:46.805	External Systems	CMW	RQTL9.L7B1	Power Permit from QPS to start powering of circuit	ST_QPS_OK_BOOL	OK	<input type="checkbox"/>



Vmeas becomes noisy 5 minutes before trip



## CONCLUSIONS

- + No burning issue on this circuit
- + Seems to be a delicate circuit
- + To be watched closely so “flagged” but how ?
- + If further issues, reduce current to the operation required value + margin