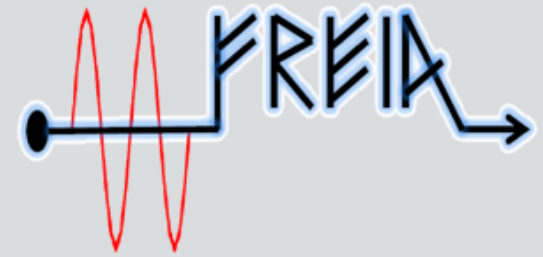




UPPSALA
UNIVERSITET



ESS weekly meeting (2024 W24)

FREIA team



Local planning



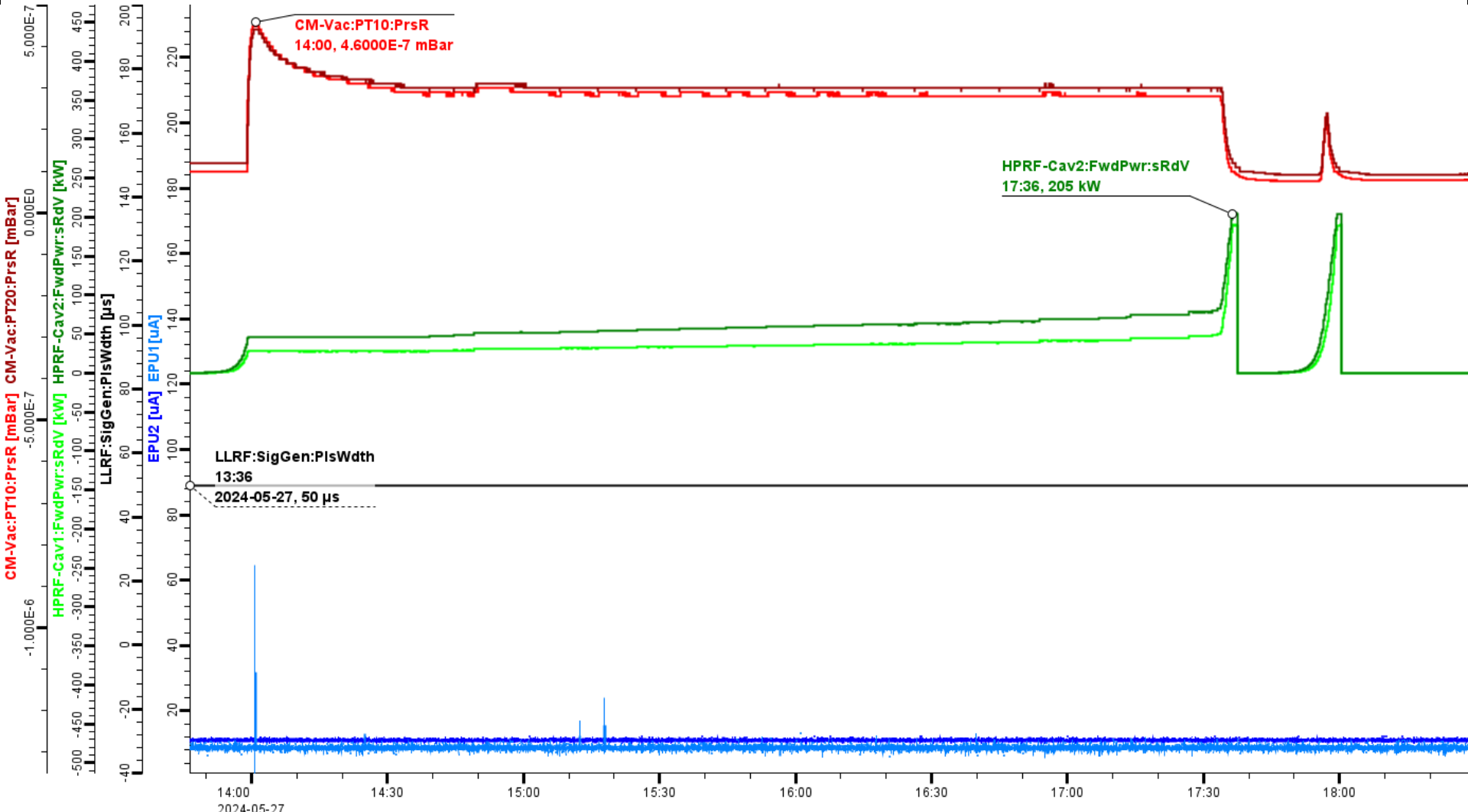
week		W22											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		27-May		28-May		29-May		30-May		31-May		1-Jun	2-Jun
		m	a	m	a	m	a	m	a	m	a		
CM	CM02	Coupler conditioning											
week		W23											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		3-Jun		4-Jun		5-Jun		6-Jun		7-Jun		8-Jun	9-Jun
		m	a	m	a	m	a	m	a	m	a		
CM	CM02			LN2 cooling		Thermalization							
week		W24											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		10-Jun		11-Jun		12-Jun		13-Jun		14-Jun		15-Jun	16-Jun
		m	a	m	a	m	a	m	a	m	a		
CM	CM02	LHe cooling, 4K filling		Cold coupler conditioning	Pumping to 2K	CTS test, RF calibration	MP conditioning	MP conditioning, Heat load measurements		From 2 K to 4K, warm up		Warming up	
week		W25											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		17-Jun		18-Jun		19-Jun		20-Jun		21-Jun		22-Jun	23-Jun
		m	a	m	a	m	a	m	a	m	a		
CM	CM02	Start to disconnect CM (cryo, vacuum parts, couplers)						Move CM to the hall, doorknobs disconnecting		Holiday			
week		W26											
date		MON		TUE		WED		THU		FRI		SAT	SUN
		24-Jun		25-Jun		26-Jun		27-Jun		28-Jun		29-Jun	30-Jun
		m	a	m	a	m	a	m	a	m	a		
CM	CM02	Outgoing test, packageing		Departure	Publish report								

We are here

CM02 3rd: Warm FPC conditioning



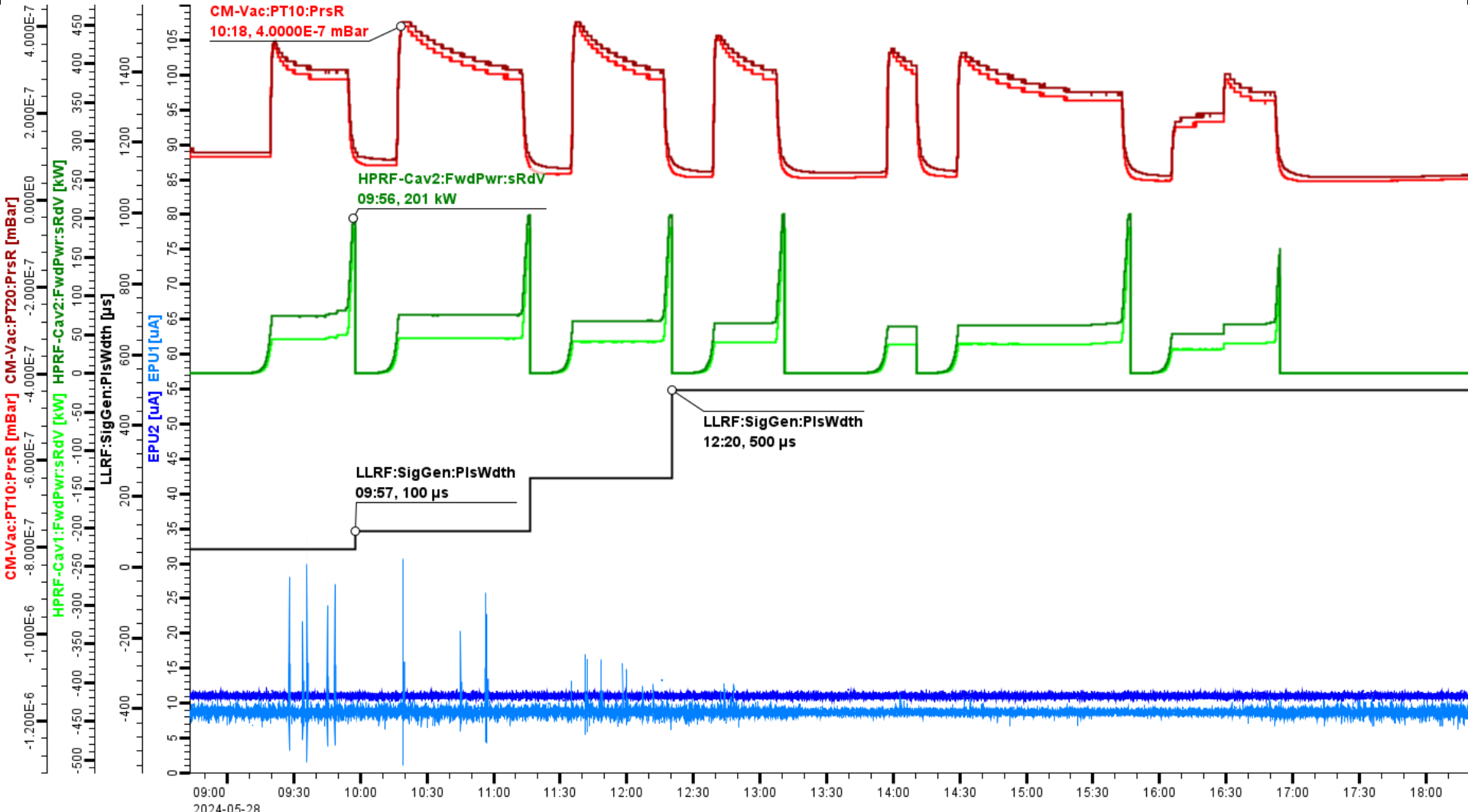
3 attempts for 50us, 50us - 500us and 500us to 3200us with maximum forward power 200kW. We didn't see any significant activity by EPU's. We observed some short spikes from coupler1 up to 60uA without arcs.



CM02 3rd: Warm FPC conditioning



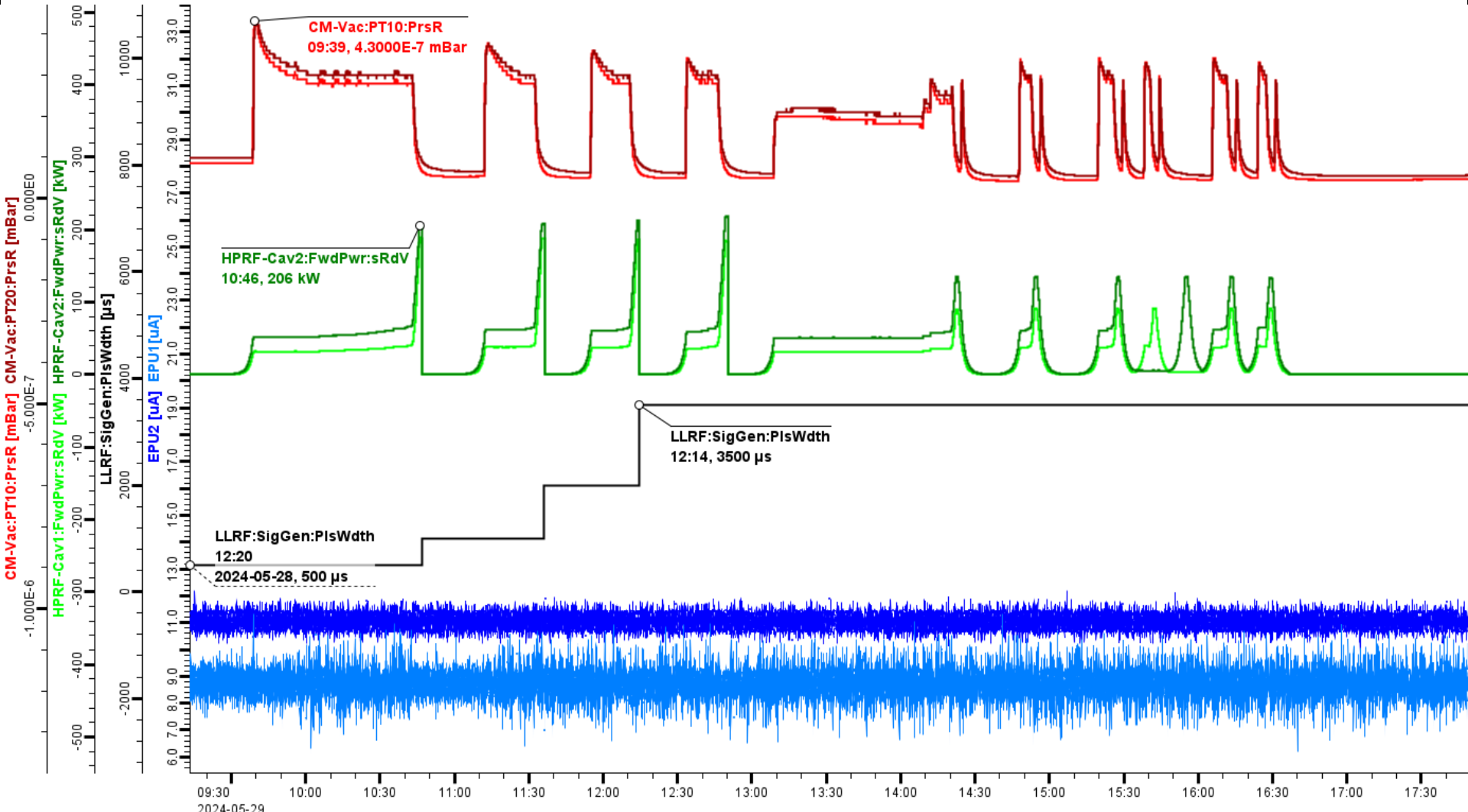
3 attempts for 50us, 50us - 500us and 500us to 3200us with maximum forward power 200kW. We didn't see any significant activity by EPU's. We observed some short spikes from coupler1 up to 60uA without arcs.



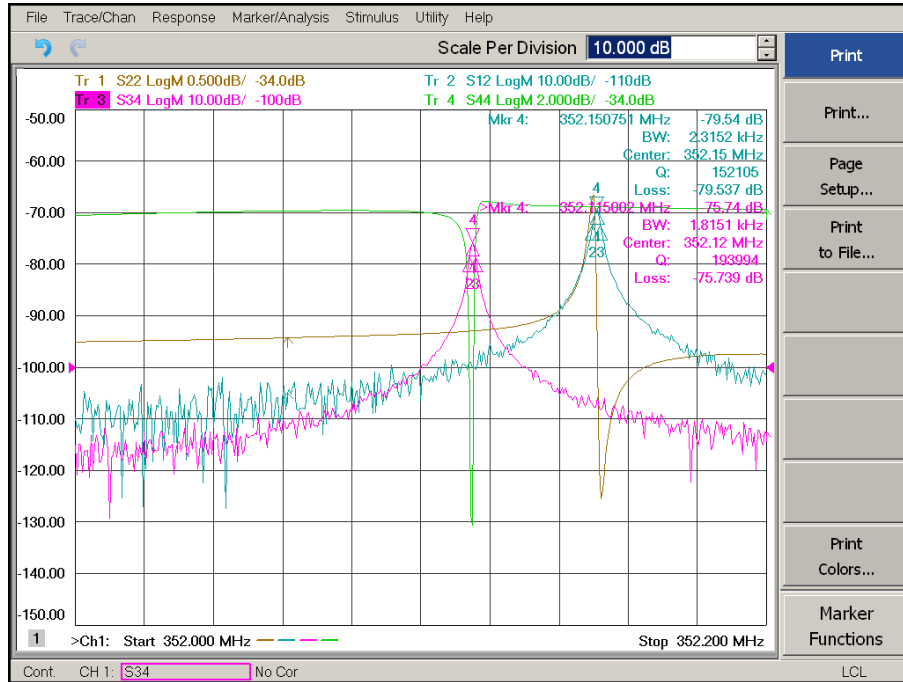
CM02 3rd: Warm FPC conditioning



3 attempts for 50us, 50us - 500us and 500us to 3200us with maximum forward power 200kW. We didn't see any significant activity by EPU's. We observed some short spikes from coupler1 up to 60uA without arcs.

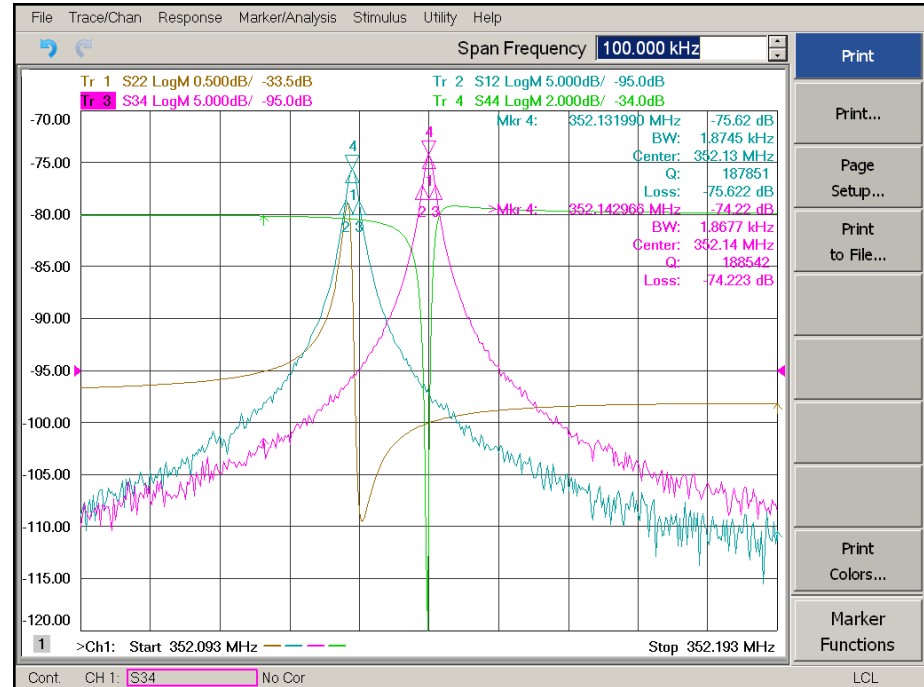


4K



Cav1: 352.151MHz
 Cav2: 352.115MHz

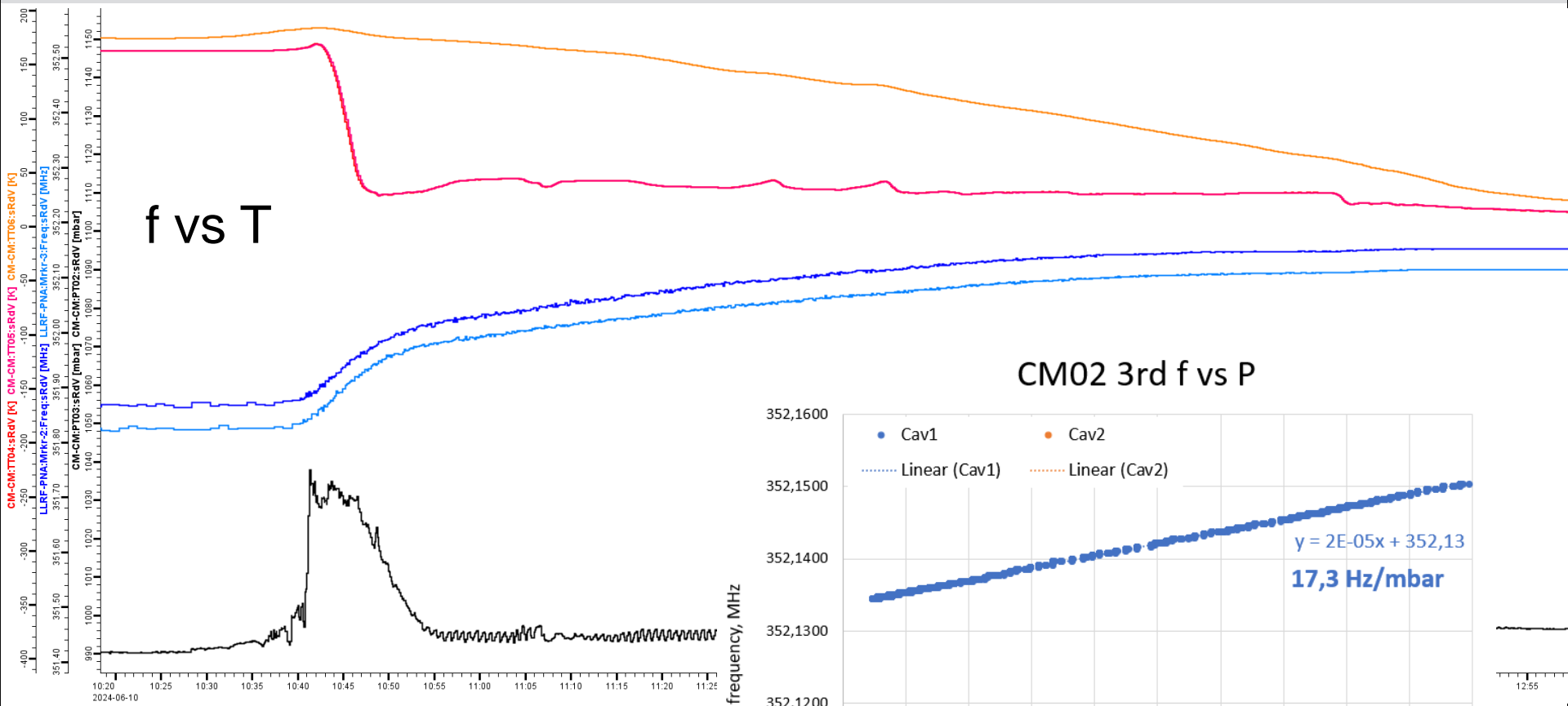
2K



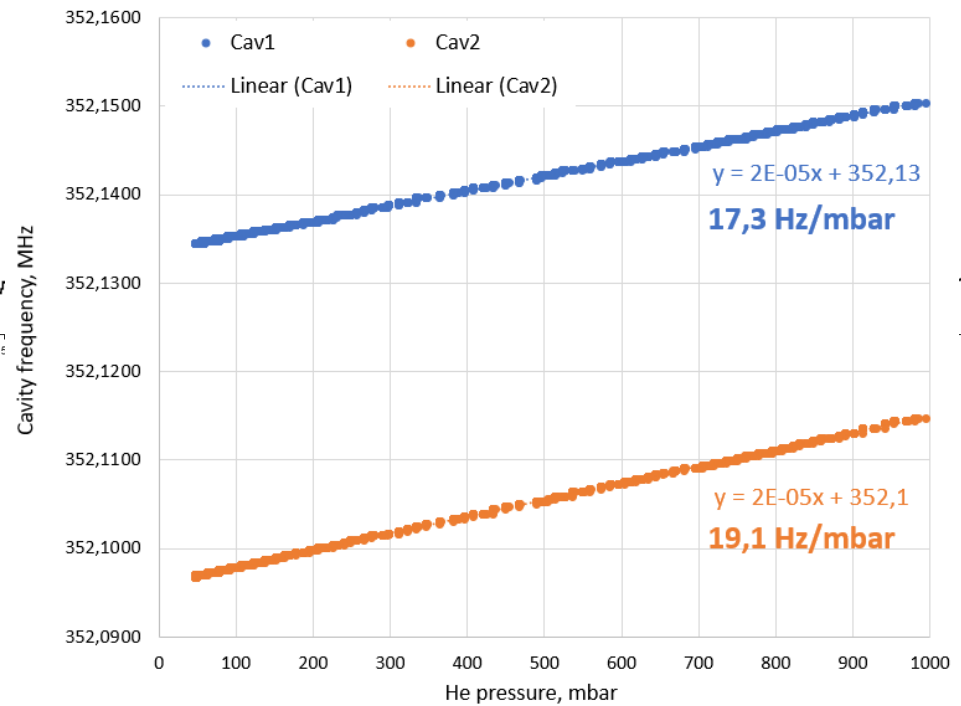
Cav1: 352.132MHz
 Cav2: 352.143MHz



CM02 3rd: Cooldown



CM02 3rd f vs P





CM02 3rd: TT12 Resurrection



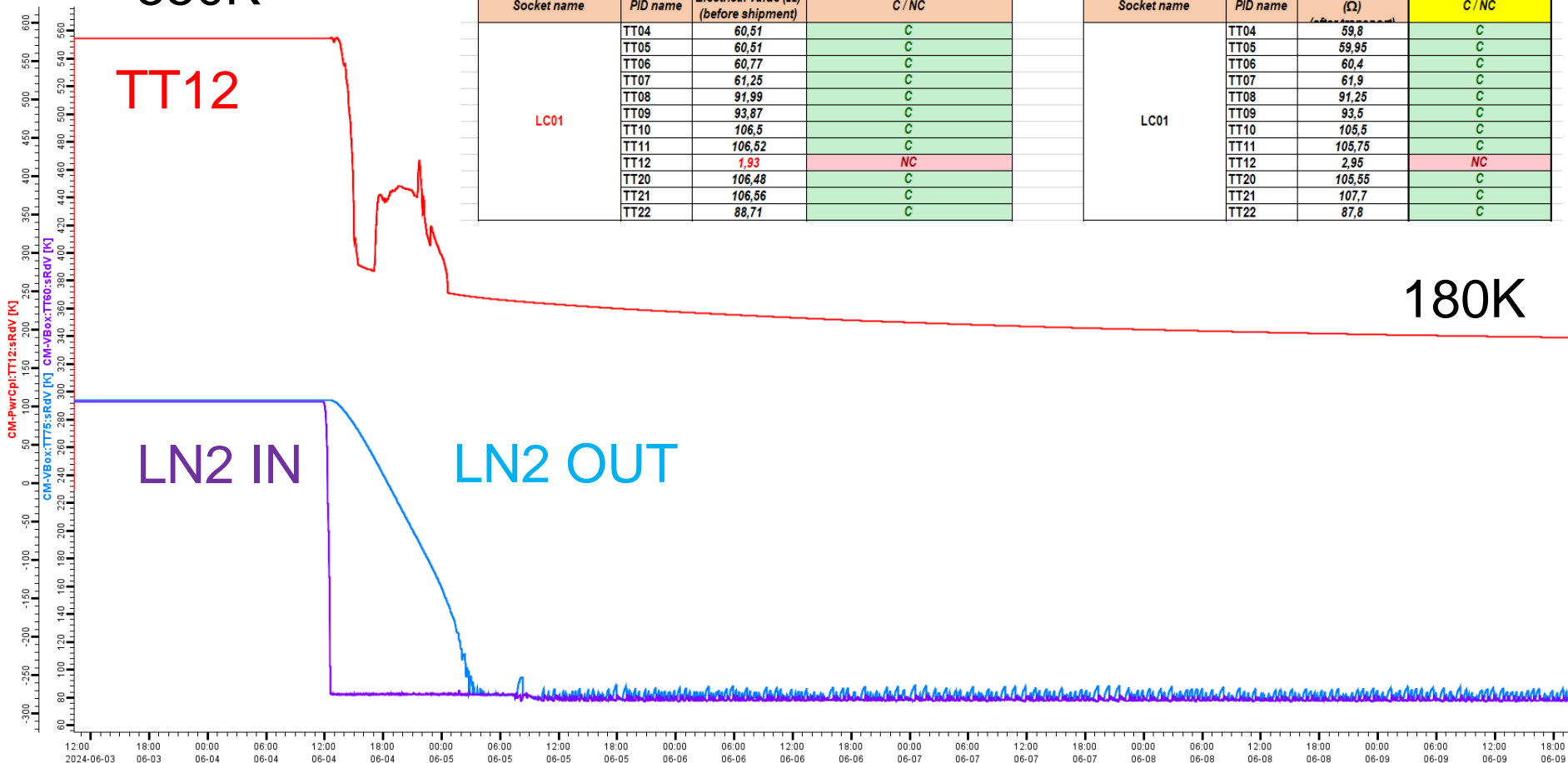
CM02 2nd

550K

TT12

LC01

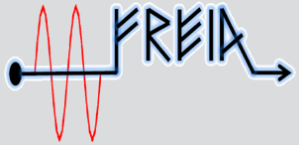
180K



Cables verification CM02 at IJLab				v2
Socket assembly		Verified by : T. Gerardin / J.-C. Roux		
Socket name	PID name	Electrical value (Ω) (before shipment)	C / NC	
LC01	TT04	60,51	C	
	TT05	60,51	C	
	TT06	60,77	C	
	TT07	61,25	C	
	TT08	91,99	C	
	TT09	93,87	C	
	TT10	106,5	C	
	TT11	106,52	C	
	TT12	1,93	NC	
	TT20	106,48	C	
	TT21	106,56	C	
	TT22	88,71	C	

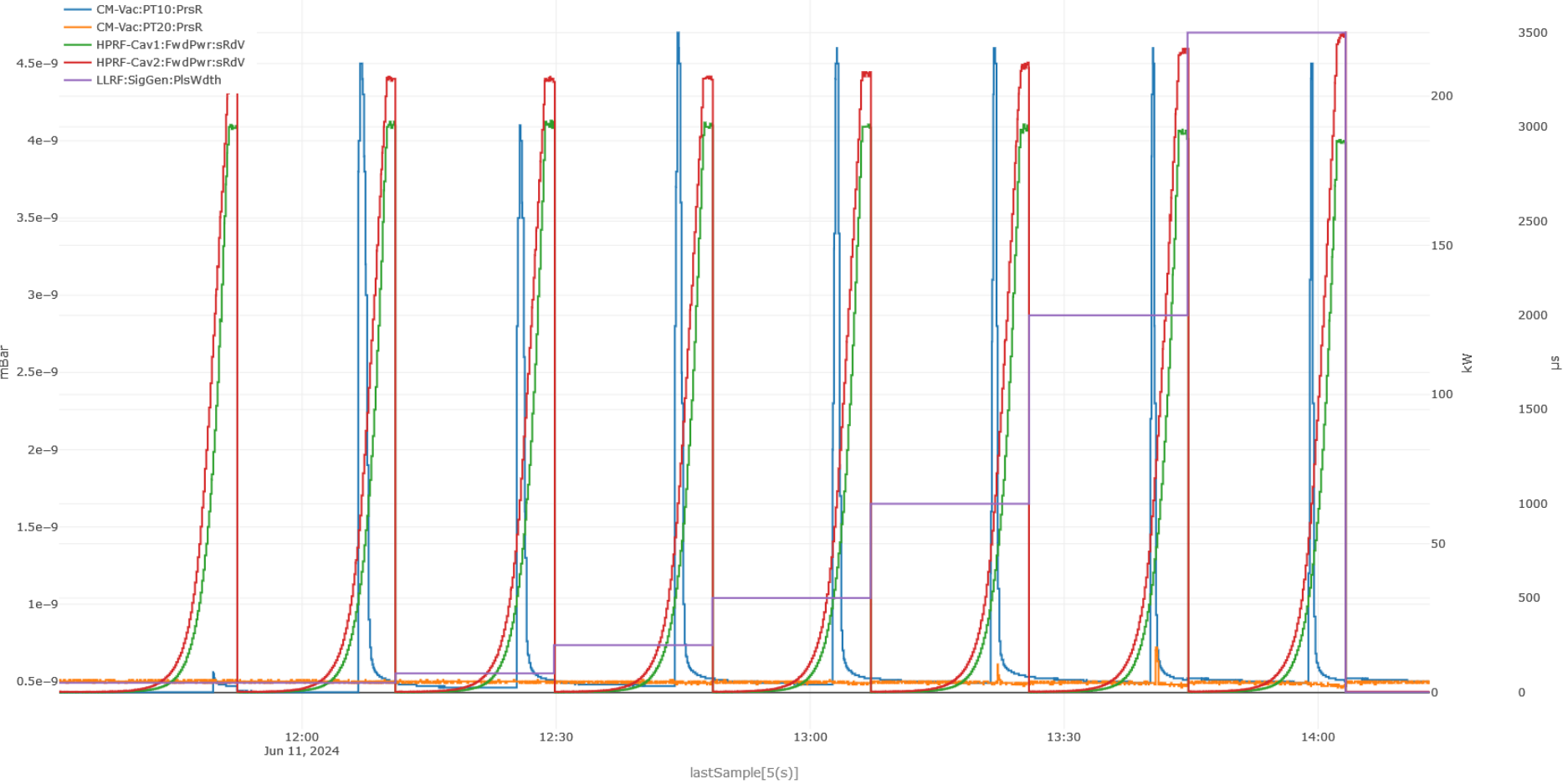
Cables verification CM02 at UU				v2
Socket assembly		Verified by : A. Miyazaki		
Socket name	PID name	Electrical value (Ω) (before shipment)	C / NC	
LC01	TT04	59,8	C	
	TT05	59,95	C	
	TT06	60,4	C	
	TT07	61,9	C	
	TT08	91,25	C	
	TT09	93,5	C	
	TT10	105,5	C	
	TT11	105,75	C	
	TT12	2,95	NC	
	TT20	105,55	C	
	TT21	107,7	C	
	TT22	87,8	C	

CM02 3rd: Cold FPC conditioning

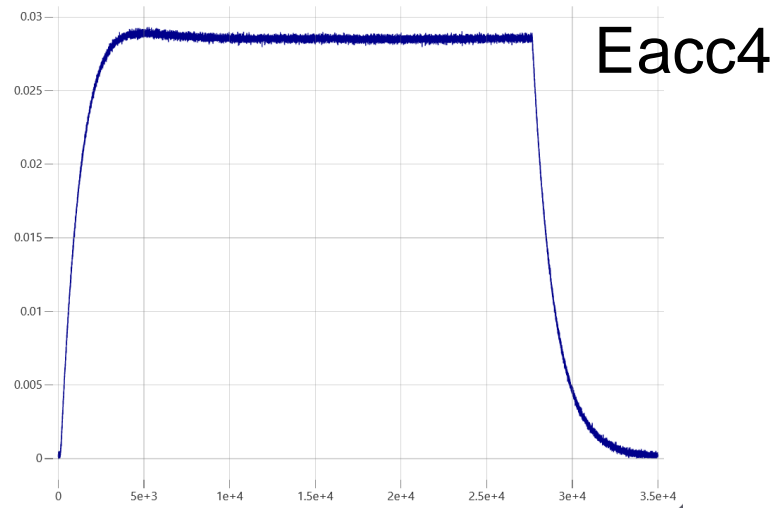
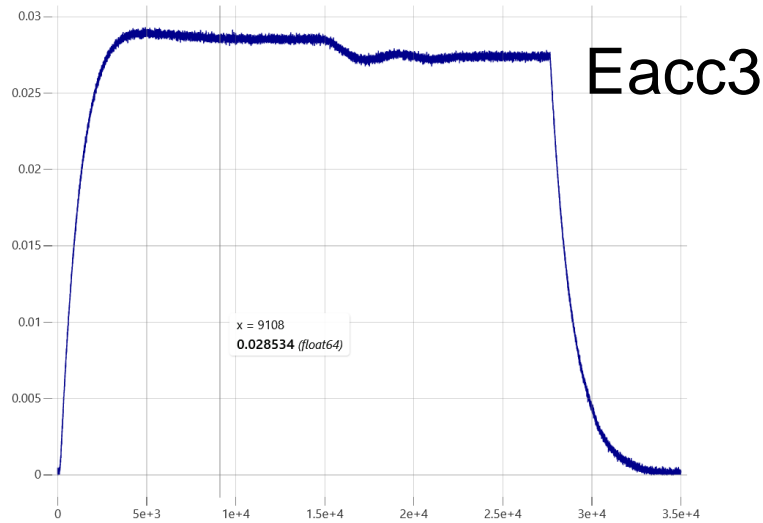
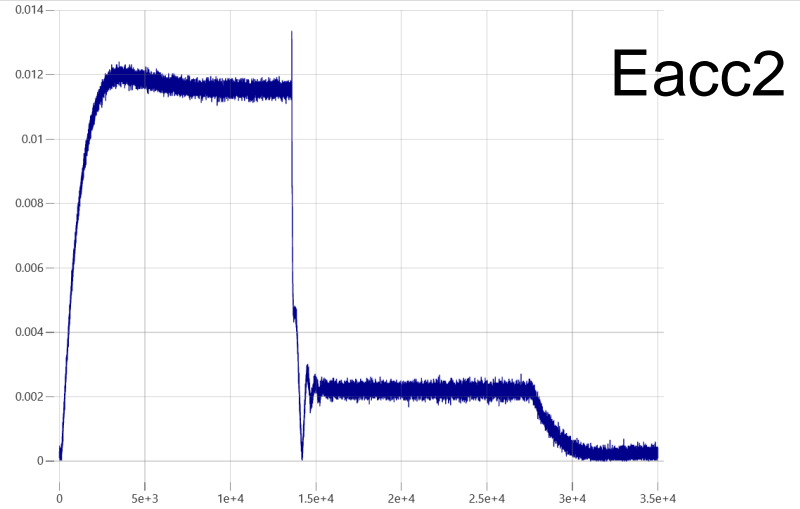
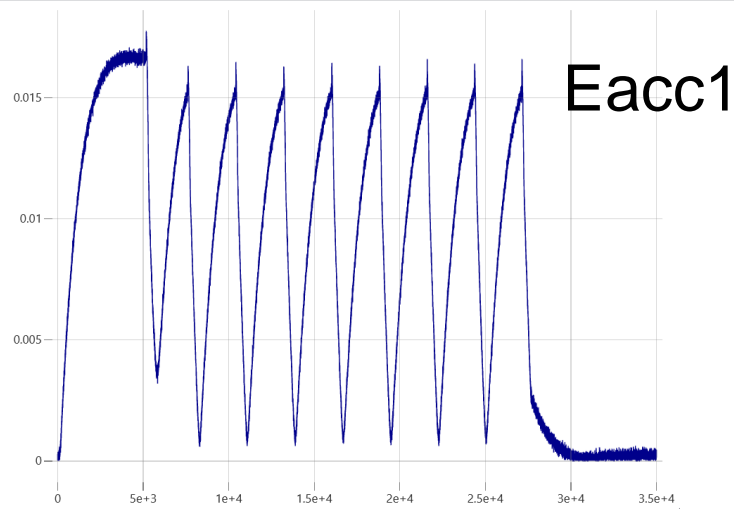
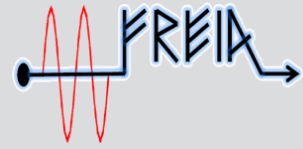


EPICS Archiver Appliance Viewer

30s 1m 5m 15m 30m 1h 4h 8h 1d 2d 1w 2w 1M 6M YTD 1Y Live

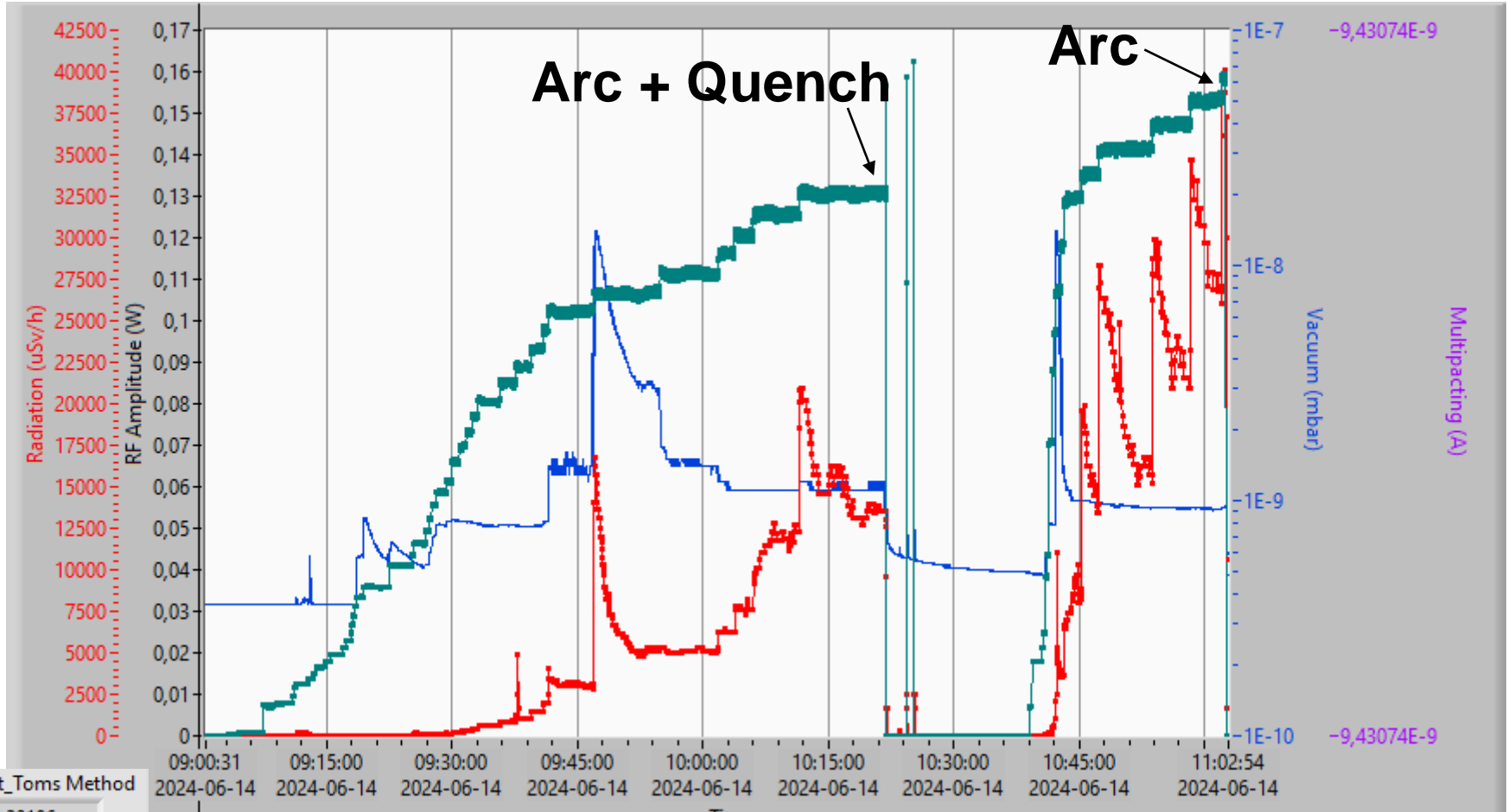


CM02 3rd: Low field MP (<1MV/m)



$Eacc1 < Eacc2 < Eacc3 < Eacc4$

CM02 3rd: Cav1 conditioning



Qt_Toms Method
5,20106

Qt_fr_Prefl_max
6,1813

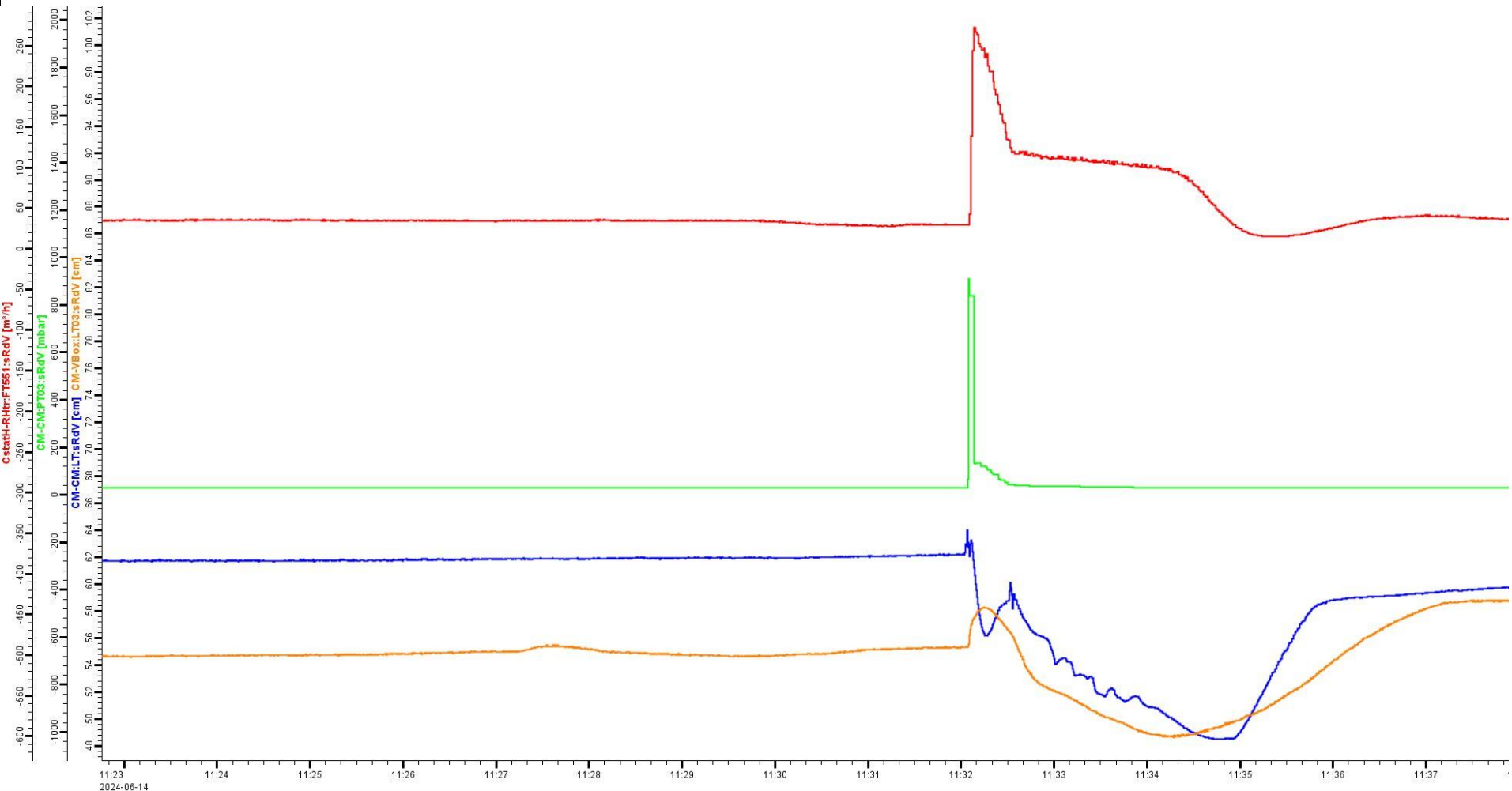
Qt_fr_Pforw_eoc
4,65931

QL_fr_Decay
162346

QL Qt


Pf_max (W)	Q0_Dynamic	Eacc_Dynamic	Eacc_pk_Pt	Eacc_pk_Pf
121697	0	0	8,03045	8,90104

CM02 3rd: Cav1 Quench



CM02 3rd: Cav2 conditioning






FREIA SPOKE HIGH POWER TEST_Cav 2

time: **14:19:07**

HELP QUIT



pulse parameter setting | Phase shifter and Gain control | PNA | Scope | decay measurement | heat load measurement | LFD measurement

● status

Transfer speed
 FFT buffer size

select for decay measurement

Display

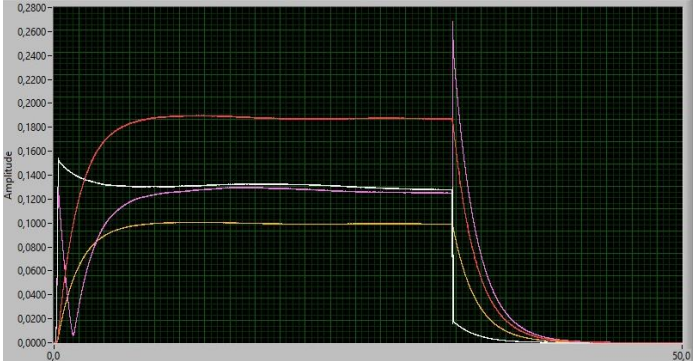
Time and Frequency

Phase and Magnitude

Buffer

Last data only

Buffer data



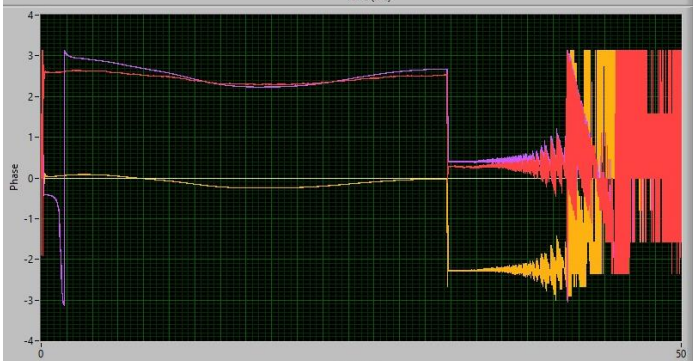
Amplitude vs Time (ms)

Chart length

unwrap phase

Reference for phase

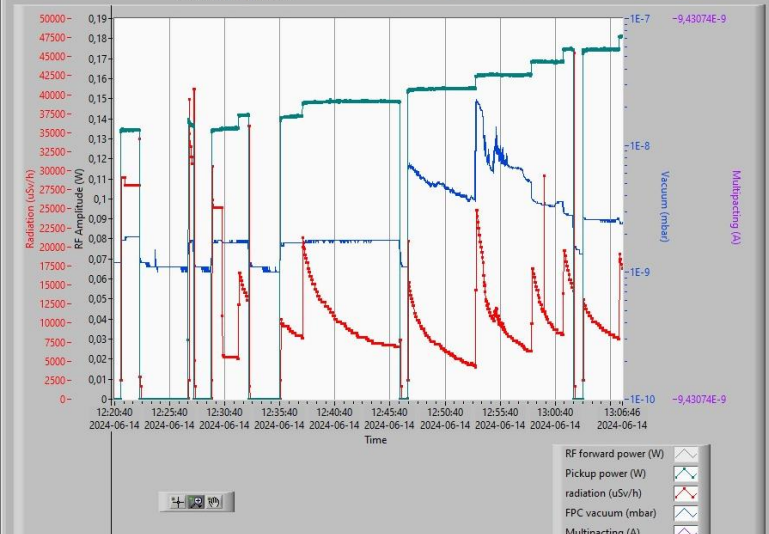
Show buffers



Phase vs Time (ms)

Q Measurement results display | Other Measurement results display | Conditioning results display

Conditioning validate? | Pulse width (us)



RF forward power (W) Pickup power (W)
 radiation (uSv/h) FPC vacuum (mbar)
 Multipacting (A)

FPGA setup

Mode: Mixer freq (MHz): Trigger:

Output mixer frequency (MHz): Period:

Output enabled:

Output delay: ns

Output delay delta: ps

PID control | Offsets | Feed forward | Cavity model | FFT | Delay | Scale

Adaptive FF

Measure Tau at Time: Tau set: Enable: Reset Quench Warning:

Tau [us]: Quench_Warning:

Pf_max (dBm)	Pf_max (W)	P_total (W)	Qt_Toms Method
80,2178	105142	0	3,61526
Pr_max (dBm)	Pr_max (W)	P_static (W)	Qt_fr_PrefL_max
85,1555	327758	0	3,53881
Pt_max (dBm)	Pt_max (W)	P_heater (W)	Qt_fr_Pforw_eoc
22,5795	0,181115	0	3,1804
			Qt_fr_Decay
			202741

QL	Qt
192000	3,48E+11
real time frequency_fc <input type="text" value="0E+0"/>	
Pc_dynamic(W) <input type="text" value="0"/>	
Vc_ave (MV) <input type="text" value="0"/>	

Pf_max (W)	Q0_Dynamic	Eacc_Dynamic
105142	0	0

Eacc_pk_Pt	Eacc_pk_Pf
8,10904	9,17862

TT05	TT07	PT02	PT03
2,60675	-39,7499	9999	31,1
Radiation		PT10	PT20
17100		4E-10	2,4E-9

Scale_fact_Integral	PrefL_eoc	PrefL_max
0,0006046	0,0529455	0,0826737
Scale_fact_PrefL	Pforw_eoc	Decay_Integral
0,48357	0,0186163	67,3425
Scale_fact_Pforw	Ptrans_eoc	
1,93	0,0112972	