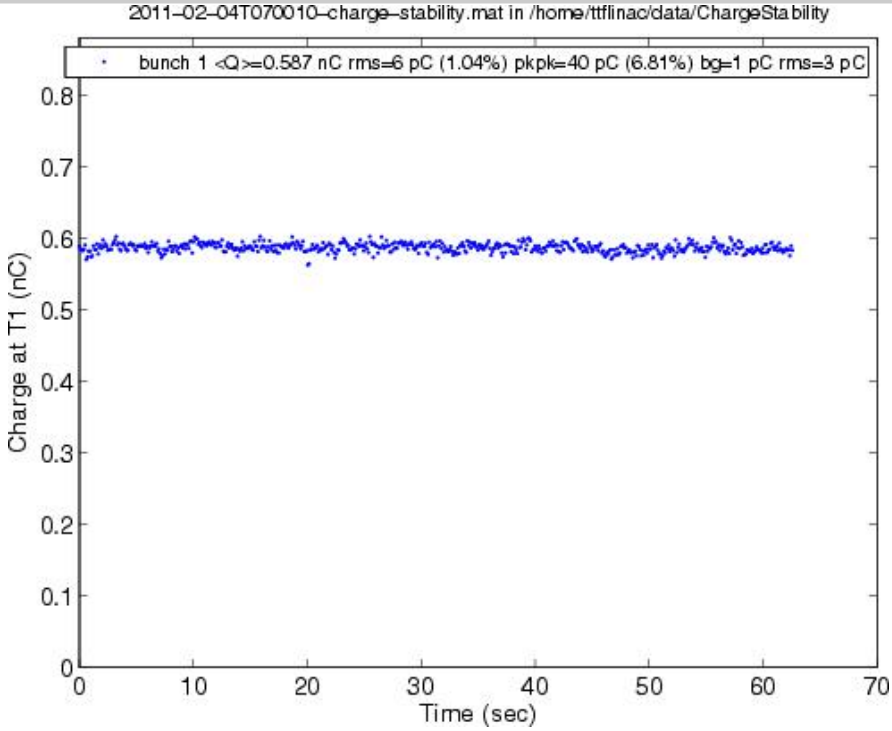
? 04.02.2011 07:01 oracle **Shift summary**

04.02.2011 07:01 ttflinac **tp2e8d1eeb_5cd5_4a1d_a515_522fd7751ab3.ps**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:01:37-00.ps

04.02.2011 07:03 ttflinac **SASE tuning parameters**

Misc. parameters

```
Energy / Wavelength: 492.33 MeV / 26.0 nm
Charge:              0.59 nC
Main solenoid:       -306.7 A
Bucking coil:        +32.0 A
Dipoles BC2/BC3:     +73.1 A / +56.0 A
```

RF parameters

	GUN	ACC1	ACC39	ACC2/3	ACC4/5	ACC6/7
Power/Gradient	+3.700	+164.50	+18.60	+325.00	+34.50	+0.00
Readback	3.92	164.5	18.6	325.1	34.5	0.0
Phase	-10.70	+3.86	-13.80	+18.06	-0.93	-10.00
on-crest		-1.0		-3.0	-5.0	-0.0
Readback	5.3	3.9	-13.8	18.0	-1.0	-32.3

Undulator steerers and aircoils

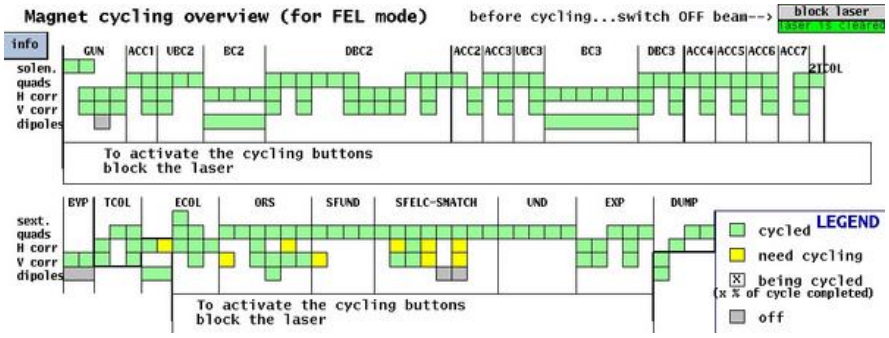
H7SMATCH	H12SMATCH
+1.095	**+0.252**

V7SMATCH	V12SMATCH
-0.021	**+0.252**

Intra-undulator steerers

H3UND1	H3UND2	H3UND3	H3UND4	H3UND5	H3UND6
-4.80	**-4.40**	**-2.50**	**-4.80**	**-2.20**	**-4.20**

04.02.2011 07:03 ttflinac **ttflinac@:magnet_cycle_overview_fel**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:03:47-00.JPG

04.02.2011 07:03 ttflinac

Main linac parameters

shift documentation

Laser

Number of bunches 1
Bunch frequency ..... 1000 kHz
Macropulse rep'rate .... 10.0 Hz
Pump time_3 ..... 0.0030 ms
Pump current_3 ..... 5.00 V
Pre-amp start time ..... 2.42 ms
Booster start time ..... 2.65 ms
Attenuator SP 5.28
Iris diameter ..... 17488 steps
Iris diameter ..... 1.58 mm

Gun

Feedforward/Feedback ... on/on
FSM ..... on
Pfwd SP 3.70
VS ampl. 18.50
Phase SP ..... -10.70 deg
VS phase ..... 5.25 deg
Pfwd (peak) ..... 3.916 MW
Prefl (peak) ..... 2.905 MW
Pfwd sample point 700
Pfwd (at sample point) . 18.494 MW
Prefl sample point 720
Prefl (at sample point) 5.221 MW
Flat top ..... 400 us
Water temperature SP ... 72.65 deg C
Main solenoid (RBV) .... -306.73 A
Bucking coil (RBV) ..... 32.00 A
Gun dipole (RBV) ..... 0.000 A
Charge 3GUN(T1) ..... 0.57 nC
DC kicker delay ..... 6.80 ms
DC kicker HV ..... not local
DC kicker HV ..... disabled
DC kicker HV ..... off
DC kicker SP ..... 60.00 V
DC kicker start ..... 124.00 ns

ACC1

Feedforward/Feedback ... on/on
Feedback gain 2.0
Pfwd SP 164.50
Pfwd RBV 164.50
Phase SP ..... 3.86 deg
Phase RBV ..... 3.91 deg
Pfwd C1.ACC1 ..... 190.8 kW
Pfwd C5.ACC1 ..... 181.8 kW
Flat top ..... 800 us
Dipole BC2 (RBV) ..... 73.11 A
Pyro 9DBC2.1 ..... -0.4306 V
Radiator 9DBC2 ..... out
Slow phase feedback .... off
Slow ph. FB target/gain -0.400/-0.1
Slow ph. FB pyrodet.used Pyro 9DBC2.1 (fine, old ADC)

ACC39

Feedforward/Feedback ... on/on
Feedback gain 10.0
Pfwd SP 18.60
Phase SP ..... -13.80 deg
Pfwd C1.ACC39 ..... <error>
Flat top ..... 800 us

ACC2/3

Feedforward/Feedback ... on/on
Feedback gain 2.0
Pfwd SP 325.00
Pfwd RBV 325.07
Phase SP ..... 18.06 deg
Phase RBV ..... 18.04 deg
Pfwd C5.ACC2 ..... 146.90 kW
Pfwd C1.ACC3 ..... 256.06 kW
Flat top ..... 400 us
Dipole BC3 (RBV) ..... 56.00 A
Pyro 4DBC3.1 ..... -1.1317 V
Pyro 4DBC3.3 ..... 0.0020 V
Radiator 4DBC3 ..... out

ACC4/5

Feedforward/Feedback ... on/on
Feedback gain 40.0
Pfwd SP 34.50
Pfwd RBV 34.42
Phase SP ..... -0.93 deg
Phase RBV ..... -0.85 deg
Pfwd C1.ACC4 ..... 68.92 kW
Pfwd C2.ACC5 ..... 5.84 kW
Pfwd C1.ACC6 ..... 0.00 kW
Flat top ..... 800 us

ACC6/7

Feedforward/Feedback ... on/on
Feedback gain 50.0
Pfwd SP 0.00
Pfwd RBV 0.03
Phase SP ..... -10.00 deg
Phase RBV ..... 66.14 deg
Pfwd C1.ACC6 ..... -0.08 kW
Pfwd C1.ACC7 ..... 0.15 kW
Flat top ..... 800 us

Bypass

Dipole D1BYP (RBV) ..... 0.00 A
Energy bypass ..... 1211.4 MeV
RF vector sum ALL ..... 471.5 MeV
Charge 16BYP ..... -0.00 nC

Collimator
Dipole D1ECOL (RBV) .... 86.90 A
Energy dogleg ..... 492.3 MeV
Charge 7ORS ..... 0.55 nC

Dump
Dipole D9SMATCH (RBV) .. 0.00 A
Dipole D1DUMP (RBV) .... 0.00 A
Dipole D6DUMP (RBV) .... 103.71 A
Rotator RD13DUMP (RBV) . 4.49 A
Charge 9DUMP ..... 0.51 nC

Photon beamline
Aperture 1 ..... 10 mm
Offset h/v ..... 0/-1 mm
Aperture 2 ..... 10 mm
Offset h/v ..... 1/0 mm

Undulator
1SFUND1 gap RBV ..... 220.0 mm
1SFUND2 gap RBV ..... 220.0 mm
1SFUND3 gap RBV ..... 220.0 mm
1SFUND4 gap RBV ..... 180.0 mm

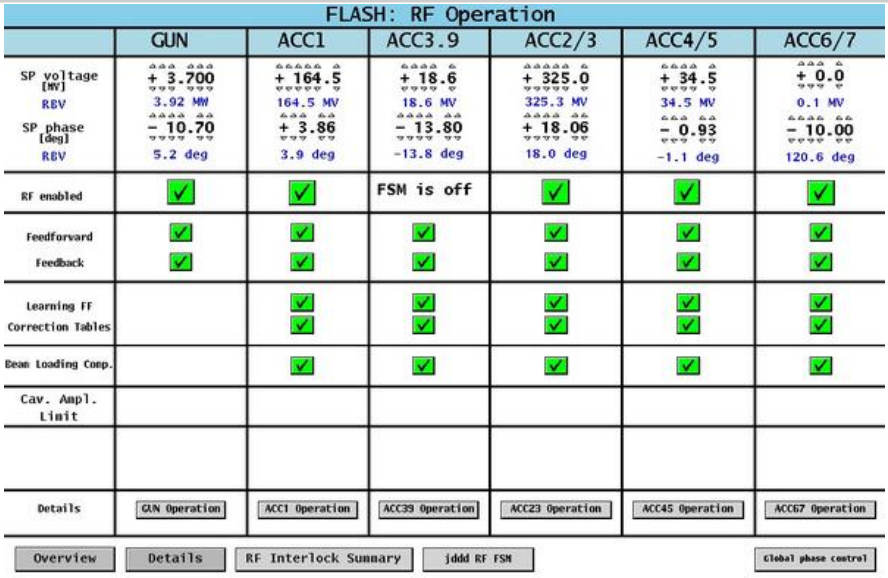
Feedbacks
Charge feedback gain ... <error>
Charge feedback SP ..... <error>
PTO feedback ..... on

Status saved in machine file 2011-02-04T07_03_16+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-04T070316

---

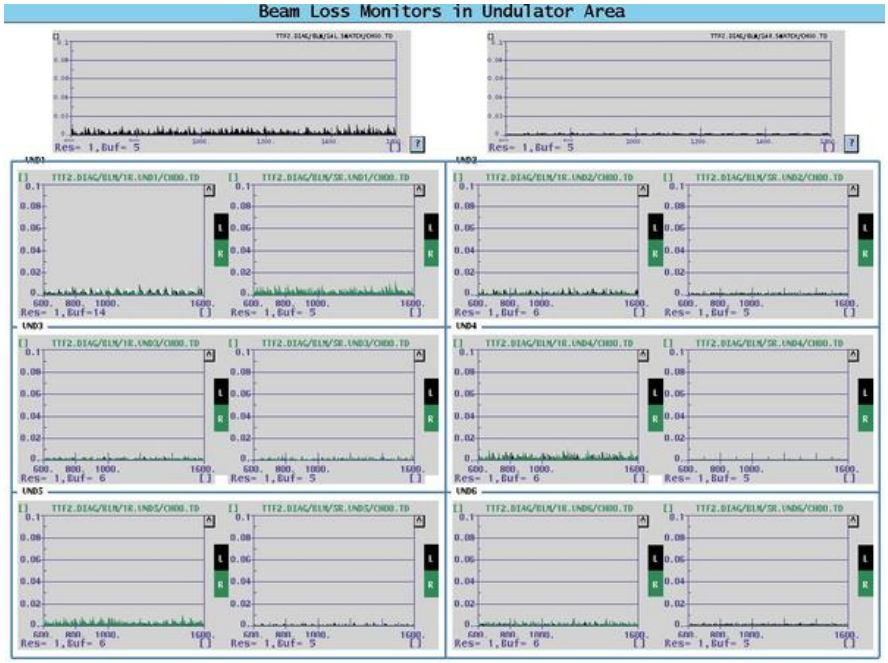
also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110204T070316.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110204T070316.sr
from computer: flashbkr4.desy.de

04.02.2011 07:03 ttflinac **ttflinac@:RF_OPERATION**



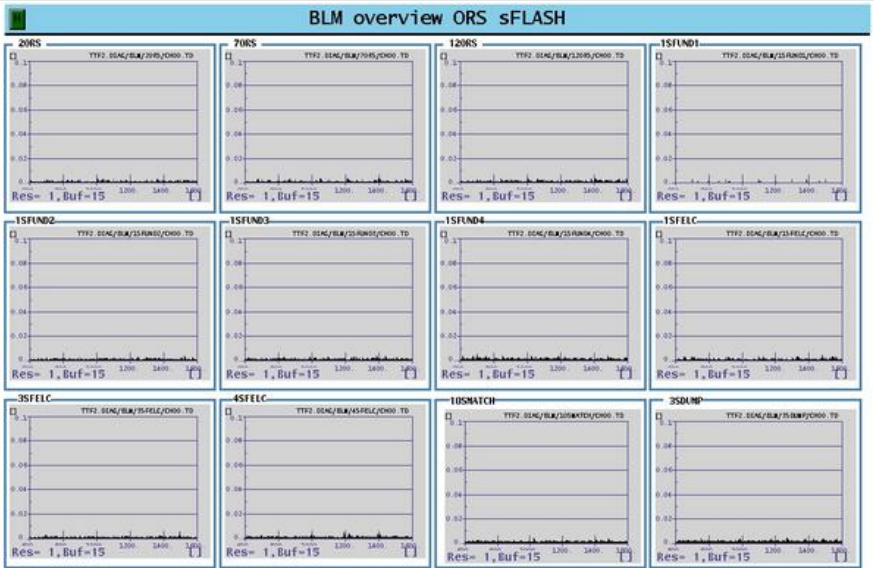
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:03:59-00.JPG

04.02.2011 07:04 ttflinac **ttflinac@:BLM_UNDULATORS**



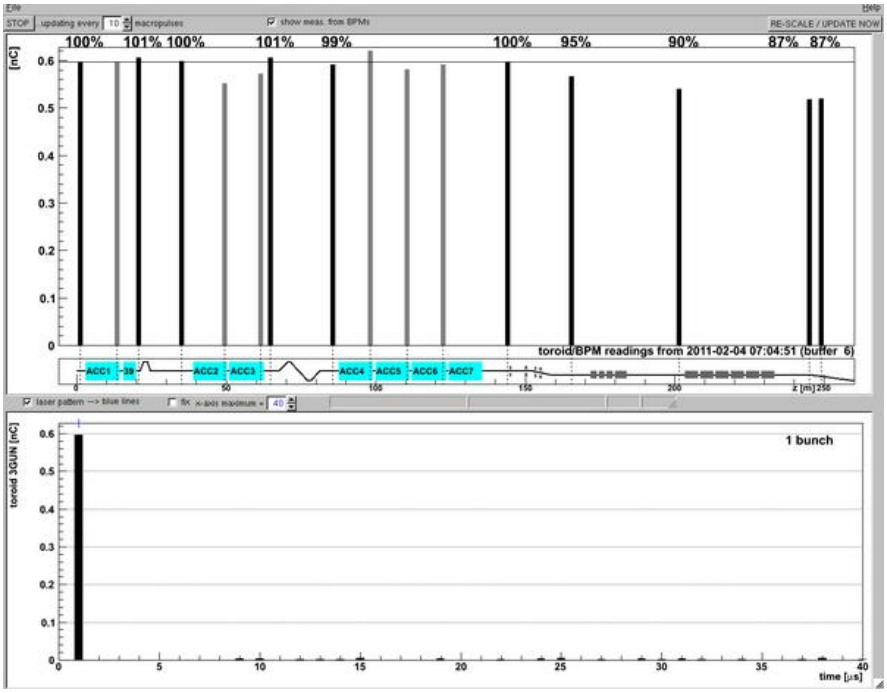
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:04:50-00.JPG

04.02.2011 07:05 ttflinac **ttflinac@:blm_overview_ORS**



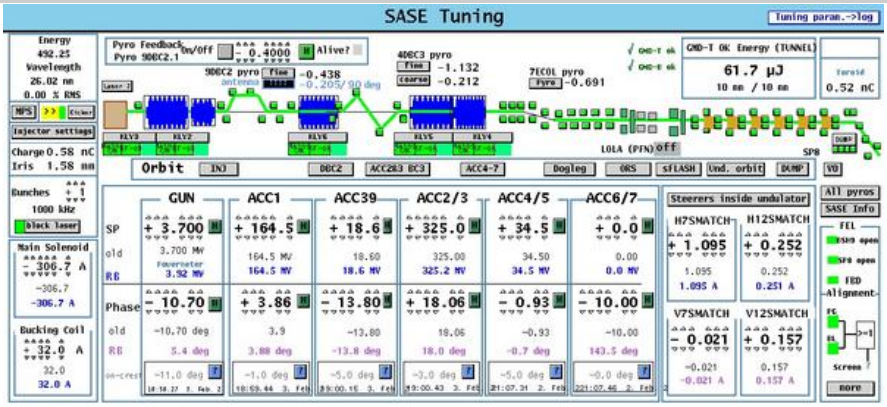
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:05:00-00.JPG

04.02.2011 07:05 ttflinac **toroid charge readings**



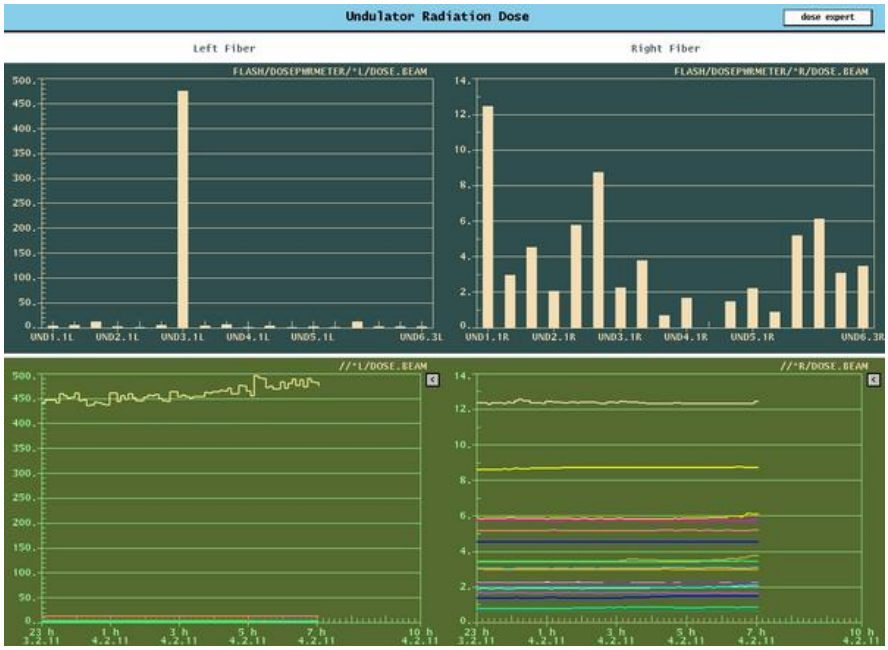
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:05:10-00.ps

04.02.2011 07:05 ttflinac **ttflinac@:SASE_tuning**



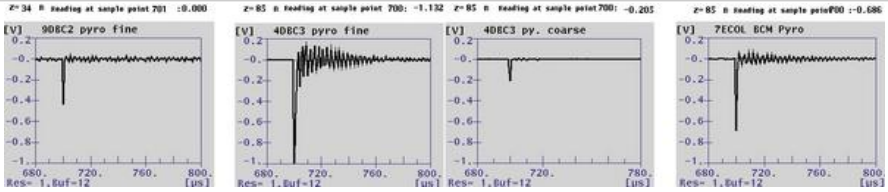
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:05:36-00.JPG

04.02.2011 07:05 ttflinac **ttflinac@:dose_und**



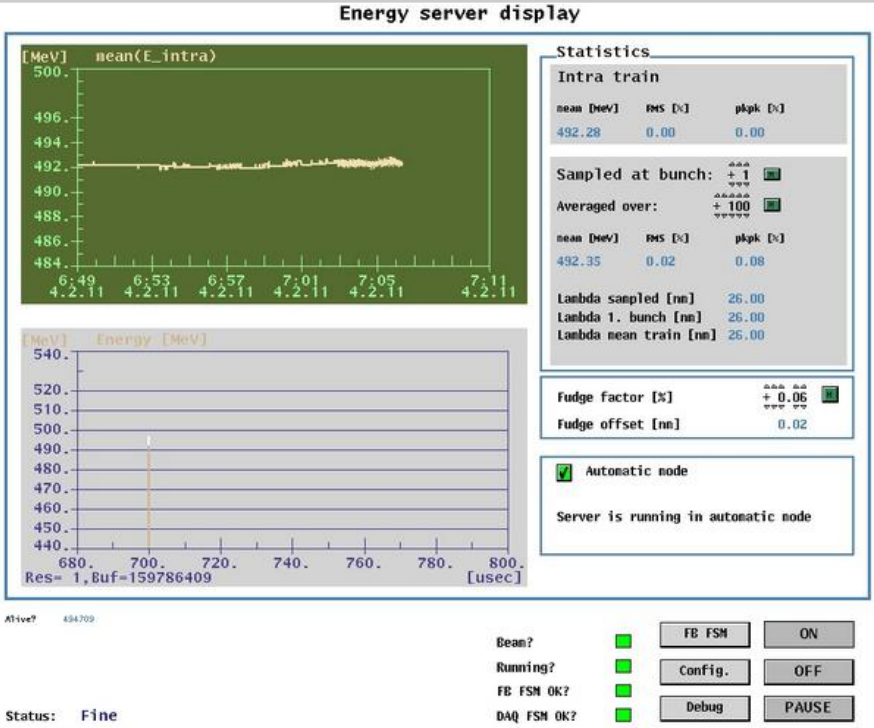
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:05:44-00.JPG

04.02.2011 07:06 ttflinac **ttflinac@:All_BCM**



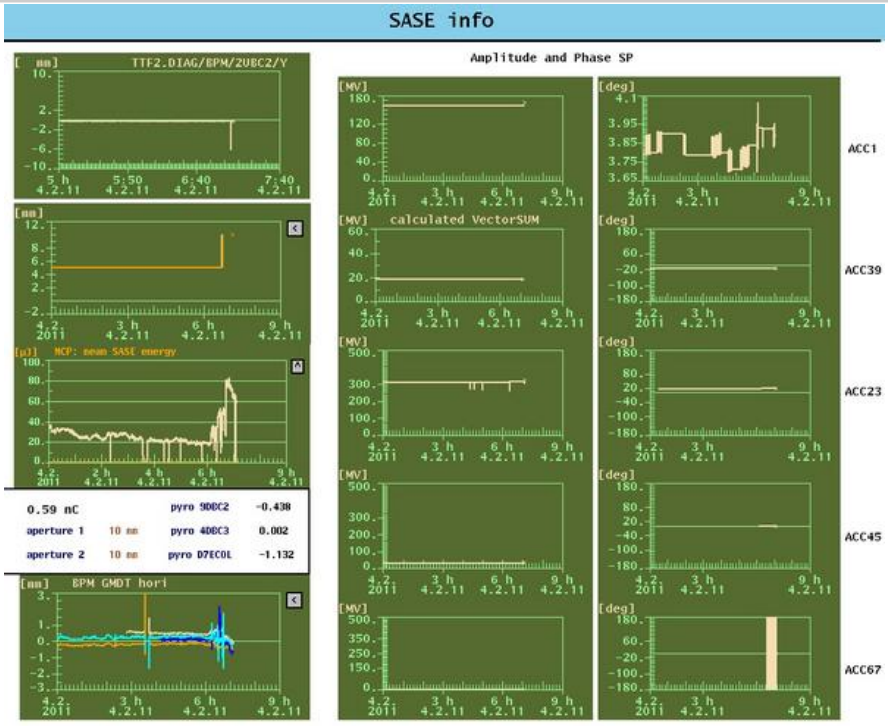
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:06:25-00.JPG

04.02.2011 07:06 ttflinac **ttflinac@:Energyfbm_display**



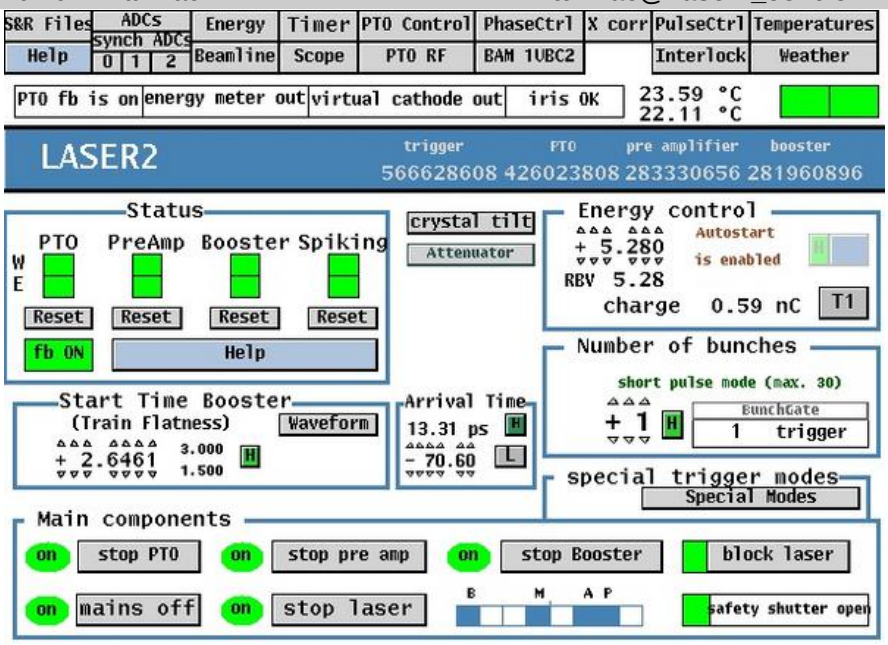
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:06:33-00.JPG

04.02.2011 07:07 ttflinac **ttflinac@:SASE_info**



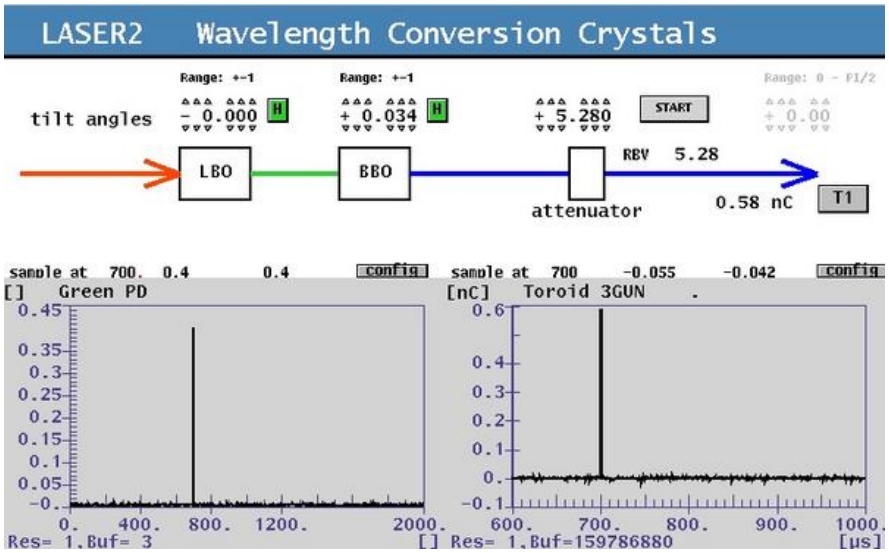
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:07:04-00.JPG

04.02.2011 07:07 ttflinac **ttflinac@:laser2_control**



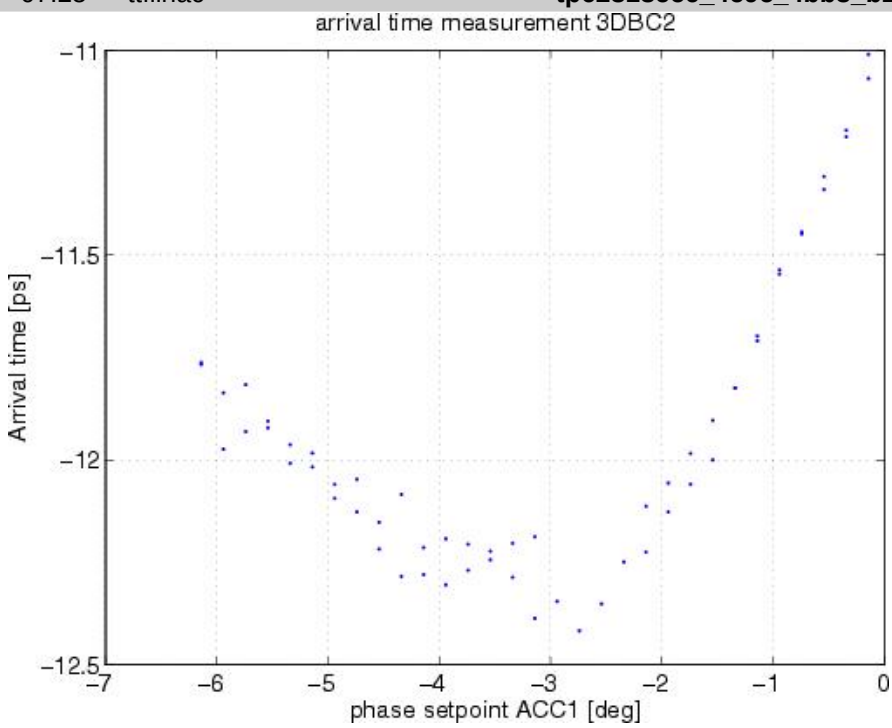
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:07:14-00.JPG

04.02.2011 07:07 ttflinac **End of shift documentation**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:07:21-00.JPG

04.02.2011 07:25 ttflinac **tp62818ec6_4e9c_4bb3_b255_97629d2ae1ca.ps**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:25:57-00.ps

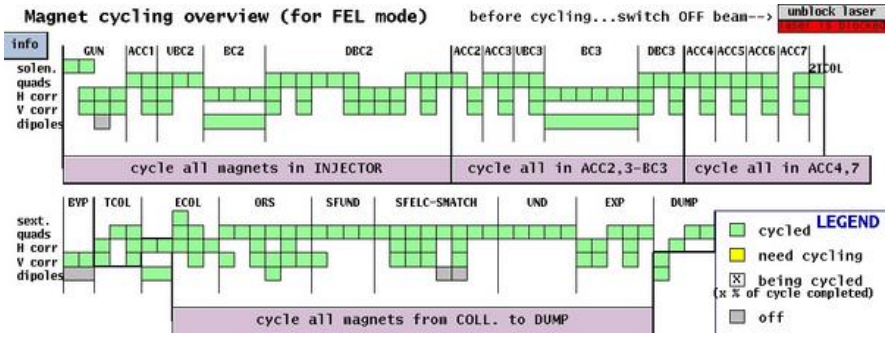
04.02.2011 07:28 ttflinac **File restored using sequencer**

```
Sequencer has restored:
   symbolic file= undulator_file  link to machine file= 2011-02-03T16:50:40+01(ID=14552)
             energy=1010.9 MeV
              wavelen.=6.26 nm
   1 items removed: D1BYP/PS
from computer: flashbkr4.desy.de
```

04.02.2011 07:39 schlarb **Magnet cycling takes too long**

```
particular the KR120 shopper of Q1ORS, Q13SMATCH and Q9EXP
```

04.02.2011 07:40 ttflinac **ttflinac@:magnet_cycle_overview_fel**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:40:28-00.JPG

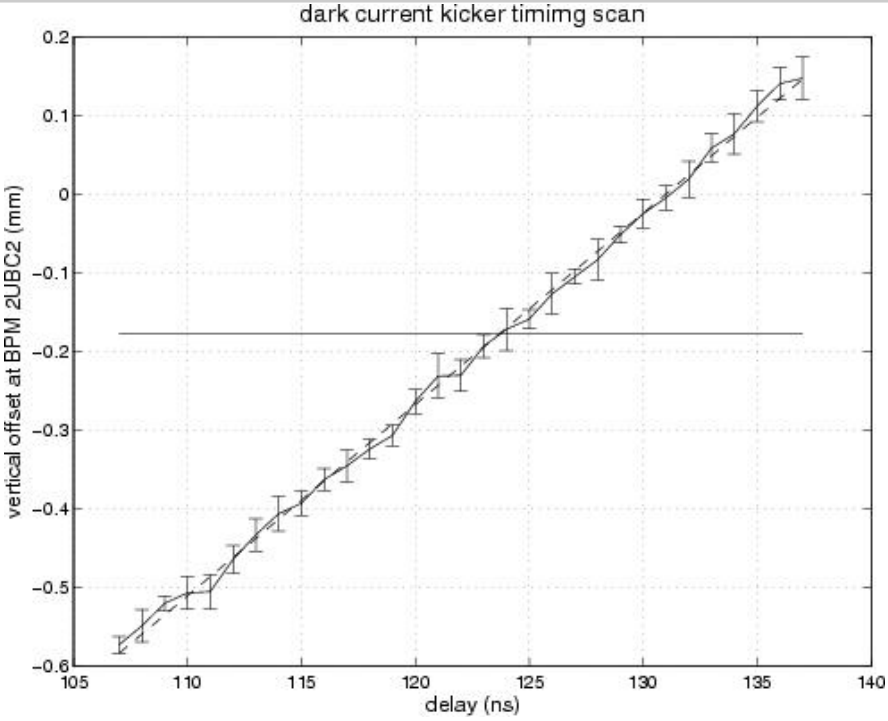
04.02.2011 07:45 ttflinac **darkcurrent kicker timing scan**

```
scan started at 123 ns, suggested new setpoint is 124 ns
new timing setpoint was set: No
coarse timing setpoint is 567 ns
trigger gate start is 6.8002 ms
bunch number was reduced from 1 to single while scanning
dg was initialised from 18.70 ns to 20.00 ns
timing setpoint was compensated from 124.00 ns to 123.00 ns
```

04.02.2011 07:48 ttflinac **darkcurrent kicker timing scan**

```
scan started at 122 ns, suggested new setpoint is 124 ns
new timing setpoint was set: Yes
coarse timing setpoint is 567 ns
trigger gate start is 3.0000 ms
bunch number was reduced from 1 to single while scanning
dg was initialised from 18.70 ns to 20.00 ns
timing setpoint was compensated from 123.00 ns to 122.00 ns
```

04.02.2011 07:48 ttflinac **tp1cc1ef3e_66aa_4969_97be_0219b84946dc.ps**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T07:48:20-00.ps

04.02.2011 07:51 ttflinac **BIS-BLM-protection disabled**

```
BIS-BLM-protection disabled for 30 minutes by operators
```

04.02.2011 08:21 ttflinac **BIS-BLM-protection disabled**

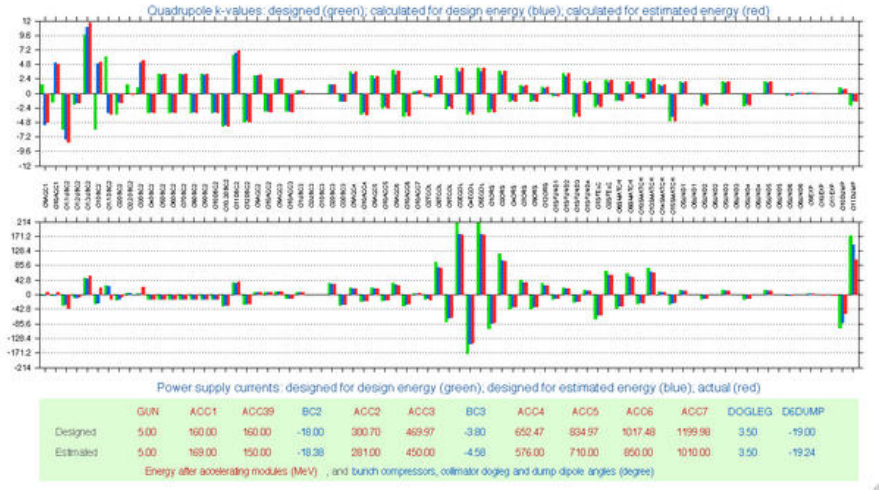
```
BIS-BLM-protection disabled for 30 minutes by operators
```

04.02.2011 08:36 Schmidt, Klose, vogtm **Comparison : MED-SHARP-1200 vs machine at estimated E-profile**

We assumed for the energy/MeV **after** the module:

GUN	ACC1	ACC39	ACC2	ACC3	ACC4	ACC5	ACC6	ACC7
5	169	150	281	450	576	710	850	1010

as usual :
top green := design (MED-SHARP matched for 1200MeV)
top red := currents from machine & estimated E-profile (see above)

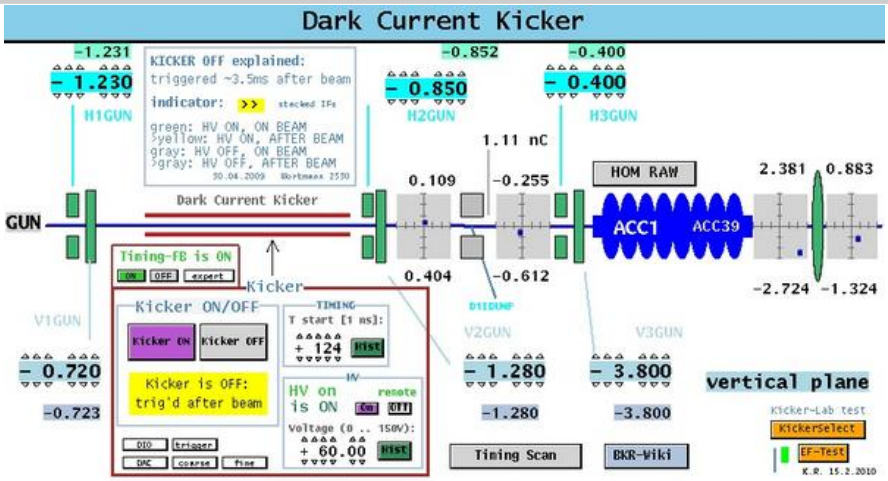


File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T08:36:59-02.png

04.02.2011 08:53 ttflinac **BIS-BLM-protection disabled**

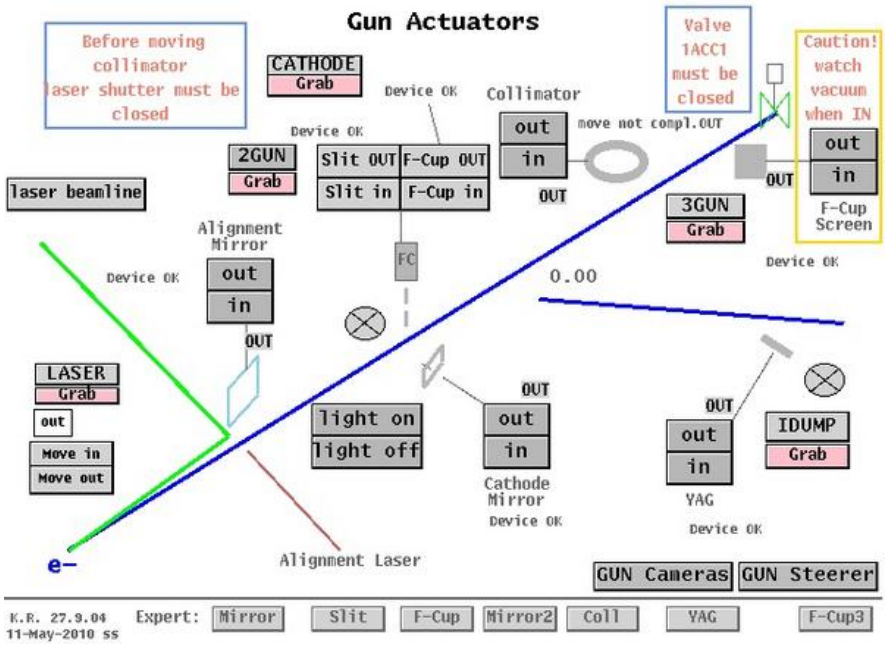
BIS-BLM-protection disabled for 30 minutes by operators

04.02.2011 08:55 ttflinac **ttflinac@:INJ_kicker**



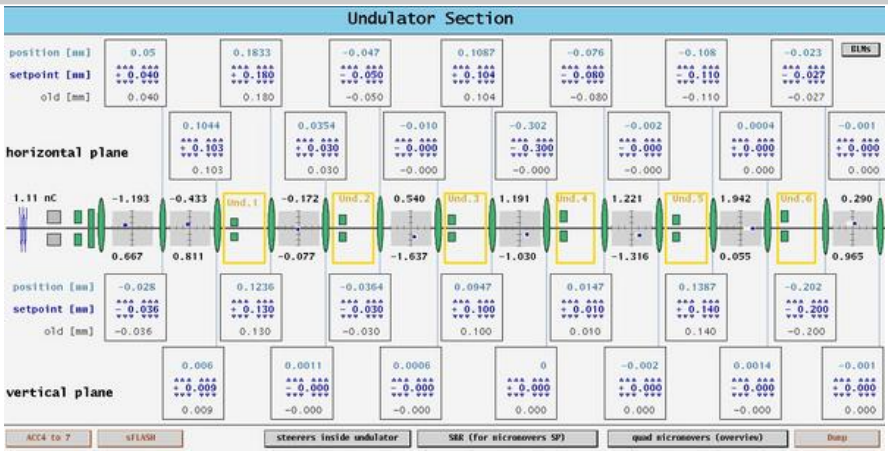
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T08:55:27-00.JPG

04.02.2011 09:19 ttflinac **ttflinac@:gun_actuators**



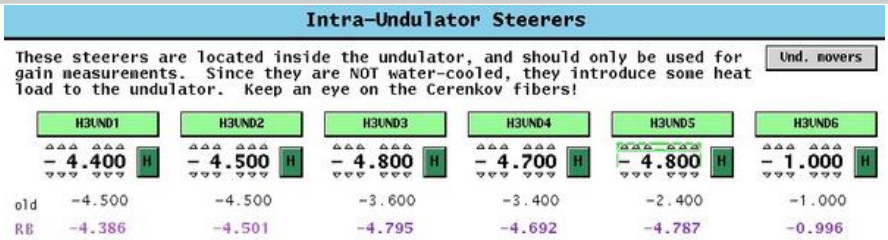
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T09:19:28-00.JPG

04.02.2011	09:32	ttflinac	**ttflinac@:orbit_corr_undulator**



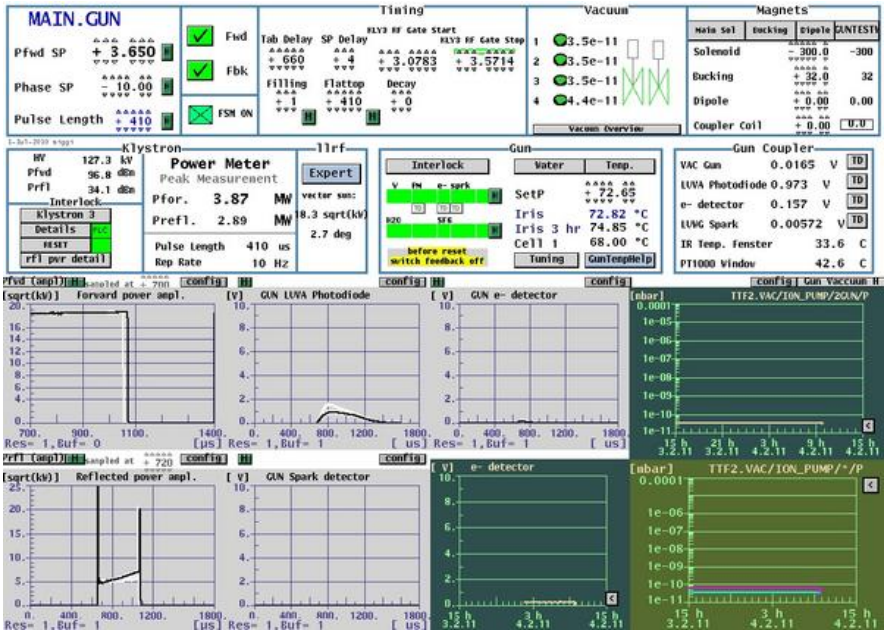
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T09:32:47-00.JPG

04.02.2011	09:32	ttflinac	**ttflinac@:UND_correctors**



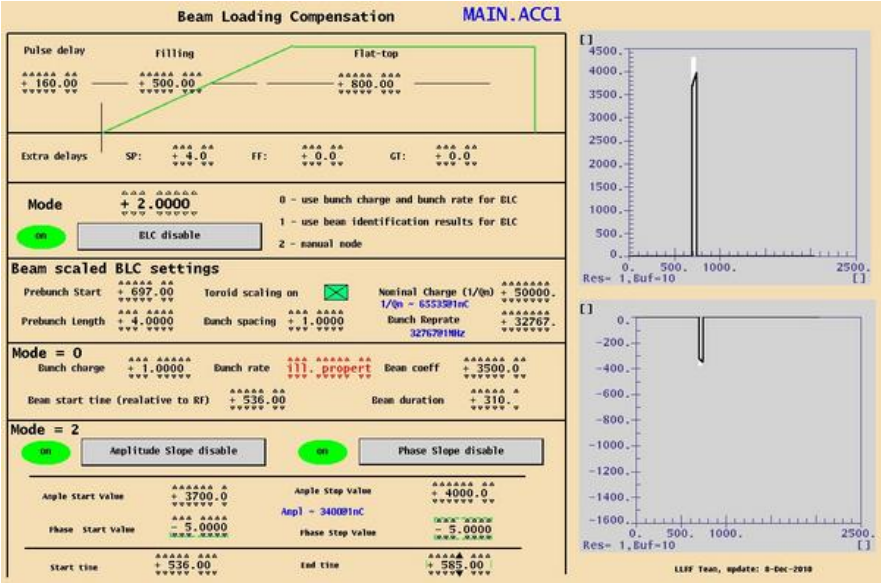
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T09:32:56-00.JPG

04.02.2011	09:53	ttflinac	**ttflinac@:gun_conditioning**



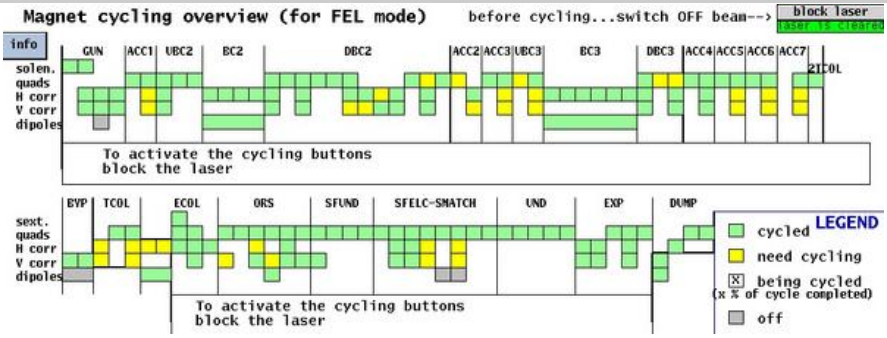
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T09:53:07-00.JPG

04.02.2011 10:00 ttflinac **ttflinac@:Beam_Loading_Comp**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:00:09-00.JPG

04.02.2011 10:10 ttflinac **ttflinac@:magnet_cycle_overview_fel**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:10:44-00.JPG

04.02.2011 10:10 ttflinac **SASE tuning parameters**

Misc. parameters

```
Energy / Wavelength: 1000.24 MeV / 6.3 nm
Charge:              1.22 nC
Main solenoid:       -300.0 A
Bucking coil:        +32.0 A
Dipoles BC2/BC3:     +73.1 A / +56.0 A
```

RF parameters

	GUN	ACC1	ACC39	ACC2/3	ACC4/5	ACC6/7
Power/Gradient	+3.650	+164.00	+19.00	+297.50	+250.00	+297.40
Readback	3.85	164.0	19.0	297.8	250.3	297.7
Phase	-10.00	+2.20	-4.20	-4.00	-8.90	-6.00
on-crest		-1.0		-3.0	-5.0	-0.0
Readback	6.6	2.2	-4.2	-4.0	-8.9	-5.9

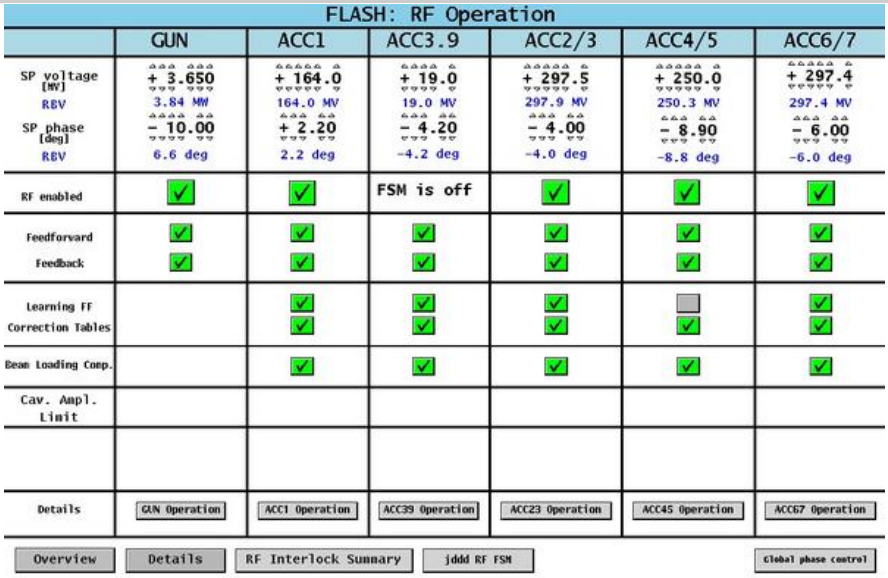
Undulator steerers and aircoils

H7SMATCH	H12SMATCH
+0.431	**-0.974**
V7SMATCH	V12SMATCH
+0.363	**-0.974**

Intra-undulator steerers

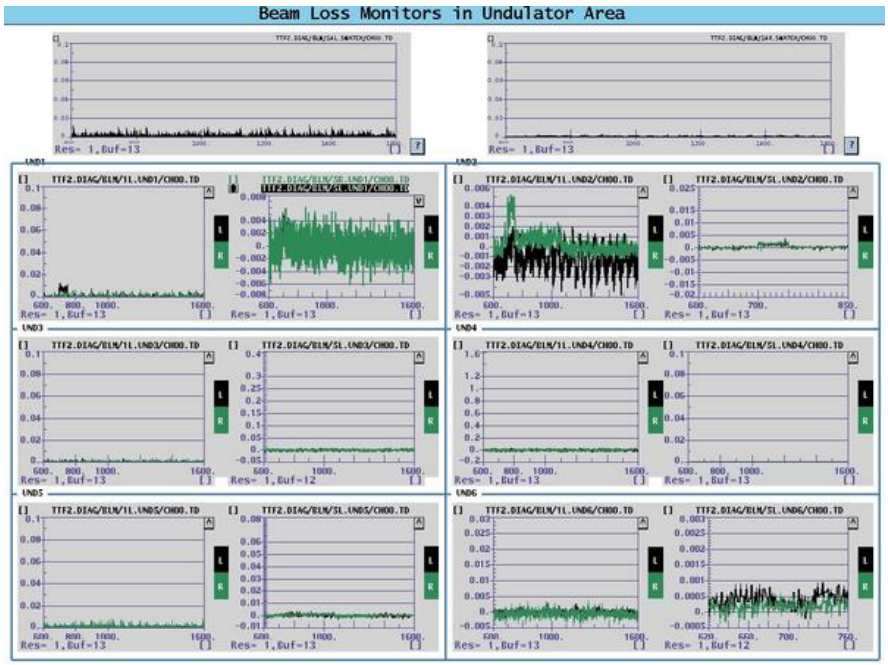
H3UND1	H3UND2	H3UND3	H3UND4	H3UND5	H3UND6
-4.40	**-4.50**	**-4.80**	**-4.70**	**-4.80**	**-1.00**

04.02.2011 10:10 ttflinac **ttflinac@:RF_OPERATION**



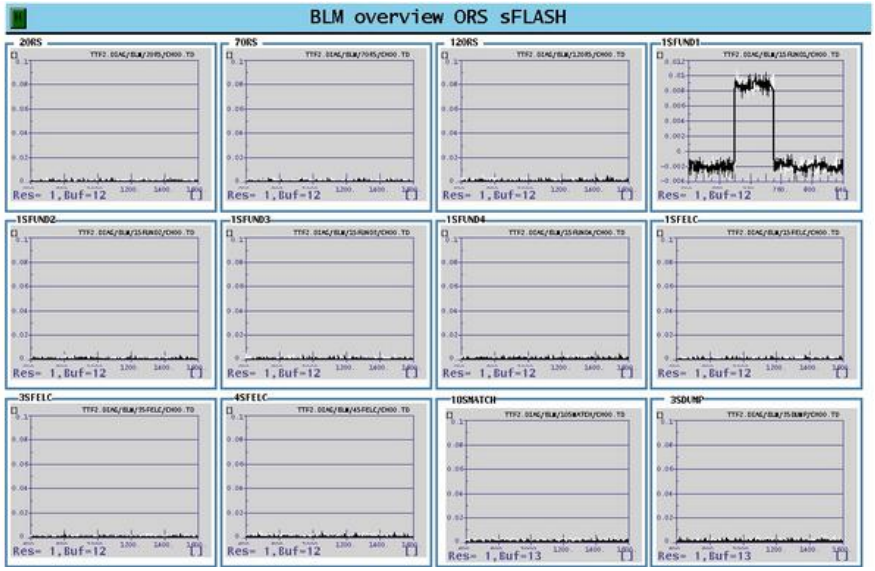
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:10:57-00.JPG

04.02.2011 10:11 ttflinac **ttflinac@:BLM_UNDULATORS**



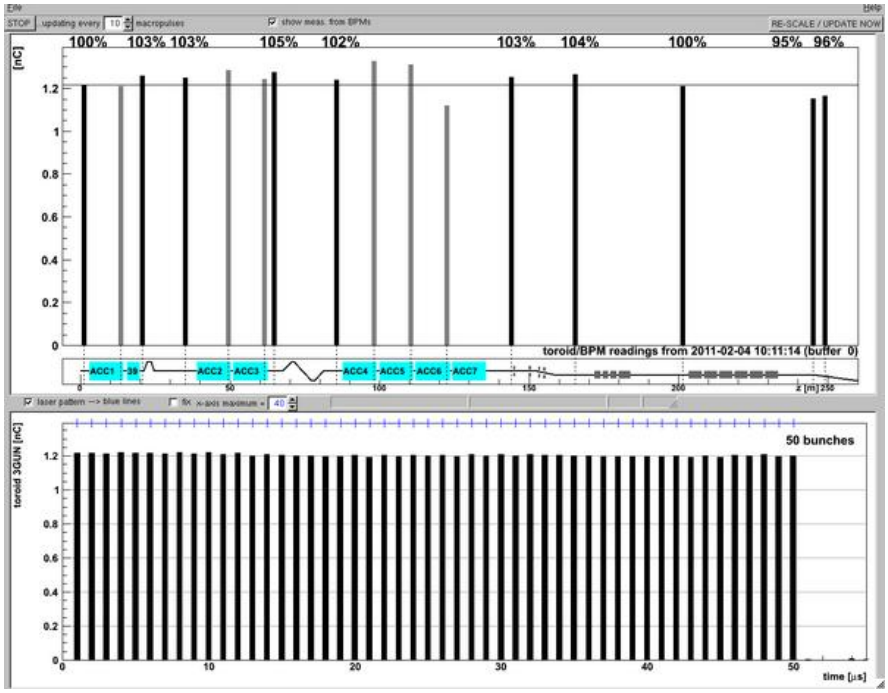
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:11:08-00.JPG

04.02.2011 10:11 ttflinac **ttflinac@:blm_overview_ORS**



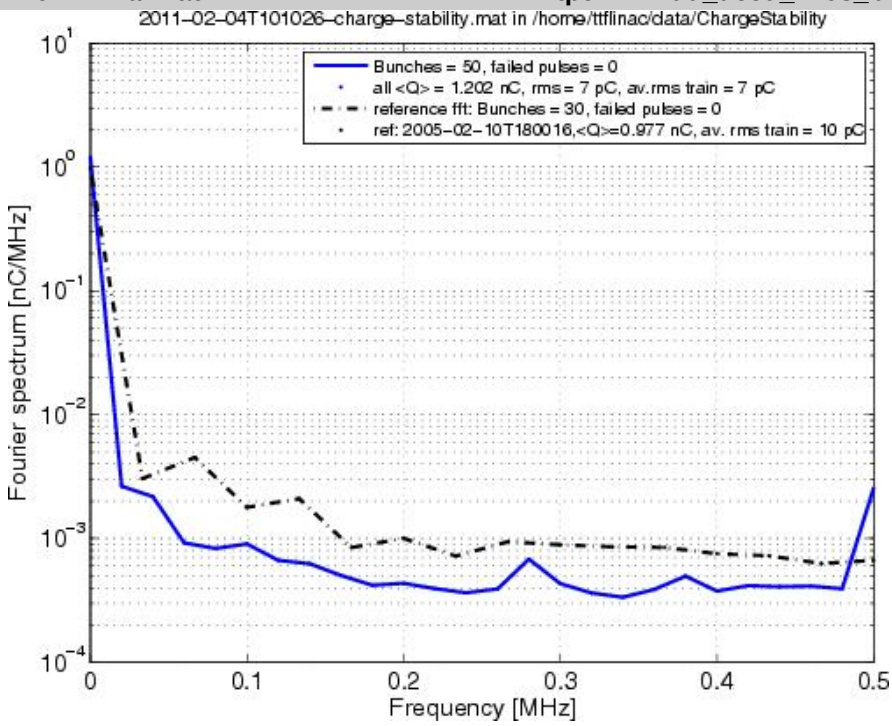
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:11:23-00.JPG

04.02.2011 10:11 ttflinac **toroid charge readings**



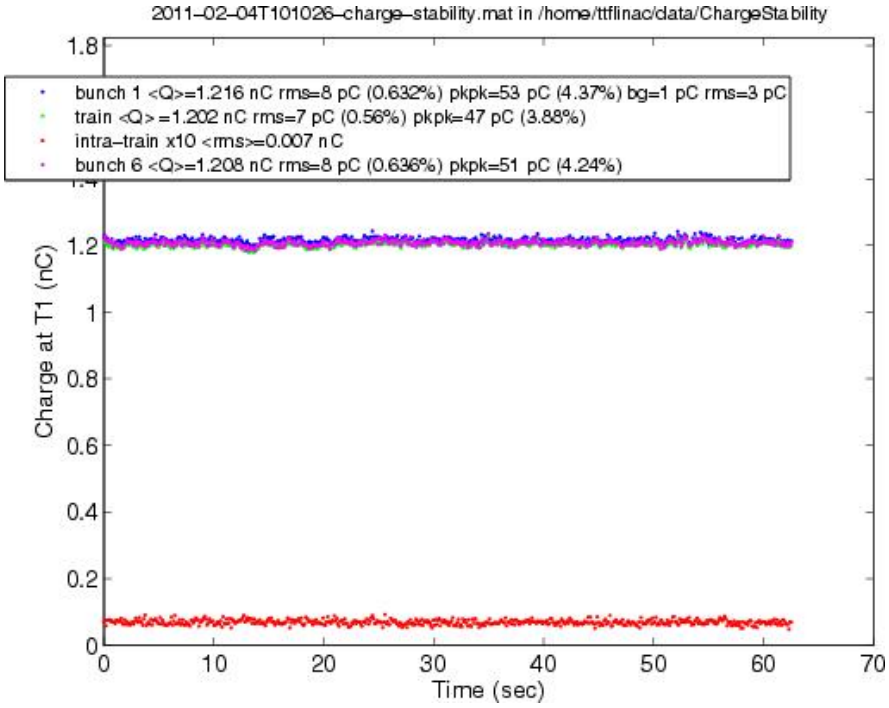
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:11:33-00.ps

04.02.2011 10:11 ttflinac **tp912211dd_dc5d_4108_b13e_58002f2b8601.ps**



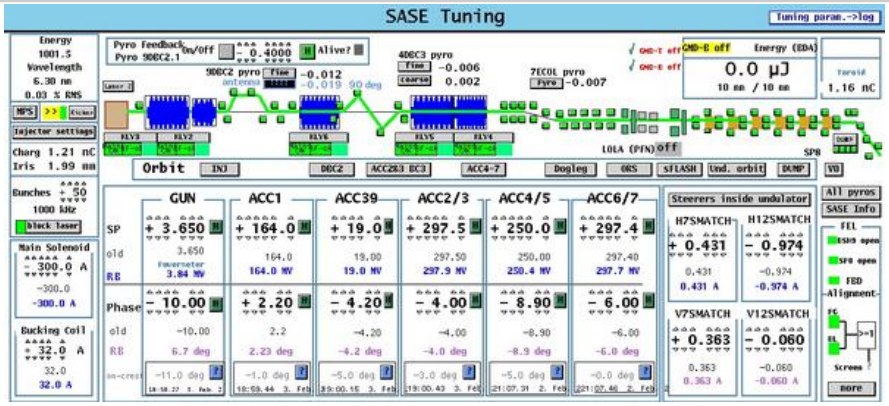
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:11:59-00.ps

04.02.2011 10:12 ttflinac **tp3d5aa7c9_c796_4905_9c3a_2996b551f2dd.ps**



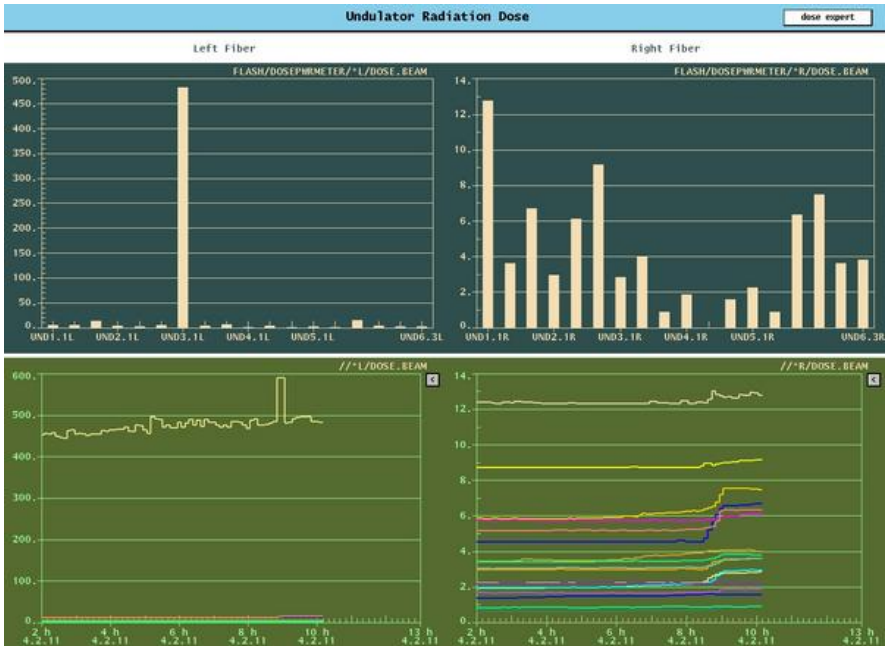
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:12:05-00.ps

04.02.2011 10:12 ttflinac **ttflinac@:SASE_tuning**



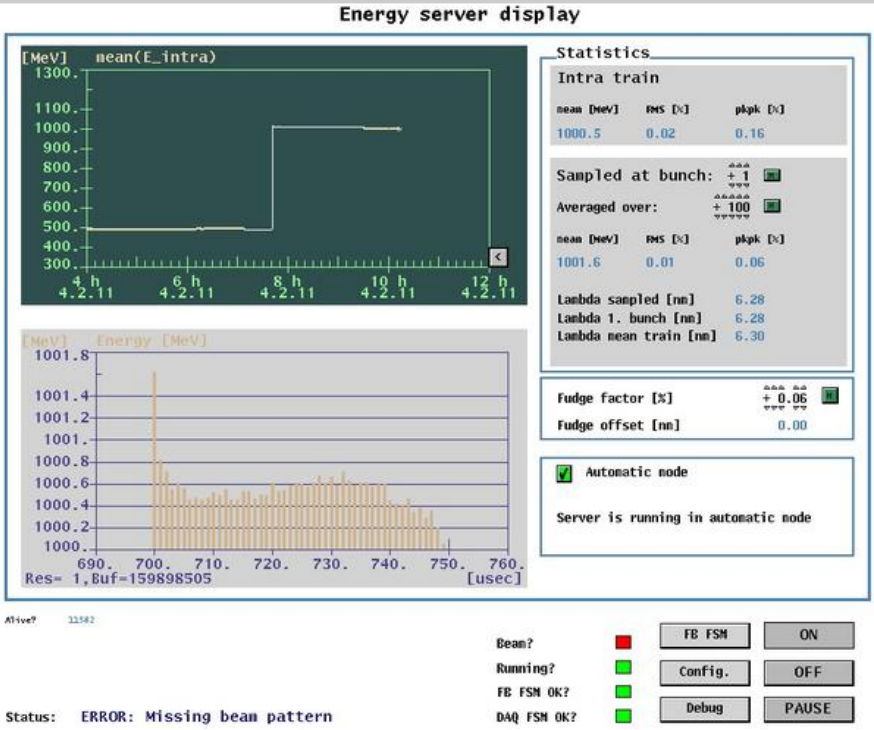
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:12:59-00.JPG

04.02.2011 10:13 ttflinac **ttflinac@:dose_und**



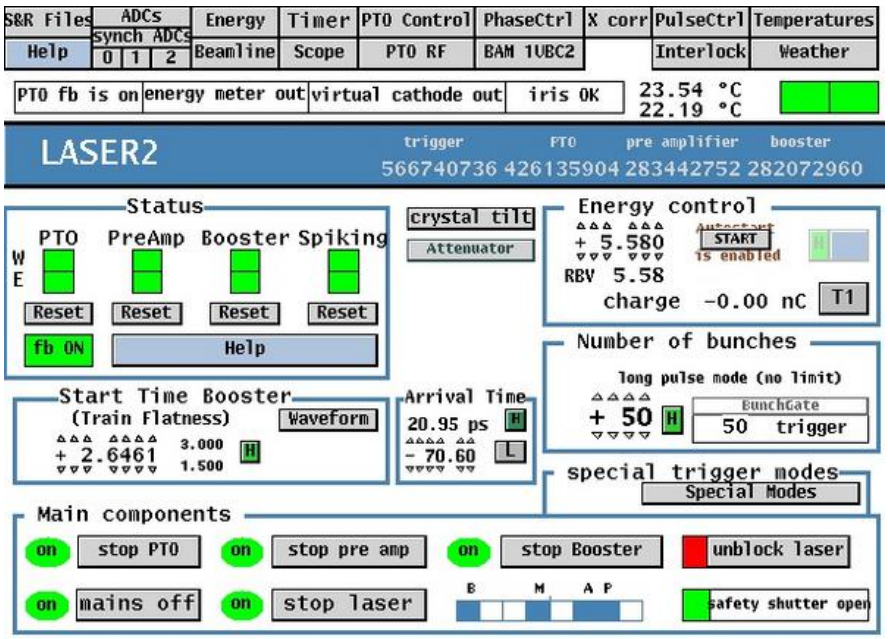
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:13:18-00.JPG

04.02.2011 10:13 ttflinac **ttflinac@:Energyfbm_display**



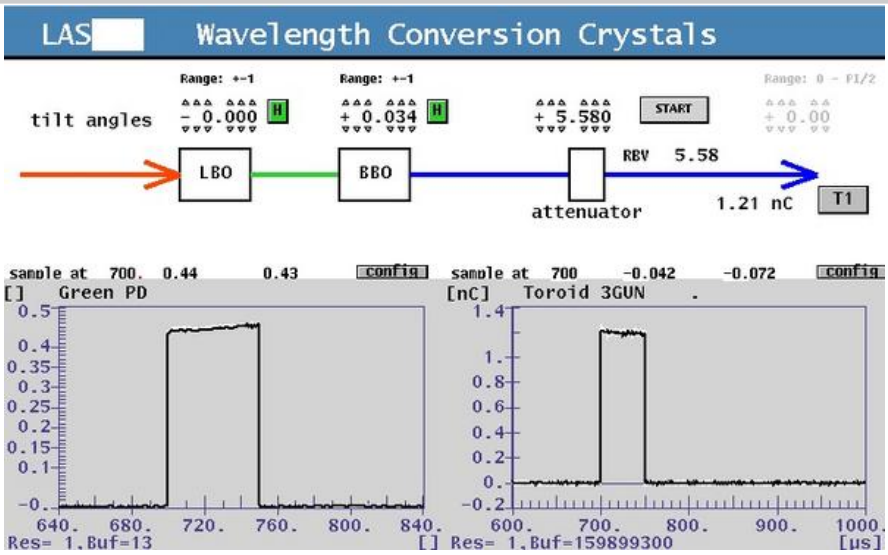
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:13:52-00.JPG

04.02.2011 10:14 ttflinac **ttflinac@:laser2_control**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:14:05-00.JPG

04.02.2011 10:14 ttflinac **ttflinac@:laser_crystal_tuning**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:14:42-00.JPG

04.02.2011 10:14 ttflinac **Main linac parameters**

shift documentation

Laser

Number of bunches 50
Bunch frequency ..... 1000 kHz
Macropulse rep'rate .... 10.0 Hz
Pump time_3 ..... 0.0030 ms
Pump current_3 ..... 5.00 V
Pre-amp start time ..... 2.42 ms
Booster start time ..... 2.65 ms
Attenuator SP 5.58
Iris diameter ..... 17280 steps
Iris diameter ..... 1.99 mm

Gun

Feedforward/Feedback ... on/on
FSM ..... on
Pfwd SP 3.65
VS ampl. 18.30
Phase SP ..... -10.00 deg
VS phase ..... 6.69 deg
Pfwd (peak) ..... 3.851 MW
Prefl (peak) ..... 2.888 MW
Pfwd sample point 700
Pfwd (at sample point) . 18.291 MW
Prefl sample point 720
Prefl (at sample point) 5.408 MW
Flat top ..... 410 us
Water temperature SP ... 72.65 deg C
Main solenoid (RBV) .... -300.04 A
Bucking coil (RBV) ..... 32.00 A
Gun dipole (RBV) ..... 0.000 A
Charge 3GUN(T1) ..... 1.22 nC
DC kicker delay ..... 6.80 ms

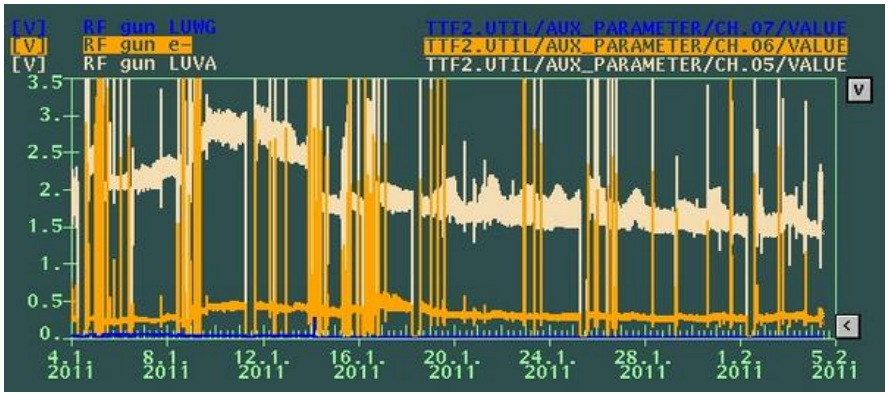
```
                                                DC kicker HV ........... not local
                                                DC kicker HV ........... disabled
                                                DC kicker HV ........... off
                                                DC kicker SP ........... 60.00 V
                                                DC kicker start ........ 124.00 ns
ACC1                                            ACC39
Feedforward/Feedback ... on/on                  Feedforward/Feedback ... on/on
Feedback gain .......... 2.0                    Feedback gain .......... 10.0
Pfwd SP ................ 164.00                 Pfwd SP ................ 19.00
Pfwd RBV ............... 164.03                 Phase SP ............... -4.20 deg
Phase SP ............... 2.20 deg              Pfwd C1.ACC39 .......... <error>
Phase RBV .............. 2.22 deg              Flat top ............... 800 us
Pfwd C1.ACC1 ........... 189.3 kW
Pfwd C5.ACC1 ........... 180.7 kW
Flat top ............... 800 us
Dipole BC2 (RBV) ....... 73.11 A
Pyro 9DBC2.1 ........... -0.0352 V
Radiator 9DBC2 ......... out
Slow phase feedback .... off
Slow ph. FB target/gain  -0.400/-0.1
Slow ph. FB pyrodet.used Pyro 9DBC2.1 (fine, old ADC)
ACC2/3                                          ACC4/5
Feedforward/Feedback ... on/on                  Feedforward/Feedback ... on/on
Feedback gain .......... 2.0                    Feedback gain .......... 40.0
Pfwd SP ................ 297.50                 Pfwd SP ................ 250.00
Pfwd RBV ............... 297.90                 Pfwd RBV ............... 250.27
Phase SP ............... -4.00 deg              Phase SP ............... -8.90 deg
Phase RBV .............. -3.98 deg              Phase RBV .............. -8.92 deg
Pfwd C5.ACC2 ........... 122.78 kW              Pfwd C1.ACC4 ........... 117.79 kW
Pfwd C1.ACC3 ........... 215.07 kW              Pfwd C2.ACC5 ........... 91.12 kW
Flat top ............... 400 us                 Pfwd C1.ACC6 ........... 0.00 kW
Dipole BC3 (RBV) ....... 56.00 A                Flat top ............... 800 us
Pyro 4DBC3.1 ........... -0.0050 V
Pyro 4DBC3.3 ........... 0.0017 V
Radiator 4DBC3 ......... out
ACC6/7                                          Bypass
Feedforward/Feedback ... on/on                  Dipole D1BYP (RBV) ..... 0.00 A
Feedback gain .......... 50.0                   Energy bypass .......... 1211.4 MeV
Pfwd SP ................ 297.40                 RF vector sum ALL ...... 801.5 MeV
Pfwd RBV ............... 297.51                 Charge 16BYP ........... -0.01 nC
Phase SP ............... -6.00 deg
Phase RBV .............. -5.94 deg
Pfwd C1.ACC6 ........... 188.67 kW
Pfwd C1.ACC7 ........... 212.93 kW
Flat top ............... 800 us
Collimator                                      Undulator
Dipole D1ECOL (RBV) .... 176.89 A               1SFUND1 gap RBV ........ 220.0 mm
Energy dogleg .......... 1000.4 MeV             1SFUND2 gap RBV ........ 220.0 mm
Charge 7ORS ............ 1.28 nC                1SFUND3 gap RBV ........ 220.0 mm
                                                1SFUND4 gap RBV ........ 180.0 mm
Dump                                            Feedbacks
Dipole D9SMATCH (RBV) .. 0.00 A                 Charge feedback gain ... <error>
Dipole D1DUMP (RBV) .... 0.00 A                 Charge feedback SP ..... <error>
Dipole D6DUMP (RBV) .... 213.50 A               PTO feedback ........... on
Rotator RD13DUMP (RBV) . 9.13 A
Charge 9DUMP ........... 1.16 nC
Photon beamline
Aperture 1 ............ 10 mm
Offset h/v ............ 0/-1 mm
Aperture 2 ............ 10 mm
Offset h/v ............ 1/0 mm
```

```
Status saved in machine file 2011-02-04T10_14_13+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-04T101413
```

```
also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110204T101413.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110204T101413.sr
from computer: flashbkr4.desy.de
```

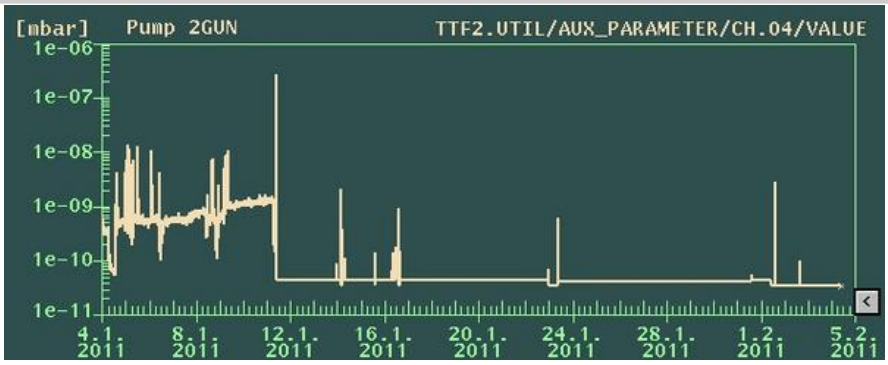
04.02.2011 10:18 S. Schreiber **rf gun coupler**

history of rf gun coupler interlock signals



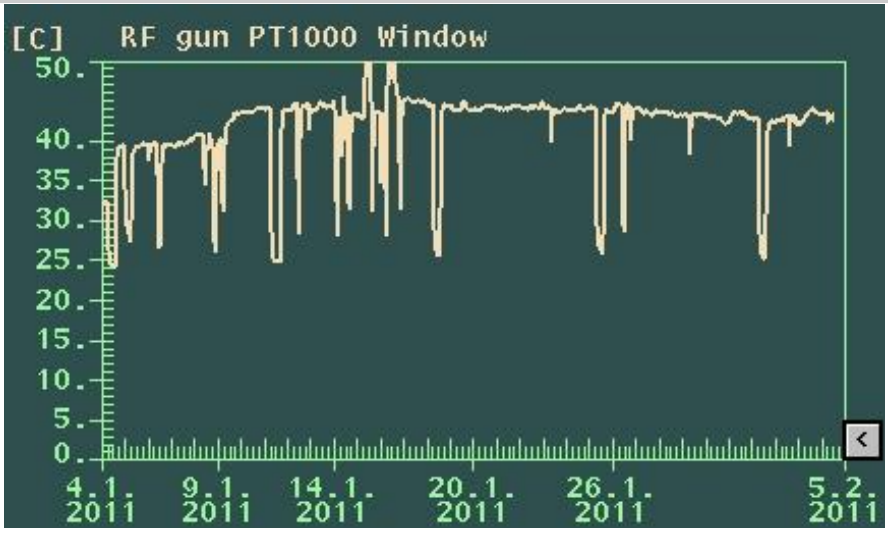
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:18:12-00.JPG

04.02.2011	10:18	S. Schreiber	**rf gun vacuum history**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:18:19-00.JPG

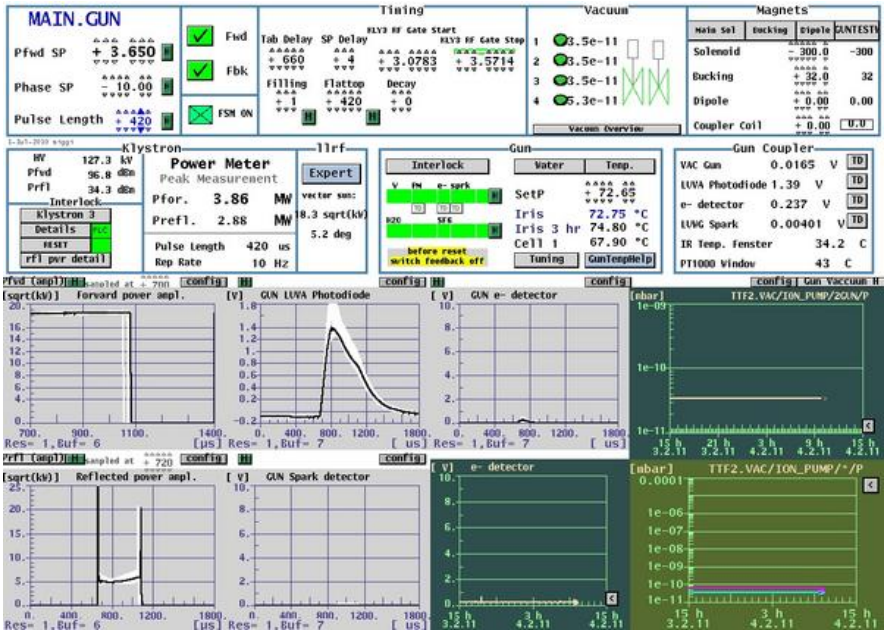
04.02.2011	10:18	S. Schreiber	**rf gun coupler window temperature history**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:18:25-00.JPG

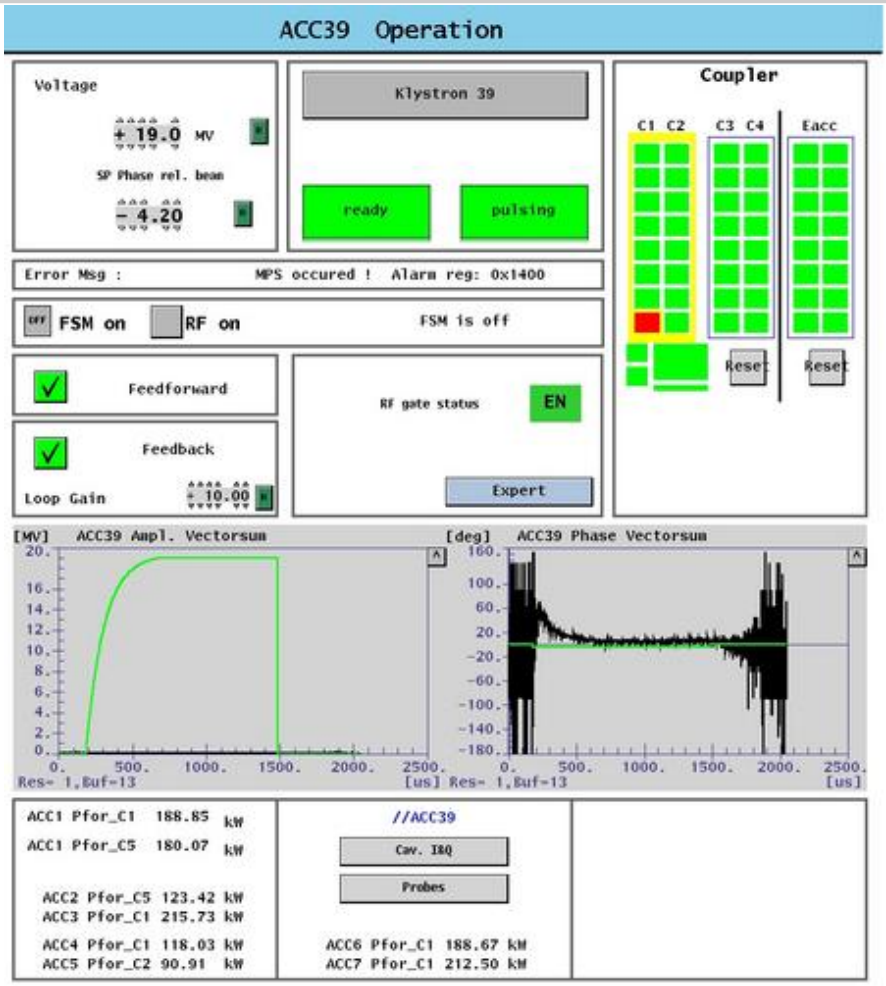
04.02.2011	10:18	S. Schreiber, K. Klose	**ttflinac@:gun_conditioning**

```
we length the rf gun pulse length -> 440 us
```



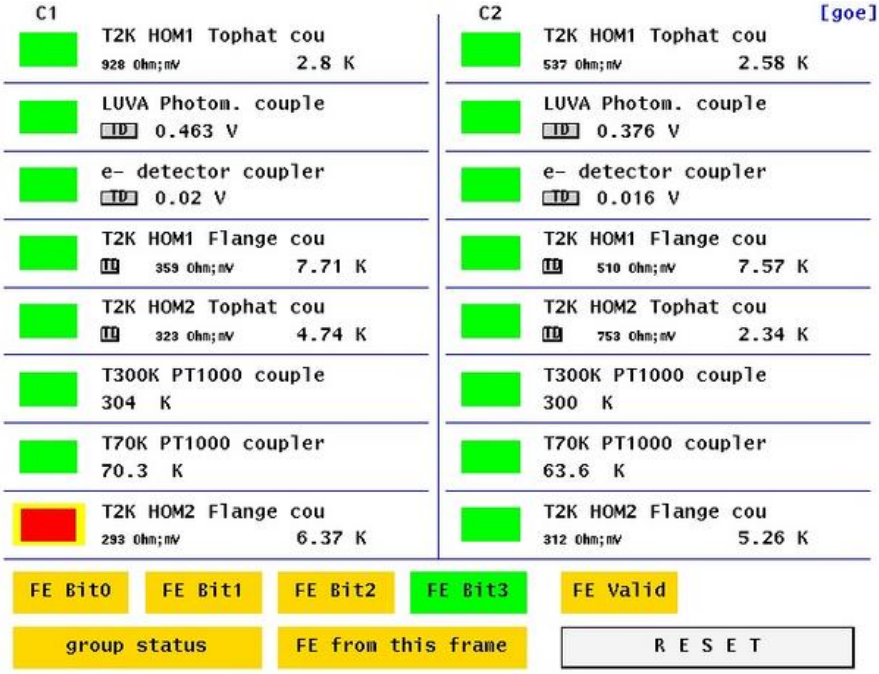
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:18:31-00.JPG

04.02.2011 10:21 ttflinac **ttflinac@:SIMCON_Operation**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:21:20-00.JPG

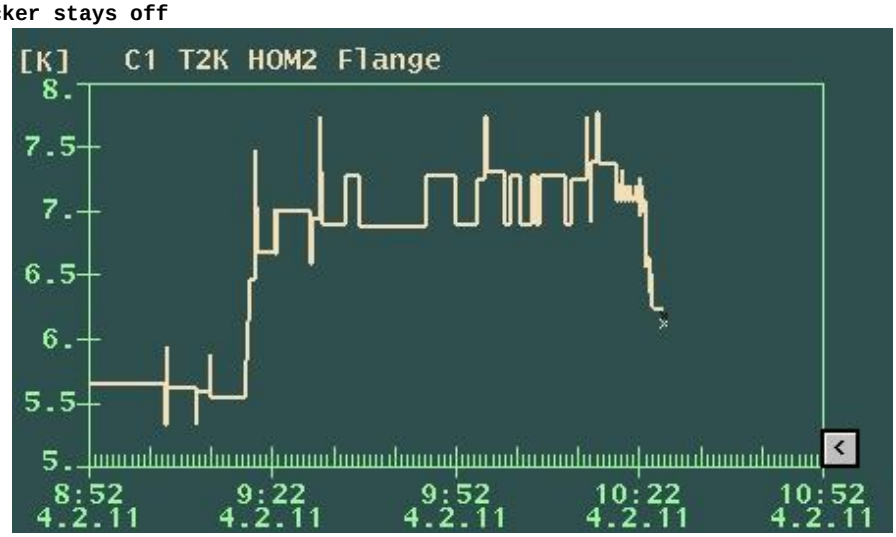
04.02.2011 10:24 ttflinac **ttflinac@:til_frame_c1_2_acc39**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:24:09-00.JPG

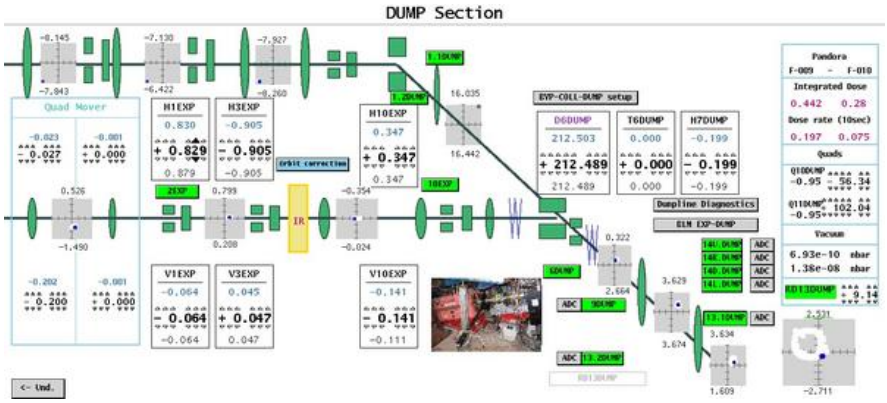
⚠ 04.02.2011 10:26 S. Schreiber, K. Klose **temperature ACC39 HOM**

with the gun collimator removed, the temperature at the HOM2
rises.
We got an interlock, when the gun rf pulse length has been increased from 430 to 440 us.
gun collimator is now back in
darkcurrent kicker stays off



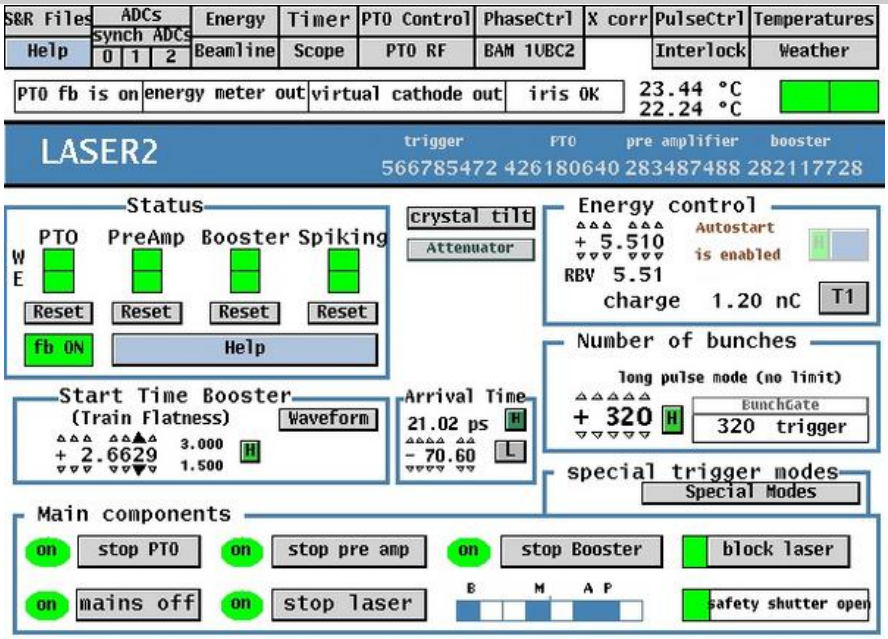
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:26:12-00.JPG

04.02.2011 10:56 ttflinac **ttflinac@:orbit_corr_dump**



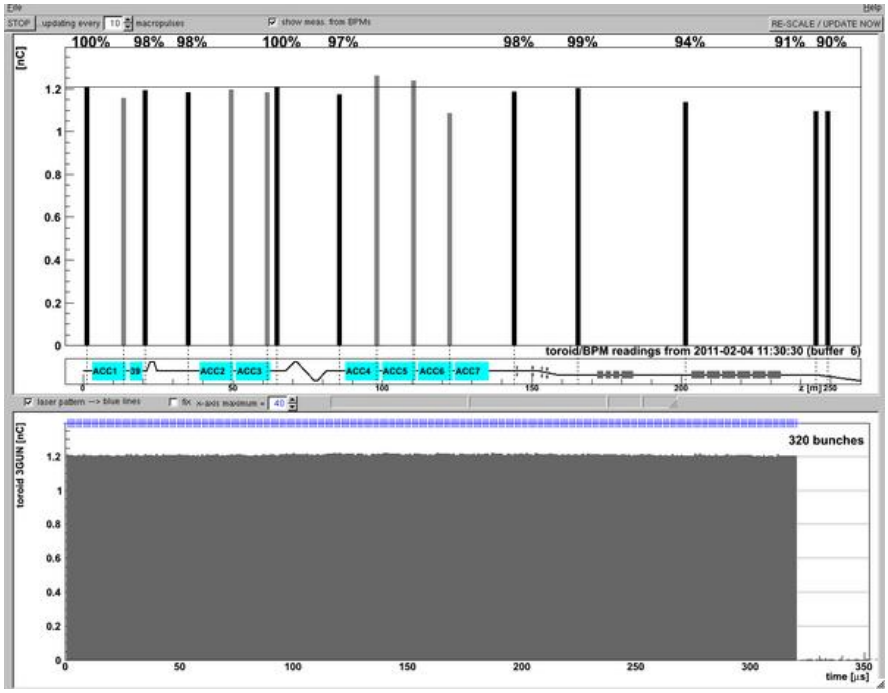
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T10:56:34-00.JPG

04.02.2011 11:28 ttflinac **ttflinac@:laser2_control**



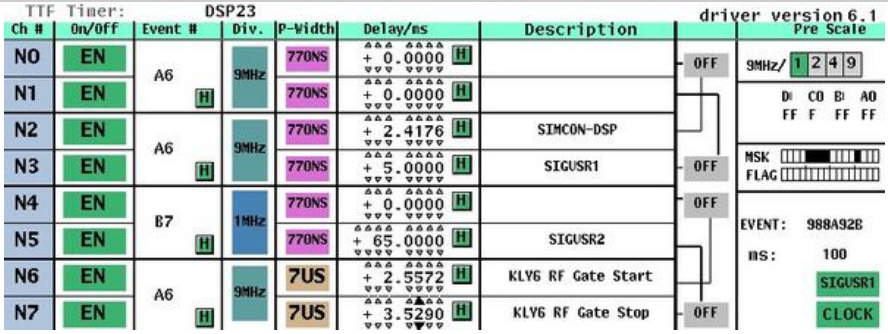
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T11:28:40-00.JPG

04.02.2011 11:30 ttflinac **toroid charge readings**



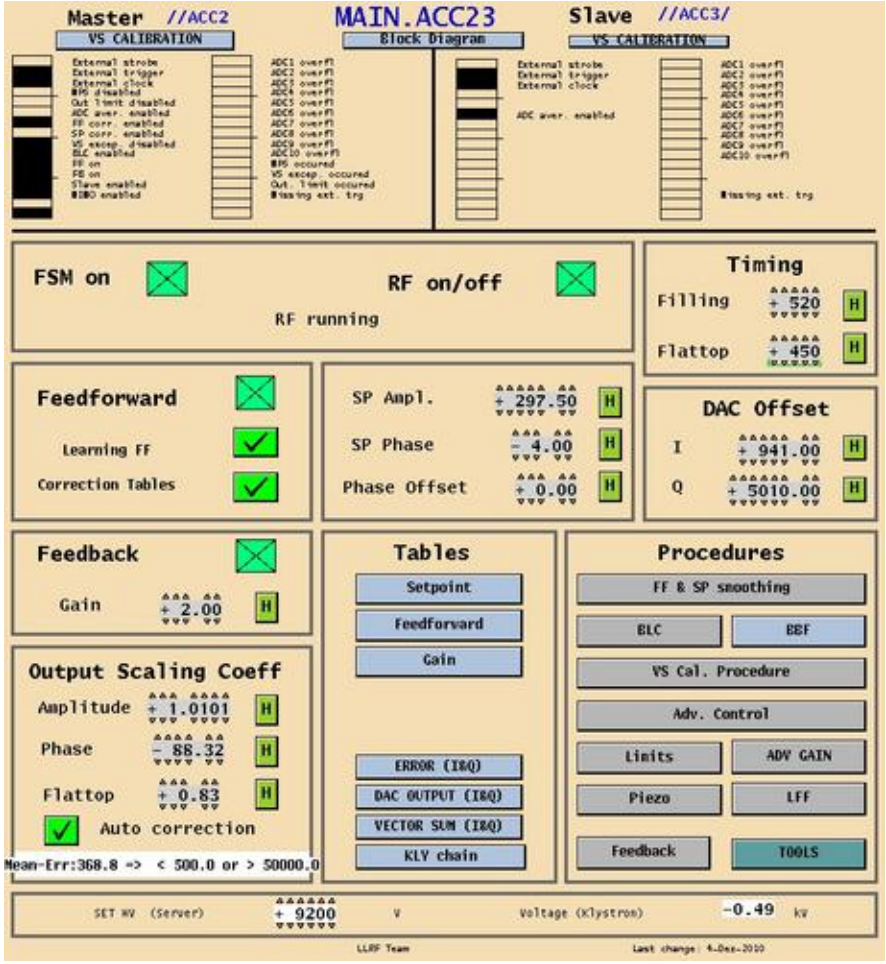
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T11:30:49-00.ps

04.02.2011 11:41 CSchmidt, Klose **increased RF gate stop by +50 us**



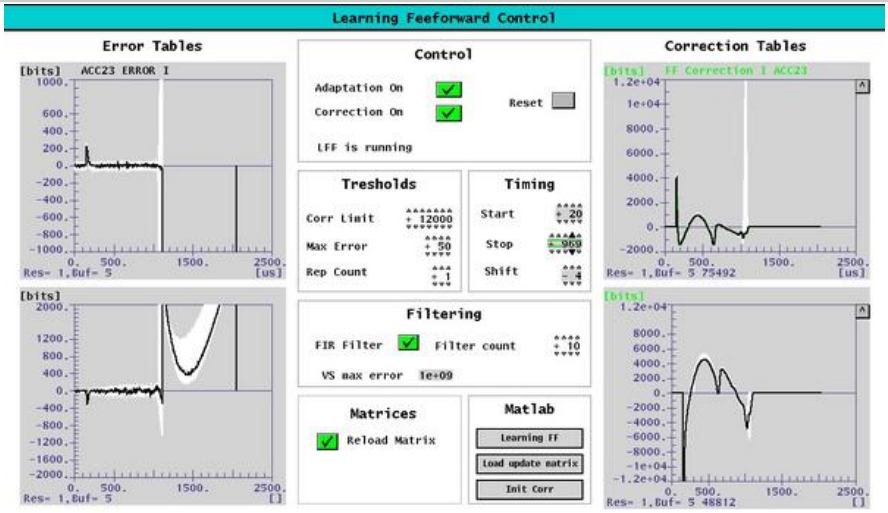
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T11:41:08-00.JPG

04.02.2011 11:41 CSchmidt, Klose **increased RF pulse length by +50us**



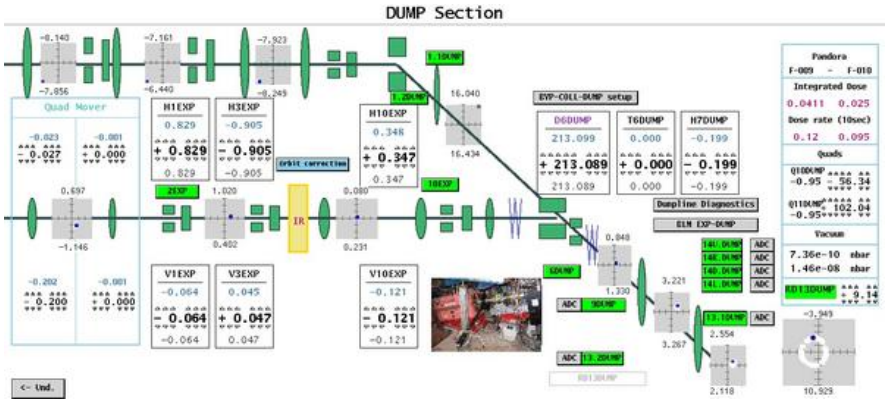
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T11:41:27-00.JPG

04.02.2011 11:41 CSchmidt, Klose **extend LFF adaptation by +50us**



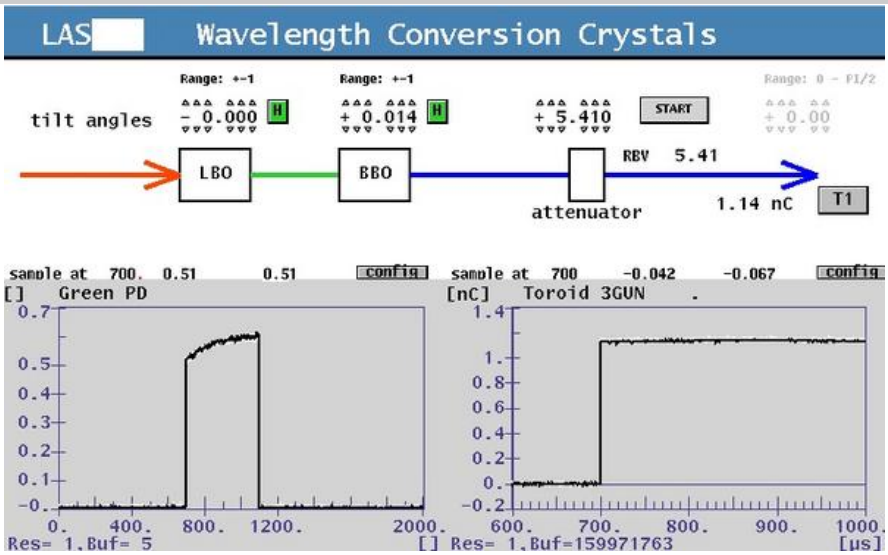
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T11:41:49-00.JPG

04.02.2011 12:15 ttflinac **ttflinac@:orbit_corr_dump**



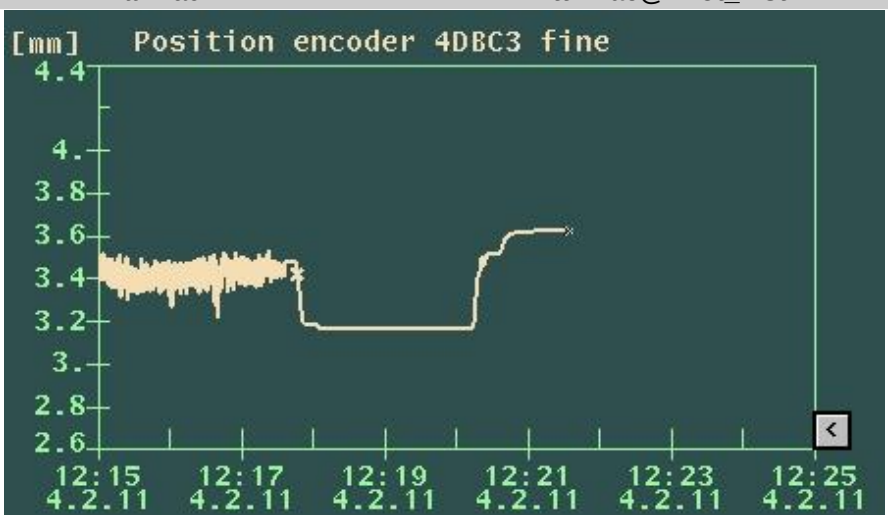
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T12:15:15-00.JPG

04.02.2011	12:15	ttflinac	**ttflinac@:laser_crystal_tuning**



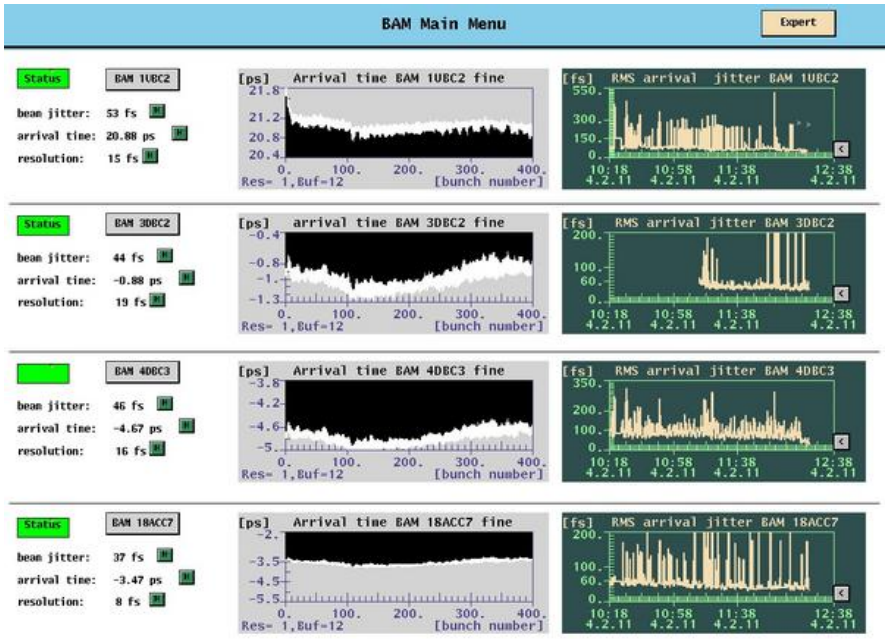
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T12:15:30-00.JPG

04.02.2011	12:21	ttflinac	**ttflinac@:Plot_hist**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T12:21:54-00.JPG

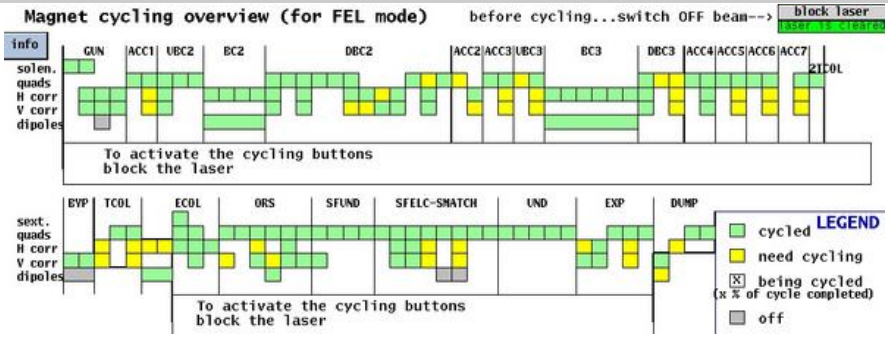
04.02.2011	12:22	ttflinac	**ttflinac@:BAM_Operator_main**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T12:22:56-00.JPG

04.02.2011 12:23

04.02.2011 12:24 ttflinac **ttflinac@:magnet_cycle_overview_fel**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T12:24:50-00.JPG

04.02.2011 12:24 ttflinac **SASE tuning parameters**

Misc. parameters

```
Energy / Wavelength: 1000.24 MeV / 6.3 nm
Charge:              1.14 nC
Main solenoid:       -300.3 A
Bucking coil:        +32.0 A
Dipoles BC2/BC3:     +73.1 A / +56.0 A
```

RF parameters

	GUN	ACC1	ACC39	ACC2/3	ACC4/5	ACC6/7
Power/Gradient	+3.650	+164.00	+19.00	+297.50	+250.00	+297.40
Readback	3.87	164.0	19.0	297.9	250.3	297.7
Phase	-10.00	+2.20	-4.20	-4.00	-8.90	-6.00
on-crest		-1.0		-3.0	-5.0	-0.0
Readback	8.1	2.2	-4.2	-4.0	-8.9	-5.9

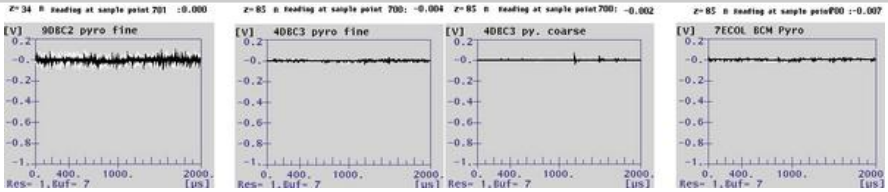
Undulator steerers and aircoils

H7SMATCH	H12SMATCH
+0.344	**-1.667**
V7SMATCH	V12SMATCH
+0.157	**-1.667**

Intra-undulator steerers

H3UND1	H3UND2	H3UND3	H3UND4	H3UND5	H3UND6
-4.40	**-4.50**	**-4.80**	**-4.70**	**-4.80**	**-1.00**

04.02.2011 12:25 ttflinac — ttflinac@:All_BCM



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T12:25:19-00.JPG

04.02.2011 12:27 ttflinac — Main linac parameters

9mA run, 400 bunches, 1.2 nC, no losses

Laser
Number of bunches 400
Bunch frequency ..... 1000 kHz
Macropulse rep'rate .... 10.0 Hz
Pump time_3 ..... 0.0030 ms
Pump current_3 ..... 5.00 V
Pre-amp start time ..... 2.42 ms
Booster start time ..... 2.66 ms
Attenuator SP 5.41
Iris diameter ..... 17280 steps
Iris diameter ..... 1.99 mm

Gun
Feedforward/Feedback ... on/on
FSM ..... on
Pfwd SP 3.65
VS ampl. 18.32
Phase SP ..... -10.00 deg
VS phase ..... 8.08 deg
Pfwd (peak) ..... 3.873 MW
Prefl (peak) ..... 2.881 MW
Pfwd sample point 700
Pfwd (at sample point) . 18.314 MW
Prefl sample point 720
Prefl (at sample point) 6.142 MW
Flat top ..... 440 us
Water temperature SP ... 72.65 deg C
Main solenoid (RBV) .... -300.34 A
Bucking coil (RBV) ..... 32.00 A
Gun dipole (RBV) ..... 0.000 A
Charge 3GUN(T1) ..... 1.15 nC
DC kicker delay ..... 6.80 ms
DC kicker HV ..... not local
DC kicker HV ..... disabled
DC kicker HV ..... off
DC kicker SP ..... 60.00 V
DC kicker start ..... 124.00 ns

ACC1
Feedforward/Feedback ... on/on
Feedback gain 2.0
Pfwd SP 164.00
Pfwd RBV 163.99
Phase SP ..... 2.20 deg
Phase RBV ..... 2.21 deg
Pfwd C1.ACC1 ..... 188.9 kW
Pfwd C5.ACC1 ..... 180.1 kW
Flat top ..... 800 us
Dipole BC2 (RBV) ..... 73.11 A
Pyro 9DBC2.1 ..... -0.0090 V
Radiator 9DBC2 ..... out
Slow phase feedback .... off
Slow ph. FB target/gain -0.400/-0.1
Slow ph. FB pyrodet.used Pyro 9DBC2.1 (fine, old ADC)

ACC39
Feedforward/Feedback ... on/on
Feedback gain 10.0
Pfwd SP 19.00
Phase SP ..... -4.20 deg
Pfwd C1.ACC39 ..... <error>
Flat top ..... 800 us

ACC2/3
Feedforward/Feedback ... on/on
Feedback gain 2.0
Pfwd SP 297.50
Pfwd RBV 297.95
Phase SP ..... -4.00 deg
Phase RBV ..... -4.04 deg
Pfwd C5.ACC2 ..... 125.15 kW
Pfwd C1.ACC3 ..... 217.03 kW
Flat top ..... 450 us
Dipole BC3 (RBV) ..... 56.00 A
Pyro 4DBC3.1 ..... -0.0061 V
Pyro 4DBC3.3 ..... 0.0017 V
Radiator 4DBC3 ..... out

ACC4/5
Feedforward/Feedback ... on/on
Feedback gain 40.0
Pfwd SP 250.00
Pfwd RBV 250.36
Phase SP ..... -8.90 deg
Phase RBV ..... -8.89 deg
Pfwd C1.ACC4 ..... 118.03 kW
Pfwd C2.ACC5 ..... 90.47 kW
Pfwd C1.ACC6 ..... 0.61 kW
Flat top ..... 800 us

ACC6/7
Feedforward/Feedback ... on/on
Feedback gain 50.0
Pfwd SP 297.40
Pfwd RBV 297.69
Phase SP ..... -6.00 deg
Phase RBV ..... -5.98 deg
Pfwd C1.ACC6 ..... 183.86 kW
Pfwd C1.ACC7 ..... 208.59 kW
Flat top ..... 800 us

Bypass
Dipole D1BYP (RBV) ..... 0.00 A
Energy bypass ..... 1211.4 MeV
RF vector sum ALL ..... 686.4 MeV
Charge 16BYP ..... 0.00 nC

Collimator
Dipole D1ECOL (RBV) .... 176.89 A

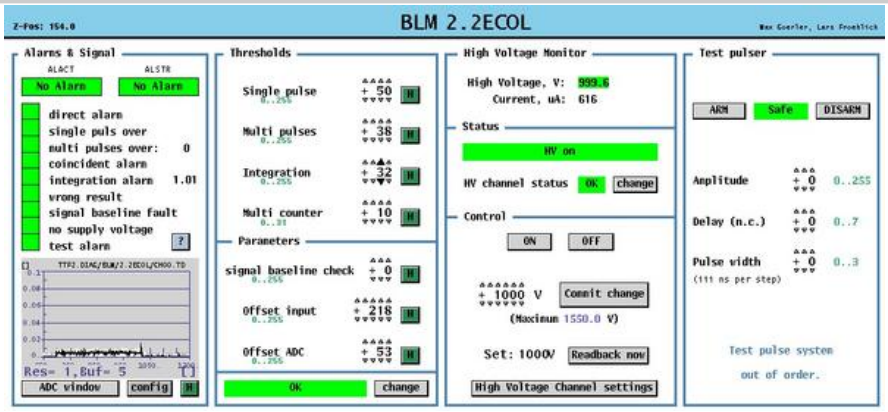
Undulator
1SFUND1 gap RBV ..... 220.0 mm

```
Energy dogleg .......... 1000.2 MeV
Charge 7ORS ............ 1.14 nC

Dump
Dipole D9SMATCH (RBV) .. 0.00 A
Dipole D1DUMP (RBV) .... 0.00 A
Dipole D6DUMP (RBV) .... 213.10 A
Rotator RD13DUMP (RBV) . 9.13 A
Charge 9DUMP ........... 1.04 nC
Photon beamline
Aperture 1 ............. 10 mm
Offset h/v ............. 0/-1 mm
Aperture 2 ............. 10 mm
Offset h/v ............. 1/0 mm

1SFUND2 gap RBV ........ 220.0 mm
1SFUND3 gap RBV ........ 220.0 mm
1SFUND4 gap RBV ........ 180.0 mm
Feedbacks
Charge feedback gain ... <error>
Charge feedback SP ..... <error>
PTO feedback ........... on
```

```
Status saved in machine file 2011-02-04T12_27_03+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-04T122703
```

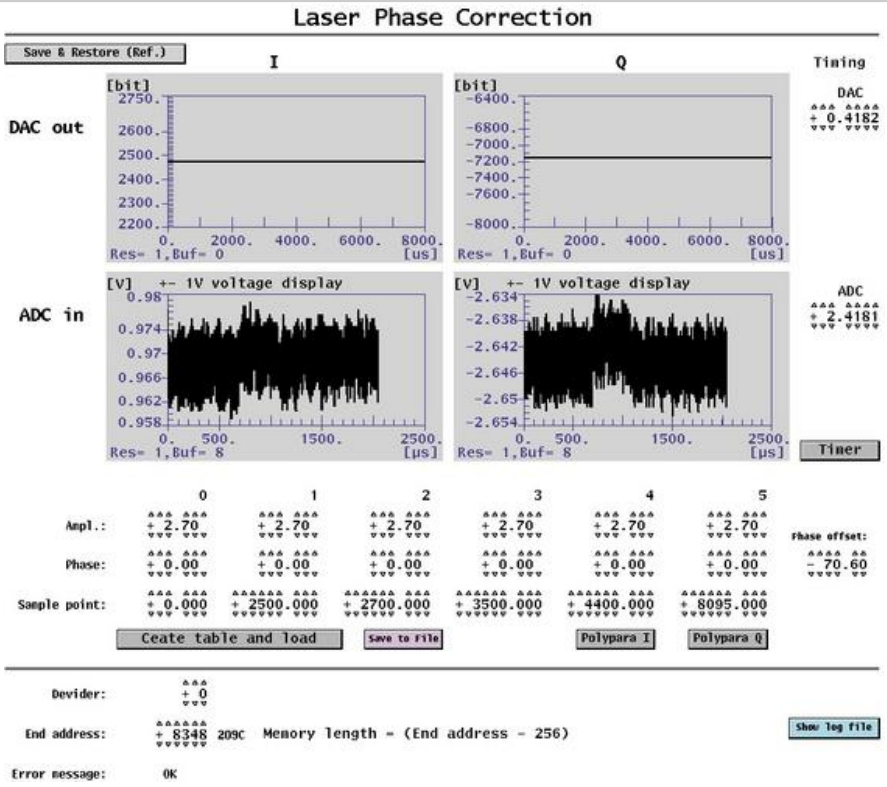
```
also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110204T122703.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110204T122703.sr
from computer: flashbkr3.desy.de
```

04.02.2011 12:45 ttflinac **ttflinac@:blm_control**



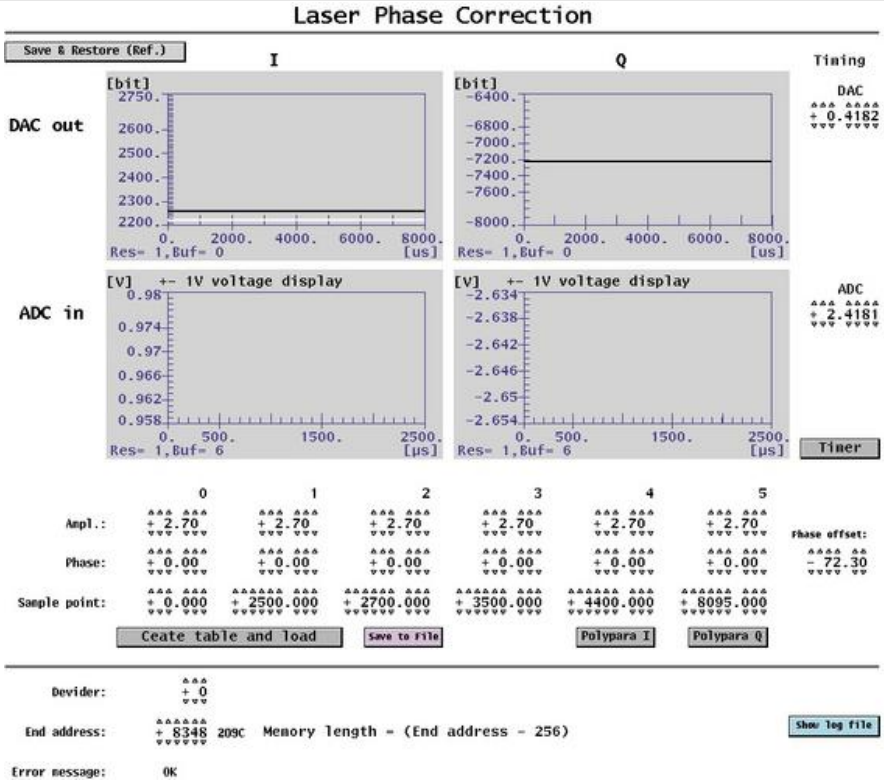
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T12:45:15-00.JPG

04.02.2011 13:02 ttflinac **ttflinac@:laser_phase_contr**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T13:02:45-00.JPG

04.02.2011 13:04 ttflinac **ttflinac@:laser_phase_contr**



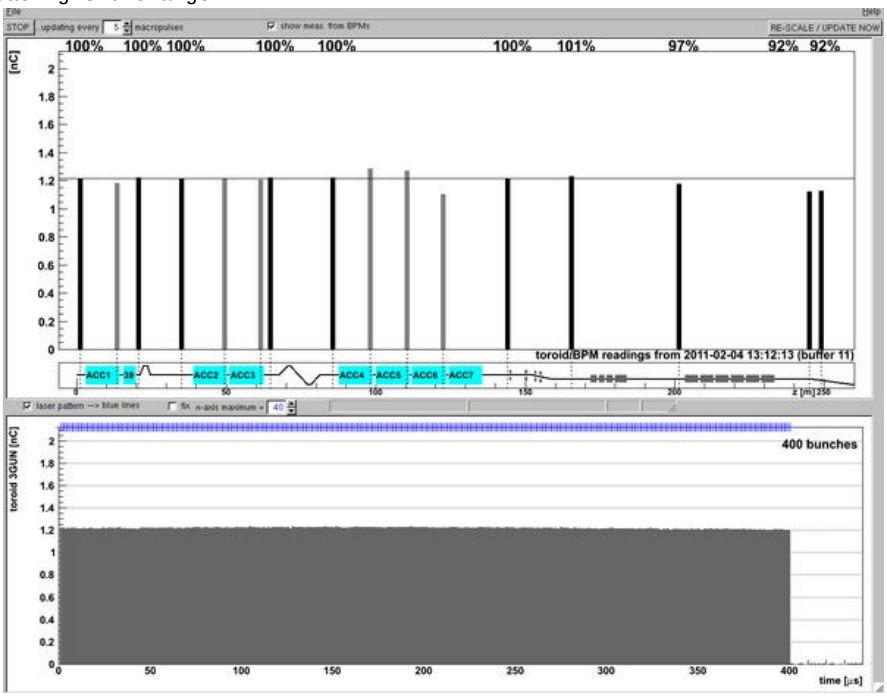
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T13:04:15-00.JPG

04.02.2011 13:06 M. Staack **BIS program update**

I modified the BIS plc program: Slice alarm of FEL-TPS 3GUN-12EXP will be masked by default.

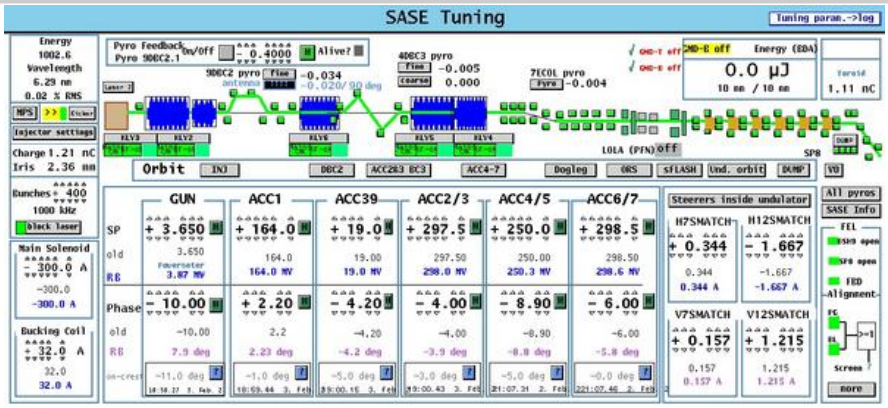
04.02.2011 13:12 klose **toroid charge readings: Start Docu Status**

Increasing the charge is limited by the integrated loss (2UBC2 - 9DUMP). We will go to 300 bunches and go on increasing the charge.



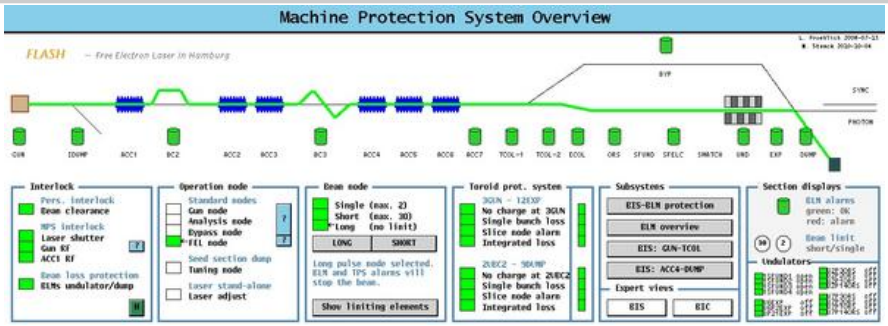
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T13:12:34-00.ps

04.02.2011 13:12 ttflinac **ttflinac@:SASE_tuning**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T13:12:59-00.JPG

04.02.2011 13:13 ttflinac **ttflinac@:MPS_overview**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T13:13:07-00.JPG

04.02.2011 13:14 Klose **main linac parameters**

400 bunches, low losses, 1.2 nC

Laser

```
Number of bunches ...... 400
Bunch frequency ........ 1000 kHz
Macropulse rep'rate .... 10.0 Hz
Pump time_3 ........... 0.0030 ms
Pump current_3 ......... 5.00 V
Pre-amp start time ..... 2.42 ms
Booster start time ..... 2.66 ms
Attenuator SP .......... 5.35
Iris diameter .......... 17088 steps
Iris diameter .......... 2.36 mm
```

Gun

```
Feedforward/Feedback ... on/on
FSM .................... on
Pfwd SP ................ 3.65
VS ampl. ............... 18.33
Phase SP ............... -10.00 deg
VS phase ............... 7.89 deg
Pfwd (peak) ............ 3.866 MW
Prefl (peak) ........... 2.875 MW
Pfwd sample point ...... 700
Pfwd (at sample point) . 18.324 MW
Prefl sample point ..... 720
Prefl (at sample point)  6.124 MW
Flat top ............... 440 us
Water temperature SP ... 72.65 deg C
Main solenoid (RBV) .... -300.04 A
Bucking coil (RBV) ..... 32.00 A
Gun dipole (RBV) ....... 0.000 A
Charge 3GUN(T1) ........ 1.22 nC
DC kicker delay ........ 6.80 ms
DC kicker HV ........... not local
DC kicker HV ........... disabled
DC kicker HV ........... off
DC kicker SP ........... 60.00 V
DC kicker start ........ 124.00 ns
```

ACC1

```
Feedforward/Feedback ... on/on
Feedback gain .......... 2.0
Pfwd SP ................ 164.00
Pfwd RBV ............... 164.01
Phase SP ............... 2.20 deg
Phase RBV .............. 2.23 deg
Pfwd C1.ACC1 ........... 189.1 kW
Pfwd C5.ACC1 ........... 180.1 kW
Flat top ............... 800 us
Dipole BC2 (RBV) ....... 73.11 A
Pyro 9DBC2.1 ........... -0.0188 V
Radiator 9DBC2 ......... out
Slow phase feedback .... off
```

ACC39

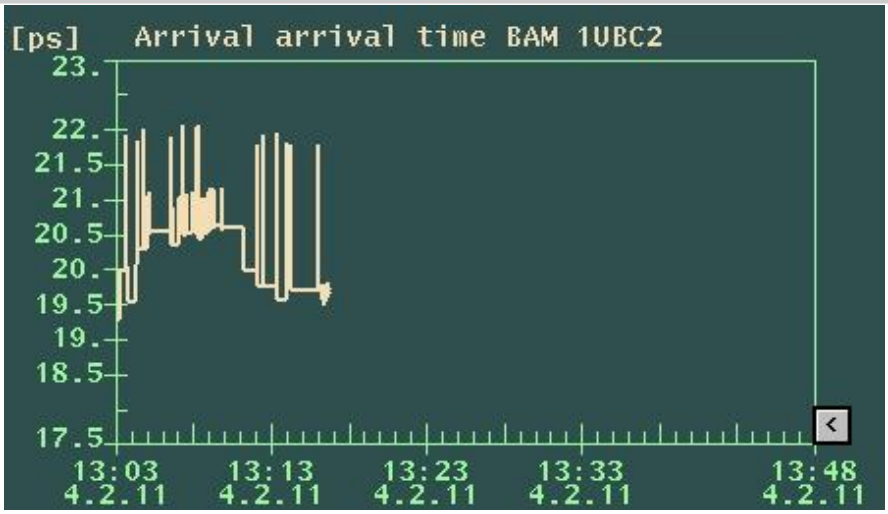
```
Feedforward/Feedback ... on/on
Feedback gain .......... 10.0
Pfwd SP ................ 19.00
Phase SP ............... -4.20 deg
Pfwd C1.ACC39 .......... <error>
Flat top ............... 800 us
```

```
Slow ph. FB target/gain  -0.400/-0.1
Slow ph. FB pyrodet.used Pyro 9DBC2.1 (fine, old ADC)
ACC2/3                                  ACC4/5
Feedforward/Feedback ... on/on          Feedforward/Feedback ... on/on
Feedback gain .......... 2.0            Feedback gain .......... 40.0
Pfwd SP ............... 297.50         Pfwd SP ............... 250.00
Pfwd RBV .............. 297.82         Pfwd RBV .............. 250.31
Phase SP .............. -4.00 deg      Phase SP .............. -8.90 deg
Phase RBV ............. -4.04 deg      Phase RBV ............. -8.92 deg
Pfwd C5.ACC2 .......... 124.93 kW       Pfwd C1.ACC4 .......... 118.26 kW
Pfwd C1.ACC3 .......... 217.25 kW       Pfwd C2.ACC5 .......... 90.26 kW
Flat top .............. 450 us         Pfwd C1.ACC6 .......... 0.00 kW
Dipole BC3 (RBV) ...... 56.00 A         Flat top .............. 800 us
Pyro 4DBC3.1 .......... -0.0042 V
Pyro 4DBC3.3 .......... 0.0020 V
Radiator 4DBC3 ........ out
ACC6/7                                  Bypass
Feedforward/Feedback ... on/on          Dipole D1BYP (RBV) ..... 0.00 A
Feedback gain .......... 50.0           Energy bypass .......... 1211.4 MeV
Pfwd SP ............... 298.50         RF vector sum ALL ...... 686.3 MeV
Pfwd RBV .............. 298.58         Charge 16BYP ........... -0.00 nC
Phase SP .............. -6.00 deg
Phase RBV ............. -5.96 deg
Pfwd C1.ACC6 .......... 184.74 kW
Pfwd C1.ACC7 .......... 207.72 kW
Flat top .............. 800 us
Collimator                              Undulator
Dipole D1ECOL (RBV) .... 176.89 A       1SFUND1 gap RBV ........ 220.0 mm
Energy dogleg .......... 1001.5 MeV     1SFUND2 gap RBV ........ 220.0 mm
Charge 7ORS ........... 1.22 nC         1SFUND3 gap RBV ........ 220.0 mm
                                        1SFUND4 gap RBV ........ 180.0 mm
Dump                                    Feedbacks
Dipole D9SMATCH (RBV) .. 0.00 A         Charge feedback gain ... <error>
Dipole D1DUMP (RBV) .... 0.00 A         Charge feedback SP ..... <error>
Dipole D6DUMP (RBV) .... 213.10 A       PTO feedback ........... on
Rotator RD13DUMP (RBV) . 9.13 A
Charge 9DUMP ........... 1.12 nC
Photon beamline
Aperture 1 ............ 10 mm
Offset h/v ............ 0/-1 mm
Aperture 2 ............ 10 mm
Offset h/v ............ 1/0 mm
```

```
Status saved in machine file 2011-02-04T13_13_51+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-04T131351
```

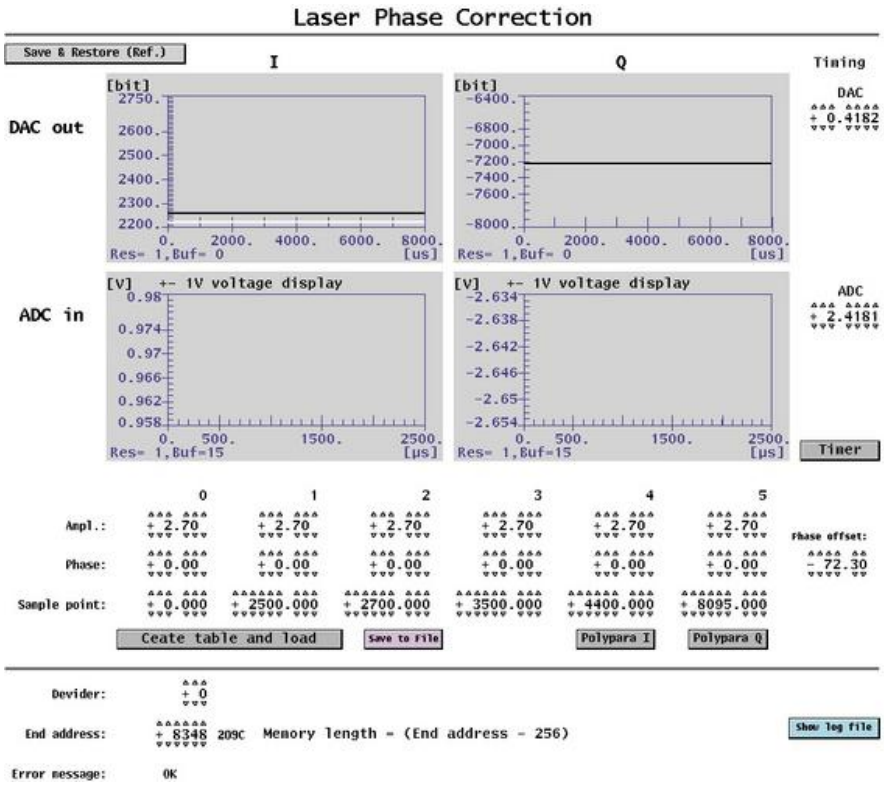
```
also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110204T131351.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110204T131351.sr
from computer: flashbkr4.desy.de
```

04.02.2011	13:16	ttflinac	**ttflinac@:Plot_hist**



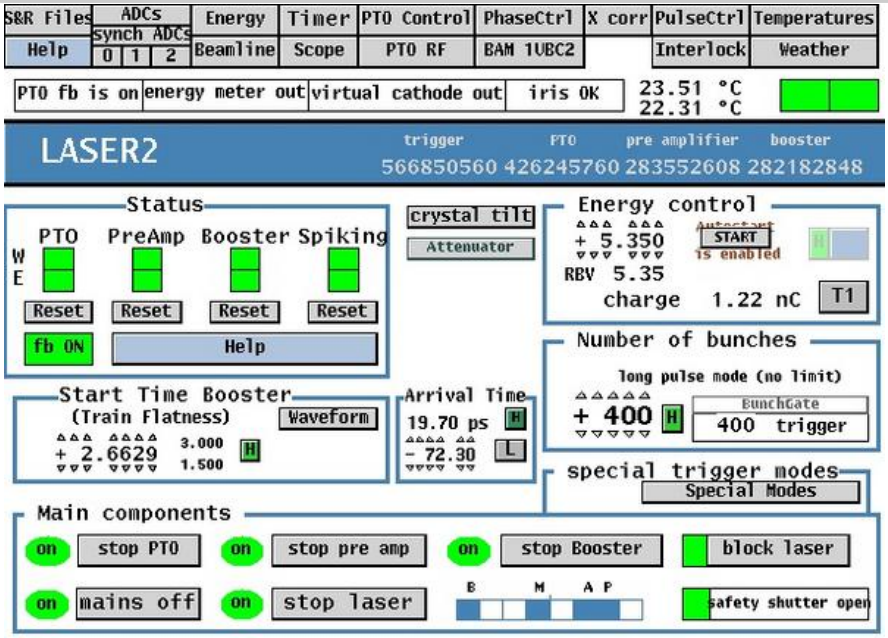
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T13:16:59-00.JPG

04.02.2011	13:17	ttflinac	**ttflinac@:laser_phase_contr**



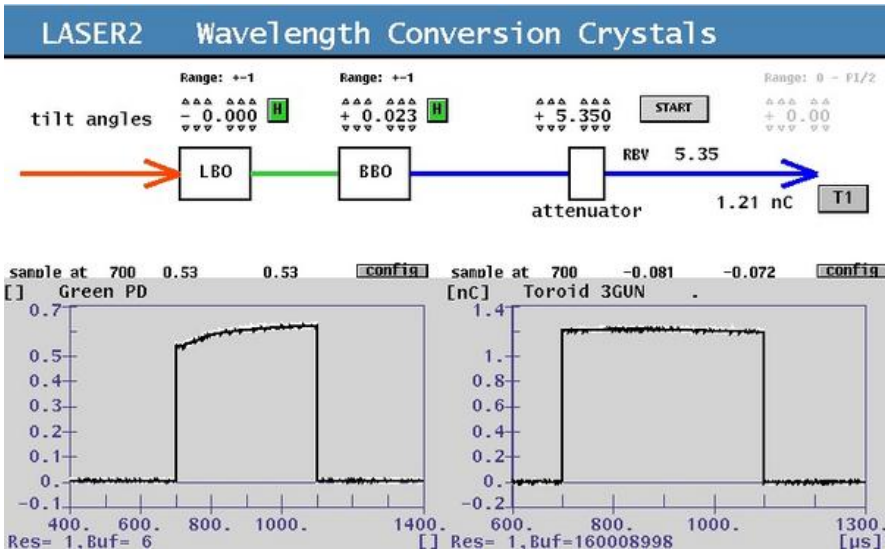
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T13:17:06-00.JPG

04.02.2011 13:17 ttflinac **ttflinac@:laser2_control**



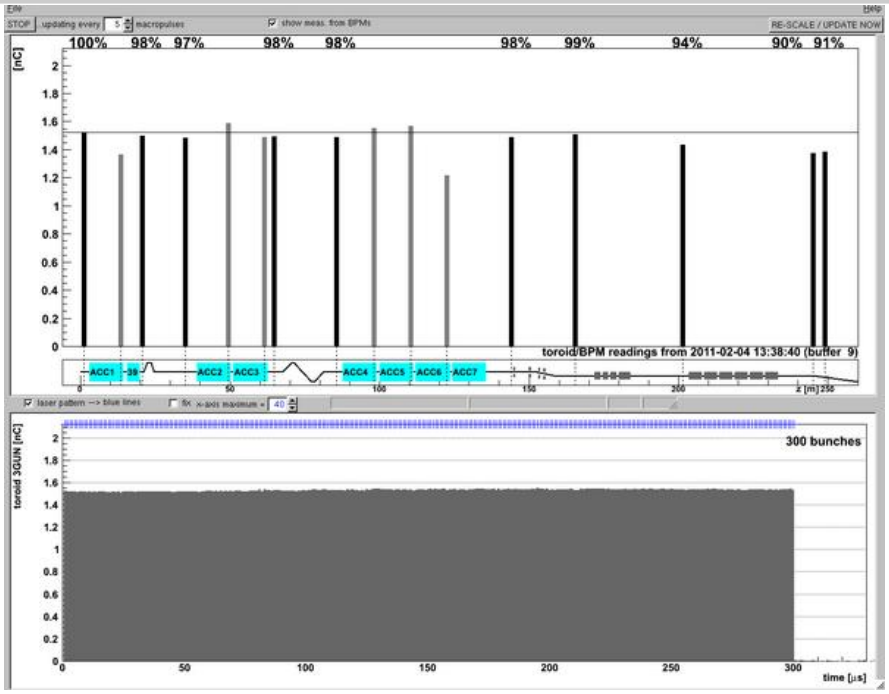
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T13:17:15-00.JPG

04.02.2011 13:17 klose **End Docu Status**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T13:17:32-00.JPG

04.02.2011	13:39	klose	**toroid charge readings. 300 bunches, 1.5nC**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/04.02_M/2011-02-04T13:39:03-00.ps