? 05.02.2011 15:03 oracle **Shift summary**

05.02.2011 15:07 ttflinac **SASE tuning parameters**

Misc. parameters

```
Energy / Wavelength: 1003.17 MeV / 6.3 nm
Charge:              -0.00 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	+298.50
Readback	3.90	164.0	19.0	297.8	250.2	298.9
Phase	-10.00	+2.20	-4.20	-4.00	-8.90	-6.00
on-crest		-1.0		-3.0	-5.0	-0.0
Readback	6.5	2.2	-4.2	-4.0	-8.9	-6.3

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**

05.02.2011 15:07 ttflinac **Main linac parameters**

shift documentation

Laser

```
Number of bunches ...... 0
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 .......... 5.29
Iris diameter .......... 17184 steps
Iris diameter .......... 2.17 mm
```

Gun

```
Feedforward/Feedback ... on/on
FSM .................... on
Pfwd SP ................ 3.65
VS ampl. ............... 18.38
Phase SP ............... -10.00 deg
VS phase ............... 6.47 deg
Pfwd (peak) ............ 3.903 MW
Prefl (peak) ........... 2.924 MW
Pfwd sample point ...... 700
Pfwd (at sample point) . 18.378 MW
Prefl sample point ..... 720
Prefl (at sample point)  5.624 MW
Flat top ............... 460 us
Water temperature SP ... 72.75 deg C
Main solenoid (RBV) .... -300.04 A
Bucking coil (RBV) ..... 32.00 A
Gun dipole (RBV) ....... 0.000 A
Charge 3GUN(T1) ........ 0.00 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 ............... 164.00
Phase SP ............... 2.20 deg
Phase RBV .............. 2.24 deg
Pfwd C1.ACC1 ........... 188.2 kW
Pfwd C5.ACC1 ........... 179.4 kW
Flat top ............... 800 us
Dipole BC2 (RBV) ....... 73.11 A
Pyro 9DBC2.1 ........... -0.0087 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 ............... 297.97
Phase SP ............... -4.00 deg
Phase RBV .............. -4.07 deg
```

ACC4/5

```
Feedforward/Feedback ... on/on
Feedback gain .......... 40.0
Pfwd SP ................ 250.00
Pfwd RBV ............... 250.14
Phase SP ............... -8.90 deg
Phase RBV .............. -8.95 deg
```

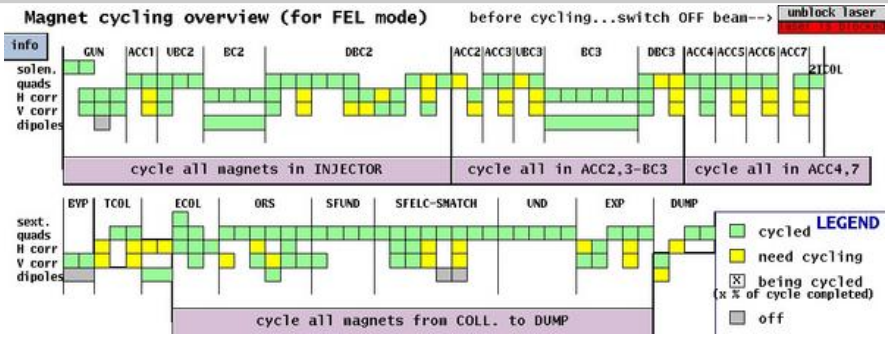
```
Pfwd C5.ACC2 ........... 125.15 kW
Pfwd C1.ACC3 ........... 217.91 kW
Flat top ............... 450 us
Dipole BC3 (RBV) ....... 56.00 A
Pyro 4DBC3.1 ........... -0.0007 V
Pyro 4DBC3.3 ........... 0.0017 V
Radiator 4DBC3 ......... out
ACC6/7
Feedforward/Feedback ... on/off
Feedback gain .......... 50.0
Pfwd SP ................ 298.50
Pfwd RBV ............... 299.14
Phase SP ............... -6.00 deg
Phase RBV .............. -6.28 deg
Pfwd C1.ACC6 ........... 154.55 kW
Pfwd C1.ACC7 ........... 173.85 kW
Flat top ............... 800 us
Collimator
Dipole D1ECOL (RBV) .... 176.89 A
Energy dogleg .......... 1003.2 MeV
Charge 7ORS ............ -0.01 nC

Dump
Dipole D9SMATCH (RBV) .. 0.00 A
Dipole D1DUMP (RBV) .... 0.00 A
Dipole D6DUMP (RBV) .... 213.09 A
Rotator RD13DUMP (RBV) . 9.13 A
Charge 9DUMP ........... -0.00 nC
Photon beamline
Aperture 1 ............ 10 mm
Offset h/v ............ 0/-1 mm
Aperture 2 ............ 10 mm
Offset h/v ............ 1/0 mm
```

```
Pfwd C1.ACC4 ........... 115.90 kW
Pfwd C2.ACC5 ........... 90.47 kW
Pfwd C1.ACC6 ........... 0.00 kW
Flat top ............... 800 us

Bypass
Dipole D1BYP (RBV) ..... 0.00 A
Energy bypass .......... 1211.4 MeV
RF vector sum ALL ...... 686.5 MeV
Charge 16BYP ........... -0.00 nC

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 2011-02-05T15_06_58+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-05T150658
```

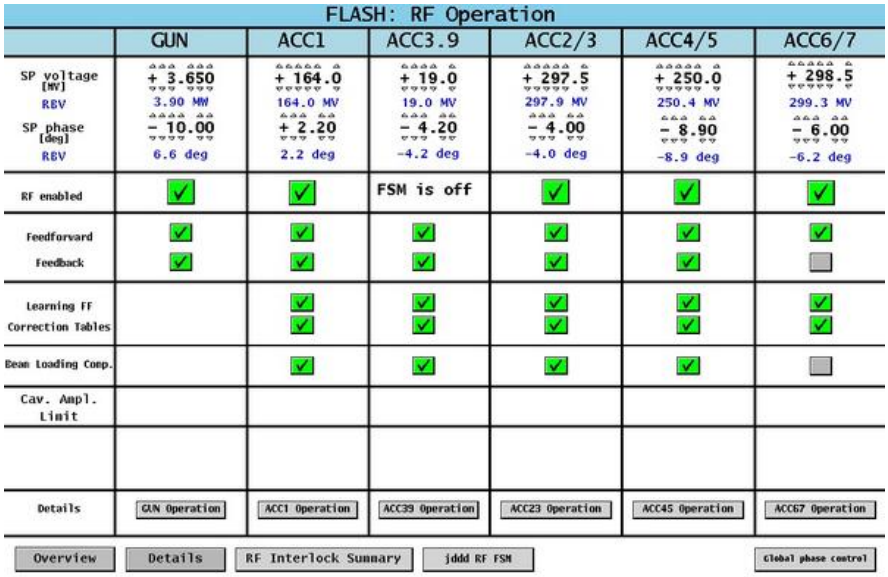
```
also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110205T150658.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110205T150658.sr
from computer: flashbkr2.desy.de
```

05.02.2011 15:07 ttflinac **ttflinac@:magnet_cycle_overview_fel**



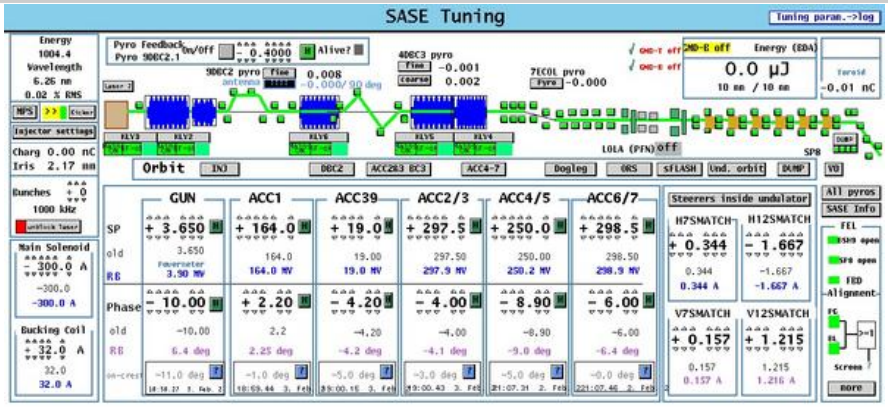
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:07:49-00.JPG

05.02.2011 15:08 ttflinac **ttflinac@:RF_OPERATION**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:08:14-00.JPG

05.02.2011 15:09 ttflinac **ttflinac@:SASE_tuning**

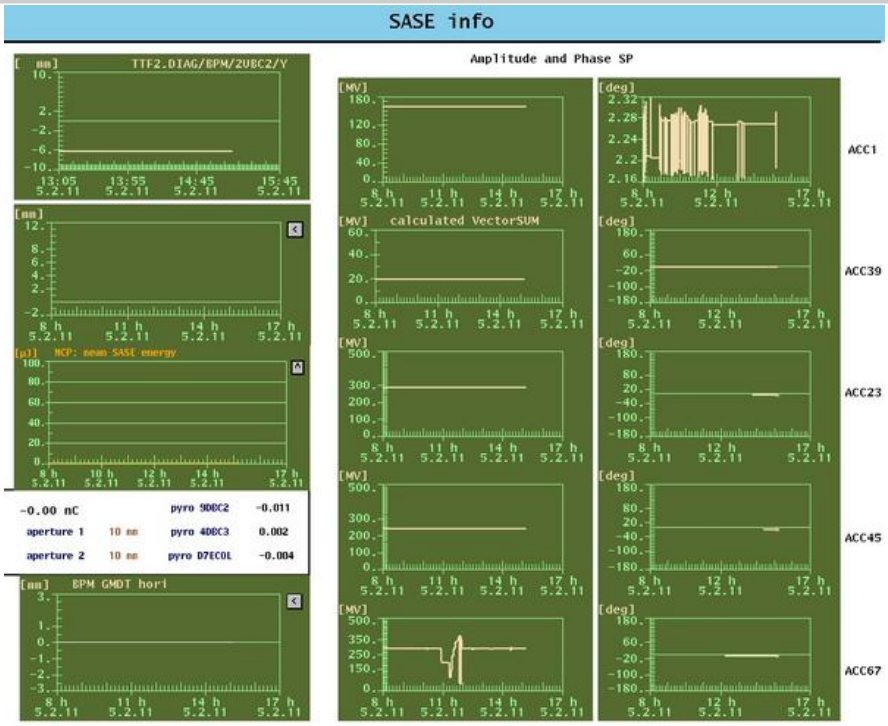


File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:09:00-00.JPG

05.02.2011 15:09 ttflinac **ttflinac@:dose_und**

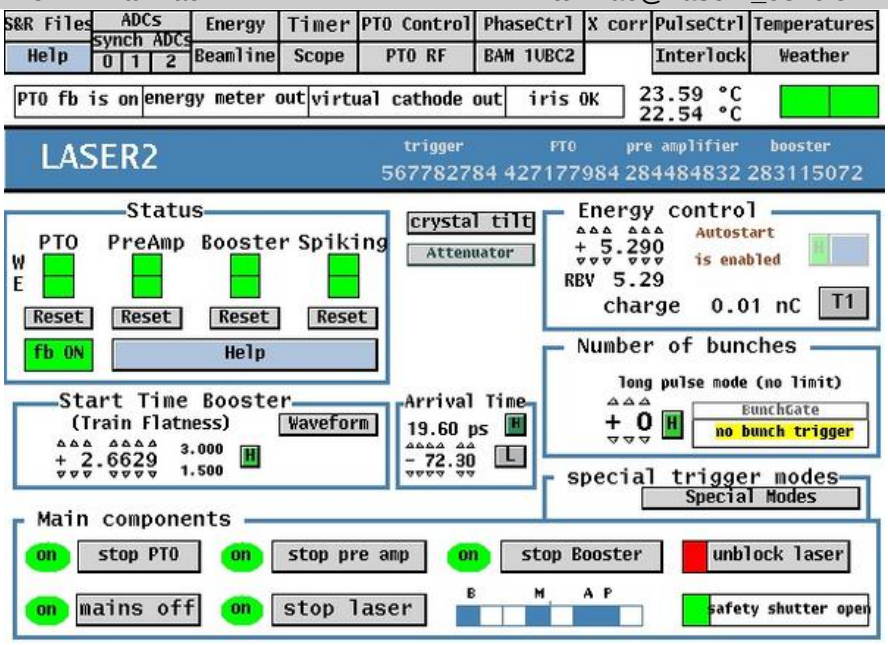
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:09:27-00.JPG

05.02.2011 15:11 ttflinac **ttflinac@:SASE_info**



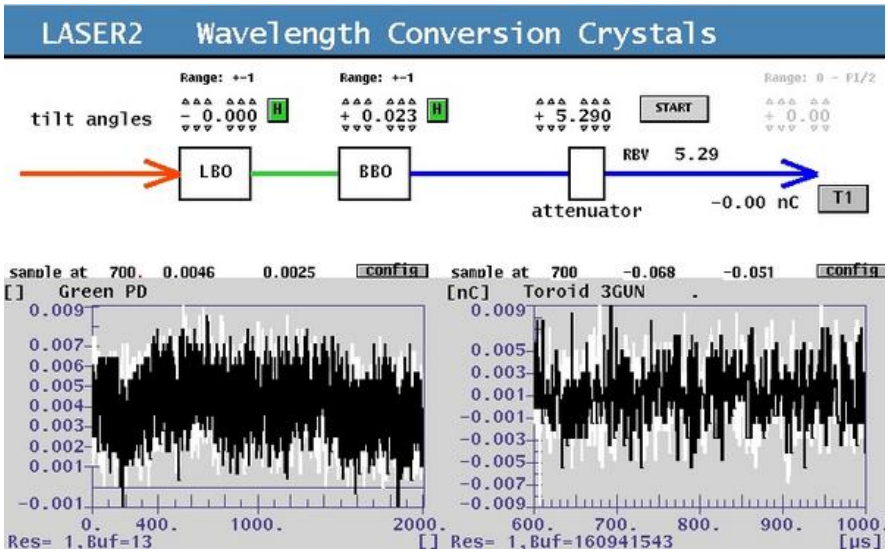
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:11:22-00.JPG

05.02.2011 15:11 ttflinac **ttflinac@:laser2_control**



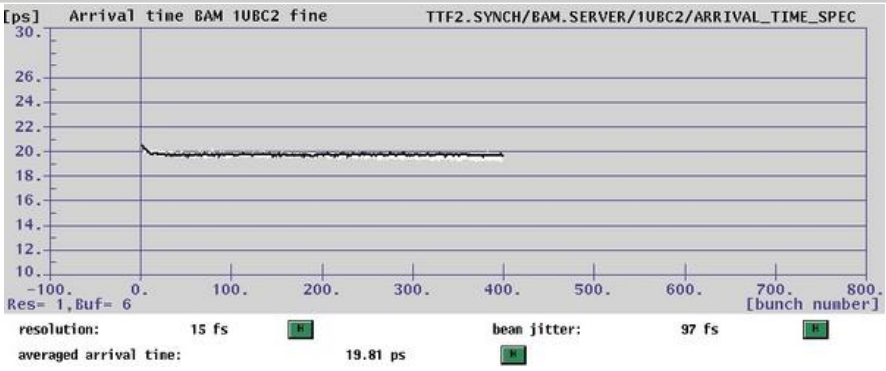
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:11:44-00.JPG

05.02.2011 15:11 ttflinac **ttflinac@:laser_crystal_tuning**



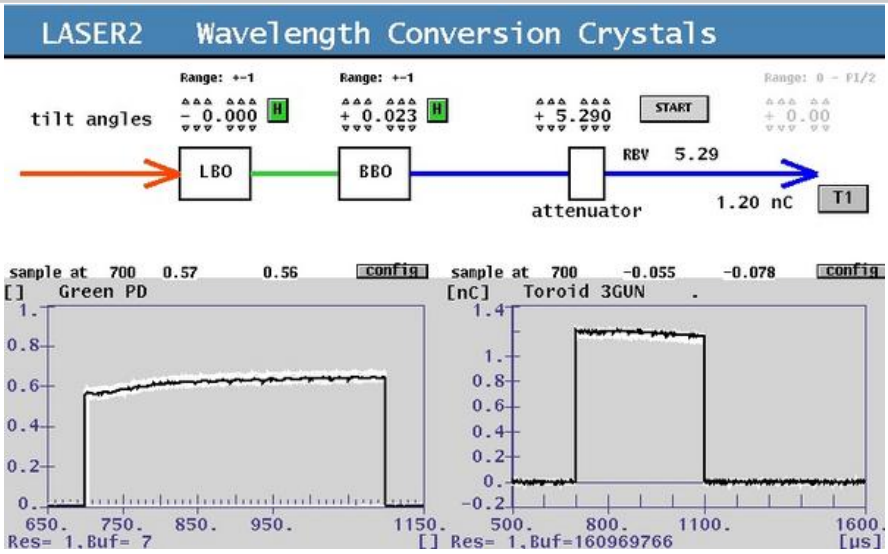
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:11:57-00.JPG

05.02.2011 15:58 ttflinac **ttflinac@:BAM_server_simple**



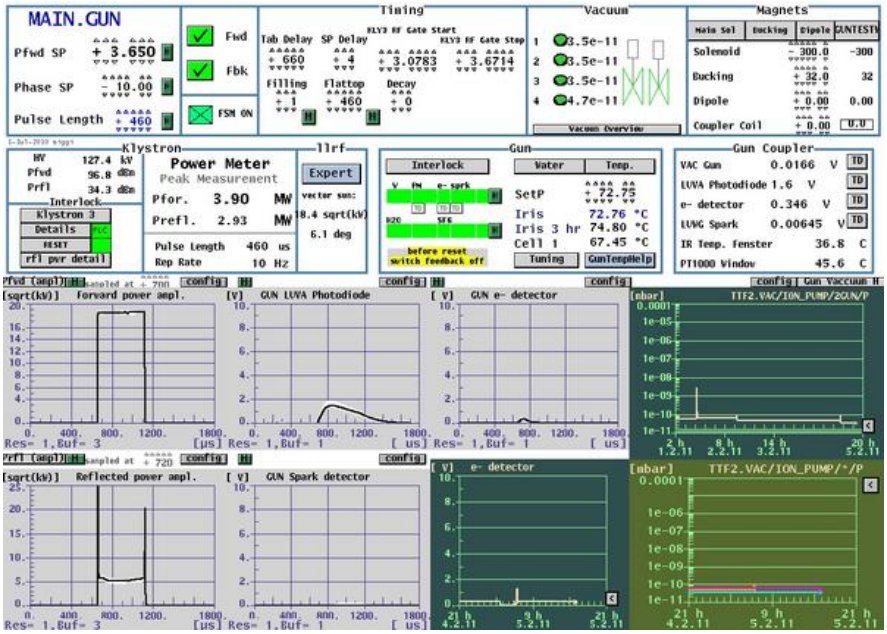
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:58:55-00.JPG

05.02.2011 15:59 ttflinac **ttflinac@:laser_crystal_tuning**



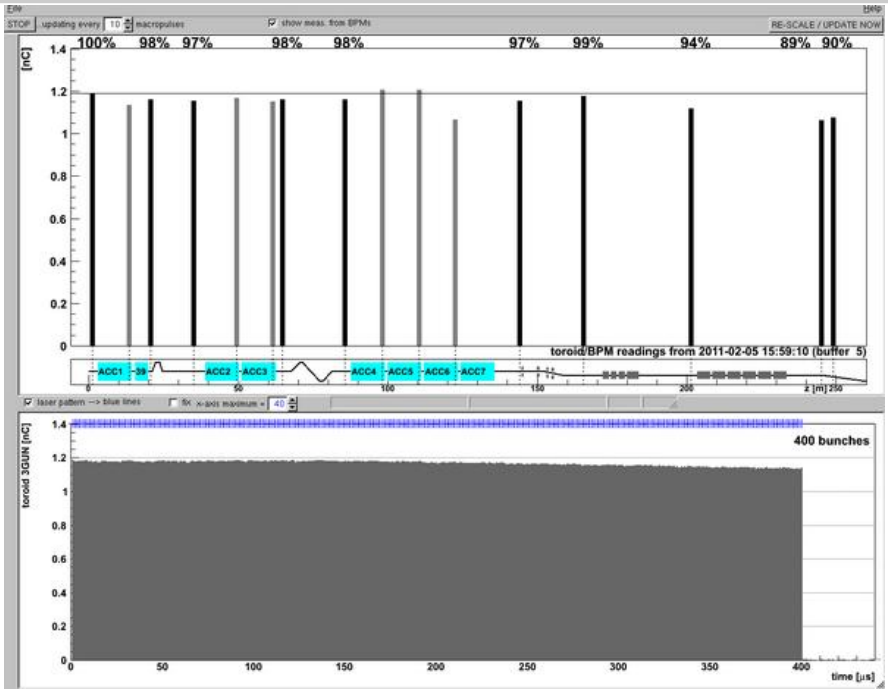
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:59:01-00.JPG

05.02.2011 15:59 ttflinac **ttflinac@:gun_conditioning**



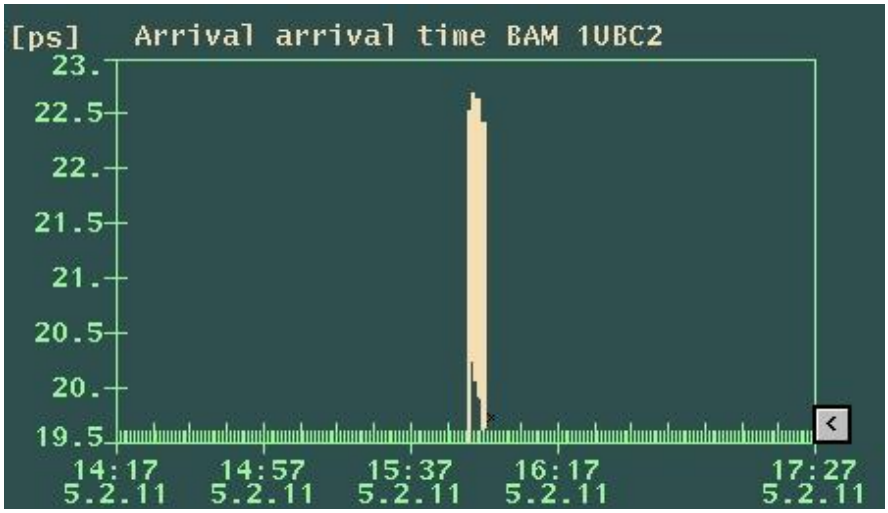
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:59:08-00.JPG

05.02.2011 15:59 ttflinac **toroid charge readings**



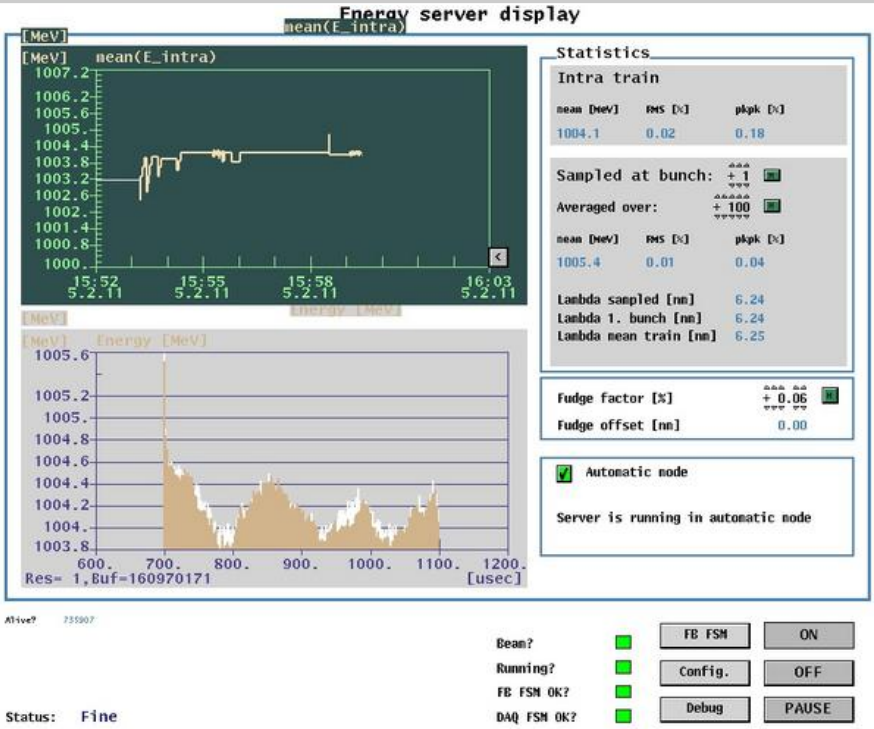
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:59:27-00.ps

05.02.2011 15:59 ttflinac **ttflinac@:Plot_hist**



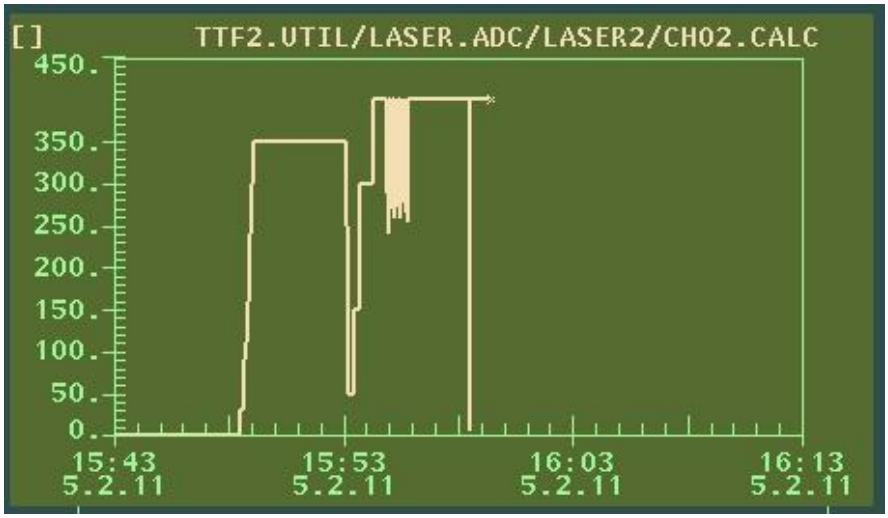
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:59:52-00.JPG

05.02.2011	15:59	ttflinac	**ttflinac@:Energyfbm_display**



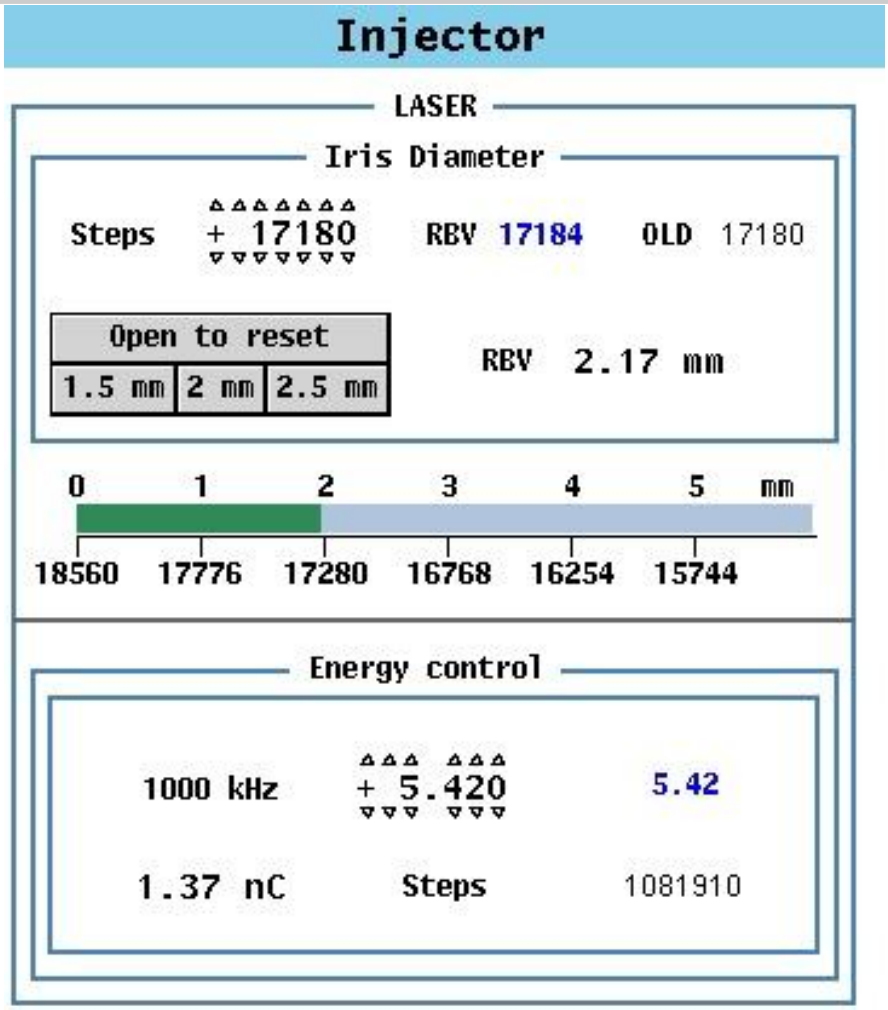
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T15:59:58-00.JPG

05.02.2011	16:00	ttflinac	**ttflinac@:Plot_hist**



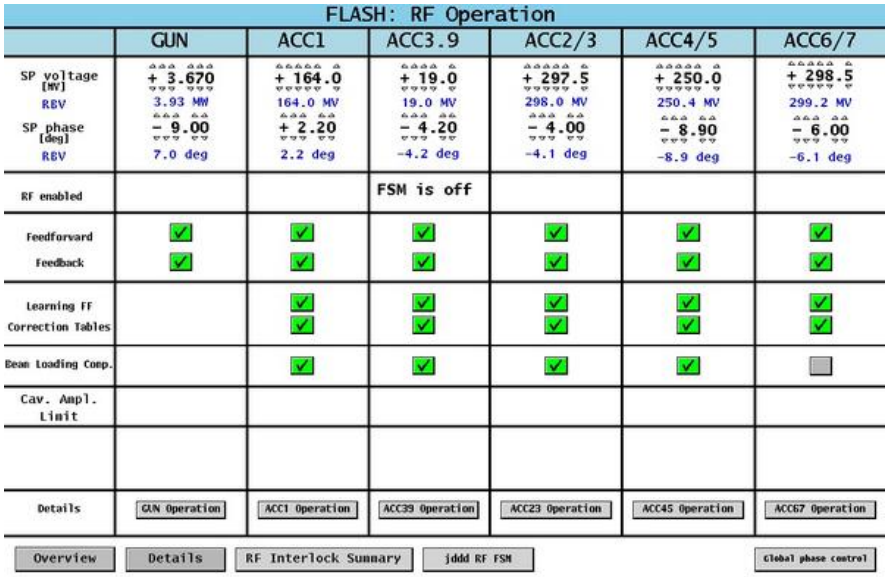
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T16:00:07-00.JPG

05.02.2011 16:04 ttflinac **ttflinac@:SASE_tuning_inj**



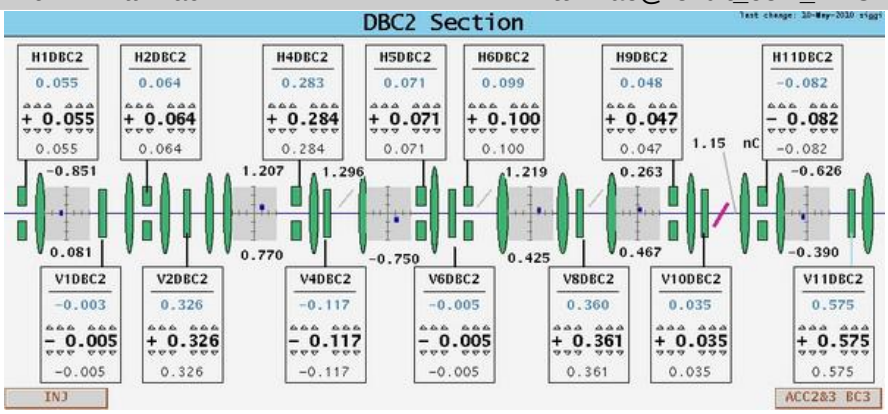
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T16:04:52-00.JPG

05.02.2011 16:11 ttflinac **ttflinac@:RF_OPERATION**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T16:11:34-00.JPG

05.02.2011	16:24	ttflinac	**ttflinac@:orbit_corr_DBC2**



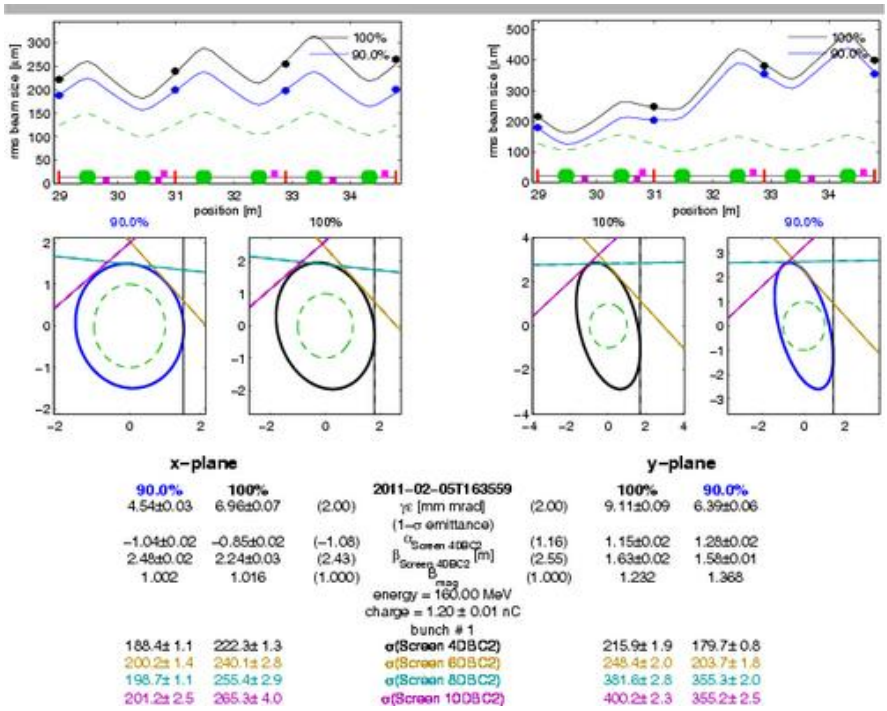
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T16:24:59-00.JPG

05.02.2011	16:41	S. Schreiber, M. Vogt, K. Klose, P. Hopf	**goal: beam with 2 nC**

```
just cranking up the charge worked until 1.4 nC
now we do matching in the injector
```

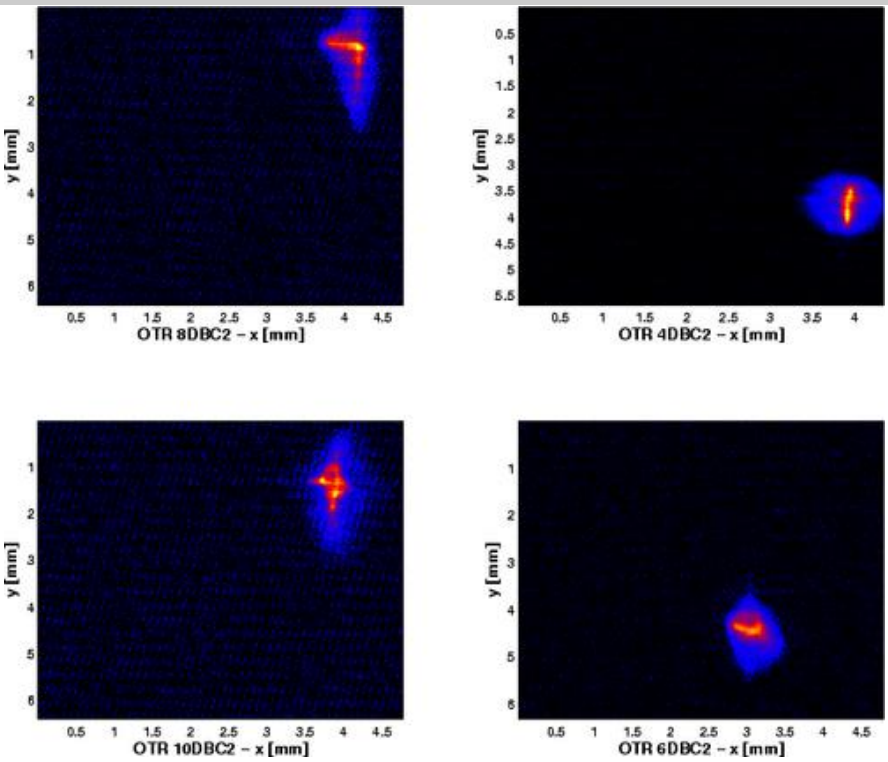
05.02.2011	16:45	ttflinac	**injector matching (done for .5nC ~4weeks ago) measured with 1.2nC**

```
(iris 2.17mm)
```



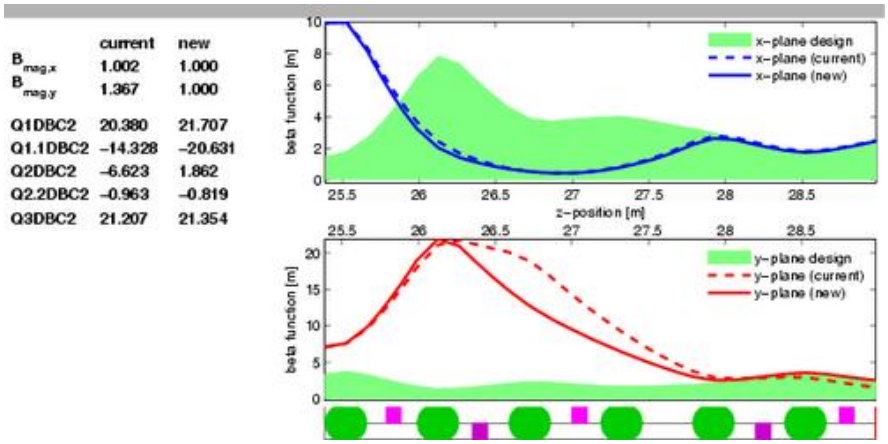
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T16:45:16-00.ps

05.02.2011 16:48 ttflinac **... the actual measurements....**



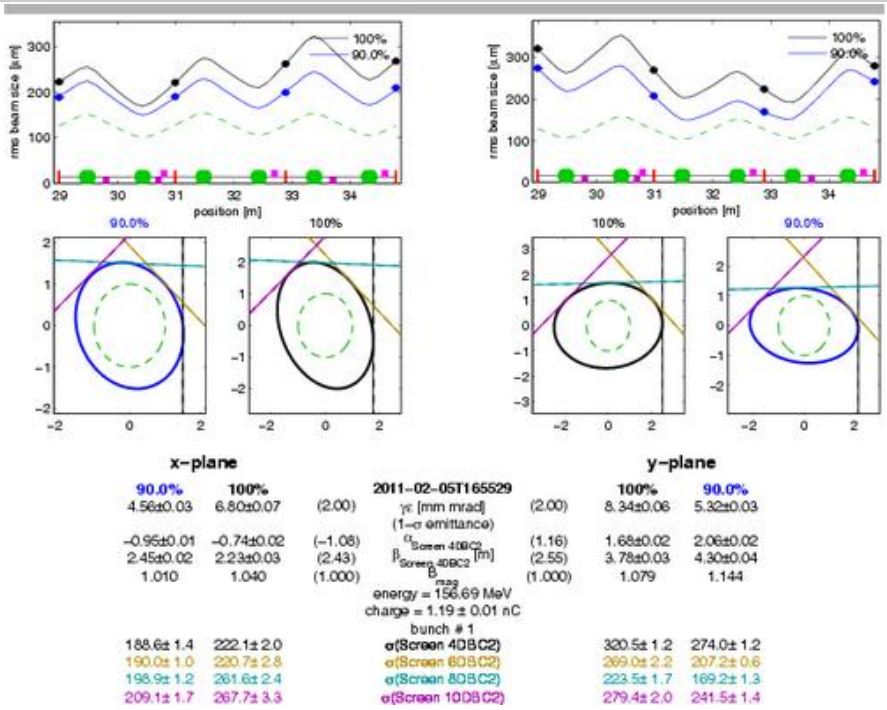
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T16:55:14-00.ps

05.02.2011 16:49 ttflinac **injector rematch for 1.2nC / first attempt**



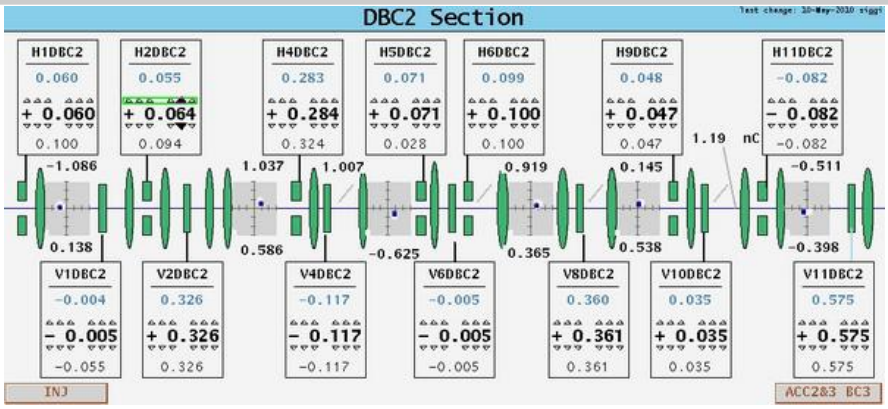
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T16:49:11-00.ps

05.02.2011 17:06 ttflinac **verification of rematch at 1.2nC : not too bad !**



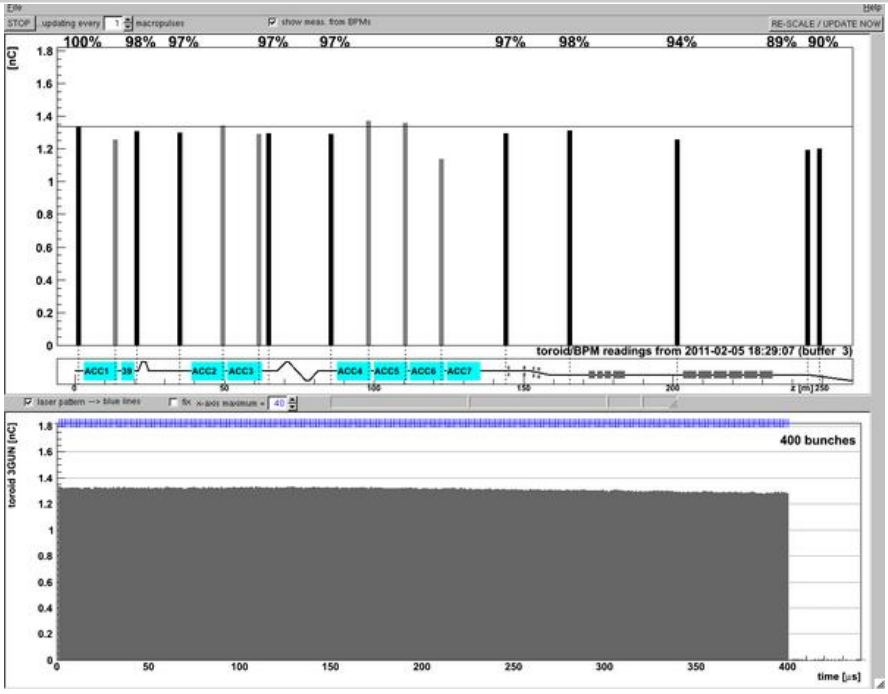
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T17:06:38-00.ps

05.02.2011 17:57 ttflinac **ttflinac@:orbit_corr_DBC2**



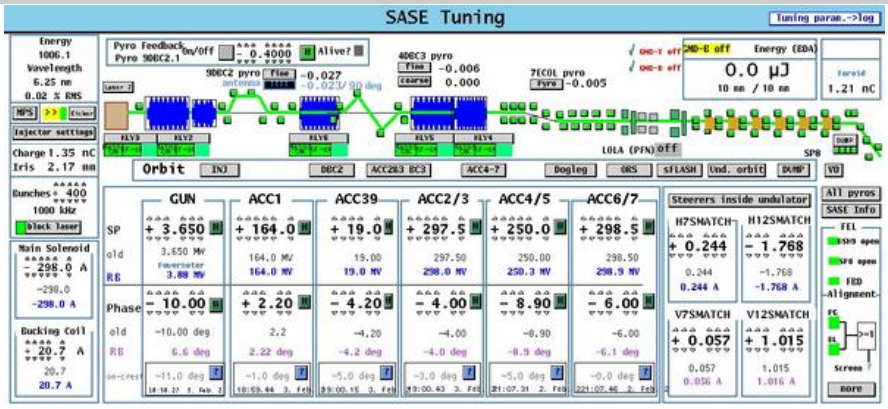
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T17:57:40-00.JPG

05.02.2011 18:29 ttflinac **toroid charge readings**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:29:35-00.ps

05.02.2011 18:30 ttflinac **ttflinac@:SASE_tuning**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:29:27-00.JPG

05.02.2011 18:31 ttflinac **Main linac parameters**

MED-SHARP-1200 injector rematched for 1.2nC /400 bunches

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 5.40
Iris diameter ..... 17184 steps
Iris diameter ..... 2.17 mm

Gun

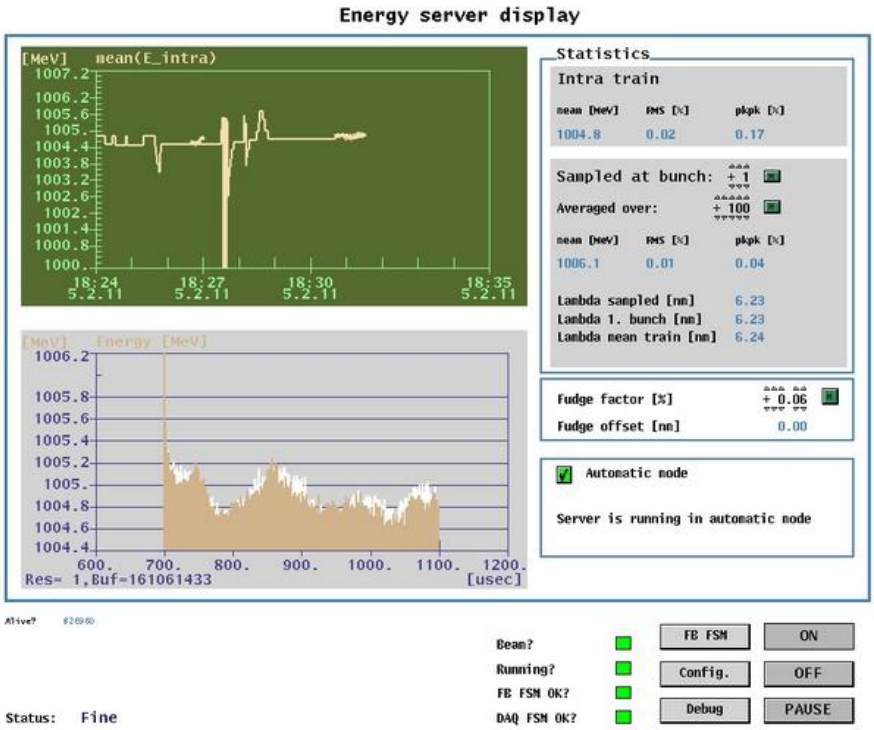
Feedforward/Feedback ... on/on
FSM ..... on
Pfwd SP 3.65
VS ampl. 18.37
Phase SP ..... -10.00 deg
VS phase ..... 6.63 deg
Pfwd (peak) ..... 3.886 MW
Prefl (peak) ..... 2.931 MW
Pfwd sample point 700
Pfwd (at sample point) . 18.383 MW
Prefl sample point 720
Prefl (at sample point) 5.641 MW
Flat top ..... 460 us
Water temperature SP ... 72.75 deg C
Main solenoid (RBV) .... -298.04 A
Bucking coil (RBV) ..... 20.70 A
Gun dipole (RBV) ..... 0.000 A
Charge 3GUN(T1) ..... 1.34 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 ............... 164.02                Phase SP ............... -4.20 deg
Phase SP ............... 2.20 deg              Pfwd C1.ACC39 .......... <error>
Phase RBV .............. 2.25 deg              Flat top ............... 800 us
Pfwd C1.ACC1 ........... 187.1 kW
Pfwd C5.ACC1 ........... 179.0 kW
Flat top ............... 800 us
Dipole BC2 (RBV) ....... 73.11 A
Pyro 9DBC2.1 ........... -0.0359 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 ............... 297.85                Pfwd RBV ............... 250.31
Phase SP ............... -4.00 deg             Phase SP ............... -8.90 deg
Phase RBV .............. -4.07 deg             Phase RBV .............. -8.85 deg
Pfwd C5.ACC2 ........... 125.36 kW             Pfwd C1.ACC4 ........... 115.67 kW
Pfwd C1.ACC3 ........... 217.91 kW             Pfwd C2.ACC5 ........... 90.47 kW
Flat top ............... 450 us                Pfwd C1.ACC6 ........... 0.61 kW
Dipole BC3 (RBV) ....... 56.00 A               Flat top ............... 800 us
Pyro 4DBC3.1 ........... -0.0070 V
Pyro 4DBC3.3 ........... 0.0016 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 ...... 686.5 MeV
Pfwd RBV ............... 298.69                Charge 16BYP ........... -0.00 nC
Phase SP ............... -6.00 deg
Phase RBV .............. -6.00 deg
Pfwd C1.ACC6 ........... 187.80 kW
Pfwd C1.ACC7 ........... 216.62 kW
Flat top ............... 800 us
Collimator                                      Undulator
Dipole D1ECOL (RBV) .... 176.89 A               1SFUND1 gap RBV ........ 220.0 mm
Energy dogleg .......... 1004.8 MeV             1SFUND2 gap RBV ........ 220.0 mm
Charge 7ORS ............ 1.31 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) .... 213.09 A               PTO feedback ........... on
Rotator RD13DUMP (RBV) . 9.13 A
Charge 9DUMP ........... 1.20 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 2011-02-05T18_31_05+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-05T183105
```

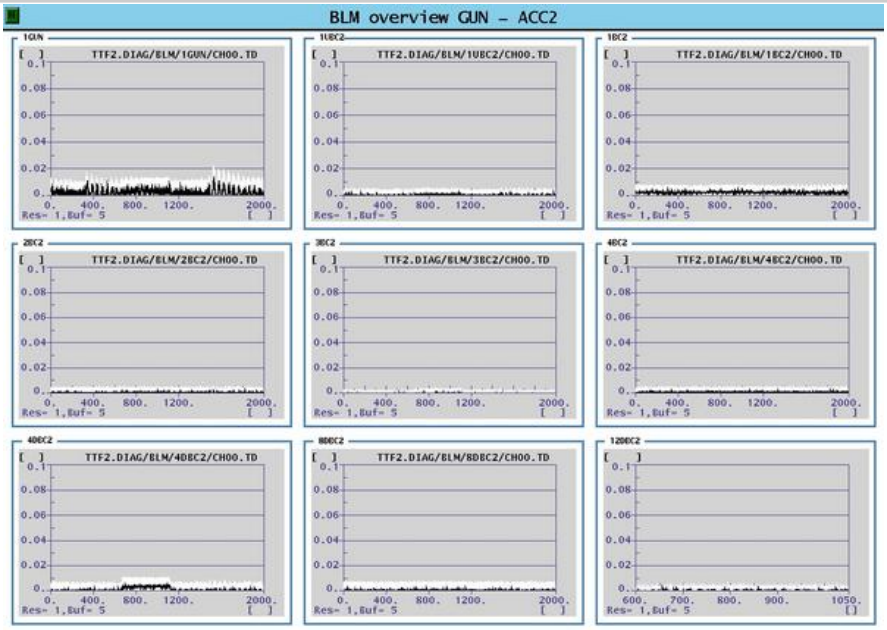
```
also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110205T183105.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110205T183105.sr
from computer: flashbkr4.desy.de
```

05.02.2011 18:31 ttflinac **ttflinac@:Energyfbm_display**



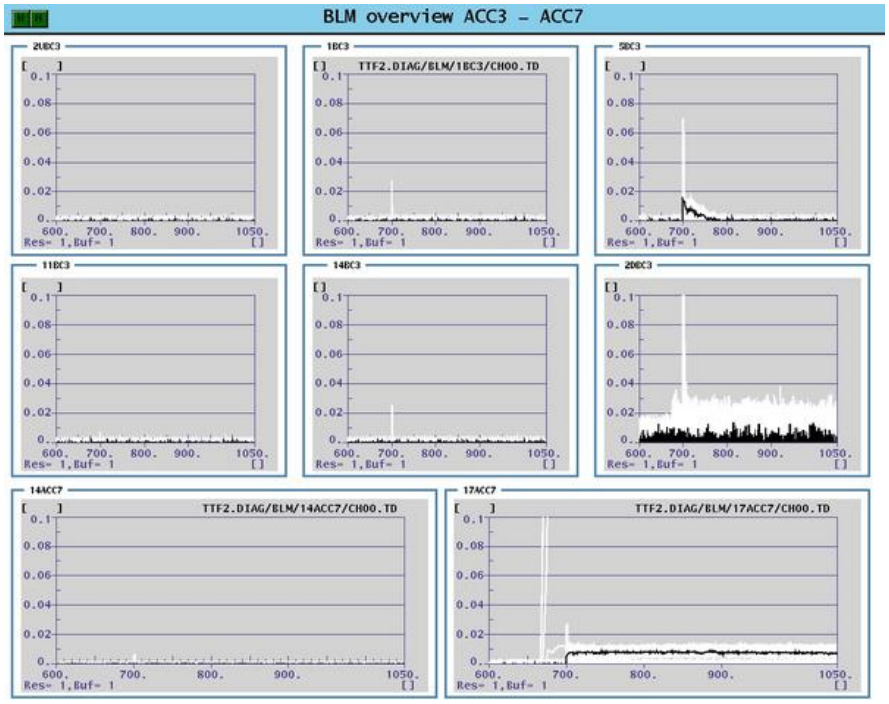
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:31:47-00.JPG

05.02.2011 18:33 ttflinac **ttflinac@:blm_overview_from_GUN_to_ACC2**



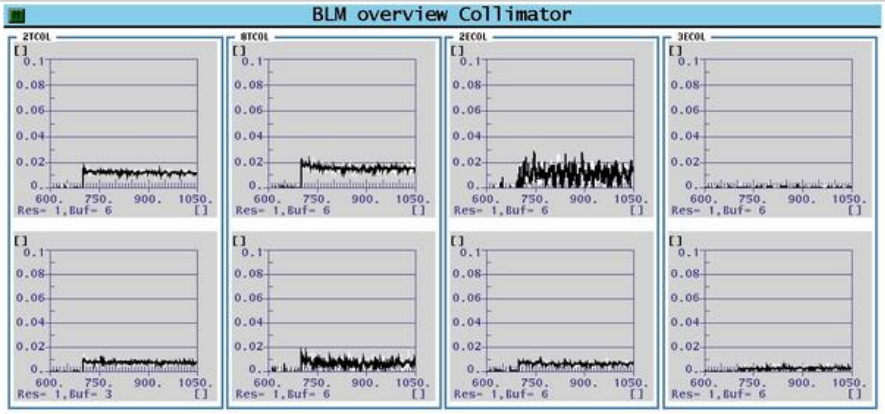
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:33:42-00.JPG

05.02.2011 18:33 ttflinac **ttflinac@:BLM_ACC3_ACC7**



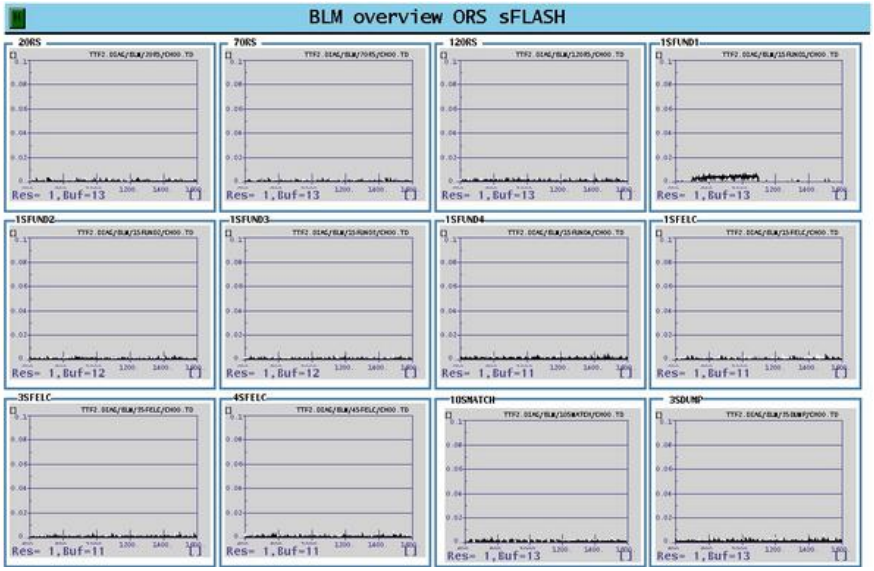
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:33:51-00.JPG

05.02.2011 18:34 ttflinac **ttflinac@:blm_overview_COL**



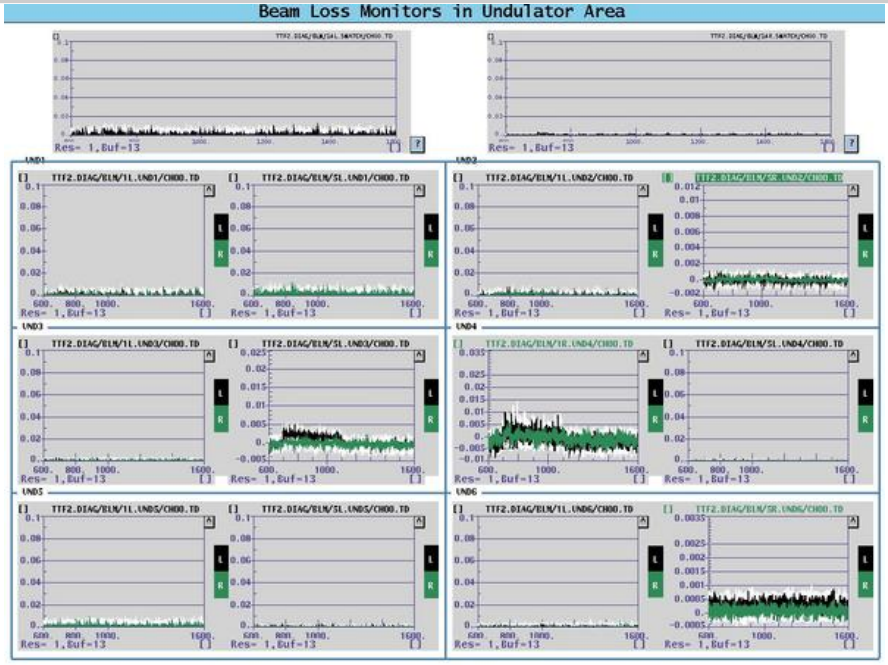
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:34:09-00.JPG

05.02.2011 18:34 ttflinac **ttflinac@:blm_overview_ORS**



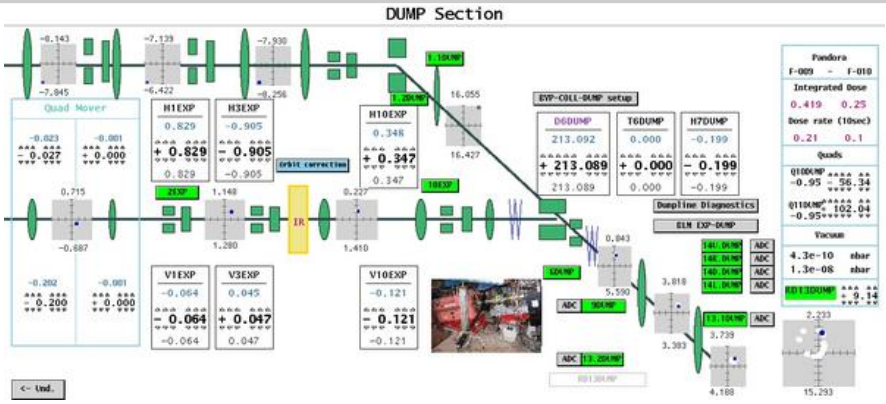
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:34:45-00.JPG

05.02.2011 18:35 ttflinac **ttflinac@:BLM_UNDULATORS**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:35:08-00.JPG

05.02.2011 18:35 ttflinac **ttflinac@:orbit_corr_dump**

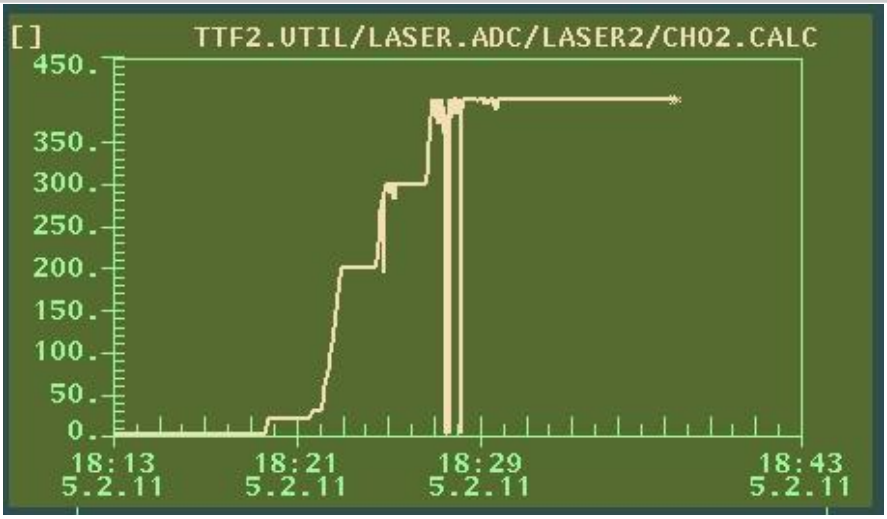


File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:35:18-00.JPG

05.02.2011 18:35 ttflinac

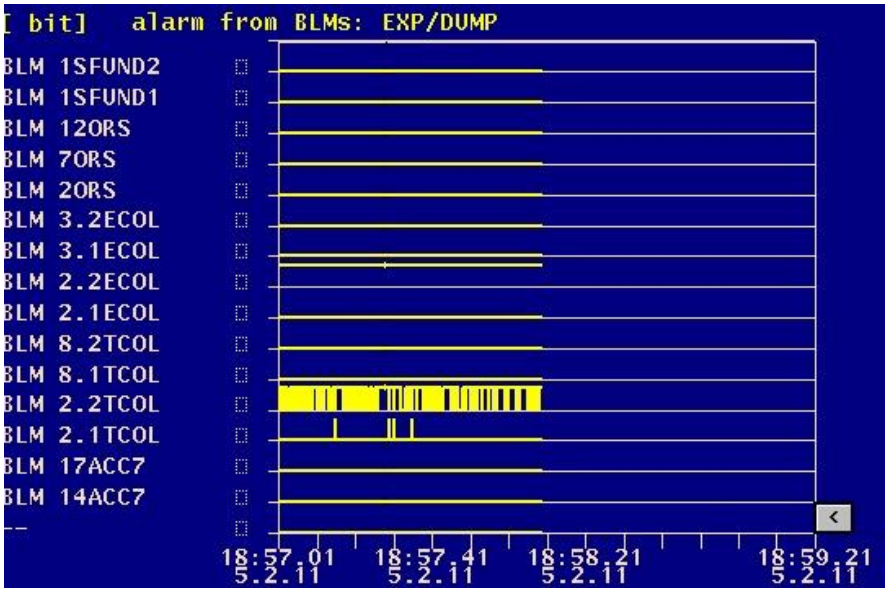
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:35:27-00.png

05.02.2011 18:37 ttflinac **ttflinac@:Plot_hist**



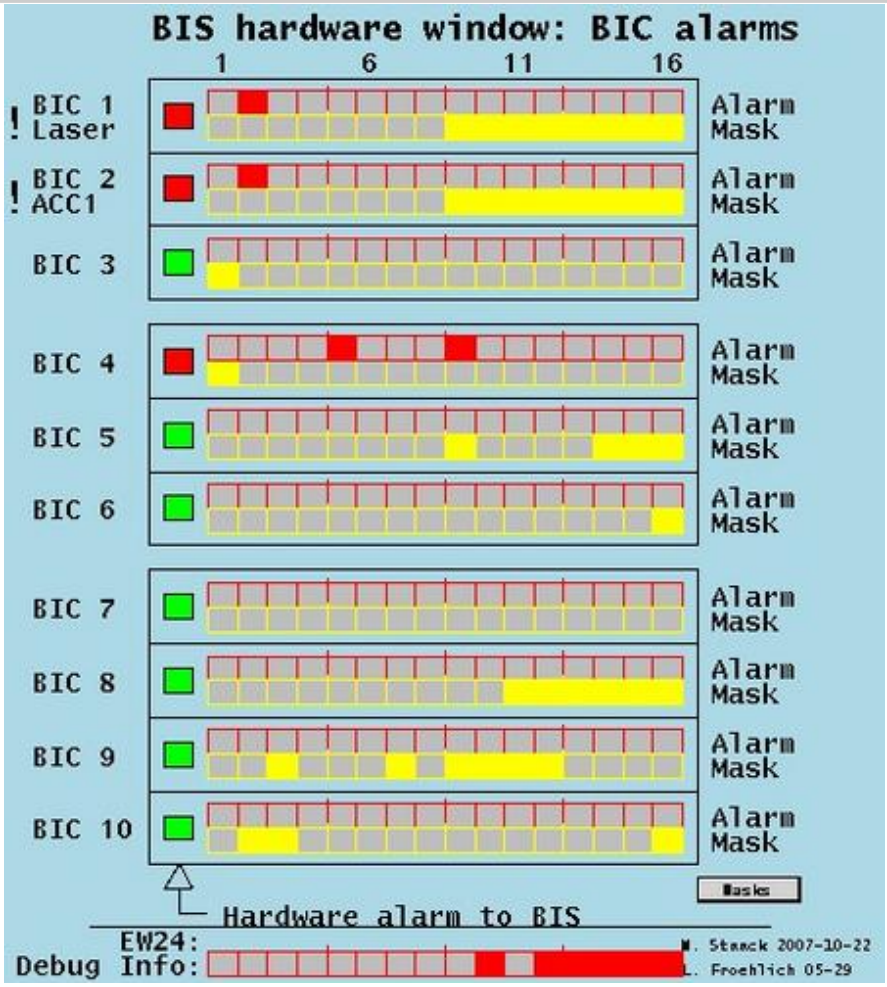
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:37:59-00.JPG

05.02.2011 18:58 ttflinac **ttflinac@:Plot_logic**



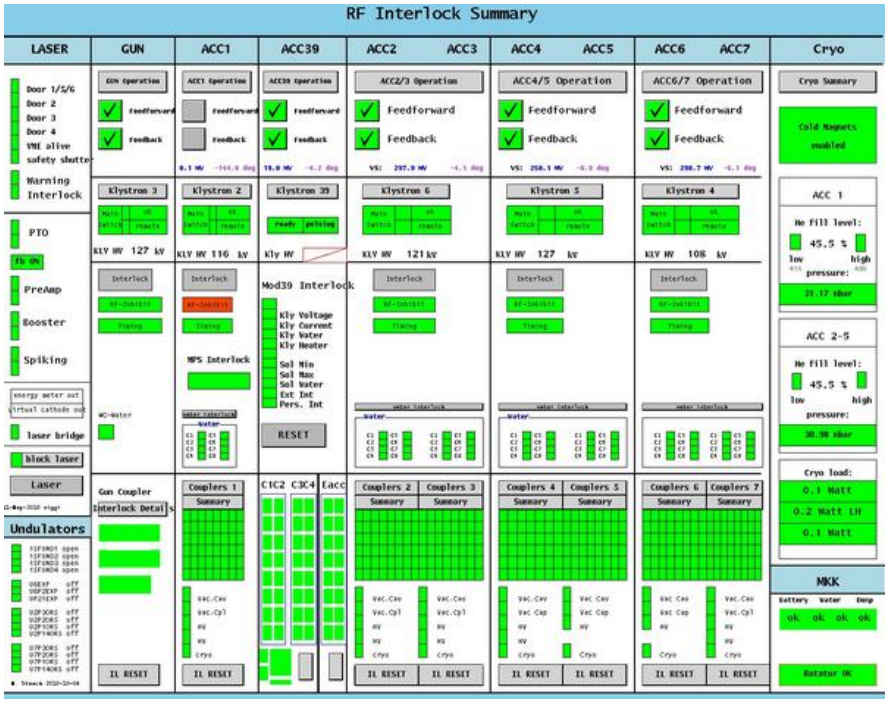
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:58:26-00.JPG

05.02.2011 18:58 ttflinac **ttflinac@:BIS_expert_BIC**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T18:58:32-00.JPG

05.02.2011 19:09 ttflinac **ttflinac@:rf_interlock_summary**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T19:09:56-00.JPG

05.02.2011 19:58 ttflinac

Main linac parameters

optimized 95% transmission

Laser

```
Number of bunches ...... 2
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 .......... 5.43
Iris diameter .......... 17184 steps
Iris diameter .......... 2.17 mm
```

Gun

```
Feedforward/Feedback ... on/on
FSM .................... on
Pfwd SP ................ 3.65
VS ampl. ............... 18.37
Phase SP ............... -10.00 deg
VS phase ............... 6.21 deg
Pfwd (peak) ............ 3.879 MW
Prefl (peak) ........... 2.931 MW
Pfwd sample point ...... 700
Pfwd (at sample point) . 18.380 MW
Prefl sample point ..... 720
Prefl (at sample point)  5.590 MW
Flat top ............... 460 us
Water temperature SP ... 72.75 deg C
Main solenoid (RBV) .... -300.04 A
Bucking coil (RBV) ..... 20.70 A
Gun dipole (RBV) ....... 0.000 A
Charge 3GUN(T1) ........ 1.25 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 ............... 163.93
Phase SP ............... 2.20 deg
Phase RBV .............. 2.25 deg
Pfwd C1.ACC1 ........... 188.0 kW
Pfwd C5.ACC1 ........... 178.8 kW
Flat top ............... 800 us
Dipole BC2 (RBV) ....... 73.11 A
Pyro 9DBC2.1 ........... -0.0314 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

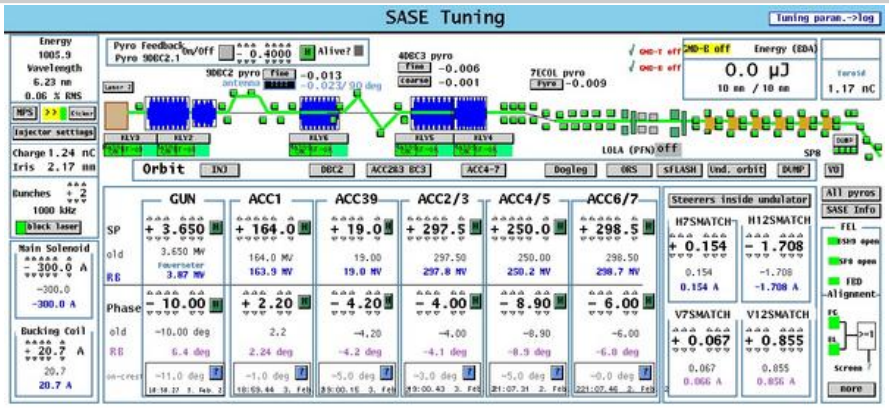
```
Feedforward/Feedback ... on/on
Feedback gain .......... 2.0
Pfwd SP ................ 297.50
Pfwd RBV ............... 297.90
Phase SP ............... -4.00 deg
Phase RBV .............. -4.06 deg
```

ACC4/5

```
Feedforward/Feedback ... on/on
Feedback gain .......... 40.0
Pfwd SP ................ 250.00
Pfwd RBV ............... 250.15
Phase SP ............... -8.90 deg
Phase RBV .............. -8.89 deg
```

```
Pfwd C5.ACC2 ........... 126.22 kW
Pfwd C1.ACC3 ........... 219.43 kW
Flat top ............... 450 us
Dipole BC3 (RBV) ....... 56.00 A
Pyro 4DBC3.1 ........... -0.0043 V
Pyro 4DBC3.3 ........... 0.0016 V
Radiator 4DBC3 ......... out
ACC6/7
Feedforward/Feedback ... on/on
Feedback gain .......... 50.0
Pfwd SP ................ 298.50
Pfwd RBV ............... 298.71
Phase SP ............... -6.00 deg
Phase RBV .............. -6.10 deg
Pfwd C1.ACC6 ........... 189.77 kW
Pfwd C1.ACC7 ........... 217.93 kW
Flat top ............... 800 us
Collimator
Dipole D1ECOL (RBV) .... 176.89 A
Energy dogleg .......... 1005.5 MeV
Charge 7ORS ............ 1.29 nC

Dump
Dipole D9SMATCH (RBV) .. 0.00 A
Dipole D1DUMP (RBV) .... 0.00 A
Dipole D6DUMP (RBV) .... 213.09 A
Rotator RD13DUMP (RBV) . 9.13 A
Charge 9DUMP ........... 1.18 nC
Photon beamline
Aperture 1 ............ 10 mm
Offset h/v ............ 0/-1 mm
Aperture 2 ............ 10 mm
Offset h/v ............ 1/0 mm

Pfwd C1.ACC4 ........... 115.67 kW
Pfwd C2.ACC5 ........... 91.12 kW
Pfwd C1.ACC6 ........... 0.61 kW
Flat top ............... 800 us

Bypass
Dipole D1BYP (RBV) ..... 0.00 A
Energy bypass .......... 1211.4 MeV
RF vector sum ALL ...... 685.8 MeV
Charge 16BYP ........... 0.00 nC

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 2011-02-05T19_58_23+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-05T195823

also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110205T195823.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110205T195823.sr
from computer: flashbkr4.desy.de
```

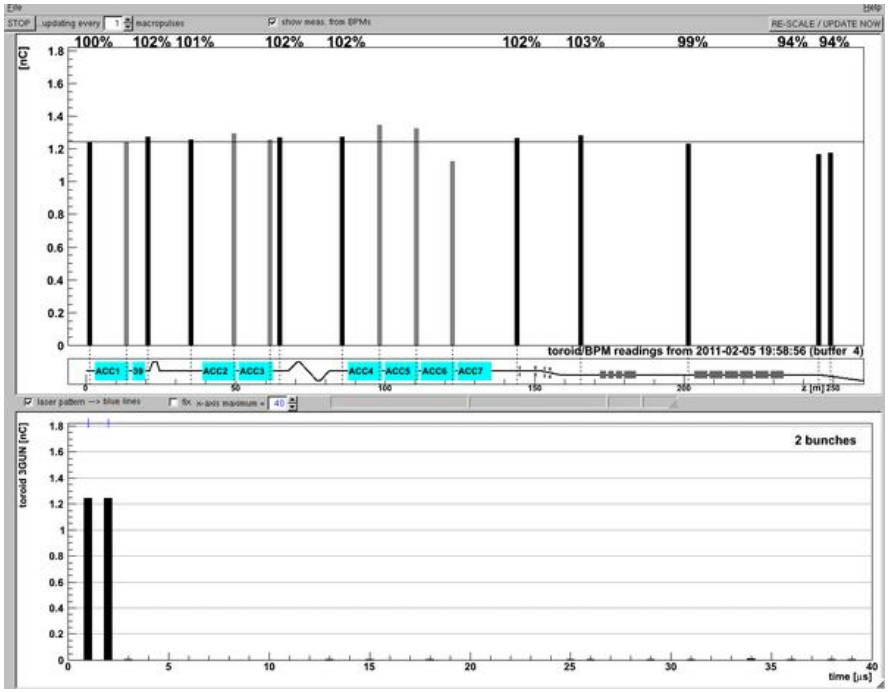
05.02.2011 19:58 ttflinac **ttflinac@:SASE_tuning**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T19:58:56-00.JPG

05.02.2011 19:59 S. Schreiber **toroid charge readings**

transmission for TPS calibration

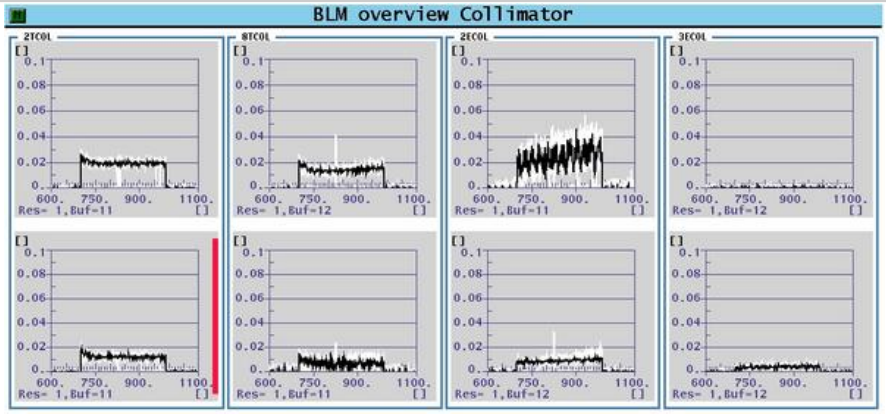


File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T19:59:18-00.ps

05.02.2011 20:27 S. Schreiber **TPS**

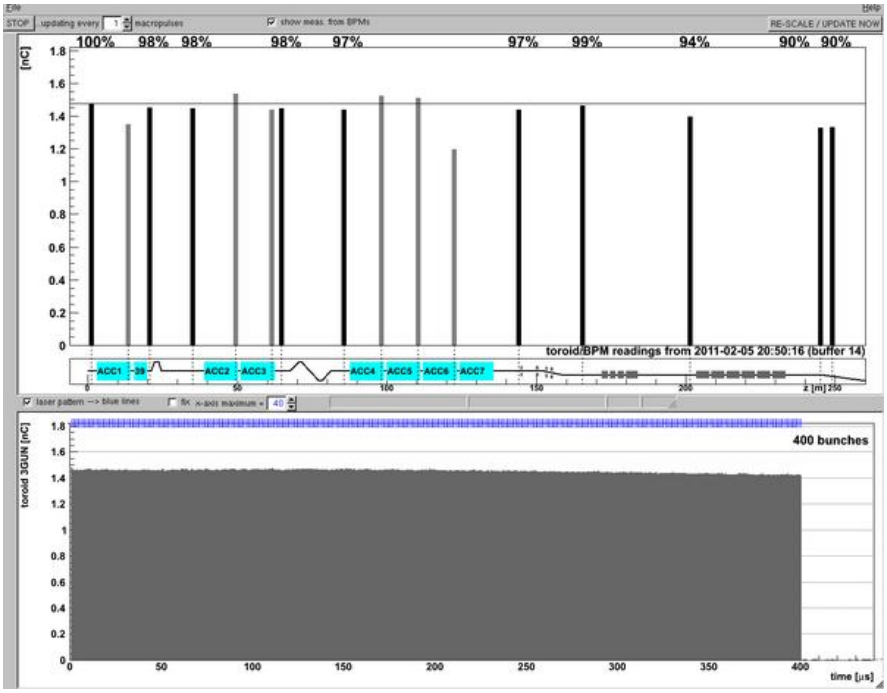
```
TPS BYP2, FEL1 and FEL2 recalibrated
transmission see plot last entry
thresholds: VAL 0.1 nC, single 10 % slice 10% integral 50 nC
```

05.02.2011 20:37 ttflinac **ttflinac@ttfsun3:blm_overview_COL**



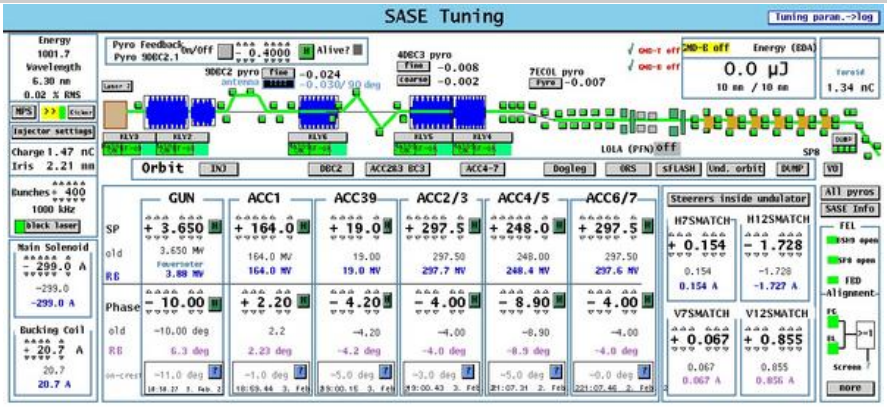
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T20:37:22-00.JPG

05.02.2011 20:50 ttflinac **toroid charge readings**



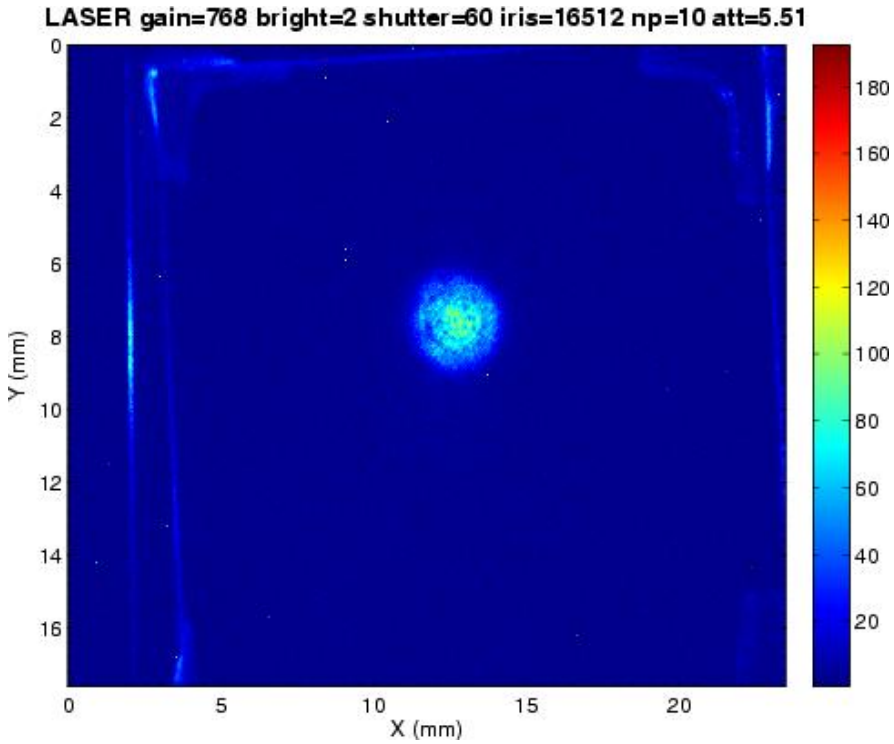
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T20:50:31-00.ps

05.02.2011 20:50 ttflinac **ttflinac@:SASE_tuning**



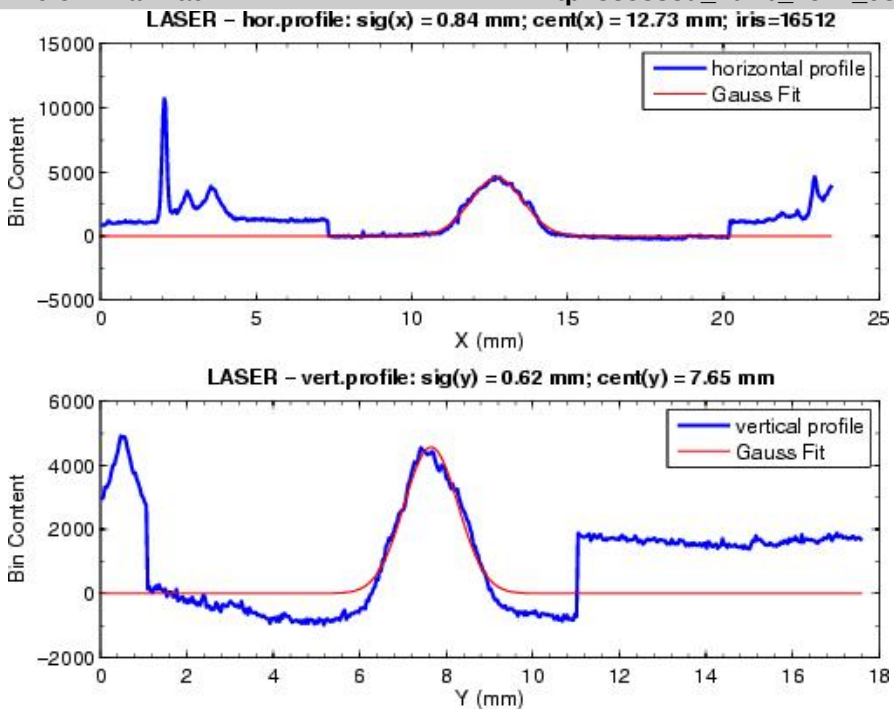
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T20:50:56-00.JPG

05.02.2011 20:57 ttflinac **tp582874f8_941c_490f_8de9_f5a0bfd5948a.ps**



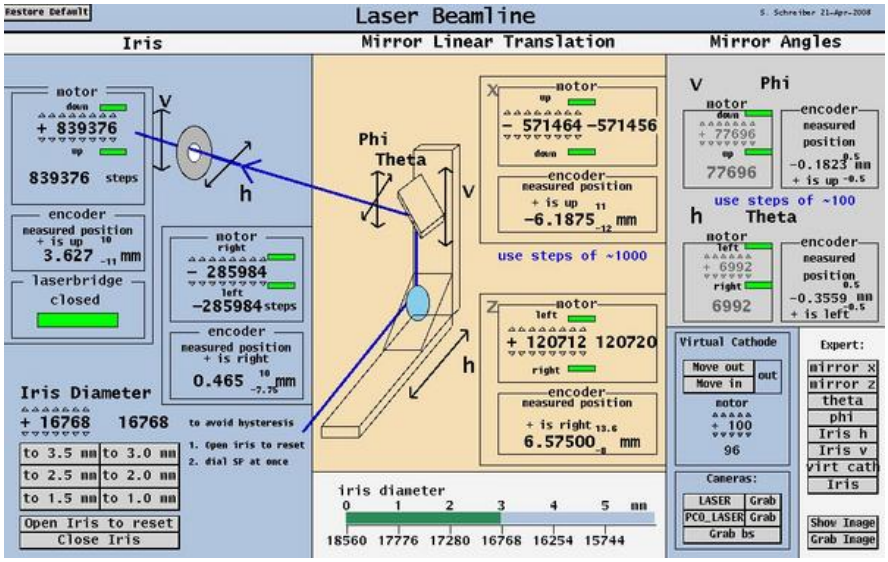
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T20:57:43-00.ps

05.02.2011	20:57	ttflinac	**tp1385388d_2d2b_4542_9377_651ae9b44269.ps**



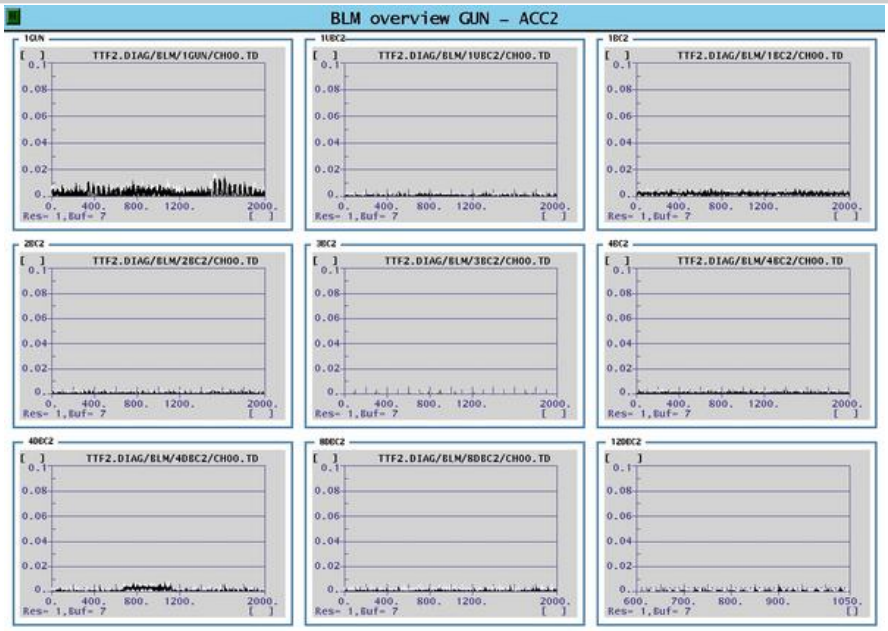
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T20:57:50-00.ps

05.02.2011	20:59	ttflinac	**ttflinac@:laser_beamline**



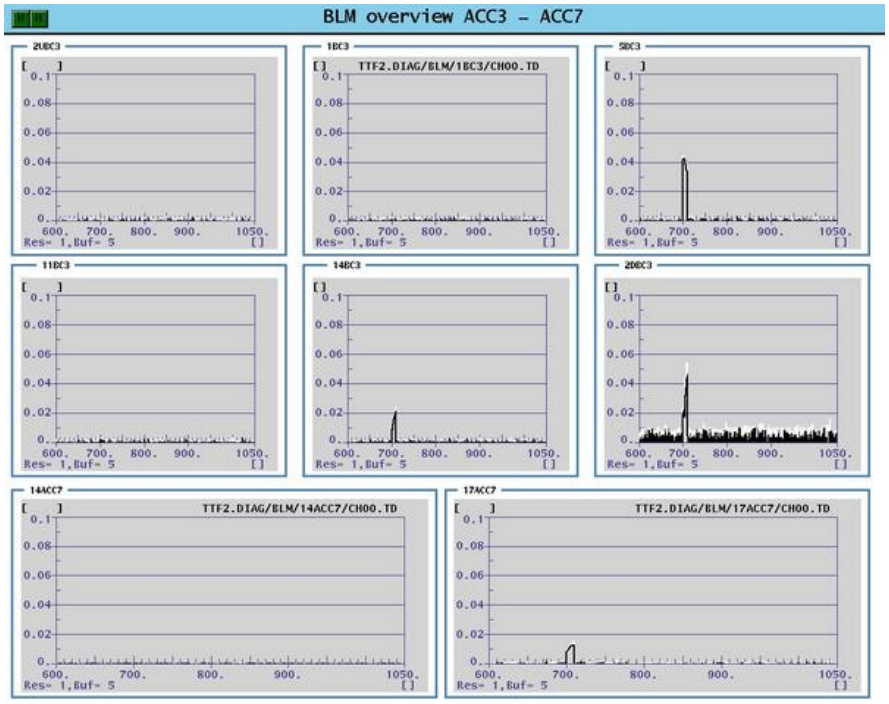
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T20:59:27-00.JPG

05.02.2011 21:00 ttflinac **ttflinac@:blm_overview_from_GUN_to_ACC2**



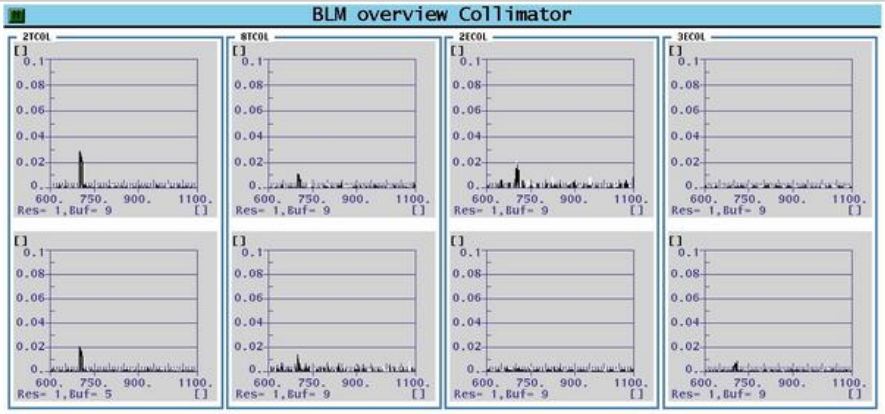
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T21:00:35-00.JPG

05.02.2011 21:00 ttflinac **ttflinac@:BLM_ACC3_ACC7**



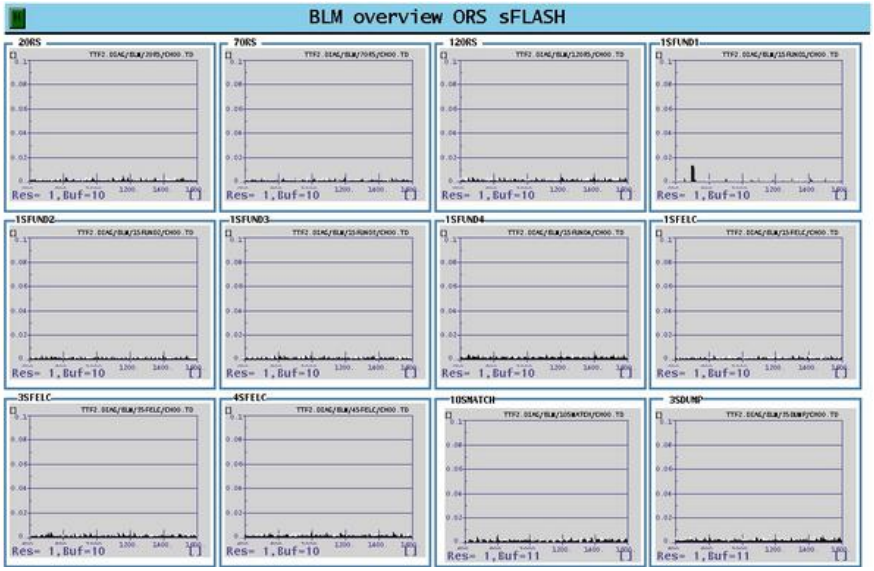
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T21:00:51-00.JPG

05.02.2011 21:01 ttflinac **ttflinac@:blm_overview_COL**



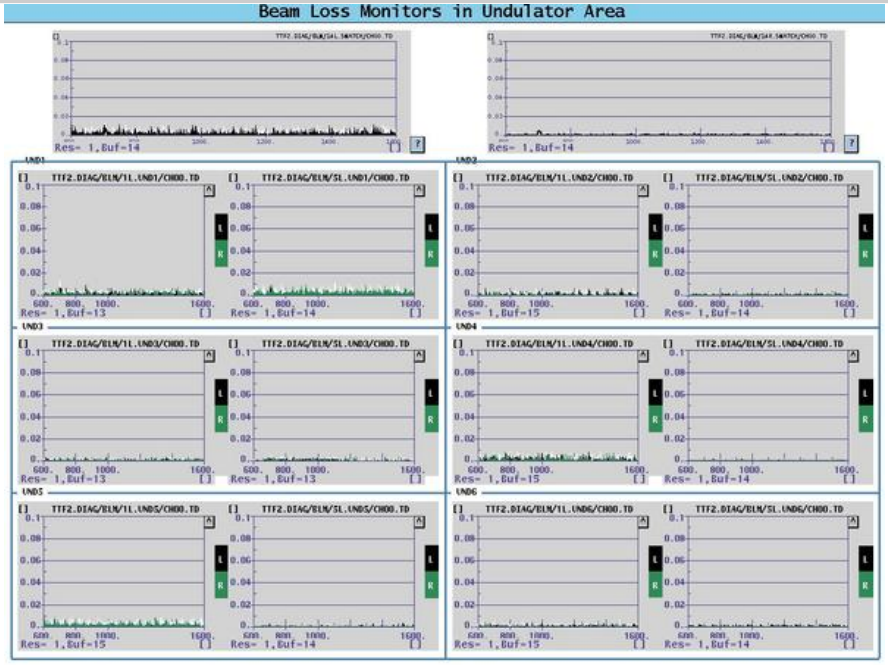
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T21:01:10-00.JPG

05.02.2011 21:01 ttflinac **ttflinac@:blm_overview_ORS**



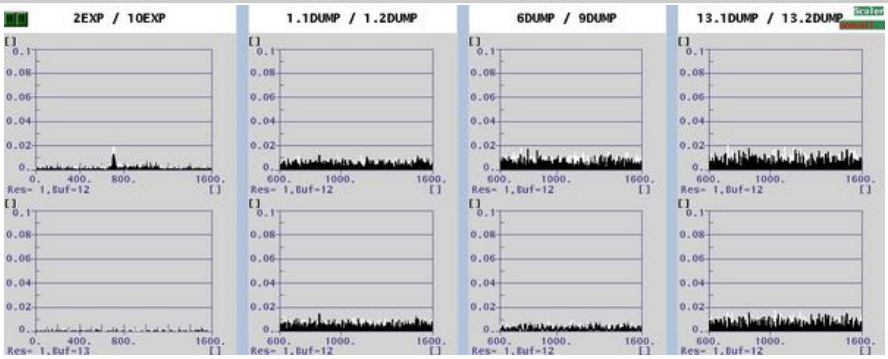
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T21:01:30-00.JPG

05.02.2011 21:01 ttflinac **ttflinac@:BLM_UNDULATORS**



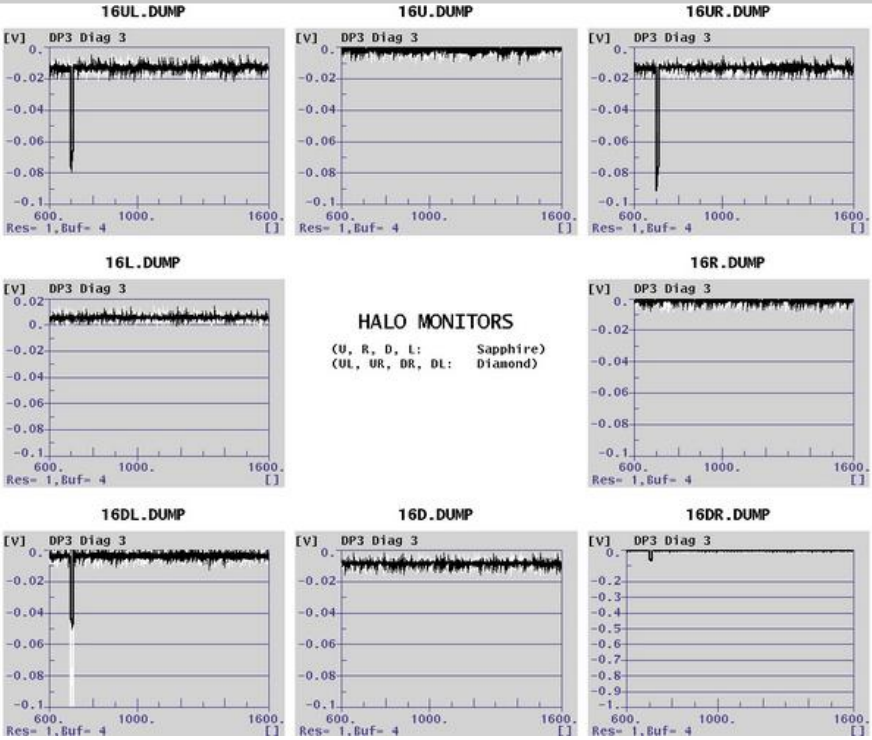
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T21:01:39-00.JPG

05.02.2011 21:02 ttflinac **ttflinac@:blm_overview_Exp_DUMP**



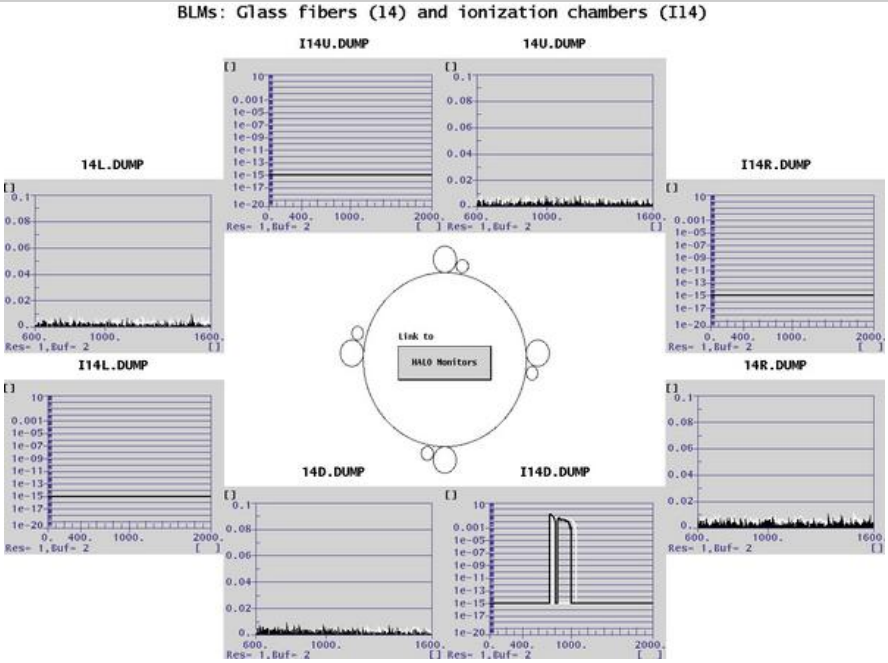
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T21:02:01-00.JPG

05.02.2011 21:02 ttflinac **ttflinac@:blm_Halo**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T21:02:24-00.JPG

05.02.2011 21:02 ttflinac **ttflinac@:blm_overview_DUMP**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T21:02:33-00.JPG

05.02.2011 21:41 ttflinac **Main linac parameters**

Intermediate at 2 nC, 100% through collimator, 97-98 through sFLASH

Laser
Number of bunches 3
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

Gun
Feedforward/Feedback ... on/on
FSM ..... on
Pfwd SP 3.64
VS ampl. 18.33
Phase SP ..... -10.00 deg
VS phase ..... 6.22 deg

```
Booster start time ..... 2.66 ms
Attenuator SP .......... 5.64
Iris diameter .......... 16768 steps
Iris diameter .......... 2.99 mm
```

```
Pfwd (peak) ............ 3.855 MW
Prefl (peak) ........... 2.933 MW
Pfwd sample point ...... 700
Pfwd (at sample point) . 18.336 MW
Prefl sample point ..... 720
Prefl (at sample point)  5.591 MW
Flat top ............... 460 us
Water temperature SP ... 72.75 deg C
Main solenoid (RBV) .... -301.03 A
Bucking coil (RBV) ..... 20.70 A
Gun dipole (RBV) ....... 0.000 A
Charge 3GUN(T1) ........ 1.98 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 ............... 163.94
Phase SP ............... 2.20 deg
Phase RBV .............. 2.24 deg
Pfwd C1.ACC1 ........... 187.8 kW
Pfwd C5.ACC1 ........... 179.0 kW
Flat top ............... 800 us
Dipole BC2 (RBV) ....... 73.11 A
Pyro 9DBC2.1 ........... -0.0429 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 ............... 297.59
Phase SP ............... -4.00 deg
Phase RBV .............. -4.04 deg
Pfwd C5.ACC2 ........... 126.22 kW
Pfwd C1.ACC3 ........... 219.43 kW
Flat top ............... 450 us
Dipole BC3 (RBV) ....... 56.00 A
Pyro 4DBC3.1 ........... -0.0067 V
Pyro 4DBC3.3 ........... 0.0018 V
Radiator 4DBC3 ......... out
```

ACC4/5

```
Feedforward/Feedback ... on/on
Feedback gain .......... 40.0
Pfwd SP ................ 250.00
Pfwd RBV ............... 250.15
Phase SP ............... -8.90 deg
Phase RBV .............. -8.91 deg
Pfwd C1.ACC4 ........... 115.90 kW
Pfwd C2.ACC5 ........... 91.12 kW
Pfwd C1.ACC6 ........... 0.61 kW
Flat top ............... 800 us
```

ACC6/7

```
Feedforward/Feedback ... on/on
Feedback gain .......... 50.0
Pfwd SP ................ 298.50
Pfwd RBV ............... 298.65
Phase SP ............... -4.00 deg
Phase RBV .............. -4.07 deg
Pfwd C1.ACC6 ........... 189.11 kW
Pfwd C1.ACC7 ........... 217.49 kW
Flat top ............... 800 us
```

Bypass

```
Dipole D1BYP (RBV) ..... 0.00 A
Energy bypass .......... 1211.4 MeV
RF vector sum ALL ...... 685.6 MeV
Charge 16BYP ........... -0.00 nC
```

Collimator

```
Dipole D1ECOL (RBV) .... 176.89 A
Energy dogleg .......... 1004.0 MeV
Charge 7ORS ............ 2.01 nC
```

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
```

Dump

```
Dipole D9SMATCH (RBV) .. 0.00 A
Dipole D1DUMP (RBV) .... 0.00 A
Dipole D6DUMP (RBV) .... 213.09 A
Rotator RD13DUMP (RBV) . 9.13 A
Charge 9DUMP ........... -0.00 nC
```

Feedbacks

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

Photon beamline

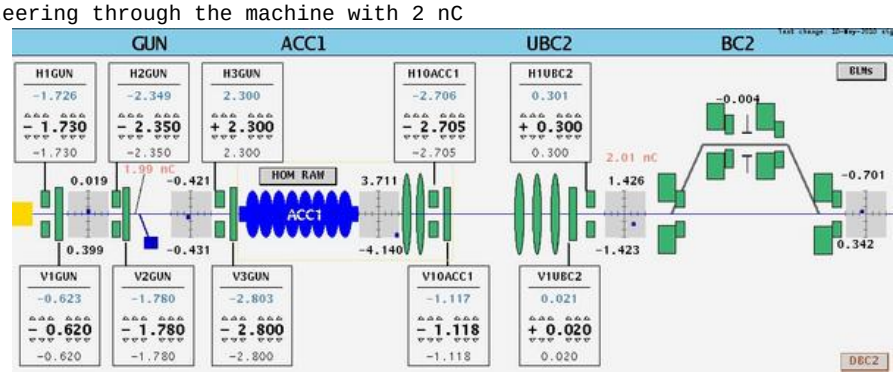
```
Aperture 1 ............ 10 mm
Offset h/v ............ 0/-1 mm
Aperture 2 ............ 10 mm
Offset h/v ............ 1/0 mm
```

```
Status saved in machine file 2011-02-05T21_40_51+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-05T214051
```

```
also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110205T214051.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110205T214051.sr
from computer: flashbkr4.desy.de
```

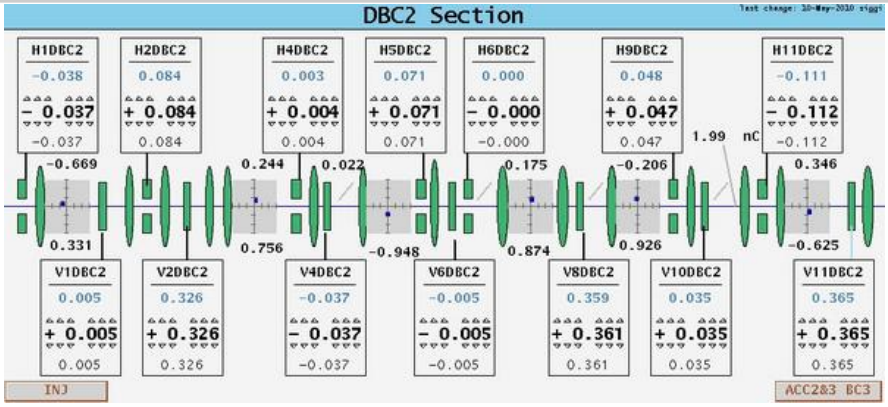
05.02.2011 22:17 S. Schreiber, B. Faatz, M. Vogt, K. Klose **ttflinac@:orbit_corr_inj**

we optimized steering through the machine with 2 nC



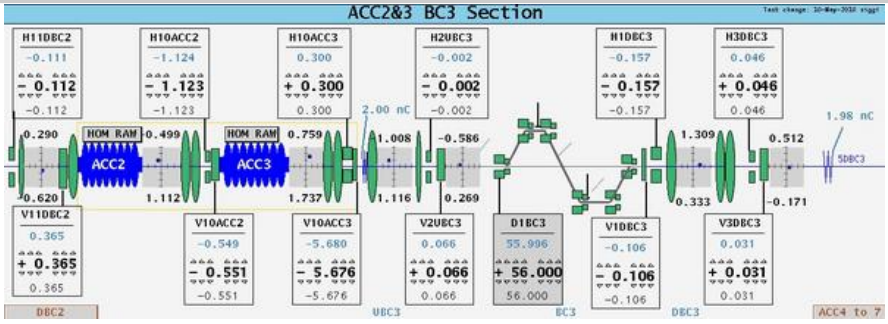
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:17:13-00.JPG

05.02.2011 22:17 ttflinac **ttflinac@:orbit_corr_DBC2**



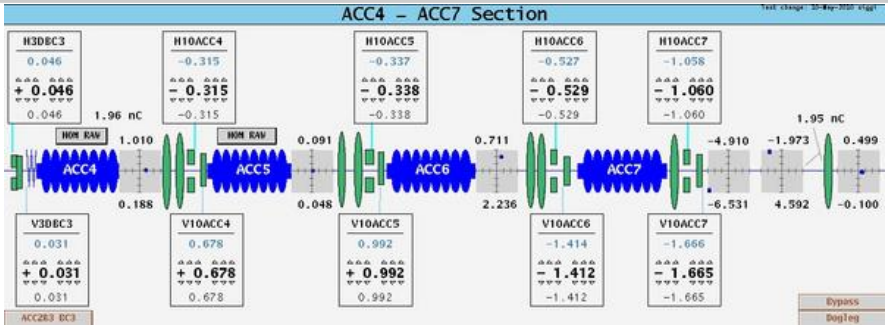
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:17:23-00.JPG

05.02.2011 22:17 ttflinac **ttflinac@:orbit_corr_bc3**



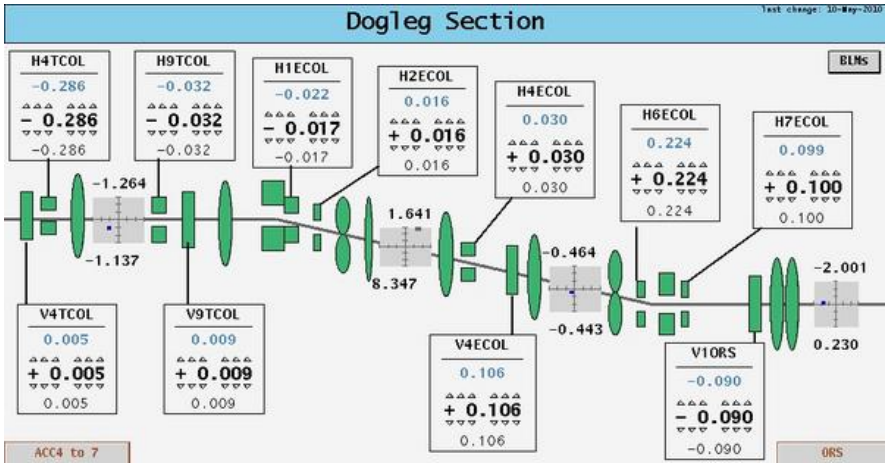
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:17:31-00.JPG

05.02.2011 22:19 ttflinac **ttflinac@:orbit_corr_acc4**



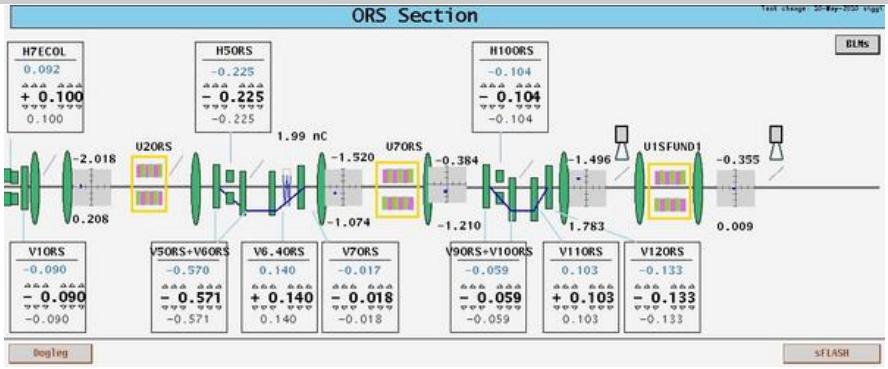
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:19:13-00.JPG

05.02.2011 22:19 ttflinac **ttflinac@:orbit_corr_dogleg**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:19:23-00.JPG

05.02.2011 22:19 ttflinac **ttflinac@:orbit_corr_ORS**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:19:32-00.JPG

05.02.2011 22:42 ttflinac **Main linac parameters**

50 bunches 2 nC

Laser

```
Number of bunches ...... 70
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 .......... 5.64
Iris diameter .......... 16768 steps
Iris diameter .......... 2.99 mm
```

Gun

```
Feedforward/Feedback ... on/on
FSM .................... on
Pfwd SP ................ 3.64
VS ampl. ............... 18.33
Phase SP ............... -10.00 deg
VS phase ............... 6.33 deg
Pfwd (peak) ............ 3.853 MW
Prefl (peak) ........... 2.927 MW
Pfwd sample point ...... 700
Pfwd (at sample point) . 18.332 MW
Prefl sample point ..... 720
Prefl (at sample point)  5.624 MW
Flat top ............... 460 us
Water temperature SP ... 72.75 deg C
Main solenoid (RBV) .... -301.03 A
Bucking coil (RBV) ..... 20.70 A
Gun dipole (RBV) ....... 0.000 A
Charge 3GUN(T1) ........ 2.03 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 ............... 164.02
Phase SP ............... 2.20 deg
Phase RBV .............. 2.26 deg
Pfwd C1.ACC1 ........... 187.3 kW
Pfwd C5.ACC1 ........... 178.3 kW
Flat top ............... 800 us
Dipole BC2 (RBV) ....... 73.11 A
Pyro 9DBC2.1 ........... -0.0346 V
```

ACC39

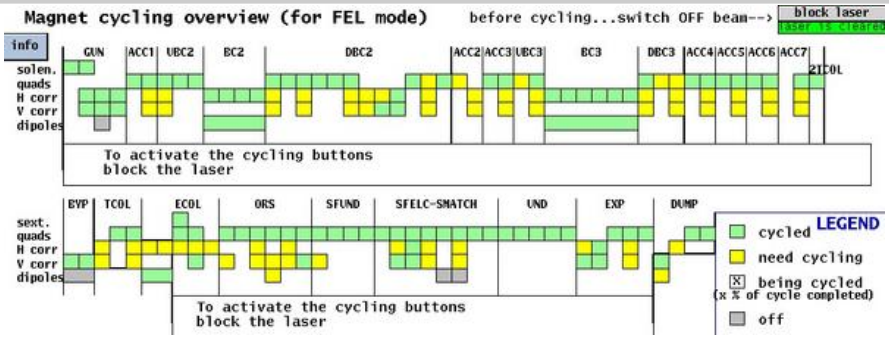
```
Feedforward/Feedback ... on/on
Feedback gain .......... 10.0
Pfwd SP ................ 19.00
Phase SP ............... -4.20 deg
Pfwd C1.ACC39 .......... <error>
Flat top ............... 800 us
```

```
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 ............... 297.74        Pfwd RBV ............... 250.01
Phase SP ............... -4.00 deg     Phase SP ............... -8.90 deg
Phase RBV .............. -3.98 deg     Phase RBV .............. -8.93 deg
Pfwd C5.ACC2 ........... 126.01 kW     Pfwd C1.ACC4 ........... 115.43 kW
Pfwd C1.ACC3 ........... 218.56 kW     Pfwd C2.ACC5 ........... 91.12 kW
Flat top ............... 450 us        Pfwd C1.ACC6 ........... 0.61 kW
Dipole BC3 (RBV) ....... 56.00 A        Flat top ............... 800 us
Pyro 4DBC3.1 ........... -0.0066 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 ................ 281.50        RF vector sum ALL ...... 686.9 MeV
Pfwd RBV ............... 281.82        Charge 16BYP ........... -0.00 nC
Phase SP ............... -4.00 deg
Phase RBV .............. -4.01 deg
Pfwd C1.ACC6 ........... 164.83 kW
Pfwd C1.ACC7 ........... 187.09 kW
Flat top ............... 800 us
Collimator                              Undulator
Dipole D1ECOL (RBV) .... 176.89 A       1SFUND1 gap RBV ........ 220.0 mm
Energy dogleg .......... 1001.1 MeV     1SFUND2 gap RBV ........ 220.0 mm
Charge 7ORS ............ 2.05 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) .... 210.09 A       PTO feedback ........... on
Rotator RD13DUMP (RBV) . 9.13 A
Charge 9DUMP ........... 1.87 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 2011-02-05T22_41_48+01
Orbit reference for the root tool saved in /home/ttflinac/measurements/xy_jitter/2011-02-05T224148
```

```
also in 'save and restore' files:
Magnets saved to: /home/ttflinac/save_restore/Magnets/autosaved/all_Magnets_20110205T224148.sr
uMovers saved to: /home/ttflinac/save_restore/Micromovers/autosaved/uMovers_20110205T224148.sr
from computer: flashbkr4.desy.de
```

05.02.2011 22:42 ttflinac **ttflinac@:magnet_cycle_overview_fel**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:42:21-00.JPG

05.02.2011 22:42 ttflinac **SASE tuning parameters**

Misc. parameters

```
Energy / Wavelength: 1001.22 MeV / 6.3 nm
Charge:              2.02 nC
Main solenoid:       -301.0 A
Bucking coil:        +20.7 A
Dipoles BC2/BC3:     +73.1 A / +56.0 A
```

RF parameters

```
              |   GUN   |   ACC1  |   ACC39 |  ACC2/3 |  ACC4/5 |  ACC6/7 |
```

Power/Gradient	+3.640	+164.00	+19.00	+297.50	+250.00	+281.50
Readback	3.85	164.0	19.0	297.9	250.3	281.8
Phase	-10.00	+2.20	-4.20	-4.00	-8.90	-4.00
on-crest		-1.0		-3.0	-5.0	-0.0
Readback	6.3	2.2	-4.2	-4.1	-8.9	-4.1

Undulator steerers and aircoils

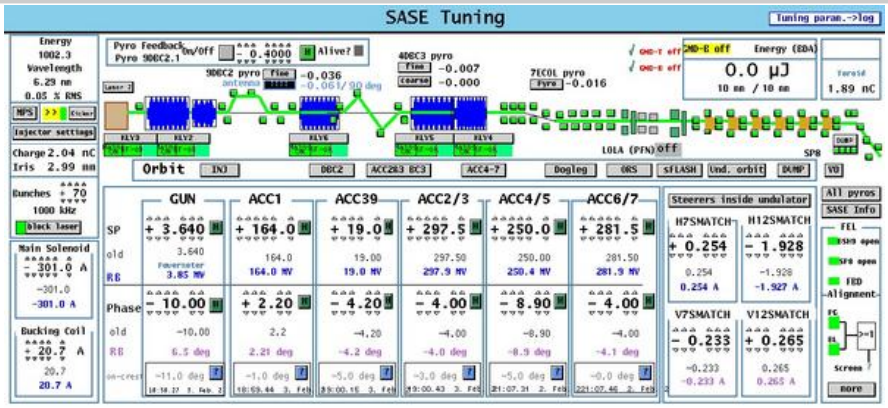
H7SMATCH	H12SMATCH
+0.254	**-1.928**

V7SMATCH	V12SMATCH
-0.233	**-1.928**

Intra-undulator steerers

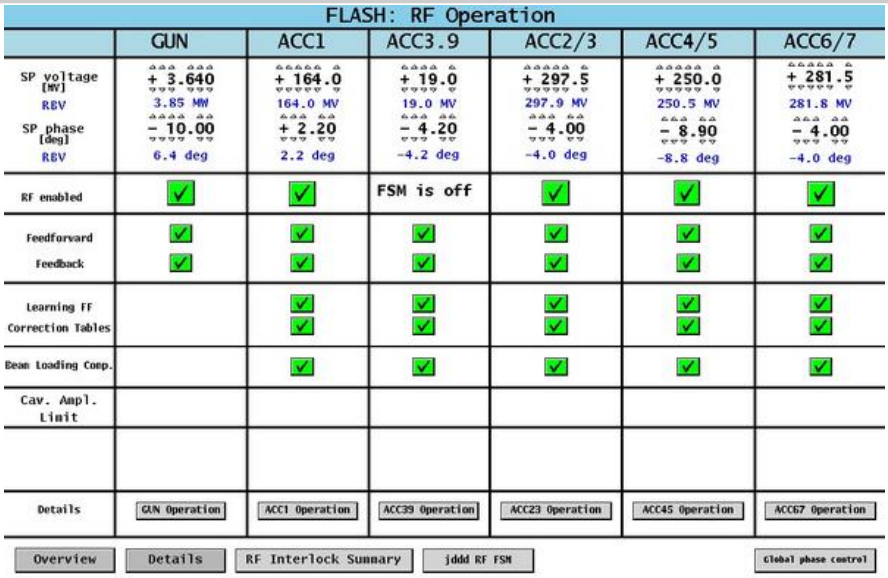
H3UND1	H3UND2	H3UND3	H3UND4	H3UND5	H3UND6
-4.40	**-4.80**	**-4.80**	**-4.70**	**-4.80**	**-5.00**

05.02.2011 22:42 ttflinac **ttflinac@:SASE_tuning**



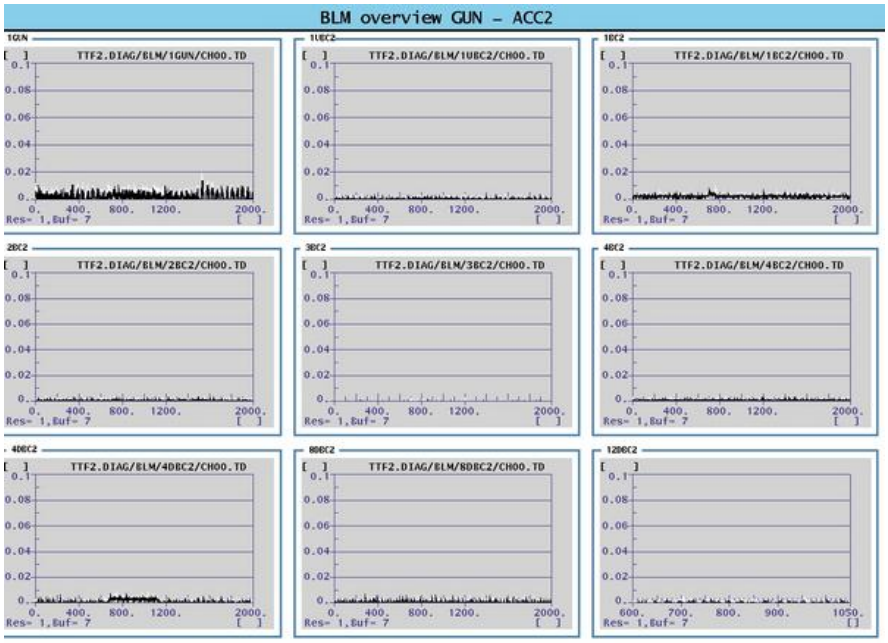
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:42:33-00.JPG

05.02.2011 22:42 ttflinac **ttflinac@:RF_OPERATION**



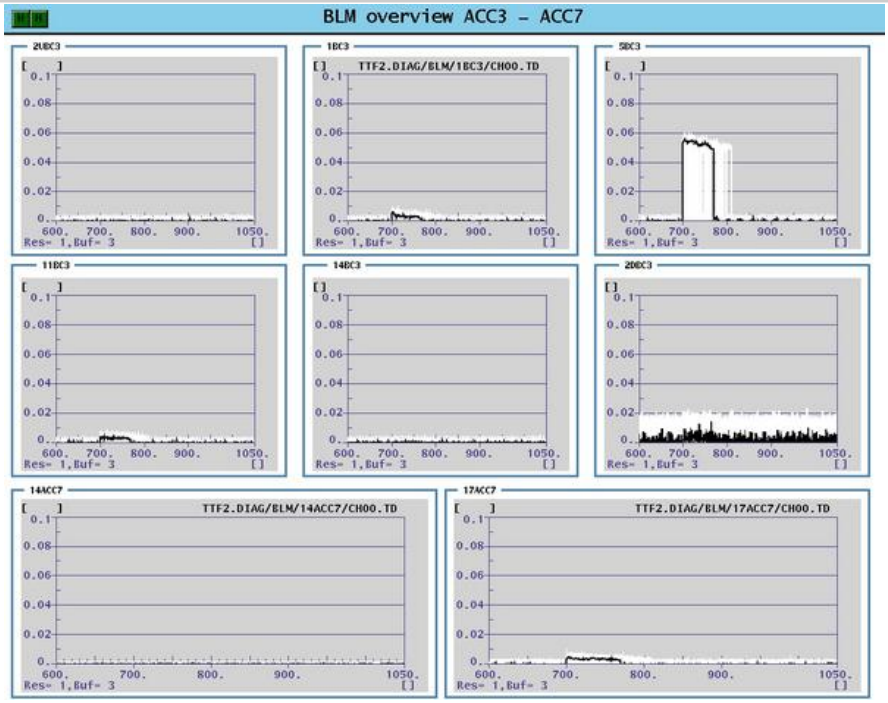
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:42:41-00.JPG

05.02.2011 22:43 ttflinac **ttflinac@:blm_overview_from_GUN_to_ACC2**



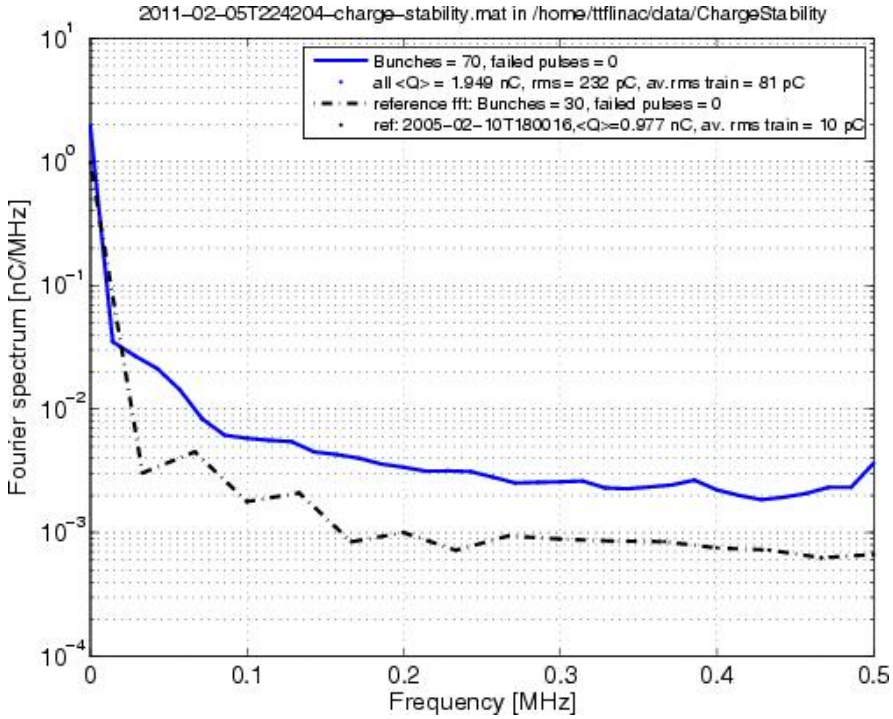
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:43:11-00.JPG

05.02.2011 22:43 ttflinac **ttflinac@:BLM_ACC3_ACC7**



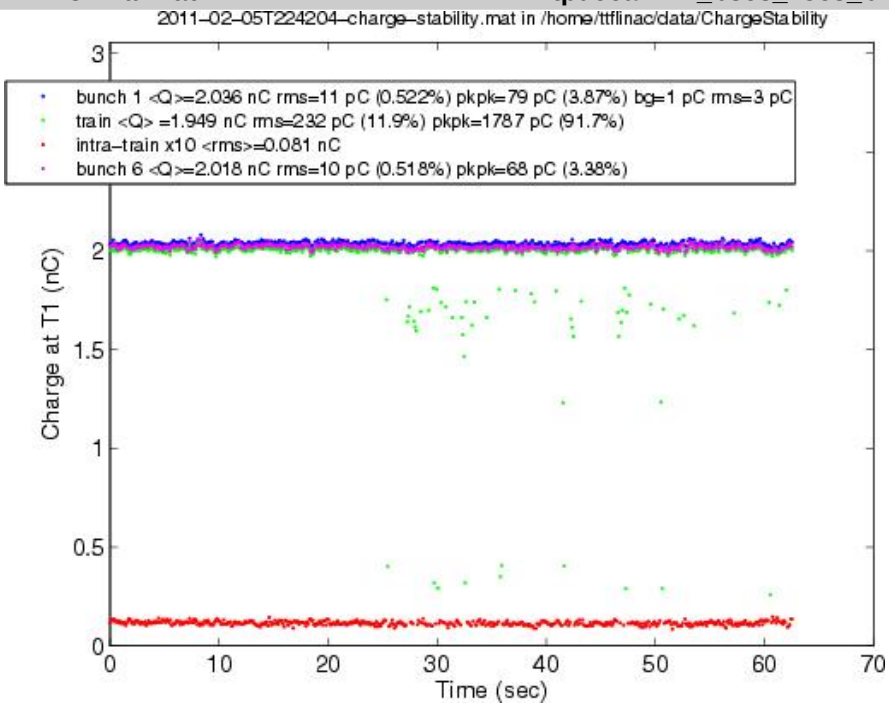
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:43:21-00.JPG

05.02.2011 22:43 ttflinac **tp6bd31835_3ffc_43cf_b8cd_686f1bbd985c.ps**



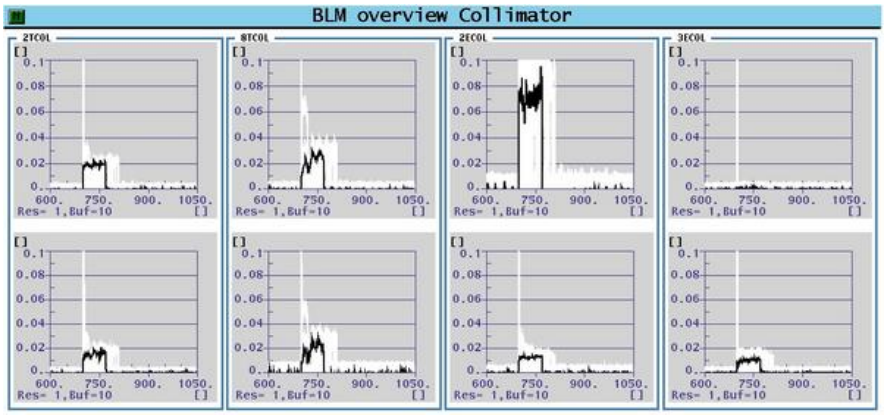
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:43:35-00.ps

05.02.2011 22:43 ttflinac **tpd9ca7274_b8e8_45e8_b4e9_d0a05e12b02c.ps**



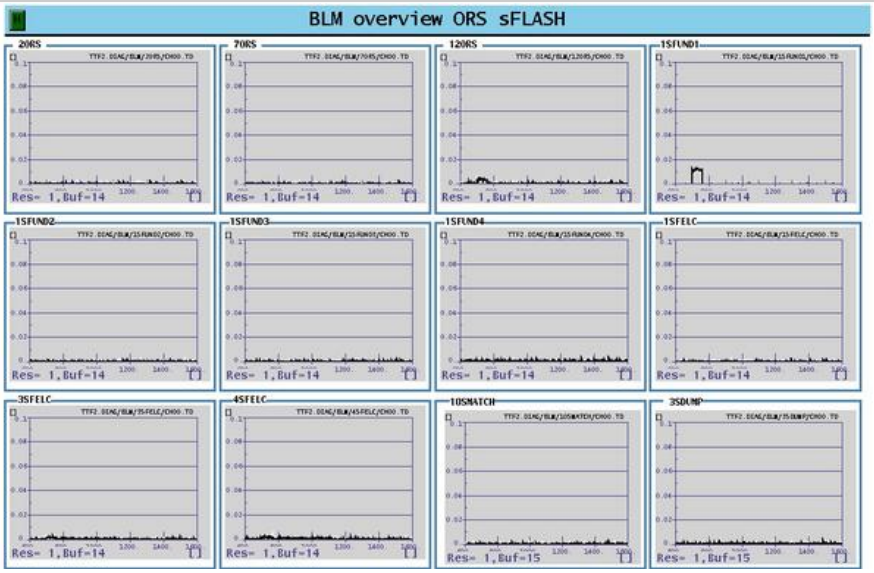
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:43:42-00.ps

05.02.2011 22:43 ttflinac **ttflinac@:blm_overview_COL**



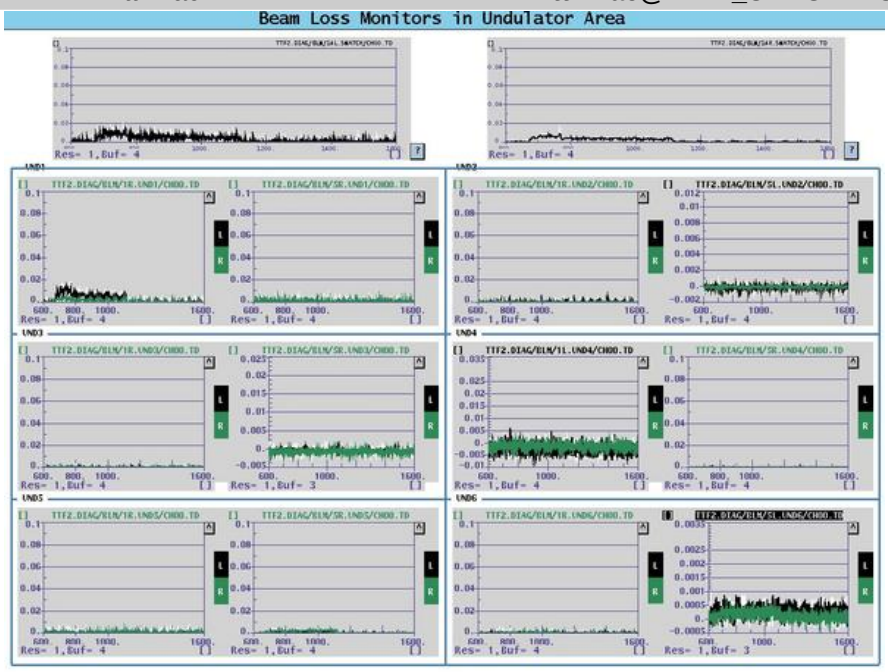
File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:43:49-00.JPG

05.02.2011 22:43 ttflinac **ttflinac@:blm_overview_ORS**



File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:43:56-00.JPG

05.02.2011 22:44 ttflinac **ttflinac@:BLM_UNDULATORS**

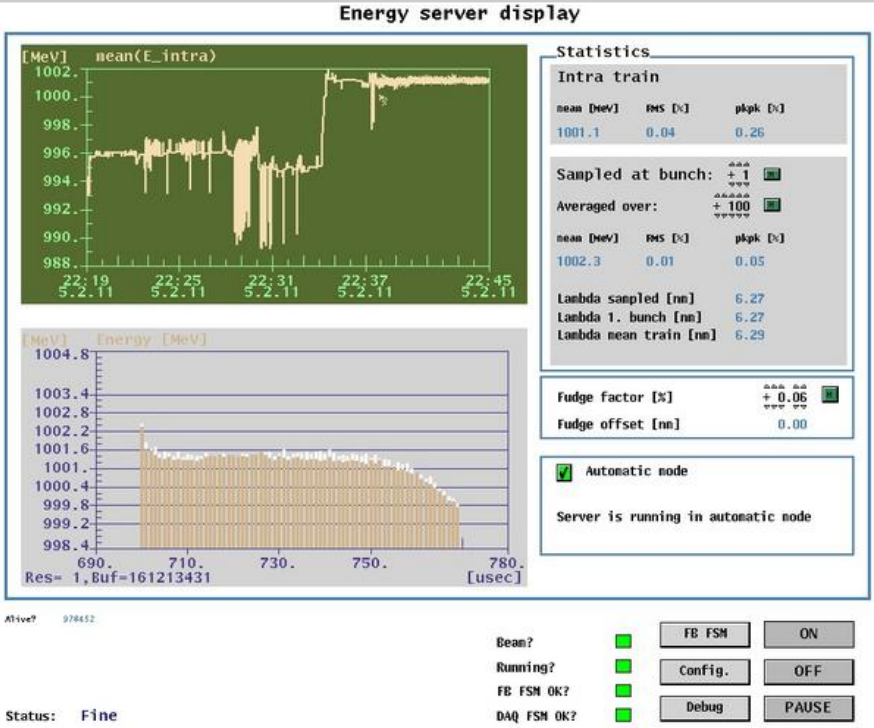


File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:44:40-00.JPG

05.02.2011 22:44 ttflinac **ttflinac@:dose_und**

File: http://ttfinfo.desy.de/TTFelog/data/2011/05/05.02_a/2011-02-05T22:44:49-00.JPG

05.02.2011 22:45 ttflinac **ttflinac@:Energyfbm_display**



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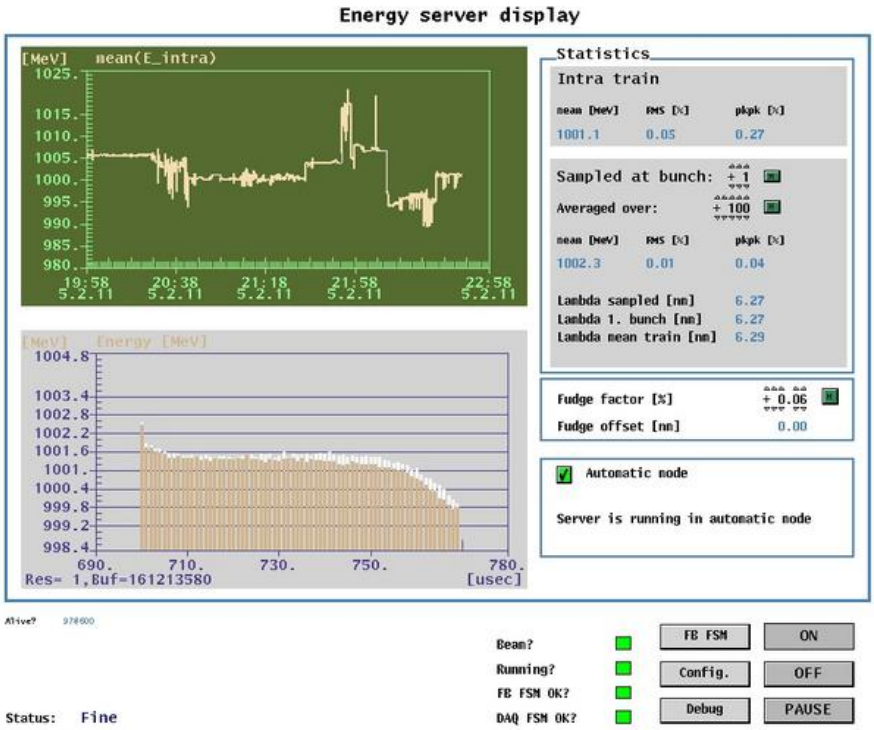

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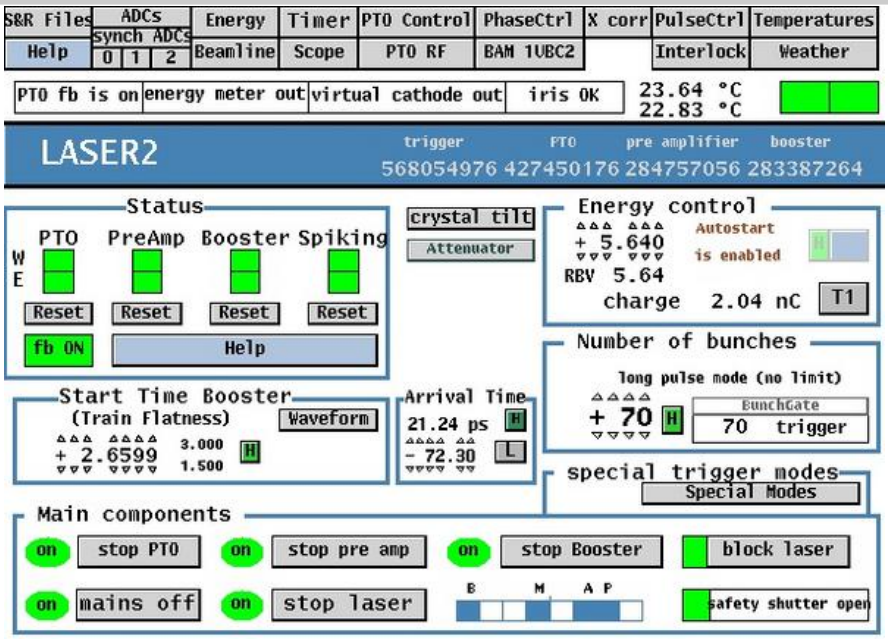

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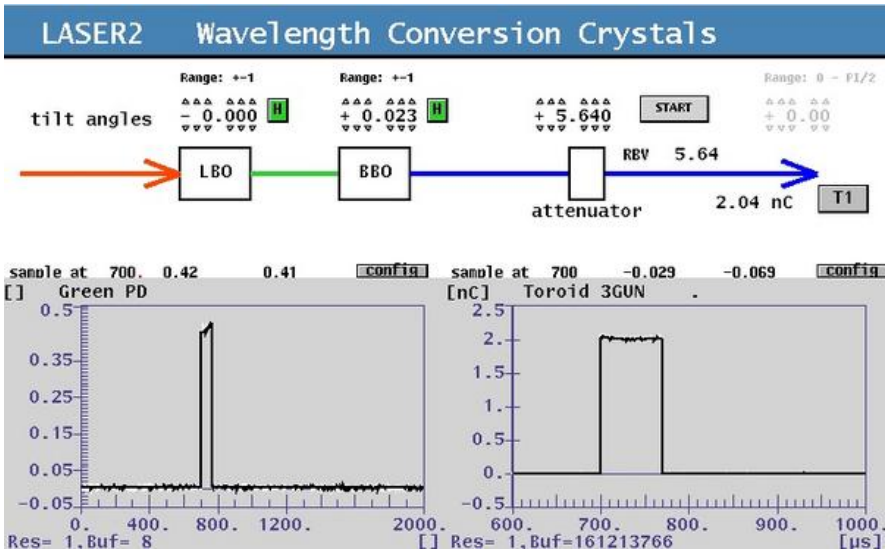
05.02.2011 22:45 ttflinac **ttflinac@:laser_crystal_tuning**



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