2010-12-08 Wednesday Morning Notes

Wednesday, December 08, 2010
7:41 AM

Stacking and Transfers

- Stacking
  - 25.11mA/hr
  - 20.63 pbar/Mp
  - 7.87 Tp
- Transfers
  - Unstacked 501E10 in 60 transfers over 20 sets with an average efficiency of 91.7%
  - Transfer 22212: lost a transfer when R:KPS2A tripped on pre-fire/fail to fire indication.
  - Without lost transfer we were 95.8%
  - Earlier this afternoon, Ops noticed that we were clipping the last bunch on pbar transfers to the Recycler. They adjusted the kicker timing (A:EKIKM1) +10ns, which improved transfer efficiency. I had recently made a +5ns change, so the net change over the past few days is + 15ns. This change is consistent with the normal late fall/early winter cool-off.

Interesting Happenings

Numbers

- Stacking
  - Pbars stacked: 531.25 E10
  - Time stacking: 23.78 Hr
  - Average stacking rate: 22.34 E10/Hr

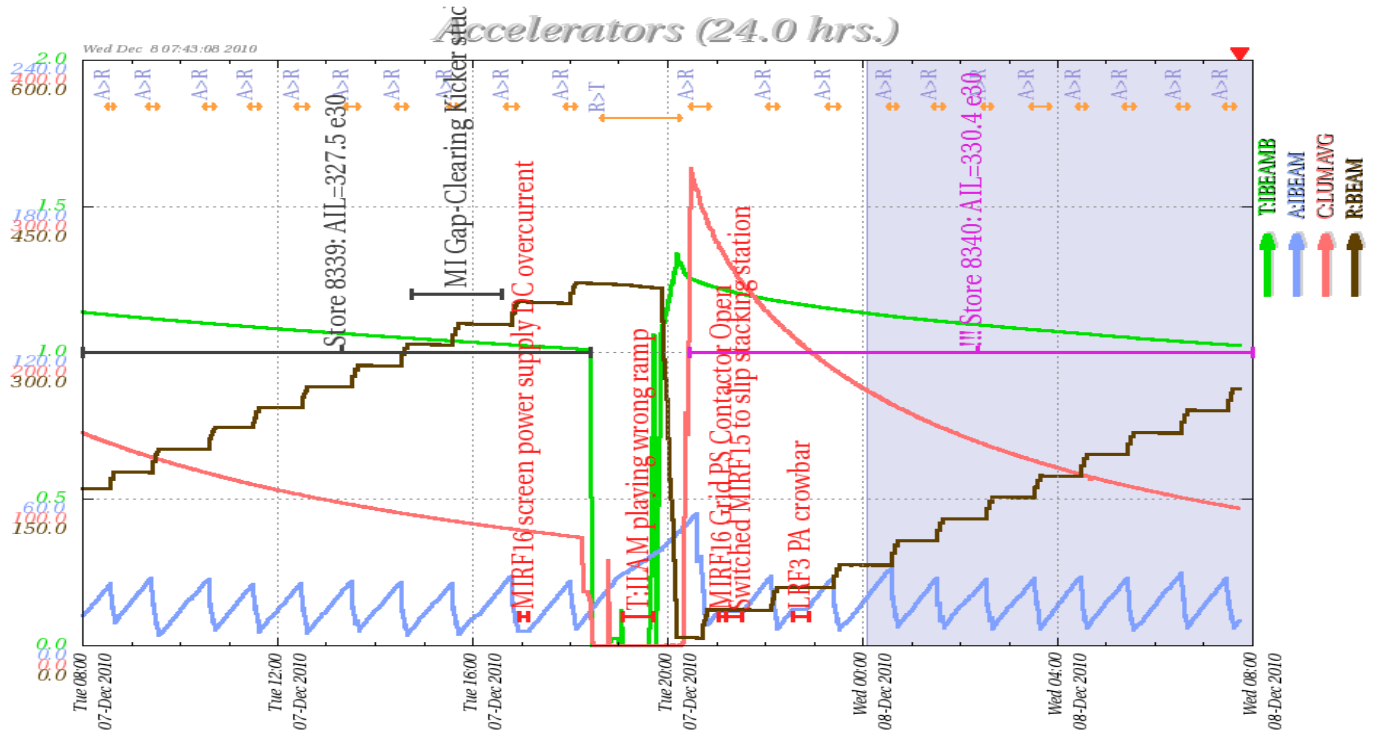
- Uptime
  - Number of pulses while in stacking mode: 35791
  - Number of pulses with beam: 32589
  - Fraction of up pulses was: 91.05%

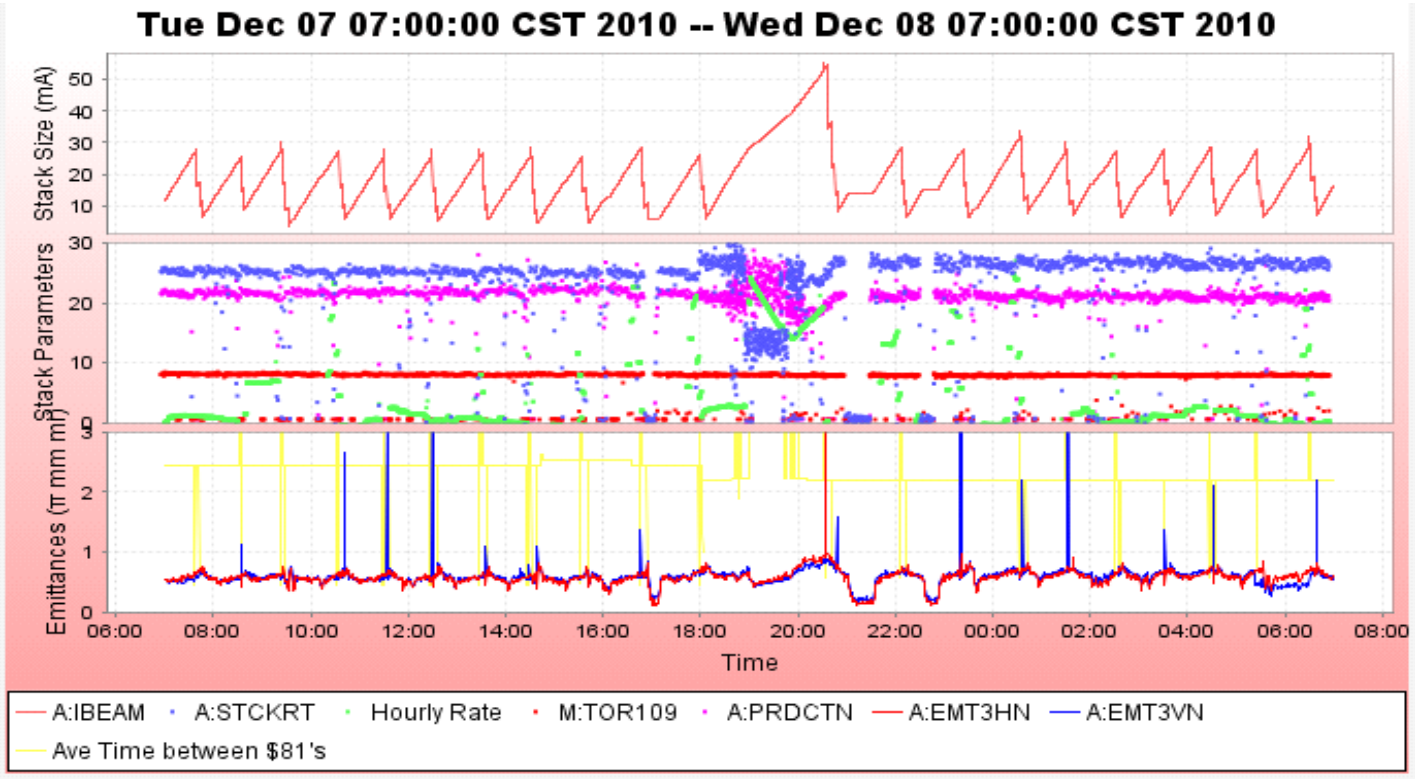
- The uptime's effect on the stacking numbers
  - Corrected time stacking: 21.66 Hr
  - Possible average stacking rate: 24.53 E10/Hr
  - Could have stacked: 583.44 E10/Hr

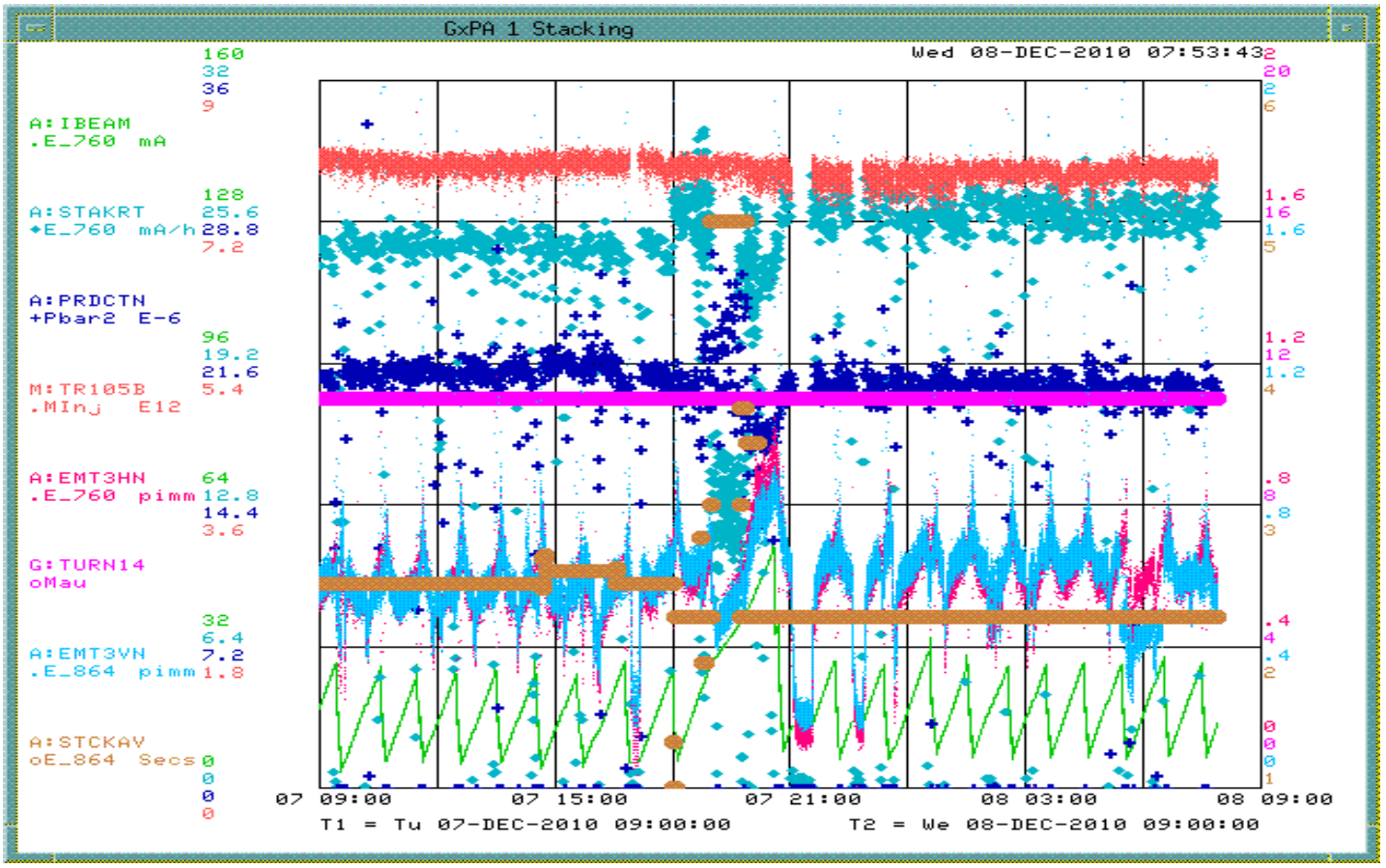
- Recycler Transfers
  - Pbars sent to the Recycler: 518.88 E10
  - Number of transfers : 62
  - Number of transfer sets: 21
  - Average Number of transfer per set: 2.95
  - Time taken to shoot including reverse proton tuneup: 00.22 Hr
  - Transfer efficiency: 91.97%

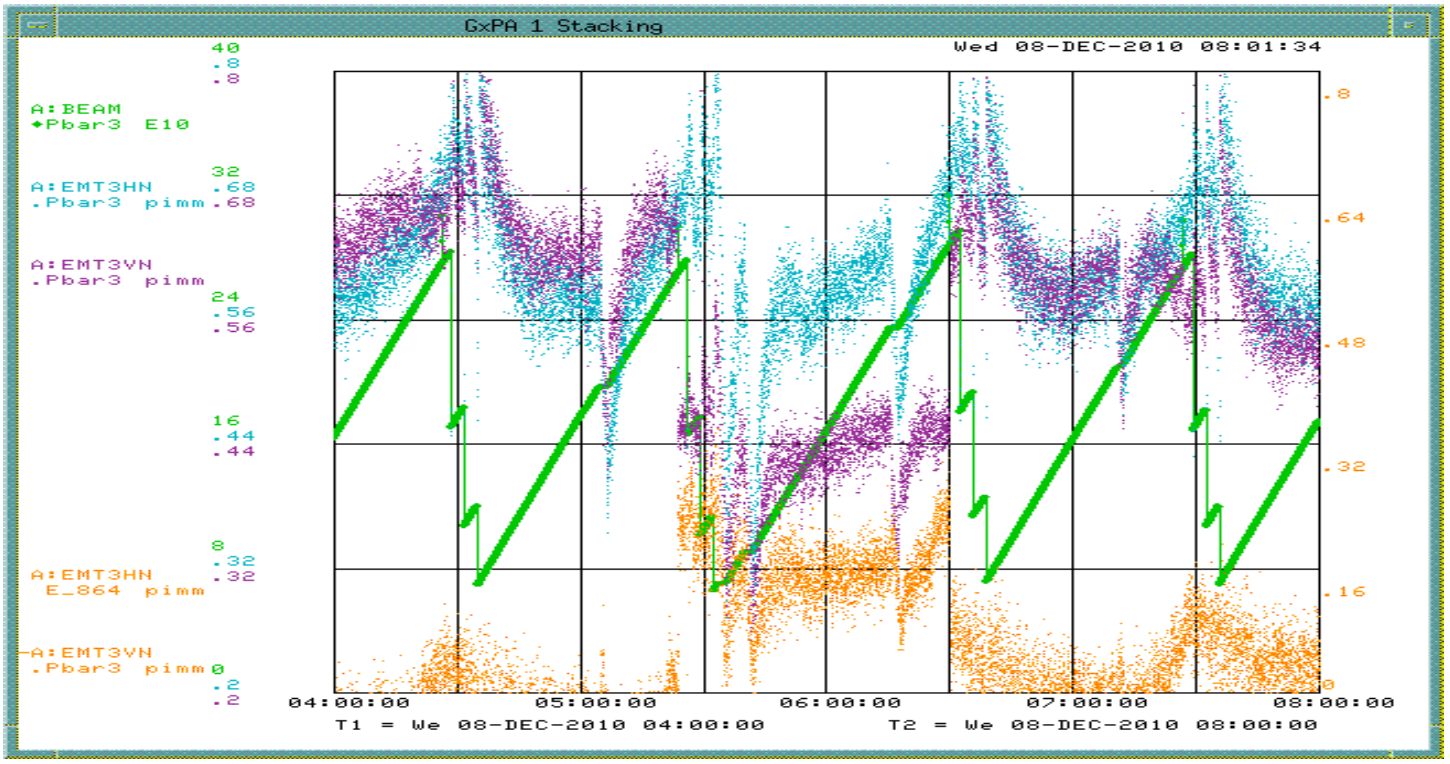
- Other Info
  - Average POT : 7.87 E12
  - Average production: 20.71 pbars/E6 protons

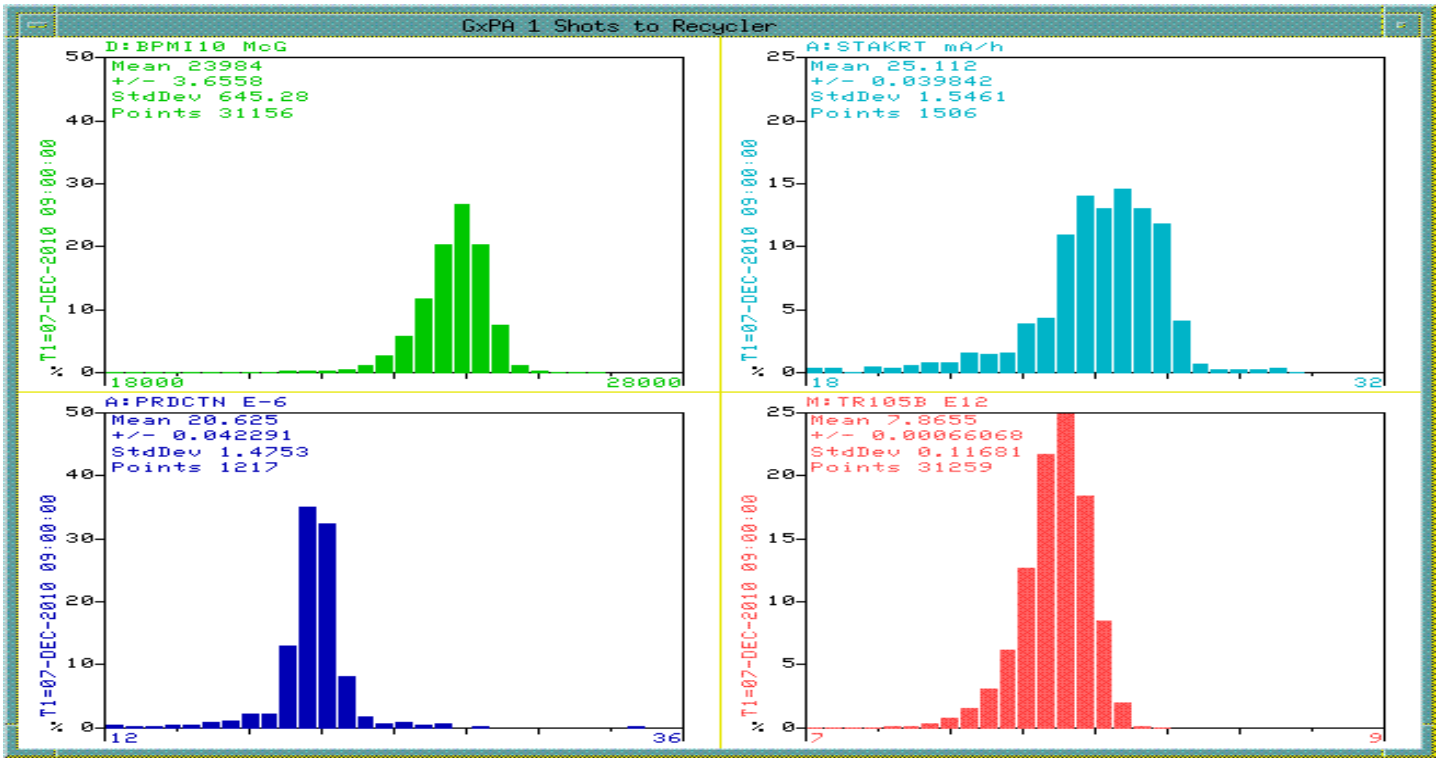
Plots

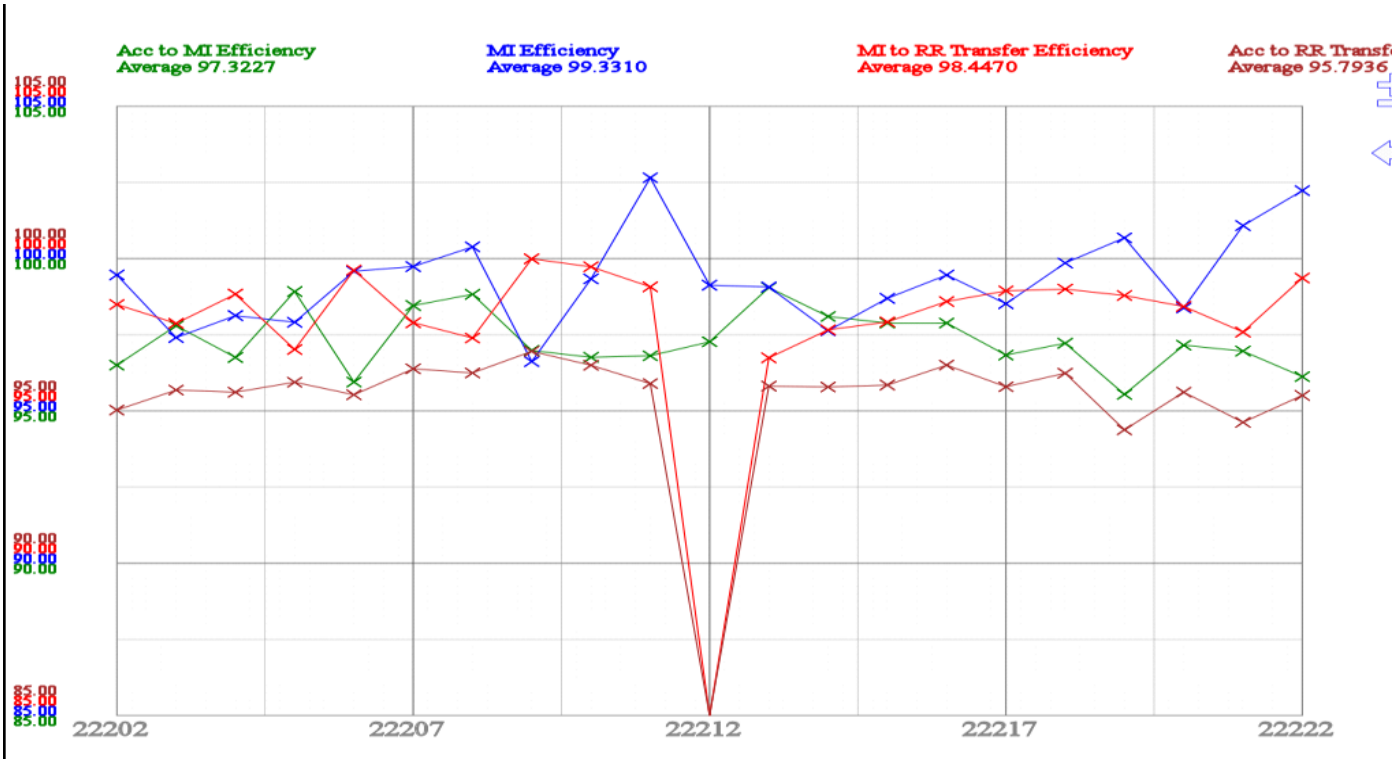

Accelerators (24.0 hrs.)
Wed Dec 8 07:43:08 2010
Store 8339: AIL=327.5 e30
MI Gap-Clearing Kicker stuc
MIRF16 screen power supply nC overcurrent
T:ILAM playing wrong ramp
MIRF16 Grid PS Contactor Open
switched MIRF15 to slip stacking station
LLRF3 PA crowbar
Store 8340: AIL=330.4 e30
T:IBEAMB
A:IBEAM
C:LUMAVG
R:BEAM
Tue 08:00 07-Dec 2010
Tue 12:00 07-Dec 2010
Tue 16:00 07-Dec 2010
Tue 20:00 07-Dec 2010
Wed 00:00 08-Dec 2010
Wed 04:00 08-Dec 2010
Wed 08:00 08-Dec 2010


Tue Dec 07 07:00:00 CST 2010 -- Wed Dec 08 07:00:00 CST 2010
Stack Size (mA)
Stack Parameters
Emittances (π mm mr)
Time
06:00
08:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
00:00
02:00
04:00
06:00
08:00
A:IBEAM
A:STCKRT
Hourly Rate
M:TOR109
A:PRDCTN
A:EMT3HN
A:EMT3VN
Ave Time between $81's

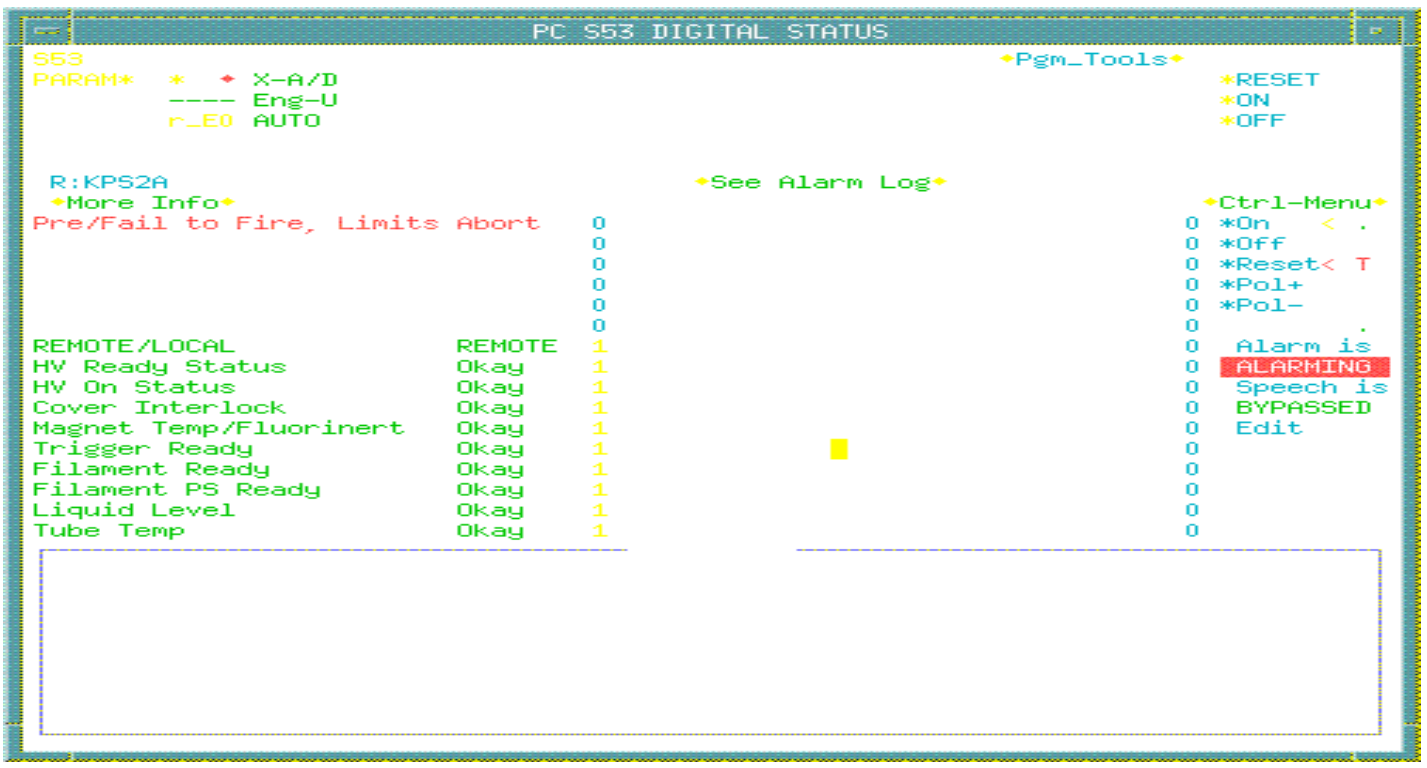

GxPA 1 Stacking
Wed 08-DEC-2010 07:53:43
A:IBEAM
.E_760 mA
A:STAKRT
+E_760 mA/h
A:PRDCTN
+Pbar2 E-6
M:TR105B
.MInj E12
A:EMT3HN
.E_760 pimm
G:TURN14
oMau
A:EMT3VN
.E_864 pimm
A:STCKAV
oE_864 Secs
07 09:00
07 15:00
07 21:00
08 03:00
08 09:00
T1 = Tu 07-DEC-2010 09:00:00
T2 = We 08-DEC-2010 09:00:00


GxPA 1 Stacking
Wed 08-DEC-2010 08:01:34
A:BEAM
+Pbar3 E10
A:EMT3HN
.Pbar3 pimm
A:EMT3VN
.Pbar3 pimm
A:EMT3HN
E_864 pimm
A:EMT3VN
.Pbar3 pimm
04:00:00
05:00:00
06:00:00
07:00:00
08:00:00
T1 = We 08-DEC-2010 04:00:00
T2 = We 08-DEC-2010 08:00:00


GxPA 1 Shots to Recycler
D:BPMI10 McG
Mean 23984
+/- 3.6558
StdDev 645.28
Points 31156
A:STAKRT mA/h
Mean 25.112
+/- 0.039842
StdDev 1.5461
Points 1506
A:PRDCTN E-6
Mean 20.625
+/- 0.042291
StdDev 1.4753
Points 1217
M:TR105B E12
Mean 7.8655
+/- 0.00066068
StdDev 0.11681
Points 31259
T1=07-DEC-2010 09:00:00


Acc to MI Efficiency
Average 97.3227
MI Efficiency
Average 99.3310
MI to RR Transfer Efficiency
Average 98.4470
Acc to RR Transf
Average 95.7936
22202
22207
22212
22217
22222

Column 1 Number_0_Pbar Transfer Shot #	Column 4 Number_3_Transfer Time		Column 21 Number_20_A:I BEAMB sampled on $91 (A:BEAM7), E10	Column 22 Number_21_A:I BEAMB sampled on $94 (A:BEAM9), E10	Unstacked (mA)	Column 23 Number_22_R: BEAMS (R:BEAME0[0]) pre xfer E10	Column 24 Number_23_R: BEAM (R:BEAME0[1]) post xfer, E10	Stashed	Acc to RR Eff	Acc to MI Eff	Acc to MI2 Eff	Acc to MI * Acc to MI2 Efficiency	Transfers	Sets	Column 5 Number_4_Acc Horizontal Emittance	Column 6 Number_5_Acc Vertical Emittance	Column 8 Number_7_Acc Longitudinal Emittance
	Totals =>				501.08			459.63	91.73%	97.46%	96.78%	94.32%	60	20	6.0831	5.701	1.9275
	Daily Average =>				501.08			459.63					60	20			
22221	Wednesday, December 08, 2010	6:32	29.76	7.13	25.12	217.86	241.51	23.80	94.74%	97.12%	97.77%	94.95%	3	1	6.472	5.822	1.934
22220	Wednesday, December 08, 2010	5:25	27.92	6.59	23.75	196.01	218.42	22.71	95.62%	97.45%	96.81%	94.34%	3	1	6.193	4.303	1.926
22219	Wednesday, December 08, 2010	4:28	28.49	6.94	24.16	173.84	196.45	22.84	94.52%	95.86%	96.67%	92.67%	3	1	6.445	6.297	1.939
22218	Wednesday, December 08, 2010	3:31	27.95	6.96	23.61	151.87	174.24	22.72	96.24%	97.49%	97.69%	95.24%	3	1	6.474	6.163	1.95
22217	Wednesday, December 08, 2010	2:32	27.41	6.60	23.34	130.07	152.22	22.36	95.81%	96.94%	95.36%	92.44%	3	1	6.202	6.068	1.963
22216	Wednesday, December 08, 2010	1:31	27.94	6.78	23.77	107.81	130.41	22.87	96.24%	97.95%	97.70%	95.70%	3	1	6.447	6.377	1.946
22215	Wednesday, December 08, 2010	0:35	31.93	7.64	26.91	82.63	108.14	25.74	95.66%	97.77%	96.66%	94.51%	3	1	6.623	6.023	1.949
22214	Tuesday, December 07, 2010	23:23	27.90	6.37	24.15	59.83	82.79	23.14	95.81%	97.75%	95.70%	93.55%	3	1	6.3	5.836	1.947
22213	Tuesday, December 07, 2010	22:07	28.66	6.65	24.47	36.65	60.03	23.44	95.81%	98.85%	97.99%	96.86%	3	1	6.346	5.938	1.923
22212	Tuesday, December 07, 2010	20:36	54.50	8.29	51.06	8.54	36.88	28.62	56.04%	96.95%	96.22%	93.29%	4	1	7.845	7.069	1.905
22211	Tuesday, December 07, 2010	18:00	26.47	6.00	22.78	350.90	372.27	21.84	95.87%	97.23%	99.41%	96.66%	3	1	6.377	6.118	1.949
22210	Tuesday, December 07, 2010	16:47	28.78	5.85	25.39	328.81	352.89	24.46	96.35%	96.86%	97.07%	94.03%	3	1	5.838	5.613	1.917
22209	Tuesday, December 07, 2010	15:34	25.80	4.70	23.17	308.27	330.27	22.41	96.75%	97.29%	94.27%	91.71%	3	1	4.888	5.109	1.9
22208	Tuesday, December 07, 2010	14:31	25.87	4.38	23.47	286.71	309.07	22.67	96.58%	98.87%	99.44%	98.31%	3	1	5.28	5.16	1.9
22207	Tuesday, December 07, 2010	13:31	26.58	5.59	23.50	264.99	287.38	22.65	96.40%	98.31%	97.78%	96.13%	3	1	5.97	5.48	1.952
22206	Tuesday, December 07, 2010	12:29	25.66	5.27	22.86	244.02	265.65	21.84	95.55%	96.75%	95.94%	92.83%	3	1	5.564	5.435	1.924
22205	Tuesday, December 07, 2010	11:30	25.56	5.76	22.34	223.39	244.51	21.44	95.97%	98.67%	96.98%	95.69%	3	1	5.724	5.482	1.914
22204	Tuesday, December 07, 2010	10:35	27.44	5.93	24.01	201.14	223.82	22.95	95.59%	96.98%	95.68%	92.80%	3	1	6.043	5.468	1.924
22203	Tuesday, December 07, 2010	9:25	28.16	3.73	25.49	177.50	201.58	24.29	95.27%	97.74%	95.13%	92.97%	3	1	5.104	4.742	1.873
22202	Tuesday, December 07, 2010	8:34	25.50	8.99	17.76	161.00	177.81	16.85	94.89%	96.76%	95.96%	92.85%	2	1	5.527	5.517	1.914



Lost a transfer on set 22212 when R:KPS2A tripped on pre/fail to fire indication

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	Totals =>				450.02			431.01	95.78%	97.51%	96.85%	94.44%	60	19	5.9904	5.629	1.9286
	Daily Average =>				450.02			431.01					60	19			
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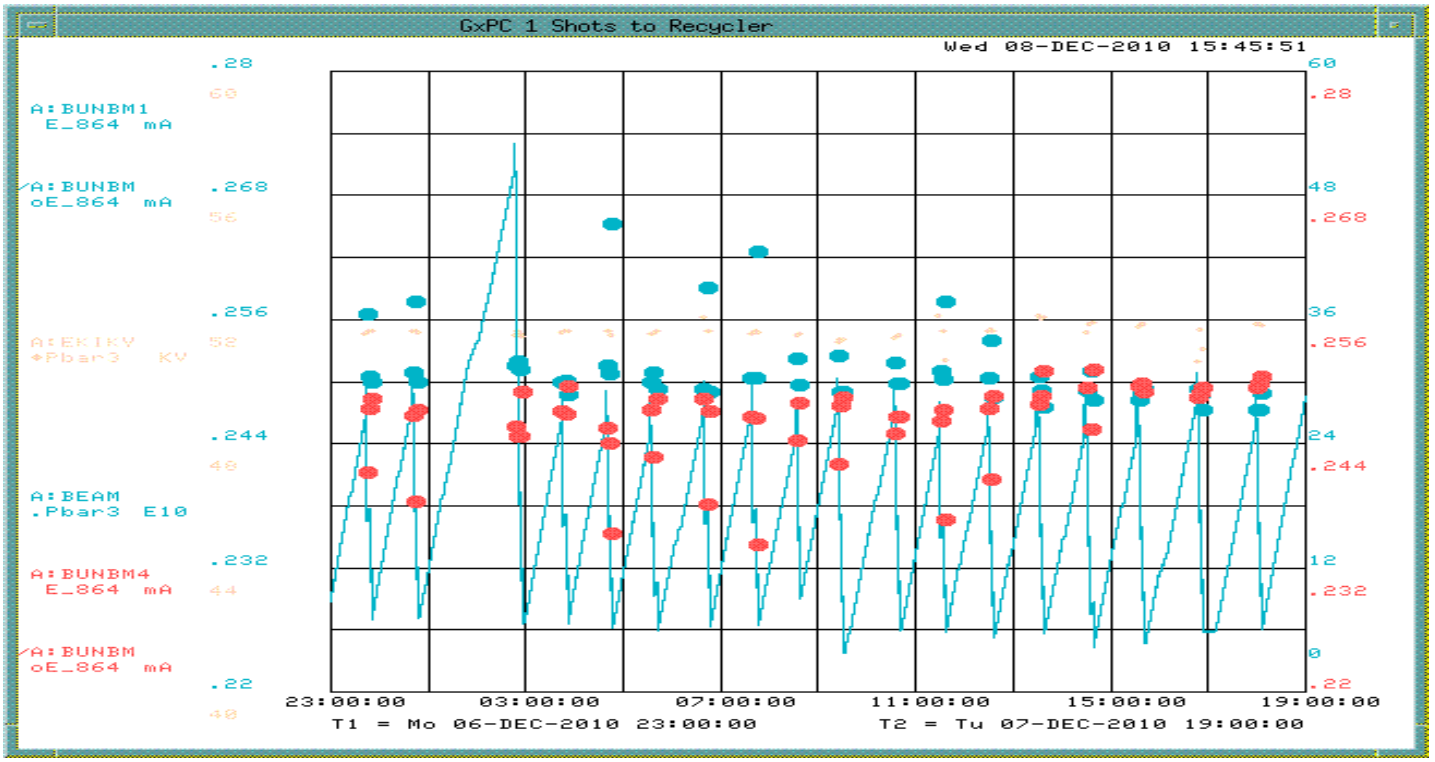
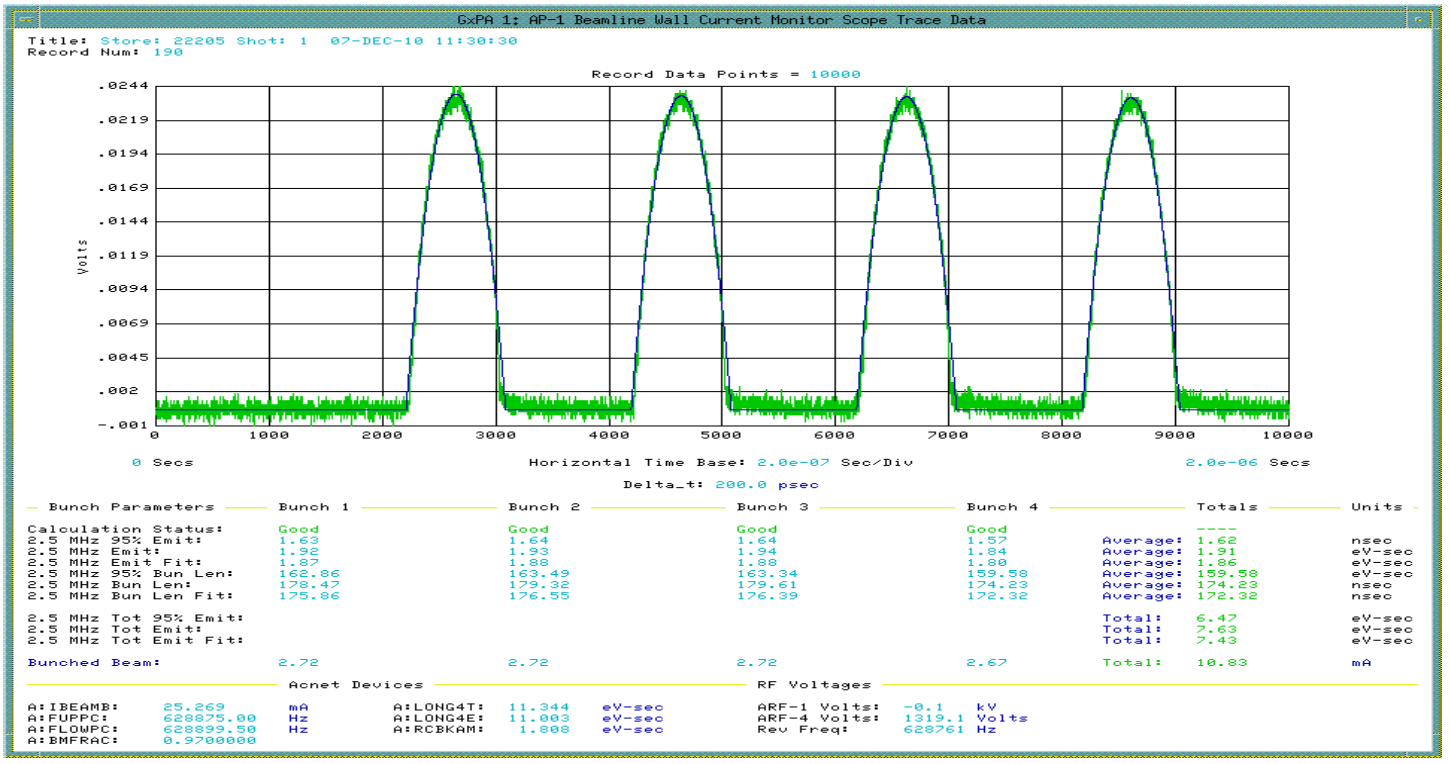


D:EKIK reduced another 10ns to stop clipping of last bunch



P207 shows clipping on last bunch