2010-10-12 Tuesday Morning Notes

Tuesday, October 12, 2010
6:00 AM

On-call:

- Tuesday: Steve Werkema
- Wednesday: DVM

Stacking

- M:IP107 tripped five times in the last 24 hours.
  - 9:44am, we had a vacuum excursion in the AP1 line. M:IP107 tripped and vacuum activity can be seen on D:IP928, D:IP926 and D:IP925.
  - http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar10&action=view&page=267&anchor=125324&hilite=12:53:24-
  - Vacuum experts checked the power supply and cable to the tunnel and all looks good. We suspect a real vacuum issue.
  - The ion pump tripped three more times during the day and once overnight, but the vacuum levels have stabilized out in the high 10-7's.
  - We hope to limp along like this for a while, but may have to access if the vacuum goes.
  - Vacuum experts would like to complete a leak check…estimate 4 hours.
  - We can line this access up with a naturally occurring interruption in stacking.
  - M:IP107 is in the PreVault enclosure
    - Good news: Can have a stack and store in the machine
    - Bad news: We have a cooldown that can take up to one hour. ES&H wants the AP0 PreVault monitor G:RD2072 to fall below 400 Cpm before they let us in.
- Debuncher Momentum cooling was tuned up
  - http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar10&action=view&page=267&anchor=104733&hilite=10:47:33-
  - http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar10&action=view&page=267&anchor=142845&hilite=14:28:45-
- Centered Debuncher movable devices
  - http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar10&action=view&page=267&anchor=162720&hilite=16:27:20-
- During transfers, the sequencer never saw the $94 and didn't turn back on the stacktail
  - http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar10&action=view&page=267&anchor=123249&hilite=12:32:49-
- Stacking numbers
  - <stacking rate> = 26 mA/hr
  - <production> = 24.4 pbar/e6 protons
  - <beam on target> = 8.44 Tp
- After the large stack was transferred on the owl shift.
  - <stacking rate> = 27.9 mA/hr
  - <production> = 25.7 pbars/E6 protons
  - <beam on target> = 8.48 Tp

Transfers

- Unstacked 550e10 in 59 transfers over 18 sets
- <overall efficiency>=95.4%
- Remove transfers 21206 (107mA) and 21192 (71mA), then the overall efficiency is 97%!

Requests

- Cycle time?

The Numbers

- Stacking
  - Pbars stacked: 579.05 E10
  - Time stacking: 22.44 Hr
  - Average stacking rate: 25.80 E10/Hr

- Uptime
  - Number of pulses while in stacking mode: 27672
  - Number of pulses with beam: 26543
  - Fraction of up pulses was: 95.92%

- The uptime's effect on the stacking numbers
  - Corrected time stacking: 21.53 Hr
  - Possible average stacking rate: 26.90 E10/Hr
  - Could have stacked: 603.68 E10/Hr

- Recycler Transfers
  - Pbars sent to the Recycler: 530.77 E10
  - Number of transfers : 59
  - Number of transfer sets: 19
  - Average Number of transfer per set: 3.11
  - Time taken to shoot including reverse proton tuneup: 00.21 Hr
  - Transfer efficiency: 96.06%

- Other Info
  - Average POT : 8.43 E12
  - Average production: 25.88 pbars/E6 protons

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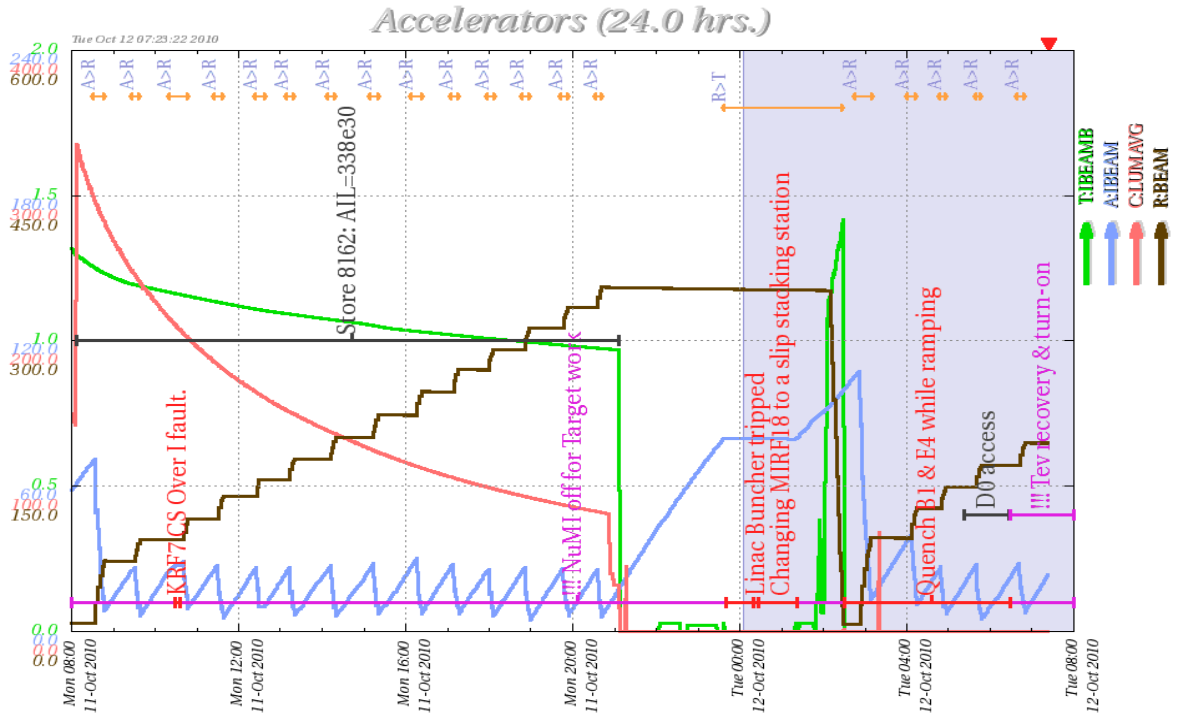
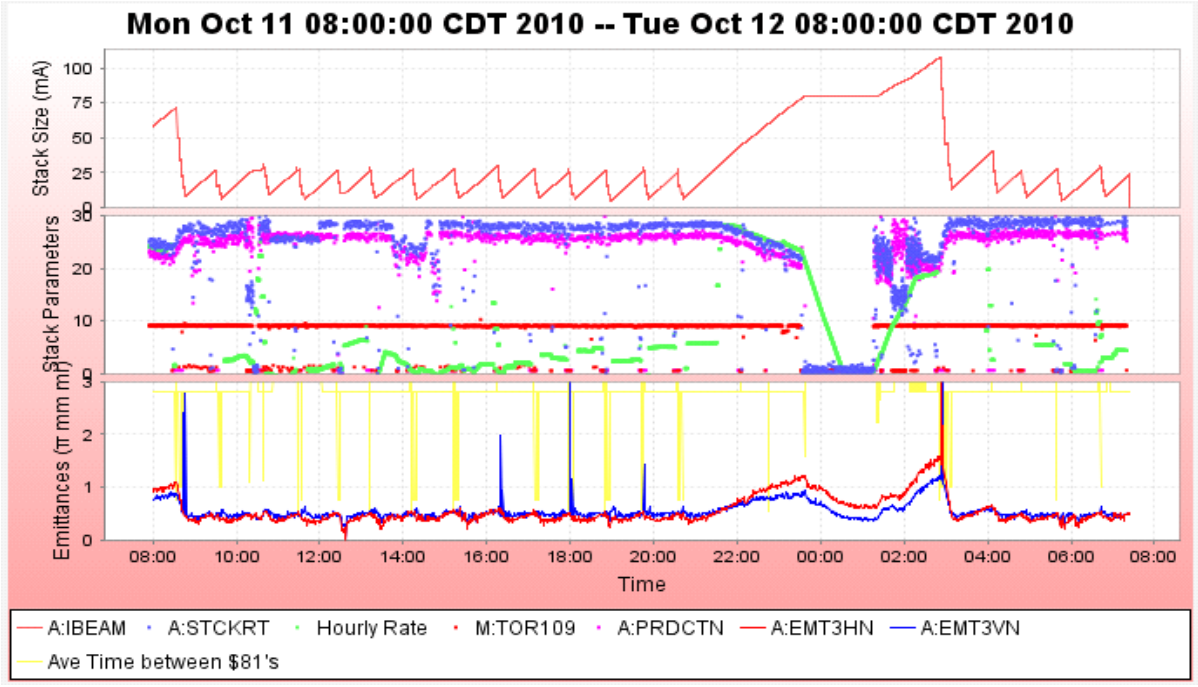
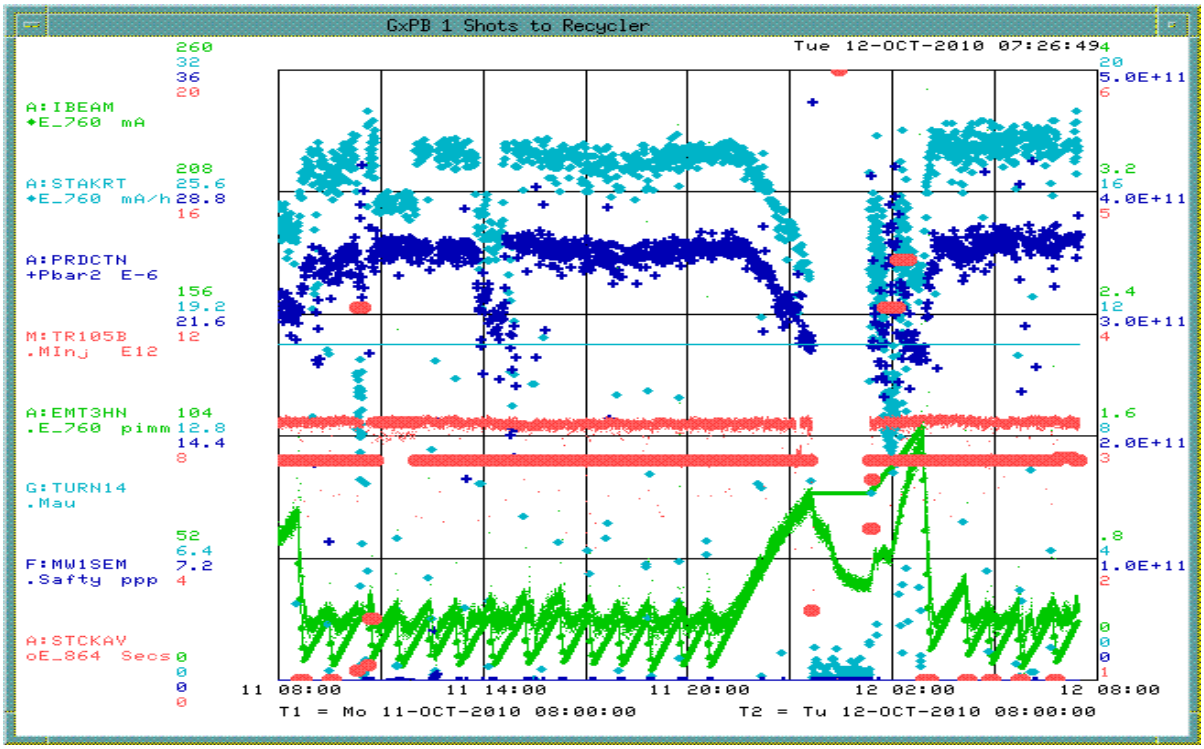
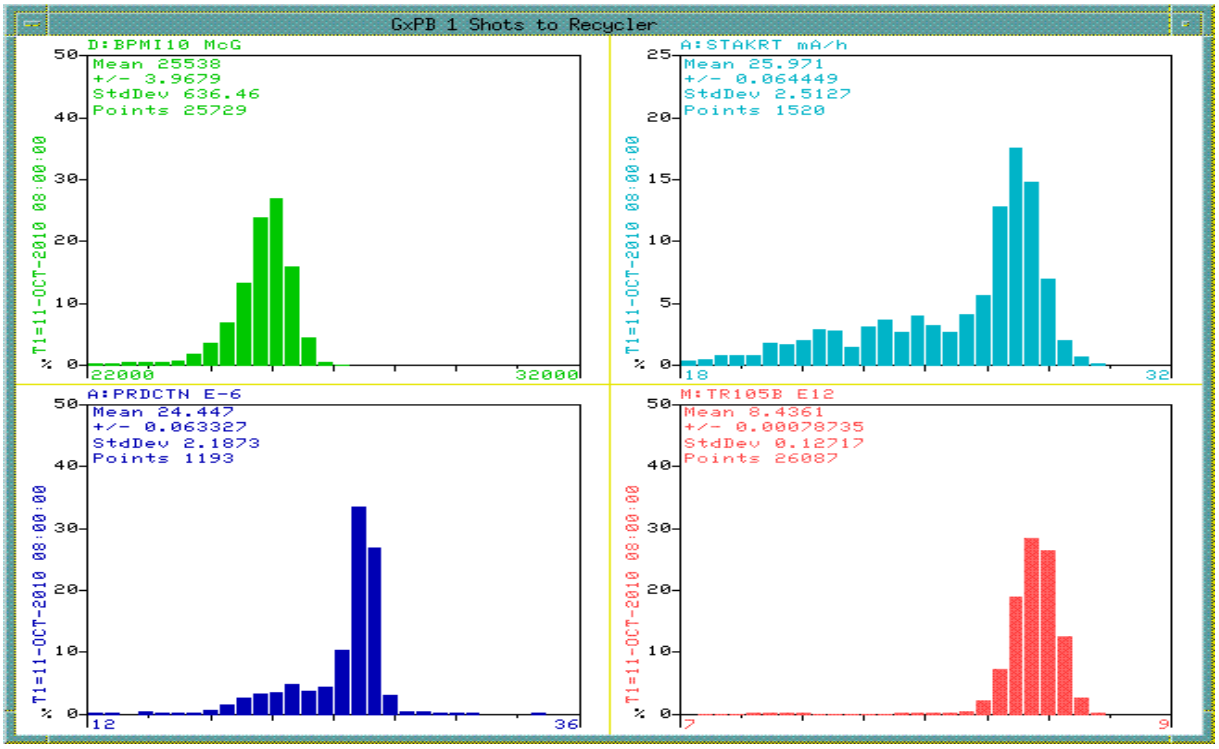
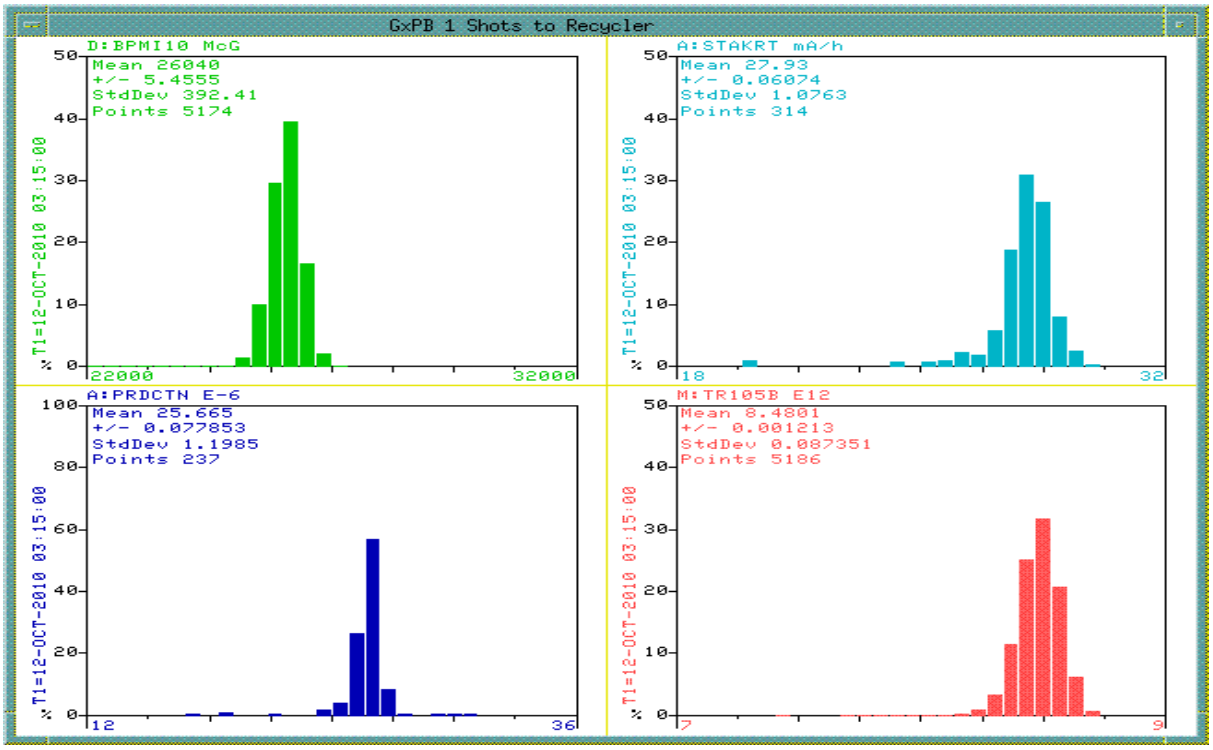
The Plots

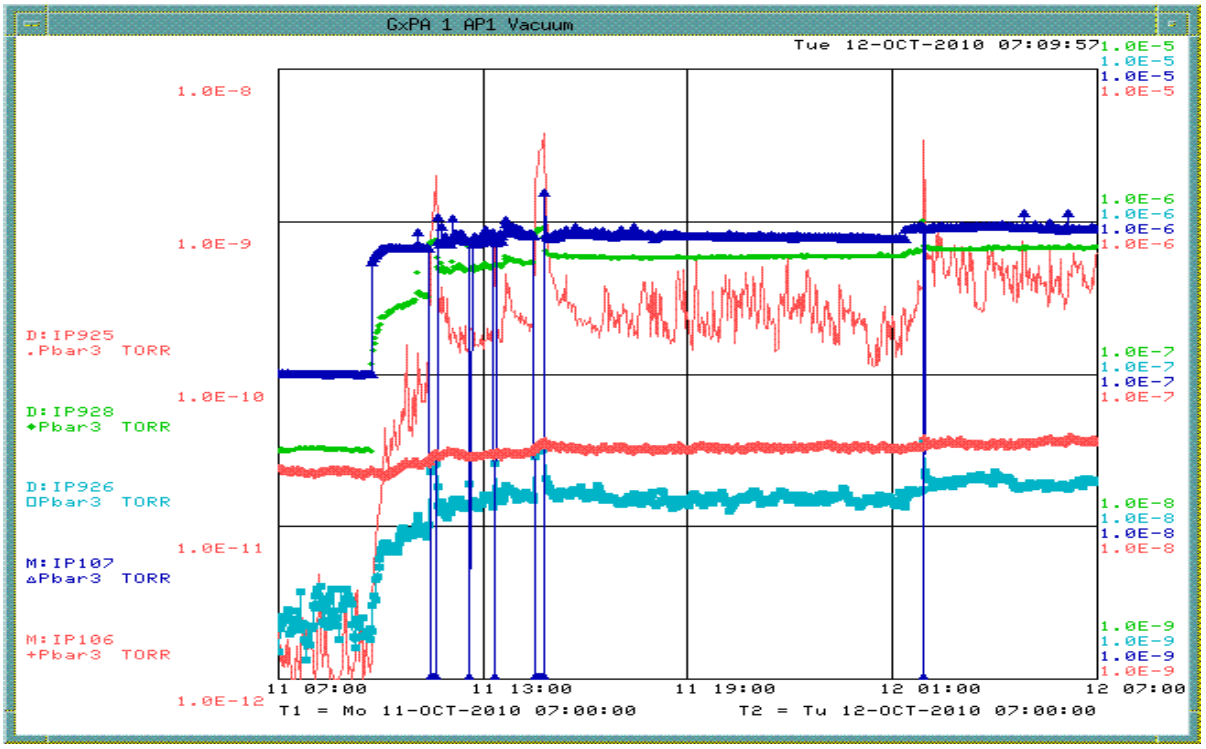


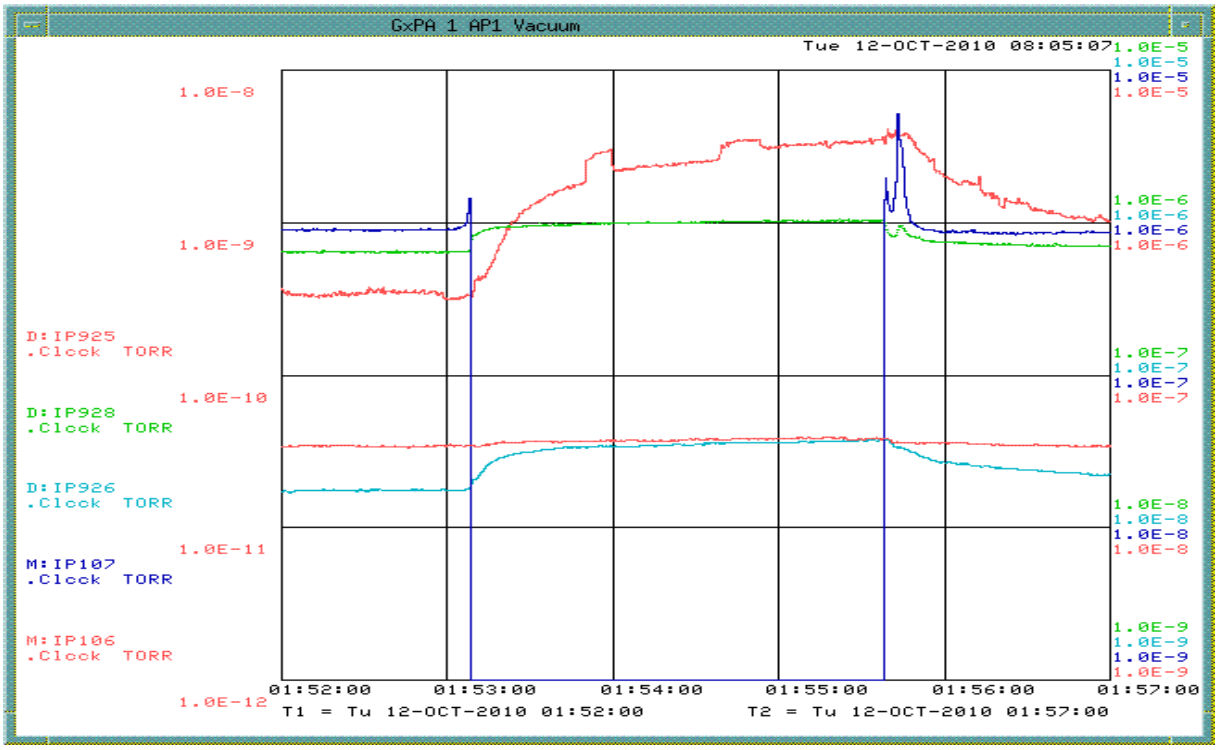

Mon Oct 11 08:00:00 CDT 2010 -- Tue Oct 12 08:00:00 CDT 2010
Stack Size (mA)
Stack Parameters
Emittances (π mm mr)
Time
A:IBEAM
A:STCKRT
Hourly Rate
M:TOR109
A:PRDCTN
A:EMT3HN
A:EMT3VN
Ave Time between $81's

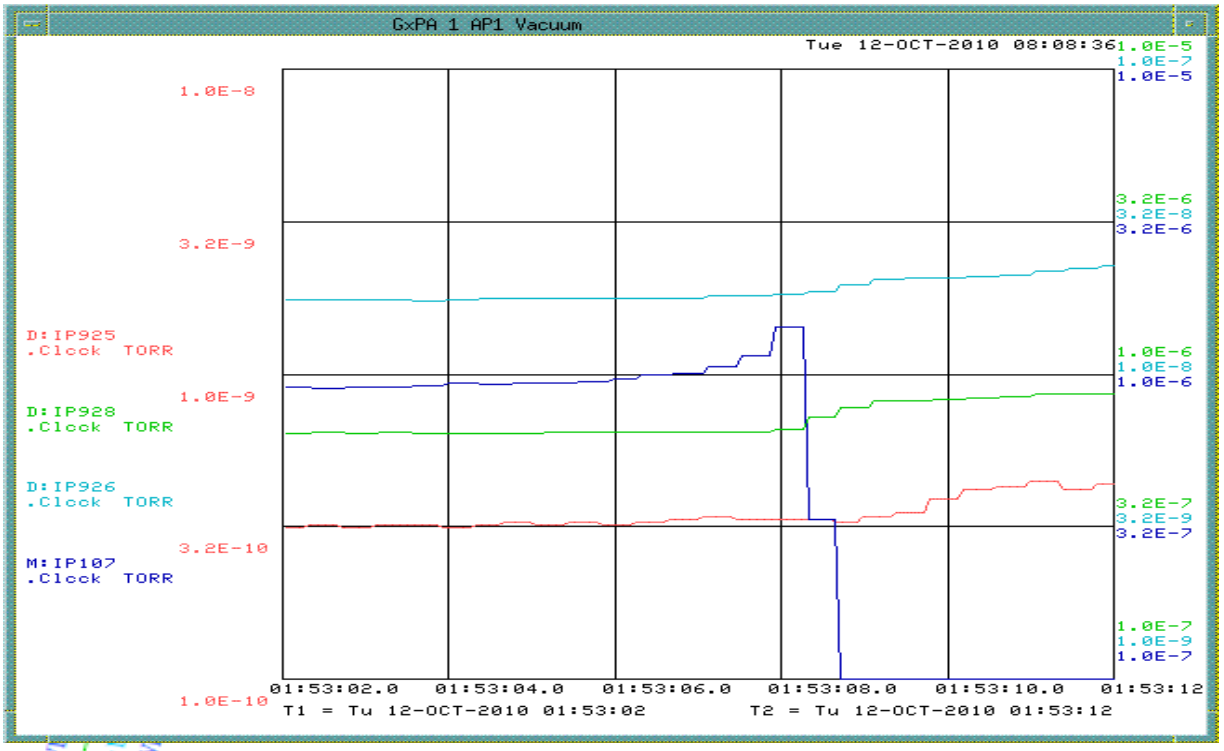

GxPB 1 Shots to Recycler
Tue 12-OCT-2010 07:26:49
A:IBEAM
+E_760 mA
A:STAKRT
+E_760 mA/h
A:PRDCTN
+Pbar2 E-6
M:TR105B
.MInj E12
A:EMT3HN
.E_760 pimm
G:TURN14
.Mau
F:MW1SEM
.Safty ppp
A:STCKAV
oE_864 Secs
11 08:00
11 14:00
11 20:00
12 02:00
12 08:00
T1 = Mo 11-OCT-2010 08:00:00
T2 = Tu 12-OCT-2010 08:00:00

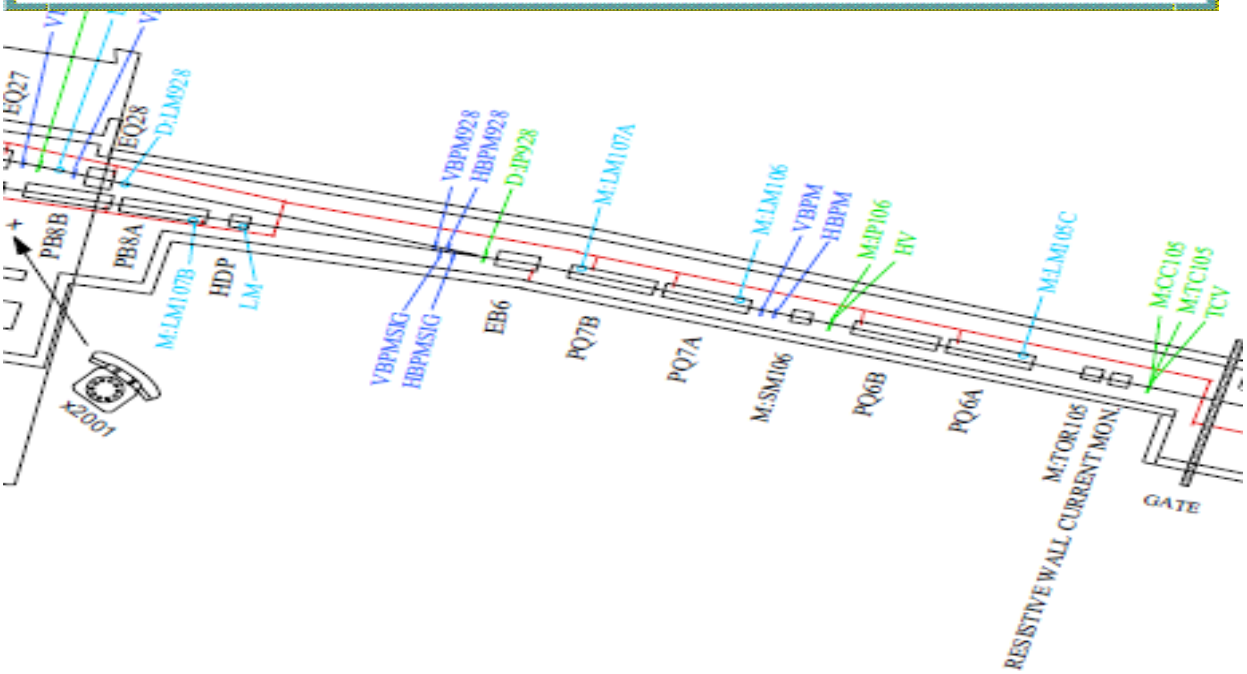

GxPB 1 Shots to Recycler
D:BPMI10 McG
Mean 25538
+/- 3.9679
StdDev 636.46
Points 25729
A:STAKRT mA/h
Mean 25.971
+/- 0.064449
StdDev 2.5127
Points 1520
A:PRDCTN E-6
Mean 24.447
+/- 0.063327
StdDev 2.1873
Points 1193
M:TR105B E12
Mean 8.4361
+/- 0.00078735
StdDev 0.12717
Points 26087
T1=11-OCT-2010 08:00:00
% 0
22000
32000
18
32
12
36
7
9

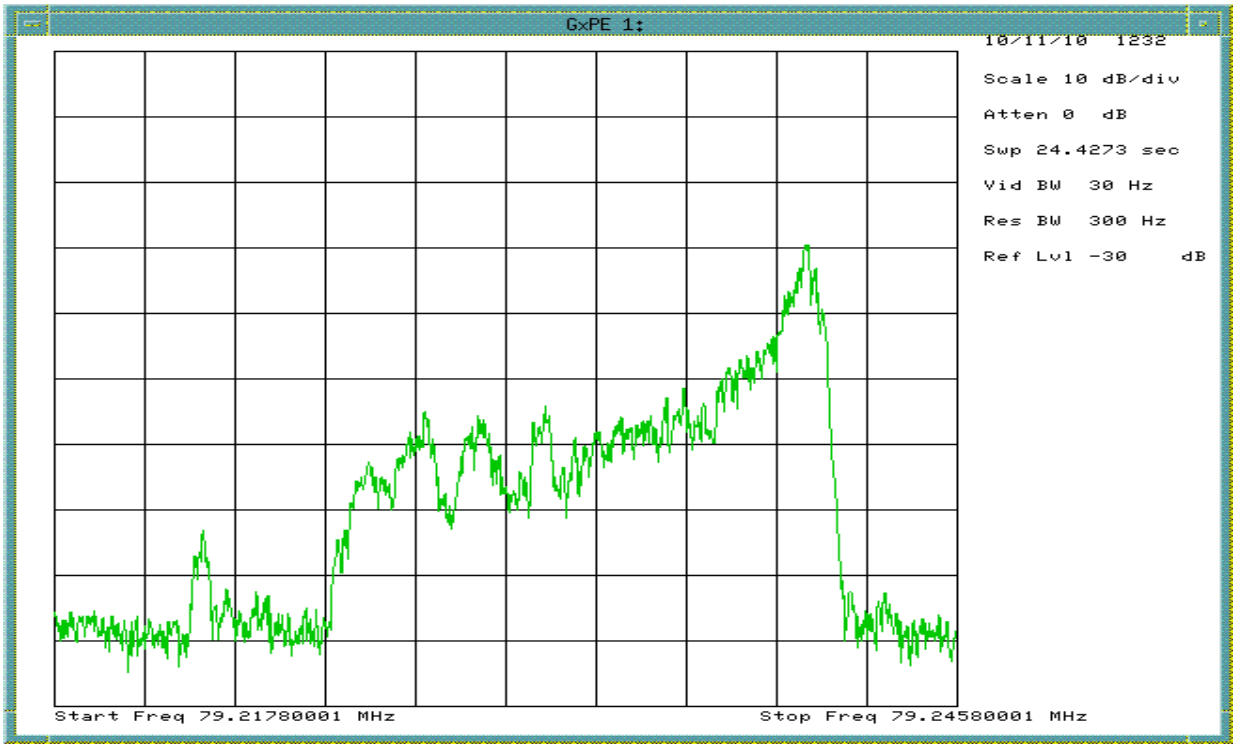

GxPB 1 Shots to Recycler
D:BPMI10 McG
Mean 26040
+/- 5.4555
StdDev 392.41
Points 5174
A:STAKRT mA/h
Mean 27.93
+/- 0.06074
StdDev 1.0763
Points 314
A:PRDCTN E-6
Mean 25.665
+/- 0.077853
StdDev 1.1985
Points 237
M:TR105B E12
Mean 8.4801
+/- 0.001213
StdDev 0.087351
Points 5186
T1=12-OCT-2010 03:15:00
% 0
22000
32000
18
32
12
36
7
9

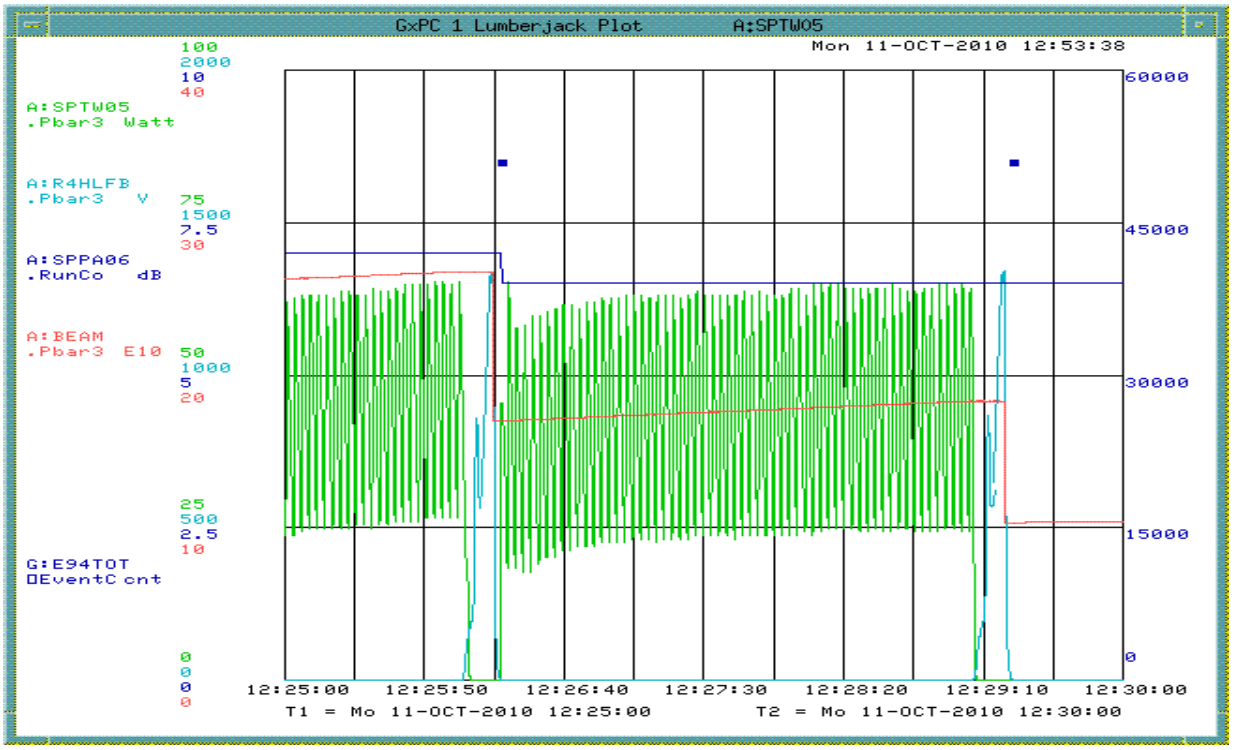

GxPA 1 AP1 Vacuum
Tue 12-OCT-2010 07:09:57
1.0E-8
1.0E-9
1.0E-10
1.0E-11
1.0E-12
D:IP925
.Pbar3 TORR
D:IP928
+Pbar3 TORR
D:IP926
□Pbar3 TORR
M:IP107
△Pbar3 TORR
M:IP106
+Pbar3 TORR
11 07:00
11 13:00
11 19:00
12 01:00
12 07:00
T1 = Mo 11-OCT-2010 07:00:00
T2 = Tu 12-OCT-2010 07:00:00

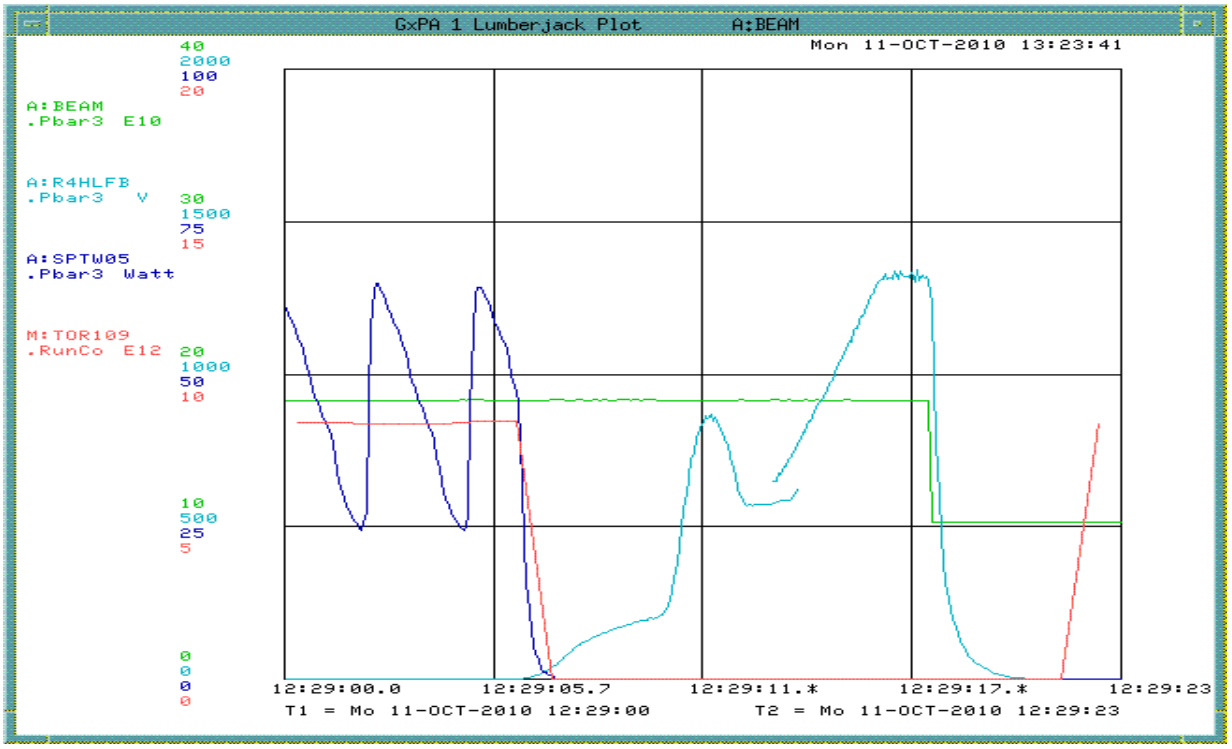

GxPA 1 AP1 Vacuum
Tue 12-OCT-2010 08:05:07
1.0E-8
1.0E-9
1.0E-10
1.0E-11
1.0E-12
D:IP925
.Clock TORR
D:IP928
.Clock TORR
D:IP926
.Clock TORR
M:IP107
.Clock TORR
M:IP106
.Clock TORR
01:52:00
01:53:00
01:54:00
01:55:00
01:56:00
01:57:00
T1 = Tu 12-OCT-2010 01:52:00
T2 = Tu 12-OCT-2010 01:57:00

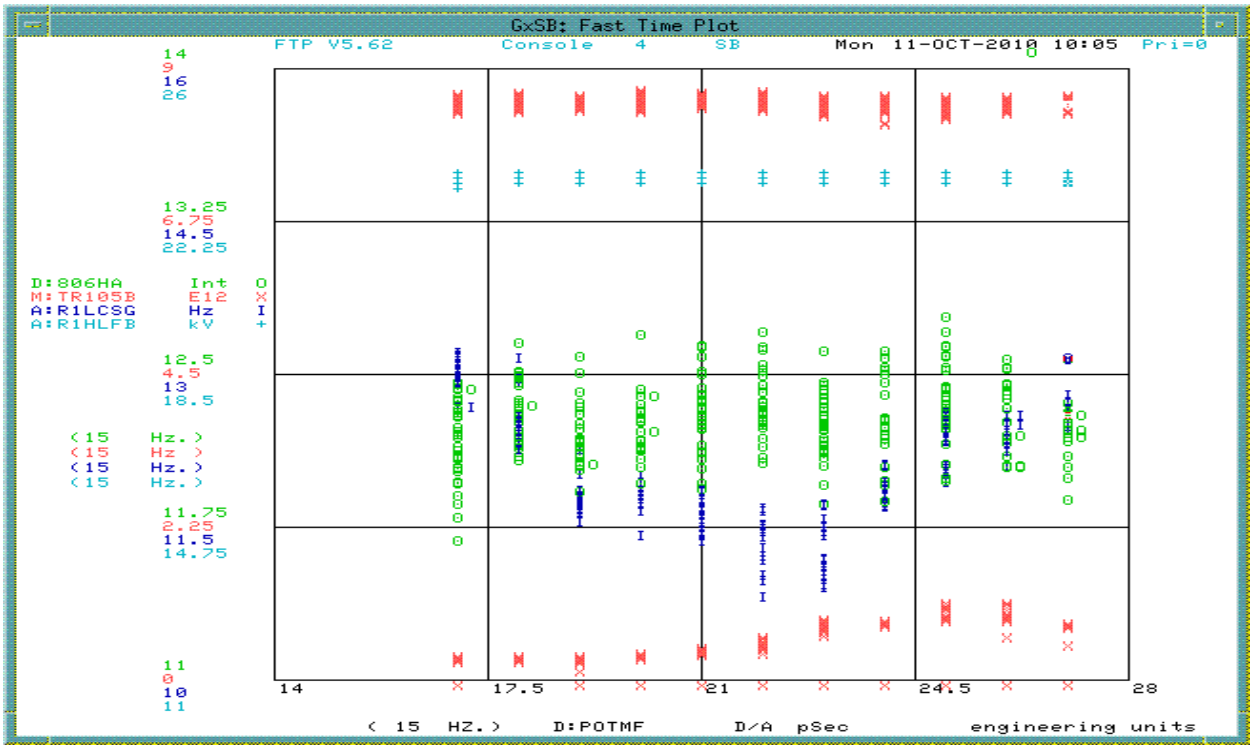

GxPA 1 AP1 Vacuum
Tue 12-OCT-2010 08:08:36
D:IP925
.Clock TORR
D:IP928
.Clock TORR
D:IP926
.Clock TORR
M:IP107
.Clock TORR
1.0E-8
3.2E-9
1.0E-9
3.2E-10
1.0E-10
1.0E-5
1.0E-7
3.2E-6
3.2E-8
1.0E-6
1.0E-8
3.2E-7
3.2E-9
1.0E-7
1.0E-9
01:53:02.0
01:53:04.0
01:53:06.0
01:53:08.0
01:53:10.0
01:53:12
T1 = Tu 12-OCT-2010 01:53:02
T2 = Tu 12-OCT-2010 01:53:12

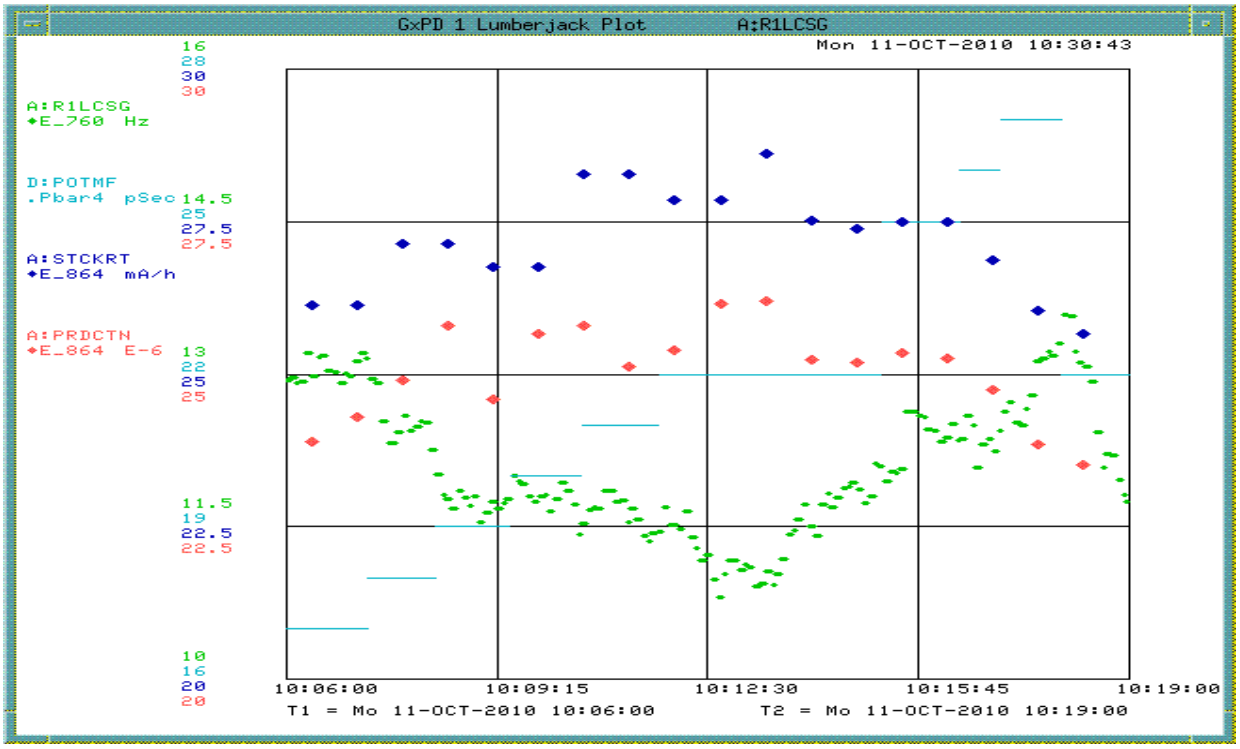

EQ27
EQ28
D:LM928
PB8B
PB8A
M:LM107B
HDP
LM
X2001
VBPM928
HBPM928
VBPMSIG
HBPMSIG
EB6
D:IP928
M:LM107A
PQ7B
PQ7A
M:LM106
VBPM
HBPM
M:SM106
M:IP106
HV
PQ6B
PQ6A
M:LM105C
M:TOR105
RESISTIVE WALL CURRENT MON.
M:CC105
M:TC105
TCV
GATE

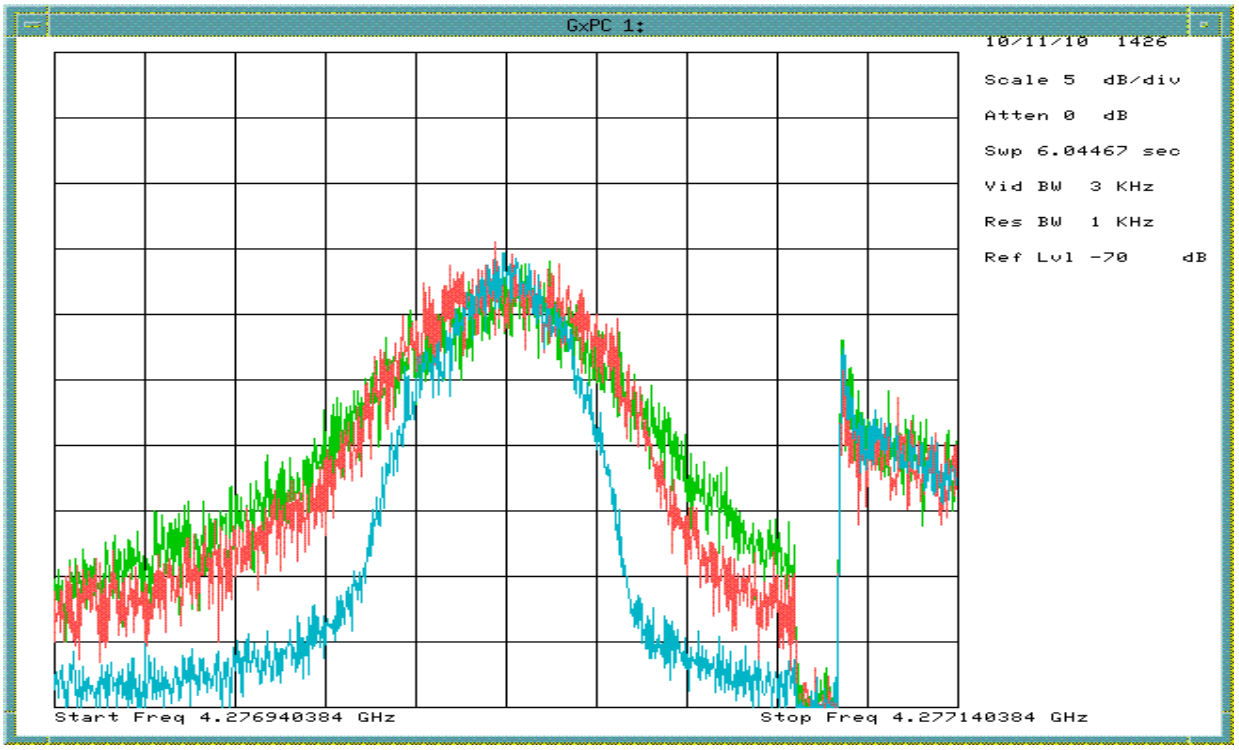

GxPE 1:
10/11/10 1232
Scale 10 dB/div
Atten 0 dB
Swp 24.4273 sec
Vid BW 30 Hz
Res BW 300 Hz
Ref Lvl -30 dB
Start Freq 79.21780001 MHz
Stop Freq 79.24580001 MHz

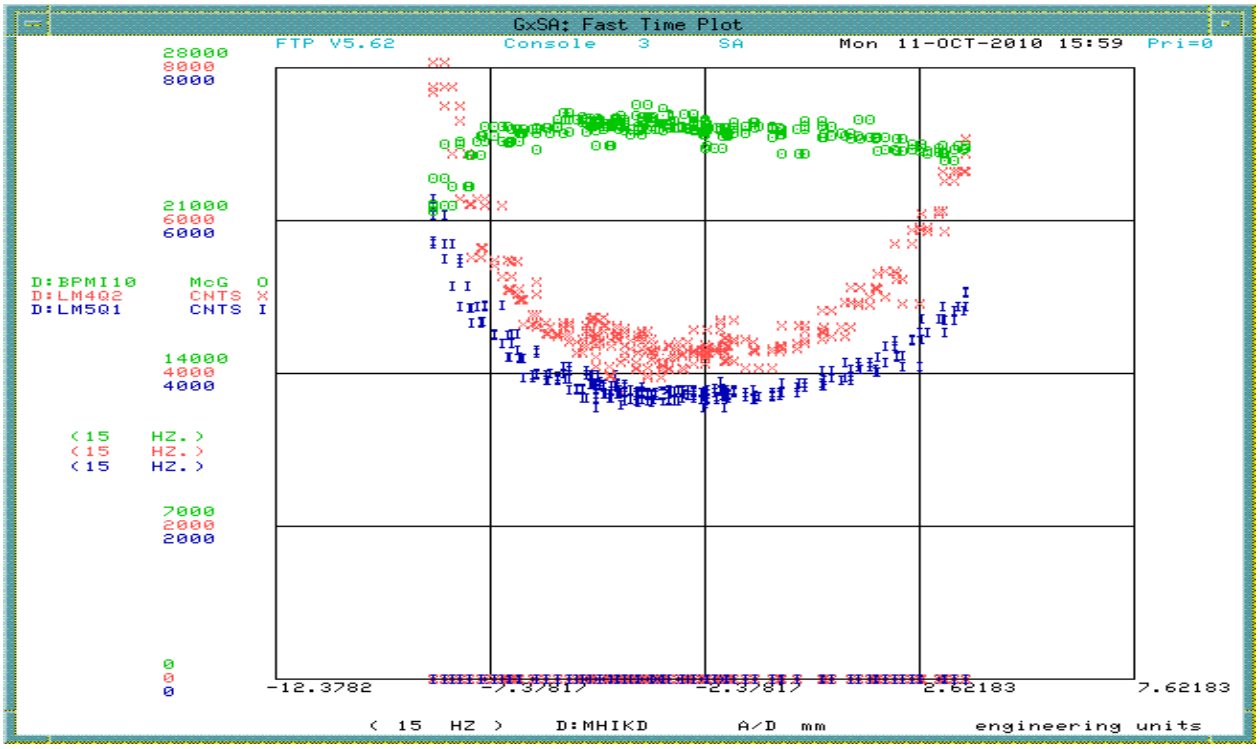

GxPC 1 Lumberjack Plot A:SPTW05
Mon 11-OCT-2010 12:53:38
A:SPTW05
.Pbar3 Watt
A:R4HLFB
.Pbar3 V
A:SPPA06
.RunCo dB
A:BEAM
.Pbar3 E10
G:E94TOT
DEventC cnt
60000
45000
30000
15000
0
12:25:00
12:25:50
12:26:40
12:27:30
12:28:20
12:29:10
12:30:00
T1 = Mo 11-OCT-2010 12:25:00
T2 = Mo 11-OCT-2010 12:30:00

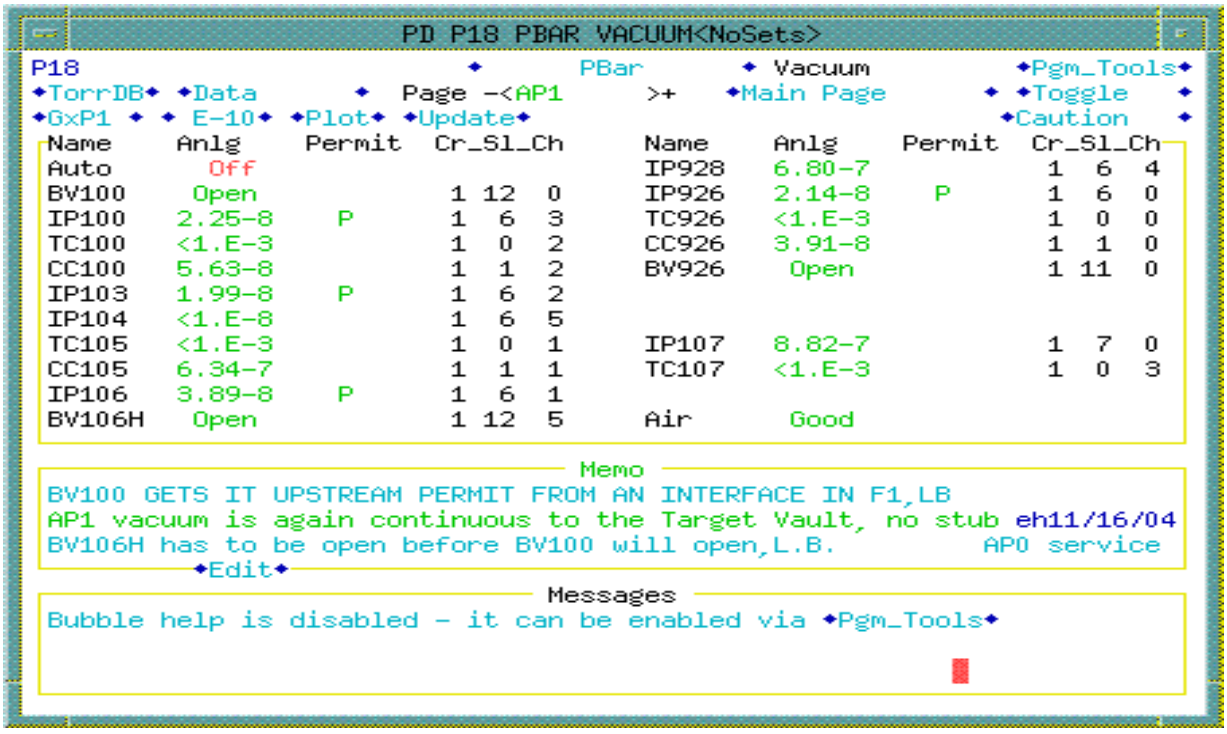

GxPA 1 Lumberjack Plot A:BEAM
Mon 11-OCT-2010 13:23:41
A:BEAM
.Pbar3 E10
A:R4HLFB
.Pbar3 V
A:SPTW05
.Pbar3 Watt
M:TOR109
.RunCo E12
12:29:00.0
12:29:05.7
12:29:11.*
12:29:17.*
12:29:23
T1 = Mo 11-OCT-2010 12:29:00
T2 = Mo 11-OCT-2010 12:29:23

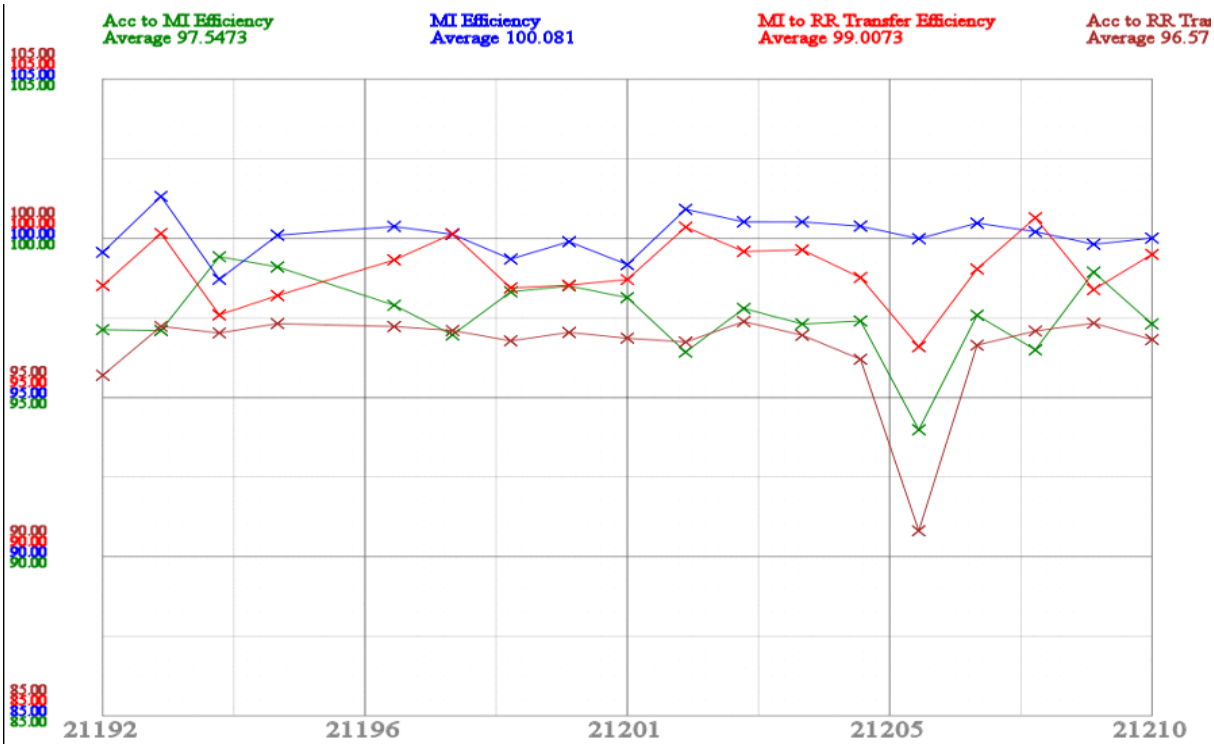

GxSB: Fast Time Plot
FTP V5.62 Console 4 SB Mon 11-OCT-2010 10:05 Pri=0
D:806HA Int
M:TR105B E12
A:R1LCSG Hz
A:R1HLFB kV
14
17.5
21
24.5
28
(15 HZ.) D:POTMF D/A pSec engineering units


GxPD 1 Lumberjack Plot A:R1LCSG
Mon 11-OCT-2010 10:30:43
16
28
30
30
A:R1LCSG
E_760 Hz
D:POTMF
.Pbar4 pSec
14.5
25
27.5
27.5
A:STCKRT
E_864 mA/h
A:PRDCTN
E_864 E-6
13
22
25
25
11.5
19
22.5
22.5
10
16
20
20
10:06:00
10:09:15
10:12:30
10:15:45
10:19:00
T1 = Mo 11-OCT-2010 10:06:00
T2 = Mo 11-OCT-2010 10:19:00


GxPC 1:
10/11/10 1426
Scale 5 dB/div
Atten 0 dB
Swp 6.04467 sec
Vid BW 3 KHz
Res BW 1 KHz
Ref Lvl -70 dB
Start Freq 4.276940384 GHz
Stop Freq 4.277140384 GHz


GxSA: Fast Time Plot
FTP V5.62 Console 3 SA Mon 11-OCT-2010 15:59 Pri=0
28000
8000
8000
21000
6000
6000
D:BPMI10 McG O
D:LM4Q2 CNTS X
D:LM5Q1 CNTS I
14000
4000
4000
(15 HZ.)
(15 HZ.)
(15 HZ.)
7000
2000
2000
0
0
0
-12.3782
2.62183
7.62183
(15 HZ) D:MHIKD A/D mm engineering units


PD P18 PBAR VACUUM<NoSets>
P18 PBar Vacuum Pgm_Tools
TorrDB Data Page -<AP1 >+ Main Page Toggle
GxP1 E-10 Plot Update Caution
Name Anlg Permit Cr_Sl_Ch Name Anlg Permit Cr_Sl_Ch
Auto Off IP928 6.80-7 1 6 4
BV100 Open 1 12 0 IP926 2.14-8 P 1 6 0
IP100 2.25-8 P 1 6 3 TC926 <1.E-3 1 0 0
TC100 <1.E-3 1 0 2 CC926 3.91-8 1 1 0
CC100 5.63-8 1 1 2 BV926 Open 1 11 0
IP103 1.99-8 P 1 6 2
IP104 <1.E-8 1 6 5
TC105 <1.E-3 1 0 1 IP107 8.82-7 1 7 0
CC105 6.34-7 1 1 1 TC107 <1.E-3 1 0 3
IP106 3.89-8 P 1 6 1
BV106H Open 1 12 5 Air Good
Memo
BV100 GETS IT UPSTREAM PERMIT FROM AN INTERFACE IN F1,LB
AP1 vacuum is again continuous to the Target Vault, no stub eh11/16/04
BV106H has to be open before BV100 will open,L.B. AP0 service
Edit
Messages
Bubble help is disabled - it can be enabled via Pgm_Tools



Column 1 Number_0_Pbar Transfer Shot #	Column 4 Number_3_Transfer Time		Column 21 Number_20_A:IBEAMB sampled on $91 (A:BEAM7), E10	Column 22 Number_21_A:IBEAMB 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 =>				550.34			525.11	95.42%	96.83%	96.75%	93.68%	59	18	4.7543	4.7917	1.9165
	Daily Average =>				550.34			525.11					59	18			
21210	Tuesday, October 12, 2010	6:42	28.75	7.59	23.79	171.72	194.63	23.06	96.93%	97.48%	97.35%	94.90%	3	1	4.605	4.602	1.972
21209	Tuesday, October 12, 2010	5:40	27.66	5.17	23.70	148.94	171.95	23.06	97.30%	98.55%	98.05%	96.62%	3	1	3.675	4	1.86
21208	Tuesday, October 12, 2010	4:49	26.89	6.97	22.56	127.29	149.10	21.88	97.02%	97.05%	96.78%	93.92%	3	1	4.222	4.604	1.976
21207	Tuesday, October 12, 2010	4:07	40.20	10.46	32.32	96.43	127.44	31.19	96.50%	97.40%	97.98%	95.43%	3	1	5.151	5.083	1.94
21206	Tuesday, October 12, 2010	2:52	107.79	13.01	100.57	7.74	96.91	90.19	89.68%	93.07%	92.93%	86.49%	6	1	10.005	8.070	1.742
21205	Monday, October 11, 2010	20:35	25.56	6.03	22.09	334.39	355.61	21.28	96.31%	97.52%	97.56%	95.14%	3	1	4.112	4.536	1.964
21204	Monday, October 11, 2010	19:46	26.27	6.20	22.61	313.20	334.96	21.92	96.98%	97.52%	97.59%	95.18%	3	1	4.288	4.667	1.949
21203	Monday, October 11, 2010	18:51	26.37	4.12	23.58	290.97	313.79	22.97	97.41%	97.78%	98.05%	95.87%	3	1	3.822	3.94	1.881
21202	Monday, October 11, 2010	17:59	25.84	6.18	22.16	270.08	291.43	21.47	96.85%	96.90%	97.23%	94.22%	3	1	4.355	4.464	1.965
21201	Monday, October 11, 2010	17:09	28.02	6.70	23.87	247.48	270.47	23.13	96.89%	97.94%	97.75%	95.73%	3	1	4.567	4.649	1.976
21200	Monday, October 11, 2010	16:16	30.27	7.29	25.56	223.24	247.86	24.78	96.93%	98.07%	97.93%	96.04%	3	1	4.494	4.872	1.906
21199	Monday, October 11, 2010	15:14	28.11	6.67	24.07	200.41	223.59	23.30	96.79%	98.24%	97.75%	96.03%	3	1	4.343	4.523	1.951
21198	Monday, October 11, 2010	14:13	27.26	6.17	23.25	178.22	200.69	22.59	97.15%	96.80%	97.23%	94.12%	3	1	4.094	4.158	1.955
21197	Monday, October 11, 2010	13:13	26.55	6.38	22.73	156.46	178.47	22.12	97.34%	97.82%	97.86%	95.73%	3	1	4.266	4.609	1.961
21195	Monday, October 11, 2010	11:30	27.27	5.69	24.17	116.27	139.68	23.52	97.30%	99.02%	99.41%	98.43%	3	1	3.997	4.132	1.929
21194	Monday, October 11, 2010	10:41	29.33	9.51	22.19	94.93	116.38	21.51	96.96%	99.27%	97.99%	97.27%	3	1	4.75	4.842	1.796
21193	Monday, October 11, 2010	9:32	26.79	6.32	22.95	72.81	95.08	22.33	97.32%	97.68%	98.63%	96.34%	3	1	3.913	4.513	1.97
21192	Monday, October 11, 2010	8:34	71.77	8.30	68.16	8.66	73.00	64.80	95.07%	96.84%	96.34%	93.29%	5	1	6.918	5.984	1.804