EXP 07037 LOGBOOK

TOPS®

07037

Computation Notebook

Department _____

Subject Micro Channel Plates

Name used w/ HiRA 07037

Address NSCL

- 75 Sheets, 4 x 4 Quad. Ruling
- 11 3/4" x 9 1/4"
- 29.8 x 23.5cm

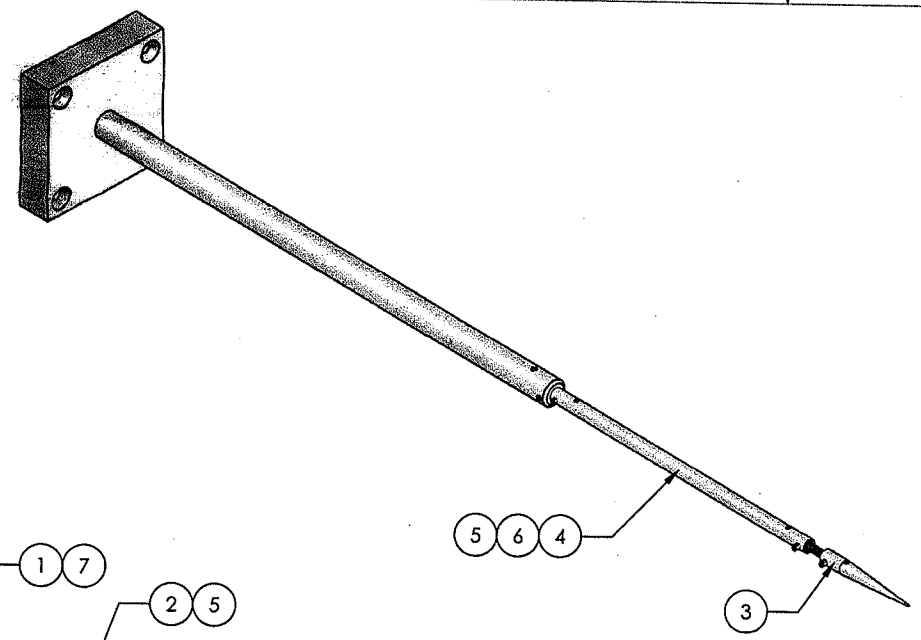
0 25932 35126 6

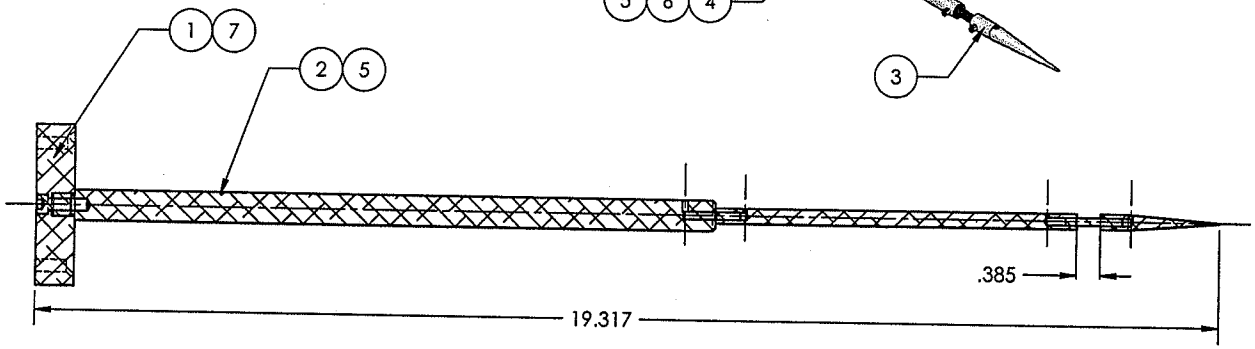
TOPS • Osage, IA 50461

No. 35126
Made in China

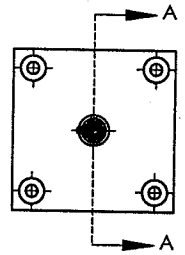
Meredith Howard

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED	5/18/2009	JRH/CCS





SECTION A-A



ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	QTY.
1	7hit01_003a	Alignment Mounting Plate	Aluminum 6061-T6	1
2	7hit01_003b	Fixed Rod	Aluminum 6061-T6	1
3	7hit01_003c	Pointer	Aluminum 6061-T6	1
4	7hit01_004a	Removeable Adjustment Rod	Aluminum 6061-T6	1
5	DPM 0.125x0.9375			2
6	SSFLATSKT 0.086-56x0.1875-HX-N			4
7	HX-SHCS 0.19-32x0.375x0.375-N		SS	1

National Superconducting Cyclotron Laboratory
MICHIGAN STATE UNIVERSITY - East Lansing, Michigan

DRAWN BY	DATE	SCALE	SIZE	ASSEMBLY	REV
J.Honke	5 May 09	1:2	B	7hit01_004 - 50cm Alignment Tool	A

NSCL Exp. 07037 $^{84}Se(p,d)^{83}Se$

For measuring spectroscopic factors for neutrons near closed shell N=50.

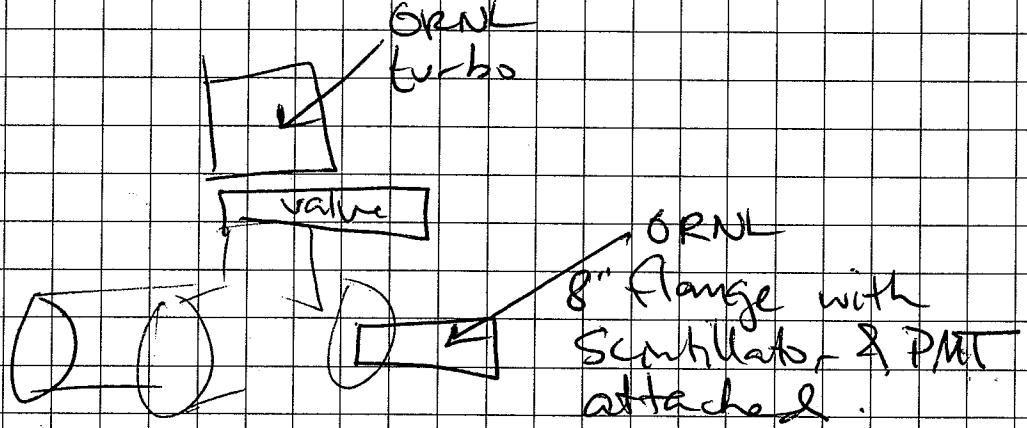
MCP0 & MCP1 drives for TRACKING.

10 plates ordered

Feb 22, 2016

Dan Shapira, Kyle Schmitt, Patrick O'Malley, Rachel Hodges, Tilak Ghosh, Meredith Howard, Jenny Lee, Alisha-Sant

Testing / Mounting plates.
Looking at electronics, etc.

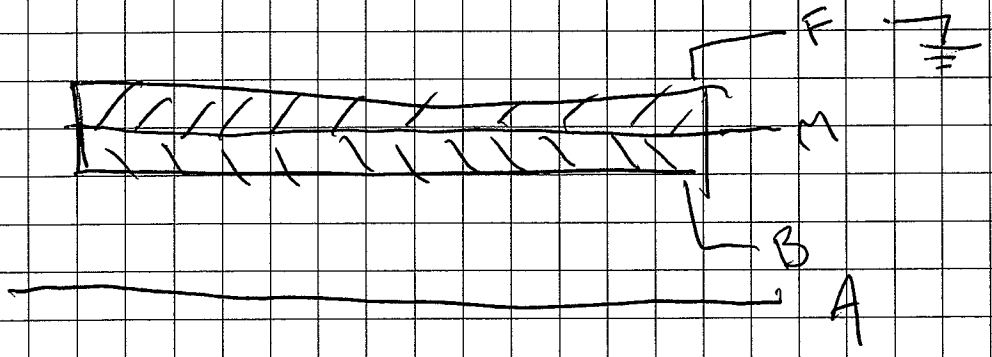


Switching mcp plates

mcp @ RAE 3394 3525

bottom plate
03-027
serial # 1320-02I-45

top plate
03-029
serial # 1320-02I-43



$$\frac{1}{2} \cdot \frac{20 \times 10^{-3}\ V}{50} \cdot 6\ ns =$$

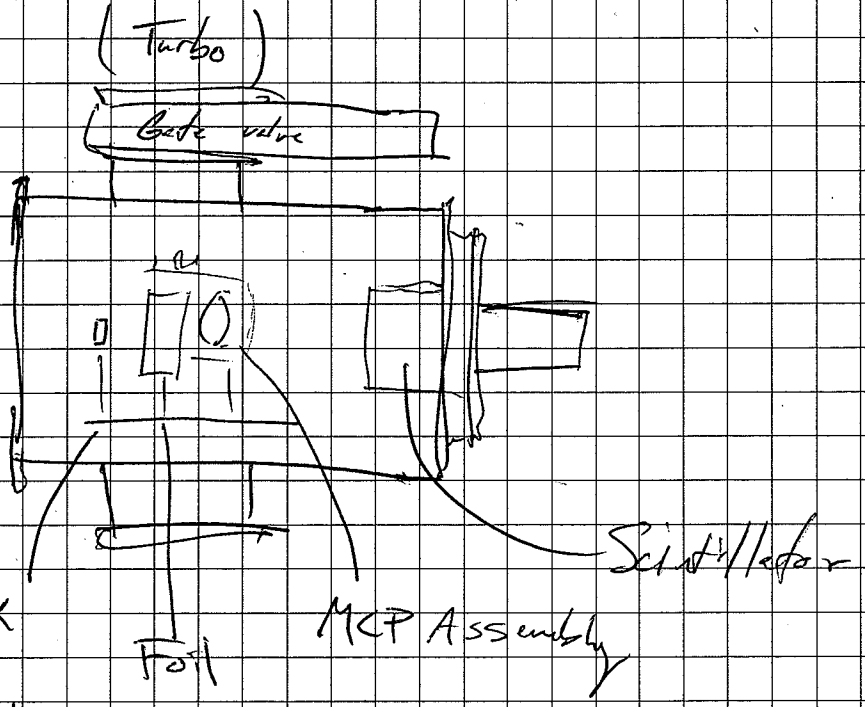
$$\frac{1}{50} \times 10^{-3} \times 6 \times 10^{-9} = 1.2 \times 10^{-12}$$

$$= 1.2\ pC$$

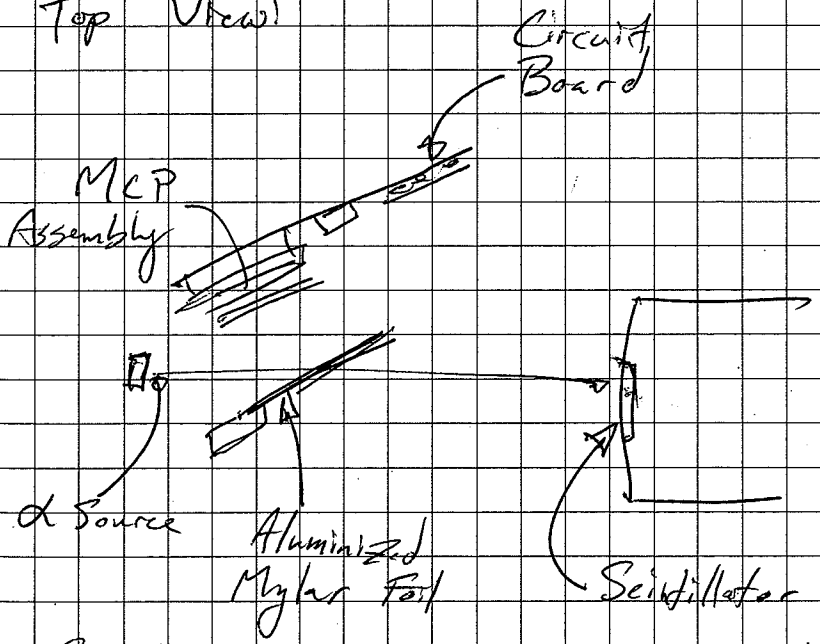
2/22/10

Testing MCP RAE # 3394-3625

Setup: "Round" Cross



Top View:



Signals seen on MCP in coincidence with Scintillator with $V_{Foil} = -400$ V

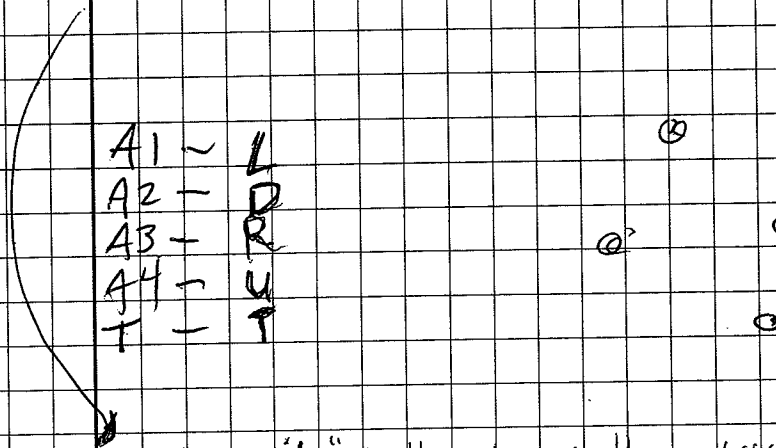
$V_{HV} = +1700$ V

$V_{Sci} = -1200$ V

8/22/10

19:48 signal looks horrible for position output labelled "L" on outside

A1 ~ L
A2 ~ D
A3 ~ R
A4 ~ U
T ~ T



replaced "L" cable + problem was resolved

MCP RAE 3394 - 3237

Put two new plates:

03 - 026 / 1320 - 02I - 44

01 - 021 / 1320 - 02I - 07

MCP RAE 3394 - 3236 - 5H

New Plate:

03 - 028 / 1320 - 02I - 46

03 - 022 / 1320 - 02I - 15

Resistive layer discolored in center. (This was MCP0)

0. Put on latex gloves to keep oils off of MCPs

Steps for replacing MCP Plates:

1. Disconnect cables from board and remove MCP assembly (RAE) from aluminum mount

2. Remove "Front" lug connection and screw

3. Remove cover if present

4. Place RAE on table with active side down and remove 4 screws

b) Keep pressure on front frame. There is a spring inside and unit may want to spring apart

5) Turn over and carefully remove top two pieces, keeping them in the same relative configuration (taping them helps)

6) Carefully remove MCP

7.5) Look at the anode and look for a discoloration slight in the middle. If it is present then the anode needs to be cleaned [see later instructions]

7) gently lift spring [it bends easily] and remove 2nd MCP

8) Place both old MCPs aside and pick up new MCP

9) Locate the notch along the outer rim and place MCP onto frame noting the location of the notch.

10) Gently hold down spring and repeat step 9. making sure the notch is on the opposite side from the 1st MCP

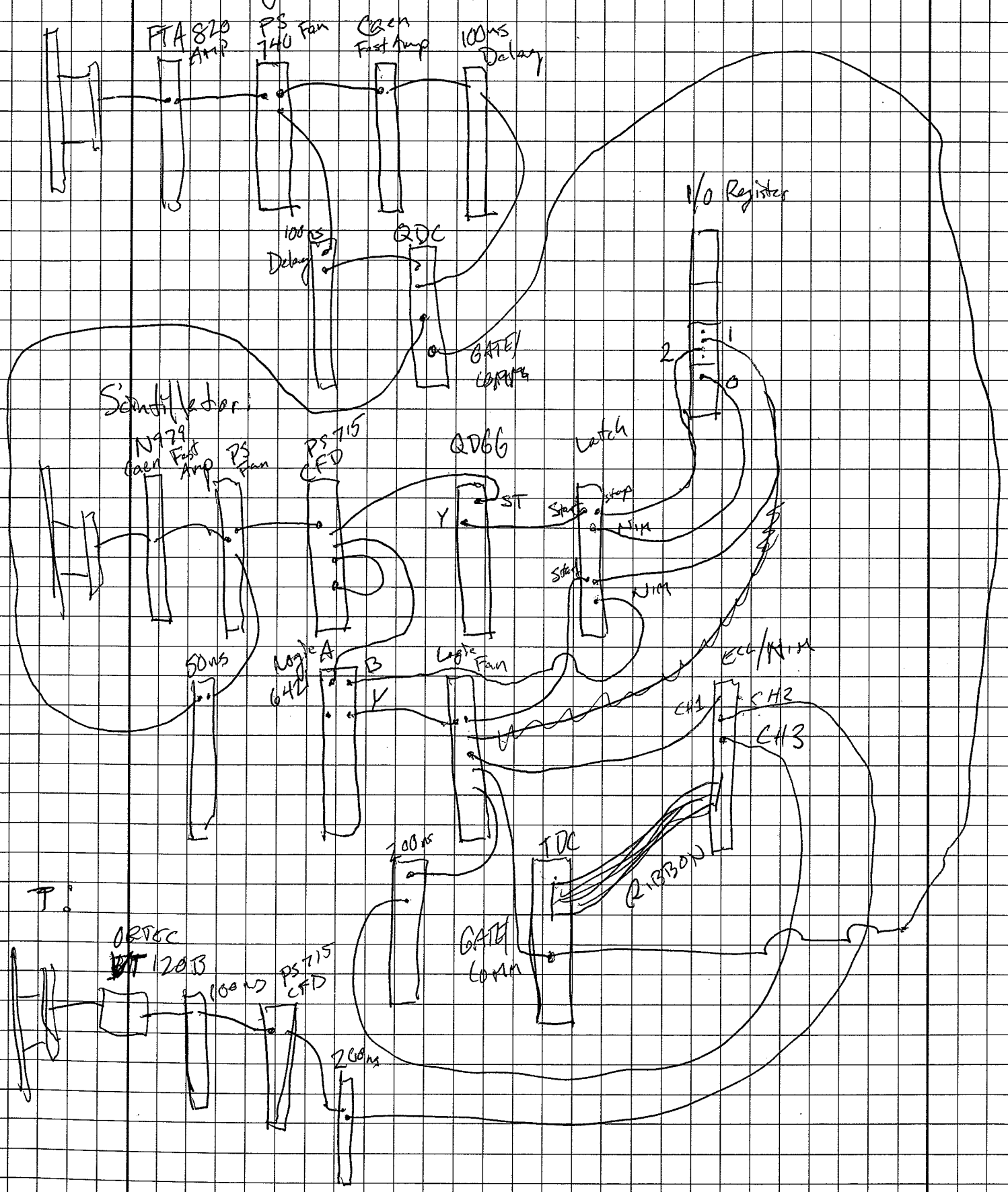
11) Place on the top two pieces, maintaining their alignment to each other and match the notch of the frame with the notch in the plastic.

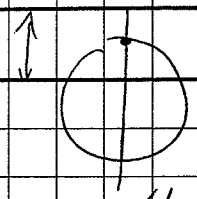
12) Carefully turn over setup and make subtle adjustments so that the 4 screws may be screwed in

13) Replace Front lug and screw and then replace front cover

$$\frac{300 \times 10^{-3}}{5.0} \cdot 2 \times 10^{-9}$$

$$6 \times 2 \times 10^{-2} = 12\,\text{nC}$$


Position Signals:
PTA 820 Amp
PS 740 Fan
Caen Fast Amp
100ns Delay
I/O Register
100ns Delay
QDC
GATE/ LOGIC
2
1
0
Scintillator:
N479 Caen Fast Amp
PS Fan
PS 715 CFD
QDGG
Latch
Y
ST
Start
Stop
NIM
Start
NIM
50ns
Logic A
B
64Z
Y
Logic Fan
ECL/NIM
CH1
CH2
CH3
100ns
TDC
RIBBON
GATE
60ns
PI:
ORTEC 120B
100ns
PS 715 CFD
200ns



w/o target: 2842 ±1

target #				
	73	2673 ±5	→	402 μg/cm²
	71	2702 ±1,	2566 ± 2 →	333, 857 μg/cm²
	69	2631 ±3	→	502 μg/cm²
	67	2735 ±10,	2636 ±3 →	255, 490 μg/cm²
	65	2748 ±2	→	224 μg/cm²
	63	2607 ±10	→	559 μg/cm²
	61	2646 ±5		481 μg/cm²

MCP RAE # 3394-3237

* Looked "fine" It looked as good as the first test on [RAE # 3394-3525]

MCP RAE # 3394 - 3236

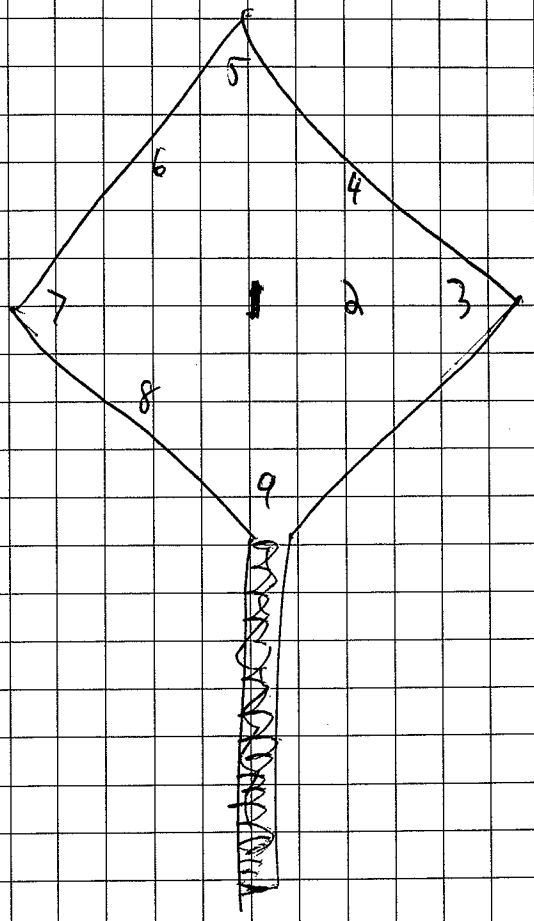
Required higher MCP voltage to produce steady signals

~ 2250 V

Paddle Voltage - 1200-1300 V

3/16/10 Paddle testing in black box with ^{244}Cm alpha source at ORNL.

voltage on Paddle ~~-1350~~ +1300 V source in middle



3/17/2010

Position	alpha peak (mV)
1	~50
2	~50
3	~50
4	50
5	50
6	50
7	50
8	50
9	60

Friday Apr. 12, 2010

Present
Tilak
Cehosh
Alisher
Sarah
Meredith
Howard

✓ Good Vacuum Cake!

STEP 1: Paddle Scintillator
+ High Voltage Power Supply (HRA Electronics Rack)
+ Oscillascope

☒ Measure BG signal to test scint.

STEP 2: Paddle Scint: Setup
+ α source
+ Vaccum → ~40 μTorr

☐ Test for α signal under vac. (Only operated scint. in air STP before w/ neutrons.)

↓↑ ~30-100 mV

How much are L's &
how much are cosmic ray backgrounds

Video on camera w/ oscilloscope
data 40.0ns, 20mV scale

2 April 2020

STEP 3: Pump down overnight
to get past outgassing
in Magnetic $\vec{B}$ yoke
assembly.

(No. of sources → looked @ cosmics
→ diff. spectra)

→ More video.

22:50 April 6, 2010

Dan Shapira, Kyle Schmitt, Meredith Howard

Closing Chamber w/ α-source,
MCP Ø setup
Sint. Nator

Pumping Down 11pm
→ 9AM: 6.6E-6 Torr

Big Noise until April 7, 2020
MCP/Target drives totally disabled.
(Not just turning Remote enabling off.)

→ Then smaller noise.
P ~ 6.0 Torr. @ 11 A.M

Crappy MCP signals.
Taking out of chamber
to test in HiRA lab.

7 April 2010

MCP0 target drive

During test, hooked up to I250X-R controller.

Remote Control on 2nd level comp.

Programs → NCS → Qt Param

I250X-R & set controller box @ Chamber to Enable, and to Remote Enable (not Local).

Click [F] icon to get

| I250X-R: GemT6K Probe |

Click [calibrate] (will still say "Uncalibrated")

Takes Several minutes on

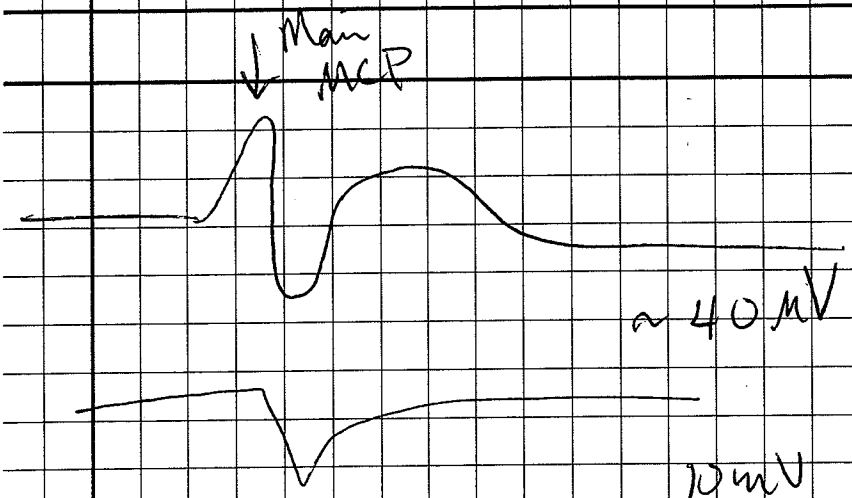
[speed: 2.000].

Setting: 0.000 = Fully Retracted

100.000 = 100 mm inserted upstream.

7 April 2010.

I250X-R "Setting"	Physical Position
190.00 200.00 Best.	Mask w/ Foil
115.00	Foil Only (-75.00)
0	Mostly Clear. ↳ Partially Obstructed ↑ In Magnet's path/gap (Sort of ← should be ok as fully retracted position)



→ keep 40 ns so don't double count

Anode – last electrode

8 Apr 2010

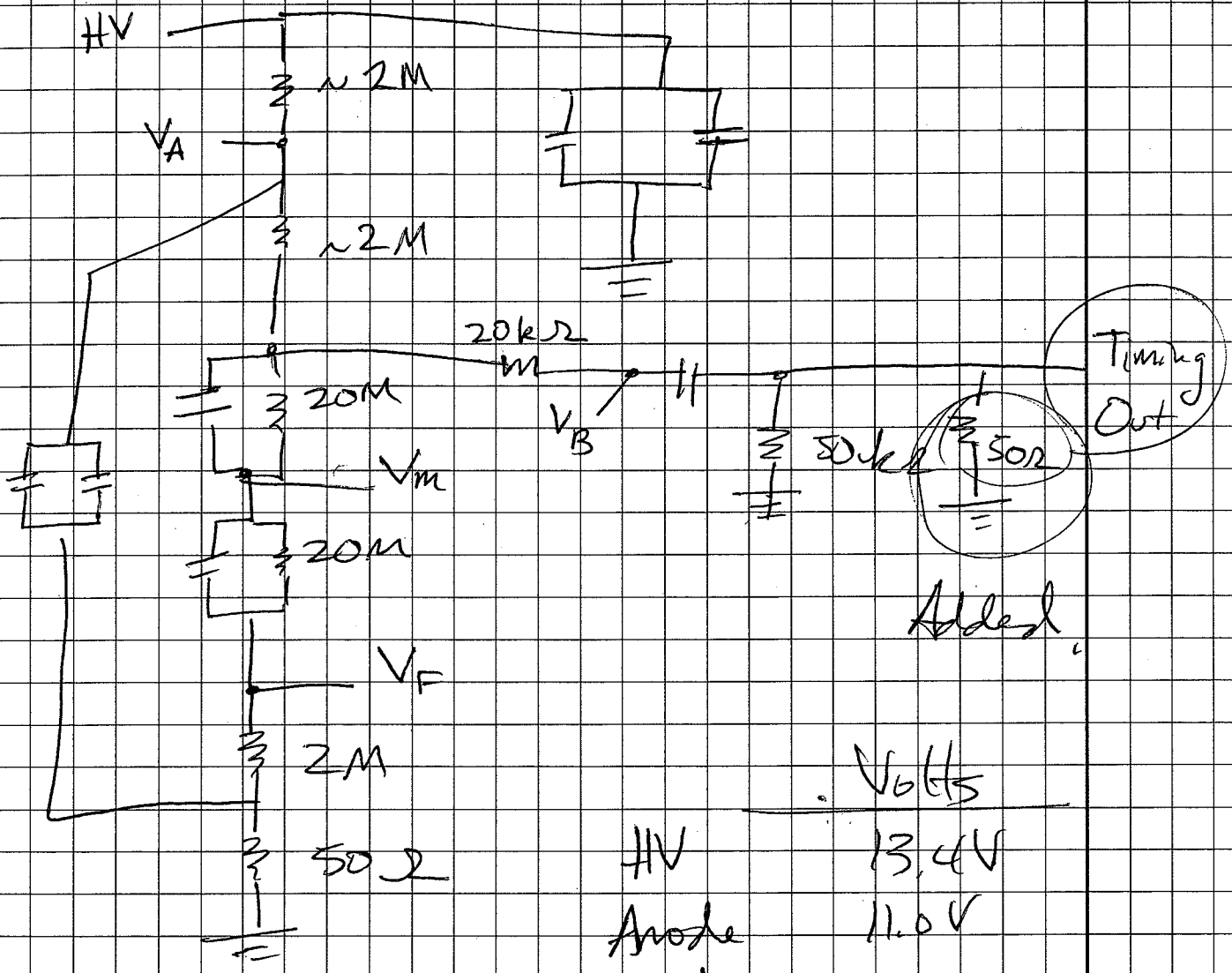
"MCP0"

Had Bad anode cable to chip board.
by Dan Shapira & Kyle Schmitt.

Other had 50Ω resistor replaced/added at the timing out.

Added terminator, too. Signal looks good – doesn't have echo (ringing) like before.

MCP
Board Diagram Dan Shapiro
8 April 2010



Volts	
HV	13.4V
Anode	11.0V
Back	10.6V
Middle	4.1V
Ground	0.4V

MCP = +2000 volts
Shield = +1600 volts
Field = −1000 volts

Bias 10 April 2010

Scintillator (+)1600 V
MCP (+)2000 V
Foil (-)1000 V

4:00 PM

April 10 Run 4 : MCP Ø w/ mask / foil

April 9-10 Run 3 : MCP Ø w/ mask

Run 2 : MCP Ø Foil only

Run 1 : MCP Ø Foil only

Pressure in Chamber 4PM
(w/ I255GV CLOSED)
@ 6.9 μTorr

Venting.
α source ~ 5½ inches from mask
α source ~ 14 inches from Scint.

10 April 2010

I250Y-R MCP1

Setting 70mm = Foil only

150mm ~~145mm~~ = Mask + Foil

< 0mm = Fully Retracted

α ⟶ Foil ⟶ PMT

15cm

~~Foil~~ ~~Stop~~ 16.5cm

RAE = 3394 - 3237

Meredith
Alisher
Vilak

MCP1 Bias

+HV MCP → 2000 Volt

+HV ~~Scintillator~~ → 1600 Volt

-HV foil → 1000 Volt

12 April 2010

P ~ 4.7 μTorr on Ion Gauge (Chamber)

After taking MCP I out last night (no signal in chamber), looks ok today.

Clean Scint + MCP signals above ~50 MHz noise.

Going to set gate and take Run w/ foil (~1-2 hours) and then Run w/ mask (1/2 day)

Run 5 ~70 Mbytes ~noon - 1:50pm

Foil, no mask,

2 peaks in TIME.01 (MCP) = (2820 - 2470) channels = 350 channels

Changed threshold on discriminator from 1 Volt to -500mV.

Run 6 Foil, no mask, increased threshold on discriminator.

Run 7 Same as Run 6

Run 8

Bill came and helped get rid of the double peaks problem. Changed the timing delay on CFD to 4ns instead of 2ns.

It seems to have solved the problem.

(2 hours data)

↑ Higher

Put in MCP1 mask 8PM

250Y-R = 150.00mm

* Increase Run number

Run 9 Mask in MCP1 (called MCP0 in electronics)

Meredith

Checked to see mask really is in.

Run 10 Mask still IN.

(4 hours)

13 Apr 1

1:20AM

After H.V. Compute outage
(Should not affect data.)

Starting new run. Same as
Run 10.

Run 11

Rough matching: high gain - low gain

corner 0:

LG	HG
353	3030
457	3679

$$\text{slope} = \frac{3679 - 3030}{457 - 353} = 6.24$$

$$\text{offset} = 3679 - 457 * \text{slope} = 827$$

$$HG = \text{slope} * LG + \text{offset}$$

corner 1:

LG	HG
136	144
537	3631

$$\text{slope} = \frac{3631 - 144}{537 - 136} = \frac{3487}{401} = 8.7$$

$$\text{offset} = 3631 - \text{slope} * 537 = -1039$$

corner 2:

LG	HG
72	1747
281	3807

$$\text{slope} = \frac{3807 - 1747}{281 - 72} = 16.9$$

$$\text{offset} = 3807 - 281 \times \text{slope} = -934$$

corner 3:

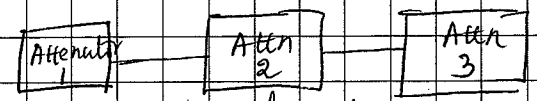
LG	HG
264	826
689	3185

$$\text{slope} = \frac{3185 - 826}{689 - 264} = 5.55$$

$$\text{offset} = 3185 - 689 * \text{slope} = -641$$

Run 13

Pulser calibration for Corner 3.



Ramping from 1 to 0.1 at step of 0.1

Run 14

Pulser Calibration for Corner 2

Run 15

Pulser Calibration for Corner 1

Run 16

Pulser Calibration for Corner 0.

Note: For MCP1 corner 0 (labelled 4 in the detector) has higher gain. may need attenuation during experiment.

MCPO

Run 17

Pulser calibration for Corner 3

Run 18

Pulser calibration for corner 2

Run 19

Pulser Calibration for corner 1

Run 20 Pulser calibration corner 0

15 th April

Cooling flange mounted and chiller on.
All 5 telescope tower mounted, no motherboards.

Pumping Chamber:

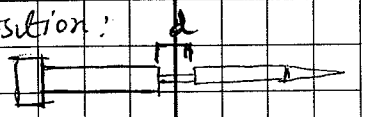
Start 5:30 pm
5:35 pm → pressure 41 torr
6:15 pm → pressure 0.174 torr
9:35 pm → 1.6×10^{-5} torr.

16th April 7:00 am → 1.2×10^{-5} torr
8:00 am → 1.2×10^{-5} torr
9:00 am → 1.0×10^{-5} torr → after putting extra cooling clamp and tightening flange
10:00 am → 9.9×10^{-6} torr.

Chris Maggio came for leak checking.
Nothing seems to be found in the door or flange.

Took out water from cooling line.
pressure drops to 8.8×10^{-6}.

Measurement of distance d from telescope to target position:



	d
TOWER : 1	0·250 inch.
TOWER 2 :	0·200 inch.
TOWER 3 :	0·225 inch
TOWER 4 :	0·150 inch
TOWER 5 :	0·200 inch

10/19/10 Monday

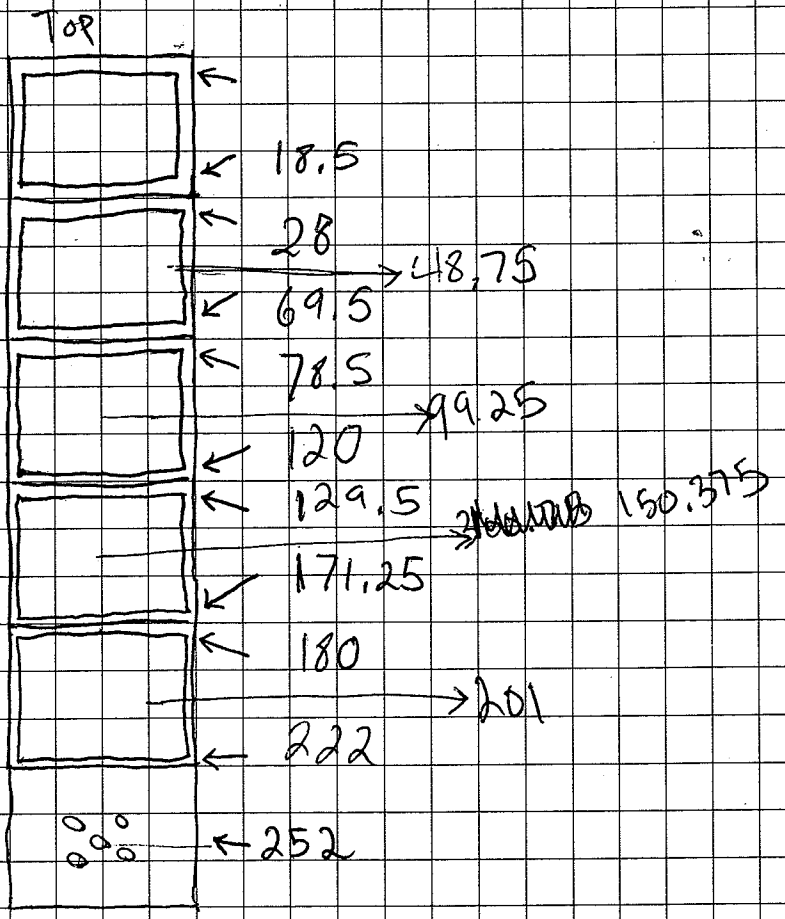
Alignment Measurements:

Jack & Tilak secured the low table on the chamber floor and moved the upper platform so that the circular G-10 position blocks were in the middle of the screws that move them.

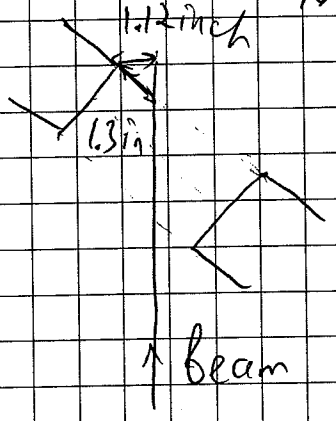
After ~2 hr,

Target mask

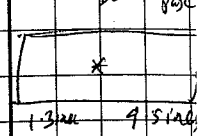
10/19/10


Top
18.5
28
48.75
69.5
78.5
99.25
120
129.5
150.375
171.25
180
201
222
252

Magnet alignment



The edge of the closest magnet is 1.12 in from the beam line (2.84 cm).



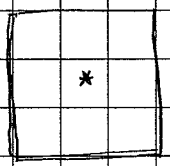
MCP0 edge (all the way back) is 1.5 inches (~4 cm) from the beamline. Pull the stand for mask (We need that to be 5 cm).
$\Rightarrow$ 2 cm so it adds $2\,\text{cm} \times \cos 60 = 1\,\text{cm}$ to the distance from the beam.

* MCP0 magnet were moved to 40 cm distance from MCP1

* MCP1 mask center (the corner of the pattern) is at position 20.55 mm on target drive.

10/19/10

Magnetic Shield hole configuration



centre at
$\frac{1}{8}$ inch high
$\frac{1}{16}$ inch beam right

10/19/10

Pump start : 7:50 pm

8:30 pm 0.80 Torr

8:50 pm turbo gate valve open up. pressure 9×10^{-5} torr

7:00 am 1.1×10^{-5} on 10/20/10

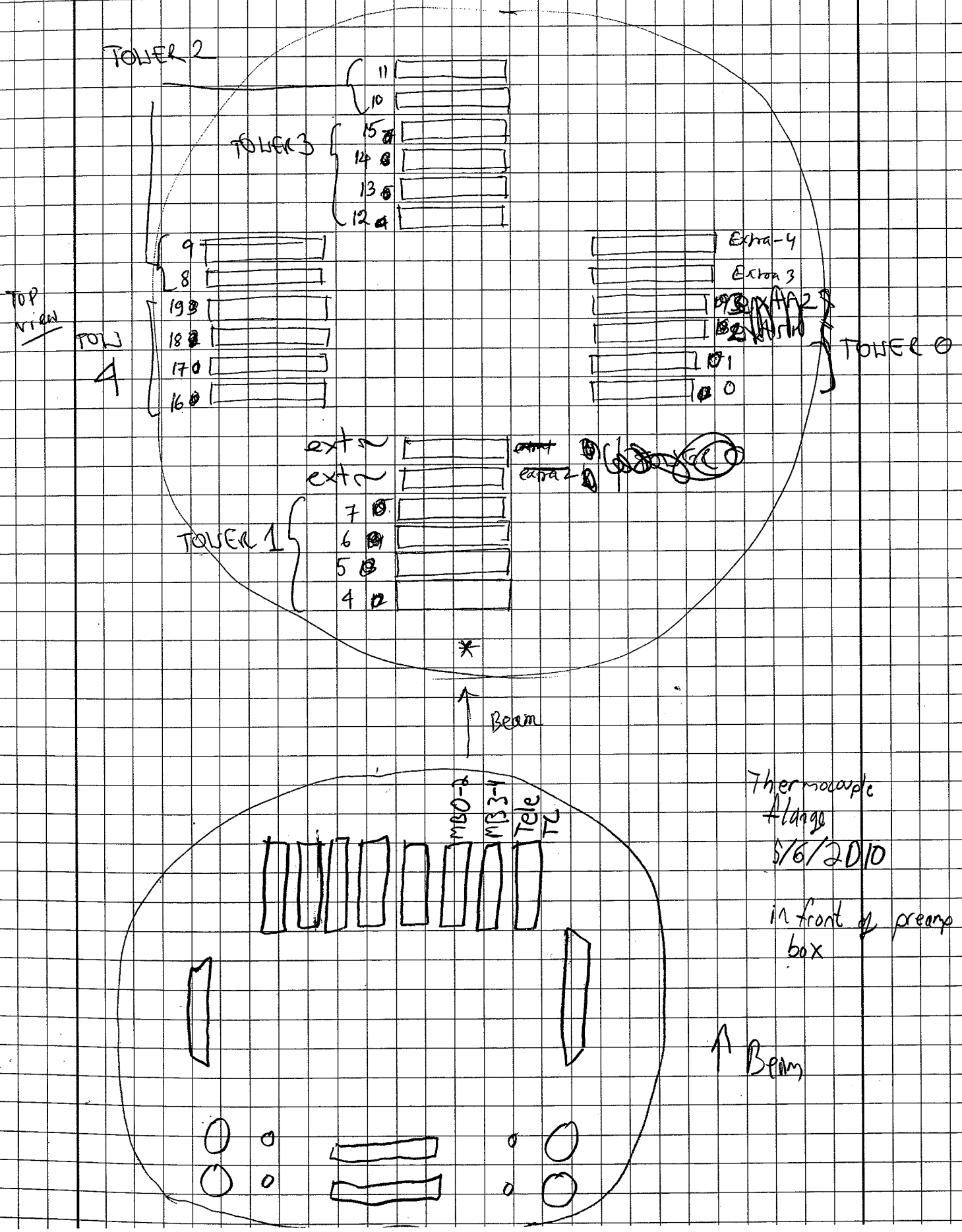
8:00 am 1.1×10^{-5}

10/20/10

Chris Massig came for leak checking.

No leak on cooling line. Door (wall side) may have leaky. (two) positions (marked with arrows).

DE flange connector configuration 10/29/10



Thermocouple flange
5/6/2010

in front of preamp box

APRIL 28th, 2010

Testing two towers

TOWER 0 (MB #0, MB #1)

TOWER 1 (MB #2, MB #3)

ALL Inspect channels look ok ?

Testing w/ pulser + Readout MB 0-2 no problem individually
Note - V. high thresholds
MB 3 noisy OR and some chips poor resolution. Going one cb at a time.

cb 1	good
cb 2	poor resolution, but not noisy
cb 3	good
cb 4	noisy - refires + poor resolution
cb 5	good
cb 6	good
cb 7	good
cb 8	good

All Except cb 4 together - no refiring, but pos. chips noisy even when cb 2 turned off.
Went away when turned off neg cb. th
changing out cb 4. 36 → 66
same problem
Changed cb 4 from slot 6 to slot 9
same problem
Changed pause delay. MB 3 now runs w/o error

No MB now runs correctly. Change from previously is that pulsers are chained. Run them seperately, and all MB run together. Call it a day

4/29/10 Run 3 in evt test area: Pulser run on MB0-3 w/ current settings
high gain chips & in software
run 0-5 V, 11 steps, 10 s each

inserted low gain jumpers on cb4 in MB0 slots 11, 12, 14, 15.
→ Inspect signals show no sensitivity to this
⇒ Output channels, however, do have smaller gain. Also different offsets

Set new energy offsets on these cb, saved as four MBs_ low gain test. setup, and ran a pulser ramp on MB0, 0-10 V, 21 steps; saved as run 4.

Note that this ramp & above have same pulser setup, i.e. pass4b split to MB 0-4, so did not achieve max pulse height

low gain chips looked saturated at the large pulses, even though output was not saturated.

4/30/10 Trying to get all chips on the DE to read out correctly; some chips wonky (cb 2 & 6), possibly timing problems

Started w/ SIS delay = 2000, AcqDelay = 6720, PauseDelay = 1560
JE recommends 3360 720 160

w/ starting values, many cb read out OK, but not all. When only cb 2 disc on, it doesn't read out at all. Also same for cb 2 at JE values

cb 2 reads out reasonably at
SIS = 3360 Acq = 7000 Pause = 160
but nothing reads out if I turn all cb on - or any other cb on
Those settings work for any 1 cb
fails again if Acq increased to 4500

cb 2 works At SIS = 1520 Acq = 4000 Pause = 1040
fails for multiple cb

Cb 6 the hit is not being addressed correctly - should not consider

SIS = 3360 Acq = 8440 Pause = 1840
works for one cb, two, but not more

Acq = 9460 works for 3 cb 27, but not always one.

Move forward w/ these settings (works for 1–64 chans) and try to fix when Jon is here next week.

Look @ cb6. Try moving from slot 9 to slot 10.
Still addressing as cb20.

Try replacing cb6 (was PS162)

RUN #5 Alpha run on 4 Telescopes

HIGH GAIN

T1 SA 2 Chip 1 BACK

Ch#4 10774 - ~8 MeV (5)

12043 ~ 6 MeV (4)

12874 ~ ~5 MeV (1)

T1 SA 3 Chip 1 FRONT

Ch#3 6620 ~ 8 MeV

5227 ~ 6 MeV

4255 ~ 5 MeV

14 ∞ ~ 2 MeV
16 008 ~ x
~ 22.8 MeV

LOW GAIN

SLAC 12 Chip 0 / Ch#1 Front

2313 - 8 mV

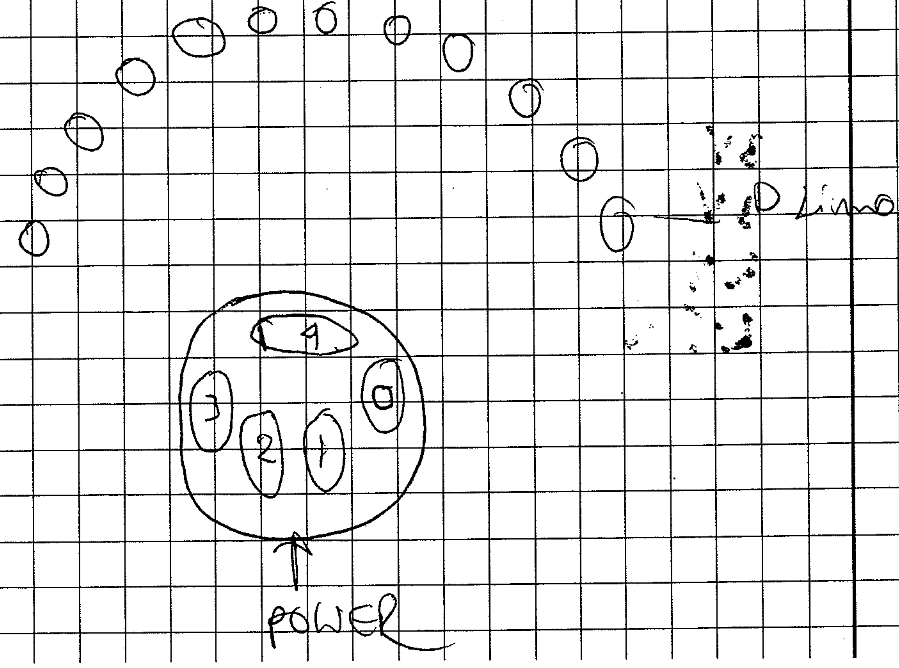
1880 - 6 ~79 mV

1577 - 5

RUN #6 Pulser ramp on after of previous alpha run

1 - 2 positive
3 - negative

PULSER SETTINGS ON MB1



ALL CBs set to LOW GAIN

RUN #6 Pulser run for positive CBs on MB0

0-9V, 19 steps

Pedestal ~ 650 - 950 (ch#)

Run #7 Pulser run for negative CBs on MB0

0-5V, 11 steps

N - 680 742

P 346

RUN #8 & 9 as above but for MB 1

Run #10 & 11 as above but for MB 3

Run #12 & 13 as above but for MB 2

3V
3V
2.5
2.5 ✓

Alpha runs

Problems:

MB0 T3 (only few counts on FF & EB)

MB2 T2 (chip 2 doesn't fire on FF & EB)

slot 526

Run 14

Alpha run + pulser set to 1V
(pulsing all channels)

Run 15 Alpha run ~ 33 min

Run 16 Alpha run

Run 17 Alpha run ~ 40 mins

lowered bias on TOT1 from 350V to 290V

*this telescope doesn't show the alpha peaks so it looks it has dE

(telescope TOTO that is supposed to have dE shows nice alpha peaks)

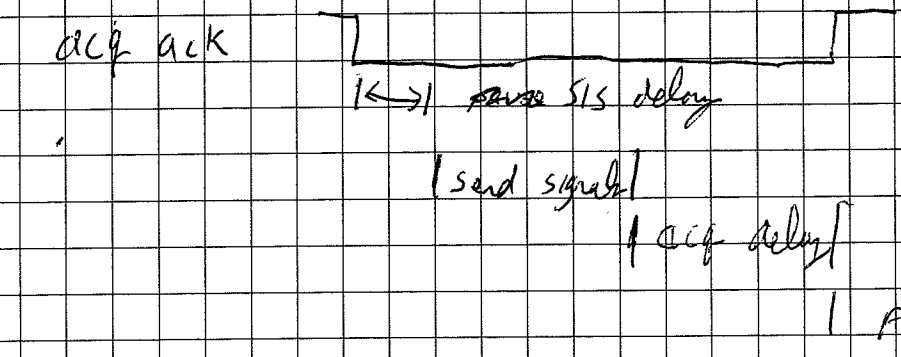
Most likely the mapping is wrong & TOTO ⇔ TOT

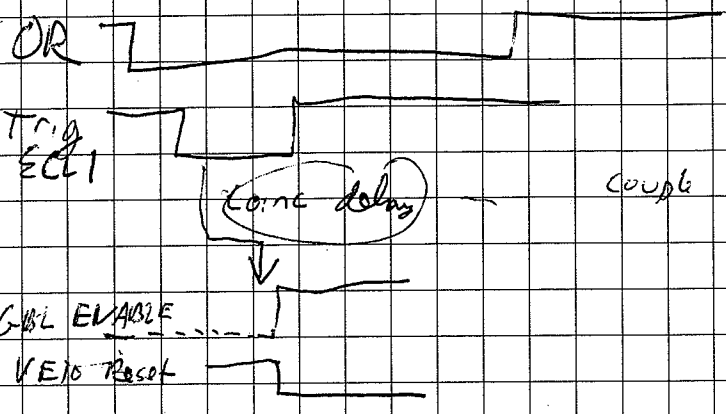
5/3/10 Quick pulser ramp on 2nd dE MB, one chip at a time. Not saved. All chips map correctly. All chips ramp reasonably

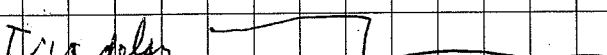
This MB regulator is running hot - 45°C w/ 5.98 V supplied. Should check other MB for comparison.

Connected to other dE MB. Temp only reaching ~ 35°C, suggesting cooling problem in other MB. Connected via XLM slot A, & hira_XlmXxv_2mb_1.0.1 able to read out using chip_cont & readout from e09042 on spdaq19. Also runs w/ new readout on spdaq20; Just needs old ASIC_control program. Should still check two-board readout, but looks promising

XLM sends token through to first channel, which passes it on if it doesn't have data. If it has, channel sends acq. acknowledge







~5 μs
2 μs

prevents readout from beginning before values have stabilized

Force_Trig → delay after forced readout set
Acq_all → set all bit registers → print of forced readout

other sliders
~~Reset Ch~~ CSA Ref – set 3
Reset CV – sets auto veto time. need to be 0
256 ok on new chip – external auto veto on ch @ 3.8 μs
can't set internal any shorter or breaks

Analog Ref 512 = 2.500 V -- analog ground for CFD, DACs, shapers

new chip splits this out
ZC2 zero crossing ref

CFD Cap - Capacitor couples signal to CFD
old chips hard coded to 5 pF
new chips set 5 or 12 - basically leave @ 12

Sum offset - used to set multiplicity offset, which can change as you change OR routing

on old chips
Analog Ref may change threshold impacting

5/5/10 RUN 70 Alpha run

TOWER 6 : slot 3 - T10
6 - T9
12 - T17
15 - T1
} MB#5

TOWER 2 : slot 3 - T8
6 - T11
} MB#3

RUN 71 Alpha run (as above)

5/5/10 DE tower 2 still running hot after replacing & tightening cooling connections to regulator. Will try replacing MB

5/5/10 * NOTE *

~~DE PREAMP MAPPING WAS CHANGED from old mapping~~

6 through 14 remain the same.

19 ↔ 4
18 ↔ 3
17 ↔ 2
16 ↔ 1
15 ↔ 0
(swapped)

NEVER MIND
(~~was~~ reverted)

5/7/10 Run 73 - 4 run on t6 in P1

5/7/10.

DE POSITION TO PREAMP MAPPING

POSITION	PREAMP (PA)	POSITION	PREAMP
15	~~X~~ 7	10	10
16	1	11	11
17	2	12	12
18	3	13	13
19	4	14	14
5	5	0	15
6	6	1	16
7	~~X~~ 0	2	17
8	8	3	18
9	9	4	19
	~~10~~		
	16		

DE mother boards won't read out - first test since moved on top of chamber. Found noise in inspect channels. Culprit appeared to be new power supply from JE, but tests w/ old power supply showed that both MB start oscillating when the supplied voltage is above some threshold, ~6.3-6.5 V. Below oscillations immediately disappear. Regulation problem? Threshold appeared to be lower on MB6 than MB5

JE sent a new bit file with "improved logic."
Rev 266

Tried a few values of acq delay & pause delay on our old bit file & on new one for comparison

Acq delay = 7080
Pause 3560.
worked on old bit file, MB 0. All other MB off show 0s.
on new bit file, MB 0 correctly showed 128 chans, but zero event MB gave a ~~4~~ 4103 error.

A = 120
P = 160
Recommended values. Old bit file spits out 0s. Bad.
New file alternates zeros & 4103. Several completes & retriggering

A = 120
~~P 12~~ P = 280 old doesn't work. New doesn't either
like {120,160}

200
4240 OK ~ like first ~ 4103 err

200 like previous
600

Went back through w/ new bit file & only 1 CB on.
No real differences.

JE sent even another bit file, rev 269.

Using the recommended delay, A=120 P=160, we can successfully read out events of multiplicity 1-20, 120
Looks successful!

Jon said the major change was adding edge detection, which was present in earlier versions but got lost in the upgrade.

Mapping for CsI Power/Bias/test

CsI 4 → Tower 0 and Tower 4

CsI 1 – Tower 1

CsI 2 – Tower 2

CsI 3 – Tower 3.

Pulser		sparky
Tower 0	–	T0
Tower 1	–	T1
Tower 2	–	T2
Tower 3	–	T3

5/8/10 While telescopes were being inserted into towers OR1, looked at noise on MB~~XX~~ 2-4. Just looking at OR and not running readout, set all thresholds to ±10 (whichever indicated a larger threshold), and set CFD Ref so that I was not triggering on noise but that each chip triggered on a 0.3V pulse, split out to MB0-H. Note that this doesn't garentee each channel will fire on that pulse size, or that 0.3V is an appropriate set point. CFD refs ranged ~480 - 520. Held other voltage settings (Analog Ref, DAC offset, ZC2 offset) at default value of 512.

5/8/10

Shaper - CSI mapping

CSI 0 → TOWER 0
CSI 1 → TOWER 1
CSI 2 → TOWER 2
CSI 3 → TOWER 3
CSI 4 → TOWER 4

In each shaper, channels 0-3 correspond to CSI's in the top telescope
4-7 to CSI's in the telescope position second from top,
8-11 " " 3rd from top
12-15 " " 4th from top.

While doing pulser ramps on MB 2-4 (run 76-78) noticed that pulser input cropped out above ~3V, split only to one MB. Also, cross talk between positive and negative channels (or firing off of OR?), but channels don't resolve on themselves given settings from earlier today. Turned off other discrim to eliminate this

When crosstalking, at one point >150 chans were firing and I started getting the 4097 error; timing out. So there is still some multiplicity limit in this current bit TA/delay settings.

Found 2 channels on MB 4 slot 15 that looked bad. Unplugged cable (to telescope but telescope disconnected) and plugged it back in and it got better.

[redacted]

PreAmp #	MB#	Slot #	Position #
0	5	15	7
1	5	14	16
2	5	12	17
3	5	11	18
4	5	9	19
5	6	12	5
6	6	14	6
9	6	15	9
10	6	9	10
11	6	11	11
12	5	5	12
13	5	6	13
14	5	8	14
15	6	5	0
16	6	6	1
17	6	8	2
18	5	2	3
19	5	3	4

RUN #82 Alpha run for dE's

Telescope	MB #	Slot #
P2	2	OFF (even chnls, many high leakage curr)
P3	3	
P4	5	
P5	6	
P6	8	
P7	9	OFF
P8	—	—
P9	11	
P10	12	
P11	14	

RUN #83 As above

Preamp power tripped

RUN 84 As above

RUN 85

cables from preamps to CBs swapped

P9 ↔ P8 both work

P10 ↔ P11 CB in slot 14 doesn't work correctly

RUN 86 P9 ↔ P6 back

P11 - slot 12

P12 - slot 15

RUN 87 cable replaced b/t P10 ↔ slot 15

RUN 88

RUN 89 P10 slot 10

Problems

① slot 11 - problem w/ the entire 2nd chip seen only if you guess the cable

~~slot 14~~ -

② slot 14 - shows almost no data mine going to look at the CB wiring

③ can't bias T2 (P2) & T15 (P7)

5/10/10 Position - preamp mapping

preamps 0 & 7 have been exchanged in the mapping. I.e. now

P15 → PA7 & P7 → PA0

Check mapping on page 59 and 55 (Alisher)

TOWER 3

May 10, 2000

Pre Amp CSI: biased 80 Volts

Pulser Input	4.43 V				White Noise
	Signal	Noise			
Output	300 mV	≅ 44 mV		1 μS	40 mV

Tilak: "All are similar"

CSI Cables

Some are "Gold cables" (stiff and problematic) and others are twisted pair cables.

Tower 0	P0	T0	Gold	Tower 3	P12	T Twisted
	P1	T6	Twisted		P13	T Gold
	P2	T2	Gold		P14	T Twisted
	P3	T3	Twisted		P15	T twisted
Tower 1	P4	T13	Gold			
	P5	T14	Gold	Tower 4	P16	T twisted
	P6	T12	Gold		P17	T twisted
	P7	T15	Gold		P18	T twisted
Tower 2	P8	T5	twisted		P19	T twisted
	P9	T9	twisted			
	P10	T11	Gold			
	P11	T8	Gold			

HiRA Thermocouples

(Top)	(Bottom)
P0	P3
P4	P7
P8	P11
P12	P15
P16	P19

No nylon screws.

With or without gap pad cushion,

with or without large surface electric coupling or contact between metal base of thermocouple and telescope can exterior.

→ "pad" or "no pad" status

→ & "touching" or "not touching" status

for ea. thermocouple.

RUN 95

0 - 0.12
Step - 0.01 - 13

Pulser ramp for MB (1) (DE)

E OFFSET SET

Pulser (1) (10 CBs)
0 - 1.2 V (13 steps)
~ 0.01 V step size / CB
slots 2 - 15

PULSER (2) (8 CBs)
0 - 0.96 V (13 steps)
slots 2 - 18

RUN 96

PULSER RAMP FOR MB (5) to above
CBs 2 - 8 (PULSER (2))

RUN 97

PULSER RAMP FOR MB (5)
CBs 9 - 15 (PULSER (1))

5/11/10

Can get DE motherboards to run on alpha source, but unstably. MB 6 cb 1 basically unusable; others may start firing for no reason but turning discs off and on has a chance of resetting them.

Preamp power supply +12V tripped off twice during testing, reasons unknown.

Several chips or chipboards not seeing alphas, should check cabling.

XLM 1 (slot 14) has started locking up the VME & spdaq regularly.

On MB 5, cb 1 extremely noisy

Unable to bias PO, which is PAIS; MB 6 slot 5

MB 6, cb 4,5,8 v. noisy, not running.

Quiescient current on each DE MB ~ 3.5-4 V. Both will now jump up to >5 V in some conditions. Starting readout makes this jump back down but even moving a slider on the controller makes it go back up, even when all discriminators are off. I suspect this has to do with the global enable. The exact voltage depends on which cb is selected, but is one of only two possibilities -5.40 V or 5.14 V.

5/11/10

CsI Current for tower 4 = 0.2 μA

All channels for P15 looks similar

white Noise without bias ~ 8mV

with bias ~ 3 mV

Pulser input : 4.43 Volt

Preamp output : CsI 3 250 mV
CsI 2 250 mV
CsI 1 250 mV
CsI 0 250 mV

Cosmic output: ~150 mV at all channels

MB 5 slot 14 (10) sometimes PAA reports
15 (13) diagnum = 0

MB 6 slot 14 (2)
15 (3)
NEW slots

MC slot 12 chip 1 - missing channels on preamp (most zeros in (for both pulser & alpha)

→ saw pulser coming out of preamp, plugged back in to MB, and it worked. Must have been plugged in wrong.

→ Traded signal cables on MB 5, and problem tracked chip, not cable.

Much noise on MB 6, had to turn off all discs for MB 5 test.

Took cb from MB 6 slot 14 & 15 and put in slot 2 & 3: No readout problem → slot related.
Suggests we have to pick different slots on MB 5.

Gain test for shaper

shaper CsI 4

input pulse = 1 volt

output channel #	Voltage	noise
1	0.5 volt	
2	9.5 volt	6 mV
3	9.5 volt	6 mV
4	9.5 volt	6 mV
5	6 volt	
6	5.8 volt	4.4 mV

Increase in gain ~ 1.6

Increase in noise ~ 1.36 @

MB 6 14 → 2, 15 → 3

MB 5 14 → 10, 15 → 13

P7, P18

CBs moved

	Slot #
MB (6)	14 → 2
	15 → 3
MB (5)	14 → 10
	15 → 13

(1) That fixed the problem with spectral reporting hits coming from chips = 0 (that doesn't exist)

(2) No more issues w/ MB (6)

(3) Few problems related to MB (5)

(a) CB in slot (11) P18

1st chip shows the alphas while the 2nd chip doesn't. However, we see a pulser on this chip. Possible problem w/ the cable b/t PA box and flange / flange or flange to telescope

(b) CB in slot (13) P7

some of the channels on chip 1 mimic alphas until they show the pulser. Most likely problem with the cable b/t the PA box & telescope

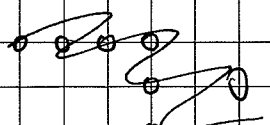
PULSER 1 MB 5, slots 9, 10, 11, 12, 13
MB 6 slots 2, 3, 12

PULSER 2 MB 5 slots
MB 6 slots

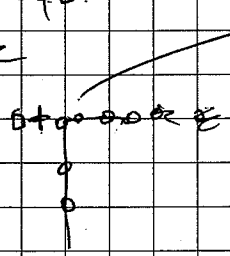
5/12/10 Alisher

CFD processing time is 10.4 ns (checked using a pocket puler and a splitter).

5/14/10 MCP1



As seen in telescope



I250 Y-k position is 240 mm.

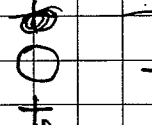
Move 3 cm up to the bottom row, the relative position of the cross-hair is the same.

Move 6 cm down to the top row

Target mask center hole ⊕

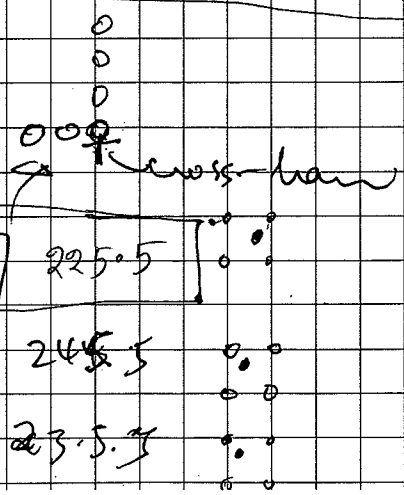
Target mask center position is 206.2 mm

Top position of target



MCP Φ

MCP Fit: 153.75

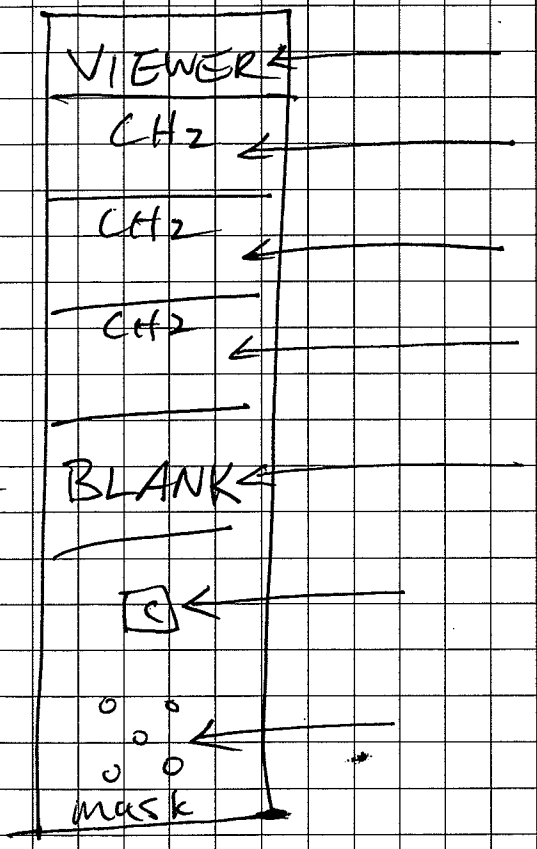


CALIBRATED BEAM SETTINGS

13 May 2010

	OUT	FOIL	FOIL+MASK
I250X-R MCP0	0.0mm		
I250Y-R MCP1	OUT	FOIL	FOIL+MASK
	0.0mm		

I250X-R TARGET DRIVE



5/15/10 Recieved new XLM XXV from WV. SN XXV0009

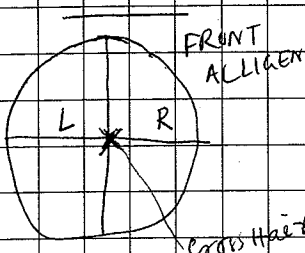
Removed HiRA XXV 4 (SN XXV0017)
from slot 16
Was not connecting to slot B at all
often comes up in locked state.

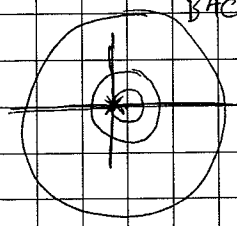
Moving HiRA XXV 5 SN XXV0016
from slot 14 to slot 16
Slot B doesn't trigger on ECL signal, but
seems to communicate via LVDS port OK.

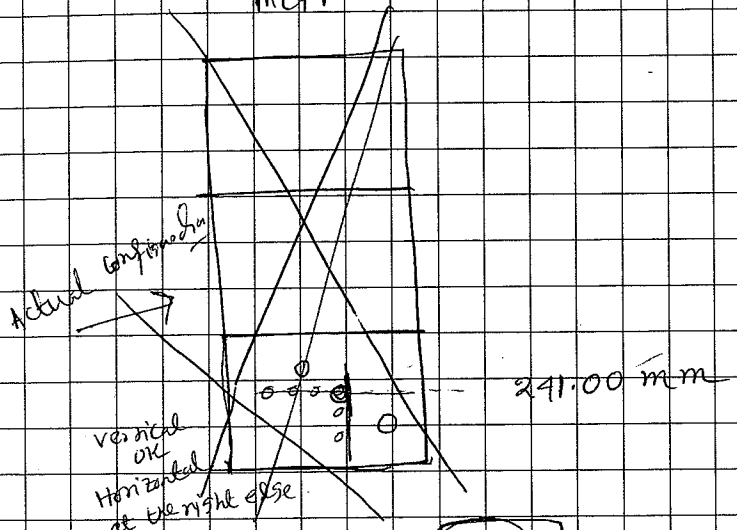
Placed WV XXV in slot 14.

5/16/10

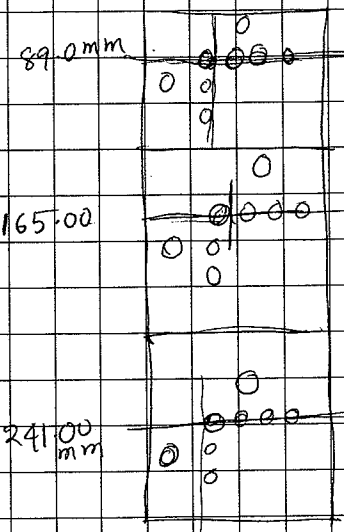
Alignment of the detector table needed adjustment.
Downstream side was required to move up by about 1 mm.





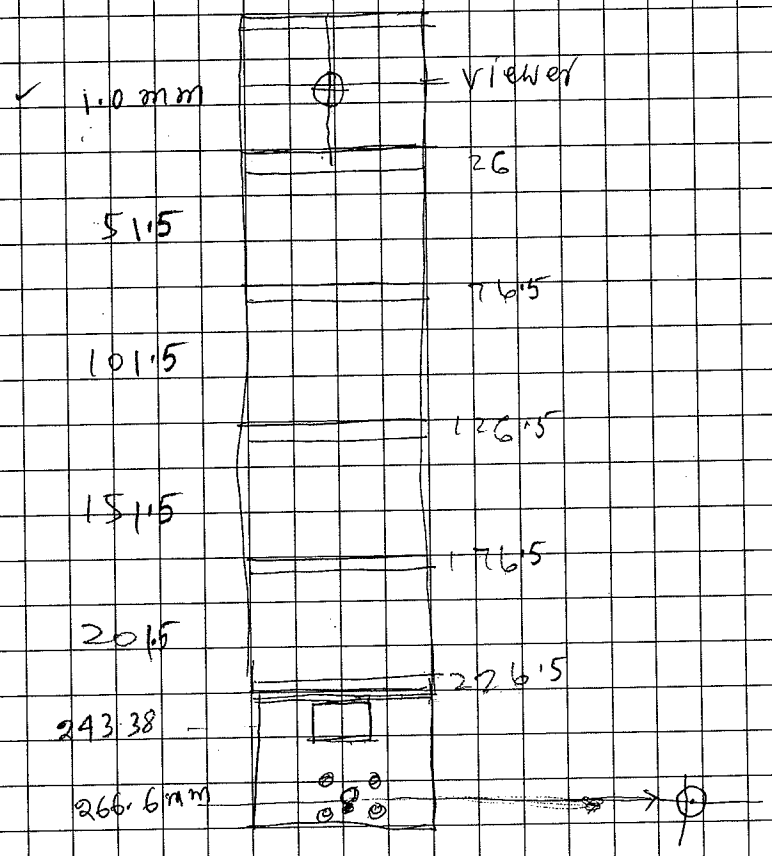


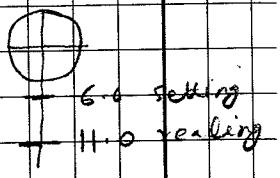
MCP1
As seen by telescope



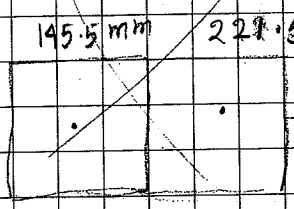
05/16/10

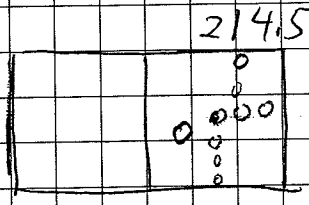
TARGET





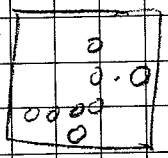
MCP 0





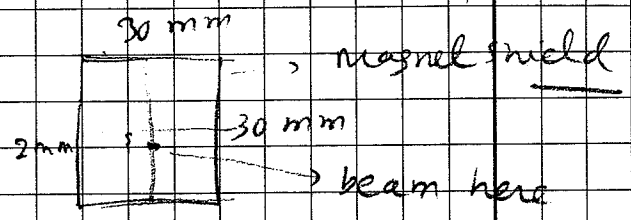
5/17/10

> 3:35 pm



MCP 1

5/16/10



pulser			Rise time	Amplitude	Fall time
mcp0	corner	0	2.56 ns	740 mV	6 ns
"	"	1	2.72 ns	668 mV	5.8 ns
"	"	2	2.56 ns	668 mV	5.8 ns
"	"	3	2.56 ns	668 mV	5.9 ns
mcp1	"	0	2.64 ns	668 mV	5.6 ns
"	"	1	2.64 ns	660 mV	5.54 ns
"	"	2	2.7 ns	664 mV	5.44 ns
"	"	3	2.64 ns	664 mV	5.5 ns
mcp0	time		2.64 ns	664 mV	5.5 ns
mcp1	time		2.64 ns	668 mV	5.4 ns
atten	pulse		3.7 ns	668 mV	5.5 ns
FTA	mcp0	time		13.4 mV	5.4 ns
FTA	mcp1	time			

5/16/10

MCP mount

RAE - 3237 → MCP1

Noise

MCP0	POS0	-18.6 mV
MCP0	POS1	-12.6 mV
MCP0	POS2	-18.0 mV
MCP0	POS3	11.8 mV
MCP0	time	~28 mV

MCP1

POS0	8 mV
POS1	12 mV
POS2	8 mV
POS3	16 mV
time	12 mV

Both the MCPs have 50 Ω terminator in the board for timing signal.

5/18/10 Telescope to electronics mapping for DES:

Pos	PA	ASIC MB	Slot	MB order
0	8	6	2	
1	16	6	3	
2	17	6	4	
3	18	5	2	
4	19	5	3	
5	5	6	6	
6	6	6	8	
7	0	5	11	
8	1	1	1	
9	9	5	9	
10	10	5	8	
11	11	6	5	
12	12	5	5	
13	13	5	6	
14	14	5	7	
15	7	1	1	
16	1	5	12	
17	2	6	9	
18	3	6	11	
19	4	6	12	

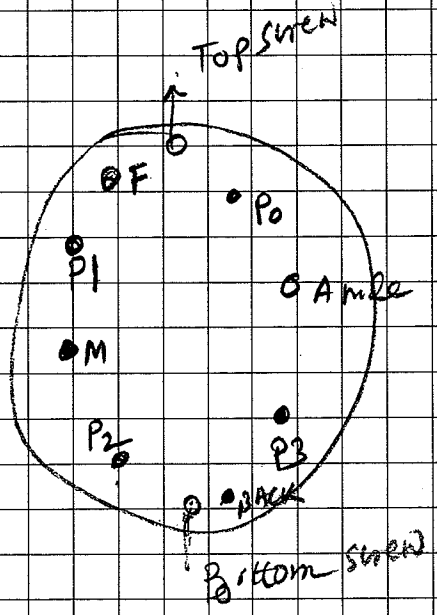
5/18/10

Trying to get Si times working
appear to have ~1 μs range

Several problems in readout.
Always get overflow in T1. Switched external
time & energy double lemos - problem stays w/ time
→ problem is inside chamber
looking at actual signals, they are there, but
one looks much smaller than the other, and both
look a little weird - grounded?

T2 has similar issue. Switched
E&T - problem tracks to inside chamber. Also
tested that it isn't FADC.
Looking at signals, one side appears completely disconnected.

Bill found a spare inside-chamber cable, but
one of the two cables has its two leads shorted
together, and will need to be fixed.



looking from back

MCP Ø

5/19/10 ~~MCP0 time~~

23:45 Installed (again) the MCP's.

MCP0 time noise (after fast preamp) is ~~~40~~ mV

MCP1 — ~ 200 mV

MCP0 P0 ~ ~~12~~ 5 mV P2 ~ ~~12~~ 7 mV

P1 ~ ~~8~~ 5 mV P3 ~ ~~20~~ 7 mV

MCP1 time ~ 14 mV

MCP1 P0, P1, P2, P3 ~ 8 mV

PATCH PANEL

1		15	Preamp Enable 1
2		16	Preamp Enable 2
3		17	~~Shaper to~~ ⊖
4	S:0 (back bias)	18	+
5	S:1 (back bias)	19	~~2~~
6	S:2 (back bias)	20	S:3 (back bias)
7 → multiplexer	M-XEK OUT 1	21	S:4 (back bias)
8	M-XEK OUT 2	22	XFP ~~5~~
9	M-XEK OUT 3	23	~~5800~~ Switch level to switch from 5800-mcp to new 3800-mcp
10	M-XEK OUT 4	24	RF
11	M-XEK OUT 5		
12	M-XEK OUT 6		
13	M-XEK OUT 7		
14	M-XEK OUT 8		

HV 19 = MCP1 bias

m/Current/others/switch/.switch

M - XOR		OR goSWITCH	
0	- BIG BROTHER	16	XLM slot12 complete latch
1	- CSI_OR TOW 2	17	XLM complete latch coincidence (bar)
2	- CSI_OR TOW 3	18	XLM slot 12 global enable
3	- DE_OR	19	5800 E1
4	- EB_OR	20	pulser trigger (bar)
5	- EF_OR	21	5800 + HiRA
6	- CSI - Malt. out - Linear	22	HiRA OR
7	Master	23	MB 0 ~~Shaper~~ Sh 3
8	Busy OR	24	MB 1 Shaper
9	5800 Busy	25	MB 2 Shaper
10	Prompt Busy	26	MB 3 Shaper
11	Computer EOE	27	MB 4 Shaper
12	MCP @ CO AG	28	MB 5 Shaper
13	MCP delayed OR	29	MB 6 Shaper
14	MCP gate	30	CSI ADC gate
15	XLM trigger	31	XFP

5/20/10 During secondary tuning.

MCP TDC channels: Common stop by Master delay

0) MCP 0
1) MCP 1
2) MCP downscale trigger
3) MCP delayed OR
4) S800 E1 time
5) XFP
6) Pulser event
7) ~~8~~ HiRA OR
8) S800 + HiRA coincidence
9) XLM trigger
10) HiRA Common Stop
11) RF

RF was patched to panel 24 but not attached.

MAY 21, 2010 0:00 - 8:00

(1) STATUS OF HiRA hw

TOWER 0: EBs biased at 150 V

TOWER 1: only EFs biased

TOWER 2: EBs biased at 150 V

we can't bias T5 (P8) on EF

TOWER 3: EBs biased at 150 V

something weird is going on w/ EFT16 (P14)
looks like the gain has changed since alpha run

TOWER 4: EBs biased at 100 V

can't bias EF on T1 (P16)

(2) We had a problem w/ sqdaq20

Readout stopped during the run and couldn't restart it (states frozen, etc). Reboot fixed the problem

(3) Only discriminators on EFs are on (EB & DE OFF!)

(4) We have to fix/lower the thresholds on Si

EF & EB ~ 1 MeV/c

DE ~ 0.2 MeV/c

We need Dan's software running!

86 15:30

did secondary beam tuning for ~~84~~ ^{84}Se E/A = 45.6 MeV/u

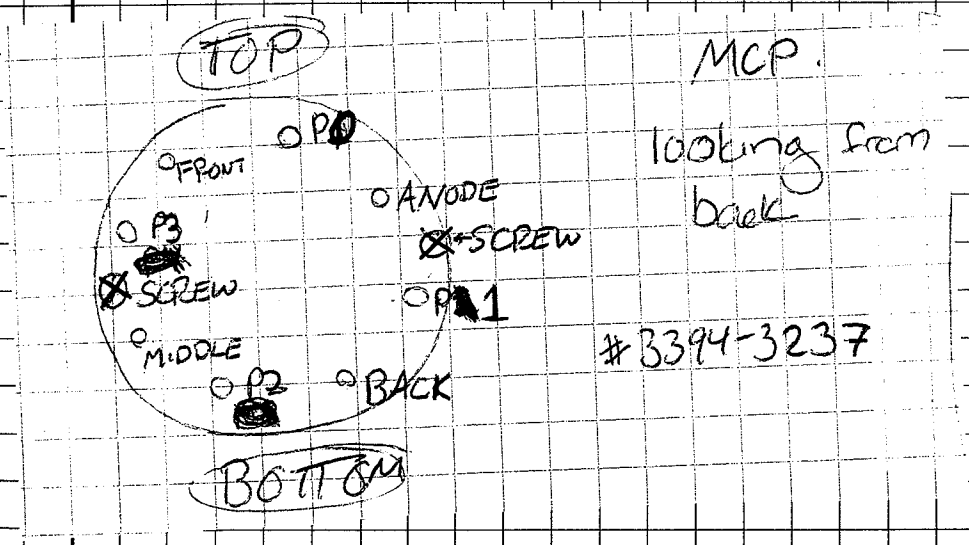
~~84~~ ^{84}Se Bρ = 2.4288 Tm @ Seg. 7

Run # 144	Beam: ^{84}Se	Date: 21 May 2010
Avg. Rates	Beam Energy: 45.6	B ρ: _____ (Seg. 8)
MCP0: X	Trigger: S800 singles	Target: Blank
MCP1: X	Drives [mm]	Attenuation: 10
XFP: _____	I250X-R: 1.0 MCP0	OnShift: MH
Live Time: _____	I250Y-R: 1.0 MCP1	
Live Trigger: _____	I251Y-R: _____ Target	
Comments: MASK CRDC1, did not terminate properly		

- did Calibration of CRDC1 with secondary ^{84}Se beam (Run 144)
  run didn't end properly also no scalers from S800
  fixed that problem
- fixed for next run. # 145

Run # 145	Beam: 84Sc	Date: 21 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1:	Drives [mm]	Attenuation:
XFP:	I250X-R: MCP0	OnShift:
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments:	CPDC 2 Mask calibration	

XFP was delayed by about 20 ns to ~~as~~ actively split to the vault



MCP.

looking from back

#3394-3237

Test of 3rd MCP to possibly replace not-working MCP 0. The mapping of the position signals is different from the last diagram.

-Rachel

Run 148 dE pulser thresholds were adjusted to Ce around 200-300 keV, which is safe.

In previous runs we set the threshold for the E's to about 1 MeV which is safe.

Find threshold file for ~~E~~ Eb

← CE7037_E_EFOR_Low threshold

threshold

E07037_ΔE_slow_Low thresh.

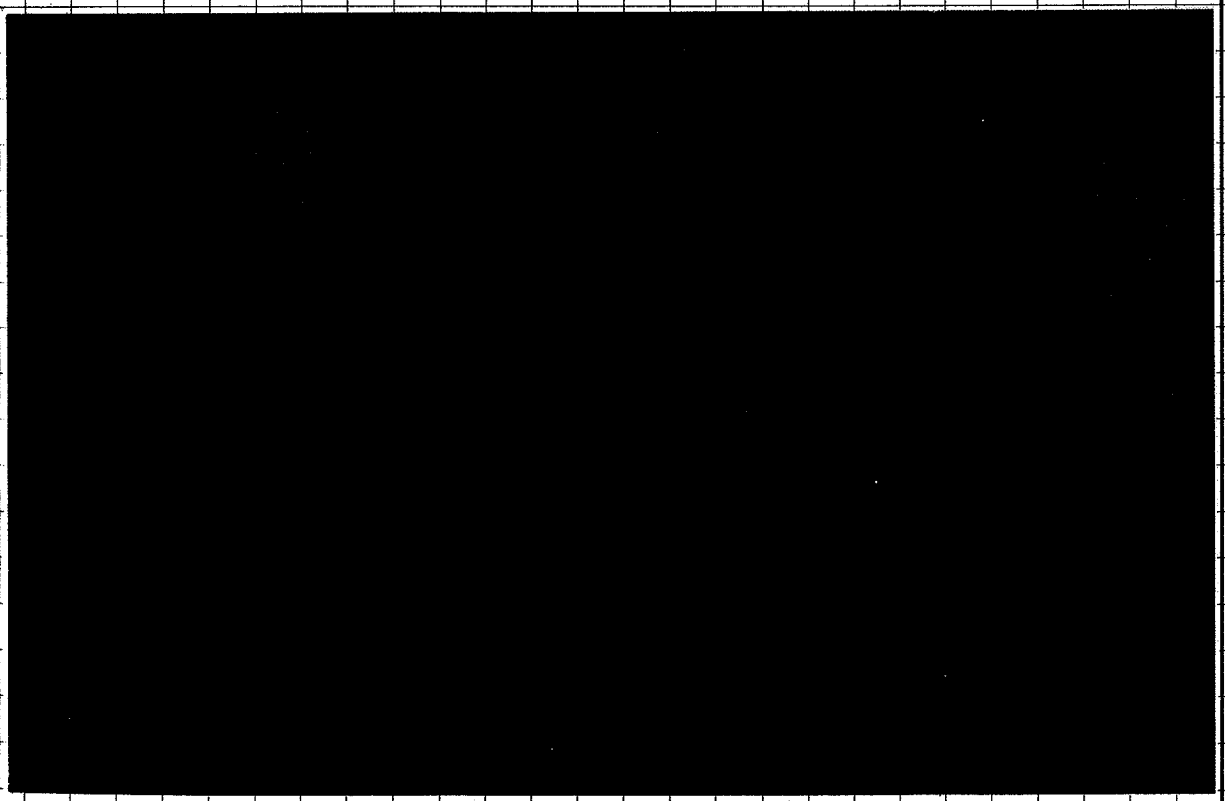
			Current
Si0	–	150 volt	3.8 MA
Si2	–	150 volt	12.2 MA
Si3	–	150 volt	5.1 MA
Si4	–	95 volt	7.59 MA

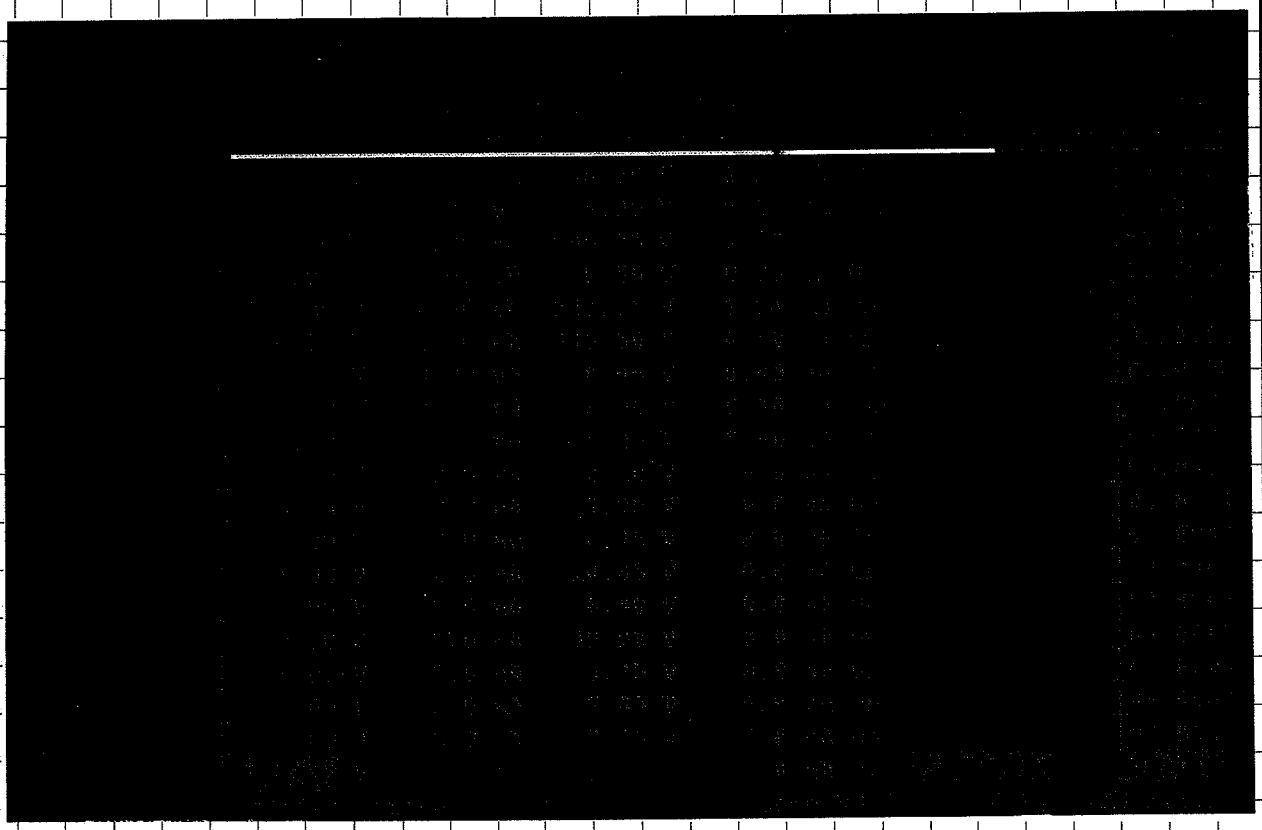
12/10

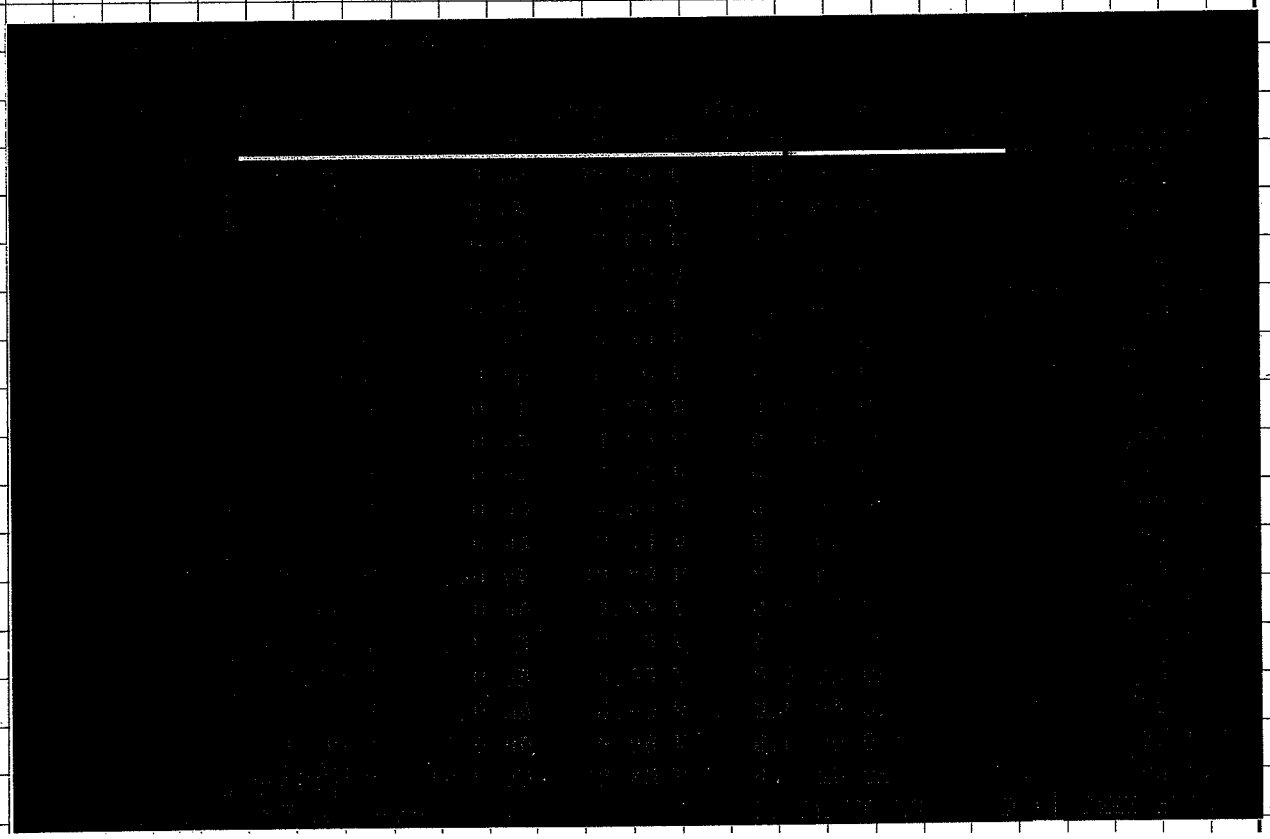
3:00 am

P.T #1 (Pressure)	+399.8	Torr
P.T #2 (Pressure)	+40.2	Torr
MFC #1 (Flow)	34.15	sccm
MFC #2 (Flow)	07.97	sccm
MFC #3 (Flow)	31.55	sccm

Tower Si0	03.7	μA
Tower Si1	15.0	μA
Tower Si2	11.8	μA
Tower Si3	04.8	μA
Tower Si4	05.42	μA







Switched to HiRA-S800 Coin trigger (around run 152 or 153) and observed that the EOR is low almost all of the time. This is quite strange we ending run almost purely a ~~S~~ S800 trigger. ~~Then~~ adjusted the delay on MCP to be about 80ns later on "Corners" going to QDC. Found that adding 50ns to MCP delayed is not enough. Need to add ~~100ns~~ 100ns total.

EOR is ~~most of the~~ time low (meaning on) while ~~the~~ trigger is in coincidence mode ⇔ ~~we need~~ at this time the busy circuit is off.

Stopping the run to try to run with ΔE pulser.

Find errors in the run Control page ⇔ waiting for "complete latch".

Firing like crazy

* At 5:57 am we noticed Tow 5 TC0 was rising in temperature. It reached as high as 47.06, up from 42.06 at 1:00 am. Bill went down to the vault to address the issue once it was clear the temperature was not coming back down. Within minutes the temperature came down to ~43. Then Bill shut off the voltage to the motherboards, when power was restored the temperature held constant at 42.06.

* Within 5 minutes the temperature of Tow 5 TC 0 was back over 47. Bill was able to bring the temperature down to 42.06 and the temperature remained at safe values.

* At 7:07 am we noticed Tow 5 TC0 was rising again (over 45) but without any changes the temperature returned to < 43.

~~desparation setup~~

* new ~~files~~: gain and threshold setting: file "lowgainsmall delay.setup" loaded.
live time increases to 80%. (earlier value ~30%).

10:00 am MCP1 bias is down now. Foil is still in it's place.

5/22/10 @ 10:20 am DDSC. Run 163
Found XFP & RF scalers were missing b/c of bad NIM bin in data U. Fixed. See scalers.

Switched to HiRA singles to focus on HiRA readout. Only reading out ASICs & CsI. Looking at timing, CsI signal falls within gate.

Lengthened master to 1 μs to catch all gate & coincidence.

HiRA triggering reasonably as trigger, but many ΔE in every event. Should raise thresholds here. Start with CsI ADC thresh - Betty will check we aren't cutting off punchthroughs.

When HiRA + S800, HiRA goes nuts. Decided to use EB OR instead of EF OR, because it is more stable.

Turned on MCP. Checked timing. MCP gate timing always set by MCP delayed OR, and is always in coincidence w/ trigger. Gate comes about 20 ns before signal, which is iffy, but I think there is additional delay downstairs ~~delay~~ before the gate is patched out, so probably OK.

2:15 pm switch to 10 μm target & S800 turn

* problem with ion source. Key is handed over to operators.

4:00pm Noticed that MCP TDC didn't read out. Discovered that gate was miswired. Should read out from now on, starting run 175.

CURRENT SETUP FILES

E: e07037_eb_0L_lowthresh.setup

DE: e07037-de-slave-midthresh.setup

Major Primary Beam tune done ~7PM

RUN 175

~ 8:40pm

Sat. May 22 (86 Kr Beam) @ "thin target setting"

MCP0: out

MCP1: 165mm = Carbon Foil

TAR: 25 μm CH_2 in ATT = 10^5 = 100,000

Meredith, Bill, Jack, Romi, Brett, Alisha.

Bρ Sg 8 = 2.30271

Trigger SR00 + HiRA com.

RUN 176

Start ~ 9:35PM
10 μm target

Trigger: S800 + HiRA coin

MCP Ø : retracted
MCP1 : C foil

(*) XFP scaler unplugged to investigate possible down scaling and reduced efficiency.

Getting ~ 100k in XFP &
~ 200k in MCP1. ??

Run Time:

Ended when we saw
K1200 & Transfer Hall
Opened ~ 2.5 minutes
before.

K1200 VME crate crashed
~~&~~ Reset

Run 177 Att 10k

Same as 176.

Investigating CRAD04 readings.

Run 178 Att = 10k

~~Att = 10~~ 100k

Attenuator & slits adjusted repeatedly to look @ MCP count rate and efficiency.

MCP1 tripped ~ 36 minutes into run.

Check the efficiency of XFP ~~95~~ assuming the eff of MCP is 100%.

device	Attn 10K Counts/s		Attn 100K	[illegible]	0 Beam
MCP	~~MCP~~ 200K	=	34K		0
XFP	280K	20	13.8K		0
5800	290	20	~~12/s~~ 15-17/s		0

raised MCP Voltage to 2.2 ~~kV~~

the efficiency is of about 80-90% at an intensity of about 300-400k

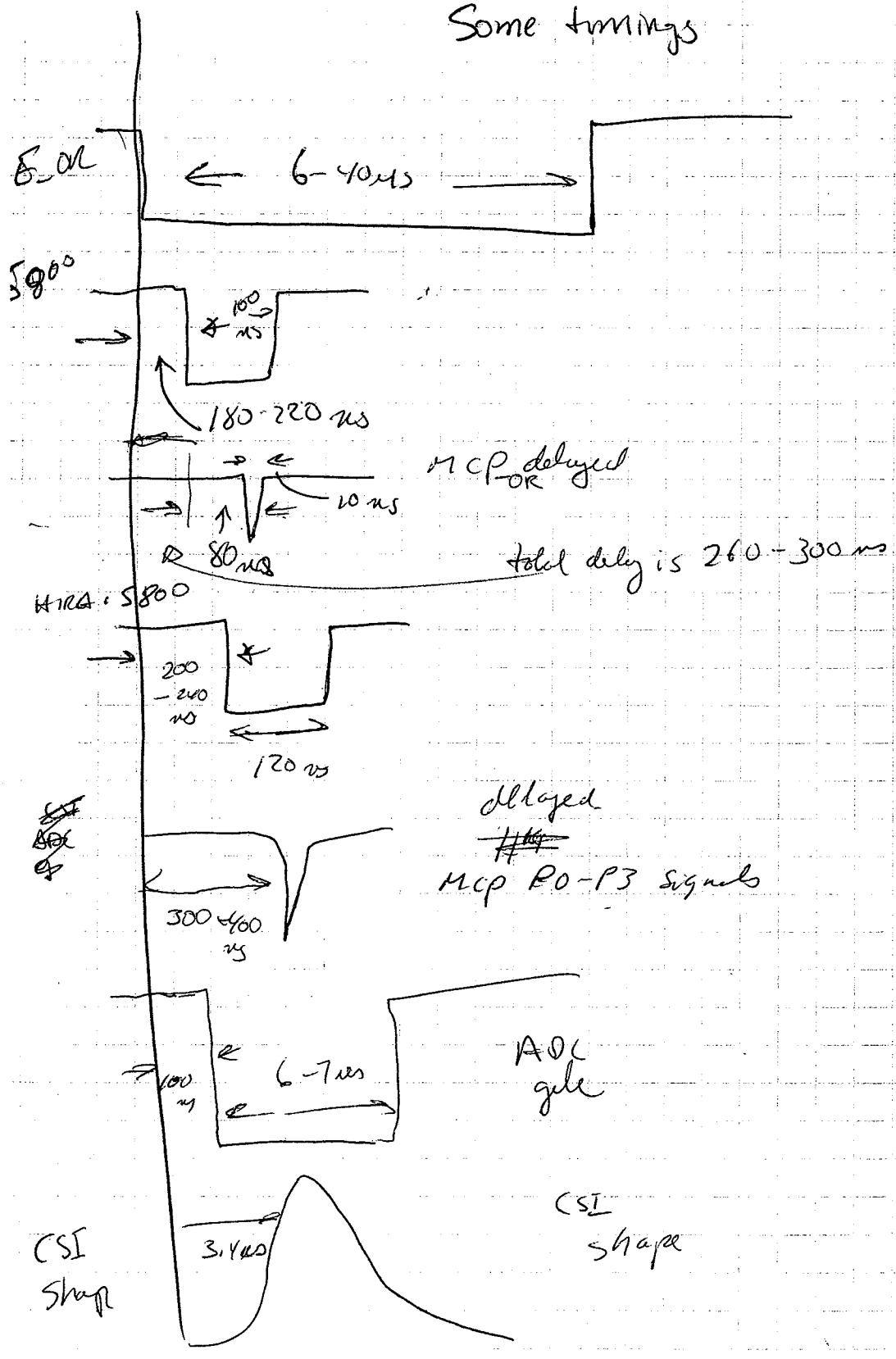
The MCP tripped off but I don't know why. The current limit is 0.1 mA the standing current is about 0.07 mA. Should I raised the limit.

At this condition the XFP has an efficiency of about 50%.

Tripped MCP Voltage again.

Set voltage to 2.1 kV ← seems to run stably with efficiency of 90%

Some timings



The TDC for MCP1 is not working

⇒ ~~remove the cancelled with the~~ take the outputs directly from the CFD's

2. Add 100 ns to Common stop

3. add 100 ns to HiRA OR

4 Why are there no MCP Downscales

channel	TDC's	Sca 8 raw	Scaler 9	Sca 10 liv
0	mcp0	mscp0	master	mcp 0
1	mcp1	mscp1	premaster	mscp1
2	mcp_dnsc	MCP_dnsc	EF_or	MCP_dnsc
3	msc_or	CsI0_OR	OR-T1	CsI0_OR
4	S800	CsI1_OR	OR_T2	CsI1_OR
5	Xfp	CsI2_OR	Clears	CsI2_OR
6	Master	CsI3_OR		CsI3_OR
7	HiRA	CsI4_OR		CsI4_OR
8	rf	S800.Trig		S800.Trig
9	HirA stop	S800-Hira		S800-Hira
10		rf		rf
11		clock		clock
12		big_broth		big_broth
13		XFP		XFP
14				
15				

RUN 181

Before this run we found out that the TDC downstairs is a multihit one. And we weren't seeing MCP1 time and MCP1 downscaled times in the TDC. So we added ~90 ns to the stop and ~150 ns to HiRA OR so they don't come too early.

Dan C notes later: the TDC is a V775, which is multievent, not multihit. Since we read this out after every trigger, this doesn't mean anything to us. We read a maximum of one hit per channel per event.

5/23/10 4:00 am

P.T. #1 (pressure)	+400.5	Torr
P.T. #2 (pressure)	+40.1	Torr
M.F.C. #1 (Flow)	37.97	sccm
M.F.C. #2 (Flow)	8.43	sccm
M.F.C. #3 (Flow)	30.38	sccm

Tower Si0	3.7	uA
Tower Si1	15.1	uA
Tower Si2	12.2	uA
Tower Si3	4.9	uA
Tower Si4	5.47	uA

Terminal

File Edit View Terminal Tabs Help

- Main Utility Setup Groups View Admin

Group 00

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
Tow0Cart15	140.00 V	4.00 uA	139.75 V	0.56 uA	On		00.0000
Tow0Card12	290.00 V	4.00 uA	290.25 V	1.20 uA	On		00.0001
Tow0Card9	0.00 V	4.00 uA	0.00 V	0.00 uA	Off		00.0002
Tow0Card6	160.00 V	4.00 uA	160.25 V	0.64 uA	On		00.0003
Tow0Card3	245.00 V	4.00 uA	245.00 V	1.30 uA	On		00.0004
Tow1Card15	410.00 V	4.00 uA	409.75 V	1.74 uA	On		00.0005
Tow1Card12	310.00 V	5.00 uA	310.00 V	0.76 uA	On		00.0006
Tow1Card9	0.00 V	4.00 uA	0.00 V	0.00 uA	Off		00.0007
Tow1Card6	420.00 V	4.00 uA	419.75 V	1.54 uA	On		00.0008
Tow1Card3	240.00 V	4.00 uA	239.75 V	1.60 uA	On		00.0009
Tow2Card15	0.00 V	6.00 uA	0.00 V	4.48 uA	Off		00.0010
Tow2Card12	150.00 V	6.00 uA	150.00 V	4.66 uA	On		00.0011
Tow2Card9	0.00 V	4.00 uA	0.75 V	0.00 uA	Off		00.0012
Tow2Card6	200.00 V	4.00 uA	200.25 V	1.38 uA	On		00.0013
Tow2Card3	115.00 V	4.00 uA	115.50 V	1.66 uA	On		00.0014
Tow3Card15	150.00 V	4.00 uA	150.00 V	1.36 uA	On		00.0015
Tow3Card12	70.00 V	4.00 uA	70.00 V	1.14 uA	On		00.0016
Tow3Card9	0.00 V	4.00 uA	0.50 V	0.00 uA	Off		00.0017
Tow3Card6	60.00 V	4.00 uA	60.25 V	1.16 uA	On		00.0018

Channels Display/Edit Screen LocEn V0 I0 N ◇ | CAEN SY1527

Terminal

File Edit View Terminal Tabs Help

- Main Utility Setup Groups View Admin

Group 00

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
Tow3Card3	300.00 V	4.00 uA	300.50 V	1.28 uA	On		00.0019
Tow4Card15	0.00 V	6.00 uA	0.00 V	0.12 uA	Off		00.0020
Tow4Card12	200.00 V	5.00 uA	200.25 V	1.90 uA	On		00.0021
Tow4Card9	0.00 V	4.00 uA	0.50 V	0.00 uA	Off		00.0022
Tow4Card6	120.00 V	4.00 uA	120.25 V	1.54 uA	On		00.0023
Tow4Card3	210.00 V	4.00 uA	210.50 V	1.08 uA	On		00.0024
Tow0Card1	0.00 V	0.00 uA	0.00 V	0.00 uA	Off		00.0025
1	0.00 V	0.00 uA	0.00 V	0.00 uA	Off		00.0026
Tow2Card1*	0.00 V	0.10 uA	0.25 V	0.00 uA	Off		00.0027
PA14	8.00 V	2.0 uA	8.10 V	0.0 uA	On		03.0000
PA11	8.00 V	2.0 uA	7.95 V	0.0 uA	On		03.0001
PA13	7.00 V	2.0 uA	6.75 V	0.0 uA	On		03.0002
PA10	11.00 V	2.0 uA	10.85 V	0.0 uA	On		03.0003
PA12	9.00 V	2.0 uA	8.80 V	0.0 uA	On		03.0004
CsI1	40.00 V	3.0 uA	39.90 V	0.0 uA	On		03.0005
PA19	6.00 V	2.0 uA	5.45 V	0.0 uA	On		03.0006
PA16	7.00 V	2.0 uA	7.05 V	0.0 uA	On		03.0007
PA18	7.00 V	2.0 uA	7.25 V	0.0 uA	On		03.0008
pa15	3.00 V	3.0 uA	0.00 V	0.0 uA	Off	I-Tripped	03.0009

Channels Display/Edit Screen LocEn V0 I0 N ◇| CAEN SY1527

Terminal

File Edit View Terminal Tabs Help

- Main Utility Setup Groups View Admin

Group 00

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
CsI1	40.00 V	3.0 uA	39.90 V	0.0 uA	On		03.0005
PA19	6.00 V	2.0 uA	5.45 V	0.0 uA	On		03.0006
PA16	7.00 V	2.0 uA	7.05 V	0.0 uA	On		03.0007
PA18	7.00 V	2.0 uA	7.25 V	0.0 uA	On		03.0008
pa15	0.00 V	3.0 uA	0.00 V	0.0 uA	Off	I-Tripped	03.0009
PA17	6.00 V	2.0 uA	5.80 V	0.1 uA	On		03.0010
CsI2	40.00 V	3.0 uA	40.00 V	0.3 uA	On		03.0011
PA4	7.00 V	2.0 uA	6.90 V	0.0 uA	On		05.0000
PA1	8.00 V	2.0 uA	7.90 V	0.1 uA	On		05.0001
PA3	7.00 V	2.0 uA	7.05 V	0.3 uA	On		05.0002
PA0	8.00 V	2.0 uA	8.05 V	0.3 uA	On		05.0003
PA2	9.00 V	2.0 uA	9.15 V	0.2 uA	On		05.0004
CsI3	40.00 V	3.0 uA	39.80 V	0.2 uA	On		05.0005
PA9	8.00 V	2.0 uA	7.65 V	0.4 uA	On		05.0006
PA6	11.00 V	2.0 uA	10.75 V	0.0 uA	On		05.0007
PA8	7.00 V	2.0 uA	6.85 V	0.0 uA	On		05.0008
PA5	7.00 V	2.0 uA	6.65 V	0.0 uA	On		05.0009
PA7	0.00 V	3.0 uA	0.00 V	0.0 uA	Off		05.0010
CsI4	50.00 V	10.0 uA	39.85 V	0.2 uA	On		05.0011

Channels Display/Edit Screen LocEn V0 I0 N ◇| CAEN SY1527

Run # 186	Beam: 86 Kr	Date: 23 May 2010
Avg. Rates	Beam Energy: 45.6	B ρ: 2.30271 (Seg. 8)
MCP0:	Trigger: S800 & HiRA	Target: 10 um CH2
MCP1:	Drives [mm]	Attenuation: 10 K
XFP:	I250X-R: 0 MCP0	OnShift: Micah Alisher Jack Betty Brett
Live Time:	I250Y-R: 0 MCP1	
Live Trigger:	I251Y-R: 150 Target	
Comments: Below		

Continuing to collect coincidence data.

Run # 187	Beam: 86 Kr	Date: 23 May 2010
Avg. Rates	Beam Energy: 45.6	B ρ: 2.30271 (Seg. 8)
MCP0:	Trigger: S800 & HiRA	Target: 10 um CH2
MCP1:	Drives [mm]	Attenuation: 10 K
XFP:	I250X-R: 0 MCP0	OnShift: ~~Micah~~ Micha Alisher Brett
Live Time:	I250Y-R: 0 MCP1	
Live Trigger:	I251Y-R: 150 Target	
Comments: The DAQ crashed before starting this run		

We decided to turn off the MCP1 so that we can turn up the beam intensity to get some good statistics. We ended Run 187 early to make this change.

Run # 188	Beam: 86 Kr	Date: 23 May 2010
Avg. Rates	Beam Energy: 45.6	B ρ: 2.30271 (Seg. 8)
MCP0: out	Trigger: S800 & HiRA	Target: 10 um CH2
MCP1: off	Drives [mm]	Attenuation: 1000
XFP: 600 n	I250X-R: 0 MCP0	OnShift: Meredith Micha Alisher Brett
Live Time:	I250Y-R: 0 MCP1	
Live Trigger:	I251Y-R: 150 Target	
Comments: Turned the attenuator down to 1000.		

Turned off the MCP1

~97% Live. Clock

Run # 189	Beam: 86 Kr 45.5 MeV	Date: 23 May 2010 9:15AM
Avg. Rates	Beam Energy:	B ρ: 2.3027 (Seg. 8)
MCP0: out	Trigger: S800 + HiRA coin	Target: 10 μm CH2
MCP1: off	Drives [mm]	Attenuation: 1k
XFP: .6 M	I250X-R: 0 MCP0	OnShift: Meredith
Live Time:	I250Y-R: 0 MCP1	
Live Trigger: ~~6962~~	I251Y-R: 150 Target	
Comments:		

Slits opened to increase rate XFP from ~0.63 M to 0.83 M. No other change here.

Run # 190	Beam: 86 Kr	Date: 23 May 2010
Avg. Rates	Beam Energy: 45.5 MeV/u	B ρ: (Seg. 8)
MCP0: out	Trigger: coin	Target: 10 μm CH2
MCP1: off	Drives [mm]	Attenuation: 1k
XFP: .8 M	I250X-R: 0 MCP0	OnShift: Meredith
Live Time:	I250Y-R: 0 MCP1	
Live Trigger:	I251Y-R: 150 Target	
Comments: Opened coupling, live slits		

10:15 AM

Run # 191	Beam: 86Kr	Date: 23 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.34690 (Seg. 8) = 2.30271
MCP0: out/off	Trigger: S800+HiRA	Target: 10 μm CH2
MCP1: in/off	Drives [mm]	Attenuation: 1k
XFP: 700k	I250X-R: 0 MCP0	OnShift: Meredith
Live Time: 90%	I250Y-R: 165 MCP1C	
Live Trigger: 2.6k?	I251Y-R: 150 Target	
Comments: No change from 190. Hi XAP Rate		

11:05 AM

Run # 192	Beam: 86 Kr	Date: 23 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.30271 (Seg. 8) 2.[redacted]1
MCP0: out / off	Trigger: S800 + HIRA	Target: 10 μm CH2
MCP1: in / off	Drives [mm]	Attenuation: 1 K
XFP: 700 K	I250X-R: 0 MCP0	OnShift: EM MH TG
Live Time:	I250Y-R: 165 MCP1 ∈	
Live Trigger:	I251Y-R: 150 Target	
Comments:		

NOON 23 May 2010

Talked to cyclotron operator. He was increasing beam to maintain CRAD 06 (XFP) rate in ~~7=85~~ 0.70 – 0.85 MHz range. Doing so caused CRAD 04 (S800 FP rate) to hit

Run # 193	Beam: 86Kr	Date: 23 May 2010
Avg. Rates	Beam Energy: 45.5	B ρ: same (Seg. 8)
MCP0: —	Trigger: S800 HiRA	Target: 10 μm CH2
MCP1: in / off	Drives [mm]	Attenuation: 1k
XFP: ~610 k	I250X-R: 0 MCP0	OnShift: MH, EM, TG
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 150 Target	
Comments: ~~XFP eff~~ XFP/S800FP ratio is drifting.		

Enrique Merino - ~~fo~~ found negative scalers for XFP & one other. Shortening Run time ~50 min.

Run # 194	Beam: 86Kr	Date: 23 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: _____ (Seg. 8)
MCP0: OUT/OFF	Trigger: S800 + HiRA	Target: 10 mm CH2
MCP1: IN/OFF	Drives [mm]	Attenuation: _____
XFP: 550 K	I250X-R: 0 MCP0	OnShift: MM, EM, TG, BL
Live Time: _____	I250Y-R: 165 MCP1	
Live Trigger: _____	I251Y-R: 150 Target	
Comments:		

1:40 PM

Run # 195	Beam: 86 Kr	Date: 23 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: _____ (Seg. 8)
MCP0: OUT/OFF	Trigger: S800 + HiRA	Target: 10 mm CH2
MCP1: IN/OFF	Drives [mm]	Attenuation: _____
XFP: 480 K	I250X-R: _____ MCP0	OnShift: MM, EM, TG, BL
Live Time: _____	I250Y-R: _____ MCP1	
Live Trigger: _____	I251Y-R: _____ Target	
Comments:		

2:00 PM

Run # 196	Beam: 86 Kr	Date: 23 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: _____ (Seg. 8)
MCP0: OUT/OFF	Trigger: S800 + HIRA	Target: 10 mm CH_2
MCP1: IN/OFF	Drives [mm]	Attenuation: _____
XFP: 420 K	I250X-R: _____ MCP0	OnShift: MH, RA, BL, EM, TG
Live Time: _____	I250Y-R: _____ MCP1	
Live Trigger: _____	I251Y-R: _____ Target	
Comments:		

Chart Recorder 32 (#1 Be
05/23/10 14:04

N004I-C
YDiv = 20.00E-06
Offs = -71.14E-06

Z001I-C
YDiv = 50.00E-06
Offs = 3.320E-03

K5MPS-C
YDiv = 10.00E-09
Offs = 141.6E-09

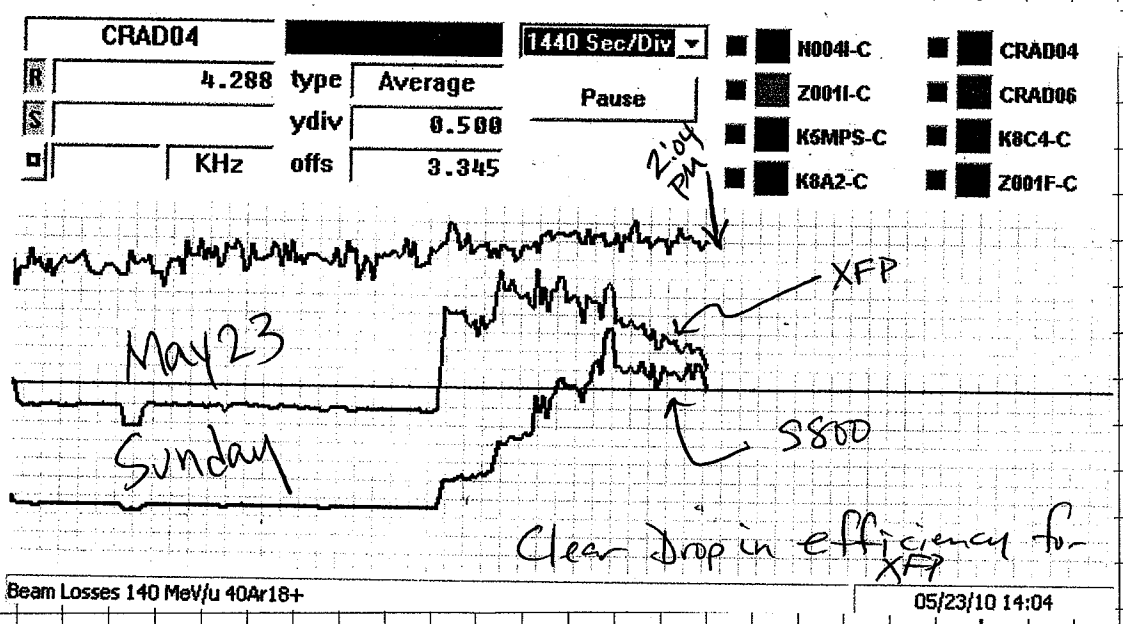
K8A2-C
YDiv = 20.00E-09
Offs = 787.5E-09

CRAD04
YDiv = 0.500
Offs = 3.345

CRAD06
YDiv = 1.000
Offs = 2.237

K8C4-C
YDiv = 5.000E-09
Offs = 112.8E-09

Z001F-C
YDiv = 5.000E-09
Offs = 280.0E-09



Saw that the MCP1 QDC low gain have large negative pedestals ⇒ go into Vault and get ready for.

Run 197 MCP1 mask in.
Timing gates looked funny. B.L. changed.

Run 198 ATT=10
Same as 197 except gates adjusted by B.L.

Run 199 ATT=100
Same as 198

23 May 2010.

(X) Run 199 Ended to go into vault.

The MCP gate was updating on the trailing pulses. So we put in a short MCP gate into the coin after 30ns delay to veto subsequent updating

Run 200

Mask MCP1. Still no capacitors added to MCP1 corners low gain. Timing gate adjusted by B. Again.

Run 201

Added capacitors to MCP1 corners to address Hi/Lo gain issues. Will compare to other calibration.

Going to production mode

1. Slits I255 in "blocker" position
   top slit closed to 4.40 position.
2. MCP1 carbon foil in (165 mm).
3. 25 μm CH_2 target in place.
4. ATT = 1 with slits in CCF coupling line not fully open.

~~MCP~~

Switched to coincidence mode. MCP downscaled master looks a little funny. The coincidence data looks to be correctly timed. The experiment through

23 May 2010

Run # 202	Beam: 84Se	Date: 23 May 2010
Avg. Rates	Beam Energy: 45MeV	B ρ: 2.375 (Seg. 8)
MCP0: out/off	Trigger:	Target: 25 μm CH2
MCP1: 165/on	Drives [mm]	Attenuation: 1 + slits
XFP: ~200 kHz	I250X-R: 0 MCP0	OnShift: MH, ~~BTG~~, BL, RA
Live Time: 99%	I250Y-R: 165 MCP1	(Target drives were locally enabled)
Live Trigger:	I251Y-R: 100 Target	
Comments: Bρ in Seg. 7 = 2.42880 T·m		

Target drives were enabled.

Run # 203	Beam: 84Se	Date: 23 May 2010
Avg. Rates	Beam Energy: 45.0 MeV	B ρ: 2.375 (Seg. 8)
MCP0: out	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 165/on	Drives [mm]	Attenuation:
XFP: ~200 KHz	I250X-R: 0 MCP0	OnShift: Tilak, Zibi, Bill, Remi, Jack
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Target Drives Disabled		

Run # 204	Beam: 84Se	Date: May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: out	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 165/on	Drives [mm]	Attenuation: 1
XFP: ~200 kHz	I250X-R: 0 MCP0	OnShift: Tilak, Zibi, Remi, Bill, Zack
Live Time: 98%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 205	Beam: 845e	Date: May 2010
Avg. Rates	Beam Energy: 45 MeV/u	B ρ: 2.375 (Seg. 8)
MCP0: out	Trigger: 5800+ H1BA	Target: 25 μm CH_2
MCP1: 165 / on	Drives [mm]	Attenuation: 1
XFP: ~220 kHz	I250X-R: 0 MCP0	OnShift:
Live Time: ~98%	I250Y-R: 165 MCP1	Tilak, Bill, Remi, Zibi
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 206	Beam: 845e	Date: May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger:	Target: 25 μm CH_2
MCP1: 165 / On	Drives [mm]	Attenuation:
XFP: ~220 kHz	I250X-R: 0 MCP0	OnShift:
Live Time: ~98%	I250Y-R: 165 MCP1	Jack, Remi, Tilak, Zibi
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 207	Beam: 845e	Date: May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger:	Target: 25 μm CH_2
MCP1: 165 / On	Drives [mm]	Attenuation:
XFP: ~220 kHz	I250X-R: 0 MCP0	OnShift:
Live Time: ~99%	I250Y-R: 165 MCP1	Jack, Remi, Bill
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 208	Beam: 845e	Date: May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger:	Target: 25 μm CH_2
MCP1: 165 / on	Drives [mm]	Attenuation:
XFP: ~250 kHz	I250X-R: 0 MCP0	OnShift:
Live Time: ~99%	I250Y-R: 165 MCP1	Jack, Remi, ZB, Bill,
Live Trigger:	I251Y-R: 100 Target	Mich, Brett, Alisha
Comments:		

12:33 am

Run # 209	Beam: 84Se	Date: 24 May 2010
Avg. Rates	Beam Energy: ~~85~~ MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger: S800 & HiRA	Target: 25 μm CH2
MCP1: 165/on	Drives [mm]	Attenuation: 1
XFP: ~230 KHz	I250X-R: 0 MCP0	OnShift: Bill Jack Zibi Mike Alisher Brett
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: (see below) Bill, Alisher and Zibi went to the vault		

MCP1 low gain channel 1 was changed from channel 9 to channel 1 in the QDC, because of a D.C. offset in the channel.

The change has made the results look good! Before it was looking very bad.

12:57 am

Run # 210	Beam: 84 Se	Date: 24 May 2010
Avg. Rates	Beam Energy: ~~85~~ MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger: S800 & HiRA	Target: 25 μM CH2
MCP1: 165/on	Drives [mm]	Attenuation: 1
XFP: ~230KHz	I250X-R: 0 MCP0	OnShift: Bill Alisher Betty Brett Mike Zibi
Live Time: ~98%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Removed downstream MCP from trigger.		

Bill removed the downstream MCP from the trigger because we were observing a double line in the low-gain high-gain plots.

2:00 am

Run # 211	Beam: 84Se	Date: 24 May 2010
Avg. Rates	Beam Energy: ~~85~~ MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger: S800 & HiRA	Target: 25um CH2
MCP1: 165/on	Drives [mm]	Attenuation: 1
XFP: ~210	I250X-R: 0 MCP0	OnShift: Bill Alisher Betty Jack Tilak Brett Mike
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

2:50 am

Run # 212	Beam: 84Se 8	Date: 24 May 2010
Avg. Rates	Beam Energy: ~~45~~ MeV	B ρ: 2.375 (Seg. 8)
MCP0: Our	Trigger: S800& HiRA	Target: 25um CH2
MCP1: 165/on	Drives [mm]	Attenuation: 1
XFP: ~220 KHz	I250X-R: 0 MCP0	OnShift: Mike, Jack, Alisher, Brett
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

3:47 am

Run # 213	Beam: 84 Se	Date: 24 May 2010
Avg. Rates	Beam Energy: ~~45~~ MeV	B ρ: 2.375 (Seg. 8)
MCP0: Our	Trigger: S800& HiRA	Target: 25 um CH2
MCP1: 165/on	Drives [mm]	Attenuation: 1
XFP: ~220 KHz	I250X-R: 0 MCP0	OnShift: Mike, Jack, Alisher, Rachel, Brett
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

4:45 am

Run # 214	Beam: 84 Se	Date: 24 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: Our	Trigger: S800& HiRA	Target: 25 um CH2
MCP1: 165/on	Drives [mm]	Attenuation: 1
XFP: ~220 KHz	I250X-R: 0 MCP0	OnShift: Mike, Rachel, Jack, Alisher, Brett
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

5/24/10 5:26 am

Tower Si 0	3.7	μA	
Tower Si 1	15.1	μA	
Tower Si 2	12.2	μA	
Tower Si 3	4.9	μA	
Tower Si 4	5.47	μA	
PT #1 (Pressure)	+399.5	Torr	
PT #2 (Pressure)	+39.5	Torr	
MFC #1 (Flow)	37.32	sccm	
MFC #2 (Flow)	8.11	sccm	
MFC #3 (Flow)	32.19	sccm	

Terminal

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- Main Utility Setup Groups View Admin

Group 00

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
Tow0Cart15	140.00 V	4.00 uA	140.00 V	0.56 uA	On		00.0000
Tow0Card12	290.00 V	4.00 uA	290.25 V	1.20 uA	On		00.0001
Tow0Card9	0.00 V	4.00 uA	0.00 V	0.00 uA	Off		00.0002
Tow0Card6	160.00 V	4.00 uA	160.25 V	0.64 uA	On		00.0003
Tow0Card3	245.00 V	4.00 uA	245.00 V	1.30 uA	On		00.0004
Tow1Card15	410.00 V	4.00 uA	409.75 V	1.78 uA	On		00.0005
Tow1Card12	310.00 V	5.00 uA	310.00 V	0.72 uA	On		00.0006
Tow1Card9	0.00 V	4.00 uA	0.00 V	0.00 uA	Off		00.0007
Tow1Card6	420.00 V	4.00 uA	419.75 V	1.62 uA	On		00.0008
Tow1Card3	240.00 V	4.00 uA	239.75 V	1.60 uA	On		00.0009
Tow2Card15	0.00 V	6.00 uA	0.00 V	4.48 uA	Off		00.0010
Tow2Card12	150.00 V	6.00 uA	150.25 V	4.64 uA	On		00.0011
Tow2Card9	0.00 V	4.00 uA	0.75 V	0.00 uA	Off		00.0012
Tow2Card6	200.00 V	4.00 uA	200.25 V	1.38 uA	On		00.0013
Tow2Card3	115.00 V	4.00 uA	115.50 V	1.66 uA	On		00.0014
Tow3Card15	150.00 V	4.00 uA	150.00 V	1.36 uA	On		00.0015
Tow3Card12	70.00 V	4.00 uA	70.00 V	1.14 uA	On		00.0016
Tow3Card9	0.00 V	4.00 uA	0.50 V	0.00 uA	Off		00.0017
Tow3Card6	60.00 V	4.00 uA	60.25 V	1.16 uA	On		00.0018

Channels Display/Edit Screen LocEn V0 I0 N | CAEN SY1527

Terminal

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- Main Utility Setup Groups View Admin

Group 00

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
Tow3Card3	300.00 V	4.00 uA	300.25 V	1.34 uA	On		00.0019
Tow4Card15	0.00 V	6.00 uA	0.00 V	0.12 uA	Off		00.0020
Tow4Card12	200.00 V	5.00 uA	200.25 V	1.88 uA	On		00.0021
Tow4Card9	0.00 V	4.00 uA	0.50 V	0.00 uA	Off		00.0022
Tow4Card6	120.00 V	4.00 uA	120.25 V	1.54 uA	On		00.0023
Tow4Card3	210.00 V	4.00 uA	210.25 V	1.18 uA	On		00.0024
Tow0Card1	0.00 V	0.00 uA	0.00 V	0.00 uA	Off		00.0025
1	0.00 V	0.00 uA	0.00 V	0.00 uA	Off		00.0026
Tow2Card1*	0.00 V	0.10 uA	0.25 V	0.00 uA	Off		00.0027
PA14	8.00 V	2.0 uA	8.15 V	0.0 uA	On		03.0000
PA11	8.00 V	2.0 uA	7.95 V	0.0 uA	On		03.0001
PA13	7.00 V	2.0 uA	6.80 V	0.0 uA	On		03.0002
PA10	11.00 V	2.0 uA	10.85 V	0.0 uA	On		03.0003
PA12	9.00 V	2.0 uA	8.80 V	0.0 uA	On		03.0004
CsI1	40.00 V	3.0 uA	39.90 V	0.0 uA	On		03.0005
PA19	6.00 V	2.0 uA	5.45 V	0.0 uA	On		03.0006
PA16	7.00 V	2.0 uA	7.05 V	0.0 uA	On		03.0007
PA18	7.00 V	2.0 uA	7.25 V	0.0 uA	On		03.0008
pa15	3.00 V	3.0 uA	0.00 V	0.0 uA	Off	I-Tripped	03.0009

Channels Display/Edit Screen LocEn V0 I0 N ◇| CAEN SY1527

Terminal

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- Main Utility Setup Groups View Admin

Group 00

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
CsI1	40.00 V	3.0 uA	39.90 V	0.0 uA	On		03.0005
PA19	6.00 V	2.0 uA	5.45 V	0.0 uA	On		03.0006
PA16	7.00 V	2.0 uA	7.05 V	0.0 uA	On		03.0007
PA18	7.00 V	2.0 uA	7.25 V	0.0 uA	On		03.0008
pa15	0.00 V	3.0 uA	0.00 V	0.0 uA	Off	I-Tripped	03.0009
PA17	6.00 V	2.0 uA	5.80 V	0.1 uA	On		03.0010
CsI2	40.00 V	3.0 uA	40.00 V	0.3 uA	On		03.0011
PA4	7.00 V	2.0 uA	6.90 V	0.0 uA	On		05.0000
PA1	8.00 V	2.0 uA	7.90 V	0.1 uA	On		05.0001
PA3	7.00 V	2.0 uA	7.05 V	0.3 uA	On		05.0002
PA0	8.00 V	2.0 uA	8.05 V	0.3 uA	On		05.0003
PA2	9.00 V	2.0 uA	9.15 V	0.2 uA	On		05.0004
CsI3	40.00 V	3.0 uA	39.80 V	0.2 uA	On		05.0005
PA9	8.00 V	2.0 uA	7.65 V	0.4 uA	On		05.0006
PA6	11.00 V	2.0 uA	10.75 V	0.0 uA	On		05.0007
PA8	7.00 V	2.0 uA	6.85 V	0.0 uA	On		05.0008
PA5	7.00 V	2.0 uA	6.65 V	0.0 uA	On		05.0009
PA7	0.00 V	3.0 uA	0.00 V	0.0 uA	Off		05.0010
CsI4	40.00 V	10.0 uA	39.85 V	0.2 uA	On		05.0011

Channels Display/Edit Screen LocEn V0 I0 N ◇| CAEN SY1527

5:40 am

Run # 215	Beam: 84 Se	Date: 24 May 2010
Avg. Rates	Beam Energy: 45MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger: S800 & HiRA	Target: 25 um CH2
MCP1: 165/on	Drives [mm]	Attenuation: 1
XFP: ~220 KHz	I250X-R: 0 MCP0	OnShift: Rachel Mike Jack Alisher Brett
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

6:38 am

Run # 216	Beam: 84 Se	Date: 24 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger: S800 & HiRA	Target: 25 um CH2
MCP1: 165/on	Drives [mm]	Attenuation: 1
XFP: ~220 KHz	I250X-R: 0 MCP0	OnShift: Rachel Alisher Brett Mike
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

7:31 am

Run # 217	Beam: 84Se	Date: 24 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: out	Trigger: S800 and HiRA	Target: 25 um CH2
MCP1: 165 / on	Drives [mm]	Attenuation: 1
XFP: ~136 kHz	I250X-R: 0 MCP0	OnShift: Tony Mike Andy Alisher Brett Rachel
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

→ Stopped at 8AM for beam tuning. 8:46 AM

Tool tuned from ~290 to 700 e pnt

Run # 218	Beam: 84Se	Date: 24 May 2010
Avg. Rates	Beam Energy: 45MeV	B ρ: 2.375 (Seg. 8)
MCP0: out	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 165/on	Drives [mm]	Attenuation: 1
XFP: 121 kHz	I250X-R: 0 MCP0	OnShift: Tony Dan B Andy Meredith Rachel
Live Time: 99	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Data not running to tape?		

8:55 AM

Run # 219	Beam: 84Se	Date: 24 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger: S800 + HiRA	Target: 25μm CH2
MCP1: 165/ on	Drives [mm]	Attenuation: 1
XFP: 288 kHz	I250X-R: 0 MCP0	OnShift: Tony Rachel Andy Meredith Dan B
Live Time: 99	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

9:53 AM

Run # 220	Beam: 84Se	Date: 24 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger: S800 + HiRA	Target: 25μm CH2
MCP1: 165 / on	Drives [mm]	Attenuation: 1
XFP: 264 kHz	I250X-R: 0 MCP0	OnShift: Tony Meredith Andy Rachel Dan B Remi
Live Time: 99	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

10:47 am

Run # 221	Beam: 84Se	Date: 24 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 165 On	Drives [mm]	Attenuation: 1
XFP:	I250X-R: 0 MCP0	OnShift: Tony Rachael Andy Meredith Dan. Remi
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Source died. Most watch beam intensity. 200 @ ~520 epnA

10:55 am When op. gave us back beam.

Run # 222	Beam: 84Se	Date: 24 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: 0	Trigger:	Target: 25 μm CH2
MCP1: 165 On	Drives [mm]	Attenuation: 1
XFP: ~220 kHz	I250X-R: 0 MCP0	OnShift: Tony Rachael Andy Meredith Dan. Remi
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	

11:59 pm

Run # 223	Beam: 845e	Date: 24 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger: 5800 + HIRA	Target: 25 Mm CH2
MCP1: 165 on	Drives [mm]	Attenuation: 1
XFP: ~210 kHz	I250X-R: 0 MCP0	OnShift: Bill Rachael Remi Betty
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

1:01 am

Run # 224	Beam: 845e	Date: 24 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: Out	Trigger: 5800 + HIRA	Target: 25 Mm CH2
MCP1: 165 on	Drives [mm]	Attenuation: 1
XFP: ~220 kHz	I250X-R: 0 MCP0	OnShift: Andy Meredith Dan Betty Tony Remi
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 225	Beam: 845i	Date: 24 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0: X	Trigger:	Target:
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: MCP0	OnShift: Same
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments:		Same

Run # 226	Beam: 845i	Date: 24 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: MCP0	OnShift: Same
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments:		Same

Primary Fire by Tom Beal

~ 1 hour

Run # 227	Beam: 84Sr	Date: 24 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0: X	Trigger: Coin	Target: 25 μm CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: X MCP0	OnShift:
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 228	Beam: 84Sr	Date: 24 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0: X	Trigger: Coin	Target: 25 μm CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: X MCP0	OnShift:
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 229	Beam: 84Sr	Date: 24 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0: X	Trigger: Coin	Target: 25 μm CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: X MCP0	OnShift:
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 230	Beam: 84Sr	Date: 24 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0: X	Trigger: Coin	Target: 25 μm CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: X MCP0	OnShift: Same
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Same		

Run 231: After Tune

CRADC1 – 2.1 kHz
CRADC6 – 3.5-4 kHz

Run # 231	Beam: 84Se	Date: 24 May 2010
Avg. Rates	Beam Energy: ~~45~~ 45 MeV	B ρ: _____ (Seg. 8)
MCP0: _____	Trigger: Hira + S900	Target: 25 μ
MCP1: _____	Drives [mm]	Attenuation: 1
XFP: _____	I250X-R: X MCP0	OnShift:
Live Time: _____	I250Y-R: _____ MCP1	Jack
Live Trigger: _____	I251Y-R: _____ Target	
Comments:		

Run # 232	Beam: 84Se	Date: 24 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: _____ (Seg. 8)
MCP0: _____	Trigger: Hira + S900	Target: 25μ
MCP1: _____	Drives [mm]	Attenuation: 1
XFP: _____	I250X-R: _____ MCP0	OnShift:
Live Time: _____	I250Y-R: _____ MCP1	Jack
Live Trigger: _____	I251Y-R: _____ Target	
Comments:		

Run # 233	Beam: 84Se	Date: 24 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: _____ (Seg. 8)
MCP0: _____	Trigger:	Target: 25μ
MCP1: _____	Drives [mm]	Attenuation: 1
XFP: 200 K	I250X-R: _____ MCP0	OnShift:
Live Time: _____	I250Y-R: _____ MCP1	Jack
Live Trigger: _____	I251Y-R: _____ Target	
Comments:		

Run # 234	Beam: 84Se	Date: 24 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: _____ (Seg. 8)
MCP0: _____	Trigger:	Target: 25μ
MCP1: 45 K	Drives [mm]	Attenuation: 1
XFP: 130K	I250X-R: _____ MCP0	OnShift:
Live Time: _____	I250Y-R: _____ MCP1	Jack
Live Trigger: _____	I251Y-R: _____ Target	
Comments: Rates have dropped significantly		

Tuesday (early morning)

At around Midnight we turned over the beam to the operators to be returned because the beam intensity had dropped by almost a factor of 2. They gave it back after an hour or so, and the rate was back up, almost. Operators said that this is all they could give us. after restarting the run, the daq crashed, and was restarted.

—Jack W.

ending 4:15 am:

Run # 235-240	Beam: 84Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: _____ (Seg. 8)
MCP0: X	Trigger: S800+HiRA	Target: 25 μm CH2
MCP1: 130 k	Drives [mm]	Attenuation: 1
XFP: 102 k	I250X-R: X MCP0	OnShift: Jack Rachel Mike Alisher Tilak
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Taking data for a few hours with parameters stable Ended Run 240 for beam tuning.		

Beam started to drop... operators have it now...

5:19 am, 6:10 am, 6:58 am, 7:46 am

Run # 241,2,3,4	Beam: 84Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: _____ (Seg. 8)
MCP0: _____	Trigger: S800+HiRA	Target: 25 μm CH2
MCP1: ~~131~~ 222 k	Drives [mm]	Attenuation: 1
XFP: 183 k	I250X-R: X MCP0	OnShift: Rachel Mike
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Ended 244 to enter vault + for a quick beam tune		

CRDC MASK

245 MASK 1 upstream
viewer only in.
~5 minutes Beam dropped.

246 MASK 1
No viewer, empty

247 MASK 2
No viewer, then viewer,
w/ and w/o 17mg C target

248 MCR1 MASK
w/ 17mg C target
CRDC2 mask was in.

249) MCP 1 Mask, nothing else in beam line.

250) Removed HiRA from Readout, both ASICs & CsI, to speed up data acq.
MCP1 Mask w/ 100 μm CH2 target in beam

251) Target mask run
w/ MCP1 carbon foil in

252) Target mask, as 251

After these, handed the Key over to Jorge to shim the A1900 XFP. Took this time to change back to coincidence trigger, add ASIC and CsI back to readout, and flush the chiller twice. This involved shutting off the ASICs; when I reloaded them, I turned on the dEs one Chipboard at a time.
Put in 25 μm CH_2 target, and put 5800 slits back in.

253) Production run w/ 84Se (p,d)

Run # 253	Beam:	Date: 25 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger: Coin S800+HiRA	Target: 25 μm CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: MCP0	OnShift:
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: XFP shimmed by Jorge & D4 (I228DS) Matched		

Run # 254	Beam: 84Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.3750 (Seg. 8)
MCP0:	Trigger: S800 + HiRA coin	Target: 25 μm CH2
MCP1: 205 kHz	Drives [mm]	Attenuation: 1
XFP: 306 kHz	I250X-R: 0 MCP0	OnShift:
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger: 1-5 Hz	I251Y-R: 100 Target	
Comments: Adjusted I255 slits @4.40 to 4.41. Peak is missing.		

Where did ^{84}Se trail go?? It is more covered by S800 FP slits than before.

12:00 PM

Run # 255	Beam: 84Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.3750 (Seg. 8)
MCP0:	Trigger: S800 + HiRA coin	Target: 25 μm CH2
MCP1: 202 kHz	Drives [mm]	Attenuation: 1
XFP: 303 kHz	I250X-R: 0 MCP0	OnShift: Rachel
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: I255 slits opened to 4.43 then 4.44		

12:32pm

Run # 256	Beam: 84Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800+HiRA coin	Target: 25μm CH2
MCP1: 200 kHz	Drives [mm]	Attenuation: 1
XFP: 300 kHz	I250X-R: 0 MCP0	OnShift: Rachel
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger: ~3	I251Y-R: 100 Target	
Comments:		

1:25 PM

Run # 257	Beam: (none)	Date: 25 May 2010
Avg. Rates	Beam Energy: N/A	B ρ: N/A (Seg. 8)
MCP0: X	Trigger: S800 & HiRA	Target: 25 μm CH2
MCP1:	Drives [mm]	Attenuation: N/A
XFP:	I250X-R: 0 MCP0	OnShift: Meredith, Brett, Andy, Betty, Tony, Dan C, Dan B.
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: No beam!		

Running Background with no beam.

1:32 PM

Run # 258	Beam: 84Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45.5MeV	B ρ: 2.375 (Seg. 8)
MCP0:	Trigger: S800 & HiRA	Target: 25 um CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: 0 MCP0	OnShift: Meredith, Dan B, Bill, Dan C, Betty, Tony, Brett, Andy
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Adjustment of beam. (dE's were still off)		

Adjusted Z001 spot position.

DE's were off so we killed the run and turned them on for Run 258.

2:56 PM

Run # 259	Beam: 84 Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 & HiRA	Target: 25 μm CH2
MCP1: ~170 KHz	Drives [mm]	Attenuation: 1
XFP: ~250 KHz	I250X-R: 0 MCP0	OnShift: Brett, Tony, Andy, Meredith, Dan B, Dan C
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 160 Target	
Comments:		

Turned on dE's and started run.
3:54 AM

Run # 260	Beam: 84 Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 & HiRA	Target: 25 μm CH2
MCP1: ~180 KHz	Drives [mm]	Attenuation: 4
XFP: ~260 KHz	I250X-R: 0 MCP0	OnShift: Meredith, Brett, Dan-B, Remi, Tony, Andy
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Stopped beam for primary tune before shift change. Continuation of Run 259. Daniel Bazin matched I2280S, but didn't take right away. Stopped run to match again for run 261. 4 PM 25 May 2010.

Run # 261	Beam: 84Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: (Seg. 8)
MCP0:	Trigger:	Target: 25 μm CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: 0 MCP0	OnShift:
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Operator will take beam in next ~4 hours to change stripper foil.

Add [END] of Run 261,

" Warning: eventlog may not have finished normally continuing w/ post run actions "

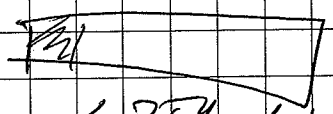
& Run Control GUI shows

Wrong Background color,

time keeps counting!,

and spectrodaq fue

pages goes yellow



CRASHED.

Restarting fue

Run # 262 Pulser ramp for DE1

0 - 0,1 V 11 steps

Run # 263 Pulser ramp for DE1

~~0 - 2 V, 21 steps~~

0 - 1.4 V, 15 steps

Run # 264 Pulser ramp for DE3

0 - 0.2 V, 21 steps

Run # 265 Pulse ramp for EF

0 - 10 V, 21 steps

Run # 266 Pulser ramp for EB

0 - 10 V, 21 steps

Run # 267 Pulser ramp for EF

0 - 2 V, 21 steps

Run # 268 Pulser ramp for EB

0 - 2 V, 21 steps

~ 6:00 PM

Run # 269	Beam: 84 Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 & HiRA	Target: 25 μm CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: 0 MCP0	OnShift: Meredith Tony
Live Time:	I250Y-R: 165 MCP1	Brett Remi
Live Trigger:	I251Y-R: 100 Target	Dan B
Comments:		Andy

Beam is dying so we will try for one more run

~ 6:45 PM

Run # 270	Beam: 84 Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 & HiRA	Target: 25 μm CH2
MCP1: ~140 KHz	Drives [mm]	Attenuation: 1
XFP: ~170 KHz	I250X-R: 0 MCP0	OnShift: Brett Andy
Live Time: ~99%	I250Y-R: 165 MCP1	Remi
Live Trigger:	I251Y-R: 100 Target	Dan B,
Comments:		Tony

Just gave the key back for the operators to change the foil and give a primary beam tuning. They thought we could get 30-60 minutes but we barely made 15 minutes before I had to end the run.

8:09 PM

Comments:

Run # 271	Beam: 84 Se	Date: 25 May 2010
Avg. Rates	Beam Energy:	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 & HiRA	Target: 25 μm CH2
MCP1: ~239 KHz	Drives [mm]	Attenuation: 1
XFP: ~400 KHz	I250X-R: 0 MCP0	OnShift: Brett
Live Time: ~99%	I250Y-R: 165 MCP1	Tilak
Live Trigger:	I251Y-R: 100 Target	Jack
Comments:		

5/25/10

As of 8:27 PM

P.T. #1 (Pressure)	+400.0	Torr
P.T. #2 (Pressure)	+40.0	Torr
M.F.C. #1 (Flow)	39.68	sccm
M.F.C. #2 (Flow)	8.23	sccm
M.F.C. #3 (Flow)	31.91	sccm

Tower Si0	3.8	uA
Tower Si1	15.1	uA
Tower Si2	12.1	uA
Tower Si3	5.0	uA
Tower Si4	7.05	uA

Terminal

File Edit View Terminal Tabs Help

- Main Utility Setup Groups View Admin

Group 02

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
Tow0Cart15	140.00 V	4.00 uA	139.75 V	0.56 uA	On		00.0000
Tow0Card12	290.00 V	4.00 uA	290.25 V	1.22 uA	On		00.0001
Tow0Card6	160.00 V	4.00 uA	160.25 V	0.66 uA	On		00.0003
Tow0Card3	245.00 V	4.00 uA	245.00 V	1.30 uA	On		00.0004
Tow1Card15	410.00 V	4.00 uA	409.75 V	1.86 uA	On		00.0005
Tow1Card12	310.00 V	5.00 uA	310.00 V	0.72 uA	On		00.0006
Tow1Card6	420.00 V	4.00 uA	419.75 V	1.70 uA	On		00.0008
Tow1Card3	240.00 V	4.00 uA	239.75 V	1.62 uA	On		00.0009
Tow2Card15	0.00 V	6.00 uA	0.00 V	4.42 uA	Off		00.0010
Tow2Card12	150.00 V	6.00 uA	150.25 V	4.60 uA	On		00.0011
Tow2Card6	200.00 V	4.00 uA	200.25 V	1.38 uA	On		00.0013
Tow2Card3	115.00 V	4.00 uA	115.25 V	1.66 uA	On		00.0014
Tow3Card15	150.00 V	4.00 uA	150.00 V	1.38 uA	On		00.0015
Tow3Card12	70.00 V	4.00 uA	70.00 V	1.14 uA	On		00.0016
Tow3Card6	60.00 V	4.00 uA	60.25 V	1.16 uA	On		00.0018
Tow3Card3	300.00 V	4.00 uA	300.25 V	1.38 uA	On		00.0019
Tow4Card15	0.00 V	6.00 uA	0.00 V	0.10 uA	Off		00.0020
Tow4Card12	200.00 V	5.00 uA	200.25 V	1.86 uA	On		00.0021
Tow4Card6	120.00 V	4.00 uA	120.25 V	1.52 uA	On		00.0023

Display/Edit Group 02 LocEn V0 I0 N ◇| CAEN SY1527

Terminal

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- Main Utility Setup Groups View Admin

Group 02

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
Tow3Card3	300.00 V	4.00 uA	300.25 V	1.38 uA	On		00.0019
Tow4Card15	0.00 V	6.00 uA	0.00 V	0.10 uA	Off		00.0020
Tow4Card12	200.00 V	5.00 uA	200.00 V	1.86 uA	On		00.0021
Tow4Card6	120.00 V	4.00 uA	120.25 V	1.52 uA	On		00.0023
Tow4Card3	210.00 V	4.00 uA	210.25 V	2.74 uA	On		00.0024
PA14	8.00 V	2.0 uA	8.10 V	0.0 uA	On		03.0000
PA11	8.00 V	2.0 uA	7.95 V	0.0 uA	On		03.0001
PA13	7.00 V	2.0 uA	6.75 V	0.0 uA	On		03.0002
PA10	11.00 V	2.0 uA	10.85 V	0.0 uA	On		03.0003
PA12	9.00 V	2.0 uA	8.80 V	0.0 uA	On		03.0004
CsI1	40.00 V	3.0 uA	39.95 V	0.0 uA	On		03.0005
PA19	6.00 V	2.0 uA	5.45 V	0.0 uA	On		03.0006
PA16	7.00 V	2.0 uA	7.05 V	0.0 uA	On		03.0007
PA18	7.00 V	2.0 uA	7.25 V	0.0 uA	On		03.0008
PA17	6.00 V	2.0 uA	5.80 V	0.1 uA	On		03.0010
CsI2	40.00 V	3.0 uA	40.00 V	0.3 uA	On		03.0011
PA4	7.00 V	2.0 uA	6.90 V	0.0 uA	On		05.0000
PA1	8.00 V	2.0 uA	7.90 V	0.1 uA	On		05.0001
PA3	7.00 V	2.0 uA	7.05 V	0.3 uA	On		05.0002

Display/Edit Group 02 LocEn V0 I0 N ◇| CAEN SY1527

Terminal

File Edit View Terminal Tabs Help

- Main Utility Setup Groups View Admin

Group 02

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
PA10	11.00 V	2.0 uA	10.85 V	0.0 uA	On		03.0003
PA12	9.00 V	2.0 uA	8.80 V	0.0 uA	On		03.0004
CsI1	40.00 V	3.0 uA	39.95 V	0.0 uA	On		03.0005
PA19	6.00 V	2.0 uA	5.45 V	0.0 uA	On		03.0006
PA16	7.00 V	2.0 uA	7.05 V	0.0 uA	On		03.0007
PA18	7.00 V	2.0 uA	7.25 V	0.0 uA	On		03.0008
PA17	6.00 V	2.0 uA	5.80 V	0.1 uA	On		03.0010
CsI2	40.00 V	3.0 uA	40.00 V	0.3 uA	On		03.0011
PA4	7.00 V	2.0 uA	6.90 V	0.0 uA	On		05.0000
PA1	8.00 V	2.0 uA	7.90 V	0.1 uA	On		05.0001
PA3	7.00 V	2.0 uA	7.05 V	0.3 uA	On		05.0002
PA0	8.00 V	2.0 uA	8.05 V	0.3 uA	On		05.0003
PA2	9.00 V	2.0 uA	9.15 V	0.2 uA	On		05.0004
CsI3	40.00 V	3.0 uA	39.80 V	0.2 uA	On		05.0005
PA9	8.00 V	2.0 uA	7.65 V	0.4 uA	On		05.0006
PA6	11.00 V	2.0 uA	10.75 V	0.0 uA	On		05.0007
PA8	7.00 V	2.0 uA	6.85 V	0.1 uA	On		05.0008
PA5	7.00 V	2.0 uA	6.65 V	0.0 uA	On		05.0009
CsI4	40.00 V	10.0 uA	39.85 V	0.2 uA	On		05.0011

Display/Edit Group 02 LocEn V0 I0 N ◇| CAEN SY1527

8:49 PM

Run # 272	Beam: 84 Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 & HiRA	Target: 25 um CH2
MCP1: ~240 KHz	Drives [mm]	Attenuation: 1
XFP: ~390 KHz	I250X-R: 0 MCP0	OnShift: Jack
Live Time: ~99%	I250Y-R: 165 MCP1	Brett
Live Trigger:	I251Y-R: 100 Target	Tilak
Comments:		

9:30 PM

Run # 273	Beam: 84 Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 & HiRA	Target: 25 um CH2
MCP1: ~230 KHz	Drives [mm]	Attenuation: 1
XFP: ~360 KHz	I250X-R: 0 MCP0	OnShift: Jack
Live Time: ~99%	I250Y-R: 165 MCP1	Tilak
Live Trigger:	I251Y-R: 100 Target	Brett
Comments:		

Beam is still running Strong.

Run # 274	Beam: 84 Se	Date: 25 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: —	Trigger: S800 + HiRA	Target: 25 um CH2
MCP1: 240K	Drives [mm]	Attenuation: 1
XFP: 390K	I250X-R: MCP0	OnShift: Jack
Live Time:	I250Y-R: MCP1	Tilak
Live Trigger:	I251Y-R: Target	
Comments:		

Run # 276	Beam: same	Date: ____ May 2010
Avg. Rates	Beam Energy: ____	B ρ: ____ (Seg. 8)
MCP0: ____	Trigger:	Target: ____
MCP1: ____	Drives [mm]	Attenuation: ____
XFP: ____	I250X-R: ____ MCP0	OnShift:
Live Time: ____	I250Y-R: ____ MCP1	
Live Trigger: ____	I251Y-R: ____ Target	

Comments: delayed MCP1 LG by 10 ns.

~~no~~ took extra lines remained

Run # 277	Beam: same	Date: ____ May 2010
Avg. Rates	Beam Energy: ____	B ρ: ____ (Seg. 8)
MCP0: ____	Trigger:	Target: ____
MCP1: ____	Drives [mm]	Attenuation: ____
XFP: ____	I250X-R: ____ MCP0	OnShift:
Live Time: ____	I250Y-R: ____ MCP1	
Live Trigger: ____	I251Y-R: ____ Target	

Comments:

patch cord MCP1 LG ϕ signal via multiplexer

Run # 278	Beam: same	Date: ____ May 2010
Avg. Rates	Beam Energy: ____	B ρ: ____ (Seg. 8)
MCP0: ____	Trigger:	Target: ____
MCP1: ____	Drives [mm]	Attenuation: ____
XFP: ____	I250X-R: ____ MCP0	OnShift:
Live Time: ____	I250Y-R: ____ MCP1	
Live Trigger: ____	I251Y-R: ____ Target	

Comments: Took out 10 ns delay from MCP1 LG.

Everything is the same as before.
~~Put~~ Put MCP1 delayed or back into the multiplexer.

Run # 279-282	Beam:	Date: 26 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1: 145K	Drives [mm]	Attenuation:
XFP: 185K	I250X-R: MCP0	OnShift:
Live Time:	I250Y-R: MCP1	Jack
Live Trigger:	I251Y-R: Target	

Comments:

4:22 am.

Run # 283	Beam: 84Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800+HiRA	Target: 25 μm CH2
MCP1: 200 k	Drives [mm]	Attenuation: 1
XFP: 300 k	I250X-R: 0 MCP0	OnShift:
Live Time: 99%	I250Y-R: 165 MCP1	Rachel
Live Trigger:	I251Y-R: 100 Target	Micha

Comments:

5:12 am

Run # 284	Beam: 84Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800+HiRA	Target: 25 μm CH2
MCP1: 200 kHz	Drives [mm]	Attenuation: 1
XFP: 280 kHz	I250X-R: 0 MCP0	OnShift: Rachel
Live Time: 99%	I250Y-R: 165 MCP1	Micha
Live Trigger:	I251Y-R: 100 Target	

Comments:

6:00 am

Run # 285	Beam: 84Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800+HiRA	Target: 25 μm CH2
MCP1: 200 kHz	Drives [mm]	Attenuation: 1
XFP: 280 kHz	I250X-R: 0 MCP0	OnShift: Rachel
Live Time: 99%	I250Y-R: 165 MCP1	Micha
Live Trigger:	I251Y-R: 100 Target	

Comments:

DAQ crash at 6:50 am. Restart, runs okay.

Run # 286, 287	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 100 kHz	Drives [mm]	Attenuation: 1
XFP: 120 kHz	I250X-R: 0 MCP0	OnShift: Rachel Micha
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	

Comments:

Run 286 ended early to ensure that data was saved [elog gave u
read during the run — was rewritten [illegible]. (written over
when we stopped 286.] All is well.

7:55 am:

Run # 288	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 100 kHz	Drives [mm]	Attenuation: 1
XFP: 120 kHz	I250X-R: 0 MCP0	OnShift: Rachel Brett Mike Meredith
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	

Comments:

Dan C notes: we are not using a multihit TDC. See p. 98

Jorge P-C. shimmed XFP. (Made slight increas
in XFP HV.
~+5%.
See Alog boo

Minor Primary Beam Tuning.

Crystal problem fixed in T-Hall.

9:41 AM

Run # 289	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 &	Target: 25 μm CH2
MCP1: ~200 kHz	Drives [mm]	Attenuation: 1
XFP: ~375 kHz	I250X-R: 0 MCP0	OnShift: Rachel Brett Meredith Mike Dan C.
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	

Comments:

10:12 AM

Daq crashed due to "&" in the run title. Restarted DAQ.

Run # 290	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: ———	Trigger: S800 & Trigger	Target: 25 um CH2
MCP1: ~200 KHz	Drives [mm]	Attenuation: 1
XFP: ~340 KHz	I250X-R: 0 MCP0	OnShift: Enrique, Tony, Dan C., Rachel, Dan B., Mike, Andy, Brett
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger: ____	I251Y-R: 100 Target	

Comments:

* Same event log error as got yesterday. After message, clock started to continue counting.

Maybe look @ this in down time.

T0, T17 } moved down slightly.

Going to look @ Run 292.

Run # 291	Beam: 84Se	Date: ____ May 2010
Avg. Rates	Beam Energy: ____	B ρ: ____ (Seg. 8)
MCP0: ____	Trigger:	Target: ____
MCP1: ____	Drives [mm]	Attenuation: ____
XFP: ____	I250X-R: ____ MCP0	OnShift:
Live Time: ____	I250Y-R: ____ MCP1	
Live Trigger: ____	I251Y-R: ____ Target	

Comments: More data

Run # 292	Beam: 84Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0:	Trigger: S800+ HiRA	Target: 25 um CH2
MCP1: 156000	Drives [mm]	Attenuation: 1
XFP: 246831	I250X-R: 0 MCP0	OnShift:
Live Time: 99.4	I250Y-R: 165 MCP1	Special run: TO8717 have new lower thresholds from Dan Coupland.
Live Trigger:	I251Y-R: 100 Target	

Comments:

Run # 293	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0:	Trigger: S800+ HiRA	Target: 25 um CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: 0 MCP0	OnShift: ~~[illegible]~~ Mike
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	

Comments:

293 is another data run with modified thresholds on 2 dE's.

12:20 PM

* Failed run due to DAQ

Run # 294	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45MeV	B ρ: 2.375 (Seg. 8)
MCP0:	Trigger: S800&HiRA	Target: 25 um CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: 0 MCP0	OnShift: Mike, Brett, Remi, Dan B., Zibi, Andy, Tony, Enrique
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	

Comments:

The DAQ crashed at the end of the run so we rebooted the program

12:04 PM

Run # 295	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: ~~—~~	Trigger: S800 & HiRA	Target: 25 um CH2
MCP1: ~120 KHz	Drives [mm]	Attenuation: 1
XFP: ~185 KHz	I250X-R: 0 MCP0	OnShift: Mike, Zibi, Brett, Andy, Dan B., Tony, Enrique, Remi
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	

Comments:

1:46 PM

Run # 296	Beam: 84Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: ~	Trigger: S800 & HiRA	Target: 25 um CH2
MCP1: ~165 KHz	Drives [mm]	Attenuation: 1
XFP: ~240 KHz	I250X-R: 0 MCP0	OnShift: Brett, Andy, Dan B., Enrique, Remi, Mike, Tony
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

We were going to the operator's control room to ask for a beam tune, but the operators gave us a quick tune before we asked. They said we should be fine until about 4:00pm.

2:30 PM

Run # 298	Beam: 84Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: ~	Trigger: S800 & HiRA	Target: 25 um CH2
MCP1: ~160 KHz	Drives [mm]	Attenuation: 1
XFP: ~250 KHz	I250X-R: 0 MCP0	OnShift: Mike, Brett, Enrique
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

(Run 297 was a junk run because the DAQ crashed!)
The beam is fine, CRDC6 ~ 2.5

Run # 299	Beam: 84Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.375 (Seg. 8)
MCP0:	Trigger: S800 + HiRA coin.	Target: 25 um CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: MCP0	OnShift:
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments:	Stopped so Jose could examine XFP signal	

Jorge P-C looked at XFP ~~single~~ signal. From 7AM to 3PM - clear degradation of signal. Eff. as measured by company XFP & p.in detector signal was near 1.0 ratio.

Will call J.P. @ dinner 4/Updesk.

Run # 300	Beam: 84Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45.5MeV	B ρ: _____ (Seg. 8)
MCP0: out	Trigger: S800+H.R.Acqu	Target: _____
MCP1: _____	Drives [mm]	Attenuation: 1
XFP: _____	I250X-R: _____ MCP0	OnShift:
Live Time: _____	I250Y-R: _____ MCP1	
Live Trigger: _____	I251Y-R: _____ Target	

Comments:

Gave the key to the operator for primary beam tuning. Before the primary tuning, the rate on the XFP was 158 KHz

4:00pm PRIMARY BEAM RETUNED

~4:30pm AFTER THE TUNING ~ 600 enA

05/26/2010 XFP ~ 350 KHz

Run # 301	Beam: 84Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45.5	B ρ: _____ (Seg. 8)
MCP0: out	Trigger: S800	Target: _____
MCP1: 190 ℓ	Drives [mm]	Attenuation: _____
XFP: 350 ℓ	I250X-R: _____ MCP0	OnShift: MILAN
Live Time: 99%	I250Y-R: _____ MCP1	
Live Trigger: _____	I251Y-R: _____ Target	

Comments:

6:50 pm

beam back after the CCF water leak

intensity 630 enA

Run # 303	Beam: 84Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.375 (Seg. 8)
MCP0: out	Trigger: 5800 + HiRA	Target: 25 μm CH_2
MCP1: 196 K	Drives [mm]	Attenuation:
XFP: 335 K	I250X-R: 0 MCP0	OnShift: ajilar
Live Time: 99%	I250Y-R: 165 MCP1	Milan
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run # 304	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: 2.375 (Seg. 8)
MCP0: out	Trigger: 5800 + HiRA	Target: 25 μm CH_2
MCP1: 189 K	Drives [mm]	Attenuation:
XFP: 315 K	I250X-R: 0 MCP0	OnShift: ajilar
Live Time: 99	I250Y-R: 165 MCP1	Milan
Live Trigger:	I251Y-R: 100 Target	Jacl
Comments: Normal data Run		

Run # 305	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2,375 (Seg. 8)
MCP0: out	Trigger: 5800 & HiRA	Target: 25 μm CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: 0 MCP0	OnShift: [redacted] ?
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: (Filled out several hours before my shift)		

(so I won't have all the info on runs 305 - 306)

Run # 306	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 25 um CH 2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: 0 MCP0	OnShift: ?
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: (Not here during run)		

Run # 307	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 25 um CH 2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: 0 MCP0	OnShift: Milan
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Arrived At end of run		

10:55 PM

Run # 308	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 25 um CH2
MCP1: ~160 KHz	Drives [mm]	Attenuation: 1
XFP: ~270 KHz	I250X-R: 0 MCP0	OnShift: Brett Meredith Jack Bill Milan
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Data Run		

10:48 PM

Run # 309	Beam: 84 Se	Date: 26 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 25 um CH2
MCP1: ~170 KHz	Drives [mm]	Attenuation: 1
XFP: ~310 KHz	I250X-R: 0 MCP0	OnShift: Jack Meredith Brett Milan Betty
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: Beam still looks strong.		

Run # 310	Beam:	Date: May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1:	Drives [mm]	Attenuation:
XFP:	I250X-R: MCP0	OnShift:
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments:		

Jorge shimmed the XFP. He said the efficiency was near 97% ← before shimming. What does it all mean?

(We measured the efficiency to be ~65%)

Run # 311	Beam:	Date: May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1: 144K	Drives [mm]	Attenuation:
XFP: 270 K	I250X-R: MCP0	OnShift:
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments:		

3:20 AM

Run # 312, 313	Beam: 84 Se	Date: 27 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0:	Trigger: S800 & TRIKA	Target: 25um CH2
MCP1: ~160 KHz	Drives [mm]	Attenuation: 1
XFP: ~300 KHz	I250X-R: 0 MCP0	OnShift: Jack
Live Time: ~99%	I250Y-R: 165 MCP1	Micha
Live Trigger:	I251Y-R: 100 Target	Brett
Comments: Data run. Beam looks strong.		

* At the conclusion of Run 313 the DAQ froze and the 50 minute run was "over written". Run 314 was a short run before the DAQ crashed. Subsequently, we rebooted spdaq 20 to avoid any further data loss.

* → For runs 315-323, using wrong ASIC file (trigger off of EF)

5/27/10 3:39 AM

P.T. #1 (Pressure) +400.2 Torr
P.T. #2 (Pressure) +40.4 Torr
M.F.C. #1 (Flow) 37.93 sccm
M.F.C. #2 (Flow) 7.89 sccm
M.F.C. #3 (Flow) 27.57 sccm

Tower Si0 3.8 uA
Tower Si1 15.1 uA
Tower Si2 12.2 uA
Tower Si3 5.1 uA
Tower Si4 7.15 uA

Terminal

File Edit View Terminal Tabs Help

- Main Utility Setup Groups View Admin

Group 00

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
Tow0Cart15	140.00 V	4.00 uA	139.75 V	0.56 uA	On		00.0000
Tow0Card12	290.00 V	4.00 uA	290.25 V	1.22 uA	On		00.0001
Tow0Card9	0.00 V	4.00 uA	0.00 V	0.00 uA	Off		00.0002
Tow0Card6	160.00 V	4.00 uA	160.25 V	0.66 uA	On		00.0003
Tow0Card3	245.00 V	4.00 uA	245.00 V	1.30 uA	On		00.0004
Tow1Card15	410.00 V	4.00 uA	409.75 V	1.90 uA	On		00.0005
Tow1Card12	310.00 V	5.00 uA	310.00 V	0.72 uA	On		00.0006
Tow1Card9	0.00 V	4.00 uA	0.00 V	0.00 uA	Off		00.0007
Tow1Card6	420.00 V	4.00 uA	419.75 V	1.74 uA	On		00.0008
Tow1Card3	240.00 V	4.00 uA	239.75 V	1.62 uA	On		00.0009
Tow2Card15	0.00 V	6.00 uA	0.00 V	4.44 uA	Off		00.0010
Tow2Card12	150.00 V	6.00 uA	150.25 V	4.64 uA	On		00.0011
Tow2Card9	0.00 V	4.00 uA	0.50 V	0.00 uA	Off		00.0012
Tow2Card6	200.00 V	4.00 uA	200.25 V	1,38 uA	On		00.0013
Tow2Card3	115.00 V	4.00 uA	115.25 V	1.66 uA	On		00.0014
Tow3Card15	150.00 V	4.00 uA	149.75 V	1.38 uA	On		00.0015
Tow3Card12	70.00 V	4.00 uA	70.00 V	1.14 uA	On		00.0016
Tow3Card9	0.00 V	4.00 uA	0.50 V	0.00 uA	Off		00.0017
Tow3Card6	60.00 V	4.00 uA	60.25 V	1.16 uA	On		00.0018

Channels Display/Edit Screen LocEn V0 I0 N | CAEN SY1527

Terminal

File Edit View Terminal Tabs Help

- Main Utility Setup Groups View Admin

Group 00

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
Tow3Card3	300.00 V	4.00 uA	300.25 V	1.40 uA	On		00.0019
Tow4Card15	0.00 V	6.00 uA	0.00 V	0.10 uA	Off		00.0020
Tow4Card12	200.00 V	5.00 uA	200.00 V	1.86 uA	On		00.0021
Tow4Card9	0.00 V	4.00 uA	0.50 V	0.00 uA	Off		00.0022
Tow4Card6	120.00 V	4.00 uA	120.25 V	1.52 uA	On		00.0023
Tow4Card3	210.00 V	4.00 uA	210.25 V	2.80 uA	On		00.0024
Tow0Card1	0.00 V	0.00 uA	0.00 V	0.00 uA	Off		00.0025
1	0.00 V	0.00 uA	0.00 V	0.00 uA	Off		00.0026
Tow2Card1*	0.00 V	0.10 uA	0.25 V	0.00 uA	Off		00.0027
PA14	8.00 V	2.0 uA	8.10 V	0.0 uA	On		03.0000
PA11	8.00 V	2.0 uA	7.95 V	0.0 uA	On		03.0001
PA13	7.00 V	2.0 uA	6.75 V	0.0 uA	On		03.0002
PA10	11.00 V	2.0 uA	10.85 V	0.0 uA	On		03.0003
PA12	9.00 V	2.0 uA	8.80 V	0.0 uA	On		03.0004
CsI1	40.00 V	3.0 uA	39.95 V	0.0 uA	On		03.0005
PA19	6.00 V	2.0 uA	5.45 V	0.0 uA	On		03.0006
PA16	7.00 V	2.0 uA	7.05 V	0.0 uA	On		03.0007
PA18	7.00 V	2.0 uA	7.25 V	0.0 uA	On		03.0008
pa15	3.00 V	3.0 uA	0.00 V	0.0 uA	Off	I-Tripped	03.0009

Channels Display/Edit Screen LocEn V0 I0 N ◇| CAEN SY1527

Terminal

File Edit View Terminal Tabs Help

- Main Utility Setup Groups View Admin

Group 00

Channel Name	V0Set	I0Set	VMon	IMon	Pw	Status	Ch#
CsI1	40.00 V	3.0 uA	39.95 V	0.0 uA	On		03.0005
PA19	6.00 V	2.0 uA	5.45 V	0.0 uA	On		03.0006
PA16	7.00 V	2.0 uA	7.05 V	0.0 uA	On		03.0007
PA18	7.00 V	2.0 uA	7.25 V	0.0 uA	On		03.0008
pa15	0.00 V	3.0 uA	0.00 V	0.0 uA	Off	I-Tripped	03.0009
PA17	6.00 V	2.0 uA	5.80 V	0.0 uA	On		03.0010
CsI2	40.00 V	3.0 uA	40.00 V	0.3 uA	On		03.0011
PA4	7.00 V	2.0 uA	6.90 V	0.0 uA	On		05.0000
PA1	8.00 V	2.0 uA	7.90 V	0.1 uA	On		05.0001
PA3	7.00 V	2.0 uA	7.05 V	0.3 uA	On		05.0002
PA0	8.00 V	2.0 uA	8.05 V	0.3 uA	On		05.0003
PA2	9.00 V	2.0 uA	9.15 V	0.1 uA	On		05.0004
CsI3	40.00 V	3.0 uA	39.80 V	0.2 uA	On		05.0005
PA9	8.00 V	2.0 uA	7.65 V	0.4 uA	On		05.0006
PA6	11.00 V	2.0 uA	10.75 V	0.0 uA	On		05.0007
PA8	7.00 V	2.0 uA	6.85 V	0.0 uA	On		05.0008
PA5	7.00 V	2.0 uA	6.65 V	0.0 uA	On		05.0009
PA7	0.00 V	3.0 uA	0.00 V	0.0 uA	Off		05.0010
CsI4	40.00 V	10.0 uA	39.85 V	0.2 uA	On		05.0011

Channels Display/Edit Screen LocEn V0 I0 N ◇| CAEN SY1527

4:50 AM

Run # 315	Beam: 84Se	Date: 27 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 25 um CH2
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: 0 MCP0	OnShift: Micha, Rachel, Brett
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

4:53

(We were receiving an error = "could not latch" from the DAQ so we restarted the run)

Run # 316	Beam: 84 Se	Date: 27 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: —	Trigger: S800 & HiRA	Target: 25 um CH2
MCP1: ~ 130 kHz	Drives [mm]	Attenuation: 1
XFP: ~240 kHz	I250X-R: 0 MCP0	OnShift: Micha, Rachel, Brett
Live Time: ~ 90%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

5:45 AM

Run # 317	Beam: 84 Se	Date: 27 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 120 kHz	Drives [mm]	Attenuation: 1
XFP: 220 kHz	I250X-R: 0 MCP0	OnShift: Rachel, Micha
Live Time: ~90%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

6:35 AM

Run # 318, 319	Beam: 84 Se	Date: 27 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 130 kHz	Drives [mm]	Attenuation: 1
XFP: 240 kHz	I250X-R: 0 MCP0	OnShift: Rachel, Micha
Live Time: ~93%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Run 320: DAQ not reading data. Restarted DAQ and looks fine.

7:57 am

Run # 321	Beam: 84 Se	Date: 27 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 110 kHz	Drives [mm]	Attenuation: 1
XFP: 200 kHz	I250X-R: 0 MCP0	OnShift: Rachel Micha Meredith Mike Remi
Live Time: 90%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments: ended to check DAQ		

8:12 am

Run # 322	Beam: 84 Se	Date: 27 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 110 kHz	Drives [mm]	Attenuation: 1
XFP: 200 kHz	I250X-R: 0 MCP0	OnShift: Rachel Meredith Mike Micha Remi
Live Time: ~95%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

9:02 am

Run # 323	Beam: 84 Se	Date: 27 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 100 kHz	Drives [mm]	Attenuation: 1
XFP: 180 kHz	I250X-R: 0 MCP0	OnShift: Rachel Meredith Mike
Live Time: ~95%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

★ → Between 323 to 324 loaded correct ASIC file, triggers off EB

9:39 am:

Run # 324	Beam: 84 Se	Date: 27 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 100 kHz	Drives [mm]	Attenuation: 1
XFP: 170 kHz	I250X-R: 0 MCP0	OnShift: Rachel Meredith Mike Dan
Live Time: ~99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

10:15 am

Run # 325	Beam: 84Se	Date: 27 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0: X	Trigger: S800 + HiRA	Target: 25 μm CH2
MCP1: 100 kHz	Drives [mm]	Attenuation: 1
XFP: 180 kHz	I250X-R: 0 MCP0	OnShift: Rachel, Meredith, Dan
Live Time: 99%	I250Y-R: 163 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

Raised discriminators in CsI to 255. This changed the ~~total~~ counts rate w/ no beam for 1355 ~~counts~~ w/ beam 18:29 ⇒ 1109s

		RATE		RATE	
CSI0_OR	5	.037	555	.50	7%
CSI1_OR	5	.037	1426	1.29	2.9%
CSI2_OR	10	.074	6073	5.47	1.3%
CSI3_OR	6	.044	2985	2.69	1.6%
CSI4_OR	9	.066	814	.734	9%

overwrote the discriminator file at disc_07032.dat.

326: inserted DE pulser into trigger. Testing welding effect on DE electronics. Pulser in DEs @ 2 Hz. Added to scaler 15 as raw & live. No beam

327: No welding

328: Turned pulser to normal values 0.5V @ 2Hz. It was unset in 326-327, so ignore those runs. This has no welding. S800 out of readout for speed.

329: welding.

330: S800 back in trigger, beam in, pulser off but still in trigger. Data Run

Run #334 Pulser ramp for DEs

0 - 0.2V, 21 steps

e07037_dc_slave_midthresh_[illegible]_setup

Run #335 PEDESTAL RUN FOR DEs

Run #336 Pulser ramp for DEs

0.2V, 4 steps

e07037_dc_slave_lowthresh_setup

Run 337 XFP Not biased.
S800 not in readout seq.

Run 338 XFP on BUT hi CRADOY

Run 339 BAD

Run 340 S800 + nothing else
in readout.
S800 SINGLES

Run 341 Restarting Readout

to put everything back in readout. CRADO4 drops from ~5 kHz to 0.3 kHz with Daniel Bazin's change of left slit from 4.40 to 4.20.

Run 342) short run, continuing previous

Run 343) continue previous DAQ ended at end of run. Status bar is red - spectrodaq is out of page. Restarted spdaq20. Note that as usual, this happened after Daniel Bazin was looking at his specialized S800 spectra. Bill took this opportunity to go into vault and look @ XLM trigger.

Run # 341	Beam: 84Se	Date: 5/27 May 2010
Avg. Rates	Beam Energy: 45.5	Bρ: 2.375 (Seg. 8)
MCP0: —	Trigger: Coin	Target: (CH2)n 25mm
MCP1: 1644	Drives [mm]	Attenuation: 1
XFP: 300 k	I250X-R: 0 MCP0	OnShift:
Live Time: 99%	I250Y-R: 165 MCP1	
~~Live Trigger~~: 3.5/s	I251Y-R: 100 Target	
Comments:		

main parameters

~~The problem discussed of~~
We observed in Run 341 that the OR was about 30 ns long. This was the length for OR5 without triggers
So we decrease Deadtime by increasing reset CW for each chipboard Now the OR ~~for~~ without triggers is 6 ns long; This means that the Chipboard level reset is not work
Why? Who knows?

SEVERAL SHORT RUNS:

342 - short run, but good data, same as 341

343 - good data after spdaq crashed

344 - test data, just S800 singles to check CEAD 04

345

346 - most of the motherboards were not included into the trigger

347 - same (?) as 346

Run # 348	Beam: ^{84}Se	Date: 05/27 May 2010
Avg. Rates	Beam Energy: 45.5	B ρ: 2.375 (Seg. 8)
MCP0:	Trigger: S800 + HIRA	Target: CH_2 25 μm
MCP1: 160K	Drives [mm]	Attenuation:
XFP: 320K	I250X-R: 0 MCP0	OnShift: MM
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

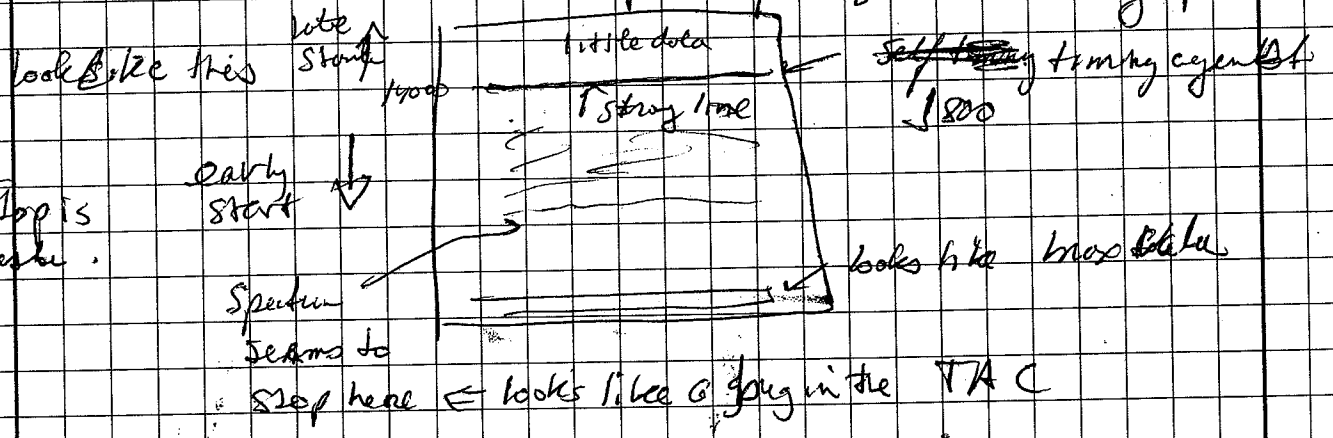
Run # 349	Beam: 89Se	Date: 05/27 May 2010
Avg. Rates	Beam Energy: 95.5	B ρ: _____ (Seg. 8)
MCP0: _____	Trigger: S800 + HIRA	Target: CH_2 25μm
MCP1: 162K	Drives [mm]	Attenuation: _____
XFP: 313K	I250X-R: 0 MCP0	OnShift: MM
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger: _____	I251Y-R: 100 Target	
Comments:		

CRAD04 = 75K

CRAD06 = 310K

$\frac{CRAD06}{CRAD04} = 4.13$

we looked at the HiRA TAC spectra for E_β the summary spectra looks like this



Run # 350	Beam: 89Se	Date: 05/27 May 2010
Avg. Rates	Beam Energy: 95.5	B ρ: 2.375 (Seg. 8)
MCP0: _____	Trigger: S800+ HiRA	Target: CH_2 25μm
MCP1: 170K	Drives [mm]	Attenuation: _____
XFP: 333K	I250X-R: 0 MCP0	OnShift: MM, REMI, TICAR
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger: _____	I251Y-R: 100 Target	
Comments:		

CRAD04 = 80K

CRAD06 = 340K

$\frac{CRAD06}{CRAD04} = 4.25$

Measured Channel plate efficiency

ratio $\frac{44}{63}$ ← channel plate signals / coincidence events

.70 =

⇒ Should raise voltage after this run.

Run # 351	Beam: 84 Se	Date: 27 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: ______ (Seg. 8)
MCP0: none	Trigger: S800 + HiRA	Target: CH2 25 um
MCP1: 157 K	Drives [mm]	Attenuation: ______
XFP: 313 K	I250X-R: 0 MCP0	OnShift: milan, gilak
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger: ______	I251Y-R: 100 Target	
Comments: normal data run		

Run # 352	Beam: 84 Se	Date: 27 May 2010
Avg. Rates	Beam Energy: 45.5 MeV	B ρ: ______ (Seg. 8)
MCP0: none	Trigger: S800 + HiRA	Target: CH2, 25 um
MCP1: 138 K	Drives [mm]	Attenuation: ______
XFP: 284 K	I250X-R: 0 MCP0	OnShift: gilak, milan
Live Time: 99	I250Y-R: 165 MCP1	
Live Trigger: ______	I251Y-R: 100 Target	
Comments:		

10:30pm

CRAD06 = 260 K

CRAD04 = 60 K

$\frac{\text{CRAD 06}}{\text{CRAD 04}} = 4.3$

MCP1 HV changed from 2.2kV to 2.3kV.

Run # 353	Beam: ^{87}Se	Date: 05/27 May 2010
Avg. Rates	Beam Energy: 45.5	B ρ: 2.375 (Seg. 8)
MCP0:	Trigger: S800 + HIRA	Target: CH_2 25μm
MCP1: 194K	Drives [mm]	Attenuation:
XFP: 250K	I250X-R: 0 MCP0	OnShift:
Live Time: 99%	I250Y-R: 165 MCP1	
Live Trigger: ~~3448~~	I251Y-R: 100 Target	
Comments:		

tot

Efficiency = 49/55 = .89

3448 total triggers.

time = 1361 s

coin/MCP = 1.69×10^{-5}

2.A MCP(live) =
⇒ total = 1.63×10^{8}
.76
L = MCP(live) =
total = 1.295×10
.64

Prepare for intensity ramp.

use CsI and overall coincidence rates as normalization

Efficiency of MCP count E1 times / MCP times

ε = MCP times / E1 times = MCP t / Evts

Record in log: E1 CsI, 4 MCP's overall trig rates HIRA OR.

$5\% \cdot 2\times10^{-6}$ ≈ 10%
2×10^{-6}

MCPØ 90k
MCP(τ=2μs) = 27k — $DT = 27k \cdot 2\times10^{-6} = 5.4\%$ ⇒ R = 28.5k
MCP(τ=4μs) = 25k — $DT = 25k \cdot 4\times10^{-6} = 10\%$ ⇒ R = 27.7k
MCP(τ=6μs) = 24k — $DT = 24k \cdot 6\times10^{-6} = 14\%$ ⇒ R = 27.9k

Run # 354	Beam: ^{84}Sc	Date: 5/27 May 2010
Avg. Rates	Beam Energy: 45.5	B ρ: 2.375 (Seg. 8)
MCP0:	Trigger:	Target: 25 μm CH_2
MCP1: 39k	Drives [mm]	Attenuation: 10
XFP: 39k	I250X-R: MCP0	OnShift: Tilak, Milan, Bill
Live Time: 1.00	I250Y-R: MCP1	
Live Trigger: 2/s	I251Y-R: Target	
Comments: Crad 06 .4 Crad 04 .1 ratio 4		

Avg total trigger

$2.\cancel{14}\times10^{8}$
5.64
$= 2.\cancel{10}\times10^{8}$

W. Lynch

During the attempt to do the intensity calibration I noticed that the coincidence rate did not scale with beam intensity. Looking at the coincidence circuit I found that ~~most~~ most of the coincidence were not real coincidences but simply the HiRA OR did not reset but waited until the next 5800 ER trigger. We tried many things but eventually we just raised some of the thresholds on the Tel Scope in P11. By the way, the chipboard level reset circuit is dead on all boards the reset is defined by the reset CV.

9.8×10^{5}
2.7×10^{5}

Run # 357	Beam:	Date: 5-28 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1: 617455258	Drives [mm]	Attenuation: 1
XFP: 743722623	I250X-R: MCP0	OnShift: Micha
Live Time: .986	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: raised PII EB thresholds		

crad 06 2.5
04 .6
ratio ~5

Run # 358	Beam:	Date: 5-28 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1:	Drives [mm]	Attenuation: 10
XFP:	I250X-R: MCP0	OnShift: Micha
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: crad ratio ~ 4.5		

Run # 359	Beam:	Date: 5-28 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1:	Drives [mm]	Attenuation: 10
XFP:	I250X-R: MCP0	OnShift: Micha
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: crad 06 .4 crad 04 .1 ratio ~4		

Run # 360	Beam:	Date: May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1: 172 K	Drives [mm]	Attenuation: 1
XFP: 720 K	I250X-R: MCP0	OnShift: Micha
Live Time: .99	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: crad 06 2.2 crad 04 .5 ratio 4.4		

Run # 361	Beam:	Date: 5-28 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: MCP0	OnShift: Micha
Live Time:	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: crad rat ~4		

Run # 362	Beam:	Date: 5-28 May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1: 216 K	Drives [mm]	Attenuation: 1
XFP: 270 K	I250X-R: MCP0	OnShift: Micha
Live Time: 100%	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: crad rat ~4 2.7/.7 = 3.85		

Run # 363	Beam:	Date: May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1: 215 K	Drives [mm]	Attenuation: 1
XFP: 260 K	I250X-R: MCP0	OnShift: Micha
Live Time: 99%	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: crad 06 2.8 crad 04 .8 ratio ~3.5		

Run # 364	Beam:	Date: May 2010
Avg. Rates	Beam Energy:	B ρ: (Seg. 8)
MCP0:	Trigger:	Target:
MCP1: 210 K	Drives [mm]	Attenuation: 1
XFP: 250 K	I250X-R: MCP0	OnShift: Micha
Live Time: 99%	I250Y-R: MCP1	
Live Trigger:	I251Y-R: Target	
Comments: crad 2.5/.7 3.6		

Run # 365	Beam: 84Se	Date: 28 May 2010
Avg. Rates	Beam Energy: 45 MeV	B ρ: 2.375 (Seg. 8)
MCP0:	Trigger: S800+	Target: CH2 25μm
MCP1:	Drives [mm]	Attenuation: 1
XFP:	I250X-R: 0 MCP0	OnShift: Micha
Live Time:	I250Y-R: 165 MCP1	
Live Trigger:	I251Y-R: 100 Target	
Comments:		

After XFP shim! (Old XFP eff. was ~82%)

8:30 am

Run # 366		Beam: 84Se		Date: 28 May 2010	
Avg. Rates		Beam Energy: 45.5 MeV		B ρ: 2.375 (Seg. 8)	
MCP0:		Trigger: S800+HiRA		Target: CH_2 25μm	
MCP1:		Drives [mm]		Attenuation: 1	
XFP:		I250X-R: 0	MCP0	OnShift:	
Live Time:		I250Y-R: 165	MCP1		
Live Trigger:		I251Y-R: 100	Target		
Comments:					

Run # 367		Beam: 84Se		Date: 28 May 2010	
Avg. Rates		Beam Energy: 45.5 MeV		B ρ: 2.375 (Seg. 8)	
MCP0: X		Trigger: S800+HiRA		Target: CH_2 25μm	
MCP1: 170 kHz		Drives [mm]		Attenuation: 1	
XFP: 220 kHz		I250X-R: 0	MCP0	OnShift: Mike, Meredith, Rachel, Remi, Brett	
Live Time: ~99%		I250Y-R: 165	MCP1		
Live Trigger:		I251Y-R: 100	Target		
Comments:					

Run # 368		Beam: 84 Se		Date: 28 May 2010	
Avg. Rates		Beam Energy: 45 MeV		B ρ: 2.375 (Seg. 8)	
MCP0: —		Trigger: S800 & HiRA		Target: 25 CH2	
MCP1: ~160 KHz		Drives [mm]		Attenuation: 1	
XFP: ~200 KHz		I250X-R: 0	MCP0	OnShift: Meredith, Mike, Brett, Rachel, Remi	
Live Time: ~98%		I250Y-R: 165	MCP1		
Live Trigger:		I251Y-R: 100	Target		
Comments: 2.1 / 0.45 = 4.667					

Run # 369		Beam: 84Se		Date: 28 May 2010	
Avg. Rates		Beam Energy: 45.5		B ρ: 2.375 (Seg. 8)	
MCP0:		Trigger: S800 + HiRA		Target: 25 CH_2	
MCP1: 153420		Drives [mm]		Attenuation: 1	
XFP: 196290		I250X-R:	MCP0	OnShift: Remi, Rachel, Meredith, Mike, Brett	
Live Time: ~98%		I250Y-R:	MCP1		
Live Trigger:		I251Y-R:	Target		
Comments: 1.96 / .45 = 4.35					

Jose Cell 402 290 / Text when vault is open.

Run 371, Target mask run w/ MCP foil

Proposed measurements

easurements									
	Triggers								
Duration	Coincidence	HiRA	S800	Beam	Target:	MCP 0	MCP 1	Purpose	
			x	84Se	C 17mg	blank	blank	CRDC 2	
			x	84Se	C 17mg	blank	blank	CRDC 1	
			x	84Se	C 17mg	Foil	mask	MCP 1 mask calibration	
			x	84Se	mask	Foil	Large C Foil	target mask	
	x	x	x	84Se	C 17mg	Foil	Large C Foil	C background calibration	
			x	84Se	blank	Foil	Large C Foil	beam intensity calibration ✓	
			x	86Kr	C 17mg	blank	blank	CRDC 2	
			x	86Kr	C 17mg	blank	blank	CRDC1	
	x	x	x	86Kr	C 17mg	Foil	Large C Foil	C background calibration	
		x		86Kr	C 17mg	blank	blank	singles measurement	
			x	86Kr	blank	Foil	Large C Foil	beam intensity calibration	
			x	86Kr	25um CH2			charge state distributions	
			x	86Kr	C 17mg	??25um CH2		charge state distributions	
	x	x		no beam	10um CH2			background measurements	

1. Shim XSP

2. put caps in

3. check for MCP Ø

4. ~~call~~ Fix spectrum def.

5. call Daniel to to
Mask calibration / retune.
o) run with preset trigger 2 intensities
a) run as if with/and without push

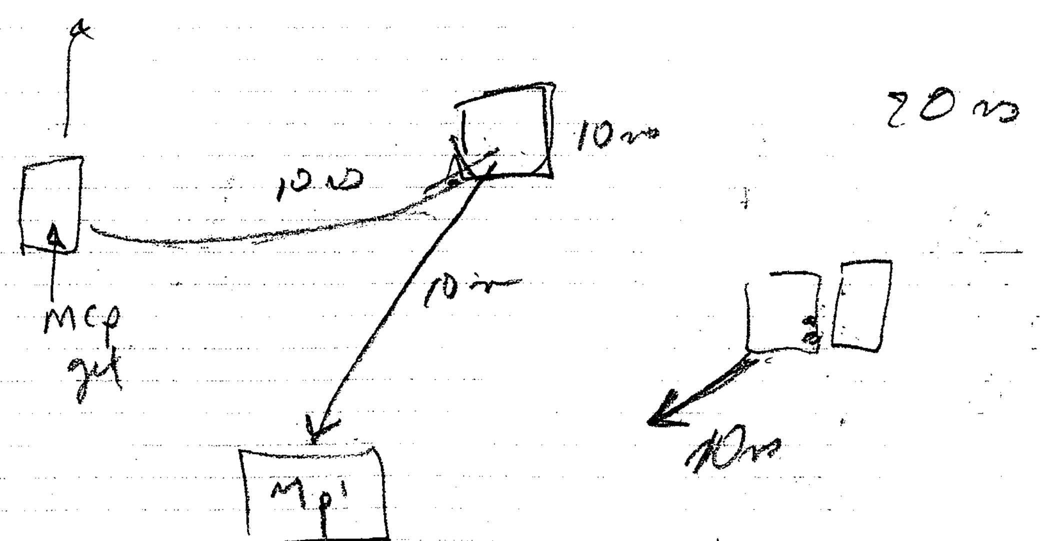
b)

$\frac{106}{.79}$ = 134k 106k × 2×10⁻⁶ .21% .79

139k 89k × 4×10⁻⁶ .36 .64

171k 79k × 6×10⁻⁶ .54 .46

input 4 - ff.



gate arrives ~~20~~ 15 ns
earlier than
slope

Signal arrives ~~[illegible]~~ 10 ns later

lowgain exits 10 ns earlier