

1. DAQ DEAD TIME SCAN RUN PLAN

The purpose of this scan is to determine the dead time of various trigger rates on both HRS DAQ's. Through this scan we should be able to determine the maximum rate we can run at with reasonable dead time (under 20%). For the test we will only be using the main triggers on each arm T1/T3, all other prescale factors should be set to zero. The carbon target should be in for ALL configurations.

Run for 10-15 minutes
per setting

Run Number	Beam Current	Raw Trigger Rate	Prescale	Deadtime
1983	1 μ A	14293.3 Hz	1	49.34%
1984	1 μ A	14247.0 Hz	2	18.58%
1985	1 μ A	14221.3 Hz	3	6.40%
1986	1 μ A	14228.7 Hz	4	1.49%
1987/1988	1 μ A	12927.4 Hz / 14182.1 Hz	5	.89% / .58%
1989	500nA	7376.3 Hz	21	29%
1990/1991	500nA	7000 Hz / 14247 Hz	32	8.76% / 4.48%
1992/1993	450nA	6492 Hz / 6472 Hz	21	24.49% / 24.54%
1994	350nA	5392.7 Hz	11	19.34%
1995	350nA	5366.8 Hz	21	19.97%
1996	300nA	4186.3 Hz	11	14.94%
1997	200nA	3205.3 Hz	11	11.69%

TABLE 1. BHRS Run Plan

Run Number	Beam Current	Raw Trigger Rate	Prescale	Deadtime
21083	1 μ A	19541.4 Hz	1	60.58%
21084	1 μ A	19538.9 Hz	2	32.37%
21085	1 μ A	19542.4 Hz	3	17.10%
21086	1 μ A	19593.6 Hz	4	10.61%
21087/21088	1 μ A	17876.1 Hz / 19582.8 Hz	5	6.70% / 6.44%
21089	500nA	10171.5 Hz	X2	14.09%
21090/21091	500nA	9682.7 Hz / 10257.2 Hz	X3	5.08% / 5.44%
21092/21093	450nA	8986.9 Hz / 8936.3 Hz	X2	11.82% / 11.75%
21094 21095	350nA	7416.1 Hz	X1	31%
21094	350nA	7456.1 Hz	X2	8.68%
21096	300nA	5784.2 Hz	X1	25.25%
21097	200nA	4413.3 Hz	X1	19.54%

TABLE 2. RHRS Run Plan