

Gamma Transition Power Supply Automatic Ramp / Jump Procedure

1.0 Scope

- 1.1 This procedure describes the methods used to automatically ramp and jump all the Gamma Transition power supply at one time.
- 1.2 To ramp / jump an individual supply refer to the “Gamma Transition Power Supply Manual Ramp / Jump Procedure” available at the link provided below.
- 1.3 Graphical representation of the jump will be presented upon completion of the jump for analysis.
- 1.4 There is a way to observe previous jumps performed in operation of the accelerator. This can be used as a reference when the normal appearance of a jump is not known. Refer to **Appendix 1** for a procedure to observe previous jumps. Figures 2 and 3 also show normal jumps.

2.0 Requirements

- 2.1 A computer with a network connection logged into a Sun server. Usually the ATR account is used. It is not known if the program described below works from other accounts.
- 2.2 **If the accelerator is running, you will need permission from MCR in order to perform this procedure.**

3.0 Background Information

- 3.1 Gamma Transition supplies are located at all the A and C alcoves in the ring.
- 3.2 Information about the supplies, their locations, rack positions, other procedures and some schematics can be found by following the links from the Collider Electrical Power Supply Group On-Line Documentation web page at <http://www.c-ad.bnl.gov/ceps/onlinedocs.htm>

4.0 Supply Operation

- 4.1 Operation of the supplies is handled automatically by the program. The “Manual Gamma Transition Ramp Procedure” further describes operation of the supplies.

5.0 Setup

- 5.1 After logging into a Sun server, run the jumpWatch.tcl program by typing **jumpWatch.tcl** at a console or terminal prompt.
- 5.2 When the program comes up it brings up two windows as in Figures 1 and 2.

6.0 Procedure

- 6.1 Click the **Arm MADC** button and wait approximately 30 seconds.
- 6.2 Click the **ARM WFG** button and wait another 30 seconds.
- 6.3 Click the **Trigger** button.
- 6.4 After triggering, all of the supplies should have jumped and the supply or supplies of interest can be selected using the buttons on the left of the jumpWatch window.
- 6.5 Figure 3 shows a typical jump with the bi1-qgt supply signals selected.
- 6.6 The small c is power supply current, I is current setpoint, V is power supply voltage and large C is capacitor voltage.
- 6.7 Multiple supplies can be selected simultaneously for comparisons.
- 6.8 The signals can be zoomed if desired by placing the cursor over the area of interest, left clicking and dragging the resulting box over the signal area desired. Left clicking again displays the zoomed area. This process can be repeated to further zoom in. To zoom out or return to the standard display right click anywhere in the graph field.
- 6.9 To have the supplies jump to the opposite polarity just repeat the steps above.

7.0 Appendix 1 – Use to observe previous jumps made during an accelerator run.

- 7.1 The StartUp program is required for this procedure. It usually starts during the logon process. If it does not, then type **StartUp&** at a console or terminal prompt.
- 7.2 In the StartUp program select **Start**, then select **RHIC PS Management**, then select **barshow**.
- 7.3 When the barshow program starts up select **Main_Quad** from the top menu bar. Then select **GAMMA** from the drop down menu.
- 7.4 Next select a power supply from the list on the left. This will bring up a list of events on the right. Pick an event to view and this will bring up a plot in the “two” window.
- 7.5 This window will show a plot of the jump current vs. time. See Figures 2 and 3 for examples of positive to negative and negative to positive transitions respectively.

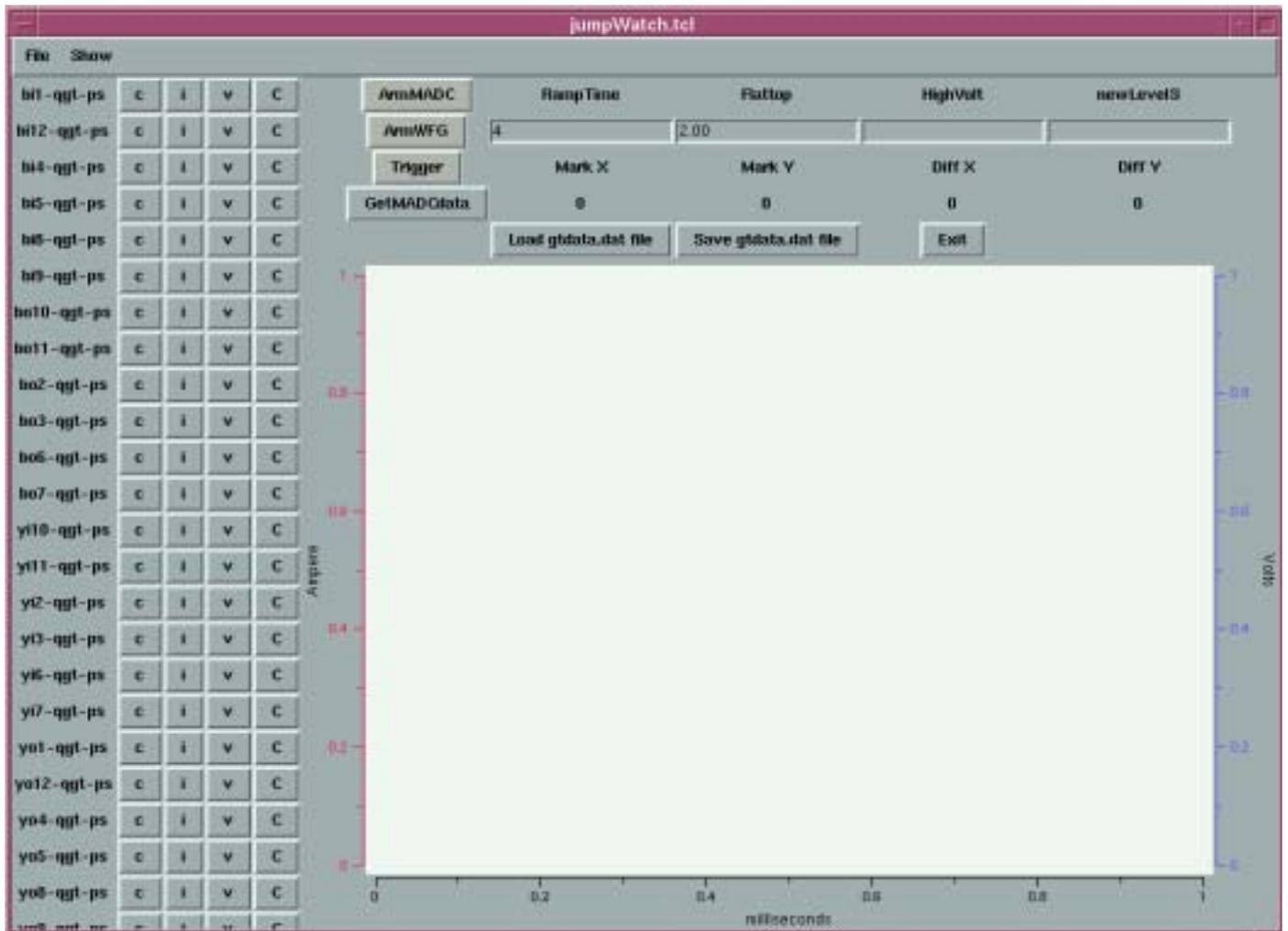


Figure 1

	Current	MaxCurrent	HighVolt	Delay	JumpTime
bi1-qgt-ps	-0.878906905651	24.696	-135	-0.0146	0.0
bi12-qgt-ps	0.903320968151	26.557	150	-0.0146	0.0
bi4-qgt-ps	1.01318430901	26.557	150	-0.0146	0.0
bi5-qgt-ps	-0.964356184006	24.696	-140	-0.0146	0.0
bi8-qgt-ps	0.915527999401	26.557	160	-0.0146	0.0
bi9-qgt-ps	-0.842285752296	24.696	-140	-0.0146	0.0
bo10-qgt-ps	0.927735030651	26.557	150	-0.0146	0.0
bo11-qgt-ps	-0.830078721046	25.229	-140	-0.0146	0.0
bo2-qgt-ps	0.854492783546	26.557	150	-0.0146	0.0
bo3-qgt-ps	-0.854492783546	25.229	-140	-0.0146	0.0
bo6-qgt-ps	1.02539134026	26.557	150	-0.0146	0.0
bo7-qgt-ps	-0.842285752296	25.229	-140	-0.0146	0.0
yi10-qgt-ps	-1.14746177197	24.696	-160	-0.0146	0.0
yi11-qgt-ps	1.01318430901	26.557	160	-0.0146	0.0
yi2-qgt-ps	-1.06201243401	24.696	-160	-0.0146	0.0
yi3-qgt-ps	1.12304770947	26.557	160	-0.0146	0.0
yi6-qgt-ps	-1.00097727776	24.696	-160	-0.0146	0.0
yi7-qgt-ps	1.17187583447	26.557	160	-0.0146	0.0
yo1-qgt-ps	1.02539134026	26.557	160	-0.0146	0.0
yo12-qgt-ps	-0.968770246506	25.229	-160	-0.0146	0.0
yo4-qgt-ps	-1.14746177197	25.229	-160	-0.0146	0.0
yo5-qgt-ps	1.09863384697	26.557	160	-0.0146	0.0
yo6-qgt-ps	-1.13525474072	25.229	-160	-0.0146	0.0
yo9-qgt-ps	1.07421946526	26.557	160	-0.0146	0.0

Figure 2

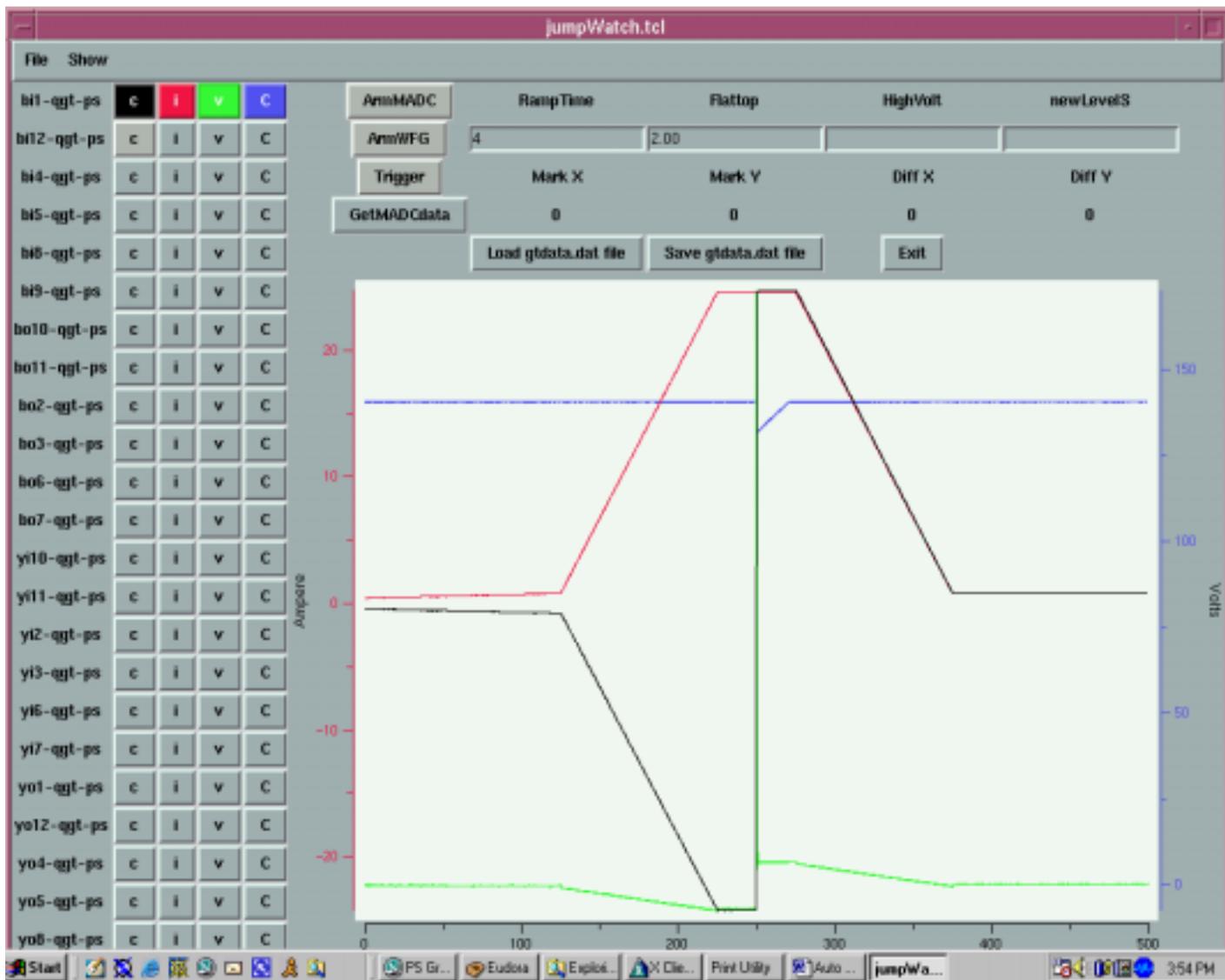


Figure 3