JSC/RC Relative Timing: JSC Number_____

Setup: A RCT crate with a Jet/Summary Card (JSC) with an RMC and a Receiver Card (RC) in Slot 3 with a Receiver Mezzanine Card (RMC) in the first HCAL position (second from the top). A VME crate with two STC cards (C/Dn linked) and 20 m cables from the transmit mezzanine cards to the first RMC on the RC and and to the RMC on the JSC. Initialize the RCT crate.

1. Zero the memories: **rctCrateTest –t 1**
2. To do the first cycle checks run the STC as follows:
    a. STC: `vmedia> read two_link_test.txt`
    b. STC: `vmedia> resettall`
    c. STC: `vmedia> qb_data_long_c1.txt`
    d. STC: `vmedia> qb_data_long_c3.txt`
    e. STC: `vmedia> idletall`
    f. STC: `vmedia> readyall`
3. To setup the JSC and RC enter vmedia for the RCT and type:
    a. RCT: `vmedia> read rc_jsc_timing.txt`
4. Start sending data:
    a. STC: `vmedia> datat`
5. Trigger on connector J4 pin 37, there should be a pulse 12.5 ns wide. Probe J6 pin 13. These two pulses should be in time.

e/γ Sum Relative Timing: JSC Number_____

1. Completely fill a crate and initialize it.
2. Zero the memories: **rctCrateTest –t 1**
3. Increment the electron memories: **rctCrateTest –t 2 –c 2a55**
4. To setup the pulses to measure relative timing:
    a. RCT: `vmedia> read test_timing_eg_sum.txt`
5. Trigger on J6 pin 13 and ISO-E pin 23, measure timing between pulses with scope
    a. separation should be around 225 ns, 9 bunch crossing

BX0 Check and Relative Timing: JSC Number_____

1. Initialize a crate with a JSC
2. Trigger on the CCC, connector J8, pin 12 (see pinout below for female connector)
3. Probe the pins in the table below. in vmedia, after typing aa3.txt, type "bx0" for each combination of outputs. There should be 9 bx (225 ns) between the BX0 going away for the sum and the e/γ.

Sum	**e/γ**	**Okay?**
J3 pin 67	NISO-E pin 67	
J4 pin 67	NISO-E pin 67	
J5 pin 67	ISO-E pin 67	
J6 pin 67	ISO-E pin 67	

1. Quick check of BX0 arrival at XOR, U249 pin 23: In vmedia, l**oop(0,bx0)**, probe on U8 pin 5 and U249 pin 23. BX0 from U8 to U249 should be ~28.5 ns.