BigBite Shower/Pre–shower Trigger Logic

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(modified from I. Rachek GeN diag.)
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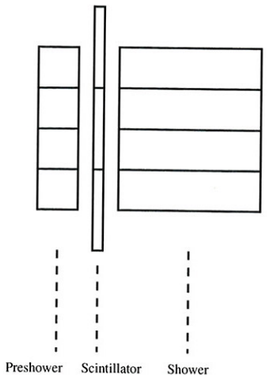
Scint PMT → Amp 53ns 825 → Ribbon pp to ADC



NOTE: Electronic DT pulser should be fed into separate TDC channel as an additional flag. The same pulse should be used to simulate coin. timing with the HRS for Transversity.

NOTE: Electronic DT pulser won't fire if the PS is needed in the AND – one solution would be to force the coin. by changing the P757 with a '2of3' capable module and inserting another copy of the DT pulse there.

Preshower — ***Shower***

825 ns to ribbon PP

ADC "P01L" — ***PS1L*** — A PS776 — SPL 0.5/0.5 — 50Ω — **ADC "P01R"** — ***PS1R***

53ns

Sh1/1 ***Sh1/2*** ***Sh1/3*** ***Sh1/4*** ***Sh1/5*** ***Sh1/6*** ***Sh1/7*** → S8 → Electronic DT Pulser input

825 to ribbon PP

ADC "S1.1–S1.7"

FI/O L428F → **ADC "PS01A"** (825 ns)

ADC "TS01A" (815!) — FI/O L428F

254ns to CAMAC disc. → **TDC "TS01T"**

D P706* (175) — D P706* (180) — AND/OR P758 (145) — 37

100nF

TDC "PS01T"

To be removed for production trigger

254–265ns to CAMAC disc. (using Sh pulse)

PS2L ***PS2R*** — A PS776 — SPL 0.5/0.5 — **ADC "P02L"** **ADC "P02R"**

Sh2/1 ***Sh2/2*** ***Sh2/3*** ***Sh2/4*** ***Sh2/5*** ***Sh2/6*** ***Sh2/7*** → S8 → Electronic DT Pulser input

ADC "S2.1–S2.7"

ADC "TS02A" — FI/O L428F — **TDC "TS02T"** (140)

100nF

FI/O L428F → **ADC "PS02A"**

D P706* — AND/OR P758

To be removed for production trigger

TDC "PS02T"

PS3L ***PS3R*** — A PS776 — SPL 0.5/0.5 — **ADC "P03L"** **ADC "P03R"**

Sh3/1 ***Sh3/2*** ***Sh3/3*** ***Sh3/4*** ***Sh3/5*** ***Sh3/6*** ***Sh3/7*** → S8

ADC "S3.1–S3.7"

From other Sh+PS Coinc. in this cluster

NOTE: Shower clusters are overlapped.

OR P757 (51) — ×13 — OR P757 — 66 — OR P755 (76) — 250ns → T6

250 ns to single row PP @ DAQ weldment

26 total → OR (51) → 100 T6 → **"Shower" Trigger**

NOTE: This trigger better have a lower threshold than the "regular" trigger if you want TDC data.

×26 → OR N408 + P754 (86) (82) — 250 ns to end of cable in DAQ weldment — T1 25 T1

These modulse are in the 'Cerenkov' Rack.

Build Clusters for geom. overlap with Cerenkov

A B C D LC429A FI/FO (70) (48) (65) → (81) → Cluster 1 of 9 to overlap with Cer. cluster 1 of 9

From other Sh+PS Coinc. in this cluster

D E F G LC429A FI/FO → Cluster 2 of 9 to overlap with Cer. cluster 2 of 9

NOTE:
See Cerenkov diagram for the full Shower+Cer(d2) Trigger, and Cerenkov–related cable and module counts.
EDT F/O also located in Cer. Rack.

[N] = time in ns from Appl. input ← PSh
OR Sum7 input ← Sh