Amplifier (Tennelec TC241S)
CRDC 1 Anode
Uni. OUT
C. Gain 10
F. Gain 5.1
T. Gain 5
Fast OUT
R1C2S12
Quad Fast Amplifier (NSCL)
51/21: CRDC 1 Anode
52/22: CRDC 2 Anode
R1C2S10
Amplifier (Tennelec TC241S)
CRDC 2 Anode
IN
C. Gain 10
F. Gain 6.5
T. Gain 5
R1C2S11
16-ch CFD (CAEN C808)
E1 u
E1 d
7: CRDC1
8: CRDC2
OBJ SCI
A1900
Galotte
Hodoscope 0-31
to Level Adaptor
to Scaler (17-32)
R1C4S13
CFD (Canberra 454)
CRDC 1
CRDC 2
R2C1S4
Variable Amplifier (LeCroy 612EM)
E1 up
E1 down
1 Right
2 Left
1 Left
2 Right
R1C3S12
Splitter Att. (NSCL)
to FERA
R1C3S11
Quad Fast Amplifier (NSCL)
Det # 1 target
Det # 3 target
Det # 4 target
R1C1S6
R2C1S7
CFD (Canberra 454)
R1C1S8
Gretina Sync (Fast Patch 3)
Fan In / Out (ESN LF 4000)
B13: Fast Clear
to clear FERA and TDC (Targ.)
Det. #1 Target
Det. #3 Target
Det. #4 Target
R1C3S9
TDC (Phillips 7186)
B13: Fast Clear
Clear
Common
B4: QDC gate OR
B6: Coinc. Reg. gate
Det Target#2 (200 ns)
Det Target#1 (200 ns)
Det Target#4 (200 ns)
R1C4S17
CC-USB (Wiener)
B2: Live Trigger
B16: Time Stamp Clock
to ULM (C)
R1C4S1
ULM (LeCroy 2367)
A1: S800 trigger (E1 up)
A2: Gretina gamma OR (Fast Patch 2)
A3: Trig Insp 4
A7: Gretina synch (Fast Patch 3)
A8: Gretina clock (Fast Patch 1)
B2: Live Trigger
B3: ADC Gate
B4: QDC Gate
B5: TDC Start
B6: Coinc. Reg. Gate
B8: Live Trigger
B9: Insp. 1
B10: Insp 2
B11: Insp 3
B12 Insp 4
B13: Fast Clear
B16: Time stamp clock
C1: VC-USB: 01
C2: CC-USB: O1,O2
C8: CC-USB: O1,O2
C9: Time stamp clock
C10: Time stamp latch
D1: S800 source
D2: Seconday source
D5: S800 trigger
D6: Coinc. Reg.
D7: Ext. trigg. 1
D8: Ext. trigg. 2
D9: Second trigg.
D10: Raw trigg.
D11: Live trigg.
D12: Raw pulser
D13: Live pulser
D14: Fast clear
D15: 10 Hz
D16: 1 Hz
R1C4S6
16-ch CFD (LeCroy 4413)
B5: TDC Start
B13: Fast Clear
B4: QDC gate OR
B6: Coinc. Reg.
to TDC (XLM Del.)
veto
sync
Clear and Gate to FERA
R1C4S15
CFD (CAEN C671)
Hodoscope 16-23
Hodoscope 24-31
R1C4S10
Hodoscope 0-7
Hodoscope 8-15
R1C4S9
Coinc. Register (LeCroy 4448)
B8: Live Trigger
Gate
R1C4S3
Net Controler (CAEN V288)
R1C5S10
XLM (JTEG)
R1C5S21
TAC (ORTEC 566)
S800 Trigger (200 ns)
OBJ SCI
R1C2S9
Scaler (LeCroy 4434)
17: E1 up
18: E1 down
23: CRDC 1
24: CRDC 2
25: OBJ SCI
26: A1900
27: Gallote CFD
31: Hodoscope 0-31
R1C4S5
S800 Trigger
Gallote
R1C1S7
XLM72 V
R1C5S13
ADC (Phillips 7164)
B8: Live Trigger
94/04: Target
4 TAC (E1,CRDC1)
5 TAC (E1,CRDC2)
8 TAC (XF SCI,E1)
9 TAC (OBJ SCI,E1)
10 TAC (Gallote,E1)
TAC(E1,Hodoscope)
R1C4S8
B5: TDC Start
CRDC 1 Anode
R1C1S5
XLM (JTEG)
1: S800 Trigger (1200 ns)
2: E1 down (200 ns)
3: E1 up (200 ns)
9: S800 Trigger (200 ns)
10: Trigger Inspect 4
12: Gretina gamma OR (Fast P 2)
13: Cyclotron RF (100 ns)
14: OBJ SCI (800 ns)
15: XF SCI (1000 ns)
Del
R1C5S19
ECL-NIM-ECL (NSCL)
Hodoscope 0-15
Hodoscope 16-31
S800 Trigger (1200 ns)
E1 down (200 ns)
E1 up (200 ns)
Trigg. Ins. 4
Gretina gam OR (Fast P 2)
RF (100 ns)
67/37: OBJ SCI (800 ns)
66/36: XF SCI (1000 ns)
XF_SCI Del
to XLM Del
R1C3S10
Hodosc 0-16
Hodosc 17-31
62/32: From OBJ_SCI
66/36: From XF SCI (1000 ns)
60/30: From Gallote CFD
Fan In / Out (NSCL)
R1C3S1
CFD (Canberra 454)
x/41: Gretina Clock (Fast Patch 1)
x/43: Gretina Sync. (Fast Patch 3)
R1C2S4
Scale Down (NSCL)
R1C1S3
Gate Generator (NSCL)
CC-USB: 02
to OR with O1
R1C2S6
Ratemeter (ORTEC 661)
R1C1S2
Random Pulse Gen. (NSCL)
R1C1S1
Scale Down (NSCL)
Scal down 2
R1C2S3
Level Adaptor (LeCroy 688 AL)
R1C2S7
Fan In / Out (ESN LF 4000)
E1 up
Pulser
to XLM Del.
61/31: to S800 FPD Rate Meter
to start TACs
to ULM (A)
x/42: Gretina gamma OR (Fast Patch 2)
58/28: Trigg. Insp. 4
R1C3S7
Level Adaptor (Phillips 726)
1: E1 u
2: E1 d
7: CRDC 1
8: CRDC 2
to Gener. Raw Trigg.
to XLM Del.
to xtop TACs CRDC1 & 2
to XLM CRDC1 & 2
to ULM (A)
Pulser: only connected for CRDCs pedestals measurement
S800 Trigger
Gretina gam OR (Fast P 2)
Trigg Inspect 4
Gretina Sync (Fast P 3)
Gretina Time stamp Clock (Fast P 1)
R1C3S6
ECL-NIM-ECL (EG&G-ESN EC1600)
ULM I/O (B)
55/25: Trigg. Insp. 1
56/26: Trigg. Insp. 2
57/27: Trigg. Insp. 3
59/29:
to clear FERA and TDC (Targ.)
to I2 CC-USB (time stamp)
R1C3S4
to start TAC CRDC1
to start TAC CRDC2
to TDC start (XLM Del.)
Fan In / Out (ESN LF 4000)
B5: TDC Start
B6: Coinc. Reg. Gate
B8: Live Trigger
to veto RF
to XLM CRDC1&2
to XLM Delay
to ADCs gates
to Coinc Reg gate
R1C3S2
Fan In / Out (LeCroy 429A)
B8: Live Trigger
B2: Live Trigger
B4: QDC Gate
B6: Coinc. Reg. Gate
Gates to ADCs Hodos.
to I1 CC-USB
to I1 VC-USB
x/44: Master Live (Fast Patch 4)
to ADC Gate
to Coinc. Reg. Gate
Gate to FERA
Start TDC (Target det.)
R1C3S3
ECL-NIM-ECL (NSCL)
B8: Gen. more trigg. live signals
CRDC 1 Anode
CRDC 2 Anode
VC-USB: O1
CC-USB: O1,O2
1,2 to XLM CRDC1
3,4 to XLM CRDC2
5,8 Gates to ADC Hodos.
9 to ULM C1: VC-USB: 01
10 to ULM C2: CC-USB: O1,O2
16 to ULMC8: CC-USB: O1,O2
R1C3S5
70/40: A1900 XF SCI
Scaler
Fan In / Out (NSCL)
CC-USB: O1
CC-USB: O2
Stop TAC (E1,XF)
to ULM (C)
Start TAC (E1,OBJ)
Start TAC (E1,XF)
Start TAC (E1,OBJ))
109/19: S800 source Target
to Coinc. Det. target
Start TAC (E1,Galott.)
69/39: Cyclotron RF
R1C2S1
VC-USB (Wiener)
B2: Live Trigger
R1C5S22
Gate Generator (NSCL)
Hodoscope 0-31
to Start TAC Hodos.
to Anticoinc. Hodos.
R2C1S12
ECL-NIM-ECL (NSCL)
B8: Trigger Live
1-4: to XLM Delay
1-8 OUT OR IN??
64/34: Delay Inspect 1
65/35: Delay Inspect 2
R1C3S8
Logic Unit (Phillips 755)
NOT(B6: Coinc. Reg. gate)
Det. Target
S800 Trigger (100 ns)
R1C2S8
R2C1S11 IMPLEMENTED IN FREE CHANNELS ON R1C2S8
Q Logic Unit (NSCL)
S800 Trigger
Hodoscope 0-31
AND(Hodoscope 0-31, NOT(S800 Trigger))
NOT(S800 Trigger
R2C1S11
TAC (ORTEC 566)
A1900
R1C2S2
FERA (LeCroy 4300B)
Fast Clear
B4: QDC gate OR
B6: Coinc. Reg.
1: E1_u (200 ns)
2: E1_d (200 ns)
6: Det #1 target (140 ns)
7: Det #3 target (140 ns)
8: Det #4 target(140 ns)
R1C4S18
XLM72
1: Live Trigger
2: CRDC 1 Anode
R1C5S17
CRDC 2 Anode
R1C1S4
TDC (Phillips 7186H)
B5: TDC Start
Common
1: S800 Trigger (1200 ns)
2: E1 down (200 ns)
3: E1 up (200 ns)
9: S800 Trigger (200 ns)
10: Trigger Inspect 4
12: Gretina gamma OR (Fast P 2)
13: Cyclotron RF (100 ns)
14: OBJ SCI (800 ns)
15: XF SCI (1000 ns)
R1C4S23
XLM72V
1: Live Trigger
2: CRDC 2 Anode
R1C5S15
TAC (ORTEC 566)
R2C1S10
ADC (Phillips 7164H)
Live Trigger
Hodoscope 1-16
R1C4S19
Hodoscope 17-32
R1C4S20
Ion. Chamber (from Shaper Amplif.)
R1C4S21
CRDC
Gretina Time stamp Clock (Fast P 1)
Gretina Sync (Fast Patch 3)
Cyclotron RF
S800 Trigger
A1900
Pulser
OBJ SCI
Det # 1 target
Det # 3 target
Det # 4 target
Gretina gam OR (Fast Patch 2)
E1 up
E1 down
Galotte
Hodoscope
XF_SCI
ULM
ECL signals (Flat cable)