Electronics requirements for Gen01

September 5, 2000

THIS LIST DOES NOT INCLUDE SPARES!

1 Helicity

- Separate moller and helicity electronics
  - 1 NIM bin with cooling fan
  - 6 Logic Fans L429A
  - 1 Quad Gate Generator P794
  - 2 Octal Discriminators P708 (or LeCroy 4608C)
  - 1 ECL-NIM-ECL L4616
- VME crate:
  - upgrade CPU to ppc $\rightarrow$ S. Wood
  - 3 multiscaler (STR2701) for polarized running
  - 3 multiscaler (STR2701) for moller running
  - 1 multiscaler (STR 2701) for event tag

2 Neutron Detector

The following lists are based on 300 signal lines (Gen98: 236):
44 paddles, 106 bars (each detector having two PM's)

- 300 BNC cables from NDET to patch panel → define length (G. Warren/ B. Vulcan)
- Patch to Patch (short) cables (G. Warren/B. Vulcan)
- 5 passive splitter boxes (4×16 channels each) →GET 6 from UVA (D. Day/ B. Vulcan)
- 10 Transition Boxes (2 ×16 each) →GET 7 (B. Vulcan)
- 200 delay cables (400 ns) → GET 100 (B. Vulcan)
- 20 Shielded Ribbon Cable: Splitter to Transition Box (16 ch each) →check out and fix (B. Vulcan)
- 20 Shielded Ribbon Cable: Transition Box to ADC (16 ch each) → check out and fix (B. Vulcan)
- Lemo Cables for electronics →quantify (?/ B. Vulcan)
- ADC, TDC
  - 1 Fastbus Crate → EXISTS
  - 1 SFI, 1 ppc CPU → S. Wood
  - 6 ADC → EXISTS
  - 6 TDC → EXISTS
  - 1 Multihit TDC → EXISTS
- Scaler
  - 1 VME crate → S. Wood
  - 1 ppc CPU → S. Wood
  - 10 scaler (32 ch each) for singles
  - 5 scaler (32 ch each) for L/R coinc
  - 1 scaler (32 ch each) for coinc
  - 1 scaler (32 ch each) for general →combination of Le Croy Scalers from TS crate and existing Struck Scalers (S. Wood)
- Neutron Detector Trigger
  - 2 CAMAC crates plus cooling ()
  - 20 Discriminators L4413, newer version L3412 or P7106

  - 10 Logic Units L4516
  - 5 NIM bins plus cooling
  - 28 LDU PEC
  - 6 LDU Basel
  - 4 Logic Units L622
  - 2 Logic Fans L429A
- Neutron Detector Cosmics Trigger
  - 1 ECL-NIM-ECL Converter L4616
  - 1 Logic Fan L429A
  - 1 Logic Unit L622
- HV supply?

3 Trigger

- 1 NIM bins plus cooling fan
- (1 NIM bin for delays) →exists
- 1 Level Translator P726 (CIP conversion)
- 1 Logic Fan L429A (OR of all CIPs)
- 2 Level Translator P726 (ADC, TDC gates)
- 1 4fold Logic Unit L365AL (Pretrigger)
- 1 4fold Logic Unit L365AL (Retiming)
- 1 Discriminator L821 (Gates)
- 1 Logic Unit L622 (Retiming)
- 1 Logic Unit P754 (Retiming)
- 2 Discriminator L821 (signal regeneration)
- 1 16ch Discriminator P706
- 6 Delay Boxes P792
- 1 additional 8LM L2365 → check alternative modules
- 1 Level Translator P7126 (second 8LM outputs)

4 Shopping List

Priorities are given in brackets. 1 is highest.

Modules	Helicity	Day/Madey	Trigger	Total	Wanted	existing	Buy
NIM bin plus cooling	1 (1)	5 / ? (1)	1 (1)	7	6		6
CAMAC crate plus cooling		2 / ? (1)		2	2		2
Logic Fan L429A	6 (1)	3 / 3 (1)	1 (1)	10	10	4	6
Gate Generator P794	1 (1)			1	1	1	0
Octal Disc P708 (L4608C)	2 (1)			2	2		2
Multiscaler STR2701	7 (1)			7	11		11
ECL Disc L3412 (P7106)		20 / 18 (1)		20	14	4	10
Logic Units L4516		10 / 4 (1)		10	7	6	1
8ch LDU PEC		28 / 0 (1)		28	13	8	5
16ch LDU Basel		6 / 0 (1)		6	6	6	0
Logic Unit L622		5 / 0 (2)	1 (1)	6	3		3
ECL-NIM-ECL L4616	1 (1)	1 / 10 (2)		11	5		5
Level Translator P726			3 (1)	3	3		3
4fold Logic L365AL			2 (1)	2	2		2
Disc L821			3 (1)	3	3		3
16ch Disc P706			1 (1)	1	1		1
Dual Delay P792			6 (1)	6	6		6
Logic Unit P754			1 (1)	1	1		1
Logic Matrix L2365			1 (2)	1	1		1
Level Translator P7126			1 (1)	1	1	1	0