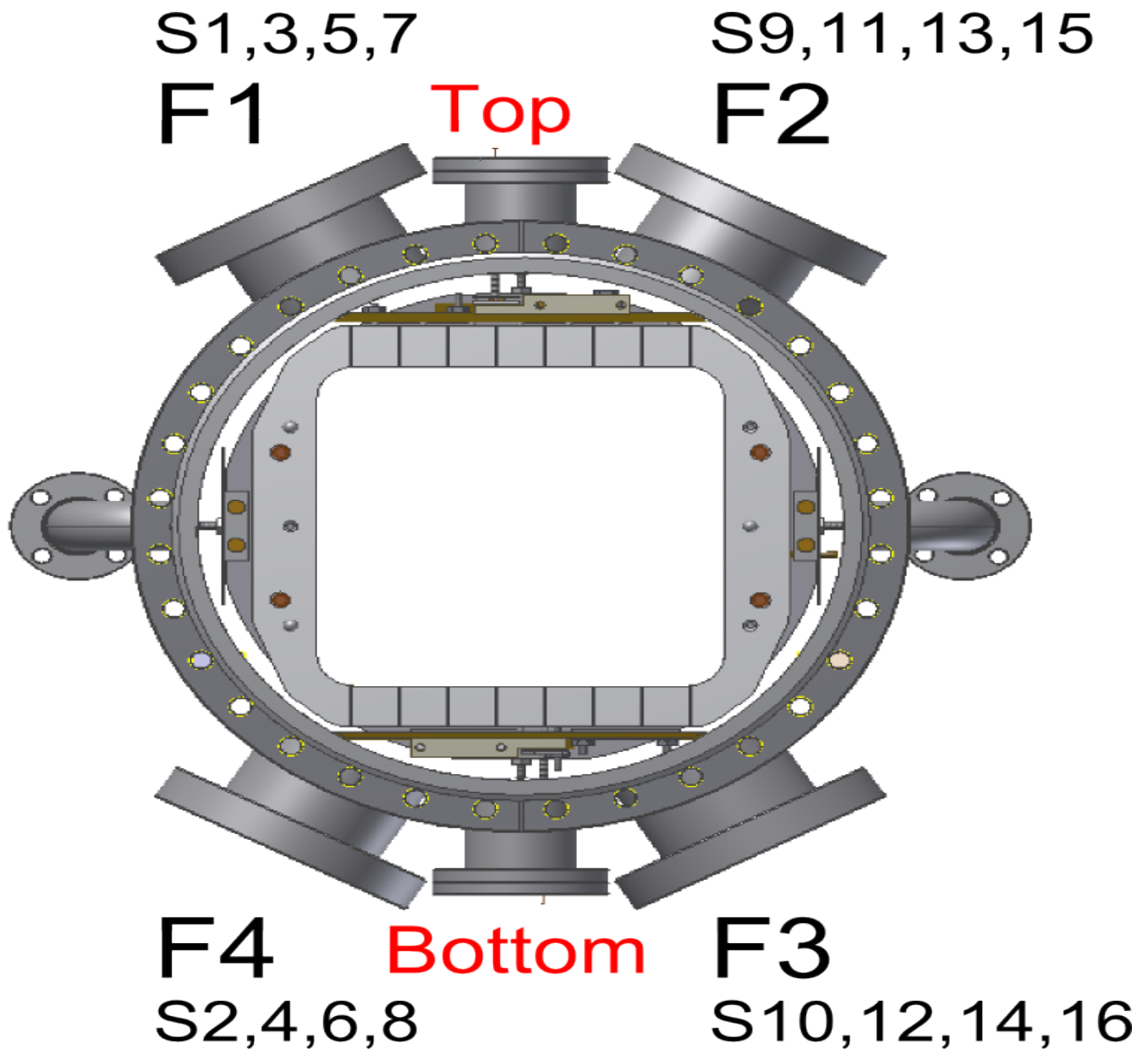


Signal Wire to Feed Thru to ADC Mapping

2014/10/22

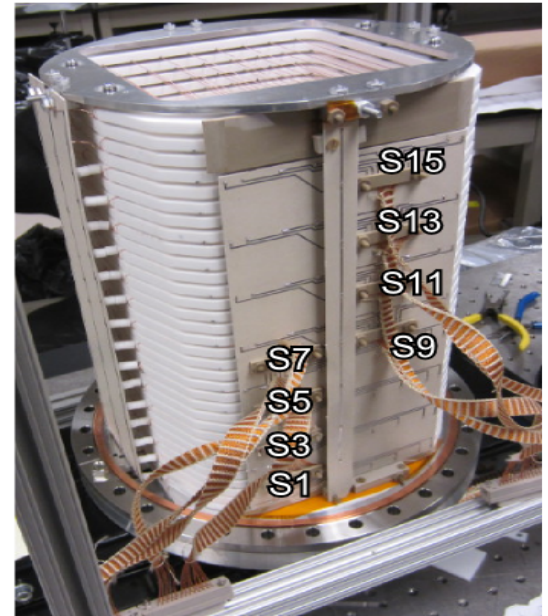
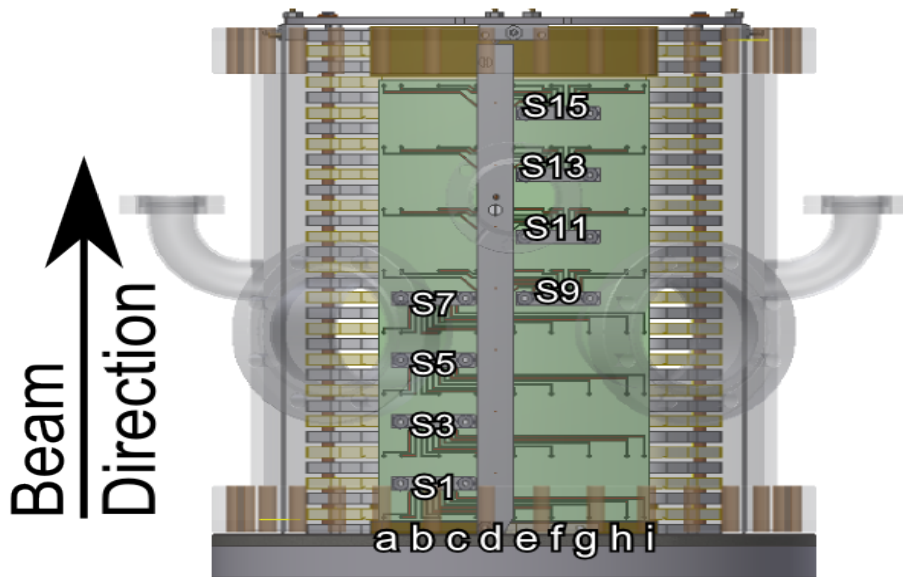
Mark McCrea



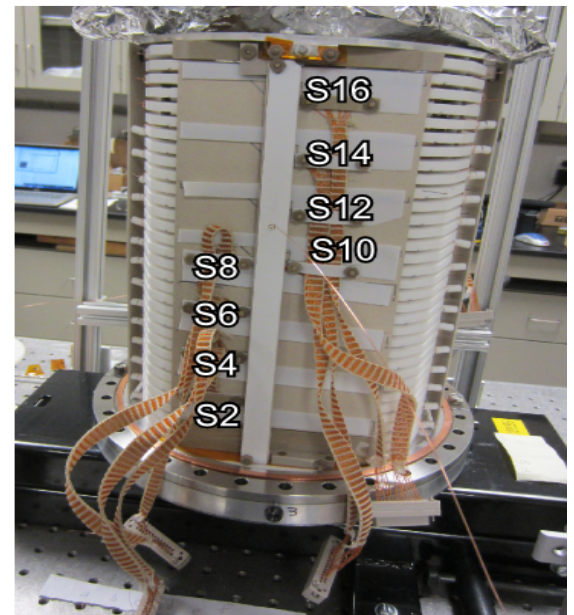
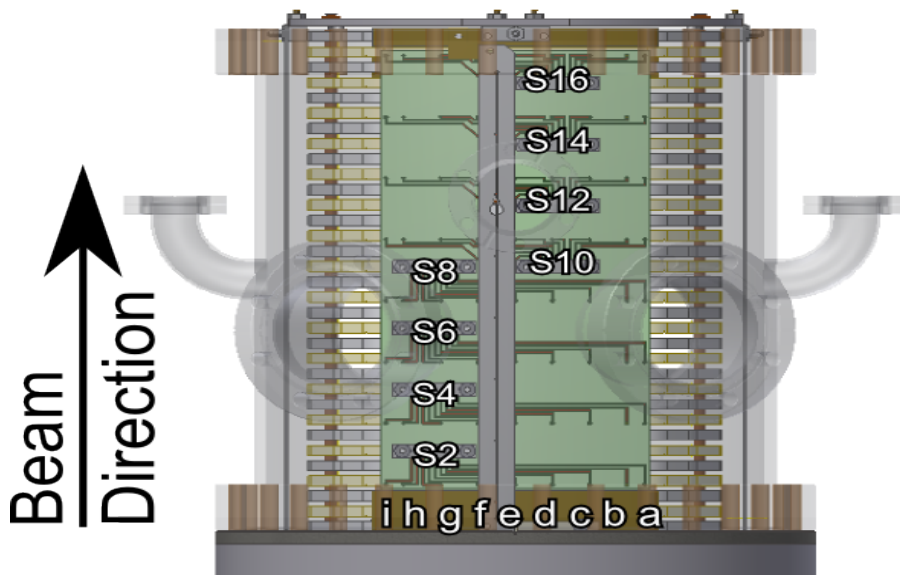
Beam into Page

Chamber Interior Cabling

Top Side

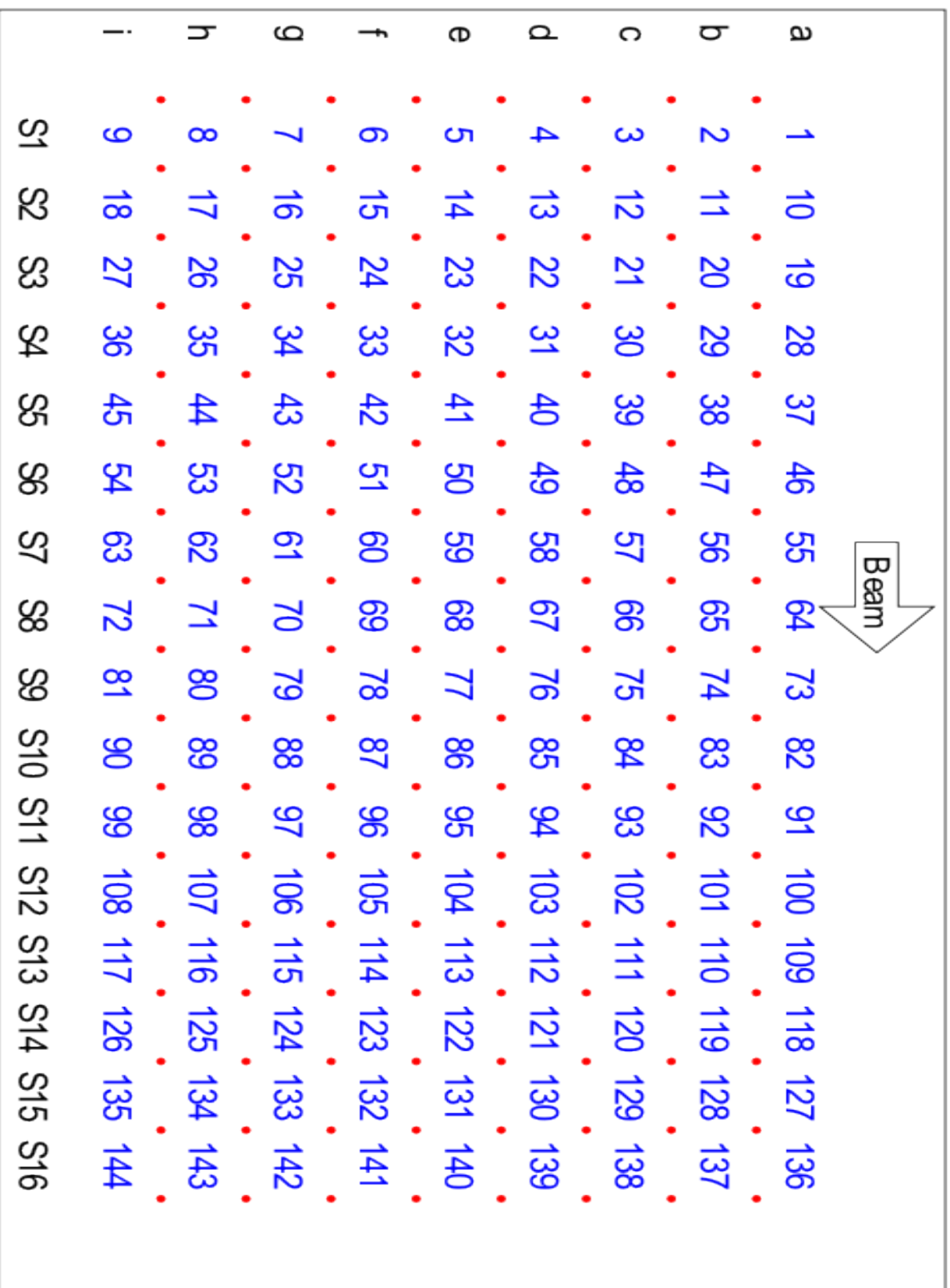


Bottom Side



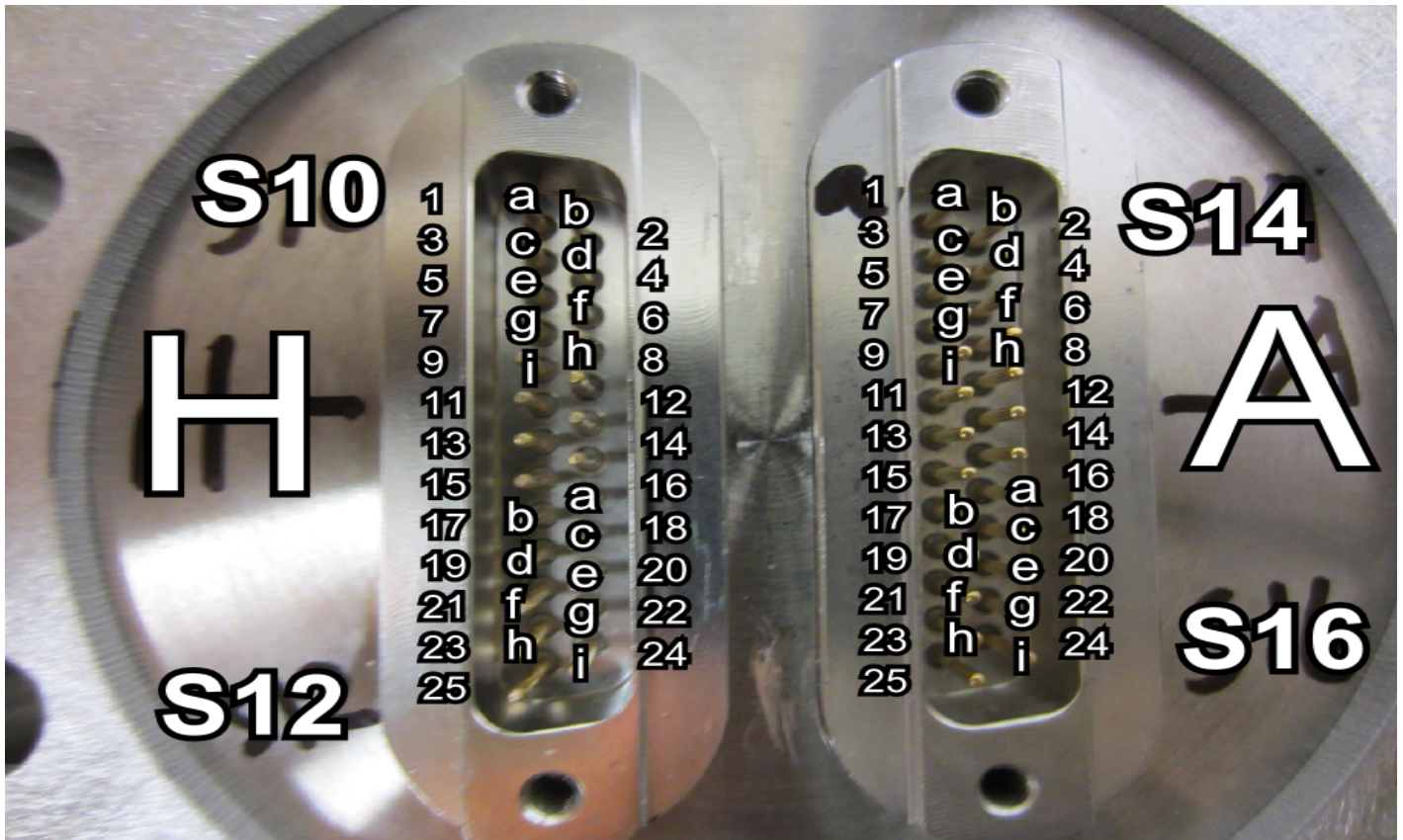
8 Dsub 25 pin plugs are used to readout the wire planes.
 Each plug has two ribbon cables, a 12 and 13 wire cable.
 Each cable goes to one plane.
 Each cable has a few unused wires that are not connected to anything inside the chamber

Chamber Frame and Wire Labels



- HV 17 HV Frames with 8 wires each
- Signal 16 signal Frames with 9 wires each

Feed Thru Pin Labels



Note: 25 pin plugs are labeled in a non-standard order from 1-25.
Letters indicate which wire comes to each pin from inside the chamber.

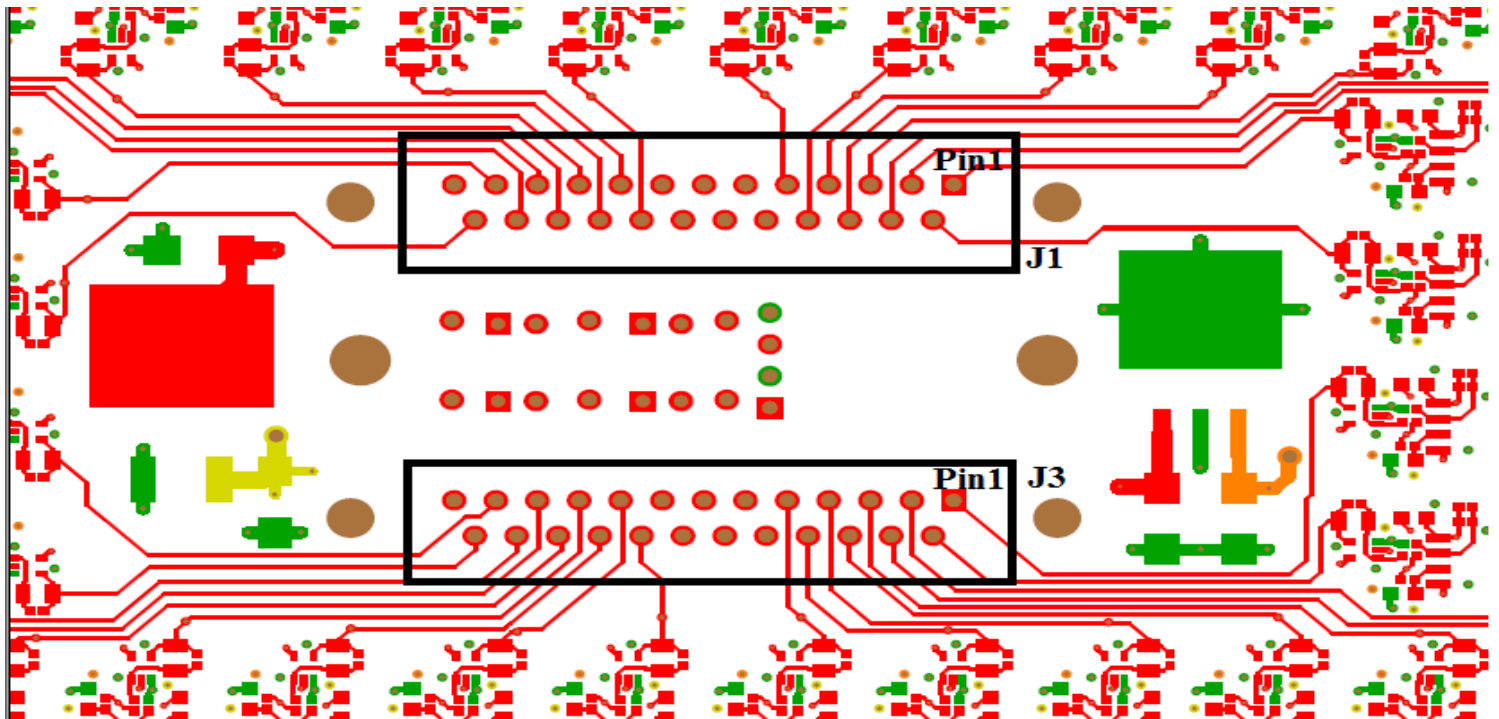
Singal Wires:	144
Wire Planes:	16
Wires Per Plane:	9

Feed Thrus:	4
Total Connectors:	8
Pins Per Connector:	25
Total Connectors:	200

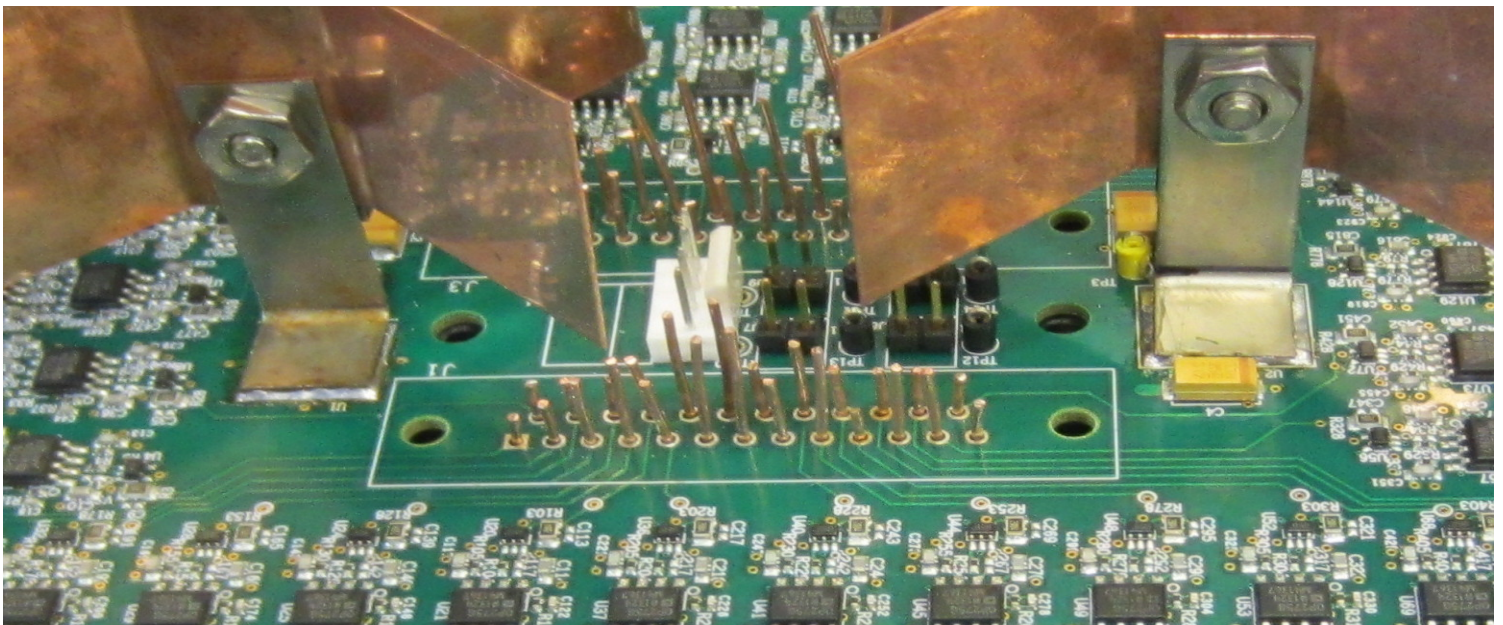
Frames are labeled in the beam direction starting with S1 to S16

Feed Thrus are labeled F1 to F4 starting upper left and going clockwise looking down the beam

Preamp to ADC Pin Mapping

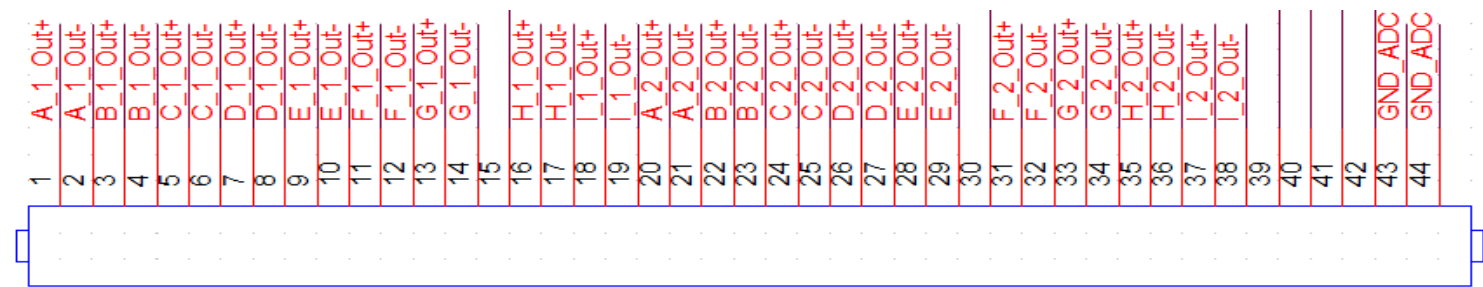


Here we can see the two 25 pin plugs in the middle of the preamp board have a J1 and J3 pin labeled beside them that is then used to label each input and output.



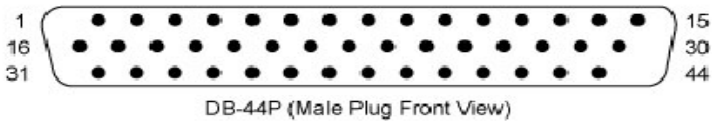
This photograph shows a close up of the dual 25 pin plugs being with the adapter plug being solder to the back of the board. On the left hand side the J1 and J3 labels can be seen.

44 Pin Plug Pin Outs

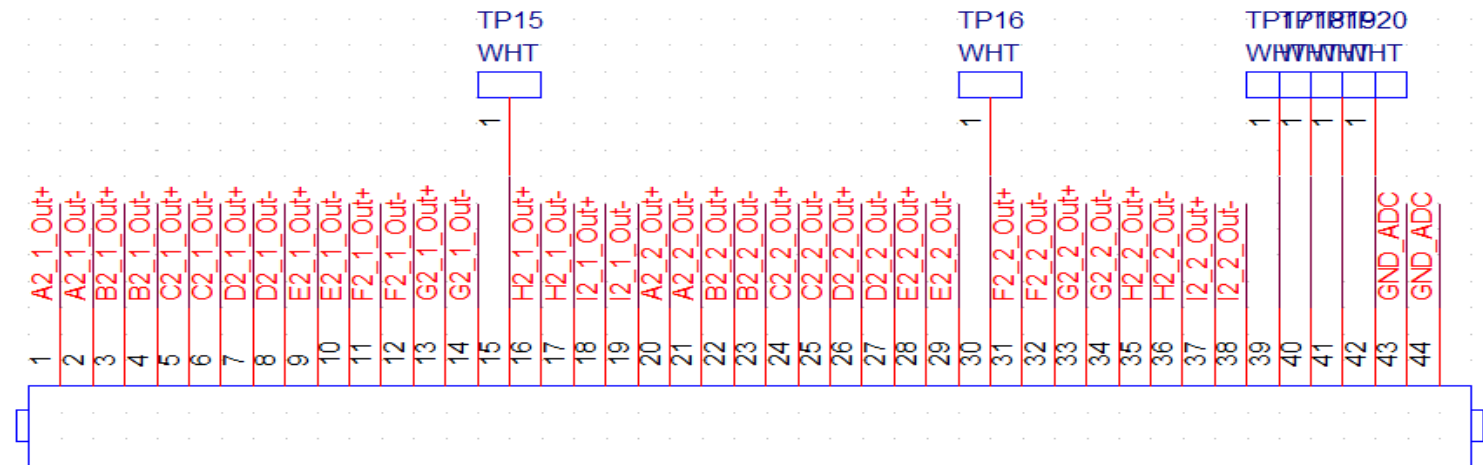


13
HEADER 44

44-Pin HD D-Sub Cable (HD44)



HD44



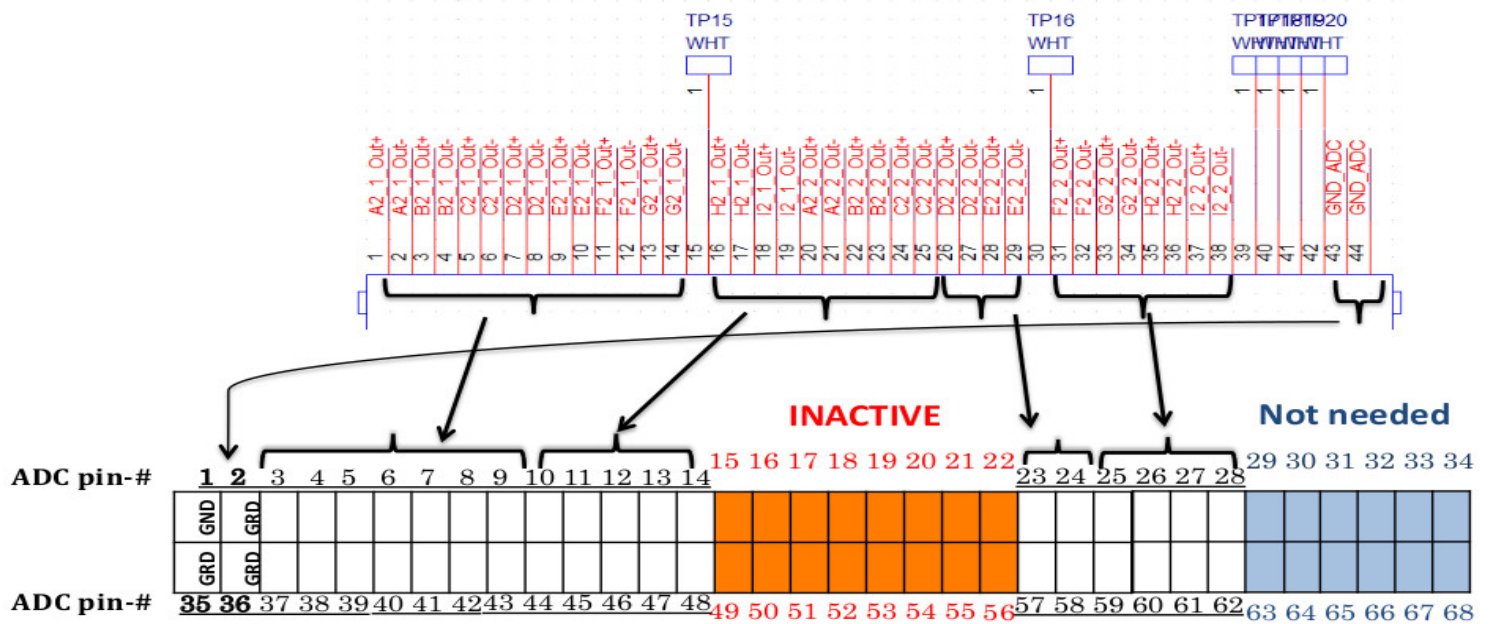
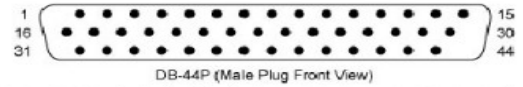
Cable Pin Map

Mapping: Pre-amp 44-pin HD plug to DAQ 24-ch ADC Pin-out

44-Pin HD D-Sub Cable (HD44)



HD44



ADC Setup



Each ADC has two 24 channel inputs.

Output from each ADC combines the 48 input channels in one 64 channel output file.

16 of the channels are blank.

Channels 1-12 and 21-32 are live in each ADC input

Channels 15-22 are inactive, and would be used with 32 channel ADC

18 of the 24 channels are used for wire chamber signals

6 ADC channels are left unused.

3.3 24 Channel Pinout

after software mapping for faceplate order

Input Configuration Key	Follower	Transimpedance
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Pin	Variant		Pin	Variant	
	24FF	20TF-4FF		24FF	20TF-4FF
1	0V	0V	35	0V	0V
2	0V	0V	36	0V	0V
3	AI01+	AI01+	37	AI01-	AI01-
4	AI02+	AI02+	38	AI02-	AI02-
5	AI03+	AI03+	39	AI03-	AI03-
6	AI04+	AI04+	40	AI04-	AI04-
7	AI05+	AI05+	41	AI05-	AI05-
8	AI06+	AI06+	42	AI06-	AI06-
9	AI07+	AI07+	43	AI07-	AI07-
10	AI08+	AI08+	44	AI08-	AI08-
11	AI09+	AI09+	45	AI09-	AI09-
12	AI10+	AI10+	46	AI10-	AI10-
13	AI11+	AI11+	47	AI11-	AI11-
14	AI12+	AI12+	48	AI12-	AI12-
15			49		
16			50		
17			51		
18			52		
19			53		
20			54		
21			55		
22			56		
23	AI21+	AI21+	57	AI21-	AI21-
24	AI22+	AI22+	58	AI22-	AI22-
25	AI23+	AI23+	59	AI23-	AI23-
26	AI24+	AI24+	60	AI24-	AI24-
27	AI25+	AI25+	61	AI25-	AI25-
28	AI26+	AI26+	62	AI26-	AI26-
29	AI27+	AI27+	63	AI27-	AI27-
30	AI28+	AI28+	64	AI28-	AI28-
31	AI29+	AI29+	65	AI29-	AI29-
32	AI30+	AI30+	66	AI30-	AI30-
33	AI31+	AI31+	67	AI31-	AI31-
34	AI32+	AI32+	68	AI32-	AI32-

Feed Thrus Pins, Wire Number, ADC Mapping

FeedThru	Plane	Wire Label	Wire #	Plug	Dsub-25pin	Preamplifier Side	ADC Channel
F1	S1	a	1	1	1	J1	1
		b	2	1	2		2
		c	3	1	3		3
		d	4	1	4		4
		e	5	1	5		5
		f	6	1	6		6
		g	7	1	7		7
		h	8	1	8		8
		i	9	1	9		9
				1	10		
				1	11		
				1	12		
				1	13		
				1	14		
				1	15		
	S3	a	19	1	16	J1	10
		b	20	1	17		11
		c	21	1	18		12
		d	22	1	19		21
		e	23	1	20		22
		f	24	1	21		23
		g	25	1	22		24
		h	26	1	23		25
		i	27	1	24		26
				1	25		

Assuming J1
to Module1

Note: Each ADC plug has the same active and blank channels. The output from the ADC is for if all 32 channels were used.

Note: The unused pins in each plug still connect back to the ribbon cable inside the chamber.

FeedThru	Plane	Wire Label	Wire #	Plug	Dsub-25pin	Preamplifier Side	ADC Channel
F1	S5	a	37	X	1	J3	33
		b	38	X	2		34
		c	39	X	3		35
		d	40	X	4		36
		e	41	X	5		37
		f	42	X	6		38
		g	43	X	7		39
		h	44	X	8		40
		i	45	X	9		41
				X	10		
				X	11		
				X	12		
				X	13		
				X	14		
				X	15		
	S7	a	55	X	16	J3	50
		b	56	X	17		51
		c	57	X	18		52
		d	58	X	19		53
		e	59	X	20		54
		f	60	X	21		55
		g	61	X	22		56
		h	62	X	23		57
		i	63	X	24		58
				X	25		

assuming J3
to module 2

FeedThru	Plane	Wire Label	Wire #	Plug	Dsub-25pin	Preamplifier Side	ADC Channel
F2	S9	a	73	Y	1	J1	1
		b	74	Y	2		2
		c	75	Y	3		3
		d	76	Y	4		4
		e	77	Y	5		5
		f	78	Y	6		6
		g	79	Y	7		7
		h	80	Y	8		8
		i	81	Y	9		9
				Y	10		
				Y	11		
				Y	12		
				Y	13		
				Y	14		
				Y	15		
	S11	a	91	Y	16	J1	10
		b	92	Y	17		11
		c	93	Y	18		12
		d	94	Y	19		21
		e	95	Y	20		22
		f	96	Y	21		23
		g	97	Y	22		24
		h	98	Y	23		25
		i	99	Y	24		26
					25		

Assuming J1
to Module1

FeedThru	Plane	Wire Label	Wire #	Plug	Dsub-25pin	Preamplifier Side	ADC Channel
F2	S13	a	109	Z	1	J3	33
		b	110	Z	2		34
		c	111	Z	3		35
		d	112	Z	4		36
		e	113	Z	5		37
		f	114	Z	6		38
		g	115	Z	7		39
		h	116	Z	8		40
		i	117	Z	9		41
				Z	10		
				Z	11		
				Z	12		
				Z	13		
				Z	14		
				Z	15		
	S15	a	127	Z	16	J3	50
		b	128	Z	17		51
		c	129	Z	18		52
		d	130	Z	19		53
		e	131	Z	20		54
		f	132	Z	21		55
		g	133	Z	22		56
		h	134	Z	23		57
		i	135	Z	24		58
				Z	25		

assuming J3
to module 2

FeedThru	Plane	Wire Label	Wire #	Plug	Dsub-25pin	Preamp Side	ADC Channel
F3	S2	a	10	V	1	J1	1
		b	11	V	2		2
		c	12	V	3		3
		d	13	V	4		4
		e	14	V	5		5
		f	15	V	6		6
		g	16	V	7		7
		h	17	V	8		8
		i	18	V	9		9
				V	10		
				V	11		
				V	12		
				V	13		
				V	14		
				V	15		
	S4	a	28	V	16	J1	10
		b	29	V	17		11
		c	30	V	18		12
		d	31	V	19		21
		e	32	V	20		22
		f	33	V	21		23
		g	34	V	22		24
		h	35	V	23		25
		i	36	V	24		26
					25		

Assuming J1
to Module1

FeedThru	Plane	Wire Label	Wire #	Plug	Dsub-25pin	Preamplifier Side	ADC Channel
F3	S6	a	46	T	1	J3	33
		b	47	T	2		34
		c	48	T	3		35
		d	49	T	4		36
		e	50	T	5		37
		f	51	T	6		38
		g	52	T	7		39
		h	53	T	8		40
		i	54	T	9		41
				T	10		
				T	11		
				T	12		
				T	13		
				T	14		
				T	15		
	S8	a	64	T	16	J3	50
		b	65	T	17		51
		c	66	T	18		52
		d	67	T	19		53
		e	68	T	20		54
		f	69	T	21		55
		g	70	T	22		56
		h	71	T	23		57
		i	72	T	24		58
				T	25		

assuming J3
to module 2

FeedThru	Plane	Wire Label	Wire #	Plug	Dsub-25pin	Preamplifier Side	ADC Channel
F4	S10	a	82	H	1	J1	1
		b	83	H	2		2
		c	84	H	3		3
		d	85	H	4		4
		e	86	H	5		5
		f	87	H	6		6
		g	88	H	7		7
		h	89	H	8		8
		i	90	H	9		9
				H	10		
				H	11		
				H	12		
				H	13		
				H	14		
				H	15		
	S12	a	100	H	16	J1	10
		b	101	H	17		11
		c	102	H	18		12
		d	103	H	19		21
		e	104	H	20		22
		f	105	H	21		23
		g	106	H	22		24
		h	107	H	23		25
		i	108	H	24		26
					25		

Assuming J1
to Module1

FeedThru	Plane	Wire Label	Wire #	Plug	Dsub-25pin	Preamplifier Side	ADC Channel
F4	S14	a	118	A	1	J3	33
		b	119	A	2		34
		c	120	A	3		35
		d	121	A	4		36
		e	122	A	5		37
		f	123	A	6		38
		g	124	A	7		39
		h	125	A	8		40
		i	126	A	9		41
				A	10		
				A	11		
				A	12		
				A	13		
				A	14		
				A	15		
	S16	a	136	A	16	J3	50
		b	137	A	17		51
		c	138	A	18		52
		d	139	A	19		53
		e	140	A	20		54
		f	141	A	21		55
		g	142	A	22		56
		h	143	A	23		57
		i	144	A	24		58
				A	25		

assuming J3
to module 2