

Muon Monitor Chamber Map

<b>Muon Monitor Chamber Map</b>								
<b>Hardware Pixels</b>		<b>Software Pixels</b>						
MM3; MM1 and MM2 prior to August 2010	MM1 and MM2 after August 2010							
<u>"Pixel"</u>	<u>"Pixel"</u>	<u>"Pixel"</u>	<u>Tube</u>	<u>(Row, Column)</u>	<u>Acnet Index</u>	<u>Channel</u>	<u>SWIC plane</u>	<u>SWIC wire #</u>
9	1	0	1	(1,1)	152	48	V	1
8	2	1	1	(2,1)	153	49	V	2
7	3	2	1	(3,1)	154	50	V	3
6	4	3	1	(4,1)	155	51	V	4
5	5	4	1	(5,1)	156	52	V	5
4	6	5	1	(6,1)	157	53	V	6
3	7	6	1	(7,1)	158	54	V	7
2	8	7	1	(8,1)	159	55	V	8
1	9	8	1	(9,1)	160	56	V	9
18	10	9	2	(1,2)	161	57	V	10
17	11	10	2	(2,2)	162	58	V	11
16	12	11	2	(3,2)	163	59	V	12
15	13	12	2	(4,2)	164	60	V	13
14	14	13	2	(5,2)	165	61	V	14
13	15	14	2	(6,2)	166	62	V	15
12	16	15	2	(7,2)	167	63	V	16
11	17	16	2	(8,2)	168	64	V	17
10	18	17	2	(9,2)	169	65	V	18
27	19	18	3	(1,3)	170	66	V	19
26	20	19	3	(2,3)	171	67	V	20
25	21	20	3	(3,3)	172	68	V	21
24	22	21	3	(4,3)	173	69	V	22
23	23	22	3	(5,3)	174	70	V	23
22	24	23	3	(6,3)	175	71	V	24
21	25	24	3	(7,3)	176	72	V	25
20	26	25	3	(8,3)	177	73	V	26
19	27	26	3	(9,3)	178	74	V	27
36	28	27	4	(1,4)	179	75	V	28
35	29	28	4	(2,4)	180	76	V	29

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34	30	29	4	(3,4)	181	77	V	30
33	31	30	4	(4,4)	182	78	V	31
32	32	31	4	(5,4)	183	79	V	32
31	33	32	4	(6,4)	184	80	V	33
30	34	33	4	(7,4)	185	81	V	34
29	35	34	4	(8,4)	186	82	V	35
28	36	35	4	(9,4)	187	83	V	36
45	37	36	5	(1,5)	188	84	V	37
44	38	37	5	(2,5)	189	85	V	38
43	39	38	5	(3,5)	190	86	V	39
42	40	39	5	(4,5)	191	87	V	40
41	41	40	5	(5,5)	192	88	V	41
40	42	41	5	(6,5)	193	89	V	42
39	43	42	5	(7,5)	194	90	V	43
38	44	43	5	(8,5)	195	91	V	44
37	45	44	5	(9,5)	196	92	V	45
54	46	45	6	(1,6)	197	93	V	46
53	47	46	6	(2,6)	198	94	V	47
52	48	47	6	(3,6)	199	95	V	48
51	49	48	6	(4,6)	104	0	H	1
50	50	49	6	(5,6)	105	1	H	2
49	51	50	6	(6,6)	106	2	H	3
48	52	51	6	(7,6)	107	3	H	4
47	53	52	6	(8,6)	108	4	H	5
46	54	53	6	(9,6)	109	5	H	6
63	55	54	7	(1,7)	110	6	H	7
62	56	55	7	(2,7)	111	7	H	8
61	57	56	7	(3,7)	112	8	H	9
60	58	57	7	(4,7)	113	9	H	10
59	59	58	7	(5,7)	114	10	H	11
58	60	59	7	(6,7)	115	11	H	12
57	61	60	7	(7,7)	116	12	H	13
56	62	61	7	(8,7)	117	13	H	14
55	63	62	7	(9,7)	118	14	H	15
72	64	63	8	(1,8)	119	15	H	16
71	65	64	8	(2,8)	120	16	H	17
70	66	65	8	(3,8)	121	17	H	18

Muon Monitor Chamber Map

69	67	66	8	(4,8)	122	18	H	19	
68	68	67	8	(5,8)	123	19	H	20	
67	69	68	8	(6,8)	124	20	H	21	
66	70	69	8	(7,8)	125	21	H	22	
65	71	70	8	(8,8)	126	22	H	23	
64	72	71	8	(9,8)	127	23	H	24	
81	73	72	9	(1,9)	128	24	H	25	
80	74	73	9	(2,9)	129	25	H	26	
79	75	74	9	(3,9)	130	26	H	27	
78	76	75	9	(4,9)	131	27	H	28	
77	77	76	9	(5,9)	132	28	H	29	
76	78	77	9	(6,9)	133	29	H	30	
75	79	78	9	(7,9)	134	30	H	31	
74	80	79	9	(8,9)	135	31	H	32	
73	81	80	9	(9,9)	136	32	H	33	
					137	33	H	34	Unused
					138	34	H	35	Unused
					139	35	H	36	Unused
					140	36	H	37	Unused
					141	37	H	38	Unused
					142	38	H	39	Unused
					143	39	H	40	Unused
					144	40	H	41	Unused
					145	41	H	42	Unused
					146	42	H	43	Unused
					147	43	H	44	Unused
					148	44	H	45	Unused
					149	45	H	46	Unused
					150	46	H	47	Unused
					151	47	H	48	Unused

## Muon Monitor Map Diagram

### Muon Monitor Map Diagram

### Back of Swic Scanner

SWIC Plane: Vertical (V)

Wire #	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
												grounds												
Wire #	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
												grounds												

SWIC Plane: Horizontal (H)

24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
												grounds												
48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	
												grounds												

### Hardware Pixels

MM3; MM1 and MM2 prior to August 2010

(pixels go from bottom to top)

MUON MONITOR "Pixels" (seen from beams eye view)

		1	2	3	4	5	6	7	8	9	
Tube #, Column											
Row											
1	upper left	9	18	27	36	45	54	63	72	81	upper right
2		8	17	26	35	44	53	62	73	82	
3		7	16	25	34	43	52	61	74	83	
4		6	15	24	33	42	51	60	75	84	
5		5	14	23	32	41	50	59	76	85	
6		4	13	22	31	40	49	58	77	86	
7		3	12	21	30	39	48	57	78	87	
8		2	11	20	29	38	47	56	79	88	
9	lower left	1	10	19	28	37	46	55	64	73	lower right
		hv feed throughs are here									

MM1 and MM2 after August 2010

(pixels go from top to bottom)

MUON MONITOR "Pixels" (seen from beams eye view)

		1	2	3	4	5	6	7	8	9	
Tube #, Column											
Row											
1	upper left	1	10	19	28	37	46	55	64	73	upper right
2		2	11	20	29	38	47	56	65	74	
3		3	12	21	30	39	48	57	66	75	
4		4	13	22	31	40	49	58	67	76	
5		5	14	23	32	41	50	59	68	77	
6		6	15	24	33	42	51	60	69	78	
7		7	16	25	34	43	52	61	70	79	
8		8	17	26	35	44	53	62	71	80	
9	lower left	9	18	27	36	45	54	63	72	81	lower right
		hv feed throughs are here									

## Muon Monitor Map Diagram

### Software Pixels

MUON MONITOR "Pixels" (seen from beams eye view)

Tube #, Column	1	2	3	4	5	6	7	8	9	
Row										
1 upper left	0	9	18	27	36	45	54	63	72	upper right
2	1	10	19	28	37	46	55	64	73	
3	2	11	20	29	38	47	56	65	74	
4	3	12	21	30	39	48	57	66	75	
5	4	13	22	31	40	49	58	67	76	
6	5	14	23	32	41	50	59	68	77	
7	6	15	24	33	42	51	60	69	78	
8	7	16	25	34	43	52	61	70	79	
9 lower left	8	17	26	35	44	53	62	71	80	lower right

hv feed throughs are here

### Channels

MUON MONITOR "Channels" (seen from beams eye view)

Tube #, Column	1	2	3	4	5	6	7	8	9	
Row										
1 upper left	48	57	66	75	84	93	6	15	24	upper right
2	49	58	67	76	85	94	7	16	25	
3	50	59	68	77	86	95	8	17	26	
4	51	60	69	78	87	0	9	18	27	
5	52	61	70	79	88	1	10	19	28	
6	53	62	71	80	89	2	11	20	29	
7	54	63	72	81	90	3	12	21	30	
8	55	64	73	82	91	4	13	22	31	
9 lower left	56	65	74	83	92	5	14	23	32	lower right

hv feed throughs are here

### High Voltage Map

MUON MONITOR Channels(seen from beams eye view)

One Droge provides the HV to 3 columns, but each column(tube) connects to the HV through its own HV cable. That fan-out occurs at the HV distribution box in the electronics rack. The fan-out to each chamber occurs at the tube.

Tube #, Column	E:			E:			E:			# = 1,2 or 3		
	MM#HV1	MM#HV2	MM#HV3	1	2	3	4	5	6		7	8
Row												
1 upper left	48	57	66	75	84	93	6	15	24	upper right		
2	49	58	67	76	85	94	7	16	25			
3	50	59	68	77	86	95	8	17	26			
4	51	60	69	78	87	0	9	18	27			
5	52	61	70	79	88	1	10	19	28			
6	53	62	71	80	89	2	11	20	29			
7	54	63	72	81	90	3	12	21	30			
8	55	64	73	82	91	4	13	22	31			
9 lower left	56	65	74	83	92	5	14	23	32	lower right		

hv feed throughs are here

# Muon Monitor Map Diagram

## **ACNET Index**

MUON MONITOR "Acnet Index" (seen from beams eye view)

Tube #, Column		1	2	3	4	5	6	7	8	9	
Row											
1	upper left	152	161	170	179	188	197	110	119	128	upper right
2		153	162	171	180	189	198	111	120	129	
3		154	163	172	181	190	199	112	121	130	
4		155	164	173	182	191	104	113	122	131	
5		156	165	174	183	192	105	114	123	132	
6		157	166	175	184	193	106	115	124	133	
7		158	167	176	185	194	107	116	125	134	
8		159	168	177	186	195	108	117	126	135	
9	lower left	160	169	178	187	196	109	118	127	136	lower right

hv feed throughs are here

## Muon Monitor Map Diagram

Hadron Monitor Chamber Map

<b>Hadron Monitor Chamber Map</b>							
<b>Hardware Pixels</b>		<b>Software Pixels</b>					
prior to Nov 2007	after Nov 2007						
<u>"Pixel"</u>	<u>"Pixel"</u>	<u>"Pixel"</u>	<u>(Row, Column)</u>	<u>Acnet Index</u>	<u>Channel</u>	<u>SWIC plane</u>	<u>SWIC wire #</u>
1	49	0	(1,1)	152	48	V	1
2	48	1	(1,2)	153	49	V	2
3	47	2	(1,3)	154	50	V	3
4	46	3	(1,4)	155	51	V	4
5	45	4	(1,5)	156	52	V	5
6	44	5	(1,6)	157	53	V	6
7	43	6	(1,7)	158	54	V	7
8	42	7	(2,1)	159	55	V	8
9	41	8	(2,2)	160	56	V	9
10	40	9	(2,3)	161	57	V	10
11	39	10	(2,4)	162	58	V	11
12	38	11	(2,5)	163	59	V	12
13	37	12	(2,6)	164	60	V	13
14	36	13	(2,7)	165	61	V	14
15	35	14	(3,1)	166	62	V	15
16	34	15	(3,2)	167	63	V	16
17	33	16	(3,3)	168	64	V	17
18	32	17	(3,4)	169	65	V	18
19	31	18	(3,5)	170	66	V	19
20	30	19	(3,6)	171	67	V	20
21	29	20	(3,7)	172	68	V	21
22	28	21	(4,1)	173	69	V	22
23	27	22	(4,2)	174	70	V	23
24	26	23	(4,3)	175	71	V	24
25	25	24	(4,4)	176	72	V	25
26	24	25	(4,5)	177	73	V	26
27	23	26	(4,6)	178	74	V	27
28	22	27	(4,7)	179	75	V	28
29	21	28	(5,1)	180	76	V	29
30	20	29	(5,2)	181	77	V	30
31	19	30	(5,3)	182	78	V	31



### Hadron Monitor Chamber Map

32	18	31	(5,4)	183	79	V	32
33	17	32	(5,5)	184	80	V	33
34	16	33	(5,6)	185	81	V	34
35	15	34	(6,7)	186	82	V	35
36	14	35	(6,1)	187	83	V	36
37	13	36	(6,2)	188	84	V	37
38	12	37	(6,3)	189	85	V	38
39	11	38	(6,4)	190	86	V	39
40	10	39	(6,5)	191	87	V	40
41	9	40	(6,6)	192	88	V	41
42	8	41	(6,7)	193	89	V	42
43	7	42	(7,1)	194	90	V	43
44	6	43	(7,2)	195	91	V	44
45	5	44	(7,3)	196	92	V	45
46	4	45	(7,4)	197	93	V	46
47	3	46	(7,5)	198	94	V	47
48	2	47	(7,6)	199	95	V	48
49	1	48	(7,7)	104	0	H	1
				105	1	H	2 Unused
				106	2	H	3 Unused
				107	3	H	4 Unused
				108	4	H	5 Unused
				109	5	H	6 Unused
				110	6	H	7 Unused
				111	7	H	8 Unused
				112	8	H	9 Unused
				113	9	H	10 Unused
				114	10	H	11 Unused
				115	11	H	12 Unused
				116	12	H	13 Unused
				117	13	H	14 Unused
				118	14	H	15 Unused
				119	15	H	16 Unused
				120	16	H	17 Unused
				121	17	H	18 Unused
				122	18	H	19 Unused
				123	19	H	20 Unused

### Hadron Monitor Chamber Map

				124	20	H	21	Unused
				125	21	H	22	Unused
				126	22	H	23	Unused
				127	23	H	24	Unused
				128	24	H	25	Unused
				129	25	H	26	Unused
				130	26	H	27	Unused
				131	27	H	28	Unused
				132	28	H	29	Unused
				133	29	H	30	Unused
				134	30	H	31	Unused
				135	31	H	32	Unused
				136	32	H	33	Unused
				137	33	H	34	Unused
				138	34	H	35	Unused
				139	35	H	36	Unused
				140	36	H	37	Unused
				141	37	H	38	Unused
				142	38	H	39	Unused
				143	39	H	40	Unused
				144	40	H	41	Unused
				145	41	H	42	Unused
				146	42	H	43	Unused
				147	43	H	44	Unused
				148	44	H	45	Unused
				149	45	H	46	Unused
				150	46	H	47	Unused
				151	47	H	48	Unused

## Hadron Monitor Map Diagram

### Hadron Monitor Map Diagram

### Back of Swic Scanner

SWIC Plane: Vertical (V)

Wire #	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
												grounds												
Wire #	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
												grounds												

SWIC Plane: Horizontal (H)

24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
												grounds												
48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	
												grounds												

### Hardware Pixels

Prior to Nov 2007

HADRON MONITOR "Pixels" (seen from beams eye view)

		1	2	3	4	5	6	7	
Column									
Row									
1	upper left	1	2	3	4	5	6	7	gas line is here upper right
2		8	9	10	11	12	13	14	
3		15	16	17	18	19	20	21	
4		22	23	24	25	26	27	28	
5		29	30	31	32	33	34	35	
6		36	37	38	39	40	41	42	
7	lower left	43	44	45	46	47	48	49	lower right

After to Nov 2007

HADRON MONITOR "Pixels" (seen from beams eye view)

		1	2	3	4	5	6	7	
Column									
Row									
1	upper left	49	48	47	46	45	44	43	gas line is here upper right
2		42	41	40	39	38	37	36	
3		35	34	33	32	31	30	29	
4		28	27	26	25	24	23	22	
5		21	20	19	18	17	16	15	
6		14	13	12	11	10	9	8	
7	lower left	7	6	5	4	3	2	1	lower right

## Hadron Monitor Map Diagram

### Software Pixels

HADRON MONITOR "Pixels" (seen from beams eye view)

Column		1	2	3	4	5	6	7	
Row									gas line is here
1	upper left	0	1	2	3	4	5	6	upper right
2		7	8	9	10	11	12	13	
3		14	15	16	17	18	19	20	
4		21	22	23	24	25	26	27	
5		28	29	30	31	32	33	34	
6		35	36	37	38	39	40	41	
7	lower left	42	43	44	45	46	47	48	lower right

### Channels

HADRON MONITOR "Channels" (seen from beams eye view)

Column		1	2	3	4	5	6	7	
Row									gas line is here
1	upper left	48	49	50	51	52	53	54	upper right
2		55	56	57	58	59	60	61	
3		62	63	64	65	66	67	68	
4		69	70	71	72	73	74	75	
5		76	77	78	79	80	81	82	
6		83	84	85	86	87	88	89	
7	lower left	90	91	92	93	94	95	0	lower right

### High Voltage Map

HADRON MONITOR Channels (seen from beams eye view)

One Droge provides the HV to one row, but each pixel connects to the HV through its own HV cable. The fan-out occurs at the HV distribution box in the electronics rack

Column		1	2	3	4	5	6	7	
Row									gas line is here
E:HMHV1	1 upper left	48	49	50	51	52	53	54	upper right
E:HMHV2	2	55	56	57	58	59	60	61	
E:HMHV3	3	62	63	64	65	66	67	68	
E:HMHV4	4	69	70	71	72	73	74	75	
E:HMHV5	5	76	77	78	79	80	81	82	
E:HMHV6	6	83	84	85	86	87	88	89	
E:HMHV7	7 lower left	90	91	92	93	94	95	0	lower right
E:HMHV8 – Extra									

# Hadron Monitor Map Diagram

## **ACNET Index**

HADRON MONITOR "Pixels" (seen from beams eye view)

Column		1	2	3	4	5	6	7		
Row	1	upper left	152	153	154	155	156	157	158	gas line is here
	2		159	160	161	162	163	164	165	upper right
	3		166	167	168	169	170	171	172	
	4		173	174	175	176	177	178	179	
	5		180	181	182	183	184	185	186	
	6		187	188	189	190	191	192	193	
	7	lower left	194	195	196	197	198	199	0	lower right

## Hadron Monitor Map Diagram