
Cabling plan

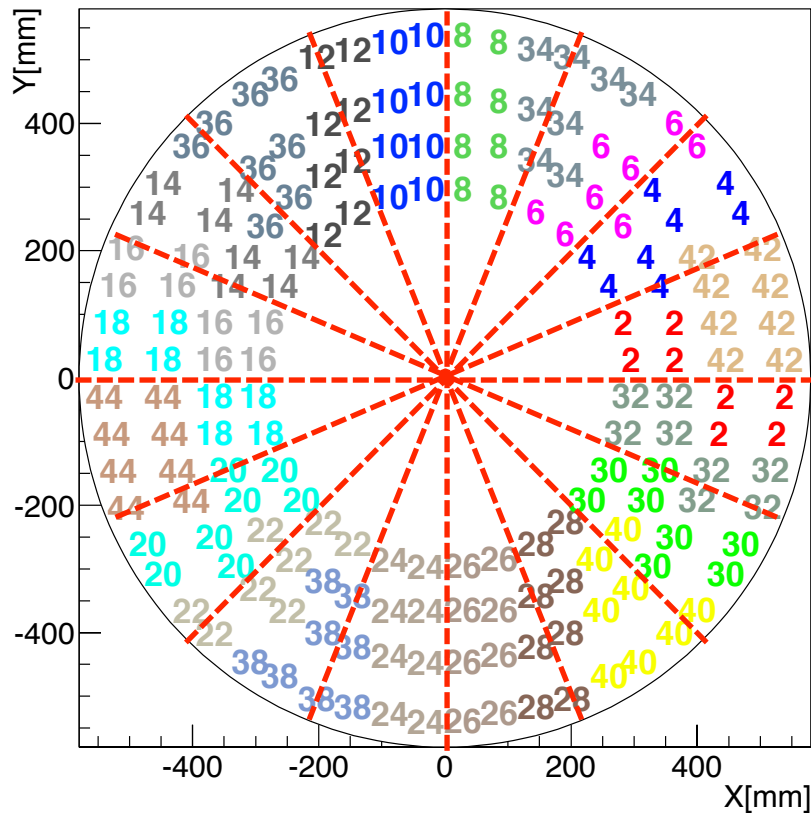
奥村恭幸

(OKUMURA, Yasuyuki)

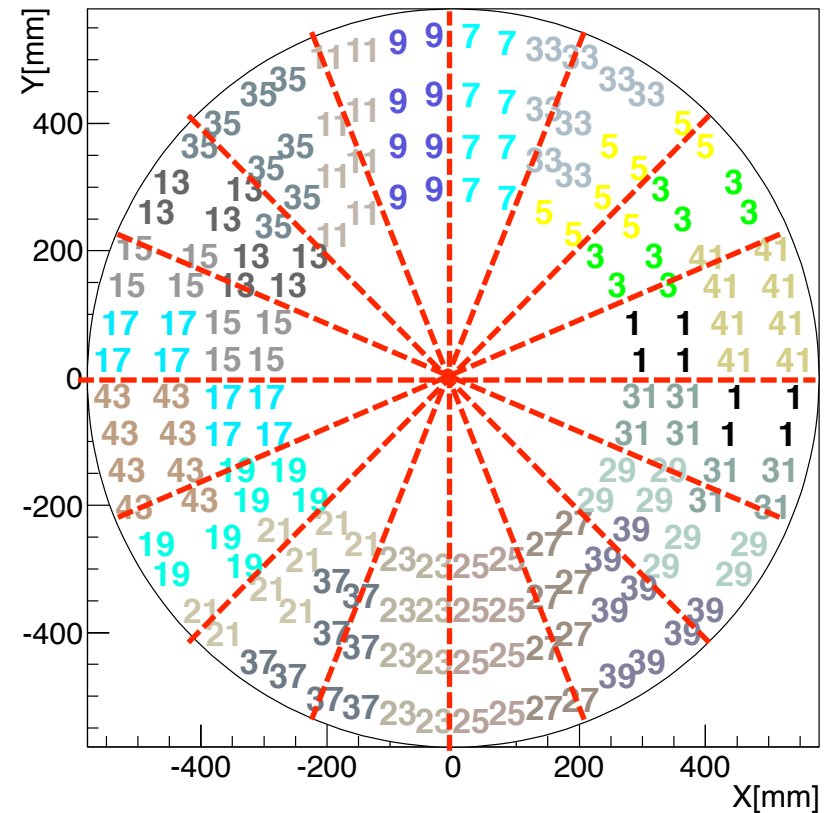
University of Chicago & Fermilab

SCT 1

XY view SCT Barrel A



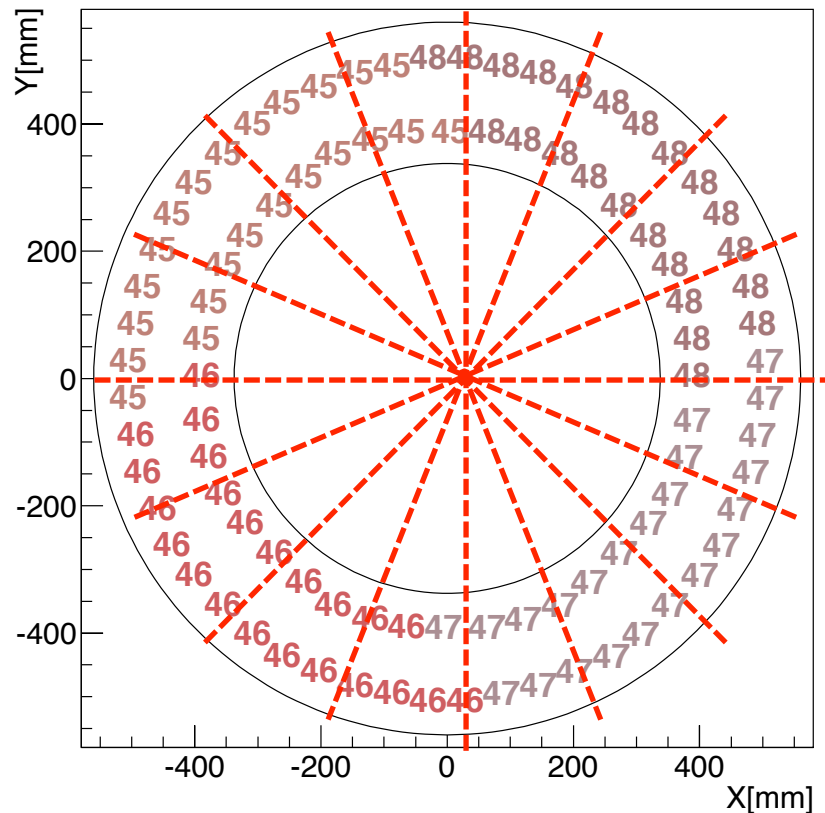
XY view SCT Barrel C



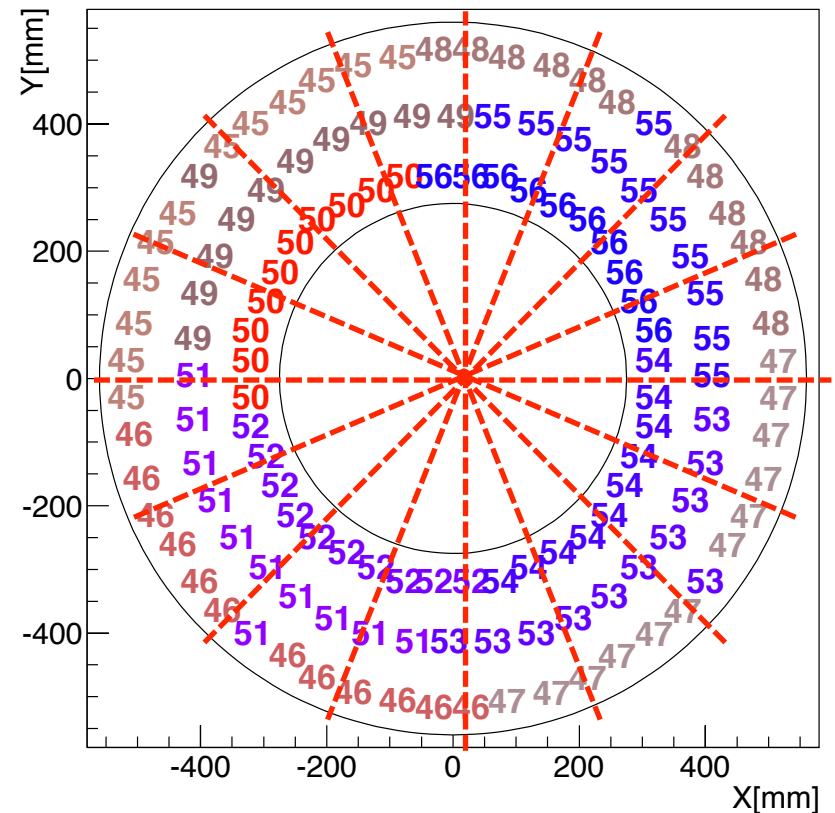
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A (22)	2, 42	4	6, 34	8	10	12, 36	14	16	18, 44	20	22, 38	24	26	28, 40	30	32
C (22)	1, 41	3	5, 33	7	9	11, 35	13	15	17, 43	19	21, 37	23	25	27, 39	29	31

SCT 2

XY view SCT Endcap A Disk 0



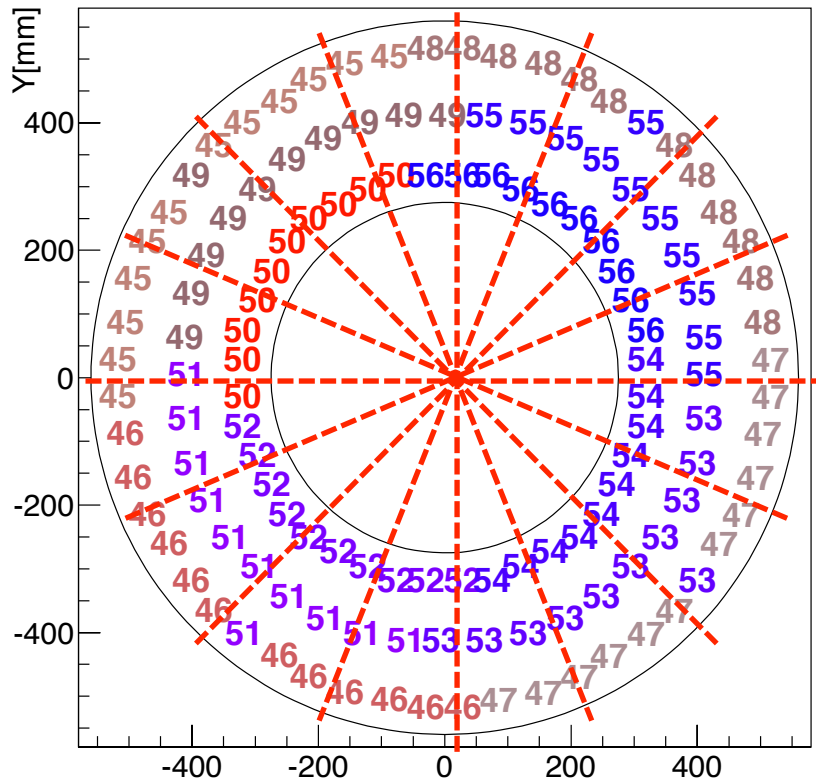
XY view SCT Endcap A Disk 1



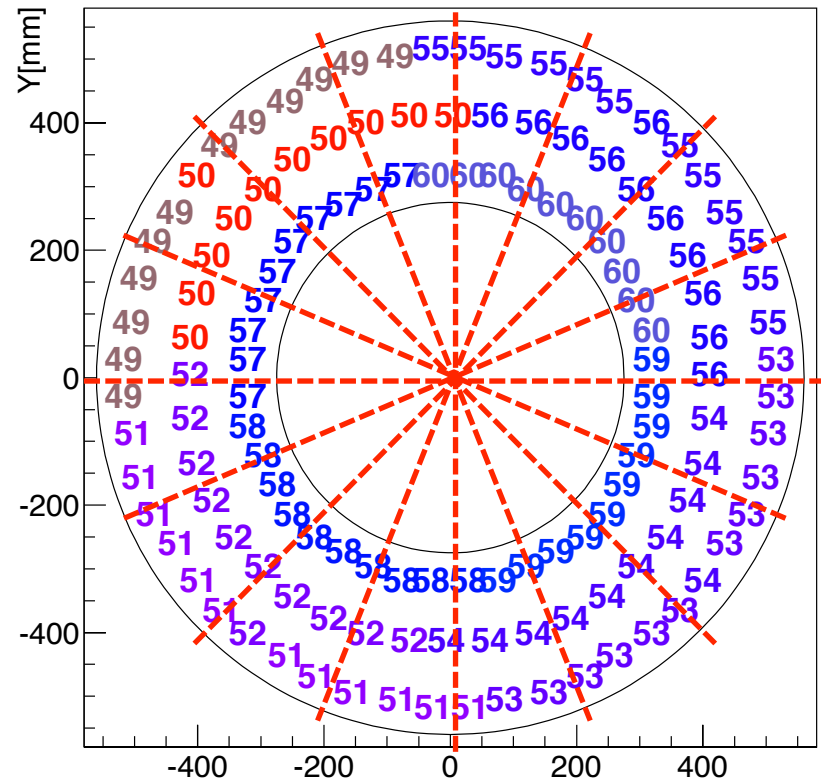
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AD0			48				45				46				47	
AD1 E0	Readout lines are shared with A-Disk0															
AD1 E1/2		55	56				49	50			51	52			53	54

SCT 3

XY view SCT Endcap A Disk 2



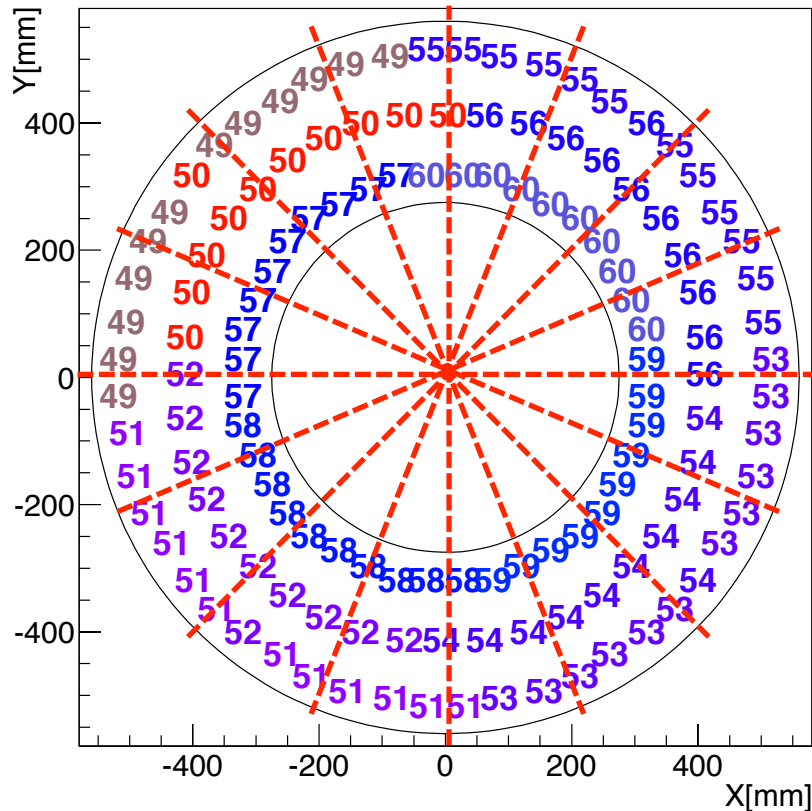
XY view SCT Endcap A Disk 3



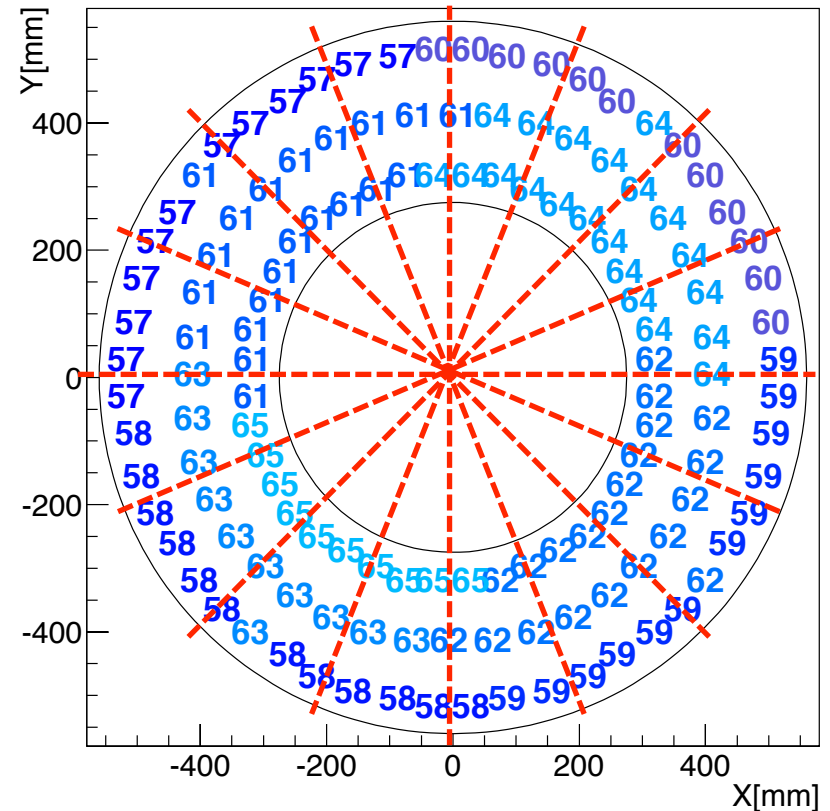
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	m]
AD2 E0	Readout lines are shared with A-Disk0																
AD2 E1/2	Readout lines are shared with A-Disk1 E1/2																
AD3 E0/1	Readout lines are shared with A-Disk1 E1/2																
AD3 E2			60				57				58				59		

SCT 4

XY view SCT Endcap A Disk 4



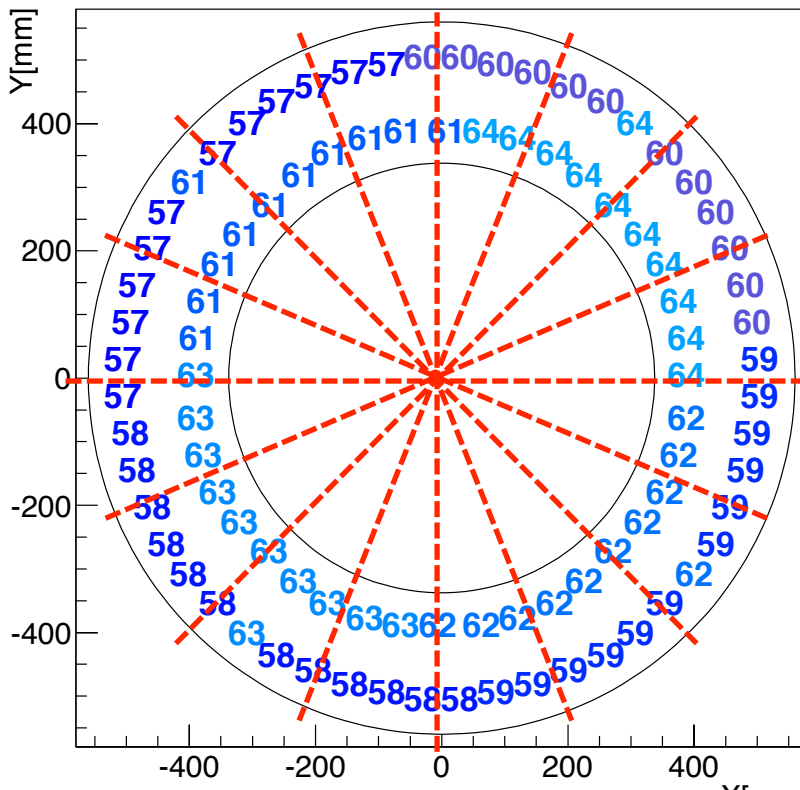
XY view SCT Endcap A Disk 5



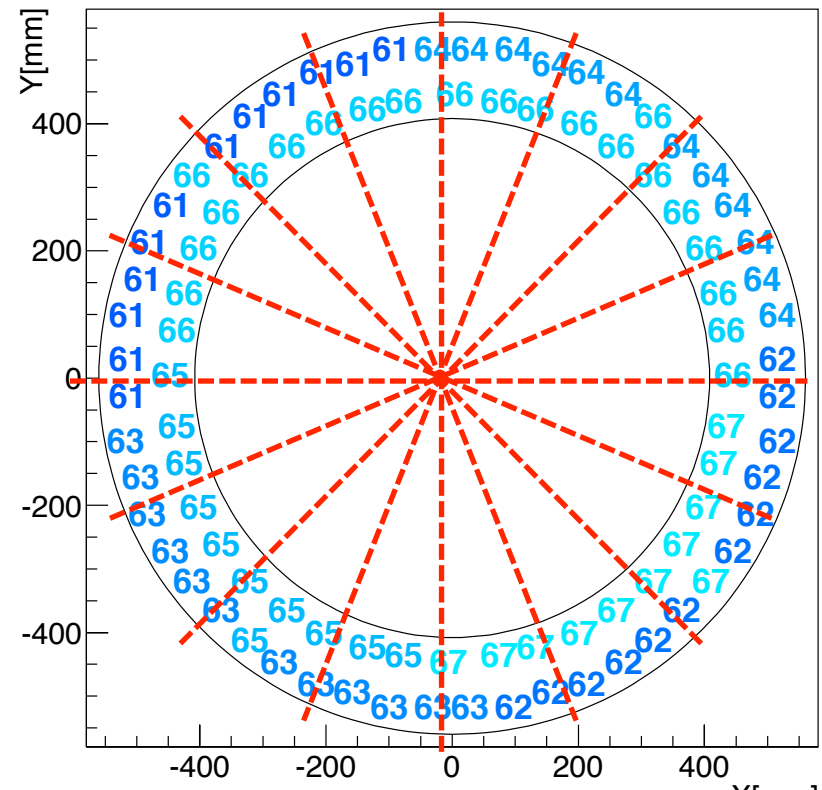
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AD4 E0/1	Readout lines are shared with A-Disk1 E1/2															
AD4 E2	Readout lines are shared with A-Disk3 E2															
AD5 E0	Readout lines are shared with A-Disk3 E2															
AD5 E1/2		64					61			63	65				62	

SCT 5

XY view SCT Endcap A Disk 6



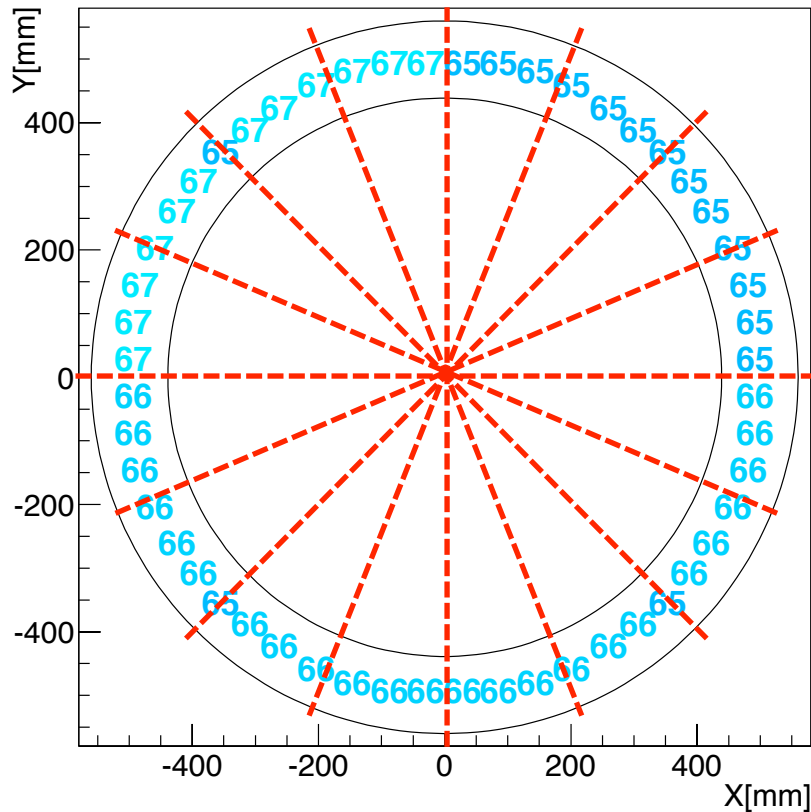
XY view SCT Endcap A Disk 7



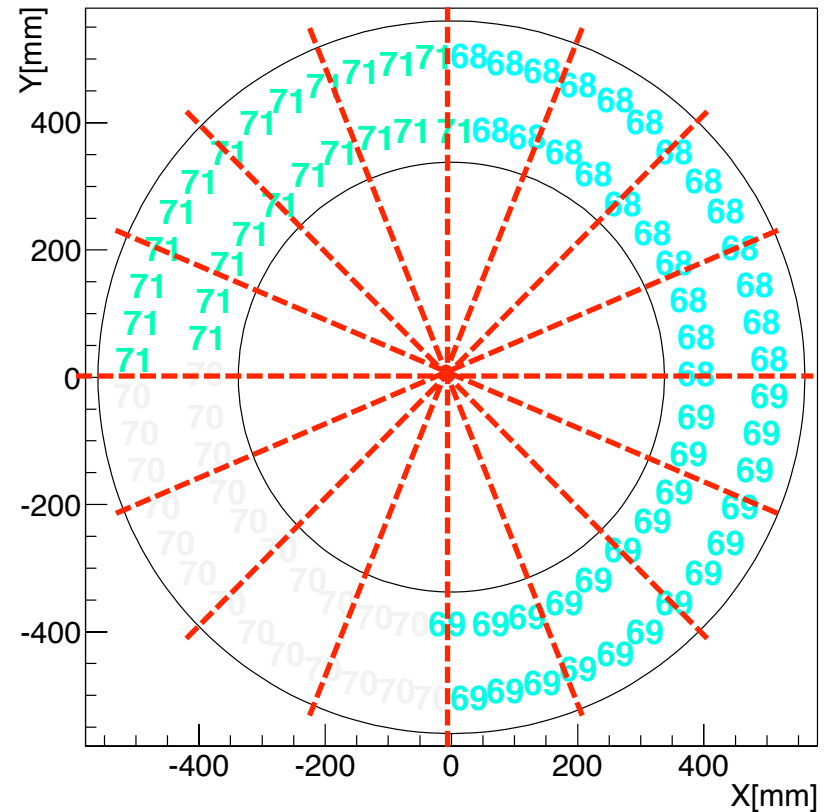
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AD6 E0	Readout lines are shared with A-Disk5 E0															
AD6 E1	Readout lines are shared with A-Disk5 E1/2															
AD7 E0	Readout lines are shared with A-Disk6 E1															
AD7 E1		66								65					67	

SCT 6

XY view SCT Endcap A Disk 8



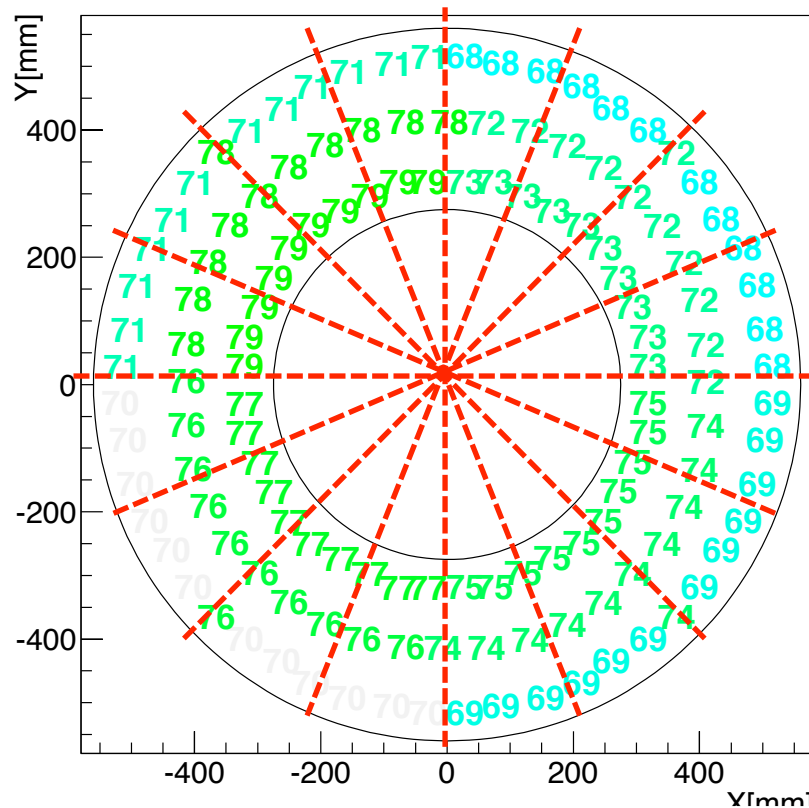
XY view SCT Endcap C Disk 0



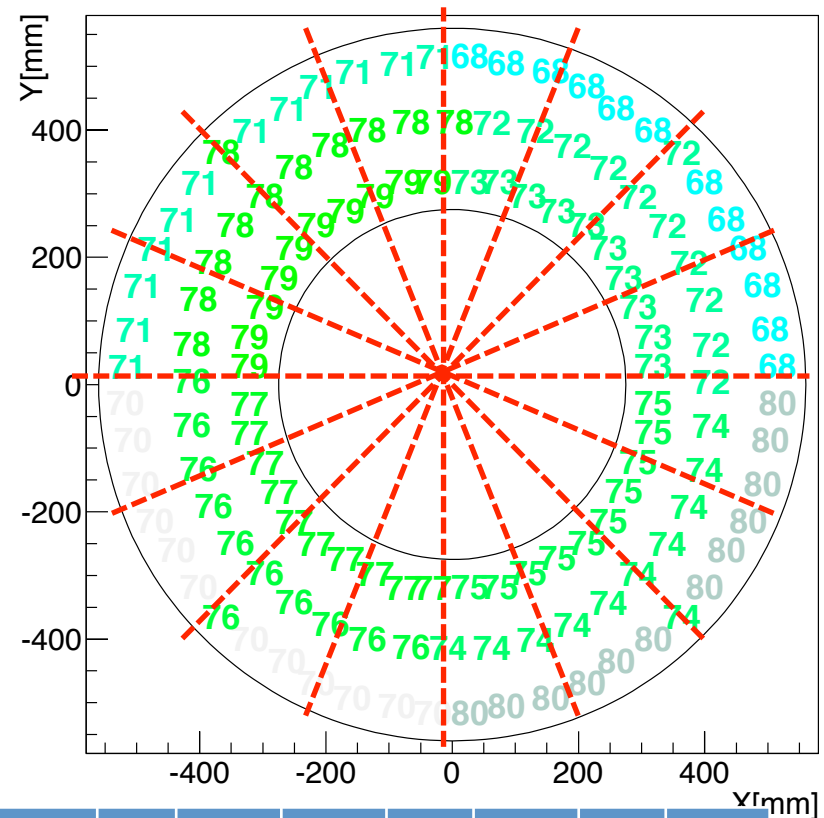
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AD8	Readout lines are shared with A-Disk7 E1															
CD0			68				71				70				69	

SCT 7

XY view SCT Endcap C Disk 1



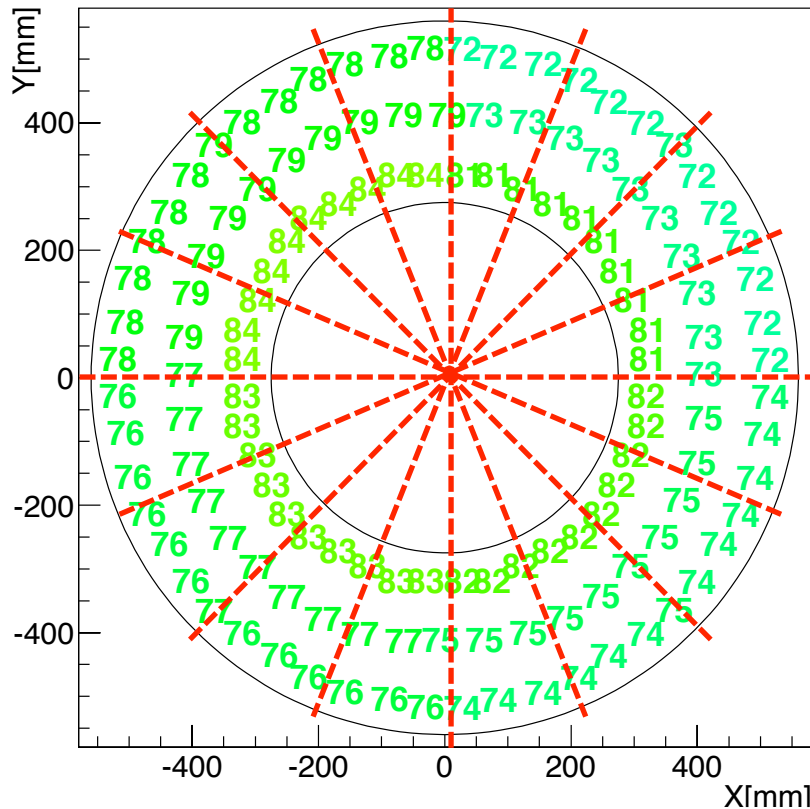
XY view SCT Endcap C Disk 2



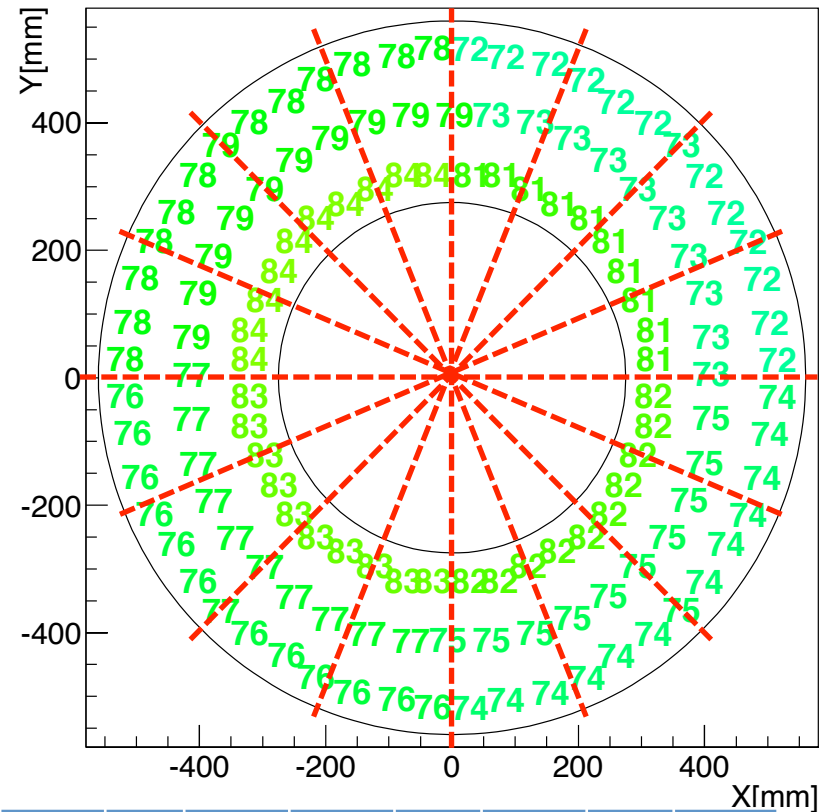
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CD1 E0	Readout lines are shared with C-Disk0															
CD1 E1/2		72	73			78	79			76	77			74	75	
CD2 E0															80	
CD2 E1/2	Readout lines are shared with C-Disk1 E1/2															

SCT 8

XY view SCT Endcap C Disk 3



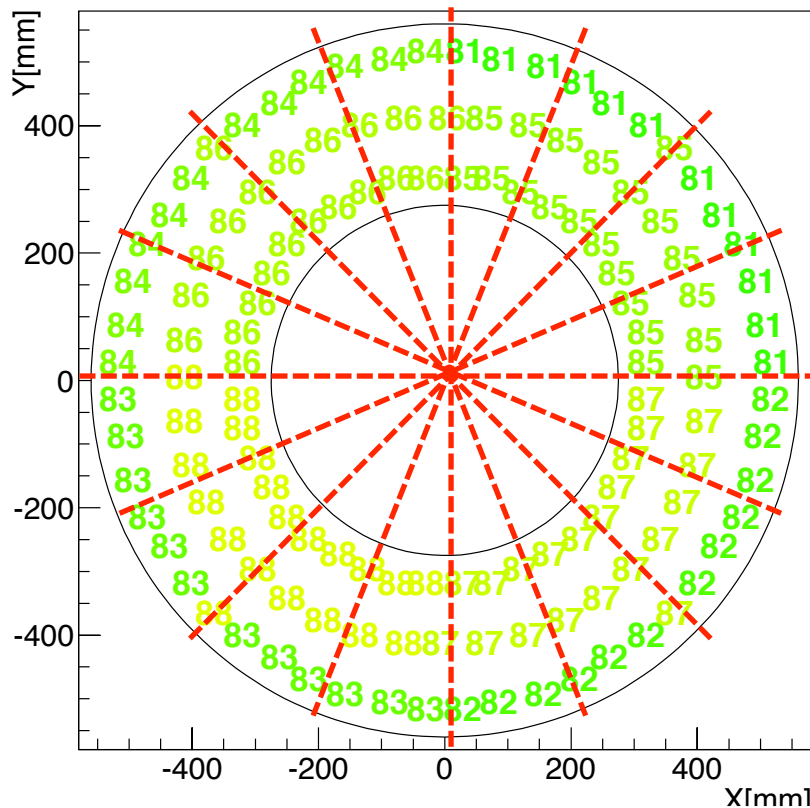
XY view SCT Endcap C Disk 4



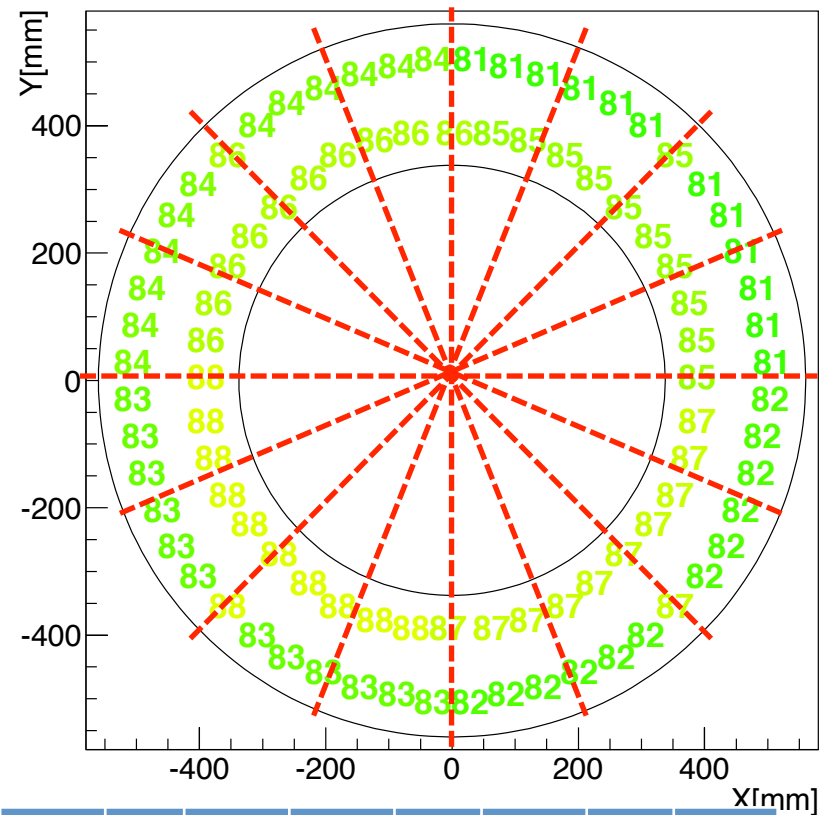
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CD3 E0/1	Readout lines are shared with C-Disk1 E1/2															
CD3 E2			81				84				83				82	
CD4 E0/1	Readout lines are shared with C-Disk1 E1/2															
CD4 E2	Readout lines are shared with C-Disk3 E2															

SCT 9

XY view SCT Endcap C Disk 5



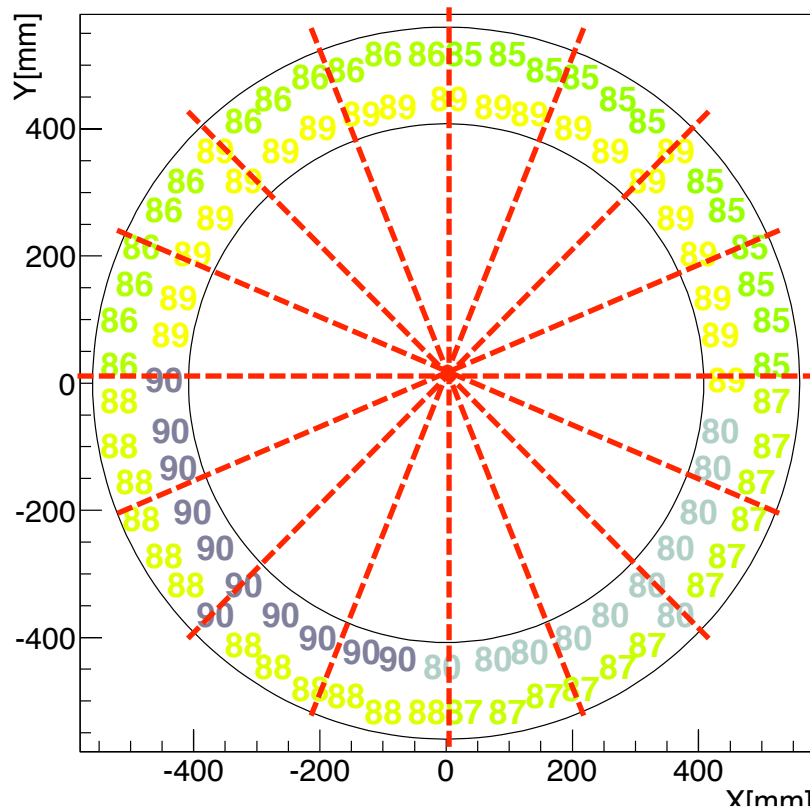
XY view SCT Endcap C Disk 6



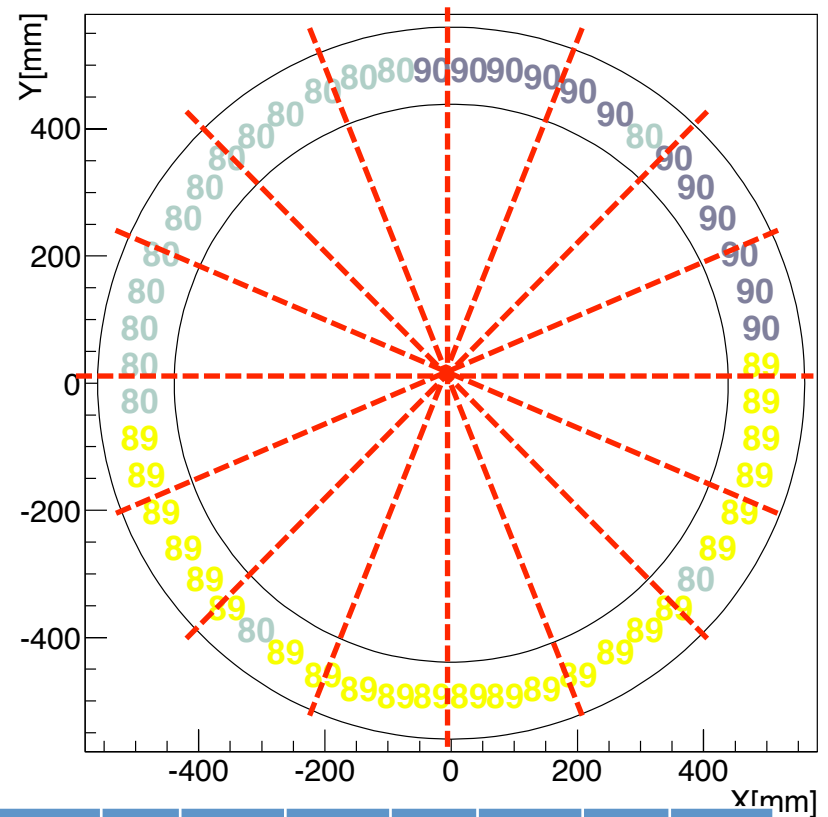
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CD5 E0	Readout lines are shared with C-Disk3 E2															
CD5 E1/2			85				86				88				87	
CD6 E0	Readout lines are shared with C-Disk3 E2															
CD6 E1	Readout lines are shared with C-Disk5 E1/2															

SCT 10

XY view SCT Endcap C Disk 7



XY view SCT Endcap C Disk 8



ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CD7 E0	Readout lines are shared with C-Disk5 E1/2															
CD7 E1/2			89								90					
CD8											89					

SCT Summary 1

ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A (22)	2, 42	4	6, 34	8	10	12, 36	14	16	18, 44	20	22, 38	24	26	28, 40	30	32

ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AD0			48				45				46				47	
AD1 E0	Readout lines are shared with A-Disk0															
AD1 E1/2		55	56			49	50			51	52			53	54	
AD2 E0	Readout lines are shared with A-Disk0															
AD2 E1/2	Readout lines are shared with A-Disk1 E1/2															
AD3 E0/1	Readout lines are shared with A-Disk1 E1/2															
AD3 E2			60				57				58				59	
A04 E0/1	Readout lines are shared with A-Disk1 E1/2															
AD4 E2	Readout lines are shared with A-Disk3 E2															
AD5 E0	Readout lines are shared with A-Disk3 E2															
AD5 E1/2			64				61				63				62	
AD6 E0	Readout lines are shared with A-Disk3 E2															
AD6 E1	Readout lines are shared with A-Disk5 E1/2															
AD7 E0	Readout lines are shared with A-Disk5 E1/2															
AD7 E1			66								65				67	
AD8	Readout lines are shared with A-Disk7 E1															

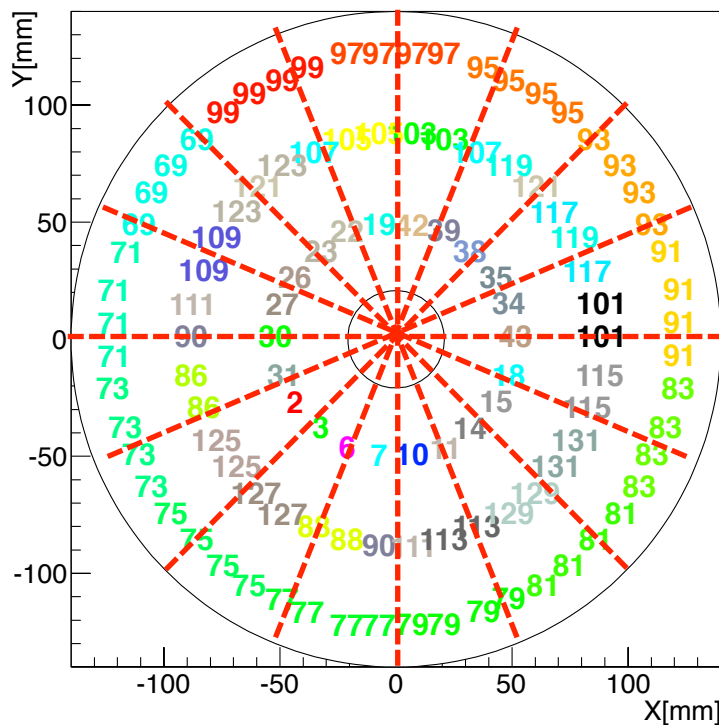
SCT Summary 2

ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C (22)	1, 41	3	5, 33	7	9	11, 35	13	15	17, 43	19	21, 37	23	25	27, 39	29	31

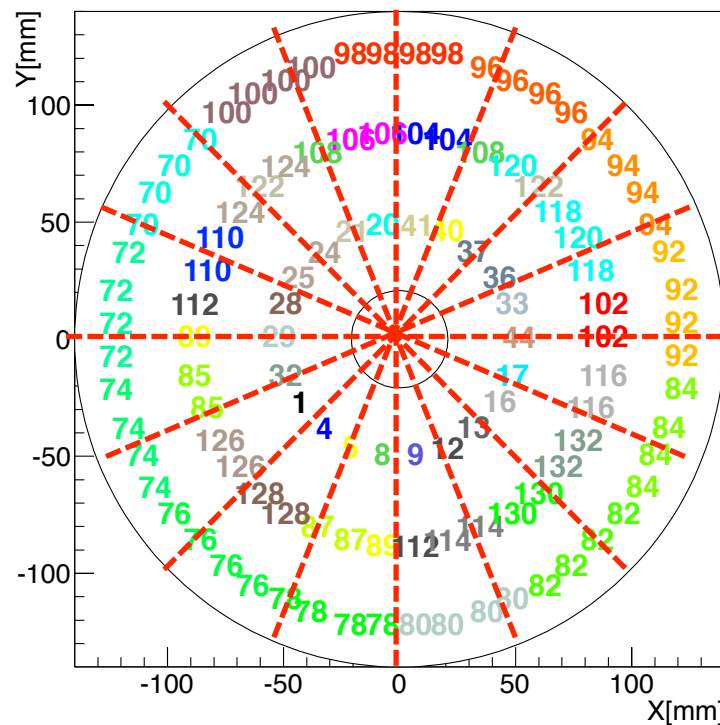
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CD0			68				71				70				69	
CD1 E0	Readout lines are shared with C-Disk0															
CD1 E1/2		72	73			78	79			76	77			74	75	
CD2 E0	Readout lines are (almost) shared with C-Disk0															
CD2 E1/2	Readout lines are shared with C-Disk1 E1/2															
CD3 E0/1	Readout lines are shared with C-Disk1 E1/2															
CD3 E2			81				84				83				82	
CD4 E0/1	Readout lines are shared with C-Disk1 E1/2															
CD4 E2	Readout lines are shared with C-Disk3 E2															
CD5 E0	Readout lines are shared with C-Disk3 E2															
CD5 E1/2			85				86				88				87	
CD6 E0	Readout lines are shared with C-Disk3 E2															
CD6 E1	Readout lines are shared with C-Disk5 E1/2															
CD7 E0	Readout lines are shared with C-Disk5 E1/2															
CD7 E1			89								90				80	
CD8	Readout lines are shared with C-Disk7 E1															

Pixel 1

XY view Pixel Barrel A



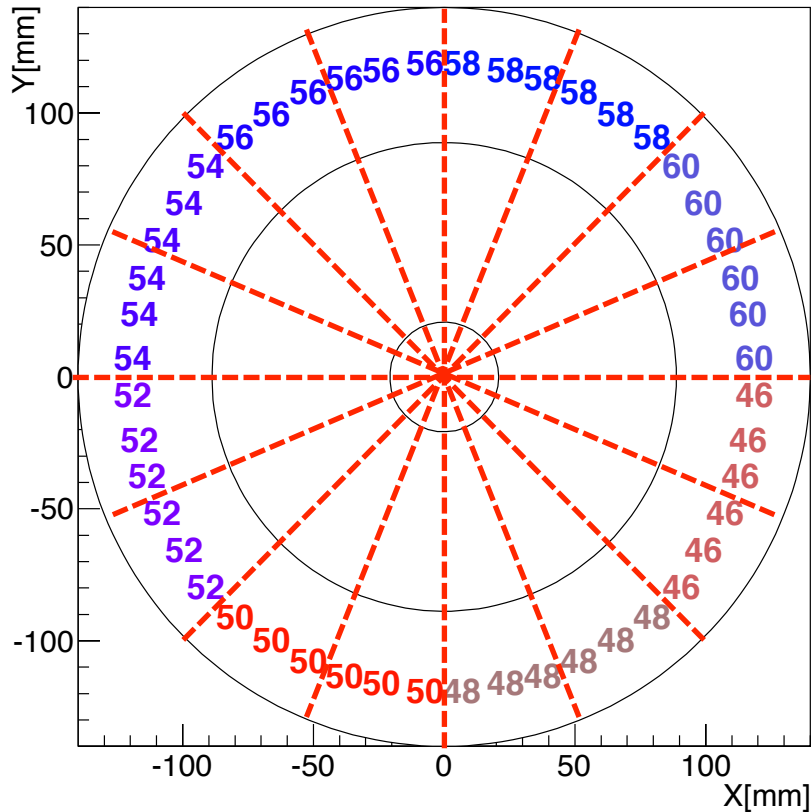
XY view Pixel Barrel C



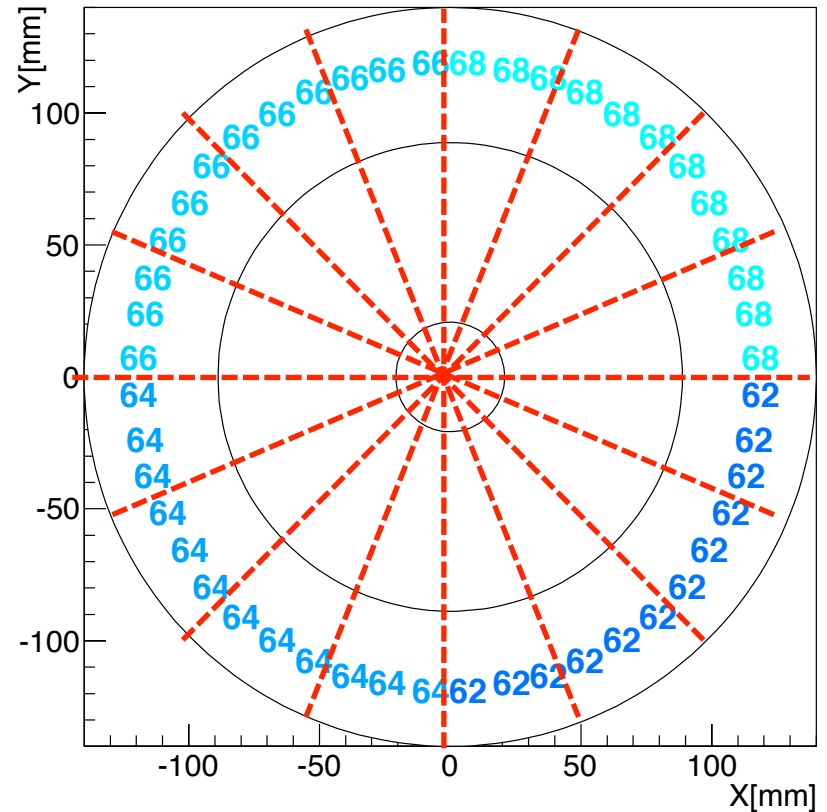
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AL0 (22)	43, 34	35	38, 39	42	19	22, 23	26	27	30, 31	2	3, 6	7	10	11, 14	15	18
AL1 (19)	101	117, 119	121	103	105	107	123	109, 111	86	125	127	88, 90	113	129	131	115
AL2 (13)	91	93	95		97	99	69	71		73	75	77	79	81		83
CL0 (22)	44, 33	36	37, 40	41	20	21, 24	25	28	29, 32	1	4, 5	8	9	12, 13	16	17
CL1 (19)	102	118, 120	122	104	106	108,	124	110, 112	85	126	128	87, 89	114	130	132	116
CL2 (13)	92	94	96		98	100	70	72		74	76	78	80	82		84

Pixel 2

XY view Pixel Endcap A Disk 0



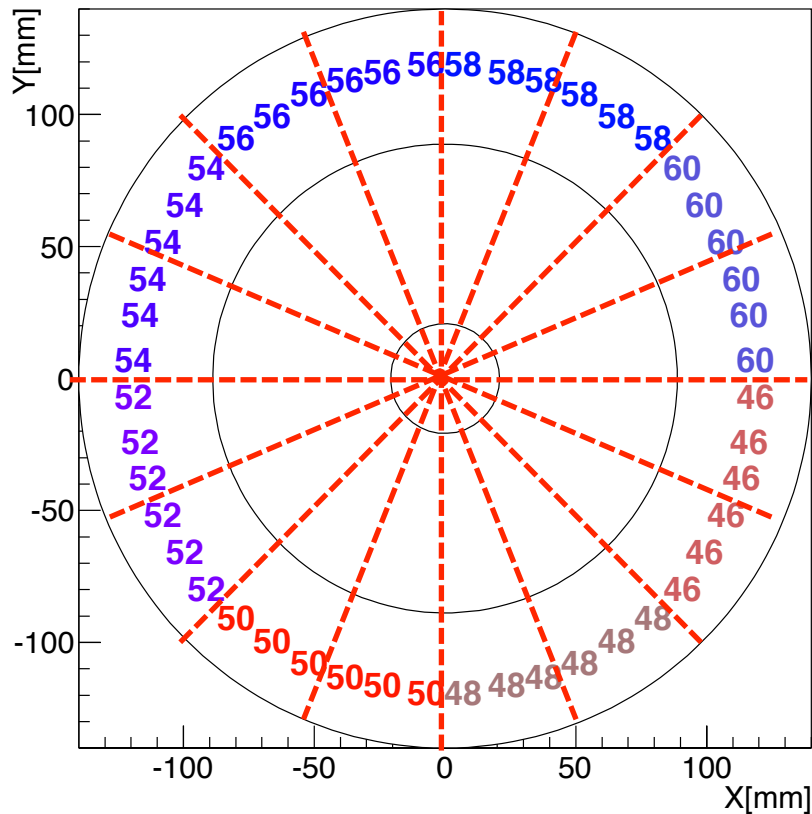
XY view Pixel Endcap A Disk 1



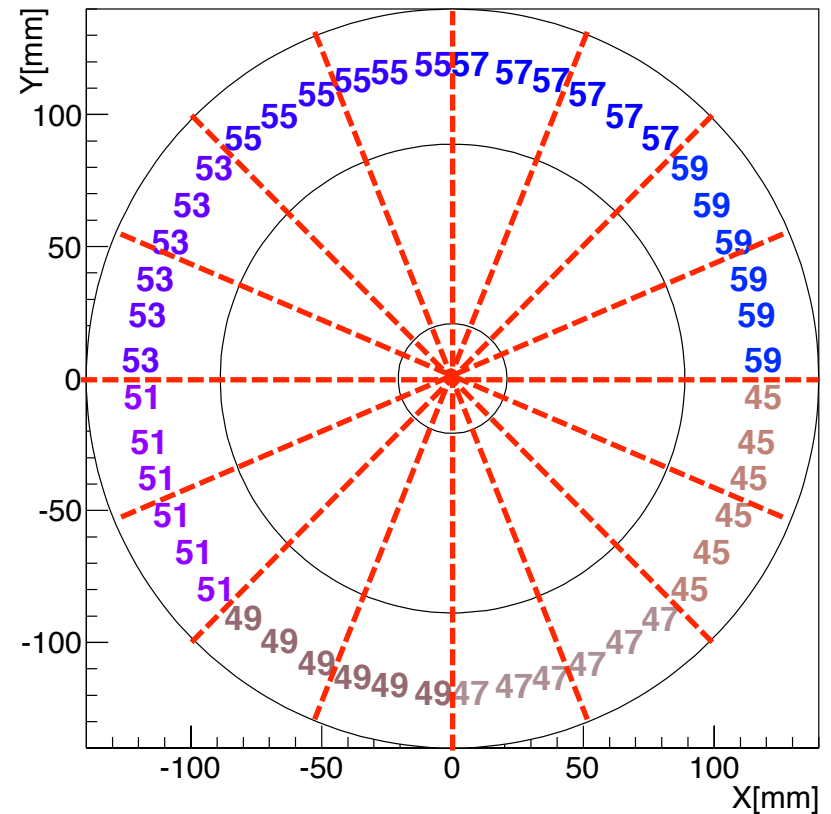
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AD0 (8)	60		58		56		54		52		50		48		46	
AD1 (4)			68				66				64				62	

Pixel 3

XY view Pixel Endcap A Disk 2



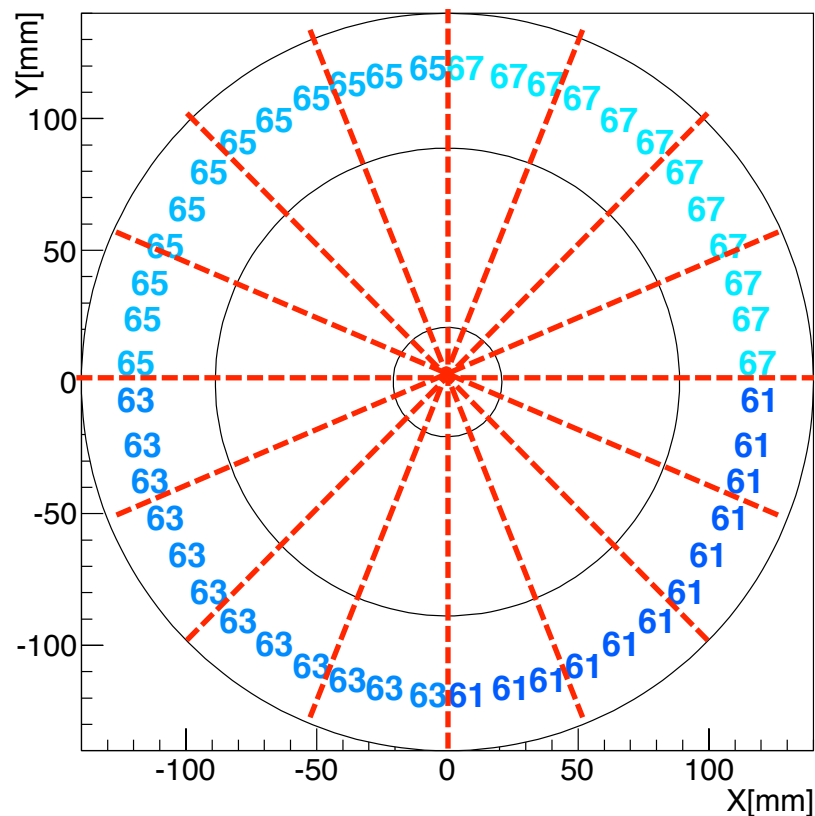
XY view Pixel Endcap C Disk 0



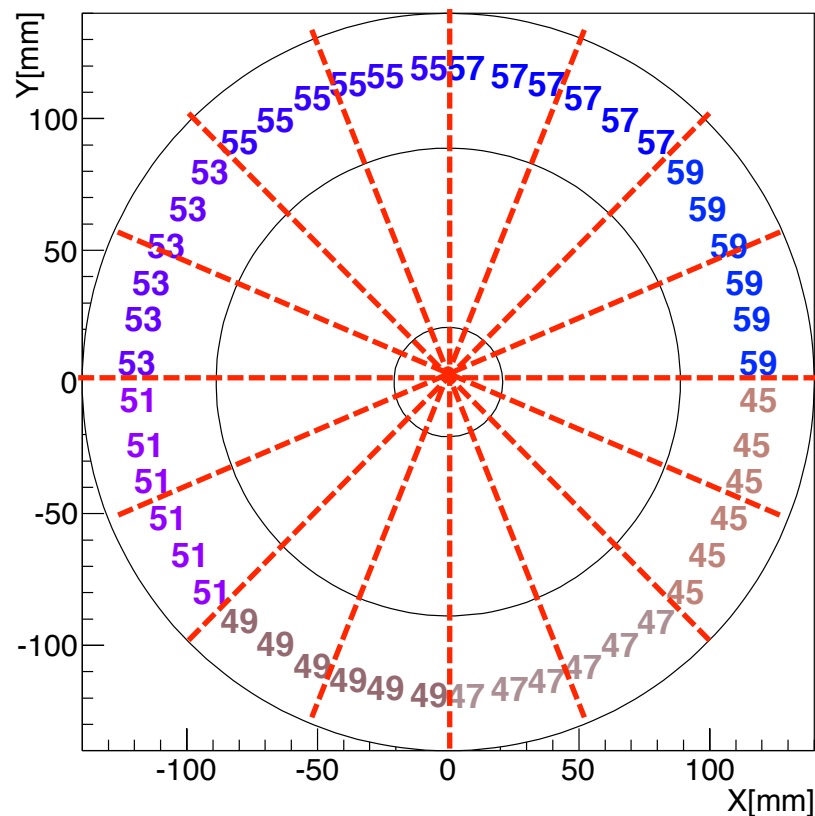
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AD2 (8)	Readout lines are shared with A-Disk 1															
CD1 (8)	59		57		55		53		51		49		47		45	

Pixel 4

XY view Pixel Endcap C Disk 1



XY view Pixel Endcap C Disk 2

[illegible]

Pixel Summary

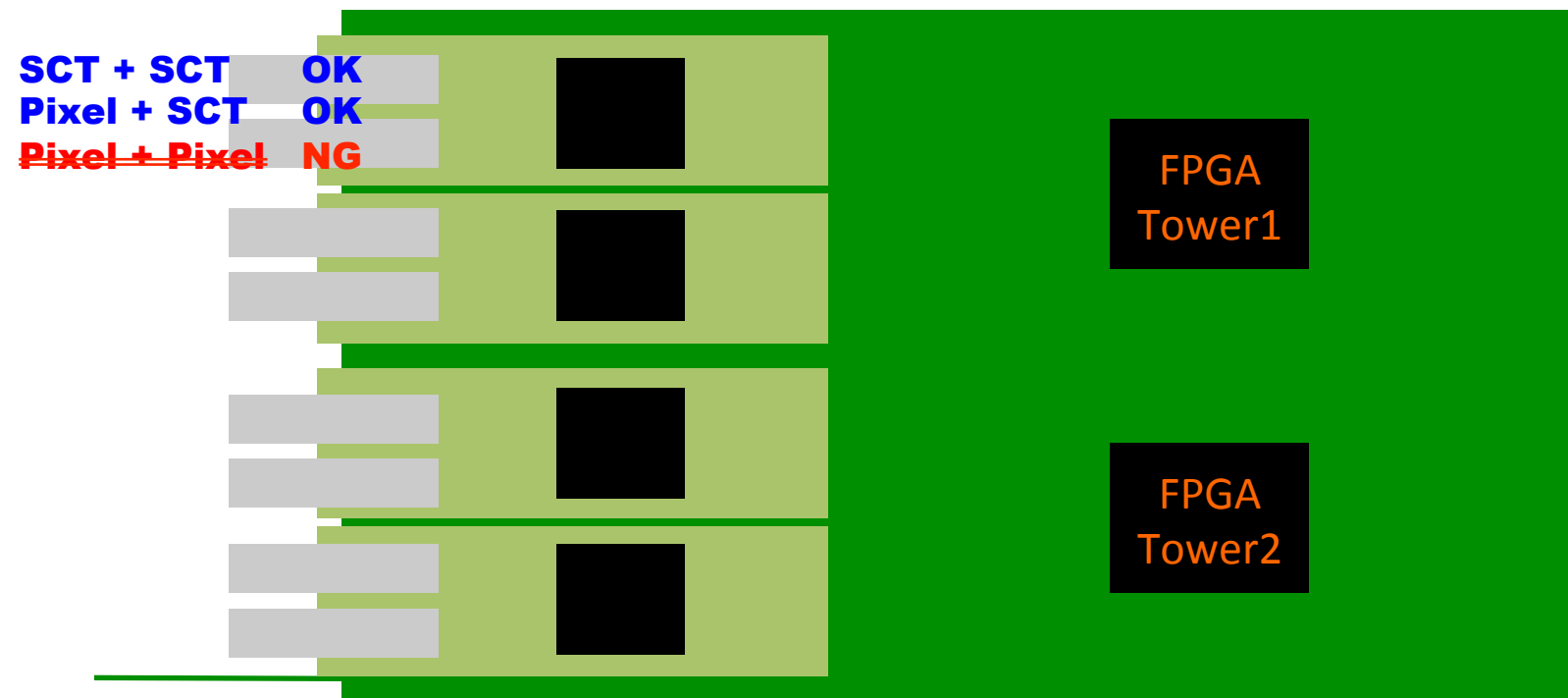
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AL0 (22)	43, 34	35	38, 39	42	19	22, 23	26	27	30, 31	2	3, 6	7	10	11, 24	15	18
AL1 (19)	101	117, 119	121	103	105	107	123	109, 111	86	125	127	88, 90	113	129	131	115
AL2 (13)	91	93	95		97	99	69	71		73	75	77	79	81		83
CL0 (22)	44, 33	36	37, 40	41	20	21, 24	25	28	29, 32	1	4, 5	8	9	12, 13	16	17
CL1 (19)	102	118, 120	122	104	106	108,	124	110, 112	85	126	128	87, 89	114	130	132	116
CL2 (13)	92	94	96		98	100	70	72		74	76	78	80	82		84

ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AD0 (8)	60		58		56		54		52		50		48		46	
AD1 (4)			68				66				64				62	
AD2 (8)	Readout lines are shared with A-Disk 1															
CD1 (8)	59		57		55		53		51		49		47		45	
CD1 (4)			67				65				63				61	
CD2 (8)	Readout lines are shared with C-Disk1															

CABLING

Constraint

- Pixel input should be less than or equal to 2 for one for one FTK tower (= for two Mezzanine card)



Board-ROD plan for Pixel

ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AL0 (22)	34	35	38, 39	42	19	22, 23	26	27	30, 31	2	3, 6	7	10	11, 24	15	18, 43
AL1 (19)	101	117, 119	121	103	105	107	123	109, 111	86	125	127	88, 90	113	129	131	115
AL2 (13)	91	93	95		97	99	69	71		73	75	77	79	81		83
AD0 (8)	60			58	56		54		52		50		48		46	
AD1 (4)				68			66			64					62	
AD2 (8)	Readout lines are shared with A-Disk 1															

ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CL0 (22)	33	36	37, 40	41	20	21, 24	25	28	29, 32	1	4, 5	8	9	12, 13	16	17, 44
CL1 (19)	102	118, 120	122	104	106	108,	124	110, 112	85	126	128	87, 89	114	130	132	116
CL2 (13)	92	94	96		98	100	70	72		74	76	78	80	82		84
CD1 (8)	59			57	55		53		51		49		47		45	
CD1 (4)				67			65			63					61	
CD2 (8)	Readout lines are shared with C-Disk1															

Note :

Modification is indicated by red characters

Only $\phi 6$ split cannot follow the constraint, indicated by purple characters

Board-ROD plan for SCT

ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A (22)	2, 42	4	6, 34	8	10	12, 36	14	16	18, 44	20	22, 38	24	26	28, 40	30	32
A Disk (23)				48				45				46			47	
		55			56	49		50		51	52			53	54	
		60				57				58			59			
				64			61					63				62
	66								65							67

ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C (22)	1, 41	3	5, 33	7	9	11, 35	13	15	17, 43	19	21, 37	23	25	27, 39	29	31
C Disk (23)				68				71				70			69	
		72			73	78		79		76	77			74	75	
		81				84				83			82			
				85			86					88				87
	89								90							80

Note :
Modification is indicated by red characters

Tower-ROD plan for Pixel

ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A Endcap	60 34	35 117	38 39	58 68	56 19	22 23	54 66 26	27 109	52 30	64 2	50 3 6	7 88	48 10	11 14	46 62	18 43
A Barrel	101 91	119 93	121 95	42 103	105 97	107 99	123 69	111 71	31 86	125 73	127 75	90 77	113 79	129 81	15 131	115 83

ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C Endcap	59 33	36 118	37 40	57 67	55 20	21 24	53 65 25	28 110	51 29	63 1	49 4 5	8 87	47 9	12 13	45 61	17 44
C Barrel	102 92	120 94	122 96	41 104	106 98	108 100	124 70	112 72	32 85	126 74	128 76	89 78	114 80	130 82	16 132	116 84

Note :

Color difference stands for Barrel L0, Barrel L1, Barrel L2, Endcap.

Priority to be filled into Endcap Tower is order of Endcap > Layer0 > Layer1 > Layer2, according to the amount of contribution to Endcap tower.

Tower-ROD plan for SCT

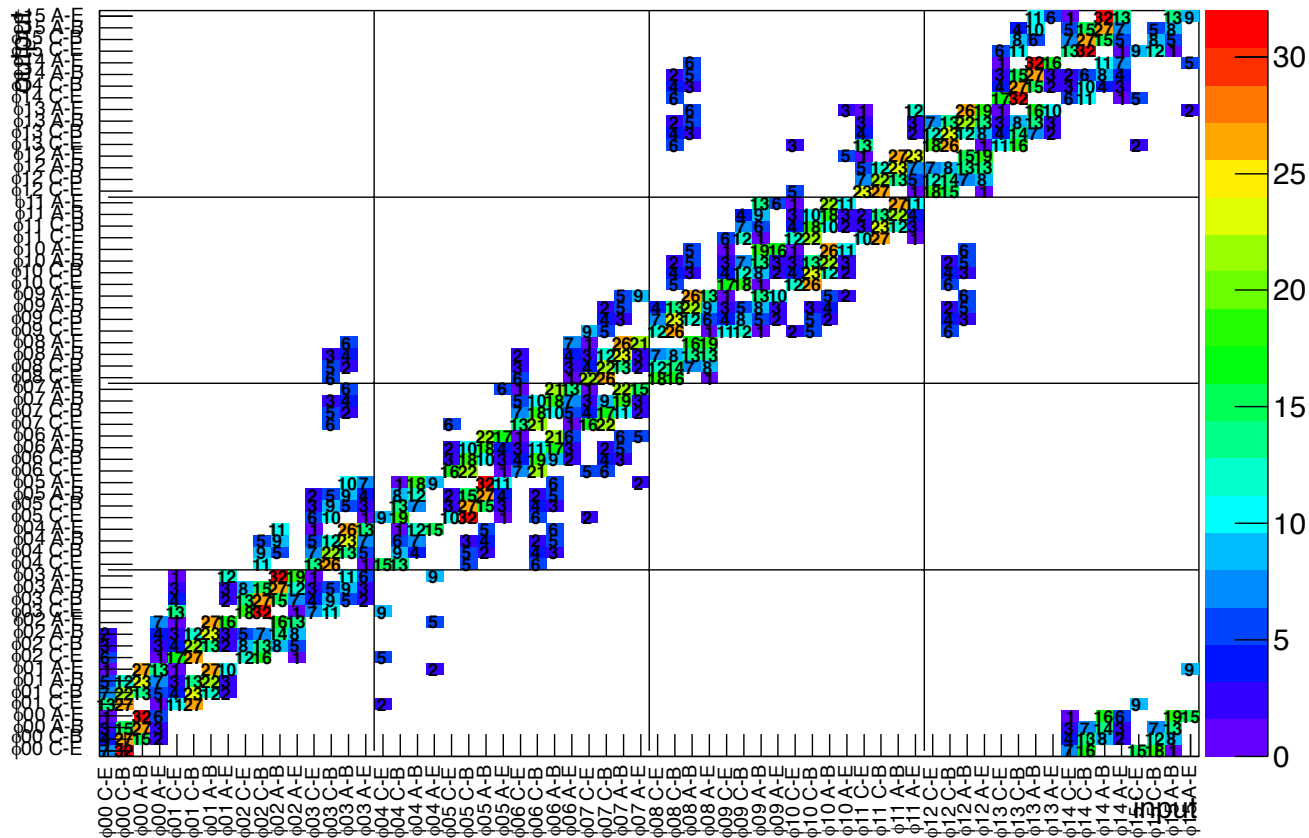
ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A Endcap	66	55 60		48 64	56	49 57	61	45 50	65	51 58	52	46 63	59	53	47 54	62 67
A Barrel	2 42	4	6 34	8	10	12 36	14	16	18 44	20	22 38	24	26	28 40	30	32

ϕ	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
C Endcap	89	72 81		68 85	73	78 84	86	71 79	90	76 83	77	70 88	82	74	69 75	87 80
C Barrel	1 41	3	5 33	7	9	11 35	13	15	17 43	19	21 37	23	25	27 39	29	31

Module in-out correlation

Input (x-axis) & Output (y-axis) Pixel

Input Output of DF boards (Pixel)



Hit in-out correlation SCT
(1000Events integrated @ pileup = 7.3)

Hits in-out correlation

Hit in-out correlation Pixel
(1000Events integrated @ pileup = 7.3)

Input Output of DF boards (Pixel)

