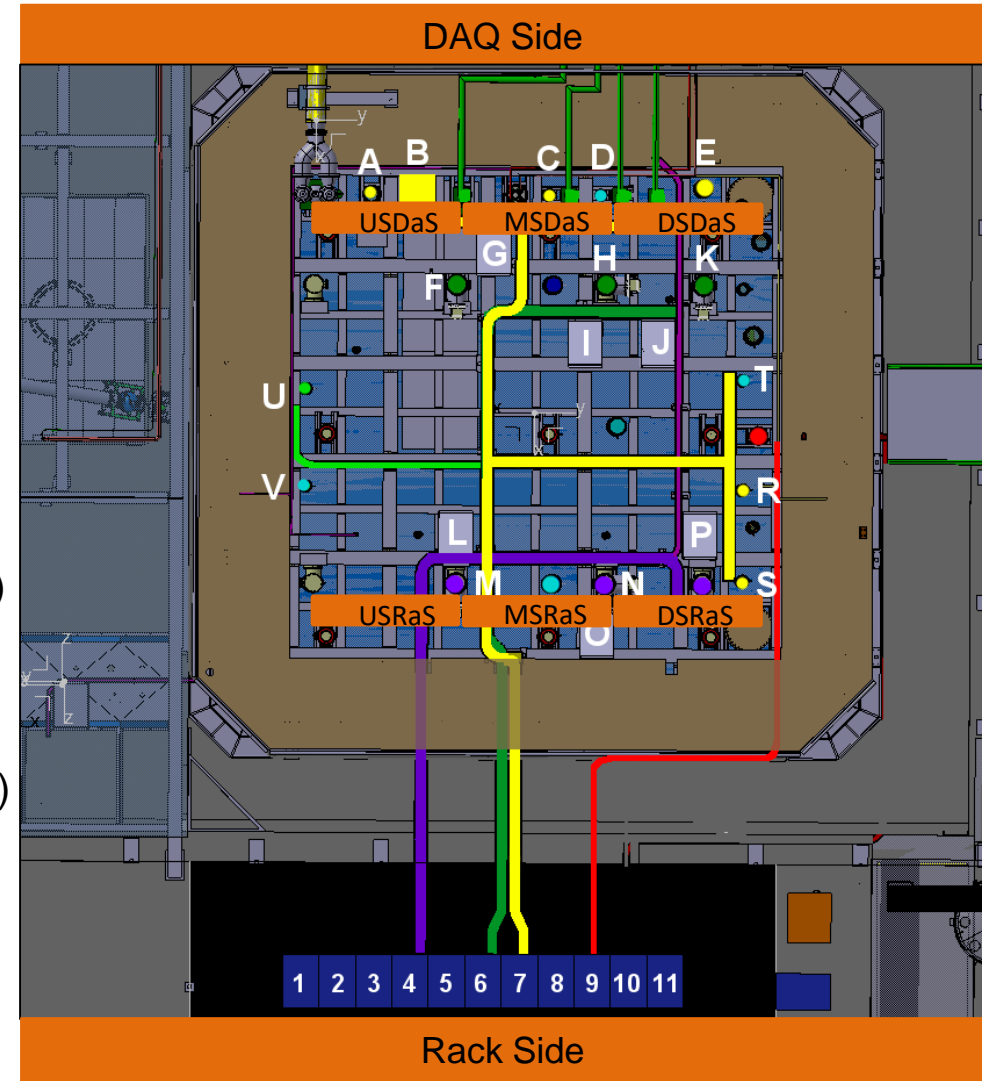


APA Mapping



- Split into two sections:
 - DAQ side*
 - Rack side
- DAQ Acronyms
 - USDaS - Upstream-DAQ Side (APA#5)
 - MSDaS - Midstream-DAQ Side (APA#6)
 - DSDaS - Downstream-DAQ Side (APA#4)

 - USRaS - Upstream-Rack Side (APA#3)
 - MSRaS - Midstream-Rack Side (APA#2)
 - DSRaS - Downstream-Rack Side (APA#1)

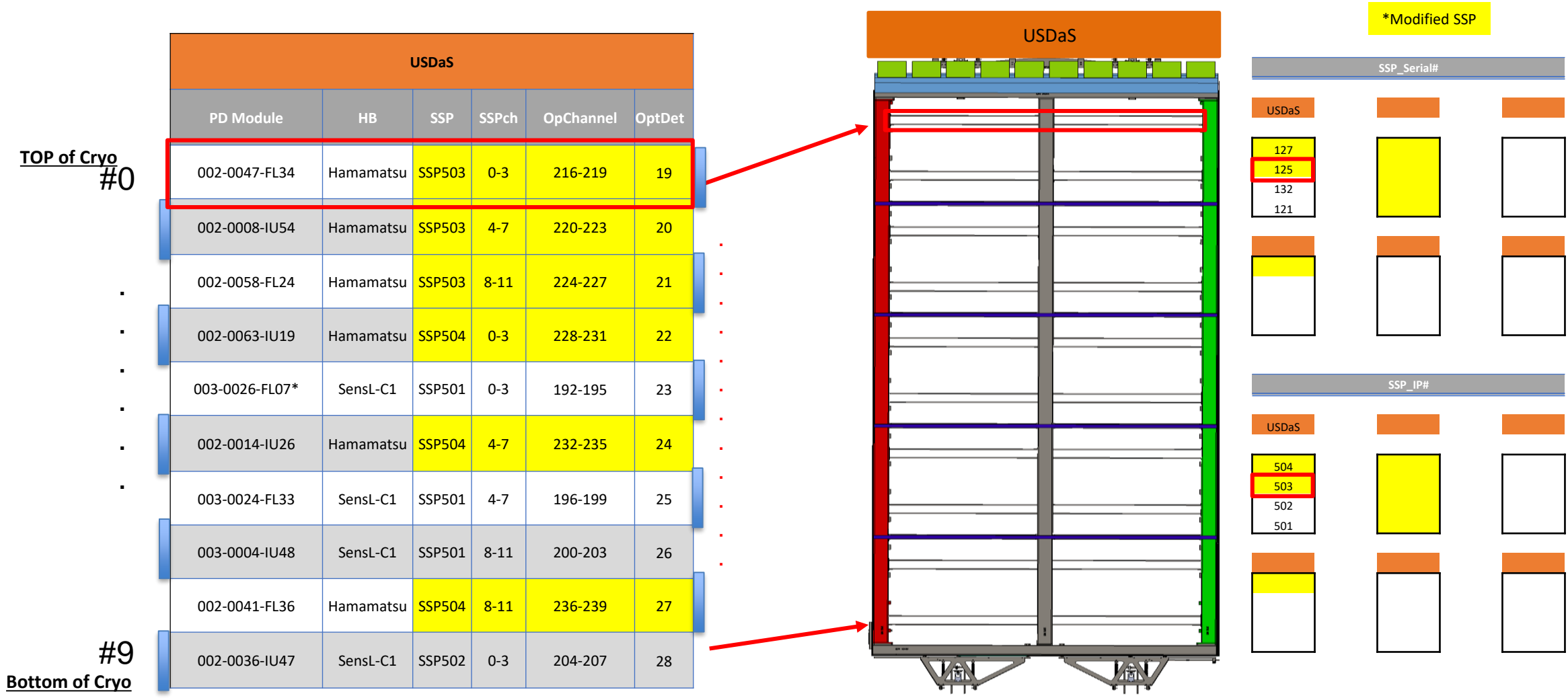
*The DAQ is now calling "Jura side" the "DAQ side".



PD Channel Mapping

-  APA- Face A
-  APA- Face B

 = Readout end



ProtoDUNE PD Channel Map

*Updated with OptDets w/ v7 Geometry



APA- Face A



APA- Face B

= Readout end



USDaS					
PD Module	HB	SSP	SSPch	OpChannel	OptDet
002-0047-FL34	Hamamatsu	SSP503	0-3	216-219	19
002-0008-IU54	Hamamatsu	SSP503	4-7	220-223	20
002-0058-FL24	Hamamatsu	SSP503	8-11	224-227	21
002-0063-IU19	Hamamatsu	SSP504	0-3	228-231	22
003-0026-FL07*	SensL-C1	SSP501	0-3	192-195	23
002-0014-IU26	Hamamatsu	SSP504	4-7	232-235	24
003-0024-FL33	SensL-C1	SSP501	4-7	196-199	25
003-0004-IU48	SensL-C1	SSP501	8-11	200-203	26
002-0041-FL36	Hamamatsu	SSP504	8-11	236-239	27
002-0036-IU47	SensL-C1	SSP502	0-3	204-207	28

MSDaS					
PD Module	HB	SSP	SSPch	OpChannel	OptDet
002-0002-FL22	Hamamatsu	SSP601	0-3	240-243	10
002-0054-IU22	Hamamatsu	SSP601	4-7	244-247	11
002-0059-FL08	Hamamatsu	SSP601	8-11	248-251	12
002-0020-IU09	Hamamatsu	SSP602	0-3	252-255	13
002-0060-FL39	Hamamatsu	SSP602	4-7	256-259	14
ARAPUCA-2	Hamamatsu	SSP603	0-3	264-267	29-44
		SSP603	4-7	268-271	
		SSP603	8-11	272-275	
002-0055-FL40	Hamamatsu	SSP602	8-11	260-263	15
002-0013-IU01	Hamamatsu	SSP604	0-3	276-279	16
002-0011-FL15	Hamamatsu	SSP604	4-7	280-283	17
002-0031-IU02	Hamamatsu	SSP604	8-11	284-287	18

DSDaS					
PD Module	HB	SSP	SSPch	OpChannel	OptDet
001-0003-FL01	SensL-C1	SSP401	0-3	144-147	0
002-0044-IU50	SensL-C1	SSP401	4-7	148-151	1
002-0039-FL29	SensL-A1	SSP401	8-11	152-155	2
003-0002-IU27	SensL-C1	SSP402	0-3	156-159	3
002-0025-FL25	SensL-C1	SSP402	4-7	160-163	4
003-0011-IU37	SensL-C1	SSP402	8-11	164-167	5
003-0048-FL42	SensL-C1	SSP403	0-3	168-171	6
002-0023-IU53	SensL-C1	SSP403	4-7	172-175	7
002-0038-IU35	SensL-C1	SSP403	8-11	176-179	8
002-0040-FLP06*	SensL-C1	SSP404	0-3	180-183	9

USRaS					
PD Module	HB	SSP	SSPch	OpChannel	OptDet
003-0031-IU20	SensL-A1	SSP301	0-3	96-99	81
002-0055-FL03	SensL-A1	SSP301	4-7	100-103	82
002-0020-IU31	SensL-A1	SSP301	8-11	104-107	83
ARAPUCA-1	Hamamatsu	SSP304	0-3	132-135	45-60
		SSP304	4-7	136-139	
		SSP304	8-11	140-143	
002-0042-IU52	SensL-A1	SSP302	0-3	108-111	84
002-0056-FL30	SensL-A1	SSP302	4-7	112-115	85
002-0047-IU17	SensL-A1	SSP302	8-11	116-119	86
002-0054-FL38	SensL-A1	SSP303	0-3	120-123	87
001-0039-IU51	SensL-A1	SSP303	4-7	124-127	88
003-0015-FL04	SensL-C1	SSP303	8-11	128-131	89

MSRaS					
PD Module	HB	SSP	SSPch	OpChannel	OptDet
002-0049-IU16	SensL-A1	SSP201	0-3	48-51	71
001-0054-FL18	SensL-A1	SSP201	4-7	52-55	72
002-0035-IU13	SensL-A1	SSP201	8-11	56-59	73
002-0006-FL14	SensL-A1	SSP202	0-3	60-63	74-76
001-0044-IU18	SensL-A1	SSP202	4-7	64-67	77
002-0012-FL19	SensL-A1	SSP202	8-11	68-71	78
002-0027-IU12	SensL-A1	SSP203	0-3	72-75	79
002-0015-FL21	SensL-A1	SSP203	4-7	76-79	80
001-0052-IU14	SensL-A1	SSP203	8-11	80-83	71
003-0025-FL06	SensL-A1	SSP204	0-3	84-87	72

DSRaS					
PD Module	HB	SSP	SSPch	OpChannel	OptDet
403-003-0063-IU28	SensL-A1	SSP101	0-3	0-3	61
403-003-0041-FL9	SensL-A1	SSP101	4-7	4-7	62
403-002-0001-IU15	SensL-A1	SSP101	8-11	8-11	63
403-003-0054-FLP12	SensL-A1	SSP102	0-3	12-15	64-66
403-001-0006-IU49	SensL-A1	SSP102	4-7	16-19	67
403-003-0064-FLP13	SensL-A1	SSP102	8-11	20-23	68
403-001-0061-IU04	SensL-A1	SSP103	0-3	24-27	69
403-001-0042-FLP4	SensL-A1	SSP103	4-7	28-31	70
403-001-0025-IU21	SensL-A1	SSP103	8-11	32-35	61
403-003-0020-FL5	SensL-A1	SSP104	0-3	36-39	62

*Modified SSP
SSP_Serial#

USDaS	MSDaS	DSDaS
127	131	120
125	130	119
132	129	118
121	128	117

USRaS	MSRaS	DSRaS
123	113	109
116	112	108
115	111	107
114	102	106

SSP_IP#

USDaS	MSDaS	DSDaS
504	604	404
503	603	403
502	602	402
501	601	401

USRaS	MSRaS	DSRaS
304	204	104
303	203	103
302	202	102
301	201	101



Physical Channel Map

*Updated with OptDets w/ v7 Geometry

*Modified SSP

[cm]

USDaS			
OptDet	x	y	Z
19	363.075	568.292	115.336
20	363.075	509.092	115.336
21	363.075	449.892	115.336
22	363.075	390.692	115.336
23	363.075	331.492	115.336
24	363.075	272.292	115.336
25	363.075	213.092	115.336
26	363.075	153.892	115.336
27	363.075	94.692	115.336
28	363.075	35.492	115.336

MSDaS			
OptDet	x	y	Z
10	363.075	568.292	347.396
11	363.075	509.092	347.396
12	363.075	449.892	347.396
13	363.075	390.692	347.396
14	363.075	331.492	347.396
ARAPUCA-2			
15	363.075	213.092	347.396
16	363.075	153.892	347.396
17	363.075	94.692	347.396
18	363.075	35.492	347.396

DSDaS			
OptDet	x	y	Z
0	363.075	568.292	579.456
1	363.075	509.092	579.456
2	363.075	449.892	579.456
3	363.075	390.692	579.456
4	363.075	331.492	579.456
5	363.075	272.292	579.456
6	363.075	213.092	579.456
7	363.075	153.892	579.456
8	363.075	94.692	579.456
9	363.075	35.492	579.456

ARAPUCA-1			
OptDet	x	y	Z
45	-362.335	390.692	196.736
46	-362.335	390.692	186.536
47	-362.335	390.692	176.336
48	-362.335	390.692	166.136
49	-362.335	390.692	155.936
50	-362.335	390.692	145.736
51	-362.335	390.692	135.536
52	-362.335	390.692	125.336
53	-362.335	390.692	105.336
54	-362.335	390.692	95.136
55	-362.335	390.692	84.936
56	-362.335	390.692	74.736
57	-362.335	390.692	64.536
58	-362.335	390.692	54.336
59	-362.335	390.692	44.136
60	-362.335	390.692	33.936

USRaS			
OptDet	x	y	Z
81	-363.075	568.292	115.336
82	-363.075	509.092	115.336
83	-363.075	449.892	115.336
ARAPUCA-1			
84	-363.075	331.492	115.336
85	-363.075	272.292	115.336
86	-363.075	213.092	115.336
87	-363.075	153.892	115.336
88	-363.075	94.692	115.336
89	-363.075	35.492	115.336

MSRaS			
OptDet	x	y	Z
71	-363.075	568.292	347.396
72	-363.075	509.092	347.396
73	-363.075	449.892	347.396
74	-363.075	390.692	347.396
75	-363.075	331.492	347.396
76	-363.075	272.292	347.396
77	-363.075	213.092	347.396
78	-363.075	153.892	347.396
79	-363.075	94.692	347.396
80	-363.075	35.492	347.396

DSRaS			
OptDet	x	y	Z
61	-363.075	568.292	579.456
62	-363.075	509.092	579.456
63	-363.075	449.892	579.456
64	-363.075	390.692	579.456
65	-363.075	331.492	579.456
66	-363.075	272.292	579.456
67	-363.075	213.092	579.456
68	-363.075	153.892	579.456
69	-363.075	94.692	579.456
70	-363.075	35.492	579.456

ARAPUCA-2			
OptDet	x	y	Z
29	362.335	272.292	428.796
30	362.335	272.292	418.596
31	362.335	272.292	408.396
32	362.335	272.292	398.196
33	362.335	272.292	387.996
34	362.335	272.292	377.796
35	362.335	272.292	367.596
36	362.335	272.292	357.396
37	362.335	272.292	337.396
38	362.335	272.292	327.196
39	362.335	272.292	316.996
40	362.335	272.292	306.796
41	362.335	272.292	296.596
42	362.335	272.292	286.396
43	362.335	272.292	276.196
44	362.335	272.292	265.996



PD Channel Summary

- Module Count
 - (29) Double-Shift Light Guides
 - 4 channels/module
 - (29) Dip-Coated Light Guides
 - 4 channels/module
 - (2) ARAPUCAs
 - 12 channels/module
- Total Channels
 - (256) channels
 - 288 available channels (24 SSPs, 12 chs/SSP)
 - Known “bad channels”
 - DAQ ch = [25, 36, 58, 62, 65, 73, 75, 82, 101, 110, 119, 125, 156, 160]

*finicky