1) Add header on biniary file with
    1) ID of the digitizer
    2) Data structure (in Setup directory?)
    3) Run number

2) Structure of the data director with separate subdirectory fot tracker, PID, gamma e setup

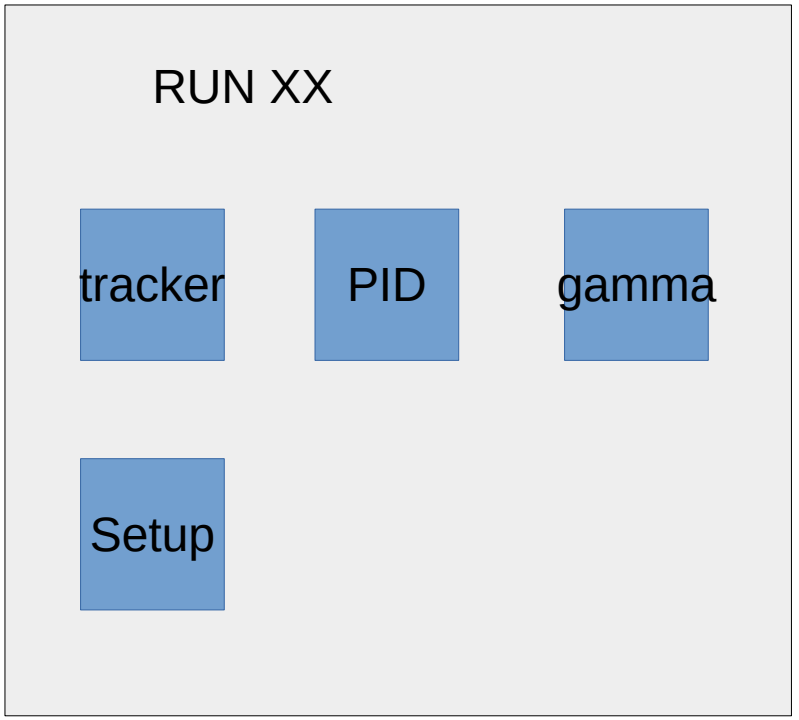
3) The macro that convert binary to root file take the link between digitizer and anode section from separate configuration file. The macro should provide for different level of

    min level all the original data are kept to havemaximum flexibility during test.

    max level only the usefull data are kept and all the other are not copied to save space

4) Separation of the flag variable in two different variable (to be alligned with the digitizers documentation)

5)



DEFINITIONS

- *Hit / entry:* All the information relate to the signal in a single pad

  entry is related to the organization of this information on a root or binry file, hit is the corresponding physical phenomeno

- *Event:* It is the totality of hit generated by a single physical event (e.g.

  charged particle crossing the detector)

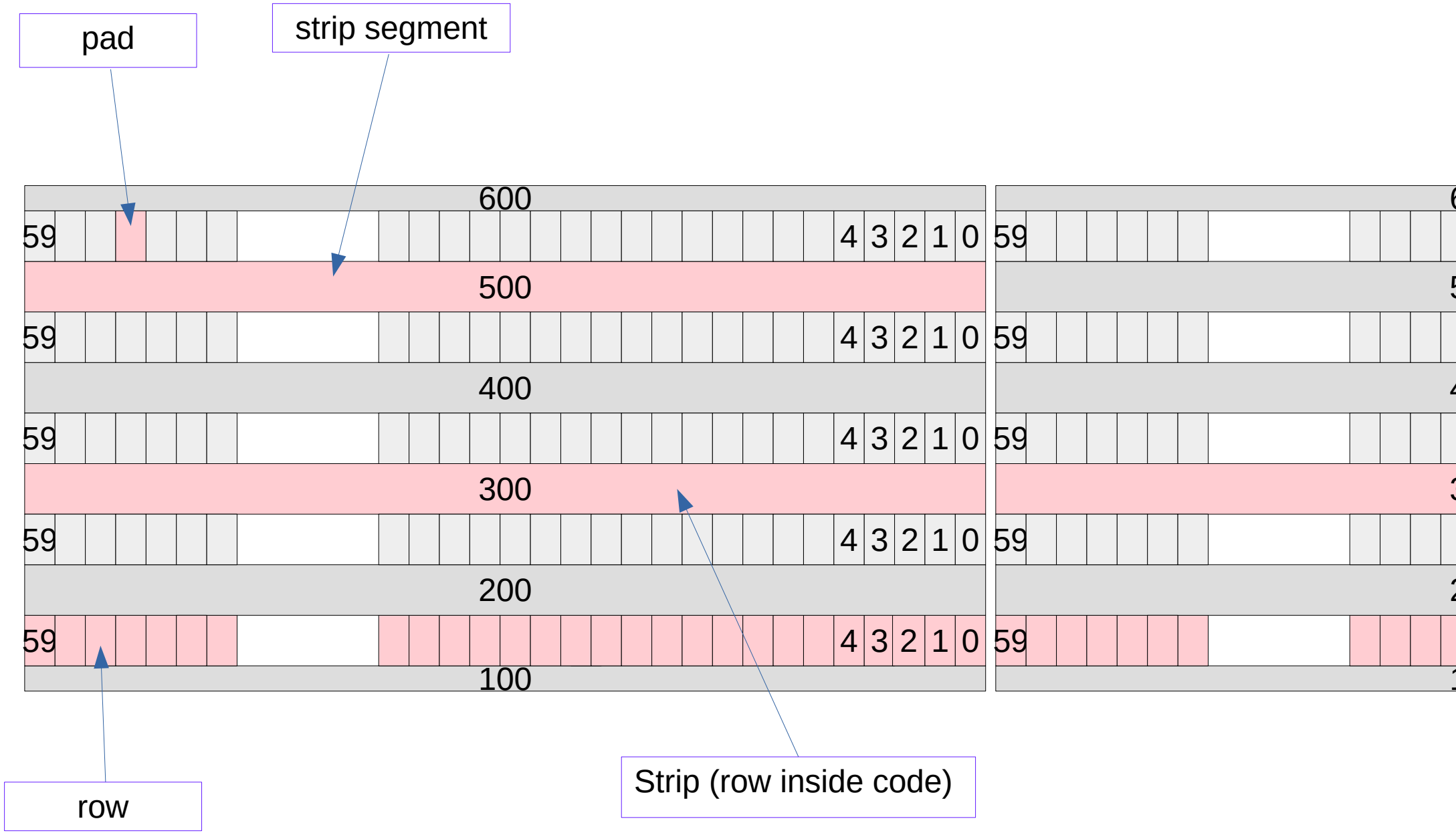
- *Cluster:* Group of entries that are close in space and time (not necessarely

  part of a physical event)

- *Row:* is the totality of pad or strip tha have same z-coordinate (in the final detector a row is made or of 64x). It is divided in four segments correspnding to the four section of the anode.

- *Strip:* Is the sensible area of the anode between two rows. Each strip is made of four long segment (300 mm) each one corresponding to a section of the anode.

Inside the code *strip* and *row* are both called row. The proper raw have an index that run from 0 to 4 and 64x4 pads, the strips instead have an index between 5 and 10 and just 4 pads.


pad
strip segment
600
59
4 3 2 1 0
500
400
300
200
100
row
Strip (row inside code)

19	18	17	16
15	14	13	12
11	10	9	8
7	6	5	4
3	2	1	0

Section number

Anode board 4 Anode board 3 Anode board 2 Anode Board 1

beam

Bottom view (internal view), the beam enter from the bottom.

Full anode (group of all 4 anodes)

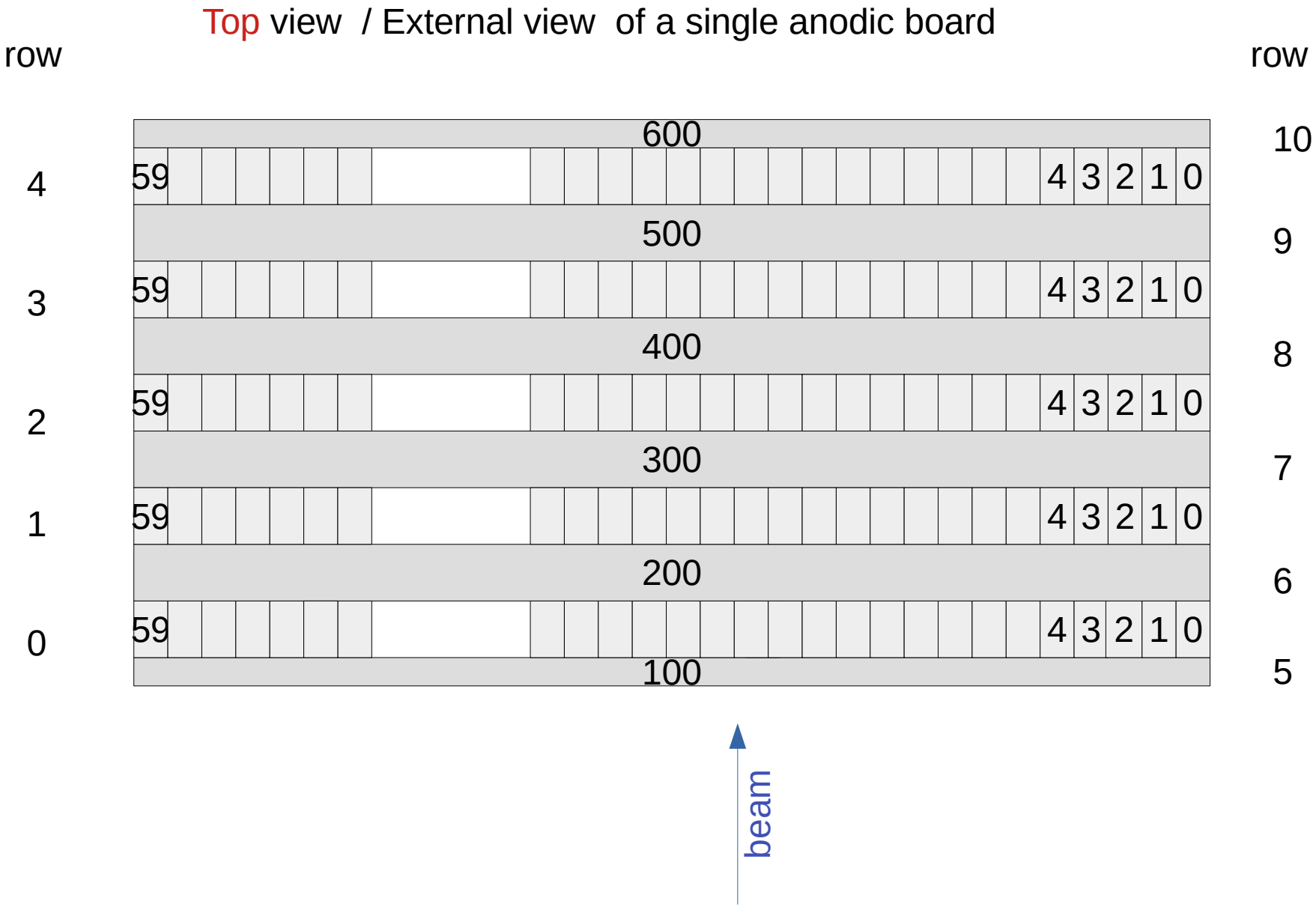
Single anode (single anodic board)

Anode section (group of pad and strip linked to a digitizer)
At each anode section is linked one and only one digitizer and a preamplifier

Anode section	row	anode board	ID dig	ID preampl
1	0	1	xxx	yyyy
2	1	1	xxy	yyyx
3	2	1	…	...
4	3	1	…	...
5	4	1	…	...
6	0	2	…	...
7	1	2	…	...
20	4	4		

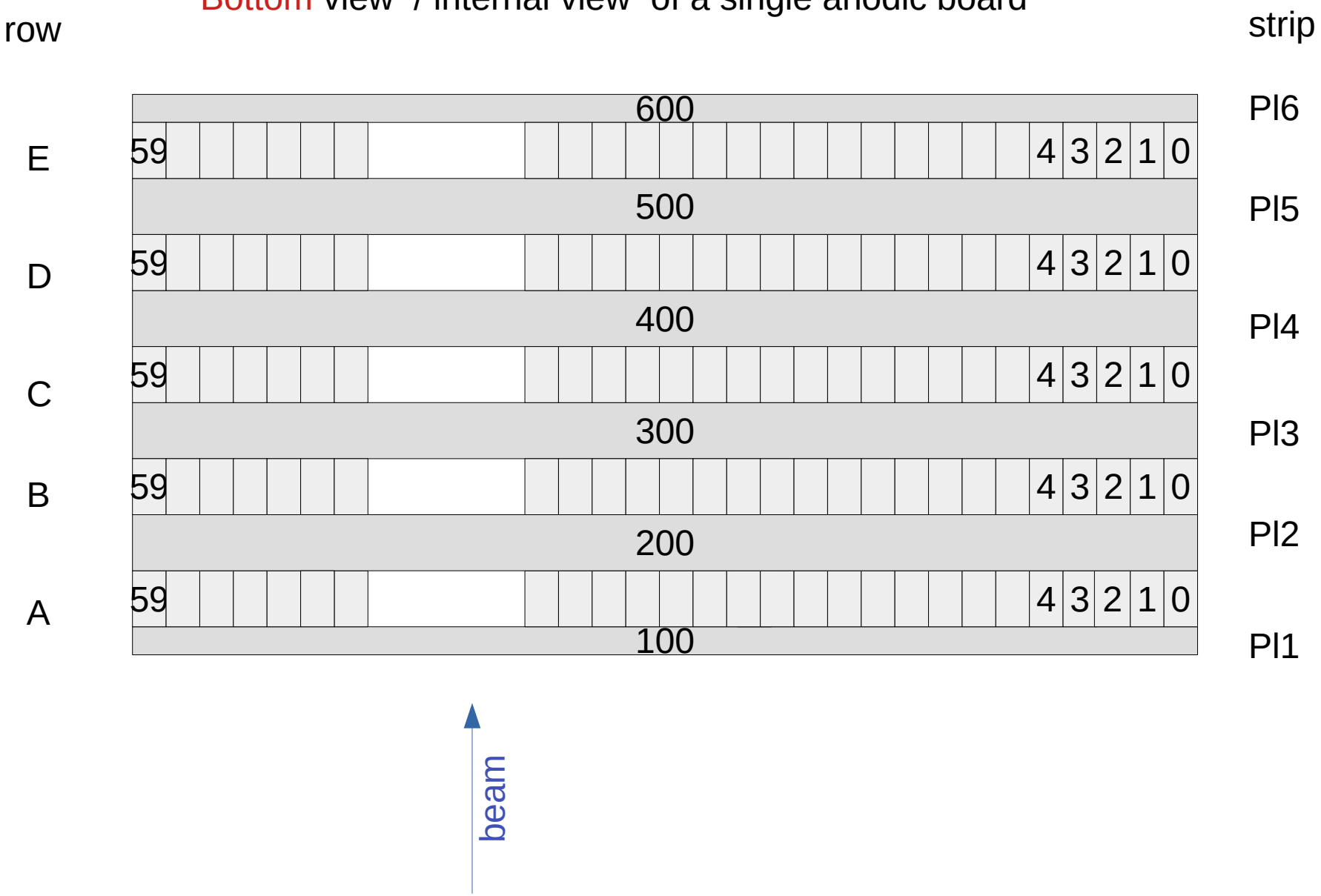
Template for the anode map file.

Software nomenclature



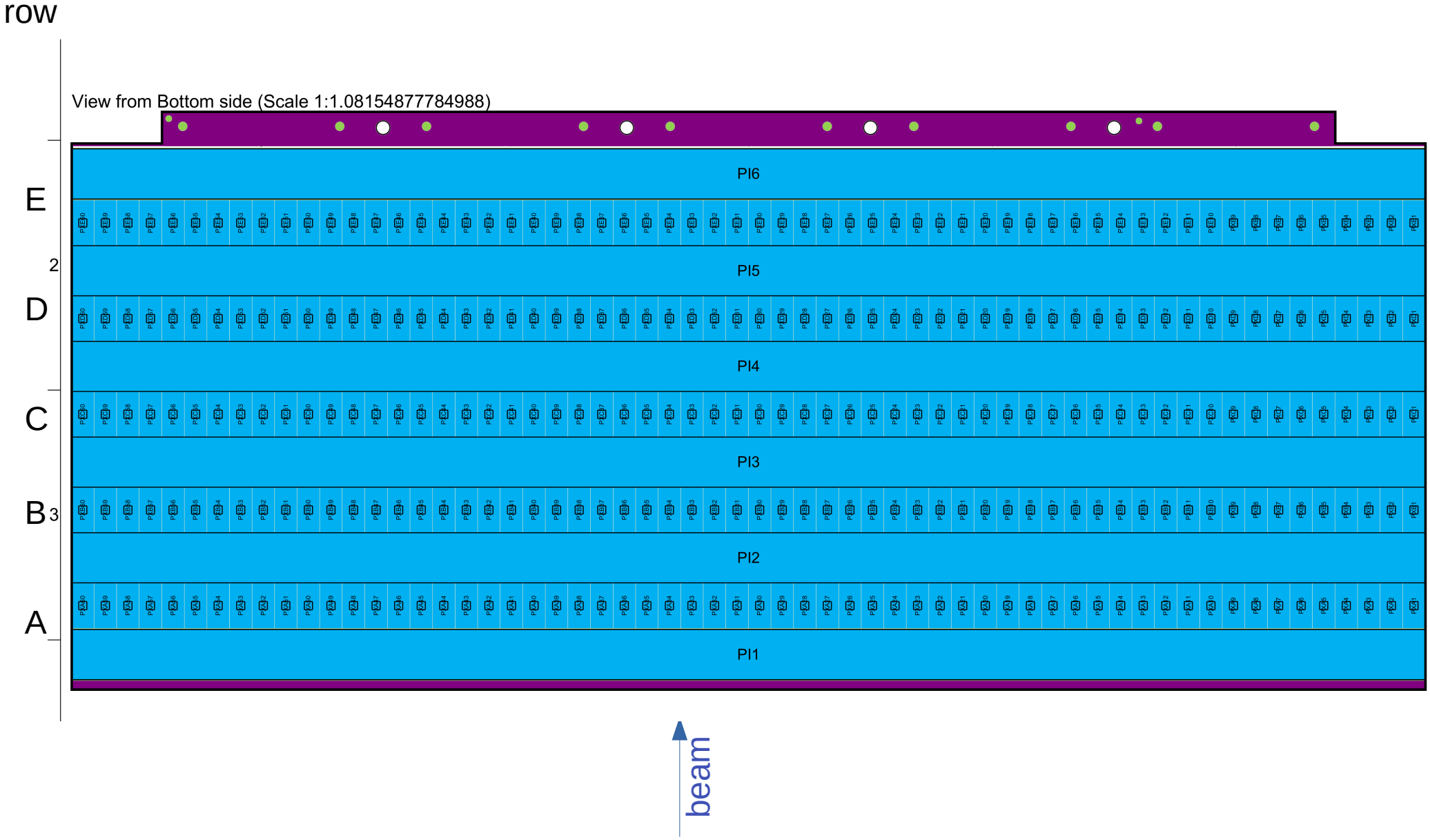
Electronics nomenclature

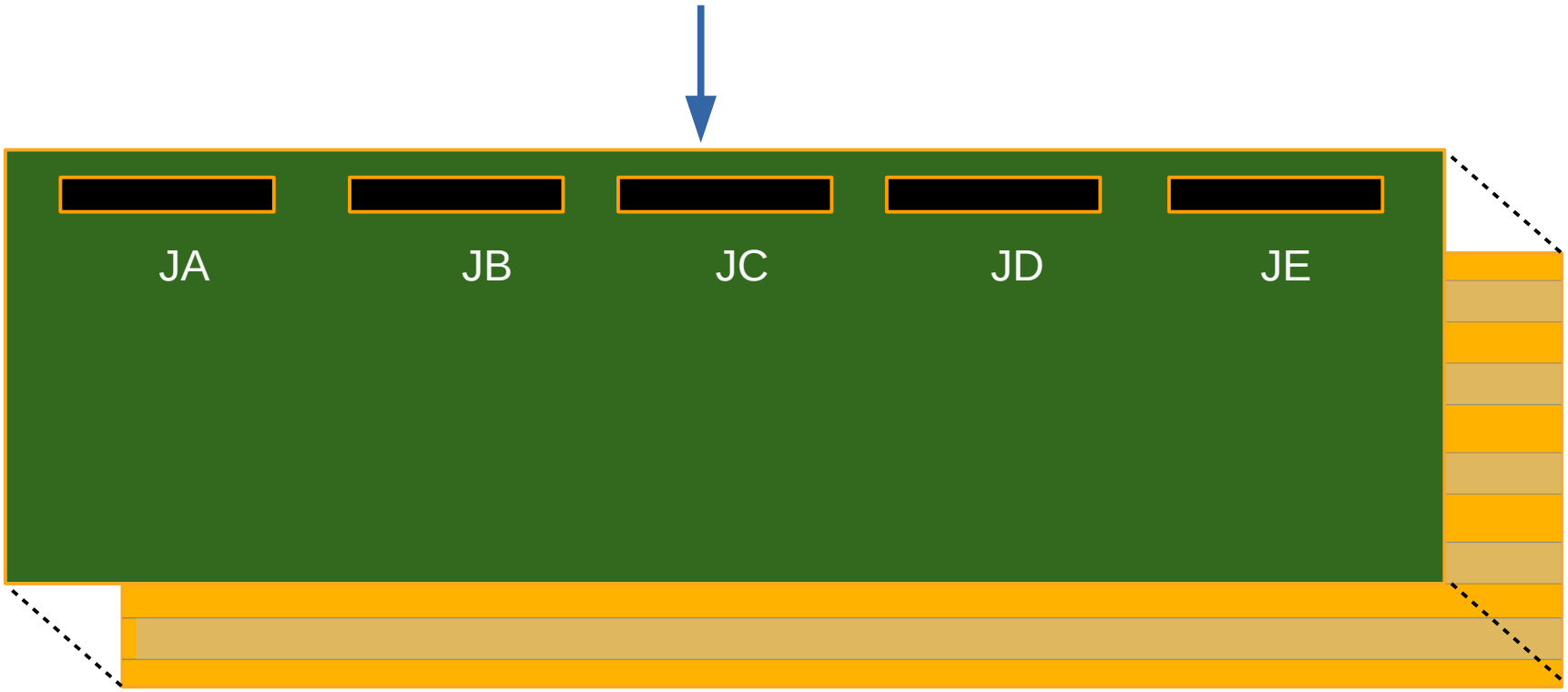
Bottom view / internal view of a single anodic board



Electronics nomenclature

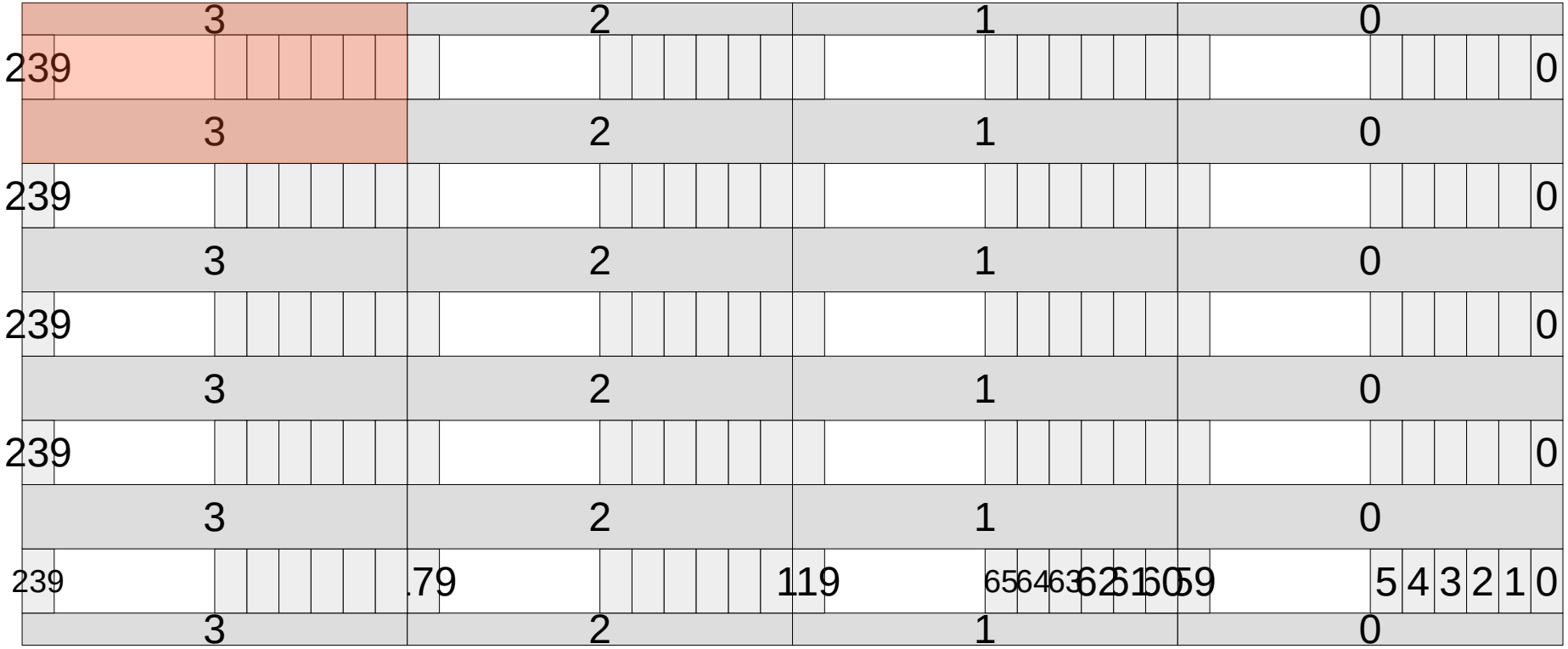
Bottom view / internal view of a single anodic board

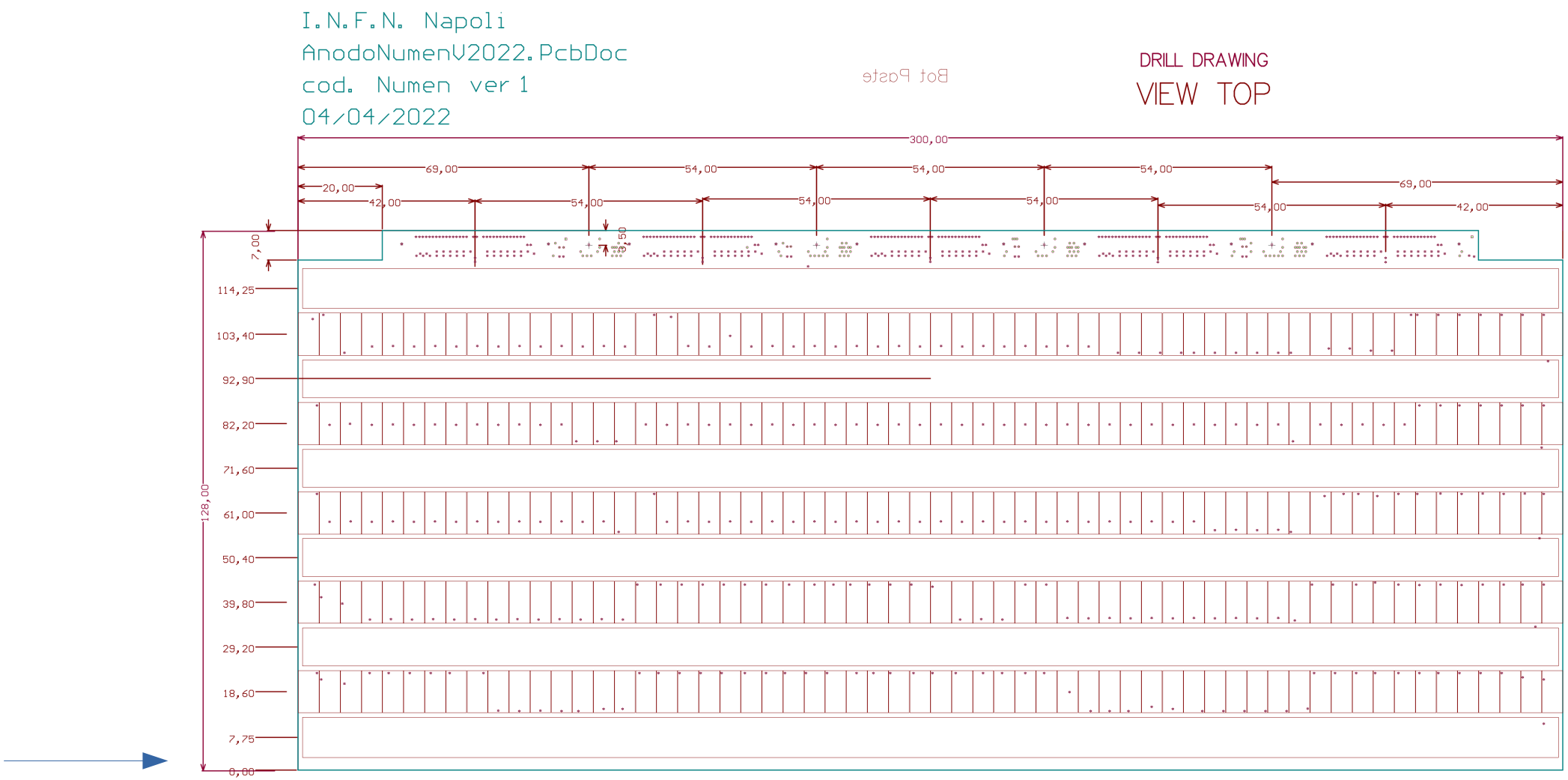




JA	**row A + Pl1**	**row 0 + row 5**
JB	**row B + Pl2**	**row 1 + row 6**
JC	**row C + Pl3**	**row 2 + row 7**
JD	**row D + Pl4**	**row 3 + row 8**
JE	**row E + Pl5 + Pl6**	**row 4 + row 9 + row 10**

Top view / External view of the full anode with an highlight (red) on a single section of the anode



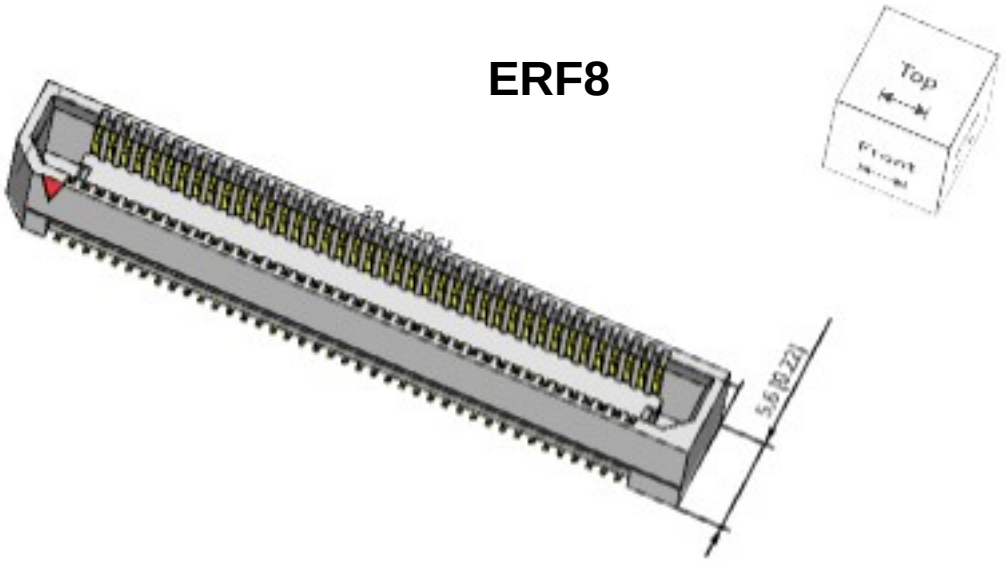


The active area of the detector start from +2 (To be verified)

Pinout of different elements

Pad number	output channel PA	
0	1	
1	2	
2	3	
3	4	
⋮	⋮	
59	60	
Strip	61	
Strip2	62	(if row is 4)

ERF8

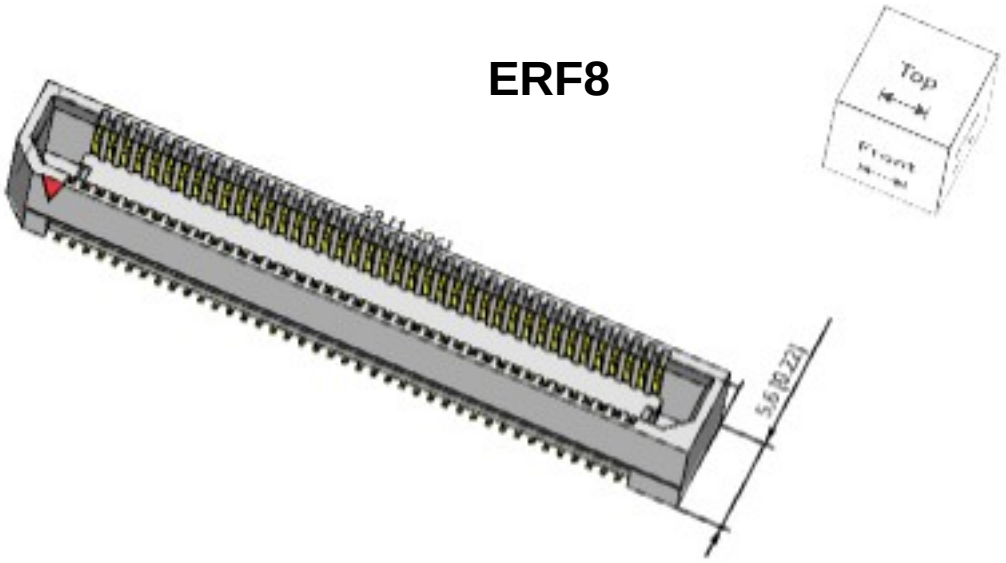


Pin number SAMTEC ERF8	channel PA
1	bias 0:31
2	bias 0:31
3	N.C
4	N.C
5	16
6	0
7	17
8	1
9	18
10	2
⋮	⋮
33	30
34	14
35	31
36	15
37	N.C.
38	N.C.
39	GND
40	GND
41	GND
42	GND
43	N.C.
44	N.C.
45	48
46	32
47	49
48	33
49	50
50	34
⋮	⋮
71	61
72	45
73	62
74	46
75	63
76	47
77	N.C.
78	N.C.
79	bias 32:63
80	bias 32:63

Pinout of different elements

SAMTEC to Flat converte (by Fabio L.)

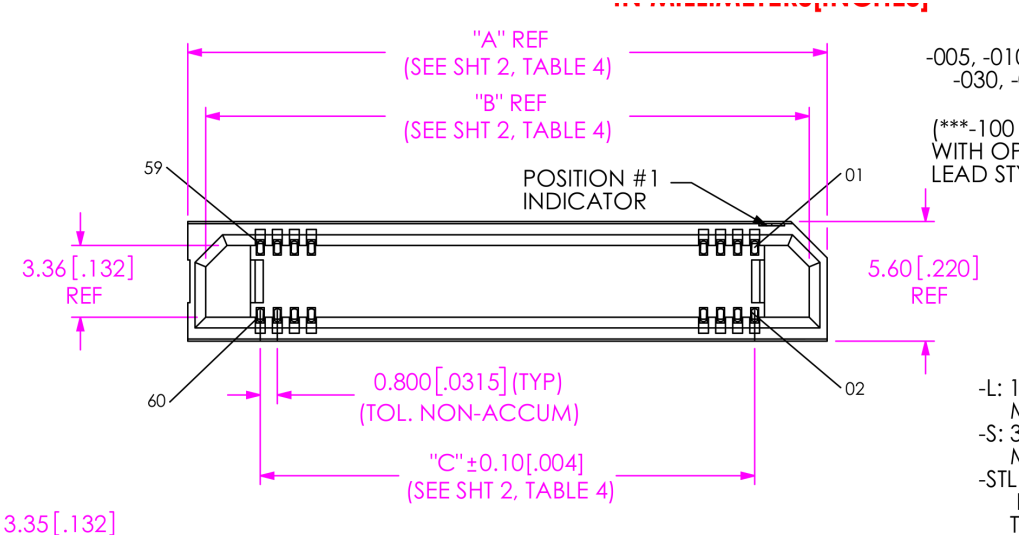
ERF8

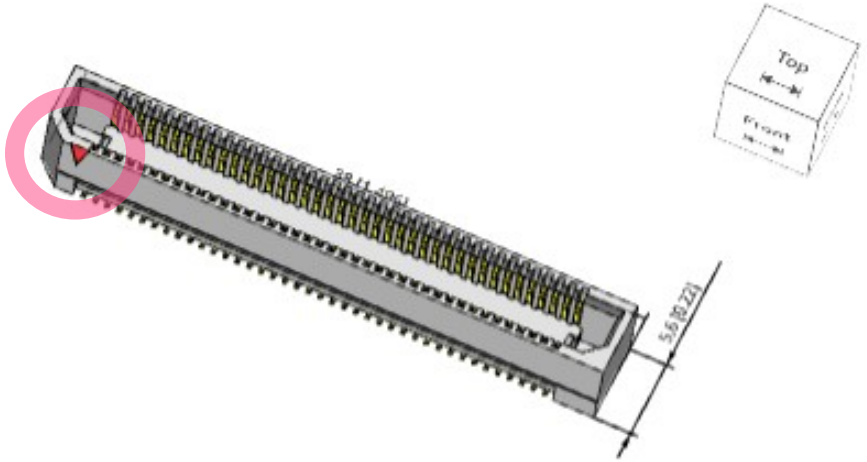


Pin number SAMTEC ERF8	out channel in flat cable
1	N.C.
2	N.C.
3	N.C.
4	N.C.
5	16
6	0
7	17
8	1
9	18
10	2
⋮	⋮
33	30
34	14
35	31
36	15
37	N.C.
38	N.C.
39	N.C.
40	N.C.
41	N.C.
42	N.C.
43	N.C.
44	N.C.
45	48
46	32
47	49
48	33
49	50
50	34
⋮	⋮
71	61
72	45
73	62
74	46
75	63
76	47
77	N.C.
78	N.C.
79	N.C.
80	N.C.

First pin in SAMTEC connectors and cables

ERF8





ERCD

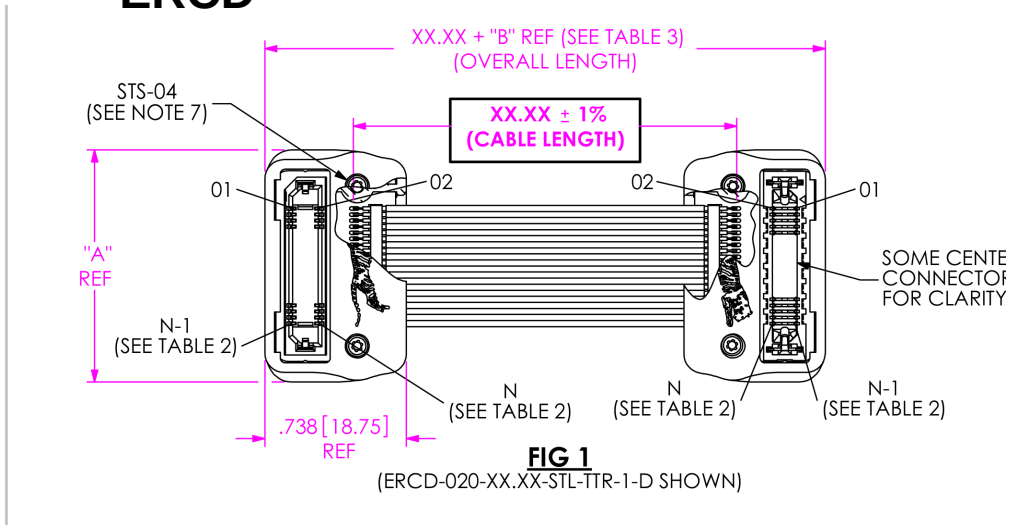
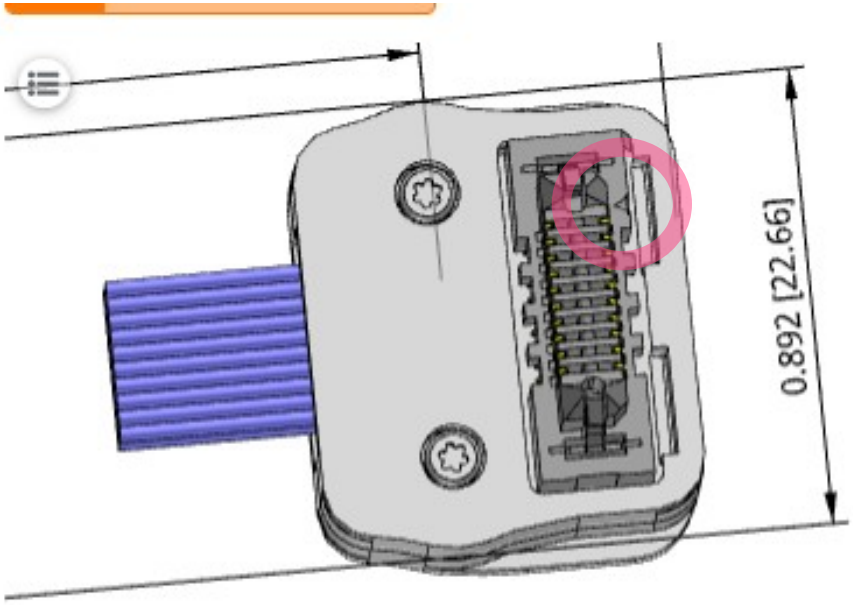


FIG 1
(ERCD-020-XX.XX-STL-TTR-1-D SHOWN)



Electrical connection between Bias supply and Tracker