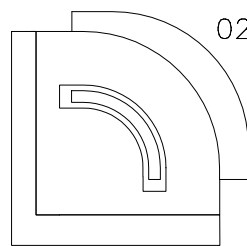
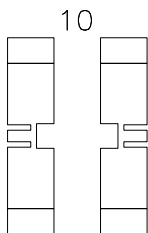


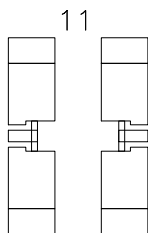
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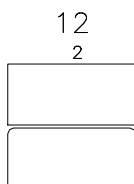
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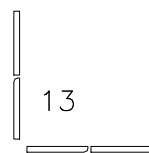
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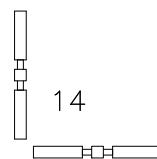
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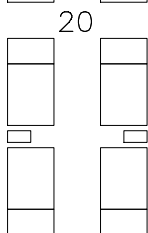
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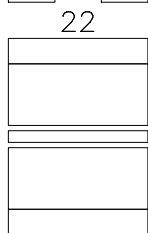
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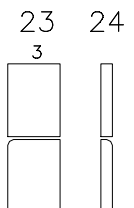
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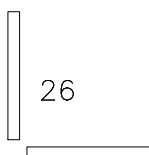
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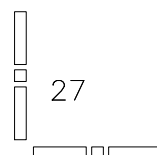
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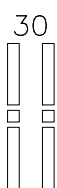
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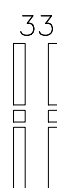
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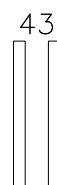
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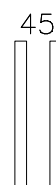
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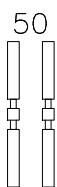


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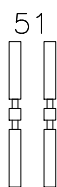


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s



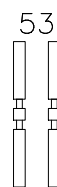
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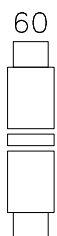


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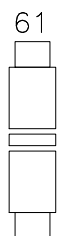


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m



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L1



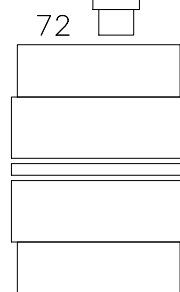
70

L2



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L3



72

L4



CS-109 Calibration Substrate Key (Table 1)

(all structures for GSG probes with 250 to 600 micrometer pitch)

Location #	Description	Coordinates (X,Y in micrometers)
01	6600 micrometer 50 ohm coplanar line	(-1700,-4400) from 21 for left probe
02	Right angle through	(2000,-2000) from 13
10	200 micrometer offset shorts (pair)	(-5000,0) from 12
11	200 micrometer offset 50 ohm loads (pair)	(-2000,0) from 12
12	Home 12 for offset standards	(0,0)
13	Right angle standards home	(0,0)
14	Right angle 50 ohm loads	(2000,0) from 13
20	200 micrometer offset opens (pair)	(-5000,2000) from 12
21	Home 21	(0,0)
22	1200 micrometer 50 ohm coplanar line	(-2000,2000) from 12
23	Home 23	(0,0)
24	Home 24 (left probe on 23, right probe on 24)	(0,0)
25	Home 25 (left probe on 23, right probe on 25)	(0,0)
26	Right angle shorting bar (pair)	(0,2000) from 13
27	Right angle open pads (pair)	(2000,2000) from 13
30	open pads (pair)	(-1700,2000) from 21
31	open pads (pair)	(0,2000) from 21
31	open pads (pair)	(1700,2000) from 21
33	open pads (pair)	(3400,2000) from 21
34	open pads (pair)	(5100,2000) from 21
35	open pads (pair)	(6800,2000) from 21
36	open pads (pair)	(8500,2000) from 21
40	shorting bar (pair)	(-1700,4000) from 21
41	shorting bar (pair)	(0,4000) from 21
42	shorting bar (pair)	(1700,4000) from 21
43	shorting bar (pair)	(3400,4000) from 21
44	shorting bar (pair)	(5100,4000) from 21
45	shorting bar (pair)	(6800,4000) from 21
46	shorting bar (pair)	(8500,4000) from 21
50	50 ohm loads (pair)	(-1700,6000) from 21
51	50 ohm loads (pair)	(0,6000) from 21
52	50 ohm loads (pair)	(1700,6000) from 21
53	50 ohm loads (pair)	(3400,6000) from 21
54	50 ohm loads (pair)	(5100,6000) from 21
55	50 ohm loads (pair)	(6800,6000) from 21
56	50 ohm loads (pair)	(8500,6000) from 21
60	400 micrometer 50 ohm coplanar line	(-1700,8000) from 21
61	400 micrometer 50 ohm coplanar line	(0,8000) from 21
62	400 micrometer 50 ohm coplanar line	(1700,8000) from 21
63	400 micrometer 50 ohm coplanar line	(3400,8000) from 21
64	400 micrometer 50 ohm coplanar line	(5100,8000) from 21
65	400 micrometer 50 ohm coplanar line	(6800,8000) from 21
66	400 micrometer 50 ohm coplanar line	(8500,8000) from 21
70	550 micrometer 50 ohm coplanar line	(-4100,10000) from 23
71	1000 micrometer 50 ohm coplanar line	(-900,10000) from 23/24
72	1500 micrometer 50 ohm coplanar line	(2800,10000) from 23/25