

Connector Guide for PIB modules

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Intended audience

Hardware developers who plan to design a custom PIB module for use with PCIS3Base or PCIeV4Base boards.

Introduction

With PCIS3Base boards PIB module slot was introduced, which enabled users to design custom PCI cards by simply developing a user specific IO- module to be plugged onto PCIS3Base. With the introduction of PCIeV4Base it even became possible to use the very same PIB module to develop a similar card with PCIe interface. With newer releases of PIB64IO boards connectors from Seltronics (PL169-35-100-G) had to be replaced with compatible ones from **SAMTEC (TFM-150-02-SDA)**. However, the SAMTEC connectors show a different numbering than used in PCIS3Base or PCIeV4Base documentation. Additionally the SAMTEC connectors incorporate inverse-polarity protection which should be taken into account to guarantee that custom boards stay compatible with upcoming releases of PCIS3Base or PCIeV4Base boards.

Pin-out FPGA connector

PIB IO numbering vs. SAMTEC TFM-150-02-SDA numbering					
PIB number	SAMTEC pin number	PIB Signal name	PIB number	SAMTEC pin number	PIB Signal name
1	99	PIB_IO 0	100	100	PIB_IO 92
2	97	PIB_IO 1	99	98	PIB_IO 91
3	95	PIB_IO 2	98	96	PIB_IO 90
4	93	GND	97	94	PIB_IO 89
5	91	PIB_IO 3	96	92	PIB_IO 88
6	89	PIB_IO 4	95	90	PIB_IO 87
7	87	PIB_IO 5	94	88	PIB_IO 86
8	85	PIB_IO 6	93	86	PIB_IO 85
9	83	PIB_IO 7	92	84	PIB_IO 84
10	81	PIB_IO 8	91	82	PIB_IO 83
11	79	PIB_IO 9	90	80	PIB_IO 82
12	77	PIB_IO 10	89	78	PIB_IO 81
13	75	PIB_IO 11	88	76	PIB_IO 80
14	73	PIB_IO 12	87	74	PIB_IO 79
15	71	PIB_IO 13	86	72	PIB_IO 78
16	69	PIB_IO 14	85	70	PIB_IO 77
17	67	PIB_IO 15	84	68	PIB_IO 76
18	65	PIB_IO 16	83	66	PIB_IO 75
19	63	PIB_IO 17	82	64	PIB_IO 74
20	61	PIB_IO 18	81	62	PIB_IO 73
21	59	PIB_IO 19	80	60	PIB_IO 72
22	57	PIB_IO 20	79	58	PIB_IO 71
23	55	GND	78	56	PIB_IO 70
24	53	PIB_IO 21	77	54	PIB_IO 69
25	51	PIB_IO 22	76	52	PIB_IO 68
26	49	PIB_IO 23	75	50	PIB_IO 67
27	47	PIB_IO 24	74	48	PIB_IO 66
28	45	PIB_IO 25	73	46	PIB_IO 65
29	43	PIB_IO 26	72	44	PIB_IO 64
30	41	PIB_IO 27	71	42	PIB_IO 63

PIB IO numbering vs. SAMTEC TFM-150-02-SDA numbering					
PIB number	SAMTEC pin number	PIB Signal name	PIB number	SAMTEC pin number	PIB Signal name
31	39	PIB_IO 28	70	40	PIB_IO 62
32	37	PIB_IO 29	69	38	PIB_IO 61
33	35	PIB_IO 30	68	36	PIB_IO 60
34	33	PIB_IO 31	67	34	PIB_IO 59
35	31	PIB_IO 32	66	32	PIB_IO 58
36	29	PIB_IO 33	65	30	PIB_IO 57
37	27	PIB_IO 34	64	28	PIB_IO 56
38	25	PIB_IO 35	63	26	PIB_IO 55
39	23	PIB_IO 36	62	24	PIB_IO 54
40	21	PIB_IO 37	61	22	PIB_IO 53
41	19	PIB_IO 38	60	20	PIB_IO 52
42	17	PIB_IO 39	59	18	PIB_IO 51
43	15	PIB_IO 40	58	16	PIB_IO 50
44	13	PIBCLK (50MHz)	57	14	PIB_IO 49
45	11	GND	56	12	PIB_IO 48
46	9	PIB_IO 41	55	10	PIB_IO 47
47	7	PIB_IO 42	54	8	PIB_IO 46
48	5	+3,3 Volt	53	6	PIB_IO 45
49	3	+3,3 Volt	52	4	PIB_IO 44
50	1	+3,3 Volt	51	2	PIB_IO 43

Pin-out HD-Sub connector

78-pin HD-Sub PIB numbering vs. SAMTEC TFM-150-2-SDA numbering					
PIB number	SAMTEC pin number	HD-Sub	PIB number	SAMTEC pin number	HD-Sub
1	99	GND	100	100	GND
2	97	GND	99	98	GND
3	95	GND	98	96	GND
4	93	HD-Sub Pin 39	97	94	HD-Sub Pin 59
5	91	HD-Sub Pin 20	96	92	HD-Sub Pin 78
6	89	HD-Sub Pin 38	95	90	HD-Sub Pin 58
7	87	HD-Sub Pin 19	94	88	HD-Sub Pin 77
8	85	HD-Sub Pin 37	93	86	HD-Sub Pin 57
9	83	HD-Sub Pin 18	92	84	HD-Sub Pin 76
10	81	HD-Sub Pin 36	91	82	HD-Sub Pin 56
11	79	HD-Sub Pin 17	90	80	HD-Sub Pin 75
12	77	HD-Sub Pin 35	89	78	HD-Sub Pin 55
13	75	HD-Sub Pin 16	88	76	HD-Sub Pin 74
14	73	HD-Sub Pin 34	87	74	HD-Sub Pin 54
15	71	HD-Sub Pin 15	86	72	HD-Sub Pin 73
16	69	HD-Sub Pin 33	85	70	HD-Sub Pin 53
17	67	HD-Sub Pin 14	84	68	HD-Sub Pin 72
18	65	HD-Sub Pin 32	83	66	HD-Sub Pin 52
19	63	HD-Sub Pin 13	82	64	HD-Sub Pin 71
20	61	HD-Sub Pin 12	81	62	HD-Sub Pin 51
21	59	HD-Sub Pin 31	80	60	HD-Sub Pin 70
22	57	HD-Sub Pin 11	79	58	HD-Sub Pin 50
23	55	HD-Sub Pin 30	78	56	HD-Sub Pin 69
24	53	HD-Sub Pin 10	77	54	HD-Sub Pin 68
25	51	HD-Sub Pin 9	76	52	HD-Sub Pin 67
26	49	HD-Sub Pin 8	75	50	HD-Sub Pin 66
27	47	HD-Sub Pin 7	74	48	HD-Sub Pin 65
28	45	HD-Sub Pin 6	73	46	HD-Sub Pin 64
29	43	HD-Sub Pin 5	72	44	HD-Sub Pin 63
30	41	HD-Sub Pin 4	71	42	HD-Sub Pin 62

78-pin HD-Sub PIB numbering vs. SAMTEC TFM-150-2-SDA numbering					
PIB number	SAMTEC pin number	HD-Sub	PIB number	SAMTEC pin number	HD-Sub
31	39	HD-Sub Pin 3	70	40	HD-Sub Pin 61
32	37	HD-Sub Pin 2	69	38	HD-Sub Pin 60
33	35	HD-Sub Pin 29	68	36	HD-Sub Pin 49
34	33	HD-Sub Pin 28	67	34	HD-Sub Pin 48
35	31	HD-Sub Pin 27	66	32	HD-Sub Pin 47
36	29	HD-Sub Pin 26	65	30	HD-Sub Pin 46
37	27	HD-Sub Pin 25	64	28	HD-Sub Pin 45
38	25	HD-Sub Pin 24	63	26	HD-Sub Pin 44
39	23	HD-Sub Pin 23	62	24	HD-Sub Pin 43
40	21	HD-Sub Pin 22	61	22	HD-Sub Pin 42
41	19	HD-Sub Pin 21	60	20	HD-Sub Pin 41
42	17	GND	59	18	GND
43	15	GND	58	16	GND
44	13	GND	57	14	GND
45	11	+5 Volt	56	12	+5 Volt
46	9	+5 Volt	55	10	+5 Volt
47	7	+5 Volt	54	8	+5 Volt
48	5	+12 Volt	53	6	+12 Volt
49	3	+12 Volt	52	4	+12 Volt
50	1	+12 Volt	51	2	+12 Volt

Connector positioning

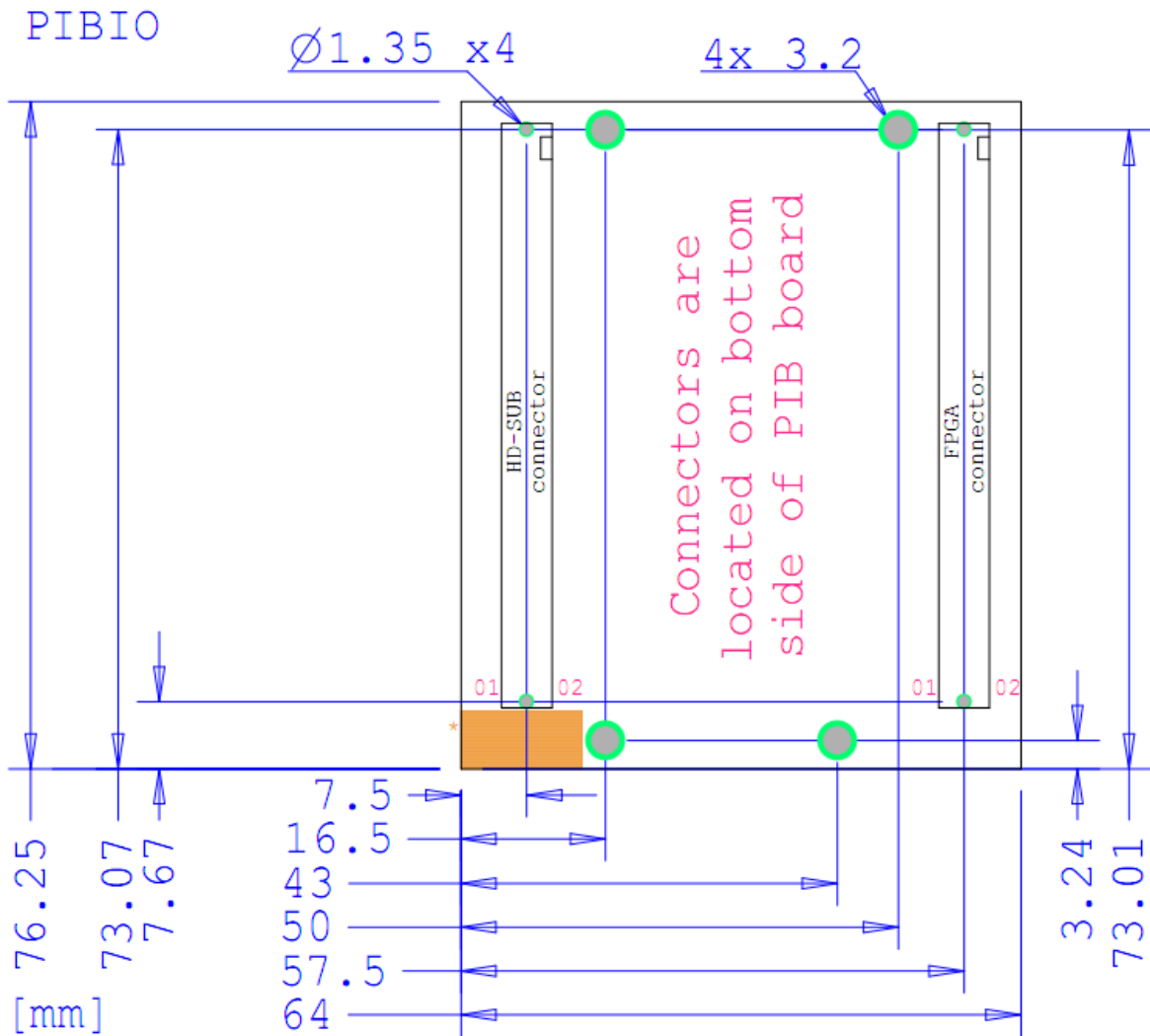


Figure 1: PIB IO - Top view

Shown pin-numbers are for SAMTEC TFM-150-02-SDA connectors