



TaichuPix-3 test

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Test ladder V1.5



Test ladder V1.5 produced to debug the flex

Same design as flex V1.3 (2 layers), but is a 6-layer rigid PCB, with some test points and closer power supply socket



Test ladder V1.5

2 test ladder boards bonded with TC3

- Each one has a TC3 chip on position 'U1'
 - FlexV1.5-6C
 - FlexV1.5-6D

FlexV1.5-6C and V1.5-6D test results

OCT mode

- \succ
- \geq

							1	1	229	128	323	0	1
	Elex v1.5-6C has some						2	255	187	170	0	4	0
							3	255	170	187	64	0	0
		error c	ode			_	4	1	229	256	323	0	1
							5	1	250	511	323	0	1
	\triangleright	Flex v'	1.5-6D	has no	ormal		6	1	250	0	323	0	1
	<i>,</i>						7	1	15	128	323	0	1
		output					8	1	15	256	323	0	1
							9	1	15	511	323	0	1
							10	1	36	0	835	0	33
							11	1	36	128	323	0	1
_			Flex V	1.5-6D		12	1	57	320	835	0	33	
10	674x9 doub	le						511	835	0	33		
	1	2	3	4	5	6	7	8	9	170	0	4	0
1		1 218	0	323	0	23	(238	97	187	64	0	0
2		1 239	128	323	0	23	(238	97	0	323	0	1
3		1 240	256	323	0	23	(238	97	128	323	0	1
4		1 5	511	323	0	23	(238	97	256	323	0	1
5		1 4	0	323	0	23	(238	97		ГІ	NY \/A E	60
6		1 4	128	323	0	23	(238	97		LIE	ex v1.5	-00
7		1 26	256	323	0	23	(238	97				
8		1 26	511	323	0	23	(238	97				
9		1 25	0	323	0	23	(238	97				
10		1 46	128	323	0	23	(0 238	97				
11		1 47	256	323	0	23	(238	97	_			
12		1 68	511	323	0	23	(238	97	_			
13		1 67	0	323	0	23	(238	97	_			
14		1 67	128	323	0	23	(238	97	_			
15		1 89	256	323	0	23	(238	97				
16		1 89	511	323	0	23	(238	97	_			
17		1 109	0	323	0	23	(238	97				
18		1 109	128	323	0	23	(238	97				

Valid ts - Col. Row Pattern -

Apulse read test (1)

DPULSE floating

Flex v1.5-6C and 6D output abnormal

Flex V1.5-6C

data ×							
	Valid	ts	Col.	Row	Pattern		
1	0	214	276	511	0		
2	0	192	240	1023	8		
3	1	208	294	510	8		
4	0	192	498	509	0		
5	0	191	93	1020	8		
6	1	130	140	511	8		
7	0	178	137	1022	0		
8	0	214	474	1021	0		
9	1	126	94	1022	8		
10	0	192	382	511	8		
11	0	178	139	1020	0		
12	1	129	484	511	8		
13	1	192	284	1022	0		
14	0	193	76	1022	0		
15	0	130	335	1022	8		
16	1	182	461	511	8		
17	0	191	46	1022	0		
18	0	193	244	1023	8		
19	1	98	137	1023	8		
20	0	193	192	511	0		
21	0	193	61	1023	8		
22	1	131	76	510	8		
	•						

Flex V1.5-6D

1	1666x9 double						
	1	2	3	4	5		
1	1	0	191	1023	0		
2	1	0	191	1023	0		
3	1	0	191	1023	0		
4	1	0	191	1023	0		
5	1	0	191	1023	0		
6	1	0	191	1023	0		
7	1	0	191	1023	0		
8	1	0	191	1023	0		
9	1	0	191	1023	0		
10	1	0	191	1023	0		
11	1	0	191	1023	0		
12	1	0	191	1023	0		
13	1	0	191	1023	0		
14	1	0	191	1023	0		
15	1	0	191	1023	0		
16	1	0	191	1023	0		
17	1	0	191	1023	0		
18	1	0	191	1023	0		





Apulse read test (2)

With DPULSE connected to GND

- Indicate DPULSE should NOT floating
 - Proved by the single chip board Chip12
- Output of Flex v1.5-6C nearly normal
 - Read out most of pixels <63, 0:69>, a few lost
 - Several masked pixels were read out

🛨 66x9 double							
	1	2	3	4	5		
1	1	151	63	815	0		
2	1	151	63	787	0		
3	1	134	63	554	0		
4	1	151	63	518	0		
5	1	134	62	97	0		
6	1	134	63	69	0		
7	1	134	63	68	0		
8	1	134	63	67	0		
9	1	134	63	66	0		
10	1	134	63	64	0		
11	1	134	63	63	0		
12	1	134	63	62	0		
13	1	135	63	61	0		
14	1	135	63	60	0		
15	1	134	63	59	0		
16	1	134	63	58	0		
17	1	134	63	57	0		
18	1	134	63	56	0		



Output of Flex v1.5-6D normal



S-curve test



- Flex v1.5-6C
 - Output pixel address when Vin=0
 - > Counts do not increased with Vin



ITHR=96

- Flex v1.5-6D
 - Output unstable
 - No output when Vin=0



Summary



- DPULSE should NOT be floating, otherwise pixel can not work normally
 - > Next step: bond DPULSE to GND on the flex ladder

Next step

- > Figure out the reason why s-curve output is unstable
- > Test Flex1.5-6D with a laser source