Metrology summary on electrical module E4

The XY survey after the baseboard and sensors have been glued together.

Electrical module 4 4/17/2002 data: right after gluing the sensors to the baseboard

Cartesian (drawing) reference frame, ref TB-0059-601-02						
		Top			**Bottom**	
Distance Parameter	**Measure**	**Expect**	**Deviation**	**Measure**	**Expect**	**Deviation**
F2 To F3	2189.5	2190	-0.5	2191.4	2190	1.4
F2 to x=0	4772.3	4774	-1.7	6034.3	6036	-1.7
F2 to y=0	5459.1	5478	-18.9	5414.6	5434	-19.4
F3 to x=0	6961.3	6964	-2.7	8225.2	8226	-0.8
F3 to y=0	5413.5	5434	-20.5	5461.5	5478	-16.5
F6 to F7	2186.6	2190	-3.4	2192.1	2190	2.1
F6 to x=0	8222.9	8226	-3.1	6975.2	6964	11.2
F6 to y=0	68500.9	68522	-21.1	68551.0	68566	-15.0
F7 to x=0	6036.8	6037	-0.2	4783.6	4774	9.6
F7 to y=0	68547.5	68566	-18.5	68502.8	68522	-19.2
average of x	6498.3	6500.3	-1.9	6504.6	6500.0	4.6
average of y	36980.2	37000.0	-19.8	36982.5	37000.0	-17.5
left wafer angle	-0.02004	-0.02002	-0.00002	0.01982	0.02000	-0.00018
right wafer angle	-0.02000	-0.02000	0.00001	0.01981	0.02000	-0.00019

top side angle	-0.02149	-0.0200	-0.00149
bottom side angle	0.01857	0.0200	-0.00143
	0.040061		0.020031

Physics frame results for the same module. ref TB-0059-601-02						
Parameter	**Units**	**Measure**	**Expect**	**Tolerance**	**Deviation**	**Status**
Mhx	?m?	-6497.8	-6500	30	2.2	OK
Mhy	?m?	-36981.0	-37000	30	19.0	OK
Msx	?m?	38492.9	38500	100	-7.1	OK
Msy	?m?	-36980.1	-37000	30	19.9	OK
Sepf	?m?	64087.5	64090	10	-2.5	OK
Sepb	?m?	64091.3	64090	10	1.3	OK
Midxf	?m?	-0.3	0	10	-0.3	OK
Midyf	?m?	0.2	0	5	0.2	OK
Stereo	mrad	-20.031	-20.000	0.130	-0.031	OK
a1	mrad	0.008	0.000	0.130	0.008	OK
a2	mrad	0.058	0.000	0.130	0.058	OK
a3	mrad	-0.051	0.000	0.130	-0.051	OK
a4	mrad	-0.071	0.000	0.130	-0.071	OK

The XY survey with hybrid on.

Electrical module 4 4/22/2002 data: after placing the hybrid on (no wirebonds yet)

Cartesian (drawing) reference frame, ref TB-0059-601-02						
		Top			Bottom	
Distance Parameter	**Measure**	**Expect**	**Deviation**	**Measure**	**Expect**	**Deviation**
F2 To F3	2190.1	2190	0.1	2190.4	2190	0.4
F2 to x=0	4773.2	4774	-0.8	6035.3	6036	-0.7
F2 to y=0	5460.7	5478	-17.3	5416.8	5434	-17.2
F3 to x=0	6962.9	6964	-1.1	8225.2	8226	-0.8
F3 to y=0	5416.1	5434	-17.9	5463.6	5478	-14.4
F6 to F7	2186.5	2190	-3.5	2191.6	2190	1.6
F6 to x=0	8230.0	8226	4.0	6975.7	6964	11.7
F6 to y=0	68503.4	68522	-18.6	68552.4	68566	-13.6
F7 to x=0	6043.9	6037	6.9	4784.6	4774	10.6
F7 to y=0	68549.2	68566	-16.8	68504.9	68522	-17.1

average of x	6502.5	6500.3	2.3	6505.2	6500.0	5.2
average of y	36982.4	37000.0	-17.6	36984.4	37000.0	-15.6
left wafer angle	-0.02014	-0.02002	-0.00012	0.01982	0.02000	-0.00018
right wafer angle	-0.02008	-0.02000	-0.00008	0.01980	0.02000	-0.00020

top side angle	-0.02361	-0.0200	-0.00361
bottom side angle	0.01642	0.0200	-0.00358
	0.040030		0.020015

Physics frame results for the same module. ref TB-0059-601-02						
Parameter	**Units**	**Measure**	**Expect**	**Tolerance**	**Deviation**	**Status**
Mhx	?m?	-6498.2	-6500	30	1.8	OK
Mhy	?m?	-36984.4	-37000	30	15.6	OK
Msx	?m?	38478.0	38500	100	-22.0	OK
Msy	?m?	-36978.9	-37000	30	21.1	OK
Sepf	?m?	64087.1	64090	10	-2.9	OK
Sepb	?m?	64090.0	64090	10	0.0	OK
Midxf	?m?	-0.6	0	10	-0.6	OK
Midyf	?m?	-0.4	0	5	-0.4	OK
Stereo	mrad	-20.015	-20.000	0.130	-0.015	OK
a1	mrad	-0.020	0.000	0.130	-0.020	OK
a2	mrad	0.040	0.000	0.130	0.040	OK
a3	mrad	-0.051	0.000	0.130	-0.051	OK
a4	mrad	-0.055	0.000	0.130	-0.055	OK