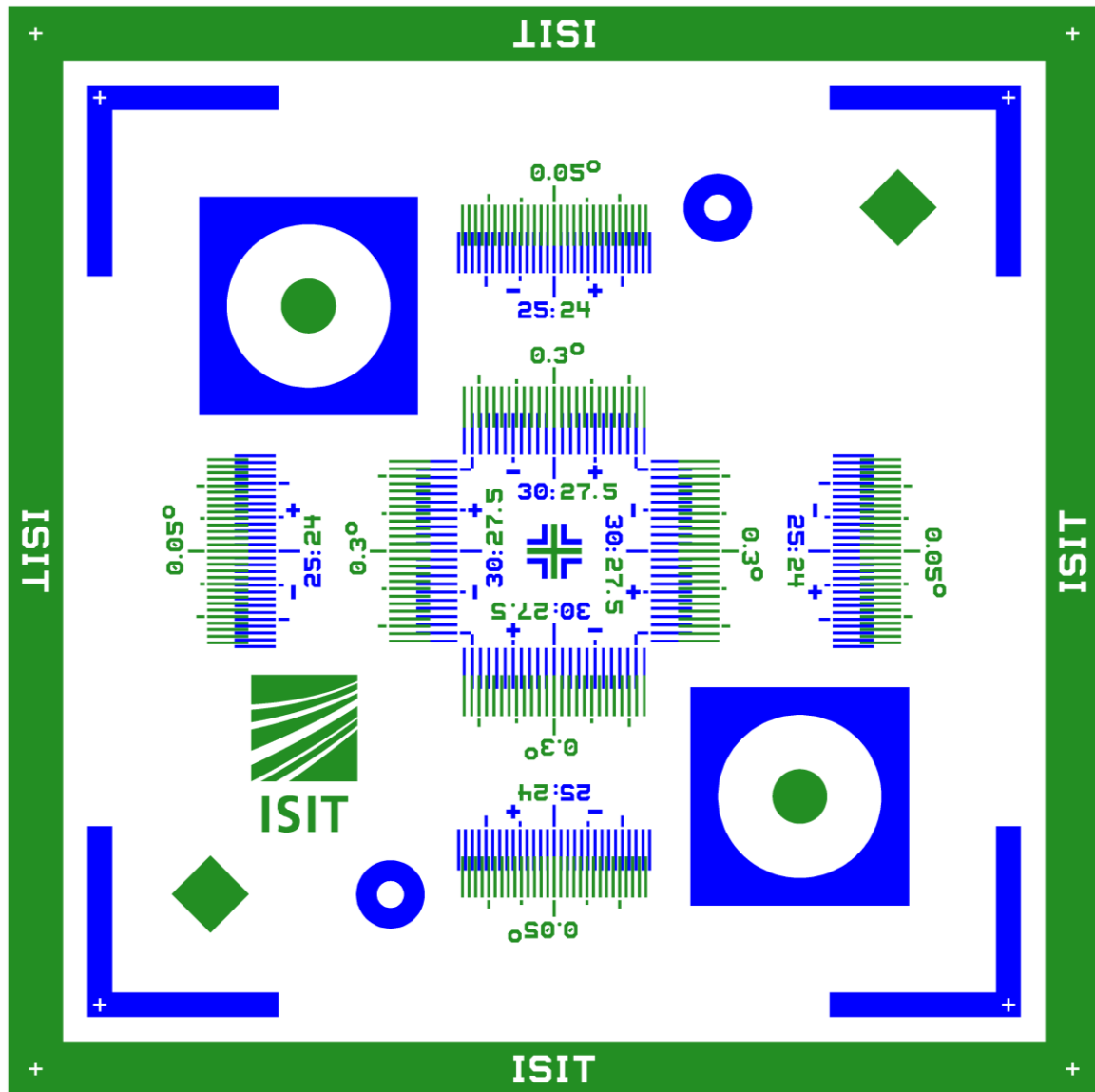
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LAYOUT:



Glass die (green) on top of a multiuse substrate (blue).

TECHNICAL DATA:

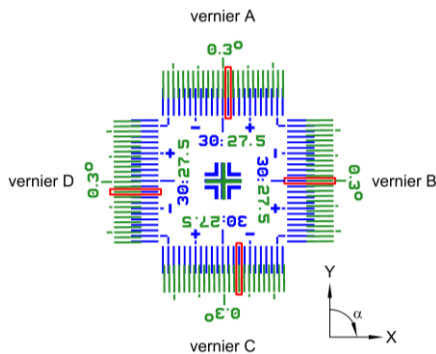
- alignment calibration set consisting of glass dies and multiuse substrates
- fiducial marks for automated placement and displacement measurement
- vernier scales for manual measurement of linear and rotational displacement;
measurement range: $\pm 27.5 \mu\text{m} / 3.3^\circ$ and $\pm 14 \mu\text{m} / 0.7^\circ$
resolution: $2.5 \mu\text{m} / 0.3^\circ$ and $1 \mu\text{m} / 0.05^\circ$
- substrates are available as 8" silicon or glass wafers (200 mm diameter); they can be diced on request, e.g. square (135 x 135 mm) or rectangle (180 x 76.5 mm) geometry
- adhesive fixation allows displacement measurement independent of the placement equipment
- easy to use laser cut stencil for manual application of adhesive spray

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TECHNICAL INFORMATION:

designed chip size	4.00 mm x 4.00 mm (metal frame on chip)
die pitch	4.50 mm x 4.50 mm
typical die size after dicing*	4.36 mm x 4.36 mm
	other geometries, e.g. 4x4 dies available on request
metallization*	200 nm Al
wafer material*	chip: borosilicate glass
	substrate: borosilicate glass or silicon
wafer thickness*	725 µm, other thicknesses available on request
delivery	8" wafer, ~ 1294 dies, diced on tape laser cut stencil, 250 x 250 x 0.150 mm

interpretation of vernier scales



The displacement of the die is calculated from the observed reading on the vernier scales (example marked in red).

$$\text{horizontal displacement} = (\text{vernier A} - \text{vernier C})/2$$

$$\text{vertical displacement} = (\text{vernier D} - \text{vernier B})/2$$

$$\begin{aligned} \text{rotational displacement} &= (\text{vernier A} + \text{vernier C})/2 \\ &= (\text{vernier D} + \text{vernier B})/2 \end{aligned}$$

example:

$$\Delta X = (2.5\mu\text{m} - -7.5\mu\text{m})/2 = +5\mu\text{m}$$

$$\Delta Y = (-5\mu\text{m} - 0\mu\text{m})/2 = -2.5\mu\text{m}$$

$$\alpha = (0.3^\circ + -0.9^\circ)/2 = (-0.6^\circ + 0^\circ)/2 = -0.3^\circ$$

contact

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geometry variations

Arbitrary customer-specific layouts including a company's logotype can be realised on 8" glass and silicon wafers.

* Specifications subject to change without notice.