

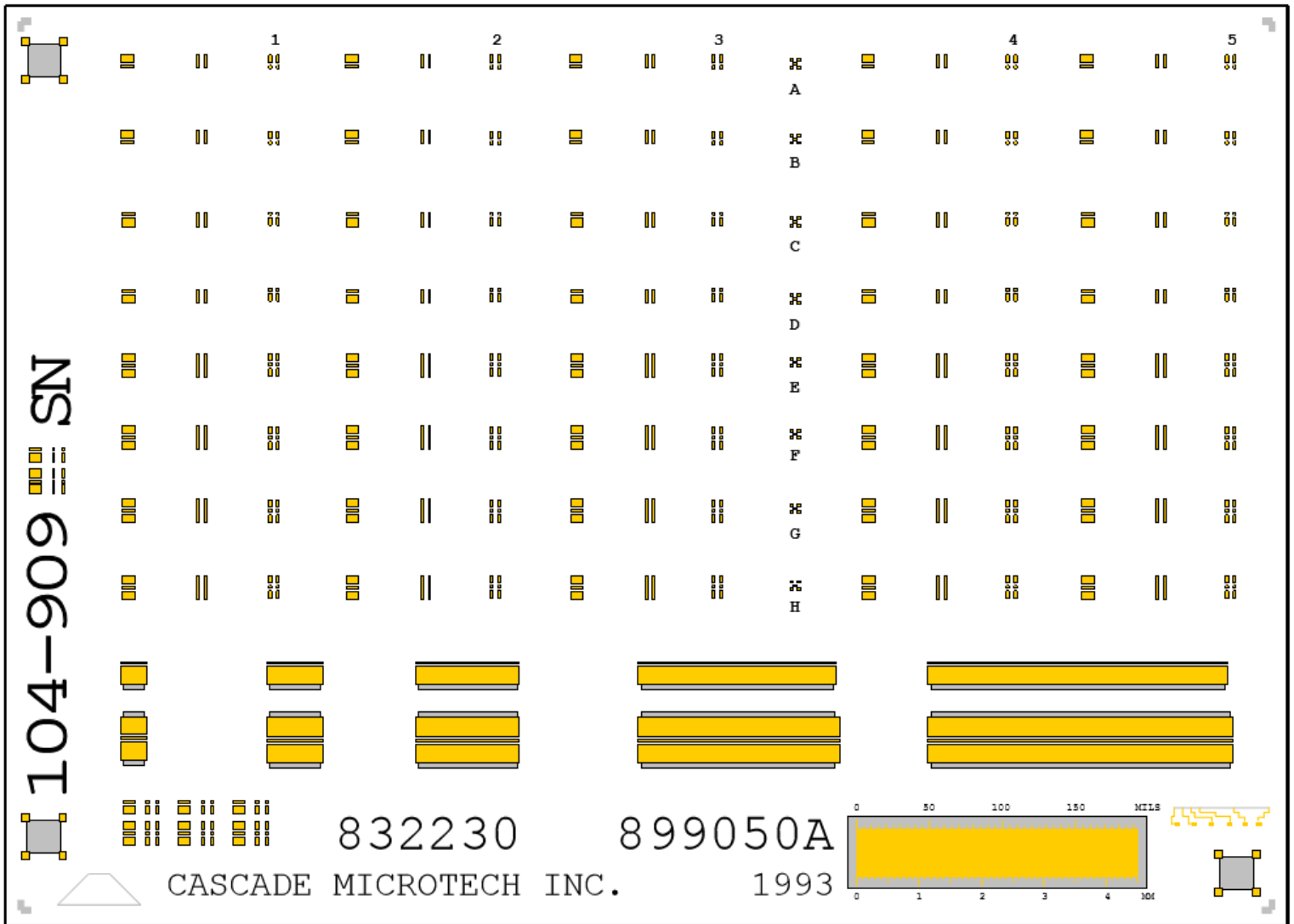
Cascade Impedance Standard Substrate Map

000111100010

> **P/N: 104-909**

Pitch: 50 μ m - 150 μ m

Configuration: **GSG, SG, GS**



> Key to Map

Key to the 104-909 Map

Substrate specification: Material: Alumina; Thickness: 25 mils (635 μm); Dielectric constant: 9.9

Tips	Thru	Short	Load	Alignment Marks	Verification Lines												
GSG																	
SG				<p>Note:</p> <p>An Open is synthesized by raising the probes in air a minimum distance of 250 μm above the chuck surface</p> <p>Recommended Overtravel</p> <p>ACP: 75 – 100 μm Infinity: 50 – 75 μm</p>													
GS					<table border="1"> <thead> <tr> <th>Depay</th> <th>Length</th> </tr> </thead> <tbody> <tr> <td>3 ps</td> <td>\approx 450 μm</td> </tr> <tr> <td>7 ps</td> <td>\approx 900 μm</td> </tr> <tr> <td>14 ps</td> <td>\approx 1800 μm</td> </tr> <tr> <td>27 ps</td> <td>\approx 3500 μm</td> </tr> <tr> <td>40 ps</td> <td>\approx 5250 μm</td> </tr> </tbody> </table>	Depay	Length	3 ps	\approx 450 μm	7 ps	\approx 900 μm	14 ps	\approx 1800 μm	27 ps	\approx 3500 μm	40 ps	\approx 5250 μm
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	<p>Thru delay: 1 ps</p> <p>Impedance: Nominally 50 Ω</p>	<p>Impedance: 50 Ω DC accuracy: $\pm 0.3\%$</p> <p>For optimum calibration accuracy only the Red-marked load standards should be used</p>															

All of the above specifications are based on an overtravel (downward movement of probe after initial touchdown on the substrate). This amount of overtravel can be set before calibration on the Impedance Standard Substrate (ISS) using the alignment marks (allows precise setting of probe separation and overtravel). Figure 1 shows that initial contact with the edge of the probe tips should be made at reference plane X (midpoint between the outer flat edge and the internal apex). The desired overtravel and thus skate (forward movement of probe tips after initial contact with substrate) is then achieved by adjusting the Z height on the positioner to move the edge of the probe tips to reference plane Y (midpoint between the internal apex and the flag points). This can also be seen from the photographic images shown in Figure 2.

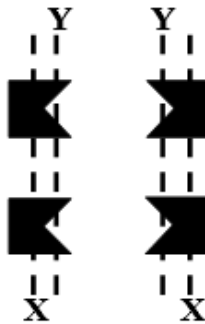


Figure 1: Alignment marks

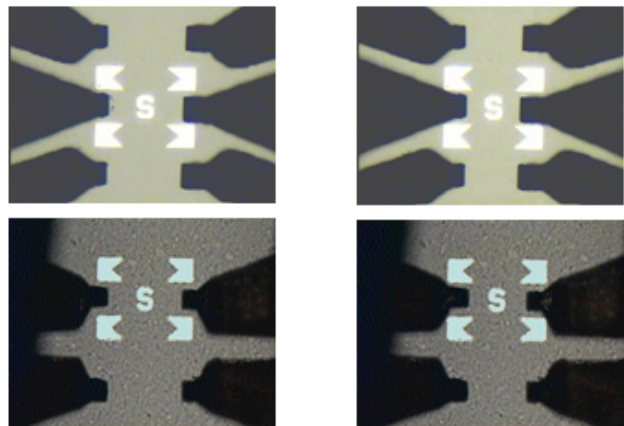


Figure 2: Images showing correct alignment and placement of probe tips

Calibration Coefficients are dependent on the probe tip configuration, placement on a standard, and the standard configurations. This leads to unique calibration coefficients for a unique pair of probe and ISS. Therefore, the calibration coefficients are supplied with the probe not with the ISS.

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Corporate Headquarters
7005 Southfront Road
Livermore, CA 94551
Phone: 925-290-4000

Document PN: 106-742 rev B