

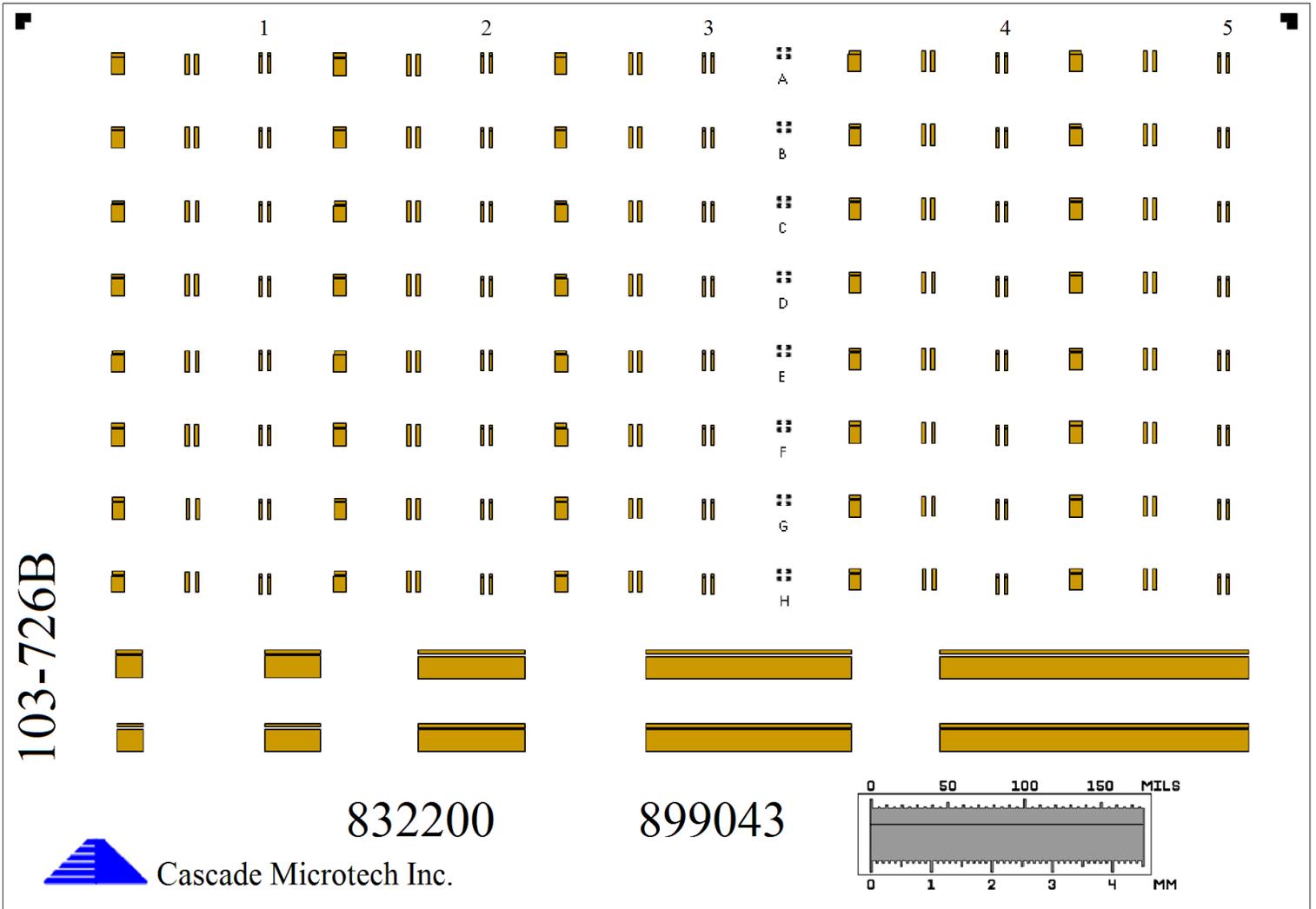
Cascade Impedance Standard Substrate Map

000111100010

> **P/N: 103-726**

Pitch: 100 μm - 250 μm

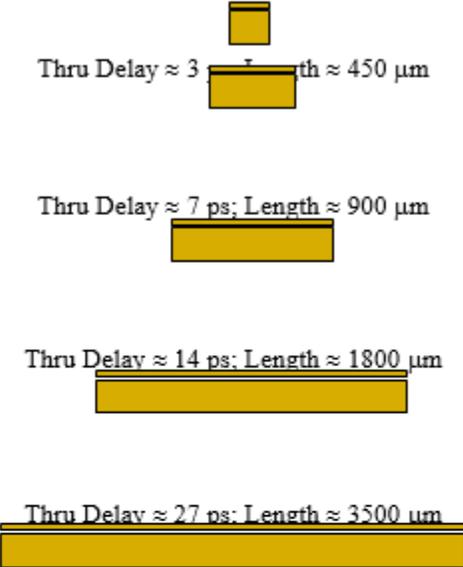
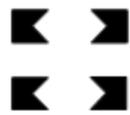
Configuration: SG



> Key to Map

Key to the 103-726 Map

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

 <p>Thru</p> <p>Short</p>	<p>Thru delay: 1 ps</p> <p>Impedance: Nominally 50 Ω</p> <p>Recommended Overtravel:</p> <p>ACP 75 – 125 μm</p> <p>Infinity 50 – 75 μm</p>	 <p>Load</p> <p>Precision 50 Ω Load</p>	<p>For optimum calibration accuracy only the Red-marked load standards should be used</p> <p>DC accuracy: +/- 0.3 %</p> <p>Note: Ensure the bias supply is turned off during calibration. Applying bias to the probe during calibration could cause the resistance of the load to change</p>	<p>Verification Lines</p>  <p>Thru Delay \approx 3 ps; Length \approx 450 μm</p> <p>Thru Delay \approx 7 ps; Length \approx 900 μm</p> <p>Thru Delay \approx 14 ps; Length \approx 1800 μm</p> <p>Thru Delay \approx 27 ps; Length \approx 3500 μm</p> <p>Thru Delay \approx 40 ps; Length \approx 5250 μm</p>	 <p>A-H</p> <p>Alignment Marks</p> <p>Note: An Open is synthesized by raising the probes in air a minimum distance of 250 μm above the chuck surface</p>
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All of the above specifications are based on an overtravel (downward movement of probe after initial touchdown on the substrate) of 75-125 μm . 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.

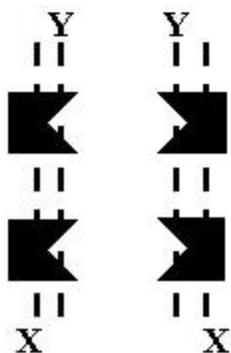


Figure 1: Alignment marks

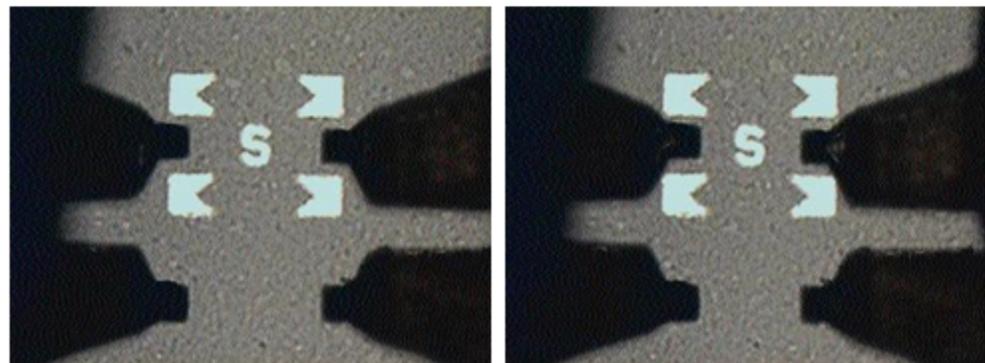


Figure 2: Images showing correct alignment and placement of probe tips

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

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