

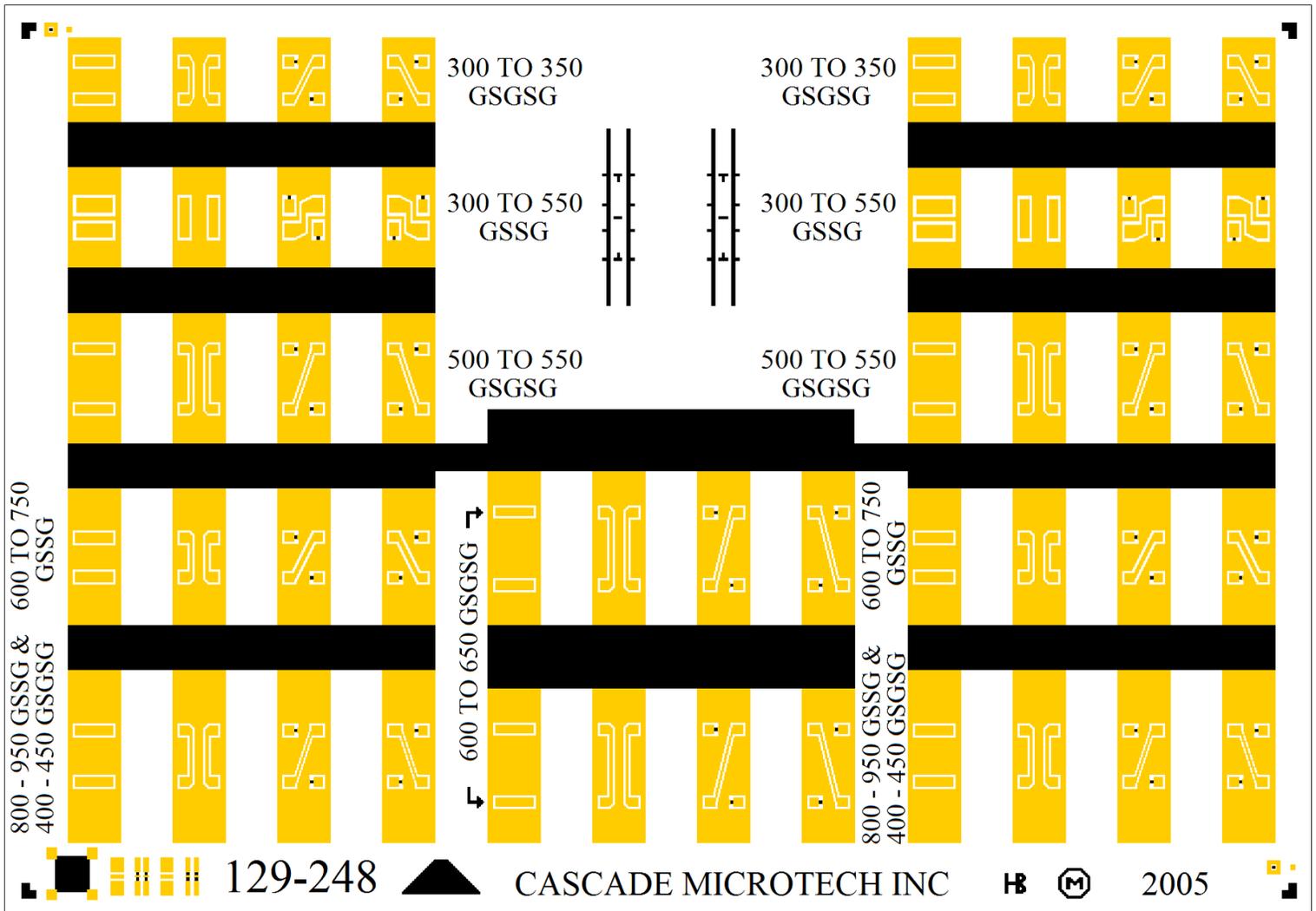
Cascade Impedance Standard Substrate Map

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> P/N: 129-248

Pitch: 300 μm - 650 μm , Configuration: **GSGSG, GSGS, SGSG, SGS**

Pitch: 300 μm - 950 μm , Configuration: **GSSG, GSS, SSG, SS**



> Key to Map

Key to the 129-248 Map

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

 Straight Thru	 or  Cross Thru	 Alignment Marks	<table border="1"> <thead> <tr> <th rowspan="2">Thru set descriptions</th> <th colspan="3">Thru lengths (ps)</th> </tr> <tr> <th>Straight thru</th> <th>Cross thru</th> <th>Loop-back thru</th> </tr> </thead> <tbody> <tr> <td>300 to 350 GSGSG</td> <td>5.6</td> <td>8.3</td> <td>7.4</td> </tr> <tr> <td>400 to 450 GSGSG</td> <td>5.6</td> <td>9.8</td> <td>9.2</td> </tr> <tr> <td>500 to 550 GSGSG</td> <td>5.5</td> <td>11.1</td> <td>10.5</td> </tr> <tr> <td>600 to 650 GSGSG</td> <td>5.5</td> <td>12.5</td> <td>12.3</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td>300 to 550 GSSG</td> <td>5.7</td> <td>8.1</td> <td>5.2</td> </tr> <tr> <td>600 to 750 GSSG</td> <td>5.6</td> <td>8.4</td> <td>7.5</td> </tr> <tr> <td>800 to 950 GSSG</td> <td>5.6</td> <td>9.8</td> <td>9.2</td> </tr> </tbody> </table>	Thru set descriptions	Thru lengths (ps)			Straight thru	Cross thru	Loop-back thru	300 to 350 GSGSG	5.6	8.3	7.4	400 to 450 GSGSG	5.6	9.8	9.2	500 to 550 GSGSG	5.5	11.1	10.5	600 to 650 GSGSG	5.5	12.5	12.3					300 to 550 GSSG	5.7	8.1	5.2	600 to 750 GSSG	5.6	8.4	7.5	800 to 950 GSSG	5.6	9.8	9.2
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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 for ACP style probes. This amount of overtravel can be set before calibration for both styles 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. 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. This can also be seen from the photographic images shown in Figure 2.

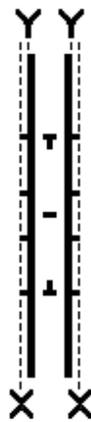


Figure 1: Alignment marks

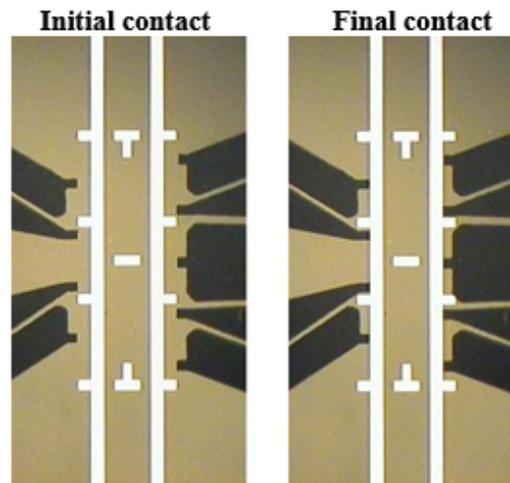


Figure 2: Images showing correct alignment and placement of probe tips of both GSSG and GSGSG ACP style probes.

This General Purpose Thru Impedance Standard Substrate should be used in conjunction with the short, open and load standards on the 106-682 (GSG configuration) or 106-683 (GS configuration) ISSs. The combinations allow two, three and four port calibrations of probing systems for GSGSG pitches of 300 to 650 μm and GSSG pitches from 300 to 950 μm . Unused ports of the cross thru are terminated in a 50 Ohm load (nominal).