

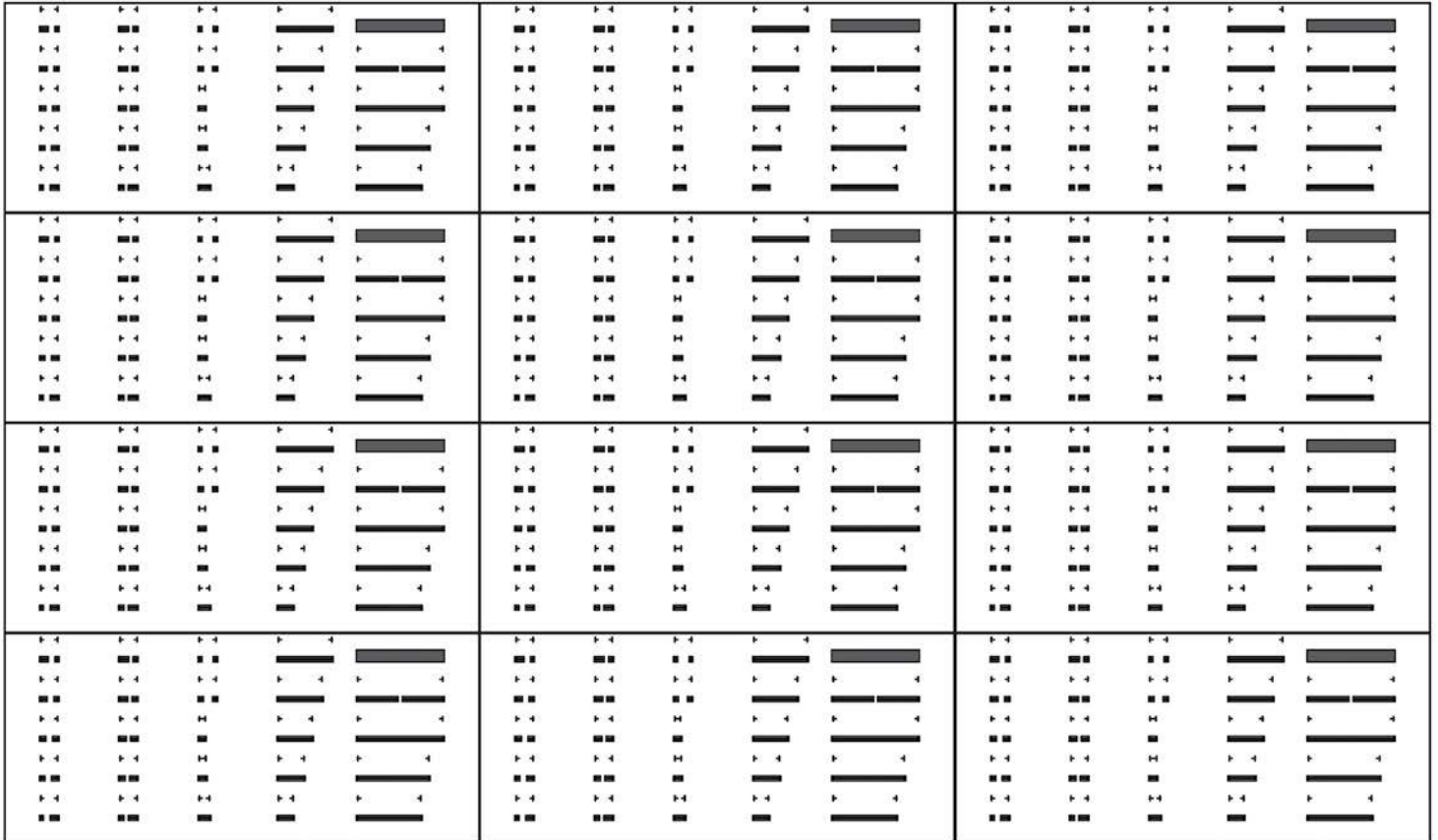
# Impedance Standard Substrate Map



## ➤ Multiline TRL Calibration

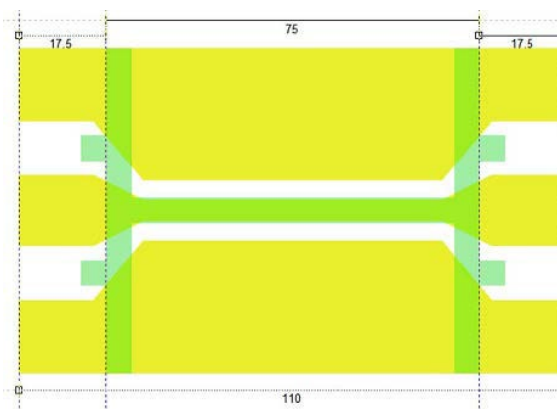
**Pitch:** 25  $\mu\text{m}$ , **Frequency:** WR-1.0 – WR-5.1, **Configuration:** Ground-Signal-Ground

**P/N:** 172-885



Calibration Sites: 12 Site Spacing: 6000  $\mu\text{m}$  x 2650  $\mu\text{m}$

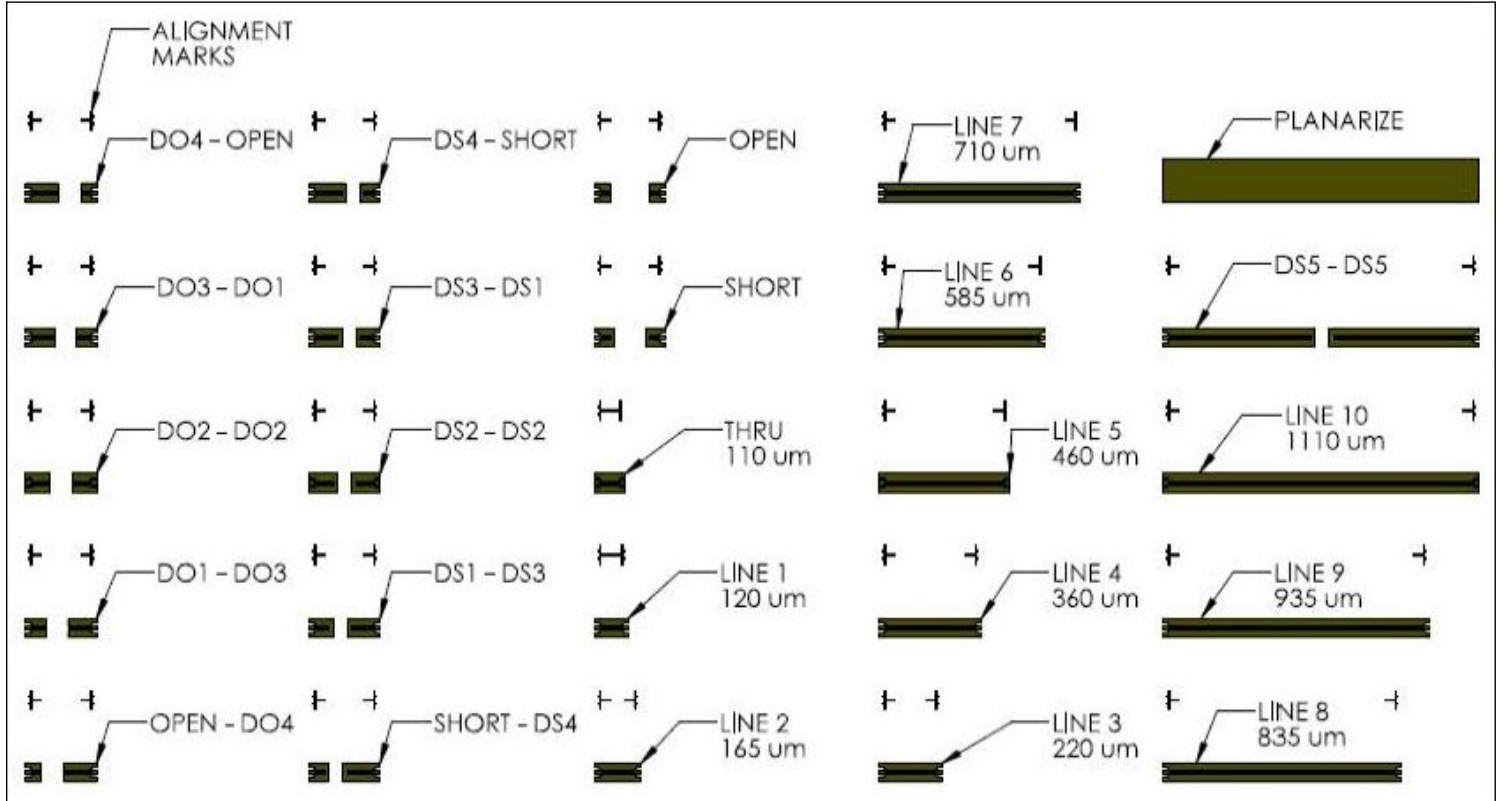
Lines	Conductor Length [um]	Tip-to-Tip Length [um]
THRU	110	75
LINE1	120	85
LINE2	165	130
LINE3	220	185
LINE4	360	325
LINE5	460	425
LINE6	585	550
LINE7	710	675
LINE8	835	800
LINE9	935	900
LINE10	1110	1075



Overlay of Alignment Mark and THRU standard, showing the conductor edge-to-edge length (110  $\mu\text{m}$ ) and Tip-to-Tip length (75  $\mu\text{m}$ )

## Key to Map

West Probe Fixed Index Step: 1000  $\mu\text{m}$  x 500  $\mu\text{m}$ , Alignment Mark Offset: 250  $\mu\text{m}$  Step North



**Note:** Line lengths are specified as conductor edge-to-edge dimension.

### SPECIFICATIONS

**Substrate Material:** High-resistivity Silicon, **Substrate Thickness:** 275  $\mu\text{m}$   
**Dielectric Constant:** 11.8, **Nominal Line  $Z_0$ :** 50 Ohm

### OVERTRAVEL AND ALIGNMENT

Prior to contacting the calibration standards, alignment and overtravel should be set using the alignment marks. On initial contact, the leading edge of the probe contacts should be aligned with the outermost edge "A" of the alignment mark, shown in Figure 1. To reach final contact, overtravel should be increased until the leading edge of the probe contacts is aligned with the innermost edge "B" of the alignment mark, shown in Figure 2.

**Note:** Calibration substrate must be mounted on an absorber material (such as ISS Holder P/N 116-344).

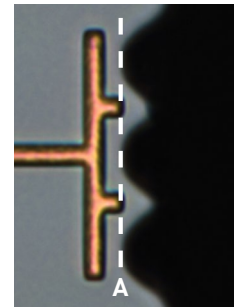


Figure 1: Initial contact

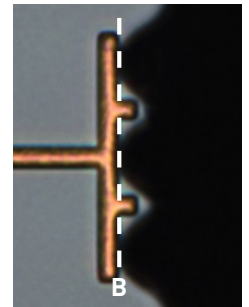


Figure 2: Final contact

## Recommended Line Configurations

Band	WR-1.0 (750 - 1100 GHz)	WR-2.2 (325 - 500 GHz)	WR-3.4 (220 - 330 GHz)	WR-4.3 (170 - 260 GHz)	WR-5.1 (140 - 220 GHz)
Lines	Thru Line 1 Line 2	Thru Line 2 Line 4	Thru Line 3 Line 5	Thru Line 3 Line 6	Thru Line 3 Line 7

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