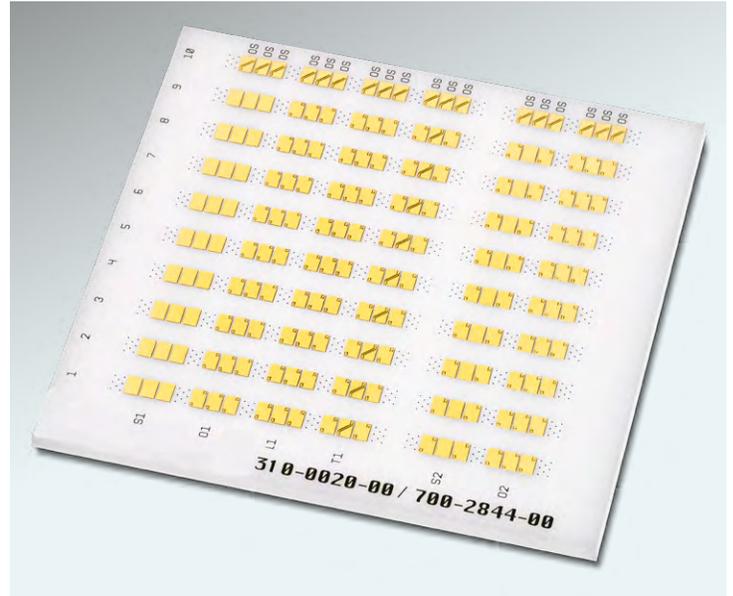


Custom Calibration Substrates

Custom ISS for Pyramid Probe® Cards

➤ Overview

FormFactor's Custom Calibration Substrates address specific layouts for calibration that match the layout of the device under test (DUT). The custom calibration substrates provides several advantages when compared to standard calibration substrates - higher accuracy by matching device layout, faster calibration by reducing the number of indexing steps to measure every RF port, as well as a total solution with calibration coefficients for faster time to first data. Customers can also select non-50 Ω loads, to match the impedance of the device that is being tested. To order a custom calibration substrate, fill out a [Design Capture Form](#) with your layout.



➤ Features / Benefits

Superior calibration accuracy

- Ability to match DUT layout improves RF calibration for better yield
- Reduced site-to-site variation in probe cards eliminates the need for correlation
- Verification standards can be placed on the ISS to confirm calibration stability in situ (offset open and offset short)

Versatile and cost-effective

- Capable of non-50 Ω loads to match the impedance of the device, such as for PAs, LNAs, and TIAs
- Reduced calibration time by single touchdown on multiple standards for multi-DUT calibration
- Customer-specified layout options available
- Each ISS has a unique serial number for traceability

Complete probing solution set

- Probe, calibration substrate and cal coefficients in a single box (time delay of each thru, C_{OPEN}, L_{LOAD} and L_{SHORT})
- Improves speed and efficiency to first data

› Specifications

Mechanical Specifications

| | |
|--------------|---|
| Pad Material | Au (Gold) |
| Resistor | NiCr (Nichrome) |
| Min Pitch | 150 μm (depends on specific application) |
| Thicknesses | 25 mils for up to 67 GHz; 10 mils for >67 GHz |
| Size | 22.2 mm x 22.2 mm (Other sizes will be available in the future) |

Electrical

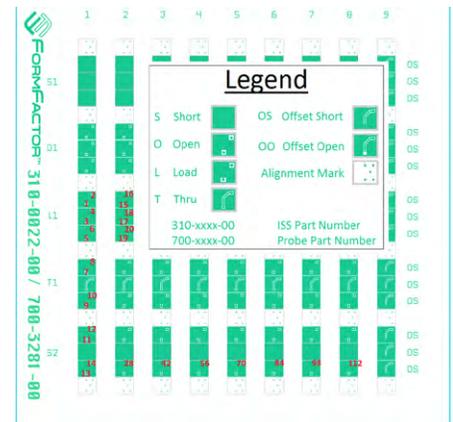
| | |
|----------------------------------|--|
| Load Values | 10 Ω - 150 Ω with +/-1% higher values available with +/-5% |
| Max RF Power | 27 dBm for 50 Ω load |
| Max Temperature | 100 $^{\circ}\text{C}$ |
| Cal Coefficients | C_{OPEN} , L_{LOAD} , and L_{SHORT} |
| Verification Standards Available | Offset open and Offset Short |

› Counting Instructions

1. Start in Column 1, L1 (or the first touchdown with loads).
 - Start with the left-most load and count top to bottom, then move right.
 - If the touchdown has multiple DUTs, count all loads in the top DUT before moving down to the next DUT.
2. Move down to the next touchdown in Column 1 and repeat (eg L2 next, then L3, etc).
3. Once Column 1 is complete, repeat for Column 2, Column 3, etc)

Example: Begin in Column 1, L1 (in this case, T1 and S2 also have loads). After counting all six loads in L1 touchdown, count four loads in T1 touchdown, followed by four loads in S2 touchdown. Repeat for Columns 2 through 9.

Note: Some Load structures in the row are named as S2, to give you the flexibility to choose the structures and the locations.



› Ordering Information

To order a custom calibration substrate, please fill out a [Design Capture Form](#).

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CUSTOM ISS-DS-0418

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