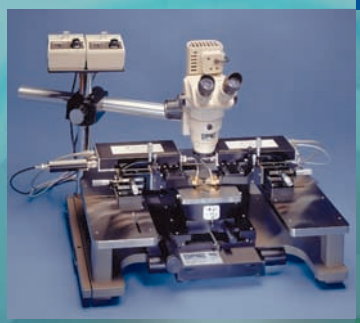
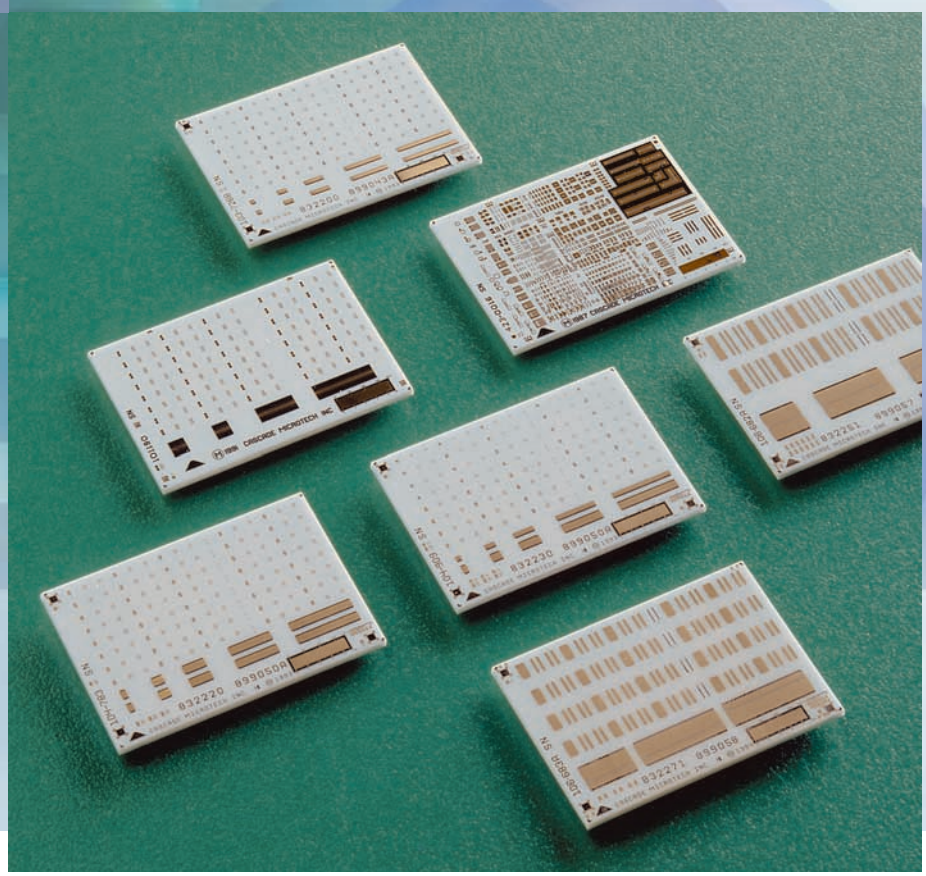
ISS Series of Impedance Standard Substrates





Superior measurements with NIST-verified calibration standards

Cascade Microtech's family of Impedance Standard Substrates support all of your high-frequency probing applications, including RFIC Pyramid™ Probe Cards. Cascade Microtech alone, offers the proven accuracy of LRRM calibrations with load inductance compensation.

CASCADE® MICROTECH

Innovating Test Technologies

Features

- Non-dispersive calibration standards, usable through 110 GHz
- Supports SOLT, TRL, and LRM/LRRM calibrations
- Dedicated substrates for GS/SG and GSG contact configurations maximize the number of usable sites per ISS
- Supports 50 µm to 3000 µm pitches
- Alignment marks provided to improve probe placement accuracy
- Layouts optimized for use with autoprobers
- Precision DC-trimmed, 50 ohm terminations
- NIST verified LRM/LRRM calibration accuracy with VNA calibration software for Summit-series probe stations
- General purpose elements for membrane and other fixed position RF probe cards

Benefits

- Fast, accurate, and repeatable high-frequency wafer probe calibrations
- Durable, precision calibration elements
- Dedicated calibration substrates for W-band and wide-pitch calibrations
- Optional Agilent calibration disk assists calibration setup
- LRM/LRRM calibrations with VNA calibration software provide highest accuracy in the industry
- Auto-calibration compatibility allows "single button" wafer probe calibration

Specifications

Substrate

Material: Alumina 99.6%
Thickness: 625 µm ±25 µm (25 mils ±1 mil)
Dielectric constant: 9.9
Loss factor (@ 1 MHz): 0.001

Supported probe heads

Footprints: GS, SG, GSG
Pitch: 50 to 3000 µm (2 to 50 mils)

Calibration standards

Spaced on 1270 x 1270 µm centers (50 x 50 mil centers)
50 ohm terminations:
DC accuracy: ±0.3% (except 106-686 which is ±1%)
TCR: +50 ppm/°C (NiCr) to -125 ppm/°C (TaN)
Stability: 0.5%
Maximum power: 0.25 W
VSWR for 101-190 and 114-456 only with 25 µm (1 mil) overlap:

<26.5 GHz	1.03:1
26.5 to 50 GHz	1.05:1
50 to 65 GHz	1.07:1
65 to 75 GHz	1.09:1
75 to 110 GHz	1.10:1

Thru lines (101-190 only):
Impedance: nominally 50 ohms
Physical length: 200 µm (8 mils)
Shorts (101-190 only):
50 x 500 µm bars (2 x 20 mils)
Additional verification lines:
Impedance: nominally 50 ohms
Scale (located right corner):
Upper scale: 180 mils @ 125 µm (5 mils)/div.
Lower scale: 4.5 mm @ 100 µm (4mils)/div.

Standard accessories

Wafer map indicating location of trimmed match standards (114-456 has a trim indicated by mark on substrate).

Optional accessories

Microwave wafer probe cal kit manual and disk (Agilent). *101-338*
VNA calibration software for manual stations . . . . . *VNACAL-WIN-M*
VNA calibration software for semiautomatic stations. . . *VNACAL-WIN*

Ordering Information

See table below

Part #	Description	Cal Sites	Pitch µm
101-190	LRM	27 GSG	100-250
103-726	GS	27 GS or SG	100-250
104-783	W-band	27 GSG	75-150
104-909	Narrow pitch	13 GSG, 7 GS, 7 SG	50-150
106-682	Wide pitch GSG	8 GSG	250-1250
106-683	Wide pitch GS/SG	8 GS, 8 SG	250-1250
005-016	General purpose	Cal sites vary	
106-686	GP membrane	25 loads	80-3000
108-010	Very wide pitch GSG	4 GSG	150-3000
108-011	Very wide pitch GS/SG	4 GS, 4 SG	150-3000
109-531	Right angle	5 N-E, 5 N-W, 5 E-W	100-250
114-456	HPC	27 GSG	100-150

CASCADE MICROTECH

Innovating Test Technologies for better measurements faster

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Innovating the HP Way

Channel Partner

ISSFAMDS-1200
Data subject to change without notice