

RF Probe Selection Guide Fall 2000

CASCADE® MICROTECH

Innovating Test Technologies



RF and Microwave On-wafer Probes: A broad family for diverse applications

The Air Coplanar Probe was developed in response to the need for a rugged microwave probe with a compliant tip for accurate, repeatable measurements on-wafer. Air Coplanar Probes feature excellent probe-tip visibility and the lowest loss available.

Metrology grade measurement accuracy, combined with precise probe mechanics make the ACP the best performing, most widely used microwave probe available.

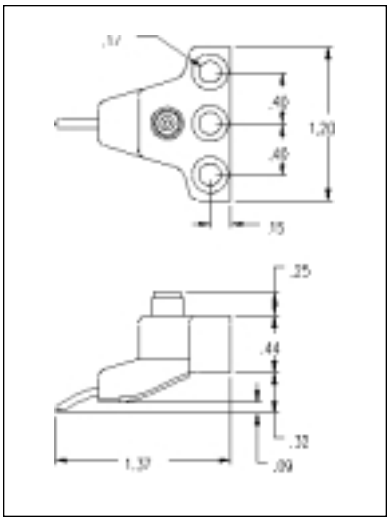
Air Coplanar Series Probes

Features

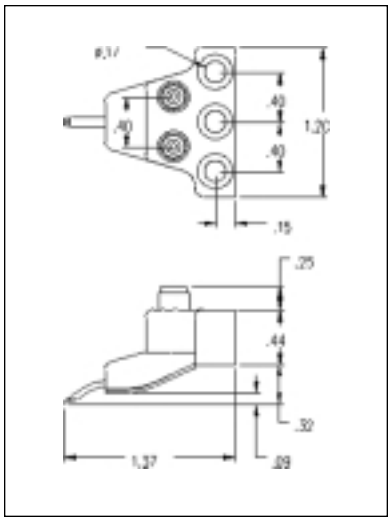
- Unique Air Coplanar tip design
- DC to 110 GHz models available
- Low insertion and return loss with ultra-low-loss (-L) versions
- Patented design for suppression of unwanted modes
- Excellent crosstalk characteristics
- Wide operating temperature -65°C to +200°C
- 100 to 250 µm standard pitch range (50 to 1250 µm available)
- Choice of beryllium copper (BeCu) or tungsten tip material
- Precision tip dual configuration available
- BeCu tip provides rugged, repeatable contact on gold pads

Benefits

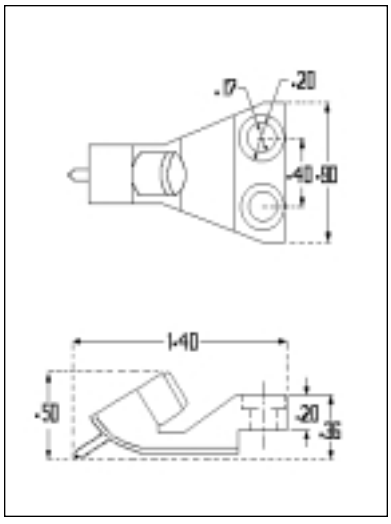
- Good visibility at probe tip allows accurate placement on DUT contact pads
- Individually supported contacts provide outstanding compliance for probing non-planar surfaces
- Stable and repeatable over-temperature measurements
- Typical probe life of 500,000 contacts on gold pads



Probe style for: ACP40, ACP40-W, ACP50, ACP65 and ACP110-C



Probe style for: ACP40-D



Probe style for: ACP40-L, ACP40-LW, ACP110-L

	Probe head type	Part number (Note 1,2)	Insertion loss Max. (dB)	Micro-Chamber compatible	Connector & tip type	Recom-mended cable	Recommended ISS Standard (100-250µm)	Recommended ISS Wide pitch (250-1250µm)
Coaxial	DC-40 GHz	ACP40-GS-xxx	2.0	Yes			103-726	106-683
	(Note 3)	ACP40-SG-xxx	2.0	Yes	K conn.	101-162	103-726	106-683
		ACP40-GSG-xxx	1.0	Yes	BeCu		101-190	106-682
		ACP40-L-GSG-xxx	0.6 (Note 5)	(Note 7)			101-190	106-682
	DC-40 GHz	ACP40-W-GS-xxx	2.0	Yes			103-726	106-683
	(Note 3)	ACP40-W-SG-xxx	2.0	Yes	K conn.	101-162	103-726	106-683
		ACP40-W-GSG-xxx	1.0	Yes	Tungsten		101-190	106-682
		ACP40-LW-GSG-xxx	0.6 (Note 5)	(Note 7)			101-190	106-682
	DC-50 GHz	ACP50-GS-xxx	2.0@40GHz		2.4 mm		103-726	
	(Note 3)	ACP50-GSG-xxx	1.4	Yes	BeCu	103-202	101-190	n/a
		ACP50-SG-xxx	2.0@40GHz				103-726	
	DC-65 GHz	ACP65-GSG-xxx	2.0	Yes	1.85 mm	104-540	101-190	n/a
	(Note 3)				BeCu			
	DC-110 GHz	ACP110-C-GSG-xxx	1.25	Yes	1.0 mm	(Note 8)	104-783	n/a
	(Note 4)	ACP110-L-GSG-xxx	1.15	(Note 7)	BeCu		& 116-344	
Dual coaxial	DC-40 GHz	ACP40-D-GSGSG-xxx	1.25					
	Dual-line	ACP40-D-GSGS-xxx	1.25@18GHz					
	(Note 3)	ACP40-D-GSS-xxx	1.0@10GHz (Note 6)		K conn.		005-016	005-016
		ACP40-D-GSSG-xxx	1.0@10GHz	Yes	BeCu	101-162	(consult	(consult
		ACP40-D-SGS-xxx	1.25@18GHz				factory)	factory)
		ACP40-D-SGSG-xxx	1.25@18GHz					
		ACP40-D-SSG-xxx	1.0@10GHz (Note 6)					
Wave-guide	50-75 GHz	ACP75-GSG-xxx	1.15	No	WR-15	n/a	101-190	n/a
	(Note 3)	ACP75-M-GSG-xxx	1.3	Yes (Note 9)	BeCu			
	75-110 GHz	ACP110-GSG-xxx	1.6	No	WR-10	n/a	104-783	n/a
	(Note 4)	ACP110-M-GSG-xxx	1.75	Yes (Note 9)	BeCu			

Note 1: The -xxx suffix indicates probe contact center-to-center spacing (pitch) in microns, e.g. ACP40-SG-150 is 150 µm (5.91 mils). Contacts are on a constant pitch and width is approx. 50 µm.

Note 2: The convention for describing probe head footprints is the sequence of contacts as seen looking down on the probe head tip in its functional position, with the tip pointing away from the viewer, describing contacts from left to right.

Note 3: ACP standard pitches are 100, 125, 150, 200 and 250 µm. Non-standard pitches are available from 50 µm to 1250 µm. Insertion loss applies to standard pitch range. Other pitches may have increased insertion loss and reduced frequency range.

Note 4: ACP110 standard pitches are 100, 125 and 150 µm.

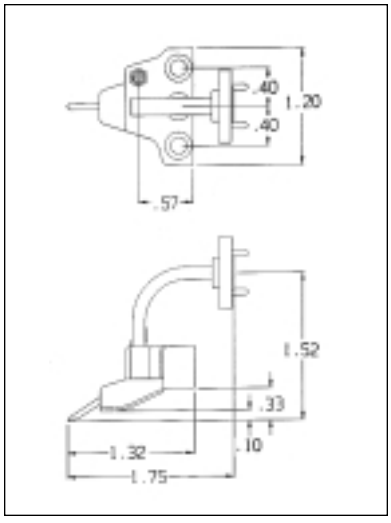
Note 5: 0.8 dB for standard pitches >150 µm.

Note 6: Signal furthest from ground is not specified.

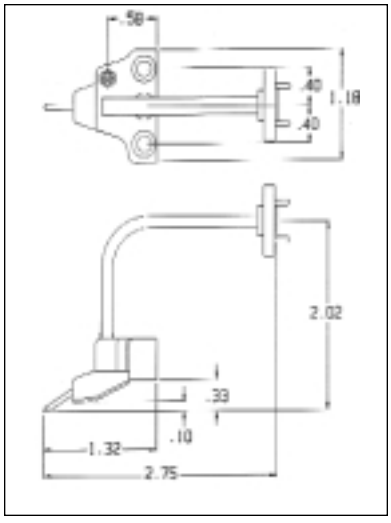
Note 7: Requires new larger top hat assembly and accessories.

Note 8: Refer to Agilent Technologies cables and XF configuration guide. HP 11500J (16 cm) for Summit 9K stations or HP 11500K (20 cm) for Summit 12K stations.

Note 9: Requires original small top hat assembly and accessories.



Probe style for: ACP75, ACP110



Probe style for: ACP75-M, ACP110-M



On-wafer High Performance Characterization Probes: The highest performance probes in the industry

On-wafer device characterization measurements demand the best performance from a probe. That's why Cascade Microtech developed its HPC-series probes. Unlike general-purpose probes that tradeoff electrical performance for production ruggedness, our HPC-series probes are designed to tackle the exacting demands of on-wafer, device characterization measurements.

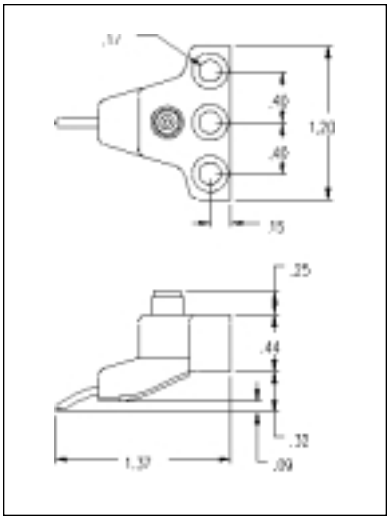
High Performance Characterization Probes

Features

- Special reduced contact area Air Coplanar™ tip
- Low insertion loss and VSWR
- Excellent crosstalk characteristics
- Designed for suppression of unwanted modes
- Wide operating temperature range (-65°C to 200°C)
- 100 or 150 µm standard pitch (125, 200 or 250 µm available)
- Choice of BeCu or tungsten
- Compatible with Cascade Microtech WinCal software for automatic VNA calibration

Benefits

- Save valuable wafer space with the ability to probe pads as small as 50 µm (excellent tip visibility/reduced contacts)
- Increase wafer yield and reduce measurement guardbands (probe repeatability and crosstalk)
- Ideal for noise parameter or load pull characterization (low insertion loss)



Probe style for: HPC40, HPC50, HPC65, HPC40-W, HPC50-W and HPC65-W

Probe head type	Part number (Note 1,2,3)	Insertion loss Max. (dB)	Micro-Chamber compatible	Connector & tip type (Note 4)	Recommended cable	Recommended ISS (100-150µm)	Recommended ISS (200-250µm)
DC-40 GHz	HPC40-GSG-xxx	0.75	Yes	K conn. BeCu			
DC-50 GHz	HPC50-GSG-xxx	0.8	Yes	V conn. BeCu	101-162	114-456	101-190
DC-65 GHz	HPC65-GSG-xxx	1.2	Yes	V conn. BeCu			
DC-40 GHz	HPC40-W-GSG-xxx	1.0	Yes	K conn. Tungsten			
DC-50 GHz	HPC50-W-GSG-xxx	1.4	Yes	V conn. Tungsten	101-162	114-456	101-190
DC-65 GHz	HPC65-W-GSG-xxx	2.0	Yes	V conn. Tungsten			

Note 1: The -xxx suffix indicates probe contact center-to-center spacing (pitch) in microns, e.g.HPC40-GSG-150 is 150 µm (5.91 mils). Contacts are on a constant pitch and width is approx. 25 µm.

Note 2: The convention for describing probe head footprints is the sequence of contacts as seen looking down on the probe head tip in its functional position, with the tip pointing away from the viewer, describing contacts from left to right.

Note 3: HPC standard pitches are 100 and 150. Other available pitches are 125, 200 and 250 µm. Insertion loss specifications apply to standard pitches only.

Note 4: The 1.85 mm V-connector is direct-mate compatible with the 2.4 mm connector. The 2.92 mm K-connector is direct-mate compatible with the 3.5 mm and SMA connectors.



RF Quadrant Probe Series: Multiple configurations for functional circuit testing

Quadrant Probes were developed in response to the need for multiple probe tips in a single module. Configurations consist of all RF or a combination of RF and DC.

The RF probes use Air Coplanar technology to produce a rugged microwave probe with a compliant tip for accurate, repeatable measurements on-wafer. The DC probes use ceramic blade needles for low noise and high performance.

ACP40Q-22 and ACP40Q-12 Quadrant Probes

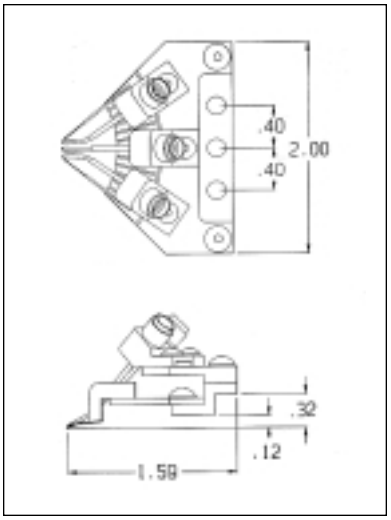
RF Quadrant Probes

Features

- Customized to customer application
- Mixture of DC and RF in one probe module. Up to 3 RF. Up to 8 DC.
- Utilizes ACP tip design, GSG, GS or SG
- Choice of BeCu or tungsten tips
- DC needles come with a 100 pF capacitor to ground at the needle base

Benefits

- Ideal for probing the entire circuit for functional test
- Dual ACP configuration supports differential signaling applications
- DC probes can provide power or slow logic to circuit under test

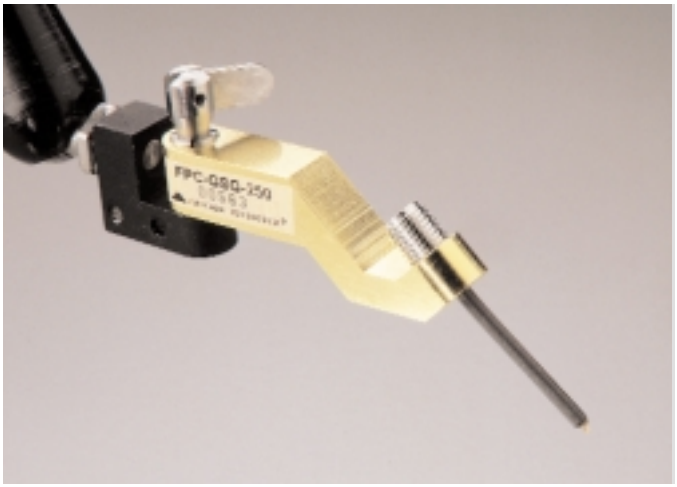


Probe style for: ACP40-Q-1Y, 2Y & 30

Probe head type	Part number	Number of RF probes	Number of DC probes	Insertion loss max. (dB)	MicroChamber compatible	Recommended RF cable
ACP Quadrant Probe	ACP40-Q-11	1	1			
(Note 1)	ACP40-Q-12	1	2			
	ACP40-Q-13	1	3			
	ACP40-Q-14	1	4			
	ACP40-Q-15	1	5	2.0	Yes	101-162
	ACP40-Q-16	1	6			(Note 2)
	ACP40-Q-17	1	7			
	ACP40-Q-18	1	8			
	ACP40-Q-21	2	1			
	ACP40-Q-22	2	2	2.0	Yes	101-162
	ACP40-Q-23	2	3			(Note 2)
	ACP40-Q-24	2	4			
	ACP40-Q-30	3	0	2.0	Yes	101-162

Note 1: Use ACP Quadrant Probe Order Form to specify number of RF probes, number of DC probes, probe tip material, configuration pitch and layout configuration. K connector is standard. Choice of BeCu or tungsten tip.

Note 2: ACP40-Q dc connections are supplied via a wire pig-tail to square-pin header, standard.



Module and Circuit Board Probes: Rugged, deep reach RF probing

The FPC-Series (Fixed-Pitch Compliant) is a high frequency 50-ohm coaxial probe that offers a signal line with either one or two low-inductance fixed-pitch ground contacts. The probe tip structure is lithographically defined for unsurpassed impedance control, preserving the highest integrity possible when launching and receiving signals from SMT boards, hybrids and multi-chip modules (MCM).

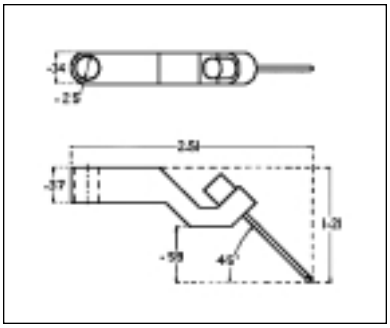
Fixed Pitch Compliant Series

Features

- DC - 40 GHz bandwidth
- 20 ps rise time
- Low insertion and return loss
- 2 mils of tip-to-tip compliance
- High probing angle and clearance

Benefits

- Maintains 50-ohm environment which allows accurate high-frequency measurement of microelectronic modules
- Compliant tips allow probing of non-planar structures
- BeCu tips provide longer probing life and reduce probe damage
- Access contacts close to components, module walls, or other obstructions



Probe style for: FPC

Probe head type	Part Number (Notes 1,2,3)	Insertion loss, typ.	Return loss min.	Connector & tip type	Recommended cable	Recommended ISS Standard (100-250µm)	Recommended ISS Wide pitch (250-1250µm)
DC-40 GHz	FPC-GS-xxx	2.0 dB		K conn.		103-726	106-683
(Note 4, 5)	FPC-SG-xxx	2.0 dB	10 dB	BeCu	101-162	103-726	106-683
	FPC-GSG-xxx	1.0 dB				101-190	106-682
DC-40 GHz	FPC-W-GS-xxx	2.0 dB		K conn.		103-726	106-683
(Note 4, 5)	FPC-W-SG-xxx	2.0 dB	10 dB	Tungsten	101-162	103-726	106-683
	FPC-W-GSG-xxx	1.0 dB				101-190	106-682

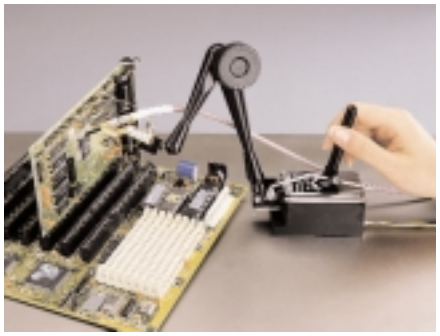
Note 1: The -xxx suffix indicates probe contact center-to-center spacing (pitch) in microns, e.g. FPC40-SG-150 is 150 µm (5.91 mils). Contacts are on a constant pitch and width is approx. 50 µm.

Note 2: The convention for describing probe head footprints is the sequence of contacts as seen looking down on the probe head tip in its functional position, with the tip pointing away from the viewer, describing contacts from left to right.

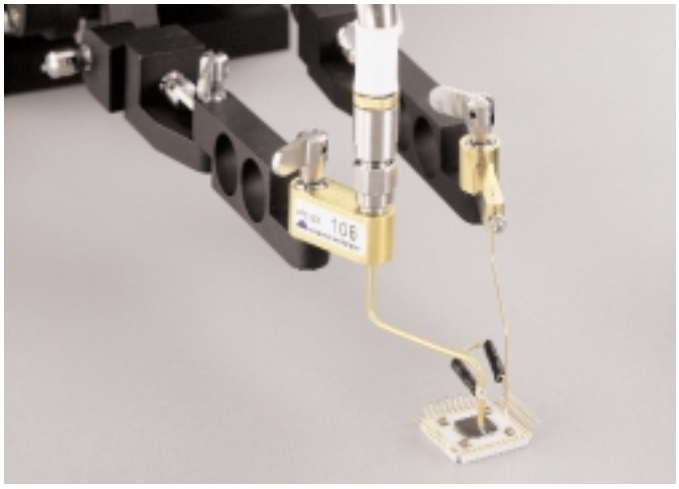
Note 3: FPC standard pitches are 100, 125, 150, 200, 250, 350, 500, 650, 750, 1000 and 1250 µm. Non-standard pitches are available from 100 µm to 1250 µm and by special order to 3000 µm. Insertion loss applies to standard pitch range. Other pitches may have increased insertion loss. Adapter 106-835 is required for Summit Series positioners.

Note 4: FPC GSG probes - 40 GHz up to 250 µm pitch, 20 GHz up to 1250 µm pitch and 3 GHz up to 3000 µm pitch..
FPC GS/SG probes - 40 GHz up to 250 µm pitch, 18 GHz up to 500 µm pitch, 10 GHz up to 1250 µm pitch and 3 GHz up to 3000 µm pitch.

Note5: FPC probes are not designed for use with MicroChamber probing stations.



EZ-Probe™ positioner with FPR probe



FPM probe with low inductance grounding wire

Module and Circuit Board Probes: Accurate probing for test and troubleshooting

The FPM-(Fine Pitch Microprobe) and FPR-(Fine Pitch Resistive Divider Probe) Series provide a superior range of probes for characterizing and troubleshooting high-speed, high-density microcircuits with pads as small as 25 microns.

The FPA-(Fine Pitch Active) probe features Agilent Technology's bipolar/ hybrid circuit technology optimized for probing high density circuits. Probes in the Fine Pitch series include separate ground contacts allowing variable pitch probing. These probes are typically used with the MTS-2000 series Module Test System and the FPD series dual headed positioners.

FPM Features

- 18GHz bandwidth for 10x, 20x, 100x
- Sub 30 ps rise time
- Low input capacitance
- Choice of ground configurations

FPM Benefits

- Ten times less tip capacitance than traditional hand held probes
- Minimizes signal distortion by providing high bandwidth
- 1% accuracy for model development
- Low invasiveness for detecting conditions like metastability

FPR Features

- dc - 6 GHz bandwidth
- Less than 60 ps rise time
- Less than 0.25 pF tip capacitance
- 10x and 20x replaceable tips

FPR and FPA Benefits

- Probes ground and signal points as small as 25 microns (1 mil)
- Low inductance ground path, small capacitance probe tip and high bandwidth are essential for accurate measurements of high speed circuits.

FPA Features

- 2.5 GHz bandwidth
- 140 ps rise time
- 0.6 pF tip capacitance
- 10x replaceable tips



FPA probe with FPD-100 positioner

Fine Pitch Series

Probe head type	Part number	Connector	Attenuation	Bandwidth 3 dB	Input resistance	Input capacitance	Rise time
Fine-Pitch Microprobes	FPM-1X	K conn.	1x	dc - 5 GHz	50 ohms	0.15 pF	<100 ps
	FPM-10X		10x	dc - 18 GHz	500 ohms	0.03 pF	<30 ps
	FPM-20X		20x	dc - 18 GHz	1000 ohms	0.02 pF	<30 ps
	FPM-100X		100x	dc - 18 GHz	5000 ohms	0.02 pF	<30 ps
Fine-pitch Resistive	FPR-100	SMA	10x & 20x	6 GHz	500 or 1000 ohms	0.3 pF	60 ps
Fine-pitch Active	FPA-10X	N conn.	10X	2.5 GHz	100k ohms	0.6 pf	<140 ps

Note 1: Fine-pitch series probes are not designed for use with MicroChamber probing systems.



ACP20-Z and ACP40-Z Reactive probes

Special Purpose Probes : Designed for your application

Cascade Microtech's Impedance Matching Probes, using proven Air Coplanar Probe technology, are available in both reactive and resistive versions. A choice of either ACP or FPC body styles is available.

Reactive matching probes provide low-loss transitions such as to the low impedance outputs of power devices. Resistive matching probes are frequently used to singly terminate the patch to a low dynamic resistance laser diode for maximally flat modulation frequency response.

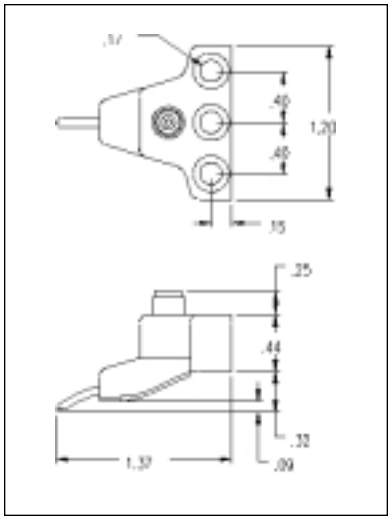
Impedance Matching Probes

Features

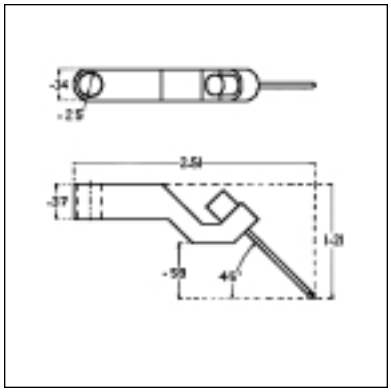
- Choice of reactive or resistive probe
- Choice of center frequency range, value and bandwidth
- Choice of probe tip impedance
- Choice of body styles, ACP or FPC

Benefits

- Improved load-pull measurement tuning range
- Ability to make accurate on-wafer measurement of low-impedance power devices
- Stabilize oscillations in high-gain devices
- Impedance match to low dynamic resistance laser diodes
- Custom configured for your application



Probe style for: ACP20-Z, ACP40-Z and ACP-R



Probe style for: FPC-R

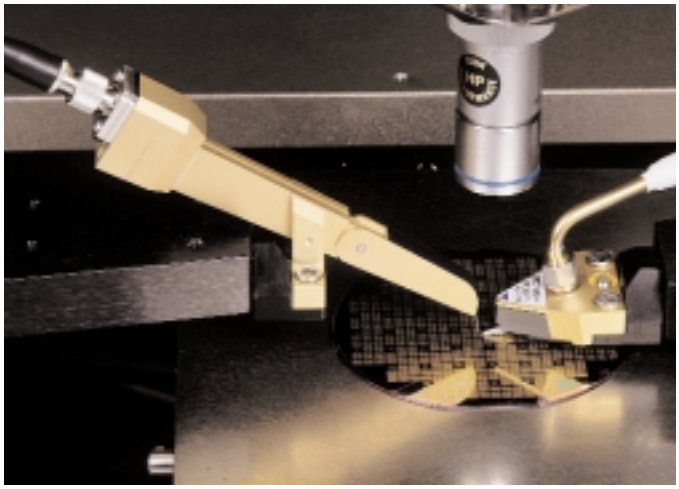
Probe head type	Part number (Note 1, 2, 3)	Center frequency	Bandwidth (GHz)	Connector & tip type	Recommended cable	Impedance range (Ohms)	MicroChamber compatible
Reactive	ACP20-Z-GSG-xxx	0.85 - 20GHz	<10% Std.	K conn.		24 - 50 Std.	
Probe	ACP40-Z-GSG-xxx	20 - 40GHz	10% - 20%	BeCu	101-162	10 - 24	Yes
(Note 4)			optional			optional	
Resistive	ACP-R-GS-xxx			K conn.		45 ±5% Std.	
Probe	ACP-R-SG-xxx		0 - 10	BeCu	101-162	10 - 300	Yes
(Note 4)	ACP-R-GSG-xxx					optional	
Resistive	FPC-R-GS-xxx			K conn.		45 ±5% Std.	
Probe	FPC-R-SG-xxx		0 - 10	BeCu	101-162	10 - 300	No
(Note 4)	FPC-R-GSG-xxx					optional	

Note 1: The -xxx suffix indicates probe contact center-to-center spacing (pitch) in microns, e.g. ACP40-Z-GSG-150 is 150 µm (5.91 mils). Contacts are on a constant pitch and width is approx. 50 µm.

Note 2: The convention for describing probe head footprints is the sequence of contacts as seen looking down on the probe head tip in its functional position, with the tip pointing away from the viewer, describing contacts from left to right.

Note 3: ACP standard pitches are 100, 125, 150, 200 and 250 µm. Non-standard pitches are available from 50 µm to 1250 µm. Insertion loss applies to standard pitch range. Other pitches may have increased insertion loss and reduced frequency range.

Note 4: Use Impedance Matching Probe Order Form to specify center frequency, tip impedance, bandwidth, resistance value and pitch.



Lightwave Probe Series

Special Purpose Probes : DC to daylight

Cascade Microtech's range of probes cover everything from DC to light. The LWP Series of lightwave probes enables on-wafer optical measurements of top-illuminated photo-diodes and optoelectronic integrated circuits. Versions are available for both cleaved fiber and lensed fiber applications.

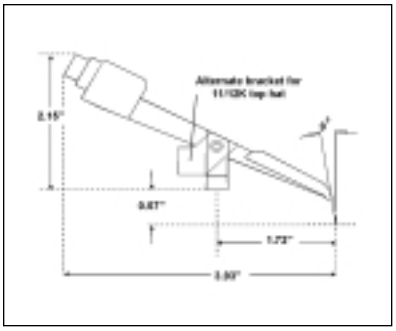
Specially designed probes are also available for your unique application from the fastest high-speed telecommunications to the extremes of cryogenic temperatures..

Features

- Choice of cleaved or micro-machined lensed optical fiber
- Field-interchangeable fiber-optic pigtails
- Standard FC type fiber optic connection
- Low-cost, field-replaceable optical fibers

Benefits

- Brings optical test equipment capability to the wafer level
- Enables fast, accurate measurements of photodiodes and OEICs
- Eliminates need to dice wafer for at-speed testing
- Removes carrier bondwire parasitics



Probe style for: LWP

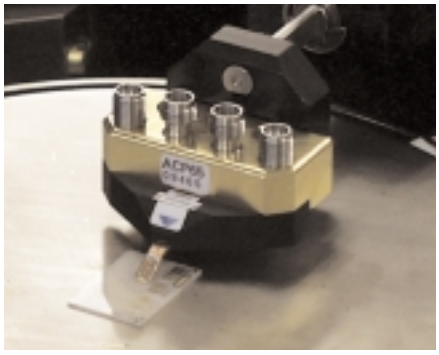
Probe head type	Part number	Fiber configuration	Spot size	NA	Wavelength (nm)	Insertion loss max.	MicroChamber compatible
LWP Series	LWP-CLV-SM	Single-mode, cleaved	25 µm	0.13	1300, 1550		
	LWP-CLV-MM	Multi-mode, cleaved	25 µm	0.22	850 -1300	0.5 dB	Yes
	LWP-LEN-SM	Single-mode, lensed	5 µm	~ 2.2 - 3.7	1300, 1550		(Note 1)
	LWP-LEN-MM	Multi-mode, lensed	5 µm	~ 2.2 - 3.7	850 -1300		

Note 1: Positioner travel somewhat limited when used with large MicroChamber top hat

Special Purpose Probes

40/80 Gb/s High Performance Quadrant

Designed to provide wide bandwidth RF connections and simultaneous resonant free power bypass connections for the special needs of high-speed mixed mode IC's for optical networks.

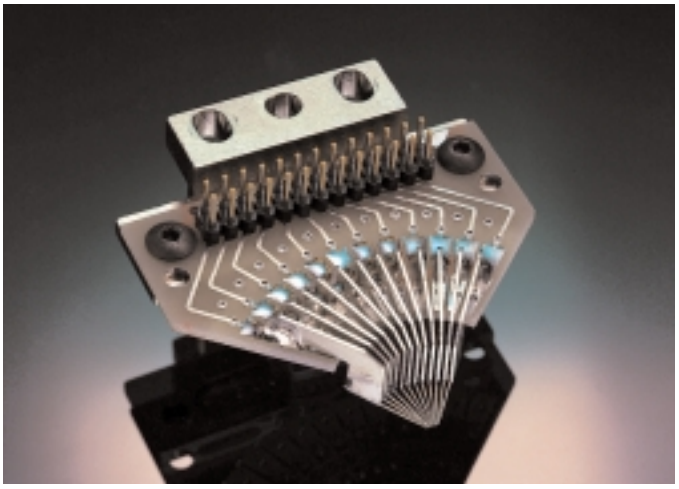


- Low RF loss and excellent impedance control over very wide bandwidth
- High performance resonance free bypass for low impedance power supplies
- Allows on-wafer evaluation of high performance digital circuits
- Minimal distortion of high-speed digital signals
- Maximized eye diagram test performance at wafer test
- Durable Air CoPlanar tip technology for long contact life
- See data sheet for details

Cryogenic ACP Probe

Designed to provide superior mechanical properties at cryogenic temperatures while maintaining solid RF measurement performance.

- Functional temperature range of -263 to +150°C
- Stainless steel tip material for thermal decoupling
- Coaxial cable with TCE matched inner and outer conductors
- Consistent tip geometry even at cryogenic temperatures
- See data sheet for details



Multicontact DC Power Probe Series: Multiple configurations for functional circuit testing

Multicontact DC power probes were developed in response to the need for multiple probe tips in a single module.

The DCQ probes use ceramic blade needles for low noise and high performance and are compatible with Summit probe station MicroChambers.

WPH-912 needle probe

Features

- Customized to customer application
- Up to 12 DC.
- Standard tungsten 0.01 in, diameter needles
- Supports collinear and non-standard needle configurations

Benefits

- Ideal for probing the entire circuit for functional test
- DC probes can provide power or slow logic to circuit under test

Probe head type	Part number (Y= # of DC probes)	Max. number of DC probes	Micro-Chamber compatible	Connector
DCQ Quadrant probe (Note 1)	DCQ-YY	12	Yes	(Note 2)
WPH needle probe heads (Note 3)	WPH-9YY-xxx (Note 4)	12	No	(Note 6)
	WPH-9YY-NS (Note 5)	12	No	

Note 1: Use DCQ Quadrant Probe Order Form to specify number of DC needles and layout of DC lines.

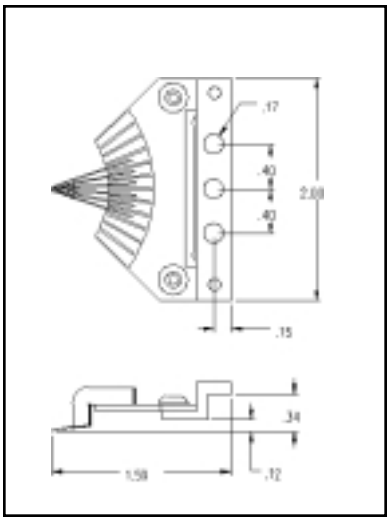
Note 2: DCQ DC connections are supplied via a wire pig-tail to square-pin header, standard.

Note 3: See app. note “Layout Rules for WPH-900 Series Probes”

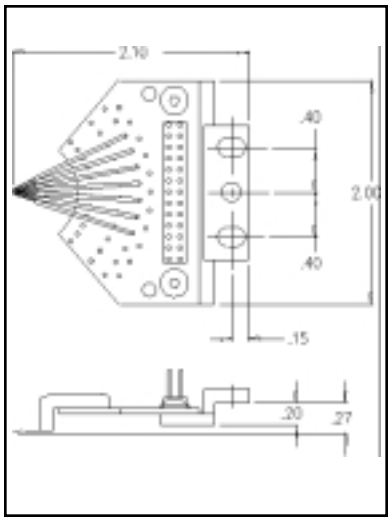
Note 4: The -xxx suffix indicates probe contact center-to-center spacing (pitch) in microns, e.g. WPH-908-150 has 8 needles with a spacing of 150 µm (5.91 mils). Needles are in a collinear pattern with constant pitch.

Note 5: Needles may be in a non-standard pattern to be specified by the customer.

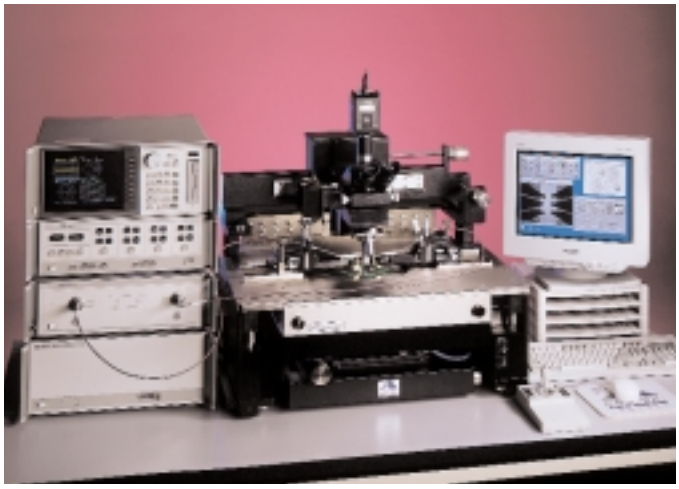
Note 6: Circuit board mounted square-pin header, standard.



Probe style for: DCQ-YY



Probe style for: WPH-9YY



RF Probe Accessories: Not just probes but a complete solution

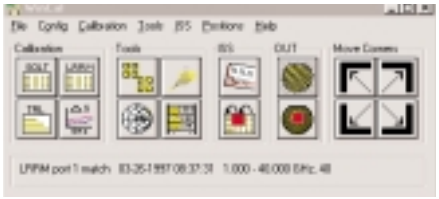
To ensure successful measurements from probe tip to VNA, rely on Cascade Microtech for a complete customized RF/Microwave analytical test system. Matching the accessories to the probe station and probes is a critical part of the total solution.

VNA calibration software, Impedance Standard Substrates, cables and adapters are all available for your one-stop shopping. Check out our list of data sheets and ordering guides to help you make the right choice for your application.

Summit 12K station with Agilent Technologies instruments

WinCal VNA Calibration Software

WinCal VNA software is an integral part of a complete microwave probing solution from Cascade Microtech. It provides the simplest, most complete and repeatable network analyzer on-wafer calibrations. One-step pad parasitic removal routines are provided, along with the ability to monitor system drift and perform quick, convenient recalibration.



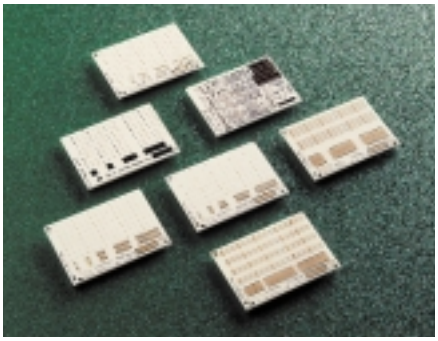
WinCal Features:

- Automatically steps you through NIST-verified LRRM calibration method
- Conveniently retrieves calibration coefficients for probes
- Reads, displays and stores S-parameters in Touchstone file format
- Quickly locates, displays and archives measurement data
- Supports Agilent (HP) and Anritsu (Wiltron) VNAs

WinCal for:	Part #
Summit semiautomatic and PS21 stations	VNACAL-WIN
Summit manual and other probe stations	VNACAL-WIN-M

Impedance Standard Substrates

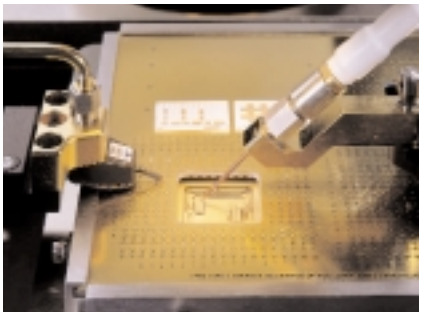
Cascade Microtech's family of Impedance Standard Substrates (ISS) support all of your high-frequency probing applications. Using them ensures greater accuracy and better repeatability in on-wafer calibration of vector network analyzers. Only Cascade Microtech offers the proven accuracy of LRRM calibrations with load inductance compensation.



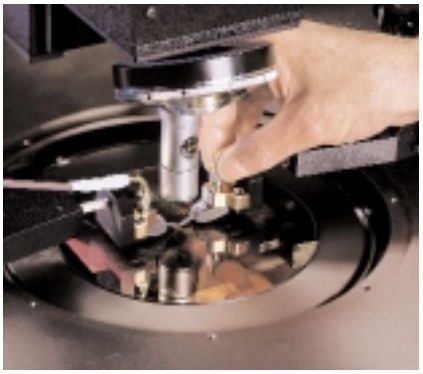
ISS	Part #
General Purpose	005-016
LRM	101-190
GS	103-726
W-band	104-783
Narrow pitch	104-909
Wide pitch GSG	106-682
Wide pitch GS/SG	106-683
High performance, GSG	114-456
Absorbing ISS holder	116-344
Surrogate chip kit	SCK-999

ISS Features:

- Non-dispersive calibration standards, useable through 110 GHz
- Supports SOLT, TRL, and LRM/LRRM calibrations
- Dedicated substrates for GS/SG and GSG contact configurations maximize the number of useable sites per ISS
- Alignment marks provided to improve probe placement accuracy
- NIST verified LRM/LRRM calibration accuracy with VNA calibration software for Summit probe stations
- Absorbing holder recommended for use with wideband ISS above 65 GHz
- Precision trimmed 50 ohm terminations
- General purpose elements for membrane and other fixed position RF probe cards.



Package Test Fixture with Surrogate Chip



Cables and Adapters

Cascade's range of low-loss, thermally stable cables ensure higher quality measurements and longer lasting calibrations. Each cable has an integrated elbow male connector at one end and a female connector at the other.

Cables

Frequency	Connector	Part #
dc - 40 GHz	2.92 mm (K)	101-162
dc - 50 GHz	2.4 mm	103-202
dc - 65 GHz	1.85 mm (V)	104-540
dc - 110 GHz	1.0 mm	11500*

* Available from Agilent Technologies
11500J for Summit 9K stations
11500K for Summit 11/12K stations

Adapters	Part #
BNC male - SMA female	103-290
2.4 mm 90° elbow	105-010
2.4 mm f - 2.92 mm male	105-097
Waveguide, W band, 6 in.	104-837
Waveguide, W band, 90°	104-838

Associated Literature by Application

On-wafer probing

Air Coplanar Probe Series brochure	ACPDS-1197
ACP40-GSG-xxx Probe Quick Guide	PGACP-1098
HPC40-GSG-xxx Probe Quick Guide	PGHPC-1098
Tungsten Probe Tip Quick Guide	PGTUNGSTEN-1098
HPC Series High Performance Characterization Probes data sheet	10DS01-0998
On Wafer Vector Network Analyzer Calibration & Measurements	PYRPROBE-0597
High-Frequency, Over-Temperature Measurements and Modeling	10600AP-0893
High-Frequency, Over-Temperature Measurements	TB 7-0694
Comparison Between Beryllium-Copper and Tungsten High Frequency Air Coplanar Probes	AR125
Comparing the Accuracy and Repeatability of On-Wafer Calibration Techniques to 110GHz	AR132

Module probing

EZ-Probe Positioner brochure	EZPRBROCH-0194
FPA-Series Fine-Pitch Active Probe data sheet	FPA200DS-1192
FPC-Series Fixed-Pitch Compliant Probe data sheet	FPCDS-0993
FPM-Series Fine-Pitch Microprobe data sheet	FPMDS-0393
FPR-Series Fine-Pitch Resistive Divider Probe data sheet	FPR100DS-1292
PFX-50 Package Test Fixture data sheet	PFXDS-0894
Surrogate Chip Kit data sheet	SCKDS-0894
Module Probing Products Ordering and Config. Guide	MODORGDE-0993
Microprobing Essentials for Fine-Pitch Modules	MEFPM-1292
Microprobing with the Fine-Pitch Active Probe	FPAAN-0293

Special purpose probing

Air Coplanar Probe Series brochure	ACPDS-1197
LWP-Series Lightwave Probe data sheet	LWPDS-1291
ACP Quadrant Probe Order Form	QUAPOF-0699
DCQ Quadrant Probe Order Form	DCQFOF-0998
Impedance Matching Probe Order Form	IMPOF-0996
40/80 Gb/s High Performance Quadrant Probe data sheet	SPACP-0699
Cryogenic ACP Probe data sheet	SPCRYO-0699
Layout Rules for WPH-900 Series Probes	LAYOUT89
Impedance Matching Probes for Wireless Applications	AR126
Cryogenic On-Wafer Measurement Techniques to 18K	TB 8-1294
On-Wafer Photodiode Measurements with a Lightwave Component Analyzer System	AR99

Accessories

Automatic Calibration Software for Vector Network Analyzers data sheet	WINCALDS-0497
ISS Family Impedance Standard Substrates data sheet	ISSFAM-0495
Technique Verifies LRRM Calibrations on GaAs Substrates	TB 6-0694
LRM and LRRM Calibrations with Automatic Determination of Load Inductance	R114
Verification of LRRM Calibrations with Load Inductance Compensation for CPW measurements on GaAs Substrates	AR117
An SOLR for Accurate Measurement of Orthogonal on-Wafer DUTs	AR122

AR is a magazine article reprint. TB is a technical brief.

CASCADE® MICROTECH

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