



SOUTHWEST TEST WORKSHOP

TO ADVANCE WAFER TESTING TECHNOLOGY

TO SERVE AND INFORM THE WAFER TEST PROFESSIONAL

TO BOLDLY GO WHERE NO OTHER WORKSHOP HAS GONE BEFORE

June 1 – 4, 1997 San Diego, CA

COPYRIGHT[©] NOTICE

- The papers in this publication comprise the proceedings of Southwest Test Workshop 1997. They reflect the authors' opinions and are reproduced as presented and without change. Their inclusion in this publication does not necessarily constitute endorsement by Southwest Test Workshop, the sponsors, or the Institute of Electrical and Electronics Engineers, Inc.
 - There is NO copyright protection claimed by publication. However, each presentation is the work of the author and respective company: as such, any acknowledgement should be made to the appropriate source; also, any questions regarding permission to use the material should be directed to them.
-

THE COMMITTEE

**BILL MANN
MIKE BONHAM
DAVE UNZICKER
REY RINCON**

**ROCKWELL
CERPROBE
INTEL
SEMATECH/TI**

WHAT IS A TEST WORKSHOP?

- **It's not a theoretical or academic conference**
- **Workshops are informal and casual**
- **Provides practical solutions to real problems**
- **Mixture of vendor and user presentation**
- **Open discussions and networking**
- **Opportunity for informal discussions**

INFORMAL TECHNICAL INTERACTION

- **LONG BREAKS.... TALK WITH A STRANGER**
- **SOCIAL ACTIVITIES**
 - **San Diego Harbor Cruise**
 - **San Diego City Tour**
 - **Miniature Golf**
- **POOLSIDE HAWAIIAN LUAU**
- **THREE HOSTED COCKTAIL RECEPTIONS**

TECHNICAL PROGRAM

- **RF PROBING**
- **AUTOMATIC PROBE MARK INSPECTION ON PROBERS**
- **CONTINUATION OF TECHNICAL DISCUSSIONS**
- **PROBER TO TEST HEAD INTERFACE**
- **TEMPERATURE PROBING**

TECHNICAL PROGRAM

- **MULTI-DIE, PARALLEL PROBING**
- **BREAKOUT DISCUSSIONS**
 - **ADVANCED PROBE TECHNOLOGY OR PROBE OPERATIONS**
- **AWARDS BANQUET AND AFTER DINNER SPEAKER**
- **PROBE POTPOURRI**
- **NEW PROBE TECHNOLOGIES**

PRIZES, PRIZES AND MORE PRIZES

- **BEST TECHNICAL PRESENTATION**
- **BEST DATA PRESENTED**
- **ALL PANEL MEMBERS**
- **BEST QUESTIONS ASKED**
- **A FEW SURPRISE AWARDS**
- **TUESDAY AWARDS BANQUET**
- **ALL PRESENTERS ON WEDNESDAY**

Test Technology Periodicals

- **International Test Conference Proceedings**
- 655 15th St., N.W., Suite 300
- Washington, D.C. 20005

- **Test Technology Technical COMMITTEE**
- Newsletter
- P.O. Box 629
- Hollidaysburg, PA 16648

- **Journal of Electronic Testing**
- Kluwer Academic Publishers
- 101 Philip Drive
- Norwell, MA 02061

- **Design and Test of Computers**
- IEEE Computer Society
- 10662 Los Vagneros Circle
- Los Alamitos, CA 90720-1314

- **Final Test Report**
- Ikonix Corporation
- P.O. Box 1938
- Lafayette, CA 94549

- **Evaluation Engineering**
- Nelson Publishing
- 2504 N. Tamiami Trail
- Nokomis, FL 34275-3482

Author Index

- Anderson, Jim [*Cerprobe*, Prober – Test Head Interface]
- Bossaller, Jim [*Hewlett Packard*, RF Wafer Probing]
- Brown, Don [*Wentworth Labs*, New Probe Card Technologies]
- Carlin, Scott [*Wentworth Labs*, Probe Potpourri]
- Casavant, Dai Dee [*Electroglass*, Automatic Probe Mark Inspection on Probers]
- Davis, Bill [*Motorola*, Multi-Die Probing]
- Eddy, Earl [*TSK America*, Automatic Probe Mark Inspection on Probers]
- Ehlerman, Eckhard [*Wentworth, Germany*; Temperature Probing]
- Gardell, Dave [*IBM*, Temperature Probing]
- Gesse, Michelle [*Advanced Probing Systems*, Probe Potpourri]
- Kister, January [*Probe Technology Corp.*, Temperature Probing]
- Leckie, Ron [*Strategic Test Partners*, Keynote]
- Levy, Larry [*Form Factor Inc.*, New Probe Card Technologies]
- Lupan, Marius [*Tokyo Electron America*, Automatic Probe Mark Inspection on Probers]

NOTE: Names highlighted in blue indicate the presentation is not in 'searchable' form

Author Index (continued)

- Mai, Phill [*JEM America*, New Probe Card Technologies]
- Miller, Al [*Digital Micro Electronics*, Prober – Test Head Interface]

- Pietzchmann, Frank [*Siemens*, Multi-Die Probing]
- Peters, John [*Fujitsu*, Multi-Die Probing]

- Rogan, Pete [*Cerprobe*, Probe Potpourri]

- Seitzer, Phil [*Lucent Technologies*, Temperature Probing]
- Strouth, Tom [*GigaTest Labs Inc.*, RF Wafer Probing]

- Weilerstein, Marvin [*InTest*, Prober – Test Head Interface]
- West, Christopher [*InTest*, Prober – Test Head Interface]

NOTE: Names highlighted in blue indicate the presentation is not in ‘searchable’ form

Southwest Test Workshop - Attendee List

Yuichi Abe	Tokyo Electron Ltd.	81-551-22-8611
Billie Adams	MJC Micronics	415-968-3531
Indu Aggarwal	Intel Corp	408-765-6346
Richard Alderete	TSK America	214-735-0880
Joanne Allison	Probe Technology	408-980-1740
Russ Allred	VLSI	408-434-3072
Yoshiaki Amazutsumi	Tokyo Cathode Lab	81-3-3962-8311
James Andersen	Applied Precision	425-557-1000
Jim Anderson	CerProbe Corporation	602-333-1500
Lance Arakaki	Rockwell/Brooktree	619-535-3586
Yoshimatsu Asako	Micronics Japan Ltd.	81-0422-21-0194
Darryl Atkinson	National Semiconductor	301-621-0900
Kamal Azizi	LSI Logic	408 433-8089
Joseph Baker	ICT	203-264-5757
Jeff Bartsch	Rockwell Semiconductor	714-221-5133
Les Barut	Pacesetter, Inc.	818-362-6822 x2617
R. Dennis Bates	UESYS-CerProbe L.L.C.	602-497-4264
Ruth Bauer	Contact Technologies LLC	408-782-9752
Rick Baze	Synergetix	972-874-1003
Steve Beaver	Micro-Probe Inc.	760-603-0631
Clive Beddoe-Stephens	ICT	203-426-9880
Azam Beg	Intel	916-356-0702
Scott Bernin	Rockwell Semiconductor	619-535-3382
Richard Bialobrodski	TEM INC.	408-566-4412
Wade Bick	Teradyne	818-991-9700 x4775
Ken Blakkan	Micro Module Systems Inc.	408-864-5954
Roland Blass	APS	49-89-863-3373

Southwest Test Workshop - Attendee List

Michael Bonham	CerProbe Corporation	602-333-1500
Jean-Pierre Bonnot	SGS Thomson	33-42-25-88-37
Jerry Bortnem	inTest Corp.	408-730-9797
James Bossaller	Hewlett Packard	707-577-3323
Timothy Boyle	Electroglas	408-727-6500
Mark Bradford	Testdesign Corp	408-730-1754
Steve Braithwaite	Unitrode	605-429-8689
Michael Brannan	Wentworth Labs	408-745-1644
Joseph Brown	Probe Technology	408-980-1740
John Brown	Wentworth Labs	203-775-0448
Donald Brown	Wentworth Laboratories	203-775-9311
Ray Brown	CerProbe	013-552-72381
Jerry Broz	Advanced Probing Systems	303-939-9384
Carl Buck	AEHR Test Systems	415-691-9400
Ken Burdette	Dallas Semiconductor	972-371-6393
Duane Burt	CerProbe	602-333-1500
E. S. (Bud) Cain	Tribotech	707-643-2148
Allan Calamoneri	Total Test Services	510-249-1222
Kevin Carlile	Tokyo Electron America	408-566-4321
Scott Carlin	Wentworth Labs	512-440-0792
Dai Dee Casavant	Electroglas	408-727-6500 x6361
Derek Castellano	Teradyne	818-874-7621
Mark Celentano	Tri-Millennium Technology	508 922-6041
Evan Chang	NEC Electronics	916-789-4862
Ning Chang	KLA Tencor	408-875-6532
Henry Chen	Hewlett-Packard	970-229-4152
Shu Min Chen	TSMC - FabII	

Southwest Test Workshop - Attendee List

Jimmy Chen	FormFactor, Inc.	510-294-4300
Mike Chiu	Teradyne	617-422-2786
F. C. Chong	MMS	408-864-5944
Hsun Chou	Rucker & Kolls/EICO Inc.	408-934-9875
Chris Clark	TMR	408 354-5157
Doug Close	TSK America	214-735-0880
Ken Cole	Temptronic Corp	617-969-2501
Bill Corwith	Teradyne	617-422-2774
Larry Cowart	Adaptec, Inc.	408-957-2364
David Cressman	Teradyne, Inc.	818-874-7425
Cindy Cruz	Probe 2000	408-735-7396
Stephen DaBose	Motorola	512-891-6023
Kris Dabrowiecki	Probe Technology	408-980-1740
Sallet Daniel	Semiconducteur Services	33-160-139-441
John Darbyshire	Probe 2000	408-735-7396
Gobinda Das	IBM Microelectronics	914 894-9967
William Davis	Motorola	919-685-3369
John de los Santos	Wentworth Labs	203 775-9311
Russell J. Deaton	Rockwell International	714-221-3145
Vash Dev	National Semiconductor	817-468-6762
Cris Dewitt	Agile Probe	512-292-8451
Michael Diamond	Advantest	408-727-2222 x334
Steven Dickey	Intel	916-356-5288
David Dickman	Motorola Semicon	
Martin Diep	Rockwell Semiconductor	714-221-4504
Richard Dock	Cascade Microtech Inc.	503-626-8245
Pete Dodd	AMD	512-602-2268

Southwest Test Workshop - Attendee List

Jim Dotson	CerProbe	512-445-6767
Rob Drew	Xandex, Inc.	707-763-7799 x154
April Dutta	Electroglas	408-727-6500 x4040
Jack Eddings	ESH Inc.	602-438-1112
Earl A. Eddy	TSK America	602-496-0070
Michael Egloff	Megatest	512-292-8409
Kouichi Eguchi	MJC Micronics Inc.	0422 21 0194
Eckhard Ehlermann	Wentworth Labs	49-89-530-9046
Benjamin Eldridge	FormFactor, Inc.	510-294-4300
Paul M. Elizondo	Micro-Probe, Inc.	760-603-0631
Michelle Ellison	Xandex Inc.	707-763-7799 x119
Wolf Erben	MJC Micronics, Inc.	415-968-3531
Arthur Evans	Wentworth Labs	203-775-0448
Michael Fedler	Intel	916-356-6315
Sting Feng	Chain-Logic Intl Corp.	
Thomas Ferrari	Fairchild Semiconductor	207 775-8466
Robert Fischer	Lucent Technology	407-345-6213
Ed Flanigan	Motorola	512-891-3970
Greg Flynn	MCC	512-338-3288
Thomas Foerster	Rockwell Semiconductor	714-221-4620
Mary Fong	TEM Inc.	408-566-4413
Todd Fosler	Intel	503-642-6942
Guy Freeman	Khonectix	512-288-9713
Bill Freund	Hewlett-Packard	503-715-3286
Kyle Fukuda	NEC Electronics	916 789-4861
Kasumasa Funyu	Tokyo Cathode Lab. Ltd..	03-3962-8311
Ross Gallagher	National Semiconductor	301 621-0900

Southwest Test Workshop - Attendee List

David Gardell	IBM	802-769-4813
Paul Geary	ICT	203-264-5757
Melanie Genakos	LSI Logic	408-433-7425
Petra Georg	Teradyne GmbH	49-89-41861-231
Herbert Gerschwitz	Siemens AG	
Michelle Gesse	Advanced Probing Systems	303-939-9384
Klaus Giringer	Feinmetall GmbH	49-7032-200-1140
Dale Gleason	Hewlett-Packard	541-715-4488
Reed Gleason	Cascade Microtech Inc.	503 626-8245
James Glishmann	Rockwell Semiconductor	619-535-3588
Jim Godfrey	Motorola Mo512	602-814-4048
Lian Teik Goh	ZMC Technologies PTE Ltd.	65 285 1159
Michael Gonia	VLSI Technology	408-781-2802
Ray Gore	Teradyne, Inc.	408-451-3279
Kaoru Gotoh	Wentworth Japan	045-912-8520
Daniel J. Graham	inTEST Corp.	609 424-6886 x207
Ayre Green	Electroglas	408-727-6500 x6209
Brian Green	Chain-Logic Intl Corp	886-3-561-1899
Bill Greiner	Rockwell	714-721-4794
Steven Gretter	Dallas Semiconductor	214-450-0434
Gary Griffin	Team International	408-654-5660
Alan R. Guilford	Eastman Kodak Co.	716-726-5819
Kurt Guthzeit	Intel	916-356-2063
Tomas Gutierrez	Micro-Probe Inc.	760-603-0631
Bob Hahnke	Advantest America, Inc.	602-855-4740
Mike Hamilton	Motorola	512-933-7271
Kassem A. Hamze	Hewlett-Packard	503-715-2867

Southwest Test Workshop - Attendee List

George Harris	Probe 2000	408-735-7396
Rob Harrison	Tokyo Electron Ltd.	408-566-4330
Robert Hart	Digital Equipment Corp	508-568-4805
Yoshiei Hasegawa	Micronics Japan Co LTD.	0422 21 0194
Tony Heathcote	S V T R	408-748-9933
Dan Higgins	CerProbe	602-333-1500
Wes Highfill	Tokyo Electron America	408-566-4320
Gary Higley	STI, Inc.	908-780-2060
Joe Hinds	Accuprobe, Inc.	508-745-7878
Jeffrey Hintzke	Electroglass, Inc.	408-757-6500 x6457
James Holwager	IBM	802-769-7393
Hideaki Honma	TSK America	214-735-0880
Steve Hopkins	Micro-Probe Inc.	760-603-0631
Monika Hormaza	Rockwell Semiconductor	714-221-3106
Hyzy Hornyak	Advance Probe, Inc.	408-980-0460
John Hsia	National Semiconductor	408-721-6071
Michael Hunter	Delco Electronics	765-451-8923
Kristene Huston	VTC, Inc.	612-853-3618
Toshihiko Iijima	Tokyo Electron Ltd.	81-551-22-8611
Toshinori Ishii	Mitsubishi Materials Corp	81-795-68-2320
Takuo Itagaki	Tokyo Cathode Lab Ltd.	81-493-56-3185
Bill J. Jakobeit	Alphatech, Inc.	512-458-9179
Jurine Jean-Michel	UPSYS	33 160905873
Mark Jones	Advantest	847-634-2552
Dae Kyoon Kahng	DEMCO	032
Ken Karklin	Intel Corp.	408-765-2617
Mamoru Kato	Tokyo Cathode Lab Ltd.	81-3-3962-8311

Southwest Test Workshop - Attendee List

James Kennedy	Kinetic Probe LLC	619-445-9222
Jack Kessler	Amkor Electronics Inc.	408-496-0303
Raul Kich	Rockwell Semiconductor	714-221-4612
Jae Kim	Teradyne	818-874-7895
Kil Yeon Kim	Samsung Electronics Co.	82-2-760-7888
Kyung Kap Kim	Teradyne	82-2-549-9888
Soo Hak Kim	Ho San Electronics	0347-66-5362-4
Wei-Shik Kim	Teradyne Korea	02-549-9888
Jung Soo Kim	Teradyne	82-2-549-9888
Kevin Kincaid	Natinal Semiconductor	207-541-8564
David King	DOD	301-688-4116
Kevin Kirby	Micro-Probe, Inc.	619-603-0631
January Jarek Kister	Probe Technology Inc.	408-980-1740 x263
William Knauer	Keithley Instruments	216 498-3053
Eric Knoester	Vitesse Semi.	805-388-3700
Kevin Koontz	Synergetix	913-342-5544
Doug Kopcso	Micro-Probe, Inc.	619-603-0631
Daniel Kosecki	Integrated Technology	602-968-3459
Shinichiro Kozaki	Japan Electronic Materials	06-482-2007
Walter Kreiger	Advantest America	802-879-8974
Andrew Krivy	Micron Technology	208-368-1728
Patrick Kuhn	Probe Technology	408-980-1740
Shuchita Kumar	Electrogas	408-727-6500 x6453
Belinda Kuo	Schlumberger	408-453-3632
Thomas G. Lambert	SGS-Thomson Microelectronics	602 867-6274
Rob Lang	Rockwell Semiconductor	714-221-5827
Dominique Langlois	IBM France	+160 886 933

Southwest Test Workshop - Attendee List

Mike Lapp	Lapp Technologies, Inc.	512-467-6773
Mike Larsen	NEC Electronics	916-786-3900
Matt Lauderdale	Motorola	512-891-6434
Heather Lauer	Intel Corp.	408-765-2614
Michael Lawrence	Peak Technology, Inc.	619-745-8297
Stephen Lay	Motorola SPS	602-732-3135
Ron Leckie	Strategic Test Partners	408-255-0853
Jong Sik Lee	Samsung Electronics	
Justin Leung	Intel	408-653-7648
Larry Levy	FormFactor, Inc.	510-294-4300
Rex Lewis	Texas Instruments Inc.	214 995-9340
John Littlefield	National Semiconductor	207-541-8398
Brian Loechner	Silicon Systems	714-573-6348
Michael J. Lopez	Intel	505-893-0486
Mario Lopez	Credence Systems	510-623-2531
Roger Lorenzo	Texas A&M University	409-862-7274
Susanne Lubash	Intel	503-591-2716
Marius Lupan	Tokyo Electron Ltd.	408-566-4319
Klaus Lutz	Advantest GmbH	+49-89-930-82-188
Chris Mack	Schlumberger	408 453-4288
Alec Madsen	FormFactor, Inc.	510-294-4300
Phill Mai	JEM America Corp.	510-683-9234 x133
Joe Mai	JEM America Corp.	510-683-9234 x121
Jesus Mamani	Silicon Systems	408-425-4225
William R. Mann	Rockwell International	714-221-3132
Don Marquardt	JEM America	510-683-9234
Anthony Martel	Wentworth Labs	203-775-9311

Southwest Test Workshop - Attendee List

Todd Martin	Probe Technology	408-980-1740
Rasoy Martin	LSI Logic Corp	503-618-4653
Martin Martinez	CerProbe	602-333-1500
Steven Martinez	TEA	602-940-7114
Dick Mason	Motorola	714-450-6467
Peter Mathews	FormFactor Inc.	510-294-4300
Martin McAleer	National Semiconductor	207 761-6163
Vail McBride	American Microsystems	208-233-4680
John McCarthy	Applied Precision	425-557-1000
Mike McDevitt	Microchip Technology	602-786-7671
Bruce McFadden	Cascade Microtech Inc.	503-626-8245
Gay McFarren	CerProbe Corporation	512 445-6767
James McGurn	Tokyo Electron America	408-566-4410
Robert McKinney	Siemens Microelectronics Ltd.	44-191-280-4676
Sam McKnight	Intel	408-653-7846
Michael McMenamin	APEX America Inc.	503-968-5900
Fred Megna	CerProbe	602-333-1500
Ron Mende	Probe Technology	408-980-1740
Frank Mesa	Silicon Systems	408-425-1010
Barry Metrolis	SGS-Thomson	972-466-8152
Roger Milesi	SGS Thomson	+33 4 76 92 6449
David Miley	DFW Test, Inc.	214-231-1094
Al Miller	Digital Equipment Corp.	508-568-6143
Michael Mitchell	TSK America	201-808-6800
Hans Mizusugi	Tokyo Electron Ltd.	3-3340-8129
Beth Moeur	Intel	505-893-0481
Al Molina	Intel	916-356-0692

Southwest Test Workshop - Attendee List

Louis Molinari	CerProbe	602-333-1500
Yong Woo Moon	DEMCO	032
Brian Moore	inTEST Ltd..	44-84 421 7525
Scott Morash	National Semiconductor	207 775-8161
Chris Moreau	Micro-Probe Inc.	760-603-0631
Alex Mouravieff	All-Points	201-515-4440
Paul Mouravieff	All-Points	201-515-4440
James Muhs	Rockwell S S	714 221-6856
Jim Mulady	Ikonix	510-939-7909
Scott R. Mullaly	Intel	408 765-9301
Bunsaku Nagai	Applied Precision, Inc.	206-313-4551
Naboru Nagano	Tokyo Cathode Lab	81-3-3962-8311
Michael Nakamura	Rockwell Semiconductor	714-221-4066
Vinh Nguyen	SV Probe	408-441-4650
Bao Nguyen	Rockwell/Brooktree	619-535-3390
Makoto Nihei	TSK	214-735-0880
Mac Niroumand	Silicon Systems	714-573-6427
Chris Noe	Comdisco	408-383-5053
Greg Nordgren	Cascade Microtech, Inc.	503-626-8245
J. Kirk O'Brien	Advanced Probing Systems	303-939-9384
Rick O'Connell	Motorola MOS8 MDB1	512 928-7883
Brendan O'Donnell	Rockwell	714-221-5031
Pat O'Hagan	TI	214-255-4580
Kaz Okubo	JEM America Corp.	510-683-9234
Masa Onda	Tokyo Electron America	408-566-4310
Stewart Ongchin	Intel	408-765-4672
Robert Orsello	Triage Corporation	503-297-5230

Southwest Test Workshop - Attendee List

Carlo Marco Orsi	SGS-Thomson	39-39-603-5328
David Osborne	Teradyne Ltd.	44-1344-725-847
Jack Pachima	Intel	972-2-589-7522
Lisa Page	Rockwell International	714-221-3218
Ken Papworth	Motorola Inc.	602-655-5388
Craig Parietti	Applied Precision	425-557-1000
Je Young Park	Samsung	82-2-760-7885
Frank Parrish	Teradyne	818-991-9700 X4641
Cameron Paterson	Motorola	
John Pence	Cascade Microtech Inc.	503-626-8245
Frank Perkons	Rockwell Semiconductor	619-535-3279
David Perniz	Wentworth Labs	408-746-1644
John Peters	Fujitsu	503-669-6045
Tap Pham	Motorola	602-655-2749
Duc Pham	Rockwell International	714-221-3133
Ivan Phillips	Northern Telecom	613-763-5065
Frank Pietzschmann	Siemens Microelectronics	49-351-886-2032
Jerry L. Pilkay Sr.	Micro Linear, Inc.	408-433-5200
Jennifer Pinter	Rockwell	714-221-5533
Gerald Piper	CerProbe Corporation	602-333-1500
Wayne Poe	CerProbe Corporation	602-333-1500
Gus Ponder	S.V.T.R.	408-748-9933
Romi Pradhan	TSK America	512-834-4344
Gary Puckett	Rockwell/Brooktree	619-535-3545
Jung Pyon	Motorola	602-655-5279
Jerry Qubain	Adaptec, Inc.	408-957-6604
Michael Quinn	TSK America	214-735-0880

Southwest Test Workshop - Attendee List

Marcie Raad	Motorola	512-891-4858
Roy Raebel	SVTR	408-748-9933
Norman Rapoport	IBM Corp	802-769-7311
Rob Redeker	Semtec bv	31-24-787-876
Anthony Reed	Silicon Systems	714-573-6430
Patrick Reilly	Reid-Ashman	408-278-9300
Peter Rembulat	TestDesign Corp	408-730-1754
Peter Ridgway	Hewlett-Packard	408-553-6842
Rey Rincon	Sematech	512-356-3672
Dan Riordan	Wentworth Laboratories	408-745-1644
Bill Ritchie	Symbios Logic	970 226-9000 x9349
Jeanette Roberts	Intel	408-765-2668
Todd Rockoff	Advantest R&D Center	408 727-2222
Al Rodenhiser	Analog Devices	617 937-2611
Pete Rogan	CerProbe Corporation	602-333-1500
Bryan Root	Celadon Systems	612-423-3170
James D. Ross	Teradyne	408-441-3128
John Rybij	Silicon Systems	408-425-1010
Bryan Saba	Semi-Probes, Inc.	408 866-6535
Teruhisa Sakata	Japan Electronic Matls.	81-06-482-2007
Mark Sanchez	Silicon Systems	408-425-1010
Lynn Saunders	MicroConnect, Inc.	503-647-9021
Sharon Scannell	Precision Proves	303-530-0467
Douglas Schertzer	Rockwell Semiconductor	619-535-3224
Todd Schnack	Probe Technology	408-980-1740
Stefan Schneidewind	Karl Suss America, Inc.	802-244-5181
Vivianne Schoenecke	American Microsystems	208-233-4680 x6950

Southwest Test Workshop - Attendee List

Steve Schultz	Zilog	208-468-2795
Rod Schwartz	Integrated Technology	602-968-3459
Hank Scutoski	CerProbe	602-333-1500
Philip Seitzer	Lucent Technologies	610-712-6529
Ron Sena	Intel	505-893-6826
Kamran Shamsavari	Xandex, Inc.	707-763-7799 x113
Melissa Shell	Intel	408-765-2868
Ziv Shemer	Intel	408-765-7330
Hyuseog Shim	Hyundai Electronics	
Jim Simmons	Accuprobe, Inc.	619-781-1418
Mark Anthony Sindayen	Intel Philippines Mfg	632-841-7423
Roger Sinsheimer	Xandex	707 765-9997 x124
Stuart Slater	Teradyne	617-422-2185
Douglas Smith	TestDesign Corp.	408-730-1754
Ken Smith	Cascade Microtech Inc.	503 626-8245
William O. Smith	Intel	916-356-2319
Michael Sobelman	Credence Systems	510-623-5174
Ken Sokol	Applied Precision	425-557-1000
Aubrey Sparkman	Motorola	512 933-5426
James Spooner	LSI Logic	408 433-7926
Nicholas Sporck	FormFactor Inc.	510-294-4300
R.P. St. Clair	Teradyne	818 874-7252
Jacque Stewart	CerProbe Corporation	602-333-1500
Eric Strid	Cascade Microtech Inc.	503-626-8245
Tom Strouth	Gigatest Labs, Inc.	408-996-7500
Val Stucky	Rockwell International	714-622-3151
John Stumpf	Keithley Instruments	216-498-2897

Southwest Test Workshop - Attendee List

Eswar Subramanian	CerProbe Corporation	602-333-1500
Brian Summerhill	SGS Thomson	602-485-2354
Todd Swart	Texas Instruments	806-741-2819
Frederick L. Taber	IBM Corp.	914-894-2348
Hesam Taheri	Applied Precision	425-557-1000 x4402
Mac Takano	TSK America	512-834-4344
Danny Tam	Total Test Services	510-249-1222
Sadafumi Tamakoshi	TSK	214-735-0880
Khe Tang	Intel	505-893-7309
Ken Taoka	Tokyo Electron America	408-566-4313
Clyde Tatman	Intel	503-642-6950
Sheldon Taylor	FormFactor Inc.	510-294-4300
Al Tejada	Teradyne	818-991-2900 x4527
Eric Thompson	Applied Precision	425-557-1000
James Tomer	Rockwell Semiconductor	714-221-6860
Yoshiya Toyoshima	Micronics Japan Co Ltd.	0422 21 0194
Hendley Trinh	Advance Probe, Inc.	408-980-0460
Alexander Tsafirir	Intel	408-653-6349
Arnard Tuinitapoli	MC Test Products	408-395-5000
Jim Tylka	Cascade Microtech, Inc.	503-626-4453
Kiran Udeshi	National Semiconductor	817 557-7618
David Unzicker	Intel	916-356-6156
James Van Zee	Motorola	602-814-3401
Ivan Vaupel	Intel	505-893-0476
Robert J. Veth	Teradyne	617-422-2693
Fumio Wada	Wada Associates	415-968-1344
Dilip Wadhvani	Intel	602-715-1128

Southwest Test Workshop - Attendee List

Dallas Wallace	Silicon Systems, Inc.	408-429-4795
David Wanzenried	CerProbe Corp.	602-333-1500
Andrew Weiffenbach	Applied Precision	425-557-1000
Marvin Weilerstein	inTest	609 424-6886 x205
Pat Wenzel	Micro-Probe Inc.	760-603-0631
Christopher West	inTEST Corp.	609 424-6886
Carol Whann	Micro-Probe, Inc.	619-603-0631
Welton Whann	Micro-Probe, Inc.	619-603-0631
Frank Wies	FormFactor Inc.	510-294-4300
Jack Willett	Analog Devices	617-937-2718
Gerry Williams	Rockwell/Brooktree	619-535-3223
Ralph Williams	Technology To Go	408-578-6256
Irv Wilson	ESH Inc.	602 438-1112
Mark Winn	Intel	505-893-0576
Steven Wolf	Chip Supply, Inc.	407-298-7100
David Woodliff	Motorola	512-505-8363
Kunihiko Yamazaki	ATE Service Co., Inc.	81-423-77-8811
Yuki Yoshida	TSK America	512-834-4344
Dane Zehrung	Teradyne, Inc.	617-422-2886
John Zimmer	Wentworth	203-775-9311
Karl Zimmermann	Contact Technologies	805 498-8157
Rob Zokaeci	Probe Technology	408-980-1740
Marek Zywno	Electroglass	408-727-6500 x6594

Table of Contents (page 1)

• RF Wafer Probing

“Microwave Probing”

Jim Bossaller
Hewlett Packard, MS 3USQ

“High Frequency Basics”

Tom Strouth
GigaTest Labs Inc.

• Automatic Probe Mark Inspection on Probers

“Electroglas EG4090”

Dai Dee Casavant
Electroglas

“TEL P8”

Marius Lupan
Tokyo Electron America

“TSK APM 90A”

Earl Eddy
TSK America

• Prober -Test Head Interface

“The Test Head Hoist – A New Concept in Test Head Positioning”

Marvin Weilerstein
Christopher West
InTest

“Design Concepts for a Total Integrated Solution”

Jim Anderson
Cerprobe Corporation

“Probe to Pad XY Scrub Positioning Process”

Al Miller
Digital Micro Electronics, HL01-109

NOTE: Presentations highlighted in blue indicate it is not in ‘searchable’ form

Table of Contents (page 2)

• Temperature Probing

“Elevated Temperature Probing Development at Sematech”

Phil Seitzer

Lucent Technologies, M/S 24A-206AK

“Matched Expansion Probe Cards”

Eckhard Ehlerman

Wentworth, Germany

“Analytical Model of Probe Card Performance at Elevated Temperature”

January Kister

Probe Technology Corporation

“Wafer Temperature Control for Testing High Power Chips:

Measured Thermal Chuck Performance”

Dave Gardell

IBM Corporation, 963G

• Multi-Die Probing

“Experiences with Multi-Die Probe Cards in Production”

Frank Pietzchmann

Seimens

“An Integrated System for Controlling the Unit Probe Process in a Parallel Test Environment”

Bill Davis

Motorola

“Multi-Die Probing”

John Peters

Fujitsu

• Keynote

“When Can We Really Turn the Lights Out at Probe?”

Ron Leckie

Strategic Test Partners

NOTE: Presentations highlighted in blue indicate it is not in ‘searchable’ form

Table of Contents (page 3)

• Probe Potpourri

“Myths and Legends of Probe Needles”

Michelle Gesse
Advanced Probing Systems

“Roadmap to 50 Micron Probe Pitch”

Scott Carlin
Wentworth Labs

“Advanced Cantilever Technology”

Pete Rogan
Cerprobe Corporation

• New Probe Card Technologies

“JEM Vertical Contact Probe Card”

Phill Mai
JEM America

“Vertical Probe Update”

Larry Levy
Form Factor, Inc.

“Mini-Cobra”

Don Brown
Wentworth Labs

NOTE: Presentations highlighted in blue indicate it is not in ‘searchable’ form