

News bits

Website Review

We are beginning a review of the ESDA website. The ESD Association website exists to provide you updates and information. We will assess the usability of the website and make improvements where needed. We welcome any comments you, as the user, may have about the website. Comments can be directed to Katie Connor at kconnor@esda.org, with "website review" in the subject.

New Registration for Free Downloads

When downloading free standards from the website, users will now be prompted to register and create a login profile. Please take a few minutes to register and create a username and password the next time you take advantage of the standards available for free download. Members please note that your member login and password are not profiles for this section. To download standards, members will also need to register through the new pop-up window. Any questions or difficulties can be directed to info@esda.org.

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2004 EOS/ESD Symposium

Gathering in Grapevine, Texas

Grapevine, Texas, near the Dallas-Forth Worth area, is hosting the 26th annual EOS/ESD Symposium. This symposium packages research, technology, education, protective materials, and peer networking into the premier international ESD event September 19-23, 2004, at the Gaylord Texan Resort and Conference Center.

The Symposium program is organized in three special interest tracks, and attendees will be able to customize their Symposium experience along their specific areas of interest. This year's tracks are: ESD Test, Failure Analysis, and Systems; Factory, Materials, and ESD Control; and Device, Design, and Technology.

Education

Three days of in-depth tutorials provide training and education. Internationally recognized instructors will present a total of 20 basic, intermediate, and advanced courses. Many of the tutorials earn credit for one of the professional certification programs sponsored by the ESD Association: ESD Certified Professional-Device/Design and ESD Certified Professional-Program Manager. Other tutorials will assist attendees in preparing for the NARTE certification exams for ESD Control Engineer and/or ESD Control Technician, scheduled this year for Friday, September 24.

Also included in this year's Symposium is the two-day seminar, *ESD Program Development and Assessment (ANSI/ESD S20.20)*, on Sunday, September 19, and Monday, September 20.

Several new and expanded tutorials are included in the program this year. The complete list of tutorials and abstracts may be viewed in the Symposium program on the ESDA website at www.esda.org/symposia.html.

This year's Symposium also features 51 technical papers to be presented in 10

sessions featuring the latest technological issues and research on ESD and EOS. The papers will be offered in parallel sessions to allow attendees to concentrate on those sessions of greatest interest to them. The technical sessions scheduled for Tuesday, September 21, through Thursday, September 23, include: *MR Heads – Processing; RFIC and Novel Protection Devices; System Level and Other ESD Issues; On-Chip Protection Strategies, Physics and Modeling; Tester – Device Effects; Analysis and Modeling of ESD Design Failures; Factory and Materials; Characterization of On-Chip Protection; Novel TLP Testers; and Magnetic Recording Heads.*

A special plenary session on *The Evolution of Failure Analysis to Keep up with the Semiconductor Industry* will be featured Tuesday morning, September 21.

The technical sessions also feature the award winning invited paper from the 2003 RCJ EOS/ESD Symposium-Japan: *ESD Protection Design Using a Mixed-Mode Simulation for Advanced Devices* by H. Hayashi, S. Kuroda, K. Kato, K. Fukuda, S. Baba, and Y. Fukuda of Oki Electric Industry Co., Ltd.

Detailed descriptions of the technical papers may be found in the Symposium program, available on the ESDA website.

Exploration

Eight interactive workshops on Wednesday afternoon, September 22, provide attendees with the opportunity to explore specific topics in depth. The workshops encourage discussion, questions, and audience interaction and participation. Workshop session topics for this year: *Silicon Technology Scaling and ESD Reliability – Roadmap and Reality; Common Auditing Issues; ESD in Cleanrooms; Can*

Symposium

Continued from page 1

Gathering in Grapevine, Texas

TLP Go Beyond HBM and CDM?; Ionization Issues; Automated Equipment, ESD and Grounding Issues; ESD in Magnetic Recording, and HBM-TLP Testing Miscorrelation: Experiences, Explanations, Solutions. Complete workshop details are available in the Symposium program, available on the ESDA website.

And for exploration the 2004 EOS/ESD Symposium features nearly 70 exhibits. Attendees will have the opportunity to visit booths where leading companies will be displaying ESD products and services all in one place. You will cover the broad spectrum of static protection, control, testing, and analysis, as well as prominent trade publications. The exhibits are open to anyone interested in EOS and ESD, and Symposium registration is not required to at-

tend the exhibits. Exhibits are open to the public.

Networking

Almost as important as education, networking is a key reason for attending symposium. Attendees will have the opportunity to discuss the technical papers with the authors at Authors' Corners and meet top professionals at the Welcome Reception, Awards Breakfast, Professional and Technical Women's Reception, and the ESD Association Annual Meeting and Luncheon.

The Symposium is sponsored by the ESD Association in cooperation with the

IEEE. It is technically cosponsored by the Electron Devices Society. The general chair is John Kinnear, IBM. The technical program chair is Carl Newburg, River's Edge Technical Service/Microstat Labs.

The detailed program is available at the following link on the Association's website: www.esda.org/symposia.html. For more information, contact the ESD Association, 7900 Turin Road, Building 3, Rome, NY 13440, phone: 315-339-6937, fax: 315-339-6793, email: info@esda.org, website: www.esda.org.

EOS/ESD Symposium and Exhibits Program and Schedule Summary

September 19-23, 2004

Gaylord Texan Resort and Conference Center, Grapevine (Dallas), TX

Sunday, September 19 Registration 6:00AM-5:00PM	Tuesday, September 21 Registration 7:00AM-5:00PM	Exhibits open 9:00-Noon, 2:00PM-4:00PM
Standards Meetings	Awards Breakfast 7:30AM	Workshops
ANSI/ESD S20.20 Seminar, Day 1 8:00AM-5:00PM	Plenary Session 9:00AM-9:30AM	Thursday, September 23 Registration 6:30AM-3:00PM
Tutorials	Exhibits open 9:00AM-5:00PM	Technical Sessions
Monday, September 20 Registration 6:30AM-5:00PM	Technical Sessions	Tutorials
ANSI/ESD S20.20 Seminar, Day 2 8:00AM-5:00PM	Professional and Technical Women's Reception 6:00PM-7:00PM	Friday, September 24 ESDC Technician and Engineer Exams 8:00AM-5:00PM
Tutorials	Wednesday, September 22 Registration 7:00AM-Noon	
Welcome Reception (Exhibit Hall)	Technical Sessions	
Exhibits open 7:00PM-10:00PM	ESD Association Luncheon & Annual Meeting Noon-2:00PM	

A look at Dallas

Dallas has been a center for technology giants since the 1960s. Topping the Texas charts for both business and leisure travel, Dallas offers visitors a unique blend of Southwestern warmth, cosmopolitan flair, Old West charm, and modern sophistication.

Gaylord Texan Resort & Conference Center

The EOS/ESD Symposium will be held at the Gaylord Texan Resort & Conference Center, a new facility that opened in April 2004. Located in Grapevine, Texas, the conference center is just 6 minutes from the Dallas-Fort Worth Airport, 20 minutes from downtown Dallas, and 20 minutes from downtown Fort Worth. Sitting high on a bluff overlooking Lake Grapevine, this resort welcomes guests to an authentic Texas experience.

Food and Spirits

According to the Texas Restaurant Association, Dallas has more than 7,000 restaurants (that is more restaurants per person than New York City!) Dallas is regularly included in the list of the nation's top cities for fine dining. Most of the major chains can be found in Dallas, as well as many one-of-a-kind local eateries offering the regional fare Dallas is known for—Mexican food, barbecue, and steaks—and many other ethnic specialties.

The chicken fajita was invented in Dallas. This "Tex-Mex" specialty made of marinated grilled meat, flour tortillas, tomatoes, chili peppers, avocados and sour cream was not the only food invented in Texas. The frozen margarita, chili, and the first fast-food operation all originated in Texas, where "chili queens" served ladles full of chili from wash pots set up around a plaza.

The Dallas Farmers Market is one of the largest open-air markets in the country, with five million visitors annually. And it's only appropriate that the suburb of Dallas named Grapevine should host one of the

largest wine festivals in the Southwest—Grapefest.

Arts, Culture and Attractions

The Dallas/Fort Worth area is home to two major art districts. The 60-acre Dallas Art District is the largest urban arts district in the country and is home to the Dallas Museum of Art, the Morton H. Meyerson Symphony Center, and the newly completed Nasher Sculpture Garden. The Crow Collection of Asian Art, the only Asian Art museum in the Southwest, is also located in downtown Dallas across from the Dallas Museum of Art. The Fort Worth Cultural District claims several of the top museums in the state, including the Kimball, the Amon Carter, and the recently added Museum of Modern Art.

The Dallas World Aquarium & Zoological Garden is home to exotic plants and creatures from around the world. Visitors can explore a South American rainforest, walk through a water tunnel surrounded by reef life from the Continental Shelf, and observe monkeys, stingrays, piranhas, and penguins. The Dallas Zoo, founded in 1888, is the oldest zoo in Texas, and with 95 developed acres, contains the largest land mass of any zoo in Texas. The zoo participates in national Species Survival Plans for 37 species, including gorillas, tigers, chimps, lemurs, okapis, and Bali mynahs. Just a short drive west of downtown Dallas is Six Flags Over Texas, the area's largest family amusement park attractions.

The Dallas Public Library in downtown Dallas has on permanent display one of the original copies of the Declaration of Independence, printed July 4, 1776. Also on display at the Dallas Public Library is *Mr. William Shakespeare's Comedies, Histories, & Tragedies*, often referred to as his first folio, which marks the first printing of Shakespeare's plays.

The West End Historic District in downtown Dallas is one of the liveliest parts of town after dark. The former warehouse

S20.20 Seminar

This year's symposium features an ANSI/ESD S20.20 Seminar for ESD program development and assessment.

This two-day course is intended for companies or individuals who wish to help clients design and implement an ESD control program based on ANSI/ESD S20.20. This course will also provide the attendee with the tools and techniques to help clients prepare for a facility audit (pre-assessment).

Examples of control programs will be presented and general audit role-playing will be used in the assessment section.

Outline

The course will contain the following sections:

- Overview of ANSI/ESD S20.20
- Administrative Elements
- Technical Elements
- ESD Program Techniques for Different Applications
- ESD Program Assessment
- Overview of the Assessment Process
- How to Approach an Assessment
- The Audit Checklist and Follow-up Questions

Presenters

Ron Gibson, Celestica, Inc., and John Kinnear, Jr., IBM, will be the presenters of this two-day intensive seminar.

Professional Certification

This seminar is one of the core courses in the Program Manager Certification program. See page 6 for more information.

Registration

The ESD S20.20 Seminar will be held September 19 and 20 from 8:00AM to 5:00PM both days. Attendance is limited to the first 30 registrants.

Call for papers

27th Annual EOS/ESD Symposium Anaheim, California, USA, September 11-16, 2005

The 27th Annual EOS/ESD Symposium is now issuing a call for papers for the 2005 Symposium in Anaheim, California. The Symposium will be devoted to the understanding of issues related to electrical transients and electrical overstress, and the application of this knowledge to the solution of problems in consumer, industrial and military applications, including electronic components and manufacturing, as well as in systems, subsystems and equipment.

Submission Guidelines *Technical Papers*

The Technical Program Committee solicits paper contributions, which include data and analysis, which advance the state-of-the-art knowledge, enhance or review the general knowledge, or discuss new topics related to EOS/ESD.

Abstracts

Authors must submit a 50-word abstract and 4 page (maximum) summary of their work.

The summary must clearly state the purpose, results (e.g., data, diagrams, photographs, etc.), and conclusions of the work. Summaries must also include references to prior publications and state how the work enhances existing knowledge. Authors must designate the appropriate area related to their work and submission.

Electronic Submissions

Abstract and paper submissions shall be made electronically via email to

info@esda.org. The required file format is PDF (Adobe Acrobat®)—**one PDF file for each submission**. Paper presentations at the Symposium will be in electronic PowerPoint® format.

Paper Acceptance

The Technical Program Committee accepts papers with the understanding that the author will not publish the work prior to presentation at the Symposium, and will enforce this policy by withdrawing papers if necessary. Authors must obtain appropriate company and government clearances prior to submitting their abstracts.

Awards and Recognition

Awards are presented annually for the Best Presentation (selected by Symposium attendees) and the Best Paper (selected by the Technical Program Committee). The Best Paper is considered for presentation at the RCJ EOS/ESD Symposium in Japan. A Best Student Paper Award will also be presented. Eligible student contributions should be marked as such by the authors at the time of abstract submission.

Deadlines

The submission deadline is Monday, January 10, 2005. Late submissions will not be accepted.

The final submission deadline for the finished papers will be Friday, May 27, 2005. Final papers will be limited to a maximum of 10 pages. Guidelines will be provided after acceptance of the paper.

Download guidelines and a complete topic listing at

www.esda.org

For further information contact

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From the President

Behind the scenes at the ESDA



Ed Weggeland

It has been quite a year for the Association since our 2003 Symposium in Las Vegas.

In December 2003, your directors met to review our performance for the year and to approve goals, objectives by activity, and a 2004 budget.

Little is generally known about our budgeting process and its value. Years ago, the directors established a budget process and more times than not, the result was a dartboard shoot with much guesswork and speculation.

Once adopted, the budget took on a private life of its own, rarely being reviewed during the year. Most years we exceeded the financial goals due to the thriving industry in North America. Expenses most times exceeded budgets, but the shortfalls were compensated for by larger than expected attendance at Symposium.

When we moved into the new century, the industry had cooled, travel was restricted, and the profit and loss figures looked grim. We had to change! One change was to revise the way we budgeted and take very seriously the way we plan our annual overhead, expenses, how we forecast revenue, and most of all, how we manage our Association business.

All directors have some experience with

a budgeting process and some have extensive knowledge of financial business planning. Our treasurer's job description was expanded and enhanced. The treasurer established a budget-planning model that engaged all activity managers and all directors. Historical data was collected, new budget planning forms were established, and the process was changed. Without boring you with all the details, we successfully transported our business management to a more sophisticated level with responsibility, accountability, and monthly and quarterly reviews.

Now, every month we know where we stand, actual costs against established budgets. The financial statements give us a "live" picture of where we are and permit us to take any corrective action necessary to meet our objectives.

Another new planning tool that we established two years ago was a five-year plan. Many of us knew, or had somehow experienced in our past, that "fail to plan, plan to fail" was real. Each director/manager was required to present forward-looking plans for their Association activity. The five-year, now modified to 3-year plans, have great value to the Association, just as they do for all businesses. Your directors and managers now have current financial information and know the forward years' expectations, putting them into a position of careful direction for your Association.

Much goes on behind the scenes that most members never see. Most see documents developed for industry, the best technical papers presented by experts, the exhibitors that support our industry, and many participate in our educational programs. It takes a great deal of behind the scenes work to make this all possible and plan for our future. Rest assured that your directors and appointed managers are providing the Association leadership that you expect and that under their stewardship the ESD Association will continue to "Serve Industry."

A look at Dallas

Continued from page 3

district now features an exciting and varied assortment of specialty shops, restaurants, street performers, horse-and-buggy-rides, and live musical entertainment. In fact, the Dallas area offers more live music every night than Nashville—from country and western music, to blues, rock, symphony, and more.

Information for this article was obtained from The Dallas Convention & Visitors Bureau (www.dallascvb.com) the Greater Dallas Chamber (www.gdc.org), and the American Association for Petroleum Geologists (www.aapg.org).

Association news

New secretary appointed

Michele McSwain has been appointed Secretary to the Board of Directors. In her volunteer role, as Secretary, Michele is responsible for recording meeting minutes at all Board and Executive Committee meetings. In this position she will assure that all meetings, proposals and resolutions comply with the Constitution and By-laws of the Association and to coordinate all changes proposed to these guidance documents.

Michele's background includes executive management of large multinational manufacturing operations in the data storage industry, spending a fifteen-year period living and traveling throughout Asia. During that time, she was developing and managing manufacturing sites for more than 9,000 employees as well as assisting in customer and vendor relations. Since 1996, Michele has established her own manufacturing company in Asia as well as a partnership located in California.

Michele has been active in our Association since 1996 and has participated in committees working on Membership, Marketing & Communications, Standards and International Council on Education.

We look forward to the management experience and multinational familiarity Michele brings to the Board.

Certification

Advance Your Career

Earn an ESD Association Professional Certification

The ESD Association now offers Professional Certification for ESD Control Program Managers and for Device/Design Technical specialists.

The impact of the ESD Control Program Standard *ANSI/ESD S20.20-1999: Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)* on the global industry has been extraordinary. The ESD Association's Board of Directors recognizes the need to offer a certification program for individuals that are involved in designing, implementing, managing and auditing ESD control programs in their facilities. The ESD Certified Professional-Program Manager certification program was announced in 2003 to serve that purpose. In addition, the needs of the technical community for certification of various technical specialists are apparent. The ESD Association is pleased to now offer an ESD Certified Professional-Device/Design certification program as well.

Requirements for certification will include, as a minimum, attending required prerequisite tutorials, and passing a final exam. Sign up at this year's Symposium and start earning your credits!

Many of the prerequisite courses are available in the 2004 Symposium tutorial program (course list follows) and additional courses are in development.

Please watch the ESD Association website at www.esda.org for announcements regarding these exciting and important new offerings. Details of these Certification Programs also will be available at the EOS/ESD Symposium; please stop by the ESD Association booth for more information.

Program Manager Certification Seminars and Tutorials

ESD Program Development and Assessment (ANSI/ESD S20.20 Seminar) (Sunday and Monday)

A. ESD Basics for the Program Manager (Sunday)

D. Air Ionization: Issues and Answers (Monday)
H. How To's of In-Plant ESD Survey and Evaluation Measurements (Monday)
I. Packaging Principles for the Program Manager (Monday)
N. ESD Standards Basics for EPA (Thursday)
P. Device Technology and FA Overview (Thursday)
Q. Electrostatic Calculations for the ESD Engineer (Thursday)
T. Cleanrooms Considerations for the Program Manager (Thursday)

Device/Design Certification Tutorials

B. ESD On-Chip Protection in Advanced Technologies (Sunday)
C. System Level ESD/EMI (Part 1 & 2) (Sunday)
E. On-Chip ESD Protection in RF Technologies (Monday)
F. SPICE-Based ESD Protection Design Utilizing Diodes and Active MOSFET Rail Clamp Circuits (Monday)
G. EOS/ESD Failure Models and Mechanisms (Monday)
J. Circuit Modeling and Simulation for On-Chip Protection (Monday)
K. Latchup Physics and Design (Monday)
L. Device Testing-Component Level: HBM, CDM, MM, & TLP (Monday)
O. Troubleshooting On-Chip ESD Failures (Thursday)
S. Transmission Line Pulse Measurements: Parametric Analyzer for ESD On-Chip Protection (Thursday)

Earn a NARTE Certification

Change continues to foster growing interest in voluntary professional certification. In static control, you can advance your career by becoming NARTE certified as an ESD Control (ESDC) Engineer or ESD Control (ESDC) Technician.

At the 2004 Symposium, certification examinations for ESDC Engineer and ESDC Technician will be held Friday, September

24. You can prepare for the exams and add to your education by attending the tutorials that have been designated as examination preparation courses.

Tutorials Preparing for the Technician Exam

A. ESD Basics for the Program Manager (Sunday)
D. Air Ionization: Issues and Answers (Monday)
H. How To's of In-Plant ESD Survey and Evaluation Measurements (Monday)
I. Packaging Principles for the Program Manager (Monday)
N. ESD Standards Basics for EPA (Thursday)

Tutorials Preparing for the Engineer Exam

A. ESD Basics for the Program Manager (Sunday)
D. Air Ionization: Issues and Answers (Monday)
G. EOS/ESD Failure Models and Mechanisms (Monday)
H. How To's of In-Plant ESD Survey and Evaluation Measurements (Monday)
I. Packaging Principles for the Program Manager (Monday)
L. Device Testing-Component Level: HBM, CDM, MM, & TLP (Monday)
N. ESD Standards Basics for EPA (Thursday)
Q. Electrostatic Calculations for the ESD Engineer (Thursday)

To obtain additional information about professional certification or the 2004 EOS/ESD Symposium, please contact the ESD Association by phone: 315-339-6937; fax: 315-339-6793; or email: info@esda.org; website: www.esda.org. The complete 2004 Symposium Program is available on the ESDA website at www.esda.org/symposia.html. Information about professional certification also will be available at this year's Symposium in the registration area and at the ESD Association booth.

Calendar

September 2004

September 10, 2004

ESD Midwest Chapter: Product Safety Testing and ESD Workstations: Are They Really Two Worlds Apart?

Sheraton Chicago Northwest Hotel,
Arlington Heights, Illinois
www.midwestesd.org

September 14, 2004

ESD Northwest Chapter Membership Meeting

Vanguard EMS, Beaverton, Oregon
www.esdnw.org

September 16-19, 2004

ESDA Standards and Committee Meetings

Gaylord Texan Resort and Conference Center, Grapevine (Dallas), Texas
www.esda.org

September 19-24, 2004

EOS/ESD Symposium

Gaylord Texan Resort and Conference Center, Grapevine (Dallas), Texas
www.esda.org

September 24, 2004

ESD NARTE Exams

Gaylord Texan Resort and Conference Center, Grapevine (Dallas), Texas
www.esda.org

September 20-23, 2004

AUTOTESTCOM 2004

Henry B. Gonzalez Convention Center, San Antonio, Texas
www.autotestcon.com

September 28, 2004

Silicon Valley EOS/ESD Society General Membership Meeting

Silicon Valley Ramada Inn, 1217 Wildwood Avenue, Sunnyvale, CA
www.esdsiva.org

October 2004

October 8, 2004

ESD Midwest Chapter: Zap Zar Panel

Sheraton Chicago Northwest Hotel, Arlington Heights, Illinois
www.midwestesd.org

October 12, 2004

ESD Northwest Chapter Board Meeting

Vanguard EMS, Beaverton, Oregon
www.esdnw.org

October 19, 2004

Silicon Valley EOS/ESD Society General Membership Meeting

Silicon Valley Ramada Inn, 1217 Wildwood Avenue, Sunnyvale, California
www.esdsiva.org

October 20-21, 2004

NEPCON Texas

Arlington Convention Center, Arlington (Dallas), Texas
www.nepcontexas.com

November 2004

November 8, 2004

ESD Midwest Chapter: Zap Zar Repeat/ Container Showcase

Century Container, Mannheim Rd., Hillside, Illinois
www.midwestesd.org

November 9, 2004

ESD Northwest Chapter Membership Meeting

Vanguard EMS, Beaverton, Oregon;
www.esdnw.org

November 9-10, 2004

CleanRooms Puerto Rico Conference and Exhibition

Caribe Hilton Hotel, San Juan, Puerto Rico
www.cleanrooms.com

November 16, 2004

Silicon Valley EOS/ESD Society

General Membership Meeting
Silicon Valley Ramada Inn, 1217 Wildwood Avenue, Sunnyvale, California
www.esdsiva.org

September Standards Meeting Schedule

ESD Association

Standards and Association Committee Meetings

September 16-19, 2004

Gaylord Texan Resort & Conference Center
Grapevine (Dallas), TX

Thursday, September 16

TAS	8:00 - 5:00
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Friday, September 17

TAS	8:00 - 5:00
WG-3, Ionization	8:00 - Noon
WG-5, Device Testing	8:00 - 5:00
WG-6, Grounding	1:00 - 5:00
WG-10, Handlers	1:00 - 5:00

Saturday, September 18

TAS	7:00 - 5:00
WG-5, Device Testing	8:00 - 5:00
WG-53, Workstations	8:00 - Noon
WG-55, Cleanrooms	8:00 - Noon
WG-6, Grounding	8:00 - Noon
SYM 04/ICE/SYM 05	9:00 - Noon
WG-11, Packaging	1:00 - 2:00
WG-2, Garments	1:00 - 3:00
WG Chair Meeting	5:30 - 6:30
MIXER	6:30 - 7:30

Sunday, September 19

TAS	7:00 - 5:00
ANSI/ESD S20.20 Seminar	8:00 - 5:00
National Tutorials	8:30 - 4:30
Local Chapters	8:00 - 10:00
WG-14, ESD Simulators	8:00 - Noon
WG-7 Flooring	8:00 - Noon
WG-15, Gloves	8:00 - Noon
DAR/STDCOM	1:00 - 3:00
Board of Directors	5:30 - 7:00

System level HBM ESD testing versus component level HBM ESD testing—a tidbit



Leo G. Henry

The recent (well, the last six months) increase in requests for system level (hand-held metal objects) ESD testing cannot go unnoticed because this ties in with the recent increases in system level job notices “out there.” This definitely indicates that companies are becoming more aware of the need for the expertise of system level ESD engineers. Whereas in the past (90s and earlier) this system level HMM (Human Metal Model) test was being used primarily for pulsing the larger systems like ATEs, the method is now being used increasingly to test sub-assemblies like data storage card products and voltage suppression devices. These products of course are being used more often in consumer electronic systems like hand-held PDAs and cell phones, etc.

However, although the data collected thus far is limited, it indicates that most of these companies are not aware of the existence of the ESDA’s Standard Practice document SP-14.1-2003 and the Technical Report TR-07-2000. These documents, developed and completed by the ESDA System Level Working Group 14, have the following titles: TR-07 *Uncertainty Calculation Procedures* and SP-14.1 *System Level ESD Simulator Verification*.

Even more alarming is the fact that three of the seven companies that I spoke to (who manufacture the system level ESD Gun) were **not** aware of the existence of these two documents.

So why do we care? Why am I writing about this? Well the system level situation is similar to the component level situation. The system level current pulse (waveform) delivered by the ESD Gun (using a

150 pF/330 ohm RC discharge Network) must be verified before using the simulator to test product, but there is no precise direction in the existing IEC standard as to how to do this. By comparison, the component level ESD standard for HBM ESD testing not only provides a procedure for testing, but also specifies a method for the calibration/verification of the simulator’s current pulse (which uses a 100 pF/1500 ohm RC discharge Network).

It is well known that the system level IEC standard, IEC-61000-4-2 (for ESD immunity from EMI), does not provide any direction for the verification of the current waveform; this is where the ESDA documents are applicable. It seems to me then that there must be a way to market the standard practice method/procedure that the system level experts have developed. It is “strange” because the team that put this Standard Practice document together included members from the four continents of America, Europe, Asia, and the Caribbean (okay, a bit small, but worth mentioning).

The situation is alarming because, even though I have not contacted all the ESD labs who perform system level testing, of the few with whom I have had discussions, only three were aware of the SP-14.1 and TR-07 documents.

Specifically, the SP-14.1 document’s foreword states that it is intended to provide guidance to designers, manufacturers and calibration facilities for verification and specification of the system and fixtures used to measure simulator discharge currents.

To continue, the ESDA SP document was developed to improve the understanding of simulator repeatability and reproducibility in the ESD current measurement. It provides a proper method for making accurate measurements of the discharge current. The document was also meant to explain the reported large response varia-

tion in the current measurement sensor or target, which had insufficient bandwidth required for characterizing the ESD current waveform. The document did this by providing better target performance specifications. This has led to improved test data correlation of the system equipment under test. This was because the measurement system had variations in the characteristics.

The purpose section in the SP-14.1 document defines a measurement system with fixtures that can be used to make accurate, reproducible measurements of the discharge currents from ESD Simulators and other sources. The Scope in the document defines a time-domain measurement technique for verifying compliance with discharge current specifications given in system level ESD standards.

At the risk of repeating myself, the application is intended to be used primarily by users of ESD simulators (mostly hand-held) for simulator discharge current verification. When the components are placed on boards and become part of sub-assemblies or systems the failure levels of these same components are quite different from those obtained when tested using the component level HBM standard test method. Therefore a system level approach (IEC-61000-4-2 standard) must be used; and before these simulators can be used for testing, their current pulse must be verified, and the ESDA standard SP-14.1-2003 is the only document that addresses this. As is the usual, if you have questions and need details on this tidbit, please do not hesitate to send me email.

Be Happy

leogesd@pacbell.net

The New Volunteer Spotlight

The next time you visit the ESDA website don't miss one of the newest features. The ESDA website now takes a regular look at the people we rely on most: our volunteers. Each month the ESDA website will offer a different volunteer profile, highlighting the volunteer's work for the ESD Association and professional and educational background, as well as what volunteers do when they are not dedicating themselves to the ESD Association or their profession.

August's Volunteer Spotlight gave us a glimpse of Rick Knight, vice president of Ranger Plastic Extrusions, Inc., in Arlington, Texas. Rick has been a

member of the ESD Association since 1996, and is a member of the Work Group 11.0 Packaging Committee, which helps develop standards for packaging materials to protect ESD sensitive devices. Rick helped in the development of the proposed 2-Point Resistance Test Standard 11.13.

Rick is a member of the Society of Plastics Engineers and has been involved with plastics manufacturing during his entire career. In 1972, Rick was one of the three founding members of Meritex Plastic Industries in Arlington, Texas, and served as vice president until moving to Penang, Malaysia, in 1982 to oversee the final construction and startup of Meritex Penang. In 1994, Rick became a member of the Illinois Tool Works (ITW) Patent Society following issue of a patent in his name and assistance on other patents related to static dissipative mechanical (non-adhesive) cover tape systems for tape and reel plastic carrier to handle, store and ship semiconductor, and other small electronic devices. In 1999, Rick went to Mexico to be

on-site during the final construction of a new manufacturing facility for ITW Meritex.

Past volunteers featured in the Spotlight can be found in the Spotlight Archives from the Volunteer Spotlight page of the website. Previously, the Volunteer Spotlight featured Gary Weiss, consulting member of the Technical Staff, CMTS, at Agere Systems, Inc. Gary has been a member of the ESD

Association since 1994, and a member of the 5.0 Device Testing Committee for 10 years. He has also served as chairman of Working Group 5.4 since 1996; this group is engaged in using tran-

sients to assess latch-up robustness. Gary has also served as a member or alternate on HBM, CDM, or TLP working groups at various times during his membership. He is currently involved in an effort by Working Group 5.1 to adapt the HBM Standard to complex high pin-count ICs, to which he has contributed data & simulations describing the loading effect of multipin power nodes and proposed single node stressing. Gary has published papers on transient-induced latch-up testing at the 1995 and 1999 EOS/ESD Symposium, served on the Symposium Technical Program Committee in 1999 and 2000, and is co-author of a paper on the effects of spurious voltages on HBM simulators that will be presented at the 2004 EOS/ESD Symposium.

Also to be found in the archived editions of the Volunteer Spotlight is Larry Burich, Process Control Engineer at Lockheed Martin. Larry has been a member of the ESD Association since 1982, and has been an active member of the Grounding,

Flooring, Footwear, Wrist Strap, Equipment and Work Surface Committees.

Larry received an AA degree in Electronics Technology from Henry Ford Community College in Dearborn, Michigan, in 1973. Larry moved from Michigan to California to work for Lockheed Martin. His first job was as a technician maintaining micro electronic production equipment, and he first started working with ESD sometime around 1976. The U.S. Navy filed for a patent for a wrist strap tester that Larry developed for a Navy program in 1978; the patent was never issued. Larry developed a real-time monitor for wrist straps and table tops in 1979. About 350 units were made and used at Lockheed in Sunnyvale, California; about 100 of the units are still in use today. In 1979, Larry founded a company called Burich Electronics to make static sensors.

Don't miss this look at the people who make the ESD Association a premier organization for expanding the understanding and educating the world about ESD. September's Spotlight will focus on Thomas J. Meuse, semiconductor test product line manager at Thermo Electron.

To find the Volunteer Spotlight, follow the link from the ESDA labeled Volunteer Activities.



Rick Knight, Volunteer Spotlight



Larry Burich, Volunteer Spotlight

And the survey says...

Each month *Threshold*[™] provides a column to address the many questions and comments expressed by Association members in their responses to an email survey conducted by the ESD Association's Human Resources Business Unit.

Structured in a question and answer format, this column presents questions, comments, and requests chosen from the survey responses and provides answers to those questions, which are supplied by the Association.

The primary goal of the ESDA is to serve our members in any way possible. The survey responses received serve as an excellent source of direction in our quest to serve the membership.

As many of you know, this survey was distributed by email in August 2003, and members also responded by email. The ESD Association sincerely thanks those members who took the time to send in their comments.

Survey Question:

What products or services can the ESD Association provide to help you in your ESD duties?

Member Comment:

Coordinated access to information on ESD. Your website does a good job of providing access to ESDA standards and activities, but to the industry professional implementing programs we need access to the suppliers in a more coordinated fashion. We can find the suppliers by going to the symposium and then visiting the websites of products of interest, but what about the other 11 months of the year? What about a page of industry links sorted by products? You could charge a nominal fee to suppliers to have their websites linked under categories. I emphasize the nominal in fee, because a site with too few links is less useful than a 1-stop link shop for anything ESD related.

ESDA Response:

The ESDA website offers the ESDA Buyer's Guide, which provides just the service you requested. Click the Buyer's Guide link from the left hand column of the ESDA home page and you have access to over 50 companies who provide ESD related products and services. To find what you need, you can conduct a search by company, product, or geographical location.

Member Comment:

Audit Workshops and a standard that is more real life to the site audit. The standards now are too detailed for a monthly site audit. I think when the Workstations Group finishes their document for Compliance Verification, it'll be a great help!

ESDA Response:

Working Group 53 of the ESDA's Standards Committee is currently working on a document that will address the Compliance Verification requirements section highlighted in ANSI/ESD S20.20. Periodic verification has been a goal of many companies but is not always adhered to appropriately. The S20.20's mission is to incorporate good ESD control practices among those companies who fortuitously decide to use its recommendations. The compliance verification aspect of an industry ESD control program is one very important leg in the program's successes. Knowing that your qualified and correctly installed equipment is functioning during use, is critical for a world class ESD control program to succeed. Some of the key sections in the new document will be workstations, grounding systems, seating, garments, and ionization, among several others.

New standards available

The ESD Association has published several new standards that are now available for sale. The following standards are new in 2004:

ANSI/ESD SP5.3.2-2004

Sensitivity Testing Socketed Device (SDM) Component Level

This standard practice provides a test method for generating a "Socketed Device Model" (SDM) test on a component integrated circuit (IC) device.

ANSI/ESD SP5.4-2004

Transient Latch-up Testing – Component Level Supply Transient Stimulation

This standard practice was developed to instruct the reader on the methods and materials needed to perform Transient Latch-Up Testing.

ANSI/ESD SP5.5.1-2004

Electrostatic Discharge Sensitivity Testing Transmission Line Pulse (TLP) Component Level

This standard practice defines a method for pulse testing to evaluate the voltage/current response of the component under test.

These standards are now available for sale through the ESD Association by calling 315-339-6937, or they can be purchased at the ESD Association booth at the 2004 EOS/ESD Symposium.



Institutional listings

<p>Howell Packaging, Division of F.M. Howell & Company P.O. Box 286, Elmira, NY 14902 Tel: 607-734-6291 Fax: 607-734-8667 Designers & Manufacturers of ESD Protective Packaging, Paperboard & Thermoformed Plastic, In-House Testing</p>	<p>DESCO 3651 Walnut Avenue, Chino, CA 91710 Tel: 909-627-8178 Fax: 909-627-7449 www.desco.com Manufacturer of ESD control products including wrist straps, mats, foot grounders, ionizers, shielding bags, floor finish & more</p>
<p>Conductive Containers, Inc. 4500 Quebec Ave. North, New Hope, MN 55428 Tel: 1-800-FARADAY Fax: 763-537-1738 www.corstat.com Manufacturer of CORSTAT conductive corrugated products and ESD safe thermoformed plastic designs for shipping, storage & handling.</p>	<p>3M Electronic Solutions Division Tel: 1-800-328-1368 www.3M.com/eisd Manufacturer of static control permanent flooring, wrist/heel straps, static shielding bags, & testing/monitoring equipment</p>
<p>VPI 3123 S. 9th St., P.O. Box 451, Sheboygan, WI 53082-0451 Tel: 800-874-4240 Fax: 920-458-1368 Email: floor@vpiflooring.com www.vpiflooring.com Manufacturer of ESD Control Solid Vinyl Floor Tile</p>	<p>TREK, INC. 11601 Maple Ridge Road, Medina, NY 14103 Tel: 585-798-3140 Fax: 585-798-3106 Web: www.trekinc.com Manufacturer and designer of instrumentation and sensors for measuring surface voltage, ionizer performance, and surface resistivity</p>
<p>Kenflex Corporation 460 NE Hemlock, Suite A, Redmond, OR 97756 Tel: 541-923-4765 Fax: 541-923-4190 sales@kenflex.com Manufactures FLEXCELL®, FLEXSTAND®, FLEXTOTE® circuit board transport and protection units, also on Web. For additional information: www.kenflex.com</p>	<p>ACL Staticide 1960 E. Devon Avenue, Elk Grove Village, IL 60007 Tel: 847-981-9212 Fax: 847-981-9278 www.aclstaticide.com Cleanroom products, topical antistats, floor finishes and coatings, static detection meters, monitors, computer cleaning products</p>
<p>ESDSYSTEMS.com 432 Northboro Rd. Central, Marlboro, MA 01752-1823 Tel: 508-485-7390 Fax: 508-480-0257 www.esdsystems.com A full line of ESD control products: wrist straps/foot grounders/mats/ ionizers/floor finish/shielding bags/smocks/testers & more</p>	<p>Wolfgang Warmbier Untere Giesswiesen 21, D-78247 Hilzingen, Germany Tel: 49-7731-86880 Fax: 49-7731-868832 www.warmbier.com ISO 9002 certified for advice, supply and manufacturing of static control materials and systems</p>
<p>Monroe Electronics 100 Housel Avenue, Lyndonville, NY 14098 Tel: 585-765-2254 Fax: 585-765-9330 Email: electrostatics@monroe-electronics.com www.monroe-electronics.com Full line manufacturer of static measurement equipment</p>	<p>Static Solutions Inc. 331 Boston Post Rd.-East, Marlboro, MA 01752 Tel: 508-480-0700 Fax: 508-485-3353 www.staticsolutions.com Manufacturer of patented ESD, Cleanroom & Maintenance products including Ohm-Stat™ combination & resistivity meters, Ohm-Shield™, coatings, floor finish, and paint, Ohm-Cide™ EPA cleaners, Stat-o-Flex™ class zero wriststrap and more.</p>
<p>HMS Compounds, Inc. P.O. Box 388, Mansfield, TX 76063 Tel: 817-468-3099 Fax: 817-468-3122 www.hmscompounds.com Manufacturers of Conductive and Static Dissipative Thermoplastic Sheet and Roll Stock for ESD Protection</p>	<p>Saint-Gobain Ceramics 1225 Aeroplaza Drive, Colorado Springs, CO 80916 Tel: 719-637-8737 Fax: 719-380-5591 Email: william.losch@saint-gobain.com Manufacturer of Cerastat™ ESD ceramics products to customers' prints; tools, fixtures, wear parts for data storage & other electronic industries</p>
<p>RMV Technology Group, LLC ESD Materials Testing (including equipment, thermoforming, paper, polymers, foam) Tel: 925-673-0225 www.esdrmv.com Fax: 925-672-3316 NARTE Certified ESD Engineer, American Council of Independent Labs, ESD Product Development & Product Safety, Comprehensive ESD/Cleanroom Audits, Event Monitoring, On-Site Seminars</p>	<p>Tek Stil Concepts, Inc. P.O. Box 67, Haddonfield, NJ 08033 Tel: 800/603-0848 856/428-4464 Fax: 856/429-6532 www.tekstilconcepts.com Email: info@tekstilconcepts.com ESD dissipative and conductive vinyl sheet and tile, ESD carpet tile, ESD high traction safety floor tile</p>
<p>ProLine 12 Rogers Rd., Haverhill, MA 01835 Tel: 800-739-9067 Fax: 978-374-4885 www.1proline.com Email: Bench@1proline.com Manufactures ESD modular and ergonomic workstations</p>	<p>PROTEKTIVEPAK 14040 Central Ave., Chino, CA 91710 Tel: 909-627-2578 Fax: 909-363-7331 www.protektivepak.com Corrugated paper and plastic containers, tape, labels, and bags for ESD protected handling of electronic devices and components</p>
<p>Barth Electronics, Inc. 1589 Foothill Drive, Boulder City, NV 89005 Tel: 702-293-1576 www.barthelectronics.com Supplying the ESD Community with the most Accurate and Reliable CDM-TLP and HBM-TLP Test Equipment</p>	<p>Molded Fiber Glass Tray Co. 6175 US Highway 6, Linesville, PA 16424 Tel: 800-458-6050 Fax: 814-683-4504 email: info@mfgtray.com Manufacturer of static dissipative and conductive trays and containers for static protection of sensitive parts.</p>

Minimum rates are \$600.00 for six consecutive issues. Larger contributions are welcome. No agency fee is granted for soliciting such contributions. Inquiries, or contributions made payable to the ESD Association, plus instructions on how you wish your Institutional Listing to appear, should be sent to: ESD Association, 7900 Turin Rd., Building 3, Rome, NY 13440-2069 Tel: (315) 339-6937, Fax: (315) 339-6793, email: info@esda.org

Institutional listings

<p style="text-align: center;">Vermason Ltd.</p> <p>1 Avenue One, Letchworth, Herts., SG6 2HB, England Tel: +44 1462 672005 Fax: +44 1462 670440 sales@vermason.co.uk Manufacturer of ESD products. For more information, www.vermason.com</p>	<p style="text-align: center;">Tech Wear</p> <p>2205 Faraday Ave., Suite B, Carlsbad, CA 92008 Tel: 760-438-7788 Fax: 760-438-6868 Email: kay@techwear.com www.techwear.com Industry leader in static control garments, including groundable cleanroom garment systems.</p>
<p style="text-align: center;">TOPLINE-ELME</p> <p>7331A Garden Grove Blvd., Garden Grove, CA 92841 Tel: (800)776-9888 Email: info@ESD.TV www.ESD.TV Full line ESD products including shoes, garments, chairs, brushes, mats, gloves. Maximum comfort.</p>	<p style="text-align: center;">Abeba "Comfort Shoes for Technologies"</p> <p>P.O. Box 1066, Medford, OR 97501-0077 www.abeba.com Tel: 425-501-9811 Fax: 541-864-1092 Email: comfortfootwear@msn.com Comfortable European quality ESD, Cleanroom, safety shoes and boots for men and women.</p>
<p style="text-align: center;">Electrostatic Society of America www.electrostatics.org</p> <p>The Electrostatic Society of America (ESA) is devoted to the advancement of electrostatics, encompassing a wide breadth of areas including MEMS, biological and industrial applications.</p>	<p style="text-align: center;">Your Listing Can Appear Here</p> <p>Contact ESD Association for details 7900 Turin Rd., Building 3, Rome, NY 13440-2069 Tel: (315)339-6937, Fax: (315) 339-6793, email: info@esda.org</p>

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