

July 23 & 24, 2008

CDM & Class 0 & S20.20

Highly Interactive ESD Workshop

Key Note Speech: "Charged Board Model"

by Mr. Andrew Olney, Quality Director, Analog Devices

(CDM = Charged Device Model; Class 0= Ultra-Sensitive Components)

ESD Dream Team
www.dangelmayer.com



Key Note Speech:

Real-World Charged Board Model (CBM) ESD Failures

Andrew Olney, Quality Director of Analog Devices, has published many papers and holds several patents related to ESD testing and on-chip protection. Hear Mr. Olney dispel several fallacies about ESD susceptibility of components on PCBs and the common misdiagnosis as EOS damage instead of the real cause - ESD.

**Hands-on ESD Workshop with the Dream Team:
CDM & Class 0 & S20.20, Issue 2**

Intended For Professionals Who:

- Have Achieved Basic Knowledge Of ESD
- Desire Roadmap For Current And Future Protection
- Need A Better Understanding of CDM and S20.20

What You Will Learn:

- CDM (Charged Device Model) & Class 0 Basics
- Why Industry Trend Toward Class 0 Is Inevitable
- Over 95% of ESD Failures are CDM
- CDM & Class 0 Counter Measures
- Hands-On CDM & Class 0 Test Methods
- Most FA Experts Misdiagnose CBM as EOS
- What's New with ESDA S20.20, Issue 2 -2007
- How to Develop and Implement Sound ESD Programs

Workshop Agenda

Day 1: Wednesday, July 23, 2008

8:00

- **Introductions**

8:30

- **Key Note Speech: Charged Board Model**
 - Andrew Olney, Quality Director, Analog Devices
 - Laboratory Test Results
 - Damage Failure Analysis Photos
 - Damage Looks Like EOS!
 - Commonly Misdiagnosed as EOS
 - Impact on the Industry



**Ted
Dangelmayer
President**

9:30

- **Updated Class 0 & CDM Trends - Ginger Hansel**
 - Industry Wide Trends and Drivers
 - Who Will be Impacted and When
 - Who has Already been Impacted
 - The New Manufacturing Challenges!
 - High Failure Rates (up to 100%)



**Ginger
Hansel
Director**

10:30

- **Enhanced ESD Basics – Dr. Terry Welsher**
 - With Emphasis on CDM & Class 0
 - Why CDM & Class 0 are Not Well Understood

12:00

- **Lunch**

1:30

- **Enhanced ESD Basics (Continued)**
 - CDM vs. HBM vs. MM
 - Discharge Characteristics
 - Current Limitations of Designed-in-Protection
 - Demonstrations and Videos
 - FMA: Differentiation Among the 3 Models
 - CDM & Class 0 Manufacturing Controls



**Terry
Welsher
Vice
President**

6:30

- **Evening: Sunset Dinner at Seaside**

Workshop Agenda

Day 2: Thursday, July 24, 2008

8:30

- What's New with S20.20, Issue 2 - 2007 – [Larry Fromm](#)
 - Changes in Issue 2
 - Why S20.20 is Preferred
 - Strengths and Technical Gaps

9:30

- Advanced Auditing Techniques for Class 0
 - EMI/ESD Event Detection
 - Case Study

11:00

- Hands-on – Measurement Techniques and Pitfalls –
[Led by the Dream Team](#)
 - Class Exercises
 - EMI/ESD Event Detection
 - EM Aware – Data Acquisition System
 - Voltage Measurements and the Limitations
 - Auditing Measurement Equipment Usage
 - Avoiding Common Pitfalls
 - Proper Use of Key Instruments

12:00

- Lunch

1:30

- Hands-on Test Methods (Continued)

5:00

- Adjourn



**Larry
Fromm
Director**

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Location: Cape Ann, Gloucester, MA

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Transportation

45 minute drive from Boston's Logan airport

55 minute train ride from Boston

1.25 hr. drive from Manchester, NH airport



Larry Snow
Director
Training



Vicki
Dangelmayer

Sales Vice
President



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CDM & Class 0 & S20.20

Highly Interactive ESD Workshop
What's New With Issue 2, S20.20-2007

(CDM = Charged Device Model; Class 0= Ultra-Sensitive Components)

14 Butternut Lane, Gloucester, MA 01930

REGISTRATION FORM

Two day Workshop includes two lunches, two continental breakfasts, one dinner
Fee: \$895.00 per person. Register by June 30, 2008 and deduct \$50.

Registration Information

Name: _____ Title: _____

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