



September/October 2011 Newsletter

[Sherlock Wins NPI Award!](#) | [Sherlock Expands into Central Europe](#)
[DfR on the Front Cover of Medical Electronics Design!](#)

It Is All About Good Design

In honor of Steve Jobs, this month's newsletter focuses on Good Design. The secret to ensuring optimum Quality, Reliability and Safety is having a technical team that understands Good Design, and this is what makes DfR Solutions so successful. Our staff has expertise and experience in the technologies and processes of direct interest to you. With that knowledge, we drive our clients to become better / faster / cheaper and still meet all of their Quality, Reliability and Safety goals. Come learn the secret of Good Design. Remember, with Good Design, all else is possible.

Power Supplies - The Heart of Every Product

All electronics need power, but power supplies are a surprisingly common source of problems. This enlightening [white paper](#) describes solutions to some common challenges, including issues with stability, Power MOSFETs, and Schottky Diodes. For more information on our power supply design review, contact [Ron Wunderlich](#).

Motherboards / Embedded Systems - Design for Reliability

Turning an idea into a functional circuit can be complex and time consuming. The more systematic the design and test process the more likely products will be delivered on schedule. This [white paper](#) highlights three critical practices, circuit reuse, design reviews and thorough testing, that will develop a robust design and will minimize schematic issues. For more information, contact [Annie Drees](#).

Application-Specific Integrated Circuits (ASICs) - The Secret to Good Design (Part 1)

The ASIC design flow is a complex process with many important details. First pass success is desired, but it requires a few iterations to get all of the information needed to fully meet the specifications. DfR can provide support and guidance to help you navigate this process, which is delineated in this [white paper](#). For more information, contact [Francisco Tejada](#).

Sherlock

[Automated Design Analysis™](#)



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2.5D, 3D and Beyond: Bringing 3D Integration to the Packaging Mainstream

November 9, 2011

Biltmore Hotel, Santa Clara, CA

This event will be co-located with [KGD in an Era of Multi-Die Packaging and 3D Integration](#) to be held on November 10.

Discounts are available for attending or exhibiting at both events.

Thermal Solutions - Designing to Optimize Performance

Meeting targets for cost, size, and performance for a thermal solution is a challenging activity for most engineering teams. Designers can be drawn into a game of 'opinionering,' which can induce overdesign or initiate a time-consuming design of experiments. This [white paper](#) illustrates how DfR optimizes this process. For more information, contact [Nathan Blattau](#).

Board-to-Board Connections - Know Your Options (Part 1)

In this [white paper](#), DfR guides you through the process of selecting a board-to-board connection and how to balance cost, size, number of I/O, manufacturability, repairability, and robustness. A concise understanding of the advantages and disadvantages of each connection option is provided. For more information, contact [Greg Caswell](#).

Latest on Pb-Free

iNEMI/IPC Solder Testing

The electronics industry is developing a standardized methodology for capturing new solder materials (manufacturability and reliability). An array of tests, including solderability, thermal cycling, mechanical shock, and pin-pull testing, are proposed. DfR Solutions is the only organization that has been involved in this document AND can perform all these activities. Need help with a new Pb-free alloy? Contact [Joelle Arnold](#) for assistance.

India RoHS/WEEE

India recently published their [e-waste \(Management and Handling \) Rules, 2011](#). The rules cover both restrictions (RoHS) and disposal (WEEE). The materials, limits, and exemptions are the same as EU RoHS, but encompass a more limited scope and exemption expiration dates are not included. For more information, contact [Craig Hillman](#).

FAA and Pb-Free

The FAA has issued a nuanced [memo](#) that defines their position on Pb-free. They recommend familiarity with GEIA documents, a focus on five critical areas (solder joint reliability, tin whisker, repair, configuration, and obsolescence), and state that no avionic failures have been traced back to Pb-free finishes. Looking for assistance with tin whisker mitigation or lead free control plans (LFCP)? Contact [Randy Schueller](#) for more information.

DfR News

Sherlock Wins 2011 PCD&F New Product Innovation (NPI) Award

On the market for only six (6) months and Sherlock has already been recognized for its innovative and unmatched capabilities by one of the

most prestigious publications in the electronics marketplace, [PCD&F Magazine](#). DfR is proud to be one of the few companies to have ever received [this award](#) and is looking forward to continuing to increase Sherlock's rapidly expanding user base. For more information on Sherlock, contact [Tom O'Connor](#).

Medical Electronics and RoHS

Cheryl Tulkoff and Randy Schueller's article on "[Developing a Reliability Test Plan for Lead Free Medical Electronics](#)" was highlighted on the front cover of the November/December issue of Medical Electronics Design Magazine. For more information contact [Cheryl Tulkoff](#).

RELNETyX to Support Sherlock in Central Europe

DfR is [proud to announce](#) that the prestigious reliability firm, [RELNETyX](#), will be supporting Sherlock sales and services in central Europe. For more information, please contact [Viktor Tiederle](#).

Reliability of Reballed BGAs

DfR is proud to announce it has been awarded a Phase II SBIR grant by the US Navy to assess the reliability of reballed BGAs. This is the largest study ever funded in this critical area for high rel applications attempting remain SnPb. For more information, please contact [Joelle Arnold](#).

DfR Recognized as Gold Sponsor of NEBS Conference

DfR is proud to announce its selection as a Gold Sponsor of the upcoming [NEBS Conference](#). The premier conference on ensuring successful operation of Verizon equipment, DfR is being recognized for the insight and tools it brings to the telecommunication validation and verification process. For more information, please contact [Ed Dodd](#).

Read All About DfR Solutions

ECN Magazine published Nathan Blattau's article, "[Achieving Product Reliability with Automated Design Analysis Software](#)" in their September edition, and Touch Panel Newsletter recently published Craig Hillman's article "Capturing the Robustness of Glass Panels in Touch Screen Displays." Be sure to check out both articles. For more information contact [Nathan Blattau](#).

Google Calendar

Look for DfR at upcoming events, conferences, webinars, and sales visits that may be in your area on our new [link to Google Calendar](#). For more information on a specific activity, please contact [June Caswell](#).

Upcoming Events

DfR in New York (Long Island, NY: September 6-9)

Cheryl Tulkoff visited customers in the Long Island area the week of September 6. If you and your associates were unable to meet with Cheryl but are interested in a future onsite visit and/or presentation, please contact [June Caswell](#).

EMPC – IMAPS Europe (Brighton, UK: September 12-15)

Greg Caswell taught a NEW course: High Brightness Light Emitting Diodes - Reliability Considerations at the European Microelectronics and Packaging Conference. He also conducted several customer visits while at the conference. If you were unable to meet with Greg but would like a future visit, please contact [June Caswell](#).

DfR in Pittsburgh (Pittsburgh, PA: September 12-13)

Craig Hillman visited customers in the Pittsburgh area. If you and your associates are interested in a onsite visit and/or presentation the next time Craig or another DfR staff member are in the area, please contact [June Caswell](#).

SMTA Capital Chapter (September 13)

Walt Tomczykowski gave a presentation entitled "How to Design for Reliability and Summarizing the Importance and Cost Benefits of Designing in Reliability Early in the Life Cycle. For more information, contact [Walt Tomczykowski](#).

IPC Midwest Conference (Schaumburg, IL: September 21-22)

Craig Hillman presented "Common Mistakes in Electronic Design" as part of focused Design for Reliability session within the annual IPC Midwest Conference. He also presented "Quantitatively Predicting the Reliability of Complex Integrated Circuits" in a technical session. If you would like to schedule a visit to your company the next time Craig is in the area, please contact [June Caswell](#).

DfR in Illinois and Indiana (September 19-23)

Craig Hillman and Jim McLeish visited companies in the Illinois/Indiana area in mid-September. If you would like to schedule a visit to your company the next time they are in your area, please contact [June Caswell](#).

Predicting Hardware Reliability for the Data and Telecom Industries (Webinar: September 27, 11 a.m. Eastern)

Gregg Kittlesen gave a very insightful presentation, based on his direct experience in implementing successful Pb-free transitions in several companies in the telecommunications and enterprise markets. For more

information, please contact [June Caswell](#).

STACK Conference (Baltimore, MD: October 5)

Craig Hillman presented the latest information on Copper Wire Bonds to STACK International. Many OSAT vendors are changing from gold to copper wire bonds and the reliability impact on long-term high reliability applications is still uncertain. For more information please contact [Craig Hillman](#).

IEEE Boston Reliability Chapter (Wilmington, MA: October 12)

Gregg Kittlesen will be presenting on "Enhanced Reliability through Automated Design Analysis™ software for the electronics Industry (Sherlock 2.0 Overview)" at the [IEEE Boston Reliability Chapter meeting](#) this fall. For more information, please contact [Aaron Dermarderosian, Jr.](#)

DfR in New England (October 12-14)

Gregg Kittlesen will be visiting companies in the Boston area in mid-October. If you would like to schedule a visit to your company while they are in your area, please contact [June Caswell](#).

IMAPS Symposium (Long Beach, CA: October 9-13)

Greg Caswell will be presenting a workshop at the IMAPS Conference - [S5: Understanding Failure and Root-Cause Analysis in Pb-Free Electronics](#). In addition, Greg will be presenting [The Reliability Impact of Reballing COTS Pb-Free BGAs to Sn/Pb for Military Applications](#) and [Manufacturability & Reliability Challenges with Leadless Near Chip Scale Packages in Pb-Free Processes](#). If you would like to meet Greg at the conference, please [contact him](#) to schedule the meeting.

DfR in Southern California (October 10-14)

Greg Caswell will be visiting companies in the Los Angeles area in mid-October. If you would like to schedule a visit to your company while they are in your area, please contact [June Caswell](#).

SMTA International Conference (Ft Worth, TX: October 16-20)

Randy Schueller will be teaching a NEW course: Packaging and Reliability Considerations for High Brightness LEDs at [SMTAI](#). If you would like to arrange a meeting with Randy while he is in the area, please contact [June Caswell](#).

DfR in Texas (TX: mid-October)

Craig Hillman and Randy Schueller will be visiting customers in North Texas. If you would like to arrange a meeting with them while they are in the area, please contact [June Caswell](#).

Webtorial in Conjunction with Qualmark (Virtual: October 20)

[Dr. Nathan Blattau](#), DfR's Chief Technologist, will be the featured presenter for a special 2-part edition of Qualmark's popular Ask the Experts webinar series this fall. Mark your calendars to attend the October 20th session on Vibration and the November 17th session on Shock when Dr. Blattau will discuss the effects of these stresses and how they can be effectively applied during product development and process verification to deliver a more reliable product. [Registration is now open.](#)

Webinar in Conjunction with IPC (Virtual: October 20)

Cheryl Tulkoff will be presenting a webinar entitled "[Electronics Failure Analysis: Common Mechanisms & Techniques](#)" in conjunction with the IPC. Effective failure analysis is critical to product reliability. Without identifying the root causes of failure, true corrective action cannot be implemented and the risk of repeat occurrence increases. A systematic approach to failure analysis is recommended -proceeding from non-destructive to destructive methods until all root causes are conclusively identified. Choosing the appropriate techniques based upon the failure information (failure history, failure mode, failure site, failure mechanism) specific to your product is also critical. Learn how in this webinar! For more information contact [Cheryl](#).

NEBS Conference (Orlando, FL: October 25-26)

DfR Solutions is a "**Gold Sponsor**" for the [NEBS Conference](#) to be held at the Orlando World Center Marriott. We will be conducting customer visits at the conference. If you would like to arrange a company visit, please contact June Caswell., please contact [June Caswell](#).

IPC Designers Council Webinar (Huntsville, AL: October 26)

Cheryl Tulkoff will be presenting a webinar on "DFM for PCB" The meeting will be a "lunch and learn" webinar at the AdTran facility in Huntsville and will be conducted by the IPC Designers council. For more information contact [Cheryl Tulkoff](#).

Lockheed Martin Pb-free Electronics Workshop (College Park, MD: October 27)

Lockheed Martin has invited Craig Hillman to present on the broad range of Pb-free research and development activities being currently performed at DfR Solutions. If you would like a similar informative update at your facility, please contact [June Caswell](#).

IPC Conference on Reliability: Assembly Process for a Reliable Product (Irvine, CA: November 1-2)

Cheryl Tulkoff will be teaching two courses at [the conference](#). One on "Design for Reliability" and the other on "Design for Reliability / Manufacturability in the Lead Free Era". Dr. Nathan Blattau will be presenting on, "Coating and Potting of QFNs." Nathan and Cheryl will also be visiting companies in the Irvine area. If you would like to schedule a visit to your company while they are in your area, please contact [June Caswell](#).

DfR in Southern California (November 1-4)

Cheryl Tulkoff and Nathan Blattau will be visiting customers in the Orange County and San Diego areas. If you would like to schedule a visit to your company while they are in your area, please contact [June Caswell](#).

DfR and MET Labs Seminar (Dallas, TX: November 1)

Greg Caswell will be presenting on "Design for ESD" at the seminar. Please register for the [meeting](#). For more information please contact [Greg Caswell](#) or [Barnaby Wickham](#).

DfR in Germany (Germany: November 14-18)

Craig Hillman will be visiting customers in various parts of Germany, including Munich, Frankfurt, and Berlin. If you would like to schedule a visit to your company while he is in your area, please contact [June Caswell](#).

TechSearch International –Fraunhofer Institute-Advanced Packaging Trends for Medical Electronics Workshop (Munich, Germany: November 14)

Craig Hillman will be Making a presentation entitled "Dealing with New RoHS Regulations in Medical Devices: An Update" at this workshop preceding Productronica. If you would like to meet with Craig while he is in the area please contact [June Caswell](#).

Webtorial in Conjunction with Qualmark (Virtual: November 17)

Dr. Nathan Blattau, DfR's Chief Technologist, will be the featured presenter for a special 2-part edition of Qualmark's popular Ask the Experts webinar series this fall. Mark your calendars to attend the October 20th session on Vibration and the November 17th session on Shock when Dr. Blattau will discuss the effects of these stresses and how they can be effectively applied during product development and process verification to deliver a more reliable product. [Registration is now open](#).

New Technologies in Electronic Packaging (Munich, Germany: November 17)

Craig Hillman will be presenting a half day course addressing topics such as Copper Wire Bonds, Through Silicon Via (TSV), Copper Pillar, Stacked Die, and Bottom Terminated Components (BTC). He will also be visiting

customers in Germany. If you would like to arrange a visit, please contact [June Caswell](#).

DfR in Israel (Israel: December 4)

Cheryl Tulkoff will be presenting a two day course addressing topics such as Advanced packaging Technologies, Supplier Qualification, Developing a Test Plan, Pb-free, and Design for Manufacturability. She will also be visiting customers in Israel. If you would like to arrange a visit, please contact [June Caswell](#).

DfR in Malaysia and Singapore (December 6-10)

DfR Solutions will be visiting customers in Singapore and Malaysia. If you would like to arrange a visit please contact [June Caswell](#).

Electronics Packaging Technology Conference (Singapore: December 7)

DfR Solutions will be teaching a NEW full-day course titled "Reliability Predictions for Packaging and Tools for Analyzing Risks and Grading Packages at Board Level" at the [Electronics Packaging Technology Conference](#). The course will be in two parts with the first addressing semiconductor packaging and the second board level reliability. For more information please contact [Craig Hillman](#).

Microelectronics Reliability and Qualification Workshop (El Segundo, CA: December 13)

Craig Hillman and Ed Wyrwas will be presenting DfR's Silicon-to-Systems solution for predicting reliability. For registration information, please contact [Ronald Laco](#).

ASQ Reliability Division Webinar (Virtual: February 9, Noon EST)

Jim McLeish will be presenting "Introduction to Physics of Failure Reliability Methods" during this webinar. For registration information, please contact [Jim McLeish](#).

IPC APEX Conference (San Diego, CA: February 26-March 1)

Cheryl Tulkoff will be teaching her highly regarded course on Design for Manufacturability on Sunday, Feb 26th, in addition Cheryl will be moderating these 2 sessions at [APEX 2012](#).

- S19 - Wednesday, February 29, 10:15am-11:45am - PCB Hole Fill
- S31 - Thursday, March 1, 10:15am-11:45am - Pad Cratering

For more information contact [Cheryl Tulkoff](#).

Employment

Reliability Manager

Full-time onsite at customer location in Washington, DC, metro area.

Individual will utilize a thorough knowledge of the DoD 5000 acquisition process to draft policy and guidance documents and to review DoD major weapons systems reliability and maintainability documentation. Individual will supervise a team of reliability engineers and analysts. This is a fast-paced, high-visibility position that requires the applicant to be highly engaged, capable of managing multiple tasks, writing comprehensive reports and meeting critical deadlines. Position includes travel up to 25% of the time.

Required:

- Highly skilled in presenting to senior leadership in both industry and government
- Thorough knowledge of reliability improvement, growth theory and practice, and the DoD 5000 acquisition process to include the Defense Acquisition Guide
- 20 years experience working in the DoD system program office
- Minimum M.S. degree in engineering
- Secret clearance and US citizenship

Preferred:

- Cross-domain experience (air, land, sea, space) is a plus

Qualified individuals should [e-mail](#) their resume along with a cover letter.

Reliability Analyst / Engineer

Full-time onsite at customer location in Washington, DC, metro area.

Required:

- DoD 5000 acquisition directives and regulations
- DoD major weapons systems development timeline with an emphasis on reliability and maintainability activities
- Reliability design principles and practices including part selection, physics of failure, R&M math models, etc.
- Best practices in test development and execution including HALT/HASS, reliability growth tests, accelerated life testing, etc.

Required Experience/Education:

- Minimum 10 years of experience including direct experience with system-level technical reviews
- Minimum B.S. degree in engineering
- Secret clearance and US citizenship

Preferred:

- Cross-domain experience (air, land, sea, space) a plus
- Certified Reliability Engineer (CRE)
- Green Belt Six Sigma

Qualified individuals should [e-mail](#) their resume along with a cover letter.

Advertisement

Advertise here and reach more than 11,000 electronics professionals. DfR Solutions is now accepting advertisements in the DfR newsletter. For more information, contact [Tammy Smittenaar](#).