

Managing & Improving Electronics Product Reliability across the Entire Lifecycle from Prototype into Volume Manufacture

12th – 13th May 2020 – Doubletree by Hilton Hotel Manchester - Picadilly

Set up and manage World Class Electronic Reliability Improvement Programmes to drive Failure Rate Reduction

Comments from past participants:

"The course really applicable to most company. Not only necessarily for, reliability guy only. Designer should know also."

Plexus Manufacturing

"Martin is surely an expert in this field. I would recommend it to others who would need this training."

NI Malaysia

"Instructor credentials and evident in training"

Infineon Technologies

"Good presentation skills and have a lots of experience in this course."

Premium Sound

"Learn a lot of new knowledge "

Clarion

"Im specialist of statistical analysis, I know theory background. However martin can share some points in practical that make me more understand and, find out the way to apply in future"

Sanmina (Thailand)

"Fantastic. Gain a lot of knowledge from the course."

Finisar

"Very good! Definitely learn new things"

Bose System

"Very good! Definitely learn new things"

Bose System

"Martin is a serious guy and in reliability testing and with his last experience able give better insight and approach for NPD/NPI reliability testing."

Dyson Manufacturing

"Course was informative, new technique and modeling Instructor is very affective"

Sandisk Storage

"Well-versed with the training course and able to learn from its experience"

QAV Technologies

"The instructor have in depth knowledge in Reliability and Management"

Sandisk Technologies

"Very Knowledgeable on the topic and have increased my overall understanding of importance of reliability "

Dominant OPTO Technologies

"Actual cases sharing good for audience. Trainer very knowledgeable in the topic that being addresses "

Amkor Technology

"Good Knowledge on the industry and the needs to improve design for cost effectiveness"

Muehlbauer Technologies

"Simplify complicated reliability subject into practical model for electronics industry"

EDMI Meters

Program Overview

What could an unreliable product really cost your company?

Your credibility? Your reputation? Your future?

Markets are demanding cheaper, more reliable electronic products and systems and many manufacturers find that traditional, established procedures and processes. Yet in today's market-driven climate you need, even more, to review procedures, examine options and pursue cost-effective solutions that will allow you to stay competitive and profitable, and increase your market credibility.

Reliability enhancement is now within everyone's reach

Leading-edge reliability enhancement technologies used to be regarded as solely the province of safety-critical avionics and aerospace applications.

But things change. These technologies are now within the grasp of all electronic designers and manufacturers; crucially the benefits in reliability that they bring are now expected by the market are now being questioned.

The idea of running months of extensive reliability testing is fast becoming a luxury – and one that few can justify.

Global customers seek out suppliers whose enhanced reliability performance improves their own market penetration and consolidates their own position – the rewards are substantial for those suppliers ready to meet the new demands.

How will this course benefits your company?

- Streamline your Reliability Testing and ensure only the most effective testing is performed
- Greatly Increase your capability of defect detection
- Drive Lowest field failure rates very quickly
- Drive Down cost of Failure in the field
- Lower the cost of your Reliability testing
- Bring engineers together in their understanding of reliability and how to improve it at all levels
- Provide a focused approach to Continual Improvement
- Bring BETTER quality new products into the market quicker
- Improve Customer Satisfaction

This 2 days masterclass will have a good balance of Practical and theory. Initial theory to set the scene goes quickly into multiple case studies so participants learn quickly how to do similar on their own product types.

Why you should attend Reliability Solutions Seminar

- Learn about the REAL EFFECTIVE ways to test out your product reliability.
- Realize you should NOT rely on old standards to qualify your product reliability.
- Mix with like-minded engineers and managers interested in understanding more about reliability.
- Understand how NOT to miss defects in your reliability test.
- Understand how to get an edge on your competitors.
- Learn how to improve reliability at lowest cost.
- Discover what reliability means to the world's most successful companies.

The Course is designed for:

- Reliability engineers / Test engineers
- NPI engineer / Manager (New Product)
- Electronic and electro mechanical designers / manufacturers
- Quality Assurance/Quality Lab/Quality Engineers / Departments.
- Design Team / Hardware engineer / Product engineer
- Manufacturing
- Testing companies provides reliability stress testing.
- Anyone who is doing reliability testing at design stage.

Seminar Cost : £850 + VAT per person

DAY 1 (AM Agenda)

Introduction to Basic Reliability Understanding

- Importance of Early Life Reliability and the Importance of Exponential and Normal Distributions in Reliability Prediction
- Definition of Hazard Rate and its importance in Reliability estimation at RD stage
- Understanding MTTF and why it is NOT a meaningful measure of 'Real Reliability'

Understanding Accelerated Testing to set up Predictive Testing Models for all products at Design Stage

- High Temp Arrhenius model and Activation Energies used for key component failure modes
- Maximising Acceleration Factors by combining Temperature, Thermal Cycling, Power Cycling, Humidity and Vibration

Applying Accelerated Test models and optimising reliability testing

- Electronic and Mechanical product real life examples

Evaluating the effectiveness of different stress test types with the Hughes Test Strength Equation to optimise Early Life Test programmes

- Developing an Effective Reliability test Strategy, using Modern stress techniques, including Random Vibration and Thermal Cycling
- **Product Level Case Study with real life examples using the FREE Reliability Solutions calculation models**

Life Test Planning

- Theory behind classical Life Testing set up
- **Using the FREE Reliability Solutions XL models to combine Acceleration Factors / Sample Sizes / % confidence levels**

Day 1 (PM Agenda)

Understanding the Statistics and Probability of Failure to define optimum Reliability test Sample Sizes

- Facing the challenge of not being able to afford statistically valid sample sizes
- Understanding the 'real' cost of minimizing reliability test budgets

Relationship of Manufacturing Yield with Early Life Failure Rate

- Using yield performance data from PCBA and Product Assembly processes to Predict Warranty Field Fail Rates
- **How to predict and control Early Life Failure Rates using manufacturing data, Case Studies using the FREE Reliability Solutions calculation model**

Electronic Sub-Assy Reliability Stress Testing

- How to Accelerate Failures by stress testing at sub-assy levels to drive FAST, EFFECTIVE, LOW COST, Reliability Testing that provides FAST RESULTS – Control Board and Power board case studies
- Mechanical and Electro Mechanical device application Case Studies

The benefits of Sequential Reliability Stress Testing and how gradual cumulative stress testing finds more 'real' defects

- LCD Panel Accelerated Stress Testing using a more effective sequential stress test approach with failure rate prediction modelling

DAY 2 (AM Agenda)

Developing a packaged semiconductor Sequential Reliability Stress Test Approach

- Summary of defect types and types of Reliability Tests that are most effective in stimulating Latent Semicon defects
- Understanding the best way to combine JEDEC test standards SEQUENTIALLY to maximise defect detection capability

Weibull Analysis of Failure data and how to apply to any product failure data and understand how standard software packages actually work

- **Real Life Case Studies using FREE Reliability Solutions Weibull development models**

Setting up strong Design Quality Test Programme and using Design Maturity Measurement to measure Design Capability

- Understanding how this will benefit your organisation
- Making use of the FREE Reliability Solutions model

Setting up 'Holistic' approach to New Product Introduction scoring and the scoring model used to manage NPI more effectively and Objectively

- Multiple Case Studies of Electronic and Electro Mechanical products
- **Using the FREE Reliability Solutions calculation model to measure the % NPI Score to control release into mass production**

Q & A Session

DAY 2 (PM Agenda)

Opportunity for attendees to discuss any specific areas of reliability on a one to one basis with Martin Shaw

CASE STUDIES & PAST PARTICIPANTS ACHIEVEMENT:

- Realize how world class companies manage Reliability and make major cost savings in Field Failure costs.
- Understand how to make your Accelerated Testing most efficient and low cost.
- Making Reliability Testing much more effective and NOT generic according to Military Std specs which many companies follow due to lack of knowledge.
- Realizing the need for making Accelerated Testing unique to the product type to maximise effectiveness.
- Ability to drive 50% REDUCTION in Field Failures within 12-18 months once a new and effective low cost programme set up.



Principal Program Facilitator

Martin a 35 years veteran expert:

- Developed wide range of solutions for many companies on how to perform effective Reliability testing very unlike traditional standard approaches which are very weak and ineffective, his solutions have been applied at multiple World Class Companies; Artesyn Power, Acbel Power (World's 3rd biggest Power Supply maker), TPV China (World's biggest contract TV / LCD Monitor maker), Melexis Germany (Supplier of sensor devices to top Auto makers BMW, Mercedes, Porsche, Audi), GE, Bosch Automotive Products, Hua Wei Telecommunications, Range of semiconductor manufacturers including Renesas, Toyota, Hyundai Electronics, Fairchild, Atmel, etc)
- Provides solutions to the problems electronic and electro mechanical designers / manufacturers face when not being able to stimulate failure of design or manufacturing weaknesses which are later found in the field as major failing items
- Focuses on applying UNIQUE measurements in Design Cycle and during manufacture to accurately estimate and predict future failure levels.
- Enables designers and manufacturers to OPTIMISE time spent on Reliability testing and REDUCE costs and avoiding old style wasteful testing, replaced by his more effective and lower cost proven methods
- Is an energetic and enthusiastic teacher who is able to inspire students to think totally differently and be able to quickly add real value to their own businesses.
- Works with range of low cost test companies who can provide services to companies which do not have relevant equipment to do proper and effective Reliability Stress Testing, enables companies to perform best possible testing at lowest cost based on reliability Solutions models
- Previously of IBM as Quality and Reliability Specialist within PC business unit.
- Worked as specialist in Product and Commodity Quality / Reliability optimisation for the Electronic Product Suppliers to IBM between the years of 1982-1997.
- During this time he worked extensively throughout Asia, USA and Europe with wide range of suppliers. Since 1997 he has worked with a wide range of companies Worldwide and provided solutions to ensure RAPID improvement in a dynamic environment.
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Reliability Solutions

Reliability Solutions focuses on providing the complete range of Reliability Improvement tools and Application Solutions to Significantly Reduce your product failure levels at the most expensive end of the product cycle, the Consumer.

Martin's Blue Chips Clients:

Daewoo Electronics, LiteOn, Astec Power, GE, Bosch Automotive products, Philips, TPV, Vestel, Acer, LiteOn Power, LG, Amtran, Fairchild Semiconductors, Atmel Semiconductors, Wolfson Microelectronics, ULTRA Electronics, Melexis Germany, IDEAL Heating, SKY TV, Hua Wei Telecommunication, Emerson Power, EE Phones, TCL, SMART Technology, Singapore Technology Kinetics, Artesyn Power, Acbel Power, Range of semiconductor manufacturers including Renesas, Toyota, Hyundai Electronics, Fairchild, Atmel, etc) and etc.

Delegate Details

1. Name: _____ Mr ☐ Mrs ☐ Ms ☐ Dr ☐

Job Title: _____

Email : _____

Contact No: _____

Department: _____

2.Name: _____ Mr ☐ Mrs ☐ Ms ☐ Dr ☐

Job Title: _____

Email : _____

Contact No: _____

Department: _____

3.Name: _____ Mr ☐ Mrs ☐ Ms ☐ Dr ☐

Job Title: _____

Email : _____

Contact No: _____

Department: _____

Head of Department: _____

Invoice Attention to: _____

Company: _____

Industry: _____

Address: _____

Postcode: _____ Country: _____

Telephone: _____ Fax: _____

Email: _____

Authorized
Signature : _____

Invoice Details

Payment Method

By Direct Transfer: Please quote invoice numbers on remittance advice.

ACCOUNT NAME : RELIABILITY SOLUTIONS
BANK : CLYDESDALE BANK Sort Code : 82:65:23
ACCOUNT NO : 20100570

Payment Policy: Upon receipt of a completed registration form, it confirms that the organization is registering for the seat(s) of the participant(s) to attend the conference or training workshop. Payment is required with registration and must be received prior to the event to guarantee the seat. Payment has to be received no later than 10 April 2020

Payment Discounts: If more than 1 person from same company, 2nd person gets 15% discount, 3rd person gets 25% discount

Venue: . Doubletree by Hilton, Picadilly Manchester
The course fee does not include accommodation or travel cost. It's recommended to book an hotel room early as there are only limited room available at the discounted corporate rate.

DATA PROTECTION: The information you provide will be safeguarded by Reliability Solutions that may be used to keep you informed of relevant products and services. We take it seriously when it come s to protection of our client data.

Cancellation & Substitutions:

Upon receipt of a completed registration form, it confirms that the organization is registering for the seat(s) of the participant(s) to attend the conference or training workshop. Should you be unable to attend, substitutes are always welcome at no additional cost. Please inform us as early as possible. Payment is non-refundable if cancellation occurs 5 working days prior to event commencement. However a substitute is welcome at no additional charges.

Program Change policy:

The organizer reserves the right to make any amendments and/or changes to the workshop, venue, facilitator replacements and/or modules if warranted by circumstances beyond its control.