Reduce Maintenance Cycles and Increase Availability

Reduce Depot-Level Maintenance Activities and Cut Costs in Half

Sherlock Automated Design Analysis™ automatically identifies components with solder joints near end of life and alerts repair personnel so that they can be 'refreshed' wile the PCBA is already in depot for repairs. Implementing this unique tool as part of a condition based maintenance (CBM+) program allows depot level repair activities to effectively anticipate and remediate the next points of failure, extending mean time between maintenance (MTBM).

Sherlock allows you to predict and proactively repair the most salient failure sites that have not yet degraded to the point of detectability. In this way, a PCBA can be returned to ready-for-issue status with a much extended time on wing. By increasing MTBM and reducing the number of maintenance activities, Sherlock implementation can significantly cut program sustainment costs.

Identify Age-Related Wearout Items

As part of a CBM+ maintenance program, Sherlock will enable sustainment personnel to identify age-related wearout items that threaten availability, well in advance, based on actual use environments. By planning ahead for wearout items or making repairs of future solder joint failures, the return rate of these same boards will be reduced.

Physics-of-Failure Models that Adapt to Changing Mission Profiles

With Sherlock Automated Design Analysis™ software as part of your improved system sustainment program, you will be able to predict the impact of changing mission profiles on the future maintenance of electronics systems, allowing you to better manage maintenance cycles, ensure availability to the warfighter, reduce risk, and cut overall costs.

sherlock
AUTOMATED DESIGN ANALYSIS™

- ✓ Reduce return rate and extend mean time between maintenance (MTBM)
- ✓ Predict useful life electronic circuit boards
- ✓ Identify age related wearout items
- ✓ Detect most likely future failure zones

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Reduce Risk of No-Fault Found or Intermittent Failure Modes

Sherlock also identifies the most likely future failure zones caused by solder joint fatigue allowing intermittent failures that cause no-fault-founds or cannot duplicates to also be reduced

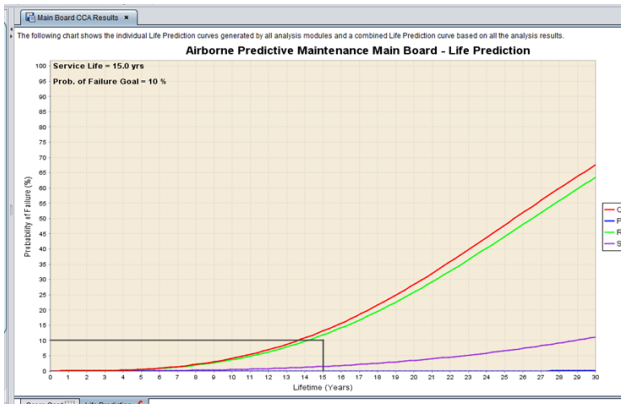
Reduce Your Risk

Sherlock Automated Design Analysis™ predicts the useful life or if already in operation the remaining useful life (RUL) of electronic circuit boards. It identifies age related wearout items, and identifies the most likely future failure zones caused by solder joint fatigue. Reduce operational risk, increase equipment availability to the warfighter and decrease maintenance with a Sherlock-enabled sustainment strategy

Sherlock is Fast, Easy, and Accurate

Sherlock Automated Design Analysis™ Software, is a Physics of Failure based reliability tool that will help you better forecast electronics maintenance and reduce operating and support costs.

Using a number of validated techniques including failure based predictions, Sherlock accounts for the use environment and required lifetime of the PCBA. Sherlock provides aggregate lifetime predictions at the PCBA and box and quickly and easily identifies which components are the most at risk of solder joint failure and what the gain in time to next failure is likely to be.



PCBA probability of failure prediction by failure mechanism

dfr-vibration-coupon4 Solder Fatigue

RefDes	Package	Part Type	Side	Solder	Max dT (C)	Cycles to Fail	TTF (yrs)	Score
U11	LCCC-44	IC	TOP	63SN37PB	57.5	5,050	13.84	0.0
U12	LCCC-44	IC	TOP	63SN37PB	57.5	5,050	13.84	0.0
U9	BGA676	IC	TOP	63SN37PB	57.5	13,052	35.76	5.1
U10	BGA676	IC	TOP	63SN37PB	57.5	13,052	35.76	5.1
U13	TSOP-32 (...	IC	TOP	63SN37PB	57.5	14,083	38.58	6.1
U14	TSOP-32 (...	IC	TOP	63SN37PB	57.5	14,083	38.58	6.1
U15	TSOP-32 (...	IC	TOP	63SN37PB	57.5	14,083	38.58	6.1
U16	TSOP-32 (...	IC	TOP	63SN37PB	57.5	14,083	38.58	6.1
U5	QFN-80 (M...	IC	TOP	63SN37PB	57.5	32,308	88.52	10.0
U6	QFN-80 (M...	IC	TOP	63SN37PB	57.5	32,308	88.52	10.0
R1	2512	RESISTOR	TOP	63SN37PB	57.5	34,105	93.44	10.0
R2	2512	RESISTOR	TOP	63SN37PB	57.5	34,105	93.44	10.0
R3	2512	RESISTOR	TOP	63SN37PB	57.5	34,105	93.44	10.0
R4	2512	RESISTOR	TOP	63SN37PB	57.5	34,105	93.44	10.0
R5	2512	RESISTOR	TOP	63SN37PB	57.5	34,105	93.44	10.0

Time to Failure by Component

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