# Project Summary:

Failure Analysis of a Cellular Phone

DfR Solutions was asked to determine the cause of elevated leakage current in a cell phone, which began after transferring production location. Tests performed on the normal and abnormal boards included visual inspection, scanning acoustic microscopy, x-ray microscopy, superconducting quantum interference device testing, curve tracing of packages, and cross-sectioning. The failure site was located and a temporary healing phenomenon based on heat application was found, thereby suggesting that an intermittent connection may exist within the packaging. The findings of this analysis enabled the cell phone manufacturer to take further actions to prevent recurrence of failures.

Keywords: Cell phone, mobile, cellular, failure analysis, leakage current, SQUID microscopy, failure site, SAM, digital base band processor, sleep mode, solder balls, TAMI scan, delamination, voiding, failure mode, electrical characterization, audit of manufacturing, root-cause analysis, abnormal, normal, temperature changes, pin, ground, decapsulation