

Project Summary:

Initial Reliability Assessment of Humidifier Control Board

By performing an initial reliability assessment of a humidifier control board for a major IT infrastructure provider, DfR Solutions documented several areas of quality and reliability concern that if improved would ensure that the product would meet its 10-year desired lifetime. Findings indicated that the electrolytic capacitor lifetime was sufficient to meet this reliability standard, and that thermal and vibration fatigue should also confidently enable this 10-year lifetime. Key recommendations include step stress testing of the watchdog timer to ensure sufficient operating margin and elimination/replacement of the DIP switch.

Keywords: initial reliability assessment, humidifier control board, equipment room environment, 24 hours/day, 365 days/year operating time, air-conditioned space, constant power on, diurnal cycling, power cycling, desired lifetime, watchdog timer, operating margin, isolation transformer, tantalum capacitors, plated through-hole aspect ratio, ECM, electrochemical migration, interconnects, interconnections, insertion-mount leads, surface mount solder joints, strain range, hysteresis loop, DIP switch