NCR 96

- **Documented Evidence/Facts of Failure or Non-Conformance**
  - **What**: MCM S/N 271 failed post Burn-In functional test
  - **Where**: Carried out at SLAC
  - **Why**: Conductive contaminants shorting out exposed traces
  - **When**: 3 May 2004
  - **How**: MCM shipping case had conductive debris across exposed traces, embedded in the sticky surface at the edge of the pitch adapter.
NCR 96

• The contaminants found on the board of MCM SN 271 were thin flakes of solder residue, bits of solder material, 2 small bits of clear epoxy like material. (approx. size: .5 to 1.5 trace width)

• The materials, shown in the picture, were thin flakes of solder residue stuck on the very edge of the extremities of the traces. They were one of the two series of short circuits that contributed to the failure of the MCM.
NCR 96 – Root Cause/Impact

• Root Cause
  – Debris in the MCM shipping case short-circuited the MCM board.
  – The MCM assembly, once installed in the shipping case, was not inspected for contamination.
  – The shipping case was not cleaned at the machine shop before delivery.

• Impact to Inventory, WIP, Supplier PO, Already Built Product
  – There is no impact to Manufacturing Schedule, Inventory, WIP, Already Built Product.
NCR 96 – Corrective Action

- Teledyne was instructed to inspect and clean the MCM cases prior to kitting and release to manufacturing. The cases that were already kitted and released to manufacturing would be inspected and cleaned prior to assembly. The action was recorded as item # 92 in the Teledyne MCM Production Readiness Punch List, effective 5/11/04. The progress of the work was reported during the bi-weekly teleconference.

- The LAT QA inspection and cleaning of the MCM shipping case were added to the Acceptance Test work order as a requirement before submitting the MCM to the acceptance tests. The units received at SLAC were inspected during ID&D. The shipping cases were free of contaminants.
NCR 96 – Effectiveness / Final Disposition

• Effectiveness of Corrective Action
  – No modification to performance capability

• Final Disposition
  – Work order #173 was generated for rework.
  – The contaminants were removed from the PWB, and the case was thoroughly cleaned.
  – The assembly was re-tested and passed the electrical test.
  – LAT QA inspected and signed off the work order.