



**Product Line: Transceivers Clamp Redesign per DFMA techniques for Optical communications major.**

**Challenges:**

This was a R&D project to address various concerns with customer on their product design (Gigabit modules / Transceivers). Task was to arrest optical wiggling, try to reduce EMI leakage at identified zones by redesigning a clamp with micron level accuracy.

We had to provide a cost effective solution in less than a month as the customer had a scheduled timeframe for launching the product to production.

**Inputs Provided:**

- Physical product sample with complete 3D CAD database.
- Existing Clamp Design & Manufacturing process .
- Existing Assembly technique.

**Methodology:**

AES team at Onsite worked closely with the Engineering Team by performing Competitor Benchmark study and evaluating the current design for test requirements to qualify for production.

Our Engineers conducted Brainstorming and Generated Ideas to satisfy the Design needs. Based on the Reviews, DFMEA was prepared for the short listed Solutions.

Prototypes were made after Tolerance Analysis and new Clamps were tested at the Client's facility to check the feasibility of improved solution.

**Tools Used:**

Pro E: CAD modeling tool has used for cleaning the geometry.  
ICEM CFD: Meshing has been done with hexahedral elements.  
ANSYS CFX11.0 Simulations for different baffle configurations were carried out.

**Solutions Provided:**

- Product & Process study, Brainstorming & Concept Designs to solve EMI issues.
- Cost effective Material selection (Clamp, O-Rings & Gasket) & Simplified manufacturing process.
- Complete 3D modeling, Detailed Design & Tolerance Stack-up.
- Vendor Identification & Vendor Management, Prototype delivery for final testing.

**Benefits:**

- New Clamp design addressed the concerns of DFMA.
- Wiggling issue is reduced to a large extent.
- EMI leakage observed in current design is eliminated.
- The design enhancement on these aspects helped Customer to launch the product in lesser time.