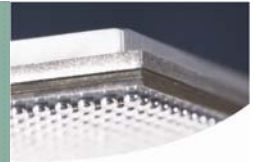


Case Study



THE CLIENT

Defense Contractor who specializes in International Communications & Information Technology

The client is an international communications and information technology company serving government and commercial markets in more than 150 countries. The Company is dedicated to developing best-in-class communications products, systems, and services for global markets, including government communications, RF communications, broadcast communications, and wireless transmission network solutions.

THE CHALLENGE

The client wanted to redesign a printed circuit board for use in a next generation military transmitter/receiver radio for data transmission. The current board, measuring 7.8" (197 mm) W x 15.0" (380 mm) L, needed to be smaller, lighter, more portable and better performing.

The original engagement began with a discussion about redesigning the board into a system-in-package and the module RFQ was initially quoted as a 2-4-2 stack-up construction. The client began the design work, but asked EI to assist due to the complex nature of the design.

THE SOLUTION

A 3-4-3 CoreEZ[®] substrate design was approved and released to manufacturing. The first substrates were delivered to assembly and the first modules were completely assembled and functionally tested. Feasibility qualification testing has been successfully completed.

EI reviewed the design, offering suggestions that would enhance performance as well as manufacturability, performed the physical layout and fabricated the substrates. EI also provided the very complex module assembly and functional test.

ORIGINAL PCB: 7.8" x 15.0" (197 mm x 380 mm)

SiP DESIGN: 2.20" x 2.20" (56 mm x 56 mm)

SUBSTRATE: 3-4-3 CoreEZ[®]

4 signal, 6 power planes

30µm line width / space width

92 ft. (28 m) of wiring

ASSEMBLY:

Top & bottom side

5 flip chip FPBGA's

CSP memory

Passives

SMT components (>300)

PGA connector

15K flip chip connections

THE BENEFITS

This opportunity has been the most challenging application EI has undertaken since its inception as a company. EI partnered with this customer to redesign a board for size and weight reduction, as well as improved performance, portability and reduced overall cost.

EI's vertically integrated structure proved beneficial to this defense contractor by providing one-stop-shopping for their advanced electronic packaging needs. From design and layout to substrate fabrication and module assembly and test, the EI team supplied the technical expertise necessary to deliver a leading edge, high performance and cost effective solution.

