



Tools

- Mentor Graphics PADS 2005
- Cadence Allegro 16.2
- Altium Designer 6.9
- HyperLynx 7.5
- SigXplorer PCB SI L 16.2
- Pspice simulation tool

About Aftek

Aftek Limited is a full spectrum technology services company from India. Over last 20 years Aftek has gained significant exposure to variety of technologies. Rich technological capabilities, focused investments in Research & Development and industry exposure enables us to reach beyond the basic IT services to design and deliver projects, products and implement end-to-end solutions to customers in variety of industries. Our service spectrum covers key services as Application Development, Application Maintenance, Hardware Development, Firmware Development, Embedded Systems and Testing Services.

Overview

Board layout is the most critical and important phase of hardware design process. The quality of board design can make a difference in product performance and success. A good layout can eliminate EMI-EMC issues to make the product successful.

Services

Aftek has extensive experience in designing highly dense, critical and multilayer form-factor boards.

Design for Manufacturability and Testability

- ♦ Design for Manufacturability (DFM) considerations for making the product production able.
- ♦ Design for Testability (DFT) considerations allowing flexibility for testing and debugging of assembled board for tests like bed of nails and flying probe tests.
- ♦ All considerations as per the PCB manufacturer like via-trace spacing, trace-trace spacing, drill size, prepreg-core selection for layer stack-up etc. during board design.
- ♦ The package delivered to production contains all relevant and essential files like Gerber files, pick & place files for board assembly and assembly drawing.

Signal Integrity Analysis

- ♦ Routing with impedance control, differential pair, critical signal and group / bus routing.
- ♦ Per-layout and post-layout signal integrity analysis for best layout.
- ♦ Layout considerations for power supply noise reduction, impedance matching, minimized crosstalk and reduced ground bounce are done.
- ♦ PCB stack-up and layer definition for best layout from EMI-EMC and ESD perspective to comply with major standards like FCC, CE and UL etc.
- ♦ Board layout with on-board delay incorporation with traces length matching to reduce setup and hold time constrains.
- ♦ Critical signal routing for RF and high-speed digital signals.

Multilayer Board Layout

- ♦ Multilayer board design up to 12 layers with blind, buried and micro vias with minimal return path analysis.
- ♦ Form-factor board layout as per the product enclosure dimensions.
- ♦ Highly dense board layout with multiple BGA, QFN and other chips of critical package and passive components with small package as small as 0201.
- ♦ Widely used board layout and simulation tools with expert PCB layout engineers.
- ♦ Power supply layout and power / ground plane definition for best power distribution system for on-board components.

Mixed-Signal Board Layout

- ♦ Taking care of analog signal interference with signal shielding, ground & power-supply plane separation from noisier digital domain.
- ♦ Impedance matching for analog signals with ground shielding on board for best performance.