DWB TECH SOLUTIONS

Redefining The Foundation Of Semiconductor Technology

e-BROCHURE

Table of Contents

1. Industries we work on

1.1 Aerospace

Designing PCB for military and aerospace applications is rewarding, so why is all the associated paperwork around the PCB design process so time consuming? Wouldn't it be great to have design tools which dovetail into the product development flow, so you can get productive design work done to specifications, while keeping track of all the changes along the way?

Basic PCB and schematic tools are simple but don't fit well with the rigor required for high reliability defense and aerospace products. You need tools in harmony with the certification and commissioning programs required for space, air, land and sea. Our PCB design includes the process oriented features needed to get your product certified for field use faster, at a lower cost.

1.2 Automotive

Automotive companies today are focused on increasing safety and creating an optimal experience for drivers and passengers. With more than 20 years of industry experience in semiconductor systems and software, DWB Tech specializes in automotive silicon and software design solutions as well as services worldwide. We have hands-on industry experience in end-to-end automotive embedded systems development, including infotainment systems, advanced driver assistance systems (ADAS).

1.3 Medical Technology & Healthcare

The medical field requires a vast level of technology with extreme reliability and long term life cycles. The medical sector consists of hospitals, doctor's offices, dental facilities, special care facilities, ambulance services, and fire and rescue. We design and produce custom boards, such as Ultrasound PCBs, that ensure your medical equipment work flawlessly.

1.4 Military and defense

Military Grade PCBs require high reliability with long service times under extreme conditions. We produce military PCBs for aviation, ground activities, defense, naval applications, and space weapons. DWB Tech provides designing of printed circuit boards that offer a wide range of materials, composites, and construction, that are very effective in military applications.

1.5 Semiconductor

DWB has deep expertise in analog, digital, and mixed-signal ASIC design and supply for the industrial, medical, automotive and consumer markets. Whether it is developing a power management system for cochlear implants, a satellite transceiver that facilitates wildlife tracking, an ultra-low-power RF transmitter, or an analog front-end for aircraft vision systems, DWB offers exceptional ability to deliver innovation on chip.

2. Services we provide

2.1 ATE Board Design

DWB Tech Solutions is a leading supplier of PCB Design services to world's largest ATE manufacturer and semiconductor companies. We offer design services to all semiconductor Load Boards and Probe Cards. Our design team having more than fifteen years of experience in all major ATE test platform. We offer Designs with High Quality and On-time Delivery to our valuable customers. Our value-added services have helped clients to achieve quick turnaround time, higher levels of efficiency and cost-effective implementation. We offer a choice of EDA Tool as per our customer flexibility.

ATE's are our specialty, with over 4 years of experience in Test development we can say we have a good handle on our Test HW. Swift design of load boards, probe cards, associated test fixtures and value-added services like fabrication, assembly and test allow us to deliver more than just a board.

ATE Test Board – Our Design Services:

- ✓ Load boards (LB), Handler Interface Board (HIB), DUT Interface Board (DIB)
- ✓ Probe cards (Vertical/Cantilever), Spider cards, Probe Interface Board (PIB), Flexible PCBs
- ✓ Device Characterization Boards
- ✓ Burn in Boards, HAST, ESD, Latch up Boards

Board Design Experience:

- ✓ Analog, High Speed Digital, Mixed Signal, RF, Sensors, MEMS devices
- ✓ High Voltage, High Current, High Speed, EMI suppression
- ✓ Experience in handling all types of PCB materials.
- ✓ Experience in design Test boards requiring leading interface technologies.

2.2 High-Speed Design

We offers turnkey Services to Printed Circuit Board Design and Manufacturing industry. We specialize in high speed design, power supply, mixed signals and RF designs. We offer a choice of EDA Tool as per our customer flexibility.

Every year, our team execute number of design projects for our customers across all vertical segments. Our design and engineering team bring value to the product development process, working at virtually every stage of the design cycle—from concept through detailed design and prototyping to volume production and end-of-life support.

Years of design experience combined with the knowledge transferred from inhouse signal Integrity and DFM validation teams helped us to acquire the expertise in HSD & HDI.

Our constant update on EDA/simulation Tools, Standard, training and Certification enables us to deliver for the ever-growing industrial needs.

2.3 Library Development & Support Services

DWB Tech can provide several solutions for your footprint and logic symbol needs. We can quickly create library parts and symbols from the manufacturers datasheet and we also can migrate an existing library by utilizing our unique translation technology which will quickly bring ALL your legacy libraries into your latest designs.

Library Services We Offer

- ✓ Library Development and Verification
- ✓ Library Clean and Scrub
- ✓ Library Management Solutions
- ✓ Global and Alternate Libraries
- ✓ Library Conversions

2.4 ASIC Flow

We offers full turnkey Analog, RF and mixed-signal ASIC solutions to system OEMs (Original Equipment Manufacturers), for small and medium production volumes.

ASICs are exclusively developed and manufactured for each customer, tailored towards its custom specifications. This provides you a leading position in your market.

DWB Tech's ASICs are typically used in the following ASIC markets: Industrial, Health, Consumer, Automotive, Smart home and Satellite Communication.

We take control over the complete ASIC Verification and Testing, being a true one stop shop for its customers.

Verification Services

We design, model & verify IPs, FPGAs, ASICs, SoCs using VHDL / Verilog / System Verilog with UVM / OVM / VMM Methodologies:

- ✓ Turnkey SoC Development
- ✓ Design for Testing
- ✓ Static Timing Analysis
- ✓ Gate Level Simulation
- ✓ ESL based Verification
- ✓ Embedded Hardware Design
- ✓ Functional Verification
- ✓ Coverage Driven Verification
- ✓ Low Power Verification

2.5 Signal Integrity Analysis, (H-SPICE, IBIS, Ansoft HFSS)

As signal speeds increase, the quality and integrity of the PCB layout becomes increasingly critical for optimizing the performance of the system. Simulation and analysis can help to avoid the painful hours of debug in a lab to find the source of bit errors, when you determine you have a noise problem. At the same time, SI simulation can prove to be time consuming and expensive.

With our extensive experience in SI, we will work with you at the beginning of the design to mutually determine the practical level of simulation required for your specific board, to mitigate the risk. We find in most cases, appropriate SI CAD guidelines, combined with simulation of just a few critical interfaces, is the optimal approach. Then we support the layout process real-time to solve any routability vs. performance issues before they have a chance to affect schedule and cost.

2.6 Power Integrity Analysis

DO YOU HAVE:
Multiple Voltage rails or fragmented power planes?
Lower voltages and tolerances?
Increased current requirements?
Tighter noise budget?

If so, you probably need to perform a Power Integrity (PI) analyses on your design to guarantee proper function of your board? DWB is your partner for Power Integrity analysis services. We provide PI DC analysis (voltage drop and current density) and PI AC analysis (decoupling and plane noise). Contact us for your Power Integrity analysis needs. We can supply you with a free quote and a sample PI analysis report to demonstrate our Power Integrity analyzes capabilities.

2.7 Voltage Drop and Current Density Analysis

Common Problems
Not enough voltage getting to ICs from power supplies (leads to IC malfunction)
High current densities in voltage island breakdowns (leads to dielectric breakdown)
Excessive currents in stitching vias connecting islands (leads to via failure = disconnected power)

Another issue is the integrity, or absence of noise of the delivered power. The designer needs to determine the number and location of decoupling capacitors and the goal is to save component cost and board area by avoiding over-conservative (excessive) use of bypass capacitors. The designer may also want to experiment with the PCB fabrication materials and stack-up to determine the best electrical and cost solution.

Obtaining impedance profiles of the power system network, analysis in the frequency domain (noise at various frequencies and resonant behavior), analysis in the time domain (noise at various points of time) and different isolation studies needs to be performed.

For good decoupling design, studies need to be done on capacitor placement and selection (dielectric types, body sizes and values), via placement, capacitor landing pad design, ferrite bead selection and design and analysis of power islands / power splits.

By using high-speed design, analysis and verification techniques early in the design cycle, designers can eliminate layout iterations and ensure that products are marketed on time.

2.8 Automated & Manual DFM Services

DWB Tech has the capability to perform DFM services on all DWB designed products, as well as designs done by customers or outside agencies. As a supplement to the automated analysis, a visual check is done to review the items not automatically checked. Every DWB Tech design goes through our QA process a minimum of two times to ensure that your design is error free.

NETLIST ANALYSIS
All shorts and opens identified by net name
Intentional shorts or opens need to be specified

SOLDERPASTE CHECKS
Presence of paste on all SMT pads
Size of paste matches SMT pad (1:1)

POWER/GROUND PLANE CHECKS
- ✓ Non-plated hole to copper spacing
- ✓ Via/plated hole pad to plane spacing
- ✓ Thermal relief connections (negative planes only)
- ✓ Plane spacing
- ✓ Copper to board edge clearance

DRILL CHECKS
- ✓ Minimum drill size
- ✓ Duplicate holes
- ✓ Touching holes
- ✓ Hole spacing
- ✓ Missing or extra holes
- ✓ Hole to board edge spacing

SOLDERMASK CHECKS
- ✓ Consistent clearance on pads (cleared or 1:1)
- ✓ Tented vias (unless specified as intentional)
- ✓ Mask coverage of adjacent features
- ✓ Board edge mask clearance
- ✓ Mask web/sliver width
- ✓ Missing mask openings

SIGNAL LAYER CHECKS

- ✓ Line width and spacing
- ✓ Line/pad and pad/pad spacing
- ✓ Non-plated hole to copper spacing
- ✓ Copper to board edge spacing
- ✓ Via and plated hole annular ring
- ✓ Trace stubs

SILKSCREEN CHECKS

- ✓ Silkscreen on via pads, SMT pad, PTH pads (especially text)
- ✓ Silkscreen to board edge
- ✓ Silkscreen line width
- ✓ Silkscreen text height
- ✓ Silkscreen text overlapping

DESIGN DATA

- ✓ Review board for pin 1 presence in silkscreen
- ✓ Review for missing silkscreen reference designators on major components
- ✓ Ensure fiducials are adequate
- ✓ Review plane connections to ensure thermal reliefs are present
- ✓ Review connections of small discretes for thermal connections
- ✓ General observations to identify unusual issues

FAB/ASSEMBLY DRAWINGS

- ✓ Breakaway or panelization recommendations
- ✓ Review notes for any inconsistencies, specs, etc.
- ✓ Review Drill tables for consistency with data
- ✓ Review fab dimensioning
- ✓ Review for part numbers, revs, dates, etc.

3. Convert Your Data Across Multiple Tools

DWB Tech has the capability to convert your data to and from any of the industry's most advanced tools. It then outputs all this converted information, along with performing data validation and verification ensuring that the resulting translation is complete and maintains the integrity of the original data.

Core Benefits of our DWB Translation

- ✓ Functional design output
- ✓ Maintains dependencies
- ✓ Design integrity maintained
- ✓ Electrical constraints retained
- ✓ Fast, accurate legacy design migration
- ✓ Data content retained with detailed reports
- ✓ Automated verification with detailed reports

- ✓ Functional properties automatically processed
- ✓ Customizable mapping for user defined properties
- ✓ PCB Translation across to and from multiple tools
- ✓ Logical and physical databases can be migrated together
- ✓ Enables design reuse and minimizes project schedule impact

4. Procurement

When you need to get started on a project, DWB supports you with a suite of components procurement services that can help with your efficiency. Easily find parts on the fly, build projects, share, and more. Sometimes you have multiple projects going on at once. DWB can help you keep track of them all and make sure that all your colleagues are in the loop.

Handpicked parts procurement by DWB will give added mileage for your project when turnkey requirement arises for your particular project.

5. Fabrication

DWB has the approved EMS vendors across the globe to ease the FAB process and has led the PCB industry for over 4 years, providing some of the most innovative printed circuit board technologies and highest quality standards in the industry. You can count on us to meet your needs, from the simplest boards to the most complex designs for small quantity and large-scale production.

we pride ourselves on our excellent customer service and reliability. We want to make your life easier with our printed circuit board manufacturing and assembly capability.

6. A Seamless Process from PCB to Assembly

Our printed circuit board assembly service is one-stop solution for PCB and assembly under one roof; specializing in small and medium runs with fast lead-times and no minimum quantity requirements. we maintain full control of the entire process so you don't have to manage multiple vendors

7. Contact:

INDIA

Head office:
DWB Tech Solutions LLP
#46/4, Novel Tech Park,
GB Palya, Hosur Road,
Bangalore, Karnataka 560068

Corporate Office:
DWB Tech Solutions LLP
No.1293, Eswari Complex, Sakthi Road,
Ganapathy, Coimbatore 641006
TamilNadu, India

UNITED STATES

Branch Office:
DWB Tech Solutions
2201, Francisco Drive,
Suite 140-541,
EC Dorado Hills,
California- 95762, USA.

CONTACT US

Contact Number:
+91-9894520497

Mail us:
sales@dwbtech.com