



**dtm Associates**

93 Highland Street  
Clinton, Massachusetts 01510-1015

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## Electrical And Electronic Engineering Consultants

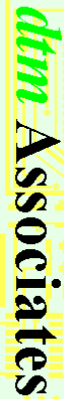
### Specializing In:

- General Engineering
- Sanity Checks and Problem Solving
- Product Co-Development
- Turnkey Product Development
- Electronic Circuit Design and Analysis
- Power Electronics
- Worst Case Circuit Analysis
- Reliability Prediction and Analysis
- Product Teardowns and Reports
- EMI Analysis and Remediation



**We Can Help!**

[www.dtmassociates.com](http://www.dtmassociates.com)



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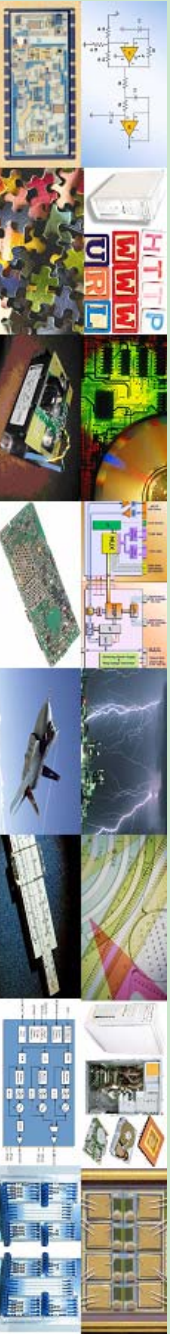
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## How Can We Help You?

*dtm Associates* offers you the flexibility to tailor our services to suit your specific needs — from product concept to design to prototype evaluation to successful customer shipments. This means that we will work with you as a partner during each phase of your product cycle. The result is that we become a valuable extension of your in-house capabilities; in a very cost effective way.

Since 1989 we've put our experience to work for our customers to decrease turn-around times, reduce product and manufacturing costs and improve their overall productivity. We can do the same for you.



## Who Are *dtm* Associates?

*dtm* Associates are engineering consultants who can help you solve your most difficult engineering requirements and problems.

We have expertise in the areas of analog, power (our specialty), digital, and mixed-signal electronic circuit design. We provide our customers with valuable analytical capabilities including electronic product design, turnkey product development, product tear down analysis, worst case electrical analysis, reliability modeling and prediction, and EMI analysis and remediation.

Many of our customers also use us as a sanity check for their new product or circuit designs. We can also help you define and solve problems and issues with your existing products as we provide a cost-effective method of getting a project or product off the ground or back on-track.

We'd be delighted to provide you a quotation for your most demanding engineering problem or issue. You won't be disappointed.

We encourage you to visit our website at [www.dtmassociates.com](http://www.dtmassociates.com) for more detailed information regarding our expertise and capabilities.

We look forward to working with you.



## What Are Our Capabilities?

### *Electronic Circuit Design and Analysis:*

Analog	Digital
Power	Mixed-Signal
SPICE Modeling and Thorough Design Analysis	

### *Circuit Partitioning and Design:*

Cost	Reliability	Performance	Size
EMI	Manufacturability		Serviceability
Full CAD PCB and Hybrid Layout Capability			

### *Product Tear Down Analysis:*

Complete Disassembly	Multi-Product Comparisons
Manufacturability Analysis	BOM Replication
Cost Analysis for ALL Components	Exhaustive Photographs
Thorough Reports With Product Pros and Cons	

### *Worst Case Electrical Analysis:*

Component and System Level	According to RADC and MIL Standards
Analytical Modeling	Thorough Reports
SPICE Circuit Behavior Modeling and Simulation	
Verification Testing To Data Sheet Parameters	

### *Reliability Modeling and Prediction:*

To MIL-HDBK-217		To Telcordia / Bellcore TR-TSY-000332	
MTBF	MTTR	MTTF	MTBSI
Component, Sub-System and System Level			
Thorough Reports and Interactive "What If?" Analyses			

## What Is Our Design Expertise?

### *Switching Power Supplies:*

- AC-DC, DC-DC (Isolated and POL), DC-AC
- All Topologies: Buck, Boost, Forward, Etc.
- Current / Voltage Mode
- High-Efficiency Synchronous Rectification
- Magnetics Design (Planar and Conventional)
- Battery Chargers, BBU and UPS

### *Power Analog:*

- Smart Power Switches
- Motor Drivers (Single and Multiphase)
- Transducer Drivers (Piezoelectric/Magnetic)
- LED Controllers / Drivers
- Fast/Accurate Current Switches
- Electronic Fuses and Squib Drivers
- Laser Drivers and TEC Controllers
- Transient Suppressors

### *Small-Signal Analog:*

- Amplifiers
- Sample- / Track-and-Holds
- Active Filters and Signal Conditioners
- High Precision RMS-DC Converters
- Precision Rectifiers
- D/A and A/D Converters: SAR, Pipeline and Flash

### *Controls and Supervisors:*

- DSP/Microcontroller/Microprocessor
- FPGA / PLA / PLD / Gate Array
- State Machines and Logic
- Power Sequencing and Control

### *Phase-Locked Loops:*

- VCO, TXCO and VCXO Oscillators
- Analog / Digital Phase Detectors
- Multi-Order Loop Filters
- Lock Detection and Error Reporting

### *Fault-Tolerant Circuit Design:*

- Redundancy (N+1, 2N, Hot Spare)
- "ORing" and Hot-Swap
- Fault Detection and Fail-Over