

Spring

Volume 18

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**DLS** News & Views

To help keep you better informed

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**EMC By Your Design**  
 Practical Applications  
 Seminar/Workshop  
**\$300 discount until**  
**April 2**

**- PAGE 4 -****Happy 30th Birthday, D.L.S.****Reflections by Don**

As I sit here reflecting on D.L.S.'s past 30 years, it seems as though we are always doing the impossible. In fact, for our first several years in business, we actually had a sign posted on our door that read, "Nothing is impossible!" How is it that one with no previous business experience and no financial backing can form a company, purchase or build necessary equipment, figure out all the constantly changing rules and regulations, find qualified employees and offer proper testing to customers in a variety of fields?

I remember back when we were testing outdoors in the frigid weather and needed a building made of material transparent to radio waves and one that was tall enough for our 4-meter antenna mast. We found no affordable buildings on the market, so during a 2-week 1983 Christmas break, a friend and I designed and, in sub zero weather, built our own fiberglass building for 3-meter testing.



Building the impossible in 1983

To understand how to test properly, I visited the FCC to see exactly how they did their testing and then built (because they were not available to purchase) the same kind of antennas the FCC was using, even though that was not considered by some to be the industry standard at the time. We wanted to test exactly the way the FCC tested. Even though many think it is impossible, precise testing has always been our standard.

When the European Union was being developed and U.S. test labs ran the risk of being excluded, I was able to find a way to attend their first meeting in Brussels where I learned their requirements and testing methods. Later when U.S. labs were getting confusing directions from various EU competent bodies, I was instrumental in forming the U.S. Council of EMC Laboratories (USCEL) and became its founding chairman. When the Department of Commerce/NIST formed the equivalent of competent bodies for Europe, USCEL became the connecting voice between the U.S. and Europe. Who would have thought back in 1983 when my entire business focused on the FCC, that today D.L.S. would be testing and consulting for a global market with testing including CE Marking, MIL-STD 461, RTCA DO 160, shield effectiveness, wireless, product safety, Qi and environmental, and that I would be teaching design seminars? Amazing how simple things were back in 1983, but at the time I didn't realize it.

And who would have thought we would have had so many opportunities to put our advanced problem-solving abilities to work? I remember when we had a customer who needed 120 shifts of EMC testing accomplished in 30 days. Impossible, most would say. But with some forethought, the product was broken down into two interconnecting labs each working two shifts a day. The project went flawlessly and the manufacturer shipped the product to his customer on the 30th day.

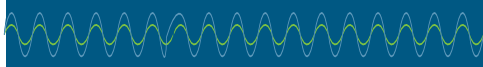
We once again did the impossible when we tested a product that was generating 1,000,000 BTUs of heat. It would have made our air-conditioned test lab unbearably hot. So our employees vented the heat outside and connected two large air handlers in parallel to the lab being used,

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## D.L.S. Conformity Assessment for Audio Video Equip.



D.L.S. Conformity Assessment is a fully accredited UL testing laboratory for devices that fall into the audio video equipment categories under the UL-cUL 60065 standard. When combined with a CE Mark for the EN 60065 program for the Low Voltage Directive, and D.L.S. EMC testing, D.L.S. offers a one stop process for the efficient and time saving compliance program. Contact Jack Black at 847-537-6400 or at [jblack@dlsemc.com](mailto:jblack@dlsemc.com) for additional information.



## Design enclosures to meet EMC requirements

Don Sweeney's article on enclosures published August 2012 in Test and Measurement World includes:

- Enclosure Design
- Determining Shielding Effectiveness
- Plane waves & electric fields
- Magnetic shielding
- Making the enclosure

For a copy of *Design enclosures to meet EMC requirements*, please email Carol at [cgorowski@dlsemc.com](mailto:cgorowski@dlsemc.com)

## regulatory requirements **UPDATE**

### EN 61010-1 3rd Edition

EN 61010-1 3rd Edition was published in July 2011, and although it does not take effect until October 1, 2013, every Lab/ Measurement Equipment manufacturer should be aware of it by now. Goods shipped to any country in the European Union must comply with the 3rd edition as of October of this year. The time to act is now. D.L.S. can help you prepare for a smooth transition through the number of add-ons and changes that can significantly affect your business. Some of the most important changes of the standard include:

- Scope expansion to include both professional and non-professional products
- Rewritten insulation requirements of section 6.7
- Additional requirements for protection against mechanical hazards
- Surface temperature limits modified to match those of EN 563
- Radiation requirements modified and now take into account the difference between intended and unintended emissions
- New requirements regarding Risk Assessment
- New methods for reducing the pollution degree of a micro-environment

Contact D.L.S. now and we will guide you and your product through compliance to the third edition of EN 61010-1 making it as painless as possible.

### D.L.S. Expands C.A. Group

The Conformity Assessment group of D.L.S., responsible for product safety compliance testing, along with environmental and newly added Wireless Power Consortium Qi testing and certification, has moved to our newest location, around the corner from our Peterson Drive corporate facility. The new 10,000 sq. ft. location is at 200 Marquardt Drive. It allows the conformity assessment team to continue its expansion for UL projects under the UL accredited testing laboratory program, as well as CE Mark, and expanded sand & dust and shock & vibrate environmental testing under MIL STD 810 and RTCA DO 160. The D.L.S. Conformity Assessment group is offering special streamlined programs that involve UL-cUL and CE Mark requirements under the 60950, 61010, 60065, 60601 and 60204 categories.

### MIL STD 704 and 1399

D.L.S. continues to expand their capabilities to support military programs, with updated power quality testing services for MIL STD 704 and MIL STD 1399 at our main campus in Wheeling, IL. This expanded service supports various platforms for the military, including vehicle, auxiliary and support equipment, ships and shipboard, aircraft and related avionics. D.L.S. is dedicated to a one stop format for all military testing requirements.

### Environmental Testing MIL STD 810 RTCA DO 160

D.L.S. performs environmental testing services for MIL STD 810 and RTCA DO 160. This program includes Shock and Vibe as well as Sand and Dust compliance. D.L.S. sand and dust equipment is designed to support larger equipment, with a 64 cubic foot testing platform. D.L.S. also supports ISO and NEMA testing requirements.



Sand and Dust Testing for Military and RTCA

### Digital Avionics Handbook

Don has been asked to create the *Environmental Qualification* chapter in the new *3rd Edition Digital Avionics Handbook* published by CRC Press. This handbook

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### Australian Government Compliance & Labeling Update

#### New single compliance mark—RCM

The ACMA Authority has confirmed that the commencement date for the new labeling arrangements is March 1, 2013.

The three existing compliance marks (C-Tick, A-Tick and RCM) are being consolidated into a single compliance mark—the RCM. This will indicate a device's compliance with all applicable ACMA regulatory arrangements—that is, for telecommunications, radiocommunications, EMC and EME—and with applicable state and territory electrical equipment safety requirements.

The C-Tick and A-Tick compliance marks are to be phased out. A new database will be designated for all supplier registration and the supplier identification requirements will be removed from the labeling



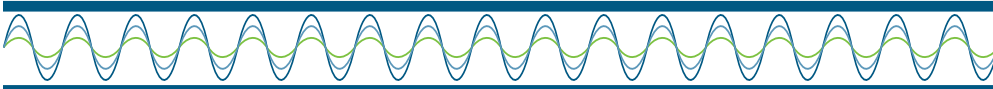
notices. The database will also be used for registration of suppliers under the Electrical Equipment Safety System (EESS) being introduced by some State and Territory governments.

The current arrangements apply until the commencement date. From March 1, 2013, the new arrangements will only apply to new suppliers—those who do not have a supplier code number issued by the ACMA.

From March 1, 2016, the arrangements will apply to all suppliers.

Further information and downloadable RCM images are available on the ACMA website or at <http://bit.ly/WMKl6b>

Call Steve at 847-537-6400 for help in meeting these new requirements.



### 30th Birthday (cont'd)

one moving 20,000 feet per minute and a second moving 18,000. The thing that amazed me was that my employees didn't even hesitate long enough to ask me what to do; they just figured out what needed to be done and did it.



Air handlers on roof of D.L.S.

During our 30 years in business, we have probably seen your worst nightmare in our lab. And even if we had not previously solved a similar problem, we would have figured out a way to accurately complete your testing in a timely manner. When I walk out and see our 13 EMC labs in Wheeling, move from building to building at our open area test site, watch our safety engineers review a

project, or watch a product being tested to its limits for shock and vibration or for exposure to a sand storm, I realize these past 30 years are just the beginning. Imagine what the next 30 will bring!

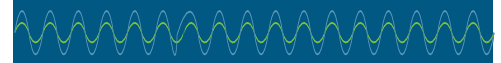
D.L.S. will be here when you need us, for whatever your project might entail. We still believe in the little sign we posted on our door so long ago that said, "Nothing is impossible!"

### Avionics Handbook (cont'd)

is intended to give designers, and those responsible for getting avionics FAA approved, an overview of the various requirements they will need to consider. Each of the 26 sections in Don's chapter will consist of an overview of how to determine what must be covered for RTCA DO 160 and includes everything from Shock and Vibration to Radiated Immunity and Lightning Testing. (In Don's bookcase, he has the *CRC Standard Mathematical Tables* handbook published when he was in high school in 1959. Some of you might remember log tables before we had computers.)

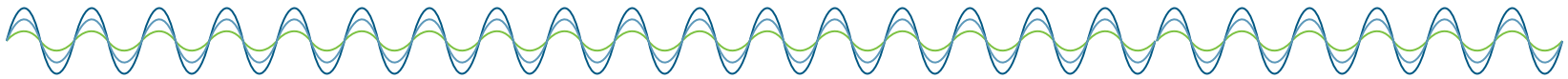
## Qi Testing Reminder

D.L.S. offers a comprehensive compliance program for wireless charging devices, including Qi testing, as established by the Wireless Power Consortium. The Qi (pronounced "chee") Mark is the only compliance testing program that guarantees 100% conformity with all requirements mandated by the WPC. D.L.S. is the only North American lab certified to do Qi testing to the new Version 1.1 Standard.



## D.L.S. Consulting Services Program

Take advantage of the technical staff at D.L.S. by considering early design review of your upcoming project. This D.L.S. EDE, or Early Design Evaluation is a comprehensive review of design related aspects of your upcoming project to identify potential non compliant design issues. The EDE program can reduce costs, and speed your product to market by identifying potential project delaying compliance issues and clearing them up prior to formalized final testing. D.L.S. offers the EDE program for Military, Avionics, High Technology Equipment, Medical and Laboratory devices, Audio-Video, Restaurant Equipment, and Industrial Machinery and Controls for EMC and Product Safety requirements.



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## Save Money

*Shorten your compliance testing time  
by learning how to design for EMC*



### EMC By Your Design

An EMC Practical Applications Seminar and Workshop with a free 45 min. individual product design evaluation on April 26, take home proprietary computer program, expanded chapter on filter design, signal integrity, and signal return currents on PCB's at no extra charge



**Tuesday, April 23 - Thursday, April 25, 2013**  
Hilton Hotel, Northbrook, IL

**We are offering a special  
\$300 discount if you register by April 2, 2013**

**Classes fill quickly so register early**

email [cgorowski@dlsemc.com](mailto:cgorowski@dlsemc.com) or call 847-537-6400

[www.dlsemc.com/1001](http://www.dlsemc.com/1001)