

Fall

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# DLS News & Views

To help keep you better informed

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## Take part in D.L.S.'s celebration

### Special \$1983 Discount Program

#### 10% off new product EMC Testing

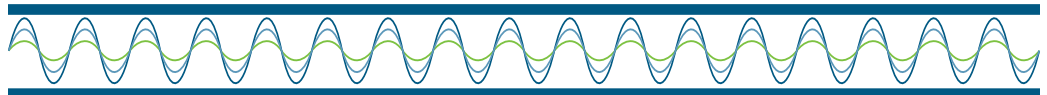


In celebration of their 30th Anniversary D.L.S. Electronic Systems, originally founded in 1983, is offering a special discount program effective August 1, 2013. This program provides a special anniversary discount of 10% on any qualified new EMC testing project for the remainder of 2013, and is subject to a limit of \$1983. This discount program is available for new projects only and covers projects that include both EMC and Safety testing only when combined as a single project. For example, this means that qualifying new projects that entail the CE Mark for both EMC and Low Voltage Directive testing would be eligible for up to \$1983 in savings. New projects that include both R&TTE Directive and Machinery Directive Product testing or a combination of UL safety and FCC testing for United States approvals also qualify.

Also included is the combination of EMC testing and Environmental testing, such as

RTCA DO-160 testing, or Mil STD 461 and Mil STD 810 testing combined into a single new qualifying project. The discount program is limited to one project per client, and will be referenced as a rebate upon final invoice to the project. All qualified project requests under this program must have the reference to discount code "30-1983" to be confirmed as eligible.

Since D.L.S. opened in 1983, we have certified products in many different categories, including transmitters, machinery, consumer goods, hi tech electronics, wireless devices, medical equipment, automotive, defense electronics, and avionics equipment to name a few. Today, D.L.S. offers a truly global compliance package with testing and certification programs to government regulations, trade and industry organizations, and to internal company requirements for our clients. This allows for a one-stop-shop process and access to the global marketplace.



### D.L.S. Completes UL Audit

D.L.S. Conformity Assessment successfully passed the 3rd edition UL 60601-1 Medical Device Testing audit under the D.L.S. – UL Certificated Agency Program. This allows D.L.S. to perform testing for medical devices in order to obtain the coveted UL mark for our clients. D.L.S. often combines our engineering and consulting services along with our testing capability to provide a streamlined path for compliance.

In addition to the medical device approval,

D.L.S. is formally accredited to perform testing for UL 60950-1, UL 61010-1, and UL 60065 categories. These categories cover a broad range of testing requirements under UL standards and formal listing services. For the past three years, D.L.S. has been an approved outlet for UL testing under the UL program for third party test data acceptance. D.L.S. also offers special UL testing programs on a case by case basis for other categories. Contact [jblack@dlsemc.com](mailto:jblack@dlsemc.com) for more details.

## More expansion for D.L.S. Conformity Assessment

The Conformity Assessment group of D.L.S. has continued their expansion at their new location, and has annexed an additional 10,000 square feet, bringing our total to 20,000 square feet of space at the 200 Marquardt facilities. This latest expansion will be used to increase product safety testing services and support additional capability for expanded environmental testing as well as including shock vibration and ingress protection. This latest addition at the Wheeling, IL campus provides for the support of future growth and increased customer services under the D.L.S. one-stop-shop format.

## IEC/EN 61010-1

### 3rd Edition

#### Risk Assessment Added to New Laboratory Equipment Requirements

The new IEC/EN 61010-1 3rd edition requirements will focus more on manufacturers risk assessment than in the past. The risk assessment portion is similar to that found in the recent IEC/EN 60601-1 3rd edition for Medical Devices. All new products placed on the market that fall under these requirements will need to show compliance to the new standard as of October 1, 2013. D.L.S. Conformity Assessment can provide a detailed review of your risk assessment under a transitional analysis format. E mail Mitch Gaudyn for more details at [mgaudyn@dlsemc.com](mailto:mgaudyn@dlsemc.com).

## regulatory requirements **UPDATE**

### Wireless Power Transfer

Inductively coupled wireless power transfer and wireless charging devices that operate at frequencies above 9kHz are subject to FCC Part 15 and/or Part 18 regulations. The FCC has published guidance (KDB 680106) on the implementation of the FCC regulations specific to these products. In this document, the FCC defines how emissions regulations apply, based on the operation of the product. The document also specifies that there are obligations that these products must meet with regard to RF exposure and gives the procedures for meeting this requirement.

**EMC considerations:** Wireless Power Transfer products must comply with FCC Part 18 regulations for ISM devices. Many of these devices also employ wireless communication between the charging pad and the client device. Generally this communication must meet Part 15 regulations as intentional radiators and so are subject to certification. However, devices which employ wireless communication integral to wireless power transfer operation and frequency solely for the purpose of load and power management might be approved as Part 18 devices, and Part 15 certification as a wireless communication device may not be necessary.

**RF Exposure considerations:** Although categorically excluded from routine RF exposure evaluation, Part 18 devices are not exempted from RF exposure compliance. The potential for exposure must be assessed according to the operating configurations of the wireless communication and wireless power transfer functions of the system, and the exposure conditions of users and bystanders.

Based on the design and implementation of the power transfer application, it must be clearly identified if mobile or portable RF exposure conditions apply. Devices that are installed to provide separation of at least 20 cm from users and bystanders may qualify for mobile exposure conditions. For some conditions where users and bystanders may be exposed at closer than 20 cm, Section 2.1091(d)(4) of the rules may apply. For devices designed for desktop applications, RF exposure evaluation is performed at a separation distance of 10 cm, which is considered typical of actual use. E and H field strength measurements should be used to

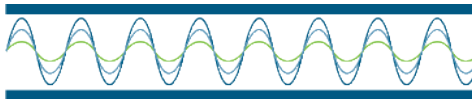
demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device. RF exposure must be evaluated with the client device(s) being charged by the primary at maximum output power. Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz. Portable exposure conditions from 100 kHz to 6 GHz are determined with respect to SAR requirements.

As detailed in FCC KDB 680106, wireless power transfer or inductive charging devices require FCC guidance for frequency exposure review. A specific wireless charging application must be submitted to the FCC for determination of the RF exposure requirements in conjunction with the device operating characteristics, and according to FCC mobile and portable exposure requirements in Section 2.1091 and Section 2.1093 of the rules. When evaluation is required by the FCC to show compliance; for example, using field strength, power density, SAR measurements or computational modeling etc., the specific authorization requirements will be determined based on the results of the RF exposure evaluation. SAR and MPE limits do not cover the frequency range for wireless power transfer applications which operate below 100 kHz and 300 kHz respectively; therefore, RF exposure compliance needs to be determined with respect to 1.1307 (c) and (d) of the FCC rules. Often an RF exposure evaluation report must be reviewed and accepted through an FCC KDB or PBA inquiry to enable authorization of the equipment. Some devices may meet an exemption from needing to go through the official inquiry process.

Similarly these devices are subject to Industry Canada and European Union regulations which differ considerably with FCC requirements. More information can be found by reviewing FCC KDB 680106, or by contacting D.L.S. Electronic Systems, Inc. at 847-537-6400.

## Power Tools Not Exempt

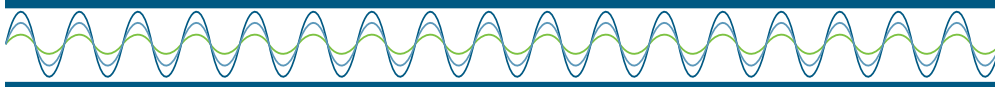
Power tools have often been thought to be exempt under FCC regulations (FCC Part 15.103). The FCC has a draft publication that clarifies the exemption for appliances, and explicitly adds "Power Tools, Cordless Multi-Tools and Battery Operated Tools" on the non-exempt appliance list. Note that this is a clarification of a current FCC publication, not a change in regulations. Therefore, power tools should be tested to the FCC Part 15 regulations.



## Automotive Testing

*D.L.S. Acquires Detroit Based Testing Laboratory Assets*

D.L.S. announces the purchase of the assets of Detroit area testing laboratory Doshi Labs, in a transaction completed in June, 2013. The assets include state-of-the-art EMC and Environmental testing equipment, chambers, fixtures, and related accessories. The acquisition will help in the continued expansion and development of testing for the automotive and vehicle industry, supporting the industry leaders such as General Motors, Ford, Chrysler, Toyota, Nissan, and other related tier one and tier two automotive suppliers.



## We need your current contact information

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To ensure you receive notice of the latest changes in EMC & Product Safety Rules and Regulations, please enter your current contact information at [dlsemc.com/email-update](http://dlsemc.com/email-update). All EMC/Product Safety engineers, technicians & managers who enter by Dec. 31, 2013 will be included in our **ten drawings for \$25 Visa Cards**. Please continue to use this site to update your contact information any time it changes. Thanks.

## DLS Partners in Exporting

*D.L.S. Partners with Department of Commerce and U.S. Commercial Service on Exporting*

D.L.S. recently participated in a series of training and informational seminars with the Department of Commerce and the U.S. Commercial Service. The seminars related to compliance requirements needed for exporting of goods to the European Union and the People's Republic of China. The information focused on current testing and certification requirements and were presented last month in Cleveland, OH; Fargo, ND; Sioux Fall, SD and Omaha NE.



Jack Black of D.L.S. and Sylvia Mohr of the U.S. Commercial Service's EU Office discussed current laws and requirements for export to the EU, and Jack provided insights and relevant details on the latest regulatory requirements for exports to China.

Jack also participated as a lead presenter for the Washington, DC office and the U.S. Commercial Service with a similar presentation on exporting for China. For more information about exporting, please email Jack Black at [jblack@dlsemc.com](mailto:jblack@dlsemc.com)



I actually began teaching in the early 1980's when I shared what I had learned about EMC with fellow engineers while working for Extel. Word spread and the Univ. of WI called saying their students were requesting I teach a 5 week, 4-hour EMC evening school course. The response was outstanding with 63 students attending after working an 8-hour day. I was then asked to expand my teaching to 3-day EMC extension classes. In addition to Henry Ott's first edition of *Noise Reduction Techniques*, the material I used stemmed from the lessons I had learned while working with EMC and I kept adding to it as I was brought more and more EMI problems to solve. I remember being called to a connector company and showing them how they could greatly reduce their emissions by terminating their cables properly.

In 1987 Don Heirman asked me to present a paper at the IEEE Symposium which I called *Mitigating Excessive Emissions*. This was based on my time spent with Dr. Warner Graft learning about Topology, which became my Barbell Theory, and eventually my *Mitigating Excessive Emissions* paper. (The article is currently being revised/updated and will soon be republished in *Interference Technology*.)

The past 30 years have been one continuous learning experience for me. I enjoy sharing the new knowledge I gain from each client and each product's specific EMI problems with others so they can understand what can go wrong and how to avoid problems. I pray the next 30 years will be as much fun.



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Hilton Hotel, Northbrook, IL



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