

Fall

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DLS News & Views

To help keep you better informed

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50% Special Discount or
\$300 Discount until Sept 15**- PAGE 3 & 4 -****How will you meet the New European Directives with no transition period?**

D.L.S. is establishing a webpage at www.dlsemc.com/EU to help you navigate through the no transition period. This website will keep you updated on the Commission's additional significant changes so your product will have an orderly placement in the European Marketplace during 2015, 2016, and 2017.

Although the new RED Directive (effective June 13, 2016) will have a short transition period, the new EMC and LVD Directives (effective April 20, 2016) will have no transition period. The problem with not having a transition period is that your product will be required to comply on the date it is "placed on the market" in the European Union. This means if you are making product model XYZ which has a continuous production, the date of "placing on the market" varies with each shipment. For example if you ship serial numbers 1,015 - 1,030 such that they are "placed on the market" on or before April 19, 2016, they will be required to meet the old EMC Directive 2004/108/EC. If the next shipment is "placed on the market" on April 20, 2016 or later, it will be required to meet the new EMC Directive 2014/30/EU.

**"Placing on the Market"**

Each individual serial number of a product is considered to be "placed on the market" when it is made available or put into service for the first time on the European Union Market and must comply with the harmonized legislation in effect at that moment. The "moment" is defined as when a manufacturer or importer supplies a product to a distributor or an end-user for the first time. This can only be done by a manufacturer or an importer. Any subsequent operation, for instance from a distributor to a distributor or from a distributor to an end-user, is defined as "making available" and not defined as "placing on the market."

The concept of "placing on the market" refers to each individual product, not to a specific model of a product whether it was manufactured as an individual unit or in series. Consequently, even though a product model or type has been supplied before new European Union harmonization legislation laying down new mandatory requirements entered into force, individual units of the same model or type which are placed on the market after the new requirements have become applicable must comply with these new requirements.

Placing a product on the market requires an offer or an agreement (written or verbal) between two or more legal or natural persons for the transfer of ownership, possession or any other property right concerning the product in question. This transfer could be for payment or free of charge. It does not require the physical handover of the product.

More information, including the following, can be found at www.dlsemc.com/EU:

- The latest updates on the EMC, LVD (Safety), R&TTE/RED (Radio) and other Directives.
- Guidance through which directive to use when.
- Specifics of the New Low Voltage Directive (LVD).
- Details of D.L.S.'s suggested steps you will need to take, such as generating a new DoC.

New Medical EMC Requirements

Recently published IEC 60601-1-2:2014, 4th edition, details new EMC requirements for compliance of medical devices. These changes require new consideration and testing for FDA, Health Canada, and Europeans Union approvals and include new designated use environments, which are now split into three areas: Professional Healthcare Facility Environment, Home Healthcare Environment, and Special Environment. Each of these new designated use environments have new requirements for EMC compliance which include new emissions requirements and test methods and higher level, more stringent immunity tests. For a compliance quote to these new requirements, go to: www.dlsemc.com/requestquote.

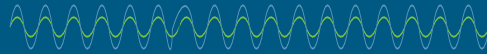
What are your needs?

We are thinking of possibly transitioning to an electronic only newsletter, but before we do, we need to hear from you.

If you currently receive our print newsletter and not our e-newsletter, please go to www.dlsemc.com/email-update and give us your current email address.

If you prefer to receive our print copy, please call us at 847-537-6400 to let us know.

And, as always, feel free to call us anytime you have questions about compliance regulations or testing requirements. We are here to serve you and to meet your needs.



Easy travel to D.L.S.



You likely already know that D.L.S. is located just 20 minutes from O'Hare International Airport, but our headquarters is also located just down the street from Chicago Executive Airport. Some of our clients with access to private jets have avoided the congestion of O'Hare and easily made their way to our labs using the facilities of this reliever airport. If you'd like to learn more about this transportation option, visit www.chiexec.com.



regulatory requirements **UPDATE**

Pre-certified radio modules... a good idea but not as simple as you might think.

One of the major trends in wireless that we are seeing in the test lab today is that the design engineer often places in his new product, RF modules for which another manufacturer (or grantee) has been granted certification. In the U.S. and Canada pre-certified radio modules are called Modular Approvals. Engineers who are integrating the RF module into their design tend to think that by using predesigned and certified modules they will save time and money, and in theory this is correct. However, when they come to the test lab they discover that they are not using the module in the same way for which it was certified.

Some examples of this may be: the duty cycle is modified to be longer than it was originally certified for, a different antenna than that certified with the module may be desired, the output power or frequency range may be modified, or two different modules are intended to be used in the same host device. Another example we see is that a module is purchased to be used in a portable (hand-held or body worn) application, but the module is approved only for mobile applications and requires a 20cm separation between the antenna and the user. Any of these changes may require recertification, or application for a permissive change which can only be done by the module manufacturer/grantee. These will also require cooperation with the module manufacturer or grantee and could end up costing more in time and money than the project will allow.

To save the time and money the engineers are seeking in their project, they need to begin working with a knowledgeable test lab early in their design stage so any errors in their assumption will be pointed out, thereby avoiding many headaches and last minute delays, or even finding that their design is not viable. Find more information at www.dlsemc.com/modules. For an RF Transmitter quote, go to www.dlsemc.com/requestquote.

FCC Update

The FCC has been busy updating its Rules and Procedures and as a result has issued a number of KDB publications in the last 30 days (26 for the month of June). Of these, we will list here a short description for those we feel are most important to our clients. For further information, go to <https://apps.fcc.gov/oetcf/kdb/index.cfm>.

1. KDB 174176 Line Conducted FAQs v01r01 provides answers to frequently asked questions related to line conducted emissions testing

FCC Update continued

requirements. Of note, the KDB clarifies that testing shall be done at all available US voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation.

2. FCC Report and Order (FCC 13-21 and rules modified per Order FCC-14-138) introduced a new regulatory framework for signal boosters, including the introduction of a Network Protection Standard that specifies the technical and operational requirements. FCC KDB 935210 provides specific guidance.

3. KDB 789033 provides guidance for testing U-NII devices operating under Part 15 Subpart E New Rules.

4. Revised KDB 443999 D01 Approval of DFS UNII Devices v01r04 provides requirements for approval of U-NII devices operating in the 5470 - 5725 MHz band under the new rules in effect since June 2, 2014.

5. KDB publication 558074 D01 provides guidance for performing compliance measurements on Digital Transmission Systems (DTS) operating under Section 15.247. This is version 3, third revision of this publication. The Commission revised the rules for DTS devices operating in the 5725-5850 MHz band operating under Section 15.247 rules (FCC 14-30). Effective June 2, 2014, DTS devices operating in this band must comply with the new rules under Part 15 Subpart E (New Rules). The transition period for certifying under the old rules ends December 2, 2015.



FCC vs. CISPR (KDB 746324)

It is common to test a product to meet both FCC Part 15 and CISPR 22 regulations in order to sell the product in the US and European markets. While the requirements of the standards are similar, it must be realized that there are differences in the limits and test procedures that must be taken into account when testing for compliance. FCC Part 15.109(g) provides an alternative path to compliance using CISPR 22 (edition 3) radiated emissions limits. However, this is only allowed in the frequency range of 30MHz to 1000MHz, and ANSI C63.4 test procedures must be used. Neither CISPR 22(EN 55022) limits or test procedures can be used for testing above 1GHz, and AC line conducted emissions per FCC Part

Continued on next page

regulatory requirements **UPDATE**

FCC vs. CISPR continued

15.107 also must be run. FCC Part 15 limits and test procedures cannot be used to show compliance with EN 55022 requirements. The FCC has recently released KDB 746324 D01 which clarifies the FCC's position. What further differentiates the compliance issue is that the EN version of CISPR 22 Ed. 3, as referenced in 15.109(g), should no longer be used for EU compliance as it has long ago been withdrawn from harmonized standard status, and EN 55032 will soon replace EN 55022 as the Harmonized Standard to be used for compliance.

FCC Exempted Devices

FCC Part 15.103 defines certain devices which are exempt from Part 15 technical requirements, meaning that they do not need to be tested for compliance. It should be noted however, that even devices which are exempt must still meet the general requirements of part 15.5 and 15.29. What this means is that if the device is found to cause harmful interference, the operation of the device must cease immediately and shall not resume until the interference has been corrected. Among these exempted devices are some home appliances such as refrigerators, clothes washer/dryers, coffee makers, vacuum cleaners, etc. Non-exempt appliances include paper shredders, exercise equipment and hair dryers. A full list of exempted and non-exempt appliances can be found on FCC KDB 772105.

What is often overlooked though, is that if the exempt appliance includes digital circuitry for a secondary function that is not for basic task of the appliance, that circuit is not exempt. An example of this would be a refrigerator with an in-house communication system. In this case, the appliance would need to be tested for Part 15 Subpart B, Class B compliance of that secondary function. Industry Canada exempt device regulations closely mirror those of the FCC. One of the more important differences however is that the FCC currently exempts power tools containing digital circuitry from Part 15 technical regulations, while Industry Canada requires these to meet ICES-001 technical regulations. Stay tuned though, as it seems that the FCC is considering changing that exemption. Please refer to FCC Part 15, FCC KDB 772105, and ICES-003 for information regarding exempted devices.

CISPR Standards Update

Many of the CISPR standards are being updated, and these updates will eventually be incorporated into EN standards. The most notable of the expected revisions to CISPR Standards include:

CISPR 11 Edition 6
CISPR 13 Amd. 1 ed. 5:2015
CISPR 15 Amd. 1:2015
CISPR 24 Amd. 1:2015
CISPR 25 Ed. 4
CISPR 32 Ed. 2/EN55032
CISPR 35

These are explained in detail at www.dlsemc.com/CISPR.

New Canada Standards RSS-247 & RSS-210 revision

On June 6, 2015 the Canada Gazette announced the publication of a new Industry Canada radio standards specification RSS-247 Issue 1. There is no transition period with the publication of this standard and therefore it became effective on the date of publication (5/28/15) on the Department's website. For devices already tested for compliance with RSS-210 and not yet certified, there are some allowances made regarding transition to the new standard. Please contact us with your questions regarding this transition and go to www.dlsemc.com/Canada for more information.

Safety/Environmental Testing Spotlight



Did you know we can help you with:

RoHS2 Evaluations – We can review documentation on all components in a product and provide a compliance report.

EN 60950-1 Evaluations – We can test and evaluate your products to the new Amendment 2 requirements which become effective July 2, 2016.

Altitude/Overpressure Testing – With our enlarged pressure chamber, we can test samples up to 2 x 3 feet in size and achieve pressures to represent altitudes between -20,000 and 70,000 feet.

Fluid/Chemical Testing – We can perform many fluid/chemical spray tests at various temperatures to determine how resistant your product is to them.

IP Testing – We are able to conduct a wide variety of Ingress Protection (IP) tests, including IPX6 and other tests from standards such as IEC/EN 60529.

Flammability – We can conduct a variety of flame tests from many different standards, including UL 94, IEC 60695 and RTCA/DO-160.

Fungus – We provide fungus resistance testing per various standards, including RTCA/DO-160.

D.L.S. is accredited by the ANSI-ASQ National Accreditation Board (ANAB), formerly known as ACLASS.

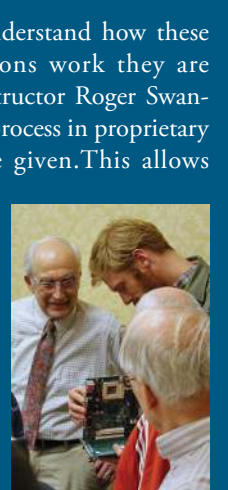
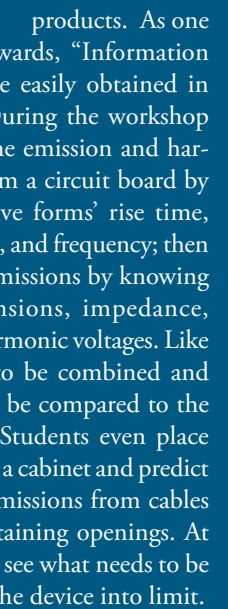
The Value of a Hands-on Workshop

One way *EMC By Your Design* differs from other seminars is that attendees spend one day experiencing a hands-on, practical application workshop where they apply the concepts just learned to actual products. As one student said afterwards, "Information like this cannot be easily obtained in any other way." During the workshop students predict the emission and harmonic content from a circuit board by looking at the wave forms' rise time, duty cycle, voltages, and frequency; then predict the trace emissions by knowing the circuit dimensions, impedance, frequencies and harmonic voltages. Like frequencies need to be combined and the results need to be compared to the regulatory limits. Students even place the circuit board in a cabinet and predict the reduction in emissions from cables and a cabinet containing openings. At this point they can see what needs to be adjusted to bring the device into limit.

Once students understand how these manual calculations work they are introduced to Instructor Roger Swanberg's automated process in proprietary software they are given. This allows them to repeat the calculations, multiple times, with different scenarios quickly and accurately. As one student commented, "The software provided is worth the price of the seminar."

After the workshop students apply what they have learned to their own product with the assistance of a senior EMC engineer. A student once said during his product review, "I would not have even understood what you are talking about had I not just taken your class. Now I see what we have been doing wrong!"

EMC By Your Design
October 6-8, 2015
Northbrook, IL



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www.dlsemc.com/EU
for latest updates

For a PDF copy of this newsletter with links, go to www.dlsemc.com/newsletter

Latest EMC Book

*Controlling Radiated Emissions by Design, 3rd Edition
contributed to and edited by Donald L. Sweeney,
including the latest digital technology, published 2014*

EMC By Your Design

An EMC Practical Applications Seminar and Workshop

using the most recent EMC Design Book
plus take home proprietary computer program,
expanded section on filter design, signal integrity,
and signal return currents on PCB's
and a free 45 min. individual product design evaluation

Tuesday, October 6 - Thursday, October 8, 2015
Hilton Hotel, Northbrook, IL



\$300 discount if you register by September 15, 2015
We are also offering a special **50% discount** on the October seminar to
attendees of previous D.L.S. seminars who used the 1st or 2nd edition.

Classes fill quickly so register early

email cgorowski@dlsemc.com or call 847-537-6400
www.dlsemc.com/1001