

March

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2010

DLS News & Views

To help keep you better informed

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REGULATORY requirements update

ITE & BUSINESS MACHINES New Safety Standard IEC/ EN/UL/CSA 60950-1

The new second edition of the safety standard for Information Technology Equipment - Safety - Part 1: General Requirements has been published and becomes effective on December 1, 2010 DoW in the U.S., Canada and Europe. This standard applies to mains and battery powered information technology equipment, including products such as computers and office copiers, along with devices for use with telecommunication networks and cable distribution systems. Since this is considered a technical revision, it replaces the existing variations of the first edition. Any new products and modified products, certified to the previous editions of this standard, will have to be evaluated to this new standard.



Input Testing per IEC/EN/UL/CSA 60950-1

The new standard contains significant changes, examples of which follow:

- Products that employ a duty cycle for normal operation now have to specify a resting time and must be tested with this new parameter in mind.
- Tables were added for capacitors that bridge insulation to clarify the requirements and show examples of applications.
- A new clause was added on surge suppressors, emphasizing requirements for voltage dependent resistors (VDR) in primary circuits.
- Overcurrent protective devices now need to be specified if they are required externally.
- Requirements were added for audio amplifiers.

- Energy hazard requirements for DC mains supplies and batteries were enhanced.
- The requirements and test procedure for the ground bond test were modified.
- New construction and performance requirements were added regarding power output limitations of data ports.
- Methods of separation for SELV and TNV circuits have been aligned.
- A new table has been added to determine the mains transient voltage using the AC r.m.s. mains supply voltage and overvoltage category for the product.
- The test procedure for wall-mounted equipment was modified.
- Clauses were added to address concerns of openings in transportable equipment.
- An alternate test procedure was added for the running overload test on DC motors in secondary circuits.
- If a product produces ozone, the manual must now make a reference to limit this exposure.

In addition to the above, definitions have been added and other tests have been clarified in this new standard. All these requirements are intended to minimize the risk of fire, electric shock and injury for the operator, layman and service person during installation, operation and maintenance. Revisions to this key compliance standard will



Humidity Testing per IEC/EN/UL/CSA 60950-1

require additional evaluations of new and modified products that fall under the scope of this
(Continued on next page lower right corner)

Environmental

Barbara Inguagiato Named Project Coordinator - Environmental Testing



Barbara Inguagiato has added Project Coordinator Environmental Testing to her portfolio of duties at D.L.S. She can provide detailed quotes for environmental

testing requirements found in standards such as RTCA DO-160 and Mil STD 810. You can contact Barbara directly at barbi@dlsemc.com with questions regarding environmental testing.

ANSI C63.10

Article Available

A round table of today's foremost EMC experts, including Bill Stumpf from D.L.S., provide a detailed review of the new C63.10 Standard for Unlicensed Wireless Devices in a recent article published in Interference Technology's 2009 EMC Test and Design Guide. This comprehensive review of the new standard by Bill and others shines a specific light on the compliance requirements addressing the increasing use of unlicensed wireless devices. To view or download a copy, go to www.dlsemc.com/1013 or email bstumpf@dlsemc.com to ask Bill a specific question regarding this new standard.

D.L.S. Adds Additional Testing Capacity

D.L.S. Electronic Systems, Inc. has continued our commitment to providing the best possible customer service by adding an additional testing chamber to our Wheeling, IL testing facility. This newest addition provides additional capacity in testing to Mil STD 461, RTCA DO-160 and other global testing requirements. D.L.S. now houses 14 EMI testing chambers, along with a full safety testing lab, and the D.L.S. consulting services group. Contact Jack Black at jblack@dlsemc.com for more information.

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regulatory requirements **UPDATE** (cont'd)

SAFETY

New Ecodesign Directive & Regulation (Energy Efficiency)

A new directive, dated October 21, 2009, was published in the Official Journal of the European Communities on October 31, 2009. This document, numbered 2009/125/EC, replaces the previous version (2005/32/EC) and provides the framework for an effort to reduce the power consumption of many products in the off/standby modes.

In addition, Commission Regulation (EC) No. 1275/2008, dated December 17, 2008, and published in the Official Journal of the European Communities on December 18, 2008, listed the products covered under the previous version of this directive. These products include household, ITE, consumer audio/video, toys and leisure/sports equipment. It also established initial compliance requirements that become effective in 2010, and more stringent requirements, which are to be met by 2011 and beyond. The above products and dates remain unchanged in the latest directive. Contact Mitch Gaudyn at mgaudyn@dlsemc.com for further details.

New Machinery Directive Reminder

As mentioned in our March 2008 newsletter, on December 29, 2009, the European Union's new version of the Machinery Directive, dated May 17, 2006, became effective. This document, numbered 2006/42/EC, was published in the Official Journal of the European Communities on June 9, 2006, and replaces the previous



Machinery Directive (98/37/EC). The new directive makes no radical changes, but seeks to clarify and improve how it is applied. Contact Jack Black

at jblack@dlsemc.com for all your machinery compliance needs.

New Machinery Standard Update EN 60204-1:2006

This is an update to an article from our March 2008 newsletter. A new version of this significant machinery safety standard has been published and became effective on June 1, 2009. The new standard is considered a "state-of-the-art" update, because it clarifies and changes the scope to include

such items as programmable electronic systems and communication networks. However, completion of the harmonized report was delayed until November 2009. Since this report has finally been published, this standard can now be formally used for evaluations. Email Mitch Gaudyn at mgaudyn@dlsemc.com for further details.



New D.L.S. Safety Manager

Mitch Gaudyn has joined D.L.S. as Manager of the Conformity Assessment Group, concentrating on Product Safety Testing and Consulting. He comes from Charles Industries and will oversee the day-to-day operations and management of the Product Safety arm within D.L.S.



D.L.S. Conformity Assessment offers testing to UL and CSA Standards for North America, along with other global standards such as IEC and EN

and other global safety programs including CE and CB. You can contact Mitch directly at mgaudyn@dlsemc.com to inquire about product safety questions.

(Continued from page 1)

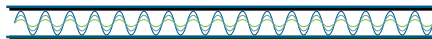
ITE & Business Machines

standard. D.L.S. can provide guidance, as well as testing to IEC/EN/UL/CSA 60950-1. Please contact D.L.S. to determine how these new safety requirements will affect the certifications on your products.

Keep your Declaration of Compliance Current

In order to market a product in the European Union (EU), a manufacturer must first evaluate their product for compliance with the Essential Requirements of the appropriate EU Directives, such as the EMC Directive, R&TTE Directive, or the Low Voltage Directive. This usually includes evaluation and testing of the product to Harmonized Standards that are current, as listed in the Official Journal of the European Union. Once the product has been evaluated, a Declaration of Conformity is written listing the applicable Directives and Standards. For products that are produced over a long period of time, the applicable standards may change and be replaced by newer editions, with the older editions ceasing to be harmonized. After this time, the product is required to be in compliance to the current "valid" edition of the harmonized standard. This will require an EMC and Safety evaluation to the current version of the published harmonized standard and may require re-testing. Only the use of current (harmonized) standards will give the manufacturer presumption of conformity. A manufacturer may decide to continue to meet the Essential Requirements of the Directive by continuing to use the older version of the standards (which have ceased to be harmonized).

This may be possible, but it must be noted that this method would not give the presumption of conformity to the Essential Requirements of the Directive. In this case, the Declaration of Conformity will need to be amended and a Technical Construction File will need to be written to explain how the product still meets the Essential Requirements of the Directive. The Technical Construction File then shall be presented to a Notified Body for an opinion as to whether the evidence provided supports compliance with the Essential Requirements of the Directive.

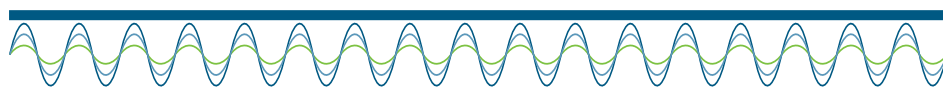


Just a reminder

VCCI compliance per VCCI V3/2009.04

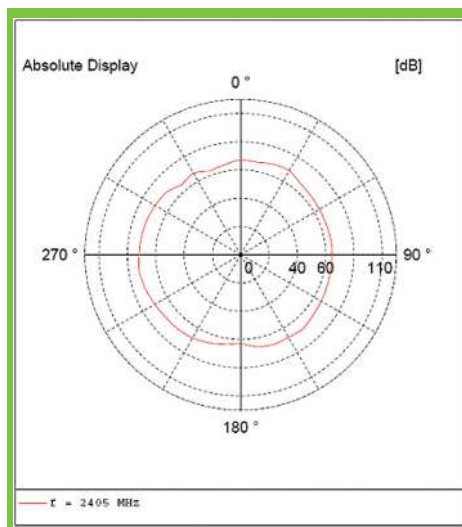
- On and after April 1, 2010 telecom port emissions will be required.
- On and after October 1, 2010 emissions above 1GHz will be required.
- Products already filed with VCCI and distributed in the market before the enforcement date will not be subject to these new requirements. It will need to be applied to new and reconfirmed VCCI applications and to products distributed after these dates.

(NOTE: We are already providing this data for our clients in their VCCI reports.)



Antenna Pattern Testing at OATS

With the proliferation of wireless communication devices in recent years, we've often been asked to perform 360-degree antenna pattern testing on various antenna designs. Previously we have performed this testing on one of our 10-meter Open Area Test Sites. Occasionally the antenna, or device under test, operated at a frequency where ambient signals were present, thereby making the testing more difficult. We've since developed software that allows the same testing to be performed in our 3-meter semi-anechoic chamber. Using the chamber allows us to measure the antenna pattern in an environment free from background RF signals, and can be done with rotational increments as small as 1-degree. Polar 360-degree azimuth plots and tabular data are provided. Antenna pattern measurements can be performed for antennas in the frequency range up to 40 GHz.



Example of polar plot

Don's Reflections On Teaching EMC



I am thinking back more than 30 years to when I attended my first class on EMC, presented by Don White Consultants in 1979. I was so excited with the new knowledge I had acquired, I shared it with my fellow engineers. This was probably the first class I taught.

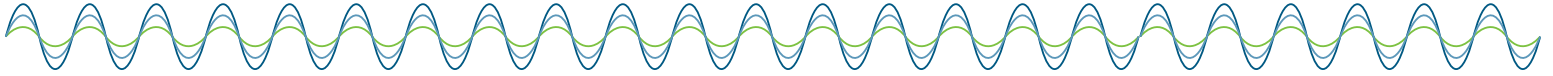
In 1983, when we began D.L.S., I was often asked to present material to various clients who wanted a better understanding of their EMC problems. Each presentation added more to my material. In 1986, I was asked by the University of Wisconsin (U of W) to put together a night school class on EMC. I first chose Henry Ott's book, plus my own material, to teach a series of four-hour lectures every other week for 10 weeks. This first class was very successful; we had 65 students enrolled with an average attendance of 63, with students arriving after working an eight-hour day at their respective companies. Several drove 180 miles for each lecture in order to learn about EMC. Later the U of W invited me to put together a seminar series. It was again based on Ott's book and my growing material. I was invited to present it at a large company on Friday afternoons, once a month. After I had presented all the material I had prepared, they wanted more. I chose Michel Mardiguian's book, *Controlling Radiated Emissions by Design*, and soon became the largest purchaser of that book. Later when Michel came out with a 2nd edition, my assistant Maxine and I chose to edit the book for the publisher.

Next we added product reviews where we discuss a company-related product, one-on-one. After having already covered EMC basics, the student better understands the comments being made to improve their product. One student stated during his product review, "I wouldn't have understood what you were even talking about during this review, had I not just completed these lectures. This has been so helpful."

Today we use two textbooks: Michel's and Bruce Archambeault's book on PCB design. Bruce's book helps develop signal integrity. We complete the class with a hands-on workshop where we use computer programs that Roger Swanberg (co-instructor) has developed based on the equations in the books and the EMC theory we have just learned.

After more than thirty years, it is still fun and exciting teaching EMC design. Join us in April for the next scheduled class and product reviews.

Don
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President



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Regulatory Requirements Update

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Learn to control signal return currents on PCB's

and how EMC and signal integrity are interrelated

using *textbook* by Dr. Bruce Archambeault of IBM

"*PCB Design for Real-World EMI Control*"

See videos showing simulation of current flowing on PCB's



Now part of Don Sweeney and Roger Swanberg's
EMC by Your Design
An EMC Practical Applications Seminar and Workshop

with a free 45 min. individual product design evaluation,
take home proprietary computer program,
and a second textbook at no extra charge
in addition to Michel Madiguian's *Controlling Radiated Emissions by Design*



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