More Wireless and OATS Capabilities

Wireless Device Testing
With today’s lower cost transmitter technology, wireless transceivers offer solutions to a wide variety of communication needs and are being incorporated into more products. These devices need to meet EMC regulations and most often need to be certified or approved before they can be marketed. In addition to testing of digital devices, our lab located at Genoa City, WI has over 25 years experience testing and certifying a wide range of wireless devices for compliance to FCC, Industry Canada, European Union, and Japan requirements, among others. We specialize in compliance of un-licensed low power wireless products and RF modules, including Bluetooth, Zigbee, Wireless LAN, Ultra Wide-band, RFID, and momentary operation transmitters. With our knowledge and unequaled support from start to finish, we make gaining certification of your wireless device a quick, painless process. Additional wireless device testing competencies include, but are not limited to, antenna patterning, frequency stability over extreme temperatures, and consulting for regulatory compliance of your products. Using state of the art test equipment and qualified, knowledgeable staff, compliance testing can be accomplished for a wide range of standards and at frequencies up to 40GHz.

Requirements for Radiated Emissions testing at frequencies higher than 1GHz
For many years the FCC has required testing of Part 15 digital devices for radiated emissions to frequencies above 1GHz. Many countries are following the FCC’s path and have updated their regulations for Information Technology equipment to include this testing. As of October 1, 2011, the European Union (EN 55022), Australia (AS/NZS CISPR 22), and Japan (VCCI TS V-3/2010.04) all require testing for radiated emissions above 1GHz. Beginning January 1, 2012, Korea (KN22) also requires this testing.

IEC 60601-1 Third Edition Medical Manufacturers Update
The third edition of IEC 60601-1 as compared to the second edition presents a monumental change in approach to testing of medical devices. This standard places a lot of attention on the risk management – ISO 14971 and essential performance of the equipment. Because of the lack of uniformity between European Union, USA and Canada at this time, both standards are still used today. For the medical device manufacturers, it is often hard to decide which version of the standard is the one they should use. Most of the people in the industry are opting for both versions of IEC 60601-1 to satisfy the requirements.

An in-depth article describing the details of these changes, written by Mitch Gaudyn, Manager of D.L.S.’s product safety division, was published in Medical Design Magazine Jan/Feb 2012 issue and can be accessed at http://medicaldesign.com/testing/third-edition-iec-60601-1-1/.
Wireless and Oats (continued)

Other countries that have already implemented this requirement include India, China, Taiwan, and South Africa. The highest frequency that must be tested is conditional based on the highest clock/timing signals of the device under test. The conditional requirements provided here are taken directly from EN 55022 – “If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz. If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz. If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 6 GHz, whichever is less.” In order to make these measurements the test site must meet the Site Validation / Site VSWR requirements of CISPR 16-1-4. To simulate a free-space environment, the CISPR 16-1-4 test site for testing above 1 GHz specifies RF-absorbing material covering the ground plane and very low reflections from around the device under test. All of our test sites meet this stringent requirement and are accredited for final compliance measurements up to 40GHz.

Wireless certification for Japan

The Agreement on Mutual Recognition of Conformity Assessment Procedures between the United States and Japan (US-Japan MRA) is now being fully implemented by both economies. The MRA provides for the mutual recognition of qualified Conformity Assessment Bodies (CAB’s) and mutual acceptance of the results of equipment certification undertaken by recognized CAB’s. What this means is that now you can have your low power wireless device (transceiver) tested and certified for the Japanese market at D.L.S. Electronic Systems. We can provide this service for you at a very competitive cost and short time from testing to certification. Examples of wireless devices that can be certified for marketing in Japan include Wireless LAN, Bluetooth, Zigbee, RFID, and Ultra Wide Band. Japan does have a “Host Independent” certification procedure similar to the FCC’s “Modular Approval”. In addition, as a VCCI approved laboratory D.L.S. can provide testing of Information Technology products for VCCI approval. Contact us for more information.

FCC TV White Space

In 2008 the FCC approved rules that would allow the operation of fixed or personal/portable unlicensed radio transmitters in the broadcast television spectrum at locations where that spectrum is not being used by licensed service. The FCC’s goal was to make available a significant frequency spectrum for new products.
Why I feel so lucky and proud!

By Donald L. Sweeney

I have owned an EMC/EMI testing laboratory for over 28 years. We have grown from one paid employee (not me) to 39 employees today and from one open field site (with no weather protection) and a single shield room to 2 all-weather Open Area Test Sites, 10 anechoic lined chambers, a reverberation chamber, and high level HIRF capabilities, plus several other test rooms and test locations.

I am always receiving compliments about our lab, its employees and their testing knowledge and ability. Over the years, several incidents stand out that tell me we are doing it right!

I had a witness come to D.L.S. to review testing. I had known the individual for a number of years and offered to show him around our lab. He said, “When you have seen one EMI lab you have seen them all.” It just so happened one of our clients heard the conversation and corrected the witness. He said, “Let me tell you there are EMI labs, and there are EMI LABS, this…. This is an EMI LAB!

A couple of other incidents stand out, describing how nothing is impossible to our staff. We had a client with a product that was going to generate 1,000,000 BTUs of heat. That much heat confined in the large test chamber would have made working conditions intolerable. We had two large ventilation fans (1-18K and 1-20K cubic feet a minute) which we use to remove heat normally. Neither could have handled the heat load by itself. The staff, without the slightest hesitation, decided to put the two systems in parallel. Testing was done during the summer; the working environment was not affected one bit.

Another example is a number of years ago, we were contacted by a client who needed 120 days of testing completed in 30 days. How do you do that? Well the staff broke the system into 2 interconnected systems, locating each in one of two of our large chambers. They simply ran 2 shifts a day, 7 days a week for 30 days. On the 31st day, after testing was completed, the client shipped the product!
NEW Regulatory Updates

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

In response to your many requests

New 3-Day Format
Keeping the same important concepts and material presented in a more condensed format

EMC By Your Design

An EMC Practical Applications Seminar and Workshop with a free 45 min. individual product design evaluation on April 20, 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 17 - Thursday, April 19, 2012
Hilton Hotel, Northbrook, IL

We are offering a special
$300 discount if you register by March 27, 2012

Classes fill quickly so register early
email cgorowski@dlsemc.com or call 847-537-6400
www.dlsemc.com/1001
Don’t forget to schedule your free product review when you register.