FCC Grants ODIN Experimental License

The firm says permission to use the 866-956 MHz band enables it to offer UHF RFID system testing and design services to customers with operations both inside and outside the United States.

By Mary Catherine O'Connor

Nov. 17, 2005—The Federal Communications Commission (FCC) has granted ODIN Technologies an experimental license to test RFID equipment using frequencies restricted in the United States but permitted elsewhere in the world. Located in Dulles, Va., the systems integrator provides RFID and product performance testing services.

Without special permission from the FCC, U.S. companies can utilize ultra-high frequency (UHF) tags operating only between 902 and 928 MHz. In Europe, UHF tags and readers must operate between 865.6 MHz and 867.6 MHz, while Japan's regulations mandate the use of frequencies above 950 MHZ. In May, India announced it had licensed 865 MHz-867 MHz for UHF RFID (see India Adopts 865-867 MHz for RFID). Japan cleared 950 to 956 MHz in April, and Singapore set aside 866 to 869 MHz in November. The Australian Communications and Media Authority (ACMA) has designated the 920-926 MHz segment for UHF RFID readers (interrogators) transmitting up to 4 watts of radiated power (see Australia's UHF Readers Get a Boost).

ODIN, however, says the FCC is allowing its Dulles laboratory to test equipment transmitting at frequencies ranging from 866 MHz up to 956 MHz at up to 8 watts of power. Bret Kinsella, vice president of operations and marketing, claims this will benefit ODIN's multinational clients because it enables the company's lab to provide testing services for UHF tags and readers for operation in all countries in which they will be deployed. ODIN believes this will give it a competitive advantage over other firms offering testing services to RFID users in the United States that cannot test UHF equipment for operation in other regulatory environments without physically being there.

In the United States, the FCC normally restricts the maximum power of unlicensed frequencies, such as the HF (13.56 MHz) and UHF (902-928 MHz) ISM bands used by many RFID systems, to 1 watt per channel. While no countries allow actual RFID systems to operate at 8 watts, Kinsella says the wider power-use margin will give ODIN more visibility into how specific RFID equipment functions. "Having this high power level enables a better use-case design process. If a use case works at high power and not at low power, we can conclude that power is a contributing issue. If a use case still does not work at high power, some other parameter is likely at fault," he says.

According to Kinsella, the experimental license also gives ODIN more flexibility when using test equipment to prototype specific RFID scenarios for operation within the United States, but outside the 902 MHz to 928 MHz range. Occasionally, he says, a company might identify a specific frequency outside this band and make a special request to the FCC for permission to use it only with a specific location. "Many of these special permissions are granted each year by the FCC for specific commercial applications," he says.

ODIN could, therefore, use its new license to help companies test tags and interrogators for these types of

specific use cases. Such cases, he says, are generally used for asset tracking in a closed-loop system, rather than for moving products through the supply chain.

ODIN is not the only U.S. company to receive experimental licenses. U.S. manufacturers of RFID equipment designed to operate in Europe or Asia also obtain them to test their equipment outside the 902 MHz to 928 MHz range. Still, Kinsella says he knows of no other RFID testing facility that has been granted one, including MET Laboratories, which certifies EPC Gen 2 UHF tags and readers for EPCglobal.

Instead, MET Labs places RF shields around equipment to perform tests to certify that it can operate within European and Asian regulatory environments. Rather than simply test the performance of tags and readers in a shielded environment, however, ODIN runs RFID systems through simulated real-world business processes in which shielding all of the RFID equipment would not be feasible.