Tektronix Real-Time Spectrum Analyzer Employed in RFID Roll-Out

Tektronix RSA6114A Used to Prepare for Japan Deployment of UHF-band RFID Tags

PRNewswire-FirstCall
BEAVERTON, Ore.

Tektronix, Inc. , a leading worldwide provider of test, measurement and monitoring instrumentation, announced that the company's RSA6114A Real-time Spectrum Analyzer has been successfully deployed in testing UHF-band tags contracted by the Japan Ministry of Economy, Trade, and Industry (METI). The objectives for this testing have been to resolve real world technical issues and to construct a sophisticated operating model, as well as the formulation of necessary guidelines and rules in relation to usage in preparation for the full-scale dissemination of UHF-band RFID tags. Live RF spectrum displays on the RSA6114A enables researchers to observe success or failure in obtaining RFID channels.

There are a variety of different frequencies and modulation methods used in digital RF applications such as RFID, and each of these requires a specific type of measurement technology. For situations where signals can change instantaneously, such as pulsed RF signals or carrier frequency in a frequency hopping systems, accurate meaningful measurements using conventional swept spectrum analyzer are difficult.

Testing of electronic tags was also carried out by Japan Automatic Identification Systems Association (JAISA) in 2006, and at that time situations were discovered in which readings were not effectively conducted due to two technical issues. In the first case "tag confusion" occurred, with mutual interference causing defective signal transmission when using a UHF-band electronic tag system in a multi-vendor environment where space was limited, such as in a warehouse or a distribution facility. In the second case, there were issues relating to maintaining effectiveness when reading electronic tags in real-time, such as on high-speed conveyors, which were caused by a reader not operating correctly when another reader nearby used the same channel. The RSA6114A was deployed for the recent testing to resolve these issues and with these environments in mind.

"After the original testing at JAISA we found that the Tektronix RSA6114A Real-Time Spectrum Analyzer is an extremely effective measuring device, as it enables direct visual confirmation of the for UHF-band RFID in real-time," said Hiroshi Nakahata, RFID Staff, R&D Center, JAISA. "Analysis of communication conditions had been impossible with conventional spectrum analyzers where data is not viewable on a timeline, because the data that is transmitted between the reader/writer and card cannot be identified. This problem has been solved with the Tektronix Real-Time Spectrum Analyzer."

Utilization of a high-performance real-time spectrum analyzer with a broad dynamic range was required for this testing, and the Tektronix RSA6114A Real-time Spectrum Analyzer has played a major role in the successful execution of this task. In terms of experiments carried out for the purpose of avoiding tag confusion, high-power transmission signals from reader devices and weak response signals from electronic tags were measured, and existence of the occurrence of tag confusion was observed. For determining real-time effectiveness, the Live RF spectrum display enabled by the DPX™ waveform image processor allowed real-time confirmation of all-channel read/write and tag behavior. Success or failure in obtaining channels was observed using Live RF to display channel acquisition status in real-time.

METI will continue to carry out testing for the spread of UHF-band electronic tags in the future, and is planning to make it compatible with the active tag system currently under consideration. Details concerning the methods used for and results of this testing are clarified in a report titled, "Research into ascertaining mutual interference and operation of UHF-band electronic tag systems," from Mizuho Information &

Research Institute, Inc., a contractor for METI. The research report is published on the METI website: http://www.meti.go.jp/policy/it_policy/tag/2006_UHF_research_1.pdf.

More information about the Tektronix Real-Time Spectrum Analyzers can be found at: http://www.tek.com/products/spectrum_analyzers/.

About the RSA6100A Series

The RSA6100A Series Real-time Spectrum Analyzer brings together excellent real-time performance, acquisition bandwidth, and dynamic range in response to varied and cutting-edge digital RF application needs. In addition, the RSA6100A enables display of enormous amounts of live RF spectrum data in real-time via its DPX trace image processing technology, making possible observations that formerly could not be made, such as observations of RF signal behavior and abnormal signals. The spectrum display can show live displays by raising the rate of measurement, and its speed of measurement can reach approximately 1000 times the speed of fast sweep spectrum analyzers and vector signal analyzers (VSA). As this innovative live RF spectrum display enables easily comprehensible observations with colored display of RF signals that change with time, it is possible to confirm design reliability, and it is also possible to promptly display problems when a failure occurs.

About Tektronix

Tektronix is a leading supplier of test, measurement, and monitoring products, solutions and services for the communications, computer, and semiconductor industries -- as well as military/aerospace, consumer electronics, education and a broad range of other industries worldwide. With 60 years of experience, Tektronix enables its customers to design, build, deploy, and manage next-generation global communications networks, advanced and pervasive technologies. Headquartered in Beaverton, Oregon, Tektronix has operations in 19 countries worldwide. Tektronix' Web address is http://www.tektronix.com/.

First Call Analyst:
FCMN Contact:

SOURCE: Tektronix, Inc.

CONTACT: Gary Grossman, Worldwide Sr. PR Manager of Tektronix, Inc.,
+1-503-627-1097, gary.grossman@tektronix.com

Web site: http://www.tektronix.com/
