Aeroflex Demonstrates Support for P25 TDMA on the 3900 Series Digital Radio Test Set

LAS VEGAS—International Wireless Communications Expo (IWCE 2011) -- Aeroflex Inc. announced today that it has successfully demonstrated the decoding and encoding of the Project 25 TDMA H-DQPSK (Harmonized Differential Quadrature Phase Shift Keying) radio signal using the 3900 Series Digital Radio Test Set.

The demonstration consisted of verifying the downlink capability. Motorola Solutions GTR 8000 Base Station transmitted the P25 TDMA signal which was successfully decoded by the Aeroflex 3900 Series Digital Radio Test Set. Then the Aeroflex 3900 Series Digital Radio Test Set was set up to transmit the P25 TDMA signal, and it was successfully decoded by a Motorola APX™ 7000 portable radio.

The Aeroflex 3900 Series Digital Radio Test Set now provides the ability to verify and maintain P25-compliant TDMA operation for base radios and subscribers. This is a significant milestone for the P25 Industry as manufacturers work to implement the P25 TDMA Standard features into their respective products.

The P25 TDMA base station test function incorporates modulation fidelity testing of the base stations H-DQPSK modulation. The transmitter test parameters include meters for symbol deviation, frequency error, modulation fidelity and symbol clock error. Also included is a measurement of carrier feed-through and the transmit bit error rate. There are also several graphical displays that provide a visual representation of the modulation fidelity and IQ parameters of the received signal. These graphical displays consist of a symbol deviation distribution display, an eye diagram and a constellation diagram. There is also a graphical display of I versus Q. All of these meters and graphs provide the user with a complete picture of the performance of the base station’s transmitter.

In addition, the 3920 allows for generation of the H-DQPSK modulation for bit error rate testing of the subscriber radio receiver. For this type of receiver testing, the 3920 can transmit all of the standard patterns required by TIA-102.CCAA, including the Outbound 1031 Tone Test Pattern, Outbound Silence Test Pattern and the Outbound Calibration Test Pattern, Inbound Symmetrical Time Slot Test Pattern and the Inbound Low and High Deviation Test Pattern.

Currently, Aeroflex is developing additional testing features that are similar to the base repeater test option, but measure parameters of the H-CPM modulation type generated by TDMA subscriber units. Planned capabilities will include transmitter test parameters including modulation fidelity testing of the H-CPM modulation, as well as generation of the H-CPM TDMA modulation for bit error testing of the base repeater's receivers. The transmitter test parameters will also include symbol deviation, frequency error and symbol clock error. The bit error rate of the transmitter can also be measured when the mobile station transmits one of the standard patterns.

For base repeater receiver testing, the 3920 will transmit all of the standard patterns required by TIA-102.CCAA, including the Inbound 1031 Tone Test Pattern, Inbound Silence Test Pattern, Inbound Calibration Test Pattern, Inbound Symmetrical Time Slot Test Pattern and the Inbound Low and High Deviation Test Pattern. Also included in this option are several graphical displays that show a picture of the modulation fidelity of the H-CPM modulation. The graphical displays are symbol deviation distribution display, an eye diagram and a constellation diagram. The combination of meters and graphs that are included with this option provide the user with a complete representation of the performance of the mobile station's transmitter and receiver. The 3920 is the latest in next generation portable test equipment for advanced professional analog and digital radio communications. Building upon a long-standing reputation for excellence in professional radio communication tests, the 3920 from Aeroflex sets a new benchmark for quality, ease of use, performance and value. It supports a wide variety of Motorola technologies including SmartNet™/SmartZone™, P25, HPD® and MOTOTRBO™ test capabilities. Designed as a software-defined radio test solution, the 3920 is the worldwide industry standard for testing digital radio technologies.