X-COM Systems Enhances Spectro-X RF Signal Analysis Software

X-COM Systems introduced Version 3.0 of its Spectro-X software, the industry's most comprehensive tool designed to search for signals of interest within long-duration recordings of signal activity in the RF and microwave spectrum. The new features in Spectro-X Version 3.0 include a "zoom" function that lets users more easily focus on a specific point in time and frequency, and integrated pulse search and analysis capability that allows long pulse trains to be identified based on key signal characteristics. These enhancements complement the software's existing carrier, wireless standard and arbitrary waveform search capabilities. X-COM has also made numerous enhancements to the software's user interface and has automated key functions to speed post-processing of large data sets.

Spectro-X software is designed exclusively for finding and analyzing signals of interest within recordings of signal activity captured "over the air" using signal analyzers and X-COM's IQC-2110 with bandwidths up to 110 MHz, by X-COM's Wideband Acquisition Record and Playback (WARP) system over bandwidths as wide as 6 GHz, or in custom spectrum files created in MATLAB or other third party software. It is particularly well suited for performing these tasks on signal capture files of long duration that can be up to several days in length, a process that without Spectro-X would be extraordinarily difficult and time-consuming.

Using its four discrete search engines, Spectro-X lets the user "home in" to specific regions of these files in frequency, time, or both to find either standards-based signals (such as GSM, Bluetooth, WiFi, etc.) or arbitrary waveforms. The results in both frequency and time are graphically displayed simultaneously, eliminating the need to switch between domains. Tools within Spectro-X can then be used to further narrow the region of interest. The new zoom-box function lets the user focus on a specific point to find signals that, for example, are hidden beneath a legitimate signal. The portion of the file selected by the zoom function can be exported in a file format usable by vector signal analysis software for detailed analysis of the suspect signal's characteristics.

The new pulse search function in Spectro-X Version X offers significant benefits for users working with pulsed signals. It allows pulse trains of any length to be searched and signals identified based on user-defined parameters such as rise and fall times, pulse width, pulse repetition interval, peak and average power, and carrier frequency. The pulse search function can be set to exclude "rogue" pulses or include synchronizing signals. Another feature new to this version allows many of the capabilities within Spectro-X to be automated when post-processing very large data sets, significantly reducing execution time.

The long-duration analysis capabilities of Spectro-X are highly valuable for use in

both commercial and defense applications. In electronic warfare (EW), Spectro-X provides a fast, accurate way to find and identify threats from recordings made in the battlefield and analyzed on-site in near real time or later in the lab. The software is also widely used for verification testing of radar, EW, ECM, and all types of wireless systems to determine how they perform when subjected to actual signal conditions and for evaluating their performance over time.

Spectro-X is also a highly effective tool for spectrum managers who must monitor activity within broad swaths of the electromagnetic spectrum to find interferers that can degrade system performance. Spectro-X is complemented by X-COM's RF Editor software that allows the user to edit the data or create and insert new spectra and waveforms and functions much like professional video editing software. It allows any waveform or slice of spectrum to be moved anywhere among 10 tracks in the recording, creating a new recording designed to accomplish specific goals.

X-COM's Spectro-X software is available now. A free 30-day trial version, a self-guided demo, and other technical resources can be accessed at X-COM's Web site, www.xcomsystems.com [1].

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