TEST EQUIPMENT PLUS **toll free (800) 260-TEST**
Phone (360) 263-5006, Fax (360) 263-5007 sales@testequipmentplus.com
35707 NE 86th Ave, La Center, WA 98629, **USA** www.testequipmentplus.com

23 February 2013

Signal Hound BB60A

Real-Time Spectrum Analyzer/RF Recorder

The BB60A is a real-time high speed spectrum analyzer and an RF recorder. It has 20MHz of real-time bandwidth, tunes from 9kHz to 6.0GHz, collects 80MSamples/second, and streams data to your computer via USB3.0 at 140MB/S (requires a minimum of an Intel i7-2600 with a video card or, for the laptop version, an i7-3612QM quad-core processor, and the Windows 7 or 8 operating system. Intel third generation i7 (Ivy Bridge) processors, such as the i7-3770K or the i7-3612QM, don't need a video card to properly run the BB60A because their HD4000 integrated graphics are adequate.

A special hard drive is not needed when the BB60A is used only as a spectrum analyzer and does not record the data stream to a mass storage drive. A hard drive with a sustained write speed of 250MB/second, or more, is required to be able to record full bandwidth RF data to the computer.

The minimum recommended laptop computer processor is the Intel third generation (Ivy Bridge) i7-3612QM quad-core. If RF recording software is used then the minimum recommended laptop computer data storage is a 512GB SSD that can sustain sequential write speeds of 250MB/second or higher. This will provide about 40 minutes of recording capacity and still leave room on the hard drive for the operating system and associated tasks.

A 1-PPS input port is provided so that a GPS 1-PPS synchronizing signal can be used to time stamp the BB60A streaming data. A general purpose trigger-in/trigger-out is also provided. Sweeping is as fast as 24GHz/second with SW spur-reject off, or 12GHz/second with SW spur-reject on.

As an example, the BB60A can continuously and simultaneously record the entire FM radio station band from 88MHz to 108MHz, or any other 20MHz band. Open source code FM recording demo software is included, which allows the user to record and playback the whole FM radio band, listening to audio from any of the FM radio stations selected from the spectrum analyzer display. This is possible because all of the FM radio stations were recorded simultaneously. It will clearly illustrate the power of the BB60A. A hard drive with a sustained write speed of 250MB/second, or more, as described above, is needed to run the demo and also a FM antenna. The BB60A hardware is not needed to run the 3-DVD demo. The demo software is open-source so it can be used as sample code.

The BB60A is powered by a USB3.0 Y-cable, which requires two adjacent USB3.0 ports on your computer. It is the same size as the SA44B and SA124A/B spectrum analyzers.

Advanced graphics are standard with the BB60A. A 2-D color spectrogram (waterfall) can be selected as a split-screen view or a 3-D color spectrogram (topographical view) with the added feature of user selectable perspective angels. The user sets a preference for 2-D, 3-D, or no spectrogram. Color persistence is another user selectable display function. Normally undetectable events are easily seen in this mode. Turn on color persistence to see what you've been missing.

The BB60A spectrum analyzer sweeps 80 times faster than the original USB-SA44B. Record RF signals up to 6GHz, having a bandwidth of 20MHz or less, for post-processing with Matlab® software from The MathWorks Inc. Data streaming can be GPS time and location stamped. The file format structure for streaming data is provided in documentation. The GUI (Graphic User Interface) is open-source, exposing instrument functions and techniques so users have a convenient starting point to code new functions such as automated testing and/or data collection.

Signal Hound will support your custom software development by providing the needed API (Application Programming Interface) functions. If you have the resources to write a demodulation algorithm then you will be able to demodulate anything recorded within a 20MHz real-time bandwidth. Data collection can be accomplished remotely through writing your own custom software that makes function calls to the BB60A's API. Drive Test solutions can be written for testing and/or mapping cellular tower performance. Programmers familiar with Standard Commands for Programmable Instruments (SCPI) will find working with the BB60A API to be intuitive. EMC test software will be available for the BB60A by the summer of 2013.

The BB60A is priced at $2,479 USD in single quantity, which is about a tenth the cost of comparable spectrum analyzer technologies. Pricing outside the USA will vary. The BB60A is expected to be a disruptive technology, for those applications requiring broadband real-time data streaming, in that there has never been this much capability for this low of a price available anywhere. Governments, their supporting contractors, test and measurement, as well as telecommunications industries, will be delighted with the price of the BB60A spectrum analyzer. Instantly there is a whole new world of possibilities when customers write their own application software. The motivation to write custom software is created from the high performance/low cost BB60A hardware. Now a customer can create an infrastructure of 10 broadband real-time data streaming systems for the same cost that other companies are being charged for a single system. Even if you use the BB60A as just a spectrum analyzer, there is nothing that we have been able to find, as of 23 February 2013, with this high of a price-to-performance ratio.

Test Equipment Plus Inc.
Bruce Devine, CEO