

# USB-SA124B Spectrum Analyzer and Measuring Receiver

100 kHz to 12.4 GHz



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The perfect tool for general field and lab use, electrical engineering students, ham radio enthusiasts, and electronic hobbyists alike

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Write automated testing and/or data collection applications with included API that is Windows®-based and Matlab®/LabVIEW® compatible

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Use as a down-converter with a 63 MHz IF Output and a 6 MHz Resolution Bandwidth

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Use over the entire 0°C to +50°C Operating Temperature Range with full accuracy

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Now with real-time mode for spans of 250 kHz or less

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# USB-SA124B Spectrum Analyzer and Measuring Receiver

6 March 2015

## FREQUENCY

- Frequency Range: 100 kHz to 12.4 GHz
- Timebase: 10 MHz reference in and out
- Internal Frequency Reference Accuracy:  $\pm 1$  ppm (standard);  $1 \times 10^{-7}$  (option-02)
- Resolution Bandwidth: 1 Hz to 250 kHz and 6 MHz

## AMPLITUDE (RBW $\leq 100$ KHZ)

- Range: +10 dBm to Displayed Average Noise Level (DANL)
- Absolute Accuracy (0dB to DANL):  
 $\pm 1.5$  dB (100 kHz to 6 GHz)  
 $\pm 2.5$  dB (6 GHz to 12.4 GHz)

## DISPLAYED AVERAGE NOISE LEVEL (DBM/HZ)

|                      |          |
|----------------------|----------|
| 100 kHz to 10 MHz    | -147 dBm |
| 10 MHz to 100 MHz    | -151 dBm |
| 100 MHz to 3.0 GHz   | -152 dBm |
| 3.0 GHz to 5.5 GHz   | -145 dBm |
| 5.5 GHz to 7.0 GHz   | -149 dBm |
| 7.0 GHz to 8.0 GHz   | -147 dBm |
| 8.0 GHz to 11.0 GHz  | -134 dBm |
| 11.0 GHz to 12.4 GHz | -129 dBm |

## RESIDUAL RESPONSES (RBW = 6.5KHZ)

|                      |          |
|----------------------|----------|
| 100 kHz to 10 MHz    | -100 dBm |
| 10 MHz to 8.0 GHz    | -93 dBm  |
| 8.0 GHz to 11.0 GHz  | -82 dBm  |
| 11.0 GHz to 12.4 GHz | -85 dBm  |

## SSB PHASE NOISE AT 10 GHZ (TYPICAL)

| Frequency Offset | dBc/Hz |
|------------------|--------|
| 100 Hz           | -72    |
| 1 kHz            | -80    |
| 10 kHz           | -87    |
| 100 kHz          | -87    |
| 1 MHz            | -110   |

## IF OUTPUT

- 63 MHz with 6 MHz bandwidth for down conversion of NTSC, PAL, SECAM, ATSC, and DTV formatted signals

**CALIBRATION INTERVAL** 1-year



## MEASURING RECEIVER (TYPICAL AFTER 30 MIN WARM-UP AND $\pm 3^{\circ}\text{C}$ OF REF. START TEMP.)

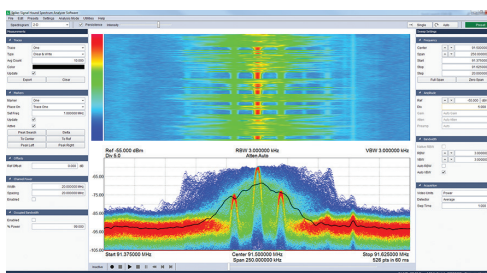
- Operating Frequency: 100 kHz to 12.4 GHz
- Modulation Measurement Accuracy:  $\pm 1\%$  for AM & FM
- Synchronous Level Detector  
 $\pm 0.25$  dBc (0 dBm to -127 dBm, 100 kHz to 1.0 GHz)  
 $\pm 0.25$  dBc (0 dBm to -117 dBm, 1.0 GHz to 6.0 GHz)  
 $\pm 0.25$  dBc (0 dBm to -102 dBm, 6.0 GHz to 12.4 GHz)

## SPIKE™ SOFTWARE

Signal Hound's Spike™ software allows the SA124B to function as a real-time spectrum analyzer (RTSA), using its real-time mode, for sweeps of 250 kHz and less—that means every RF event will be captured when using spans that are  $\leq 250$  kHz. Graphics include color persistence and a 2D waterfall display.

## OPERATING TEMPERATURE

- $0^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  with full accuracy



## SYSTEM REQUIREMENTS

Signal Hound's Spike™ software is compatible with Windows® 7 or Windows® 8 operating systems. You must have at least 200MB of free disc space, 4GB of RAM, two adjacent USB 2.0 ports, and a minimum of an Intel® Atom™ N2600 or Intel® Core™ i3 processor.