



17 April 2015

BB60C Data Sheet

Real-Time Spectrum Analyzer/RF Recorder

The BB60C is a high speed spectrum analyzer and a real-time RF recorder. It tunes from 9kHz to 6GHz, collects 80MSamples/second, streams digitized IF data to your computer, via USB3.0 at 140MB/sec., where the IF data is converted to a calibrated I/Q data format. It also comes with a compiled API and an open source spectrum analyzer application, has selectable color persistence display mode, 2-D color waterfall, and color 3-D spectrogram views.

The BB60C spectrum analyzer is Signal Hound’s latest innovation, an enhanced version of its well-received predecessor, the BB60A. The Signal Hound BB60C has improved SFDR by typically 20dB, flattened the noise floor by reducing frequency band transitions more than 8dB, extended the operating temperature down to -40°C and up to +65°C, and expanded the streaming I/Q bandwidth to make it selectable from 250kHz to 27MHz. With a price point under \$3K, the BB60C is a compelling choice for a broad range of applications.

The following production specifications are based on being in the Preset condition, using internal timebase, video processing set for average and power, plus VBW, sweep, gain, and attenuation in the default auto mode.

Frequency Range: 9kHz to 6GHz

Streaming Digitized I/Q: 250kHz to 27MHz of selectable IF bandwidth that is amplitude corrected

Resolution Bandwidths (RBW): 10Hz to 10MHz

Internal Timebase Accuracy: ±1 ppm per year

Sweep Speed (RBW ≥10kHz): 24GHz/sec

Amplitude (RBW ≤100kHz)

Range: +10dBm to Displayed Average Noise Level (DANL)

Absolute Accuracy: ±2.0dB (arbitrary & non-native RBW’s)

+2.0dB/-2.6dB (native RBW’s – faster DSP)

RF Input VSWR at tuned frequency: ≤ 3.0:1 (<10dB attenuation)

≤ 1.5:1 (≥10dB attenuation)

LO Leakage at RF Input: -80dBm

***Displayed Average Noise Level (DANL)**

Input Frequency Range	dBm/Hz
9kHz to 500kHz	-140
500kHz to 10MHz	-154
10MHz to 6GHz	-158 + 1.1 dB/GHz

***Residual Responses:** Ref Level ≤ -50dBm, 0dB Attenuation

Input Frequency Range	Residual Level	Applicable serial prefix
500kHz to 6GHz	-106dBm	4119, 4150, 4226, 4296
500kHz to 6GHz	-103dBm	5047 and higher

***Spurious Mixer Responses:** -50dBc

(any ref level from +10dBm to -50dBm, in 5dB increments, input signal 10dB below ref level, and ≤30kHz RBW)



*SSB Phase Noise at 1GHz Center Frequency	
Offset Frequency	dBc/Hz
100Hz	-70
1 kHz	-76
10kHz	-83
100kHz	-93
1 MHz	-117

Recommended Computer

Windows® 7 or 8 operating system, 8 GB of RAM, Intel i7, 3rd generation (Ivy Bridge) or later with a quad core processor, one USB 3.0 port, and one adjacent USB 2.0 or USB 3.0 port.

Note: RF recording using streaming I/Q bandwidths > 8 MHz requires the computer’s mass storage drive to have at least 250MB/sec of sustained write speed such as an SSD, RAID-0, or RAID-5.

Synchronization (≤ 20MHz IBW)

1 PPS GPS input port enables ± 50ns time-stamping

Operating Temperature: 32°F to 149°F (0°C to +65°C) Standard;
-40°F to 149°F (-40°C to +65°C) for Option-1

Weight

Net, 1.10 lbs. (0.50 kg)

Size

8.63" x 3.19" x 1.19" (219mm x 81mm x 30mm)

Power: one USB 3.0 port and one adjacent USB 2.0 or USB 3.0 port

Control and Communication: USB 3.0 serial bus

*Guaranteed DANL, Residual Responses, Spurious Mixer Responses, and Phase Noise specifications apply only at 20°C to 25°C. Typical performance, of these characteristics over the analyzer’s entire operating temperature range, is published as graphs in the User’s Manual.