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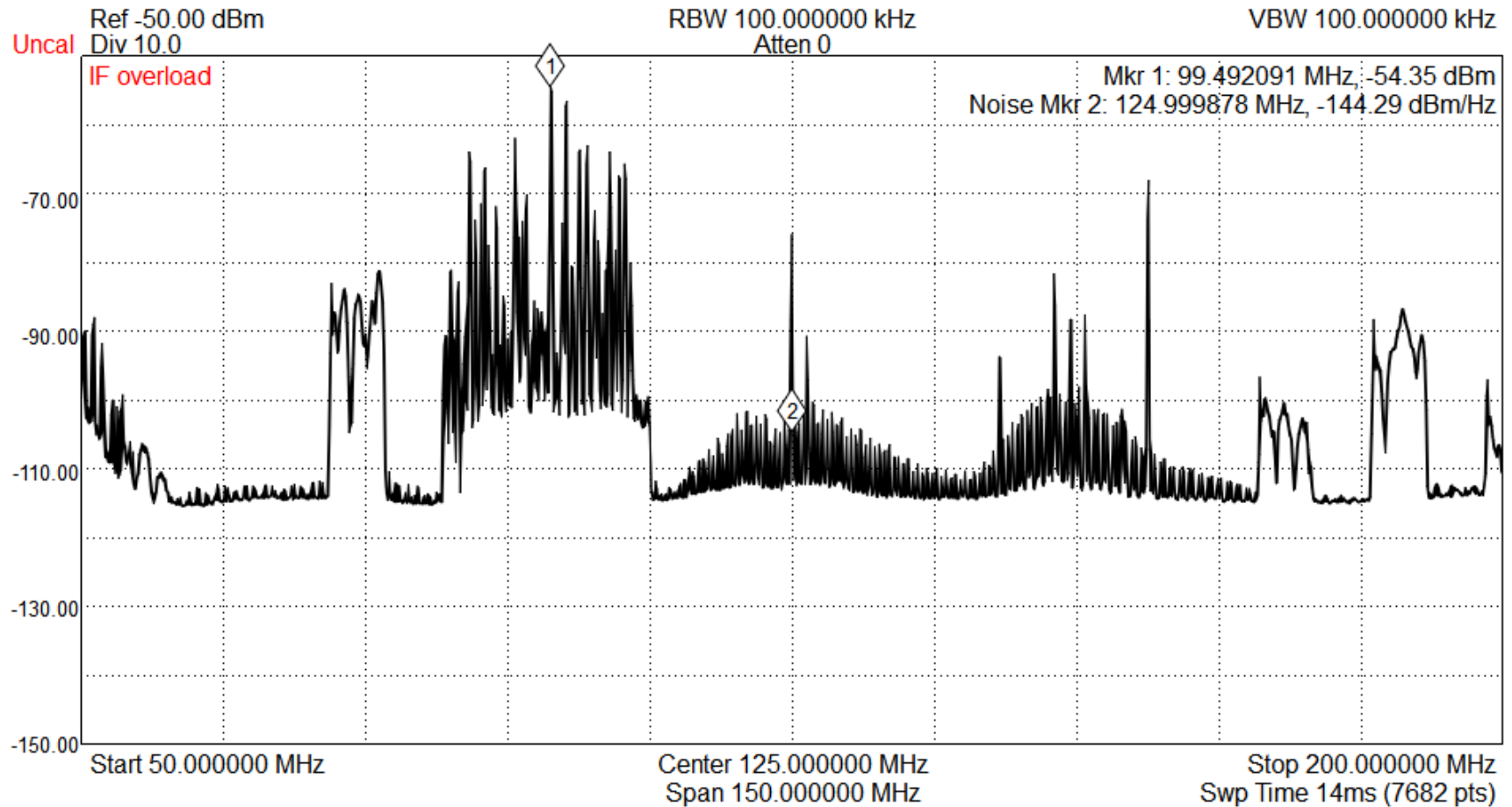
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To: EDGES Group  
From: Alan E.E. Rogers, John Barrett and Ken Wilson  
Subject: RFI monitor test

A Signal Hound BB60C and laptop has been set-up with antenna and a spectrum taken from 50 to 100MHz with 100 kHz resolution and video bandwidth with preamp turned on and reference -50 dBm with 10 dB per division shown in Figure 1. The antenna is Diamond D130NJ 25-1300 MHz which has a better matched than the antenna used in the RFI survey of the Oregon site described in memo 296. The lowest level in Figure 1 is about -115 dBm. The noise level expected for 1000 K in 100 kHz bandwidth is -118.6 dBm and tests with the antenna disconnected dropped to -116 dBm. A separate test using a Fieldfox N9917A spectrum analyzer had a noise level at -110 dBm. Lower noise performance can be obtained with a combination of a spectrum analyzer with a separate preamp as discussed in the RFI memo series.

Tests of the Signal Hound system were made in the Haystack screen room, which has poor isolation so that some FM radio the local power noise from switching for lights etc. as well as wifi, are in the spectrum shown in Figure 2. In these tests most of the power in the spectrum is from poor screen room isolation but it was found that there is also a small contribution from the laptop running the Signal Hound. When tests are done in the field the contribution from the laptop can be checked by comparing the spectra with the Signal Hound close to the antenna and using a longer cable to increase the distance between the Signal Hound and the antenna.



Signal Hound BB60C, Serial: 53100226, Firmware: 7

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Figure 1. Spectrum taken near the rear of warehouse at about 42.60961,-71.4944.

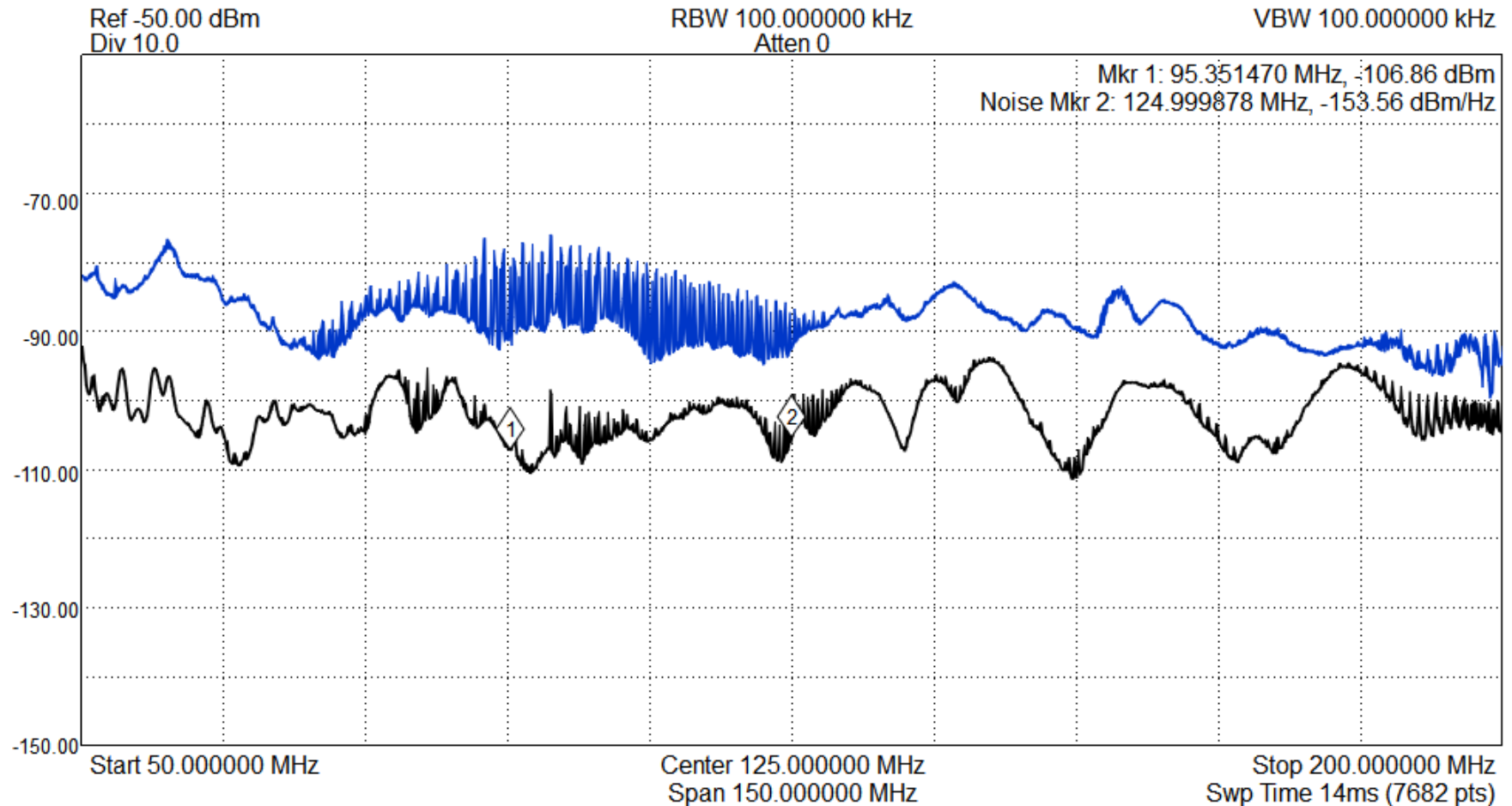


Figure 2. Spectrum taken the screen room. The blue curve is an average which is higher due to pulses and time variability in the RFI.