

TEST EQUIPMENT PLUS

Signal Hound USB-SA44B

Application Note 3: Broadcast Masks

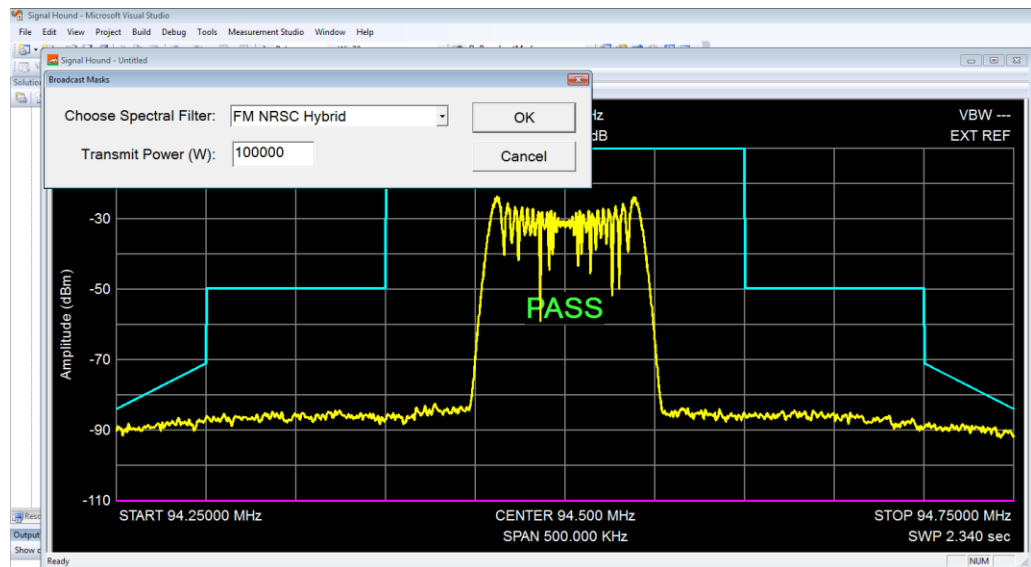
1 NRSC / FCC Broadcast Masks

Monitoring Your AM / FM Broadcast Spectrum

The Signal Hound USB-SA44B can be used to monitor AM and FM radio broadcasts, and automatically compare the result to a pre-defined mask, such as the FCC limits or the NRSC Hybrid limits.

The predefined masks include AM FCC 73.44, AM NRSC Hybrid (5 or 8 KHz), FM FCC 73.317, and FM NRSC Hybrid.

Please note that while the Signal Hound is capable of making most of the measurements required, there are a few exceptions. For example, the AM masks beyond a 50 KHz offset can fail from Signal Hound dynamic range limitations below 5 MHz center frequency. Also, the Signal Hound masks should be used for monitoring / information purposes only. The masks are provided "as-is," free of charge, without warranty. If a discrepancy is noted, please use another device to verify the discrepancy before taking action.



1.1 Launching the Broadcast Mask Utility

1. Connect the Signal Hound USB-SA44B to the PC using the included USB cable.
2. Launch the Signal Hound application software.
3. For FM, enter a span of 750 KHz (or narrower if desired) and set your center frequency to the broadcast frequency.
4. Connect a coupled output from your broadcast, padded down to 0 dBm or so, to the Signal Hound input.
5. Adjust your reference level and attenuator so that the signal level peak is within 1 division of the top reference level, and maximum dynamic range is achieved.
6. Launch the Broadcast Mask Utility from the Utilities menu.
7. Enter your desired mask and transmit power, then click OK. The predefined masks include AM FCC 73.44, AM NRSC Hybrid (5 or 8 KHz), FM FCC 73.317, and FM NRSC Hybrid.
8. After several seconds, you should see your broadcast with a mask overlaid, and a pass / fail indicator in the center of the screen.

Generally, these masks should be run with image rejection turned off, but image rejection may be used to reduce spurious signals, with the tradeoff that some transient noise may be missed.

AM masks should use MAX HOLD, and FM masks should use video averaging turned to 100 or so.

If you are using the mask with an antenna, you will pick up additional noise. Too many signals coming into the Signal Hound can have a major impact on the noise floor. Using a filter to block unwanted signals, making sure that your signal is much stronger than other nearby signals, or connecting directly to a coupled output padded down to 0 dBm, will avoid this problem.

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