

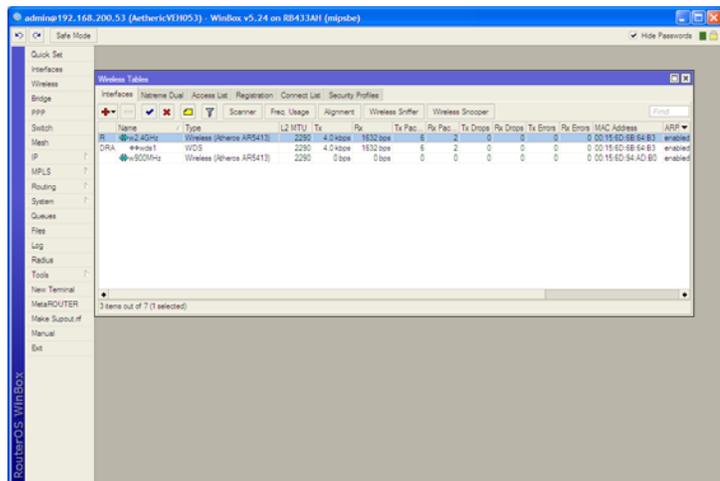
WinBox Tools for Aetheric Radio: Network Traffic Tools

The following provides a cursory procedure to use WinBox tools to scan a radio network and identify network traffic broadcasting on selected frequencies. For more information on the WinBox application refer to <http://wiki.mikrotik.com/wiki/Category:Manual>.

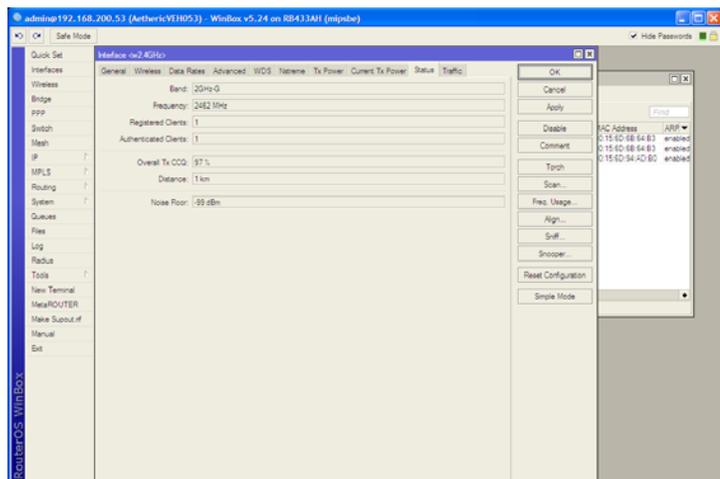
Note 1: The Operator Control Unit (OCU) must be physically connected, via an Ethernet wire, to either the Ground Control Station (GCS) or vehicle radio to use these tools.

Note 2: All vehicle radios must be turned on.

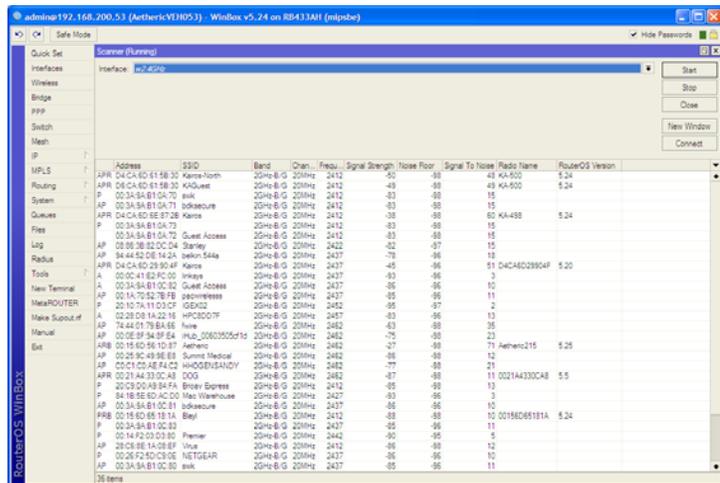
1. On the OCU, launch WinBox (winbox.exe), click the “...” button. From the drop-down select the IP address of the radio (IP can be found on the radio label), then click the “Connect” button.
2. On the left side of the window, click the “Wireless” tab. In the “Wireless Tables” window, double-click the “Name” of the frequency you would like to test (e.g. 2.4Ghz or 900Mhz).



3. At the top of the “Interface <frequency>” window, click the “Status” tab. On the Status tab, locate the “Noise Floor” entry. Noise floor should be between -90 and -100dBm. A value between -80 and -90 is marginal. Anything more than -80 is challenging. Also note the “Frequency” value for the next step.

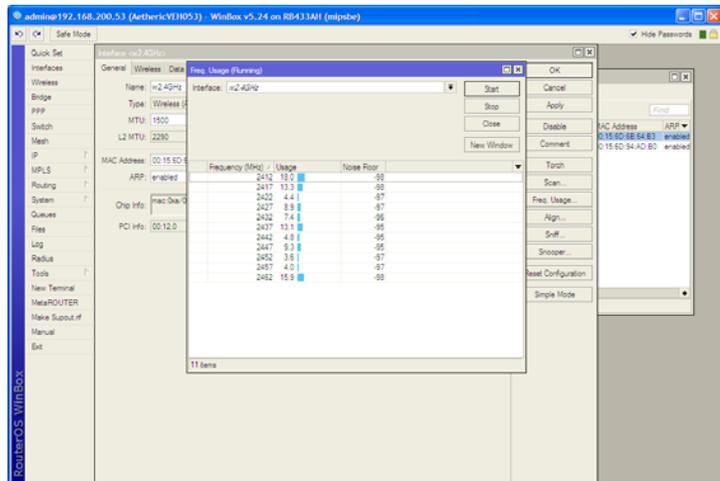


4. On the right side of the “Interface <wfrequency>” window, click the “Scan...” button. Entries should start populating the main table; if not, click the “Start” button. The main table shows all radios on the supported frequencies, but does NOT display the connected radio itself. Identify any radios using the same “Frequency Value” as the connected radio, and evaluate their “Signal Strength” and “Noise Floor” values. Signal to Noise should be 50-60dB optimally. Noise floor should be between -90 and -100dBm. A value between -80 and -90 is marginal. Anything more than -80 is challenging.



5. In the upper-right corner of the “Scanner” window, click the “Stop” button to stop scanning. Failure to stop scanning will prevent scanning by other tools, including the frequency usage scanner to be used in the next step. Click the “Close” button to close the “Scanner” window.

6. On the right side of the “Interface <wfrequency>” window, click the “Freq. Usage...” button. Identify the “Usage” value for the connected radio’s frequency.



7. In the upper-right corner of the “Freq. Usage” window, click the “Stop” button to stop scanning. Failure to stop scanning will prevent scanning by other tools. Click the “Close” button to close the “Freq. Usage” window.

8. Based on the data collected about the connected radio’s broadcast information and other devices broadcasting on the same frequency, evaluate what devices may or may not need to be terminated to improve Radio link quality.