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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 <u>http://wiki.mikrotik.com/wiki/Category:Manual</u>.

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 dropdown select the IP address of the radio (IP can be found on the radio label), then click the "Connect" button.

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 On the left side of the window, click the "Wireless" tab. In the "Wireless Tables" window, doubleclick the "Name" of the frequency you would like to test (e.g. 2.4Ghz or 900Mhz).

 At the top of the "Interface <wfrequency>" 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.



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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

afe Mode												🕑 Hde	Pasewords
	Scar	iner (Running)											8
	Inter	face: w2.4GHz											Stat
													2100
													Close
													New Wind
													Connect
		Address	SSID	Band	Chan	Frequ	Signal Strength	Noise Roor	Signal To Noise	Radio Name	RouterOS Version		
	APR	D4:CA-60:61:58:30	Kairos-Noth	20Hz-8/G	2010Hz	2412	-50	-50	43	KA-500	5.24		
	APR	DECA-60-61-58:30	KAQuest	20Hz-8/G	2010Hz	2412	-49	-50	43	KA-500	5.24		
	P	00:3A:9A:81:0A:70	enk .	2GHz-B/G	20MHz	2412	-83	-90	15				
	AP.	00:3A:9A:B1:0A:71	boksecure	2GHz-B/G	20MHz	2412	-83	-98	15				
	APR	D4 CA 6D 6E 87 2B	Karos	ZGHE-B/G	2004Hz	2412	-38	-98	60	KA-498	5.24		
	٢	00/3A/3A/81/0A/73		20H2-B/G	200042	2412	-63	-95	15				
	1.0	00/3A/3A/81/0A/72	Guest Access	20H2-B/G	2000H2	2412	-63	-90	10				
	120	54-44-52-DE-14-24	Startey helds fills	2010-0-0	2000112	2422	-02	-97	10				
	1200	D4 C4 60 29 50 4E	Kaine	2014-8-0	20104	2417	-45		51	Danage 29904E	5.20		
	1.	00-00-41-52-50-00	loine.	204-8-0	20104-	2417	-83						
-	12	00/34/94/81/00/82	Guast Annaes	2GHt-B/G	201014	2437	-36	-56	10				
na	AP	00:1A:70:52:78:FB	pacwirelesss	2GHz-B/G	20MHz	2437	-85	-96	11				
TER	P	20:10:7A:11:03:CF	IGEX02	2GHz-B/G	20MHz	2452	-95	-97	2				
h.t.d	A	02/28/D8 1A 22:16	HPC8DD7F	2GHz-B/G	20MHz	2457	-83	-96	13				
	AP	74:44:01:79.BA:66	fwire	2GHz-B/G	20MHz	2452	-63	-98	35				
	AP	00:0E:8F:34:8F:E4	Hub_00603505d1d	23Hz-8/G	2014Hz	2452	-75	-55	23				
	1488	00:15:60:56:10:87	Aetheric	20Hz-8/G	2010Hz	2462	-27	-50	71	Aetheric215	5.25		
	AP.	00:25:9C:49:9E:E8	Summit Medical	20Hz-8/G	2010Hz	2462	-05	-90	12				
	12.	CO.C1.CO.AE.F4.C2	HHOGENSANDY	20142-0.0	2055Hz	2462	-77	-90	21				
	LAPR.	00/21/A4/33/0C/A8	Dog Dog	2070-8/0	200042	2462	-87	-95	11	0021A4330CA8	0.0		
	0	6410 KE KD 40.00	broay cycless	20012-0/0	201011	2412	-00	- 20	12				
	10	00.33.93.91.00.91	Minet re	2042-8-0	20104	2417	-93						
	200	00.15.60.65.19.14	Red	20Hz.8/0	201044	2412		.41	10	001560651814	6.24		
	100	00:34:94 81:00:83	and in	20Hz-8/G	2010Hz	2437	-45	-56	11	AN 1242 03 10 10.			
	P	00-14-F2-03-03-80	Premier	20Hz-8/G	2010Hz	2442	-90	-95	5				
	2.0	28:C6:8E-1A-08:EF	Virue	20Hz-8/G	2010Hz	2412	-05	-50	12				
	P	00/26/F2/5D/C9/0E	NETGEAR	2GHt-B/G	20MHz	2437	-86	-96	10				
	10	00/34/94 81:00:80	make	2GHz-B./G	201464	2427	.05	.00	11				

"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.
- On the right side of the "Interface <wfrequency>" window, click the "Freq. Usage..." button. Identify the "Usage" value for the connected radio's frequency.

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

 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.

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