

Spectral Monitor using RouterOS

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Spectral Monitor Features

- Uses RouterOS
- Uses Atheros Merlin 802.11n chipset wireless cards
- Frequency span depending on card:
 - 5ghz: 4790-6085mhz
 - 2ghz: 2182-2549mhz
- Scan with 10mhz frequency increments for improved data quality
- Audio monitor

Spectral Monitor Variables

- Range
 - 2ghz, 5ghz, current-channel, range
- Single spectral sample
 - Wireless card generates 4us long spectral snapshots for any 20mhz wide channel
- Average-samples
 - Number of 4us spectral snapshots to take at each frequency, and calculate average and maximum energy over them (default 10)
- Value
 - avg, avg-peak, interference, max, min

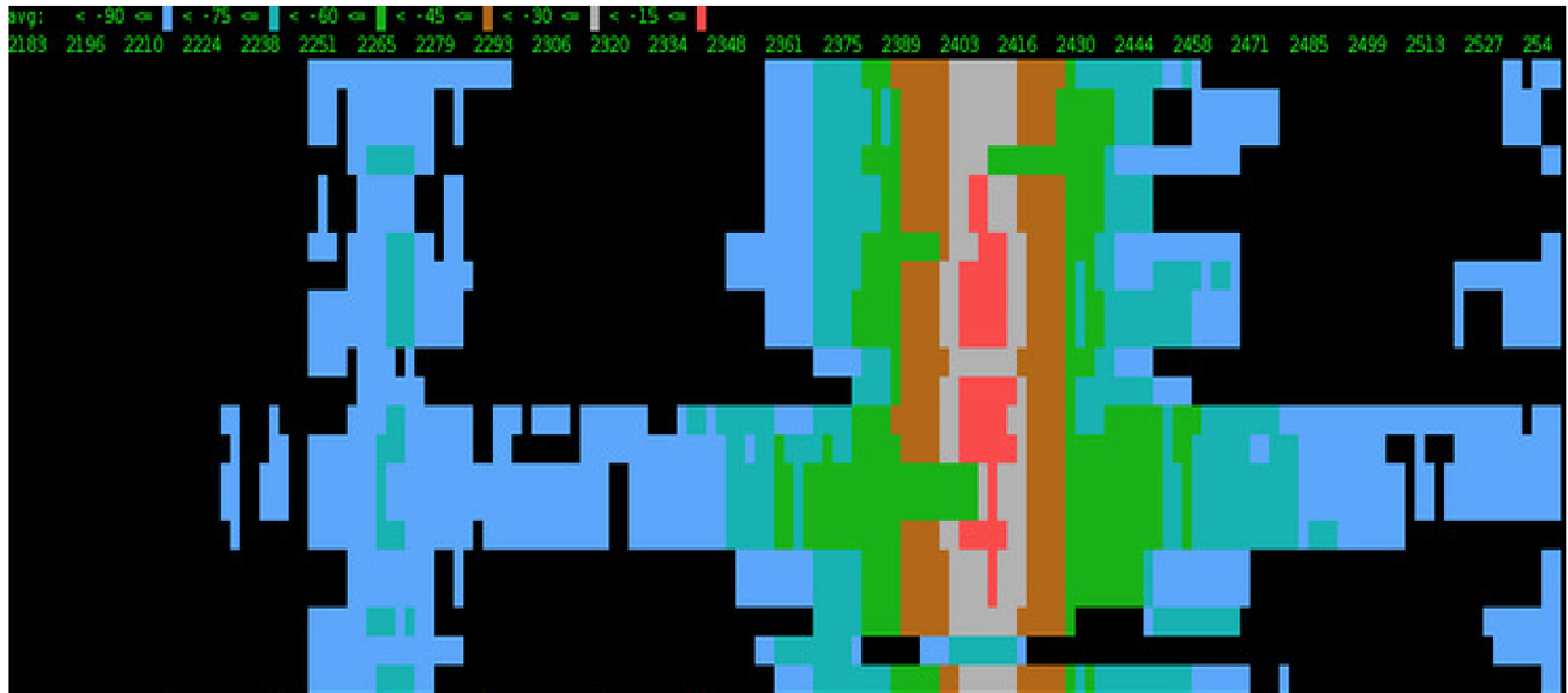
Spectral Monitor Variables

- Classify-samples
 - Number of spectral snapshots taken at each frequency and processed by interference classification algorithm. More samples gives more chance to spot certain type of interference (default 50)
- Types of possibly classified interference:
 - bluetooth-headset
 - bluetooth-stereo
 - cordless-phone
 - microwave-oven
 - cwa
 - video-bridge
 - wifi

Spectral-history

- Plot spectrogram
- Power values are printed in different colors
- Audible option - plays each line as it is printed on the routers speaker
 - Each line is played from left to right, with higher frequencies corresponding to higher values in the spectrogram

Spectral-history



Spectral-scan

- Continuously monitor spectral data
- Each line displays one spectrogram bucket:
 - Frequency
 - Numeric value of power average
 - Character graphic bar
 - average power value - ':'
 - average peak hold - '.'
 - maximum lone floating - '!'
- Show Interference option

Spectral-scan

The screenshot shows the MikroTik RouterOS WinBox interface. On the left is a vertical menu with categories like Interfaces, Wireless, Bridge, etc. The main area contains a terminal window titled 'Terminal' with the following text:

```
[admin@MikroTik] > interface wireless spectral-scan
number: wlan2
FREQ DBM  GRAPH
2189 -99  ::::::::::::::: :
2205 -99  ::::::::::::::: :
2221 -99  ::::::::::::::: :
2237 -101 ::::::::::::::: :
2253 -99  ::::::::::::::: :
2269 -98  ::::::::::::::: :
2285 -99  ::::::::::::::: :
2301 -101 ::::::::::::::: :
2317 -99  ::::::::::::::: :
2333 -98  ::::::::::::::: :
2349 -99  ::::::::::::::: :
2365 -100 ::::::::::::::: :
2381 -101 ::::::::::::::: :
2397 -99  ::::::::::::::: :
2413 -99  ::::::::::::::: :
2429 -101 ::::::::::::::: :
2445 -103 ::::::::::::::: :
2461 -103 ::::::::::::::: :
2476 -104 ::::::::::::::: :
2493 -101 ::::::::::::::: :
2508 -100 ::::::::::::::: :
2524 -102 ::::::::::::::: :
2540 -101 ::::::::::::::: :
```

The terminal window also shows the prompt [admin@MikroTik] > at the bottom.

Thank you!