



# Chanalyzer for Mac OS 10 User's Guide



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# Introduction

## About MetaGeek

MetaGeek is an innovator and leading provider of Wi-Fi spectrum analyzer solutions. Its award-winning Wi-Spy hardware, widely recognized as the most compact in its class, comes bundled with MetaGeek's powerful visualization software, Chanalyzer. Together, this solution allows users to visualize, troubleshoot, and optimize their wireless networks at home or their office. By building advanced features into an affordable, mobile, and easy-to-use product, Wi-Spy with Chanalyzer is the ideal solution for any user who wants to visualize their wireless landscape.

## Overview

The purpose of this guide is to help the user quickly get started with their Wi-Spy hardware and Chanalyzer software. Chanalyzer turns data collected from a Wi-Spy into highly interactive charts and graphs, providing the ability to visualize the wireless landscape. Together, Wi-Spy and Chanalyzer enable users to visualize, troubleshoot, and optimize their wireless networks by providing comprehensive, easy to use visualization data.

## Major Features

- Real-time RF signal strength graph
- RF signal density graph
- RF Waterfall graph
- Real-time wireless Access Point data
- 3D Spectrograph view

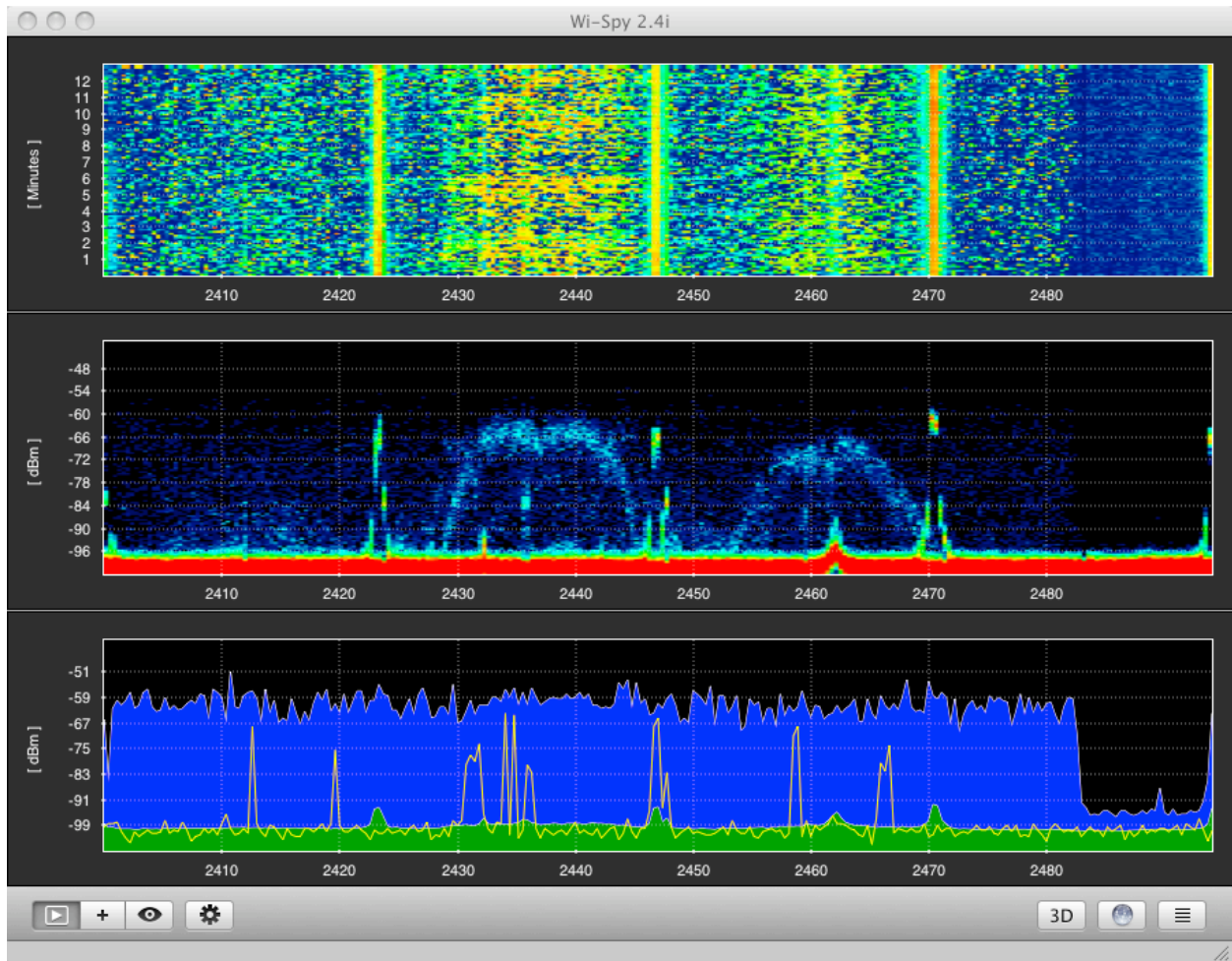
## System Requirements

- Mac OS 10.5 or greater
- Wi-Spy 900x, Wi-Spy 2.4x, Wi-Spy 2.4i, or Wi-Spy DBx

*Note: Wi-Spy V1 is not supported*

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# Getting Started



## Installing Chanalyzer

To install Chanalyzer for Mac OS X, uncompress Chanalyzer.app.zip and drag the Chanalyzer.app bundle to your system's Applications directory. Before running Chanalyzer, ensure you have a Wi-Spy plugged into your computer's USB port.

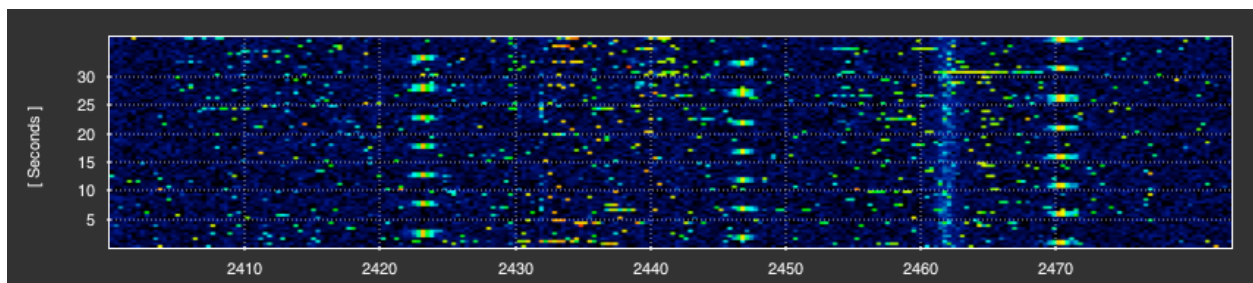
## Product Updates

Once Chanalyzer is installed and running, it will periodically check for product updates from MetaGeek's website. To manually check for updates, click "Check for Updates..." from the help menu. If a software update is available, you will be given the option to download and install the update, or skip the update.

## Chanalyzer's Main Screen

When Chanalyzer is running with a Wi-Spy connected, you will be presented with the main application screen. The main screen consists of three views. The top view is the Waterfall view, the middle view is the density view, and the bottom view is the planar view. At the bottom of the main application screen is the tool bar.

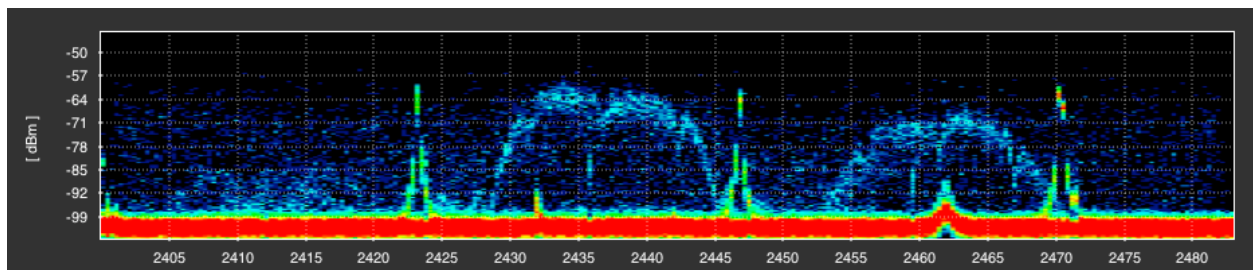
### Waterfall View



The waterfall view shows signal amplitude over time for each frequency along the x axis of the graph. Each colored coordinate of the graph represents the amplitude of the frequency, with dark blue representing signals with low amplitudes and bright red representing high amplitudes. The waterfall view shows changes in signal amplitudes over time, such as when a network became active, or when an intermittent transmitter started transmitting. You can use this view to determine when a certain device was active in your wireless environment.

By using the inspector tool, you can move your mouse over the graph area to determine the actual signal amplitude and the time at which the signal was present.

### Density View

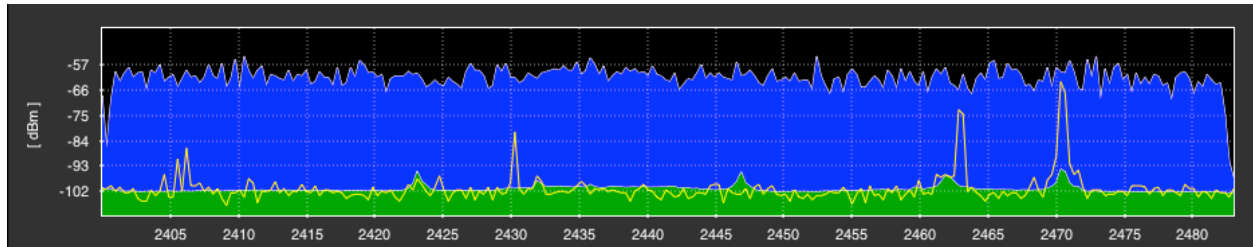


The Density View displays how often a signal is detected at a specific amplitude. The graph shows signal amplitude over frequency, with the coloration based on signal activity over time. The more often a signal is detected at a specific amplitude and frequency, the brighter the point on the graph becomes. Low density signals are represented by dark blue, and high density signals are represented by red. The main benefit of the Density View is that after a short time of gathering data, patterns begin to emerge. For example, in the figure above the two curved patterns represent 802.11b

networks, whereas the sharp spikes represent a narrow band transmitter. This view enables you to quickly identify signals that may be interfering with your network.

To see more specific information about a point on the graph, use the Inspector tool.

## Planar View



The Planar View is very similar to the traditional spectrum analyzer view. This view shows signal amplitude over frequency. The yellow trace shows the real-time signal amplitude, the green trace shows the average signal amplitude, and the blue trace shows the maximum amplitude that occurred. To monitor the amplitude of a specific frequency, you can use a marker.

## Tools



From the main application window, you can access the tool buttons. Currently there are three tools, the default tool, the marker tool, and the inspector. To enable a tool, simply click on the tool button. To disable a tool, select the default tool button with the box and triangle icon.

## Marker Tool

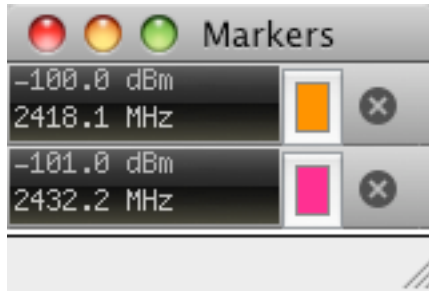


The marker tool allows you to place a marker on the graph at a specific frequency and observe the signal amplitude. To place a marker on a graph, click the Marker Tool button and move your mouse over the graph. A vertical line will appear as an aid to identify the desired frequency for the marker. Once the desired position has been determined, click the location on the graph and the marker will appear on the three main data views.

## Viewing Markers



Once a marker is placed on the graph, its value may be viewed from the marker window. To view the marker window, click on the button with the horizontal lines.



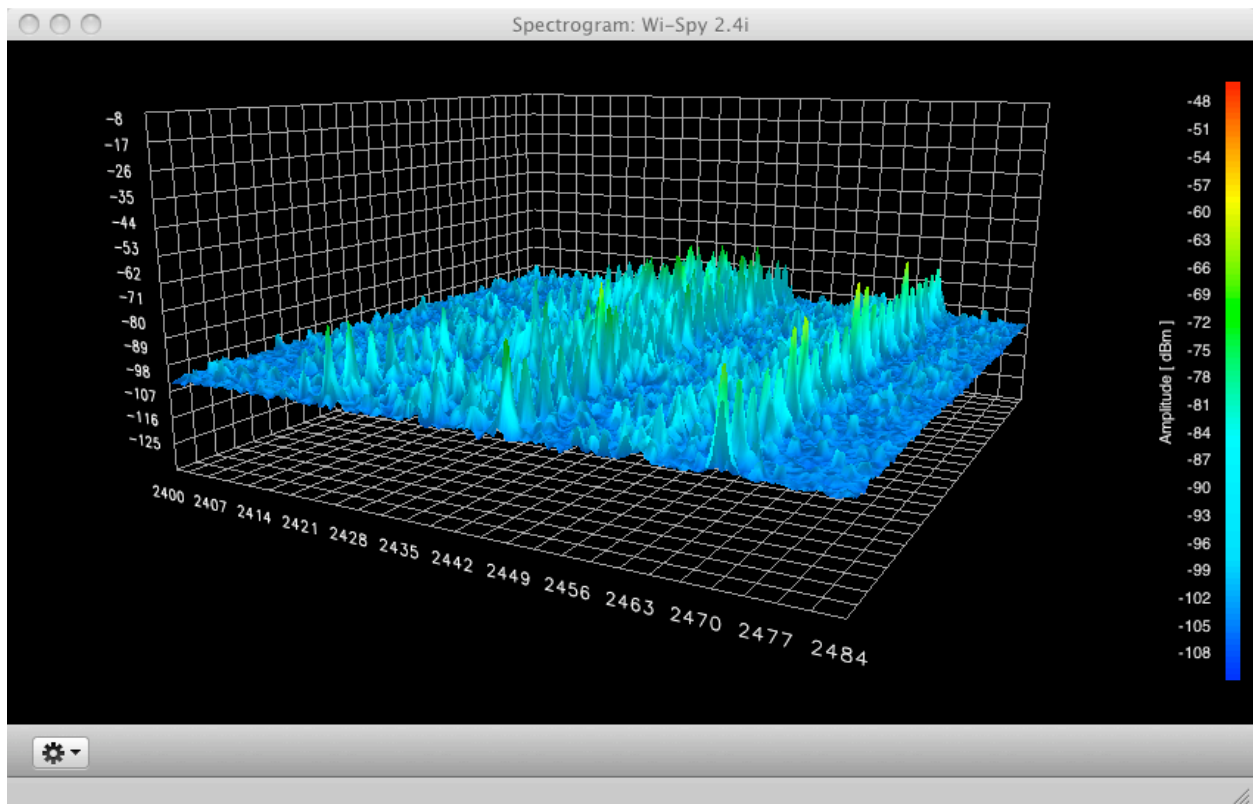
The marker window shows the marker's color, current frequency, and current signal amplitude. To change the color of a marker, simply click on the color well and choose a new color. To remove a marker, click on the button with an 'x'.

## Inspector Tool



The inspector tool allows you to get more detailed information about a point on any of the three graphs. To use the inspector tool, click on the button with the eye icon and move your mouse over one of the graphs. A tool tip window will appear giving you specific information about the point under your mouse cursor.

## 3D View



The 3D view displays signal amplitude over frequency, with time along the z-axis. This view provides a quick overview of RF activity, whereas the 2D views provide more detail about specific frequencies. To display the 3D view, click on the button with the 3D label.

The 3D view allows rotation, pan, and zooming operations, which enables the user to inspect signals in greater detail. To rotate the view, simply click on the 3D model and drag your mouse. To zoom in and out, use your mouse wheel. To pan the current view, hold down the CTL key, click on the 3D model and drag your mouse.

The 3D view also supports a smoothing option that averages adjacent signals together to provide better visualization of signals obscured by noise. To toggle smoothing on or off, simply hit the 's' key on your keyboard. Smoothing can also be enabled or disabled from the pop up menu button on the lower left corner of the 3D window.

## WiFi Network Scanning



Chanalyzer also takes advantage of the built-in wireless adapter on your computer to gather and display information about access points in the area. To view the Networks window, click on the networks button.

MAC	SSID	Alias	Channel	RSSI	Vendor	Noise	Last Seen
00:18:74:d1:0d:00	CYFI	CYFI	11	-51	Cisco Systems	-96	2:05:15 PM
00:60:1d:1c:66:0a	wavelan	wavelan	1	-55	LUCENT TECHNOLOGIES	-96	2:05:50 PM
00:14:bfe5:32:e5	Worst...net...	Worst...n...	6	-32	Cisco-Linksys LLC	-96	2:05:50 PM
00:18:74:d5:0c:c0	CYFI	CYFI	64	-44	Cisco Systems	-96	2:05:50 PM
00:1f:5b:86:e1:a9	MetaGeek	MetaGeek	149	-32	Apple, Inc.	-98	2:05:50 PM
00:22:10:ad:96:c0	qwest9840	qwest9840	1	-76	Motorola CHS	-96	2:05:40 PM
00:19:a9:41:98:20	CYFI	CYFI	1	-68	Cisco Systems	-96	2:05:45 PM
00:21:91:16:22:81	Gemstate P...	Gemstate...	6	-73	D-Link Corporation	-96	2:05:10 PM
00:16:b6:16:ff:44	linksys	linksys	6	-77	Cisco-Linksys	-96	2:05:35 PM
00:19:a9:45:98:00	CYFI	CYFI	36	-75	Cisco Systems	-96	2:05:40 PM

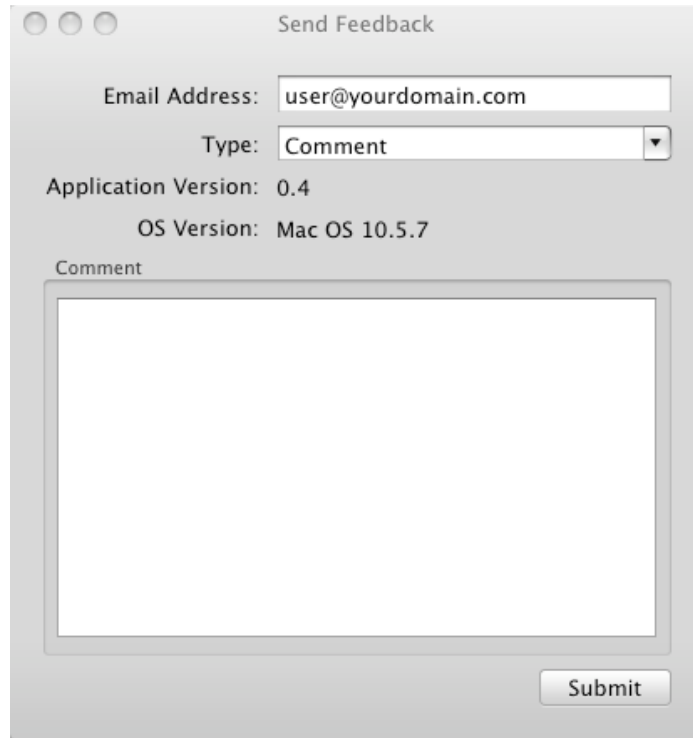
Once the Networks window is visible, network scanning can be started by clicking the play button. Scanning can be stopped by clicking the pause button.

## Basic Hardware Configuration



When using Chanalyzer with a Wi-Spy DBx, you can change the frequency range of the device. To access the configuration screen, click on the configuration button, select the desired frequency range from the drop-down list, and click the apply button.

## Sending Feedback

A screenshot of a 'Send Feedback' dialog box. It has a title bar with three window control buttons and the text 'Send Feedback'. Inside, there is a text field for 'Email Address' containing 'user@yourdomain.com', a dropdown menu for 'Type' set to 'Comment', and two lines of text: 'Application Version: 0.4' and 'OS Version: Mac OS 10.5.7'. Below these is a large text area labeled 'Comment'. At the bottom right is a 'Submit' button.

Send Feedback

Email Address:

Type:

Application Version: 0.4

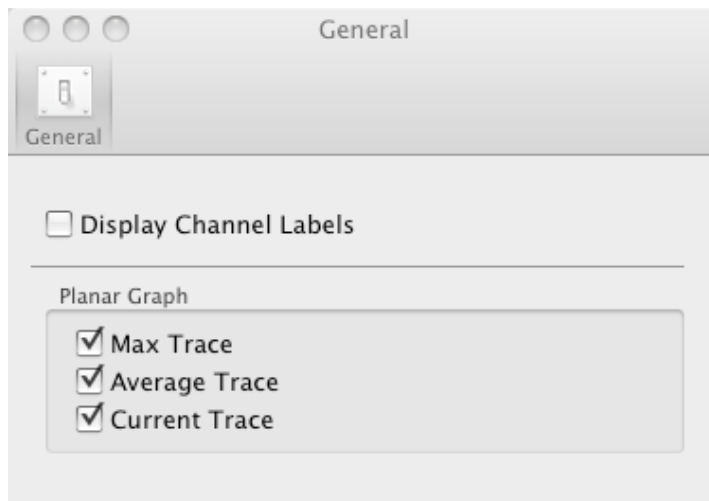
OS Version: Mac OS 10.5.7

Comment

Submit

Chanalyzer supports the ability to send feedback to MetaGeek. Whether its a bug, a feature request, or just a a comment, MetaGeek wants to hear from you. To send feedback, select the “Send Feedback...” menu item from the help menu. When the Send Feedback form is displayed, select a comment type and type your feedback in the comment box. You may also supply your email address, but it is not required. After you have entered the information, click the “Submit” button and the information will be emailed to MetaGeek.

## Preferences

A screenshot of a 'General' preferences dialog box. It has a title bar with three window control buttons and the text 'General'. On the left is a sidebar with a 'General' icon. The main area has a checkbox for 'Display Channel Labels'. Below a horizontal line is a section titled 'Planar Graph' containing three checked checkboxes: 'Max Trace', 'Average Trace', and 'Current Trace'.

General

☐ Display Channel Labels

Planar Graph

☒ Max Trace

☒ Average Trace

☒ Current Trace

Currently, Chanalyzer only supports a few user-configurable parameters. The “Display Channel Labels” option allows you to enable or disable WiFi channel labels on the X axis of the graphs. When disabled, frequency labels are displayed. In addition, you can enable or disable any of the three traces on the Planar graph.