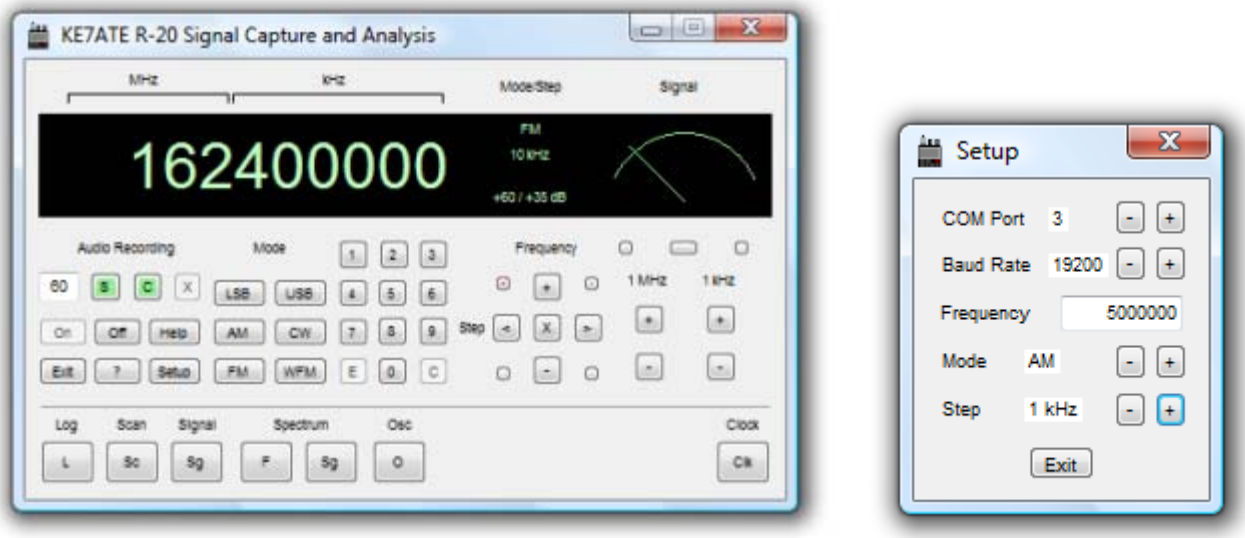
Experience a new way to use the ICOM IC-R20 Communications Receiver

The ICOM IC-R20 is a wonderful wideband handheld receiver with terrific features and a wide range of listening possibilities. Bring the power of this handheld receiver to your computer desktop with this full-featured R-20 Signal Capture and Analysis software.

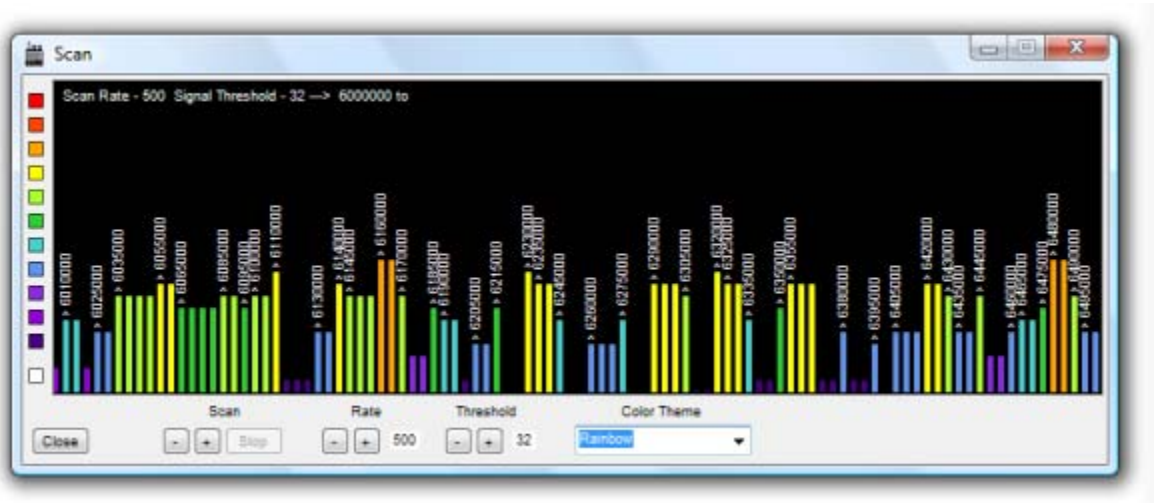
Building on the capabilities of an already powerful handheld receiver, this software package offers unprecedented control, capture and visualization of the incoming signal and audio output. Enhance your radio monitoring activities with computer control and signal visualization using this terrific software for Microsoft Windows Vista and Microsoft Windows 7 operating systems.

This software includes an easy to read display with features designed to give you accurate and enhanced control of your IC-R20 Communication Receiver through your laptop or desktop computer. Everything you need to make your R-20 into a black box receiver is right here in this software, including additional features that enhance the use of this wonderful receiver.



Turn a great handheld receiver into a computer desktop wonder!

It's a new way to look at the IC-R20 receiver. In fact, it's a new way to USE the IC-R20 adding features and functionality that are only possible when being controlled by a computer. Scanning becomes more graphical and easy station logging makes using the IC-R20 more enjoyable and maybe even more fun to use. The visual aspects of this software make it unlike any other radio control software on the market. See the station's signal strength and automatically log the received station as the software scans up or down the frequency spectrum. Record what you hear into .wav files. Use intermittent recording to capture two-way FM communications without the long pauses or band noise between transmissions. Oscilloscope and spectrum displays graphically relate the incoming audio to the listener.



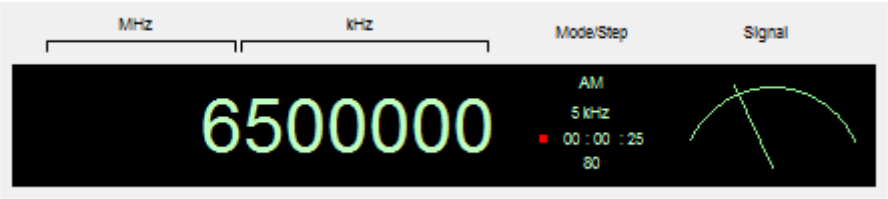
Making a good thing even better

This software enhances some of the already powerful features found in this wonderful radio receiver. The R-20 Signal Capture and Analysis software improves the listening experience and puts the most commonly needed listening tools into one useable package. It is the only software package designed specifically for listening and acquiring signal information from the ICOM IC-R20 Communications Receiver. Other receiver control software products are designed with generic controls and setups to control a general population of various radios. Using this development strategy only builds on one aspect of receiver control software. Listening and monitoring the radio involves using tools to store information and understand radio signals. The R-20 Signal Capture and Analysis Software accesses all of the features that may be controlled via the computer and adds listening tools to enhance your signal analysis and listening experience.

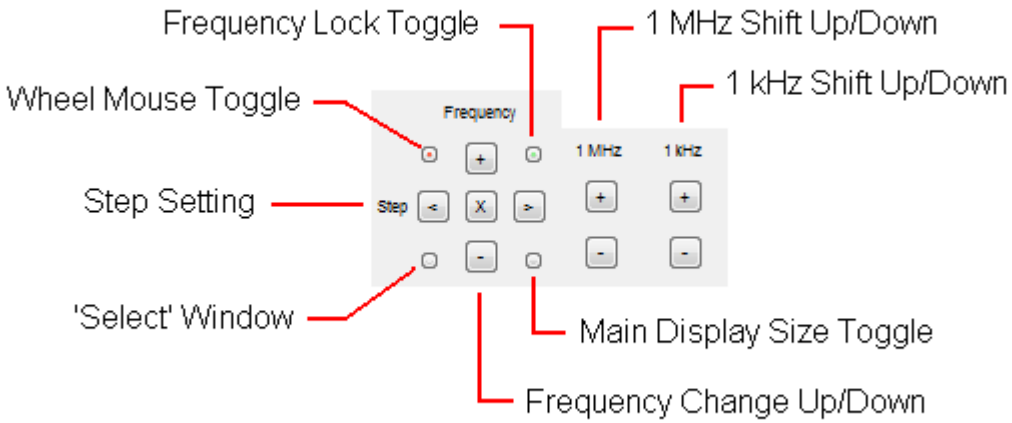
Features

- Standard control of the receiver, including mode and frequency settings
- S-Meter (configurable to display Raw or S-Units/dB values)
- Audio, signal, frequency spectrum recording
- Logging, including auto-population while scanning
- Frequency spectrum display and Oscilloscope display
- 27 user configurable frequency memories
- 24-hour clock display

The main display is easy to read and easy to use while you are searching the bands for those hard to find stations.



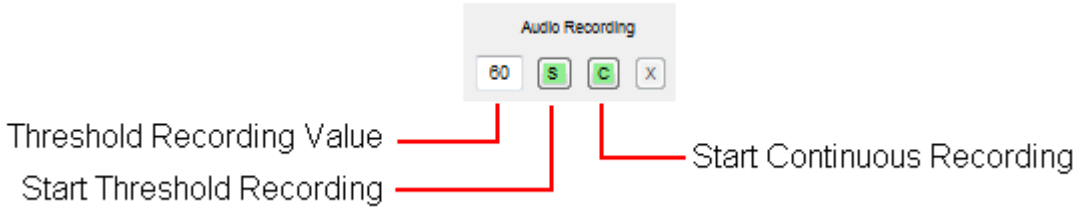
Even in collapsed mode the display gives you everything you need to see during your listening sessions and easy to use controls let your focus on the listening and less on using the receiver.



Now, there are more ways to change frequency than just pressing a button. Using the convenience of a wheel mouse you can scroll up and down a band at the step you set using the step buttons. I have included buttons to shift the frequency up and down 1 MHz and 1 kHz for tuning convenience. Some receiver control software packages use awkward tuning

controls making them difficult and inconvenient to use. This arrangement of tuning buttons is logical and makes the software much easier to use during long hours of searching and listening on the bands.

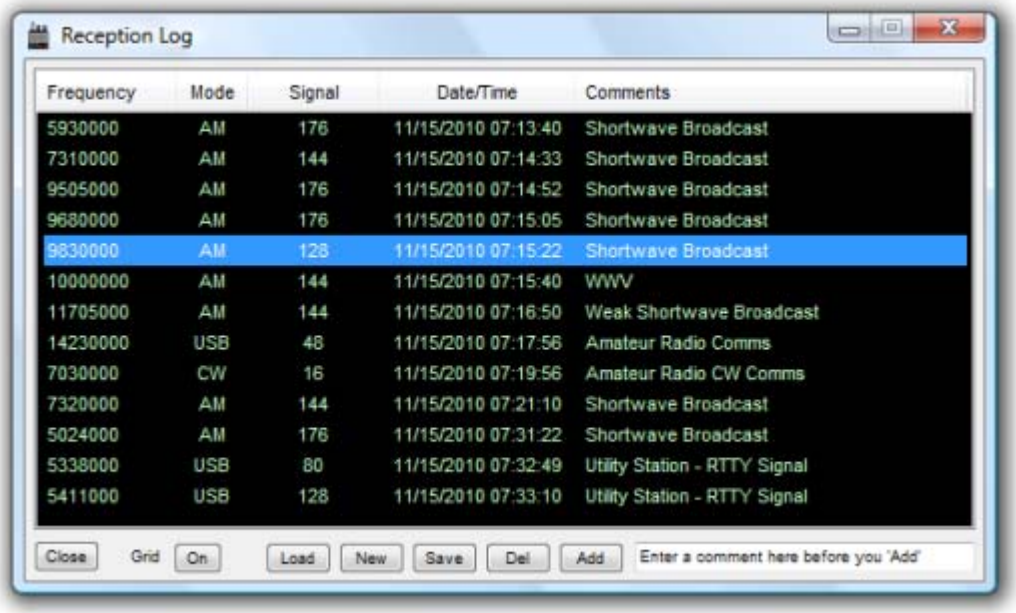
Record the audio to your computer and STOP using clumsy and hard to use interfaces to transfer the files AFTER they have been recorded. Record them directly to the computer as your listen to the incoming audio and save some effort.

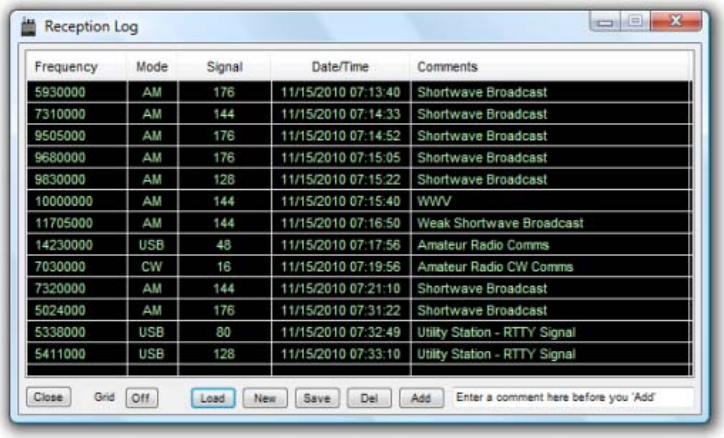


This software also feature Intermittent/Signal controlled recording as well as Continuous audio recording to capture the audio of the currently tuned signal. The recording length is displayed in the main window as it is in progress.

One-Click Logging

Log frequencies on the fly and store them as manageable files in the computer with one click of the mouse. At the same time you are logging the station using this software, you are creating a 'list' of stations that may be saved for later use. Using the 'auto-population' feature can assist in searching a band for new stations and signals or revisiting a list of old favorites. The software package includes some starter lists to give users an idea of how to create their own text files with a standard text editor or simply using the software's interface





The Reception Log View

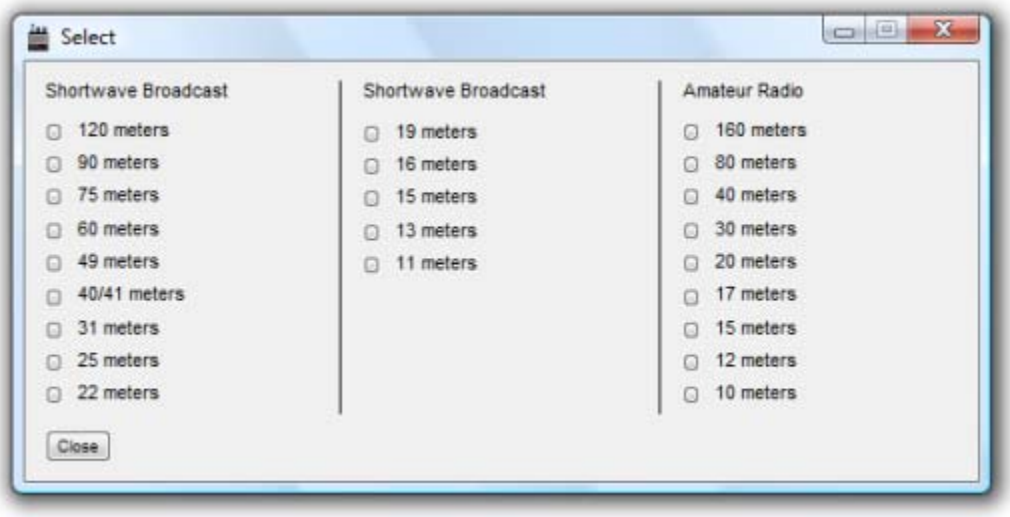
Add comments, save current frequencies and keep track of your listening sessions. Save your logs for future reference and review. Load previous logs to review or just check on a few frequencies that has peaked your curiosity. Clicking on a listing in the Reception Log will set the receiver to that station and set the mode as you stored it in the list when you logged it. This handy feature saves you the time of trying to set the frequency and mode each time you want to revisit your previous listening sessions. So, you may reuse old logs for new listening sessions.

Bringing you the Radio Desktop… to your Computer Desktop

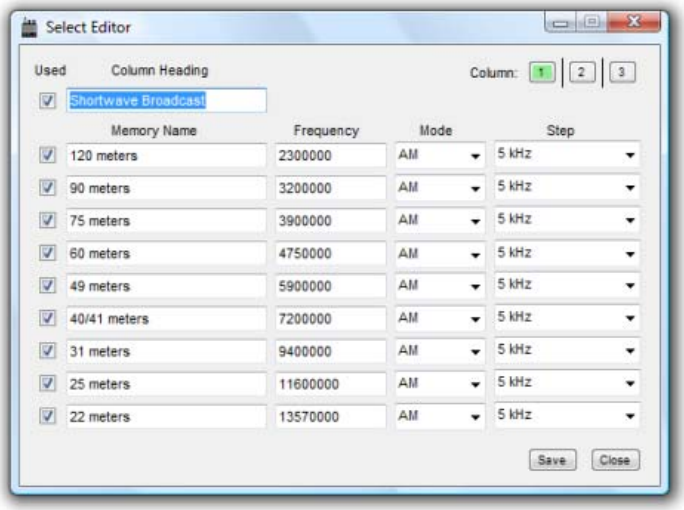
Nothing could make more sense than to use your IC-R20 like you would use any other desktop receiver, but to use it on your computer desktop in the most logical arrangement that YOU make and arranging the views where YOU want them. The features built into this software package may be arranged in any way the user decides to make the listening experience their own.

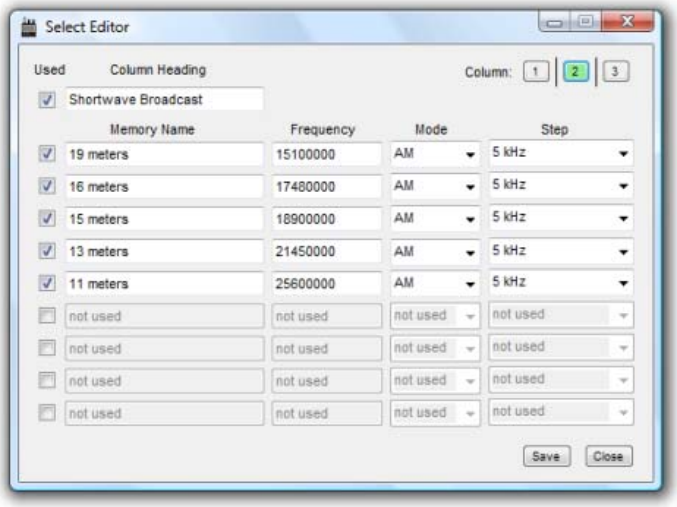
User Configurable Memories

Now you can create your own list of stored memories for recall at the click of the mouse each time you use the program. Customize the 'Select' Window with headings and station listings to use each time you use the software to control your IC-R20 receiver. Create and save your own memory bank using the built-in editor and configure the Memory as a 'band' select or 'frequency' selection display.



This software comes with preconfigured memories set up as a 'Band' select display, but may be configured in any way you choose to make selecting frequencies, mode and steps simultaneous and convenient with one click of the mouse. Configure the available memories using the built-in and easy to use editor, allowing you to set up the 'Select' Window to suit your own listening pursuits.





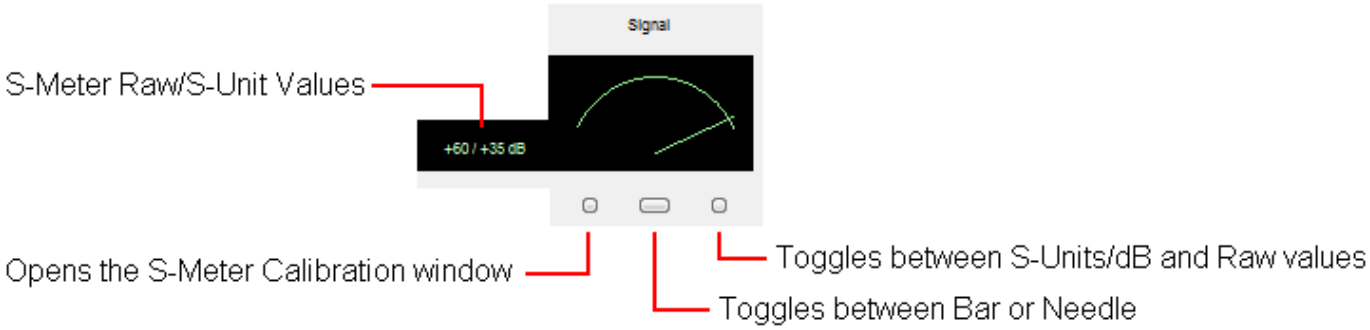
The stored memories are available every time you press the 'Select' button and may be edited to be used or not used in the 'Select' window by checking or unchecking the checkboxes in the editor window. You have the control over how this window will look and what frequencies it will store. The memories may also be edited using a generic text editor, but the built-in editor is the most convenient method of changing the settings of these memories. This feature is built on user requests and common sense design created to make using the editor easy and to minimize opportunities for errors rooted in using standard text editors to customize features like this.

Bringing the Nature of Radio Monitoring…to the Radio Monitor

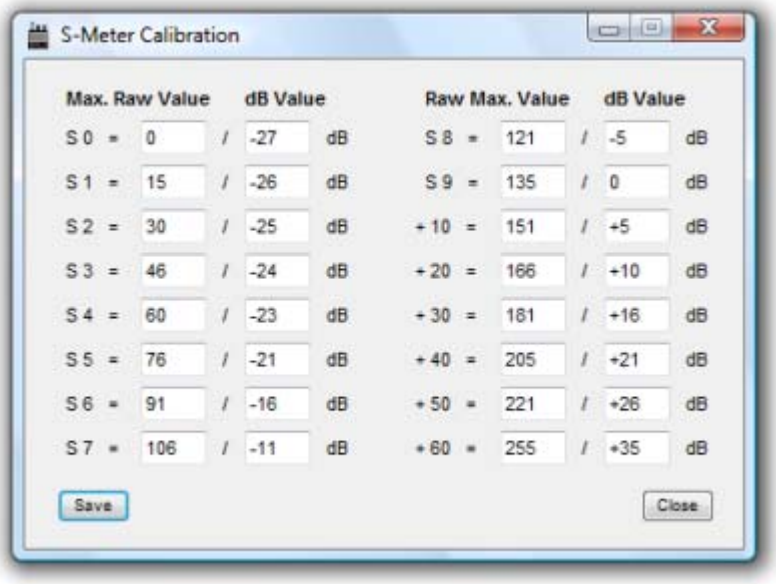
The graphical nature of this program makes using it easy and convenient utilizing what Microsoft gave every users of every Windows computer desktop. This software simplifies the radio listening hobby and provides visualizations that make sense to the user in real-time and during post-listening analysis.

S-Meter and Calibration

No other software offers the user the ability to calibrate the raw data values being sent from the receiver to the computer. Using the S-Meter Calibration display the user can set the s-meter values to measured values particular to their own listening arrangement.



The S-Meter is an area of radio reception that may be set up to address a particular listening situation as needed. Signal strength can be affected by the type of antenna used, the bands you listen on and the area you live. Setting up the S-Meter is essential to understanding the information it is providing about a received signal. This software provides generic values common to all receivers, but these may be set up to user preferred values.



Listening is only a mouse click away!

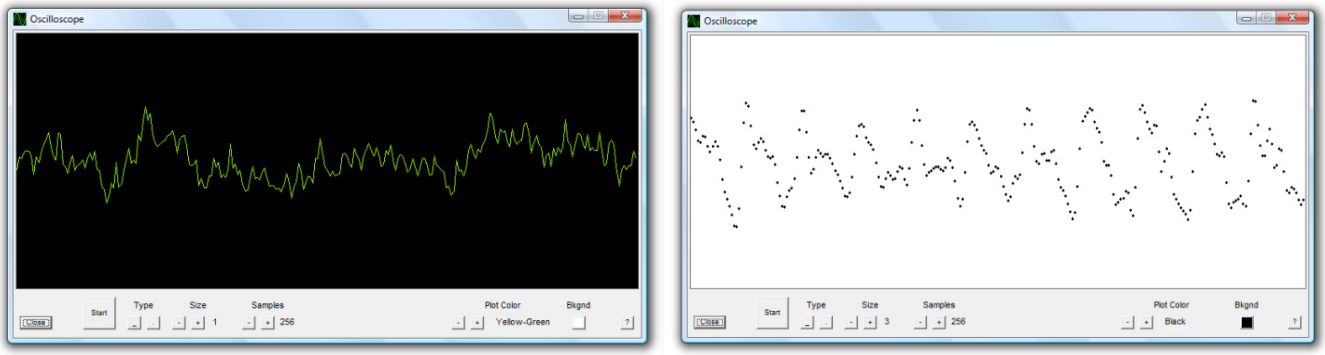
System Requirements

R-20 all mode/wide band communications receiver
Windows Vista, Windows 7 Operating System
1.7 GHz CPU
Sound Card
800x600 screen resolution (minimum)
512 Megabytes of RAM
9-Pin serial port (COM 1 through COM 16)
9-Pin Serial Port to ICOM serial connector cable or interface cable
USB to Serial Port Adapter (required if you don't have a physical built-in serial port on your computer)

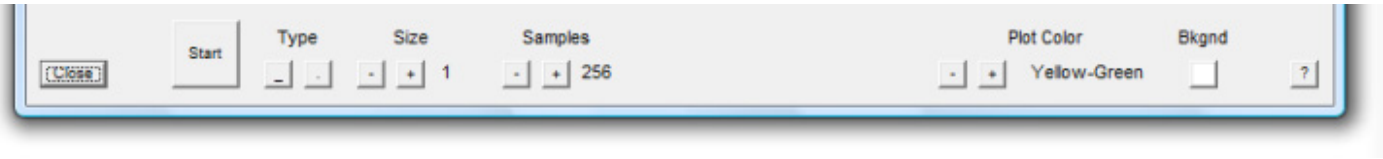
It is important that the user understands that all hardware is supplied by the user and is not included with the purchase price of this software.

Audio Visualization…An Oscilloscope Display for Radio Listening

This is an audio oscilloscope designed to enhance your general radio listening and monitoring experience. It gives the user the ability to observe audio signal characteristics of known and unknown signals found throughout the radio spectrum.



The large, versatile and configurable display with its easy to use controls has been combined into a logical and understandable layout. Compatible with Windows XP, Windows Vista and Windows 7 operating systems, this a valuable program to add to your radio monitoring toolkit.



This software is designed to work with any audio source utilizing a sound card line in or microphone jack, this software offers real-time features to enhance the visualization of incoming audio.

Features

- Audio Samples from 8 to 256 bits
- Audio display with 15 different selectable colors
- Two types of spectrum displays - Line/Dots
- Selectable size of display elements
- Background color selectable between black and white
- Start and Pause controls to activate or freeze the real-time display

Audio Samples from 8 to 256 bits

Select between 8 and 256 bit samples in the audio display. Easy to use controls allow you to change the sampled audio of your display. You can alter the resolution of your sampled input using this control.

Two types of spectrum displays - Line/Dots

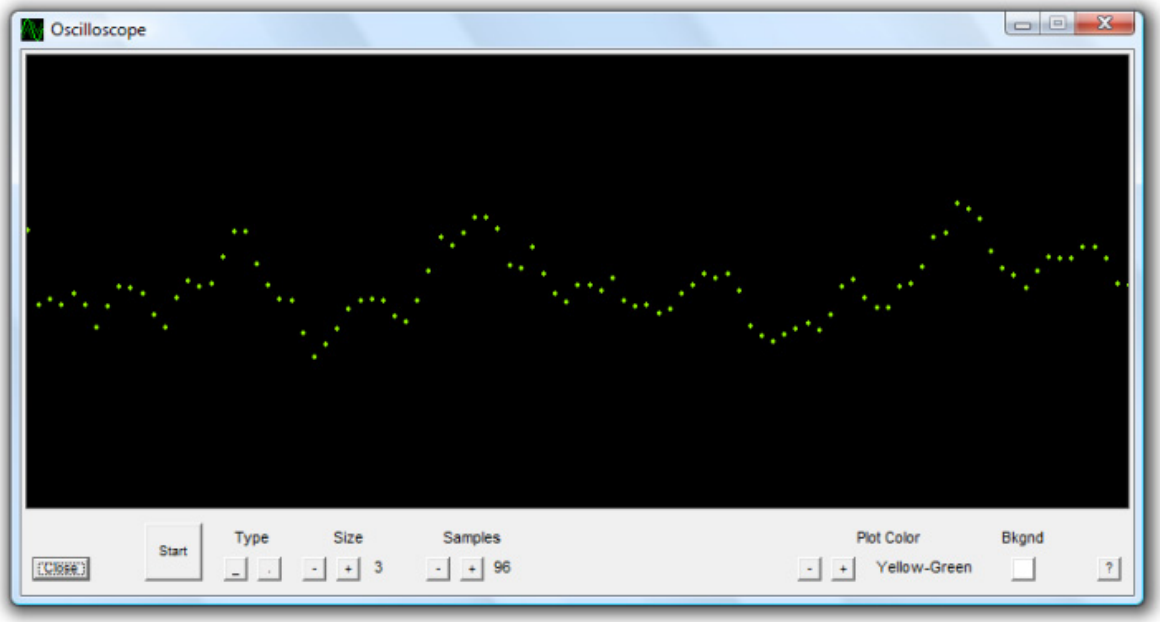
Choose between two plot representations of the incoming audio. The Line display will display a standard oscilloscope line display. The dot display will display the sample points used to display the incoming audio.

Adjust the appearance of the oscilloscope display

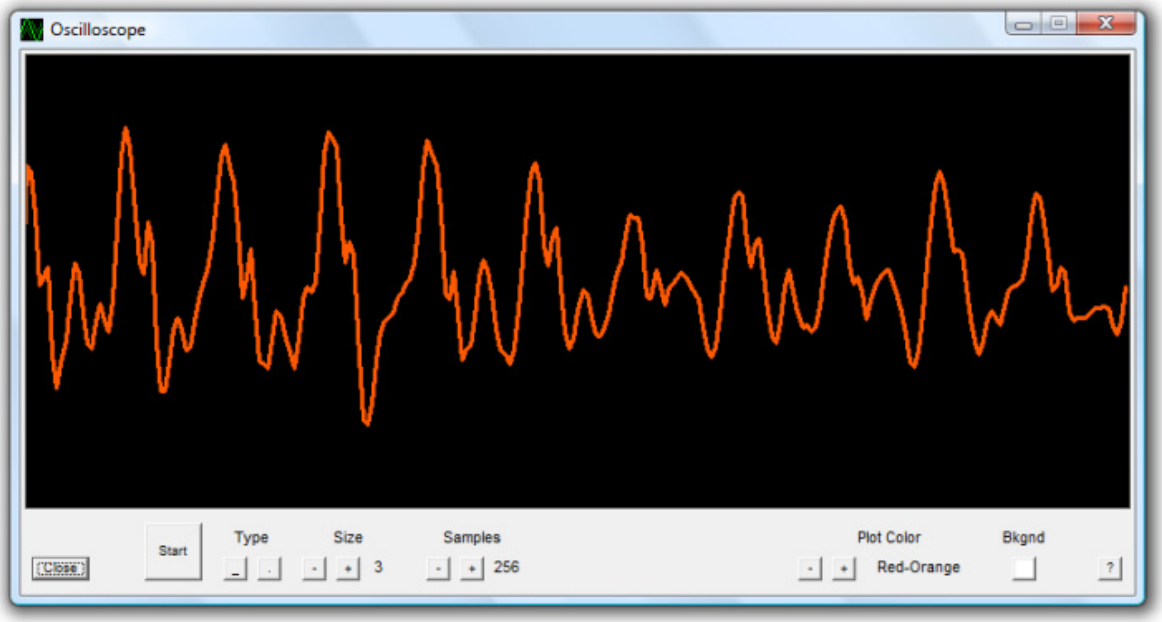
You can choose from 15 different colors, Black or White background colors and two types of displays to make your signal analysis more visually understandable.

Start and Pause the Real-time Display

Start the display to watch the audio oscilloscope show the real-time audio signal and use pause control to make observations about an audio signal. Press the start button again to restart the real-time display.

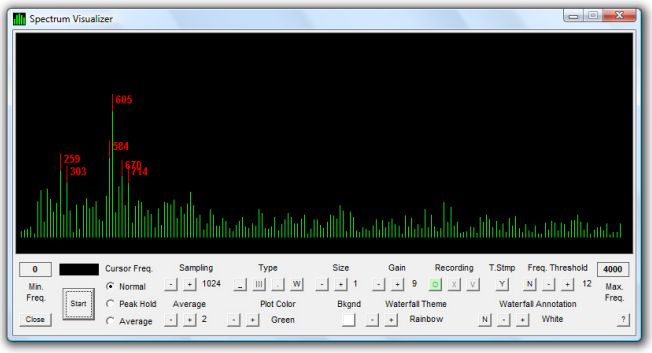


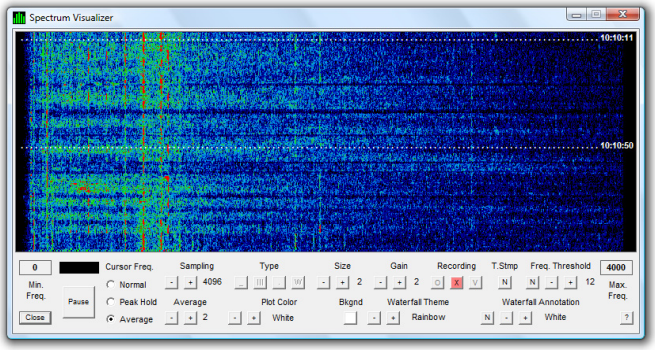
Part of listening is making the received information clear and easy to manipulate. Designed for radio monitoring, this oscilloscope display has the ability to display the incoming audio in a variety of formats and colors applicable towards describing the signal in a manner that is visually clear and recognizable.



Audio Visualization…you won't believe your eyes what this can do.

This is an audio spectrum analyzer designed to enhance your general radio listening and monitoring experience. It gives the user the ability to perform frequency analysis on known and unknown signals found throughout the radio spectrum.





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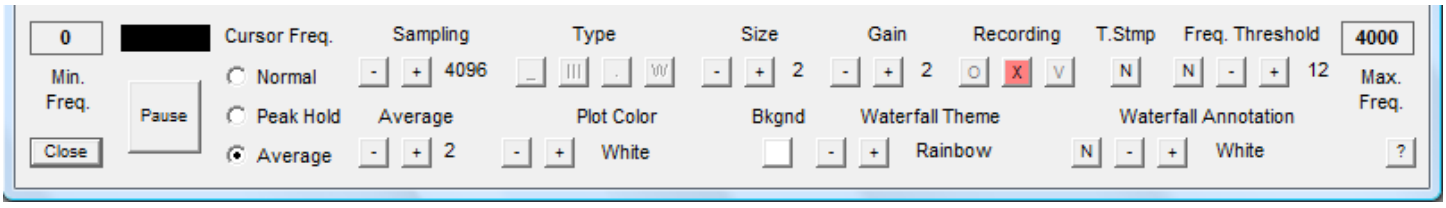
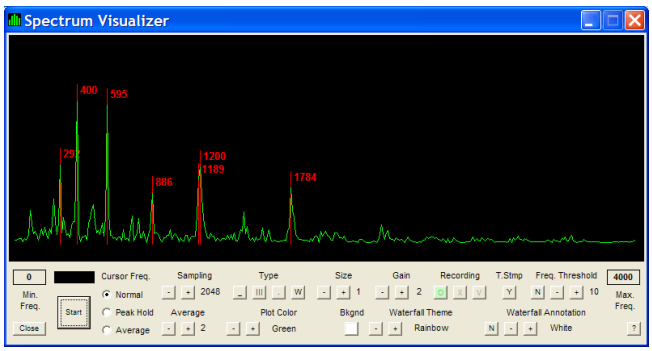
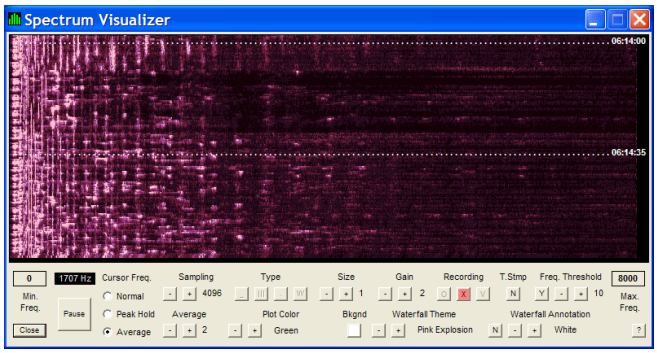
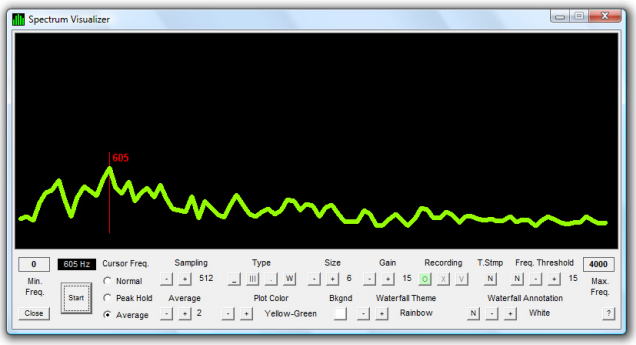


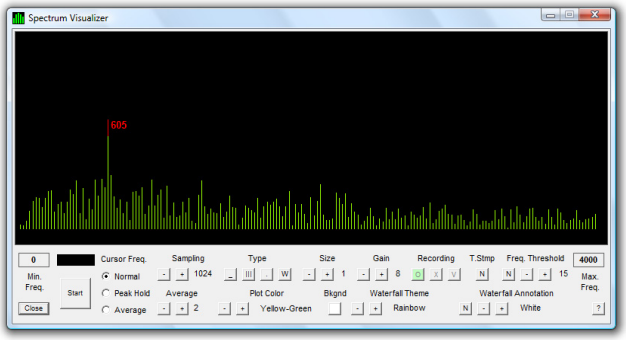
There are a variety of audio spectrum analyzers available on the Internet, but few of them have the features found in this versatile and practical audio spectrum analyzer. Designed to work with any audio source utilizing a sound card line in or microphone jack, this software offers real-time and post-listening features to enhance radio monitoring and signal analysis.





This software is a standard feature included with my latest radio control software, but may be purchased as a separate stand alone program for use with any radio receiver audio input.



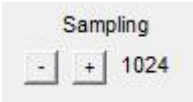


Features

- FFT selectable from 128 to 4096 Samples
- Three different modes of operation Normal/Peak Hold/Averaging
- Input gain control
- Frequency spectrum display with 15 different selectable colors
- Selectable range of sample frequencies between 0 and 8000 Hz
- Four types of spectrum displays - Line/Bars/Dots/Waterfall
- Selectable size of display elements
- Real-time peak frequency indicator with threshold control
- Background color selectable between black and white
- 6 different waterfall display color themes
- Real-time waterfall frequency annotation with 15 different colors
- Waterfall display recording and time stamping

FFT selectable from 128 to 4096 samples

Select between 128 and 4096 samples in the frequency spectrum display. Easy to use controls allow you to change the Fast Fourier Transform of your display in an active or inactive state. You can alter the resolution of your sampled input using this control.



Three different modes of operation Normal/Peak Hold/Averaging

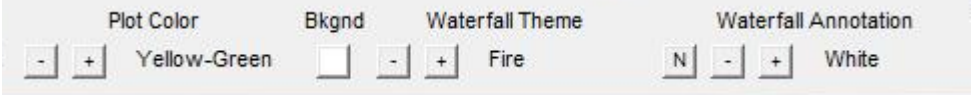
Use different modes for a variety of listening situations. Normal mode is most applicable during good signal reception and strong incoming audio. Peak Hold can give you an overall view of the incoming audio range your receiver is capturing. Averaging mode can smooth a weaker signal, reduce low level noise and improve a weaker signal's visual appearance and capture.

Input Gain Control

This control gives you a broad range of input gain and adjustment of the incoming audio signal from your receiver or transceiver. Not all audio output from all receivers is the same and being able to control the input level is a nice feature.

Adjust the appearance of the frequency and waterfall spectrum displays

You can choose from 15 different colors, 6 different waterfall color themes, Black or White background colors and four types of displays to make your signal analysis more visually understandable. Part of listening is making the received information clear and easy to manipulate. Designed for radio monitoring, this frequency spectrum display has the ability to display the incoming audio in a variety of formats and colors applicable towards describing the signal in a manner that is visually clear and recognizable.



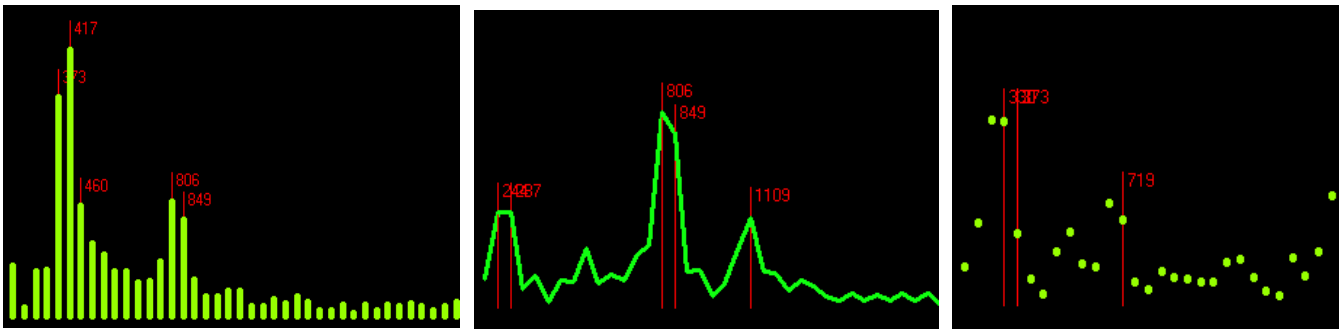
You can display your audio spectrum information in nearly any way you choose. The visualization of real-time data can enhance your monitoring tool kit. Use a visual tool that is versatile, easy to use and lets you focus on what you love to do the most…listening.

Selectable range of sample frequencies between 0 Hz and 8000 Hz

Now you can change the sample frequency range to suit your signal specific needs. Text boxes allow the user to fill in the desired range from 0 to 8000 Hertz for the active or inactive display. This is like a “zooming” feature that narrows the view to a range of frequencies that you want to view.

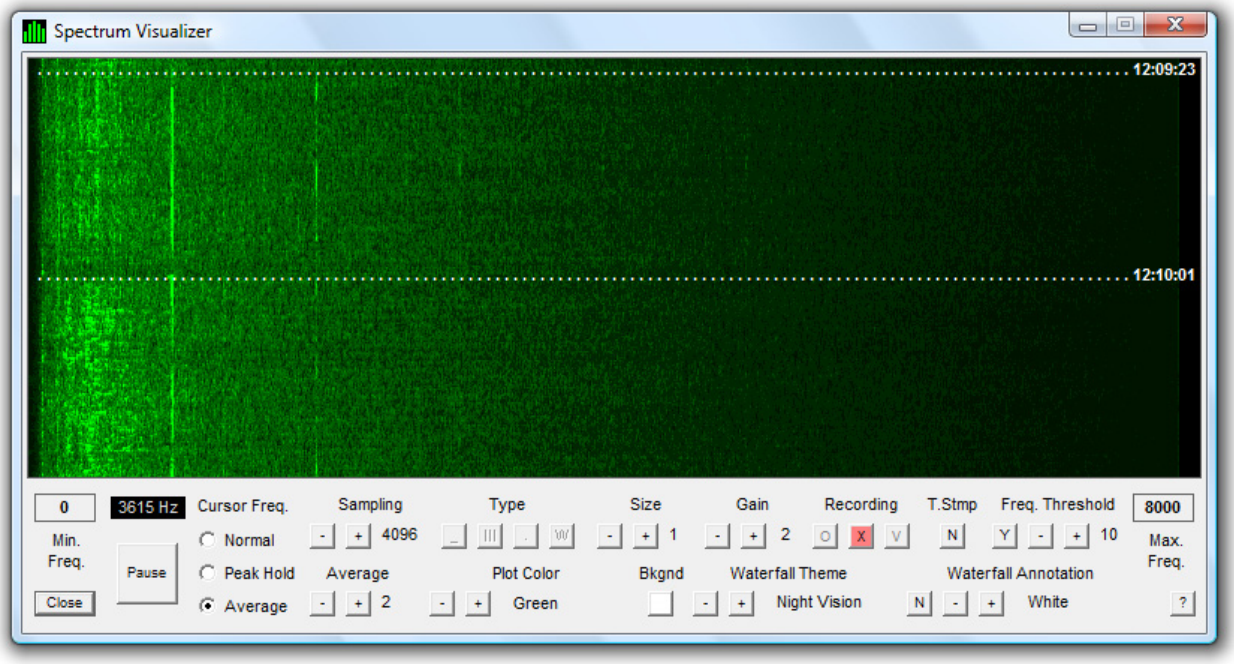
Real-time peak frequency indicator with threshold control

The peak frequencies in a FFT are displayed in the frequency spectrum window in real-time while you are doing other monitoring activities (your mouse doesn't need to be over the frequency spectrum window to see peak frequencies). This tool allows the user to identify audio tones and types of modulations being produced by utility stations and other various types of transmissions.



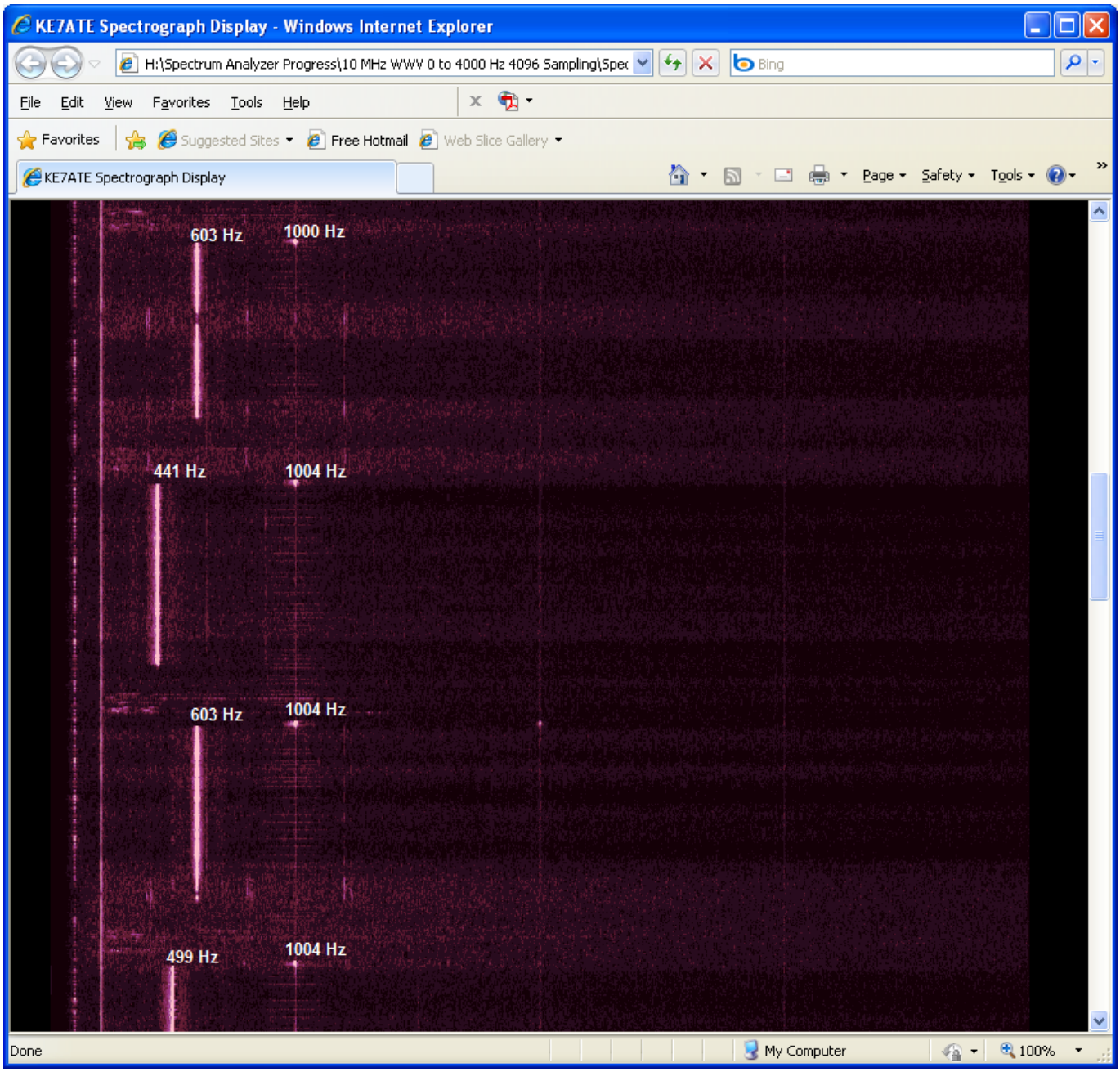
Waterfall display recording and annotation

Continuous waterfall display recording and viewing. This is a handy tool for those who want to do some further analysis of any audio signal. This feature will store the waterfall spectrum and allow the user view the saved waterfall data for future analysis, using the default Internet browser to display the saved waterfall spectrum data. No additional software is required to view the saved data files. Also, the user may annotate the waterfall image in real-time with the frequencies of selected areas.



This is an actual size screenshot of the waterfall display of WWV at 10 MHz as received on the ICOM R-20 receiver using a 10 foot stranded wire antenna.

A waterfall spectrograph is very useful in watching a signal change over a period of time, and saving a recording of the waterfall display means you don't need to replay the input signal from a recording to reproduce the waterfall display. While saving a spectrum display is handy for future analysis, real-time annotation of the waterfall display is even better.



This is an example of the saved output as viewed using the user's default Internet browser window. The output may be saved in another folder for future analysis.

What will you do with all this at your fingertips?...The radio spectrum is waiting for you.

Software and Hardware Requirements:

Operating system: Microsoft Windows XP, Microsoft Windows Vista or Microsoft Windows 7
Internet Browser: System default such as Internet Explorer, Mozilla Firefox, etc.
Sound card: Line-In audio Input
Minimum screen resolution: 800 x 600, (1280 x 1024 is preferred)
*Audio cable connection between receiver/transceiver and computer Line-In input

*Cable and receiver/transceiver not included with this software package.

Specifications

Version 2.00

System Requirements

ICOM IC-R20 Communications Receiver
Microsoft Windows Vista or Windows 7 Operating System
Sound card audio device
800x600 screen resolution
512 Megabytes of RAM
9-Pin serial port or USB to Serial Port Adapter cable
ICOM or similar control Interface with connecting audio and serial control cables

General Features

Frequency scanning and auto-logging capability
Audio recording
Real-time signal graphing and recording of signal data
User defined startup settings
Auto logging of scanning and received signals
Calibrated signal scan and spectrum displays
Waterfall spectrum recording capabilities

Control

Large frequency display with mode/step and signal strength display
Two selectable S-Meter types
+/- step frequency increment and decrement
+/- 1 MHz frequency increment and decrement
+/- 1 kHz frequency increment and decrement
Mouse Wheel frequency increment and decrement (may be toggled on/off)
Frequency Lock Button
Frequency entry via an on screen keypad
Multi-button mode selection
Step selection
Continuous and intermittant audio recording controls with date/time/frequency stamping

Scanning

Up/down scanning
Auto-logging of threshold based signal strength
Adjustable signal threshold
Frequency calibrated display

Reception Log

Save, load and create new reception logs with the click of a button
Auto-population while scanning
Mouse selectable listings
User editing capabilities including the ability to add comments
listings stored as text files and may be edited
Functions as a radio listening log as well as stored frequency listing.

Oscilloscope Display

Line or dot display settings
15 color settings
Background White/Black display toggle
Adjustable sample rates of real-time audio
Display start/pause

Signal Graph Display

Real-time graphing of received signal strength (One Active signal)
Adjustable signal threshold
Signal strength calibrated display
Signal strength data recording

Audio Frequency Spectrum Display

0 Hz to 8000 Hz frequency range
Line/Bar/Dot/Waterfall display settings
15 color settings (Line/Bar/Dot)
6 color theme settings (Waterfall Display)
Background White/Black display toggle
15 level gain adjustment
Display start/pause
Calibrated display (+/- 15 Hz)

Signal Spectrum Display

Graphing of received signal strength over a frequency range
Frequency range determined by scan step
6 color theme settings (Waterfall type of sisplay)
Display start/pause
Calibrated display (+/- 100 Hz)