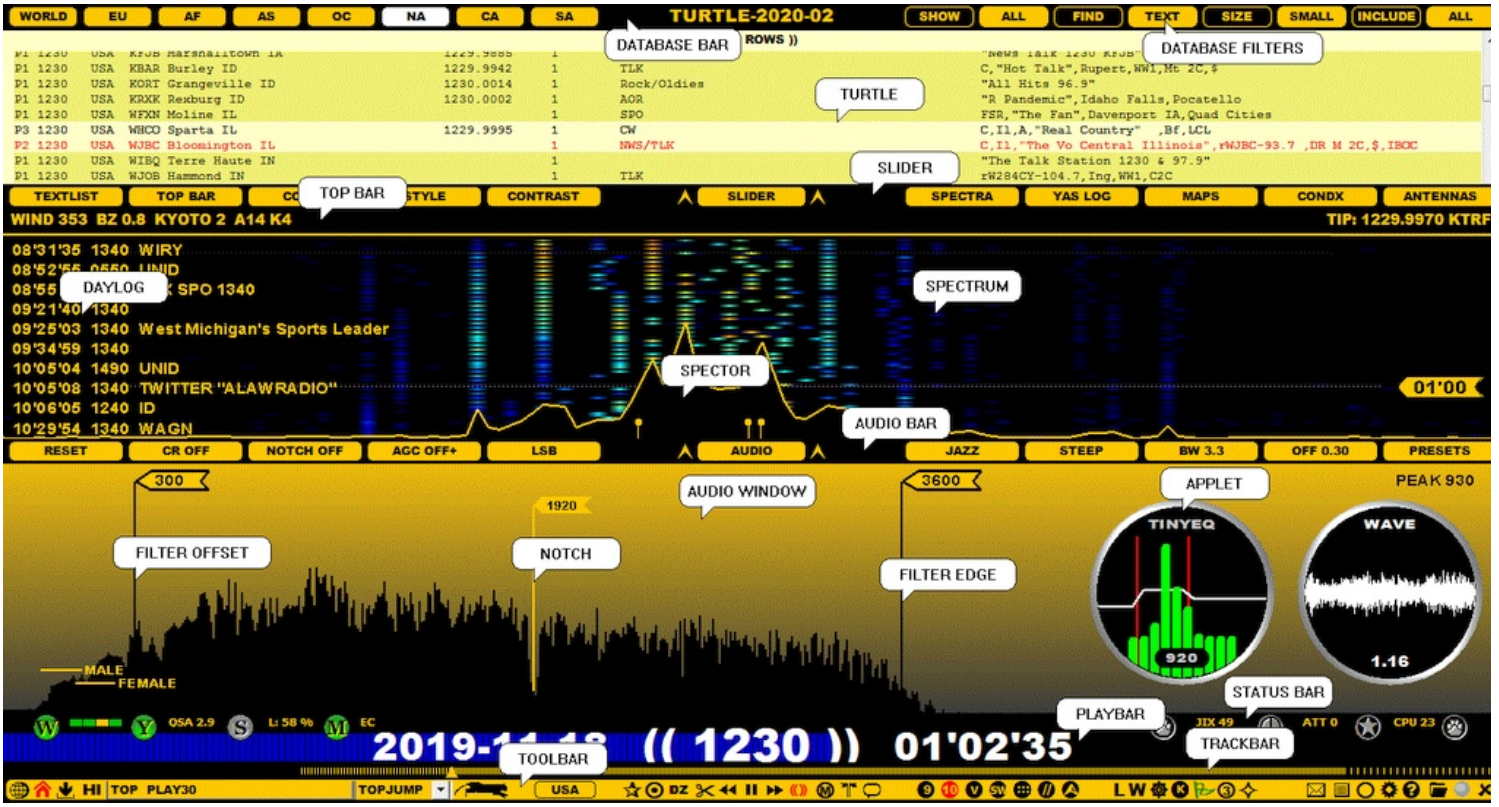
JAGUAR GUIDE V7

2021-08-13



AGC

AGC (Automatic Gain Control) regulates the signal level of the audio output.

A good AGC normalizes RF signals to the standard output level, in spite of any amplitude changes. An amplitude control function includes elimination of signal overloads in static crashes, followed by a quick restore back to the standard level immediately after the overload.

Basically, all changes in the gain are bad for weak signals: every gain change also slightly modifies the "raw audio", and this is why many experienced DXers keep their AGC disabled, especially while studying some specific ID. As a result, you will need to set the gain manually in each individual case. Also, when making audio clips, one of the rules of thumb is to disable the AGC unless there is some specific reason to use it.

JAGUAR's AGC has three different modes: AGC ON (default), AGC OFF and AGC OFF+. When AGC is OFF, the gain level is fully controlled by the user.

AGC OFF+ is a special, "semi-locked average" mode which combines the best of the ON and OFF modes. Normally, AGC OFF would require constant tuning for the optimal gain level for each frequency, and this is where the semi-locked gain values come in.

When you tune in to a new frequency in the AGC OFF+ mode, JAGUAR will determine a "semi-lock gain value" within the first 500 ms of the playback. The gain value is then kept fixed during the playback of this frequency until an amplitude overflow happens, or a new "semi-lock" is created.

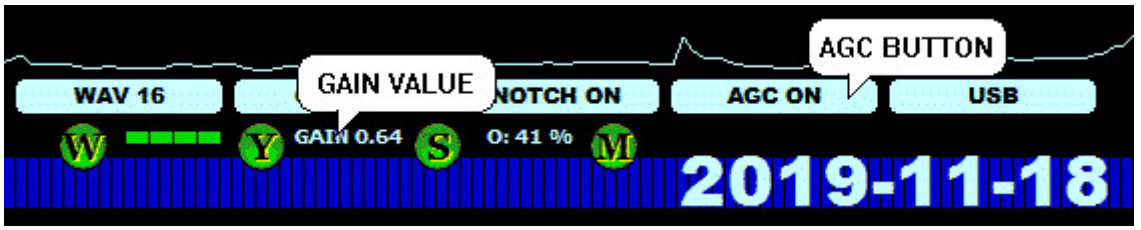
A new semi-lock value will be calculated (the gain value can also remain the same) in the following cases:

- the SSB mode is changed
- the frequency is changed
- the filter is changed
- the file is changed (provided that there is a time gap between the old and new file)

The AGC should not be mixed with the Click Remover (CR) even though both handle amplitude overflows. CR is good for recovering clicks caused by electric fences, i.e. very short audio bursts.

HOW TO

By default, AGC is always ON. You can change the AGC status by clicking the AUDIOBAR > AGC button, or by clicking the AGC button on the AUDIO APPLET.

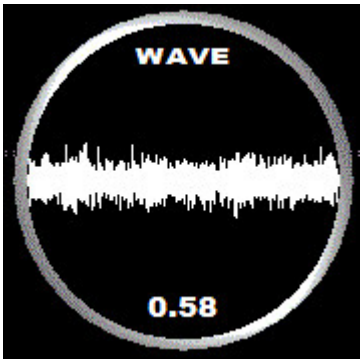


Clicking those buttons will rotate in the following order: AGC ON > AGC OFF > AGC OFF+. If you scroll (with the mouse wheel or the left/right arrow keys) instead of clicking, you will always enter into the manual gain control mode, and you will need to increase/decrease the gain value by yourself. If you had AGC ON, the mode would be changed to AGC OFF, and you can return from AGC OFF to AGC ON by clicking the AGC button.

The AGC behavior can be seen by monitoring the "gain value". The gain value is shown

- on the STATUS BAR (between the Y and S service buttons): click this area to select GAIN from the QSA > SIR > GAIN rotation

- on the WAVE APPLET: in this example, the numeric value of 0.58 on the bottom of the applet is the current gain value

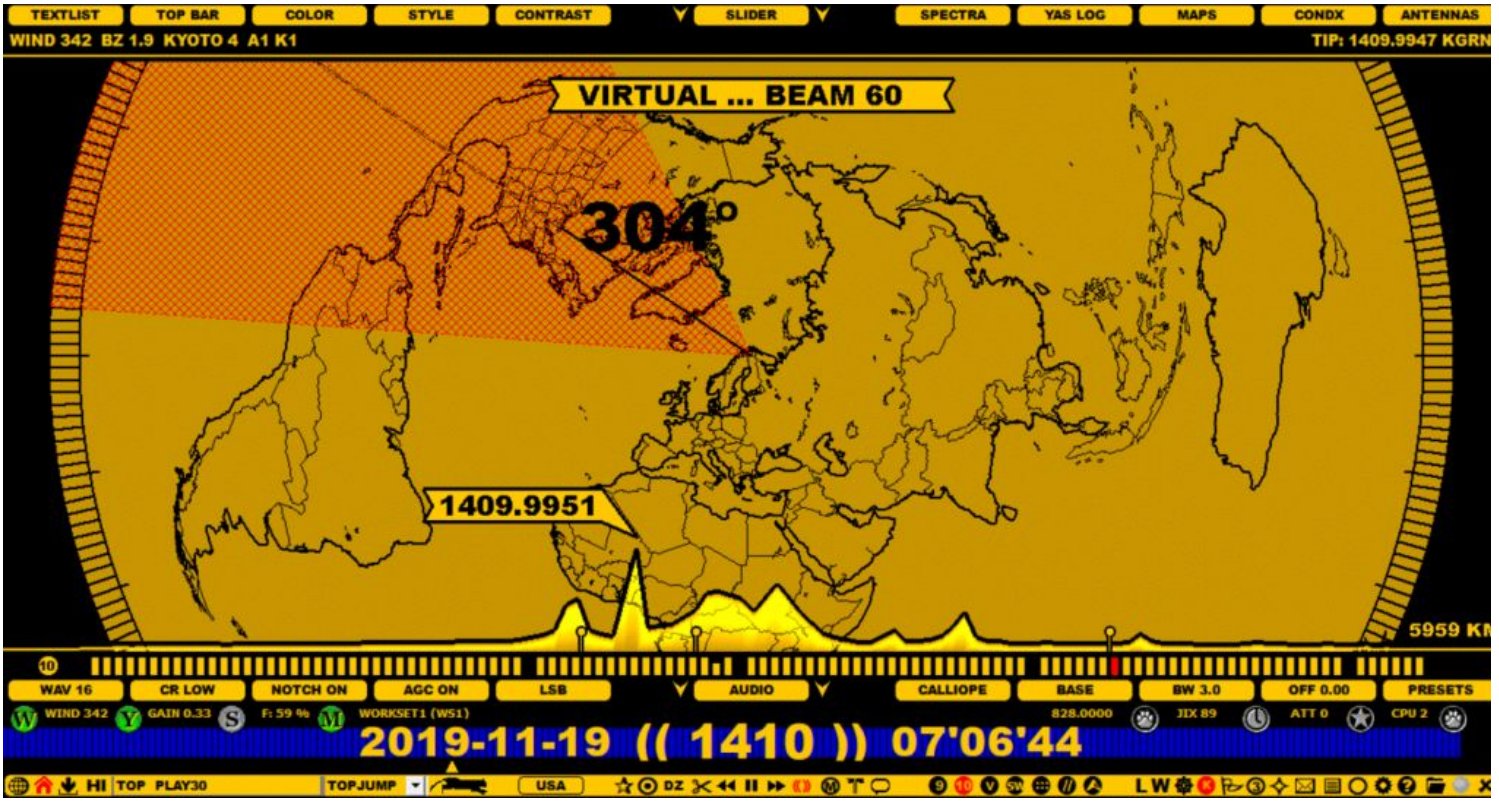
  

The background of the WAVE APPLET will flash as red when AGC performs major elimination actions ("AGC hits") of any quick signal burst (such as a lightning struck).

Also, JAGUAR's audio equalizer - the TINYEQ APPLET - has an effect on the gain.

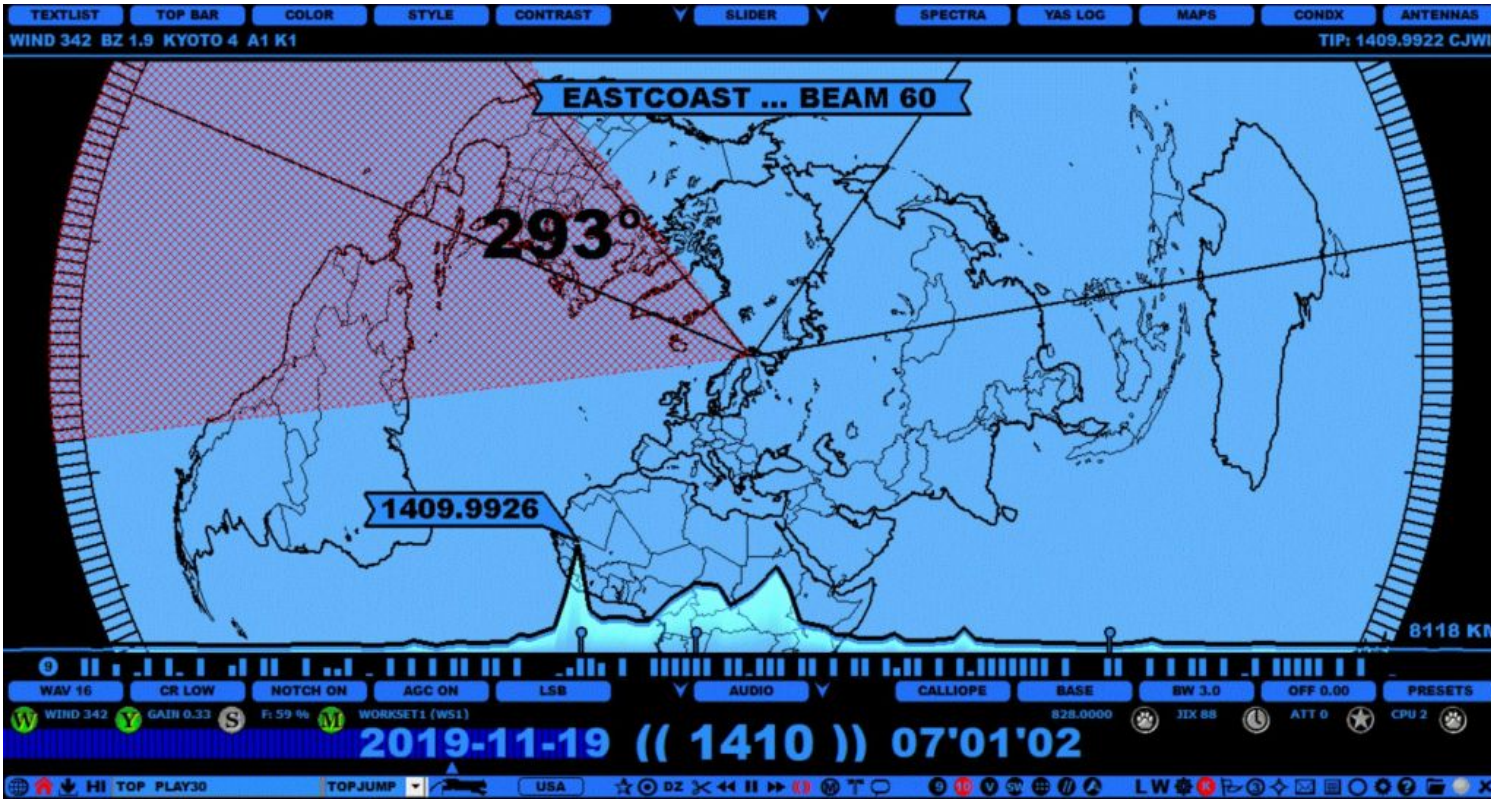
ANTENNAS

If you want to evaluate antenna beams and directions without any antenna definitions, you can use the ANTENNAS display for "virtual" antenna tests.



JAGUAR PRO ONLY

If you have defined your antennas in the SETTINGS > ANTENNAS window, the ANTENNAS display will show them accordingly. You can select an antenna for example by clicking it on the map, or by pressing the "A" key repeatedly until the desired antenna becomes red.



The selected antenna becomes your "current antenna", and the name defined for it will be added as a suffix to the file name of your recordings.

In addition, JAGUAR can also make a physical antenna change if you use either Devantech or Velleman relay boards (or a third-party antenna switcher which can be invoked from JAGUAR).

HOW TO

KEY = A

The ANTENNAS map can be shown by pressing the "A" key, or by clicking SLIDER > ANTENNAS. You can return to the original display by pressing "A" once again.

The ANTENNAS display has the following characteristics:

- You can move the display up/down with standard mouse drag'n drop
- You can zoom in/out the display with mouse wheel when the mouse cursor is over the map
- You can show directions (0-359 degrees) by moving mouse over ANTENNAS map
- If you left click the map, a virtual antenna is drawn with a 60-degree beam

When an antenna is selected (indicated by a red beam), you can increase/decrease the beam with in steps of 5 degrees in the following ways:

- Using mouse wheel when mouse cursor is over the beam or over the ANTENNAS button
- Using left/right arrow keys when mouse cursor is over the beam or over the ANTENNAS button
- Using left click/right click when mouse cursor is over over the ANTENNAS button

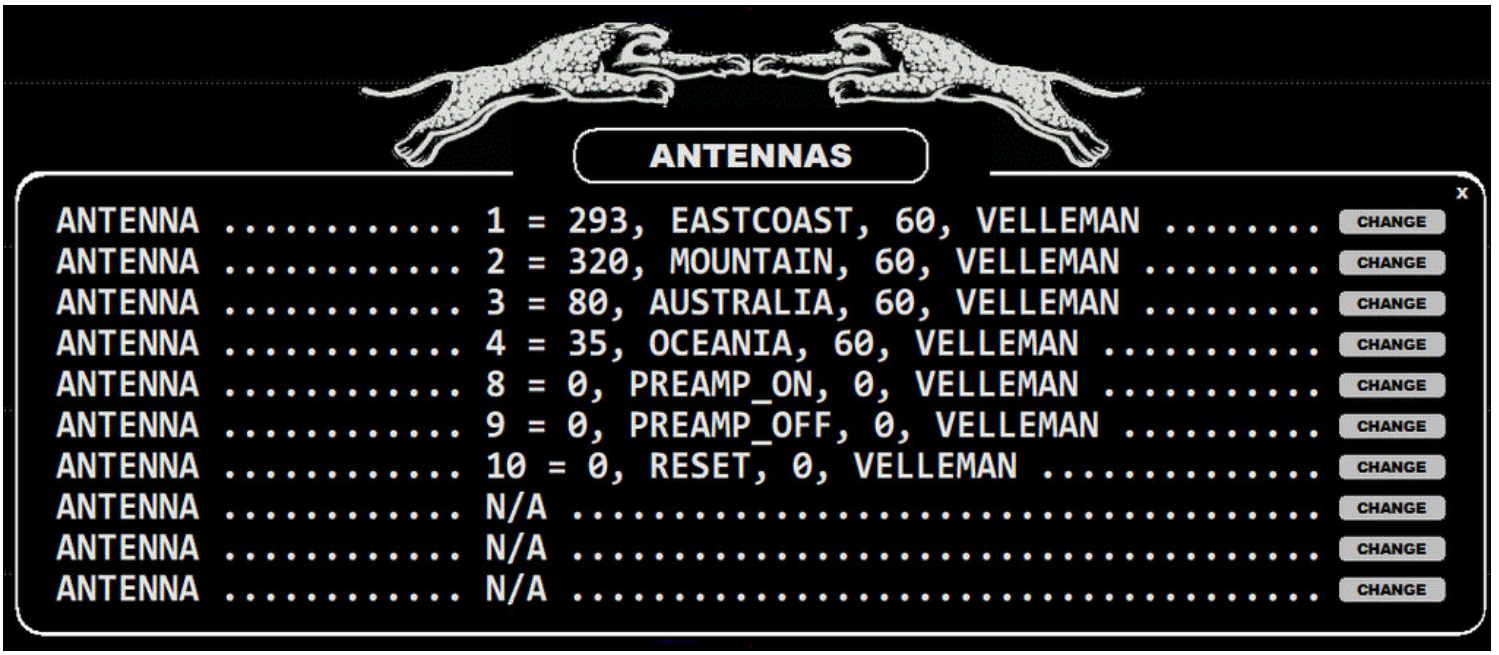
In addition, the distance (km) from your QTH to the position pointed by the mouse pointer is shown on the lower right corner of the display.

JAGUAR PRO ONLY

How to define your antennas in JAGUAR

You can define your JAGUAR antenna setup by opening the SETTINGS > ANTENNAS window and making a definition for each antenna. The defined antennas will be shown on the ANTENNAS map. Antenna switches are also supported; JAGUAR has a built-in support for the Velleman and Devantech antenna relay boards. These boards can also be used to switch the preamp on/off. If you have the Velleman/Devantech relay boards, their drivers must be installed first, and the COMPORT=port parameter may need to be defined in SETTINGS > PLUGINS.

Let us assume that you have four beverage antennas, beamed at 293, 320, 80 and 35 degrees (with an estimated beam width of 60 degrees) and a preamp is also used. In the following example, the Velleman relay board is used: the slots 1-4 have the antennas and the slot 8 has the preamp. Each line is entered by clicking the "CHANGE" button, adding one antenna definition into the corresponding text box and then clicking "SAVE" for the added antenna).



Each ANTENNAS line consists of the antenna number and three parameters: direction, name, beam width (or scan target, see below). The fourth parameter is optional: it can be either "VELLEMAN" or "DEVANTECH" (if you use either of these antenna relay boards for the antenna switches) or it can be any third-party antenna switch that can be invoked from the command line - in that case the full path to that CMD/BAT file must be given as the fourth parameter.

The antennas can now be switched as follows:

- by choosing from the TOP MENU > ANT
- by pressing "A" on the keyboard. This will rotate the antennas 1-4.
- by clicking the antenna on the bearing map

- with the function keys PF1-PF4, and Preamp ON with PF8, Preamp OFF with PF9. This requires SETTINGS > KEYBOARD > ANTENNAKEYS = YES
- scheduled in MESTOR. A new WORKSET must be created in MESTOR, and the change must be scheduled in MESTOR, see the MESTOR help.

Note that the antenna reset (for all antennas) is available via the TOP MENU only.

The third parameter (beam width) can be replaced by the default scan target of the antenna (MW9 or MW10). If MW9 or MW10 is used (instead of the beam width), the system will change the LIVESCAN target automatically when the antenna is switched (see GUIDE > LIVESCAN for more details).

This is a handy feature when LIVESCAN is used: for example, a scheduled SET ANTENNA function will change both the antenna direction and the LIVESCAN scan target at the same time. If MW9/MW10 is defined for any antenna, the default width of 60 degrees is used as the beam width for that antenna on the ANTENNAS display.

APPLETS

JAGUAR PRO ONLY

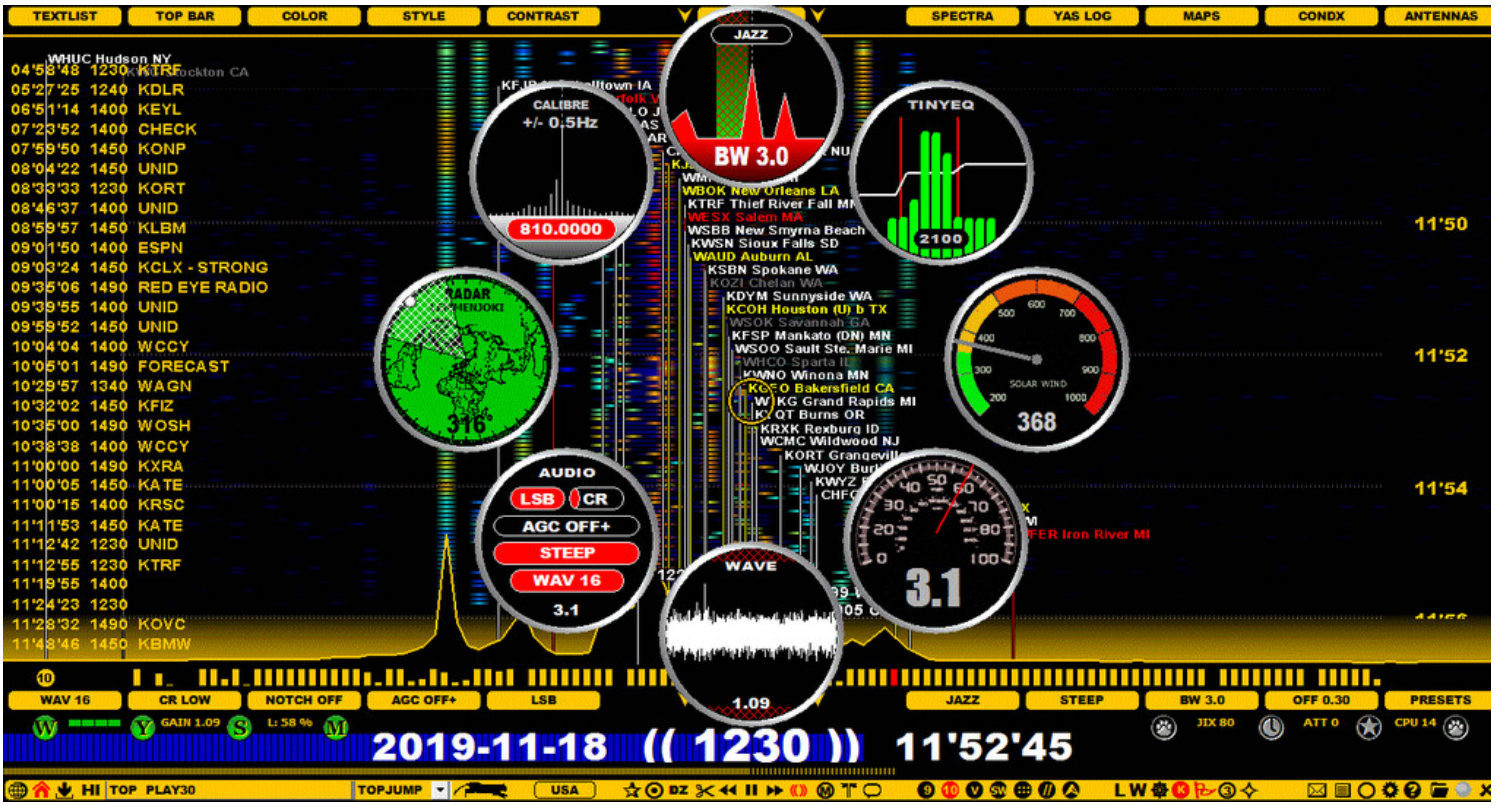
The APPLETS are small, round tool windows for extended JAGUAR control. Sometimes applets are also called by their legacy name of BB ("Ballroom Blitz") applets. Many of the functions included in the applets can be controlled via other JAGUAR bars/displays, but the applets are convenient as they can be positioned anywhere on the screen.

HOW TO

KEY = TAB and ALT-B

The applets can be invoked either individually by pressing the TAB key or via the TOP MENU. If you have TIMEWHEEL enabled, that will reserve the TAB key for itself. The applets appear first in their base locations in the centre of the screen; the applets located in these base positions will not be remembered at JAGUAR restarts. Every applet becomes permanently active if you relocate it by dragging and moving it with the mouse to any location on the screen.

Pressing ALT-B relocates (and hides) all the applets at once as a large circle on the screen ("Ballroom Blitz"). If you want to hide the active applets temporarily, click the TOOLBAR > CLEAR icon. Click the icon once more to make them visible again.



Individual applets can be launched also from the popup menu after TOOLBAR > APPLETS is clicked.

Right-clicking an applet itself removes it from the screen and de-activates it. JAGUAR will remember the screen positions of all the active applets after a restart.

Here is the current applet portfolio:

FILTER

FILTER, RF filters. You can rotate all the available filters by clicking on the filter name button on the top. The bandwidth (BW) of the currently active filter is shown on the bottom of the applet (and on AUDIOBAR); the offset of the currently active filter is shown only on AUDIOBAR by default. Note that also the AM MODE filter has an "offset"; it is the shift of the filter center from the nominal.

You can change the SSB mode by clicking the left (LSB) or the right (USB) side of the applet (not available for the AM MODE filter).

When you hover the mouse over the applet, and one of the filter edges will be shown as red, you can:

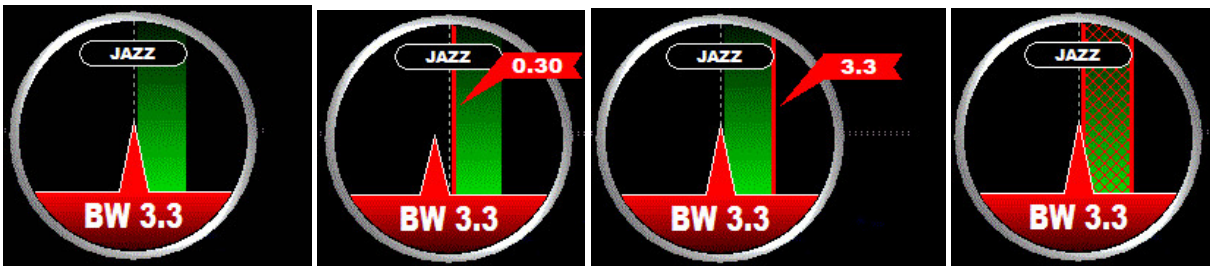
- scroll either the inner or outer edge of the filter with the mouse wheel or with the left/right arrow keys. The target edge is shown in red. When changing either edge, also the filter bandwidth is changed automatically. The filter offset is changed when you change the inner edge.
- see the offset / bandwidth values of the currently active filter as a flag when the mouse cursor is exactly over the red line

- see the "STEEP" flag if you are in the normal filter mode and the mouse cursor is between the red lines: you can get "more filter power" (and toggle the NORMAL and STEEP modes) by clicking that filter area on the applet. When STEEP is active, the filter area is covered with a red "fish net" (see the STEEP help for more information).
- only change the offset, maintaining the bandwidth, by dragging the filter area left or right; in this case, both edges are shown as red.

Note that filter characteristics (name, bandwidth, offset and STEEP mode on/off) can also be changed via AUDIOBAR.

If you hover the mouse over "BW", you will see the RESET button. If you click RESET, JAGUAR restores the default filter settings: the 3-kHz bandwidth with an offset of 0.3 kHz (except for AM MODE which is 6 kHz centered) with STEEP disabled. The defaults can be overridden by your own settings (see the CUSTOM > RESET help).

In addition to these standard operations, the FILTER applet also supports CUSTOMFREQS (more info in the CUSTOMFREQS help).

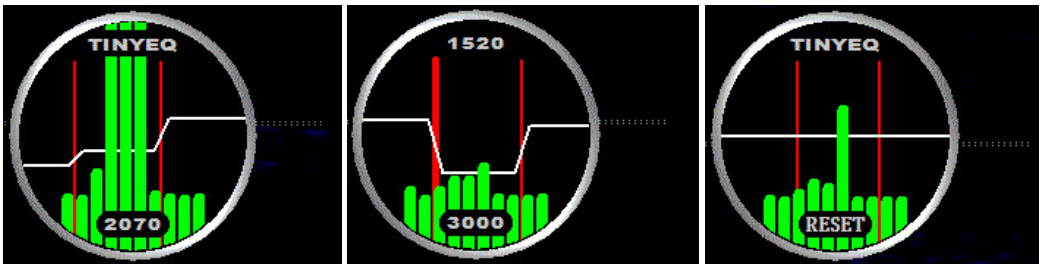


TINYEQ

TINYEQ, Tiny Equalizer is a simple 3-band equalizer which shows 10 audio frequency group bars. You can increase/decrease each of these frequency bands by moving the mouse over the band limit (the red line) and scrolling the mouse wheel or the left/right arrow keys. The band limit frequency is then shown on the top area. The number at the bottom of the applet shows the current maximum frequency in the audio spectrum. If that frequency remains unchanged, it usually means that the use of the notch is required.

When you have selected the bands you want to control, you can just move the mouse over that band area and increase/decrease the power of all the audio frequencies within that band with the mouse wheel or the left/right arrow keys.

If you move the mouse to the bottom and click "RESET", you can reset all 3 bands to their normal state. TINYEQ is probably the smallest and simplest possible equalizer that can exist. Nevertheless, it seems to be very efficient: the best way to test it is to tune in to a fully free frequency with plain noise. It is amazing how the noise level/quality varies depending on the selected equalizer settings.



However, normally, there is not much more you can get out of the audio itself by using a plain equalizer but sometimes it can be beneficial in shaping the "color" of the background noise.

The equalizer is always disabled when the TINYEQ applet is not visible.

SPACE WX

SPACE WX. Space weather center, reporting a selection of space weather indices. This service needs to be enabled (STATUSBAR > W > SOLAR DATA). In the LIVE mode, the current values will be shown, whereas in the ARCHIVE mode, the values at the time of the recording will be shown.

By default, this applet shows the SOLAR WIND value but you can toggle SOLAR WIND and ALL DATA by clicking on the applet.

There are four parameters which illustrate the current space weather in numbers and colors. The Bz value shows the current direction of the interplanetary (= the Sun's) magnetic field. When the Bz value turns to high negative values, it means disturbed conditions. KYOTO DST is a well-known indicator for trans-Atlantic openings, together with POLAR (= TromsÃ¸, Norway) A and K values. Highly increased PROTON flux values typically result in radio black-outs in the polar cap area. The threshold for storms is 10.

The following color scheme is used: GREEN = normal, YELLOW = unsettled, RED = storm/alert.

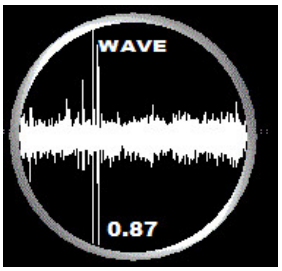
The "SPACE WX timestamp" is shown on the bottom of the applet in the ALL DATA mode.

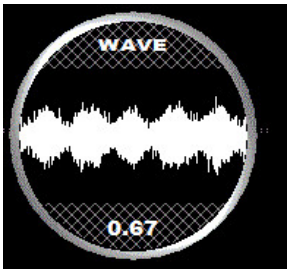
S-METER

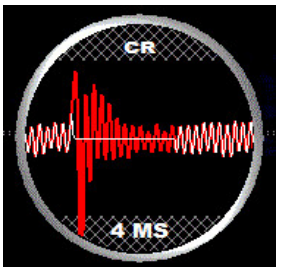
S-METER, Signal Strength Meter with a one-decimal accuracy. JAGUAR uses this format instead a more commonly-used dBm for displaying signals strengths. the S-METER applet has three different display formats available (the format can be changed by clicking on the applet): DIGITAL (default) > "SPECTRUMIZED" (red line showing the absolute low level) > GAUGE.

WAVE

WAVE, Dynamic waveform for the last second played. If the audio has no issues, the background color of the applet is black. A red flash is a sign of an AGC hit, and a yellow flash is an AGC warning. A clear audio is shown as a continuous steady sinewave but this is seldom achieved with DX signals. Instead, the waveform is often irregular, trashy and/or full of noise.







CR (Click Remover). If you hover the mouse over this applet and scroll with the mouse wheel or the left/right arrow keys, you can fine-tune the level of click removals. Sometimes, a signal can be very low but there can be clicks just above the overall signal level, and you may need utmost fine-tuning. In the images you can see the areas of effect: the grey hatched area can be moved up/down defining the CR cut limits, and when CR kicks in, this area is shown in red. In theory, CR is meant only for "independent clicks" in the audio (caused by horse fences, etc.); however some users have found it beneficial also in smoothing static crashes and splatters. But the cut limits must be far enough from the audio itself; otherwise CR will start to eat the real audio parts, too.

If you have activated CR, clicking the WAVE applet gives you another tuning tool: you can define the duration of CR operations. If the system has already made one or more CR cleanups, the real effect of the last CR process on the signal is shown on the WAVE applet: red spectrum shows the original audio, and the white spectrum shows the resulting audio after the CR process. The CR process cleans all the audio samples to zero (as seen in the example), and you can finetune the duration by keeping the mouse over the WAVE applet and scrolling the mouse wheel or left/right arrow keys. The duration of the CR process can be between 1 ms and 6 ms; clicks in the audio typically are 3-4 ms long.

AUDIO

AUDIO, Audio settings. You can finetune and change the following audio-related settings:

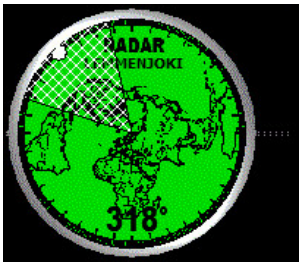
- SSB: Toggle USB and LSB
- CR: Toggle CR (Click Remover) ON and OFF. You can also finetune the removal level while the mouse is over the CR button, scrolling the mouse wheel, or with the left/right arrow keys.
- AGC: Click to rotate between AGC ON > AGC OFF > AGC OFF+. You can hover the mouse over the button, and scroll with the mouse or the left/right arrow keys: the AGC mode is changed to AGC OFF (if AGC was ON), and you can increase/decrease the GAIN value. Click again to return to AGC ON.
- FILTER MODE: Click to rotate between BASE > STEEP > STUDIO.
- WAV format: Set the output audio sampling rate. It can be rotated between 8 kHz > 16 kHz > 32 kHz (when the 1.6-MHz bandwidth is used) or 10 kHz > 20 kHz > 40 kHz (when the 2-MHz bandwidth is used). More info in the AUDIO help.
- The value on the bottom of the applet is the current Signal Strength (QSA).

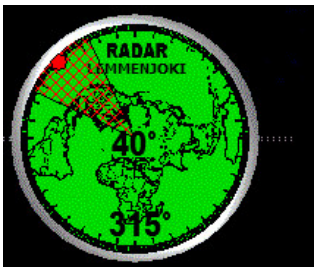
RADAR

RADAR, the main beam of the receive antenna for the FLAGS offset pole display (see TOOLBAR > FLAGS). The great-circle map on this applet is centered on the user's coordinates. Click once on the white beam to release the lock (or to see the beam itself if it is not visible) and move the beam toward the main beam of the antenna.

Use the mouse wheel to scroll to increase/decrease the beamwidth for the red beam. Click once more to lock the beam in place (the beam color returns white). The RADAR beam controls the target area for the FLAGS shown on the spectrum displays. Note that RADAR does not have any antenna-related functionality; it just defines the coverage area for FLAGS, even though it works like an antenna map.

Move the mouse to the top area of the applet, and click "RESET" if you want to remove the RADAR beam.





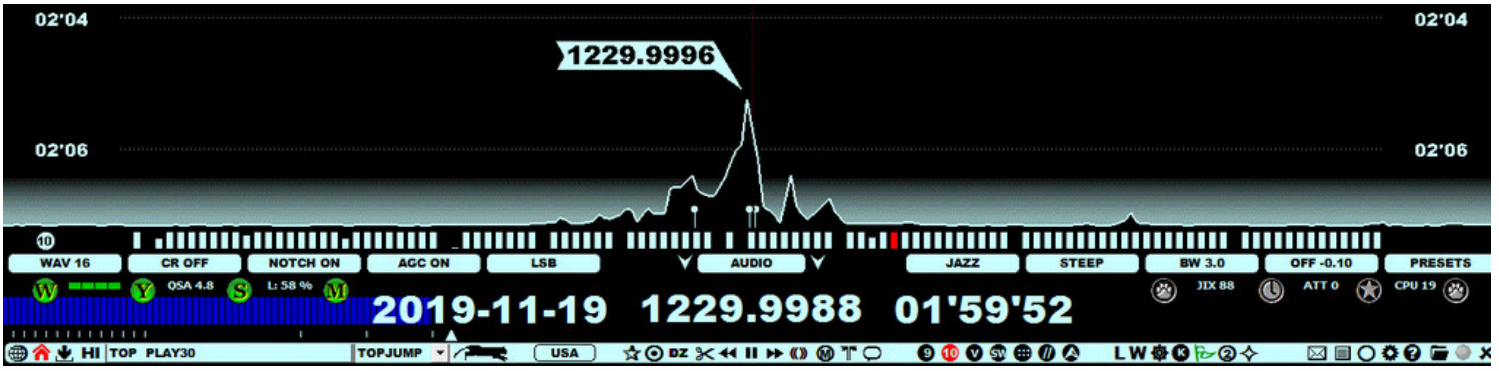
CALIBRE

CALIBRE, Calibration applet. This applet is intended for calibrating/checking that the calibration is spot on.

- Click the applet to calibrate/re-calibrate: JAGUAR will be calibrated against the maximum carrier peak on the current playback frequency (see KALIBRATE for details); however, it is highly recommended to use the FAST_CALIBRATE parameter in [CUSTOM]: you can calibrate/re-calibrate based on that frequency while playing back any frequency. The CALIBRE applet shows the calibration precision (0.5 Hz or 0.1 Hz), the calibration frequency and status (the red color on the background of the frequency means that calibration is "spot on").
- The applet also shows the current situation on the calibration frequency: each pixel is 0.5 Hz (standard calibration) or 0.1 Hz (HIRES calibration)

ARCHIVE MODE

When you review your recorded files, JAGUAR is in the ARCHIVE MODE. The Perseus hardware does not need to be connected while playing back archived files, but if you have Perseus plugged in, you can quickly toggle the LIVE MODE and ARCHIVE MODE anytime.



JAGUAR is currently the only SDR software available where users can play archived files while recording new files.

HOW TO

KEY = L

If you have Perseus plugged in, you can toggle the LIVE MODE and ARCHIVE MODE by pressing the "L" key, or by clicking TOOLBAR > L. In the ARCHIVE MODE, you will have several navigation options available, for example:

- Click PLAYBAR to jump to a new HH'MM'SS
- Press "N" or "P" to jump to the PREVIOUS or NEXT FILE. This is the same as clicking TOOLBAR > PREV FILE or TOOLBAR > NEXT FILE.
- Activate TOOLBAR > TIMEWHEEL, and you will have the option to scroll days / hours / minutes / seconds

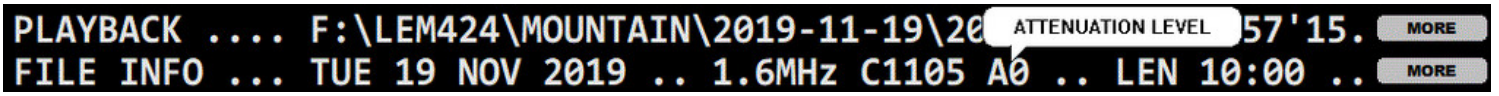
When you hover the mouse over the frequency display, you can always override the time-scrolling mode and move to the nominal frequency (based on the current stepping mode) with the mouse wheel or the left/right arrow keys.

The full documentation for the navigation features (time and frequency) can be found under the NAVIGATION help.

ATTENUATOR

JAGUAR supports the standard Perseus attenuation levels. The current attenuation level is shown on STATUSBAR

and on INFOBOX (KEY = I)



In the ARCHIVE MODE, the value is taken from the archive file header, showing the attenuation level used during recording.

HOW TO

KEY = ALT-P

You can rotate the attenuation level of the Perseus hardware by pressing ALT-P continuously: 0 (default, no attenuation) > 1 (-10 dB) > 2 (-20 dB) > 3 (-30 dB). The last used attenuation level is remembered at the next JAGUAR restart.

You can define the desired default attenuation level with the DEFAULT_ATT plugin (See SETTINGS > PLUGINS for more details):

```
PLUGIN ............ DEFAULT_ATT=1
```

You can also define different attenuation levels for scheduled daytime and nighttime recordings as described in SETTINGS > MESTOR (select the ATTENUATION template from the menu). Often, the overnight recordings are set to use the attenuation level of 1 (ATT1, -10 dB) but, in the morning, the attenuation level will be changed to the attenuation level of 0 (ATT0, no attenuation).

AUDIO

What are the best audio settings?

Simple answer: there is no such thing as "BEST AUDIO SETTINGS". Not only the situations vary but also personal preferences vary a lot. However, some audio-related aspects should be kept in mind. Note that in JAGUAR LITE not all of these options are available.

JAGUAR's audio quality

JAGUAR's base audio can be characterized as "hard, treble and clear", and such an audio can be a real advantage in many cases. On the other hand, a hard-sounding audio may be tiring during long listening sessions. The output characteristics can be modified by changing a filter / filter bandwidth / notching. For some reason, JAGUAR's audio works exceptionally well when there are several stations on the playback frequency.

However, when comparing the audio produced by SDR software, there is never one clear winner. Some users say they can dig out more data with Perseus.exe; on the other hand, we have seen cases to the contrary. For example, one user was able to dig out three personal new graveyard stations in a short test session. That is why it is often practical to check with your other favourite SDR application if a tough case cannot be easily cracked with JAGUAR. All that we often need is just 1-2 readable words more for a positive ID.

Filters

JAGUAR relies heavily on the SSB mode which has been the "standard mode" in MW DXing for decades. JAGUAR has four filters available in the filter menu - actually one of them is the AM FILTER using the JAZZ filter chain, and the output is generated in the AM demodulation mode. Also, a maximum of 40 user-customisable filter presets (= bandwidth/offset pairs) are available.

What is the best filter and optimal preset? Here again user preferences vary a lot. I have seen some users using solely very narrow bandwidths of around 2 kHz (and getting good DX results) and some users using "as wide bandwidths as possible" (and getting good DX results). Naturally this also depends on your location and existence of nearby AM powerhouses. The default preset setting (a bandwidth of 3.0 kHz with an offset of 0.3 kHz) is a good compromise when scanning the dial but when you "hit into something", it is quite likely that you can improve the output by testing various settings. Generally, the CALLIOPE and/or JAZZ filters with the STUDIO option are regarded the best in tough places. CALLIOPE and JAZZ are cascading filters with optional STEEP/STUDIO modes; STUDIO produces a "brickwall filter pipe". However, the AM FILTER should not be forgotten: when the frequency is free from nearby interference, the AM mode can often give the best audio output.

Automatic Gain Control, AGC

The Automatic Gain Control (AGC) is required to keep the output audio always on an "average level" to smooth the amplitude changes in time or when changing the frequencies. But when studying weak signals or making audio clips with CLIPPER, it is recommended that the AGC be disabled (click AGC to OFF). Every change in gain has a negative effect on the "real" audio.

Output audio format and compression

Typically, MW DXing focuses on solving the speech elements from the noise. The human speech consists of a fundamental (base) frequency and harmonics that together create the voice audio. The fundamental frequency of a male voice varies between 85 and 180 Hz and the female voice between

165 and 255 Hz. Normally, humans can hear the audio up to a maximum of 20 kHz but in the case of elderly OMs the maximum level can be way lower :-)

The output audio sampling rate is user-selectable: 8 kHz (WAV8), 16 kHz (WAV16) or 32 kHz (WAV32) if the bandwidth of 1.6 MHz is used, or 10 kHz (WAV10), 20kHz (WAV20) or 40 kHz (WAV40) if the bandwidth of 2 MHz is used; choose the one you prefer. The real audio range that our ears can get out of these sampling rates is the selected rate, divided by two:

```
WAV 8 kHz = 0-4 kHz
WAV 16 kHz = 0-8 kHz
WAV 32 kHz = 0-16 kHz
```

In MW DXing, we are interested in speech only, and WAV 8 kHz can often do the job, WAV 16 kHz can (sometimes) do better, and some prefer WAV32 because the audio quality becomes "softer". However, WAV32 brings also music frequencies and other high frequency tones into our ears. We are not interested in music so the highest audio frequencies are usually not so important. So, in theory, WAV8 should be OK in most cases. However, there are some speech elements which require WAV16 to become "fully formed"; the richness of s, c and z is formed there between 4-8 kHz. Thus, WAV16 is recommended unless you do not have other preferences.

When saving the final audio clip, use MP3 (CLIPPER > FORMAT), especially if the clip will be sent as an attachment to your reception report.

Notching

Notches are used to eliminate interfering heterodyne peaks from the audio. In JAGUAR, it is easy to get rid of whistles and the like: see detailed instructions in the AUDIO WINDOW help.

Click Remover, CR

The Click Remover (CR) removes clicks in the audio - or at least make those clicks smoother. CR should not be kept on by default because it can also make the audio quality worse by eliminating "real" audio parts. CR was originally implemented to tackle electric (horse) fence type of pulses but it may be useful for other types of clicks.

Equalizer, TINYEQ

The AF equalizer (TINYEQ) is part of JAGUAR's audio toolkit. Many users post-process their audio clips with an equalizer to adjust the frequency areas according to their personal preferences. More info in the TINYEQ help.

Noise Reduction, NR

There has been a lot of discussion about Noise Reduction (NR) in MW DXing. At the moment, JAGUAR does not include any real Noise Reduction tool. Such a tool can clearly improve the output for already good signals but, in MW DXing, we are often dealing with weak spoken words, just on or above the noise level. And in those cases, the user can often spend a lot of time with NR, all in vain: NR also removes too much real audio and we cannot achieve real improvement in weak signals.

However, the situations vary and **sometimes** you may indeed succeed in improving the output when using NR tools; it can be that you just happen to dig out one extra word after the NR process, and often it may be just enough for solving the station identity. Some experienced users use Adobe Audition, but there is a plenty of other tools available: Audacity is one of the most popular. If you have extra time, please test some NR audio tools and make up your own mind.

Instead of a special NR tool, JAGUAR offers several ways that can be used for noise reduction (because various audio frequency filters can be used for filtering/smoothing noise or changing the "color" of the noise):

- STUDIO for eliminating hum/"rumbling"/carrier waves
- TINYEQ for changing the general noise color
- even NOTCH can be used to eliminate a larger area of audio frequencies (not only the het peaks)

However, "white noise" type of noise (which is always in our recordings) is a tougher enemy!

External sound cards and headphones

This is another area where we have a wide variety of gear in use among DXers. And many have got good results with a standard laptop audio card and low-end headphones. However, external sound cards and good headphones may be the missing link between good and excellent results; the final step in securing a catch of your life.

External sound cards usually offer a higher amplitude resolution (24 bits are nowadays "the industry standard") and a higher frequency resolution (the sampling rate can be e.g. 96 kHz). The higher the bit rate and the higher the sample rate, the closer you get to the original (analog) sound. This is especially important in orchestral music and movie soundtracks but what about MW DXing? When playing back the audio produced by the SDR software with external sound cards, the original audio is transformed to the selected new specs.

A 24-bit sound is a tricky thing to assess. Does it provide for a greater amplitude resolution of sound? Definitely. Are you going to be able to hear that difference? Harder to judge. It is easier with high-quality music but what about weak signals where the meaningful audio level is very close to the noise level? On the other hand, there can be cases with several received signals bundled together, and in such cases, a higher amplitude resolution may help pick up the lower. A higher bit depth gives a more dynamic range between the loud and soft parts: it allows for quieter sounds to sound less distorted.

Some experienced DXers say that a higher sampling rate provides more "space" and makes the audio output "softer", making it possible to dig out more speech elements from the output. For example, a sample rate of 96 kHz captures frequencies up to 48 kHz, way beyond the human ear, but it will produce more accurate samples.

And, finally, the headphones: a common agreement is that "good headphones is a must" in MW DXing. Pay attention to the weight too as many MW DXers spend more time with headphones on than without :-)

To summarize: there are no "best audio settings" but because "some settings must be used" while scanning the dial, here are the good basic settings:

- use the CALLIOPE or JAZZ filter with the bandwidth of 3.0 kHz and an offset of 0.3 kHz
- use the STUDIO brickwall mode
- use the WAV16 output sampling mode
- keep NOTCH ON
- keep CR (Click Remover) OFF
- disable the AGC when studying some specific DX clips

HOW TO

The full documentation for audio-related tools can be found under the tool-specific HELP pages.

AUDIOBAR

AUDIOBAR contains a set of buttons meant for quick finetuning of audio charateristics. If you need more tools and also want to see the exact effect of your changes in the audio frequency spectrum, you must open the AUDIO WINDOW.

When clicked, the buttons normally toggle/rotate the allowed values. In addition to changing values by mouse-clicking, you can also move the mouse over any button and scroll with the mouse wheel, or use the left/right arrow keys.

HOW TO

AUDIOBAR is always visible when JAGUAR is active, containing the following buttons:

AUDIO OUTPUT SAMPLING RATE

```
(( WAV 8 | WAV 16 | WAV 32 )) or (( WAV 10 | WAV 20 | WAV 40 ))
```

Select the sampling rate for the audio output: 8 / 16 / 32 kHz when the 1.6-MHz bandwidth is in use, or 10 / 20 / 40 kHz when the 2-MHz bandwidth is in use. There is no "best" sampling rate as user preferences vary. More about this in the AUDIO help.

CLICK REMOVER

```
(( CR OFF | CR xx ))
```

CLICK REMOVER - Toggle the Click Remover ON and OFF, or change the active ON level by scrolling between Low (CR LOW), Average (CR AVG), and High (CR HIGH). More about this in the CR and APPLETS > WAVE help.

AUTONOTCH

```
(( NOTCH ON | NOTCH OFF))
```

The NOTCH BUTTON enables/disables AUTONOTCH. JAGUAR offers a maximum of 20 manual notches, and they must be triggered in the AUDIO WINDOW. See the NOTCH help for more details about the AUTONOTCH funtion.

AGC

```
(( AGC ON | AGC OFF | AGC OFF+ ))
```

AGC (Automatic Gain Control): Rotate the AGC modes by left-clicking the mouse: AGC ON > AGC OFF > AGC OFF+. Scrolling will change the gain to the desired value and will set the mode to OFF (i.e. to the manual gain control). More info in the AGC help.

SSB

```
(( LSB | USB ))
```

SSB (Single-Side Band): Toggle the Lower Sideband (LSB) and Upper Sideband (USB). Not availabe if the AM MODE filter is selected.

CENTER BUTTONS (JAGUAR PRO)

```
(( LOWER FULLSCREEN ARROW ))
```

Triggers the full text screen (TURTLE / TOMCAT); no need to move the mouse to the top area.

```
(( AUDIO ))
```

The AUDIO WINDOW opens / closes advanced audio tools.

```
(( LOWER SPLIT SCREEN ARROW ))
```

Triggers a split text screen (TURTLE / TOMCAT); no need to move the mouse to the top area.

FILTER

```
(( STOCK | JAZZ | CALLIOPE | AM MODE ))
```

FILTER

Select the filter to be used: STOCK > JAZZ > CALLIOPE > AM MODE. The full range of filters is available only in JAGUAR PRO; in JAGUAR LITE, the only available filter is STOCK. More info in the FILTERS help.

FILTER CURVE

```
(( BASE | STEEP | STUDIO))
```

STEEP and STUDIO are the "power filter" modes. The BASE mode allows some audio frequencies to leak in from outside the offset/bandwidth range; the audio output is soft and sounds like an old tube radio. The STUDIO mode creates a "brickwall", eliminating low and high audio frequencies as can be seen in the AUDIO WINDOW; the audio output is harder and sounds more like a "scientific" SDR audio. Often you will get a better output from weak signals using the STEEP/STUDIO filter modes but some use also the BASE mode often.

BANDWIDTH

```
(( BW x.x ))
```

Select the filter bandwidth in the range of 1.0 to 8.0 kHz in the steps of 0.1 kHz. Available only in JAGUAR PRO; in JAGUAR LITE, the only available filter bandwidth is 3.0 kHz.

OFFSET

```
(( OFF x.x ))
```

Select the filter offset from DC (defaulted to 0.3 kHz). Available only in JAGUAR PRO; in JAGUAR LITE, the only available filter offset is 0.3 kHz.

PRESETS (JAGUAR PRO)

```
(( PRESETS | RESET | SAVE ))
```

By default, the PRESETS button can be used to rotate the pre-defined filter bandwidth/offset pairs. You can also override the functionality of this button via SETTINGS > AUDIOBAR > CUSTOM_BUTTON; the valid value are PRESETS | RESET | SAVE. RESET restores the default filter settings (or your favorite settings if you have enabled SETTINGS > AUDIOBAR > PLAYBACK_FILTER > FAVORITE). SAVE is useful if you have enabled SETTINGS > AUDIOBAR > PLAYBACK_FILTER > CUSTOM_FREQS.

JAGUAR incorporates 15 built-in filter presets (= bandwidth/offset pairs). The predefined list consists of the following bandwidth/offset pairs:

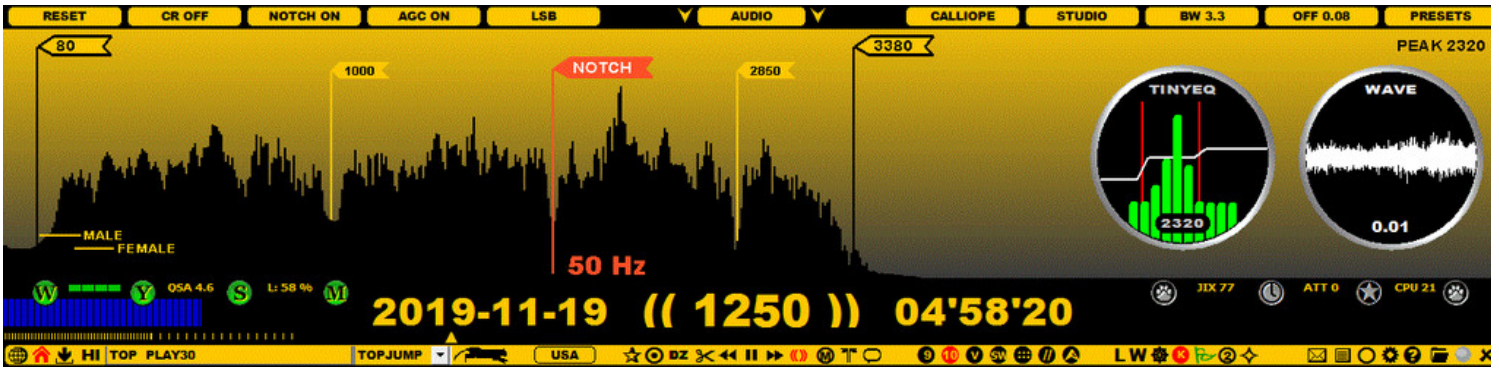
```
PRESET=2.0,0.3
PRESET=3.0,0.3
PRESET=4.0,0.3
PRESET=5.0,0.3
PRESET=6.0,0.3
PRESET=2.0,0.3
PRESET=3.0,0.0
PRESET=4.0,0.0
PRESET=5.0,0.0
PRESET=6.0,0.0
PRESET=2.0,-0.3
PRESET=3.0,-0.3
PRESET=4.0,-0.3
PRESET=5.0,-0.3
PRESET=6.0,-0.3
```

You can rotate the presets with the < and > keys, and also by hovering the mouse over the AUDIOBAR > PRESETS button and scrolling the mouse wheel, or with the left/right arrow keys, or by clicking/right-clicking on the button.

AUDIO WINDOW

JAGUAR PRO ONLY

The AUDIO WINDOW can be used for finetuning the audio output: tuning filter offsets and edges, tuning automatic notches and adding/tuning manual notches. You can see the effect of any change made in the audio frequency spectrum shown in the window. Also, all the AUDIOBAR and AUDIO applet tools can be used simultaneously.



The AUDIO WINDOW has the following characteristics:

- Fixed window height. This height can be customized with the [CUSTOM] parameter of AUDIOH=xxx (130 < xxx pixels < 250)
- Audio frequencies are visible up to 8000 Hz (depends on the X-resolution of your monitor)
    - If your audio output sampling rate is WAV8, your maximum audio frequency is 4000 Hz (WAV10: max 5000 Hz)
- Audio frequencies in the range of 0-500 Hz are extended, showing the fundamental frequencies of male and female speech
- AUDIO WINDOW can be used to see the effects of both raw audio (filter) changes and post-processing changes...

  ... so the AUDIO WINDOW can be used in the LIVE / ARCHIVE / LOOP / CLIPPER modes
- GUI is based on flags: the leftmost framed flag is the OFFSET, the rightmost framed flag is the filter EDGE (= OFFSET + BW)
- Each active notch is shown as smaller "notch flags"
- If NOTCH is ON (autonotch is activated), there are 1-2 notch flags visible by default
- TINYEQ and WAVE applets are opened automatically when the AUDIO WINDOW is opened

HOW TO

The AUDIO WINDOW can be opened in three ways:

- by clicking (AUDIO) button on AUDIOBAR
- by pressing "J" key for "JAGASS" (both the AUDIO WINDOW and TURTLE are opened)
- by pressing SPACEBAR, if SETTINGS > PREFERENCES > SPACEBAR: JAGASS is activated
    - in this case, pressing the spacebar creates a loop, and opens AUDIO WINDOW and TURTLE simultaneously

The AUDIO WINDOW can be closed by repeating the function which opened it.

The AUDIO WINDOW supports the following functions:

OFFSET TUNING

If you move the mouse over the OFFSET pole, a red "LEFT" flag is shown

- In this mode you can shift the OFFSET position with the mouse wheel or left/right arrow keys, or dragging the "LEFT" pole to a new position with the mouse
- Note that if you move the OFFSET position, the filter bandwidth does not change (meaning that the filter EDGE is moved correspondingly)

EDGE TUNING

If you move the mouse over the filter EDGE pole, a red "RIGHT" flag is shown

- In this mode you can shift the EDGE position with the mouse wheel or left/right arrow keys, or dragging the "RIGHT" pole to a new position with the mouse
- Note that if you move the EDGE position, the filter bandwidth is changed (while the OFFSET position remains unchanged)

NOTCHING

A new notch can be set by clicking anywhere in the audio spectrum. The default notch covers an audio range of 50 Hz. If you move the mouse over any notch pole, a red "NOTCH" flag is shown.

- In this mode you can increase/decrease the notch size with the mouse or left/right arrow keys
- If you left-click the red "NOTCH" flag, you can relocate the notch pole position in the audio spectrum ("notch finetuning") by scrolling the mouse wheel or left/right arrow keys
- If you right-click the red "NOTCH" flag, the notch flag is removed from the audio spectrum display

You can define a maximum of 20 manual notches.

GAIN

This is the simplest possible way of analyzing/modifying the output audio frequencies in detail: all flagpoles can be changed by scrolling the mouse wheel (or the left/right arrow keys). Note that you can scroll the filter OFFSET and EDGE also past the screen borders.

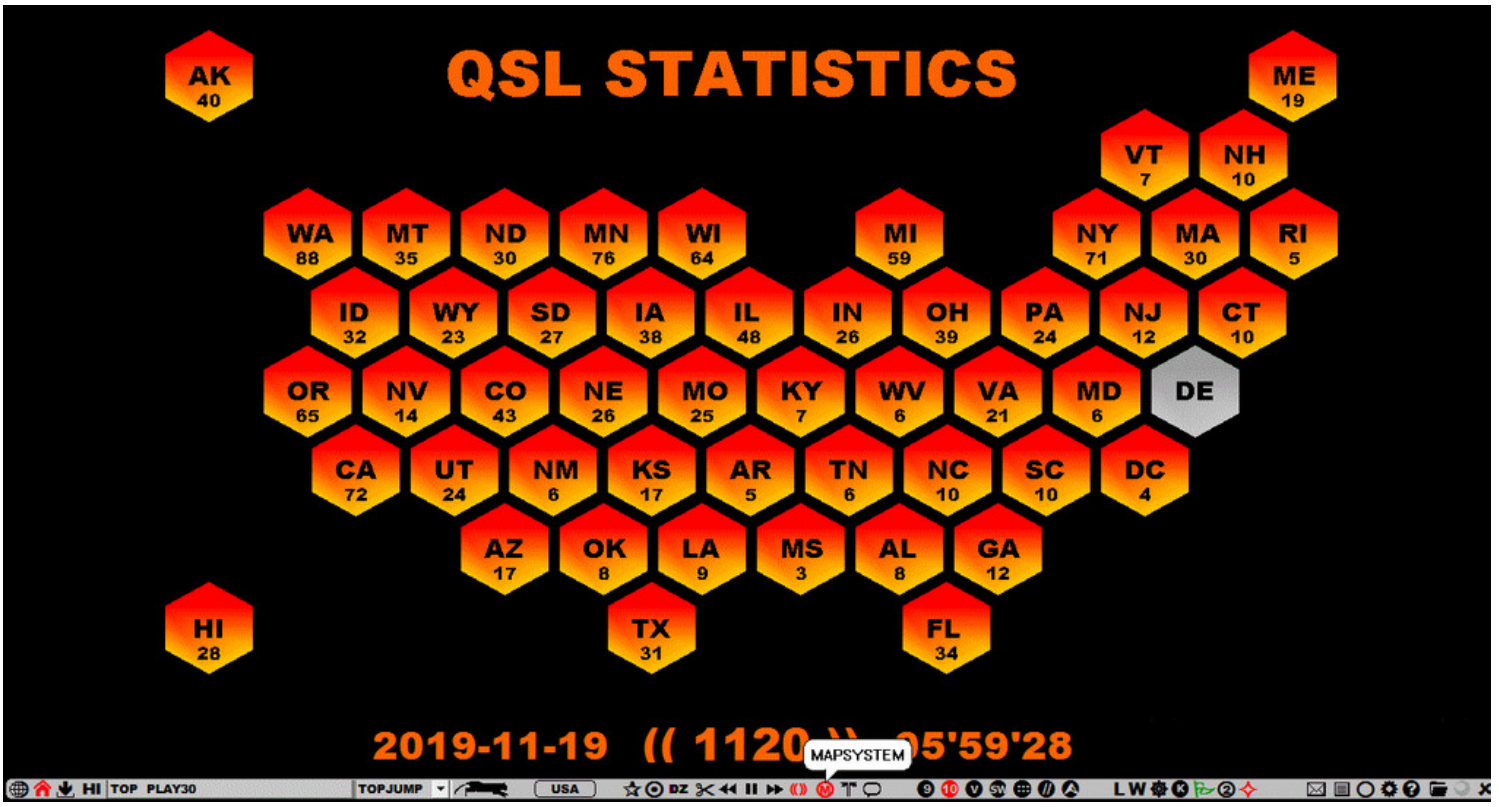
The leftmost AUDIOBAR button (= normally WAV xx selection) can be used for an audio RESET in the audio window. RESET restores all the settings changed in the audio window to the status which existed when you initially opened the audio window. If you change the audio settings and do not click RESET before closing the audio window, you will continue to use the new settings.

If the mouse is not on any flagpole, scroll the mouse wheel (or the left/arrow keys) to increase/decrease GAIN.

BEEHIVE

JAGUAR PRO ONLY

BEEHIVE is a special state-based presentation map for U.S. DX results. BEEHIVE can be used for QSLs or for identified stations.



HOW TO

KEY = ALT-M

BEEHIVE can be invoked from TOOLBAR > MAP SYSTEM or TOPMENU > MAPS, or with ALT-M. ALT-M available only if you do not use multiple MESTOR plans; if so, ALT-M rotates your MESTOR plans instead.

BEEHIVE can be closed by:

- right-clicking BEEHIVE
- rotating the MAP SYSTEMs (TOOLBAR > MAP SYSTEM / ALT-M)
- pressing ESC or W
- clicking TOOLBAR > HOME

When BEEHIVE is opened, playback continues normally but several things are cleared from the screen. By default, BEEHIVE shows empty gray cells for U.S. states; you can colorize them via BEEHIVE.TXT (please use capital letters).

BEEHIVE.TXT is a standard text file and it must be located in your JAGUAR folder; Notepad.exe can be used to create it.

BEEHIVE.TXT can contain one "TITLE=my title" line and several "state lines". If you just want to get rid of the gray color for the states you have heard (or QSLed), just enumerate the states, add the states to BEEHIVE.TXT, one state per line:

```
TITLE=STATES HEARD
AK
CA
CO
...
```

Or if you also want to define the number of stations per state (heard or QSLed), just type STATE=xx, one state per line. You can also copy-paste the following text to your BEEHIVE.TXT file and overwrite the figures to match your score.

```
TITLE=QSL STATISTICS
AK=40
AL=8
AR=5
AZ=17
CA=72
CO=43
CT=10
DC=4
```

DE=0
FL=34
GA=12
HI=28
IA=38
ID=32
IL=48
IN=26
KS=17
KY=7
LA=9
MA=30
MD=6
ME=19
MI=59
MN=76
MO=25
MS=3
MT=35
NC=10
ND=30
NE=26
NH=10
NJ=12
NM=6
NV=14
NY=71
OH=39
OK=8
OR=65
PA=24
RI=5
SC=10
SD=27
TN=6
TX=31
UT=24
VA=21
VT=7
WA=88
WI=64
WV=6
WY=23
HI=28

BREAKPOINT

When an active connection to the Perseus hardware has been created, JAGUAR always uses a buffer file on the hard disk, making it possible to play back several frequencies close to real time. By default, the buffer file size is 10 minutes (when using the bandwidth of 1.6 MHz) or 8 minutes (when using the bandwidth of 2 MHz).

A new file is always created when the buffer file reaches the upper limit. You can re-create a new buffer file any time by pressing the keyboard key "B" in order to avoid a top-of-the-hour to happen between the buffer file switches.

HOW TO

KEY = B

When the "B" key is pressed, a buffer file on the hard disk will be re-created.

In addition, you can add a permanent setting to ensure that a breakpoint will never happen at the top of the hour (TOH). Go to SETTINGS > MESTOR > CHANGE > Select BREAKPOINT and set the desired forced breakpoint minute, e.g.

```
MESTOR .......... SET FILE BREAKS AT HH57
```

creates a new buffer file at each XX:57 and thus prevents the TOH happening at file breaks whenever recording is active.

FILE BREAKS AT HH57 or HH58 are the optimal values: JAGUAR will make a file breakpoint always exactly at each XX:57:00 or XX:58:00.

Note that this BREAKPOINT is also done outside the MESTOR scheduler (and even if there is no recording active).

CALLIOPE

JAGUAR PRO ONLY

CALLIOPE is one of the main filters in JAGUAR. CALLIOPE (as any JAGUAR filter) can be used in the BASE, STEEP and STUDIO filter modes. These modes have different attenuation curves at the filter edges.

WARNING

The CALLIOPE filter can leak audio +/- 96 kHz away from a frequency of a nearby powerhouse. It is never a problem if you listen to the frequencies of your local continent but can be an issue when listening to trans-oceanic signals, and the frequency you are listening to is matching that 96-kHz difference from any nearby broadcaster.

HOW TO

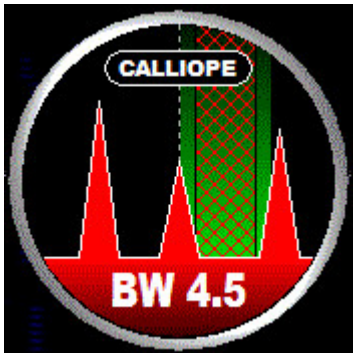
KEY = F

You can use the "F" key to rotate the filters until you see CALLIOPE displayed on AUDIOBAR.

You can also select CALLIOPE directly from that button (click/scroll until you get CALLIOPE), or you can select it from TOPMENU > FILTERS. Also, the FILTER APPLET can be used: click the FILTER button until you see CALLIOPE displayed.

The CALLIOPE filter characteristics (BW, OFFSET, BASE/STEEP/STUDIO mode) can be adjusted via the FILTER APPLET, AUDIOBAR or AUDIO WINDOW. More information on how to tune these can be found in the APPLET / AUDIOBAR / AUDIO WINDOW help sections.

The selected filter mode (BASE/STEEP/STUDIO) is also displayed over the FILTER APPLET: BASE = no fishnet, STEEP = red fishnet, STUDIO = white fishnet.



The STEEP and STUDIO modes will clear the audio frequency ranges outside the selected filter bandwidth. The effect can be seen in the AUDIO WINDOW and heard in the headphones. Sometimes you will make a clear improvement in the audio by means of either of these modes.

CATBOOK

JAGUAR PRO ONLY

CATBOOK ("Captain's Logbook") is a "collection database" for documenting your DX history (= your QSLs, loggings, offsets, audio clips, etc). The main display of CATBOOK is CATMAP ("Captain's Logmap") but some data saved in CATBOOK can also be seen using other JAGUAR features.

Every row (station) in CATBOOK is connected to a user-specified color code called P-TAG (see P-TAGS for details). This tag is added to all stations that are saved in CATBOOK, and they are used to define how the station will appear not only in CATBOOK but also on the standard MAPS and TURTLE displays.

CATBOOK is created automatically when you make the first logging / offset logging. Then a new station is added automatically to CATBOOK when it is logged; also other JAGUAR functions can be used to add stations to CATBOOK. CATBOOK data can be edited (and new data added to already saved stations) by using the CATBOX tool window.

CATBOOK.txt	5.2.2020 8:49	TXT File	129 KB

The CATBOOK file itself is a simple text file ("CATBOOK.txt"), and it is located in the JAGUAR installation folder.

HOW TO

CATBOOK stays mostly "out of sight"; it just serves as a background data source for several JAGUAR displays.

More information about maintaining the CATBOOK data can be found in the CATBOX help. In fact, you can edit CATBOOK.txt also directly (for example, with Notepad.exe), but it is not recommended because all the column positions must be exact and all the line breaks must be exactly at the end of the data row. If not, CATBOOK will get corrupted; it can happen easily if you edit it manually and are not careful enough.

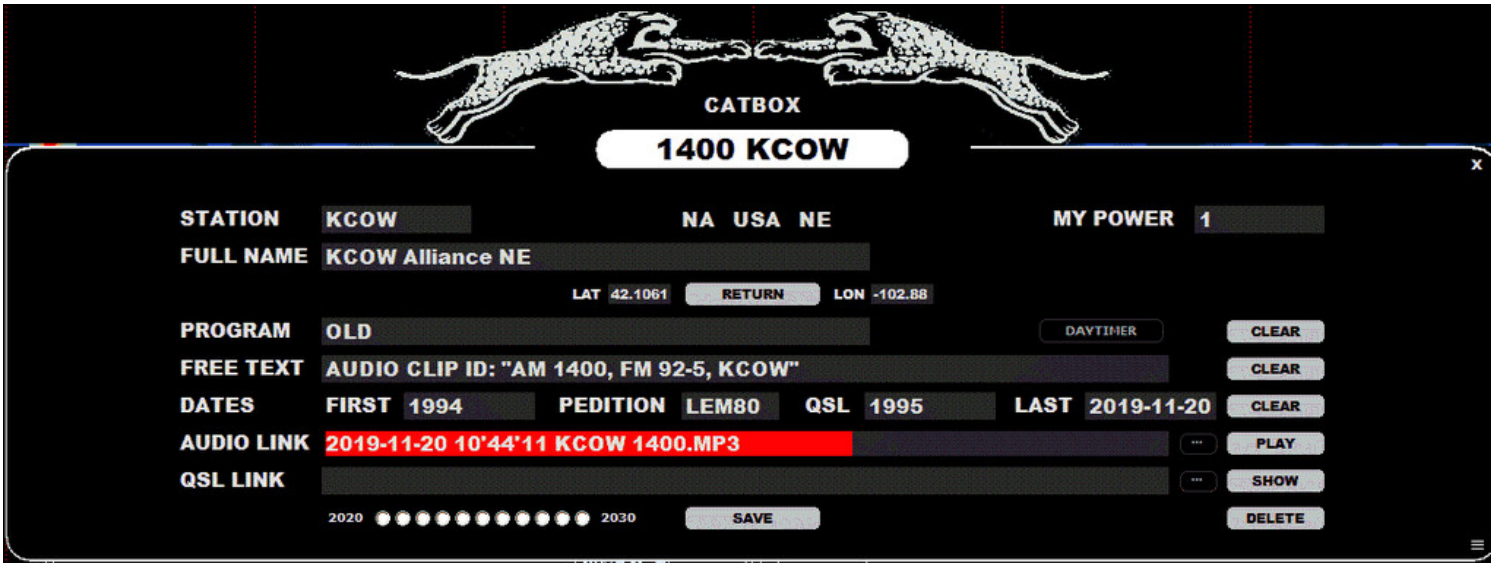
At the moment, there are no tools for converting your old documentation (QSL statistics, etc.) to the CATBOOK format, but there are tools for quick setting of the color code for a bunch of stations (see STATION MENU > TAGGER for more information) and this way you can easily copy a large amount of stations from TURTLE to CATBOOK.

More details of CATBOOK's own graphical presentation can be found in the CATMAP help.

CATBOX

JAGUAR PRO ONLY

CATBOX is a toolbox for maintaining station data in CATBOOK. Many JAGUAR tools (logging, etc.) add/update the CATBOOK data automatically, and more data can be added via CATBOX. More details in the CATBOOK help.



HOW TO

CATBOX can be opened in two ways:

- Clicking any station on MAPS or TURTLE opens LOGBOX. In the middle of LOGBOX, there is a button "SHOW CATBOX" (or "CREATE CATBOX" if the selected station is not yet in CATBOOK). Click this button to open CATBOX.
- Clicking any station on CATMAP (see the CATMAP help for details).

CATBOX allows you to change all the data displayed (except the continent/country code/state) because CATBOX is "your own view to stations". So, for example, you can change the name of the station (sometimes the station naming format in MWLI/TURTLE is not the best possible), format and even the coordinates. MY POWER can be used to denote the power used at the time of reception (if the station has separate day/night transmitting powers).

You can change the color of P-TAGS by clicking the CATBOX title header. Repeated clicks rotate the allowed colors, as will scrolling the mouse wheel and the left/right arrow key presses.

You can add a DAYTIMER tag to the station by clicking the DAYTIMER button; the definition of "DAYTIMER" is not exact so you can decide what stations you want to tag as "daytimers".

AUDIO LINK (an audio clip file or the web address to the audio clip) can be added, and the audio clip can be played within CATBOX by clicking the PLAY button. Next to the PLAY button there is a small `(...)` button which can be used to load the audio file from JAGUAR's CLIPS folder. Only one CLIPS folder location is supported: the default CLIPS folder is used so the string must contain the file name only (not the full path).

QSL LINK will be used in the future. Currently, CATBOX has only this placeholder already implemented.

All logged stations can be tracked based on the years starting from 2020 (using the "2020-2030 buttons"); these buttons are updated automatically when a logging is made.

Clicking DELETE removes the selected station entry from CATBOOK.

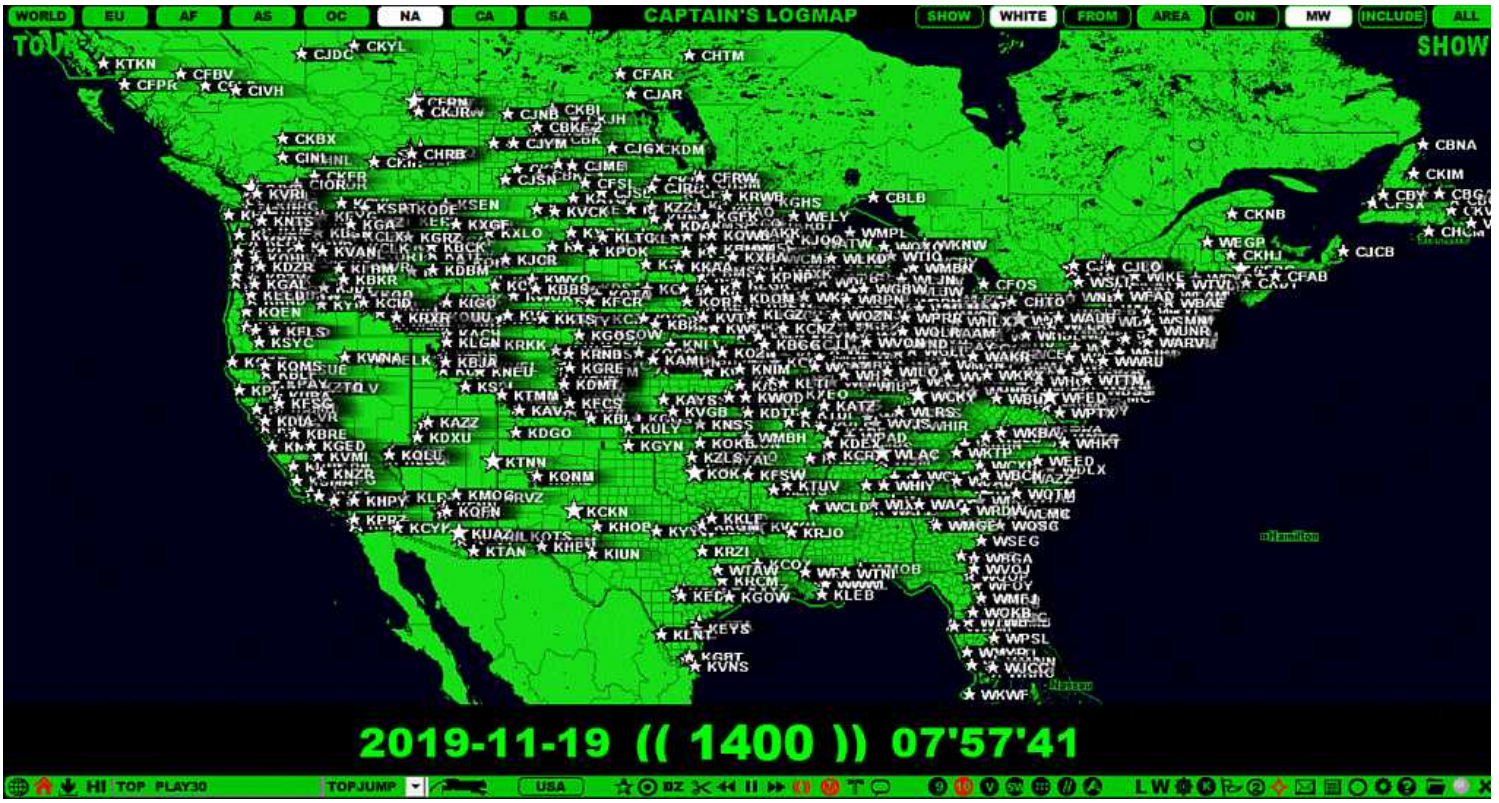
If you need to add an older station entry to CATBOOK (no more listed in TURTLE), or you want to add a brand-new station (not yet listed in TURTLE), you can open an empty LOGBOX by pressing ALT-I. You can log this station (to file / daylog) if you like, and click the "CREATE CATBOX" button to insert this station to CATBOOK, too. In this case, you have to fill out the continent/ITU/state details and the coordinates if you want the station to be correctly placed in CATBOOK and CATMAP.

After you have made all the changes, remember to click SAVE before closing the window.

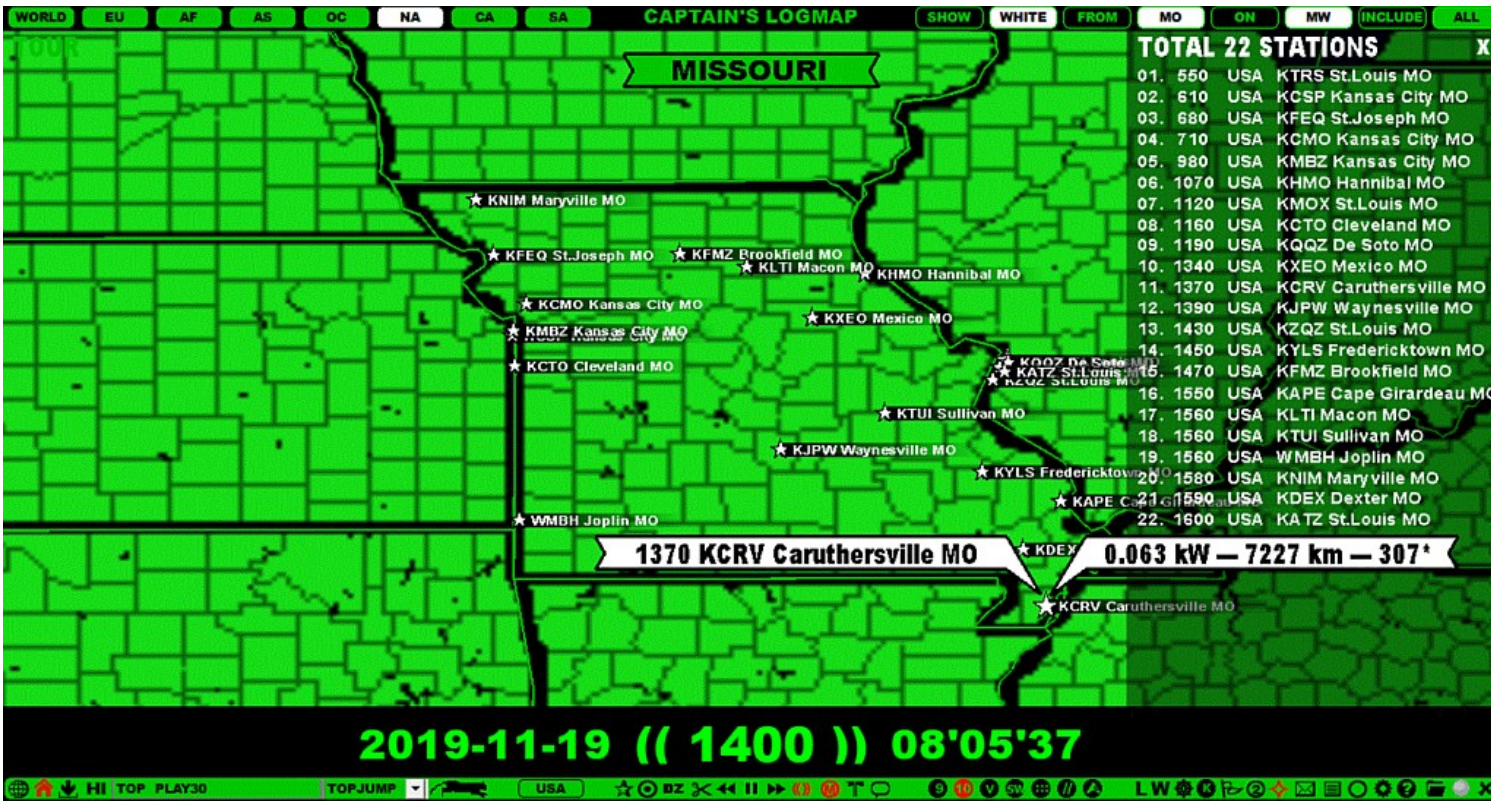
CATMAP

CATMAP (Captain's Logmap) is the graphical platform for presenting data saved in CATBOOK (your DX history collection). CATMAP has several data filters for selecting data to be displayed. CATMAP shows the results on the selected map and optionally also as a list (text overlay). CATMAP also supports the playback of audio clips associated to stations and presents the results as a "TOUR" where each station is briefly presented and the audio clip played (if associated).

Example of "NA QSL MAP" (note that the "MW" filter is active, listing all the US/CAN stations QSLed on MW):



Example of "Missouri QSL MAP":



HOW TO

KEY = ALT-M

CATMAP can be invoked from TOOLBAR > MAP SYSTEM or TOPMENU > MAPS or with ALT-M (ALT-M available only if you do not use multiple MESTOR plans. If so, ALT-M rotates your MESTOR plans instead).

CATMAP can be closed by:

- right clicking CATMAP
- rotating the MAP SYSTEMs (TOOLBAR > MAP SYSTEM / ALT-M)
- pressing ESC or W
- clicking TOOLBAR > HOME

CATMAP can be zoomed in/out with the mouse wheel when the mouse is over the map. You can also change the frequencies with standard frequency-scrolling methods.

When CATMAP is opened, playback continues normally but several things are cleared from the screen. This means that you can continue your ARCHIVE / LIVE playback while visiting CATMAP. However, if you move the mouse over any CATMAP station which has an audio clip associated, the main playback will be paused and the audio clip will be played instead. You must manually release the pause whenever you want to continue the main playback.

If you click any station on CATMAP, you will see CATBOX with detailed information about the selected station.

If you click "SHOW" on the top right corner of the display, you will see a list of currently selected stations (based on the current data selection filters). You can click any station on the list to show its location on the map. You can scroll the list up/down by moving the mouse over the list and by scrolling with the mouse wheel or with the left/right arrow keys. You can close the list by clicking "X" on the top right corner.

If you click "TOUR" on the top left corner of the display, you will enter the TOUR mode for the currently selected station set (based on the current data selection filters). The SHOW list can be present at the same time but it does not need to be. In the TOUR mode, each station will be presented one by one and the audio clip associated will be played if the audio clip has been associated with the station. You can stop the TOUR mode by pressing ESC.

The data filter buttons can be used for limiting the number of stations shown on CATMAP.

The green buttons on the top row "SHOW (ALL) FROM (AREA) ON (FREQ) INCLUDE (ALL)" are the filter buttons. Currently, the (AREA) button is available for the U.S. states only, but in the future we will define area-based filters also for other continents.

You can move the mouse over any filter button and click or scroll (using the mouse wheel or the left/right arrow keys) to rotate the allowed values:

- SHOW (ALL) > SHOW (WHITE) > SHOW (RED) > SHOW (BLACK) > SHOW (BLUE) > SHOW (GREEN): show stations based on the selected P-TAG. See the P-TAGS help for more information.
- FROM (AREA) > FROM (AK) > FROM (AL) > FROM (AR) > FROM (AZ) > ... : show stations located in the selected U.S. state (the AREA filter is available for North America only).
- ON (FREQ) <> ON (MW): show stations on the currently-selected frequency or from the whole MW dial.
- INCLUDE (ALL) > INCLUDE (100W+) > INCLUDE (1kW+) > INCLUDE (5kW+) > INCLUDE (10kW+) > INCLUDE (DTIMER): show stations by their transmitting power. The last selection INCLUDE (DTIMER) picks only the stations for which you have given the DAYTIMER status in CATBOX.

Individual filters can be cleared by clicking the black button next to it. All filters can be cleared by clicking the black "SHOW" button.

In the future, there will be more data selection filters for CATMAP.

CATWALK

CATWALK is a spectrum display where the most meaningful ("potentially audible") spectrum tracks are being displayed. CATWALK analyzes the spectrum all the time and tries to pick meaningful carriers out of each spectrum line for the display. From these peaks CATWALK tries to create continuous lines, visualizing the development of the signal strength as a timeline. Some averaging is needed to fade out ripples (= spectrum noise) and keep the signal paths reliable. The idea is that you do not necessarily have to tune the contrast continuously in order to see the essential data on the spectrum.

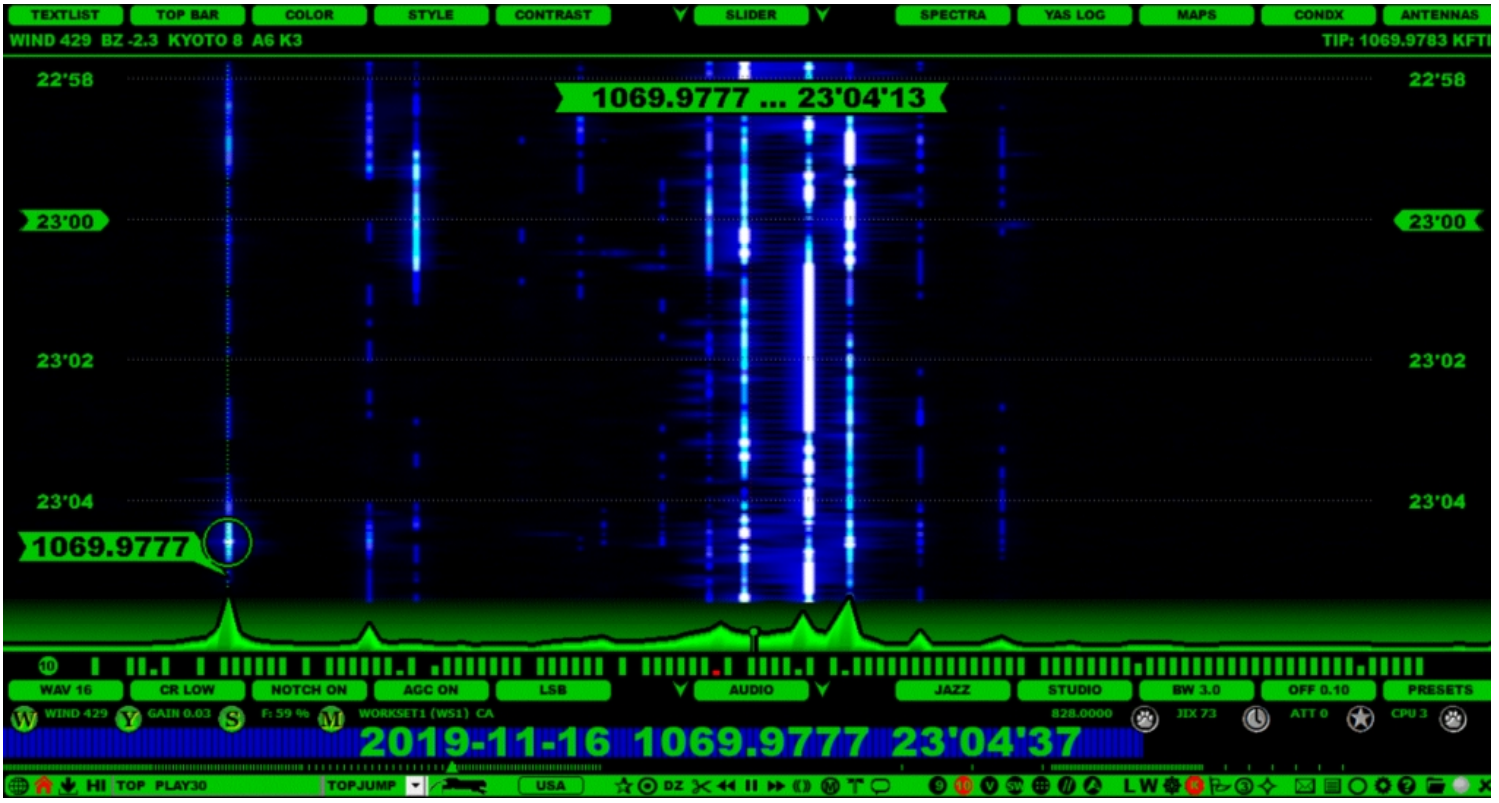
CATWALK uses only white and blue colors (white color is reserved for the highest carrier spot). CATWALK also shows the overall spectrum power behind the CATWALK tracks as a "blue layer" (this can also be increased/decreased using the contrast button). Because the strongest peak at each point of time is shown as a thicker white spot, whenever that specific carrier remains the strongest over time, you will see a "fat white track" (= the dominant station).

Unusual CATWALK lines with a fat spot/track are interesting DX-wise: there we have a station that appears to have the strongest signal strength at a specific time.

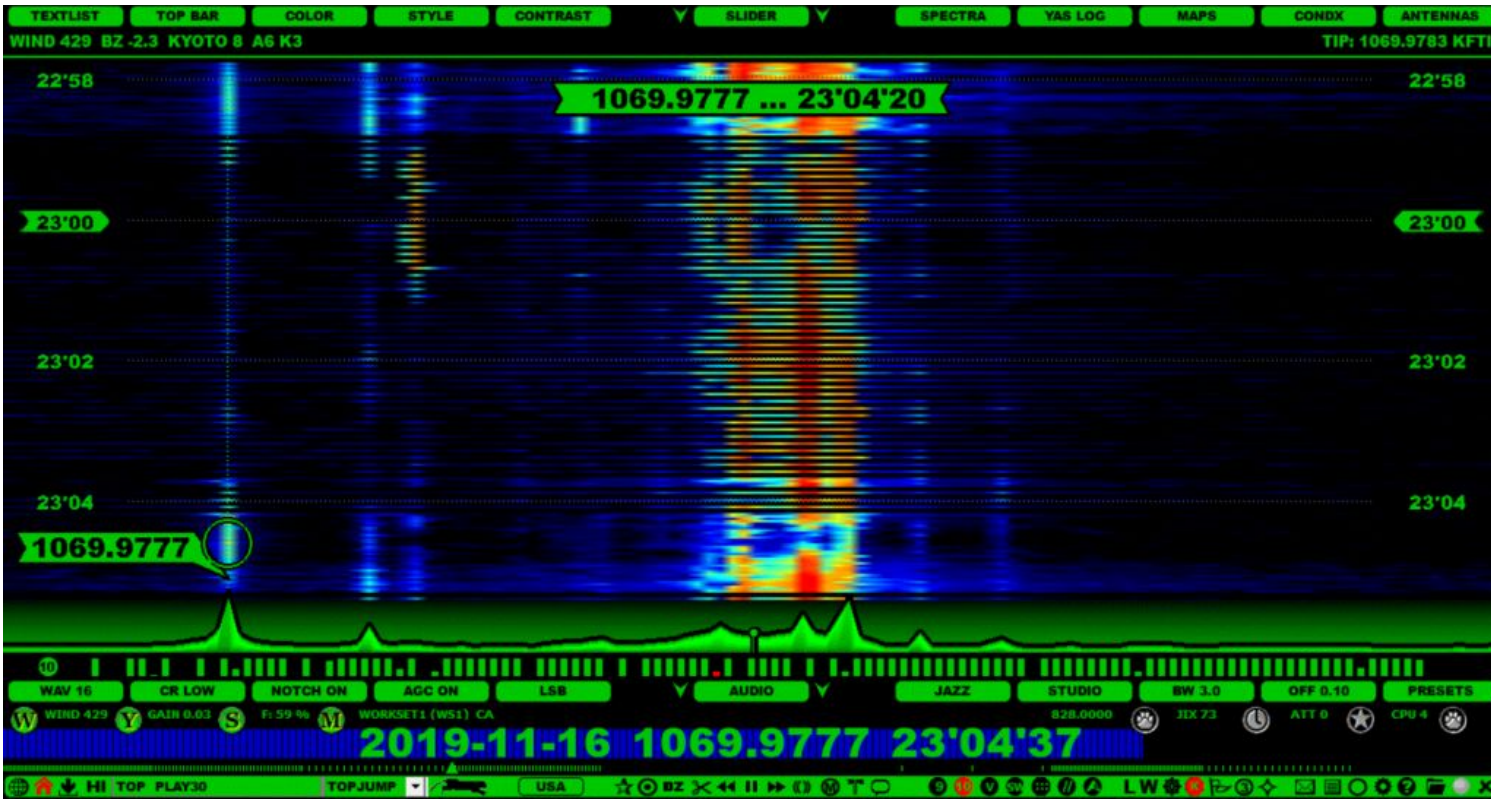
Note: CATWALK together with SETTINGS > SYSTEM > HOMESCAN > 6 SECONDS is highly recommended: using this stepping value HOMESCAN will create a gapless full preview for the whole spectrum.

CATWALK offers a lot of information when HOMESCAN is used (compared to other spectrum displays): if you use the other displays, it is sometimes very difficult to deduce from the signal paths which station actually is the strongest at the specific moment. Below you will see an example of the CATWALK spectrum vs. STANDARD spectrum (using the default CONTRAST, right after HOMESCAN with STEPPING 6 has ended).

CATWALK spectrum



STANDARD spectrum



HOW TO

CATWALK can be invoked on the SPECTRA displays via SLIDER > STYLE (click or scroll until you see CATWALK).

Using SLIDER > CONTRAST, you can increase/decrease the sensitivity of the carrier visibility.

Using SETTINGS > STARTUP > START_AS > U-96, you can select CATWALK with special "submarine looks" as your default startup setting.

CHOP

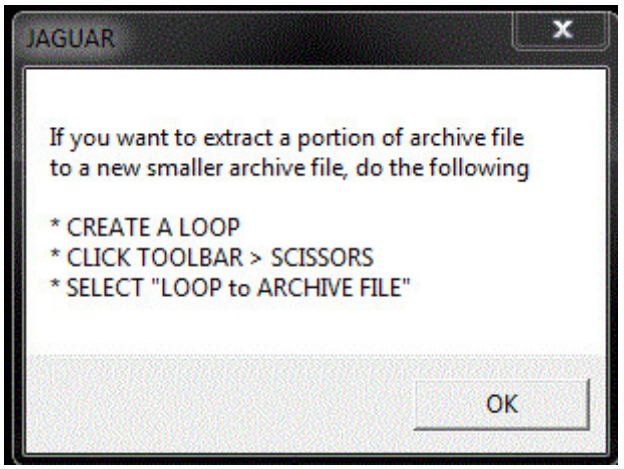
CHOP, or a wideband recording slicer, can be used to create smaller wideband files from the currently-playing file. Normally, wideband files cover a time period of 8 to 10 minutes, and sometimes there can be a need to send them over the Internet.

Unfortunately, these standard files are way too big for regular emailing. Often, the interesting time period is much shorter. For example, if a clip of 10 seconds around the top of the hour is needed, you can use CHOP to create a shorter and smaller wideband file.

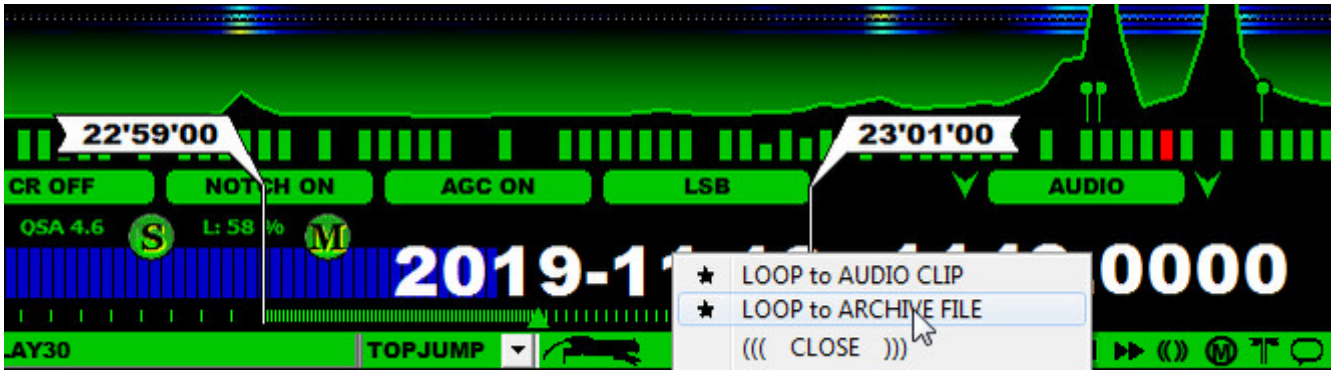
HOW TO

Chopping is easy: first, create a standard audio LOOP on PLAYBAR (see the LOOP help) and then click the TOOLBAR > SCISSORS icon and select "LOOP to ARCHIVE FILE". A new wideband file will be created in your recording folder next to the original file.

The CHOP instructions can be found also on TOP MENU > MISC > CHOP:



In the example below, a LOOP covering two minutes around the TOH has been created and TOOLBAR > SCISSORS has been clicked. A popup menu appears and, after you click "LOOP to ARCHIVE FILE", JAGUAR will create a new archive file in the same day folder as the original file. The new file includes all the frequencies between 22:59 and 23:01. The original file remains intact.



CLEAR

Sometimes we may want to "clear the table" temporarily from extra tools and data. For example, let's say that we need to see the full spectrum (all the carriers) or clear things up for creating presentation graphics. The special cleanup function that CLEAR offers can be used for this.

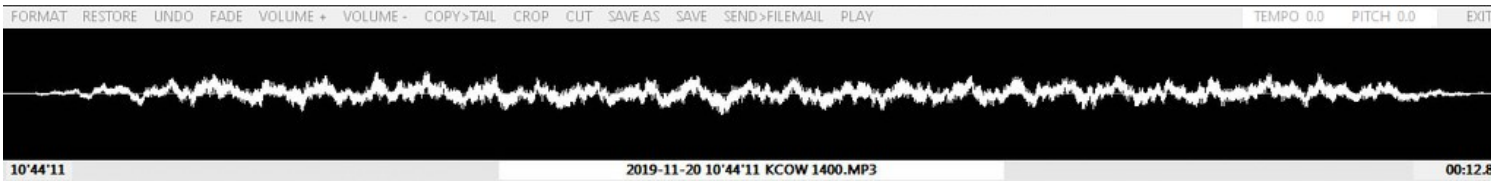
HOW TO

Clicking TOOLBAR > CLEAR toggles the CLEAR mode on/off.

The CLEAR mode leaves only the base graphics visible.

CLIPPER

CLIPPER is JAGUAR's built-in sound editor that can be used to create audio clips from wideband recordings.

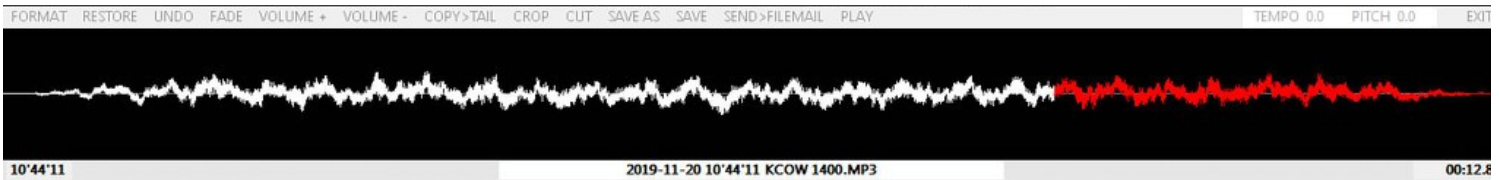


When you have the relevant audio material in the CLIPPER window, you can play/edit/process the clip before saving it (see the options below). The clip name is of the standard JAGUAR format unless you have defined your own clip name format in SETTINGS > CLIPPER > CLIPNAME. The clip name is displayed on the bottom of the CLIPPER window, and this name can be edited. But do not change the WAV/MP3 suffix here, go to CLIPPER > FORMAT to do that.

HOW TO

KEY = C

CLIPPER can be started during the playback by pressing the "C" key, or by clicking the TOOLBAR > SCISSORS icon, or from STATION MENU > CLIPPER. Another press or click on the relevant key/icon/menu will stop the flow of the audible sound to the CLIPPER editor window. You can also click STOP on the CLIPPER menu. If you want, you can add more than one segment of audio to the same clip, using any of the ways described above to start CLIPPER.



You can play the audio clip by clicking on PLAY in the menu, or by clicking the waveform in the editor window at any position. You can also highlight an area in the waveform to limit the playback or editing to that specific area. Clicking the waveform outside the highlighted area will remove the highlight. If you edit the waveform without highlighting any particular area, the entire audio clip will be subject to these edits.

The CLIPPER menu contains the following options:

- FORMAT: Select the audio clip format (WAV | MP3). Note: FILEMAIL clips are always sent as MP3.
- RESTORE: Cancel all edits you have made and restore the original audio clip.
- UNDO: Undo the last edit.
- FADE: Standard fade function.
- VOLUME+: Increase the amplitude.
- VOLUME-: Decrease the amplitude.
- COPY>TAIL: Copy the highlighted area to the end of the clip.
- CROP: Keep the highlighted area, delete the rest.
- CUT: Delete the highlighted area.

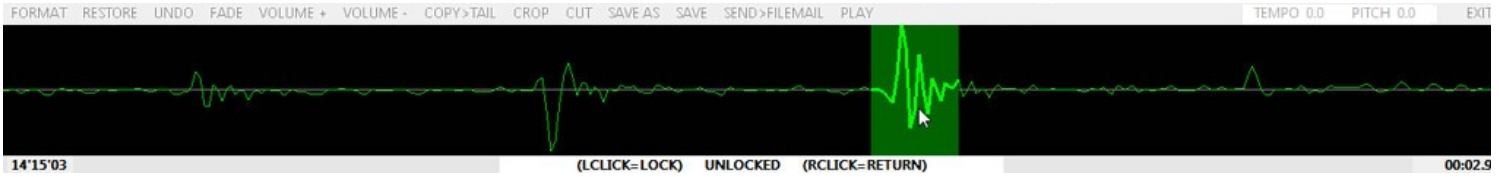
When you have finalized your edits, you have the following save options in the menu:

- SAVE AS: Select the save folder manually. While saving, you can still change the clip file name.
- SAVE: Save your clip to the CLIPS folder in your JAGUAR folder. You can override the default location in SETTINGS > CLIPPER > CLIP_FOLDER.
- SEND>FILEMAIL: Send the clip to another JAGUAR user to another computer, using your JAGUAR ID.
- PLAY: Play the audio clip / highlighted area.
- TEMPO and PITCH: Extra options for modifying the tempo and pitch of the audio. These buttons are not available by default. See more information about these on the bottom.

CLIPPER contains also a precision tool for bit fiddlers to get the maximum out of the audio:

- If an audio area has been highlighted in CLIPPER, it can be zoomed in, even to the sample level. Use the mouse wheel or the left/right arrow keys to switch between FULL AREA, RED AREA, and GREEN AREA.

- The GREEN area is the lowest level. You can move the mouse and position the area to the desired audio peak: first, click once to lock the position, then increase or decrease the width of the GREEN area with the mouse wheel or the left/right arrow keys.
- You can use the FADE button to eliminate "runaway peaks" (= fade in/ fade out for the RED and GREEN areas)



- The GREEN area is actually a low-level sample microscope. It supports sample correction on individual samples, i.e. FADE is applicable even to one single sample in the audio, which can be useful in eliminating harmful clicks if JAGUAR's default internal CLICK REMOVER (CR) consumes useful audio too much.

You can close CLIPPER by clicking EXIT or by right-clicking the CLIPPER window.

TEMPO AND PITCH BUTTONS

Modifying the audio by changing tempo and/or pitch may help in some tough IDs. These functions use the 3rd party audio library called "SoundTouch" (http://surina.net/soundtouch/index.html).

Note that changing tempo does not change the pitch and changing pitch does not change tempo, but if you necessarily want, you can change both of them (in that case you get the classic "chipmunk/klingon" effect just as when changing the plain audio playback sampling rate.

How to use TEMPO and PITCH functions in JAGUAR:

- TEMPO and PITCH buttons are available in the CLIPPER only if a program called "soundstretch.exe" is downloaded and available in the JAGUAR installation folder.
- You can download Soundstretch via JAGUAR's download page http://jaguars.kapsi.fi/download > OPTIONAL FILES > SOUNDSTRETCH.zip) or directly from http://surina.net/soundtouch/download.html : select "SoundStretch 2.1.1 for Windows". Unzip the package contents to your JAGUAR installation folder.
- Changing tempo/pitch can be done by clicking TEMPO/PITCH buttons (< for decrease, > for increase) or using the "JAGUAR style": use mouse wheel and or left/right arrow buttons whenever the mouse cursor is over either of these buttons.
- Playback starts automatically after you have changed tempo/pitch. Note that any change targets the whole clip (can't be used for painted areas) and the playback is done outside CLIPPER (the output can't be saved). However the last used "external audio file" is saved as CLIPS\TEMP2.WAV.
- The stepping/scale of the values differ a bit from the original (in JAGUAR "TEMPO 5.0" means 50% increase for the tempo), otherwise the operation should be easy and intuitive.

COBRA

COBRA, or "Continuous Offset Based Rockin' Audio". When activated, JAGUAR demodulates the audio from the highest peak offset found around the nominal frequency; the peak carrier frequency can vary all the time. COBRA can also be locked to any currently-playing offset frequency.

COBRA has nothing to do with SYNC detection, found in traditional receivers. The SYNC detection mode helps if the wanted station fades a lot, keeping that specific station "spot on" as much as possible. On the contrary, COBRA forgets that station and selects a new carrier for optimal playback.

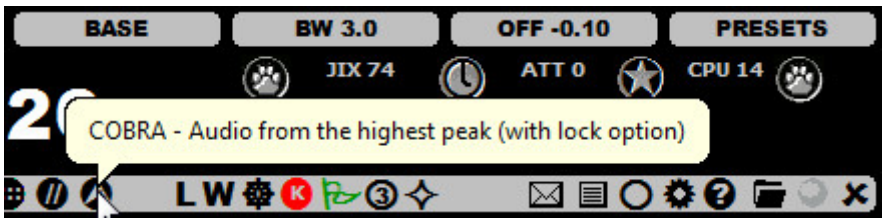
COBRA can be used for "general listening" if you want to optimize the audio from each station that temporarily fades in. However, often at first, DXers spot visually the most interesting carrier and tune in to that offset manually (that carrier may or may not be among the strongest ones).

HOW TO

KEY = ALT-C

ALT-C can be used to rotate the COBRA modes: ACTIVATED > LOCKED > COBRA OFF.

The COBRA modes can also be rotated by clicking TOOLBAR > COBRA.



When COBRA is activated, its icon color is green and you will see the "COBRA ACTIVE" message on STATUSBAR. When COBRA is locked, the icon color is red and you will see the "COBRA LOCKED" message on STATUSBAR. When changing a frequency while the icon color is red, COBRA will automatically lock itself to the strongest carrier peak on the new frequency.

COMPARE

This is a function that compares the two last-tuned frequencies for checking parallel (//) programming. JAGUAR keeps the previously tuned frequency always in memory.

HOW TO

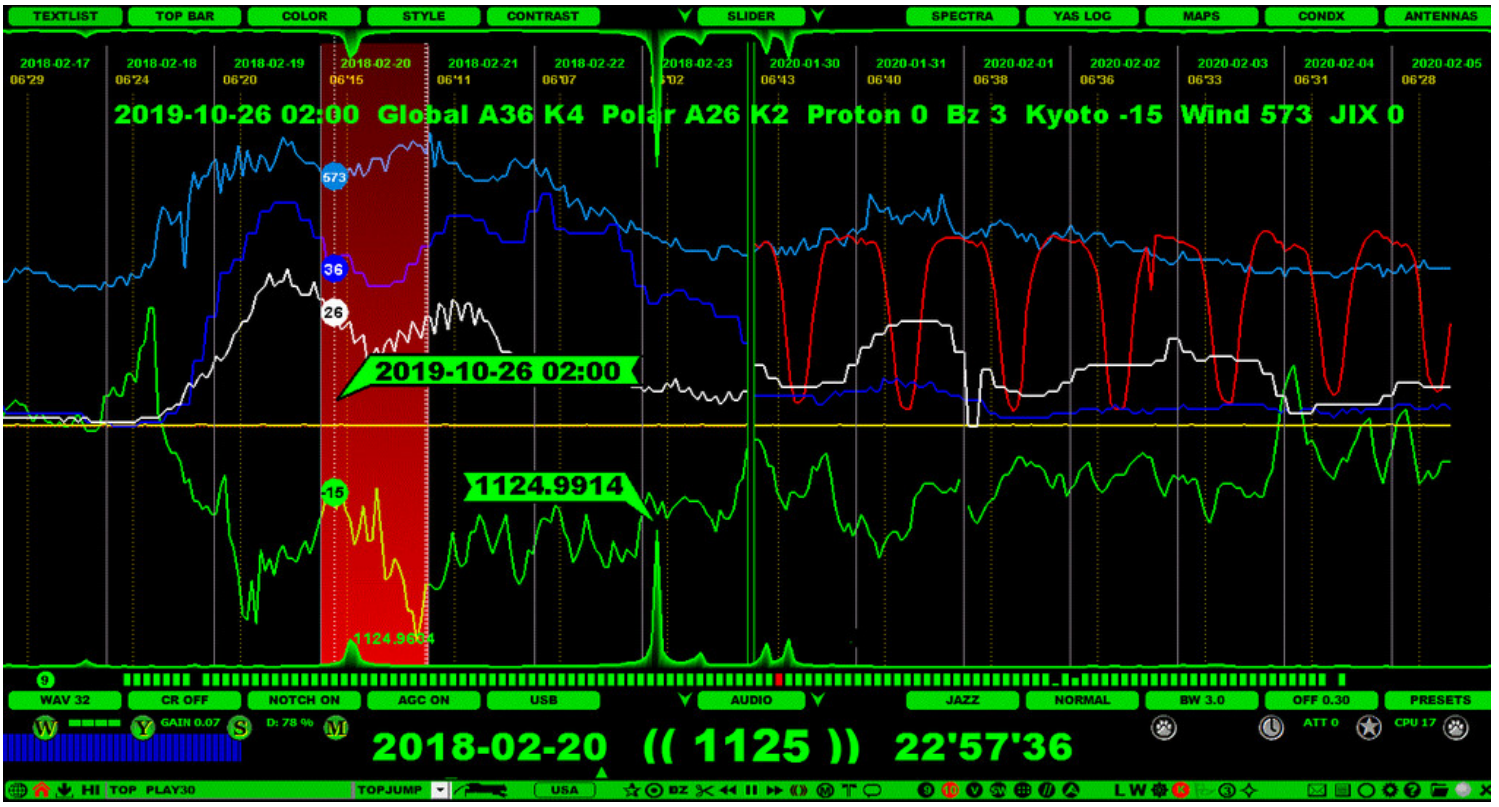
You can enable/disable the COMPARE mode by clicking TOOLBAR > COMPARE or pressing the keyboard key "/". When the COMPARE mode is enabled, a small COMPARE window is opened and your current frequency becomes the "master frequency" and the previous frequency becomes the compare frequency. Clicking the COMPARE window toggles between these two frequencies.

You can still tune to new frequencies when the COMPARE mode is enabled. In this case the master frequency remains intact but the comparison frequency is changed accordingly when tuned => you can quickly compare the "master frequency" to several other frequencies

.....

CONDX

JAGUAR is more than well connected to the current and historical online space weather data ("SPACE WX").



The solar data can be found in:

- CONDX display
- CONDX status on STATUSBAR
- SOLAR CX applet
- MSG BAR
- File HEADER
- SPACE WX in the WWW window
- KYOTO DST live in the WWW window

HOW TO

KEY = X

Just click SLIDER > CONDX or press the "X" key, and you will see a full screen of index developments from the past two weeks (or if your playback time is not within the last two weeks, you will see both the week around the playback day AND the current week). In addition to the current week, you can review earlier weeks by moving the mouse over the current week and scrolling the days backwards/forwards with the mouse wheel. The maximum of time to move backwards in time is two months. To close the CONDX screen, just press "X" again, or select some other display from SLIDER.

On the CONDX screen you will see how the polar A index (white graph), the Global or planetary A index (dark blue), Kyoto DST (green), Solar wind (light blue) and Proton flux (yellow) indices have developed over the days. Also, if your playback time is within the last two months and you are using a PC which recorded the playback files, you will see the JIX (J-index) CURVE (red). The JIX CURVE shown here depends on the current frequency-stepping you have enabled (MW10 or MW9). See the JIX help for details.

One rule of thumb which can be deduced from these indices is this: whenever the Kyoto DST index plummets (goes to negative values, especially below -10), the global & polar A indices rocket, and, as a consequence, the conditions (trans-oceanic conditions in particular over the poles) will deteriorate.

SPACE WX in the WWW window

In addition to the dedicated CONDX screen, an extended space weather report is readily available in the TOOLBAR > WWW under the SPACE WX menu. This space weather data is read in real-time from the Internet.

The explanations of the parameters shown in the space weather tables under the SPACE WX menu are as follows:

- SSN: Last measured daily sunspot number

- SSNm: Last predicted monthly smoothed sunspot number

- SFI: Last measured solar flux index
- 90-day SFI: 90-day mean solar flux index
- Au (N): Aurora index (north).
  - Max value is 10 (OBSOLETE!)
- Kt: Last measured Tromso (Norway) K index.
  - The threshold for disturbance = 5.
- At: Last calculated Tromso (Norway) A index. The same as Polar A index in the space weather screen.
- Kyoto Dst: The Kyoto Dst index. See also the menu KYOTO in JAGUAR BROWSER!
- Bz: The direction of the IMF or interplanetary (the Sun's) magnetic field.
  - The Bz value is normally around 0. When this turns to high negative numbers, it means disturbed conditions.
- SW: Solar wind speed (in km/s, typically around 400 km/s)
- X-Ray: Last measured X-Ray value.
  - Class C, M and X solar flares indicate minor and major storms in a few days. The B class events produce no disturbances.
- PCA: 24-hour Polar Cap Absorption forecast (typically caused by proton events, therefore other proton measurements not mentioned).
  - "Green" means no Polar Cap Absorption is expected during the next 24 hours.
- Proton: Current proton flux.
  - The threshold for disturbance = 10
- Kp: Last measured planetary K index.
  - The threshold for disturbance = 5
- Ap: Last calculated planetary A index. The same as Global A in the space weather screen.
- Dst: Another Dst index
- 24-h Kt: The last eight K index values from Tromso (Norway)

These parameters are followed by yesterday's and today's X-Ray events, exceeding the C level. On the right table, a 3-day outlook (OUTLOOK) on the space weather is shown, in terms of the Solar Flux Index (SFI), Planetary A index (Ap) as well as the maximum values for K index (Kp) on the high latitudes (HL) and mid-latitudes (ML).

The rest of the table shows the forecasts for High Latitude Geomagnetic and Mid Latitude Geomagnetic Disturbances for up to the next 48 hours.

SPACE WX in other displays

All the rest SPACE WX data refer to a subset of the previous values monitored and saved during the time of the playback. Most often you will see the four main values (Solar wind, Kyoto DST, Polar A and K) and, in addition, either Bz or the Proton values.

STATUSBAR contains four "color boxes" for a quick visual evaluation of SPACE WX at the time of playback. More details can be found in the STATUSBAR help.

CR

CR, or the standard Click Remover, was originally designed to wipe out/silence clicks caused by electric fences and similar. It may be useful also in some other cases, for example in softening splatters from the nearby frequencies. The "CR hit power" (= the cut value of the click) can be adjusted, and, in JAGUAR PRO, also the duration of the CR hit can be set.

WARNING: Do not keep CR enabled in vain or keep the CR hit value too high. Otherwise, it will start to "eat" the real audio and cause stuttering and probably other audio anomalies.

HOW TO

KEY = ALT-A

The easiest way to activate CR is to click the TOOLBAR > CR button.

By default, CR is disabled, but it can be toggled on/off by clicking this button. Also the ALT-A key combination is available.

The "hit level" can be changed by moving the mouse over the CR button and scrolling the mouse or press the left/right arrow keys. The hit levels are grouped to three categories: Low (CR LOW), Average (CR AVG), and High (CR HIGH).

JAGUAR PRO ONLY

You can activate/finetune CR also via the AUDIO APPLET and WAVE APPLET. The latter also offers the option to change the CR hit duration. More info in the APPLETS help.

CUSTOM FREQS

JAGUAR PRO ONLY

CUSTOM FREQS (or customized filters on frequencies) can support selection of an optimal filter / SSB mode / bandwidth / offset / mode (BASE/STEEP/STUDIO), independently for each frequency.

The saved CUSTOM FREQS settings will be deployed automatically when you tune in to the frequency for which customized filter settings can be found.

The settings are saved to the CUSTOMFREQS file in the JAGUAR folder, and this file can be moved between computers.

HOW TO

Choose SETTINGS > AUDIOBAR > PLAYBACK_FILTER > CUSTOM_FREQS to define frequency-specific filter settings.

The CUSTOM FREQS settings can be saved/changed/deleted using the FILTER APPLET (more info in the APPLETS help). If CUSTOM FREQS is enabled, you will see the CUSTOM button on the applet. By default, the color of the button is black, i.e. you have not saved any CUSTOM FREQS settings for the currently-playing frequency.

After you have found the optimal filter / SSB mode / BW / OFFSET / mode settings, you can save the settings clicking on the CUSTOM button. If a frequency has customized filter settings, the color of the CUSTOM button is red.

SAVE can also be done directly from the AUDIOBAR. If CUSTOM_FREQS is enabled, the rightmost button on AUDIOBAR will be changed to a SAVE button.

If you want to temporarily clear all your customizations for the current frequency, move the mouse over "BW" (at the bottom of the applet) and you will see the RESET button. Click RESET to restore the default settings for this filter. Note that the CUSTOM FREQS settings will remain untouched.

If you want to change your selection of CUSTOM FREQS settings, you can adjust any setting and override the existing saved settings by clicking the CUSTOM button again.

If you want to delete your customisations for the current frequency, right-click on the CUSTOM button, and the black button color is restored, i.e. no CUSTOM FREQS available for this frequency.

DATABASE BAR

DATABASE BAR is hidden by default but easily accessible by clicking the SLIDER button on SLIDER. DATABASE BAR can be used for controlling the target continent (also for MAPS) and stations to be listed on the text area below DATABASE BAR (and on MAPS). By default all stations ("WORLD") are shown for the selected frequency using the TURTLE station database.

DATABASE BAR contains the following buttons:

- CONTINENT buttons for the quick selection of the target area for stations to be listed
- DATABASE selection buttons (when the mouse cursor is moved to the center of the bar)
- DATABASE FILTER/LAYOUT buttons (including TEXTBOX - the free text search window) -- JAGUAR PRO ONLY

HOW TO

Click SLIDER button (or press the "T" key for full TEXTSCREEN) to get DATABASE BAR visible. Continents can be selected by clicking the corresponding button. "WORLD" can be used to select all the stations from all the continents.

When the mouse is moved to the center area, you will see the TURTLE, PAL and TOMCAT buttons. These can be used to select either the station database (see TURTLE for more details) or the logging database (see TOMCAT for more details). The PAL interface is currently under construction: at the moment the PAL function downloads and opens the latest PAL (Pacific-Asian Log) in a separate window.

JAGUAR PRO ONLY

DATABASE FILTER/LAYOUT buttons can be used for further restriction of the stations listed/shown on the result list/MAPS/FLAGS. This section describes the DATABASE FILTERS/LAYOUT available for TURTLE (see TOMCAT help for description of the filters available in TOMCAT database) You can move the mouse cursor over the colored buttons (=FREQ,TEXT,STOCK,ALL) and click or scroll (using the mouse wheel or the left/right arrow keys) to rotate the allowed values:

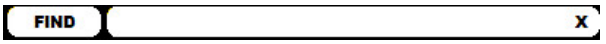
- SHOW (FREQ) (show stations on the current frequency) > SHOW (TAGGED) (show tagged stations only, see P-TAGS help for more information) > SHOW (MW) (show search results from the whole database for a given text). In addition,
    - if NA (North America) continent has been selected, the rotation includes SHOW (W***) = show stations with the call sign beginning with W and SHOW (K***) = show stations with the call sign beginning with K.
- FIND (TEXT) > Triggers TEXTBOX, the free text search feature (more details below)
- SIZE (SMALL | STOCK | BIG | MAX) > Changes the text size of the database rows
- INCLUDE (ALL) stations > INCLUDE (100W+) = show stations with tx power 100W or more > INCLUDE (1kW+) = show stations with tx power 1kW or more > INCLUDE (5kW+) = show stations with tx power 5kW or more > INCLUDE (10kW+) = show stations with tx power 10kW or more > INCLUDE (50kW+) = show stations with tx power 50kW or more > INCLUDE (LOCAL) = show stations within the distance of 2000km (any tx power).

You can make DATABASE BAR permanently visible (even if SLIDER window is closed) by ticking TOOLBAR > SETTINGS > GRAPHICS+ > FAT TOP.

Clicking the black SHOW button resets all these buttons, clicking the black INCLUDE button resets the tx power filter.

TEXTBOX, FREE TEXT SEARCH

If you click the (TEXT) button or select SHOW (MW), TEXTBOX will appear:



The keyboard focus is automatically given to the textbox so you can type the desired search word. It can be any full or partial name, callsign, state, offset, network, slogan, etc. You don't have to worry about the big/small characters, all searches are non case-sensitive, so for example when searching stations located in Florida you can type FL, Fl or fl (note: if you have selected North America as the active continent and the search word contains only two characters, the search word is automatically interpreted as "US STATE" so any other row containing that string will not be included in the result).

After you have given the search word, press enter or click "FIND" and the results will be shown in the TURTLE window/map. If you have any SPECTRUM display visible, the FLAGS are updated based on the search result.

TEXTBOX is not closed when you tune frequencies. This is useful if you find regional hotspot reception areas: you can keep the desired filter active all the time when changing frequencies. For example if you have made that "FL" search, tuning the frequencies will show only the stations located in Florida on each frequency. Or you can blank the text in TEXTBOX and keep it open by default (ready to serve when needed).

The search is done from the current frequency (if "SHOW (FREQ)" is active) or from the whole database (if "SHOW (MW)" is active).

PHONETIC CALL SIGN SEARCH (North America)

If you have selected "North America" as your active continent and give a US call sign as a search word to TEXTBOX, JAGUAR will fetch it - but not only that. In these cases JAGUAR will use the PHONETIC CALL SIGN SEARCH to display also other "photenically possible" alternatives (note that this will replace the earlier phonetic call sign search function, so here there's no need to give ? as the first character). For example, if you are on AM 1450 and hear something like "KVDK", you can type KVDK

and press ENTER. The result set contains all the stations on AM 1450 that can phonetically match that, in this case:

```
KEZJ
KVCK
KZZJ
```

Thanks to OJS for creating the phonetic character matching table. In addition, you can also use wild cards (* = any character is accepted) in your callsign query. For example, if you enter: KQ** on AM 1400, the result set gives the station callsigns starting with KQ and KU:

```
KQMS
KUKI
KUNX
KQDJ
KUNO
```

WILDCARD FM SEARCH (North America)

FM frequency given in the announcement can often help in nailing the identity of the NA station heard. However sometimes you can hear it only partially, in those cases JAGUAR's WILDCARD FM SEARCH can save a lot of time. You can add a wildcard (*) to the search word in TEXTBOX, for example

```
10*.9
```

or

```
9*.1
```

and JAGUAR will fetch only the stations with matching FM frequencies. You can set the wildcard to any position in the FM frequency.

```
STATE+ SEARCH (North America)
```

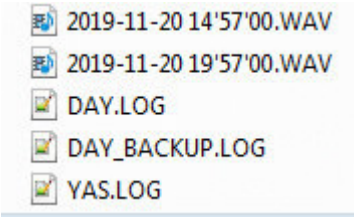
The standard U.S. state search shows the stations on TURTLE / MAPS / GLOBAL FLAGS based on the selected state; for example, the search word GA picks all the stations from Georgia.

In addition, you can use the STATE+ search: by giving GA+ the system shows all the stations from Georgia and its neighboring states, so the result set covers all the stations from AL, GA, FL, NC, SC and TN. This "plus option" is available for all U.S. states (in addition AK+ and HI+ both give stations from the AK,HI pair).

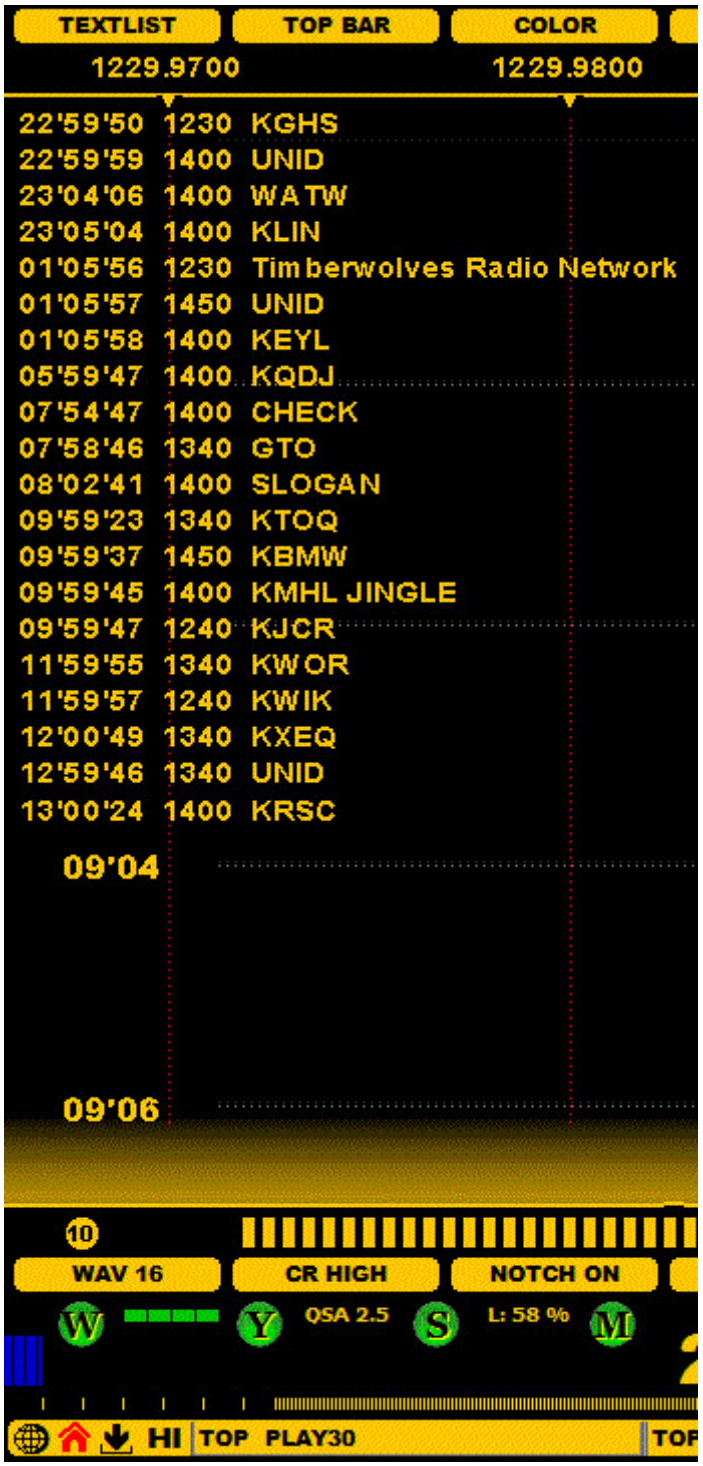
DAYLOG

JAGUAR PRO ONLY

DAYLOG is one of the main logging tools (see more in the LOGGING help). If this tool is used, loggings and bookmarks (= UNIDs, interesting spots to be studied later) are saved in a text file called DAY.LOG. Each DAY.LOG is saved in the same day folder where the actual recordings are saved. JAGUAR also takes backups of DAY.LOG before changes.



The DAY.LOG contents can be shown on every graphics display (except CONDX) as a text overlay on the left edge of the display. The contents can be scrolled up/down, you can quickly jump to any frequency/timespot listed in DAY.LOG, and you can also use a handy small editor to change the data for any DAY.LOG row.

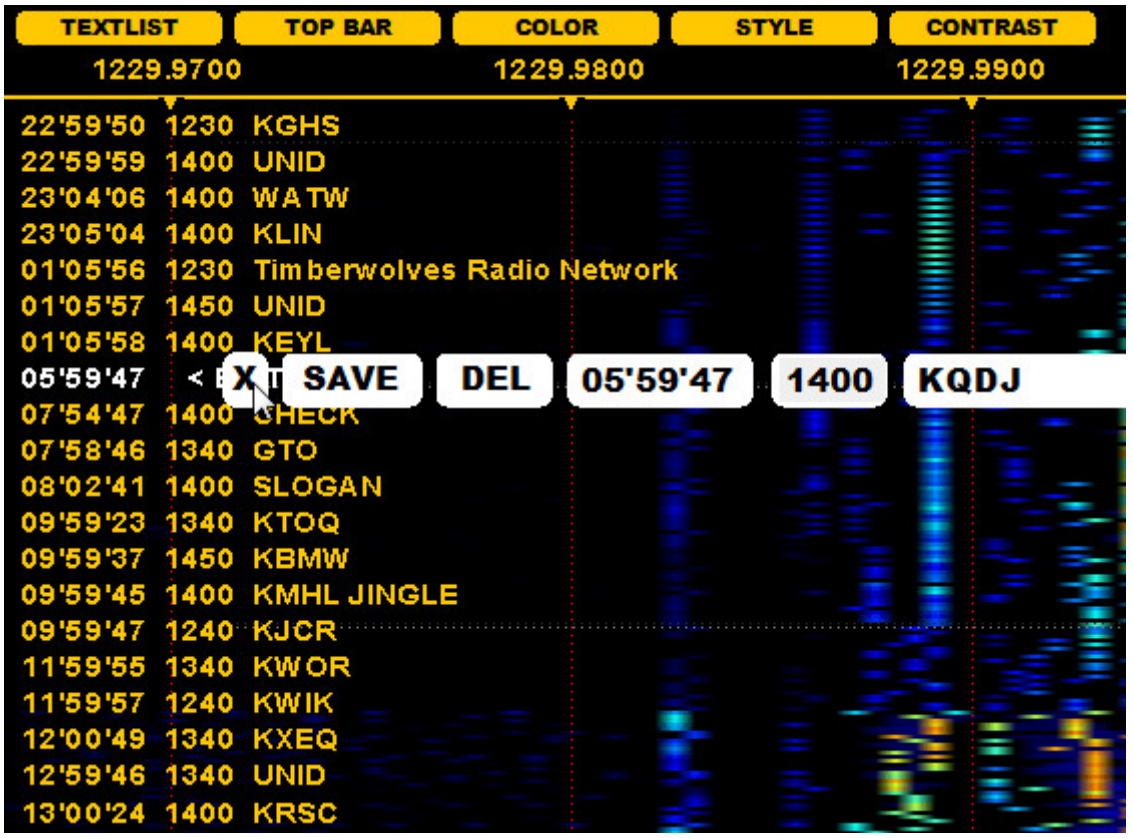


HOW TO

You can add a row to DAYLOG with four different ways:

- Logging a station via LOGBOX (more details in the LOGBOX help)
- Logging a station via DAYLOGGER (more details in the STATION MENU help)
- Adding a bookmark by clicking TOOLBAR > DAYLOG ("UNID" label is added automatically) or you can just use the easiest and fastest way:
- Type +xxxx and press ENTER (replace xxxx with the text you want to add, for example, the call sign, slogan you heard, etc.)

You can show the DAY.LOG contents by activating "DAYLOG" mode from the TEXTLIST button on the SLIDER. By default the setting is OFF, but you can rotate the list modes (OFF > DAYLOG > MWLI > VOYAGER) by clicking the TEXTLIST button or scrolling with mouse wheel or left/right arrow keys.



If you have activated the DAYLOG text overlay display, you can scroll it up/down with the mouse wheel when the mouse cursor is over the DAYLOG area.

If you move the mouse over HH'MM'SS, you'll see < JUMP > text and you can jump to that frequency/time by a left click.

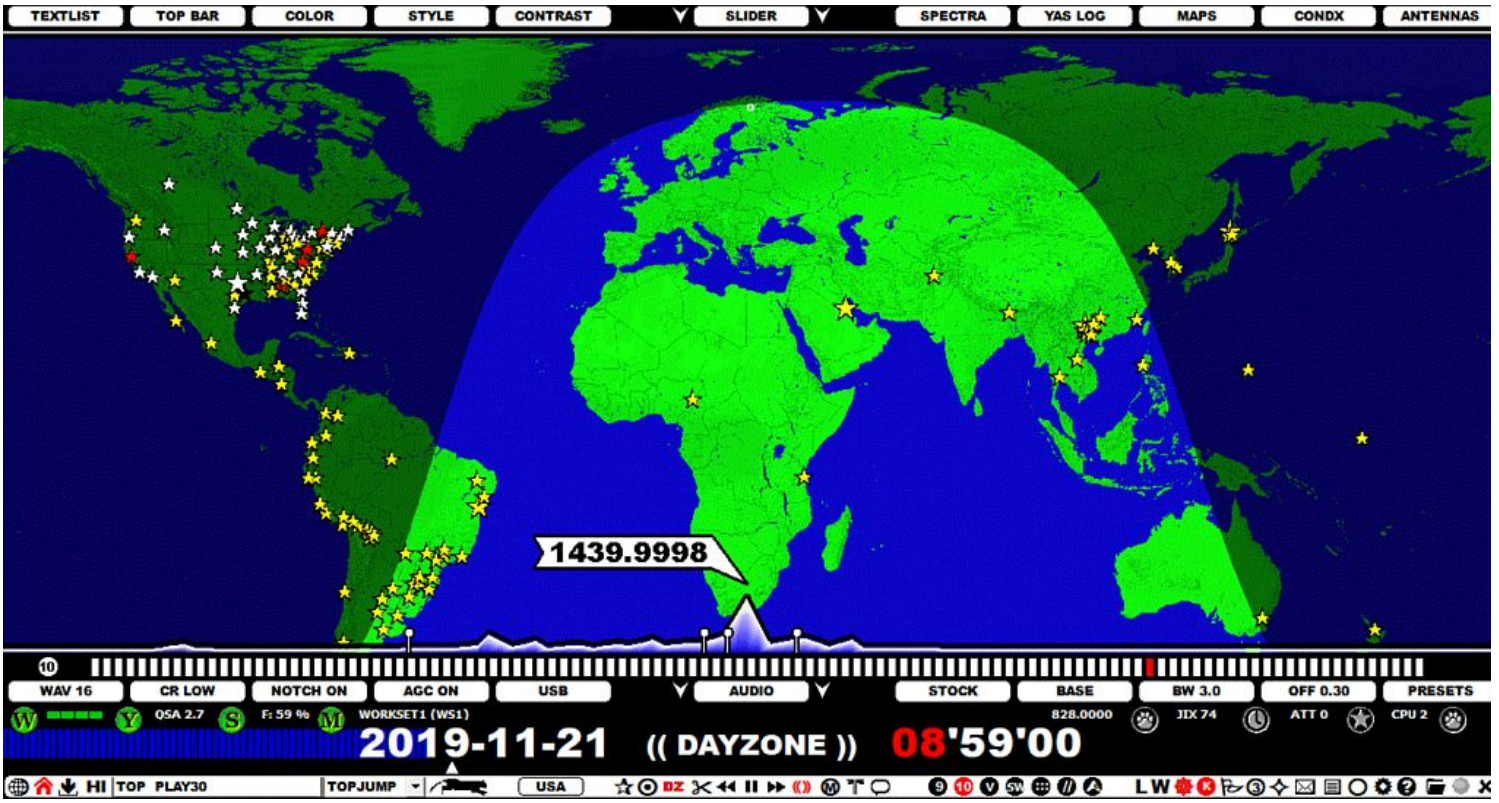
If you move the mouse over the frequency, you'll see < EDIT > text and you can trigger the DAYLOG editor by a left click.

The DAYLOG editor allows you to change the text and/or time (but not the frequency!) and save the changes by clicking SAVE. Alternatively, you can delete the row from DAYLOG by clicking DEL.

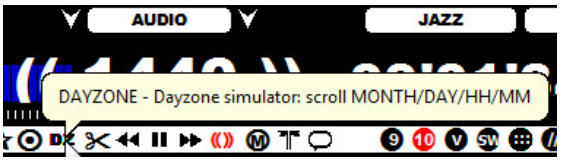
You can also edit DAY.LOG files (located in the recording folders) directly with Notepad or any raw text editor, but you must keep the column positions unchanged.

DAYZONE

DAYZONE is an easy grayline/day/night zone simulator, based on the selected stepping (months, days, hours or minutes).



HOW TO



Toggle the DAYZONE simulator mode ON and OFF by clicking the TOOLBAR > DZ icon. When the DAYZONE simulator is enabled (the DZ icon is red), you can hover the mouse over each individual component of the time on PLAYBAR, turning the component to red. Then, using the mouse wheel or the left/right arrow keys, you can scroll that time element forward/backward. Scrolling the years is not supported.

If DAYZONE is enabled, pressing the TAB key will rotate the active scrollable objects: MONTH > DAY > HOUR > MINUTE.

During a DAYZONE simulation you can change the continent (by clicking SLIDER > MAPS or pressing Q), or zoom the MAPS (using ZOOMFRAME), or simply by moving mouse over the map and scroll with mouse wheel). You can also drag the map to relocate the position.

This DAYZONE simulator can be used without recordings so JAGUAR is a useful piece DX software even if you do not own the Perseus hardware.

DIALS

JAGUAR PRO ONLY

You can define a maximum of 10 additional frequency lists for VFO, in addition to the user-configurable frequency list in VFO (= SETTINGS > WORKSET > VFO_FREQS). These additional VFO lists are called DIALS, and they are defined in SETTINGS > DIALS. Each DIAL definition contains a short label name and a list of frequencies.

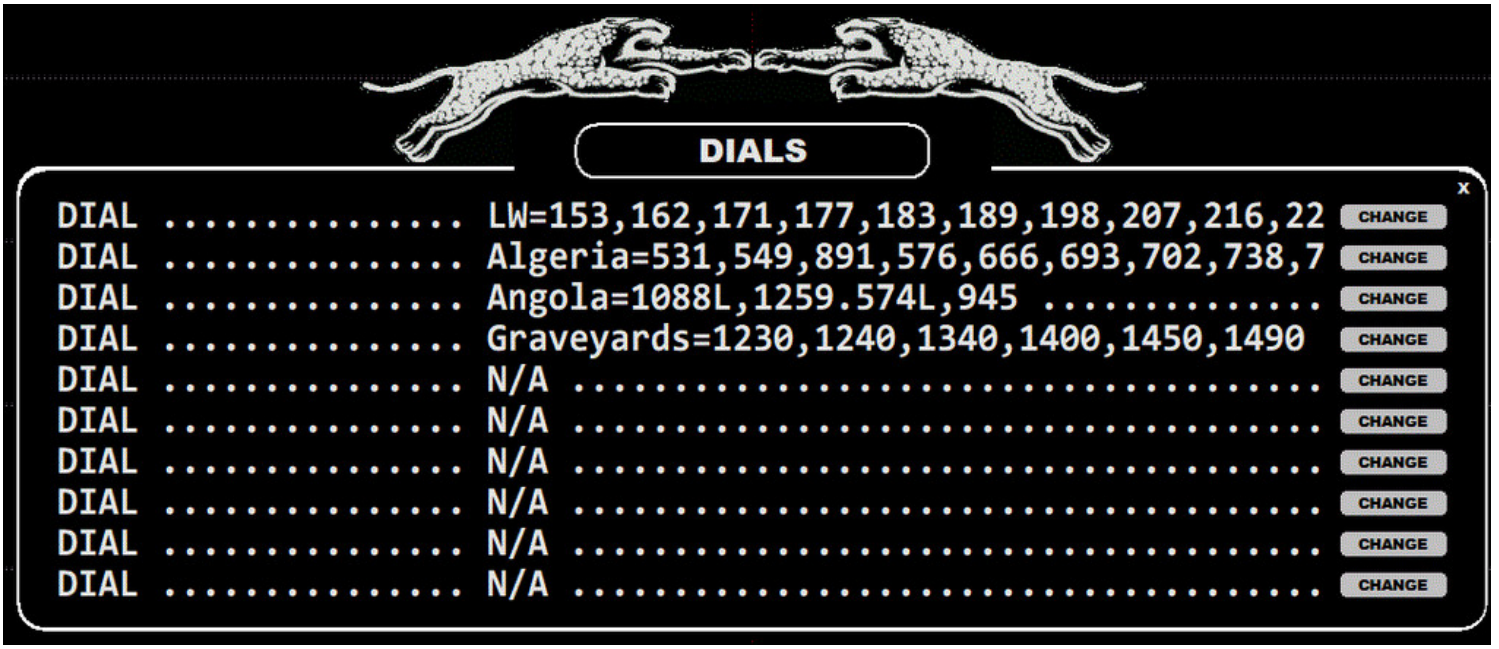
The DIALs can be created by area dominants, or by whatever criteria you prefer.

The DIAL summary:

- Give a name and add as many frequencies as needed
- Offsets (such as "1259.574") are allowed in the frequencies
- The preferred SSB mode (LSB or USB) can be given by adding L or U immediately after the frequency

HOW TO

When the DIALS window is open, a new dial can be added to the system by clicking the "CHANGE" button, typing one DIAL definition into the corresponding text box and then clicking "SAVE" for the added DIAL. For example, the DIAL window can look like this (note that the window itself can not show the full frequency list):



Any of these DIALS can be activated by:

- selecting the desired DIAL from TOP MENU > VFO
- clicking TOOLBAR > V (VFO) and selecting the desired DIAL

Note that DEFAULT VFO (as defined in SETTINGS > WORKSET > VFO_FREQS) is also available in the menu.

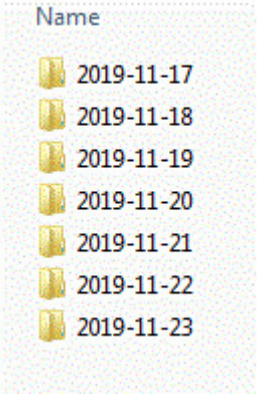
After you have activated the DIAL, it becomes your default VFO frequency list, and when VFO is activated (instead of 9-kHz / 10-kHz stepping), the mouse wheel and left/right arrows scroll the DIAL frequencies if the frequency scroll mode is active.

DIALS can be used as "memory banks", e.g. for gathering frequencies that belong to the same area or network. When DIAL is activated in VFO, it is easy to spot parallel programs over several frequencies.

You can toggle the 9-kHz/10-kHz stepping and the active VFO by clicking the their TOOLBAR icons, 640 or alternatively repeatedly pressing the "V" key which rotates the stepping modes: 9 > 10 > VFO.

DX DAY

DX DAY refers to the time period from today's 20 UTC to next day's 20 UTC. This means that exactly at 20 UTC, JAGUAR will create a new folder ("day folder") onto the hard disk used for recordings, and all the recordings created after 20 UTC will be saved into this folder. 20 UTC has been selected, instead of 00 UTC, because this way in Europe, we can save all the overnight recordings into the same folder. DX DAY also serves as a breakpoint for all-day-running JAGUAR services, including YASLOG and SCANS.



HOW TO

The DX DAY functionality is controlled and handled automatically by JAGUAR; you just have to be aware of the time when the new DX DAY starts.

FILEMAIL

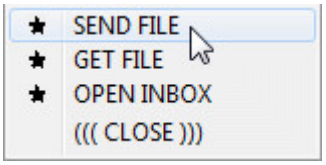
JAGUAR PRO ONLY

FILEMAIL offers an easy way to transfer files between your computers: no need to use email/ftp/cloud/dropbox/network shared folders/USB sticks, etc. anymore for quick small file transfers.

HOW TO

Sending FILEMAIL:

- Click TOOLBAR > FILEMAIL (the envelope icon)



- Select "SEND FILE" from the popup menu, and you will see the standard Windows file selection dialog.
- The selected file will be transferred.

Receiving FILEMAIL:

- Click TOOLBAR > FILEMAIL and select "GET FILE" on the computer where you want to receive the file(s)
- Files will be downloaded to the "FILEBOX" folder located in your JAGUAR folder, and this folder is opened automatically
- **Tip**: Remote users can use FILEMAIL for transferring files from the remote JAGUAR computer to the local JAGUAR computer
- **Note**: WAV clips are always automatically converted to MP3 when FILEMAIL is used

FILESCAN

JAGUAR PRO ONLY

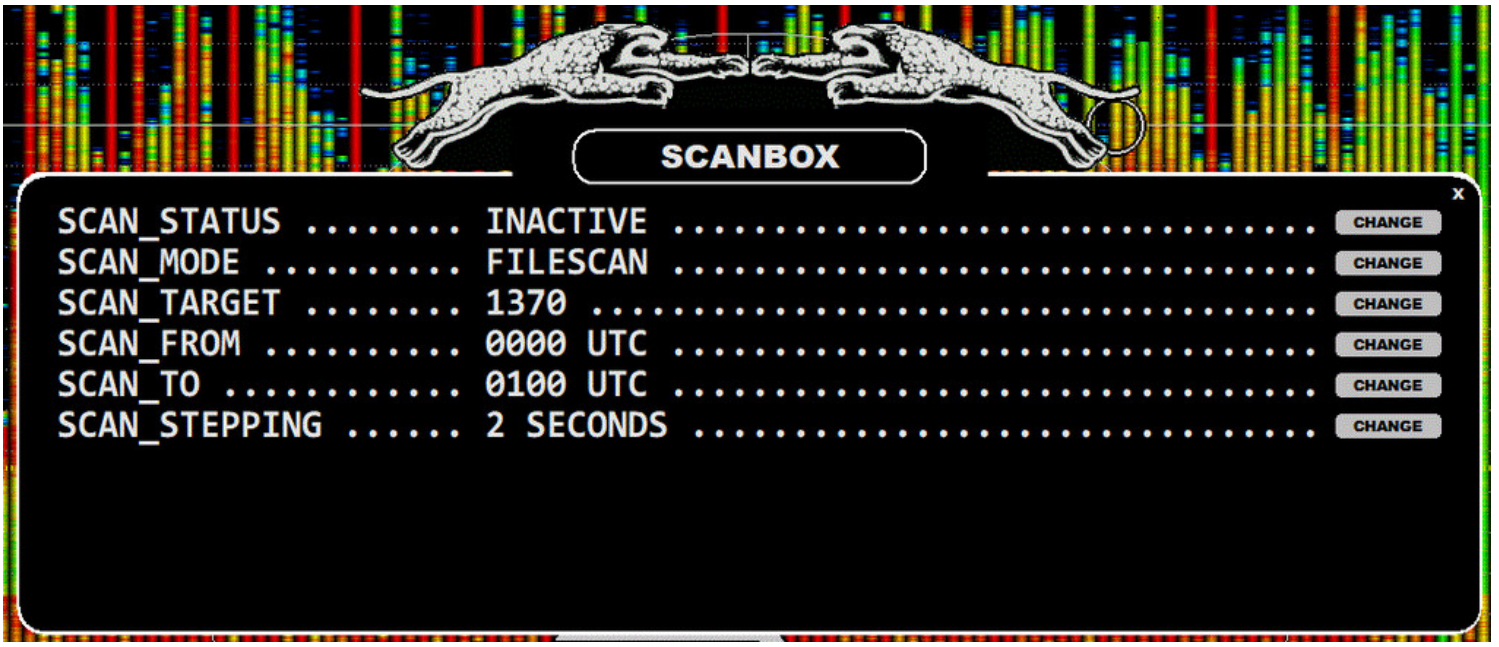
JAGUAR incorporates a built-in scanner to produce detailed offset histories for all or selected frequencies. This scanner can be used in the FILESCAN or LIVESCAN mode.

While LIVESCAN can analyze the selected frequencies in the LIVE mode as long as the Perseus hardware is connected, FILESCAN can be used for collecting offset history data from the recordings. Typically, you can have LIVESCAN active using a higher SCAN_STEPPING (= lower output resolution), but when some interesting conditions are observed, you can run additional FILESCANs with a lower SCAN_STEPPING (= higher output resolution) for that specific time period.

HOW TO

FILESCAN is defined in the SCANBOX panel which can be invoked by pressing the STATUSBAR > S button.

When the S button is clicked, you will see the SCANBOX panel where you can define the input parameters for FILESCAN (after selecting it as the SCAN_MODE; LIVESCAN must be disabled before FILESCAN can be selected as the new SCAN_MODE). When the parameters have been set, a FILESCAN run can be started by changing the SCAN_STATUS to ACTIVE.



You can define the following parameters for FILESCAN:

- SCAN_STATUS: the system is running when the status is ACTIVE
- SCAN_MODE: select FILESCAN (instead of LIVESCAN)
- SCAN_TARGET: frequencies to be scanned (MW10/MW9/VFO/single frequency)
- SCAN_FROM: HHMM for the start of the scan
- SCAN_TO: HHMM for the end of the scan
- SCAN_STEPPING: the time interval used for analysis, in seconds (scroll to change)

FILESCAN does not need or use "shadowing" (see LIVESCAN help for more details). The start and end times must be within the current "DX DAY" (a DX DAY starts and ends at 2000 UTC).

The S button is RED if FILESCAN is running; otherwise the color depends on the LIVESCAN activity.

Just as with LIVESCANs, the results of FILESCAN can be zoomed/viewed on the HISTORY spectrum displays. Whenever you run a new FILESCAN, the results will replace the earlier scan data for the target frequency/frequencies.

You can use the keyboard key "e" (or ALT-E) to toggle the current HISTORY screen and the HOME screen.

The default SCAN_STEPPING for FILESCAN is 30, i.e. one FFT sweep with an interval of 30 seconds. SCAN_STEPPING can be decreased for a better output resolution. If you are studying recordings after DXpedition, you can use a very low SCAN_STEPPING (even 2) but the SCAN duration may then be several hours, depending on how many frequencies are being scanned and how many hours are being included in the SCAN.

FILTERS

JAGUAR has a wide selection of different type of FILTERS and these can be tuned with several tools. However, JAGUAR LITE only offers one fixed filter (STOCK). JAGUAR's filtering is implemented in the time domain using 100-ms slices at a time (0.1 sec thus being the smallest operational "audio unit" in JAGUAR).

The following filters are available in JAGUAR PRO:

- STOCK
- CALLIOPE
- JAZZ
- AM MODE

AM MODE is not actually a filter but a different demodulation mode; the filter itself uses JAZZ filter processing. It can be handy to have AM MODE as "one of the filters" when trying to find the optimal audio output in each case.

Each filter can be used in three modes: BASE / STEEP / STUDIO. These modes have different attenuation curves at the filter edges.

The bandwidth and offset of the STOCK filter cannot be set; STOCK is the fixed "reference filter".

HOW TO

KEY = F (JAGUAR PRO)

The filters can be rotated with the "F" key but the desired filter can be selected also by:

- clicking/scrolling AUDIOBAR > FILTER name
- clicking the filter name in FILTER APPLET
- selecting the filter from TOP MENU > FILTERS

The filter characteristics can be changed by means of:

- AUDIOBAR (Mode / BW / OFFSET / PRESETS)
- AUDIO WINDOW
- CUSTOMFREQS

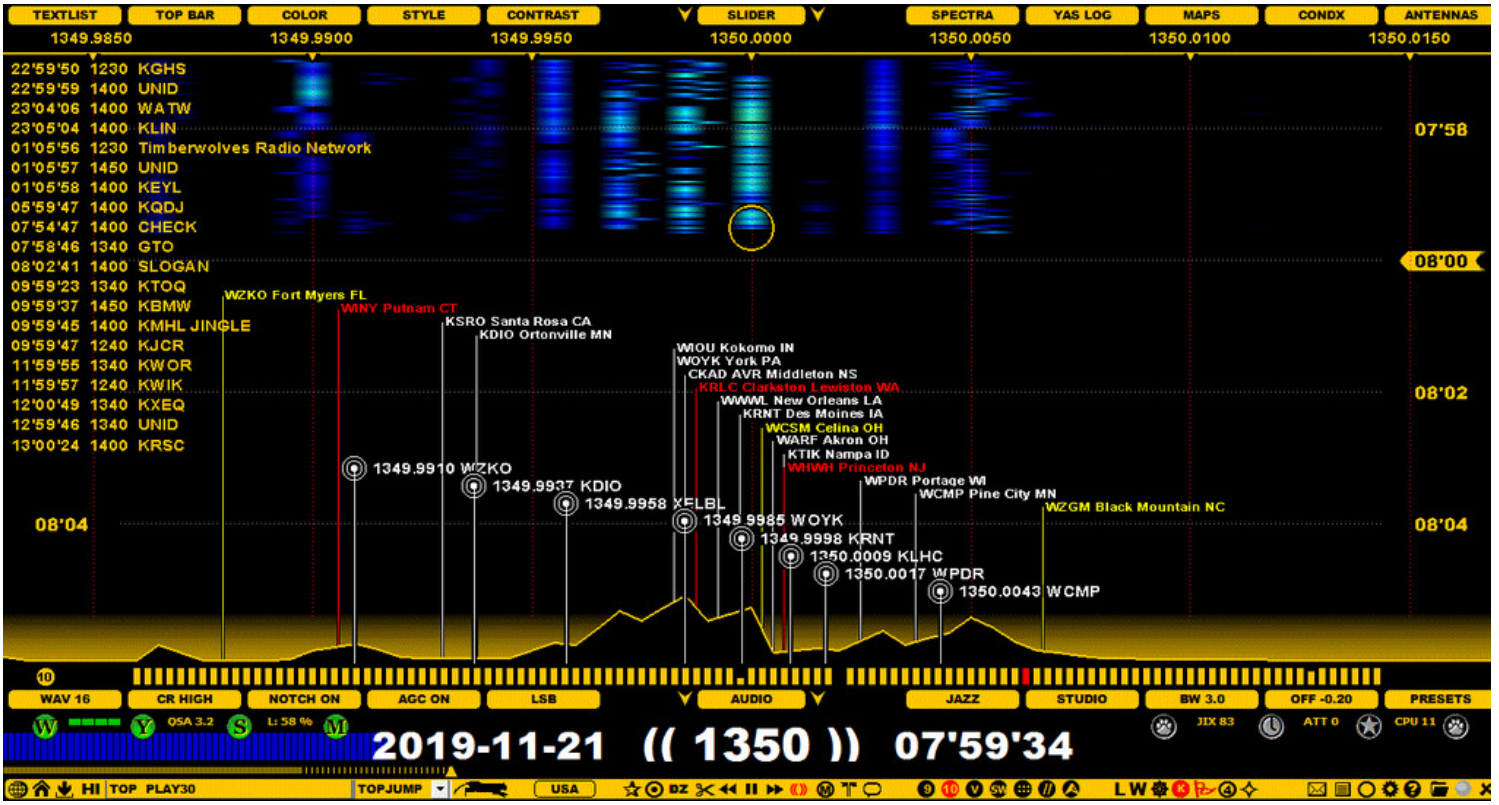
See the corresponding HELP for each of these topics. Filter-related information can also be found in the STEEP/STUDIO, PRESETS and CUSTOMFREQS helps. General information about the JAGUAR audio can be found in the AUDIO help.

FLAGS

JAGUAR PRO ONLY

The FLAGS feature can be used to show the known offsets as vertical "flagpoles". These flagpoles can be used on the displays to find matching spectrum tracks and thus help in the initial identification of the signal. However user should not trust too much on this feature: there are a lot of outdated or erroneous offsets listed so audio ID is still required for nailing the identity of any station. On the other hand FLAGS can offer a very useful tool for MW DXing.

FLAGS shown are the MWLI offsets ("GLOBAL offsets", taken from the TURTLE database and originating from the MWLI offset list) and local offsets (the offset values are collected/maintained by the user). The MWLI flags have longer poles, the local flags are presented as short "pins".

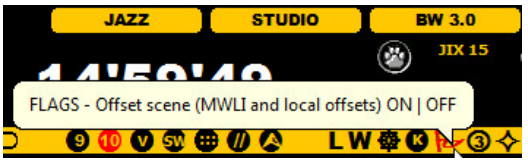


P-TAGS can be used to customise the color of the GLOBAL flags based on user's loggings/notifications (see P-TAGS help for more information).

HOW TO

KEY = ALT-X

FLAGS can be displayed/hidden by pressing ALT-X or clicking the TOOLBAR > FLAGS icon.



Filtering the GLOBAL MWLI flags

The number of listed GLOBAL flags can be huge on some frequencies and the display may be crowded by the flagpoles making the graphics cluttered. And many of the stations are unlikely to be heard in your QTH. That's why it is often useful to filter out the "unwanted" offsets from the flagpole set. You can do it in three ways:

- Use the continent filter on the DATABASE BAR or select the continent by pressing Q repeatedly (however quite likely you want to have 2-3 continents included so this is not the best option)
- Use the RADAR APPLET to show only the offsets that are included in the estimated beam of your antenna (more information about this in the APPLETS help)
- Use the POWER filter on the DATABASE BAR: you can include only the stations that are the most powerful and most likely to be audible in your QTH
- ... or any combination of the previous three methods

The number of local flags (pins) is usually so small that there's no need to filter them.

By default the data shown next to the GLOBAL FLAG poles contains the exact offset value and the station name. If you prefer to omit the exact offset value, you can use the setting SETTINGS > OFFSETS > SHORT_FLAG_NAMES > YES.

HEADER

JAGUAR PRO ONLY

JAGUAR uses the beginning (the header) of wideband recording files for saving additional data:

- RECORDING TIME
- RECORDING QTH
- ANTENNA (and ANTENNA change history)
- SOLAR CX: Space weather values at the time of the recording (see CONDX for details)
- DX VALUE: Loggings made from this file and the JIX values for MW10 and MW9 (see JIX for detais)

This data can be reviewed, for example, when you are wondering whether a particular file is worth keeping saved or if it can be deleted.

In addition, the files recorded with JAGUAR V7 (and higher) contain also

- CAL FREQ: The default calibration frequency for this file.

This frequency (if it exists) is always used as the calibration frequency when the file is opened for playback in the ARCHIVE mode. You can override this at the time of playback if needed. See details in GUIDE > KALIBRATE > MULTIPLE CALIBRATION FREQUENCIES.

The HEADER data can be shown as a text overlay on any JAGUAR graphics display.

HOW TO

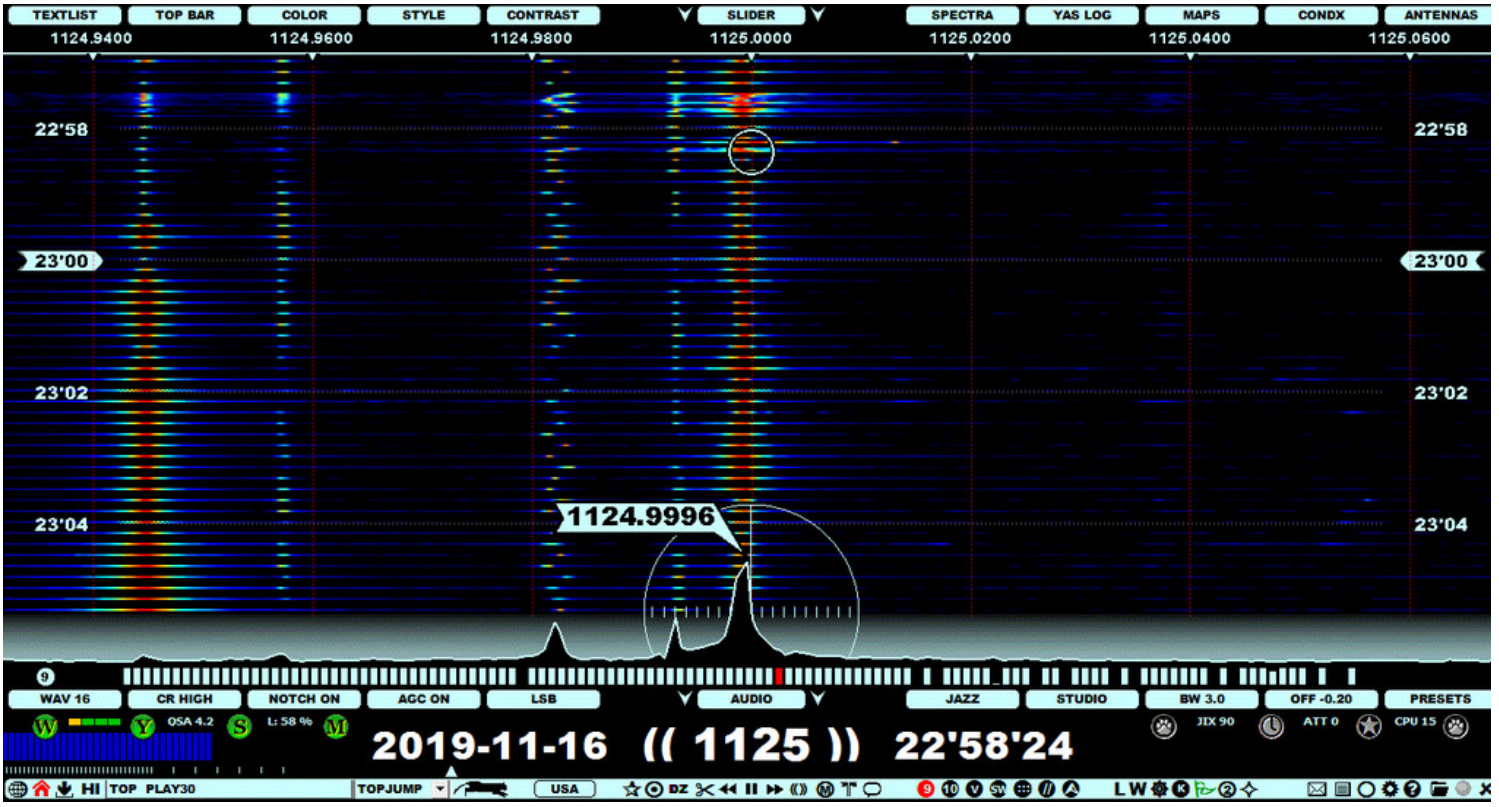
KEY = ALT-H

The HEADER data can be toggled on/off by pressing the ALT-H key.

HOMESCAN

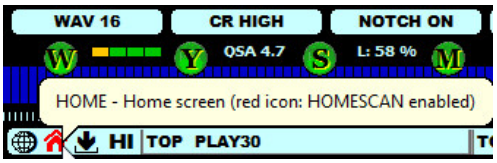
By default, JAGUAR creates a preview of the spectrum ("HOMESCAN") on the HOME screen when you tune in to a new frequency. The default scan interval ("stepping") is 10 seconds, but in JAGUAR PRO, this interval can be customized between 2 seconds (the best resolution, the slowest speed) and 60 seconds (a sparse resolution, the fastest speed).

HOMESCAN with the default stepping of 10 creates the skeleton of the offsets found on that frequency. Higher resolutions (lower steppings) can consume a considerable amount of CPU and I/O resources, but if you use a modern computer, this stepping can be decreased for a better resolution if you like the feature.



HOW TO

HOMESCAN is active by default. You can disable it by clicking the TOOLBAR > HOME icon (when the HOME icon is red, HOMESCAN is active). You can change the stepping for the current session when the HOME icon is red and the mouse is over the icon. Scroll with the mouse wheel or the left/right arrow keys, and the new stepping value is displayed on PLAYBAR ("HOMESCAN STEPPING = xx").

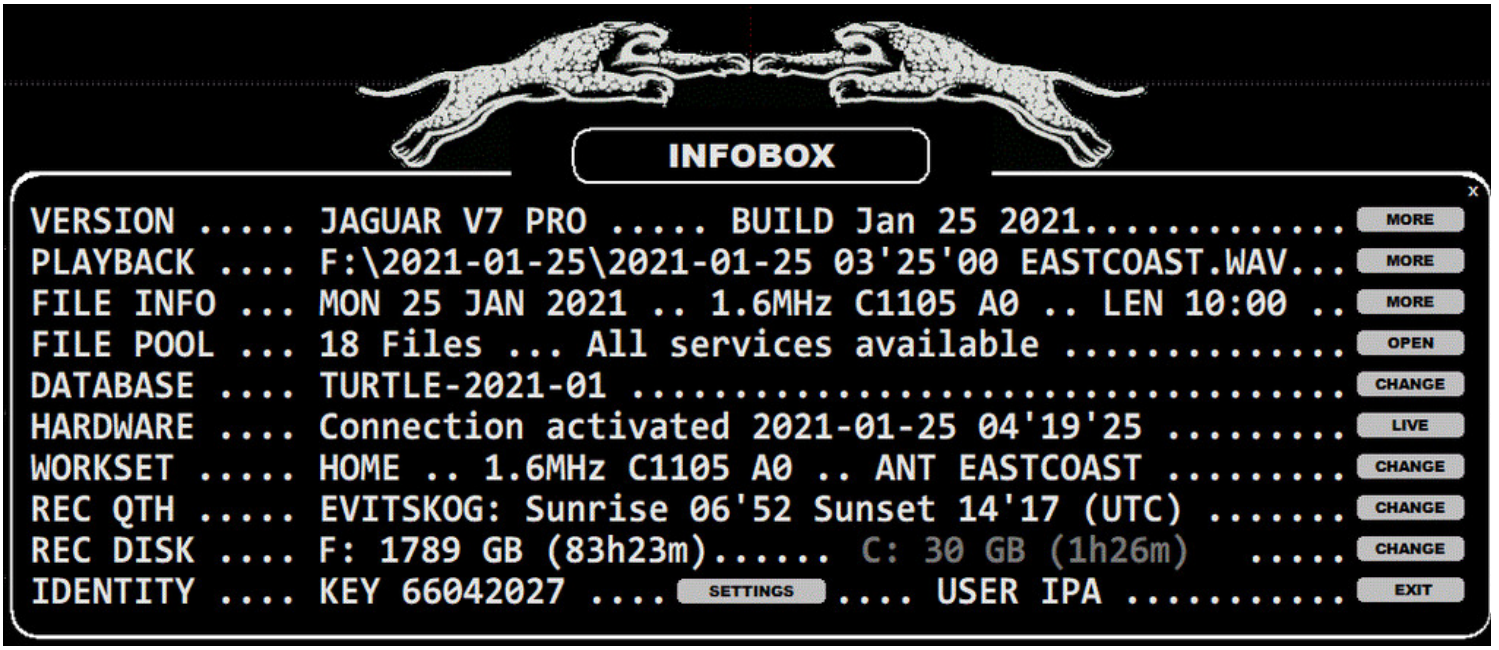


JAGUAR PRO ONLY

You can change the default HOMESCAN stepping value permanently in SETTINGS > SYSTEM > HOMESCAN. The valid values are 2,4,6, ..., 60. The value can be changed by moving the mouse over the CHANGE button and scrolling the mouse wheel (or pressing the left/right arrow keys). Also the mouse left-click/right-click can be used to increase/decrease the stepping value.

INFOBOX

The INFOBOX window is always shown after a new install, or a full reset, or every time when the "i" (info) key is pressed. You can define that INFOBOX be displayed every time JAGUAR is started for a given time period (see the SETTINGS help).



INFOBOX shows several setup details described below. You can study/change your setup/environment by clicking on the corresponding button on the right.

- VERSION: JAGUAR version and level (PRO or LITE) and the build date.
- PLAYBACK: the name of the currently-playing file.
- FILE INFO: the date, sampling rate, centre frequency, attenuation level, and length of the currently-playing file.
- FILE POOL: the number of files in the file pool and their service status. Certain JAGUAR functions require the use of the JAGUAR file name format. If all the files in the file pool have the correct format, the message "All services available" will be displayed.
- DATABASE: the currently-active station database.
- HARDWARE: the timestamp showing when the hardware connection was created.
- WORKSET: the currently-active WORKSET name, sampling rate, centre frequency, attenuation level and the antenna (for new recordings).
- REC QTH: the currently-active QTH (location) with today's sunrise and sunset times (in UTC).
- REC DISK: the primary and overflow disk details. Currently active recording disk is brightened.
- IDENTITY: Your JAGUAR key for this PC, the SETTINGS button and your "JAGUAR signature".

When you want upgrade JAGUAR from LITE to PRO, you must copy the 8-digit key shown after "KEY", and send it to the JAGUAR support team.

HOW TO

KEY = I

You can open/close INFOBOX by pressing the "I" key or clicking TOOLBAR > INFO > INFOBOX. The gray buttons on the right edge of INFOBOX can be used for the following:

- VERSION - MORE: Copyright information.
- PLAYBACK - MORE: Recording QTH and the sunrise/sunset times on the day when the recording was made.
- FILE INFO - MORE: The exact file size of the PLAYBACK file (or "Writing in progress" in the LIVE mode).
- FILE POOL - OPEN: Open a new ARCHIVE file for playback.
- DATABASE - CHANGE: Change TURTLE database version.
- HARDWARE - LIVE: Connect to LIVE (or jump from ARCHIVE to LIVE).
- WORKSET - Activate some other WORKSET (a popup menu is triggered with a list of available WORKSETs).
- REC QTH - Open WORKSET setting window for changes.
- REC DISK - Change the current recording disk between the two shown disks. If the Perseus connection has been activated, the change will become effective after the next breakpoint.
- IDENTITY - EXIT: Close INFOBOX.

INSTALLATION

JAGUAR can be downloaded as a zipped file and can be installed as any other application. There are no separate packages for JAGUAR LITE and JAGUAR PRO: whenever the user wants to upgrade from LITE to PRO, a small authorization file needs to be saved in JAGUAR's installation folder.

Note that antivirus software may flag JAGUAR as "malware". In that case you should exclude your JAGUAR folder from antivirus checks (or exclude JAGUAR.exe and LIFESAVER.exe on the process level).

HOW TO

UPGRADING / TESTING A NEW FULL PACKAGE

If you have an earlier JAGUAR version and want to test a new full package, keeping the old installation available as a backup, please follow these instructions:

1. Rename your active JAGUAR installation folder (for example C:\JAGUAR => C:\JAGUAR_OLD)

2. Install the new package using the original JAGUAR installation folder name (for example C:\JAGUAR)

    - if you are a JAGUAR PRO user, copy the JAGUARKEY.dat file from C:\JAGUAR_OLD to C:\JAGUAR
    - in addition, if you have your own offset collection, copy also the OFFSET.txt file from the old folder to the new one
    - this will ensure that you do not have to change any desktop/taskbar shortcuts and if you ever need to restore the earlier full package, it can be done simply by renaming the two folders.

FULL PACKAGE INSTALLATION

Only the Steps 1) and 4) are mandatory but below you will find many additional steps that can be reviewed in order to make the setup run as smoothly as possible. In addition in Step 4), you can also use other JAGUAR installation folder but C:\JAGUAR is recommended. If you skip all the other steps than 1) and 4), JAGUAR will run but it will use the defaults (e.g. recording to C:\ disk) and there may be some hiccups sometimes.

Here are the detailed installation steps:

1. Install the native Perseus software and verify that Perseus.exe runs flawlessly.

2. If you use an external harddisk for recording, plug it and enable write caching on the device:

    - DISK > PROPERTIES > HARDWARE > Select the external disk > PROPERTIES > GENERAL > CHANGE SETTINGS > POLICIES > BETTER PERFORMANCE

Whenever you change the recording disk/USB port, it is good to check this definition. BETTER PERFORMANCE is not the Windows default and without it your wideband recordings may not contain all the seconds and/or the file header may be not updated when the file switch happens (ending up a corrupted file - however JAGUAR can fix that).

1. If you use a mouse wheel on Windows 10, please change this:

- Windows Settings > Devices > Mouse & touchpad > Scroll inactive windows when I hover over them > Off

Mouse wheel scrolling can be used in JAGUAR for changing almost all objects and W10 blocks some of these scrolls if you don't set this W10 setting off.

2. Download JAGUAR's latest full installation package from http://jaguars.kapsi.fi/download/ and unzip the package to C:\JAGUAR

3. You can pin JAGUAR.exe to TASKBAR if you like or create a desktop shortcut. If you want to run JAGUAR 24x7 and automatically recover from power breaks and Windows OS updates, please do this: create a shortcut for LIFESAVER.exe and move it to the Windows start folder. That startup folder location is OS dependent, on W10 the folder can be opened by bringing up the Run box in Windows, typing shell:startup to it and pressing ENTER.

4. Start JAGUAR: INFOBOX opens up. Click LIVE to verify that the Perseus connection works.

5. Download the latest version: click STATUS BAR > STAR button (on the right) > click "LATEST YYYY-MM-DD" INSTALL. Usually there is a newer version available.

6. The system runs in JAGUAR LITE mode by default. If you belong to the JAGUAR PRO team, please ask for the PRO upgrade by picking the 8-digit KEY number from the INFOBOX (it can be opened by pressing "I") and sending it to this email address: jaguar4Perseus@gmail.com or to IPA.

7. Ensure that you have the latest TURTLE database: open the INFOBOX (by pressing "I"), and if the DATABASE name is out of date, click CHANGE and select DOWNLOAD LATEST.

8. After the basic installation is now done, quite likely you want to customize at least these basic settings: recording bandwith, center frequency, recording disk and your recording location.

   You can define these by opening the "WORKSET" window: click "W" button on the bottom left corner of the screen and then change the following settings (keeping the WORKSET1 as your default WORKSET):

   - REC_BANDWIDTH > CHANGE 2 MHz to 1.6 MHz if you want to save 20% of the disk space used (JAGUAR PRO only)
   - CENTER_FQ > CHANGE the center frequency if needed (however, the defaults are optimal for MW)
   - REC_DISK1 > CHANGE the default C:\ to the desired target (the path given can also contain a folder)
   - LOCATION > CHANGE the default to match your own QTH. This setting is used on many graphics screens and also whenever you use sunrise/sunset based recordings: replace LONDON, 51.5, -0.12 with your own QTH and coordinates. Note that any longitude in the western hemisphere must be given as a negative value.

When you close the WORKSET window and click EXIT for the settings dashboard, your setup is ready to rock. JAGUAR has tons of additional settings and customization options but they can be changed later (if needed) after you become more familiar with the "JAGUAR style".

Happy hunting!

JAGASS

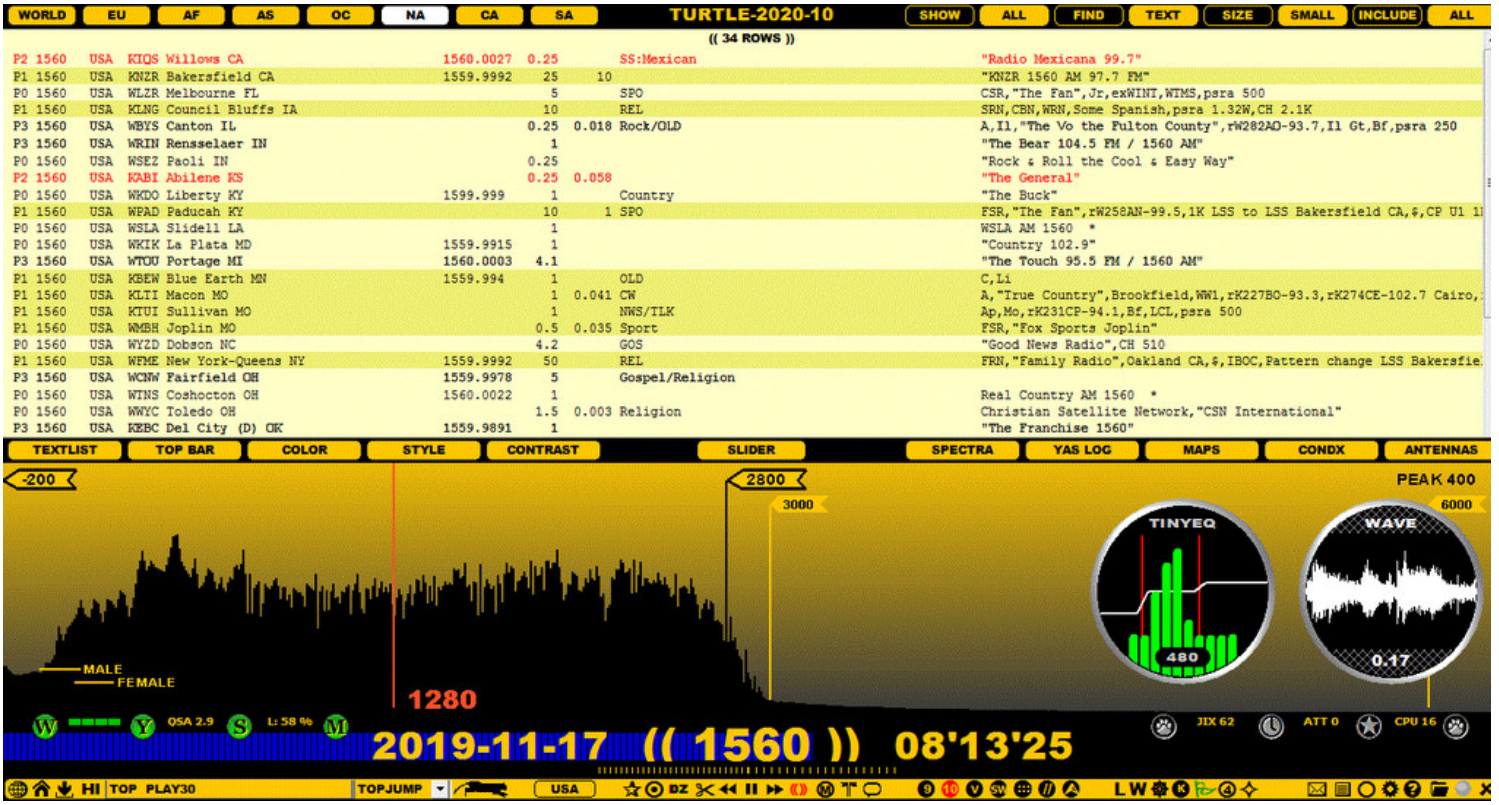
JAGUAR PRO ONLY

JAGASS is a one-click function, designed to open the four most important JAGUAR tools at once for solving station IDs. These tools are:

- the TURTLE station database for studying the stations on the current frequency, and
- AUDIO WINDOW for optimizing the audio output

In addition two applets are opened automatically to support audio trimming:

- TINYEQ, and
- WAVE



Whenever you hear some potential ID / something interesting, you can invoke JAGASS. In addition to the standard JAGASS function, you can also create an audio loop at the same time. See SETTINGS > SPACEBAR-JAGASS for more information.

HOW TO

KEY = J

You can toggle JAGASS on/off by pressing the "J" key.

JAGRUN

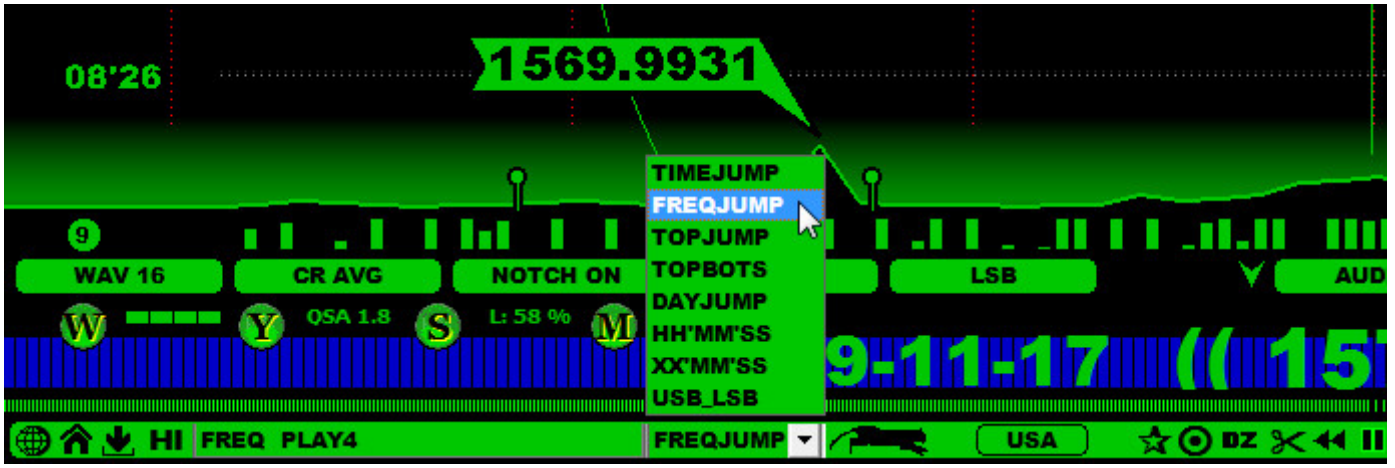
You can fully automate your jumps in the frequency and/or time domain with JAGRUN scripts. JAGRUN uses a simple scripting language to set the playback time after each jump.

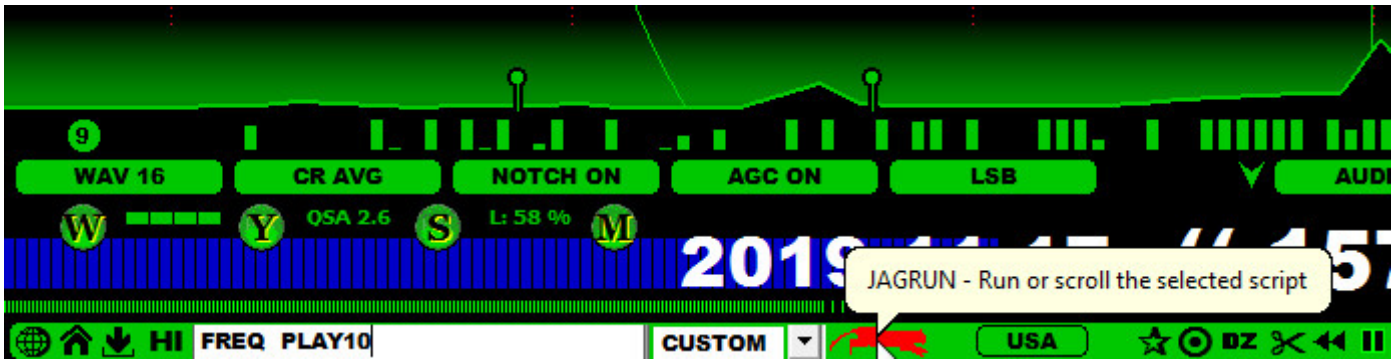
JAGUAR contains eight pre-defined scripts, and you can customize any of the scripts before running them.

The built-in scripts are:

- TIMEJUMP: Jump 60 seconds after playing 4 seconds.
- FREQJUMP: Jump to the next/previous frequency after playing 4 seconds.
- TOPJUMP: Find and jump to next/previous TOH after playing 30 seconds at current TOH.
- TOPBOTS: Find and jump to next/previous TOH/BOT after playing 30 seconds at current TOH/BOT.
- DAYJUMP: Find and jump to next/previous day after playing 40 seconds.
- HH'MM'SS: Find and jump to the next/previous defined HH'MM'SS and play it for 300 seconds.
    - The default HH'MM'SS is 22'55'00 (COPE break), you can change this to the desired HH'MM'SS
- XX'MM'SS: Find and jump to the defined xx'MM'SS and play it for 20 seconds.
    - The default XX'MM'SS is XX'04'50, you can change this to the desired XX'MM'SS
- USB_LSB: This script makes 30-second jumps, then playing 4 seconds in the USB mode followed by playing 4 seconds in the LSB mode.

After you have selected the desired script from the menu, you can optionally modify the jump/playback times and then control the jumps either manually or let JAGUAR do the job. In the example below, the FREQJUMP script is used and the playback time has been changed from 4 seconds to 10 seconds for each frequency before jumping to the next frequency. After this temporary change, the FREQJUMP script's name is changed to CUSTOM.





HOW TO

KEY = G (GO NEXT) and ALT-G (GO PREVIOUS)

If you hover the mouse over the JAGRUN icon, the color turns red, and you can use the mouse wheel or the left/right arrow keys to run the script as many times forward or backward as you need. If you click on the JAGRUN icon, the autorun mode starts. Click the icon again to stop the autorun mode.

If you want to use the keyboard for manual control of the jump: press "G" for jumping "one step" forward, and ALT-G for jumping "one step" backward. This is why "G" and ALT-G are sometimes called as "GOKEYS".

JAGUARKEY

JAGUAR PRO ONLY

A JAGUARKEY file is required for unlocking JAGUAR to the PRO version. The JAGUAR binary (jaguar.exe) itself is the same for both JAGUAR LITE and JAGUAR PRO, but JAGUAR PRO services are unlocked with the JAGUARKEY file only.

The JAGUARKEY file contains a string which is mix of the JAGUARKEY number (8-digit number shown in INFOBOX) with some PC/Windows characteristics. The file also contains the user's JAGUAR signature (= JAGUAR user id) so the JAGUARKEY file is PC/user dependent.

In older versions, JAGUAR PRO keys were embedded in the JAGUAR binary. In the future, the JAGUARKEY file will be the only way of unlocking the PRO features (the JAGUARKEY file must contain the .dat suffix).

The JAGUARKEY file must be saved in the JAGUAR installation folder.

JAGUARKEY.dat	28.1.2020 11:11	DAT File	1 KB

HOW TO

When a new user joins the JAGUAR PRO team, two things are needed:

- the JAGUARKEY number from INFOBOX (press I for INFOBOX: "KEY XXXXXXXX" is shown on the bottom line)
- the suggested JAGUAR signature (= JAGUAR user ID); a list of current JAGUAR signatures can be seen on http://jaguars.kapsi.fi/members.html

The JAGUAR PRO team members can run JAGUAR PRO on as many PCs as needed. Requests for the JAGUARKEY files for new PCs can be sent via email to the JAGUAR development team.

JAZZ

JAGUAR PRO ONLY

JAZZ is probably the best JAGUAR filter in most cases. JAZZ (as any JAGUAR filter) can be used in the BASE, STEEP and STUDIO filter modes. These modes have different attenuation curves at the filter edges.

HOW TO

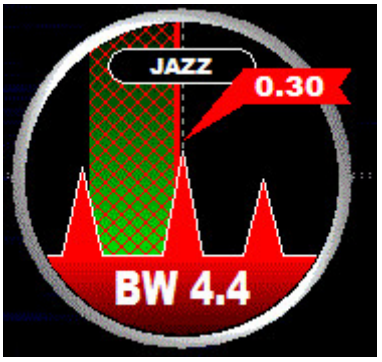
KEY = F

You can use the "F" key for rotating the filters until you get JAZZ displayed on AUDIOBAR.

You can also select JAZZ directly from that button (click/scroll until you get JAZZ), or you can select it from TOPMENU > FILTERS. Also the FILTER applet can be used (click the FILTER name button until you see JAZZ displayed).

The JAZZ filter characteristics (BW, OFFSET, BASE/STEEP/STUDIO mode) can be adjusted via the FILTER APPLET, AUDIOBAR or AUDIO WINDOW. More information can be found in the APPLET / AUDIOBAR / AUDIO WINDOW help sections.

The selected filter mode (BASE/STEEP/STUDIO) is also displayed over the FILTER applet: BASE = no fishnet, STEEP = red fishnet, STUDIO = white fishnet. JAZZ is a good general filter in most cases.



The STEEP and STUDIO modes clean up audio frequency ranges outside the selected filter bandwidth. The effect can be seen in the AUDIO WINDOW and heard in the headphones. Sometimes you will hear a clear improvement in the audio by using either of these modes.

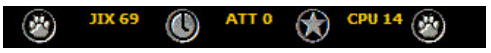
JIX

JAGUAR PRO ONLY

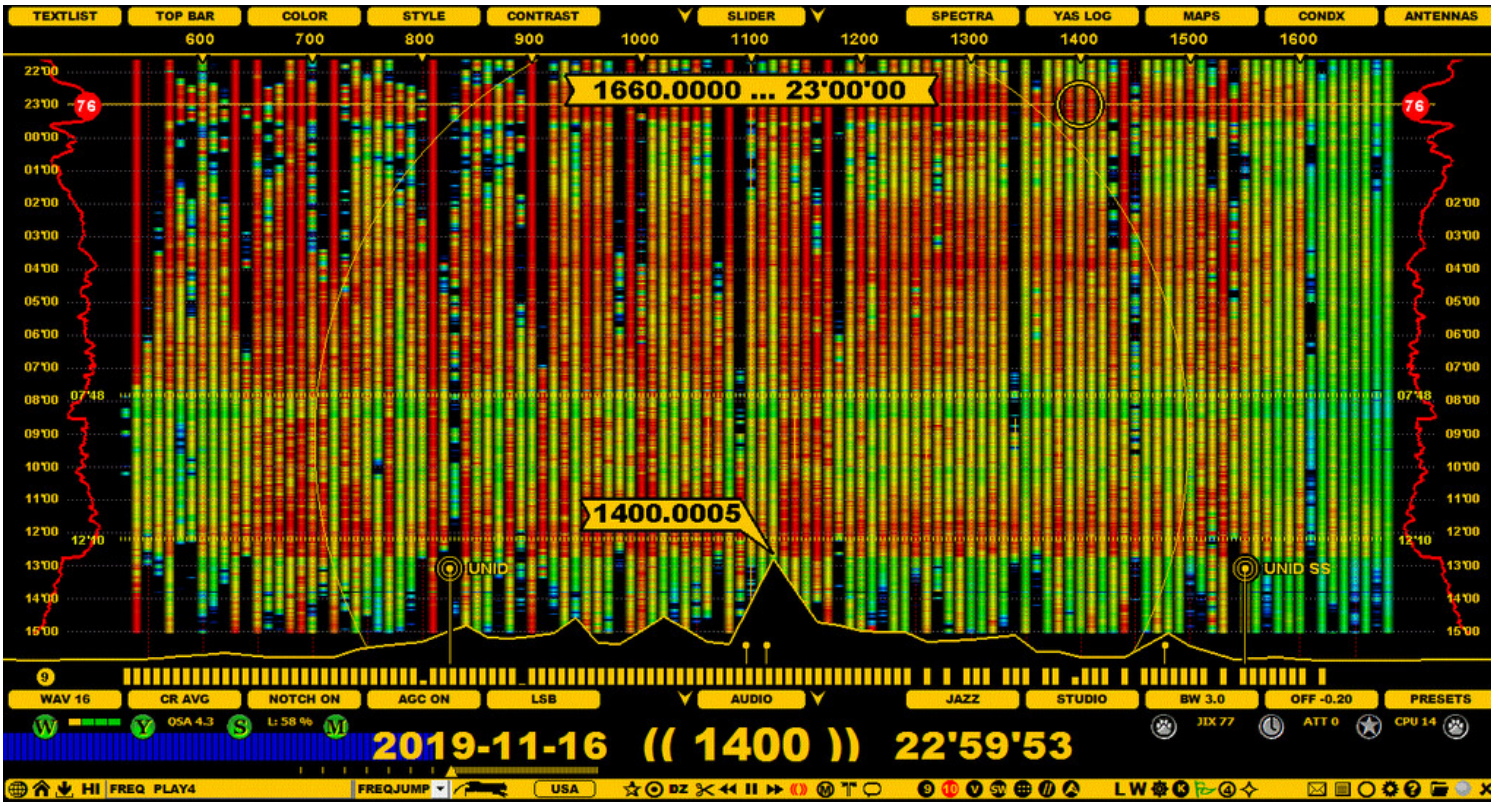
J-INDEX (JIX) is an index value for measuring true MW reception conditions, kind of a "NASDAQ index for MW". Other common indices (such as A / K / solar flux and more) just describe space weather related geomagnetic characteristics but do not give a real MW-reception index value.

JIX is scaled from 1 to 100. By default, JIX is collected from the "overseas frequencies" based on the user's location. JAGUAR keeps track of signal levels on the first 100 MW frequencies (the overlapping NA/EU frequencies are excluded) and creates the averaged value which is named as the J-INDEX.

JIX offers an excellent tool for finding interesting spots when studying the recorded files. In addition, JIX can be used for comparing antennas and even QTHs (however, the effect of using an external preamplifier must be taken into account when comparing signal levels in two different QTHs).



The current JIX values are being automatically calculated when the hardware is plugged in, and the value is shown on PLAYBAR. JAGUAR calculates and collects two separate JIX values: one for MW10 frequencies and second for MW9 frequencies. If you change the MW frequency stepping, the JIX shown changes accordingly.



The JIX values will be saved to the YAS LOG file at one-minute intervals. In the ARCHIVE mode, the JIX values are read from YAS LOG and shown as red curves ("JIX CURVE") on some displays. The exact JIX values on those displays are shown based on the mouse position in a red "JIX ball". These displays include the 12-hour and 24-hour YAS LOG displays and the extended views of the spectrum.

Additionally, JAGUAR collects JIXHISTORY.LOG with hourly values for the MW10 and MW9 JIX. This log is used on the CONDX display (more details in the CONDX help) to compare classical solar index values (A / K / Kyoto / etc) with real trans-oceanic reception results (JIX CURVE). Note that the CONDX display can show the JIX CURVE only on the original recording PC as JIXHISTORY.LOG is saved in the JAGUAR installation folder. If you move your external hard disk to another PC for playback, the JIX CURVE cannot be shown on the CONDX display.

The JIX can also be used to automatically start recording when a user-defined threshold is reached. This feature is called AUTOREC (see GUIDE > MESTOR). Even though today's megatrend in MW DXing is to record everything overnight and use various analysis tools to see/hear the results, many users still prefer to record only the TOH times. In this case, AUTOREC can be combined with scheduled TOH recordings. In this way, all the good out-of-TOH openings will be recorded automatically. Or why not record only the "good openings"?

HOW TO

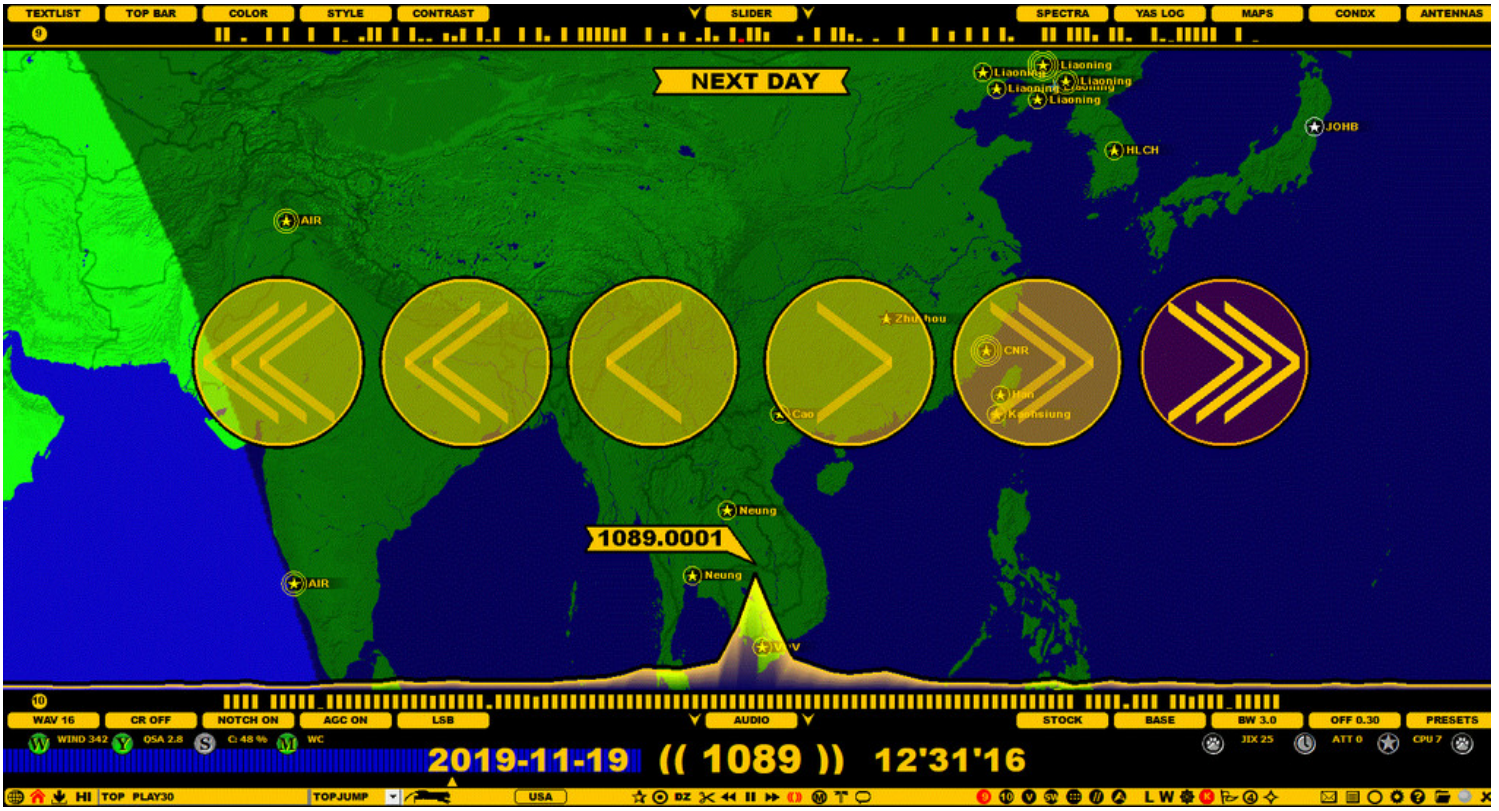
JIX is always collected automatically in the background.

When reviewing the JIX CURVE, you should look for the curve peaks (the sharper, the better!). Even a small peak in the curve can indicate a good spot for DX. Also, you should look for the times when the JIX value is rising/falling rapidly. Experience has shown that those times often

offer the most interesting reception periods, e.g. perhaps dominants may have not faded in yet or may already have faded out, and the dial can be full of surprises. While in a DXpedition, we often monitor these rapid changes as a trigger to be especially alert.

JUMPERS

JUMPERS are large time-navigation buttons. You can invoke them by right-clicking on the graphics area. You can change the method of mouse-clicking in SETTINGS > MOUSE > RIGHT_CLICK.



HOW TO

JUMPERS are six large buttons, offering a quick and easy way to jump in the time domain (keeping the frequency unchanged):

- PREVIOUS DAY (keeping HH'MM unchanged)
- PREVIOUS TOH
- PREVIOUS FILE
- NEXT FILE
- NEXT TOH
- NEXT DAY (keeping HH'MM unchanged)

JUMPERS can be closed by right-clicking on the graphics area again.

KALIBRATE

The SDR revolution has brought a new element into MW DXing: the use of offsets in signal analysis and pre-identification. In order to use any offset-based tool in JAGUAR, reliable calibration is required.

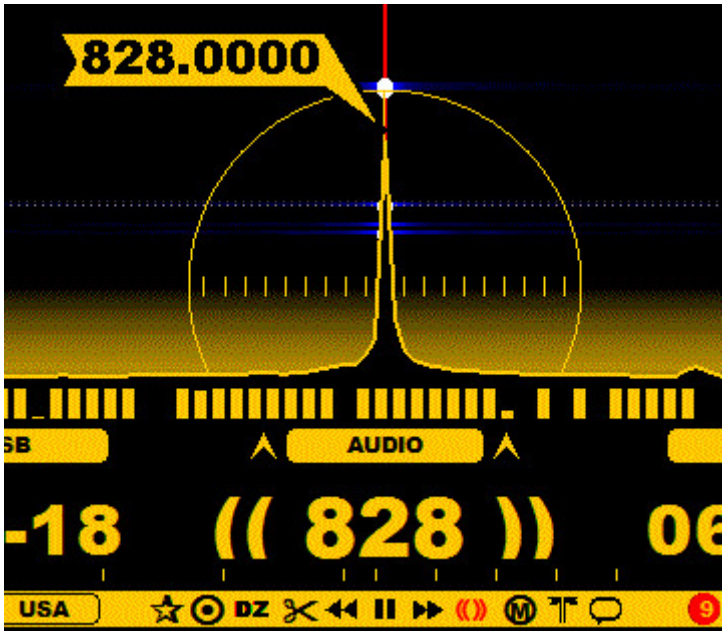
KALIBRATE is JAGUAR's calibration function. Compared to other SDR software, JAGUAR's calibration method is exceptionally easy, and it does not have to be made before recording. In addition, there is support for the "4th decimal" (a fraction of Hertz) accuracy.

The last fourth decimal is not necessarily always correct: the error margin is +/- 0.5 Hz (or +/- 0.1 Hz in JAGUAR PRO when in the HIRES mode). So if you want to be on the safe side, please use the offsets rounded to the nearest third decimal (the accuracy of one Hertz) in your public offset loggings. Although the fourth decimal can be used when the HIRES mode is activated, logging the fourth decimal requires extra attention and a bit a longer period of time spent in monitoring.

HOW TO

KEY = K, or clicking the TOOLBAR > K (KALIBRATION) icon.

By pressing the "K" key you can calibrate JAGUAR's frequency accuracy, based on the accuracy of the current frequency. You must tune in to a frequency where the station has a known and stable frequency with a sharp carrier peak visible. After the "K" key is pressed, the SPECTOR peak should show the exact .0000 frequency. You can repeat the process if the conditions make the peak to wobble, and it is difficult to get an exact calibration match. The calibration has an error range of 0.0005 kHz so the last fourth decimal is not necessary always correct - but it can be, you cannot be always sure. This is why it is recommended to use only three decimals in official offset loggings.



You can repeat this process any time you see that the calibration is not "spot on". This may be caused due to many things, e.g. a change in the hardware temperature. Calibration can be done either in the LIVE mode, or while listening to any ARCHIVE file (in JAGUAR, calibration can be done also afterwards for old files).

TOOLBAR > K (KALIBRATION) icon is red if the calibration is "spot on". JAGUAR can also be calibrated by clicking this icon.

FAST CALIBRATION (JAGUAR PRO ONLY)

The method of pressing the "K" key requires that you are tuned to the nominal frequency of the station used in calibration. However, most of the JAGUAR PRO users use the FAST CALIBRATION method: you can KALIBRATE your setup being tuned to any frequency and press the "K" key (or click TOOLBAR > K). All what we need is a good solid calibration frequency for your setup. Naturally it must be available at any time you calibrate.

Normally, calibration is done with a station known to be on the exact .0000 frequency. However, if you know that a certain local station always sits on an exact offset frequency, you can use also that offset for calibration.

First, you must define your calibration frequency in SETTINGS > SPECTOR > FAST_CALIBRATE. For example,

```
FAST_CALIBRATE ............ 828.0000
```

Now if you press the "K" key (when listening to any frequency!), JAGUAR performs the calibration in the background (the playback control does not jump to 828). Of course, you can go to 828 and check if that was done correctly but if it seems to be "always OK", quite likely you start to trust it and there is no need to check it after pressing "K". When you press "K" in "normal" calibration, JAGUAR prompts a "Do you really want to ..." confirmation box but there is no need for that if you use FAST_CALIBRATE: it does not harm if you press "K" accidentally because calibration is just done one more time using the correct frequency.

In many European setups, 828 is often visible (but not always audible in full daylight) so we in Europe can successfully do this "blind calibration" quite freely. When writing this (March 2021), the following frequencies seem to be stable enough to be used for calibration in Europe: Russia on 828.0000, UK on 1215.0000 (even though some transmitters are listed on 1214.9999), MDA 1413.0000, and UK on 1341.0001.

In JAGUAR PRO you can also keep the CALIBRE applet always visible to monitor the calibration frequency (and calibrate by clicking the applet if needed).

AUTOMATIC CALIBRATION

If you trust your calibration frequency (e.g. you have a GPSDO device or there is a good stable calibration frequency available 24x7), you will never need to calibrate manually. Instead, you can let JAGUAR keep the calibration spot on as a continuous background process: define

```
AUTO_CALIBRATE ............ YES
```

in SETTINGS > SPECTOR > AUTO_CALIBRATE. This setting takes care of both the standard calibration (with the accuracy of 0.5 Hz) and the HIRES calibration (with the accuracy of 0.1 Hz) for SPECTOR and the spectrum graphs.

MULTIPLE CALIBRATION FREQUENCIES / ARCHIVE MODE

Beginning from JAGUAR V7, you can define multiple calibration frequencies for FAST_CALIBRATE (the frequencies must be separated by a comma). If such a list is defined, clicking TOOLBAR > KALIBRATION opens a popup menu and you will need to select the calibration frequency. The currently-used calibration frequency is shown on STATUSBAR.

When you open a new ARCHIVE file, JAGUAR selects the frequency used for calibration as follows:

- If "CAL FREQ" (see GUIDE > HEADER) is found in the file header, it is activated as the calibration frequency ...
    - ... otherwise the current calibration frequency (as shown on STATUSBAR) is used

- ... and this frequency for this file can always be overridden by the frequency/frequencies in FAST_CALIBRATE using TOOLBAR > K.

Note that if you select an alternative calibration frequency from the popup menu for any file, the original frequency in the file header is not updated. So, when you open this file next time, the original "CAL FREQ" in the header is used again for calibration.

MULTIPLE CALIBRATION FREQUENCIES / LIVE MODE

LIVE mode/recording can be active while you listen to old ARCHIVE files, and the calibration frequency used in the LIVE mode does not need to be the same as the one used in the ARCHIVE mode.

Beginning from JAGUAR V7, the "live-mode calibration frequency" will be saved in the file header of the recorded file as the default calibration frequency for that file. By default, this frequency is always the first frequency set for FAST_CALIBRATE. This frequency can be overridden with SETTINGS > MESTOR > SET CALFREQ, or by selecting a new live calibration frequency from the TOOLBAR > K popup menu.

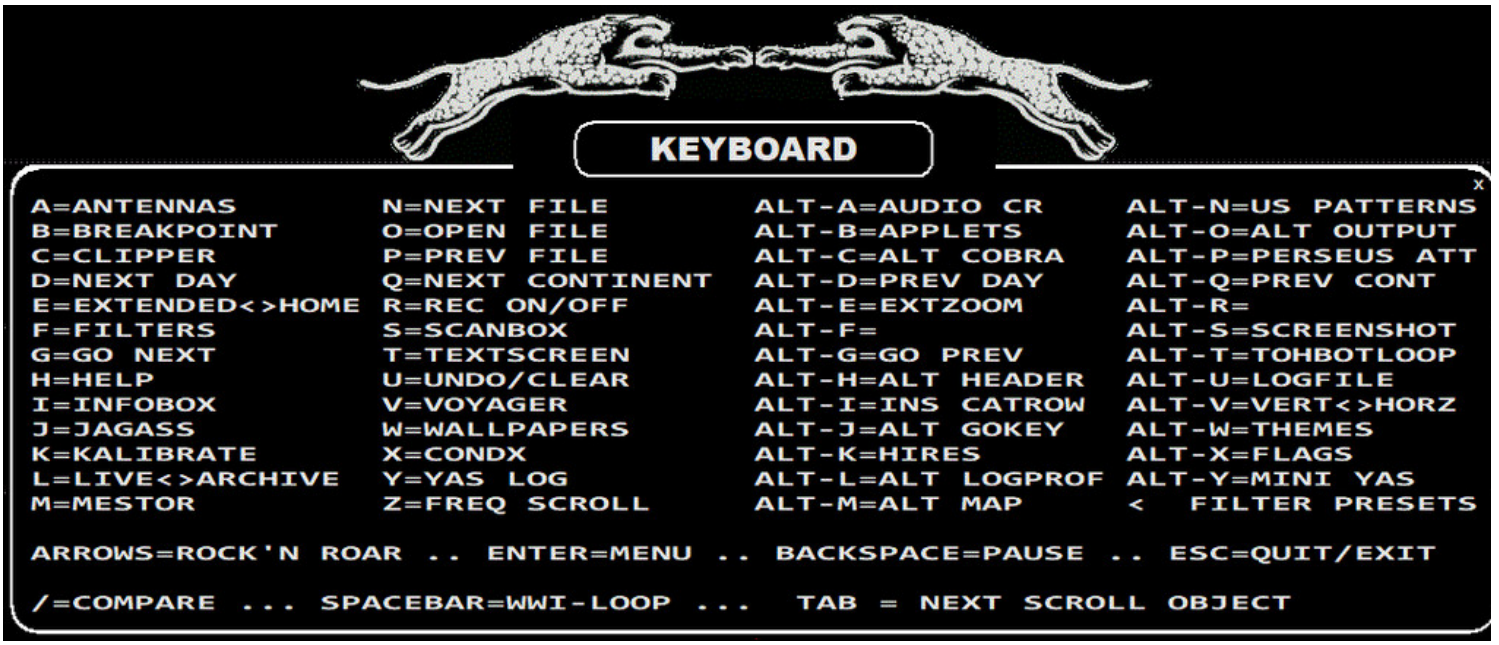
If you define only one "SET CALFREQ" row in MESTOR (let's say "SET CALFREQ 1341.0001 AT 2000"), it means that when the recording is saved, 1341.0001 will be saved in the file header, bypassing the frequency value defined for the FAST_CALIBRATE parameter.

In addition, MESTOR allows you to save different day-time/night-time calibration frequencies for the files, see SETTINGS > MESTOR > SET CALFREQ for details.

To summarize: the saved live-calibration frequency (= the first frequency in FAST_CALIBRATE) can be overridden by "SET CALFREQ" in MESTOR. You can still manually set a different live-calibration frequency via the TOOLBAR > K popup menu. This live-calibration frequency is saved to the file header and will be used as the default calibration frequency for this file when played back later in the ARCHIVE mode.

KEYBOARD

The list of the shortcut keys available in JAGUAR.



HOW TO

TOOLBAR > ? (INFO) > KEYBOARD

The list of the available keyboard keys (shortcuts) can be shown by clicking TOOLBAR > ? (INFO) and selecting "KEYBOARD" from the popup menu. Below you will find short descriptions for each keyboard key - most of the functions behind the shortcuts have their own detailed help sections in this GUIDE.

Note that each "standard key" shortcut must be given as a small letter (so CAPS LOCK must not be on). This is because using the upper-case letters can invoke a totally different function (see the SHORTCATS help).

Standard Keys (a-z)

a **- ANTENNAS

Open/close the ANTENNAS screen or rotate the "PLAYBACK ANTENNA".

If you have not defined any antennas in ANTENNAS, a subsequent press of the "a" key will close this window. Until then, you can evaluate antennas/directions by clicking the antenna map. A virtual antenna will be created on the screen.

If you have defined antennas in the ANTENNAS window, it will show the antennas defined (directions and beams) and a subsequent "a" press does not close the window but the current antenna is changed on the display. If you have an antenna switcher attached to JAGUAR, the current antenna displayed is also physically selected. In this case, you can close the antenna map e.g. by pressing "w".

If the PANTS (= PLAYBACK ANTENNAS) feature is enabled, pressing "a" rotates the playback disks (= "antennas") in the ARCHIVE mode (more details in the PANTS help).

b **- BREAKPOINT

When an active connection to the Perseus hardware has been created, JAGUAR always uses a buffer file on the hard disk, making it possible to play back several frequencies close to real time. By default, the buffer file size is 10 minutes (when using the bandwidth of 1.6 MHz) or 8 minutes (when using the bandwidth of 2 MHz). A new file is always created when the buffer file reaches these limits. You can re-create a new buffer file any time by pressing "b" in order to avoid a top-of-the-hour to happen between the buffer file switches.

c **- CLIPPER

Open JAGUAR's built-in audio clipping tool, CLIPPER.

Recording of the audio will start immediately after the "c" key is pressed. A subsequent "c" press stops the flow of audio to CLIPPER, and another press of "c" starts it again. When the desired audio clip has been recorded/modified, you can save it, and exit by pressing the EXIT button in CLIPPER.

Pressing the ESC key also cancels clip recording. A mouse right-click closes the CLIPPER window.

d **- NEXT DAY

Change the day in playback, or "jump to the same point of time on the following day". The playback starts immediately if a matching recording is found on the following day. If there is no saved recording at that point of time, a PAUSE is triggered, and the text color of PLAYBAR will change to orange.

```
e **- HOME <> HISTORY (JAGUAR PRO)
```

Toggle the HOME and HISTORY (extended spectrum) screens.

```
f **- FILTERS (JAGUAR PRO)
```

Rotate the available RF filters: STOCK > JAZZ > CALLIOPE > AM FILTER. If the FILTER APPLET is not visible when "f" is pressed, the current FILTER applet will be displayed without changing the filter itself.

```
g **- GO NEXT
```

Jump to the next time/frequency as specified by the active JAGRUN script. Often used together with ALT-g (GO PREVIOUS).

```
h **- HELP
```

Open/close the HELP window. This window is either the keyboard shortcut list on the title level (if the Internet connection is not available) or the target-specific WWW window in JAGUAR GUIDE (if the Internet connection is available). In the latter case, the page opened depends on the mouse position on the screen.

```
i **- INFOBOX
```

Open/close the INFOBOX.

```
j **- JAGASS (JAGUAR PRO)
```

Open/close JAGASS (the TURTLE + AUDIO WINDOW combination).

```
k **- KALIBRATE
```

Calibrate JAGUAR's frequency accuracy, based on the accuracy of the current frequency (JAGUAR LITE) and/or the FAST_CALIBRATE frequency (JAGUAR PRO). See the KALIBRATION help for more details.

```
l **- LIVE <> ARCHIVE
```

Toggle the playback of the LIVE mode and the last-used archive file.

```
m **- MAPS or MESTOR or MIDGET
```

This key can be customized. You can select from three options:

- MAPS: toggle the SPECTRA and MAPS screen (default)
- MESTOR: minimize JAGUAR, and enter the MESTOR mode (playback will pause)
- MIDGET: minimize JAGUAR, and enter the MIDGET mode (playback will continue)

```
n **- NEXT FILE
```

Move the playback to the next file in the file pool.

```
o **- OPEN FILE
```

Select a new file for playback.

```
p **- PREVIOUS FILE
```

Move the playback to the previous file in the file pool.

```
q **- NEXT CONTINENT
```

Rotate the active continents (in MAPS/TURTLE/FLAGS) in the following order: World > Europe > Africa- Middle East > Asia > Oceania > North America > Caribbean > South America.

```
r **- RECORDING ON/OFF
```

Start/stop the manual recording mode. In the recording mode, the color of the progress bar is red in the LIVE mode. The current buffer file is saved to disk when the file becomes full, and the recording continues normally. If you stop recording by pressing the "r" key again, the current buffer file is saved, and the color of the progress bar returns back to green.

```
s **- SCOPE or SCAN or SIXPACK
```

This key can be customized. You can select from three options:

- SCOPE: open/close the lower SCOPE bar (default)
- SCAN: open/close the SCAN control panel
- SIXPACK: open/close SIXPACK

```
t **- TEXTSCREEN
```

Toggle the minimized TURTLE/TOMCAT and the full-screen TURTLE/TOMCAT. The current slider position defines the minimized position.

```
u **- UNDO/CLEAR
```

If there are no extra functions active, pressing "u" hides/shows the following graphical elements:

- SPECTOR grid
- SPECTOR flag, and
- the APPLETS

Pressing "u" purges the currently-active audio loop markers, and a subsequent press of "u" restores the earlier loop markers, "undoing the undo".

Pressing "u" cancels recording without saving the file if the recording mode is active. Confirmation will be asked before cancellation. Pressing "u" also stops some other active functions, e.g. flushing the audio to CLIPPER.

```
v **- 9 > 10 > VFO
```

Rotate the frequency-stepping modes: 9-kHz stepping > 10-kHz stepping > the currently-active VFO/DIAL stepping.

```
w **- WALLPAPERS
```

Rotate the main screens: HOME > YAS > MAPS.

```
x **- CONDX
```

Toggle the current and CONDX displays.

```
y **- YAS LOG (JAGUAR PRO only)
```

Toggle the current and YAS displays.

```
z **- FREQ SCROLL
```

Toggle the frequency-scrolling mode on and off. When frequency-scrolling is enabled, you will see the (( )) brackets around the frequency on PLAYBAR. While the brackets are visible, scrolling the mouse will change the frequency up/down, based on the current stepping mode, as long as the mouse hovers over PLAYBAR. Also, you can use the left/right arrow keys for frequency scrolling, regardless of the position of the mouse (unless the mouse points to some other scrollable object).

ALT Keys (A-Z or a-z)

These ALT-shortcut keys are available only for JAGUAR PRO, except ALT-D (PREVIOUS DAY), ALT-G (GO PREVIOUS), ALT-O (ALT OUTPUT), ALT-P (PERSEUS ATTENUATION), ALT-Q (PREVIOUS CONTINENT) and ALT-T (TOHBOTLOOP).

```
ALT-A **- AUDIO CR
```

Toggle CLICK REMOVER on and off. CLICK REMOVER is designed to eliminate audio clicks, caused by electric fences and similar type of short audio overload bursts.

```
ALT-B **- APPLETS
```

Open/close all APPLETS.

- If the APPLETS are visible on the screen, they will be closed by ALT-B
- If the APPLETS are not visible on the screen, all applets will be displayed in a shape of a circle

You can re-position the applets the way you want to see them (just drag and drop the applets to the desired positions), and close the applets you do not need by right-clicking the applet in question.

```
ALT-C **- ALT COBRA
```

Rotate the various modes of COBRA: COBRA OFF > COBRA ACTIVE > COBRA LOCKED.

```
ALT-D **- PREVIOUS DAY
```

Change the day in playback, or "jump to the same point of time on the previous day". The playback will start immediately if a matching recording is found on the previous day. If there is no saved recording at that point of time, a PAUSE is triggered, and the text color of PLAYBAR will change to orange.

```
ALT-E **- HOME <> HISTORY (JAGUAR PRO)
```

Toggle the HOME and HISTORY (extended spectrum) screens.

```
ALT-F **- Reserved for future use
```

```
ALT-G **- GO PREVIOUS
```

Jump to the previous time/frequency as specified by the active JAGRUN script. Often used together with "g" (GO NEXT).

```
ALT-H **- ALT HEADER
```

Open/close the wideband file HEADER text overlay.

```
ALT-I **- INSERT CATROW
```

Insert a station to CATBOOK (a station which does not exist in TURTLE).

```
ALT-J **- ALT GOKEY
```

Rotate your GOKEY list (= JAGRUN scripts) on TOOLBAR.

```
ALT-K **- HIRES ON/OFF
```

Toggle the current and HIRES displays.

```
ALT-L **- ALT LOGPROFILE
```

Rotate/change the currently-active log profile. User may have set up several log profiles e.g. for creating loggings for different publications or locations with different formats. Note that LOGPROFILE can be changed also in LOGBOX.

```
ALT-M **- ALT MAPSYSTEM
```

Rotate all the map displays: BEEHIVE > CATMAP > (standard) MAPS.

```
ALT-N **- US PATTERNS
```

Open the U.S. PATTERN display system and control how the patterns are shown. Pressing ALT-N multiple times will rotate the available pattern modes: ALL PATTERNS (DAY) > ALL PATTERNS (NIGHT) > SHOW PATTERN (DAY) > SHOW PATTERN (NIGHT) > PATTERNS OFF. If either of the "SHOW PATTERN" modes is selected, the pattern is shown only when the mouse is hovered over any US/CAN station.

```
ALT-O **- ALT OUTPUT
```

Clean the display by removing some visual objects from the screen: the APPLETS and SPECTOR grid/flag can be set temporarily ON or OFF. The same function can be achieved with TOOLBAR > CLEAR or with the key "u".

```
ALT-P **- PERSEUS ATTENUATION
```

Rotate the attenuation level of the Perseus hardware: 0 (default, no attenuation) > 1 (-10 dB) > 2 (-20 dB) > 3 (-30 dB). Changing the attenuation manually overrides all the scheduled attenuation settings in MESTOR until the next JAGUAR restart.

```
ALT-Q **- PREV CONTINENT
```

Rotate the active continents (in MAPS/TURTLE/FLAGS) backward in the following order: World > South America > Caribbean > North America > Oceania > Asia > Africa-Middle East > Europe.

```
ALT-R **- Reserved for future use
```

```
ALT-S **- SCREENSHOT
```

Create a GIF image of the screen or a user-defined portion of it. After pressing ALT-S, you will see a red-white square which can be used to define the screenshot area. A mouse left-click can be used to re-position the corner of this area, and when ready, press ENTER to take the screenshot. A mouse right-click will quit this function without taking the screenshot. The output image is saved to the JAGUAR folder and named as SCREENSHOT YYYY-MM-DD HH'MM'SS.GIF.

```
ALT-T **- TOHBOTLOOP
```

Create an audio playback loop around the exact top-of-the-hour (TOH) or bottom-of-the-hour (BOT) if the currently-active file includes either of those time periods.

```
ALT-U **- LOGFILE
```

Open/close the log file.

```
ALT-V **- VERTICAL <> HORIZONTAL DISPLAY
```

Toggle the horizontal and the vertical display of the HOME spectrum.

```
ALT-W **- THEMES
```

Rotate all THEMES: WINDOWS > LONELY PLANET > DEEP BLUE SEA > COASTGUARD > TROPICANA > NOSTALGIA.

```
ALT-X **- FLAGS
```

Toggle the offset FLAGS on/off.

```
ALT-Y **- MINI YAS
```

Open/close the lower SCOPE in the "MINI-YAS" mode.

Other Keys

```
ARROW KEYS **- MULTIPURPOSE KEYS
```

The arrow keys (LEFT / RIGHT / UP / DOWN) are the most important keys in the keyboard use.

- ARROW LEFT: Scroll three seconds backward in time OR scroll the frequency down if the (( )) brackets are visible on PLAYBAR.
- ARROW RIGHT: Scroll three seconds forward in time OR scroll the frequency up if the (( )) brackets are visible on PLAYBAR.
- ARROW DOWN: Toggle the LSB (lower sideband) and USB (upper sideband).
- ARROW UP: Add an audio loop marker to PLAYBAR. The first press sets the start of the loop, the second press sets the end of the loop. The third press removes the loop markers.

```
BACKSPACE **- PAUSE
```

Toggle the playback pause/mute on/off.

```
DELETE **- DELETE FILE
```

Delete the currently-active archive file. The Delete function is not allowed if you have not enabled the DELETE key (SETTINGS > PREFERENCES > DELETEKEY). If DELETEKEY is enabled in PREFERENCES, and you press the DELETE key, a confirmation is still prompted for before finally deleting the file.

```
END **- JUMP TO LAST ARCHIVE
```

Jump directly to the last recorded archive file.

```
ESC **- STOP/CANCEL/DISABLE/QUIT
```

ESC is a multi-purpose stop/cancel/disable/quit key. When you have invoked a function, or opened a tool window, pressing ESC will stop/cancel that function. When all the extras have been stopped/disabled (one by one when ESC is pressed again), the last ESC will close JAGUAR (a confirmation will be asked). The ESC key is kind of a master key to restore the standard screen/services, offering an easy way to get rid of the extra stuff on the screen.

```
HOME **- JUMP TO HOME SCREEN
```

Go to the HOME screen.

```
PAUSE **- PAUSE
```

Toggle the playback pause/mute on/off (same as BACKSPACE).

```
PGDN **- SCROLL DOWN
```

Scroll the object downward, depending on the mouse position. The object can be textual data (in TURTLE or TOMCAT), or frequency/time (in PLAYBAR).

```
PGUP **- SCROLL UP
```

Scroll the object upward, depending on the mouse position. The object can be textual data (in TURTLE or TOMCAT), or frequency/time (in PLAYBAR).

```
TAB **- SCROLL TO NEXT
```

Display non-active APPLETS one by one. If TIMEWHEEL is enabled, TAB will rotate the active scrollable objects: MONTH > DAY > FREQUENCY > HOUR > MINUTE > SECOND.

```
SPACEBAR **- WHAT WAS IT?
```

Create/remove the WWI ("What Was It") audio loop. When hearing something interesting, you can quickly repeat the last few seconds by pressing SPACEBAR, and JAGUAR will automatically create a short audio loop. The default loop length is 10 seconds, and you can customize the duration with the [CUSTOM] parameter of WWI.

```
/ (FORWARD SLASH) **- COMPARE
```

Toggle the two last-used frequencies to compare their programming. This is the easiest way to check if parallel programming is present on those frequencies. JAGUAR keeps track of the frequency history automatically so the two last-used frequency are always kept in memory.

```
< > (LESS THAN, GREATER THAN) **- FILTER PRESETS
```

The "greater than" key (>) rotates the pre-defined filter presets (bandwidth/offset) forward. The "less than" key (<) rotates them backward.

```
+ (PLUS) **- ADD ROW TO DAYLOG
```

You can add any string (e.g. a call sign) after + and then press ENTER. The given string will be added to DAYLOG.

KIT

JAGUAR can also be minimized into a small "KIT bar", minimizing the consumption of computer resources while keeping all the defined services still active.

JAGUAR KIT is embedded into JAGUAR, but you can use KIT also as an independent application; ideal for battery-powered setups. More info available at http://jaguars.kapsi.fi/KIT.htm

HOW TO

JAGUAR can be minimized to the KIT mode by clicking TOOLBAR > KIT (= the icon next to the shutdown icon). Please note that JAGUAR will enter the KIT mode automatically if there is no user action (a keyboard key press / mouse function) in one hour. This auto-minimization can be blocked with SETTINGS > SYSTEM > KEEP_MAXIMIZED > YES.

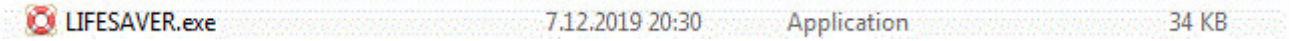
In addition to the the display panel (showing disk/scan status, realtime/playback frequency, cpu usage), KIT has six buttons:

- REC: Start/stop recording
- SHOW: Show the YAS log image
- PLAY: Start/stop playback (the frequency can be changed by scrolling the mouse when the mouse is over the frequency)
- SETTINGS: Open JAGUAR and the SETTINGS dashboard
- INFO: Open/close the infobar
- EXIT: Return to JAGUAR

If needed, KIT can be moved to the left/right: click the center area of the bar and move the bar with the mouse to the desired location. Click again or move the mouse away from the KIT bar to lock the new position.

LIFESAVER

Many MW DXers have one or more JAGUAR setups "always on", monitoring the MW dial around the clock. JAGUAR is designed for continuous operation and, for example, YASLOG can collect data about MW conditions all the time. However, because every environment is vulnerable and uninterrupted operation is rare as there can be power cuts, Windows updates, hardware problem, JAGUAR crashes, an extra guardian angel called LIFESAVER is in place to put JAGUAR back on its feet when issues occur.



The tiny program called LIFESAVER.exe is included in JAGUAR's full-installation package. Do not start this program manually, just keep it in your JAGUAR folder if you want a 24/7 operation. LIFESAVER can recover from Perseus power breaks, hardware and I/O exceptions, program crashes and hang-ups even if they happen while recording. Therefore, no UPS is needed if you just run JAGUAR on a laptop. Create a shortcut to LIFESAVER.exe and move it to the Windows start-up folder if you want a secured 24/7 operation, including an automatic JAGUAR start-up after a Windows reboot.

Important: you must use a **shortcut** to LIFESAVER.exe, not the program itself!

LIFESAVER.exe and/or JAGUAR.exe write a row to an event log when issues are detected. You will find the log in the JAGUAR folder (as LIFESAVER.LOG). There is a special case when JAGUAR cannot continue processing without automated restart: for some reason, the bit stream from the Perseus hardware to the file buffer may be interrupted for a priod of time, and JAGUAR hangs until restarted. You can simulate this case with JAGUAR.exe and PERSEUS.exe by unplugging the USB connection cable for a short while and then plugging it back and see what happens. In this case, LIFESAVER will wake up the Perseus connection to JAGUAR as soon as possible.

HOW TO

Make sure that you have placed the shortcut to LIFESAVER.exe into the Windows start-up folder.

LIVESCAN

JAGUAR PRO ONLY

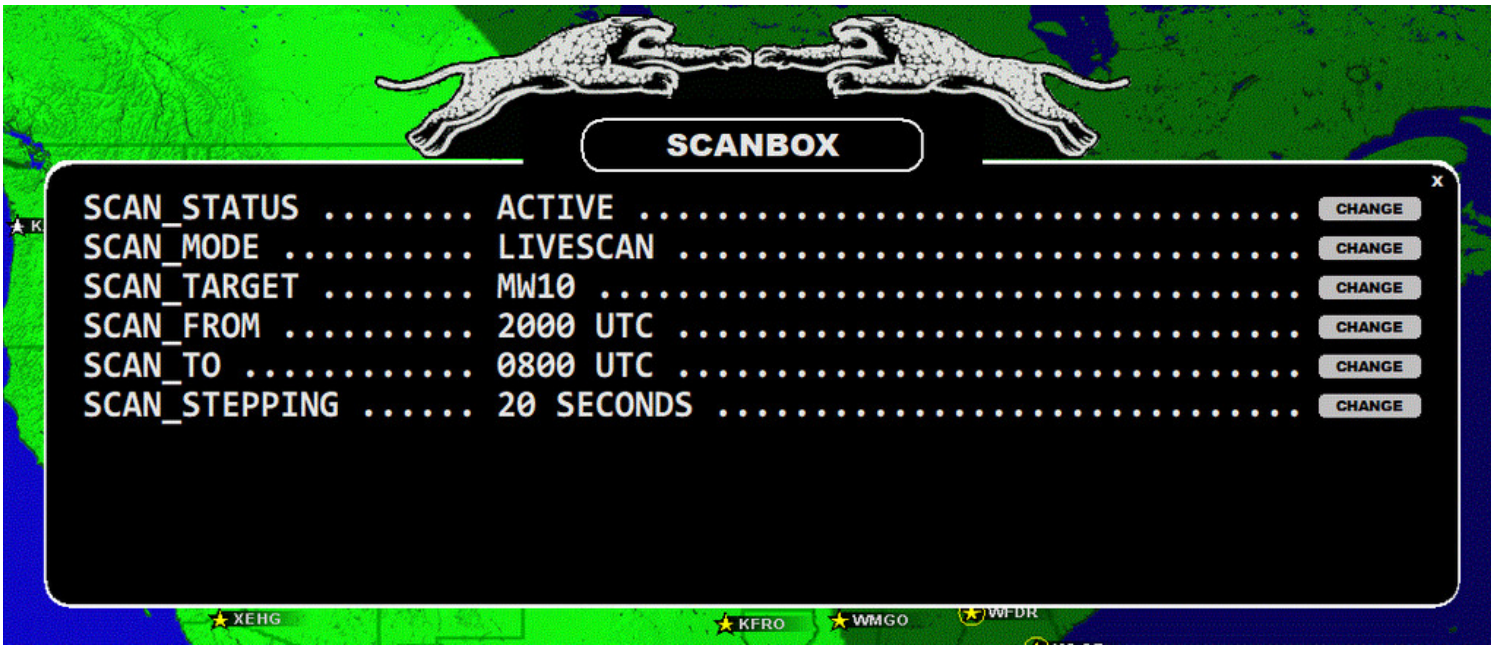
JAGUAR has a built-in scanner to produce detailed offset-related data for all or selected frequencies. Disabled by default, this scanner can be used in the LIVESCAN or FILESCAN mode.

While FILESCAN can reveal offset data only from the recorded files, LIVESCAN can look for offset data on the selected frequencies live when the hardware is connected. LIVESCAN is running in the background. You just need to set the frequencies and JAGUAR takes care of timing.

HOW TO

LIVESCAN is set in the SCANBOX panel which can be opened by pressing the STATUSBAR > S button.

When you click the "S" button, you will see SCANBOX where you can either quickly enable/disable LIVESCAN or modify its features.



LIVESCAN is the heart and soul of generating offset histories. It is disabled by default but if you are interested in investigating offsets, this feature is a must. LIVESCAN runs independently just the way you want.

You will need to define the following:

- SCAN_STATUS: when the status is ACTIVE, LIVESCAN is running
- SCAN_MODE: select LIVESCAN (instead of FILESCAN)
- SCAN_TARGET: the frequencies to be scanned (MW10/MW9/VFO/single frequency)
- SCAN_FROM: UTC time in format of HHMM for the start of collecting the offset data
- SCAN_TO: UTC time in format of HHMM for the stop of collecting the offset data
- SCAN_STEPPING: the time interval used for analysis, in seconds (scroll to change)

If you activate LIVESCAN, you can actually monitor the whole MW dial 24/7 even without making a single recording. However, usually DXers give the FROM/TO times as there is no need to waste computing time during daytime when the AM band is more or less empty.

LIVESCAN uses "shadowing", i.e. temporary data files on the C:\ drive. A bit stream from Perseus is written to the TEMP folder (created automatically). JAGUAR maintains two buffer files which are used for scanning. Today, the C:\ drives begin to be SSD disks, offering huge speed improvements. Furthermore, we can get rid of a lot of the I/O burden from the USB channel/main recording disk. So, this is also safer as far as stability is concerned. Please whitelist C:\TEMP in your antivirus software to allow for a faster, trouble-free I/O.

The "S" button has four status modes:

- GRAY: no scanning activated
- GREEN: scanning activated
- YELLOW: LIVESCAN activated
- RED: LIVESCAN analysis in progress

Just as with FILESCAN, the results of LIVESCAN can be zoomed/viewed on the (extended) HISTORY spectrum screens. After LIVESCAN has produced the offset results, you can still run also FILESCAN for the data, e.g. if you want increase the resolution for certain portions of

the data, provided you have recorded the time period of interest: click S, disable LIVESCAN, change SCAN_MODE to FILESCAN and enable FILESCAN after defining what you want to scan. Your LIVESCAN spectrum data will be replaced by these new FILESCAN results.

You can use the keyboard key "e" (or ALT-E) to toggle the current HISTORY screen and the HOME screen.

The default SCAN_STEPPING in LIVESCAN is 60, i.e. one FFT sweep per minute. Quite likely you can go down to SCAN_STEPPING 30 without issues if you do not have an outdated computer. If you have a high-end computer with an Intel Core i7 processor and an SSD disk as C:\, you can safely go to the ultimate SCAN_STEPPING 8 to generate a very high-resolution offset history for all MW9/MW10 frequencies and keep it running all the time. JAGUAR is designed for the total control of the MW dial around the clock!

You can also schedule the change of the SCAN_TARGET (MW9 <> MW10) in MESTOR if you want, for example, to scan the MW10 frequencies during the night/morning hours, and the MW9 frequencies in the afternoon (see MESTOR HELP > Advanced Usage for more details).

LIVE MODE

When the Perseus hardware connection is alive and you listen to MW in real time, then you are in the LIVE MODE. If you have some recordings available, you can quickly toggle the LIVE MODE and ARCHIVE MODE anytime. You can also jump to the ARCHIVE mode and, at the same time, make new wideband recordings.

When you are in the LIVE MODE, you can not only listen live, but you can also use the 10-minute buffer to study TOH announcements on all frequencies after TOH has passed, while in the LIVE MODE. So you have a plenty of time to decide if you want to keep the currently-running file. The recording mode can be powered ON/OFF any time.

A new buffer will be created automatically after each 10 minutes when using a samplig rate of 1.6 MHz, and after each 8 minutes with the sampling rate of 2.0 MHz. You can always start a new buffer by creating a breakpoint (see BREAKPOINT for details).

JAGUAR is the only SDR software available where you can use a maximum buffering time of 10 minutes.

HOW TO

KEY = L

If you have both Perseus connected and recordings available, you can toggle the LIVE MODE and ARCHIVE MODE by pressing the "L" key, or clicking TOOLBAR > L.

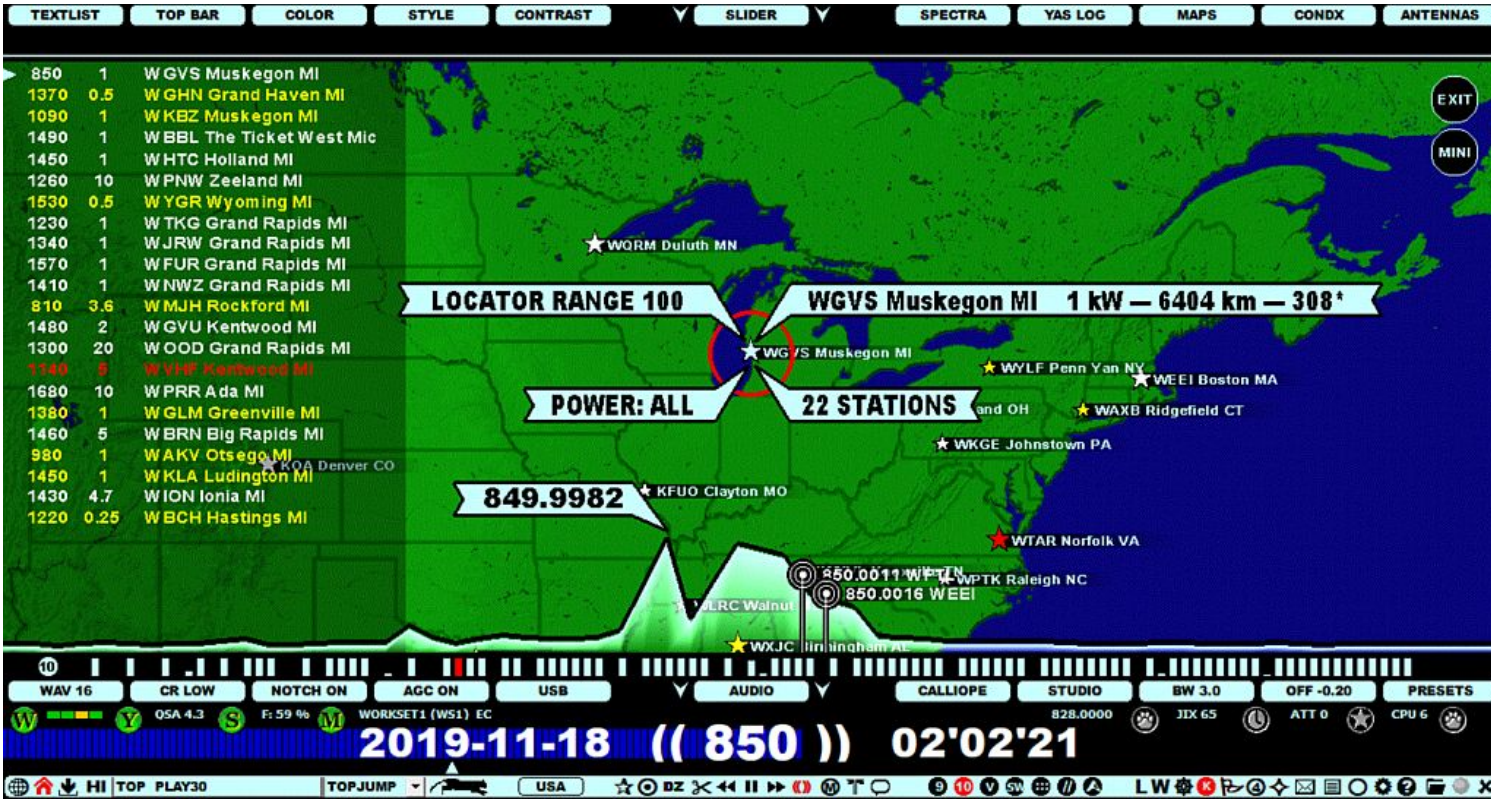
In LIVE MODE, you can jump to a new HH'MM'SS (within the current buffer) by clicking PLAYBAR. The white triangle on PLAYBAR shows your playback position in the buffer. TIMEFLAG (TOOLBAR > SETTINGS > GRAPHICS+ > TIMEFLAG) can be used to show the time on PLAYBAR as a helper for positioning the mouse to the right point of time. TIMEFLAG is a white time flag displayed over AUDIOBAR.

When you move the mouse over the frequency, you can always override the time-scrolling mode and change to the nominal frequency (based on the current stepping) using the mouse wheel or the left/right arrow keys.

LOCATOR

JAGUAR PRO ONLY

LOCATOR will zoom down on the map, showing the nearby area of the selected station. On the left column, you will see a list of the nearest stations within a 100-km radius by default, sorted by the distance to the selected station. The list contains the frequency, transmitter power, name and location for each station. You can increase/decrease the radius of the circle (stations to be included in the list), filter the stations on the list based on the transmitter power and you can also tune the stations on the list by scrolling/clicking.

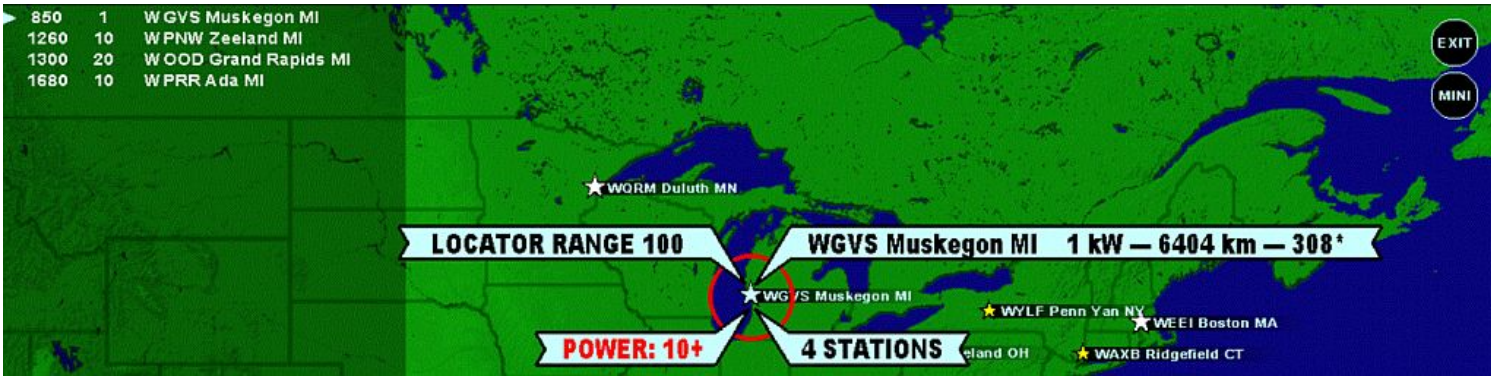


HOW TO

The LOCATOR window can be invoked only via the STATION MENU. You can get that menu by right-clicking on any station on a map or on the TURTLE screen (more details in STATION MENU help).

A red circle will be visible around the selected station on the map: the range. You can increase and decrease this range by scrolling the mouse wheel or with the left/right arrow keys when the mouse cursor is positioned over the selected station and the circle is red. You can also change the range when the mouse cursor is placed over the LOCATOR RANGE flag. When the range changes, the station list on the left is updated accordingly.

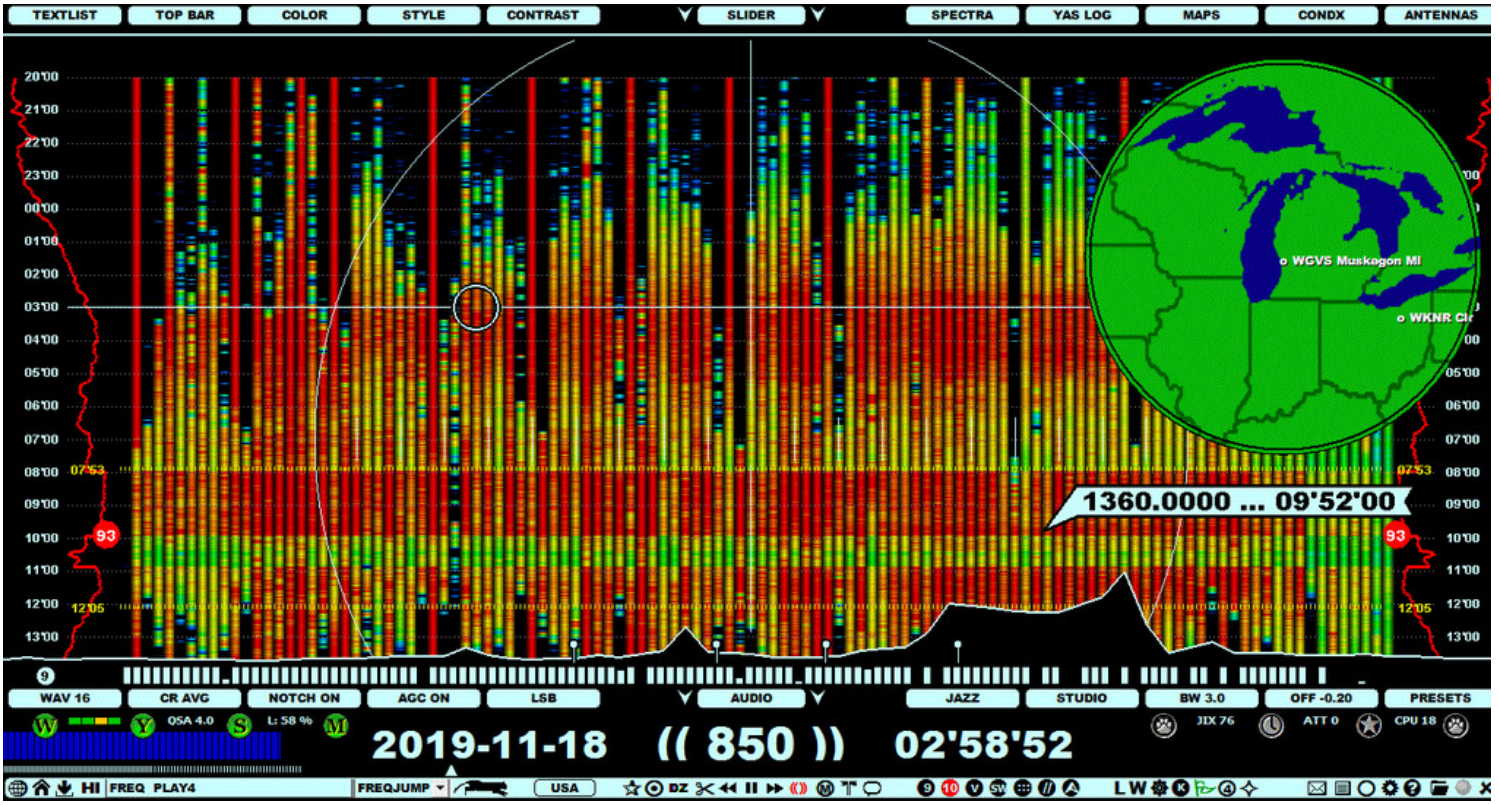
You can filter the stations on the list based on the transmitter power by moving the mouse cursor over the POWER flag (the text on the flag becomes red) and scroll with the mouse wheel or left/right arrows keys: the categories available are All stations > stations with 1 kW or more > stations with 5 kW or more > stations with 10 kW or more > stations with 50 kW or more.



If you move the mouse cursor away from the selected station, the circle turns black, and the scrolling mode changes: now you can scroll the frequencies on the station list on the left, or you can click directly on any station name on the list.

You can exit LOCATOR by clicking the EXIT button on the top right, or by pressing ESC, or right-clicking the map anywhere.

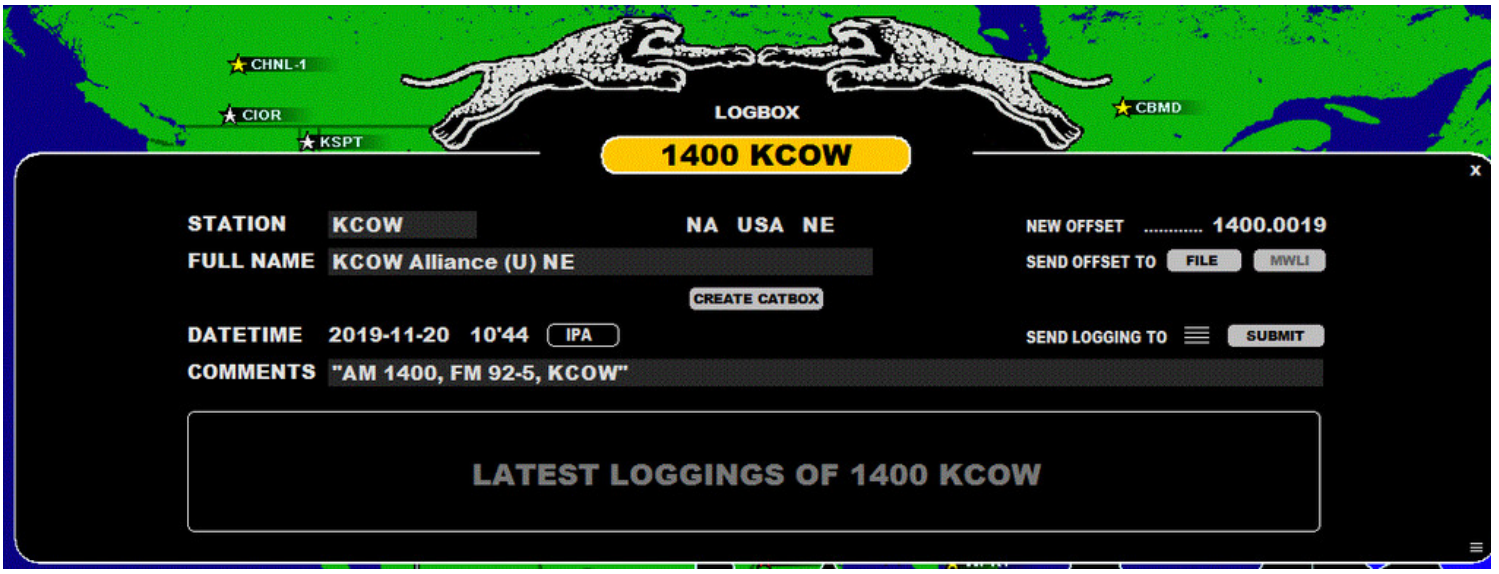
Clicking the MINI button (below the EXIT button) closes the LOCATOR window and displays a "mini map", small round MAPPLET window. Now when you scroll frequencies, MAPPLET will show the stations located on the selected area. You can relocate the position of MAPPLET on the display (by drag'n drop) and you can zoom it in and out by hovering the mouse over the window and scrolling the mouse scroll wheel or by using the left/right arrow keys. You can close MAPPLET by pressing ESC, or right-clicking on it.



LOGBOX

JAGUAR PRO ONLY

LOGBOX is a toolbox for making loggings of standard (nominal) and offset frequencies.



HOW TO

The LOGBOX window can be opened in three ways:

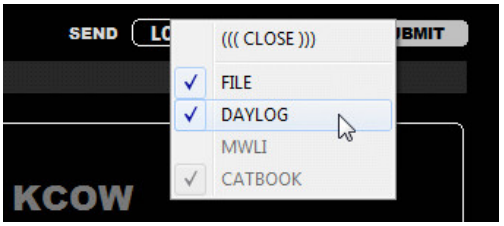
- Click the desired station on MAPS
- Click the desired station on TURTLE
- Type .CALL (= a station callsign preceded by a dot) and press ENTER (available only for US/CAN/MEX stations)

You can submit a standard logging to several targets (= text file, DAYLOG, MWLI, CATBOOK) with one click.

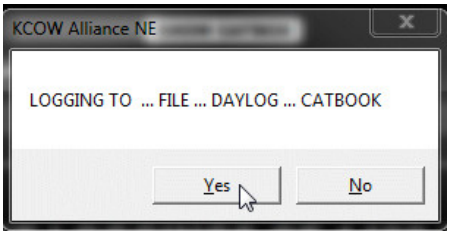
Before submitting your logging, you must define these targets. Click the menu next to "SEND LOGGING TO" and check the desired targets:

- FILE (standard text file, LOG.CSV)
- DAYLOG (see the DAYLOG help)
- MWLI (available if you have set the MWLI parameters in JAGUAR, see the MWLI help)
- CATBOOK (always enabled)

After you have made your target selection, click "Submit". The selection is remembered when making the next logging. JAGUAR asks for a confirmation and, if accepted, the logging will be sent to the selected targets.



...



Offset loggings follow a similar process but there is no popup menus: just click "FILE" or "MWLI" (or both). The MWLI option is available only if you have set the MWLI parameters (otherwise the button is grayed out).

The window of "LATEST LOGGINGS OF ..." will be used in the future.

After the station logging has been submitted, CATBOOK will be updated automatically as follows:

- a new station row is created in CATBOOK if it does not exist
- if the P-TAG of the station is P0, it is updated to P4 (blue) or to the user-defined P-TAG value (see the P-TAGS help)
- the station is marked as "logged in the year 20**" within the year buttons

This information can be seen in the CATBOX window.

Note: if you just want to make a logging to DAYLOG, there is a faster way: select DAYLOGGER in STATION MENU.

The local file used for your own offset loggings is OFFSET.txt, which can be found in the JAGUAR installation folder. This file can also be edited manually, and can also be used as the basis for the "pins" displayed on the bottom of SPECTOR (see also the FLAGS help).

LOGGING

JAGUAR PRO ONLY

LOGGING has been made easy in JAGUAR: you can submit your loggings (both standard loggings and offset loggings) to many targets with one single click via LOGBOX (see LOGBOX for details).

The classic logging to a text file supports several formats, and the logging format can be fully customized. JAGUAR's log file is named as LOG.CSV, and it is maintained in the LOGS folder under the JAGUAR installation folder.

In addition to the classic text-file based logging, JAGUAR supports the concept of DAYLOG (see DAYLOG for details). These day-based logs are named as DAY.LOG, and saved to the same day-folders where the recordings are being saved.

The MWLI users can also use the built-in logging interface to the MWLI logging database (see MWLI for details).

On top of all this, JAGUAR's own CATBOOK documentation database captures loggings automatically. You will have the stations "marked" in TURTLE and on MAPS with a minimum effort. Additional history data (personal notes) can be added via CATBOX (see CATBOX for details).

If you just want to quickly change the color of a station on MAPS / TURTLE (for example, to set the "heard" status for it on MAPS and TURTLE), you do not need LOGBOX; JAGUAR offers a special way of changing the color with "tagging". STATION MENU (see STATION MENU for details) contains a TAGGER function. When it is activated, you can change the color of many stations on the selected frequency just by clicking them on a map or TURTLE one by one. The color of the stations on MAPS is controlled by P-TAGS (see P-TAGS for details).

HOW TO

While direct logging to MWLI and JAGUAR's built-in logging tools are widely used, many users still want to log stations also into a text file. By default, the logging output is based on OLL (Online Log, popular in Finland and Norway), but you can tailor the logging format in SETTINGS > LOGGINGS > LOGMODE.

```
LOGMODE ............ parameters
```

The output row can be freely customized with fixed literal strings and LOGMODE parameters. Each parameter is four characters long, preceded by #. JAGUAR fills the parameter value in during logging. The valid parameters are:

```
#NAME #FREQ #DATE #TIME #CALL #ITUC #USER #USRN #OFFS #QSAC #ZONE #YYYY #MMMM #DDDD #HHHH
#MINS #MNTH #SECS #FILE #LINE #DIST #COMM #TENT #SINP #CLAT #CLON #SSBC #CALX #NAMX #ANTX
```

For example, when

```
LOGMODE ............. #FREQ #TIME #NAME #COMM #USER
```

is defined, LOGBOX generates log lines with frequency, time, station name, comments and userid.

```
LOGMODE ............. #FREQ;#CALX;#NAMX-#COMM;#SINP;#HHHH#MINS;#DDDD/#MMMM;USER
```

The above setting produces an optimal logging line for the MWC log format; #CALX and #NAMX generate strings designed for MWC in mind. USER must be replaced by the user initials used in MWC,

which may be different from #USER which generates the JAGUAR userid. All values are separated by a semicolon, so the output file can also be opened in Excel.

LOG PROFILES

JAGUAR PRO ONLY

Typically, JAGUAR users have only one "logging identity" but several "log profiles" are supported for generating loggings for different publications or locations with different formats.

HOW TO

KEY = ALT-L

ALT-L can be used to rotate/change the currently active log profiles. LOGPROFILE can be changed also in LOGBOX.

Creating LOG PROFILES

You can have a maximum of 3 LOGPROFILEs. In addition, the PLUGIN parameter LOG_PROFILES=YES is required (see SETTINGS > PLUGINS).

In earlier JAGUAR versions, the log profiles were defined as CUSTOM parameters. These parameters are now set in a separate LOG_PROFILES.txt file. This file must be created manually into the JAGUAR installation folder.

Each LOGPROFILE is identified by a number between 1 and 3. For each profile, you can give an independent, customized logging output format (LOGMODE1 -> LOGMODE3), clip folder location (CLIPFOLDER1 -> CLIPFOLDER3) and MWLI logging location (LOCATION1 -> LOCATION3).

If you want to have the log profile name as part of the clip name, it can be embedded there via the #LPRF parameter (see SETTINGS > CLIPPER > CLIPNAME for details).

Below there is an example where the user has three receive locations and wants to control his/her loggings/clips based on the current receive location. In this example, the logging output format remains the same (except the receive location string embedded in the logging) but in reality both these formats can be different in all the profiles. The valid customization parameters for LOGMODE are described in SETTINGS > LOGGING.

If there is no need to use log-profile-specific locations for audio clips, the CLIPFOLDER rows can be omitted.

The LOCATION rows can also be omitted. These rows are required only if you want to submit loggings to MWLI from different locations. For MWLI, you need to give your email address in SETTINGS > MWLI > EMAIL. In addition, you can define several locations with their own OMID numbers.

The parameters in the LOCATION row are: QTH abbreviation, location name, latitude, longitude, OMID.

Example of the LOG_PROFILES.txt file:

```
LOGPROFILE1=A-QTH
LOGPROFILE2=B-QTH
LOGPROFILE3=REMOTE-QTH
LOGMODE1=#FREQ;#OFFS;#HHHH#MINS-;#DDDD/#MMMM/#YYYY;#ZONE;#ITUC; ;#NAME-#COMM;#SINP;A-QTH
LOGMODE2=#FREQ;#OFFS;#HHHH#MINS-;#DDDD/#MMMM/#YYYY;#ZONE;#ITUC; ;#NAME-#COMM;#SINP;B-QTH
LOGMODE3=#FREQ;#OFFS;#HHHH#MINS-;#DDDD/#MMMM/#YYYY;#ZONE;#ITUC; ;#NAME-#COMM;#SINP;REMOTE-QTH
```

```
CLIPFOLDER1=F:\Radio Clips\A-QTH
CLIPFOLDER2=F:\Radio Clips\B-QTH
CLIPFOLDER3=F:\Radio Clips\REMOTE-QTH
LOCATION1=AAA, A-QTH, 68.6388, 25.5985, 123
LOCATION2=BBB, B-QTH, 60,1998,24.3367, 456
LOCATION3=CCC, REMOTE-QTH, 67.9761, 28.9254, 789
```

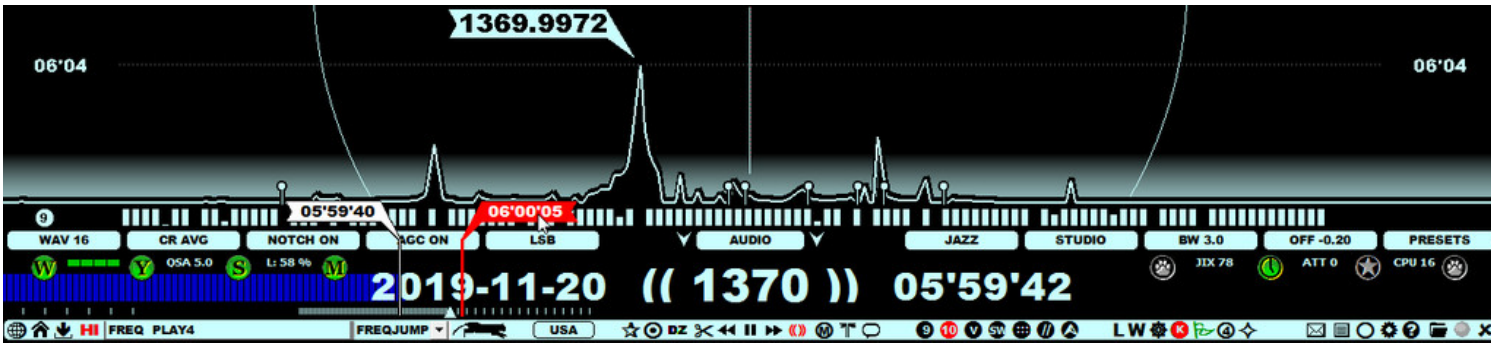
Note that the use of LOG PROFILEs do not require several receive locations. The receive location itself can be the same all the time but the profiles can be created, based on any other need as well.

LOOP

JAGUAR offers several ways of creating audio LOOPs to constantly repeat a small segment of audio:

- a user-adjustable manual loop by pressing the UP ARROW key twice (once at loop start, and once at the end of the loop)
- this can also be done by clicking the TOOLBAR > LOOP icon twice (once at loop start, and once at the end of the loop)
- the "What Was It" (WWI) loop by pressing SPACEBAR (creating a 10-second-long LOOP by default)
- TOHBOTLOOP (an audio loop around the nearest TOH or BOT) by clicking the CLOCK icon on STATUSBAR twice (the first click jumps to a file where the nearest TOH/BOT spot is found and sets the loop start, the next click sets the end of the loop)

Audio LOOPs are displayed on PLAYBAR with special flag markers.



HOW TO

The LOOP marker positions can be changed by moving the mouse over the marker flag. The flag color turns to red when ready for repositioning, and scrolling the mouse or pressing the left/right arrow keys. You can also drag the LOOP markers to the desired positions.

The default TOHBOTLOOP is set between XX'59'40-XX'00'05 (for TOH LOOP) or XX'29'50-XX'30'10 (for BOT LOOP). These times can be customized as shown below.

You can release the audio loop (and their markers) by pressing the UP ARROW key once again, clicking TOOLBAR > LOOP once again, pressing SPACEBAR once again, clicking the CLOCK icon once again, or simply by pressing the ESC key.

If you have an audio LOOP defined, pressing the C key (= CLIPPER) will create an audio clip from the segment defined by the LOOP markers. If you instead click TOOLBAR > SCISSORS, you will get a small popup menu, from which you can select either CHOP (see CHOP for details) or CLIPPER.

An additional AUTOLOOP function is available: SETTINGS > LOOPS > AUTOLOOP. If enabled, when JAGUAR opens an ARCHIVE file that contains a TOH or BOT timespot, TOHBOTLOOP will be set automatically.

You can customize the default LOOP settings in SETTINGS > LOOPS as follows:

```
TOH ............. starttime,endtime
```

Set an automatic audio loop around the top of the hour. The default TOH LOOP is from XX:59:40 to XX:00:05. You can increase/decrease the duration. For example, `TOH .... XX:59:30-XX:00:30` overrides the default TOH LOOP with new values ranging from XX:59:30 to XX:00:30.

```
BOT ............. starttime,endtime
```

Set an automatic audio loop around the bottom of the hour. The default BOT LOOP is from XX:29:50 to XX:30:10. You can increase/decrease the duration. For example, `BOT .... XX:29:30-XX:30:30` overrides the default BOT LOOP with new values ranging from XX:29:30 to XX:30:30.

```
WWI ............. X seconds
```

Pressing SPACEBAR creates a "What Was It" audio loop. The default duration is 10 seconds but you can change this value. The WWI values between 0 and 10 seconds are allowed. 0 (zero) means that WWI loops are disabled, i.e. SPACEBAR will be ignored.

MAIL

JAGUAR PRO ONLY

MAIL is a tool for automated creation of reception reports. Do not confuse this with FILEMAIL, which is intended for sending files between JAGUAR computers.

HOW TO

MAIL can be invoked from STATION MENU after you have selected the desired station (see the STATION MENU help).

Click the MAIL button to display a popup menu from which you can select the language of the reception report. The following languages are listed: English / French / Spanish / Portuguese / Russian / German. If JAGUAR cannot find a pre-formatted reception report template, the error message

```
((( TEMPLATE MISSING )))
```

will be displayed. If you want to use MAIL, please create your template(s) first as follows:

1. Create a folder called MAIL in JAGUAR's installation directory.
2. If you only work with English-language reception reports, create a file called MAIL.RTF (e.g. in Word or WordPad) with the following type of content and save it in the newly-made MAIL folder.

   Below you will find one example reception report template. Be sure to create a report template that is uniquely yours. Note the use of variables of #CALL, #NAME, #DATE, #FREQ and #TIME.

   ```
   TO: #CALL

   Dear Sirs:

   I have the pleasure to inform you that I have been listening to your station #NAME on
   #DATE on the frequency of #FREQ kHz at #TIME UTC. The overall reception quality was very
   good/good/moderate/fair/poor. Below are the details of the program. The same details can
   also be found in the attached audio clip.

   If you find this report correct, I would be pleased to receive a verification email,
   letter or card. My contact information is as follows.

   Best wishes,

   Danny DXer
   ```

Now, when you select English from the popup menu, JAGUAR will create the reception report in the MAIL folder. For example, if you have selected STATION MENU for TWR Parakou and click MAIL > English, you will get the following report:

```
TO: TWR

Dear Sirs:

I have the pleasure to inform you that I have been listening to your station TWR,
Parakou on 2020-01-29 on the frequency of 1566 kHz at 18'13'42 UTC. The overall
reception quality was very good/good/moderate/fair/poor. Below are the details of the
program. The same details can also be found in the attached audio clip.

If you find this report correct, I would be pleased to receive a verification email,
```

```
letter or card. My contact information is as follows.

Best wishes,

Danny DXer
```

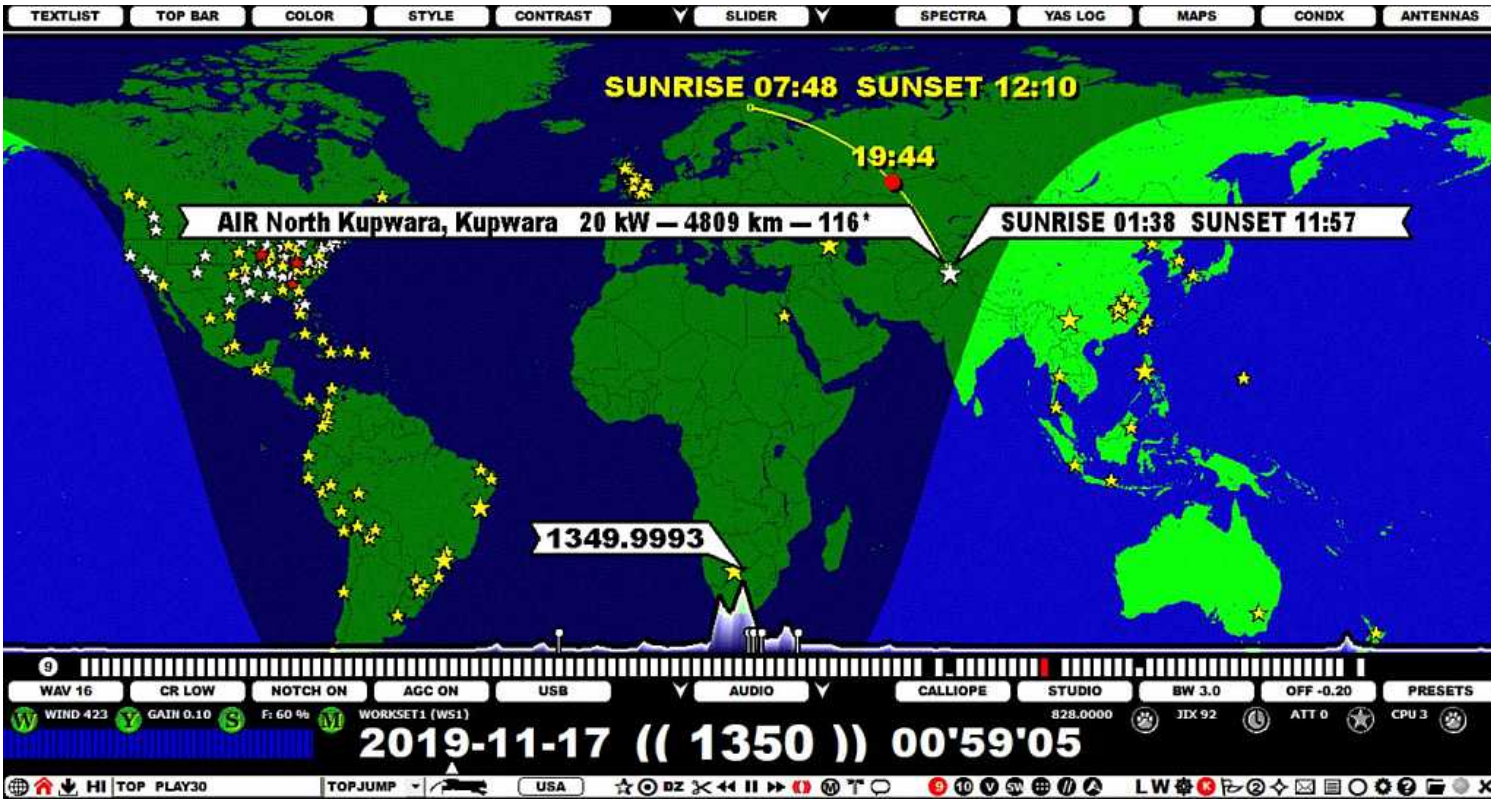
If you write reports in any major languages of the world, rename MAIL.RTF (in the MAIL folder) to MAIL-EN.RTF. Then you can create reception report templates for the following languages:

- English (MAIL-EN.RTF)
- French (MAIL-FR.RTF)
- Spanish (MAIL-ES.RTF)
- Portuguese (MAIL-PT.RTF)
- Russian (MAIL-RU.RTF)
- German (MAIL-DE.RTF)

MAPS

JAGUAR incorporates high-quality built-in maps with station locations. In addition to the standard maps (as part of the main WALLPAPER rotation), JAGUAR can also display great-circle maps (see ANTENNAS) and MWLI Logmap (see MWLI for more). Here, only the standard MAPS and the related services are described.

JAGUAR also has "alternate map systems" (ALT-M) reserved for the documentation of your DX history (see the BEEHIVE and CATMAP help).



The following map continents are available:

- World
- Europe
- Africa & Middle East
- Asia
- Oceania
- North America
- Caribbean
- South America

JAGUAR offers four different map styles and two "station pointer" styles (a station pointer appears when you hover the mouse over a station) and a special optional station pointer is available for the U.S. stations. The stations are displayed as stars on the maps, and the station names will appear next to the star, depending on the zoom level. The stars are colored based on your loggings and other notifications. Any map can be zoomed/relocated.

MAPS support additional services for any selected station (see the STATION MENU for details), U.S. PATTERN support for U.S. stations (see PATTERNS for details), and extra information shown between the RX and TX QTH (see SETTINS > GRAPHICS+ > MAP TIMES for details).

HOW TO

KEY = W and KEY = M (by default)

The standard MAPS are an essential part of JAGUAR and they can be accessed in many ways.

MAPS are one of the main wallpapers in JAGUAR, and the main wallpapers can be rotated by pressing the "w" key (the rotation cycle: HOME > YAS > MAPS). The wallpapers can also be rotated by clicking the TOOLBAR > W icon.

You can go directly to MAPS by pressing "m" (if "m" is not overridden in SETTINGS > KEYBOARD), or by choosing MAPS from TOP MENU.

When the map window appears, the currently-active continent will be shown. The continents can be rotated with the "q" key (ALT-Q rotates the continents backward), or left/right-clicking or scrolling SLIDER > MAPS. You can also go directly to any continent map by selecting MAPS from TOP MENU. Each map shows the day/night terminator at the time of playback. This terminator is automatically updated during the playback.

JAGUAR offers four different map styles: use SLIDER > STYLE to select your favourite. With SLIDER > CONTRAST you can adjust the darkness of the day/night areas.

When you hover the mouse over a map area, you can zoom the map in/out by scrolling the mouse wheel. You can also shift the map's location by using the mouse's drag-and-drop functionality.

If there are MW stations in the visible area of the map on the currently-active frequency, those stations will be displayed with a star on the map. The world map only shows stars, the more detailed continental maps also show station names. The default name shown is the call/short name for each station; full station names will appear when you zoom closer to the desired area.

The stars and names on the map can have different colous, based on user-customizable P-tags (see P-TAGS for more).

Stations with the transmitter power of 50kW or higher are displayed with a bigger star than the others.

When you move the mouse over a station on the map, by default, JAGUAR will show the following details:

- Station name = the transmitter
- Power of the transmitter
- Distance from the receive QTH to the transmitter
- Bearing from the receive QTH to the transmitter
- Sunrise / sunset times (UTC) at the transmitter location at the playback date
- If the station has a listed offset, this offset is shown on SPECTOR at the corresponding position using a "tx tower" as the offset marker

If you have enabled SETTINGS > MAPS > MAP_TIMES, JAGUAR will also show:

- the sunrise / sunset times (UTC) at the receive location at the playback date (if RX QTH is visible on the selected map)
- the great-circle line from the receive QTH to the transmitter
- the NOX time (UTC) on a red circle shown on the great-circle line. The NOX time is the midnight time at the geographical midpoint between the transmitter and the receive QTH. The NOX time is shown if the midpoint is visible on the selected map. Experience has shown that the midpoint midnight can be one of the best potential times to catch good "ultra-long" MW DX stations from the other side of the globe.

You can select a special station pointer for U.S. / Canadian stations from SETTINGS > MAPS > STATION_POINTER. You can see the local time at the transmitter location, etc. (more in GUIDE > SETTINGS).

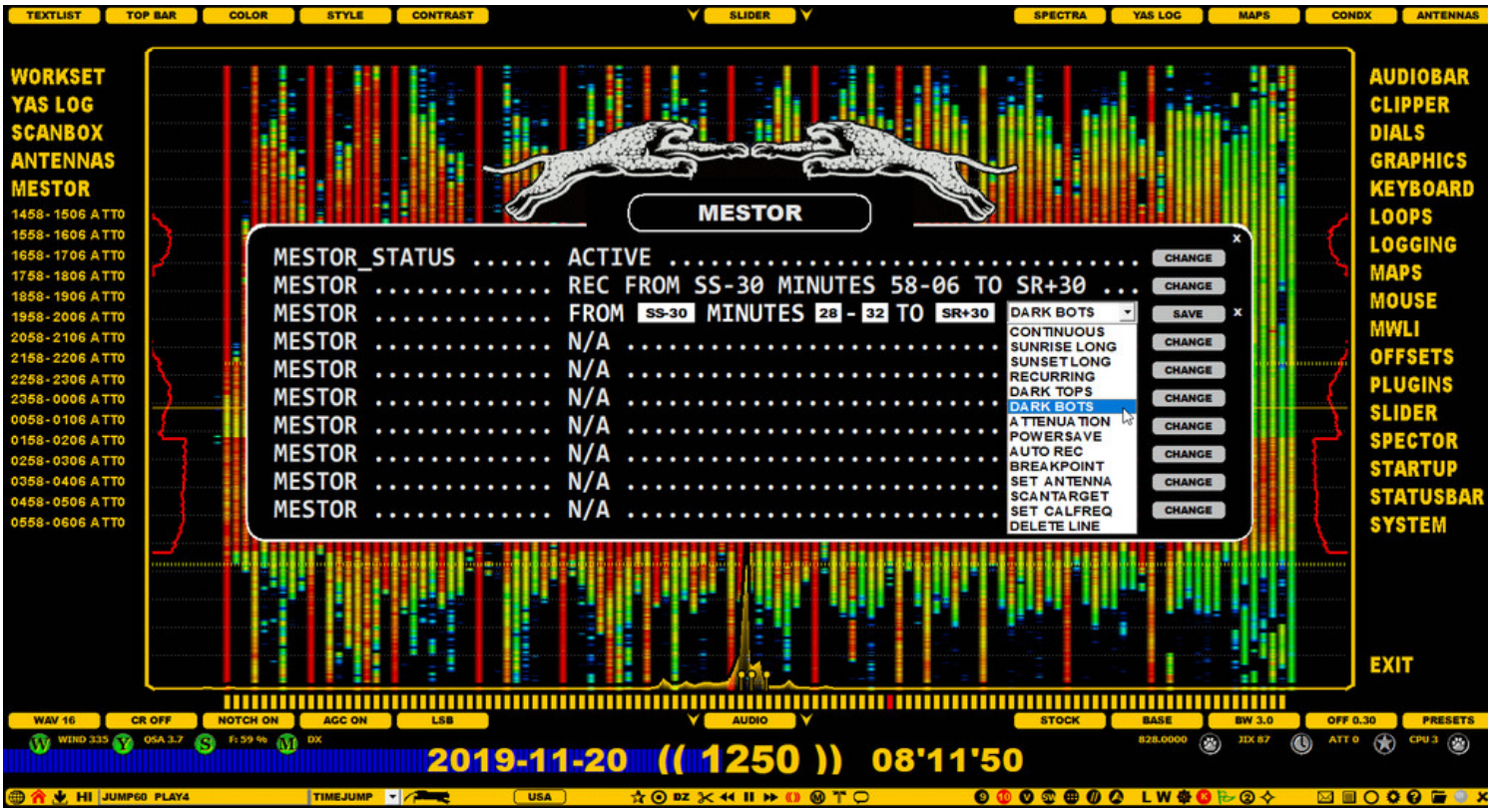
If you left-click a station star, LOGBOX will appear. LOGBOX can also be invoked by left-clicking a station on the TURTLE database (more details in the LOGBOX help).

If you right-click a station star, the station popup menu appears. It can also be invoked by right-clicking a station on the TURTLE database (more details in the STATION MENU help).

You can exit MAPS by rotating to any other wallpaper by pressing the "w" key or by pressing "m", unless "m" has not been overridden by any other function.

MESTOR

MESTOR is JAGUAR's schedule-based, automatic recording utility. All MESTOR definitions are given in the SETTINGS > MESTOR window. The currently active scheduler list is shown on the left panel of the SETTINGS dashboard; the list is sorted so that the next upcoming scheduled recordings are always on top. All times used in MESTOR are UTC (your PC time can be your local time).



You can define your basic operation environment (bandwidth, center frequency, recording disk, QTH, etc,) in the SETTINGS > WORKSET window; this MESTOR window is used to control the scheduled recordings only.

Most users leave JAGUAR running overnight in order to record TOHs (top-of-the-hours), BOTs (bottom-of-the-hours), or any other desired time periods, or even the whole night. The active scheduler list is automatically repeated daily. In addition, you can schedule changes in the operation environment (antenna, scan target) dynamically as part of the scheduling system.

In the example window above, a scheduler list has been defined which records top-of-the-hour periods beginning 30 minutes before the local sunset, these TOHs are recorded up to 30 minutes after the local sunrise. This definition can be done with a few mouse clicks thanks to the template driven "smart MESTOR". In addition to the TOHs, you can also schedule the recordings of the "bottom-of-the hours"; in the example that selection is just being made from the MESTOR template menu. The exact times/duration of recordings can be changed after the selection.

You have only nine rows available for defining the scheduler list for 24/7 recordings, makes it possible to record a maximum of 216 separate time periods (or independent files if the time periods are short) within one day; more than adequate for standard MW DX needs.

HOW TO

MESTOR can be opened by clicking TOOLBAR > SETTINGS > MESTOR, or clicking directly STATUSBAR > M (when the M button is clicked, also the SETTINGS dashboard will be opened). You can add/change the rows using the CHANGE button, left/right-clicking it.

The top row in the MESTOR window ("MESTOR_STATUS") is used to enable/disable the scheduler. You can disable it temporarily (for any reason: MW conditions are down, etc), just don't forget to enable it back again when leaving the setup unattended.

The next rows are reserved for the scheduler actions. The recording times defined by the MESTOR rows can be overlapping (MESTOR combines the settings into correct non-overlapping time slots) and also remembers the recording start times if JAGUAR is started in the middle of a recording slot. If you have defined a recording between 04:57-05:15 and you start JAGUAR at 05:03:22, JAGUAR will start recording at 05:04:00 and end it as scheduled at 05:15

Each MESTOR row definition is based on a template which is selected from the template menu. You can select any template to any row (ie. you use the same template multiple times) and even if some templates use sunrise/sunset based definitions (including "SS" or "SR", referring to your local sunrise and sunset times), you can replace any SS... or SR... with real fixed HHMM time in any textbox. Note that in order to use SUNRISE LONG/SUNSET LONG/DARK TOPS/DARK BOTS correctly, you must define your recording QTH and the corresponding coordinates first in the WORKSET > LOCATION window. On any MESTOR row you can freely edit the start/end times and any other value before saving the row (by pressing SAVE), after that the defined row is dynamically parsed and displayed as a real time scheduler list on the left frame.

NOTE: When exact hours and minutes are used in the templates, they must always be given as HHMM. The HH:MM format is not supported yet.

There are 13 pre-defined template options available:

- CONTINUOUS: define continuous recording giving start and end times
- SUNRISE LONG: define continuous recording around your local sunrise, exact start and end times are adjustable
- SUNSET LONG: define continuous recording around your local sunset, exact start and end times are adjustable
- RECURRING: define recordings giving the start and end times within one day and what minutes within each hour will be recorded
- DARK TOPS: record top-of-the-hours beginning around your local sunset and ending around your local sunrise
- DARK BOTS: record bottom-of-the-hours beginning around your local sunset and ending around your local sunset
- ATTENUATION: if you need attenuation for the night, define when you want to set the attenuation on and when off
- POWERSAVE: enable this feature if you are running a battery powered setup (JAGUAR will hibernate between recordings)
- AUTO REC: enable this feature if you want JAGUAR to start recording when good cx appears on the MW dial
- BREAKPOINT: enable this feature if you want JAGUAR to make a file breakpoint always at a given minute
- SET ANTENNA: define a scheduled antenna switch
- SCANTARGET: define a scheduled change for the LIVESCAN target frequency set (MW10 <> MW9)
- SET CALFREQ: define a scheduled change for the calibration frequency (FAST_CALIBRATE)
- DELETE LINE: remove an active row from the scheduler

MESTOR EXAMPLES

To give you an idea of what you can do with MESTOR, here are a few examples. You can creatively combine these examples and templates for your own purposes.

Example 1: Classic "top-of-the-hour" 21-05: if you want to capture TOHs from 21 UTC to 05 UTC (8 minutes per TOH, creating files 2058-2106, 2158-2206, ..., 0458-0506), you can select the RECURRING template and edit the times as follows:

```
MESTOR ............. FROM 2055 MINUTES 58-06 TO 0510
```

Example 2: Short "top-of-the-hour" between 22-06 (2159-2201, 2259-2301, etc) plus the COPE breaks at 22:55-23:00 UTC: Add one row using the RECURRING template defining only two minutes for the exact TOH and another row using the CONTINUOUS template defining time slot 2254-2301 UTC.

The COPE break recording partially overlaps with the TOH definition but it does not matter. Also the exact FROM and TO times in RECURRING can be anything before and after the exact recording period (including the exact start minute of the first recording etc).

```
MESTOR ............. REC FROM 2159 MINUTES 59-01 TO 0601
MESTOR ............. REC FROM 2254 CONTINOUSLY TO 2301
```

Example 3: Prolonged "top-of-the-hour" recordings at night (15 mins starting at XX'54), long recording (3+ hours) in the morning starting at 0252 and using the attenuator during the night. We need one RECURRING template, one CONTINOUS template and one ATTENUATION template for this.

```
MESTOR ............. REC FROM 2150 MINUTES 54-09 TO 0210
MESTOR ............. REC FROM 0252 CONTINUOUSLY TO 0615
MESTOR ............. SET 0305 ATT0 SET 2000 ATT1
```

Here the attenuation can be set at any time before the start of the night time recording (JAGUAR will do the attenuation switches even JAGUAR is started after the exact defined switch time). Here the attenuation is set OFF (ATT0) at 0305 UTC (and also here JAGUAR will do it later if it notices that attenuation is ON even when the time is past 0305 UTC). Attenuation switches can be done during recording.

Example 4: Record "top-of-the-hours" (for 10 minutes, XX57-XX07) and "bottom-of-the-hours" (5 minutes, XX27-XX32) whenever it is dark in the recording QTH. This one is easy: pick the DARK TOPS and DARK BOTS templates and modify the times as follows:

```
MESTOR ............. REC FROM SS-30 MINUTES 57-07 TO SR+30
MESTOR ............. REC FROM SS-30 MINUTES 27-32 TO SR+30
```

The effective recording window here starts 30 minutes before the local sunset (changing daily) and ends 30 minutes after the local sunrise. These can be tuned as needed.

Example 5: Overnight recording. Let it roll from 2058 to 0910. Easy - one template (CONTINUOUS) needed:

```
MESTOR ............. REC FROM 2058 CONTINUOUSLY TO 0910
```

Example 6: Force the file breakpoint in the recorded files always at each HH'58. If you use the 1.6MHz sampling rate, the system produces 10 minute files so the file breaks will never happen at the exact TOH, if you schedule your TOH rec starting at HH'58: in that case you don't need this BREAKPOINT parameter. However if you use the 2MHz sampling rate, the files will be 8 minutes long and during the continuous recording the file breaks will vary => at times it will match the exact TOH. This can be avoided with using the BREAKPOINT parameter (the allowed values are between 55 and 59):

```
MESTOR ............. SET FILE BREAKS AT HH58
```

Example 7: Switch to the EASTCOAST antenna at 2030 and to the AUSTRALIA antenna at 1430. This requires that you have defined the ANTENNAS settings window. The switches can be done by activating two SET ANTENNA rows. Note that the antenna switches are "single events": if you start JAGUAR after the switch time has passed, you must make the antenna switch manually to the correct antenna.

```
MESTOR ............. SET ANTENNA EASTCOAST AT 2030
MESTOR ............. SET ANTENNA AUSTRALIA AT 1430
```

Example 8: Switch to LIVESCAN MW10 at 2030 and to LIVESCAN MW9 at 1430. The switches can be done by activating two SCANTARGET rows. Note that the scan target switches are "single events": if you start JAGUAR after the switch time has passed, you must

make the scan target switch manually to the correct frequency set.

```
MESTOR ............. SET SCANTARGET MW10 AT 2030
MESTOR ............. SET SCANTARGET MW9 AT 1430
```

Example 9: Finding a good calibration frequency is sometimes difficult. Or if you find such, it may not transmite 24x7. On the other hand, at the night time there are often more choices available. In this example the system is calibrated using Russia (828.0000) between 0200-2200 UTC and using Italy (899.9988) between 2200-0200 UTC. These scheduled calibration frequencies are used in LIVE listening, in addition the currently active frequency is saved to the recording file header in scheduded recordings - to be used later in the playback as the default calibration frequency in the ARCHIVE mode.

```
MESTOR ............. SET CALFREQ 828.0000 AT 0200
MESTOR ............. SET CALFREQ 899.9988 AT 2200
```

You can mix the CONTINUOUS/SUNRISE LONG/SUNSET LONG and RECURRING/DARK TOPS/DARK BOTS settings in any combination you like - or you can override any time setting in them from SR/SS to fixed HHMM and vice versa. SR and SS denote for local sunrise and local sunset, and you can shift the exact SR/SS times in the settings by adding or subtracting minutes from the exact SR/SS time, for example:

```
SR = exact local sunrise time
SR-30 = 30 minutes before the local sunrise time
SS+60 = 60 minutes after the local sunset time
etc.
```

However in this version the SET ANTENNA and SCANTARGET times require the HHMM format.

ADVANCED USAGE

Besides controlling the wideband recordings, MESTOR also offers some special timed services and a support for changing the "operating environment" on-the-fly.

POWERSAVE: If you are running JAGUAR in a battery-driven environment, the POWERSAVE option is recommended: activate the POWERSAVE template, no parameters are needed for this.

```
MESTOR ............. Hibernate when not recording
```

POWERSAVE requires that the following operating system settings are in place for correct functionality, i.e. that your computer must support wake-up timers, and they must be enabled. Also, the wake-up logon must be disabled in Windows:

- Control Panel > Hardware and sound > Power Options > Change plan settings > Change advanced power settings
- Sleep: Allow wake timers: Enabled
- (For current plan): Require a password on wakeup: No (This can be greyed out. If so, click "Change settings that are currently unavailable" > Now also "No" option becomes available)
- Other sleep options should be "Never"

AUTOREC: Using this option the system will activate recording whenever "good MW cx is detected". This can be the only recording option in MESTOR - or it can be bundled with other recordings if the user does not record continuously overnight. The "good MW cx" is not based on space wx indicators, instead it relies on the JIX value (see GUIDE > JIX for more details). The user can select the target (MW9 or MW10) and the JIX threshold value for recording. When this user defined JIX value exceeds the threshold, recording is triggered automatically up to when JIX goes down again.

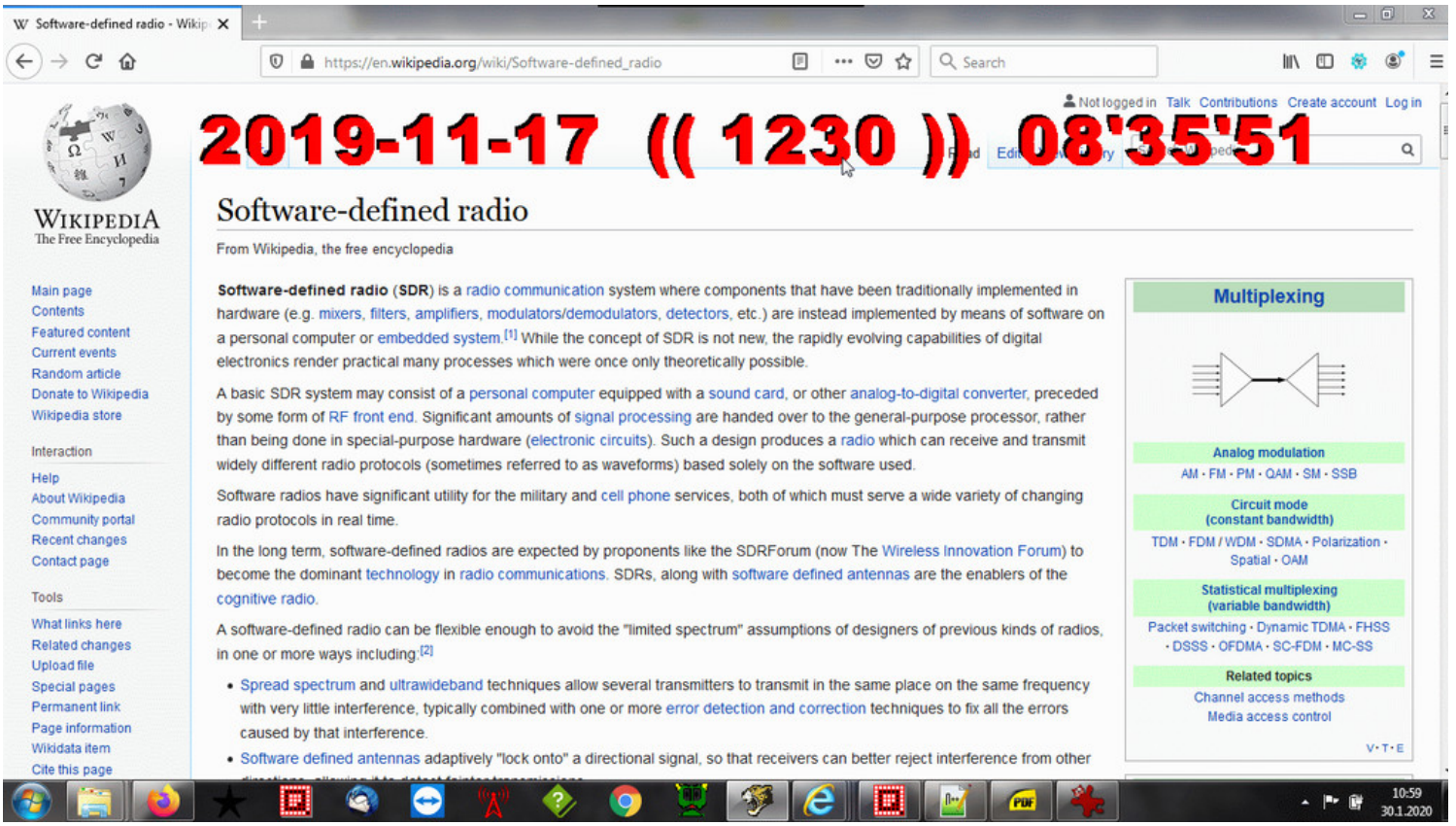
This is kind of a "Mickey Mouse implementation" and not useful in Lapland where also during low JIX exotic stations can be heard; however, this system will be improved in the upcoming versions. For example, the AUTOREC trigger could be some specific offset ("start recording if the carrier on a given offset increases high enough") - that offset could belong to an indicator station for user's favorite signal area or that offset could belong to the user's "most wanted station" etc. In JAGUAR V7 only this JIX based AUTOREC is available using the AUTO REC template. In the example below recording is started when the MW10 JIX value exceeds 30 and ends when the JIX value goes below 30:

```
MESTOR ............. REC WHEN MW10 JIX > 30
```

MIDGET

MIDGET is a minimized version of JAGUAR, with only the main controls available, and it's probably the easiest SDR player in the world! MIDGET is an ideal tool for those who listen a lot but must do other things on the same computer at the same time. Or for those who just want to use the simplest possible SDR playback tool.

In MIDGET, only the time and frequency will be shown as a text overlay over other Windows applications. The size of MIDGET is customizable.



HOW TO

MIDGET can be invoked via TOP MENU > MISC > MIDGET. If you use MIDGET often, you can assign the "m" key for MIDGET ON/OFF (JAGUAR PRO ONLY) via SETTINGS > KEYBOARD > M-KEY > MIDGET.

Also, you can invoke MIDGET by a mouse right-click (TOOLBAR > SETTINGS > RIGHTCLICK > MIDGET).

The MIDGET controls are available when it has the keyboard/mouse focus, i.e. the MIDGET color is red. Otherwise, when working with other Windows applications, the MIDGET color is yellow. You can set the focus to MIDGET by hovering the mouse over it.

MIDGET offers the following services:

- Navigation forward/backwards with the left/right arrow keys
- The use of these keys: Z (FREQ SCROLL on/off), P (PREV FILE), N (NEXT FILE) and M (MIDGET off).
- Left-click toggles FREQ SCROLL <> TIME SCROLL (= the Z key)
- Right-click restores the full-screen JAGUAR (= MIDGET OFF)
- The MIDGET size can be decreased/increased by scrolling the mouse wheel
- Drag and drop can be used to re-position MIDGET on the computer screen

Tip: if you have multiple screens, you can drag MIDGET to the second (or third) monitor and free the main monitor totally for other applications. When you need full JAGUAR services, you can stop MIDGET and JAGUAR will appear on your main monitor. The last MIDGET location will be remembered at the next JAGUAR restart.

MSG BAR

JAGUAR PRO ONLY

MSG BAR is one of the TOP BAR modes. When MSG BAR is selected, you will see

```
SOLAR DATA ------- MSG NOTES ------- SPECTOR TIP
```

visible on TOP BAR, for example:

- SOLAR DATA is a summary of the most important space weather values at the time of the playback. See CONDX for more details.
- MSG NOTES is reserved for the user defined messages and alerts. If there's no user defined input, the system shows the following data: REC QTH, Antenna used (with antenna change info, if any), MW10 and MW9 JIX values. This default information can be replaced by a frequency-based personal note or time-based alert (= message to user at the user-specified HH'MM time).
- SPECTOR TIP shows the potential "best match" among the listed offsets vs. the currently highest carrier peak. Artificial intelligence is enabled and it tries to "automatically identify" the stations shown by the SPECTOR peak offset. You can limit the geographical coverage area with RADAR by defining an antenna beam for the areas of interest. Be aware that this is only a tip; in reality, the station you see/hear most likely is not the one listed in SPECTOR TIP.

HOW TO

MSG BAR can be activated by moving the mouse over SLIDER > TOP BAR and clicking/scrolling (with the mouse wheel of the left/right arrow keys) until "MSG BAR" is shown.

JAGUAR will fetch SOLAR DATA and SPECTOR TIP, but MSG NOTES is optional and user-specified.

MSG NOTES uses the text from the "MSG.TXT" file. It's a standard text file which can be edited with any text editor (e.g. Notepad). You can also find MSG NOTES via TOOLBAR > TEXTPADS > MSG NOTES.

You can enter "frequency notes" and "time-based alerts" into MSG.TXT, both will be shown in the MSG NOTES area.

The syntax for frequency notes is:

```
FREQ1 freetext
FREQ2 freetext
....
```

and the alert syntax is:

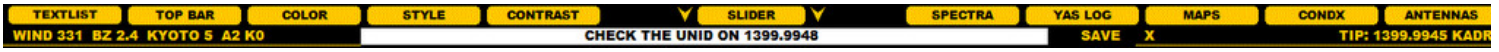
```
HH:MM freetext
HH:MM freetext
...
```

These rows can be mixed, they need not be in any specific order; only one space after FREQ or HH:MM is required.

The frequency notes are shown when you tune in to that specific frequency, and time-based alerts will start blinking one minute before the defined HH:MM. Blinking stops after one minute of the defined HH:MM. You can press ESC to get rid of the alert. Alerts are checked both against the playback HH:MM (if you are in the ARCHIVE mode) and real-time HH:MM time. The "real-time alerts" are blinking as red, "archive alerts" as orange.

This text can contain reminders, "most wanted" info, etc. and those alerts do not have to be related to DXing: how many hours do you sit on your DX shack daily, listening to the archive files without noticing your other daily duties?

There is also a very simple way of using MSG NOTES: you do not have to use Notepad (or JAGUAR TEXTPAD) for editing the messages. Just click the MSG NOTES area, and you see an edit box. You can edit the existing text or get an empty box: if you add some text there (and SAVE), that text becomes automatically a "frequency note" for the current frequency. If you add HH:MM to the beginning of the empty line, followed by a space (and the text itself), you will get a time-based alert for that HH:MM.



MWLI

MWLI (www.mwlist.org) is a unique database of worldwide radio stations on longwave, mediumwave and shortwave. MWLI powers various things like the mediumwave section of fmscan.org, the mwoffsets file and an online logbook site.

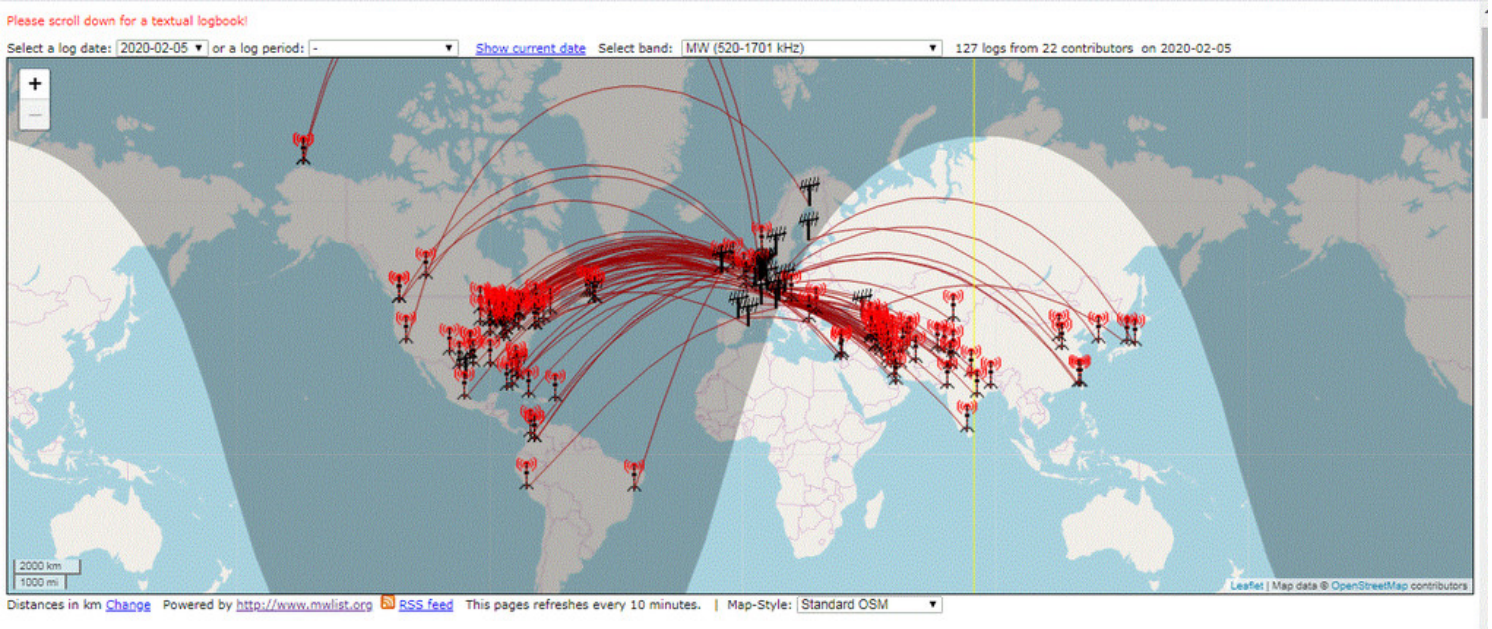
It is a non-commercial hobby project and open for everyone to contribute and use.

JAGUAR leverages several MWLI services:

- Monthly TURTLE database is based on the MWLI database, with additional important US/CAN-related information
- Direct access from JAGUAR to the MWLI Visual Logbook
- Direct submission of loggings to the MWLI Logbook from JAGUAR
- Direct submission of offset loggings to the MWLI mwoffsets file from JAGUAR
- Availability of personal daily MWLI loggings as a text overlay on every JAGUAR display

The first two options are available for all JAGUAR versions. The last three options are available in JAGUAR PRO provided that MWLI account credentials have been set in JAGUAR.

Below you will see an example of how the MWLI Visual Logbook looks like. When triggered from JAGUAR, the map opens up in a standard browser window with worldwide loggings made on the day currently playing in JAGUAR. The database-like logbook of the same can be found when you scroll the browser page down.



HOW TO

The monthly TURTLE databases can be downloaded from DATABASE BAR (see the DATABASE BAR help for details).

You can invoke the MWLI Visual Logbook from TOP MENU > MAPS > MWLI LOGMAP (see TOP MENU for details).

JAGUAR PRO ONLY

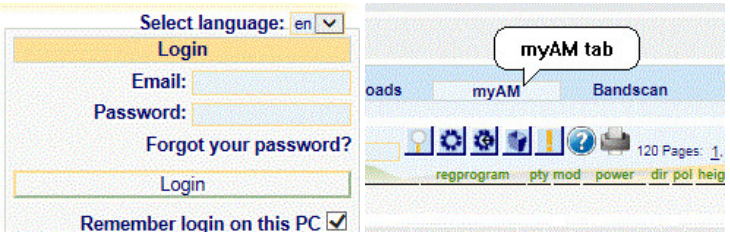
If you want to submit loggings and/or offset loggings to MWLI, you must set your MWLI credentials via SETTINGS > MWLI:

```
EMAIL ............... your.email@xxxx.com
OMID ................ omid value
```

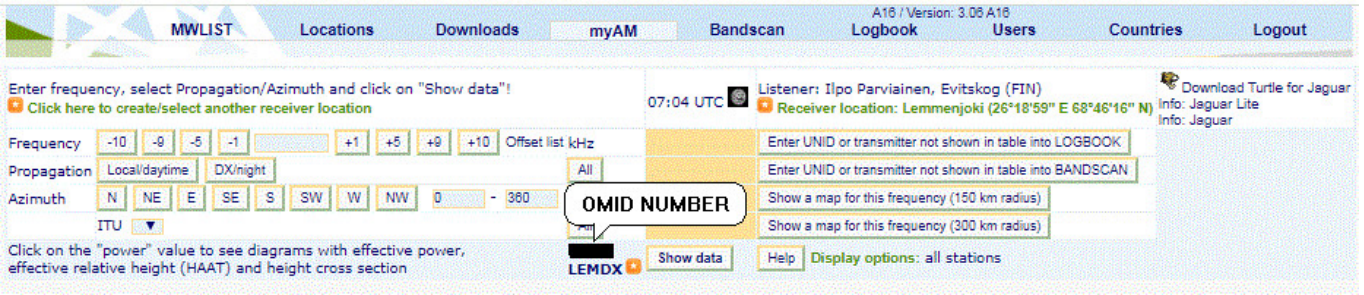
If you have set these two lines, you can then submit your loggings to MWLI.

- EMAIL = must contain the email address which you have registered with MWLI.
- **omid** is the numerical value found in your MWLI profile under MWLI's "myAM" properties tab.

If you are unsure of your omid number, you can check it by logging in to the MWLI at https://www.mwlist.org, clicking the "myAM" tab and picking up the number shown below the "myAM" on the details page.



In this example, the omid is blurred for security reasons.



When you have set your MWLI credentials, you can submit a test logging to MWLI; instructions can be found in LOGBOX. Also, if you like, you can also start contributing to the worldwide mwoffset list; more details can also be found in LOGBOX.

If you have set your MWLI credentials, SLIDER > MWLI can be selected to fetch and show all your personal MWLI loggings you have made for the date currently playing in JAGUAR.

NAVIGATION

During the playback, you can set the time point of the playback just by clicking anywhere on PLAYBAR; this is the most often used function in JAGUAR. Note that this is possible also in the LIVE mode, because JAGUAR constantly keeps a 10-minute (or 8-minute) temporary recording buffer.

In addition, there are multiple ways of navigation both in the time and in the frequency space. Your preferences may vary; some prefer navigation with the keyboard, some with the mouse, and often the two ways are combined.

Basic navigation can be done fully with the keyboard keys or with the mouse via PLAYBAR and TOOLBAR; however, normally, you utilize JAGUAR displays in navigation. Several displays show the mouse cursor based "flag pointer" which often shows the frequency and/or time. When the flag pointer has a bright color, you can jump to that frequency/time by clicking the corresponding spot. This is the "point-and-shoot" method. Note that if the pointer flag colour is dimmed, usually no recording exists at that time so you cannot use the "point-and-shoot" method.

The "point-and-shoot" method for frequencies is available on

- SCOPE (two SCOPE bars available for jumping to the desired nominal)
- SPECTOR (the bottom of SPECTOR, i.e. SPECTOR BAR is available for jumping to the desired offset without changing the playback time)
- SIXPACK (focus on six user-defined frequencies)

The pPoint-and-shoot" method for times is available on

- TIMEFRAME (jumping within the current DX DAY)
- CONDX

The "point-and-shoot" method for both frequencies and time is available on

- SPECTRA displays
- YAS LOG displays
- DAYLOG

Detailed descriptions about the displays can be found in the respective helps. This help only descibes the basic navigation tools available on PLAYBAR/SCOPE and TOOLBAR.

In addition, JAGUAR contains new easy large time-navigation buttons called "JUMPERS" (see GUIDE > JUMPERS), and the "NUMBERS" feature for keyboard heavy-users (see GUIDE > NUMBERS).

HOW TO

SUMMARY: PRIMARY NAVIGATION WITH KEYBOARD KEYS

- Press "o" to open a new file for playback
- Press "l" to toggle the LIVE mode and last played ARCHIVE file
- Type a frequency and press ENTER to jump to that frequency
- Press "n" or "p" to jump to the next/previous file
- Press SPACEBAR (or UP ARROW KEYS) to audio-loop a given time period

SUMMARY: PRIMARY NAVIGATION WITH MOUSE

- Click TOOLBAR > OPEN to open a new file for playback

- Click TOOLBAR > LIVE<>ARCH to toggle the LIVE mode and last played ARCHIVE file
- Click a frequency from SCOPE to jump to that frequency
- Click TOOLBAR > NEXT FILE or TOOLBAR > PREV FILE to jump to the next/previous file
- Click TOOLBAR > LOOP to audio-loop a given time period

Scrolling, either with the mouse wheel or left/right arrow keys, can also be used for changing the time points or the frequencies. The scroll target (time or frequency) depends on the mode you have selected: frequency scroll or time scroll. The currently-active mode can be easily seen on PLAYBAR.

FREQUENCY MODE

TIME MODE

SUMMARY: SCROLLING WITH KEYBOARD KEYS

- Press "z" to select the desired scrolling mode: frequency scroll or time scroll
- In the frequency-scrolling mode, you will see the "(( ))" brackets around the frequency. Scroll the frequencies up/down with the left/right arrow keys
- In the time-scrolling mode, the "(( ))" brackets disappear and you will see the exact frequency with 4 decimals. Scroll the seconds backward/forward with the left/right arrow keys

SUMMARY: SCROLLING WITH MOUSE WHEEL

- Click the TOOLBAR > FREQ SCROLL "(( ))" icon to select the desired scrolling mode: frequency scroll or time scroll
- In the frequency-scrolling mode, you will see the "(( ))" brackets around the frequency. Scroll the frequencies up/down with the mouse wheel
- In the time-scrolling mode, the "(( ))" brackets disappear and you will see the exact frequency with 4 decimals. Scroll the seconds backward/forward with the mouse wheel

Note that the mouse wheel scroll for time and frequencies is available only when the mouse is over PLAYBAR (and the color of the PLAYBAR text is white).

You can temporarily steal the focus from the time scroll to the frequency scroll by moving the mouse over the frequency area: the TIME mode is temporarily switched to the FREQUENCY mode (the "(( ))" brackets will appear around the frequency) and you can change the frequency with the mouse wheel (or left/arrow keys) until you move the mouse away from the top of the frequency. The control is returned back to the TIME mode (the "(( ))" brackets disappear).

TIPS

- Direct entry of the hour: you can type any of the full hours (0-23) and press ENTER. The control will jump to that TOH within the current DX DAY if a recording is available containing the given time point

- TIMEWHEEL: Click the TOOLBAR > TIMEWHEEL icon to activate this "super-tool". When active, TIMEWHEEL can be used to change the individual elements of the string on PLAYBAR

by scrolling the mouse wheel or the arrow keys when the mouse is moved over the element you want to to tune. See more details in TIMEWHEEL.

- Stepping in frequency-scrolling is normally done in steps of 9 kHz or 10 kHz. The stepping mode can be changed by clicking TOOLBAR's stepping icons. Some special stepping modes (VFO, SHORTWAVE, SIXPACK and COMPARE) can also be selected from TOOLBAR; each of these have their respective helps.

- TOOLBAR > COBRA can be activated if you want to select the "best offset" (strongest carrier peak) automatically for playback on the given frequency. See COBRA for more details. And finally:

- TOOLBAR > JAGRUN scripts can be selected and activated to fully automate the entire playback process: see JAGRUN for details.

NOTCH

Generally, NOTCH is used to eliminate sharp peaks in the audio spectrum, typically hets/whistles, but they can also be peaks on lower frequencies. JAGUAR PRO offers a special AUTONOTCH designed for MW listening. JAGUAR PRO also allows a maximum of 20 manual notches to be set.

AUTONOTCH is a "safe" notch as it can be kept always on without negative side effects in the audio.

HOW TO

AUTONOTCH can be toggled ON <> OFF by clicking AUDIOBAR > NOTCH.

Unlike "typical" autonotches, JAGUAR's autonotch is not based on continuous scanning of the audio spectrum so there can be carriers/interference anywhere in the spectrum not cleaned by the autonotch. Those must be handled manually. We know from experience that a "scanning autonotch" often causes more harm than benefit so experienced MW DXers normally do not use classic autonotches.

JAGUAR's autonotch never checks whether thre really are hets/whistles/peaks in the audio; it just relies on the AM frequency spacing. A better name for this feature would be "Trans-Oceanic Autonotch". When you listen to 10-kHz-spaced frequencies, the autonotch works on the potential hets e.g. caused by nearby EU frequencies but when you listen to 9-kHz-spaced frequencies, the autonotch works on the potential hets caused by the 10-kHz-spaced frequencies. This is mostly useful for listeners in the USA. Otherwise, every other annoying het must be notched manually.

So, JAGUAR's autonotch handles only 1 kHz / 2 kHz / 3 kHz / etc. hets, based on the nearby EU (or U.S.) frequencies. When AUTONOTCH is enabled, it takes the hets away from both sides of the SSB modes, based on the frequency you are listening to. For example, if you are on AM 1030, the autonotch will always clean 4 kHz and 5 kHz when on LSB or USB.

JAGUAR PRO ONLY

You cannot directly re-adjust the position of AUTONOTCH, but those notches can be tuned in AUDIO WINDOW. Notching (auto & manual) always removes a part of the "raw audio" so it is a challenging game. Some experienced DXers are very critical about classic autonotching but they can accept this type of "safe autonotching", and can keep AUTONOTCH always on by default.

MANUAL NOTCHES

MANUAL NOTCHES can be added/trimmed in AUDIO WINDOW. See details in the AUDIO WINDOW help.

NUMBERS

Many DXers regard the keyboard shortcuts as the fastest way to control and operate an application. JAGUAR offers dedicated keyboard shortcuts for the most important functions (see GUIDE > KEYBOARD) and special "SHORTCATS" for listing stations within the desired country or network (see GUIDE > SHORTCATS). In addition, the keyboard number keys can be used for quick navigation of frequencies and times.

NUMBERS is especially convenient if your keyboard has a numeric keypad (= standard in the full-size keyboards) or even a separate small wireless external numpad. Numeric keypads/numpads have their own ENTER and * (= star) keys so there is no need to use any shift keys while jumping. All time jumps given by NUMBERS will happen within the current "DX DAY" (20:00-20:00 UTC), so the real date itself can change when the given hour is located beyond 00:00 UTC (DX DAY hours are 20, 21, 22, 23, 00, 01, 02, etc).

HOW TO

When JAGUAR is your currently active Windows application, you can just enter the frequency or time with the keyboard number keys and press ENTER. JAGUAR recognizes if the given number is a frequency and a time. Here are some examples (after typing the numbers, ENTER must be pressed):

```
873 - Jump to the frequency of 873 kHz

1530 - Jump to the frequency of 1530 kHz

1400.0094 - Jump to the frequency of 1400.0094 kHz

13 - Jump to 13:00 UTC

8 - Jump to 08:00 UTC

21*05 - Jump 21:05 UTC (within the current "DX DAY" of 20:00-20:00 UTC)

07*29 - Jump to 07:29 UTC

*28 - Jump to XX:28 UTC (where XX is the hour which you are currently listening to)

*5 - Jump to XX:05 UTC (where XX is the hour that you are currently listening to)
```

OFFSETS

JAGUAR PRO ONLY

There are two types of offsets in JAGUAR: GLOBAL and LOCAL.

The global offsets are the "official" station offsets maintained in the MWLI offsets list. This information is included the TURTLE database (see TURTLE for more). You can submit your own offset observations to the MWLI offsets list via LOGBOX with just one mouse click.

The offset values saved locally are known as "local offsets". Normally, when a new offset is observed, it is logged both "globally" to MWLI and to a local text file. It is recommended that you share your offsets with fellow DXers around the world and use LOGBOX for offset logging to both targets. However, if you prefer to collect/maintain only your own offset list locally, this is also possible.

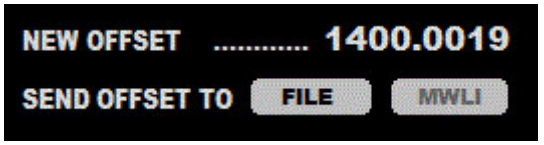
The global offsets are shown on the TURTLE rows (next to the station name, blank if not available) and as FLAGS ("flagpoles" at the exact offset positions aligned with the current spectrum). See the FLAGS help.

The local offsets are saved into a text file named OFFSET.txt, located in the JAGUAR installation folder. They are shown as "pins" on the bottom of the spectrum (this area is also known as the "offset bar"). Normally, only a small pin is shown but if the mouse is moved over it, full data is shown and you can modify it. Also, when using FLAGS, all the local offsets are fully shown (i.e. longer pins with full data). This format can also be selected as the default.

HOW TO

GLOBAL OFFSETS: Submitting offsets to MWLI

- Tune in to the exact frequency. The offset to be logged will be shown on PLAYBAR
- Click the station in question on the map, or TURTLE > LOGBOX will be opened with the selected offset in "NEW OFFSET"
- Click the MWLI button in LOGBOX (i.e. "SEND OFFSET TO MWLI")



Submitting global offsets to MWLI requires that the MWLI credentials have been set in SETTINGS > MWLI. See the SETTINGS > MWLI help. Otherwise, the MWLI button is disabled.

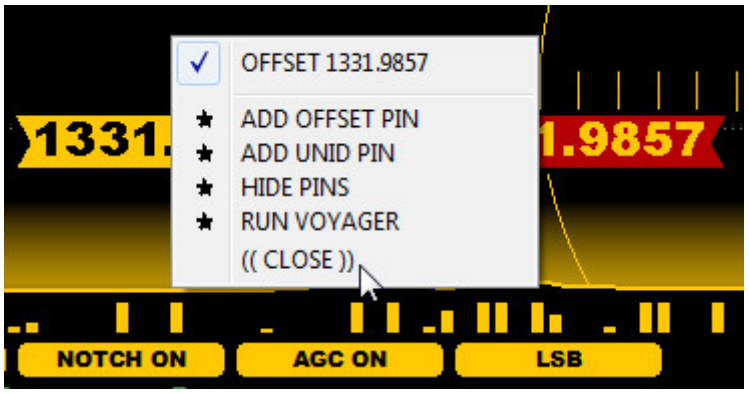
LOCAL OFFSETS: Submitting offsets locally to JAGUAR, three methods:

((METHOD 1))

- Tune in to the exact frequency. The offset to be logged will be shown on PLAYBAR.
- Click the station in question on the map, or TURTLE > LOGBOX will be opened with the selected offset in "NEW OFFSET"
- Click the FILE button in LOGBOX (i.e. "SEND OFFSET TO FILE")

((METHOD 2))

- Move the mouse to the desired position in the bottom area of SPECTOR (= OFFSET BAR). The red "offset flag" can be seen.
- Make a mouse right-click: a popup menu appears, select ADD OFFSET PIN



- The text "TYPE NAME AND PRESS ENTER" can be seen on the playbar. Enter the call, etc. you want and press ENTER
- That is all: the entry is added to the OFFSET.txt file and a new pin appears on the bottom
- This menu also allows you to add larger "UNID pins" (= offsets to be monitored in the future), to hide all the offsets pins, or to start VOYAGER (see the VOYAGER help)

((METHOD 3))

- Open the OFFSET.txt file (in the JAGUAR installation folder) with your text editor
- Add/modify the entries in the file manually, one station per line
- Be careful to obey the required syntax

- The contents of the OFFSET.txt is simple: the data consists only of the offset frequency and a short name (max 9 characters) and optional extra data up to 20 characters, all separated by a comma

    - Excel can be used for importing/exporting the data if needed. The rows do not have to be sorted, JAGUAR will handle it.

The optional data can be:

- the character "-" (= this offset will be shown as a longer pin, ie. UNID, "something to monitor", etc.)

- the character "v" (= this offset is varying, will be shown with an orange color when highlighted), or

- your personal remarks (these remarks, e.g. offset value range, must be followed by the character "-" or "v" if either is used)

  1449.9957, KZZJ 1459.9979, SPORTS,* 1460.0000, KXNO,v 1459.9985, CJOY

- After saving the file, restart JAGUAR to load the new offset data

The following options can be useful while working with the offsets (see SETTINGS > OFFSETS):

```
OFFSET_BAR = YES
```

- use this if you want to have the "offset bar" always visible, i.e. the area where the mouse shows the red "offset flag"

```
OFFSET_PEEK = YES
```

- use this if you want the "offset peeker" activated, i.e. a quick lookup of the station/stations listed at the offset located near the mouse cursor when the mouse is moved over the offset bar (= the area at the bottom of SPECTOR)

The output from TOOLBAR > FLAGS ("the full offset scene") can be shown on any JAGUAR display but the "offset peeker" is available only on the spectrum displays.

```
SHORT_FLAG_NAMES = YES
```

- use this if you want to show the global flags with short text labels (the exact frequencies are not included in the text)

```
FULL_SIZE_PINS = YES
```

- use this if you want to show your own offsets as big "tower" markers

METHOD 2 is the fastest way to control your local offsets. OFFSET_BAR is either visible (if OFFSET_BAR is activated) or just a "virtual bar". The red offset flag will be displayed when OFFSET_BAR has the control.

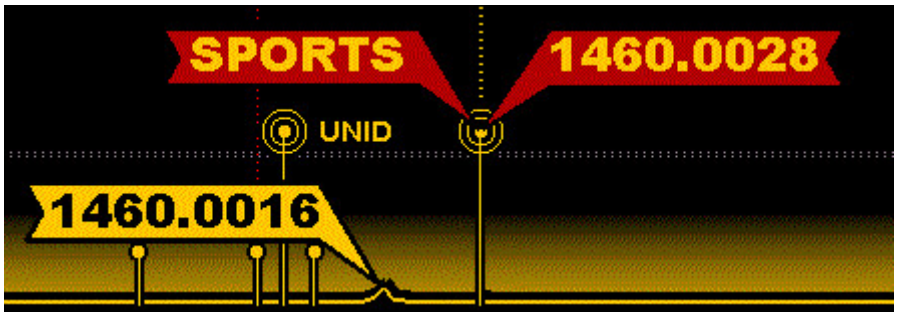
OFFSET_BAR offers the following services:

- The mouse left-click will have you jump to the offset shown, without changing time

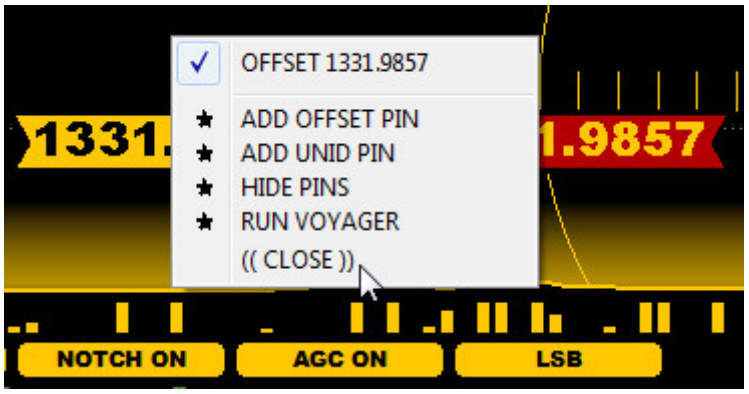
  If you move the mouse near the SPECTOR flag (= the highest frequency), you will get an "offset lock" (= the SPECTOR flag and the red offset flag will be paired), making it easy to pick the exact peak

- The mouse right-click prompts a popup menu for adding offsets: you can add a short pin ("ADD OFFSET PIN") or a long pin ("ADD UNID PIN")

- If you move the mouse close to a pin, you will get a "pin lock" (i.e. two red flags paired) as shown in the image (here the larger "UNID pin" has been locked)



- When a pin lock is visible, the mouse right-click opens a popup menu for the functions available for this pin.



- This menu allows you to change the text in the offset pin, set it marked as "variable", delete the offset, or start VOYAGER (more in the VOYAGER help)

- You can move the position of any pin by dragging it with the mouse: the OFFSET.txt file is updated automatically.

PANTS

JAGUAR PRO ONLY

PANTS, or Playback antennas. Hardcore DXers often use many Perseus setups for recording simultaneously on a DXpedition, each setup saving recordings to an external hard disk. When a specific recording is analyzed later, it can be very useful to check how signals were heard by the other setup(s) at the same time; sometimes the identity of a station can quickly be solved with the help of a recording from the other setup.

PANTS serves as a "virtual antenna switcher in the ARCHIVE mode". You can set the "a" key as the "playback antenna switcher". Then you can rotate a maximum of three hard disks in the ARCHIVE mode just as pressing the "a" key rotates the antennas in the LIVE mode. This makes it easy to compare the signals between different antennas on the currently-playing frequency/time point.

If no recording exists on the selected disk, "NO HITS" will be shown, and PANTS stays silent, showing the playback time until you switch back (or to the next hard disk).

PANTS is also available if you have moved your recordings from various hard disks to one hard disk (in separate folders) after the DXpedition.

HOW TO

KEY = A

Normally, pressing the "a" key is used for rotating the antennas (and opening up the ANTENNAS screen). You can override the default function and re-define the "a" key for the PLAYBACK ANTENNA switcher by defining a PANTS plugin in SETTINGS > PLUGINS (more details in GUIDE > PLUGINS).

For example, if you have the external hard disks L:\ and O:\ in place for JAGUAR recordings, you can set PANTS as follows:

```
PANTS=L,O
```

and you can use the "a" key for toggling the recordings on the L:\ and O:\ disks.

When a hard disk is connected, JAGUAR will display a banner showing the selected disk/folder on the top of the display for a short while. The name is also visible on the status bar.

You can also set file paths instead of hard disk letters in PANTS (thus making it possible to use the same disk); for example, if you set

```
PANTS=F:\PRec\PAX128-Disk1,F:\PRec\PAX128-Disk2
```

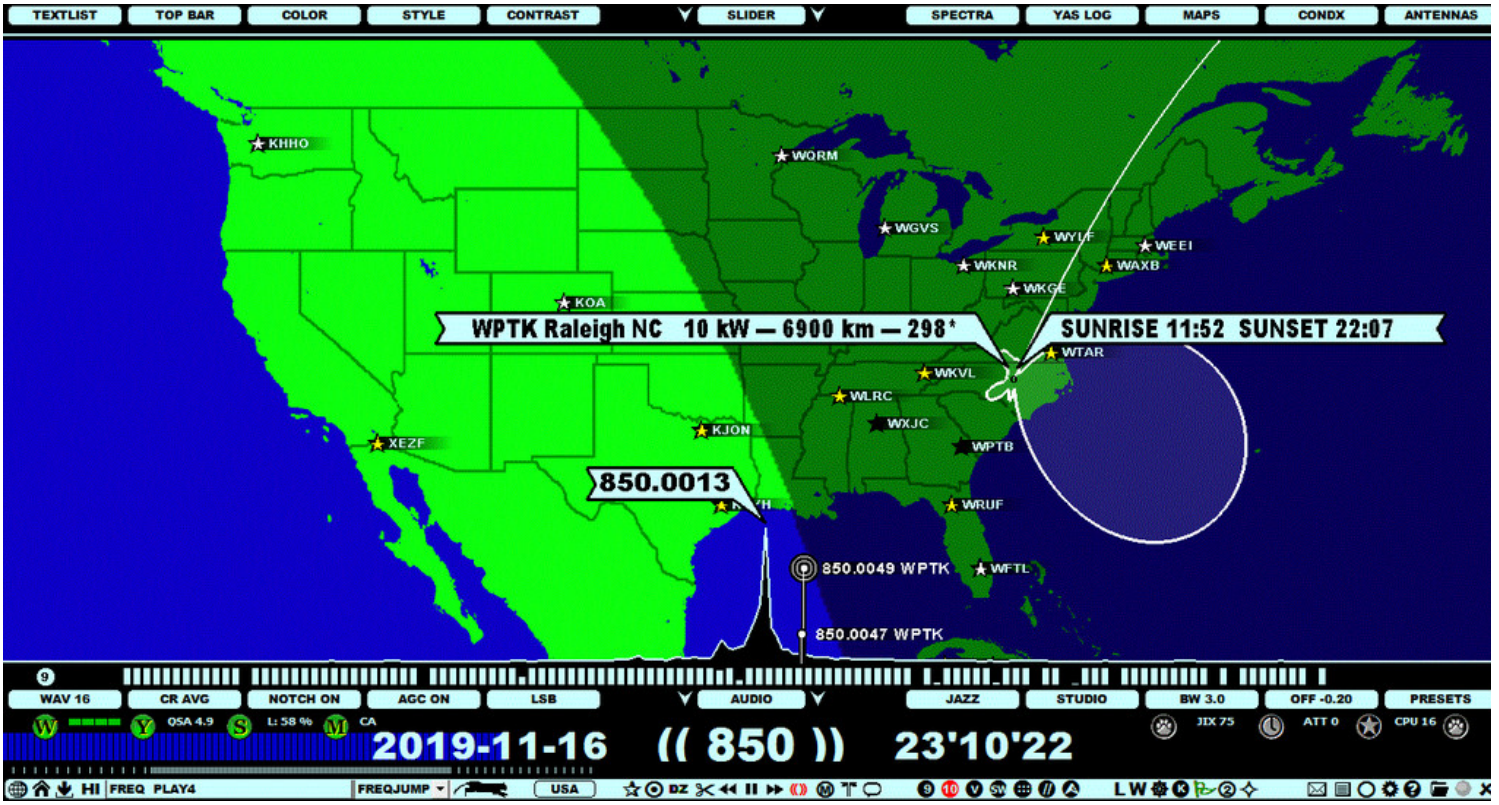
you can toggle the two folders by pressing the "a" key.

PATTERNS

JAGUAR PRO ONLY

The pattern maps of the U.S. and CAN stations can be supported natively in JAGUAR. Two pattern map modes are available:

- Show day/night pattern for the selected station
- Show day/night patterns for all the stations on the current frequency



The patterns have a strong white shading if you have logged/QSLed the station in question. Logging/QSLing information is based on P-TAGS in CATBOOK. See the P-TAGS help for details). Otherwise, the patterns are displayed without the white shading.

HOW TO

KEY = ALT-N

The use of PATTERNS requires that an additional pattern data package has been installed.

- Download the pattern data (of 40 MB in size, zipped) from TOOLBAR > WWW > DOWNLOAD > OPTIONAL FILES > PATTERNS.zip
- Unzip the data files into the folder named PATTERNS in your JAGUAR installation folder

Now you can rotate the pattern map modes by pressing ALT-N in the following order:

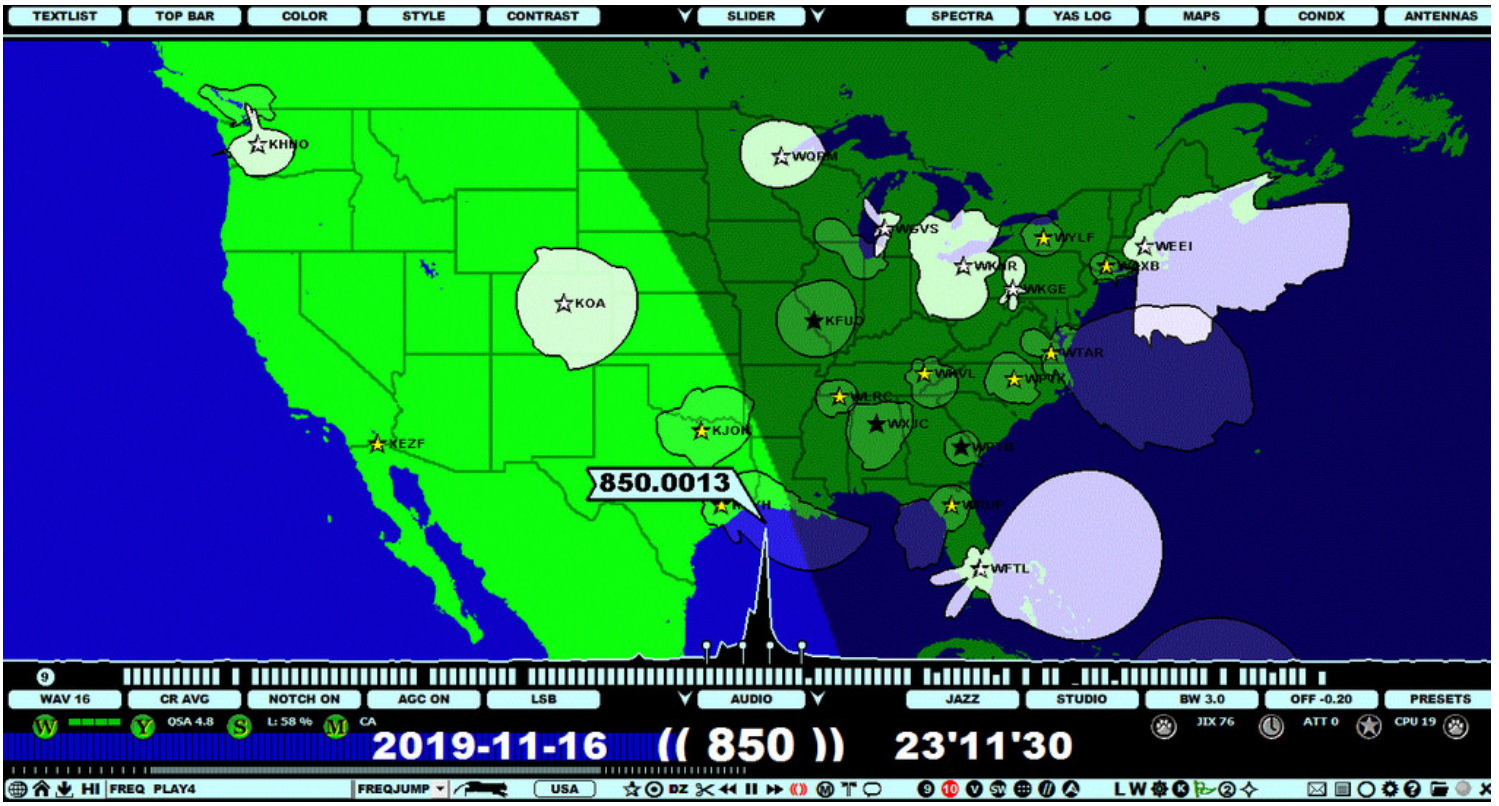
```
"ALL PATTERNS (DAY)" > "ALL PATTERNS (NIGHT)" > "SHOW PATTERN (DAY)" > "SHOW PATTERN (NIGHT)" > "PATTERNS OFF"
```

When "SHOW PATTERN" is selected, the pattern will be shown for the selected station when you move the mouse over the station star.

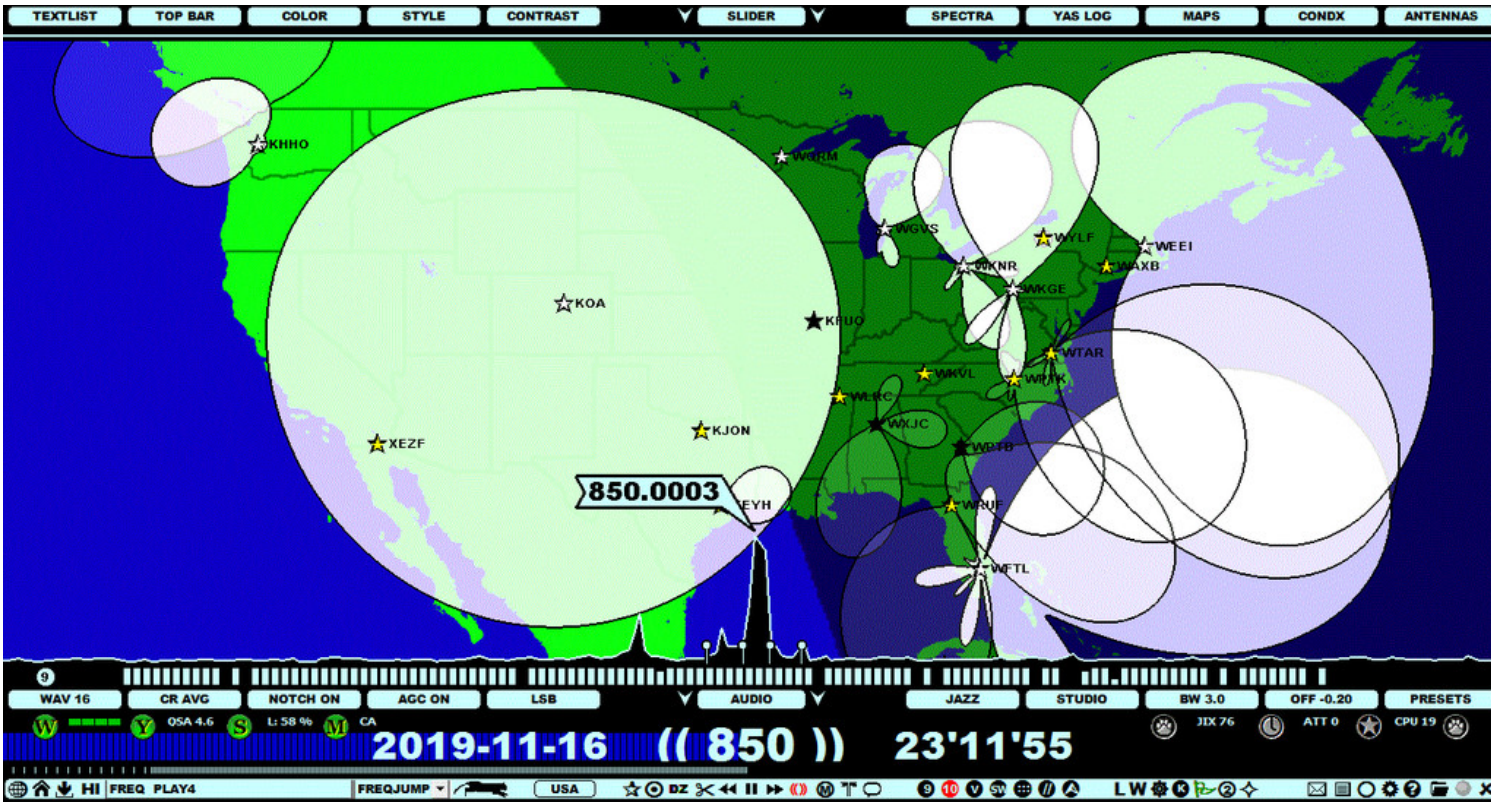
Instead of ALT-N, you can also use TOOLBAR > USA > The 1. STAR ("PATTERNS") to rotate the pattern modes.

Examples of "ALL PATTERNS (DAY)" and "ALL PATTERNS (NIGHT)":

ALL PATTERNS (DAY)



ALL PATTERNS (NIGHT)



PLAYBAR

PLAYBAR is the heart of JAGUAR, showing the progress of the playback. The length of each playback file is adjusted to cover the full screen width, and you can jump to the desired time point by clicking on PLAYBAR. The playback of a recorded file ("ARCHIVE MODE") and the playback when connected to the Perseus hardware ("LIVE MODE") are displayed in an almost identical way (Perseus playback uses a buffer file). More details can be found in the ARCHIVE MODE and LIVE MODE helps.

The progress bar color can be:

- Blue (ARCHIVE MODE)
- Green (LIVE MODE, no recording)
- Red (LIVE MODE, recording

JAGUAR supports two main "scrolling modes" when the mouse is over PLAYBAR: TIME SCROLL and FREQ SCROLL. These scrolling modes are available when the text color on PLAYBAR is white; otherwise, PLAYBAR's text color is the same as the selected color scheme for the buttons.

When the active scrolling mode is FREQ SCROLL, the frequency portion of PLAYBAR is surrounded by "((XXX))", and the scrolling function changes the nominal frequencies based on the selected frequency-stepping.

When the active scrolling mode is TIME SCROLL, the frequency portion of PLAYBAR shows the exact offset played as "XXX.XXXX", and the scrolling function changes the time instead of the frequency.

A small triangle below PLAYBAR shows the exact position of a TOH (top-of-the-hour) / BOT (bottom-of-the-hour) if such is included in the playback/buffer file.

Further, PLAYBAR supports some special functions as described below.

HOW TO

KEY = Z

The scrolling modes FREQ SCROLL and TIME SCROLL can be toggled by pressing the "z" key. Alternatively, you can toggle them by clicking TOOLBAR > "(( ))" icon (the FREQ SCROLL icon).

You can also temporarily always override the TIME SCROLL mode by moving the mouse over the frequency: "XXX.XXXX" will change to "((XXX))", and you can scroll the frequencies (with the mouse wheel or left/right arrow keys) as long as the mouse is positioned over the frequency display.

If you work with other applications at the same time while listening to JAGUAR, the focus of the keyboard / mouse wheel is then often reserved by some other application. You can put the focus back to JAGUAR in the standard Windows way (for example, by pressing ALT-TAB). If PLAYBAR is visible, you can also just move the mouse over PLAYBAR's frequency display, and JAGUAR will steal the focus for the keyboard / mouse wheel automatically.

PLUGINS

JAGUAR PRO ONLY

A number of miscellaneous dynamic settings and customizations can be set via SETTINGS > PLUGINS.

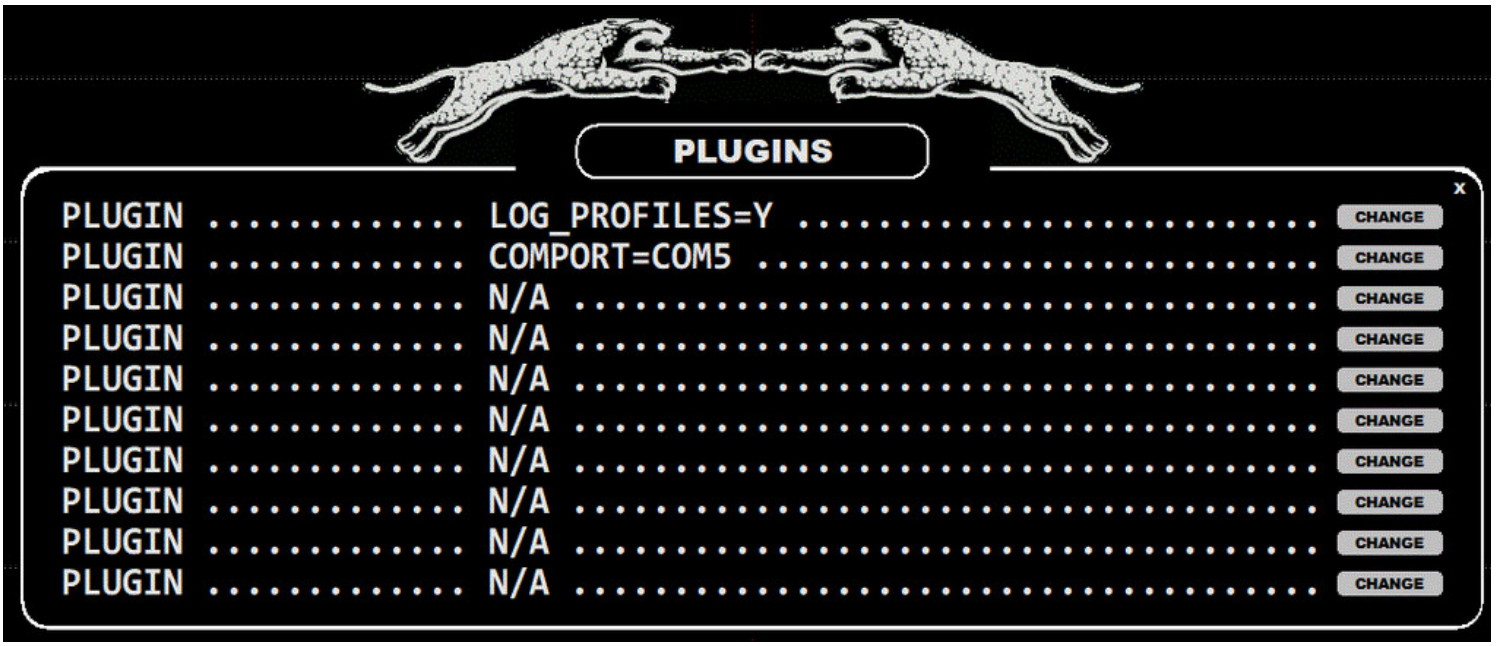
JAGUAR supports the following PLUGIN parameters:

- CATBOOK_FOLDER
- CATBOOK_QSL
- COMPORT
- DEFAULT_ATT
- DRAG_SPECTRUM_HORZ
- DUALMON
- FREQWHEEL
- LOG_PROFILES
- PANTS
- PERSEUS_DITHER
- PERSEUS_PREAMP
- POWERSAVE
- QSL_ARCHIVE
- USER
- WORKCHAIN
- XADJUST

Below you will find the detailed descriptions of the PLUGIN parameters.

HOW TO

When the PLUGINS window is open, a new plugin can be added by clicking the "CHANGE" button on the right, typing the PLUGIN definition into the corresponding text box, and then clicking "SAVE". For example, the PLUGIN window can look like this:



`CATBOOK_FOLDER=path_to_some_folder`

overrides your default TURTLE folder.

`CATBOOK_QSL=N`

If you set CATBOOK_QSL=N, you will get the full 80 characters for the audio clip name in CATBOOK, and the full path can be also included but you cannot use the QSL LINK anymore in CATBOX.

`COMPORT=comport`

Set a Windows COM port for Velleman/Devantech antenna relay control boards. For example, COMPORT=COM5 forwards antenna relay control commands to COM5.

`DEFAULT_ATT=x`

The default attenuation value for Perseus (the allowed values are: 0, 1, 2 and 3). This plugin overrides all the scheduled attenuation settings in MESTOR.

```
DRAG_SPECTRUM_HORZ=Y
```

By default the visible spectrum on the SPECTRA display can be dragged only vertically. If DRAG_SPECTRUM_HORZ is activated, dragging is possible also horizontally.

```
DUALMON=xresolution,yresolution
```

Show JAGUAR's main display on an alternative monitor. The desired X-resolution and Y-resolution must be given. These values may need to be trimmed from the default resolution values in order to get a full screen display. Also, DUALMON=xresolution,yresolution,INVERSE can be used to re-position JAGUAR on the "other side" of the main display. Note that INVERSE may not work in every situation.

```
FREQWHEEL=Y
```

FREQWHEEL=Y allows frequency tuning based on each digit of the frequency (FREQWHEEL=N is the default). If FREQWHEEL is enabled, you can move the mouse cursor over desired digit on the playbar ((FREQ)) and use the mouse wheel (or left/right arrow key) for changing the digit up/down.

```
LOG_PROFILES=Y
```

You can define a maximum of three log profiles. These profiles are useful if you want to make loggings to several publications with one single logging action. See GUIDE > LOG_PROFILES.

```
PANTS=two-different-recording-paths-separated-with-comma
```

Compare two recordings recorded at the same time. See details in GUIDE > PANTS.

```
PERSEUS_DITHER=Y | N
```

The internal dither function of the Perseus hardware is OFF by default. This improves sensitivity in low-signal-strength areas.

```
PERSEUS_PREAMP=Y | N
```

The internal amplifier of the Perseus hardware is ON by default.

```
POWERSAVE=HHMM UTC
```

The user-defined time in UTC for PC hibernation, HHMM must be replaced by desired time, e.g. POWERSAVE = 1410 UTC

```
QSL_ARCHIVE=path_to_some_folder
```

Your digital QSL archive folder, used by CATBOOK.

```
WORKCHAIN=Y | N
```

This is for the hardcore power users: different WORKSETs can be started as scheduled. If you set WORKCHAIN=Y, the WORKCHAIN.txt file will be used for controlling the WORKSET timer. You must create this file manually and save it to the JAGUAR installation folder before JAGUAR is started. The file contains the parameter "WORKCHAIN=" followed by the WORKSET name and the letter ":" and the desired start time as HHMM; each such pair must be separated by a comma. You can schedule as many WORKSETs as needed; two or three being the usual situation.

The syntax for the contents of the line required in the WORKCHAIN.txt file is

```
WORKCHAIN = XXXXXX: HHMM, YYYYYY: HHMM, ZZZZZZ: HHMM
```

where XXXXXX, YYYYYY and ZZZZZZ are workset names (case-sensitive!), and each HHMM is the desired start time of the WORKCHAIN.

For example,

```
WORKCHAIN = MIDDLE_EAST: 1500, AFRICA: 1940, USA: 2345
```

means that the workset MIDDLE_EAST starts at 15:00 UTC, the workset AFRICA at 19:40 UTC, and the workset USA at 23:45 UTC.

WORKCHAIN corresponds to the "MESTOR plan" concept used in the earlier JAGUAR versions. Note that many changes in the operating environment (antenna switches, etc.) can already be handled by using the standard MESTOR scheduler. If the standard MESTOR services are not enough, the WORKCHAIN timer will cover all the needs that can be imagined.

```
XADJUST=x
```

Can be used with DUALMON for adjusting the exact position of the left edge of the JAGUAR display (JAGUAR's X-position is moved by x pixels to the left/right)

P-TAGS

JAGUAR PRO ONLY

JAGUAR incorporates so-called P-TAGS (the user's private tags) which are used to categorize stations based on loggings and your wishes. P-TAGS are saved to the CATBOOK database (see more details in the CATBOOK help).

By default, P-TAGS are disabled: all the stations on MAPS are always marked with a yellow star and all the rows in TURTLE have ** in the beginning of the line. As soon as you start using JAGUAR tools for logging/offset logging, or "tagging" (a special function used for setting tags), JAGUAR creates a CATBOOK database for you automatically and sets the P-TAGS for logged/tagged stations. All stations which have been logged (or offsets are logged) become automatically "tagged stations"; all other non-tagged stations will be set to P0 in the beginning (P0 = YELLOW).

P-TAGS are used in queries, Captain's Logmap ("CATMAP"), and in the documentation of your DX-history and more.

Even though all P-TAGS are saved only in the CATBOOK database, they are also shown on TURTLE data rows on the screen.

After CATBOOK has been created, stations will have the P0 tag by default. P-TAGS can be changed in several ways:

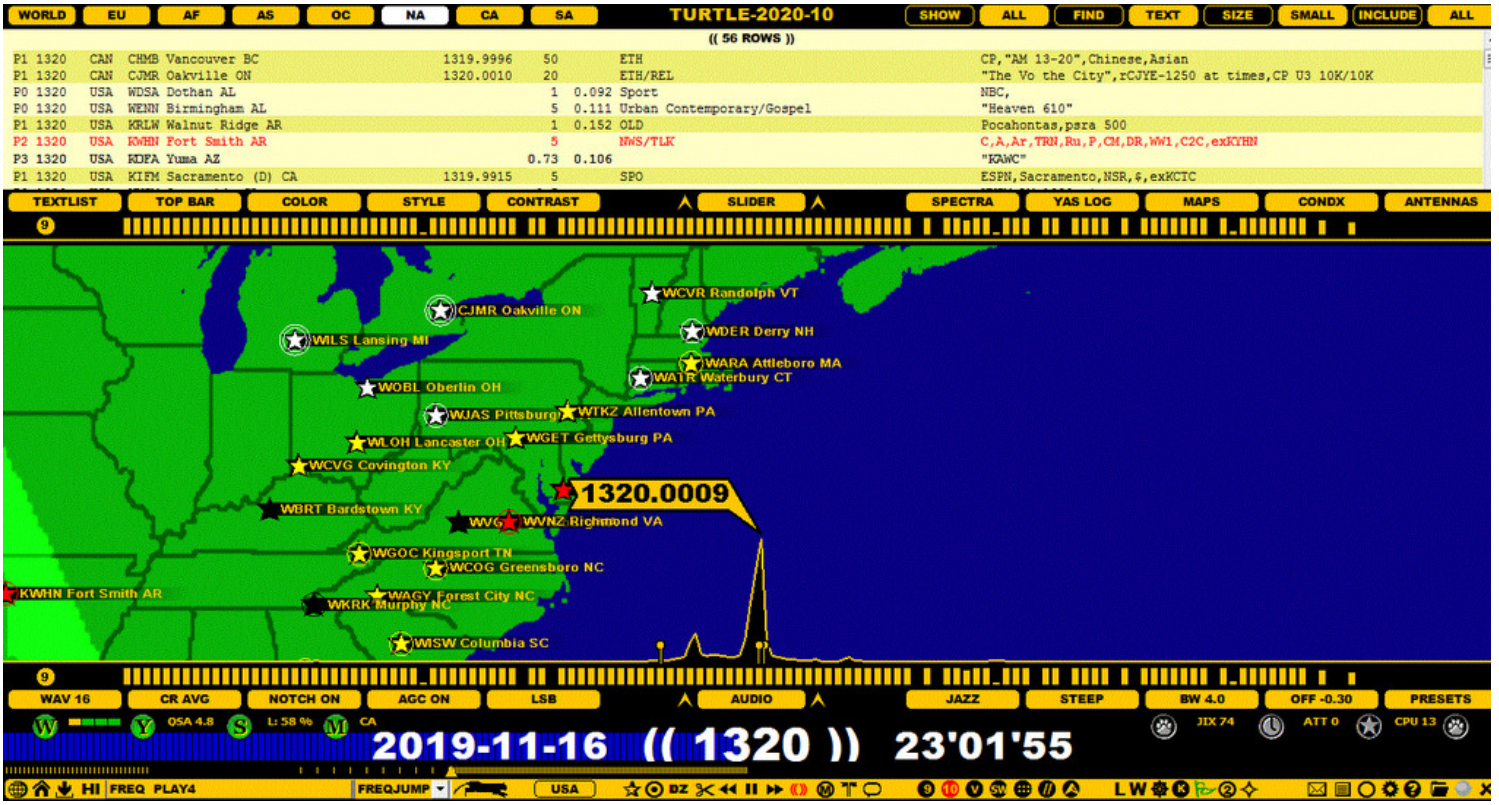
- Logging a station (automatic tagging)
- Logging/adding local offset for the station (automatic tagging)
- Using TAGGER = adding/changing a P-TAG, see STATION MENU for details
- Using LOGBOX (see LOGBOX for details)
- Using text editor (for example, Notepad) for editing CATBOOK.txt (not recommended, see CATBOOK for more details)

When a P-TAG is changed, the color on MAPS and the visual representation of the lines in the TURTLE window will change according to the tag.

The tags can be labelled from P0 to P5, and you can decide on the meaning of each tag. The default meanings are:

- P1 = "QSLed" (colored as white on MAPS)
- P2 = "Hot station" (recently logged by others or otherwise being "most wanted", red)
- P3 = "Heard/logged/reported but not QSLed" (black)
- P4 = "Logged" (blue)
- P5 = "User-defined meaning" (green)

In the following example, the default setup is slightly changed (P3 refers to "potential, keep in mind").



HOW TO

P-TAGS are added with the logging/flagging/tagging tools as described above. Instructions on how to use these tools can be found in the LOGBOX and STATION MENU helps.

The default P-TAG for automatic tagging for logged stations is P4 (blue). If you are not happy with it and want to use some other P-TAG for logged stations, you can change it in SETTINGS > LOGGING > LOGTAG. For example, if you want to show all logged stations as red on MAPS, you can define LOGTAG > P2 RED.

RABBIT

RABBIT = Online shortwave station database.

When any shortwave frequency is tuned (either in the LIVE mode or in the ARCHIVE mode), RABBIT is automatically invoked instead of TURTLE and DATABASE BAR will show only one button (on the left).

By default, RABBIT shows all stations listed on currently-playing frequency, but you can toggle the ALL and ON AIR options. ON AIR shows only the stations that are active at the time of listening.

HOW TO

SLIDER must be partially or fully opened in order for you to see the shortwave station list.

An Internet connection is required, but no other actions are needed. RABBIT is located in the Kapsi server, and the data itself is based on the Eibi shortwave database.

More information about using shortwaves in JAGUAR can be found in the SHORTWAVE help.

RESET

RESET is the first thing to do if you encounter an issue which cannot be solved easily otherwise. Especially, audio-related issues after JAGUAR starts are normally cured with RESET.

HOW TO

RESET is done by clicking the TOOLBAR > SHUTDOWN icon which always opens a small popup menu. Select RESET from this menu.

JAGUAR will ask:

```
(( DELETE SYSTEM.INI (PLAYBACK SETTINGS) ? ))
```

By replying "YES", JAGUAR deletes several system settings related to the audio playback.

Next, JAGUAR will ask:

```
(( DELETE SETUP.INI (USER SETTINGS) ? ))
```

By replying "YES", JAGUAR deletes all user configuration parameters, so after the restart the "factory defaults" will be used.

Next JAGUAR makes an automatic restart and then playback (and many other) issues are normally solved. If not, see the TROUBLESHOOTING help.

You can also delete SYSTEM.INI and/or SETUP.INI manually if needed to solve some specific issues. These files are located in the SETTINGS folder.

RIGHT CLICK

The RIGHT CLICK functionality of the mouse in JAGUAR depends on where the mouse is located; there are three main actions triggered by RIGHT CLICK.

- If the mouse is over some additional / floating window (APPLET, INFOBOX, LOGBOX, CATBOX, MIDGET, KEYBOARD HELP, etc), RIGHT CLICKing the window is the fastest way to close it.
- If the mouse is over a station (on MAPS or TURTLE), RIGHT CLICK triggers STATION MENU (see GUIDE > STATION MENU for details).
- If the mouse is over WALLPAPER / graphics area, by default, RIGHT CLICK triggers JUMPERS (see GUIDE > JUMPERS).

HOW TO

JAGUAR PRO ONLY

You can override the default right-click function (for the graphics area right clicks) in SETTINGS > MOUSE > RIGHT_CLICK.

SAMPLING

The SAMPLING rate defines the available bandwidth (frequency coverage) in wideband files.

JAGUAR is designed for MW DXing and thus it supports only two SAMPLING rates for recording: 1.6 MHz and 2 MHz; both of them cover the full MW dial. Native Perseus package supports only one such sampling rate (2 MHz) with a full MW coverage; the same sampling rate of 2 MHz (SAMPLING 2000) is also available in JAGUAR. Use this sampling rate is you want to keep compatibility with Perseus.exe as far as the playback is concerned.

In addition to 2 MHz, JAGUAR PRO can also use the sampling rate of 1.6 MHz (SAMPLING 1600) which saves 20% of the disk space and lots of CPU/GPU cycles. The 1.6-MHz files cannot be played with Perseus.exe but they can be played with many third-party SDR software.

When the desired bandwidth has been defined, 80% of it is "alias-free", i.e. free from artifacts. The area outside of it can be tuned in to, but there may be also some "trash signals". For example, if you have selected SAMPLING 1600, your alias-free bandwidth is 1.28 MHz. If you use the center frequency of 1105 kHz, the alias-free band covers 465 kHz - 1745 kHz.

So, if you want to record both LW and MW, you must use SAMPLING 2000, yielding an alias-free bandwidth of 1600 kHz, and the center frequency of e.g. 1005 kHz will yield an alias-free frequency range of 205 kHz - 1805 kHz.

Note that it is recommended to use a center frequency which does not contain any broadcasting transmissions. This is because SDRs often generate an artificial peak on that frequency. This means that you will see a spectrum trace on that frequency even if you do not have any antenna connected.

HOW TO

Selecting the bandwidth of 2 MHz or 1.6 MHz.

See the exact instructions in GUIDE > WORKSETS. The sampling rate is defined in SETTINGS > WORKSET > BANDWIDTH.

When you tune in to shortwaves in the LIVE mode, the center frequency is automatically set to be 10 kHz below the tuned frequency. The SAMPLING rate however remains the same.

SCANBOX

JAGUAR PRO ONLY

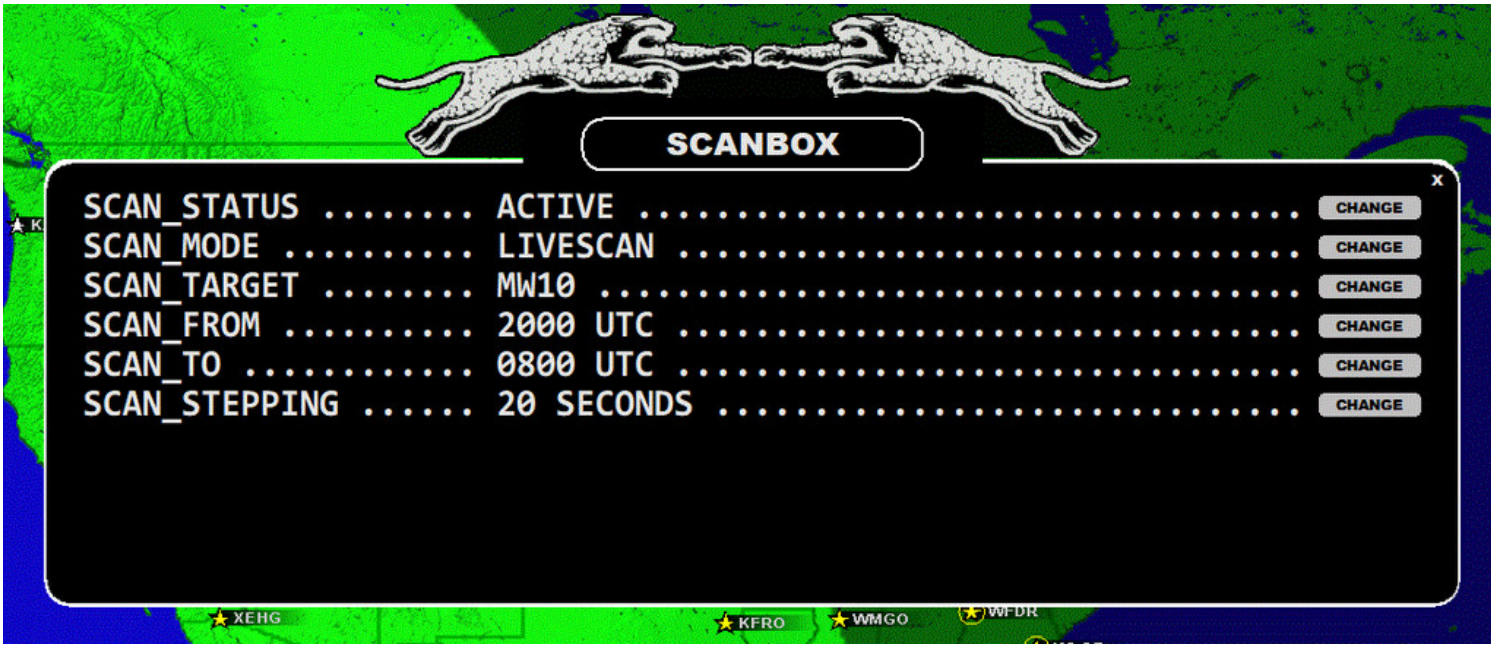
Offset detection/monitoring plays an important role in modern MW DXing as the "eyes have become as important as theears in MW DXing". JAGUAR has several built-in tools for collecting exact offset data on the AM dial supporting 24/7 offset history collection for all MW10 or MW9 frequencies. The results can be used as a platform to analyze the frequencies and jump directly to the "hot spots" when such are found.

Offset detection/monitoring is implemented in SCANBOX which is always available in the background. SCANBOX can be used in automatic and manual modes (= LIVESCAN and FILESCAN).

- LIVESCAN: If selected, JAGUAR performs an automatic offset analysis whenever the Perseus connection is active (LIVE MODE). Analysis can be done for desired MW frequencies: all frequencies using a stepping of 9 kHz or 10 kHz, or a VFO stepping, based on your location and/or preferences. The stepping and time range can be customized. LIVESCAN is not related to recordings in any way.
- FILESCAN: If selected, JAGUAR collects the offset history from the recorded data.

HOW TO

Both LIVESCAN and FILESCAN are defined and started via SCANBOX, triggered by clicking the STATUSBAR > S button.



Detailed desciptions can be found in GUIDE > LIVESCAN and GUIDE > FILESCAN.

Important: If you define too low a SCAN_STEPPING value for LIVESCAN, your PC performance may suffer and the desired SCANs may not be produced in a timely fashion. For example, setting SCAN_STEPPING down to 8 SECONDS is possible, but it requires a "gaming PC" with a modern Intel i7 (or a corresponding) CPU. Normally, SCAN_STEPPING values of 10-30 SECONDS are acceptable for average setups.

The SCAN_TARGET value in SCANBOX can be changed either manually (using the CHANGE button) or by the system itself: you can create a scheduled change for it (see SETTINGS > MESTOR and the SCANTARGET parameter). In either case, the SCAN_TARGET always shows the currently active scan target.

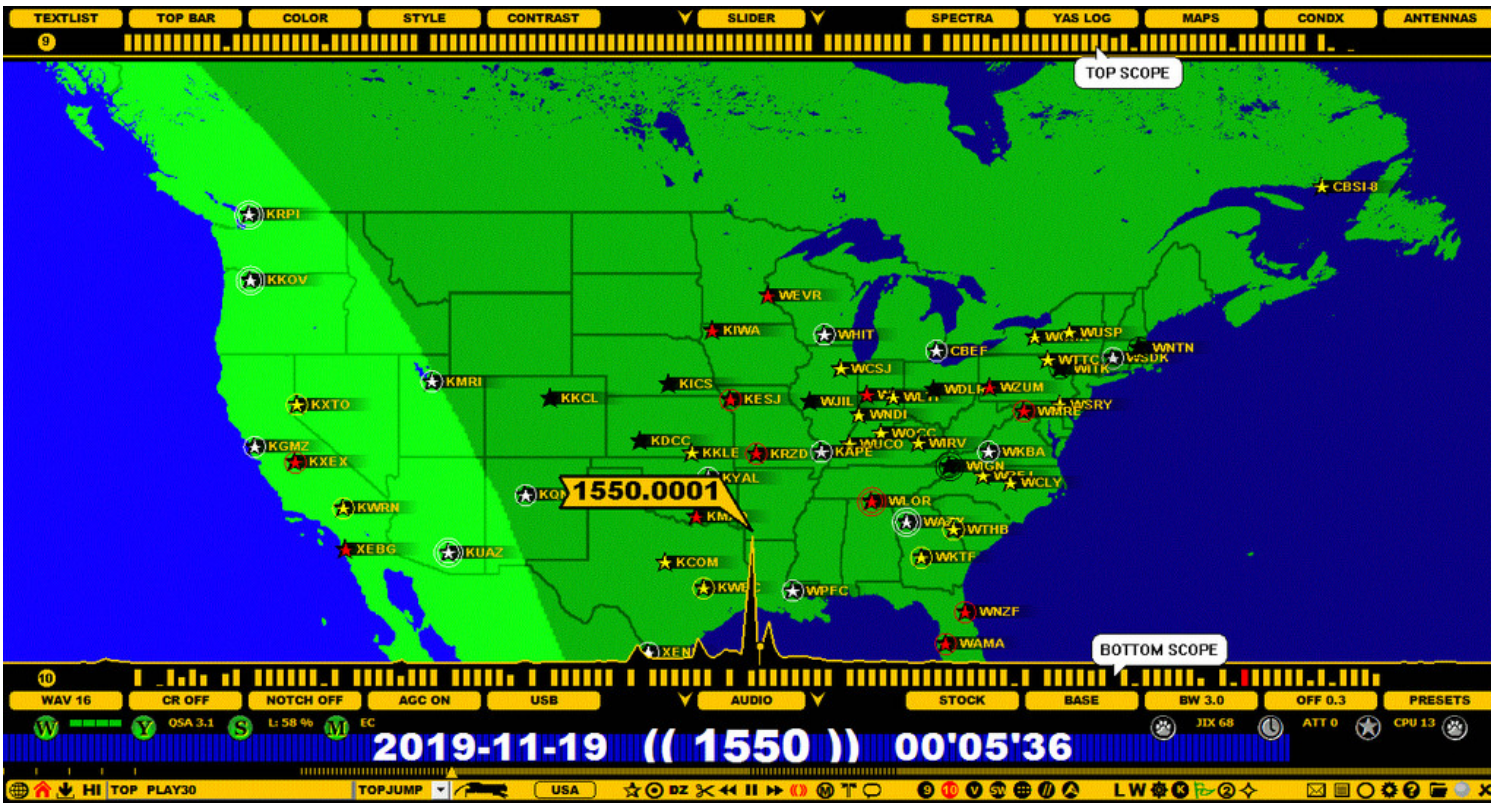
SCOPE

SCOPE is a convenient tool to monitor the signal strengths on all MW frequencies at the same time, either in the LIVE mode or in any ARCHIVE file. SCOPE can be also used for a direct jump to any desired frequency.

JAGUAR LITE supports only one SCOPE (on the bottom, "BOTTOM SCOPE"). You can define if you want to monitor MW10 or MW9 frequencies.

JAGUAR PRO has also a second SCOPE ("TOP SCOPE") available. Using the "twin scope" system, you can monitor the MW10 frequencies on the other SCOPE and the MW9 frequencies on the other SCOPE at the same time.

In addition, a twin SCOPE can be defined in JAGUAR PRO so that while being in the ARCHIVE mode, the BOTTOM SCOPE can show the MW10 dial (or the MW9 dial) of the current ARCHIVE file, but at the same time the TOP SCOPE can monitor the MW10 dial (or the MW9 dial) in the LIVE mode. This mode is called LIVE PEEKER: for example, while waiting for the conditions to improve during a DXpedition, you can focus on studying your ARCHIVE files but still monitor the LIVE band in the TOP SCOPE without jumping between ARCHIVE <> LIVE all the time.



HOW TO

The BOTTOM SCOPE is always enabled by default.

```
(( BOTTOM SCOPE ))
```

You can toggle the MW9 and MW10 frequencies by clicking the "9 / 10 ball" on the left edge of SCOPE. **JAGUAR PRO ONLY**: If you do not need the BOTTOM SCOPE, you can hide it via SETTINGS > GRAPHICS > BOTTOM_SCOPE > NO (see GUIDE > SETTINGS).

You can jump to any SCOPE frequency by clicking the corresponding bar.

Note that SCOPE uses a "quick'n'dirty" MW analysis, and there can be frequencies without signal power (bar) shown even if the frequency itself is open. These kind of situations happen if there is a strong powerhouse on a nearby frequency (normally 1 kHz away).

JAGUAR PRO ONLY

```
(( TOP SCOPE ))
```

You can use the TOP BAR button on SLIDER to open/close TOP SCOPE: click/scroll the button until you see SCOPE BAR displayed. Toggling MW9 and MW10 is available by clicking the "9 / 10 ball" on the left.

If you are listening to ARCHIVE files and also have the LIVE connection active, you will see the "LIVEPEEK" text grayed out at the right edge of TOP SCOPE. If you click that LIVEPEEK, the color turns to red, and now TOP SCOPE monitors the LIVE band instead of ARCHIVE. You can close the LIVEPEEK mode by clicking the X at that same spot.

Note that the LIVEPEEK feature is not available if "MINI-YAS" is used as the SCOPE mode. You can toggle the standard SCOPE mode and the MINI-YAS mode by pressing ALT-Y.

SCREENSHOT

JAGUAR contains an easy tool for taking screenshots, either of the full screen or of user-defined areas. The screenshot is saved to your JAGUAR folder in GIF format. GIF images offer an excellent compression/quality ratio. The screenshot files are named as SCREENSHOT YYYY-MM-DD HH'MM'SS.GIF.

JAGUAR PRO allows user-defined labels (STICKERS) to be added to screenshots before saving. See the STICKERS help for more information.

The SCREENSHOT (or the screenshot with STICKERS) format is the recommended format when using attachments in bug reports, etc., due to the small size: a full screenshot normally takes only about 200-300 kB.

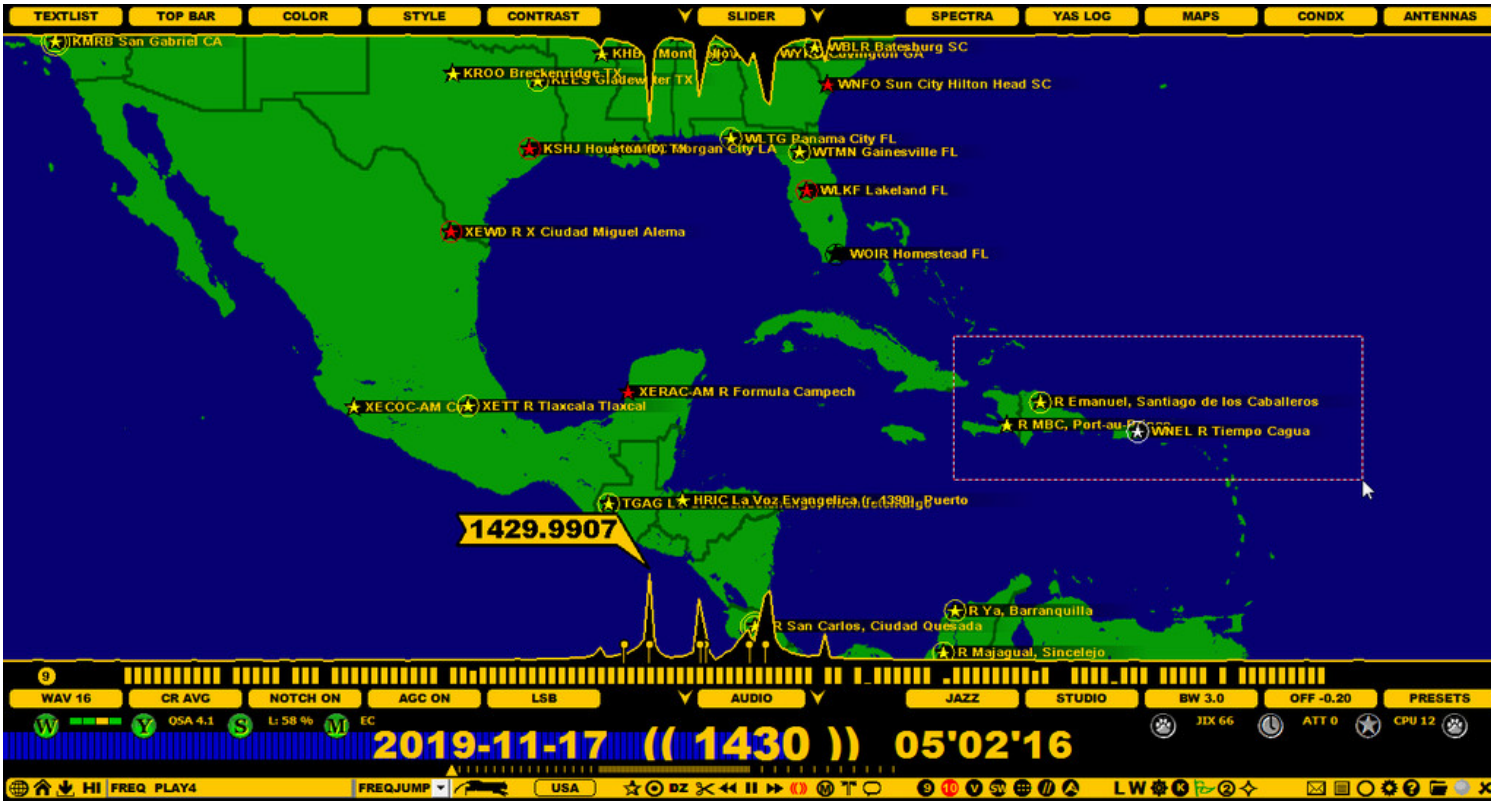
HOW TO

KEY = ALT-S

When you press ALT-S, JAGUAR freezes the normal display operations until the SCREENSHOT function is finished. If you now press ENTER, JAGUAR creates a full-screen SCREENSHOT and returns back to the normal operation mode.

If you want a SCREENSHOT of a user-defined area of the screen, do not press ENTER immediately after ALT-S. Instead, move your mouse around, and you will see a red-white square which can be used to define the screenshot area. A mouse left-click can be used to re-position the corner of this area, and when ready, press ENTER to take the screenshot.

A mouse right-click will cancel/quit the SCREENSHOT function without taking the screenshot.



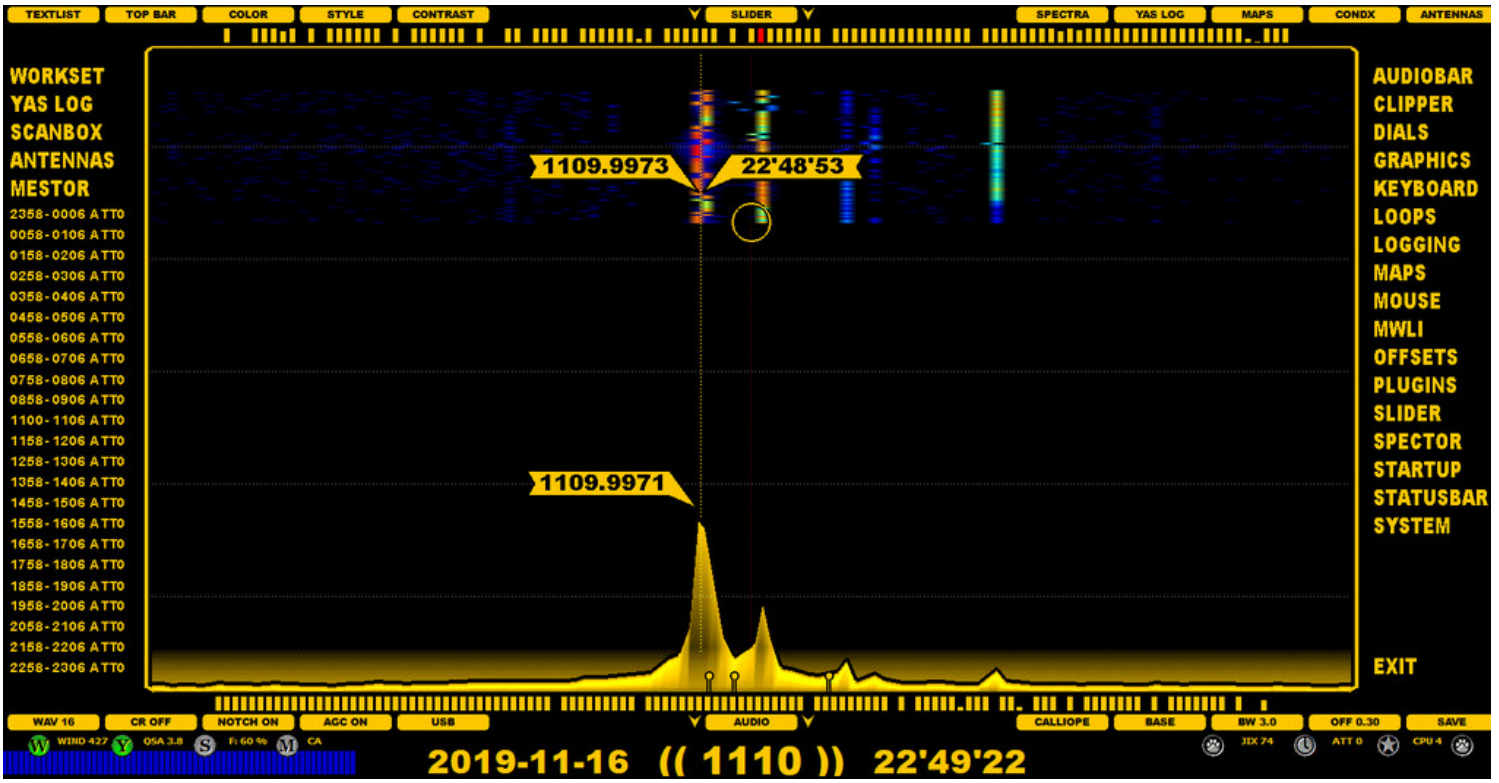
SETTINGS

JAGUAR's basic SETTINGS are controlled in the SETTINGS dashboard which consists of two panels, the left and right panel.

On the left, there is a menu for the "server" settings (WORKSET, YAS LOG, SCANBOX, ANTENNAS, MESTOR) and the currently-active recording scheduler list. On the right, there is a menu for all the "client" (= mostly playback-related) settings.

The settings defined in the left/right SETTINGS panels are always used as your defaults when JAGUAR is started. Some of the settings can also be changed via the buttons on SLIDER and AUDIOBAR, but those changes are valid only for the duration of the current session. When JAGUAR restarts, they are overridden by the settings defined via the SETTINGS panels.

In JAGUAR LITE, only the WORKSET and MESTOR settings can be modified.



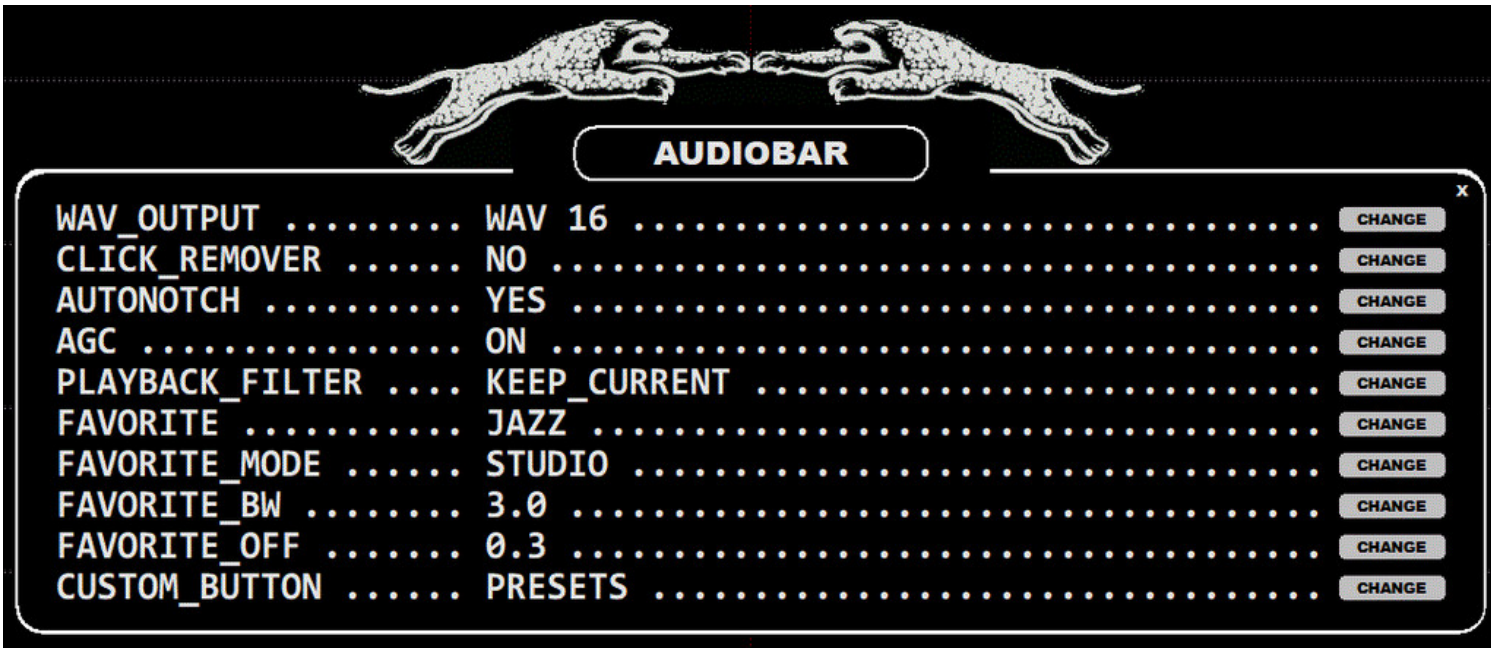
HOW TO

The basic settings can be changed by clicking the SETTINGS icon on TOOLBAR: the SETTINGS panels will be opened. Clicking any of the menu entries will open a "setting window" where the specific settings related to that group can be set and changed.

JAGUAR also has "quick launch buttons" on STATUSBAR for the most important "server" settings (WORKSET, YAS LOG, SCANBOX, MESTOR). See GUIDE > STATUSBAR for details on the W, Y, S and M buttons.

All the setting panels use the same display format. Each parameter can be set/changed by left/right-clicking the CHANGE button. Some parameters have only the YES / NO (or ACTIVE / INACTIVE) values; some parameters can have many pre-defined allowed values. These values can be rotated by a mouse left-click (next value), by a mouse right-click (previous value), or the values can be scrolled using the mouse wheel and/or the left/right arrow keys. Furthermore, some parameters will prompt a text box into which you must enter the desired parameter value (e.g. the disk/folder name used for saving the recordings). In these cases, the changes have to be confirmed by clicking SAVE.

For example, the SETTINGS > AUDIOBAR window can look like this:



THE LEFT PANEL

The parameters of the left-hand-side settings panel are described separately in GUIDE > WORKSET, GUIDE > YAS LOG, GUIDE > SCANBOX, GUIDE > ANTENNAS and GUIDE > MESTOR help sections.

The lower area in the left panel shows your currently-active scheduler action list (the time slots to be recorded next).

THE RIGHT PANEL

The parameters of the right-hand side settings panel are described as follows.

AUDIOBAR

```
WAV_OUTPUT ......... WAV 8 | WAV 16 | WAV 32 or WAV 10 | WAV 20 | WAV 40
```

The sampling rate for the audio output: 8 / 16 / 32 kHz when the 1.6-MHz bandwidth is in use, or 10 / 20 / 40 kHz when the 2-MHz bandwidth is in use. There is no "best" sampling rate, your preferences may vary. More about this in GUIDE > AUDIO.

```
CLICK_REMOVER ..... NO | LEVEL 1-9
```

Click Remover OFF (NO), or the click removal level by scrolling the button (the allowed values: LEVEL 1 <> LEVEL 9). More about this in GUIDE > CR and GUIDE > APPLETS > WAVE.

```
AUTONOTCH ..... ... ON | OFF
```

This enables/disables JAGUAR's AUTONOTCH. JAGUAR also offers a maximum of 20 manual notches, and they must be invoked in AUDIO WINDOW. See GUIDE > NOTCH for more details.

```
AGC ............... ON | OFF | OFF+
```

Automatic Gain Control, rotate the AGC mode: AGC ON > AGC OFF > AGC OFF+. More information in GUIDE > AGC.

```
PLAYBACK_FILTER ... KEEP_CURRENT | FAVORITE | CUSTOM_FREQS
```

Decide what filters will be used when you tune in to a new frequency. KEEP_CURRENT keeps the currently-used filter settings, FAVORITE restores your favorite filter settings, CUSTOM_FREQS loads the previously saved frequency-based filter settings (if any). Otherwise, the favorite settings are used.

```
FAVORITE .......... STOCK | JAZZ | CALLIOPE | AM MODE
```

Your favorite filter.

```
FAVORITE_MODE ..... BASE | STEEP | STUDIO
```

Your favorite filter mode (filter curve).

```
FAVORITE_BW ....... X.X kHz
```

Your favorite filter bandwidth.

```
FAVORITE_OFFSET ..... X.X kHz
```

Your favorite filter offset.

```
CUSTOM_BUTTON ..... PRESETS | RESET | SAVE
```

Select the function mode for this button.

CLIPPER

```
CLIPNAME ..........
```

Override the default clipname with your own naming format. When making audio clips with CLIPPER, the default naming format is:

```
DATE TIME CLIP FREQ.MP3
```

or, if you have clicked the station name on the map, or in the station database before starting CLIPPER:

```
DATE TIME NAME FREQ.MP3
```

You can customize the default name, using 4-character symbols:

```
#FREQ #DATE #TIME #NAME #CALL #SSB #LPRF (=log profile) and literals
```

For example, if you want your audio clip names to start with the frequency and use underscores in the name so that the clip files can be used in URLs, you can create the following naming template:

```
CLIPNAME=#FREQ_#CALL_#DATE_#TIME_IPA.MP3
```

which will generates clip names such as "1030_WBZ_2015-11-08_06'00'00_IPA.MP3"

```
CLIP_FOLDER ........ Path-to-clip-folder
```

By default, the SAVE function of CLIPPER saves the audio clips to the CLIPS folder located in the JAGUAR installation folder. You can override this default folder here. In addition, if you have defined LOGPROFILEs, there can be a maximum of three separate clip folders (CLIPFOLDER1=, CLIPFOLDER2= and CLIPFOLDER3=), one for each LOGPROFILE. More details in GUIDE > LOG PROFILES.

```
CLIP_ARCHIVE ...... Path-to-clip-archive
```

Your audio clip archive folder, used by CATBOOK. See GUIDE > CATBOOK for details.

```
MP3_TAGS .......... YES | NO
```

If enabled, basic MP3 tags will be embedded to MP3 audio clips: TITLE = base frequency, ARTIST = station name, ALBUM = date/time stamp. Most MP3 players can display this data in various ways.

DIALS

See GUIDE > DIALS for details.

GRAPHICS

```
FAT_TOP ...... YES | NO
```

If enabled, SLIDER will never cover DATABASE BAR, instead when SLIDER is closed, it is docked below DATABASE BAR.

```
FLAGSPOT ...... YES | NO
```

If enabled, a flag marker is shown at the "runspot" (playback position) on the SPECTRA and YAS displays.

```
SCOPE_STYLE ...... DEFAULT | YAS
```

If YAS is selected, the SCOPE bars are shown in the YAS format.

```
BOTTOM_SCOPE ...... YES | NO
```

Set this to NO if you do not need the bottom scope.

KEYBOARD

```
ANTENNAKEYS ...... YES | NO
```

If enabled and ANTENNAS have been defined, the PF (function) keys can be used as antenna switchers.

```
DELETEKEY ...... YES | NO
```

If enabled, pressing the DELETE keyboard key will delete the currently-playing file. A confirmation box will be always displayed before the deletion.

```
SPACEBAR...... LOOP | JAGASS
```

Define what happens when the spacebar is pressed. See GUIDE > JAGASS for details.

```
S-KEY ...... SCANBOX | SCOPE | SIXPACK | SETTINGS
```

Define the display to be opened/closed when the "s" key is pressed.

```
M-KEY ...... MAPS | MESTOR | MINIMIZE | MIDGET
```

Define the display to be opened/closed when the "m" key is pressed.

LOOPS

```
AUTOLOOP ...... YES | NO
```

If enabled, a loop around TOHs (top-of-the-hours) and BOTs (bottom-of-the-hours) will be created when the opened playback file contains a TOH or BOT.

```
TOH ............. Starttime,endtime
```

Define the time period for audio looping around the top of the hour. The default TOH LOOP is from XX:59:40 to XX:00:05. You can increase/decrease the duration. For example, `TOH .... XX:59:30-XX:00:30` overrides the default TOH LOOP with the new values ranging from XX:59:30 to XX:00:30.

```
BOT ............. Starttime,endtime
```

Define the time period for audio looping around the bottom of the hour. The default BOT LOOP is from XX:29:50 to XX:30:10. You can increase/decrease the duration. For example, `BOT .... XX:29:30-XX:30:30` overrides the default BOT LOOP with the new values ranging from XX:29:30 to XX:30:30.

```
WWI ............. X seconds
```

By default, pressing the spacebar creates a "What Was It" audio loop. The default duration is 10 seconds but you can change this value. The WWI values between 0 and 10 seconds are allowed. 0 (zero) means that the WWI audio loop is disabled, i.e. pressing the spacebar will be ignored.

LOGGING

```
LOGTAG ...... Px (COLOR)
```

JAGUAR will use (P4) BLUE for the logged stations on MAPS / TURTLE by default. This can be overriden with LOGTAG. For example, P3 (BLACK) will change the default to black.

```
LOG_AND_CLOSE ............. YES | NO
```

If enabled, JAGUAR closes LOGBOX/CATBOX automatically after SUBMIT/SAVE.

```
LOGMODE ............. Parameters
```

You can customize the default log format JAGUAR produces in many ways. For example, if LOGFORMAT=OLL is used, JAGUAR will create log rows which are compatible with the OLL logging system. Also, the output row can be freely customized with fixed literal strings and LOGMODE parameters. Each parameter is four characters long, preceded by #. JAGUAR translates the parameter name to its value while logging. The valid parameters are as follows:

```
#NAME #FREQ #DATE #TIME #CALL #ITUC #USER #USRN #OFFS #QSAC #ZONE #YYYY #MMMM #DDDD
#HHHH #MINS #MNTH #SECS #FILE #LINE #DIST #COMM # TENT #SINP #CALX #NAMX #LPRF #TABS
```

For example, when

```
LOGMODE=#FREQ #TIME #NAME #COMM #USER
```

is defined, LOGGERBAR generates log lines with frequency, time, station name, comments and userid.

```
LOGMODE=#FREQ;#CALX;#NAMX-#COMM;#SINP;#HHHH#MINS;#DDDD/#MMMM;USER
```

This setting will generate an optimal logging line for the MWC log format; #CALX and #NAMX will generate strings designed for MWC in mind. USER must be replaced by the user initials used in MWC, which may be different from #USER which generates the JAGUAR userid. All values are separated by a semicolon, so the output file can also be loaded to Excel.

```
LOG_FOLDER ............. Path-to-log-folder
```

By default, all JAGUAR-generated logs are saved in the LOGS folder under the JAGUAR installation folder. You can override this default folder with this parameter.

MAPS

```
MAP_STYLE ............. STANDARD | TOPOGRAPHIC | TERRITORIAL | DARK NEON
```

Define the desired map presentation style.

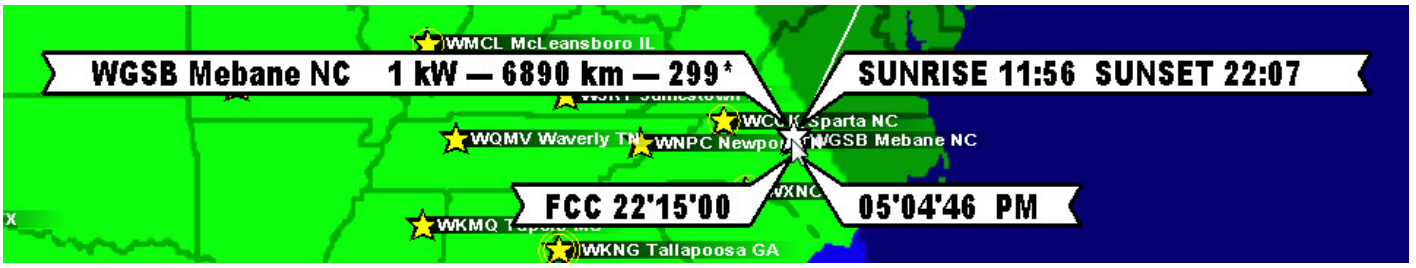
```
NIGHT_CONTRAST ............. LEVEL 0-10
```

Define how dark the night areas will be displayed.

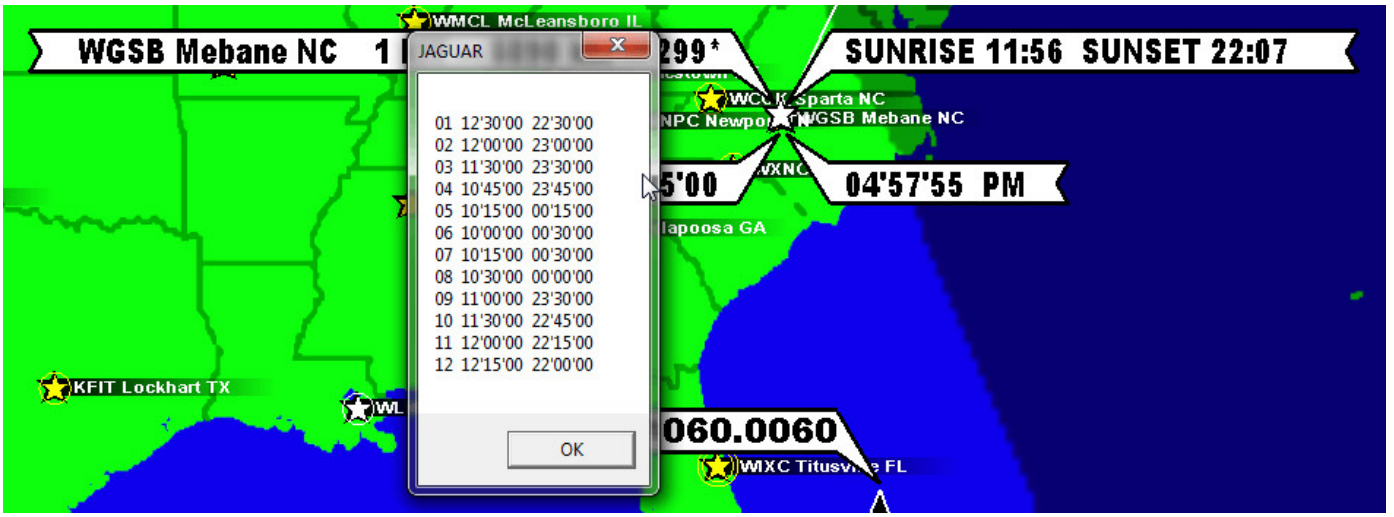
```
STATION_POINTER ............. MINI FLAG | STANDARD | STANDARD with US EXTENDED
```

Select the desired presentation format for the station pointer on the maps:

- MINI FLAG = Short name/call sign only
- STANDARD = Full station name, tx power, distance from your QTH and direction from your QTH are shown, in addition to the sunrise and sunset times (UTC) at the tx QTH, US EXTENDED = Normally, the STANDARD pointer is used but U.S. stations are shown as a "drone pointer": STANDARD pointer with two additional "wings": local time at tx QTH (internet connection required, this time is based on the time on PLAYBAR) and "FCC time" (= "monthly average sunrise/sunset time" used in FCC regulations for the transmitting times and/or day/night tx power/pattern switches).



Tip for NA DXers: if you tick SETTINGS > GRAPHICS+ > STICKY POINTER, you can use a special function related to US EXTENDED pointer. When STICKY POINTER is activated, the station pointer remains visible when you move the mouse away from the station. Now if you move the mouse over the FCC data and click it, you will get the "FCC TABLE" (i.e. LSR / LSS times for each month for this station; these times are the official signoff/signon times for daytimers, with some exceptions).



`MAP_TIMES ..... YES | NO`

If enabled, the Great Circle Line / NOX time / sunrise and sunset times at rx QTH are shown when the mouse is hovered over a station on MAPS. The NOX time (shown along the line as a red ball) is the midnight time at the geographical midpoint between the Transmitter and the Receiver QTH. Experience has shown that the midpoint midnight can be one of the best potential times to catch good "ultra-long" MW DX stations from the other side of the globe.

`US_PATTERNS ..... NO | ALL PATTERNS - DAY | ALL PATTERNS - NIGHT | MOUSE CURSOR - DAY | MOUSE CURSOR - NIGHT`

Select the mode how the covera area patterns are shown when you tune in to a new NA frequency. If `MOUSE CURSOR ...` option is selected, the pattern is shown only when the mouse is moved over some specific station on the map.

MOUSE

`FULL_CROSSHAIR ..... YES | NO`

If enabled, also the horizontal mouse cursor line is shown on the SPECTRUM displays.

`STICKY_POINTER ..... YES | NO`

If enabled, the station pointer on MAPS will stay visible for the pointed station until a new station is selected by moving the mouse over another station.

`ROW_HILITE ..... YES | NO`

If enabled, the "Hilite the current row" feature is activated on the TURTLE database.

`FIXED_MOUSE_FLAG ..... YES | NO`

If enabled, the cursor flag position is fixed, on the top of the spectrum display.

`REVERSEWHEEL ..... YES | NO`

If enabled, the direction of mouse scrolling is reversed in the main operations.

`RIGHT_CLICK ..... JUMPERS | TOP MENU | MOUSETRAP | LSB <> USB | SPECTRA | CUSTOMKEY | MIDGET | FLAGS`

The RIGHT_CLICK functionality of the mouse on the background screens ("WALLPAPERS") can be selected from the following options:

- JUMPERS: Open/close the big JUMPER buttons
- TOP MENU: Open/close the main top menu
- MOUSETRAP: Re-locate the mouse to the rightenmost PAWBUTTON (basebutton)
- LSB <> USB: Toggle between LSB and USB

- SPECTRA: Right-clicking toggles HOME <> HISTORY
- CUSTOMKEY: If you set this option, JAGUAR will ask you to press the keyboard key you want to bind the RIGHT_CLICK to. After this binding, the mouse right-click on the graphics area will always invoke the function bound to the selected keyboard key
- MIDGET: Enter the MIDGET mode where JAGUAR continues the playback with the basic functions while you can focus on using some other application at the same time
- FLAGS: Show/hide the offset flags

MWLI

If you want to submit your loggings to MWLI, you will need to set your MWLI email address and omid. See GUIDE > MWLI for details.

OFFSETS

```
OFFSET_BAR ............... YES | NO
```

If enabled, the "offset bar" (gradient color bar) will always be visible, i.e. the area where the mouse shows the red "offset flag"

```
OFFSET_PEEK ............... YES | NO
```

If enabled, JAGUAR will show the stations which are listed on the exact offsets pointed by the mouse. These stations are shown next to the mouse cursor line when you move the mouse on the OFFSET_BAR area on the spectrum displays.

```
SHORT_FLAG_NAMES ............ YES | NO
```

If enabled, JAGUAR will show the global flags with short text labels (the exact frequencies are not included in the text).

```
FULL_SIZE_PINS ........... YES | NO
```

If enabled, your own offsets will be shown as big "tower" markers.

PLUGINS

See GUIDE > PLUGINS for details.

SLIDER

```
TEXTLIST ............... DAYLOG | MWLI | DISTANCE | VOYAGER | OFF
```

Text list overlay mode. DAYLOG, MWLI and VOYAGER have separate detailed GUIDE sections.

```
TOP_BAR ............... SCOPE BAR | TITLE BAR | MSG BAR | OFF
```

Set the TOP BAR mode. More details in TOP BAR.

```
COLOR ............... ICE BLUE | WHITE | GREEN | GRAY | YELLOW | BLUE
```

JAGUAR's color theme.

```
SPECTRUM_STYLE ............ STANDARD | GLOW | XRAY | CATWALK
```

The style how the spectrum is presented. More information in GUIDE > XRAY and GUIDE > CATWALK.

```
SPECTRUM_CONTRAST ........... X.X
```

The default value for the spectrum gradient color power ("contrast"). Define a low value in the high-signal-level areas and higher value in the low-signal-level areas. SPECTRUM_CONTRAST is the general default value used for spectra when JAGUAR is started. Normally, the optimal CONTRAST value depends on the spectrum style used and the frequency. CONTRAST can be be finetuned via SLIDER > CONTRAST during the DX session whenever needed.

SPECTOR

```
FAST_CALIBRATE ............... Frequency (or list of frequencies separated by comma) used in calibration
```

Frequencies are given with four decimals, e.g. 828.0000 (single frequency) or 828.0000, 899.9988, 1341.0001 (frequency list). If a single frequency is given, clicking TOOLBAR > KALIBRATION makes the calibration using that frequency, but if a list of frequencies is given, clicking TOOLBAR > KALIBRATION gives a popup menu for selecting the frequency used for calibration. More details in GUIDE > KALIBRATE.

```
AUTO_CALIBRATE ............... YES | NO
```

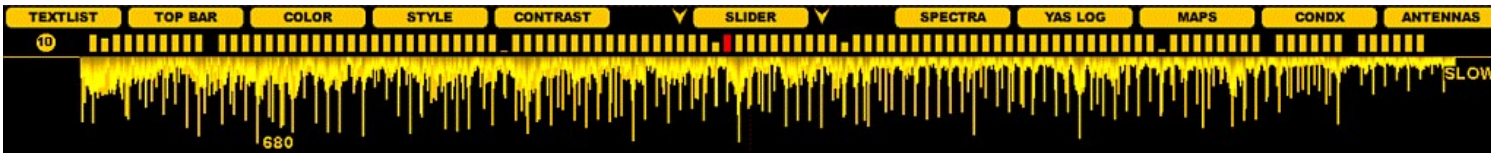
If enabled, automatic calibration will be performed all the time in the background, based on the current calibration frequency. The default is NO. AUTO_CALIBRATE = YES is useful only if you have a stable calibration frequency or an external GPSDO; otherwise this continuous auto-calibration mode may cause annoying left-right spectrum jumps on the display. AUTO_CALIBRATE cannot be used if FAST_CALIBRATE is not enabled.

```
DOWNSIZE ............... YES | NO
```

If enabled, SPECTOR peak sizes are cut to half, and you will get more graphics area visible

```
TOP_SPECTOR ............. NO | SINGLE_FREQ | FULL_MW
```

If enabled, you can select either "SINGLE_FREQ" mode (a mirror image of the standard SPECTOR on the top of the display) or "FULL_MW". In the FULL_MW mode you can select also the "spectrum speed" (button on the right): SLOW | FAST | REAL (real time). When the SLOW mode is selected, the strongest station (frequency) on MW is listed next to the corresponding peak.




```
TRANSPARENCY ............ YES | NO
```

If enabled, SPECTOR peaks are displayed transparent, i.e. FLAGS, etc. can be seen behind the SPECTOR peaks.

```
SPECTOR_SHADOW ........... YES | NO
```

If enabled, the SPECTOR area is filled with a gradient color.

```
SPECTOR_SIGHT ........... YES | NO
```

If enabled, a "rifle grid" is shown around the nominal frequency.

```
SPECTOR_SIZE ........... SMALL | MEDIUM | BIG | GIANT
```

The default SPECTOR (and spectrum) display resolution.

STARTUP

```
START_AS ............. HOME | HOME AS HORIZONTAL | YAS | MINIMIZED | U-96
```

Select the display screen what is shown right after the JAGUAR start. If START_AS MINIMIZED is selected, JAGUAR will stay idle (no connection to Perseus) until a playback or recording request is activated.

U-96 combines several visual options, the result resembles a sea view by night from a submarine perspective.

```
START_INFO ............. NO | 1-15 SECONDS
```

If enabled, INFOBOX will be shown for the selected duration at the JAGUAR start.

```
START_MESSAGE ............. NO | Audio message text
```

If any text is given, that message will be played at the JAGUAR start.

STATUSBAR

```
SOLAR_DATA ............. WIND | COLORS
```

Define the format how the solar data will be presented on the STATUSBAR when SETTINGS > YAS LOG > SOLAR_DATA has been activated.

```
QSA_GAIN_SIR ............. QSA | SIR | GAIN
```

Select the information you want to see on this specific statusbar area (see GUIDE > SIR for details about Signal-to-Interference-Ratio).

```
LEFTPAW ............. DEFAULT | User defined
```

If changed from DEFAULT (= "w", WALLPAPER), JAGUAR will ask you to press the keyboard key you want to bind the LEFTPAW left-click to. After this binding, LEFTPAW left-click will invoke the function bound to the selected keyboard key.

```
RIGHTPAW ............. DEFAULT | User defined
```

If changed from DEFAULT (= "p", PREV FILE), JAGUAR will ask you to press the keyboard key you want to bind the RIGHTPAW left-click to. After this binding, RIGHTPAW left-click will invoke the function bound to the selected keyboard key.

```
LEFTPAW_RCLICK ............. DEFAULT | User defined
```

If changed from DEFAULT (= "q", CONTINENT), JAGUAR will ask you to press the keyboard key you want to bind the LEFTPAW right-click to. After this binding, LEFTPAW right-click will invoke the function bound to the selected keyboard key.

```
RIGHTPAW_RLICK ............. DEFAULT | User defined
```

If changed from DEFAULT (= "n", NEXT FILE), JAGUAR will ask you to press the keyboard key you want to bind the RIGHTPAW right-click to. After this binding, RIGHTPAW right-click will invoke the function bound to the selected keyboard key.

SYSTEM

```
HOMESCAN ............. NO | XX SECONDS
```

If enabled, you can define the "density" of the HOMESCAN spectrum run. See GUIDE > HOMESCAN for details.

```
AUTOSAVE ............. YES | NO
```

If enabled, JAGUAR saves the HOME spectrum periodically. HOME spectrum displays can also be saved manually by clicking TOOLBAR > SAVE.

```
TRACKER ............. YES | NO
```

If enabled, JAGUAR collects playback history and shows it on the TRACKBAR. See GUIDE > TRACKBAR for details.

```
TOOLTIPS ............. YES | NO
```

If enabled, short help texts will be shown when the mouse hovers over the buttons on SLIDER / AUDIOBAR / STATUSBAR / TOOLBAR.

```
MAX_CPU ................ YES | NO
```

If enabled, the CPU is fully utilized in audio de-modulation. If you disable MAX CPU, you will achieve some savings in the CPU usage as some calculations are skipped in audio processing. Normally, they go unnoticed in the final audio.

```
CONFIRMATIONS ............. YES | NO
```

If enabled, extra confirmation popups will be shown in some functions.

```
END_OF_FILE ............. NEXT | KEEP | FQUP |FQDN
```

Define what happens when the playback reaches the end of the file. By default, JAGUAR continues to play back the next file (NEXT) when the end-of-file is reached in the current file. This behaviour can be changed with this parameter.

The other options available are:

```
- KEEP: Return to the beginning of the file on the current frequency.
- FQUP: Increase the frequency according to the selected frequency-stepping.
- FQDN: Decrease the frequency according to the selected frequency-stepping.
```

```
KEEP_MAXIMIZED ............. YES | NO
```

If enabled, JAGUAR will stay in the full-screen mode. JAGUAR will not automatically enter the minimized mode. Normally, the minimized mode is invoked if there is no user activity in one hour. It is not recommended to keep this enabled in unattended operations: the minimized mode minimizes the resource consumption.

```
BANDSTOPPER ............. YES | NO | CIRCULAR
```

Controls how the frequency-scrolling behaves when either end of the MW band is reached. The default is CIRCULAR, i.e. the circular mode: when either end of the dial is reached, the control jumps to the beginning/end of the dial. YES stops scrolling when the end of the dial is reached. NO allows the user to access the "grey area" of the bandwidth, i.e. outside the alias-free area of the wideband recording.

SHORTCATS

Keyboard SHORTCATS are short keywords that must be given with uppercase keyboard keys (the lowercase keys will trigger the old standard keyboard shortcuts).

SHORTCATS can be divided into "WORLD SHORTCATS" and "USA SHORTCATS". Their functionality differs a bit. Any SHORTCAT consists of 1-4 characters and it must be ended by pressing ENTER.

SHORTCATS require the TURTLE database version TURTLE-2020-04 or newer.

HOW TO

Type in a SHORTCAT using uppercase keyboard keys and press ENTER. If you want to return back from the SHORTCAT results, click TOOLBAR > 9 / TOOLBAR > 10, or click the continent button on the top. If you want to keep the result dial (VFO stepping), but show all stations on each frequency, press ESC.

WORLD SHORTCATS

If the SHORTCAT given is a standard ITU code, JAGUAR creates a frequency list (dial) to VFO, and you can immediately see the list of the stations in that country on the TURTLE window, and start scanning those frequencies by the mouse wheel and/or the left/right arrow keys. Some countries have stations on all MW frequencies (e.g. USA and MEX) so this is not very useful for them (more about USA/CAN/MEX below). In addition, there are DX-wise interesting networks in some countries, so instead of E (Spain), you can also type the network name: SER, COPE, RNE1 or RNE5.

ITU (and network) shortcats can be given on any frequency: if matches are found, the control is moved automatically to a matching frequency (also the continent is changed automatically).

At the moment, there are not many network shortcats included but this service can grow little by little if there is more interest in this.

USA SHORTCATS

USA/CAN/MEX shortcats are a bit different: the shortcat (format, network or state) search is focused only on the stations on the currently-playing frequency and no "dial" is created (so the shortcat is released automatically when you change the frequency). The US station shortcats are created with "fuzzy logic": shortcats are based on the language, formats and networks. For example, if you hear Spanish on AM 1400 when DXing North America, you can give the shortcat SS and press ENTER. You will see all the stations from USA and MEX which are tagged with the shortcat SS (in spite of the format listed).

NOTE: If you want to extend the USA SHORTCAT search to cover the full MW (ie. list all stations in the selected state or list all stations that are affiliates in the selected network), you must use the DATABASE BAR: SHOW MW ... FIND TEXT using the SHORTCAT as the text input.

USA shortcats will support "clues what you hear on the frequency": if you hear "Relevant Radio", you can use the shortcat RELR; if you hear something related to Fox ("Fox Sports" or "Fox News"), you can use the shortcat FOX; if you hear a familiar song or a slogan containing the word "Hits", you can use the shortcat HITS; if you find programming with Christian content, you can use the shortcat REL, etc.

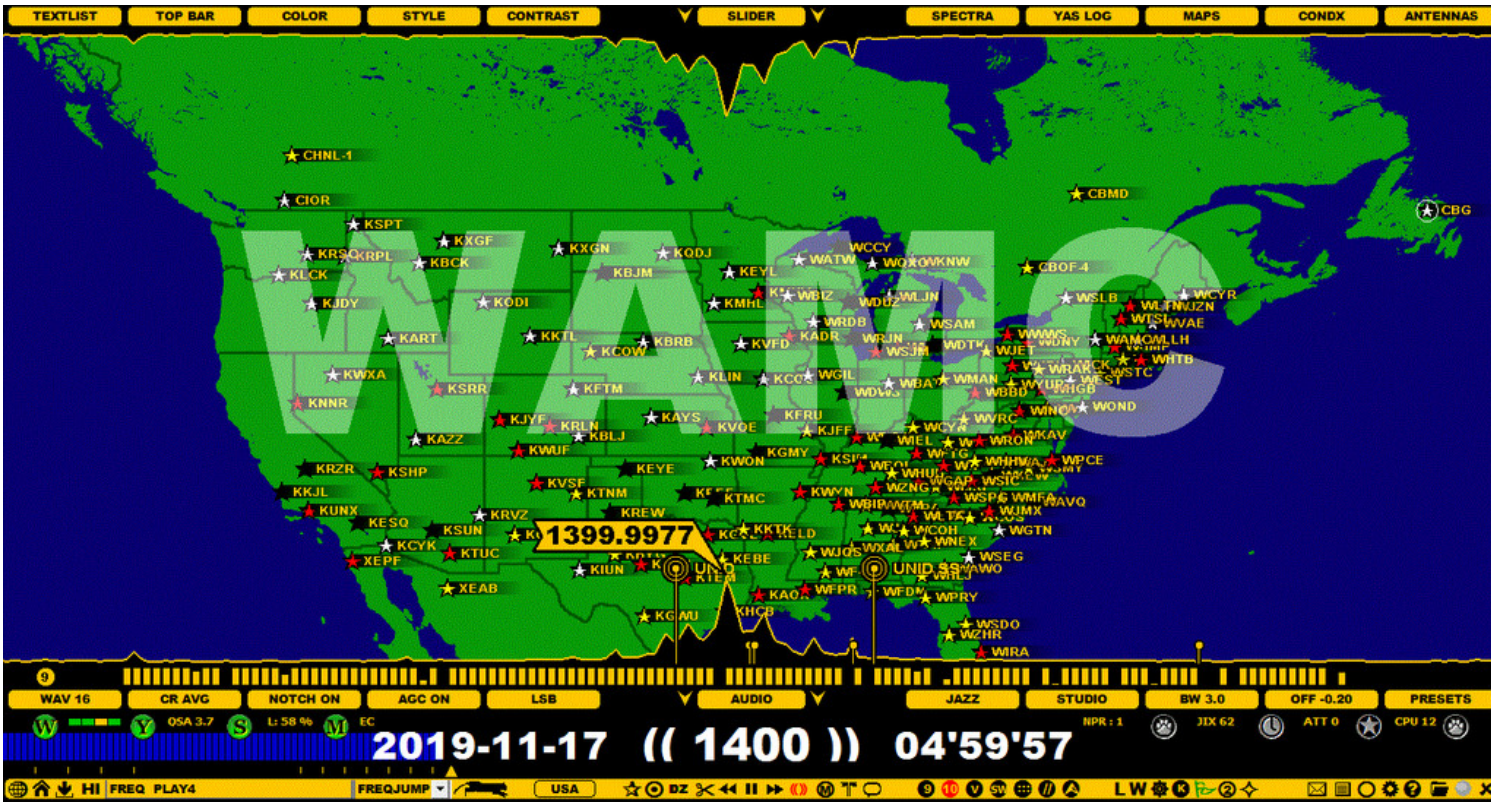
Talk-oriented stations are difficult to categorize, and there is no sense to copy the "FORMAT" column here so there are no shortcats as NWS or TLK. Instead, you may try to type in what you hear: at the moment, there are shortcats such as RER ("Red Eye Radio" affiliates) and C2C ("Coast-to-Coast" affiliates), later probably more.

The currently available "USA SHORTCATS" are as follows:

```
HITS - stations playing "hits"
OLD - stations playing "oldies" (well, they are "HITS" too)
CW - stations with C&W orientation
NOS - stations with nostalgia / adult standards orientation
SS - spanish speaking stations in USA and Mexico
MEX - Mexican stations
CBC - Canadian CBC stations
REL - religiously oriented stations
RELR - Relevant Radio affiliates
NPR - National Public Radio affiliates
EWTN - EWTN affiliates
ETN - Multicultural ("ethnic") stations: programming language being something else than Spanish or English
FOX - Stations carrying Fox News or Fox Sports programming
ESPN - ESPN affiliates
BIZ - stations with "business talk" orientation
RER - Red Eye Radio affililiates
C2C - Coast-to-Coast affiliates
CC - Coast-to-Coast affiliates (just a faster shortcat for Coast-to-Coast)
```

This service can never be perfect, and anyone can say that "no, this is not correct", and he/she is absolutely right: it is very easy to find an exception. For example, the MWLI database lists 71 hits for Red Eye Radio, but the Red Eye Radio web site lists 141 affiliates. We have included those 141 stations even though there seems to be stations which are no more RER affiliates. The same with C2C: there are 415 C2C affiliates on their website but even that is not correct (for example, one station listed as a C2C affiliate has moved to Spanish back in 2019).

However, this feature may be helpful if you just want to make a quick check for "potential hits" on a U.S. frequency based on what you hear. It does not take much time to try. And if there happens to be only one hit for any U.S. shortcat on the currently-playing frequency, JAGUAR at least will show it clearly enough. For example, if you happen to hear NPR on AM 1400, type it in and see what you will get:


TEXTLIST
TOP BAR
COLOR
STYLE
CONTRAST
SLIDER
SPECTRA
YAS LOG
MAPS
CONDX
ANTENNAS
WAVE
1399.9977
WAV 16
CR AVG
NOTCH ON
AGC ON
LSB
AUDIO
JAZZ
STUDIO
BW 3.0
OFF -0.20
PRESETS
QSA 3.7
L: 58 %
EC
NPR : 1
JIX 62
ATT 0
CPU 12
2019-11-17 ((1400)) 04'59'57
HI
FREQ PLAY4
FREQJUMP
USA

SHORTWAVE

Even though JAGUAR is purely designed for MW DXing, there can be situations when you want to tune in to the shortwaves, too. JAGUAR has an adequate support for SW, for example, for picking up new stations that appear on the shortwave dial.

When tuned to any SW frequency, most basic JAGUAR features and displays are available. TURTLE (= the MW database) will automatically be changed to RABBIT (= the SW database). Frequency stepping is changed to a stepping of 5 kHz. Also, the center frequency is changed automatically so "jump to SW" is all what is need to be done.

All audio-related functions and CLIPPER are fully available; however, SW stations are not displayed on MAPS, and YAS LOG is not supported on SW.

HOW TO

In the LIVE mode, you can type any shortwave frequency and press ENTER. The playback control jumps to that frequency, and a new center frequency will be set automatically in the background (center = the playback frequency minus 10 kHz).

You can also jump to the shortwaves by clicking the TOOLBAR > SW icon.

By default, the new SW frequency is 12095 kHz (used by BBC) but JAGUAR remembers the last tuned SW frequency, and when this SW button is clicked next time, the last tuned SW frequency will be used, instead of 12095 kHz.

When you want to return to MW, you can click any TOOLBAR > 9 | 10 icons, or enter any MW frequency, followed by ENTER.

The SHORTWAVE mode uses the RABBIT database, instead of TURTLE. RABBIT requires an internet connection, and the stations listed can be selected on DATABASE BAR between ALL stations <> currently transmitting stations ("ON AIR").

On the shortwaves, frequency calibration is not available.

SIR

SIR ("Signal-to-Interference Ratio") is a new feature developed to help automatic offset hunting in VOYAGER (see details in the VOYAGER help).

Most DXers are familiar with SNR ("Signal-to-Noise Ratio") but SIR is something new. When trying to find potential hits (i.e. audible signals) based on any given offset, we usually have to deal with many interfering stations on the same frequency. This is why SNR is not useful for this task.

We can also study the plain signal power on the desired offset but this is not optimal, either. Such an algorithm would not pick the time spots we are especially interested in but most likely the times when there is generally lots of signal power on that frequency (especially at the nighttime and/or when the antenna preamp is enabled). Instead, we are interested in the times when the relative signal power on that desired offset is the highest, compared to the signal power of the highest offset peak(s), So, when defining SIR in this way, it will also cover the cases where the desired offset itself is the highest.

The SIR value for a given offset is

- the signal power of that offset divided by the strongest offset peak on that frequency,

unless the studied offset itself is the highest; in that case, the SIR value for this offset is the signal power divided by the 2nd strongest offset peak. This is probably easiest to understand with examples. The SIR value can change rapidly over time; therefore, the better resolution you use in SCANS, the better results you will get in SIR-based offset hunting:

- SIR 0.2: The offset of interest is 5 times weaker than the currently strongest offset on the frequency.
- SIR 1.0: There is another offset peak on the frequency which is exactly as strong as the one we are interested in.
- SIR 3.5: The offset of interest is 3.5 times stronger than the next strongest offset on the frequency.

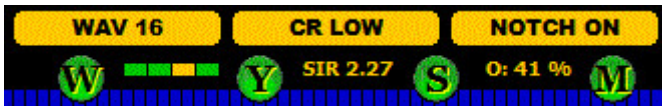
In most cases, the most powerful signal peak is also the one which is audible (if any). However, this may not always be true, but normally it can be kept as a general guideline. There is not much information available under what circumstances a "lower peak" can dominate in terms of audio. However, when searching for "potentially legible" time spots for an offset, you can just scan the recordings and keep a list of the highest SIR values which can then further studied with traditional listening.

It will be interesting to see what the lowest useful SIR values are for picking up an ID. Quite likely it can be very low on regional channels if there is only one additional dominant station present (and it happens to have a short break e.g. at TOH). On the crowded graveyard channels it is quite likely that the lowest SIR with audio will be much higher (probably SIR > 1.0).

The problem with classic spectrum displays is that it is often impossible to see the difference of the peak powers just from the spectrum colors along the timeline. In the future, SIR values can be used for evaluating the "relative offset power".

HOW TO

SIR is controlled and handled automatically by JAGUAR; you just have to be aware of this feature. The SIR value for the currently-playing exact offset can be seen on the status bar if you rotate (by clicking) the QSA > RF GAIN > SIR.


WAV 16
CR LOW
NOTCH ON
W
Y
SIR 2.27
S
O: 41 %
M

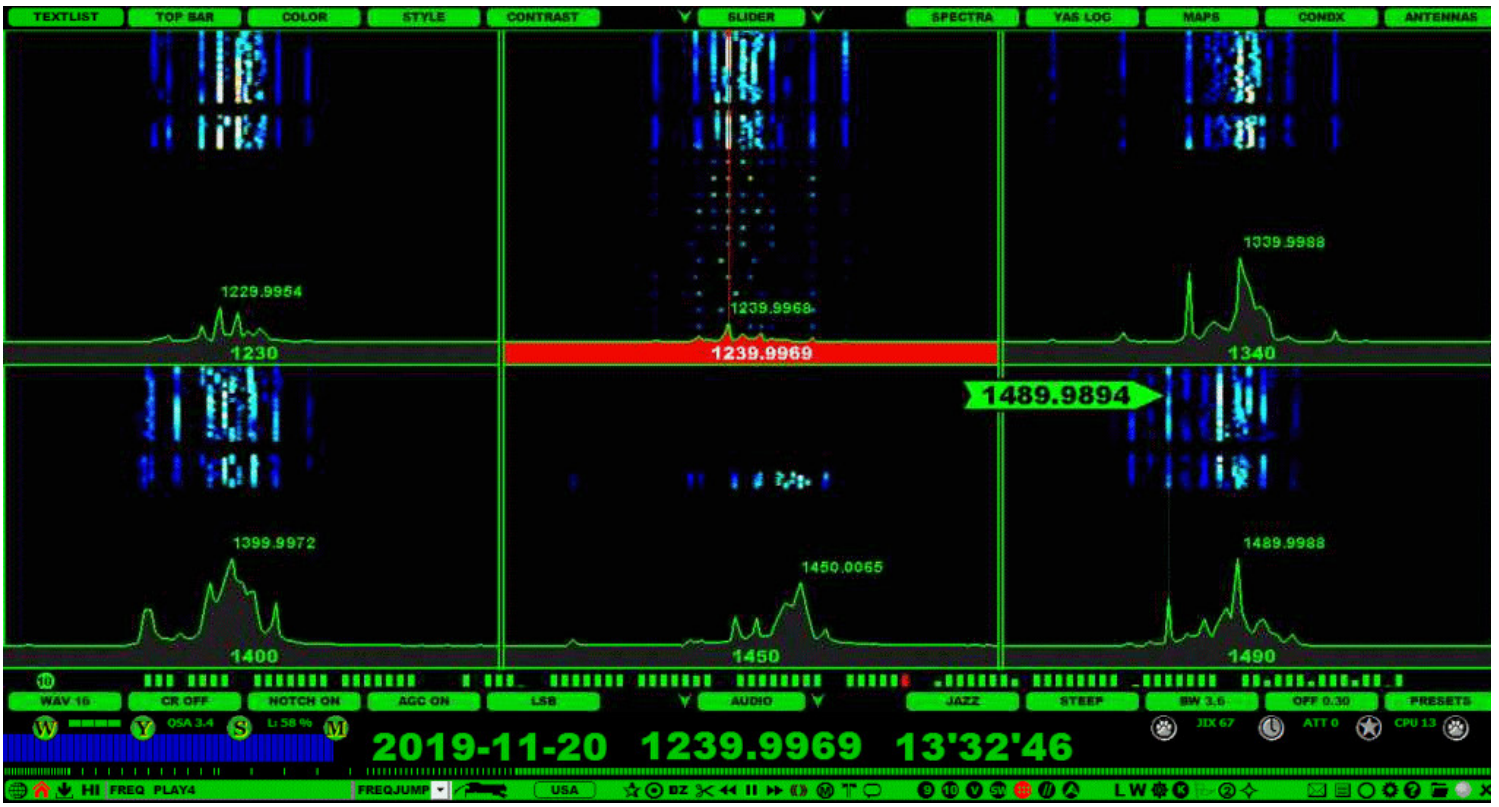
SIXPACK

JAGUAR PRO ONLY

SIXPACK allows you to control any six frequencies simultaneously in six separate windows. Originally, this was designed for monitoring graveyard channels (= 1230, 1240, 1340, 1400, 1450 and 1490 kHz) but the frequencies in SIXPACK can be any MW frequencies, and they can also be changed dynamically.

By default, SIXPACK uses the first six frequencies listed in your default VFO in MESTOR (see MESTOR for details). However, always when you activate SIXPACK, your current playback frequency will always be one of the SIXPACK frequency panels, so the playback frequency on PLAYBAR will never change when you activate SIXPACK. The current frequency will always replace the previous frequency in the fifth box (located in the center window of the second row).

SIXPACK can be used, for example, as a tool for monitoring when conditions are improving on a DXpedition; no need to scroll frequencies for that.



HOW TO

The standard way of opening/closing SIXPACK is to click the TOOLBAR > SIXPACK icon. You can return from SIXPACK also by pressing the W key (WALLPAPER), or clicking one of the stepping selection icons (9 / 10) on TOOLBAR.

In SIXPACK, the frequency scroll functions (= the mouse wheel and left/right arrow keys) rotate the six active frequencies; the panel of the currently-active frequency is highlighted as red, and the current exact frequency is marked with a red line. You can also select any exact frequency as the new playback frequency directly by clicking on any of the six frequency panels.

You can replace any SIXPACK frequency by moving the mouse over the selected panel, entering a new frequency and pressing ENTER. JAGUAR remembers the last used SIXPACK frequencies at the next restart.

You can zoom the size of the spectrum area shown in the panels by keeping the mouse over the panel and scrolling with the mouse wheel.

You can also use APPLETS, SCOPE and the split screen (ie. partially opened TURTLE) while using SIXPACK.

SLIDER

SLIDER contains a set of buttons used for quick tuning of the visual layout and/or for quick jump to desired display. All visual changes made in SLIDER are automatically saved and used in the next restart as your new defaults. SLIDER can also be used for opening/resizing/closing the database text window.

When clicked, the buttons normally toggle/rotate the allowed values. In addition to changing the values by clicking, you can also move the mouse over any button and scroll with the mouse wheel, or use the left/right arrow keys.

HOW TO

SLIDER is always visible when JAGUAR is active, and it contains the following buttons:

TEXTLIST (JAGUAR PRO ONLY)

```
(( DAYLOG | MWLI | DISTANCE | VOYAGER | OFF ))
```

The text list overlay mode. Rotate the TEXTLIST display modes by left/right-clicking the button or scrolling the mouse wheel or with the left/right arrow keys. The DISTANCE list shows the distances from your QTH to the stations on the current playback frequency in ascending order (with no up/down scroll option). DAYLOG, MWLI and VOYAGER have separate detailed GUIDE sections.

TOP BAR (JAGUAR PRO ONLY)

```
(( SCOPE BAR | TITLE BAR | MSG BAR | OFF ))
```

The TOP BAR mode: Rotate the TOP BAR display modes by left/right-clicking the button or scrolling the mouse wheel or with the left/right arrow keys. More details in TOP BAR.

COLOR

```
(( ICE BLUE | WHITE | GREEN | GRAY | YELLOW ))
```

The color themes: Rotate the color themes by left/right-clicking the button or scrolling the mouse wheel or with the left/right arrow keys.

STYLE

```
(( Graphics output style ))
```

Select the desired presentation style for SPECTRA, YAS and MAPS. On the spectrum displays, you can select from four modes: STANDARD, GLOW, XRAY and CATWALK. On the YAS screens, you can select either GAPS ON or GAPS OFF. When GAPS are OFF, the shared EU (European) + TA (trans-Atlantic) frequencies (e.g. 540, 630, 720) are not shown on the screen, helping you visualize the "real trans-Atlantic openings". On the MAPS display, three different map styles are available.

CONTRAST

```
(( Contrast value ))
```

Select the desired spectrum color power/contrast (SPECTRA | YAS LOG) or the desired day/night contrast/darkness (MAPS) by clicking or scrolling.

CENTER BUTTONS

```
(( UPPER FULLSCREEN ARROW ))
```

Open/close the full text window of TURTLE or TOMCAT.

```
(( SLIDER ))
```

Open/close the split-screen text window of TURTLE or TOMCAT. You can relocate the SLIDER position by scrolling the mouse wheel or with the left/right arrow keys, or just simply drag the SLIDER to the desired position.

```
(( UPPER SPLIT SCREEN ARROW ))
```

Open/close the split-screen text window of TURTLE or TOMCAT.

SPECTRA

```
(( HOME | HISTORY ))
```

The SPECTRUM display mode: Toggle the SPECTRUM display modes by left/right-clicking the button (HOME vs. HISTORY). If you scroll with the mouse wheel (or with the left/right arrow keys), you can also select the desired zoom level in HISTORY. More details in SPECTRA.

YAS LOG

```
(( YYYY-MM-DD ))
```

The YAS LOG day: Rotate the days displayed in YAS LOG by left/right-clicking the button or scrolling the mouse wheel or with the left/right arrow keys. More details in YAS LOG.

MAPS

```
(( World | Europe | Africa-MidEast | Asia | Oceania | North America | Caribbean | South America ))
```

The MAPS continent: Rotate the continents by left/right-clicking the button or scrolling the mouse wheel or with the left/right arrow keys. More details in MAPS.

CONDX

```
(( CONDX ))
```

The CONDX screen on <> off. More information in CONDX.

ANTENNAS

```
(( ANTENNAS ))
```

The ANTENNAS screen on <> off. More information in ANTENNAS.

SPECTOR

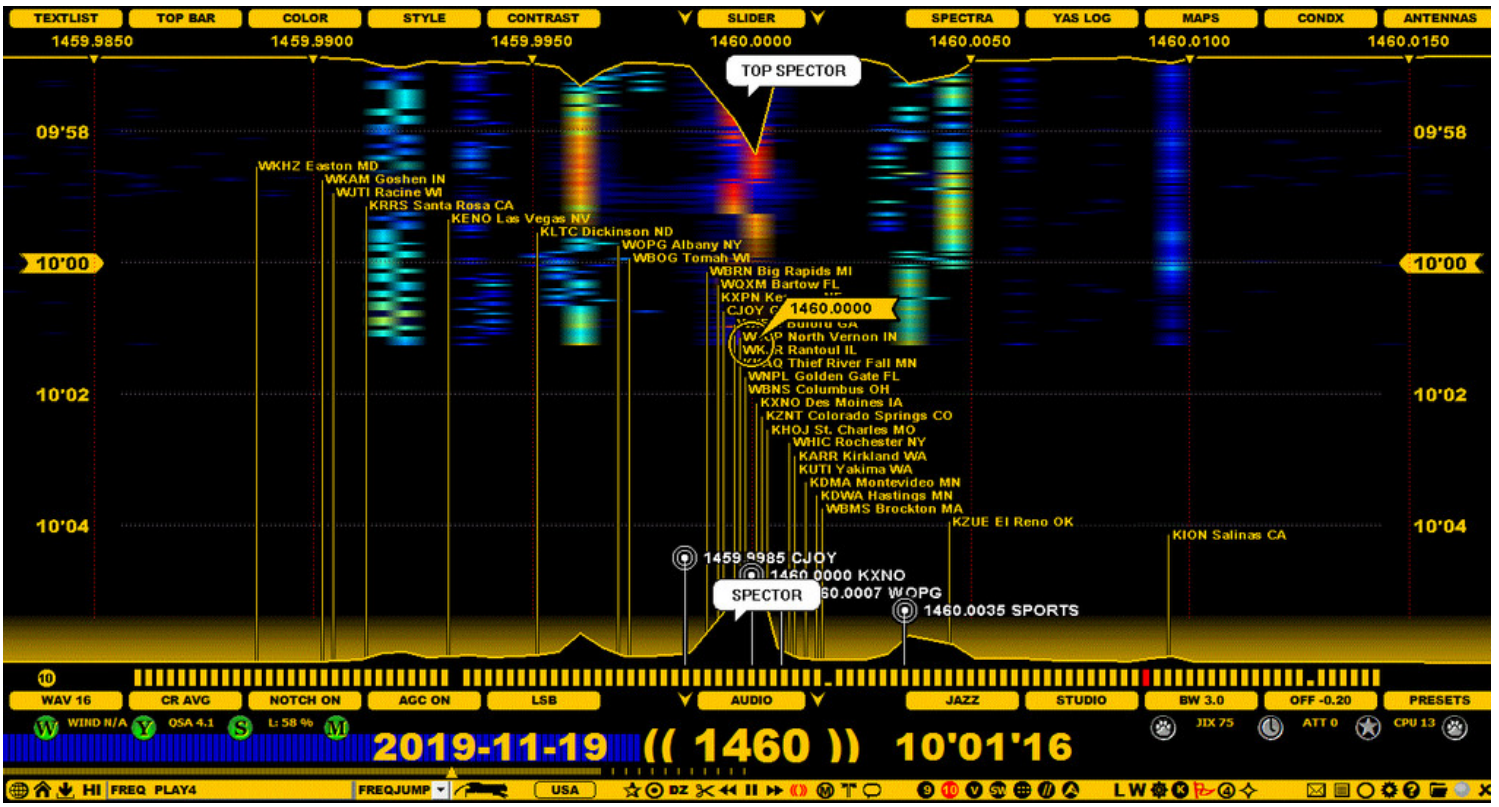
SPECTOR is the soul of JAGUAR, showing the signal strength on each exact frequency (offset). The SPECTOR display can look like a bunch of sharp needles or a "mountainous terrain", depending on the selected SPECTOR zoom level.

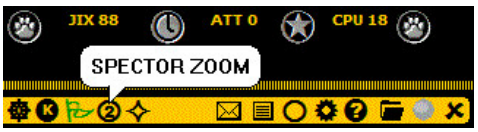
The calculated offset area is 500 Hz on both sides of the tuned frequency, and your SPECTOR span is limited only by the screen resolution. Consequently, on low-resolution monitors, it may not be possible for you to see the full 1-kHz span. Also, in any case, if you want to see beyond +/- 500 Hz, you must tune in to the adjacent frequency. Fortunately, there is only a handful of cases where offsets can be beyond this 500-Hz limit.

In addition to the SPECTOR zoom (increasing/decreasing the SPECTOR span), you can use the following optional features:

- add offset markers to the SPECTOR display
- cut the height of the peaks to half (SPECTOR peaks will then cover less graphics data)
- add the mirror image of the peaks to the top (TOP SPECTOR)
- show the SPECTOR peaks transparently to get a better match with offset FLAGS
- show the highest peak frequency as a flag
- add a "rifle grid" as a measurement aid (SPECTOR SIGHT)

In the example below, the largest possible SPECTOR zoom level (GIANT SPECTOR, level 4) is in use. When using GIANT SPECTOR, you can see only a very small area around the nominal.





HOW TO

The SPECTOR size (span) can be adjusted by clicking TOOLBAR > SPECTOR ZOOM. Repeated clicks will rotate the size in the following order: SMALL > MEDIUM > LARGE > GIANT. The number (1-4) in the TOOLBAR > SPECTOR ZOOM icon shows the current zoom level.

The zoom level (span) can be also adjusted by moving the mouse over the bottom area of SPECTOR (making the red offset flag visible) and scrolling the mouse wheel and/or the left/right arrow keys. The area where the red offset flag is shown is called OFFSET BAR. By default, it is "virtual", but you can make it also visible with a gradient color (as in the example image) via SETTINGS > OFFSETS > OFFSET_BAR (JAGUAR PRO ONLY).

Offset markers can be added/edited/deleted by right-clicking the OFFSET BAR. More details available in GUIDE > OFFSETS.

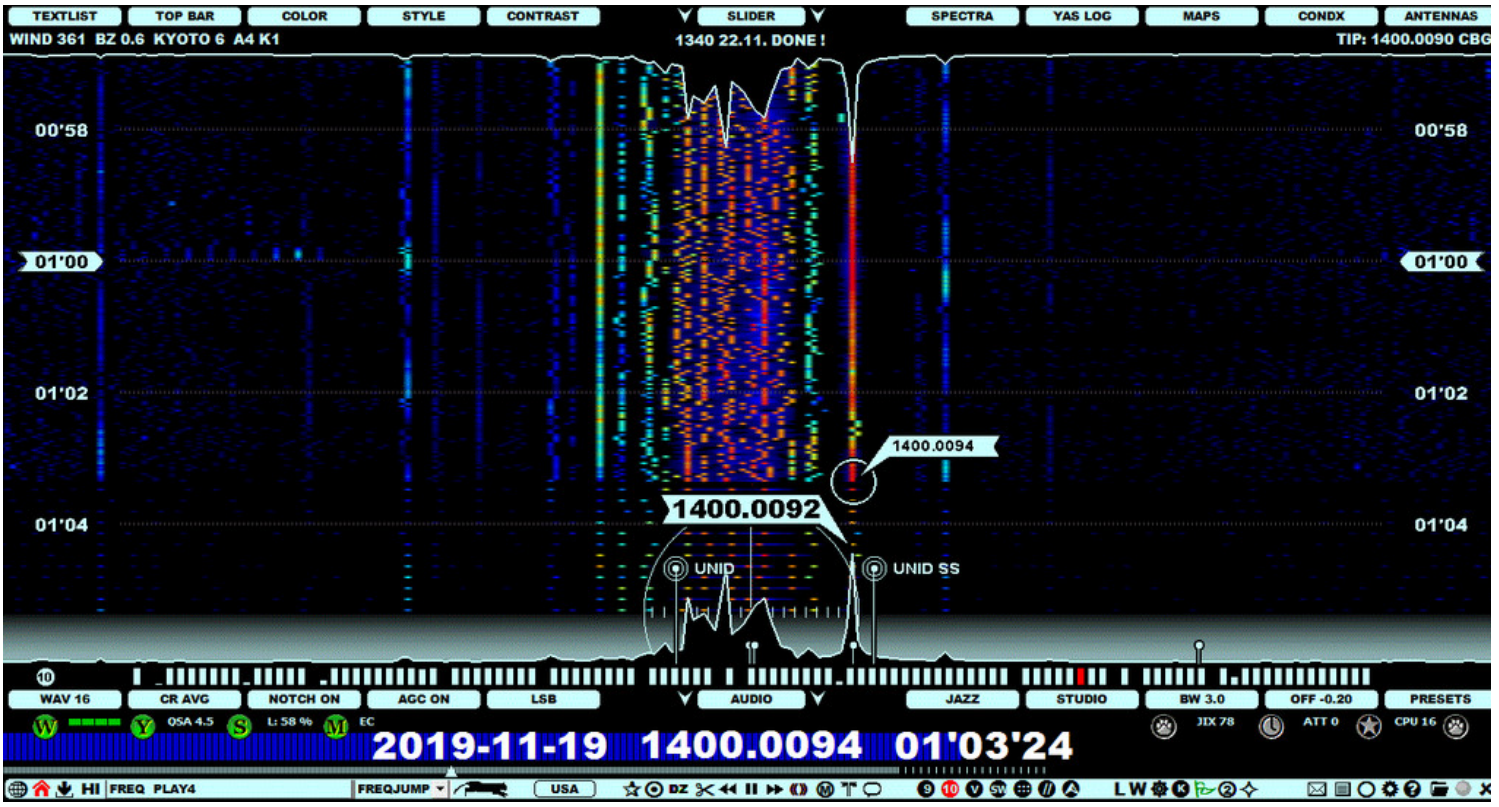
Other SPECTOR display characteristics can be set via SETTINGS > SPECTOR (see SETTINGS for more details).

Often you may need to jump to a specific exact offset without changing the time position. One way to do it is to type the exact frequency as XXXX.XXXX and press ENTER. However, SPECTOR offers a faster way: you can move your mouse over the OFFSET BAR: the red flag displaying the exact offset is shown. You can now enter this frequency with a mouse click. And there is no need to position the mouse exactly

over the correct offset of the SPECTOR peak: just move the mouse into the peak area, and JAGUAR will automatically adjust the offset shown/used in the jump, based on the exact peak offset.

SPECTRA

By default, the HOME display always appears first when JAGUAR is started. HOME is one of the JAGUAR's spectrum displays, presenting detailed spectrum information for the current frequency in the current playback file. HOME is also the only spectrum display available in JAGUAR LITE.



JAGUAR PRO offers extended spectrum displays (HISTORY) which contain the "offset history" produced by SCANS (see LIVESCAN and FILESCAN for more details).

When you start JAGUAR for the first time, or make a RESET of the playback settings, INFOBOX will be displayed on top of the HOME screen (see INFOBOX for more details). If you want to jump directly to the playback mode, click LIVE or OPEN, and close INFOBOX.

The HOME screen shows the spectrum of the currently-active frequency in the waterfall mode. The time span of the display covers the time period available in the recording. Note that, in the LIVE mode, there is always an active 10-minute playback buffer file (8 minutes if SAMPLING rate of 2000 is used). A small white circle ("runspot") shows the location in the currently-playing file. You can also attach a flag, showing the exact frequency played pointing to that circle (SETTINGS > GRAPHICS > FLAGSPOT). You can left-click the mouse to jump into any time point / offset within that file.

Note that the spectrum line locations (the exact offset positions) on the screen are not correct if you have not calibrated JAGUAR, or if the previous calibration is no more accurate. To re-calibrate, see KALIBRATE for details.

If you move the mouse to the left edge, you will see TIMEFRAME showing the recorded HH'MM (hours, minutes) areas on that day (see GUIDE > TIMEFRAME for details).

If you move the mouse to the right edge, you will see ZOOMFRAME showing your current ZOOM position. You can change the zoom level with a mouse click, and this enter the HISTORY screens (= extended spectrum displays).

JAGUAR can create a preview of the spectrum ("HOMESCAN") on the HOME screen when you tune in to a new frequency. HOMESCAN is a sparse spectrum display that shows the skeleton of the offsets found on that frequency. This preview uses a considerable amount of CPU and I/O resources. If you keep HOMESCAN enabled, you can change the resolution of HOMESCAN by changing the STEPPING value (see GUIDE > HOMESCAN for more details).

The maximum offset area that can be shown is 500 Hz on both sides of the tuned frequency, and your spectrum span is limited only by your screen resolution. So, in low-resolution monitors, it may not be possible for you to see the full 1-kHz span. Also, if you want to see beyond +/- 500 Hz, you must tune in to the adjacent frequency. You can zoom this offset span with the SPECTOR zoom (= TOOLBAR > SPECTOR, see GUIDE > SPECTOR for details).

If you prefer a horizontal presentation of HOME, you can press ALT-V. ALT-V toggles the vertical and horizontal orientations. You can define SETTINGS > STARTUP > START_AS > HOME_AS_HORIZONTAL if you want to use the horizontal mode as your default HOME orientation.

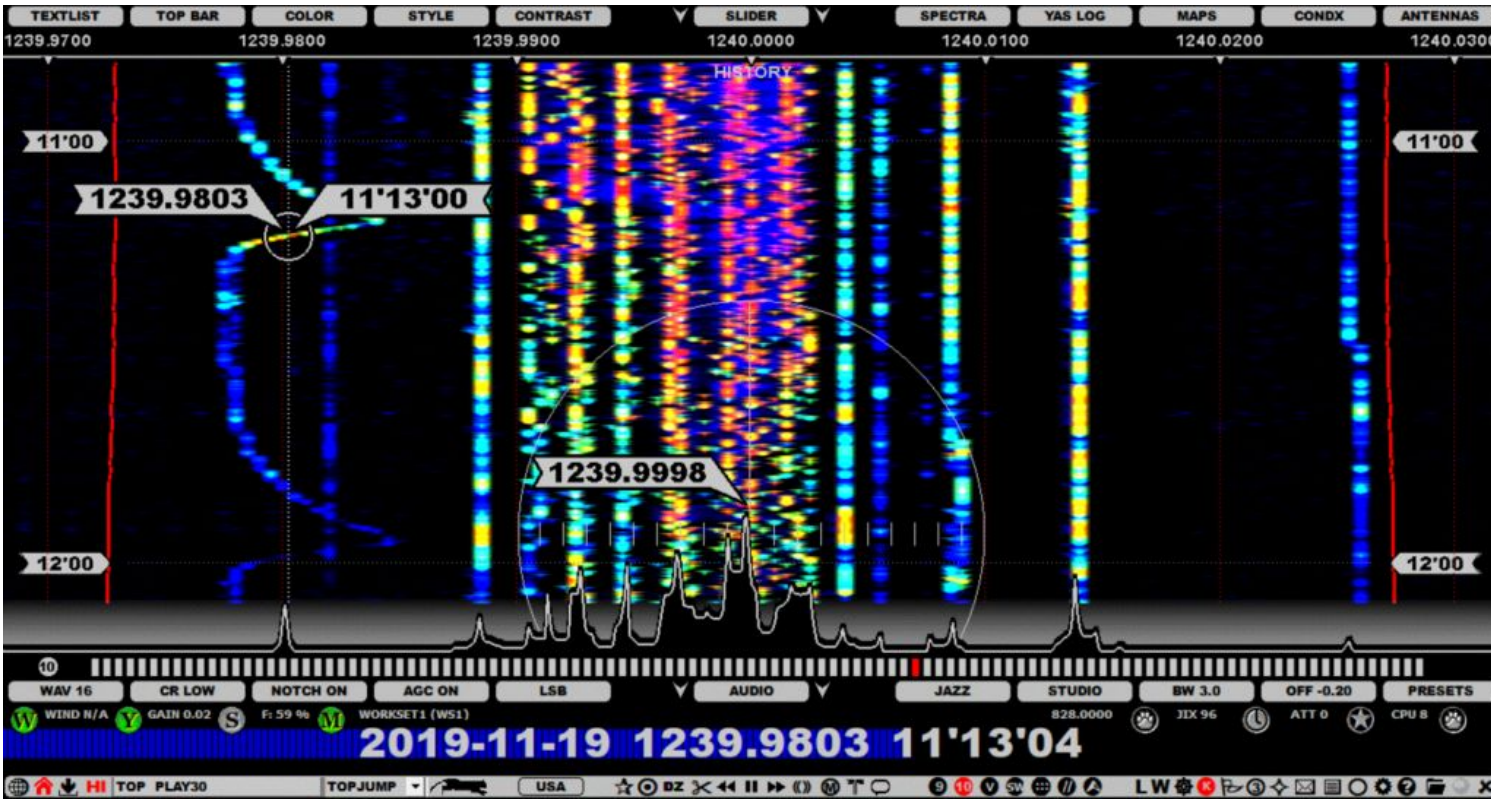
The horizontal display shows a narrower area for offsets but, in turn, the spectrum lines (in time) are aligned nicely with the PLAYBAR's progress bar. In the vertical display mode, you can use FLAGS to see listed offsets (see GUIDE > FLAGS help for details); however, in the horizontal mode, there is only a limited possibility to show the offsets.

The most-often-used JAGUAR functions are scrolling in time and scrolling frequencies, and there are ample ways to do so for both. When "traveling in time" (or on the dial), the spectrum and/or the "runspot" will be refreshed automatically.

JAGUAR PRO ONLY

The HISTORY (extended spectrum) displays show the offset history data if you have run either LIVESCAN or FILECAN.

If there is no offset history (scan data) available, you will see just empty time frames. You can start FILESCAN (see GUIDE > FILESCAN) to run a short scan to see how the offset history data is displayed on the HISTORY screen.



These extended HISTORY views can be used to analyze the offset history throughout the day, revealing sign-on/sign-off times, and jump directly to the time spots where an interesting rising carrier levels are being observed. The normal point-and-shoot option is available: when the mouse cursor is bright, there is a recording available behind that spot, and clicking there brings you to that offset/time.

You can repeat FILESCAN as many times as necessary to achieve a higher resolution or scan for various time slots of the day. Earlier scan results are always replaced by the latest run for each scanned frequency. However, if you are interested in the offset history, it is highly recommended that you use LIVESCAN, which is "scanning made easy": everything is ready when you need the offsets, no need to wait long scan jobs to complete. However, you can always run FILESCAN afterwards using a higher resolution for those interesting times/frequencies seen in LIVESCAN results.

HOW TO

You can jump to HOME from any display by

- pressing the "w" key ("WALLPAPER") until HOME appears
- pressing the HOME key
- pressing the "e" (or ALT-E) key until HOME appears
- clicking TOOLBAR > HOME
- clicking SLIDER > SPECTRA
- pressing ENTER > TOP MENU > SPECTRA > HOME

The extended spectrum display (JAGUAR PRO ONLY) can be opened by

- using ZOOMFRAME (becomes visible when you move the mouse to the right edge of the screen; make a mouse click or use the mouse wheel to select the desired HISTORY zoom level)
- pressing the "e" key (or ALT-E) - these toggle HOME <> HISTORY (last used zoom level)
- pressing ENTER > TOP MENU > SPECTRA > HISTORY
- moving the mouse to SLIDER > SPECTRA and using the mouse click, the mouse wheel to scroll, or the left/right arrow keys.

You can move the spectrum location up/down on the screen by dragging the mouse. If you define SETTINGS > PLUGINS > DRAG_SPECTRUM_HORZ=Y, you can also move the spectrum location left/right on the screen by dragging the mouse. Right-clicking the mouse restores the center location if you have relocated the position (if not, then the mouse right-click performs the standard user-defined right-click operation).

When you place the mouse over a spectrum screen, you can move the spectrum location up/down on the screen by scrolling the mouse wheel.

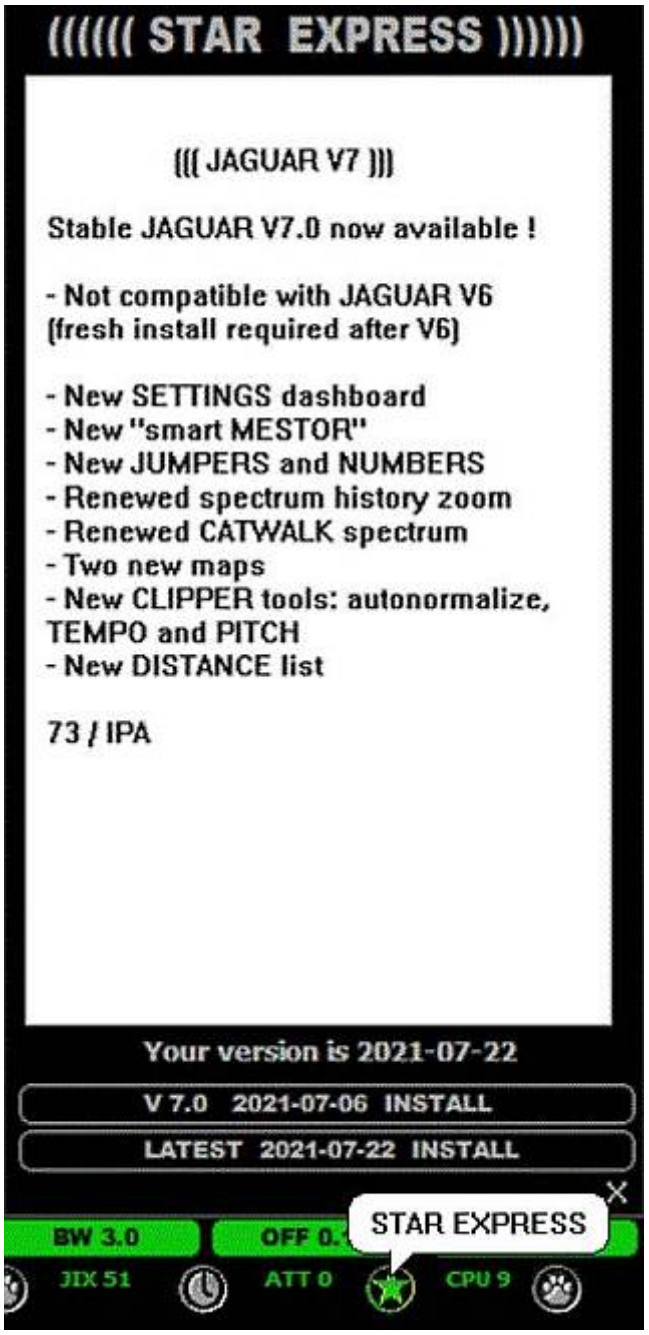
SLIDER has two important controls for customizing spectrum displays: STYLE (STANDARD > GLOW > XRAY > CATWALK) and CONTRAST (spectrum color strength). See SLIDER for more details.

In today's MW DXing eyes are as important as ears, so the visual help given by SPECTRA displays can save a lot of time when studying a huge number of recordings. A typical way how to operate with the spectrum data is presented in the following JAGUAR V5 video (tnx JF!):

https://youtu.be/_KJ1IY4IPWc

STAR EXPRESS

STAR EXPRESS shows the latest news about JAGUAR's development and versions.



HOW TO

STAR EXPRESS can be opened only by clicking STATUSBAR > STAR EXPRESS (on the bottom-right).

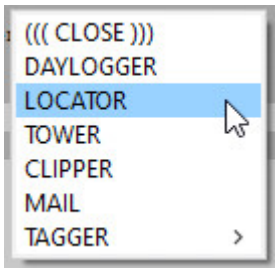
The STAR EXPRESS panel allows you to easily install the latest JAGUAR version (click on the lower XXXX-XX-XX INSTALL button) and also to revert back to the last-known stable release (click on the upper XXXX-XX-XX INSTALL button). The currently-used version is shown above those buttons ("Your version is XXXX-XX-XX").

If you find a bug in JAGUAR, please confirm whether the bug has already been fixed by installing the latest version before reporting (the bug may have already been fixed in the latest version).

STATION MENU

JAGUAR PRO ONLY

STATION MENU is a small popup menu which offers several station-related services. However, if you just want to log some specific station, you do not have to use STATION MENU: logging itself can be done directly by clicking a station on TURTLE or on a map (see LOGBOX).



HOW TO

STATION MENU can be displayed by right-clicking any station on TURTLE or on a map. In addition, this menu can be opened from the bottom-right corner of LOGBOX.

STATION MENU has the following options:

- ((CLOSE)): Close STATION MENU
- DAYLOGGER: Logging to DAYLOG. The selected station is saved as a new entry to DAYLOG, and it will be immediately visible on the screen if SLIDER > DAYLOG is activated. Also P-TAG is updated in CATBOOK if the station is not yet tagged there. More information in DAYLOG.
- LOCATOR: Open LOCATOR for this station. More information in LOCATOR help.
- TOWER: Show the transmitter tower of this station. Your default browser will be launched, showing the satellite view of Google Maps at the station coordinates. The zoom level is usually adequate to spot the transmitter tower itself; if not, you can use the standard Google Maps zooming services. Furthermore, you can go down to the Street View if you like.
- CLIPPER: Make an audio clip containing the name of the selected station. More information in CLIPPER.
- MAIL: Create a template-assisted reception report for this station. More information in MAIL.
- TAGGER: Add/change P-TAG for this station. Select the desired color from the TAGGER submenu. The P-TAG is updated in CATBOOK accordingly and the color on the map/TURTLE is changed too. More information in P-TAGS.

STATUSBAR

STATUSBAR displays four green service buttons on the left, four special buttons on the right, and several status areas in-between.

Some of the status text displays can be clicked to change the format/contents of the status. In addition to the status texts, STATUSBAR displays also some informative messages related to the settings/functions activated. These messages appear at the center area including

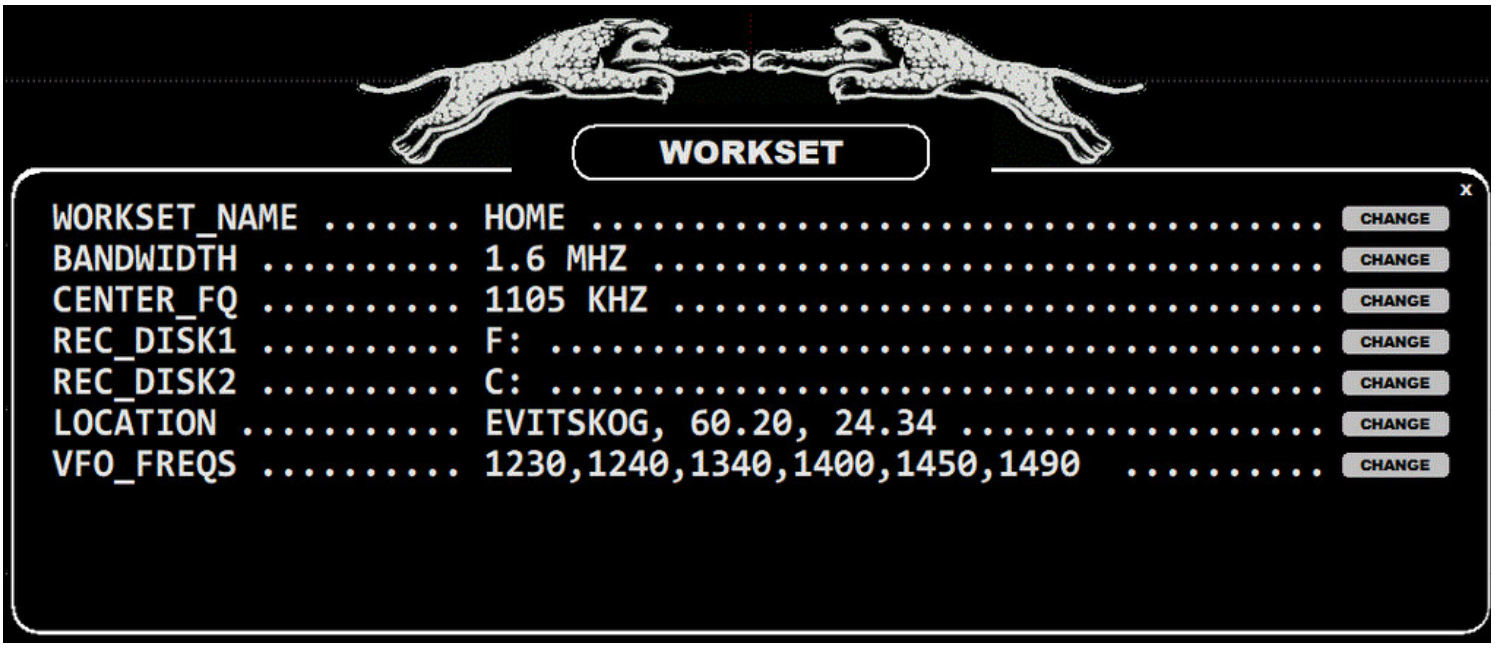
- The name of the active workset and (if defined) the antenna in use
- CAPS LOCK indicator (if active), the name of the VFO/DIAL (if active), "PAUSE"/"MUTE" indicator (if the playback is paused in ARCHIVE or muted in LIVE) or "AUTOLOOP" indicator (if AUTOLOOP is active)
- Currently active FAST_CALIBRATE frequency (if defined)

HOW TO

STATUSBAR is always visible when JAGUAR is active and it displays the following buttons/status texts:

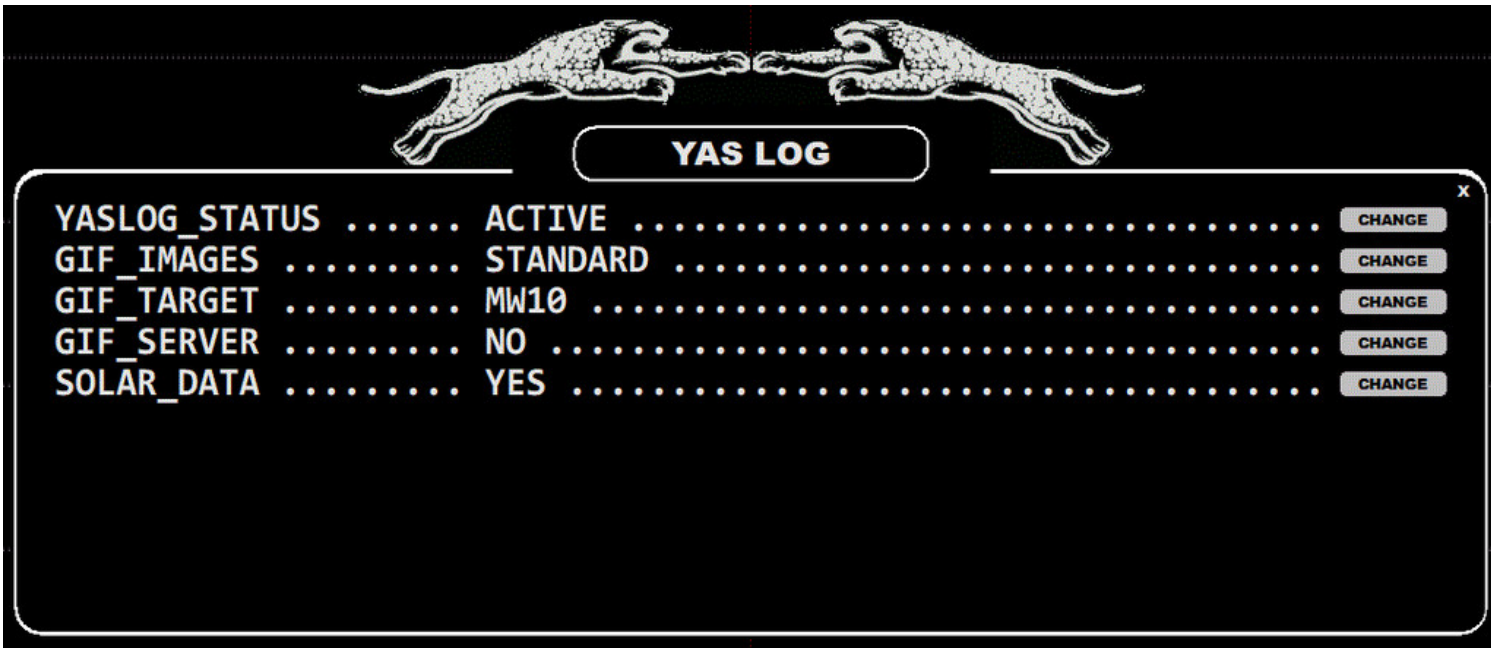
The green service buttons on the left are used to control the main background services. When any of the buttons are clicked on, the corresponding SETTINGS window will be shown and you can configure the desired services.

W (WORKSET services)



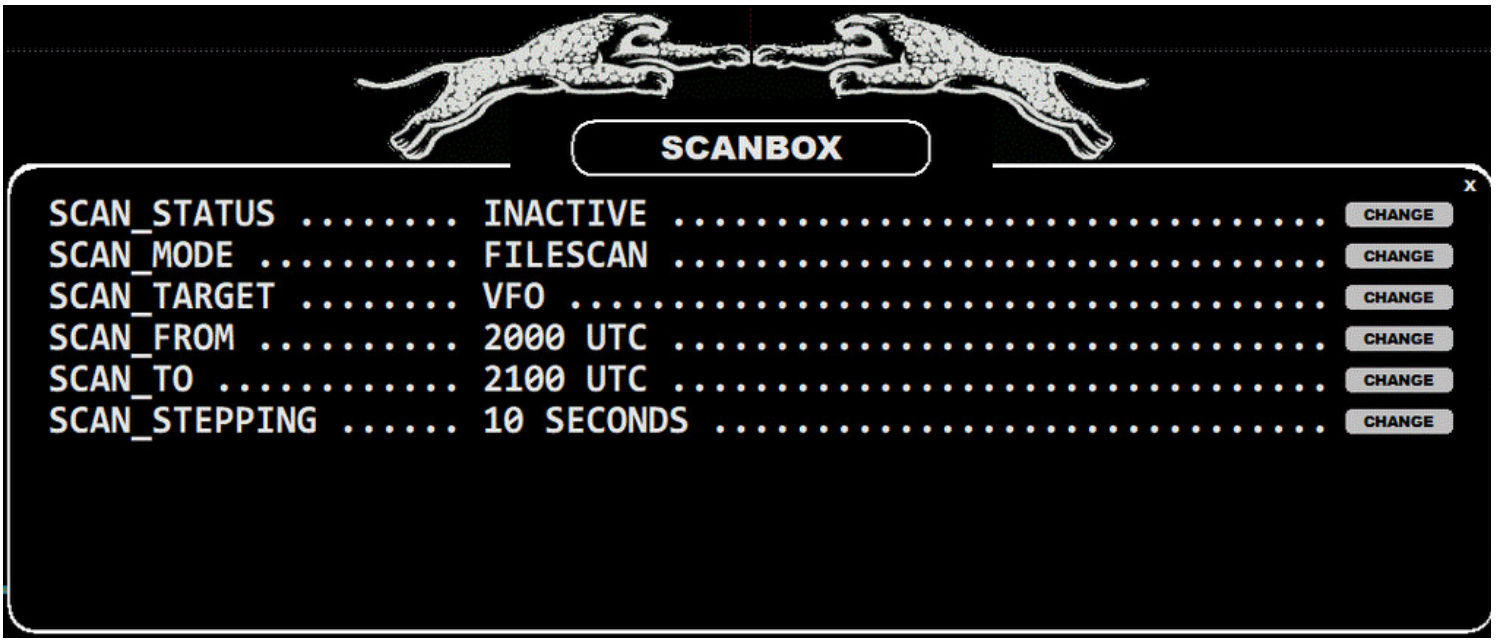
See GUIDE > WORKSET for more details. The W button color is always green, the WORKSET data must always be defined.

Y (YAS LOG services)



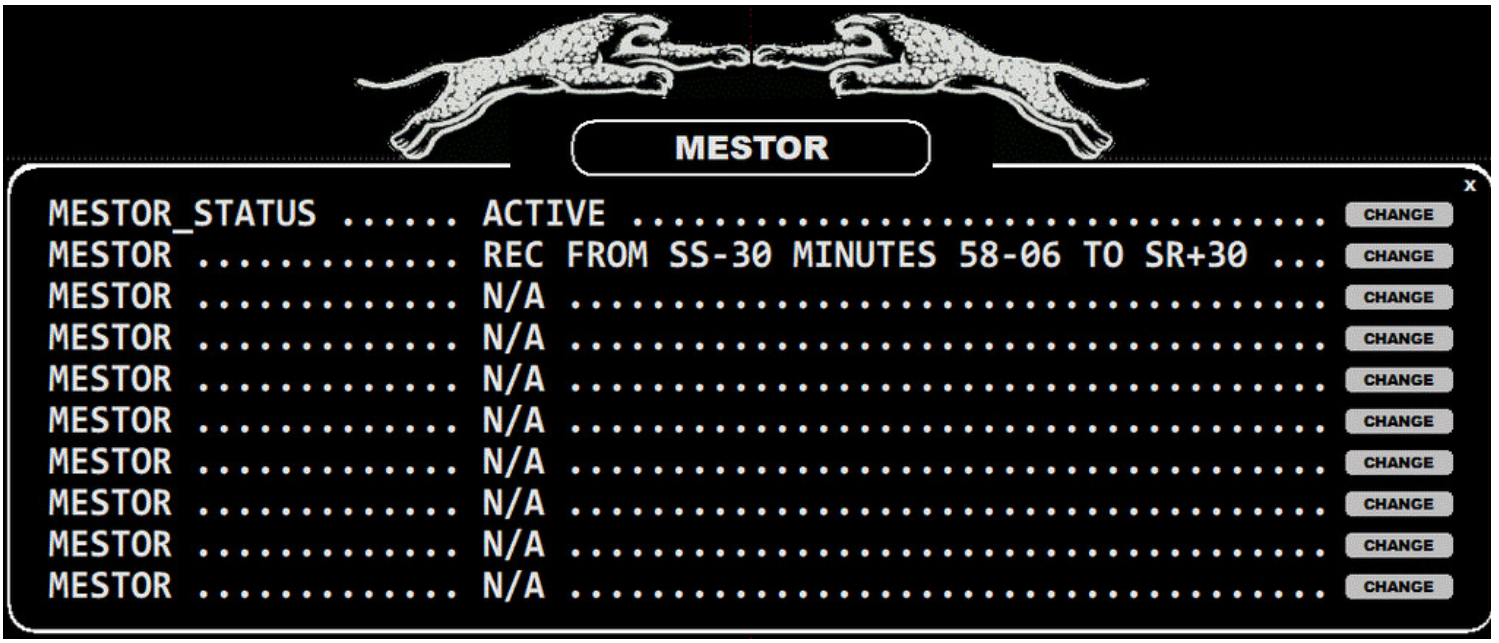
See GUIDE > YAS LOG for more details. The Y button color is gray if the YAS LOG services are inactive. Otherwise, the color is green.

S (SCANBOX, Scanning services)

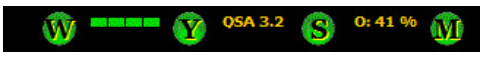


See GUIDE > SCANBOX for more details. The S button color is gray if the SCAN services are inactive. Otherwise, the color depends on the state of SCAN.

M (MESTOR, Scheduled recording services)



See GUIDE > MESTOR for more details. The M button color is green if the scheduled recording service is active, otherwise gray.



STATUS DATA ON THE LEFT

- **Graphical space weather indicators** or WIND (SOLAR WIND value). If SOLAR_DATA is enabled (or was enabled during the recording, if any ARCHIVE file is played), by default, the graphical space weather indicators at the time of the recording will be shown. You can change this default in SETTINGS > STATUSBAR > SOLAR_DATA.

  You can also toggle the graphical space weather and WIND by clicking the area.

  In the graphics mode, the status area shows four space weather values: Bz, Kyoto (Dst), A & K indices, and Protons; all marked with GREEN / YELLOW / RED colous, based on their numeric values. If everything is "all green", the space weather conditions are undisturbed. The more you see yellow or red, the more disturbed the conditions are.

- **QSA, Signal strength indicator**, QSA (S-value of SINPO) with one decimal. QSA is the default, you can change this default in SETTINGS > STATUSBAR > QSA_GAIN_SIR, or you can click this area to rotate between QSA > RF GAIN (used in AGC) > SIR (see more information in GUIDE > SIR).

- DISK USED %: The usage of the currently-active hard disk.

SPECIAL BUTTONS

Four special buttons (LEFTPAW, TOHBOTLOOP, STAR EXPRESS, RIGHTPAW) can be used to control various JAGUAR features, and some of them are user-adjustable.

- LEFTPAW: A user-adjustable button, defaulted to rotate the WALLPAPERs. See SETTINGS > STATUSBAR for more details.

- TOHBOTLOOP: The first left or right mouse click: jump to the nearest TOH (top-of-hour) or BOT (bottom-of-hour) spot and create the LOOP start marker. The second click creates the LOOP end marker. The third click purges the TOHBOTLOOP markers.

- STAR EXPRESS: Open and close STAR EXPRESS. More details in STAR EXPRESS.

- RIGHTPAW: A user-adjustable button, defaulted to "jump to PREV FILE".

See SETTINGS > STATUSBAR for more details.

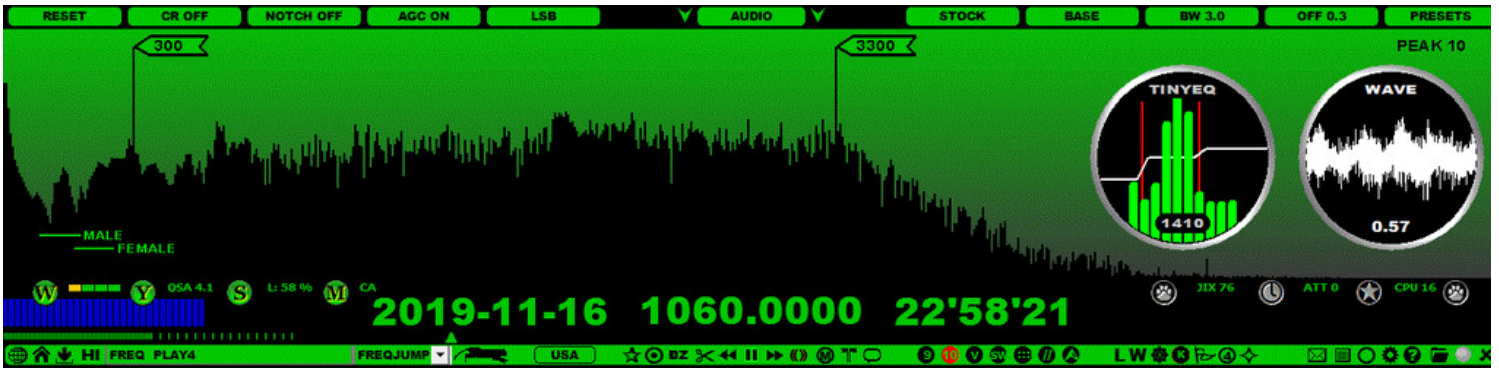
STATUS DATA ON THE RIGHT

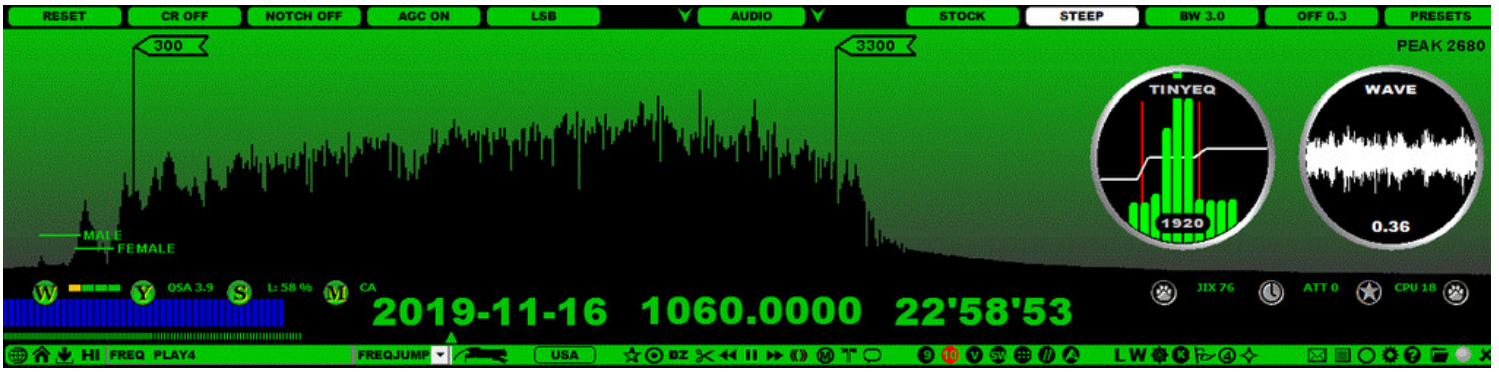
- JIX (the current JIX value): the J-INDEX value, based on the current frequency stepping (MW9 or MW10). More details in GUIDE > JIX.
- ATT: The current Perseus Attenuation level.
- CPU %: The current total CPU load.

STEEP

STEEP is a special filter mode available in all filters. STEEP cleans up more audio frequencies than the BASE mode but less than the STUDIO mode. More details in the STUDIO help.

The effect of STEEP can be clearly heard in the headphones: audio with STEEP is crispier than in the BASE mode; however, we have lost some audio frequencies beyond the selected audio spectrum limits. The effect can be visualized with before (= BASE) and after (= STEEP) images of AUDIO WINDOW (in JAGUAR PRO only).





The strongest single audio frequency (peak) changes from 10 Hz to 2,680 Hz, and there is a considerable suppression in the amplitude of the lowest (non-speech) audio frequencies. The filter curve is also much "steeper" at the filter edge than in the BASE mode.

HOW TO

You can activate the STEEP mode by rotating the AUDIOBAR > BASE | STEEP | STUDIO button to the "STEEP" position. in JAGUAR PRO, you can also enable it by clicking the filter area in the FILTER APPLET (more information in the APPLET help), or via AUDIO APPLET.

The JAZZ and CALLIOPE filters use different specifications/different mechanisms in the STEEP mode so the audio output may sound a bit different when comparing those filters using the same bandwidth / offset.

STICKERS

JAGUAR PRO ONLY

In addition to the standard SCREENSHOT function, JAGUAR also supports screenshots with user-defined labels ("STICKERS"). These screenshots always cover the full screen, and they are saved to your JAGUAR folder in GIF format. The files are named as SCREENSHOT YYYY-MM-DD HH'MM'SS.GIF.

You can add a maximum of 20 STICKERS to a single screenshot.

HOW TO

Click the TOOLBAR > STICKERS icon to create a screenshot with STICKERS. Here in the example below, you will see a STICKER which has been created for the STICKERS icon itself. Each STICKER looks pretty much like a standard Windows tooltip.

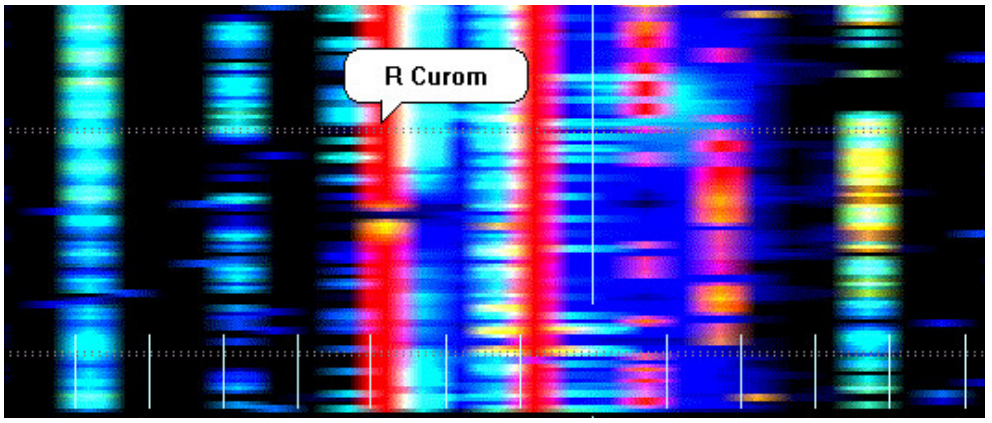
When the STICKERS icon is clicked, JAGUAR freezes normal display operations until the STICKERS function is completed. At first, you will see quick instructions in a popup window. Continue with pressing OK.

STICKERS can now be added simply by clicking the position what you want to address in the sticker: a new "bubble" is created with a text "WRITE ..". Now type the text you want to show in the sticker but do not press ENTER when you are finished with the text. Instead, if you want to add another STICKER, click on another position of the screen. Continue this process until you have created all the STICKERS you want to add to this screenshot. Note that there is no edit function for the previous STICKERS after you have created a new STICKER.

When you are finished with STICKERS, press ENTER, and JAGUAR creates a fullscreen screenshot with those STICKERS and returns to the normal operation mode.

A mouse right-click will cancel/quit STICKERS without taking the screenshot.

STICKERS can be used for presentation graphics to be used in publications, marking stations for offsets (just as below), pinpointing problem areas in bug reports, etc. Also the home page of this JAGUAR GUIDE has been created with STICKERS.


R Curom

STOCK

STOCK is the standard reference filter in JAGUAR. STOCK (as any JAGUAR filter) can be used in the BASE filter mode or in the STEEP / STUDIO filter modes (see STEEP/STUDIO for more information). The bandwidth of the STOCK filter is 3.0 kHz and the filter offset is 0.3 kHz; these values cannot be changed. STOCK is the only filter available in JAGUAR LITE.

HOW TO

KEY = F (JAGUAR PRO ONLY)

You can use the "f" key for rotating the filters until you get STOCK displayed on AUDIOBAR.

JAGUAR PRO allows you to select STOCK directly from the filter button (click/scroll until you get STOCK). You can also select it from TOPMENU > FILTERS. Also, the FILTER applet can be used: click the FILTER button until you see STOCK displayed.

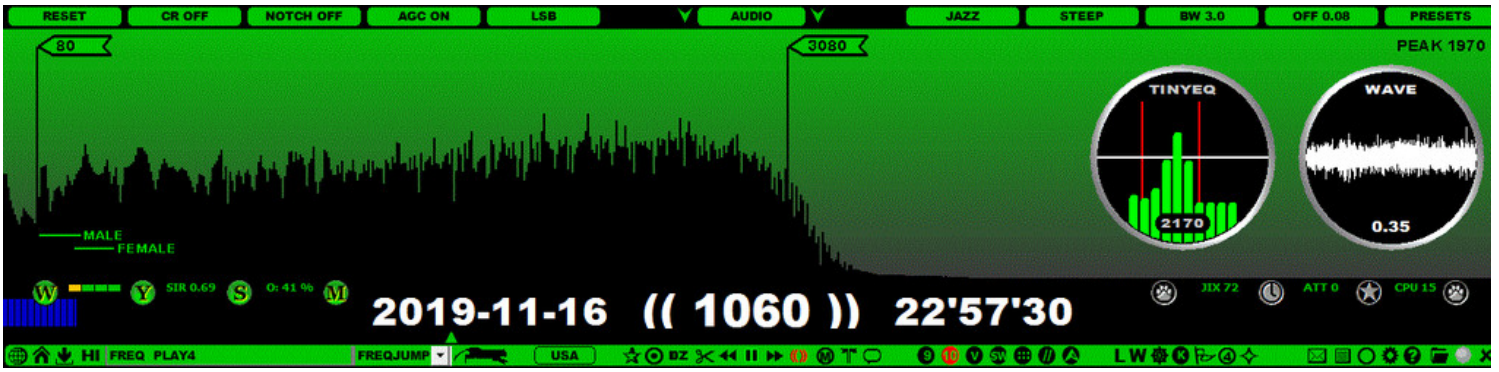
The STEEP/STUDIO modes provide additional attenuation to the low and high ends of the filter. Sometimes you will get a clear improvement in the audio by using the STEEP mode.

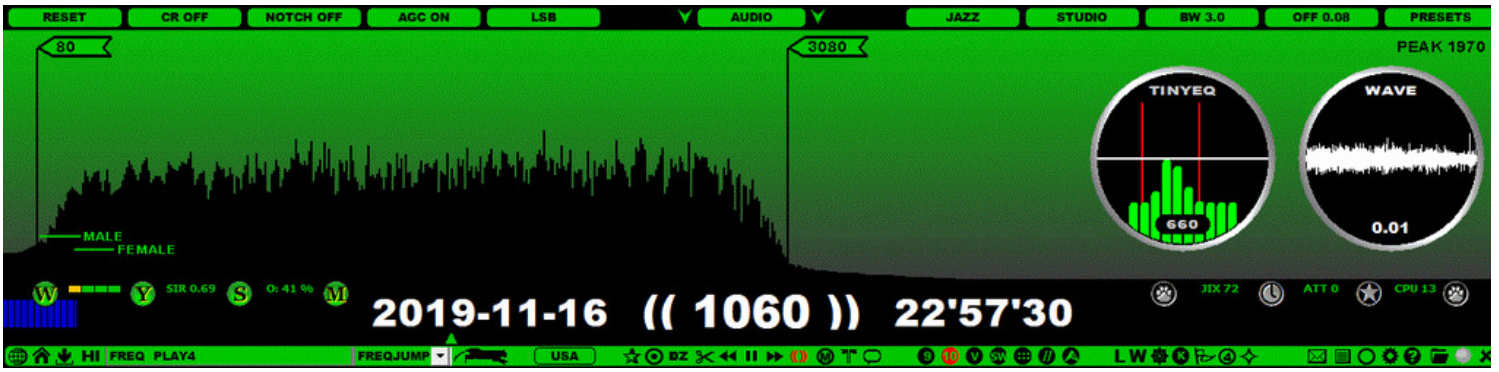
STOCK is a "fixed filter", so the filter PRESETS cannot be used with STOCK.

STUDIO

STUDIO is a special filter mode available in all filters. STUDIO provides a more thorough clean-up of audio frequencies than the STEEP mode, and much more than the BASE mode.

The effects of STUDIO can be clearly heard in the headphones: the audio with STUDIO is the crispiest; however, we have lost some audio frequencies beyond the selected audio spectrum limits. The effect can be visualized with before (= STEEP) and after (= STUDIO) images of AUDIO WINDOW (in JAGUAR PRO only).





In STUDIO, a lot of attention has been paid for eliminating the lowest frequencies. Even though most of these are located in the sub-audible frequency area, they may have some negative impact on the audio result / waveform. By default, in STUDIO we want to cut off everything as much as possible below the 80-Hz limit (= the lowest main frequency of the human speech). The filter curves are much steeper at the edges than in the other modes.

HOW TO

You can activate the STUDIO mode by rotating the AUDIOBAR > BASE | STEEP | STUDIO button to the "STUDIO" position. JAGUAR PRO allows you to enable it by clicking the filter area on the FILTER APPLET (more information in the APPLET help) or via the AUDIO APPLET.

The JAZZ and CALLIOPE filters use different specifications/different mechanisms in the STUDIO mode so the audio output may sound a bit different when comparing those filters using the same bandwidth / offset.

TEXTPADS

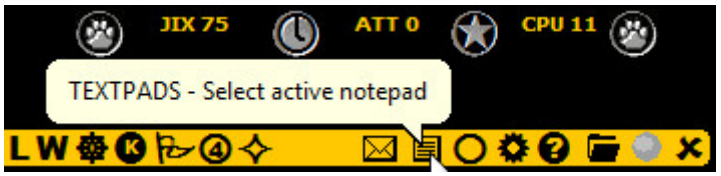
JAGUAR PRO ONLY

TEXTPADS are separate independent text windows for editing textual data.

JAGUAR offers the built-in editing support for the following files:

- LOCAL LOG = LOG.CSV (see LOGGING for more details)
- OFFSETS = OFFSET.TXT (see OFFSETS for more details)
- MSG NOTES = MSG.TXT (see MSG BAR for more details)
- LIFESAVER = LIFESAVER.LOG (see LIFESAVER for more details)
- JIXHISTORY = JIXHISTORY.LOG (see JIX for more details)
- TURTLE = Basic text version of the station database (see TURTLE for more details)

HOW TO



Any TEXTPAD can be opened by clicking the TOOLBAR > TEXTPADS icon and selecting the desired TEXTPAD from the popup menu or using TOP MENU > LOGS (TURTLE is not included in this menu).

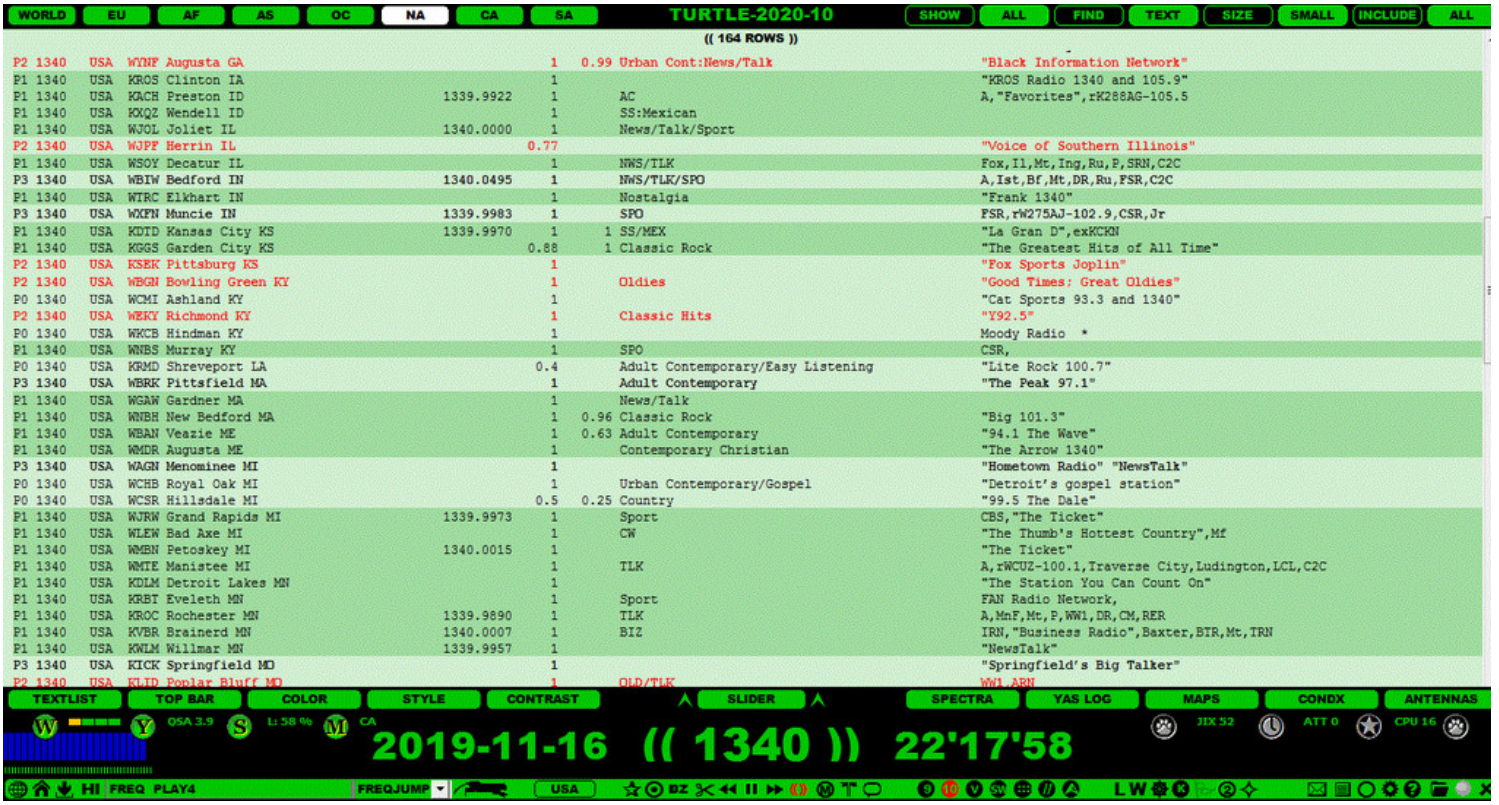
A TEXTPAD window contains some tools on the menu bar:

- NEXT: Rotate the standard TEXTPADs by clicking NEXT
- FIND: Open a simple search tool for finding strings from the text
- + and -: Increase/decrease the text size by clicking these buttons
- SAVE: Use the TEXTPAD for editing, and then SAVE the changes (not allowed for TURTLE)

By default TEXTPAD is opened on the left side of the screen as a narrow window, but it can be re-positioned and resized in standard ways during the session. After the JAGUAR restart only the TURTLE TEXTPAD is reopened automatically (using the user-defined size/position) offering a nice way to keep the station database always open on the secondary PC display. One convenient method is also to toggle the TEXTPAD full screen <> narrow window by double-clicking the TEXTPAD title bar.

TEXTSCREEN

TEXTSCREEN is a full-screen mode for station databases. TEXTSCREEN will cover the whole graphics area but the bottom bars (including PLAYBAR) are still accessible.



HOW TO

KEY = T

You can use the "T" key to open/close the TEXTSCREEN mode. TEXTSCREEN can also be opened/closed by clicking the left arrow next to the SLIDER button.

If you move the mouse over the text area, you can scroll data up/down with the mouse wheel.

THEMES

JAGUAR PRO ONLY

In addition to the standard JAGUAR displays, there are six "alternative wallpapers" available if you want some variety for your eyes while listening:

- WINDOWS
- LONELY PLANET
- COASTGUARD
- TROPICANA
- NOSTALGIA - This one reminds you of how our hobby has changed in 60 years.

In the WINDOWS theme, other active Windows applications can be seen in the background. JAGUAR shows only the bottom-level bars, and some other small windows such as applets.

HOW TO

KEY = ALT-W

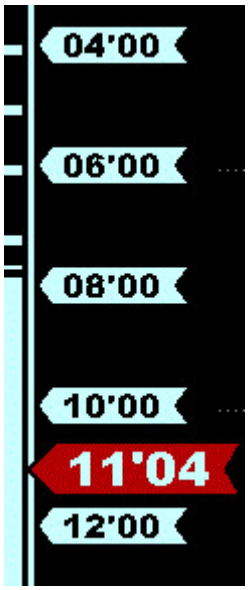
You can press ALT-W to rotate the THEMES. Any THEME can also be selected directly from TOP MENU > THEMES.

You can return to the HOME display by pressing the "W" key or by clicking the TOOLBAR > HOME icon.

TIMEFRAME

TIMEFRAME is one of the fastest ways to navigate in time within the current DX DAY (2000-2000 UTC).

TIMEFRAME is shown on the left edge of the graphics area, and you can jump to any visible HH'MM time spot simply by clicking on that spot.



HOW TO

TIMEFRAME becomes visible when you move the mouse to the left edge of the graphics area. It will be cleared automatically when you move the mouse away from the edge.

If you have the mouse over TIMEFRAME, you can scroll it up/down with the mouse wheel or with the left/right arrow keys. Left-click any recorded HH'MM in order jump to that position. Only even MM minutes (00, 02, 04, ...) are included in the bars in order to keep TIMEFRAME compact.

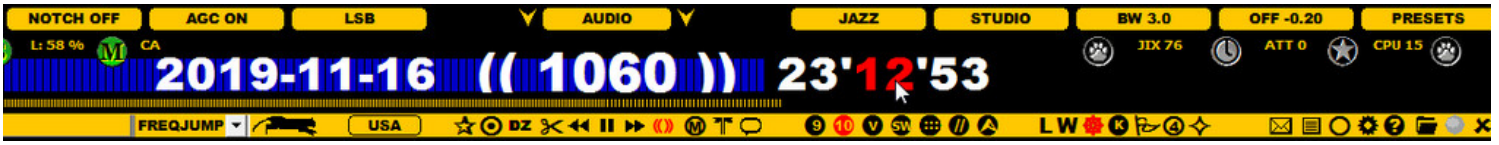
TIMEFRAME is not available on the THEMES displays.

TIMEWHEEL

TIMEWHEEL allows easy navigation in time and frequency, based on the selected stepping (months, days, frequency, hours, minutes or seconds).

HOW TO

Toggle the TIMEWHEEL mode ON and OFF by clicking the TOOLBAR > TIMEWHEEL icon. When TIMEWHEEL is enabled (i.e. the TIMEWHEEL icon is red), you can hover the mouse over each individual component of the date/timestamp on PLAYBAR, turning the component to red. Then, using the mouse wheel or the left/right arrow keys, you can scroll that time element forward/backward. Scrolling the years is not supported.



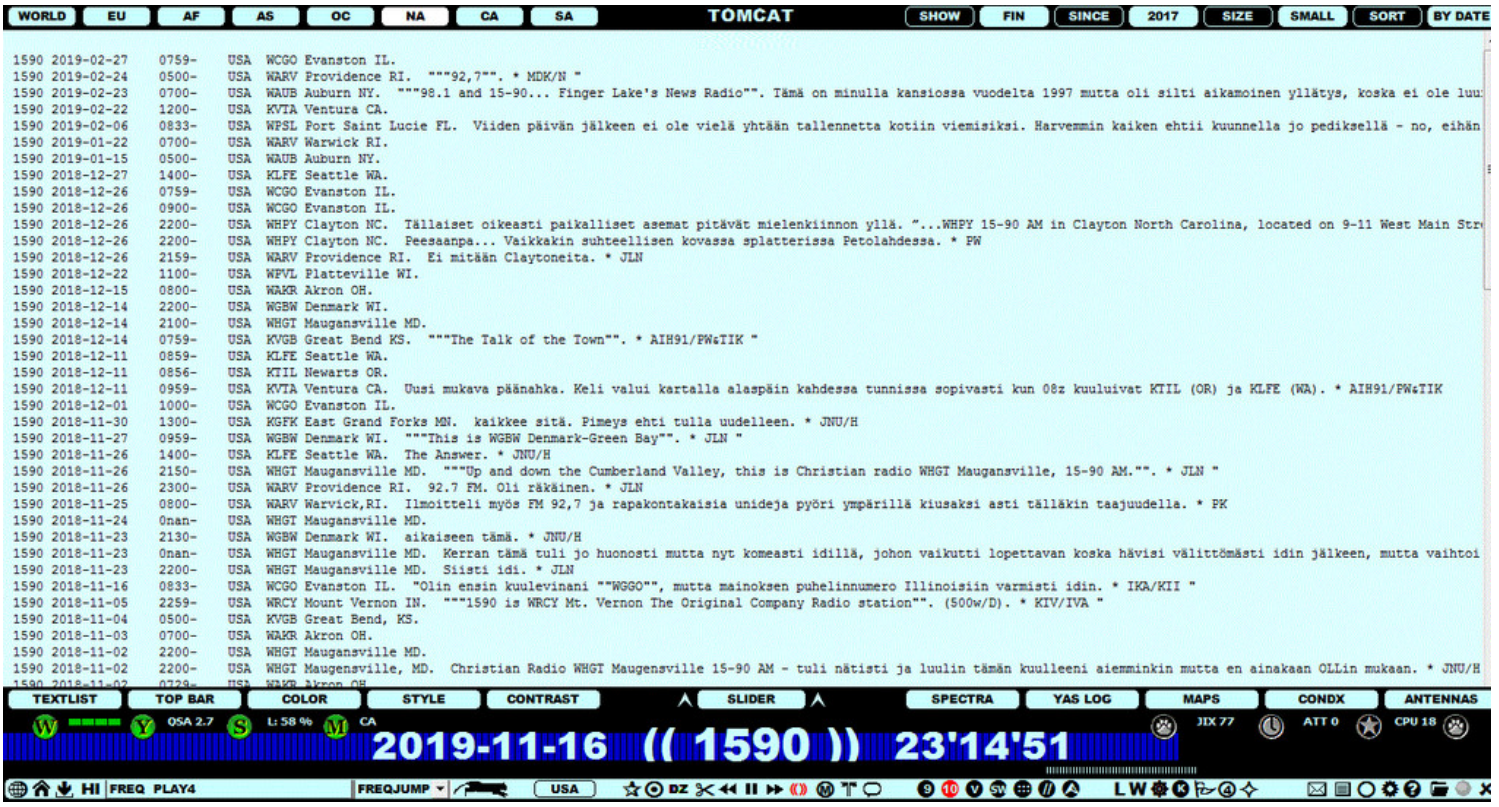
If TIMEWHEEL is enabled, pressing the TAB key will rotate the active scrollable objects: MONTH > DAY > FREQUENCY > HOUR > MINUTE > SECOND.

Note that the use of TIMEWHEEL requires that all the files have been recorded with JAGUAR.

TOMCAT

TOMCAT is a huge database of Scandinavian (Finland / Sweden / Norway) loggings. The results can be filtered by continent, country where logged, and the year (loggings since 2***). The results can sorted either by DATE (descending) or ITU (ascending). TOMCAT is located in an external server, and the logging data is updated periodically by our team.

In the example below, a TOMCAT query is made by the following criteria: "SHOW loggings made in FIN (Finland) SINCE 2017 ON 1390 and SORT the results BY DATE". The results are shown in the full screen mode (see TEXTSCREEN for more details).



HOW TO

TOMCAT is an online database so an Internet connection is required.

You can use TOMCAT from DATABASE BAR: click the SLIDER button so that you will see the standard database window and DATABASE BAR. Normally, you will see your current TURTLE version (TURTLE-YYYY-MM) in the middle of the bar. Move the mouse over that area and the TURTLE and TOMCAT buttons can be seen. Click the TOMCAT button.

TOMCAT shows Finnish and Norwegian MW DX loggings loaded from OLL ("Online Log"). TOMCAT uses a shadow copy of the real OLL, and the copy is updated a couple of times a year. The Swedish loggings are provided from ARC MV-Eko. Most of the loggings are not in English but they are certainly still very useful: many loggings contain ID transcriptions which are often helpful when trying to identify weak stations. In addition, the loggings can be translated into English. If you click a logging, a popup window appears with text ((TRANSLATE ?)). If you hit "YES", the logging will be translated using your favorite browser and the Google translator.

On DATABASE BAR, you will see the following query buttons:

- CONTINENT buttons: Select the target continent for the loggings (WORLD = show all)
- FIN / SWE / NOR / ALL: Select Finnish / Swedish / Norwegian / All loggings
- SINCE YEAR: Limit the results to start from the selected year
- SIZE: Select the font size (SMALL / STOCK / BIG / MAX)
- SORT BY: Sort by time (BY DATE) or by country (BY ITU)

When you modify any of the query filters or tune in to another frequency, the result set is refreshed immediately.

You can return to the standard TURTLE mode by clicking the TURTLE button on DATABASE BAR.

TOOLBAR

TOOLBAR contains a set of icons/buttons for the most-used JAGUAR features. Most of the icons toggle the corresponding functionality ON and OFF. Many of the icons also rotate the available values when clicked on.

TOOLBAR contains the following icons:

- WWW - Open/close JAGUAR's built-in browser window (see WWW).
- HOME - Jump directly to HOME from any JAGUAR display.
  - Second click enables HOMESCAN (the HOME icon is red when the HOMESCAN is enabled, see HOMESCAN for more information).
  - Third click disables HOMESCAN.
- SAVE - Left-click saves the current HOME spectrum to the hard disk for further use.
  - The spectrum file is saved to the SCANS subfolder of the recording output folder.
  - This save can also be made automatically by enabling AUTOSAVE (the SAVE icon is red when AUTOSAVE is enabled, see SETTINGS > SYSTEM > AUTOSAVE for details).
- HIRES - Start/stop the high-resolution SPECTOR mode. When HIRES is enabled, the SPECTOR accuracy is 0.1Hz (normally 0.5Hz). HIRES requires SETTINGS > SPECTOR > FAST_CALIBRATE enabled.
- JAGRUN SCRIPT - Default commands for the currently-active JAGRUN script.
  - You can edit the script field for temporary changes if needed (see JAGRUN and GOKEYS).
- JAGRUN MENU - A list of the available JAGRUN scripts.
  - You can change the script contents permanently, or add new scripts to this menu (see JAGRUN and GOKEYS).
- JAGRUN - You can fully automate your standard file/frequency scanning with JAGRUN scripts (see JAGRUN).
- USA - "U.S. CONFIG button". Special services for USA to control the patterns / map displays (call signs <> formats) / database (standard TURTLE <> TIS). More information below.
- DAYLOG - Add a bookmark (= a TIMESTAMP/FREQUENCY pair with "UNID" text) to DAY.LOG. See DAYLOG.
- RECORD - Start/stop continuous recording.
- DAYZONE - Toggle the dayzone/grayline simulation on/off (see DAYZONE).
- SCISSORS - Start/stop flushing the output audio to CLIPPER (JAGUAR's built-in audio editor). See CLIPPER.
  - If you have defined an audio LOOP before clicking SCISSORS, you can choose if you want to extract that part of the wideband file into a smaller wideband file (limited by the LOOP). See CHOP.
- PREV FILE - Jump to the previous file.
- PAUSE/MUTE - Toggle PAUSE ON and OFF (or MUTE ON and OFF in the LIVE mode).
- NEXT FILE - Jump to the next file.
- FREQ SCROLL - Toggle the frequency-scrolling mode ON and OFF.
- MAP SYSTEM - Rotate the map styles displayed (STANDARD > BEEHIVE > CATMAP).
  - STANDARD is the default and normally in use.
  - BEEHIVE and CATMAP are special maps used in the presentation of your DX history (see BEEHIVE and CATMAP).
- LOOP - Repeated audio looping.
  - First click: set the audio loop start.
  - Second click: set the audio loop end.
  - Third click: release the loop and their markers. See LOOP.
- STICKERS - Create a SCREENSHOT with stickers, see STICKERS.
- 9 kHz - Set a frequency stepping of 9 kHz for EU/AF/AS/OC stations.
  - Note that the selected stepping (from 9 kHz up to COMPARE) can be released only by setting a different stepping mode (9 KHZ / 10 KHZ / VFO / SHORTWAVE / SIXPACK / COMPARE)
- 10 kHz - Set a frequency stepping of 10 kHz for NA/CA/SA stations.
- VFO - Select the VFO frequency list for stepping. In addition to the standard VFO (defined in WORKSET), you can define a maximum of 10 alternative VFO lists called "DIALS".
  - If you have defined one or more DIALS, clicking this icon prompts the VFO selection menu. See DIALS and VFO.
- SHORTWAVE - Jump to the active shortwave frequency, and switch to a frequency stepping of 5 kHz.
  - The active shortwave frequency is set by manually entering the frequency and pressing ENTER. The SW button will remember the last used shortwave frequency. See SHORTWAVE.
- SIXPACK - Simultaneous control of six user-defined frequencies. See SIXPACK.

- COMPARE - Enter the mode where you can switch (or compare) between the two lastly tuned frequencies.
- COBRA - Demodulate the audio from the highest-peaking carrier frequency around the nominal. See COBRA.
- LIVE<>ARCH - Toggle the LIVE mode and the currently-active ARCHIVE file. See LIVE MODE and ARCHIVE MODE.
- WALLPAPER - Rotate the main wallpapers (HOME > YAS > MAPS). See WALLPAPER.
- TIMEWHEEL - Toggle the TIMEWHEEL mode ON and OFF. See TIMEWHEEL.
- KALIBRATE - Calibrate the frequency display. See KALIBRATE.
- FLAGS - Show the known offsets as vertical "flagpoles". See FLAGS.
- ZOOM +/- - Rotate the SPECTOR resolutions (SMALL > MEDIUM > LARGE > GIANT).
    - The number within the icon shows the current SPECTOR zoom level (1 = smallest, 4 = highest).
- CLEAR - Toggle the "clean display" on <> off. See CLEAR.
- FILEMAIL - Transfer files between your JAGUAR PCs. See FILEMAIL.
- TEXTPADS - Small notepad-style editors for JAGUAR text files. See TEXTPADS.
- APPLETS - Individual (or all) applets can be launched from the popup menu. See APPLETS.
- SETTINGS - Toggle the SETTINGS dashboard on <> off. See SETTINGS.
- INFO - Show the INFO popup menu with the following menu items:
    - INFOBOX: Show INFOBOX (see the INFOBOX help)
    - KEYBOARD: Show the keyboard help (see KEYBOARD)
    - CONTACT: Show the contact information
- OPEN - Open a new archived wideband file for playback.
- KIT - Minimize JAGUAR into the KIT mode (see KIT).
- SHUTDOWN - Show the popup menu for shutdown/reset services, including the following options:
    - REBOOT PC: Reboot the computer.
    - POWERSAVE: Hibernate the computer.
    - RESET: Close and restart JAGUAR and delete the internal restart information (= the SYSTEM.INI and/or SETUP.INI files).
        - Recommended as the first action if there are any kind of strange JAGUAR problems in playback/startup.
    - RESTART: Close and restart JAGUAR.
    - SHUTDOWN: Shutdown JAGUAR.

HOW TO

A brief summary of each toolbar function is presented above, more details can be found in the item-specific HELP sections. The multi-purpose "USA button" is described below.

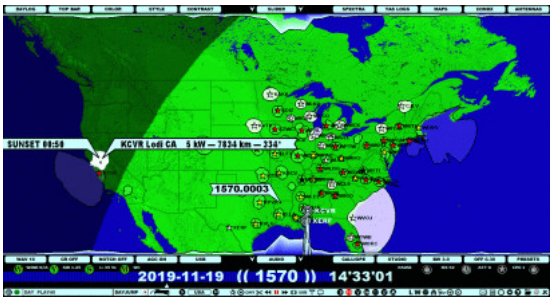
"USA or U.S. CONFIG button"

The "USA button" can be used for a quick jump to apply "North America DX-settings": the frequency, continent and map are switched to NA (if not yet already). When this is done (or you already have North America as your DX target), JAGUAR shows "Star Spangled Banner" (three stars) instead of the "USA" text when the mouse is over this button. By default, the stars are black.

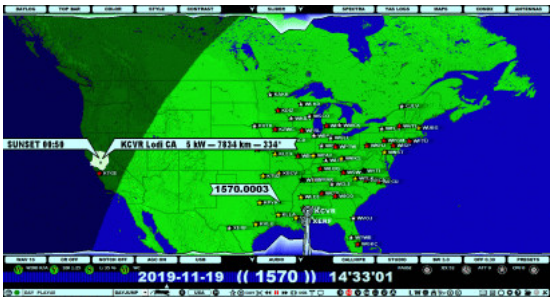
Each of the stars can be clicked on to control the following things:

- STAR 1: Pattern control. This is the same as pressing ALT-N (see PATTERNS for more details). Clicking this rotates the pattern map modes as follows:

  "ALL PATTERNS (DAY)" - RED star > "ALL PATTERNS (NIGHT)" - RED star >



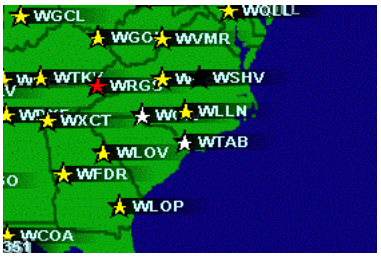
"SHOW PATTERN (DAY)" - GREEN star > "SHOW PATTERN (NIGHT)" - GREEN star




```
> "PATTERNS OFF" - BLACK star

When the "SHOW PATTERN" mode is selected, the pattern is shown for the selected station when you move mouse cursor over the station star. You c
```

- STAR 2: Map control for showing the call signs (BLACK star) <> formats (RED star). The "Callsign mode" is the default.



- STAR 3: Database control for showing the standard TURTLE (BLACK star) <> TIS stations(RED star). The standard TURTLE is the default.

TOPBAR

JAGUAR PRO ONLY

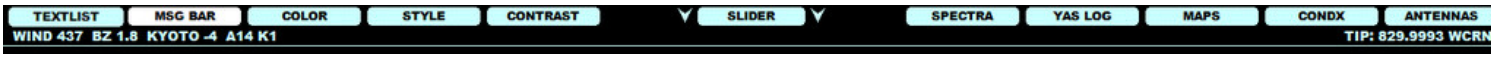
TOPBAR is an optional bar located below SLIDER. The TOPBAR mode can be one of the following:

- OFF (default)

- SCOPE BAR: Optional extra SCOPE (signal power bar for all MW9 / MW10 frequencies)

- TITLE BAR: Additional frequency titles on the SPECTRA and YASLOG displays

- MSG BAR: Solar data, optional frequency-based messages, optional time-based alerts and SPECTOR tips

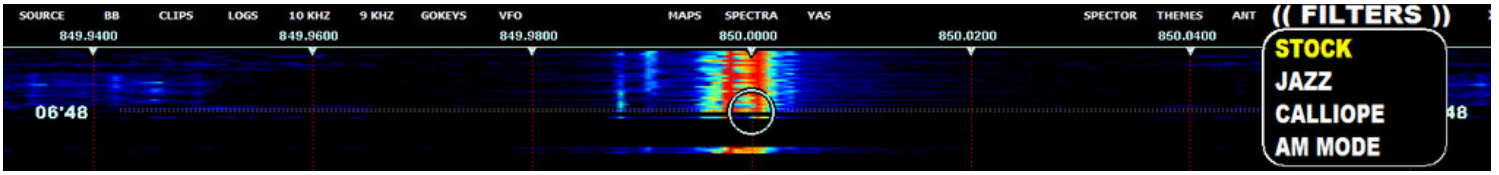


HOW TO

TOPBAR is OFF by default, but you can rotate the modes by clicking the TOPBAR button, or by scrolling the mouse wheel or with the left/right arrow keys when the mouse is over the button.

More information about SCOPE BAR and MSG BAR in the SCOPE and MSG BAR help sections.

TOP MENU



Many JAGUAR functions and features have shortcut keys or toolbar icons but they can also be invoked from TOP MENU. TOP MENU can be used for opening and closing the following JAGUAR functions (most of these functions are described in their corresponding help sections):

SOURCE - select the playback or recording function

- ARCHIVE (open a new archive file for playback)
- LIVE<>ARCH (toggle the last-used archive file and LIVE)
    - ... REC ON
    - ... REC SAVE
    - ... REC CANCEL
    - ... BREAKPOINT (re-creates the playback buffer for LIVE)
- SHORTWAVE (direct jump to the last keyboard-entered shortwave frequency)
- REMOTE (reserved for future use)

BB APPLETS - open or close the desired tool applet

- FILTER
- TINYEQ
- SPACE WX
- S-METER
- WAVE
- AUDIO
- RADAR
- CALIBRE
- SHOW ALL
- CLOSE ALL

CLIPS - open the audio clip folder

LOGS - open or close the desired text log

- LOCAL LOG - loggings made via LOGBOX
- OFFSETS - my own offsets
- MSG NOTES - see the MSG BAR help
- LIFESAVER - system error messages
- JIXHISTORY - JIX value history log

10 kHz - switch to the frequency stepping of 10 kHz

9 kHz - switch to the frequency stepping of 9 kHz

GOKEYS - select the desired GOKEY (= automated playback script)

- (((GO)))
- TIMEJUMP
- FREQJUMP
- TOPJUMP
- TOPBOTS
- DAYJUMP
- HH'MM'SS
- XX'MM'SS
- USB_LSB
- User defined GOKEYS

VFO - select the desired frequency list (from the default VFO list or user-defined DIAL)

- VFO DEFAULT
- User-defined DIALS

MAPS - select the desired continent/map wallpaper

- World
- Europe
- Africa-MidEast
- Asia

- Oceania
- North America
- Caribbean
- South America
- Antenna Map
- NA Patterns
- MWLI Logmap
- BEEHIVE
- CATMAP

SPECTRA - select the HOME or offset history display

- HOME
- HISTORY

YAS - switch to the YAS display mode

SPECTOR - select the desired resolution and/or calibrate JAGUAR

- SPECTOR SMALL
- SPECTOR MEDIUM
- SPECTOR LARGE
- SPECTOR GIANT

THEMES - select an alternative background wallpaper

- WINDOWS
- LONELY PLANET
- COASTGUARD
- TROPICANA
- NOSTALGIA

ANT - select the desired antenna. The [ANTENNAS] section in JAGUAR.INI must be defined.

- User-defined ANTENNAS

FILTERS - select the desired RF filter

- STOCK
- JAZZ
- CALLIOPE
- AM FILTER

MESTOR - enter the MESTOR applet mode

MISC - miscellaneous functions

- INFOBOX
- HELP SCREEN - a list of the keyboard shortcut keys
- DELETIONS
- REBUILD YAS
- PAUSE
- TURTLE
- CONDX
- FLAGS
- CLEAR
- MIDGET
- CHOP

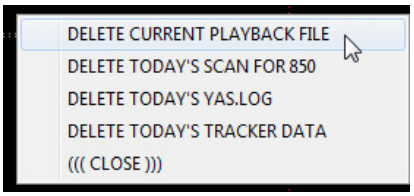
HOW TO

TOP MENU can be opened by pressing the ENTER key, and the menu items can be scrolled with the mouse wheel or the arrow keys. The desired function can be selected from TOP MENU by a mouse click or by pressing ENTER again.

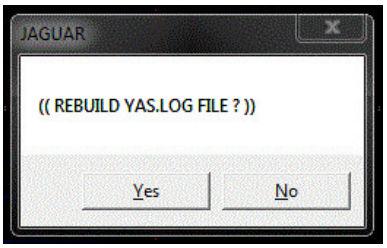
TOP MENU can also be invoked by right-clicking the graphics screen. This is the default for a mouse right-click in JAGUAR. You can change this default via TOOLBAR > SETTINGS > RIGHTCLICK to any other option listed there. You can exit the menu without any action just by moving the mouse over "X" on the right edge of the menu (no need to click on it), or by right-clicking the graphics screen, if the default right-click mode is used.

TOP MENU > MISC contains three functions which can be accessed only from this MISC menu:

- DELETIONS
- REBUILD YAS
- CHOP (separate help is available for this)



When DELETIONS is selected, a new popup menu is opened. The second menu item can be selected to delete the SCAN files for the currently-playing frequency (= 850 in this example).



When REBUILD YAS is selected, JAGUAR asks for confirmation and if accepted, the current (corrupted or missing) YAS.LOG will be recreated, based on the existing recordings. This function requires that the recordings have been made with JAGUAR.

TRACKBAR

JAGUAR PRO ONLY

TRACKBAR (located just below PLAYBAR) is a plain black horizontal bar by default. If you have activated TRACKER (see below), TRACKBAR will show what HH'MM (hour:minute)/frequency pairs you have already listened to, and how much time you have spent on each HH'MM/frequency pair.

TRACKBAR is fully aligned with PLAYBAR's playback time: each minute on PLAYBAR has a corresponding minute area below it, and you can see thickening vertical bars based on how many seconds you have spent on each particular minute on PLAYBAR.

The TRACKBAR area is also used to display the top-of-the-hour (TOH) and bottom-of-the-hour (BOT) markers for PLAYBAR if the file being played back contains an exact TOH/BOT period (see PLAYBAR for more details).

HOW TO

TRACKER can be enabled/disabled via SETTINGS > SYSTEM > TRACKER > YES | NO. If enabled, JAGUAR collects the listening activity tracking data, i.e. data on how much you have spent on each frequency in any specific HH'MM. This data is saved to the YAS.LOG file.

TRACKER does not have anything common with YAS logs but because both are internal daily data collectors, both results are saved to the same file. No need to maintain two separate files in the background.

TROUBLESHOOTING

JAGUAR PRO ONLY

Software support is available only for JAGUAR PRO users. Most JAGUAR production versions are very stable while the TEST versions may have issues due to a fast development cycle. If JAGUAR crashes unattended, no problem: JAGUAR has been developed for an unattended 24x7 use, so LIFESAVER.EXE will normally wake JAGUAR up, and no recordings will be lost.

When you report an issue to the JAGUAR PRO forum at groups.io, it will be fixed asap - just help the development team by giving a "recipe", or detailed instructions on how to reproduce the problem. We cannot fix problems without adequate details so please do not send bug reports just mentioning "JAGUAR crashed last night" or "xxx failed". If we cannot reproduce the issue based on your description, we will ask for more information and/or start a detailed debugging process.

If you have any issues at a JAGUAR start-up, most likely the culprit is located in the SYSTEM.INI file. You can try TOOLBAR > SHUTDOWN > RESET which deletes SYSTEM.INI and/or SETUP.INI and restarts JAGUAR.

An alternative way is to delete the SYSTEM.INI and SETUP.INI files manually from the SETTINGS folder. JAGUAR will deploy all the default settings at the next start-up. If nothing else seems to help, you may also try to make a fresh install from the JAGUAR full-installation package.

Also, if you are running an old version, you should try to install the latest version (via STAR EXPESS) before reporting any bugs or issues. It is possible that the issue has already been fixed.

Sometimes the culprit may be in the Windows operating system itself. For example, users should enable the Windows cache flushing if external hard disks are used, and disable all sleep states in Power Settings as described in the installation instructions.

When a severe error/crash happens, JAGUAR writes a line into LIFESAVER.LOG. This log is saved in the JAGUAR folder. One common log entry is HANG. This means that the I/O flow from Perseus to the buffer disk is interrupted, and it cannot be recovered automatically without a JAGUAR restart. If your LIFESAVER.LOG contains a lot of these entries, changing a USB port or the USB cable may help. Note that in a 24x7 operation, there may be a few such HANGs weekly also in "100% healthy" setups.

Sometimes it may happen that the output file becomes corrupted. If the file length seems to be OK, it is possible that only the file header is corrupted. See instructions below on how to fix these situations ("INVALID PERSEUS FILE").

HOW TO

You can test how your setup survives from unattended crashes by creating an artificial crash during recording:

- Type .CRASH (dot before CRASH) and press ENTER, and wait to see if JAGUAR is automatically recovered and if recording continues normally after that (artificial) crash.

If you happen to find a corrupted file (you may get the message "INVALID PERSEUS FILE" or JAGUAR may hang/crash) during playback, no worries: it can be fixed.

- Jump to the next file for playback (to a file which can be played correctly)
- Type .FIX (dot before FIX) and press ENTER

- The file selection dialog opens, now select the corrupted file.
- Then reply "YES" when JAGUAR asks ((TRY TO FIX THIS FILE ?))

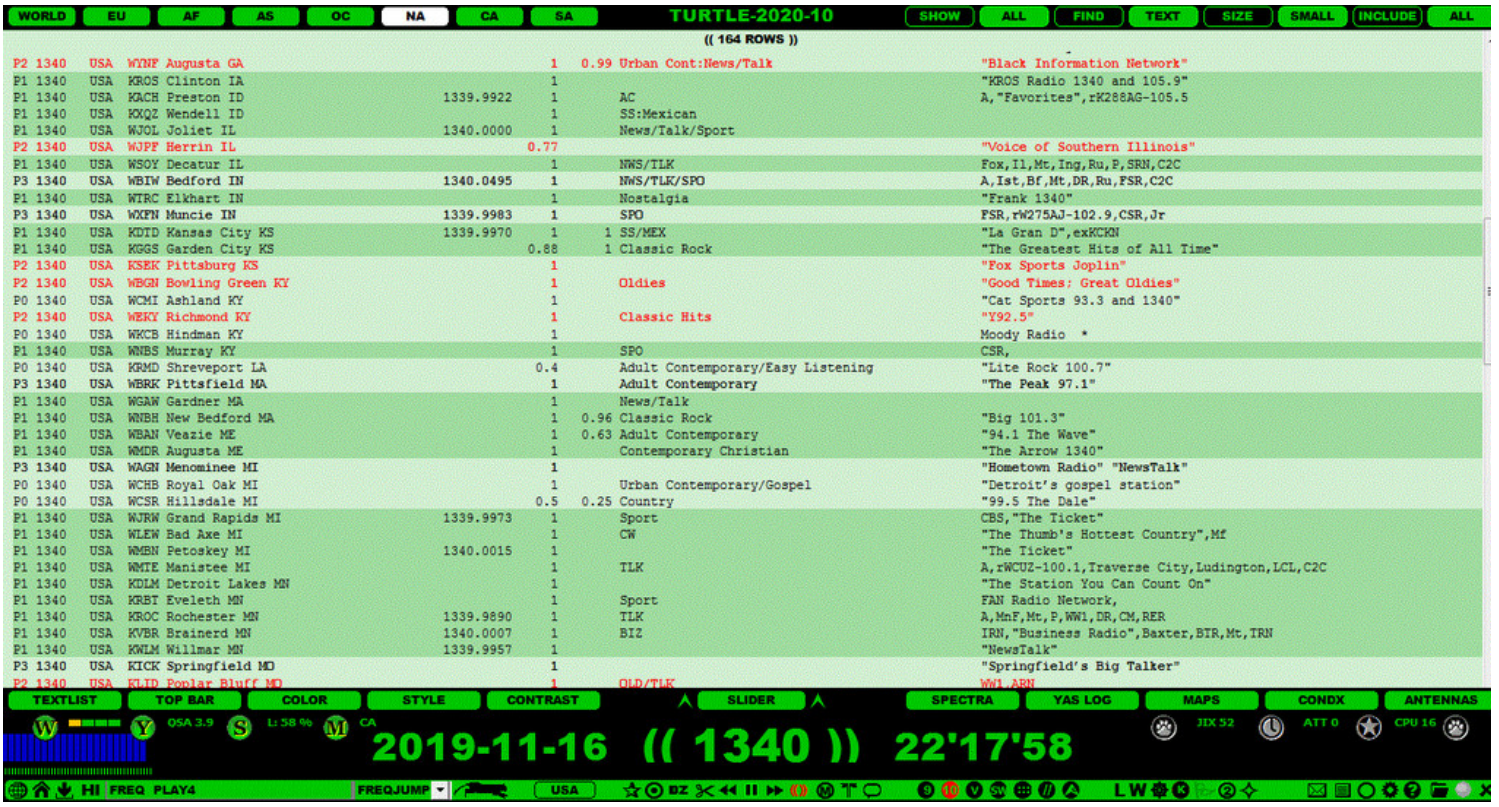
As a result, JAGUAR recreates the file header, and after this, the file should be fully available for playback.

TURTLE

TURTLE is JAGUAR's medium-wave station database, which is updated on a monthly basis. The TURTLE database itself is a standard text file named as "TURTLE-YYYY-MM.txt". By default, the JAGUAR installation package includes the default TURTLE to start with, but you can download the latest monthly database when needed. The TURTLE databases are saved in the TURTLE folder under the JAGUAR installation folder.

The TURTLE database is based on the MWLI data, with important added information on formats/slogans/networks for U.S./CAN stations. This added up-to-date information is crucial for NA DXers.

TURTLE is one of the cornerstones of JAGUAR: all the station locations on MAPS and logging functions are based on TURTLE.



HOW TO

The default TURTLE database can be found in the full installation package but it can be out of date at the time of the installation. You can always upgrade your TURTLE by following these simple steps:

- Open SLIDER (or use "T" for full TEXTSCREEN). You will see DATABASE BAR and the name of your current TURTLE database.

- Move the mouse over the TURTLE database name. The TURTLE and TOMCAT buttons will appear.

- Click the TURTLE button to see a small popup menu. Click "DOWNLOAD LATEST", and the latest TURTLE version will be downloaded and installed automatically as your current new TURTLE database.

Sometimes you may need to activate an older version of TURTLE. In that case, select "LOAD FROM DISK" on the popup menu. For example, if you are studying recordings from 2019-01, it is logical to use TURTLE-2019-01 instead of the latest TURTLE (or it is even better use TURTLE-2019-02, which contains the 2019-01 situation on the MW dial).

TIS DATABASE (North America)

Travelers' Information Stations (TIS), also called Highway Advisory Radio (HAR), are licensed low-powered non-commercial radio stations, used to broadcast information to the general public, including for motorists regarding travel, destinations of interest, and situations of imminent danger and emergencies. These are extremely interesting targets for DXers but very rare in the headphones, and because of the huge number of those stations in USA (over 2,300), they tend to fill TURTLE/US MAP/LOCATOR/etc. in vain most of the time. This is why JAGUAR has moved these stations to a separate TIS database, available only on demand (see TOOLBAR > USA > TIS).

The TIS database is created automatically for each monthly TURTLE database and saved in the TURTLE folder with a name format of TURTLE-YYYY-MM-TIS.txt. The TIS databases cannot be opened with the standard "LOAD FROM DISK" function (TOOLBAR > USA > TIS must be used for toggling the standard TURTLE and TIS).

VFO

On MW, frequency tuning is normally made in steps of 9 kHz or 10 kHz. When either of these is selected, JAGUAR's frequency scroll (the mouse wheel and left/right arrow keys) use the selected stepping while tuning. In addition to these two base stepping modes, sometimes it is also handy to use "memory banks" as an alternative stepping. These memory banks (frequency lists) are supported in form of "VFOs".

By default, JAGUAR uses the frequency list defined in the WORKSET window (see GUIDE > WORKSETS for more details). The default frequency list in the installation template is 1230, 1240, 1340, 1400, 1450, 1490, i.e. the graveyard frequencies. You can override this list, and in addition user-defined frequency lists can be added to the system (see DIALS for more information).

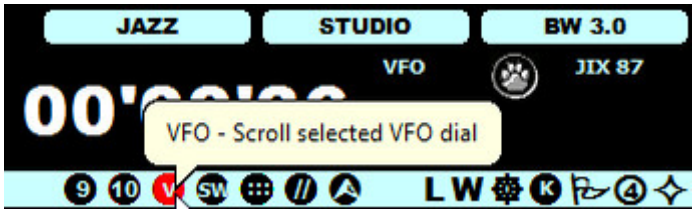
Pre-defined VFO frequency lists can be used efficiently for finding parallel programs or checking the signal levels of the indicator stations from specified areas. In addition, VFO frequency lists can be used in SCANS: you can give "VFO" (= the currently active frequency list loaded to VFO) as an input to LIVESCAN or FILESCAN (see SCANS for more information).

Note: DIALS and SCANS are not available in JAGUAR LITE.

HOW TO

TOOLBAR > VFO

Click TOOLBAR > VFO or select VFO from TOPMENU > VFO to activate the VFO-based frequency stepping. When the VFO-based frequency stepping is active, the VFO icon on TOOLBAR is red. In addition, the name of the currently active frequency list is shown on STATUSBAR (= either the active DIAL name or plain "VFO" if the WORKSET VFO is used.



VOYAGER

If you happen to have a 5-TB disk (or several of them) full of recordings, you do have a problem, namely, time. How on Earth you will ever have time to dig out all the gold from those files ?

Enter VOYAGER. VOYAGER is a new tool with a lot of potential, available if you have let JAGUAR to create the SCAN files during the recording (or created them afterwards using FILESCAN). Actually, VOYAGER is a "SCAN THE SCAN" tool.

VOYAGER is an explorer which you can send to an unchartered "signal space" (= a hard disk full of recordings) in order to find the time spots where the signal level on a given offset (or within an offset range) potentially reaches the audio level.

It is important to understand that VOYAGER will not search for the time spots where the signal on the desired offset/offset area is the strongest, but where the SIR (Signal-to-Interference Ratio) value is the highest.More info in the SIR help. "Interference" in this context means co-channel carrier peak(s).

SIR must be used instead of the signal power because the absolute signal power on some specific carriers does not necessarily correlate with the audio: even if the signal power is very high at some offset, there can be 20-30 stronger carriers around this nominal frequency. Also, if using only the signal power, we would not get the daytime signals to our result list because the nighttime signal levels are almost always stronger than those of daytime signals. Also, the use of an antenna preamplifier will complicate the analysis: non-amplified signals may not appear in the result list even if they would contain times where audio signals existed.

VOYAGER can give a huge speed benefit for solving UNIDs, either resulting in a fine new DX catch, or revealing that some familiar station has just drifted from its listed offset.

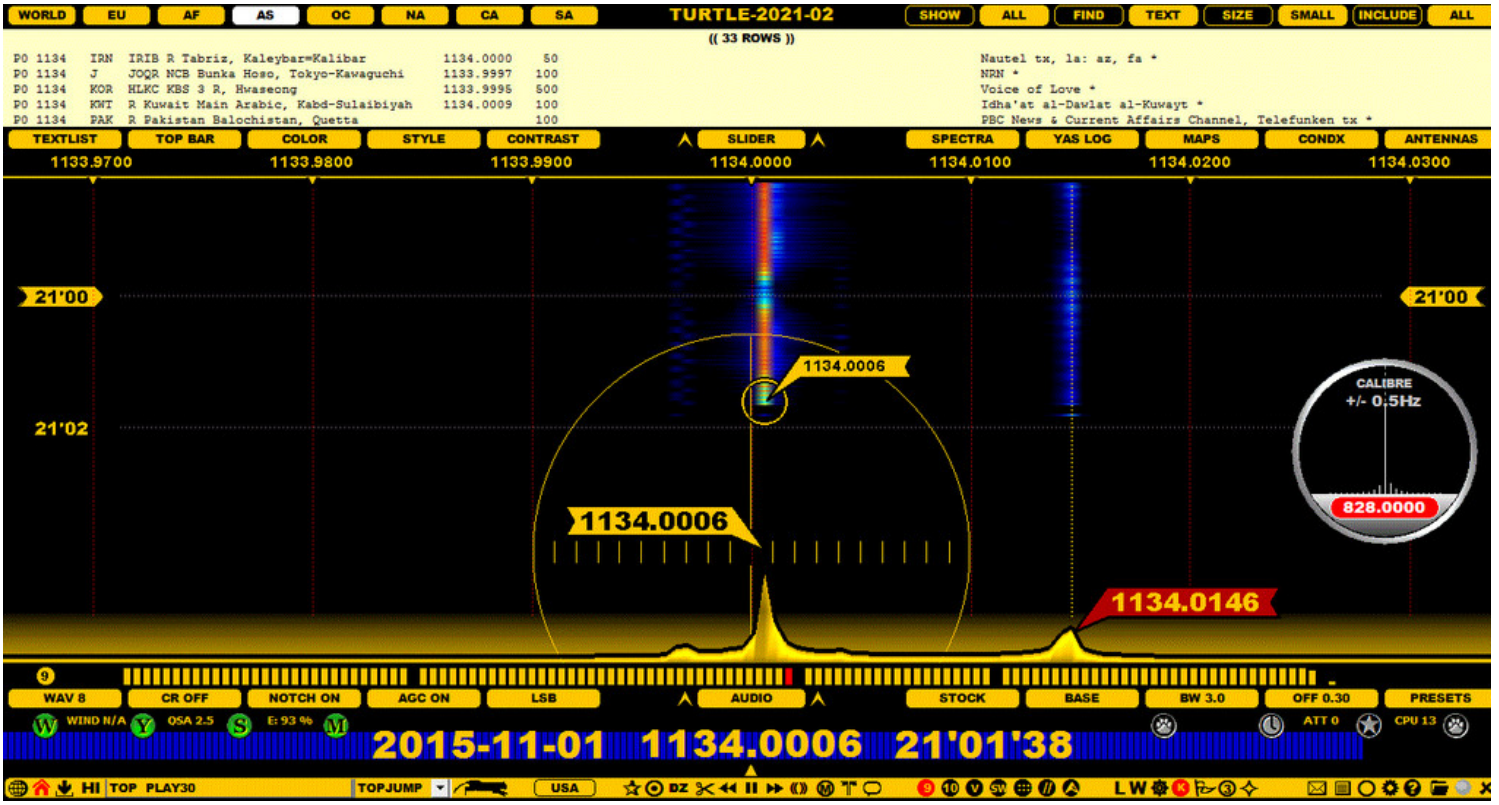
HOW TO

KEY = V

The use of VOYAGER is quite easy: press the "V" key to open the VOYAGER, define the target offset (by default, this is the exact offset you are currently playing, but you can select any other offset by a click of a mouse), define the offset range to be studied, i.e. "the pipe" (move the mouse over the grayed area and use the mouse wheel or left/right arrow keys to increase/decrease the pipe width), then press ENTER. The result list will appear soon (and the control jumps to the time shown at the first entry of the list). If you are lucky, you can identify the station already from this first hit; if not, the VOYAGER result list contains a maximum of 30 potential audio spots.

The idea is probably easiest to describe with an example:

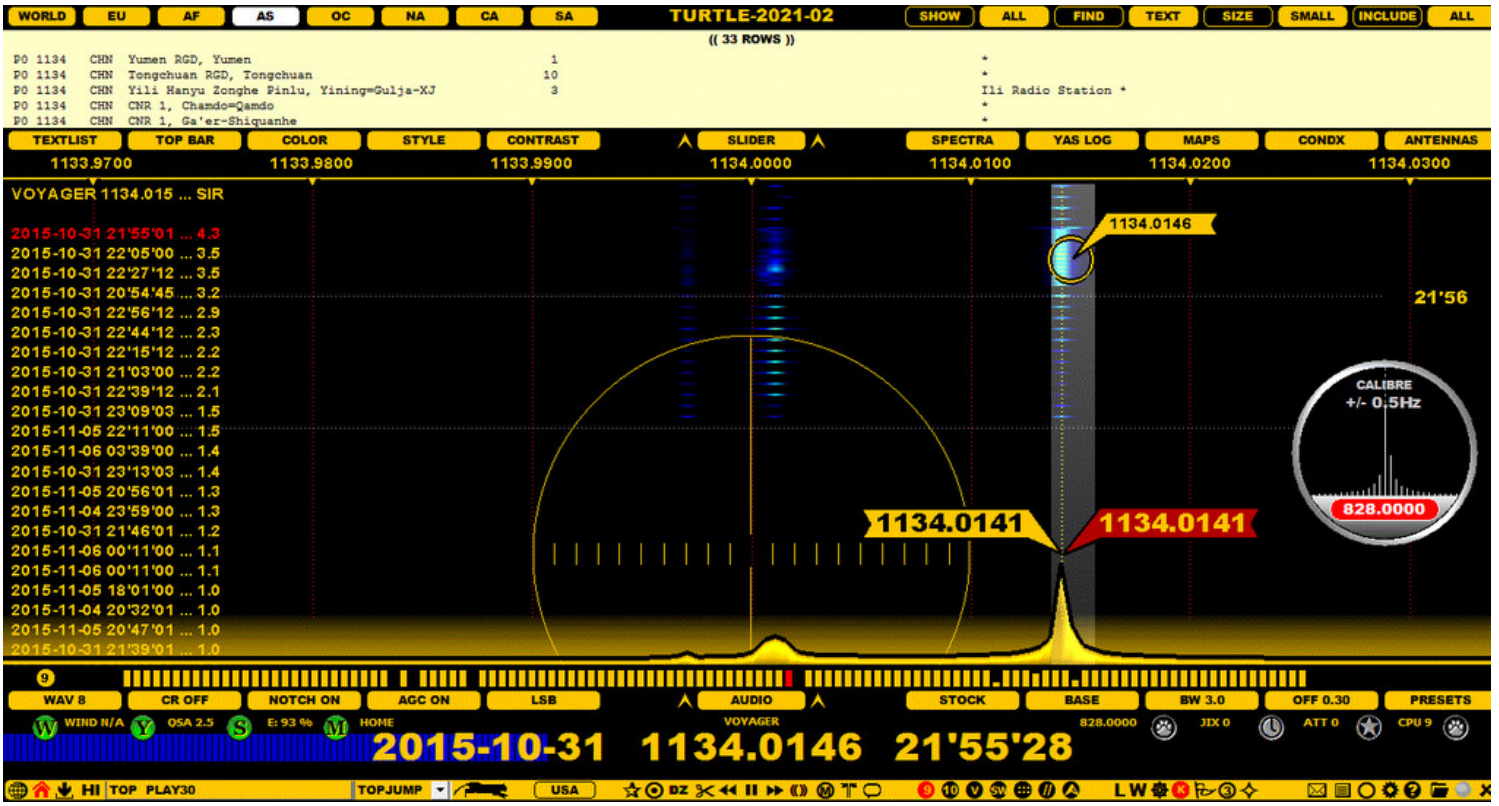
- You are noticing an interesting carrier peak on 1134.0146 kHz with no audio. Kuwait dominates on 1134.0006, but no idea who is on 1134.0146; even the offset flags do not "suggest" anything on that offset.



- Next you tune to 1134.0146 and press the "V" key to start VOYAGER. You will see a gray pipe on the spectrum around 1134.0146. You can widen the pipe a bit and then press ENTER. It takes a while until the search is finished and you will get the VOYAGER list.

The VOYAGER list shows that the carrier on 1134.015 is 4.3 stronger than the 2nd strongest station on that frequency on 2015-10-31 at 21'55'01 UTC. JAGUAR brings you there automatically when the list has been created and now you hear how Iran dominates at that time on

that frequency: the mystery solved.



You can get rid of the VOYAGER list by pressing the "V" key again, returning the control to the time spot where you were when you launched VOYAGER.

A wide VOYAGER pipe is good for offsets that are far away from the nominal. For example, Latin American stations can drift a lot, and they can be trapped with a wide pipe. However, close to the nominal, a wide pipe is not a good idea as it may capture stations that you are not interested in.

The current VOYAGER algorithm ignores the carrier peaks that do not belong to the "TOP 2" (two highest carrier peaks), so when a time spot is picked up to the result set, the pipe contains either the highest carrier peak or the 2nd highest peak at that listed time. If the carrier is the highest at that time, the corresponding SIR value is higher than 1.0. Assuming that the audible station has a carrier which belongs to the "TOP 2" is naturally not always true, but definitely in most of the cases it is. In fact, during an audio peak of a rare weak station it normally rises "to the top", i.e. temporarily it has the highest carrier peak.

The VOYAGER result list can contain real gold (good audio spots) but also "the fool's gold". Even if the SIR value is high, there may be no audio (or even no visible peak at that exact time spot). A good peak does not always necessarily correlate with audio so these spots can be ignored from the studies. If no visible peak exists at the result time, it is either because of calibration issues or corrupted SCAN data. Then, manual FILESCAN for those times may correct the data. However, in many cases, VOYAGER can also really find the spots where a rare station can be identified. In such cases, also the neighboring times should be studied carefully: VOAYGER divides the time space into 10-minute slots, and each picked result contains the best spot within that current 10-minute slot (even if there are many good audio spots within that 10-minute period, it is listed only once). The idea is that we do not fill the result list with times pointing to one "good file" only; instead, the results must be picked evenly from various files on the hard disk.

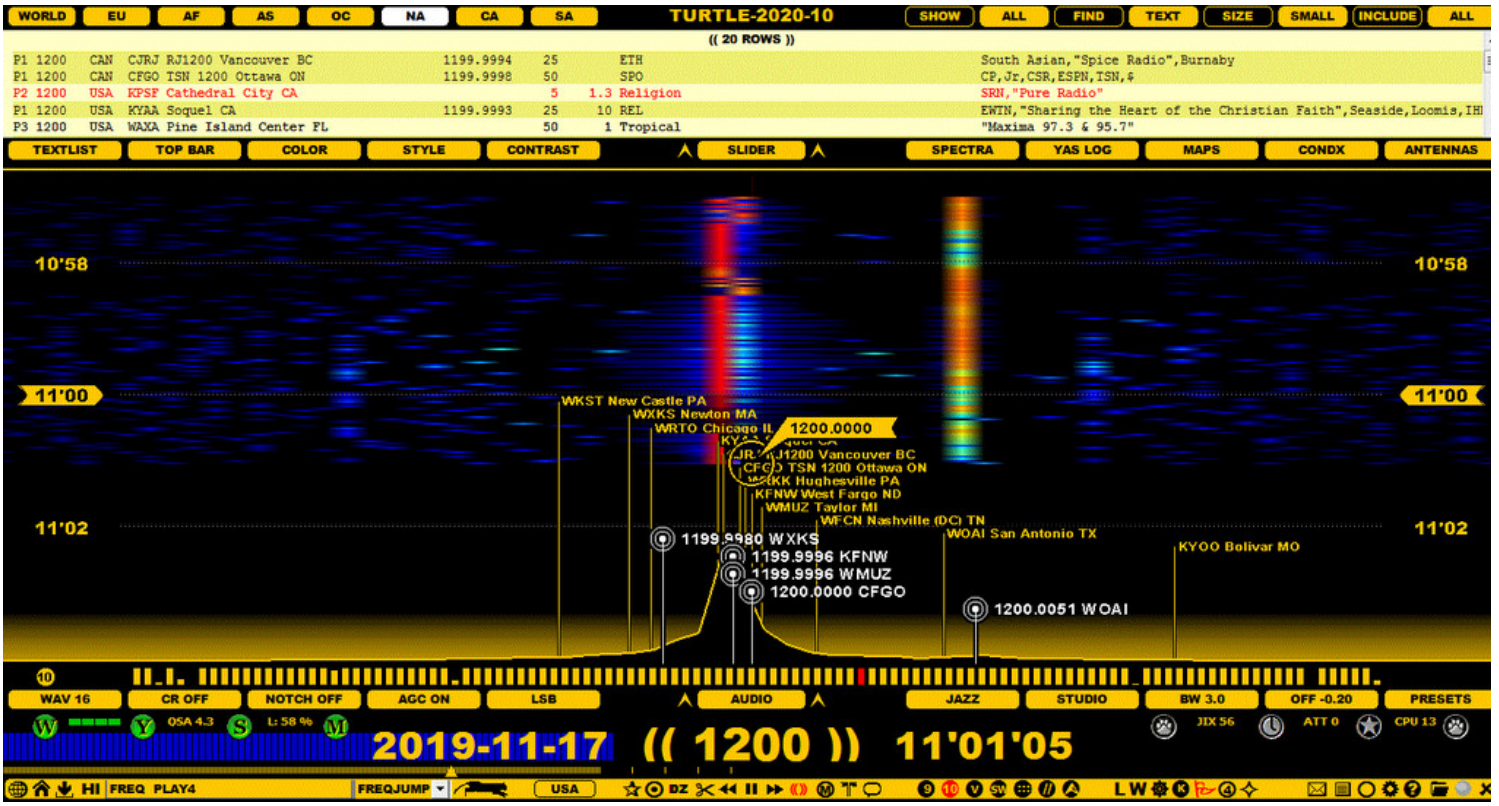
VOYAGER is still at the experimental stage, and the algorithm will be developed further.

WALLPAPER

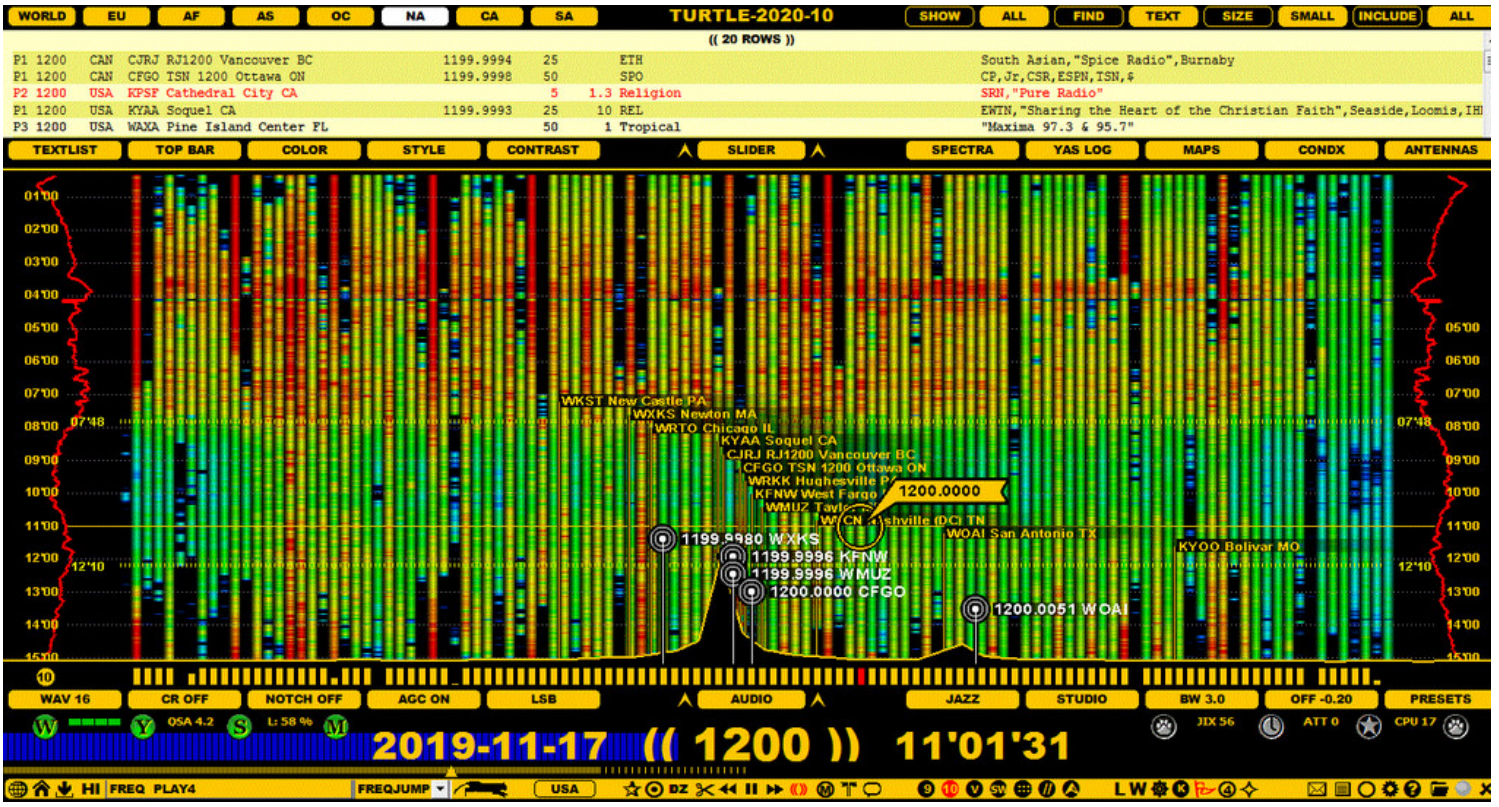
JAGUAR has three main graphics displays called WALLPAPERS: SPECTRA, YAS and MAPS. However, YAS is not available in JAGUAR LITE.

These three graphics displays are most often used as "background images" in JAGUAR, and JAGUAR offers a dedicated keyboard key for rotating/toggling them.

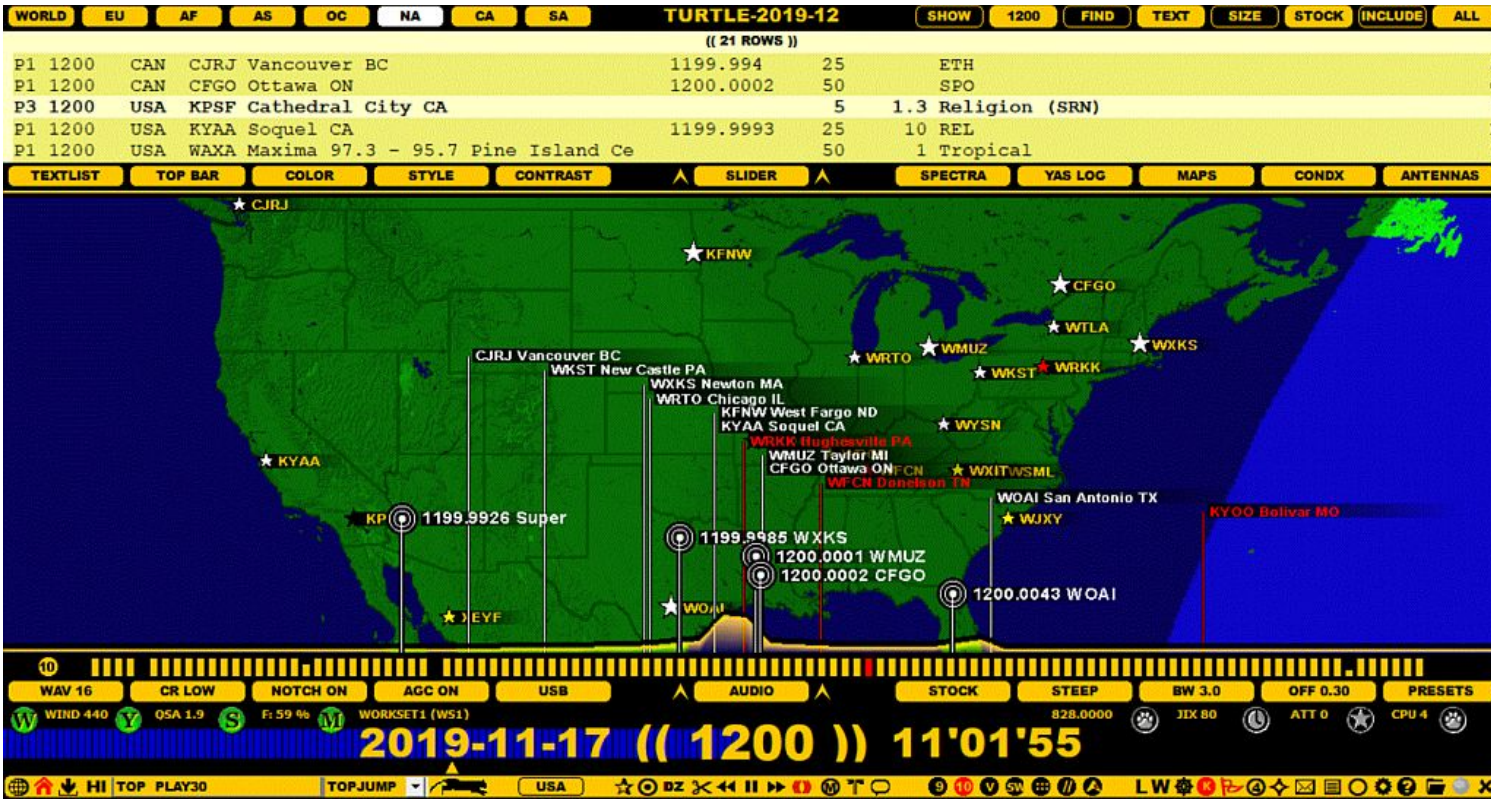
SPECTRA



YAS



MAPS



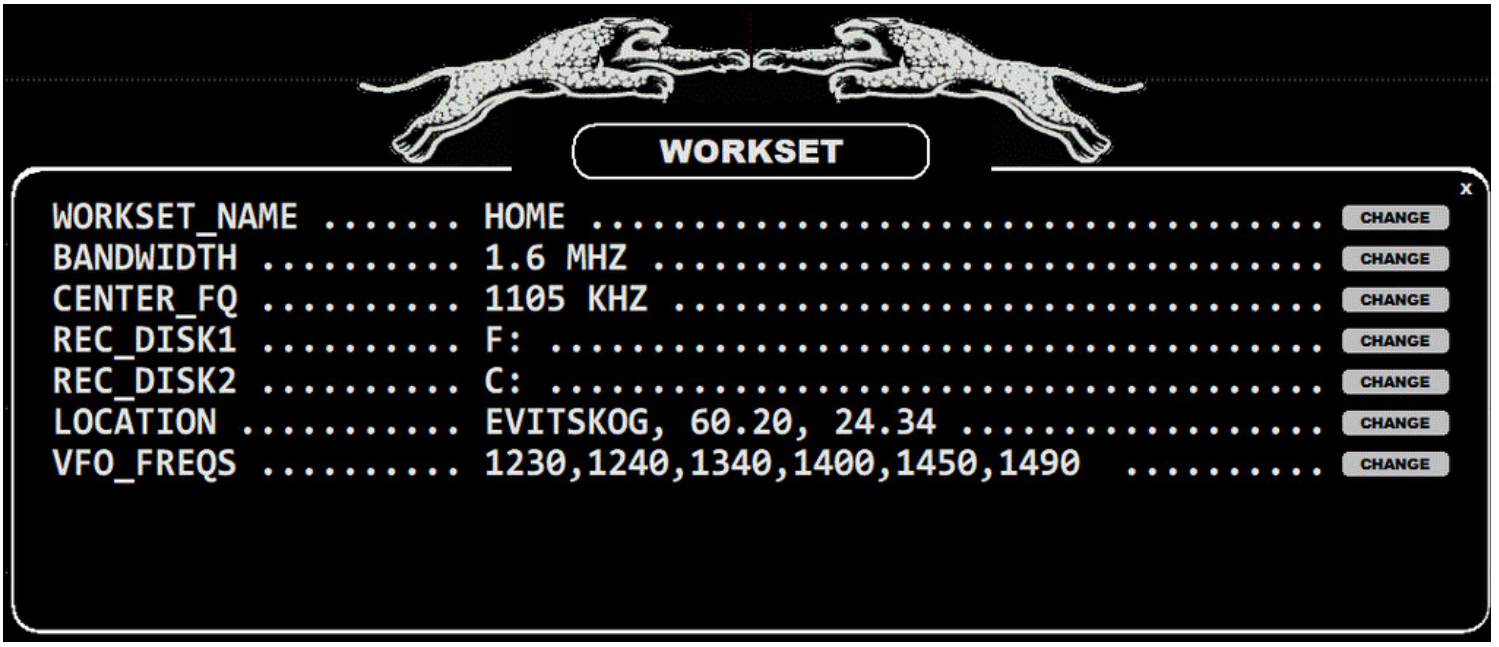
HOW TO

KEY = W

You can use the "W" key to rotate WALLPAPERS or, alternatively, click the TOOLBAR > W icon. When rotated, JAGUAR remembers the previously-used zoom level in each WALLPAPER (and the last-used continent on MAPS).

WALLPAPER can also be selected directly from the TOP MENU.

WORKSET



The WORKSET window is used to define the basic settings for your recording setup, i.e. the environment for manual and scheduled recording:

- WORKSET_NAME: The name of the currently active "setup package".
- BANDWIDTH: The sampling rate for the recorded files.
- CENTER_FQ: The center frequency for the recorded files.
- REC_DISK1: The save disk/folder for the recorded files.
- REC_DISK2: The save disk/folder for the recorded files after the REC_DISK1 becomes full.
- LOCATION: The QTH and coordinates where the recordings will be made.
- VFO_FREQS: The default/favorite VFO frequency list.
- DEF_ANTENNA (OPTIONAL): The default antenna used when the workset is changed (visible only when ANTENNAS have been defined).

On the conceptual level, WORKSET covers all the parameters defined in the left panel of the SETTINGS dashboard. These parameters can be regarded as "server profiles" and all the left-panel parameters are saved in WORKSET1.txt, WORKSET2.txt, WORKSET3.txt, etc. files. You can create worksets based on any need you have (for separate PCs, separate DXpeditions, separate QTHs, separate continents, etc). These WORKSETs can be also moved from one PC to another.

You can activate any WORKSET from your WORKSET pool via INFOBOX > WORKSET > CHANGE.

HOW TO

You can open/close the WORKSET window by clicking STATUSBAR > W. The gray CHANGE buttons on the right edge of the window can be used for changes:

- WORKSET_NAME: Clicking CHANGE prompts a popup menu with the following options:
  - CHANGE NAME: Change the name of the current WORKSET (the default names are WORKSET1, WORKSET2, ...).
  - CREATE NEW: Create a new WORKSET. The data is copied to this new WORKSET from the currently visible WORKSET.
  - List of existing WORKSETs: select the one you want to activate/edit
- BANDWIDTH: Only 2 MHz and 1.6 MHz are supported (1.6 MHz available only in JAGUAR PRO)
  - The bandwidth used should be the same in all WORKSETs if multiple WORKSETs are in use
- CENTER_FQ: The defaults suggested by the system can be accepted unless you have a specific reason for changing it
- REC_DISK1: The given disk (and the recording folder, if also a folder is given) must exist in the PC setup.
- REC_DISK2: The given disk (and the recording folder, if also a folder is given) must exist in the PC setup.
- LOCATION: Three parameters must be given: QTH name, latitude, longitude
  - The longitudes in the Western Hemisphere must be given as negative values
  - This data is used in calculating the sunrise/sunset times for SR/SS-based recordings
- VFO_FREQS: Add the list of your "favorite frequencies" here, separated by a comma.
- DEF_ANTENNA: N/A or the antenna name for the "Default WORKSET antenna".

This definition can be added if ANTENNAS have been defined (the antenna name given here must be found in ANTENNAS). This antenna definition is used only when you change the active workset (either manually or scheduled).

Note that normally there is no need to define anything here: antenna changes within the current workset can be controlled using the standard manual/scheduled antenna switches, and even if this DEF_ANTENNA has been defined, JAGUAR will keep the last used antenna activated after any restart (DEF_ANTENNA is ignored). A WORKSET change is the only case when the DEF_ANTENNA will be activated by JAGUAR.

WWW

WWW, or the JAGUAR's Internet home page, can be invoked by clicking on the left-most icon on TOOLBAR. The home page will be opened in your default browser.

JAGUAR's home page is under construction - when ready, it may contain the following links:

- COVER: Front page
- JAGUAR KIT: Introduction to JAGUAR KIT
- JAGUAR LITE: Introduction to JAGUAR LITE
- JAGUAR PRO: Introduction to JAGUAR PRO
- GUIDE: JAGUAR Documentation - the one you are reading right now!
- DOWNLOAD: JAGUAR Download Center with full installation packages and Optional Files
- TEAM: List of JAGUAR PRO users and their JAGUAR IDs
- CLOUD: Free cloud space available for JAGUAR PRO users
- SPACE WX: Textual space weather report with a 48-hour outlook
- CONTACT: Contact address for inquiries

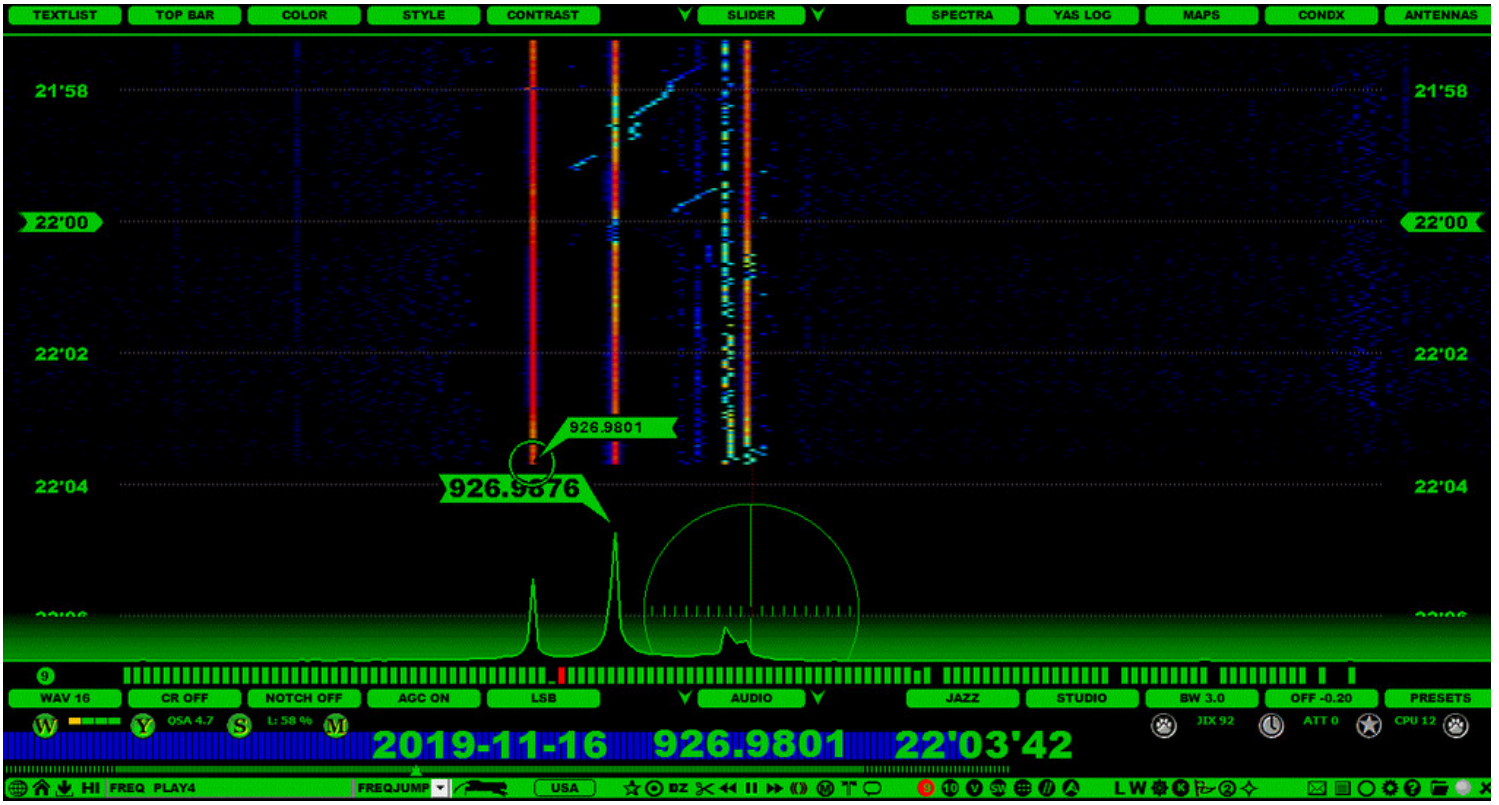
HOW TO

The JAGUAR home page (WWW) can be opened either by clicking TOOLBAR > WWW and the JAGUAR GUIDE can be opened pressing the "h" key. The latter method opens up the item-specific help: the page shown depends on the mouse position on the screen.

The JAGUAR home page can also be viewed with any standard internet browser (Microsoft Edge, Chrome, Firefox, ...) at http://jaguars.kapsi.fi/HOME/, the GUIDE can be opened using the link http://jaguars.kapsi.fi/GUIDE7/.

XRAY

XRAY is a spectrum display with continuous carrier peaks only, ignoring the "background spectrum noise". The spectrum tracks are narrower than those in the standard spectrum displays.



HOW TO

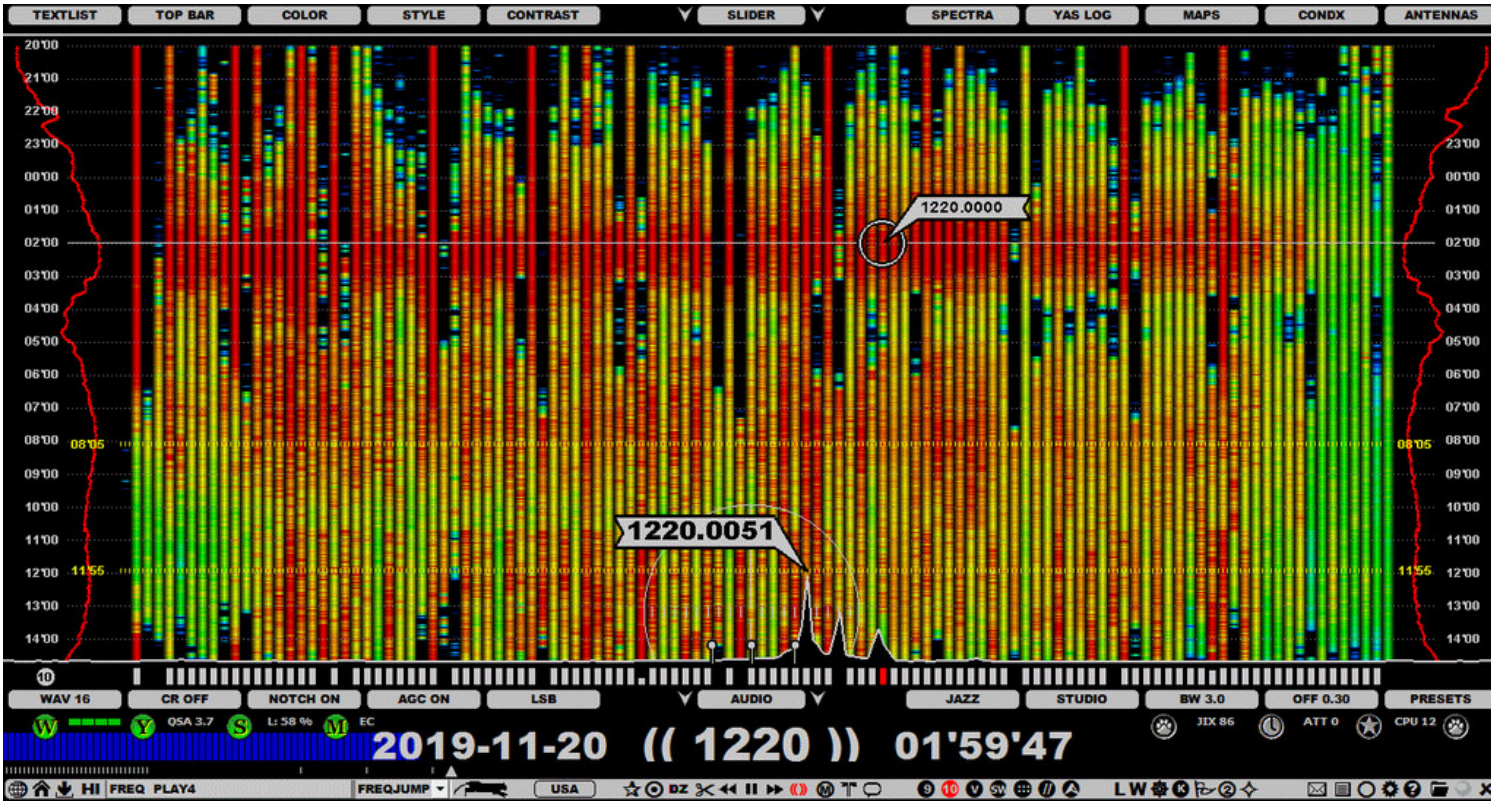
XRAY can be selected on the SPECTRA displays via SLIDER > STYLE (click or scroll until you see XRAY).

SLIDER > CONTRAST allows you to increase/decrease the spectrum power.

YAS LOG

JAGUAR PRO ONLY

YAS is the abbreviation of "Yet Another Spectrum", and it is the cornerstone in JAGUAR's ability to monitor the MW band around the clock. YAS uses a quick "overview FFT" method which creates and saves MW area snapshots.

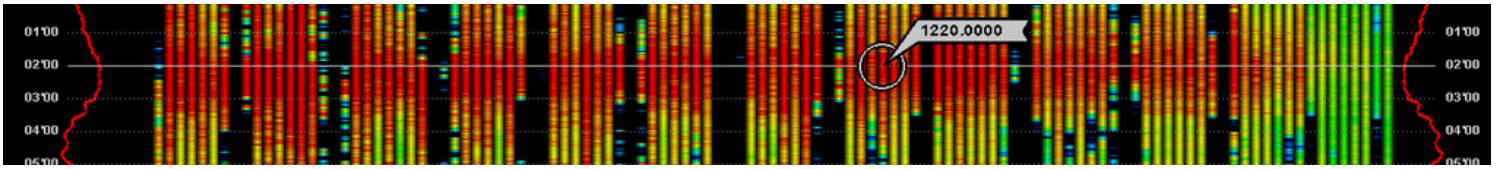


YAS saves a MW snapshot once a minute to a file called YAS.LOG. This file can be found in the folder where the recordings are being saved. Besides the YAS data, this file also contains TRACKER data (see GUIDE > TRACKBAR for details).

The YAS.LOG data is displayed on YAS screens. The YAS screens are part of JAGUAR's main screens, i.e. they are included in the WALLPAPER (W) rotation. The FFT used for YAS logging can pick up carrier peaks on most 9/10-kHz frequencies. However, some signals may not be detected because of the FFT used. For instance, if there is a powerful carrier 1 kHz away, it may block the wanted signal, and then this frequency may remain "blank" on the display. Another example: WWKB on AM 1520 is one of the most common U.S. stations in Europe but it may not be visible in YAS because there is often a powerful carrier on 1521 kHz, and, as a result, the peak of WWKB will be blocked by the more powerful signal.

The YAS screen displays a colored bar for each MW frequency, and the number of bars is determined by the selected frequency stepping (9/10/VFO). YAS makes it very easy to spot overseas openings, fading up and down. Any overlapping 9/10-kHz frequencies can be hidden to make it easier to visualize true overseas openings. The contrast of the YAS display is also customizable.

Overlapping frequencies in MW9 and MW10 removed:



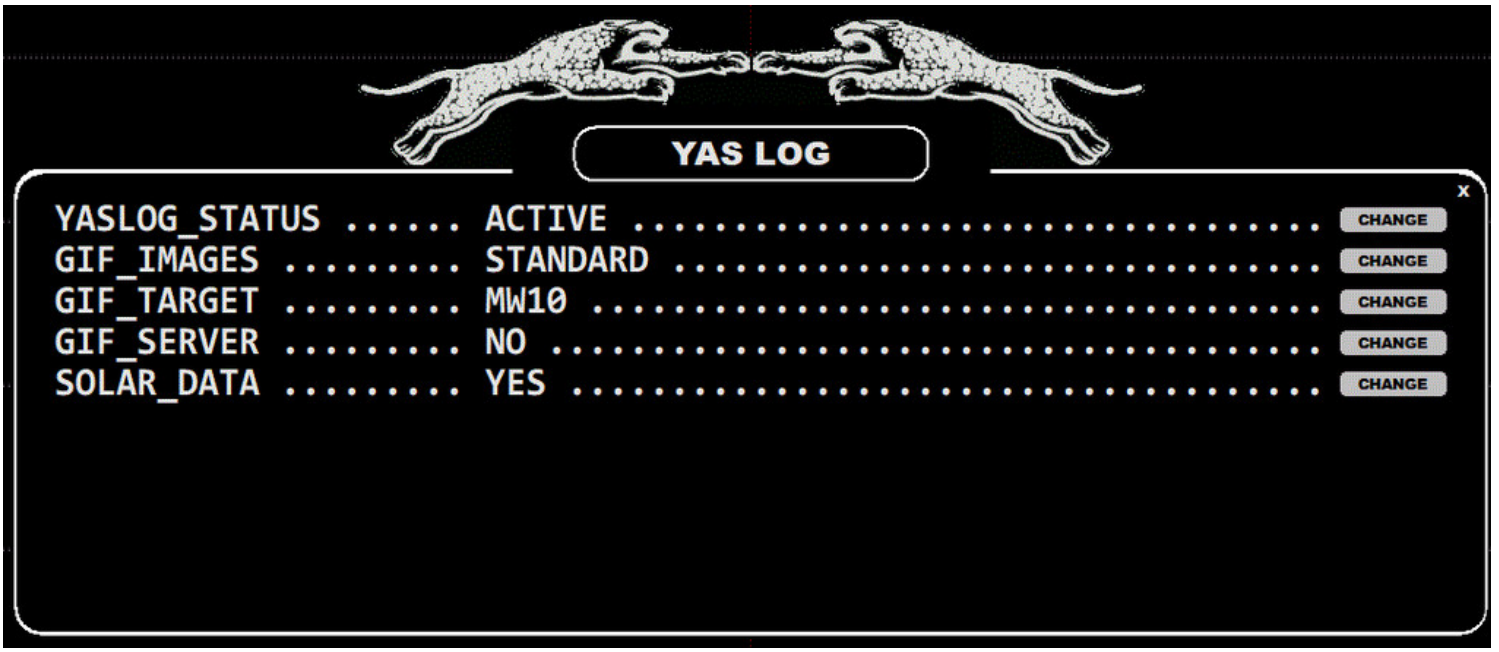
YAS will reveal station sign-on/sign-off periods for strong stations as the color bars will appear/disappear on the screen. It can also show daytimers signing on/off, e.g. resulting in a sudden change in the bar color at sign-on/sign-off times.

Note that SCOPE (see SCOPE for more details) uses the same FFT algorithm as YAS.

JAGUAR is designed for a 24/7 operation, and the YAS data collector is part and parcel of a MW DXer's toolkit.

HOW TO

The YAS LOG services are configured via SETTINGS > YAS LOG. It can be invoked by clicking the STATUSBAR > Y button.



The YASLOG window contains the following options:

- YASLOG_STATUS: If active, the Y button color is green and JAGUAR creates/updates YASLOG, one of the main functions in JAGUAR. Normally there is no reason to disable this feature (the Y button color is gray if this service is disabled).
- GIF_IMAGES: STANDARD | HIRES | NO. If STANDARD or HIRES is selected, JAGUAR creates/updates the daily thumbnail images from YASLOGs. The thumbnails ("x.gif") are saved in recording-day folders, and can be uploaded to the kapsi.fi server if "GIF_SERVER" is enabled. The STANDARD gif contains one snapshot line per two minutes, the HIRES option gives one snapshot line per one minute. Using the HIRES option, your x.gif files show less hours per day but with a better resolution.
- GIF_TARGET: MW10 | MW9. This parameter defines the "frequency selection" in the YAS thumbnail images.
- GIF_SERVER: YES | NO. If enabled, JAGUAR automatically uploads the YAS LOG thumbnails to the server at kapsi.fi. The thumbnails on the server are refreshed once an hour, and they can be viewed with any browser using this URL: http://jaguars.kapsi.fi/jagnet/jagthumb_12345678.gif . Replace "12345678" with your JAGUAR key, as shown in INFOBOX.
- SOLAR_DATA: YES | NO. This is not related to YAS LOG but is an independent feature: if enabled, JAGUAR fetches the current space weather data from the internet, refreshing the data every 15 minutes. This data is shown next to the W button and on the SPACE WX applet (more information in the APPLETS help).

The YAS screen itself can be invoked in the following ways:

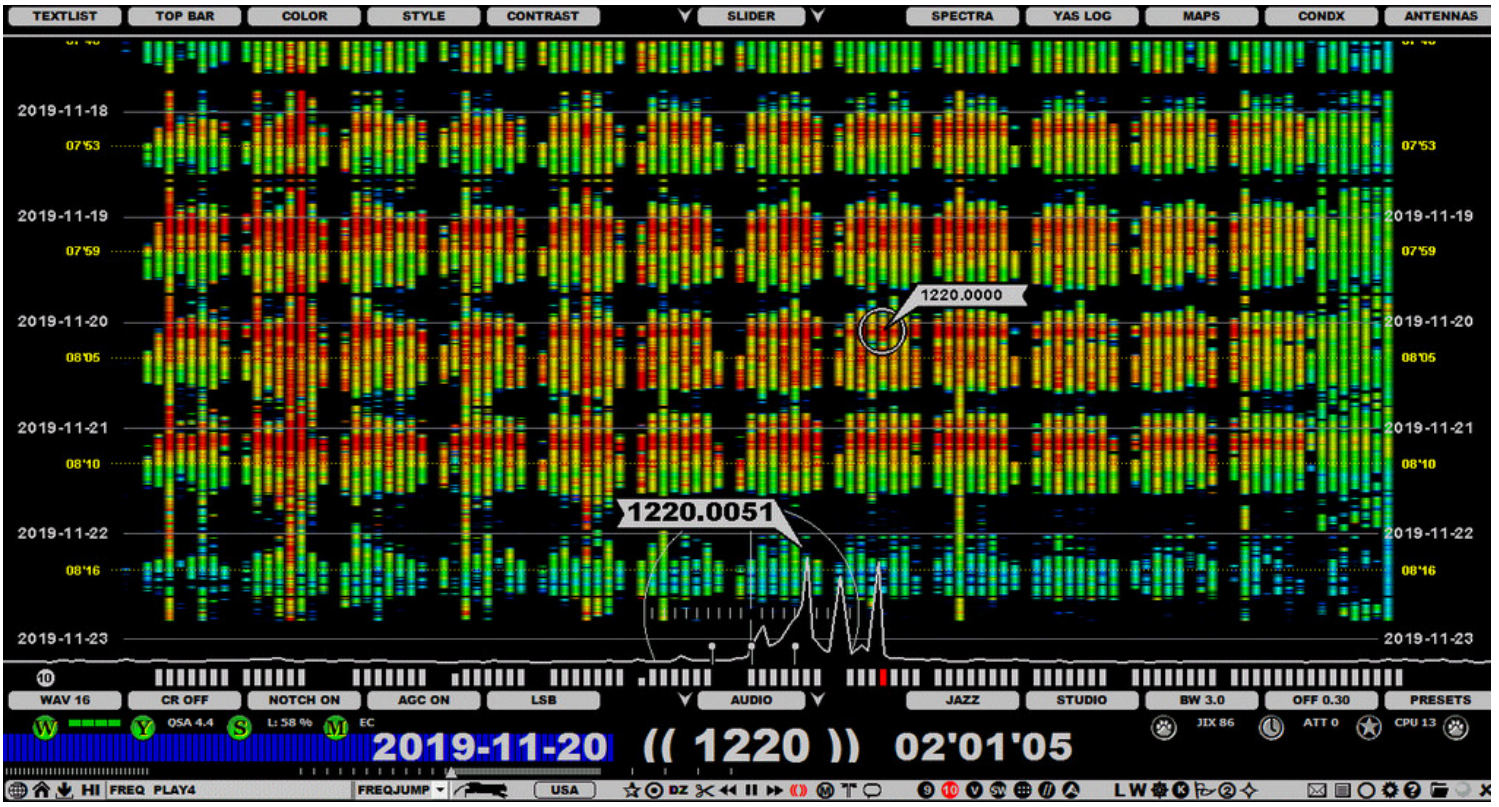
- press W (WALLPAPER) until you see YAS
- press Y to toggle your current display and the current YAS zoom level
- select YAS from TOP MENU (ENTER > TOP MENU > YAS)

You can also leave the YAS screen using the methods above.

The YAS screen is zoomable, scrollable, draggable and clickable. This is all that you need for having the full control of the entire MW dial. The more you have recordings on your disk, the better!

ZOOMING. Just move the mouse to the right edge of the YAS screen, and scroll with the mouse wheel. The YAS zoom level will change from a detailed hour-level (12 hours) overview to a rougher week overview, and back.

One of the YAS LOG zoom levels (a one-week display):



SCROLLING. Move the mouse to the YAS area and scroll YAS up/down with the mouse wheel. The YAS scroll can be used for scrolling days on the four highest day-zoom levels, but on the two lowest hour-zoom levels ,the control does not move across the day borders.

DRAGGING. You can relocate the visible area of the screen up/down by dragging/dropping the canvas to the desired position. This function does not change the loaded data content but only moves the data to the desired position on the screen.

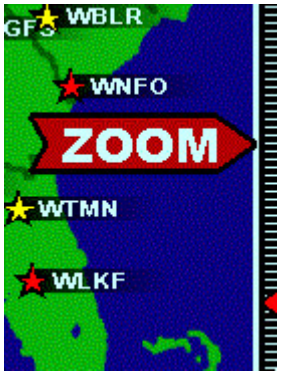
CLICKING. A true point-and-shoot service is available. When you move the mouse over the YAS screen, YAS will show a frequency-timestamp pair, based on the location of the mouse. If the mouse cursor's color is bright, a recording exists at that time point, and you can jump to that frequency/time with a mouse click.

The 12-hour and 24-hour screens of YAS can also display JIX CURVES curves (see JIX for details), i.e. red curves on both sides of the screen and their corresponding values within a red JIX ball.

The SLIDER has two important controls for customizing the YAS display: STYLE (GAPS > FULL) and CONTRAST (spectrum color strength). See SLIDER for more details.

ZOOMFRAME

ZOOMFRAME is a fast way to zoom in/out the graphics area content on the SPECTRA, YAS and MAPS displays. ZOOMFRAME is available on the right edge of the graphics area.



HOW TO

ZOOMFRAME becomes visible when you move the mouse to the right edge of the graphics area. It is cleared automatically when you move the mouse away from the edge. If you have the mouse over ZOOMFRAME, you can zoom the graphics area by scrolling the mouse wheel or with the left/right arrow keys. Also a left-click above/below the current zoom status (a red triangle) will change the zoom level provided that zooming is possible in that direction.

The ZOOMFRAME support is available only on SPECTRA (HOME <> HISTORY / several levels), YAS (several levels) and MAPS (zooming the area based on the center spot of the current display).