JAGUAR HANDBOOK

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Table of contents

Introduction 5
- Welcome 5
- What's New 6

Getting Started 6
- System Requirements 6
- Installation 7
- Getting Help 8

Jaguar GUI 8
- Main Screens 8
  - SPECTRA 9
    - HOME 9
    - DAYSCAN 10
    - EXTENDED SCAN 11
  - YAS 12
    - Introduction 12
    - YAS operations 12
  - MAPS 13
    - Standard Maps 13
    - Antenna Map 15
    - NA Patterns 15
    - MWLI Logbook 15
- Jaguar Bars 15
  - SLIDER 16
  - TOP MENU 17
  - STATUSBAR 19
  - PLAYBAR 21
  - TIMEBAR 22
  - TOOLBAR 22
  - LOGGERBAR 25
  - CX-BAR 27
- Extra Windows 28
  - CONDX 28
  - LOCATOR 28
  - TOMCAT 29
  - TRACKS 29
  - THEMES 30
  - TURTLE 30
  - WWW 32
- Small Windows 33
  - Compass 33
  - Clipper 33
  - BB Applets 34
  - Info window 36

Mapplet 36
Mestor applet 36
Midget 37
Star Express 37
Textpads 37
Mouse Usage 37
Basic Usage 38
Advanced Usages 39
Keyboard Shortcuts 39
Standard Keys (A-Z) 39
ALT-Keys (A-Z) 42
Other Keys 45
Mestor 47
MESTOR Basics 47
Advanced Usages 51
Customization 53
Settings 53
JAGUAR.INI 55
[MESTOR] 55
[ANTENNAS] 55
[ALERTS] 56
[CUSTOM] 56
[DIALS] 60
[FILTERS] 61
[GOKEYS] 62
[JAGNET] 62
[LINKS] 63
Advanced Usages 63
24x7 Operation 63
Station Popup Menu 64
AGC 65
Filenotes 66
Filemail 66
Messenger 67
Notch 68
Stickers 69
Log Profiles 69
Phonetic Call Sign Search 70
Frequency Notes 71
Tips and Tricks 72
FAQ and Troubleshooting 72
FAQ 72
Best Audio Settings ? 73
What is J-Index (JIX) ? 75
PC Recommendations ? 75

Troubleshooting 76
Future Plans 77
Document Changelog 78

Introduction

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* Jari Perkiömäki for stellar codestorming

* and everyone in JAGUAR team for making this software possible

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Welcome

Thank you for your interest in JAGUAR SDR, Software Defined Radio application developed by the community of experienced DXers!

JAGUAR is sixth-generation SDR software, to be used with the Perseus SDR hardware, covering the medium-wave broadcast band by default.

JAGUAR project started in 2011 because new SDR technology offered inspiring views how MW DXing could change in the future but all the SDR software developed by the hardware manufacturers and non-commercial were then (and still are !) general purpose applications trying to please all type of radio hobbyists. However, MW DXing is a clear niche area and efficient use of this new technology requires totally different approach. First JAGUAR version evolved from MESTOR, popular freeware application serving as a reliable recording scheduler for Perseus hardware platform.

Since that JAGUAR project has made several ground breaking innovations and been a trend-setter in MW DXing.

Today JAGUAR is available as two versions:

* **JAGUAR LITE** is freeware application for recording and playing Perseus files
* **JAGUAR PRO** is "feeware" application for recording, playing, analyzing, logging and documenting Perseus files

JAGUAR PRO version is available for everybody who likes JAGUAR LITE but wants more features, We are not commercial, but because earlier our team has purchased a new bandwidth support from Perseus from Microtelecom (to get the 1.6MHz bandwidth for MW which gives better support for MW than with Perseus native 2MHz - in JAGUAR PRO users can select either 1.6MHz or 2MHz), we have taken 50 EUR (or equivalent) as a "membership fee". We developers don't collect the money, but it is given to the JAGUAR user who will help the new user (mentor help is often needed in the beginning).

If you are interested in JAGUAR PRO, you can contact Jaguar4Perseus@gmail.com for more information.

On behalf of Jaguar development team

Ilpo Parviainen (IPA)

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What's New

The latest JAGUAR version is V3.100 (the version number is chosen based on Finland's 100th anniversary year).

This version shows the way to the future: for example YAS screens now are "zoomable, scrollable, movable and clickable". User can see real MW CX displays easily from detailed level to "bird's eye" level (covering several days/weeks), Read more about this on Jaguar GUI > Main Screen > YAS. In the future versions we have a plan to get this same kind of user interface for each individual MW frequency giving complete detailed offset history.

V3.100 has new visual design which has been praised by old JAGUAR users, fine details and clearer new logical solutions in GUI. However, the basic user functionality is still the same so if you have used JAGUAR earlier, you certainly can handle easily also V3.100.

New users may want to read further for detailed instructions in the next chapters, old users can use this manual as a reference guide for Jaguar services and features.

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Getting Started

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System Requirements

OS: Jaguar supports newer Windows Operating Systems ranging from Window XP to Windows 10.

CPU: Normally any Core i3 level (or higher) CPU can provide smooth Jaguar operation - but the more CPU power you have the better. In theory Jaguar can be used even with pre-2010 CPU's with low Passmark benchmarks (even below 1000, just like Intel Atom N270), but only for limited services - for example such an old notebook could be used for scheduled recordings. Users can evaluate CPU performance by checking Passmark benchmark using Google: values below 2000 are not recommended for Jaguar use while CPU Passmark values above 4000 should give trouble free operation CPU-wise even for the most CPU-bound Jaguar features. See also Advanced Usages > Tips and Tricks > MINIMIZING CPU USAGE.

MEMORY: 4GB RAM or more offer enough memory space for full Jaguar functionality, minimum being 1GB. Jaguar itself requires a few hundred megabytes RAM.

DISK: No special requirements. If you use external disk for recording, please note that USB2 interface may not give you stutter-free playback. Disk speed can be low 5400rpm but there's one important thing that need to be done for external disks: Windows write cache must be enabled for stutter-free playback (see installation).

MOUSE: Mouse with good scroll wheel is highly recommended - Jaguar can be used without external mouse but many Jaguar functions give fastest and easiest interface when used with scroll wheel.

PERSEUS: Last but not the least: Perseus hardware is required for recording new files. Jaguar uses its own file name standard which is required for many Jaguar features. If you play wideband files in JAGUAR which are recorded by Perseus.exe or by some 3rd party software, some Jaguar functions may not work correctly. Note also that only 2MHz files can be played (in addition to Jaguar's own 1.6MHz files). Also calibration

made with other software can't be used in Jaguar - and Jaguar calibration is not valid with other software,

Note: Perseus hardware or recorded files are not necessary: Jaguar can be used with any other SDR software as an independent tool for browsing maps / MW station lists / Scandinavian loggings.

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Installation

You can download and install the latest Jaguar full package from
`http://jaguars.kapsi.fi/download/`

Installation process:

- Download & unzip the package to a new folder, f.eg. C:\JAGUAR or D:\JAGUAR
- Don't use "Program Files" or other Windows-controlled folder
- JAGUAR is portable: it does not use Windows registry and doesn't write outside it's own context, so you can install JAGUAR even to a USB stick
- Download the latest JAGUAR.EXE and replace the version included in this full package by it

- Start JAGUAR.EXE => you are ready to rock !

- You'll see INFORMATION screen. You can just close it (to go into test mode) or click "OPEN" button to select some Perseus file for playback. Or if you have Perseus hardware connected, you can click "LIVE" button.

- Calibrate Jaguar with known "calibration frequency": for example in Europe you can tune to 810 (type 810 and press enter) and calibrate using UK or MKD (known to be on exact 810.0000). If you see one main peak in Spector peak display (and either station is the clear dominant), press "K" => Jaguar should show "810.0000".

- Shutdown Jaguar => SYSTEM.INI is created (SYSTEM.INI is the file that keeps information about calibration, settings and user preferences, this file is used at restart).

If you ever need to reinstall JAGUAR, you can do this same process again,.

Important notes:

ANTIVIRUS: Some Antivirus-software may flag Jaguar as malware (typically as a trojan) - if so you should exclude Jaguar folder from AV checks). Jaguar.exe does not contain malware/virus but some AV-software may flag it as such or your AV-software may slow down/even hang Jaguar operation (especially MSE/Defender is known for that). To guarantee smooth operation it is recommended to exclude Jaguar folder and the wideband file recording folder from AV controlled folders.

WINDOWS 10: W10 has one default setting which must be changed in order to get mouse scroll wheel to function correctly. Please set the following default off in Windows 10: Settings > Devices > Mouse & touchpad > Scroll inactive windows when I hover over them > Off

WINDOWS POWER SAVING: If you plan to make unattended recording, please turn ALL power saving options OFF (except display, which can be turned off) from Control Panel > System and Security > Power Options (there are plenty of them). We really do not want our PC to hibernate/go to sleep mode wen trying to run our overnight scheduled recordings!

EXTERNAL HARD DISK: If you are using external HDD for recording/playback, you may experience stuttering/audio breaks if you don't enable Windows cache for that device. Please always do this for external HDDs: go to Computer Management > Device Manager > Disk Drives > open it and find your external HDD > right click it > Properties > Policies > Enable Write caching (if it is disabled).

PERSEUSUSB.DLL. If you still have unacceptable audio (stuttering/audio cuts), you may try some other perseusudb.dll level. You'll find alternative dll files in TOOLBAR > WWW > DOWNLOAD > OPTIONAL FILES > PERSEUSUSBDLL folder.

PERSEUS FILES RECORDED OUTSIDE JAGUAR can be played with Jaguar if the bandwidth is 2MHz. However navigating between files is highly restricted in these cases: when opening such a file for playback, you can use only N/P jumps (N=NEXT FILE, P=PREV FILE) within the folder that contains the file played. Jaguar's advanced time jump functions (TIMEWHEEL, DAYSCROLL, JAGRUN scripts, etc) require Jaguar/Mestor file name format and "day folders".

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Getting Help

Many PC users love to become acquainted with any new software just by playing with buttons and testing various functions on-the-fly. Jaguar is very intuitive and logical once you get a grip of the base ideology used in it - so please feel free to just click buttons / objects and scroll objects pointer by mouse cursor with scroll wheel and see what happens.

If you need detailed guidance the following things may be helpful:

* This Jaguar Handbook (Note:this document has been written for JAGUAR PRO users, many of the functions described here are not available for JAGUAR LITE users).

* Tooltips: keep TOOLBAR > SETTINGS > TOOLTIPS ticked

* Keyboard shortcut help (pressing H opens/closes HELP-screen)

* Getting help from Jaguar community: you'll find Jaguar Pro user list from TOOLBAR > WWW > TEAM. Maybe some of them are familiar to you ?

* Jaguar mentor: often when new user starts using Jaguar, "Personal Trainer" is available for tutoring

* Jaguar development team: you also can contact Jaguar4perseus@gmail.com if you can't find reply to your question by other ways

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Jaguar GUI

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Main Screens

JAGUAR PRO has three main screens ("wallpapers") which can be rotated by pressing keyboard key W:

* HOME
* YAS
* MAPS

YAS is not available in JAGUAR LITE.

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SPECTRA

Only HOME screen in available in JAGUAR LITE version.

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HOME

Whenever JAGUAR is started, **HOME** screen appears always first. HOME is standard spectrum display and user can always return to this screen with the following ways:

* Pressing keyboard key W ("Wallpaper") until HOME appears
* Pressing keyboard key HOME
* Pressing the following keys until HOME appears: Y / D/ E / M (HOME is included in the rotation of these keypresses)
* Clicking HOME on COMPASS
* Clicking SLIDER > HOME
* ENTER > TOP MENU > HOME

When you start JAGUAR for the first time (or make a FULL RESET), you'll get the INFO WINDOW on top of HOME screen (see Jaguar GUI > Small Windows > Info Window). If you want to jump directly to playback, click "LIVE" or "OPEN" and close this Info Window.

HOME screen shows the spectrum of the currently active frequency in waterfall mode. Timespan of the display covers the time included in the file behind playback (note that also in LIVE mode there is always a playback buffer file active). Small white circle ("hotspot") shows the location in the currently played file with HH'MM marker and exact playback frequency. You can use mouse left click to jump into any exact time / offset within that file.

Note that the spectrum lines locations (exact offset positions) on the screen are not correct if you haven't calibrated Jaguar (or the previous calibration is no more accurate) => see Jaguar GUI > Keyboard Shortcuts > Standard Keys (A-Z) > K *** KALIBRATE).

In addition to the waterfall you'll also have lots of extras on all sides of the screen edges:

* Top area: SLIDER and audio spectrum output
* Left and right: YOYOS
* Bottom: Spector grid with spectrum output curve and several bars (STATUSBAR, PLAYBAR, TIMEBAR, TOOLBAR)

All these components are visible also on other Jaguar screens as well (in addition audio spectrum output and YOYOS can be hidden). See the corresponding documentation for each of these for further details.

By default JAGUAR creates a preview of the spectrum (="HOMESCAN") on HOME screen whenever you tune to a new frequency.
HOMESCAN is a sparse spectrum display showing the skeleton of the offsets found on this this frequency. This preview uses CPU/IO resources and it can be disabled via STATUSBAR > Green S button > untick HOMESCAN if you don't want to waste PC resources and you don't need this feature. If you keep this, you can tune the how many preview lines are created using HOMESCAN's SPEED tuning: click yellow SLIDER button on top (it toggles between AUDIO vs. VISUAL slider). When you see yellow HOME button on the right, move mouse cursor over that button and increase/decrease the speed by mouse wheel or left/right arrow keys. Default SPEED is 20 (FFT sweep id done every 20 seconds), but it can be scrolled to 2 seconds (minimum) or 30 seconds (maximum).

When you have mouse cursor over HOME screen, you can increase/decrease Spector zoom width by mouse wheel. The offset area calculated is 500Hz on both sides of the tuned frequency and your scope is limited also by the screen resolution so on some low resolution displays it may not be possible to see the full 1kHz span. Also (in any case) if you want to see beyond +/- 500Hz you must tune to the adjacent frequency. Fortunately there are only a handful of cases where station's offset is beyond that 500Hz limit.

If you disable YOYOS (ALT-Y) and move your mouse cursor to either edge of the screen, you can move the spectrum location up/down on the screen by mouse wheel.

If you prefer horizontal presentation of HOME, you can use keyboard key ALT-V (ALT-V toggles between vertical <> horizontal display). Horizontal display shows narrower area for offsets but the spectrum lines are nicely aligned with the playbar's progress.In addition, horizontal display shows the offset labels by default (and YOYOs - if active - are shown only on the right side) - in vertical mode you can use SPIKES (see Jaguar GUI > Jaguar Bars > TOOLBAR > SPIKES) to reveal existing known offsets.

VISUAL SLIDER has two important controls for HOME display customization: STYLE (STANDARD > GLOW > XRAY) and CONTRAST (spectrum color strenght). See Jaguar GUI > Jaguar Bars > SLIDER for more details.

Most often used JAGUAR functions are scrolling in time and scrolling frequencies - there are multiple ways for both. The most popular method is to use left/right arrow keys and/or mouse wheel to scroll both in time and frequencies. You can control what you scroll by keyboard key Z or (())-icon on toolbar: whenever the frequency on playbar has (( )) markers around it, JAGUAR has frequency scroll mode, otherwise time scroll mode.

Other frequency/time scroll methods and basic functions can be found in other sections of this Handbook.

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DAYSCAN

DAYSCAN screen shows daily frequency analysis of desired MW frequency/frequencies. Data for this analysis can be created fully automated (frequencies are scanned during recording) or they can be run manually for old recordings.

You can trigger DAYSCAN screen by keyboard key D (D toggles between DAYSCAN <> HOME, also if there's no DAYSCAN data available D offers a small run panel in this rotation: user can start DAYSCAN using this run panel). DAYSCAN can also be opened clicking COMPASS (D) or via ENTER > TOP MENU > HOME > DAYSCAN.

DAYSCAN shows exactly the same offset data as HOME but per minute basis: FFT data is saved once a minute into SCAN files. These files can be found in the recording disk > day folder > SCANS folder > *.SCAN file is created for each frequency.

DAYSCAN collection is not active by default. If user has adequate CPU/IO resources he can fully automate the collection process: clicking STATUSBAR > Green S button > tick DAYSCAN. Whenever this is ticked, JAGUAR will create DAYSCAN analysis automatically for each OVERSEAS frequency immediately after currently recorded file has been saved. By default this scan is run for overseas frequencies based on user's QTH but this can be overridden by SET TARGET-declarative (see Mestor > MESTOR Basics),

Another option to create DAYSCAN analysis for recorded files is to launch the collector manually via the run panel: either by clicking "CLICK HERE FOR DAYSCAN" or pressing D until the run panel appears. User can select if he wants the run the scan for current frequency only / currently active VFO frequency list / MW9 ("all EU-channels") / MW10 ("all US-channels), clicking RUN starts the scan..

DAYSCAN process shows the scan progress during processing, user can leave it running on background and continue DXing on other screens/frequencies.

When DAYSCAN data has been processed, user can use the display to analyze the offsets and jump directly to the time spot where he observes interesting offsets with decent signal strength: normal "point and shoot" functionality is available: when mouse cursor is bright white, there is a recording behind that spot and clicking brings user to that offset/time.

As mentioned before, DAYSCAN makes a FFT sweep once in a minute. DAYSCAN screen has two zoom

options: "24H display" shows every 2nd minute (=> full day usually fits on the screen), zoomed version shows each minute. In V3.100 user must use ZOOMER (on VISUAL SLIDER) or COMPASS to rotate the zoom resolution:

* SLIDER > VISUAL SLIDER > move mouse cursor over ZOOMER > scroll with mouse wheel ot use left/right arrows => zoom level rotates HOME > Zoomed DAYSCAN > 24H DAYSCAN
* COMPASS: Click D => 24H DAYSCAN, Click + => Zoomed DAYSCAN,

When using keyboard key D, Jaguar triggers the last used DAYSCAN zoom level. DAYSCAN data can also be scrolled up/down (YOYOs must be disabled with ALT-Y): move mouse cursor to either edge of the screen and use mouse wheel or left/right arrow key.

In addition to DAYSCAN users can also use more detailed offset analysis (EXTENDED SCAN). If user finds something especially interesting on DAYSCAN, he can paint an area on DAYSCAN screen (left mouse button must be kept down for a bit longer time to trigger the area painter) and control jumps automatically to EXTENDED SCAN screen for further analysis.

"CLEAR" button is shown at the lower left corner of the DAYSCAN screen: if there's any reason to delete current DAYSCAN data, it can be done by clicking this button - when cleared DAYSCAN rerun in possible for this frequency.

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EXTENDED SCAN

While DAYSCAN can reveal interesting offsets from large recording volumes, the one-minute-resolution used in it is sometimes not adequate for detailed analysis => **EXTENDED SCAN** can be used for areas with especially interesting offsets.

EXTENDED SCAN display and functionality is pretty much the same as DAYSCAN with a few exceptions:

* Extended scan data is displayed "bottom-up" (vs. waterfall in DAYSCAN)
* Extended scan can't be run automatically during recording (but it can be scheduled to be run after recordings)
* Extended scan run panel has more options

You can trigger EXTENDED SCAN screen by keyboard key E (E toggles between EXTENDED SCAN <> HOME, also if there's no EXTENDED SCAN data available E offers a small run panel in this rotation: user can start EXTENDED SCAN using this run panel). EXTENDED SCAN can also be opened clicking COMPASS (E) or via ENTER > TOP MENU > HOME > EXTENDED.

EXTENDED SCAN shows offsets with selected time resolution, the offset data is saved in MONITOR_freq.LOG files. These files can be found in the recording disk > day folder > SCANS folder > EXTENDED folder > MONITOR_*.LOG file is created for each frequency included in EXTENDED SCAN.

You can create EXTENDED analysis for recorded files by launching the extended collector manually via the run panel: either by clicking "CLICK HERE FOR EXTENDED SCAN" or pressing E until the run panel appears. User can select if he wants the run the scan for current frequency only / currently active VFO frequency list / MW9 ("all EU-channels") / MW10 ("all US-channels). In addition user can give start and end times for the scan and also the time resolution ("SPEED"): the slowest and most detailed analysis will be generated with SPEED=2 (FFT sweep happens within 2 second intervals). Clicking RUN starts the scan..

EXTENDED SCAN can be automated by defining it as scheduled task (see Mestor > Advanced Usages > EXTSCAN).

EXTENDED SCAN process shows the scan progress during processing, user can leave it running on background and continue DXing on other screens/frequencies.

Just as with DAYSCANs, when EXTENDED SCAN data has been processed, user can use the display to analyze the offsets and jump directly to the time spot where he observes interesting offsets with decent

signal strength: normal "point and shoot" functionality is available: when mouse cursor is bright white, there is a recording behind that spot and clicking brings user to that offset/time.

There is no zooming options for EXTENDED SCANs in V3.100 but it can be scrolled up/down (YOYOs must be disabled with ALT-Y): move mouse cursor to either edge of the screen and use mouse wheel or left/right arrow key.

"CLEAR" button is shown at the lower left corner of the EXTENDED SCAN screen: if there's any reason to delete current EXTENDED SCAN data, it can be done by clicking this button - when cleared EXTENDED SCAN rerun in possible for this frequency.

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YAS

YAS is not available in JAGUAR LITE.

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Introduction

YAS is the abbreviation from "Yet Another Spectrum" and it is the cornerstone in Jaguar's ability to control MW band 24x7. YAS uses quick "overview FFT" which creates and saves MW area snapshots whenever "YASLOGGER" is activated (default). YASLOGGER can also be disabled (see Jaguar GUI > STATUSBAR > Green Y Button > YASLOGGER) but normally it is highly recommended to keep it on.

When YASLOGGER is activated, YAS system saves MW snapshot once in a minute to file called YAS.LOG. This file can be found in the same folder where recordings are saved. In addition to YAS data, this file contains also TRACKER data (see Jaguar GUI > Extra Windows > TRACKS).

YAS.LOG data is displayed on highly configurable YAS screen (see YAS operations), this YAS screen is one of the Jaguar main screens.

The FFT used for YAS logging in V3,100 is can pick up signals peaks on most 9/10 kHz frequencies. However some signals may not be detectec with the FFT used in V3.100: if there is powerful signal 1kHz apart it may cover the wanted signal and that frequency may remain "blank" in display. For example WWKB on AM 1520 is one of the most common US stations in Europe but it may not be visible in YAS because there is often too much signal power on 1521 kHz --- the peak of WWKB can be buried within that power when this quick FFT is used.

YAS screen shows a "color pipe" for each MW frequency, the number of pipes is based on selected stepping (9 / 10 / VFO). Using YAS it is very easy to spot overseas cx ups and downs. Overlapping 9/10 frequencies can be hidden to make it easier to visualize true overseas cx. Colors and YAS spectrum format are customizable.

YAS reveals station signon/signoff times for strong stations (= color pipe appears/disappears) with one glance on MW but it can also show daytimers signing on/signing off (= sudden change in pipe color at signon/signoff time).

Note that YOYOs (see Jaguar GUI > Jaguar Bars > SLIDER > VISUAL SLIDER > YOYOS) use the same FFT algorithm than YAS.

Jaguar is designed for 24x7 operation and YAS data collector is an essential part of MW DXer's tool kit.

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YAS operations

YAS screen can be triggered by the following ways:

* Press W (WALLPAPER) until you see YAS
* Press Y (toggles between HOME <> YAS)
* Click Y on COMPASS (Y triggers "two-week overview", + can be used for zooming to more detailed level)
* Select YAS from TOP MENU (ENTER > TOP MENU > YAS)

User can leave YAS screen using the previous methods.

YAS screen is "zoomable, scrollable, draggable and clickable" - all you need for having full control for the whole MW dial. The more you have recordings on your disk, the better !

ZOOMING. Just move mouse cursor over YAS screen and scroll with mouse wheel => YAS zoom level varies from detailed hour level to "two weeks overview" and back. There are six different zoom levels.

SCROLLING, Move mouse cursor the edge of the screen and scroll YAS up/down (note: YOYOs must be off, otherwise this scroll is done for YOYO frequency list). 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 go across day borders in V3.100.

DRAGGING. User can relocate the visible area of the screen up/down by dragging/dropping the canvas to desired position. This function does not change data contents loaded, just moves the data to desired position on screen.

CLICKING. True "point and shoot" service available. when you move mouse on the YAS screen, YAS shows "frequency ... timestamp" pair based on mouse cursor location. If the mouse cursor color is bright white, a recording exists at that time and you can jump to that frequency / time with a mouse click. Note that you can also configure YAS to show all recorded areas behind the colored pipes.

By default YAS shows also J-INDEX (see FAQ) based on mouse cursor (red curves on both sides and their corresponding values within red ball. Also STICKERS are shown on YAS canvas (if they are used, see Advanced Usages > Stickers).

YAS screen contents can be customized: you can show the following extras on YAS screen by ticking one or more of these features in Customization > SETTINGS > YAS

* HOTSPOT+: Shows rays to hotspot (white circle as a marker telling where you are located in time / frequency space). You never "get lost" if you keep this activated (sometimes your playback control can be outside the visual area shown on screen, HOTSPOT+ shows which way to navigate if you want to "get back to map").
* MWLI LOGS: Shows your loggings for each day from MWLI Visual Logbook database.
* REC AREAS: Shows recorded areas in the background.
* SOLAR CX: Shows hourly Kyoto DST, Global A and Polar A values on the screen edges. You'll get more solar data for each time spot when clicking the non-fq area of YAS canvas (= area between color pipes and screen edges) => CX-BAR appears (see Jaguar GUI > Jaguar Bars > CX-BAR)
* TIMELINES: Time raster including sunrise times

VISUAL SLIDER has two important controls for YAS display customization: STYLE (GAPS > FULL) and CONTRAST (spectrum color strength). See Jaguar GUI > Jaguar Bars > SLIDER for more details.

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MAPS

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Standard Maps

Standard Maps are one of the main wallpapers in Jaguar: main wallpapers can be rotated with keyboard

key W (HOME > YAS > MAPS). Wallpapers can also be rotated by clicking TOOLBAR > W icon or VISUAL SLIDER > WALLPAPER (you can scroll / left click / right click SLIDER button).

You can jump also directly to MAPS also by pressing M (MAPS, if M is selected for M-KEY, see TOOLBAR > SETTINGS > M-KEY), using TOP MENU > MAPS or using COMPASS (M). In addition, right clicking TOOLBAR > W gives a popup menu, form which MAPS can be selected.

When map window appears, currently active continent is shown. Continents can be rotated with keyboard key Q or via VISUAL SLIDER > CONTINENT or using COMPASS (< >).You can jump also directly to any continent using TOP MENU > MAPS. Each map shows day/night zone at the time of playback - this zone is updated automatically along playback.

Available map continents are

* World
* Europe
* Africa-MidEast
* Asia
* Oceania
* North America
* Caribbean
* South America

There are three different map styles available in Jaguar: use VISUAL SLIDER > STYLE to select your favorite.

When you move mouse over map area, you can use mouse scroll wheel for zooming in/out. You can also shift map location using mouse drag'n drop functionality.

If there are any MW stations in the visible area of the map on currently active frequency, those stations are displayed with a star. World map shows only stars, "real" continental maps show also corresponding station names. User can select the style of the names via VISUAL SLIDER > TITLES: either long names or short names can be selected. If the database in use is NAMEX Turtle and the active continent is North America, the short name contains CALL and FORMAT.

Stars and names on map can have different colors based on user customizable P-tags in Turtle database: see Jaguar GUI > Extra Windows > TURTLE.

When user moves mouse over any station on map, Jaguar shows the following information;

* Station name
* Distance from rx QTH (rx QTH is always taken from active Mestor plan)
* Direction from rx QTH
* Great Circle Arc from rx QTH

If user has activated TOOLBAR > SETTINGS > GRAPHICS + > MAP TIMES, Jaguar also shows sunrise/sunset times both at target and rx QTH (all UTC) and also NOX time (red ball shown on the connecting arc): this NOX time is the "midpoint midnight" between these two QTH's and experience has shown that it is one of the potential "best catch times" when DXing that target station - especially in "ultra-long" MW reception from the other side of the earth.

If user clicks any station star, station popup menu appears (the same popup menu can be also triggered by clicking a station on Turtle database). Station popup menu services are described in Advanced Usages > Station popup menu. :

You can leave MAPS by selecting any other main wallpaper for example by pressing W.

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Antenna Map

Antenna Map can be triggered by pressing keyboard key A.

If you have defined your antennas in JAGUAR.INI (see [ANTENNAS] section), those antennas are drawn on Great Circle map centered at your QTH taken from your active Mestor plan. In this case you can rotate your antennas by pressing A repeatedly. Currently selected antenna is shown as red with red beam. If you have defined Velleman/Devantech/3rd party antenna switcher in [ANTENNAS] section, physical antenna switch is done accordingly - if not, this switch can also be used as "documentary" => current antenna name is always automatically added to the wideband file name.

If you haven't defined [ANTENNAS]-section, you can use Antenna Map for antenna beam simulation: just click on map and "virtual antenna" is created.showing selected direction and default beam. If you move mouse cursor over that beam. you can increase/decrease the beam width with mouse scroll wheel. Note: you can also use this beam tuning for antennas defined in [ANTENNAS] section.

You can close Antenna map by pressing ESC, right clicking or just using some shortcut key to any other window.

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NA Patterns

JAGUAR can show **NA Patterns** ie, tx patterns for NA MW stations. This functionality requires additional pattern data package being installed.

* Download pattern data (=40Mb zipped) from TOOLBAR > WWW > DOWNLOAD > OPTIONAL FILES > PATTERNS.zip
* Unzip the data contents into folder named "PATTERNS" within your JAGUAR main folder

* Now you can open NA Pattern maps: Press ENTER for MENU > MAPS > NA Patterns (or press ALT-N) ...
* ... you'll be moved to full screen Google map mode and you can use standard Google map functions ...
* ... map/sat, zoom (down to road map level), street car mode (drag'n drop that yellow fellow), etc
* ... you can toggle between DAY <> NIGHT patterns clicking corresponding buttons ...
* ... or (if you see round Windows logo on the left side, you'll get this with extra click on DAY/NIGHT)...
* .... you can also toggle DAY <> NIGHT patterns with LEFT/RIGHT arrows or MOUSE WHEEL
* When you ready to return back to Jaguar, click ((EXIT)) button on the downright corner

* If you get stuck with Google maps, press CONTROL+W to return to standard screen

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MWLI Logbook

Jaguar offers direct jump to **MWLI Logmap**: select TOP MENU > MAPS > MWLI Logmap and Jaguar opens up MWLI Visual Logbook webpage in your default browser. MWLI account is not required for this service: you can select date and display all loggings made on that day.

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Jaguar Bars

List of vertical bars in Jaguar:
* SLIDER
* STATUSBAR
* PLAYBAR
* TOOLBAR

* TIMEBAR

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SLIDER

SLIDER is a thin black bar with yellow buttons located on the top of the screen. SLIDER has two formats:

* AUDIO SLIDER with 10 audio controls
* VISUAL SLIDER with 10 visual controls

User can toggle between AUDIO SLIDER <> VISUAL SLIDER by clicking "SLIDER" button located at the center of the bar. AUDIO SLIDER is the default mode after fresh install/full reset.

SLIDER can also be used for dividing the screen for text area (Turtle station database) and graphics area. You get Turtle visible with the following ways:

* Press keyboard key T (Turtle on/off)
* Click the small arrows on SLIDER bar (Turtle on/off): left arrow = full screen Turtle, right arrow = split screen Turtle
* Move mouse cursor over SLIDER button and scroll with mouse wheel or left/right arrow keys: the height of the split screen Turtle increases/decreases based on scrolling
* Move mouse cursor over SLIDER button or the black area of SLIDERBAR and drag the SLIDERBAR to desired position
* Click ALLTXT on VISUAL SLIDER => you'll get shared screen consisting half-screen Turtle and half-screen Tomcat

You can change the SLIDER controls by clicking the button or moving the mouse over the button and using mouse wheel or left/right arrow keys.

AUDIO SLIDER has the following controls.

* AUDIO OUT - Select audio output sampling rate (8kHz / 16kHz / 32kHz when 1.6MHz bandwidth is in use or 10kHz / 20kHz / 40kHz when 2MHz bandwidth is in use)
* CLICK REMOVER - Toggle Click Remover ON <> OFF
* AUTONOTCH - Select AUTONOTCH mode (NOTCH OFF / NOTCH A / NOTCH B / NOTCH C) - see Advanced Usages > Notch)
* GAIN - Select base gain level (GAIN HIGH / GAIN AVG / GAIN LOW)
* AGC - Gain coherent calculated by AGC system (see Advanced Usages > AGC) or OFF. When OFF, user can adjust the value.
* FILTER - Select filter used (STOCK / CLASSIC / CALLIOPE / AM FILTER)
* BANDWIDTH - Select filter bandwidth within range 1.0-8.0kHz with 0.1kHz steps
* OFFSET - Select filter offset from DC (default 0.3kHz)
* FILTER PRESETS - User customizable filter bandwidth/offset pairs (see Customization > JAGUAR.INI > [FILTERS])
* SSB - Toggle between LSB <> USB

VISUAL SLIDER has the following controls:

- WALLPAPER - Select active graphics screen (HOME / YAS / MAPS)
- CONTINENT - Select active continent for Maps/Turtle/Tomcat/Spikes
- ALLTXT - Toggle between full txt mode <> normal display. Full txt mode shows both Turtle and Tomcat at the same time.
- STYLE - Select desired color scheme for spectrum screens and maps. On basic frequency screens user can select from three modes: STANDARD / GLOW / XRAY. On YAS screens user can select between GAPS ON or GAPS OFF (when GAPS are OFF, shared EU+TA frequencies (540, 630, 720, ...) are not shown on the screen thus helping to visualize "real TA cx"
- CONTRAST - Select desired spectrum color power/contrast (this control is ignored on MAPS)
- TITLES - Toggles frequency titles ON <> OFF (spectrum screens) or station label format short names <>

long names (MAPS)
- TOPSCREEN - Select the contents of the topscreen area (below SLIDER): FIXED > AUTO > OFF. When FIXED is selected, Jaguar keeps AUDIO BAR (="NOTCH BAR") always visible (see Advanced Usages > Notch > MANUAL NOTCH). If AUTO-status is selected, AUDIO BAR is visible only when AUDIO SLIDER is active. If OFF-status is selected, the area is not used unless user has "FREQUENCY NOTES" activated (see Advanced Usages > Frequency Notes)
- YOYOS - Toggles YOYOS ON <> OFF. YOYOS ("vertical yoyos") are signal power markers for each frequency in the current dial. Normally YOYOS are visible on both sides of the graphics screen but if HOME spectrum is shown in horizontal mode (ALT-V), left side YOYOS give room for station offset labels. YOYOS can be scrolled up/down by moving mouse over YOYOS area and using mouse wheel or left/right arrow key, Note that STYLE > GAPS OFF for YAS controls also the visibility of those frequencies in YOYOS.
- ZOOMER - Graphics area zoom
- HOME - Returns control to Jaguar's HOME screen. If you keep mouse over this button and scroll with mouse wheel (or left/right arrow keys), you can adjust the HOMESCAN resolution ("SPEED").

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TOP MENU

Many Jaguar functions and features have shortcut keys or toolbar icons, but they can also be triggered using **TOP MENU**. TOP MENU can be opened by pressing ENTER, menu items can be scrolled with mouse wheel or arrow keys. Desired function can be selected from the TOP MENU by mouse click or pressing ENTER again.

TOP MENU can be also triggered by right clicking the graphics screen. This is mouse right click default in JAGUAR, user can change this default via TOOLBAR > SETTINGS > RIGTHCLICK to any other listed option. User can exit the menu also without any action by moving mouse cursor over "X" on the right edge of the menu (no need to click it) or right clicking the graphics screen (if right click default is used).

TOP MENU can be used for opening/closing the following JAGUAR functions:

SOURCE - select playback/recording function
* ARCHIVE (open new archive file for playback)
* LIVE<>ARCH (toggle between latest used archive file <> LIVE)
... REC ON
... REC SAVE
... REC CANCEL
... BREAKPOINT (recreates LIVE playback buffer)
SHORTWAVE (direct jump to latest keyboard entered SW frequency)
REMOTE (reserved for future use)

BB - open/close desired tool applet (see Jaguar GUI > Small Windows > BB Applets)
* FILTER
* GRAYLINER
* SPACE WX
* S-METER
* LITEMON
* AUDIO
* RADAR
* CATBOX
* SHOW ALL
* CLOSE ALL

CLIPS - open audio clip folder

LOGS - open/close desired text log
* LOCAL LOG - loggings made via LOGGERBAR

* MY OFFSETS - offset loggings made via LOGGERBAR
* BOOKMARKS - bookmarks made via TOOLBAR > BOOKMARK
* FILENOTES - notes made via FILENOTES function (see Advanced Usages > Filenotes)
* LIFESAVER - system error / information messages
* JIXMAX - automatically collected daily max J-Index values
* NOTEPAD - frequency notes (see Advanced Usages > Frequency Notes)
* MSG LOG - Chat message history (see Advanced Usages > Messenger)

10 KHZ - switch to 10 kHz frequency stepping mode

9 KHZ - switch to 9 kHz frequency stepping mode

GOKEYS - select desired GOKEY (automated payback script)
* (((GO)))
* TIMEJUMP
* FREQJUMP
* TOPJUMP
* TOPBOTS
* DAYJUMP
* HH'MM'SS
* XX'MM'SS
* USB_LSB
* GY_PLAY
* User defined GOKEYS

VFO - select desired frequency list (default VFO list o user-defined DIAL)
* VFO<>BASE
* VFO DEFAULT
* User defined DIALS

MAPS - select desired continent/map wallpaper
* World
* Europe
* Africa-MidEast
* Asia
* Oceania
* North America
* Caribbean
* South Amercia
* Antenna Map
* NA Patterns
* MWLI Logmap

HOME - select HOME or history spectrum (DAYSCAN or EXTENDED SCAN)
* HOME
* DAYSCAN
* EXTENDED

YAS - switch to YAS display mode

SPECTOR - select desired Spector resolution and/or calibrate JAGUAR
* SPECTOR LARGE
* SPECTOR MEDIUM
* SPECTOR SMALL
* SPECTOR OFF
* KALIBRATE (see Keyboard Shortcuts > Standard Keys (A-Z) > K *** KALIBRATE)
* ALT-KALIBRATE (see Keyboard Shortcuts > ALT-Keys (A-Z) > ALT-K *** ALT KALIBRATE)

THEMES - select alternate background wallpaper
* WINDOWS

* LONELY PLANET
* DEEP BLUE SEA
* COASTGUARD
* TROPICANA
* NOSTALGIA

ANT - select desired antenna (if [ANTENNAS] section is defined)
* User defined ANTENNAS

FILTERS - select desired filter
* STOCK
* CLASSIC
* CALLIOPE
* AM FILTER

MESTOR - minimize JAGUAR into Mestor applet mode

MISC - miscellaneous functions
* INFORMATION (see Jaguar GUI > Small Windows > Info Window)
* HELP SCREEN - Keyboard shortcut keys listed
* YASTRACKS (see Jaguar GUI > Extra Windows > TRACKS)
* DELETE FILE
* PAUSE
* TURTLE (see Jaguar GUI > Extra Windows > TURTLE)
* CONDX (see Jaguar GUI > Extra Windows > CONDX)
* SPIKES (see Jaguar GUI > Jaguar Bars > TOOLBAR > SPIKES)
* CLEAR (see Keyboard Shortcuts > Standard Keys (A-Z) > U *** UNDO/CLEAR)
* MIDGET (see Jaguar GUI > Small Windows > Midget)

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STATUSBAR

STATUSBAR contains four (green) service buttons (on the left), four special buttons (on the right) and several status areas in between.

Green service buttons control automatic background services. When clicked, popup menu is shown and user can tick/untick desired services ON <> OFF. If none of the services listed is active, service button is grayed.

- W (WEBBER - Web services):
** SOLAR DATA: If ticked, JAGUAR fetches current solar cx data values from the Internet, cx data is refreshed every 5th minute. This data is shown on this STATUSBAR (see "WIND" below) and on SPACE WX applet (see Small Windows > BB Applets > SPACE WX). If Jaguar's own 1.6MHz bandwidth is in use, this data is also saved into wideband file header to be used in ARCHIVE file playback,
** MSG MODE: If ticked, JAGUAR polls server to support the CHAT feature between fellow DXers ("TEAM" must be defined, see Advanced Usages > Messenger),

- Y (YASSER - YASLOG services):
** YASTHUMBS: If ticked, JAGUAR creates/updates daily thumbnail images from YASLOGs. Thumbnails are saved in the recording day folder ("x.gif") and the can be used uploaded also to KAPSI server (see Customization > JAGUAR.INI > [JAGNET] > GIFSERVER
** YASTRACKS: If ticked, JAGUAR collects listening activity tracking data (how much user has listened to each frequency in any specific HH'MM. Results are shown on TRACKS window (overall view, see Jaguar GUI > Extra Windows > TRACKS) and/or on TRACKER bar display (ALT-O, see Jaguar GUI > Jaguar Bars > TIMEBAR > TRACKER and/or as blue TRACKER graph (see Settings > GRAPHICS + > SIDELINES).
** YASLOGGER: If ticked (default), JAGUAR creates/updates YASLOG, one of the main functions in JAGUAR. See Jaguar GUI > Main Screens > YAS.

- S (SCANNER - Automatic scanning services):

** HOMESCAN: If ticked, JAGUAR plots "spectrum preview" on Home screen whenever frequency is changed. Default scan interval ("SPEED") is 20 seconds, user can customize this interval to a value between 2 (best resolution, slowest speed) and 30 seconds (sparse resolution, fastest speed), see Jaguar Bars > SLIDER > VISUAL SLIDER > HOME: if you keep mouse over this button and scroll with mouse wheel (or left/right arrow keys), you can adjust the HOMESCAN resolution ("SPEED").
** DAYSCAN (LIVE): If ticked, JAGUAR creates automatic frequency analysis ("DAYSCAN") for all MW frequencies (using 9 KHZ stepping or 10 KHZ stepping, based on your location and/or preferences). DAYSCAN starts whenever a new wideband file is saved to disk and the results can be viewed on DAYSCAN screens for each day and frequency (see Jaguar GUI > SPECTRA > DAYSCAN). By default this scan is run for overseas frequencies based on user's QTH but this can be overridden by SET TARGET-declarative (see Mestor > MESTOR Basics),

- M (MESTOR - Scheduled recording services):
** MOBILE +: If clicked, JAGUAR goes into "MESTOR +" hibernation mode (battery driven mobile setup).
** MOBILE -: If clicked, JAGUAR goes into "MESTOR -" hibernation mode.(battery drvien mobile setup, operation temprature may go below zero). See Advanced Usages > 24x7 Operation > MOBILE 24x7 OPERATION for more information.
** MESTOR: If ticked, all scheduled recording services are in use (default). User can disable Mestor temporarily for example during DXpeditions when cx is totally off.
In addition, right clicking M shows current active MESTOR control table.

Four special buttons control various JAGUAR features, some of them are user adjustable.

- LEFTPAW: User defined button, default=rotate WALLPAPER. See Customization > Settings > LEFTPAW. Right click for this LEFTPAW can also be customized there (default=rotate CONTINENT).
- TOPHOUR: First mouse click (left or right) jumps to nearest TOH spot and creates TOPHOUR loop start marker. Second click creates TOPHOUR loop end marker. Third click releases these TOPHOUR loop markers.
- EXPRESS: Opens/closes JAGUAR EXPRESS window: information about latest changes and releases. Sometimes there are two versions exe versions available: the latest stable version ("PROD") and latest development version ("TEST").
- RIGHTPAW: User defined button, default=toggle FREQSCROLL ON <> OFF ("BASEBUTTON"). See Customization > Settings > RIGHTPAW. Right clicking RIGHTPAW toggles USB <> LSB by default, this can be changed in JAGUAR.INI (see Customization > JAGUAR.INI > [CUSTOM] > RIGHTPAW-RCLICK. If you keep the default ("BASEBUTTON") for left click, JAGUAR offers also two extra functions: "LONG LEFTCLICK" and "LONG RIGHTCLICK" (see Mouse Usage > Advanced Usages > MARC-MODE *** MOUSE AS A REMOTE CONTROLLER

Status areas show specific data and many of them are also clickable. STATUSBAR contains the following status areas:

- LOW (LOW NOTCH): Click to toggle LOW NOTCH ON <> OFF (status is red when enabled)
- WIND (SOLAR WIND): Solar wind value. If WEBBER > SOLAR DATA is enabled, in LIVE mode current solar wind value is shown or in ARCHIVE mode the solar wind value at the time of the recording is shown. Click to toggle between WIND value <> graphical solar data status. In graphics mode this status area shows four solar data values: Bz * Kyoto * A/K * Protons, all scaled GREEN / YELLOW / RED based on their numeric values. If "all green", solar cx values are all undisturbed, the more you see yellow/red, the more disturbed conditions are. If you move mouse over this status area, you'll see the corresponding numeric values.
- QSA: Signal level display - the number red balls show the QSA level. Click to toggle between graphics <> numeric display.
- DISK USED %: Disk space used in the currently active disk.
- Various information in the center area - for example current antenna (if used), "((MESTOR OFF))" if Mestor is disabled, current DIAL (if used)
- JIX (current JIX value):J-Index value based on current stepping / DIAL (see FAQ and Troubleshooting > FAQ > What is J-INDEX (JIX) ?
- CPU %: Current total CPU usage of PC
- CR (CLICK REMOVER): Click to toggle CR ON <> OFF (status is red when enabled)

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PLAYBAR

PLAYBAR is the Heart and Soul of JAGUAR !

PLAYBAR contains playback status information:

DATE ((FREQUENCY)) TIME

or

DATE FREQUENCY.OFFSET TIME

When (( )) is visible around frequency, JAGUAR has frequency scroll mode active, otherwise time scroll mode is used. This scroll mode can be changed by keyboard key Z or clicking TOOLBAR > (()) icon. Note that even when time scroll mode is selected, user can temporarily switch to frequency scroll mode by moving mouse over frequency area.

Frequency / time (based on active scroll mode) can be changed by or mouse wheel (whenever mouse cursor is over PLAYBAR area and PLAYBAR text is white) or normally always by left/right arrow keys (unless mouse cursor is over some other scrollable target).

User can also always click PLAYBAR to relocate the time position in the playback file. Note that this can be done also in LIVE mode: JAGUAR uses (max) 10-minute audio buffer file available in LIVE mode.

Mouse right click on PLAYBAR toggles LSB <> USB (or it can be done by pressing Down arrow key).

The progress bar on PLAYBAR can have three different colors:

* BLUE: Archive file played
* GREEN: LIVE mode playback (either real-time LIVE or LIVE buffer file playback)
* RED: LIVE mode playback, recording is active

At the end of file playback normally continues automatically to the next file in the file pool. User can also PAUSE/MUTE playback `(=keyboard bey PAUSE or BACKSPACE).

Two kind of LOOPs can be created: either "What Was It"-loop by pressing SPACEBAR or creating a manual loop by pressing UP ARROW key twice (at loop start and end positions). LOOP is shown by "pylons", their positions can be changed by moving mouse cursor over the pylon and scrolling by mouse wheel / left/right arrow keys. User can release the loop markers by pressing SPACEBAR again ("What Was It"-loop), pressing ESC or pressing Up arrow key for the third time.

PLAYBAR text area is also used for messages - they normally fade out automatically after some time but they can also be released by pressing ESC.

Most users prefer mouse/mouse wheel use but originally JAGUAR was designed for "hard-core keyboard shortcut users" and it can be largely be controlled using the PLAYBAR only and the four ARROW KEYS.

* Scrolling TIME <> FREQ using LFEFT / RIGHT ARROW KEYS
* Toggling USB <> LSB with DOWN ARROW KEY
* Creating/releasing LOOPs with UP ARROW KEY
* In addition Z is useful for toggling the scroll mode and P / N for changing files backwards/forward.

TOOLBAR > TIMEWHEEL enables/disabled TIMEWHEEL function, When TIMEWHEEL is enabled (TIMEWHEEL icon is red), user can move mouse over each individual part of date/timestamp, that part turns red in color and then user can scroll that time element forward / backwards using mouse wheel or left/right arrow keys (year change is not supported).

In addition, TOOLBAR > SETTINGS contain some PLAYBAR related control options:

SETTINGS > PREFERENCES > REVERSEWHEEL: mouse wheel scroll direction can be reversed
SETTINGS > TIMETOOLS > TIMEFLAG: if ticked, small time flag is shown when mouse is over PLAYBAR area
SETTINGS > TIMETOOLS > TIME UP/DOWN: if ticked, UP/DOWN arrow keys can be used to jump to the next/prev TOH instead of the standard LOOP/SSB functionality

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TIMEBAR

TIMEBAR offers an additional timejump control into specific hh'mm shown on the bar. Instead of that, TIMEBAR can also be used to show what hh'mm/frequency pairs user has already listened to (and how much user has spent on each hh'mm/frequency pair: this is so called TRACKER display.

TIMEBAR is enabled by default, to disable it user must untick TOOLBAR > SETTINGS > TIMEBAR.

TIMEBAR is located just below PLAYBAR and by default it shows short vertical gray bars, one bar for each recorded minute within currently active day. When mouse is moved over those bars, corresponding yellow time flag is shown. User can jump to pointed hh'mm by clicking the bar. Note: if the x-resolution of your display is less than 1440, the first and last minutes of the "DX day" (2000-2000 UTC) are not visible.

Vertical TIMEBAR lines can have three colors:
* gray: recorded hh'mm
* white: recorded and scanned by DAYSCAN (see Jaguar GUI > Jaguar Bars > STATUS BAR > Green S button)
* green: upcoming recordings (as scheduled in Mestor)

TIMEBAR contains also colored triangle markers:
* white triangle showing the playback hh'mm position (ARCHIVE mode)
* green triangle showing the playback hh'mm position (LIVE mode)
* red triangle showing the TOH (top of the hour) position on PLAYBAR (if the playback file contains TOH)

If user has activated YASTRACKER (see Jaguar GUI > Jaguar Bars > STATUS BAR > Green Y button), TIMEBAR are can alternatively be used for displaying listening activity history by pressing ALT-O. ALT-O toggles between TIMEBAR <> TRACKER display, .In TRACKER mode timebar's area is fully matched with PLAYBAR's playback time: each minute on PLAYBAR has a corresponding minute area below it and user can see thickening vertical white area based on how many seconds user has listened to each particular minute on PLAYBAR.

TIMEBAR/TRACKER area is also used for showing Top-Of-The-Hour marker (red triangle) for PLAYBAR if the file used in playback contains exact TOH.

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TOOLBAR

TOOLBAR contains a set of icons/buttons for most used JAGUAR features. Most icons toggle the corresponding functionality ON<>OFF (and right click is the same as left click). Many icons also rotate the available values when left clicked, in those cases you normally get a popup menu with right click containing all the available values.

JAGUAR V3.100 contains the following triggers:

- **WWW** - Open JAGUAR BROWSER (see Jaguar GUI > Extra Windows > WWW). Subsequent mouse clicks open the next browser pages one by one. Right click closes JAGUAR BROWSER

- **REMOTE** - Reserved for future use. Currently only chat log is shown if MSG MODE is activated (see Advanced Usages > Messenger)

- **JAGRUN SCRIPT** - Default commands for currently active JAGRUN script - edit for temporary changes if needed

- **JAGRUN MENU** - LIst of available JAGRUN scripts. User can change the script contents permanently or add new scripts to this menu (see Customization > JAGUAR.INI > [GOKEYS])

- **JAGRUN** - If you move mouse over JAGRUN icon, the color turns red and you can use mouse wheel or left/right arrow key to run the script as many times forward/backwards as you need, If you click the JAGRUN icon, the script color turns green and autorun mode starts (click again to stop autorun mode). You fully can automatize your standard file/frequency scanning with JAGRUN

- **TOMCAT** - Open/close TOMCAT logging database (see Jaguar GUI > Extra Windows > TOMCAT)

- **BOOKMARK** - Add a bookmark (=TIMESTAMP/FREQUENCY-pair) to BOOKMARKS.LOG. If any station has been selected active by clicking map or Turtle, the station name is also added to bookmark. You can view/jump to bookmarks on BOOKMARKS textpad
by right clicking the icon (see also Jaguar Bars > TOP MENU > LOGS > BOOKMARKS)

- **RECORD** - Start/stop continuous recording

- **DAYSCROLL** - Toggle dayscroll mode ON <> OFF. When "DAY" icon is red, mouse wheel (and left/right arrow key) scrolls days using current HH:MM in playback. If there's no recording found on some specific day at that HH'MM, playback is paused and the playbar text color is shown as orange.

- **CLIPPER** - Start/stop flushing output audio to CLIPPER (Jaguar's built-in audio editor)

- **PREVFILE** - Jump to previous file

- **PAUSE/MUTE** - Toggle PAUSE ON <> OFF (or MUTE ON <> OFF in LIVE mode)

- **NEXT FILE** - Jump to next file

- **FREQSCROLL** - Toggle frequency scroll mode ON <> OFF

- **SSB** - Toggle LSB <> USB modes.

- **LOOP** - First click: set loop start marker, second click set loop end marker, third click: release loop markers

- **STICKER** - Add "UNID"-sticker (text can be edited later) to current playback position, visible on spectrum displays

- **9 KHZ** - Select EU/AF/AS/OC (MW 9 kHz) frequency stepping. Note: selected stepping mode (from 9kHz up to COMPARE) can be released only by selecting a new different stepping mode (9 KHZ / 10 KHZ / VFO / SHORTWAVE / HOTLIST / COMPARE)

- **10 KHZ** - Select NA/CA/SA (MW 10 kHz) frequency stepping

- **VFO** - Select currently active VFO list / DIAL for frequency stepping. Right click gives you a popup menu with all available DIALS

- **SHORTWAVE** - Jump to "active shortwave frequency" and switch to 5 kHz frequency stepping. Active shortwave frequency is set only by typing the frequency and pressing ENTER (tuning on SW frequencies does not change the saved active shortwave frequency)

- **HOTLIST** - Jump to HOTLIST frequency stepping (three last picked frequencies from YOYOS)

- **COMPARE** - Select "compare" stepping mode (two last tuned frequencies)

- **COBRA** - "Continuous Offset Based Rockin' Audio". When clicked (the icon color is green) and JAGUAR demodulates audio from the highest peak frequency around the nominal - the peak frequency can vary all the time. If clicked once more (the icon color turns red), the currently played offset is locked for playback. Third click disables COBRA activity

- **LIVE<>ARCH** - Toggle between LIVE mode <> currently active ARCHIVE file

- **WALLPAPER** - Rotate main wallpapers (HOME > YAS > MAPS)

- **TIMEWHEEL** - Toggle TIMEWHEEL mode ON <> OFF. When TIMEWHEEL is enabled (TIMEWHEEL icon is red), user can move mouse over each individual part of date/timestamp on playbar, that part turns red in color and user can scroll that time element forward / backwards using mouse wheel or left/right arrow keys (year change is not supported).

- **CONDX** - Toggle CONDX (space weather) overlay ON <> OFF (see Jaguar GUI > Extra Windows > CONDX)

- **SPIKER** - Show known offsets shown as "flagpoles" (see also Keyboard Shortcuts > Standard Keys (A-Z) > X *** SPIKES). Offsets are displayed for stations located in the currently active CONTINENT (CONTINENT can also be "WORLD", see Jaguar Bars > SLIDER > VISUAL SLIDER > CONTINENT). In addition, you can select the "offset area" yourself by defining a beam with RADAR BB applet (see Small Windows > BB Applets > RADAR), By default clicking SPIKER icon toggles spikes ON <> OFF (the icon is red when SPIKER is activated), but user can select the display format and left click functionality using right click popup menu which has the following options:
*** SPIKES OFF - Spiker disabled
*** WHITE SPIKES - Spiker enabled, show all
*** COLORED BY P-TAGS - Spiker enabled, show colors based on P-tags (see Jaguar GUI > Extra Windows > TURTLE)
*** EXCLUDE P0-TAGS - Spiker enabled, show all except P0-tags
*** X = ROTATE ALL - When this is kept ticked, left clicking SPIKER icon or pressing X key rotates available SPIKER display formats WHITE SPIKES > COLORED BY P-TAGS > EXCLUDE P0-TAGS > SPIKES OFF

- **ZOOM +/-** Rotate Spector resolution (LARGE > MEDIUM > SMALL > OFF). Right click gives a popup menu with those menu items plus also options to trigger standard and alternate spector calibration (see Keyboard Shortcuts > Standard Keys (A-Z) > K *** KALIBRATE and ALT-Keys (A-Z) > ALT-K *** ALT KALIBRATE

- **CLEAR/UNDO** - Toggles JAGUAR head, BB Applets and COMPASS displays temporarily ON <> OFF

- **FILEMAIL** - When FILEMAIL icon color is yellow, someone has sent you JAGUAR FILEMAIL. Clicking FILEMAIL opens up FILEBOX folder where your FILEMAIL files are saved, GET FILEMAIL and OPEN FILEBOX are also shown in popup menu if you right click the FILEMAIL icon.

- **TEXTPADS** - Left click: rotate available TEXTPADS (see Jaguar GUI > Small Windows > Textpads), right click: select desired TEXTPAD directly from the popup menu.

- **BB APPLETS** - Left click: rotate BB applets (see Jaguar GUI > Small Windows > BB Applets), right click: select desired BB applet directly from the popup menu

- **SETTINGS** - Show SETTINGS popup menu (see Customization > SETTINGS)

- **INFO** - Show INFO popup menu with the following menu items:
*** H - HELP KEYS - Show HELP KEYS window
*** I - INFORMATION - Show INFO screen (see Jaguar GUI > Small Windows > Info window)
*** ? - MESTOR - Show MESTOR control table

*** ?? - JAGUAR.INI - Show/edit JAGUAR.INI
*** CONTACT INFO - Show current contact email address for JAGUAR support

- **OPEN** - Open new archive wideband file for playback

- **SHUTDOWN** - Show popup menu for shutdown/reset services including the following options:
*** REBOOT PC - Reboot PC
*** POWERSAVE - Hibernate PC
*** FULL RESET - Close and restart JAGUAR with deleting the current SETTINGS and internal restart information (=SYSTEM.INI file). Recommended as the first action if there are any kind of strange JAGUAR problems in playback/startup. Remember that calibration settings are also lost so calibration is always required after FULL RESET
*** RESTART - Close and restart JAGUAR
*** SHUDOWN - Shutdown JAGUAR

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LOGGERBAR

LOGGERBAR can be triggered via Station Popup Menu (see Advanced Usages > Station Popup Menu).

LOGGERBAR displays the following data:

- MAIL button: Reception Report service
- FREQUENCY
- DATE
- TIME (UTC)
- STATION NAME (can be edited)
- MAGNIFIER button: Triggers popup menu > select log to be displayed
- LOG button: select target system where you are going to save/send your logging: LOCAL / MWLI / OLL
- X button: Exit LOGGERBAR
- OFFSET button; select target system where you are going to save/send your offset logging: LOCAL / MWLI
- SCISSORS button; triggers CLIPPER directly from LOGGERBAR
- COMMENTS: add free text to your logging

Detailed description on the LOGGERBAR buttons:

MAIL: When clicking MAIL button Jaguar displays popup menu from which user can select the language of the reception report. The following languages are listed: English / French / Spanish / Portuguese / Russian / German. If Jaguar can not find pre-formatted reception report template, an error message "(((TEMPLATE MISSING)))" is given. If you want to use this feature, the process goes like this;
:
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. Here is one example reception report template, be sure to create a report template that is uniquely yours. Note the use of variables #CALL (8 chars), #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,

Now when you select English from the popup menu, JAGUAR will create the following reception report in the MAIL folder.

TO: TWR

Dear Sirs:

I have the pleasure to inform you that I have been listening to your station TWR, Parakou on 2013-03-15 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,

If you are writing reports in any major languages in 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), and German (MAIL-DE.RTF).

MAGNIFIER: When clicking MAGNIFIER button Jaguar displays popup menu with the following options:

- Show Local Log File
- Show MWLI Log Map
- Show OLL Log File
- Show Local Offset log

Selected log is displayed in TEXTPAD window (see Small Windows > Textpads) except "Show MWLI Log Map" which triggers MWLI's "Worldwide Visual Logbook" in your default browser using the date on LOGGERBAR as input.

LOG: When clicking LOCAL / MWLI / OLL, JAGUAR adds station logging to selected log system,

- LOCAL: Log row is added to LOG.CSV file located in JAGUAR folder (or user defined folder, see Customization > JAGUAR.INI > [CUSTOM] > LOGFOLDER parameter). The row format can be customized (see Customization > JAGUAR.INI > [CUSTOM] > LOGMODE-parameter), without this parameter JAGUAR uses default format (which is compatible with OLL base log format),

- MWLI: Logging is added directly to MWLI Worldwide Visual Logbook. This requires MWLI account and two lines in [CUSTOM]- section of JAGUAR.INI (see Customization > JAGUAR.INI > [CUSTOM] > EMAIL and LOCATION parameters.

OLL: Log row is added to OLL.txt file for further batch processing to OnLineLog-database (OLL is used mainly by Finnish DXers). When OLL is clicked, the menu shows three new buttons; TIME / FONT / SAVE. For normal loggings, click SAVE to add log row, If you need to change the log time to signon time or signoff time, click TIME until you see signon or signoff format, If you need to change your logging to BOLD or PLUS, click FONT until you see BOLD or PLUS format. --- JAGUAR does not have direct plugin to OLL database, but loggings are saved to OLL.txt file first. Loggings can be uploaded to OLL with separate batch

process which uses 3rd party browser extension. Please contact IPA or TAK for more information about OLL batch upload.

Note: JAGUAR has some additional [CUSTOM]-parameters for station logging - see Customization > JAGUAR.INI > [CUSTOM] > FASTLOGGER / LOGPROFILEs / LOGTOTURTLE,

OFFSET: When clicking LOCAL / MWLI, JAGUAR adds offset logging to selected offset log system.

Note: JAGUAR can be used for measuring exact station offsets but the following golden principles must be kept in mind;
* Always make sure that JAGUAR is correctly calibrated before making an offset logging (see Keyboard Shortcuts > Standard Keys (A-Z) > K *** KALIBRATE)
* Keep the error margin (0.0005 kHz) in mind - the last 4th decimal is not necessarily always correct. If you want to be on the safe side, use offsets rounded to nearest 3rd decimal in your public offset loggings. The 4th decimal can be used but it requires experience and longer monitoring for a particular station.

- LOCAL: Offset log row is added to OFFSET.LOG file located in JAGUAR folder (or user defined folder, see Customization > JAGUAR.INI > [CUSTOM] > LOGFOLDER parameter), format is as in the example below

2015-11-05; 972; NIG; Katsina State R & TV Service, Dutsinma; 972.0007;

- MWLI: Offset logging is added directly to MWLI's MW OFFSET LIST. This requires MWLI account and two lines in [CUSTOM] section of JAGUAR.INI (see Customization > JAGUAR.INI > [CUSTOM] > EMAIL and LOCATION parameters.

SCISSORS: When clicking SCISSORS button Jaguar triggers CLIPPER service and starts creating the audio clip using the timestamp and selected station as part of the default audio clip name.

Note: If you have defined multiple Log Profiles (see Advanced Usages > Log Profiles), the currently active log profile is shown on the LOGGERBAR (and it can be changed by clicking it).

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CX-BAR

CX-BAR shows daily space wx values on a yellow bar on YAS screens (see Jaguar GUI > Main Screens > YAS).

In order to view this information user must enable Customization > SETTINGS > YAS > SOLAR CX and click the non-fq area of YAS canvas (= area between color pipes and screen edges) => CX-BAR shows the following solar cx data based on mouse cursor position on screen (solar data is available for JAGUAR since 2015);

* TIMESTAMP
* GLOBAL A and K
* POLAR A and K
* PROTONS
* BZ
* KYOTO DST
* SOLAR WIND

KYOTO DST is probably most often referred index value when forecasting/evaluating trans-Atlantic reception. Dst is the abbreviation from **disturbance storm time,** it gives information about the strength of the ring current around Earth caused by solar protons and electrons. The ring current around Earth produces a magnetic field that is directly opposite Earth's magnetic field, i.e. if the difference between solar electrons and protons gets higher, then Earth's magnetic field becomes weaker. A negative Dst value means that Earth's magnetic field is weakened, this is particularly the case during solar storms. Recent values can be viewed at http://wdc.kugi.kyoto-u.ac.jp/dst_realtime/presentmonth/.

Polar A and K are the standard A and K values (see https://en.wikipedia.org/wiki/K-index) measured in Tromsø Geophysical Observatory. These indexes are more useful for European MW DXers than the global (planetary) A and K indexes.

More information about indexes and solar weather can be found on http://www.voacap.com/ssn.php.

You can close CX BAR by clicking the bar (also right click closes it).

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Extra Windows

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CONDX

CONDX window is not an independent window but overlay on existing graphics screen. This serves only one function: quick lookup for current / recent solar data and rx conditions (it is available also in plain Archive mode with Perseus not connected).

CONDX can be triggered using ALT-X key or clicking TOOLBAR > CX icon. It can be closed same way, also ESC and mouse right click closes CONDX window.

CONDX shows the following daily/hourly data (Internet connection is required):

* Blue curve: Global A-index
* White curve: Polar A-index (Tromsö)
* Green curve: Kyoto DST-index
* Yellow curve: Proton index

In addition CONDX shows

* Red curve: JIX (J-index) if YAS logger is active and local JIXHISTORY.LOG file is available
* Daily sunrise times as yellow vertical line

Numerical values for cx data is shown on the header area for selected time spot (based on mouse cursor position on screen). In addition to the visual curve data this header area also shows numerical value for Global K, Polar K, Bz and Solar Wind.

If you have mouse cursor position on the CONDX screen, you can scroll time backwards/forward using mouse scroll wheel. CONDX screen can show solar data/JIX values max 2 months backwards.

CONDX screen can also show recorded TOHs based on mouse cursor position: whenever recorded file exists at pointed position, the mouse cursor color is bright white => you can jump into that time spot by mouse left click. .

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LOCATOR

LOCATOR window can be triggered only via station popup menu > LOCATOR. You get station popup menu by clicking any station on map or on Turtle screen.

LOCATOR zooms down on the map showing the nearby area of the selected station. On the left you'll see the list of nearest stations within 100km range sorted by the distance to the selected station. List contains frequency, tx power, name and location for each nearby station.

On the map there's red circle around the selected station: range.You can increase/decrease this range by mouse wheel scroll or left/right arrow keys whenever mouse cursor is positioned on the selected station and the circle is red => the station list on the left is updated accordingly.

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

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

Clicking "MINI" button (below EXIT button) closes LOCATOR window but triggers small "Mapplet" window (see Small Windows > Mapplet).

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TOMCAT

TOMCAT window is a sub-window below playbar. It is normally invisible but you can open it by clicking TOOLBAR > TOMCAT. TOMCAT has default height but you can change it anytime when Tomcat is open by moving mouse cursor over playbar and dragging playbar up/down.

You can also create "full text Jaguar" (= TURTLE and TOMCAT sharing the display 50-50) by clicking VISUAL SLIDER > ALLTXT.

TOMCAT shows Finnish and Norwegian MW DX loggings from OLL (OnLine Log). TOMCAT uses a shadow copy of the real OLL, the copy is updated a couple of times a year. Most of the Finnish loggings are unfortunately in Finnish but they are certainly still very useful: many loggings contain ID transcriptions which are always very useful for fellow DXers.

TOMCAT has own menu bar consisting the following buttons:

* FIN/NOR/ALL: Select Finnish / Norwegian / All loggingg
* CONTINENT buttons: Select log target continent (WORLD = all loggings)
* FROM YEAR: You can limit the response set to consist only loggings starting from selected year
* SORT BY: Loggings can be sorted by time (BY DATE) or country (BY ITU).
* EXIT: Close TOMCAT

You can also exit TOMCAT by clicking TOMCAT button again.

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TRACKS

TRACKS window shows a summary based on data collected by Jaguar listening activity tracker.TRACKS window can be opened via TOP MENU > MISC > YASTRACKS. Tracker data is saved and maintained in YAS.LOG, that's why it can also be called as YASTRACKS.

This tracker is not activated by default but it can be triggered from TRACKS screen ("CLICK HERE TO START YASTRACKER") or ticking STATUSBAR > green Y button (YASSER) > YASTRACKER. When activated, YASTRACKER starts keeping track how much time user has spent on each frequency at each minute. Results can be seen below playbar (see Jaguar Bars > TIMEBAR), on the side of the screen (see Customization > Settings > Graphics + > Sidelines) or summarized on this TRACKS screen.

TRACKS show each MW frequency in the "YAS way" as colored "pipes". If nothing is marked as "listened", the pipe is full red - if each minute has been listened through, the color is black. Partially listened minutes have use spectrum color based on how many seconds each minute has been listened to (spectrum fading changing from red to black gradually).

TRACKS shows a quick summary of time/frequency space where you have spent your time and what areas

are fully untouched. Many users use manual documentation what times/frequencies they have listened to f.eg. after DXpedition. YASTRACKER offers a computer assisted alternative to that.

You can jump into any time/frequency spot just as on normal YAS window (mouse cursor is bright white when the jump is possible ie. there is a recording at pointed time). You also zoom this view up/down with mouse scroll wheel.

Return from TRACKS window by selecting main window (for example by using COMPASS, pressing W or HOME key)..

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THEMES

THEMES (ALT-W or via TOP MENU) offer some alternative backgrounds for your listening session. ALT-W rotates all themes, musing TOP MENU > THEMES you can jump directly to desired theme.

The following THEMES are available:

* WINDOWS - Other active applications are displayed on the background, Jaguar shows only the low level bars and Spector (and some small windows: applets, compass, etc). Note that this WINDOWS mode is the only mode where FILEMAIL can be sent (by dragging desired file and dropping it to Jaguar's head)

The following themes are more or less "digital art" tests:

* LONELY PLANET
* DEEP BLUE SEA
* COAST GUARD
* TROPICANA
* NOSTALGIA

The last one reminds you how our hobby has changed in 50 years...

Press W to return HOME from themes.

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TURTLE

TURTLE is the nickname of our station database - the heart and soul of many Jaguar services. You get Turtle visible with the following ways:

* Press keyboard key T (Turtle on/off)
* Click the small arrows on SLIDER bar (Turtle on/off): left arrow = full screen Turtle, right arrow = split screen Turtle
* Move mouse cursor over SLIDER button and scroll with mouse wheel or left/right arrow keys: the height of the split screen Turtle increases/decreases based on scrolling
* Move mouse cursor over SLIDER button or the black area of SLIDERBAR and drag the SLIDERBAR to desired position
* Click ALLTXT on VISUAL SLIDER => you'll get shared screen consisting half-screen Turtle and half-screen Tomcat

Closing Turtle can be done using any of the previous methods.

Jaguar supports two station database formats **MWLI Turtle** and **NAMEX Turtle**. MWLI Turtle is provided with the Jaguar full package but it can be outdated => you can always load up-to-date Turtle via http://www.mwlist.org/ (MWLI account required). If you have added your MWLI account information to [CUSTOM] (see Customization > [CUSTOM] > EMAIL and LOCATION parameters), you can do this download anytime directly from Jaguar: click TOOLBAR > WWW > DOWNLOAD > select MWLI. Download start may take some time but you should get "SAVE" dialog box if MWLI login is successful. You must save

this database to Jaguar's TURTLE folder and then you can activate it using Turtle > LOAD button. MWLI database is kept very up-to-date and accurate.

NAMEX Turtle is a must if US/CAN/MEX radio stations are your main DX targets. NAMEX Turtle contains more detailed information about North American MW stations than MWLI and Jaguar can support some extra services related to this data. NAMEX Turtle is updated less frequently and it can be downloaded via http://www.tapiokalmi.net/dx/koje/koje5.html > Turtle NAMEX database file. Activation after download is required also for this using Turtle > LOAD button.

Turtle database has so called "P-tag" (private tag) in the beginning of each line. These are normally P0 by default and stations tagged as P0 are shown as yellow on the maps (and as "normal lines" on Turtle). You can change this tag by Turtle editor => color on the map and visual representation on Turtle window is changed based on the tag saved, this tag can be P0 -> P4. You can decide what each tag means, but often P1 is used for "QSLed" (white on map), P2 = "hot station" (=recently logged by others, red color), P3 = "possible, included in wish list" (blue), P4="heard/logged/not QSLed" (black)..

Jaguar remembers two last used Turtle databases which can be toggled using keyboard key > ALT-I (ALT TURTLE), so it is possible to switch quickly between MWLI and NAMEX Turtles. In addition you can define different default colors for these two databases (see Customization > [CUSTOM] > TURTLECOLOR.

When you move mouse over Turtle window, mouse wheel scrolls lines up/down (also scroll bar on the right can be used). Note that left/right arrow keys scroll frequencies up/down in this case.

If you click any station on Turtle database, you'll get the same popup menu as when you click a station on map => see Advanced Usages > Station Popup Menu.

Turtle menu on the top of the Turtle window contains the following buttons:

* FILTER: Show only stations based on filter, see below
* WORLD: Show all MW stations on this frequency
* EU: Show only stations on this continent
* AF: Africa
* AS: Asia
* OC: Oceania
* NA: North America
* CA: Caribbean
* SA: South America
(Note: currently active continent is marked with *)
* FONT: Change Turtle font (three different fonts available)
* COLOR: Change background color (four different colors available)
* HILITE: Highlight the row pointed by mouse cursor (HILITE * shown if activated)
* ZOOM +: Zoom text bigger
* ZOOM --: Zoom text smaller
* EDITOR: Turtle data editor, see below
* LOAD: Activate new Turtle station database
* UPGRADE: Transfer user defined P-tags from previous database to new database)

FILTER

Clicking FILTER button enables/disables additional query filter bar. You can define your filter criteria for ITU / STATE / ACTIVE FQ ONLY and P-tag and click GO to run the filtered query. Note that selected continent is ignored in FILTER queries: all continents are automatically included in the filtered query,

* ITU: Type the ITU country code you want to be included in the result set
* STATE: Type the state code within USA (can be left blank)
* ACTIVE FQ ONLY: If this is ticked, only the stations on the current frequency are shown in the result set. If unticked, query result set contains stations from all frequencies.
* P-tag: Default is ALL (P-tag is ignored in query), but you can restrict the query also based on desired P-tag

Click FILTER button to return back to normal Turtle scroll mode.

EDITOR

Click EDITOR button if you want to add/modify data in your Turtle database. Your personal Turtle data (including P-tags) can be upgraded to new Turtle database versions with UPGRADE function.

EDITOR consists of black EDITOR menu on the top of the screen. You can select the following functions:

* MOD for modifying existing row (default): Click any row to open up that data line for editing.
(((IMPORTANT: You must not change any column positioning when editing so don't shift any text positions, just "type over"))), Press enter when you have finished editing of each line,
* ADD: add new line. Click at the position where you want to add a new line. When typing new data keep column positions exactly the same as lines above/below the inserted line. Press enter when you have added all the data you want.
* P-tags (for selected P-tag type): just click station rows to change the tag of the station to currently selected P-tag - currently active P-tag is shown within (( )) -markers. Note that you can change P-tags also without EDITOR by clicking station row and selecting TAGGER from the station popup menu. .

All changes are temporary until you close down Jaguar. If changes have been made during the session, at signoff Jaguar asks
((SAVE TURTLE CHANGES ?)). User can now either cancel all the changes made or save the changes permanently.

UPGRADE

If you have made personal changes to Turtle (MOD/ADD/P-tags) and download new Turtle database, you must upgrade your personal modifications to the new Turtle database with UPGRADE function.

From Turtle menu

* Click LOAD to load your old database (if it is not already active)
* Click UPGRADE > Open your new database to which you want the data to be transferred
* Upgrade is quick and you'll see the results on playbar.

Sometimes there is personal data which can not be upgraded => a new file ORPHANS.txt is created to Jaguar.folder. Study this file in order to see what station data was not processed (most often the reason is that the station is no more active).

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WWW

Clicking the leftmost icon on toolbar triggers **WWW**, Jaguar's own embedded browser window. Embedded browser can show selected web-pages in special Internet Explorer browser mode. There are some restrictions in this, for example html with javascript cause error messages.

Jaguar's WWW browser has the follwing builtin pages available in the menu:

* HOME: Jaguar News Desk
- Note. latest Jaguar exe information can be found via STAR EXPRESS (see Jaguar GUI > Jaguar Bars > STATUSBAR)
* DOCS: Jaguar Documentation
* DOWNLOAD: Jaguar Download Center for Jaguar full packages and Optional Files
* TEAM: List of Jaguar Pro users and their "Jaguar IDs" (=CHAT/FILEMAIL possible within team members)
* CLOUD: Free unlimited cloud space available for Jaguar Pro users
* SPACE WX: Complete space weather status with outlook in text format.
* KYOTO: Long-term Kyoto DST development.
* AFRICA: (Work In Progress) Web page dedicated to African MW stations

* MORE: Some especially important MW DX sites
* LINKS: User defined links (see Customization > JAGUAR.INI > [LINKS])

Jaguar WWW can be closed also by pressing ESC.

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Small Windows

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Compass

COMPASS is an optional navigation tool for quick mouse access between Jaguar main screens.

Compass is enabled by default. You can relocate the position with drag'n drop (Jaguar remembers it at restart) or you can disable COMPASS via TOOLBAR > SETTINGS > GRAPHICS+ > COMPASS,

COMPASS supports the following shortcuts to other Jaguar screens:

HOME: Clicking the center of the compass moves control to HOME window,

D and +: D = Dayscan screen, + = zoomed view of Dayscan screen,

E: Extended screen (+ does the same, no zoom available)

M and + and < >: M = World Map, + = Zoom current continent, < > = Previous / next continent

Y and +: Y = "Top view" of YAS logs, + = Zoom down YAS log

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Clipper

CLIPPER tool can be used to create audio clips from wideband recordings. Clipper can be started during playback by pressing keyboard key C or clicking TOOLBAR > CLIPPER icon or directly from LOGGER BAR (scissors). Repeating that same press/click stops the output flow to CLIPPER (you can also click STOP on CLIPPER tool menu). If you want you can add more playback audio to the same clip by repeating start press/click.

When your audio clip is taken, you can play/edit/process the clip before saving it (see options below). The clip name has standard Jaguar format unless you have used "CLIPNAME" [CUSTOM]-parameter. The clip name is displayed on the bottom of the CLIPPER frame, this name can be edited (don't change the WAV/MP3 suffix here, use CLIPPER tool menu > FORMAT for that).

You can play the audio clip by clicking tool menu > PLAY or by clicking waveform at any position. You also paint a "target area" on the waveform to restrict playback or edit actions to that specific area (clicking waveform outside that area releases the target area). You can increase/decrease the target area size by dragging/dropping the area edges by mouse cursor at either end of the area.
If you edit waveform without painting a target area, the whole audio clip will become the target area for the edit command.

CLIPPER tool menu contains the following edit services:

* FORMAT: Select audio clip format for the locally saved clip (note: filemail/cloud clips are always sent in mp3 format)
* RESTORE: Cancel all the editing you have made and restore the original audio clip
* DESELECT: Release target area
* VOLUME +: Increase amplitude
* VOLUME -: Decrease amplitude

* COPY>TAIL: Copy target area to the end of the clip
* CROP: Keep the target area, delete other parts
* DELETE: Delete the target area
* TOOLS: Move CLIPPER window downwards a bit to reveal SLIDER (you may want to use AUDIO SLIDER tools)
* UNDO: Undo the last edit command

When you are ready with your clip, you have the following save options in the tool menu:

* SAVE AS: Select the save folder manually (you can also change the clip file name)
* SAVE: Your clip is saved into CLIPS folder within your Jaguar folder. You can override this default location with "CLIPFOLDER" [CUSTOM] paramater
* SEND>CLOUD: Clip is sent either to Jaguar cloud or user's own cloud (if available)
* SEND> FILEMAIL: Clip will be sent to some other PC (or to some other Jaguar user)

If you want to log the station in the audio clip, you can jump directly to LOGGER by clicking tool menu > LOGGER.

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

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BB Applets

BB APPLETS are small circular tool windows for extended JAGUAR control. BB stands for "Ballroom Blitz". BB applets are not available in JAGUAR LITE.

These applets can be invoked one by one via the TOP MENU or pressing the TAB key. Applets appear first to the base location at the center of the screen (applets located on this base position are not remembered at Jaguar restart), Each applet becomes permanently active if you relocate it by dragging and moving it with the mouse to a suitable location on the screen. In addition pressing ALT-B relocates (& hides) all applets at once as a large circle on the screen. If you want to hide active applets temporarily, click TOOLBAR > CLEAR/UNDO icon (click again to make applets visible again).

Right-clicking an applet clears and de-activates it. Pressing the ESC key clears and de-activates all active applets.

JAGUAR remembers the screen positions of all active applets after a restart.

Here is the current offering of BB applets:

1. FILTER – Audio filter tuning. You can rotate all the available filters by clicking the filter name button on the top. You can change the SSB mode by clicking left (LSB) or right (USB) side of the applet.

You can move mouse cursor over the applet (=> blue filter area turns green and the edge positioned by mouse is shown as red) and
* drag'n drop the filter position itself when dragging from the black area
* scroll either the inner or outer edge of the filter by mouse wheel or left/right arrow keys (target edge is shown as red). When changing either edge also filter bandwidth is changed automatically. Filter offset is changed when you change the inner edge.
* you can also change only the offset (maintaining bandwidth) by clicking the green filter area and dragging it left/right (in that case both edges have red color)
* CLASSIC filter has additional FRONTEND filter (FIR), in addition CALLIOPE filter has user-adjustable FRONTEND and BACKEND filters which can be triggered for additional filter processing along with the main filter stage: BACKEND processing happens before main filter and FRONTEND processing is done after the main filter stage.

2. GRAYLINER – Grayline display & simulation. You can simulate the movements of the grayline manually by moving the mouse over Month/Day/Hour/Min and scrolling the selected value by the mouse wheel or

arrow keys. In addition, the sunrise and sunset times for the chosen day are shown. You can jump into a detailed grayline map by clicking on the applet.

3. SPACE WX – Shows space weather conditions provided that user has enabled W > SOLAR DATA service. In LIVE mode current values are shown, in Archive mode values at the time of the recording are shown (1.6Mhz files only).

By default applet shows the SOLAR WIND value but when mouse cursor is moved over the applet, more data is shown. 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 well known indicator for TA cx as well as POLAR (= Tromsø, Norway) A and K values. Highly increased PROTON flux values mean radio black-out in the polar cap area. The threshold for a storm is 10. The following color scheme is used: GREEN = normal. YELLOW = something's happening/unsettled, RED = storm/alert/something to worry about.

4. S-METER – QSA value with one decimal on glowing green background. JAGUAR uses this format instead more commonly used dBm for showing signals strengths.

5. LITEMON – LITEMON applet shows four signal power J-Index values: MW10 / MW9 / VFO / user defined frequency (current value at the time of playback) - longer red areas mean better cx on those frequencies, Numerical JIX values for each are shown when you move mouse cursor over the applet. If you are in LIVE mode LITEMON also shows then day's max values for each. The monitored "user defined frequency" is given in [CUSTOM]: MONITORFQ=freq.

6. AUDIO – Audio settings. You can tune/change the following audio related things:
* SSB: Click USB <> LSB
* CR: Click CR (audio Click Remover) ON <> OFF
* AGC: Click to toggle between AGC ON <> AGC OFF. When OFF, you can move mouse cursor over the button => button becomes green => now you can scroll (with mouse wheel or left/right arrow keys) the shown GAIN value lower/higher.
* AUTONOTCH: Clicking this button rotates autonotch mode A > B > C > OFF (see Advanced Usages > Notch).
* WAV format: Defines the output audio sampling rate. It can be rotated 8kHz > 16kHz > 32kHz (if 1.6MHz bandwidth is used) or 10kHz > 20kHz > 40kHz (if 2MHz bandwidth is used).
* The lowest "button" is not clickable, it just shows the current QSA value

7. RADAR – Set the main beam of the receive antenna for SPIKER offset data display (see Jaguar Bars > TOOLBAR > SPIKER). The great-circle map on this applet is centered on the user's QTH coordinates. Click once on the map to release the lock and move the beam towards the main beam of the antenna. Use mouse wheel scroll to increase/decrease the beam size. Click once more to lock the beam in place. RADAR beam controls the target pick area of the "offset poles" (spikes) shown on the graphics screens. Note that RADAR does not have any other antenna related functionality (just the coverage area for SPIKER) even though it works like Antenna Map functionality,

8. CATBOX - Multi-function applet. By default CATBOX is a black window showing current frequency ("NOTES" mode), Currently CATBOX has four "channels" available (channel can be changed by moving mouse cursor over the applet and scroll by mouse wheel or left/right arrow keys):
* NOTES: Frequency notes. User can write and save personal notes for each frequency, clicking NOTES applet Jaguar's own "notepad" pops up for adding/editing these notes. Notes can have also colors and title, this color and title are shown on CATBOX applet whenever user tunes on this frequency and CATBOX / NOTES applet is visible. See Advanced Usages > Frequency Notes,
* AURORA: When clicked this applet shows current global aurora zone (Internet connection required)
* CULTURE: When clicked this applet shows time but alarms top-of-the-minute time spots with various Team Lurx alarm clock videos (Internet connection required). This channels alarms you even when CATBOX is closed, you can get rid of this channel only by changing the channel. Top-of-hour reminder is a special video showing one of the "Finnish national heroes" in his favorite action (also music experts abroad may recognize this guy).
* WAVEFORM: When clicked this applet shows dynamic playback waveform (last second played). If audio has no issues, the background of the applet is black - red flash is a sign on AGC hit and green flash means

CR hit (if Click Remover is activated). Clear audio is shown as continuous sine wave but that is seldom achieved with DX signal: this waveform is often very irregular, trashy and/or full of noise.

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Info window

INFO WINDOW is shown always after new install/full reset or every time when keyboard key I (info) is pressed.

Title contains Jaguar build date and Jaguar version and level (Pro or Lite), in addition there are lines with the following information. User can change his setup / environment using the corresponding button on the right.

* CONNECTION: time when hardware connection was created
* ARCHIVE: number of files in file pool and their service status. Certain Jaguar functions require Jaguar file name format and if all files in the file pool have correct format, message "All services available" is displayed here
* FILE NAME: The name of the currently played file
* FILE INFO: Date, bandwidth, center frequency, attenuation level and length of the currently played file
* DEVIATION: Jaguar shows the hardware offset for current active frequency here (offset info is available after calibration).
* DATABASE: Currently active station database.
* SET NAME: Currently active Mestor plan name, bandwidth, center frequency (for new recordings)
* SET QTH: Currently active QTH with their sunrise and sunset time (UTC) on playback date
* SET DISK: Primary and overflow disk info. Star on "ACTIVE" button shows which disk is currently the active disk. Clicking "ACTIVE" button will toggle the recording target disk between primary < > overflow disks.
* SETTINGS: Your JAGUAR key for this PC, "SETTINGS"-button and "GET PRO"-button. "GET PRO"-button can be used for asking JAGUAR upgrade from Lite to Pro: it triggers PC's default email client for sending email to JAGUAR support team. If there's no email configured on your PC, copy the key shown in the beginning of this line and send it to JAGUAR support staff using another PC.

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Mapplet

MAPPLET (Map Applet) is a spin-off of LOCATOR window. Mapplet can be triggered only from MAPS screen after selecting LOCATOR functionality from the Station Popup Menu (see Advanced Usages > Station Popup Menu and Jaguar GUI > Extra Windows > LOCATOR).

If you click "MINI"-button on the top-right area of LOCATOR window, the main LOCATOR is closed and Mapplet opens up showing the target DX station on large circular window. You can't relocate this window but you can zoom it by moving mouse cursor over that window and using mouse scroll wheel (or LEFT / RIGHT ARROW keys).

If you scroll frequencies, Mapplet shows station located within Mapplet area size. You can close Mapplet by pressing ESC or right clicking it.

In the future version Mapplet window may be used for other services as well..

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Mestor applet

MESTOR applet is similar to BB applets but it is visible only in "MESTOR mode". See Mestor > Mestor Basics for details.

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Midget

JAGUAR **MIDGET** is the easiest SDR player ever !

Midget can be triggered via MENU > MISC > MIDGET, optionally with M keyboard key (see TOOLBAR > SETTINGS > M-KEY > MIDGET) or it can be defined to be triggered by mouse right click (TOOLBAR > SETTINGS > RIGHTCLICK > MIDGET.

Midget is a minimized version of JAGUAR with only the main controls available:
* Navigation with left / right arrow keys
* Only Z (FREQ SCROLL on/off), P (PREV FILE), N (NEXT FILE) and M (MIDGET off) keyboard keys in use
* Zoom size with mouse wheel, drag'n drop to relocate Midget position

Midget is meant for those who listen a lot but do other things on the same PC simultaneously.

It can be also used if user wants to use just the simples possible SDR playback tool.

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Star Express

STAR EXPRESS shows the latest info for Jaguar development and versions. STAR EXPRESS can be opened only by clicking STAR icon on statusbar (icon is located between Jaguar teeth).

STAR EXPRESS panel allows users to easily install the latest exe (using TEST XXXX-XX-XX INSTALL button) and also revert back to the last known stable release (using PROD XXXX-XX-XX INSTALL). Currently used version is shown above those buttons ("Your version is XXXX-XX-XX").

If you find a bug in Jaguar, please test if that has been already fixed by installing the latest TEST version before reporting about the problem (the issue may have already been fixed in the latest TEST exe).

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Textpads

TEXTPADs are separate independent window for handling text data.

TEXTPAD can be any of the following:

* LOCAL LOG
* MY OFFSETS
* BOOKMARKS
* FILENOTES
* LIFESAVER.LOG
* JIXMAX.LOG
* NOTEPAD
* MSG LOG

* TEXTPADs can be rotated with TOOLBAR > TEXTPADS icon or from popup menu given after mouse right click of that icon
* You can also use the TEXTPAD for editing and SAVE the modifications (except MSG LOG)
* TEXTPAD can be relocated/resized in stardard ways, settings are remembered in the next Jaguar restart
* "Double tapping" textpad's titlebar maximizes/minimizes the window

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Mouse Usage

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Basic Usage

MOUSE LEFT CLICK

While many experienced users prefer keyboard shortcuts for most Jaguar functions, mouse is required for complete Jaguar control. All Jaguar services can be also used without keyboard with standard WYSIWYG (What You See Is What You Get) principle - mouse left click triggers the desired function.

Also some standard "drag'n drop" services are available as well as functions triggered after user has pressed left mouse button for a few seconds ("long click"):

* Drag'n drop can be used to relocate BB applet, compass, slider or textpad positions on display.
* Long click can be used with mousetrap (see Mouse Usage > Advances Usages) and also on DAYSCAN screen: after "long click" on DAYSCAN user can start painting an area on DAYSCAN screen and after that painted time area is ready for creating an EXTENDED SCAN for this time period.

MOUSE RIGHT CLICK

Mouse right click behavior depends on mouse cursor position:

Mouse cursor over playbar: right click toggles USB <> LSB
Mouse cursor over small window / ANTENNAS / CONDX: right click closes the window
Mouse cursor over main screens: toggles TOP MENU on/off by default.
In the last case user can change the default functionality via TOOLBAR > SETTINGS > PREFERENCES > RIGHTCLICK.
The following options are available:

* TOP MENU
* MOUSETRAP (See Mouse Usage > Advanced Usages)
* LSB <> USB
* SPECTRA (Rotates HOME > DAYSCAN > YAS)
* CUSTOMKEY (User can select desired functionality clicking any standard key A-Z)
* MIDGET (Minimizes Jaguar into MIDGET mode)

MOUSE SCROLL WHEEL

Even though JAGUAR can be used without external mouse, a good mouse with "not too slippery" scroll wheel is highly recommended.

JAGUAR PRO supports lots of scroll wheel functionality: just point target with mouse cursor and use mouse wheel for changing that object).

Mouse scroll wheel behavior depends on mouse cursor position:

Mouse cursor is over playbar (playbar text is bright white): scroll wheel scrolls either frequencies (if (( )) markers are active) or time.

Mouse cursor is over graphical screen (playbar text is yellow): normal functionality is zoom but it also depends on the screen - for example on CONDX screen mouse scroll wheel can be used to scroll days backwards/forward. Detailed description can be found in screen description. .

Mouse cursor is over small windows: Depends on the case - for example on BB FILTER applet scroll wheel can change either filter offset or bandwidth depending on the position of cursor on the filter area. Detailed description can be found in related small window description.

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Advanced Usages

MARC-MODE *** MOUSE AS A REMOTE CONTROLLER

Jaguar offers a revolutionary way to control DX files without touching the keyboard and without moving the mouse cursor at all. With this mode user can even focus visually with other things (TV etc) but still being able to scroll DX files - without looking at Jaguar display. So you can watch a movie on TV (provided that you don't need audio ie. the movie has local language transcription instead of dubbing) and simultaneously scan last night's DX recordings using Jaguar with headphones.

What you need is a laptop and an external wireless mouse where the optics below the mouse has been removed/disabled (normally several layers of thick tape is required to fully disable the optics control of the mouse). Also it is a great benefit if the mouse has side buttons (you can get such mouses from 3EUR incl. shipping from eBay).

In addition you need to define "Mousetrap" for the right click option of Jaguar (CUSTOMIZATION > SETTINGS > RIGHTCLICK > MOUSETRAP).and BASEBUTTON for RIGHTPAW (CUSTOMIZATION > SETTINGS > RIGHTPAW > BASEBUTTON). The latter is default setting in Jaguar.

After that the mouse cursor will stay on the same physical spot (right paw button) all the time during Jaguar operation and you can use mouse in the standard Jaguar way:

* LEFTCLICK toggles TIME SCROLL <> FREQ SCROLL
* SCROLL WHEEL scrolls time or frequency based on current scroll mode
* RIGHTCLICK toggles USB <> LSB
* If you have side buttons (X1 and X2) in mouse, they can be used to jump to previous file (X1) or next file (X2)

You can also change settings/screens/antennas/whatever without changing the cursor position on the screen: after "LONG LEFT CLICK" (keeping mouse left click down for 2 seconds) Jaguar triggers TOP MENU and scroll wheel/left click can be then used to select anything from the TOP MENU. After selection (left click) the mouse cursor is still located in the "mousetrap position" on the RIGHTPAW button and standard MARC operation can continue (or you can get rid of TOP MENU without selecting anything with right click).

"LONG RIGHT CLICK" is also available: keep mouse right click down for 2 seconds and you'll enter into FILESCROLL mode: mouse wheel can be used now for scrolling file forward/backwards (next left/right click returns back to normal mode).

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Keyboard Shortcuts

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Standard Keys (A-Z)

A *** ANTENNAS

Opens/closes ANTENNAS screen (see also Jaguar GUI > MAPS > Antenna map).

If user has not defined [ANTENNAS] section in JAGUAR.INI, subsequent A press closes this window. Until

that user can evaluate antennas / directions by clicking the antenna map (virtual antenna is created on the screen).

If user has defined [ANTENNAS] section that screen shows the antenna set (directions and beams) and subsequent A press does not close the window but "current antenna" is changed on display (if user has an antenna switch box included in his DX gear, that current antenna on display is also physically selected). In this case you can close Antenna map by pressing ESC or W or just with mouse right click.

B *** BREAKPOINT

When active connection to Perseus hardware is created, Jaguar always uses buffer file on disk making possible to play back several frequencies close to real time. By default this buffer file size is 10 minutes (when using 1.6MHz bw) or 8 minutes (when using 2MHz bw) and new file is always started when buffer file reaches those limits. Users can recreate new buffer file any time by pressing B in order to avoid TOH to hit between buffer files switch,

C *** CLIPPER

Opens Jaguar's built-in audio clip extract tool "CLIPPER" (Jaguar GUI > Small Windows). Audio clip creation is started immediately after pressing C. Subsequent C press stops the extract process and another C press starts it again. When desired audio clip has been recorded/modified, user can save it and exit by pressing EXIT button on CLIPPER.
Pressing ESC key also cancels clip recording. Mouse right click closes CLIPPER window.

D *** DAYSCAN

Toggles between HOME and DAYSCAN screen (see also Jaguar GUI > Main Screens). If there is not any DAYSCAN created, D also rotates via RUN DAYSCAN panel giving user an option to create DAYSCAN for this frequency.

E *** EXTENDED

Toggles between HOME and EXTENDED screen (see also Jaguar GUI > Main Screens). If there is not any EXTENDED scan created, E also rotates via RUN EXTENDED SCAN panel giving user an option to create EXTENDED SCAN for this frequency.

F *** FILTERS

Rotates available Jaguar filters: STOCK > CLASSIC > CALLIOPE > AM FILTER. If there's no FILTER BB APPLET visible when F is pressed, at first Jaguar displays the current filter BB applet without changing the filter itself.

G *** GO NEXT

Jump to next time/frequency as specified by active JAGRUN script (see TOOLBAR > JAGRUN). Often used together with **ALT-G (GO PREV)**..

H *** HELP

Opens/closes keyboard HELP window. HELP window shows this keyboard list in title level.

I *** INFORMATION

Opens/closes Info window (see Jaguar GUI > Small Windows > Info window).

J *** JAGRUN

Starts/stops the automated run of currently selected JAGRUN script (see Jaguar GUI > Jaguar Bars > TOOLBAR > JAGRUN).

K *** KALIBRATE

Calibrates Jaguar based on current frequency. When using this you must be tuned on frequency where you have a valid "calibration station" with a sharp peak visible. For example in Europe AM 810 can be used: both UK and MKD are known to be pretty exactly on 810.0000. After K is presses the SPECTOR peak should show exact .0000 frequency. If you can repeat the process (sometimes cx may cause peak "wobbling" and it is dfficult to get exact calibration match. Jaguar calibration has error range of 0.0005 kHz so the last 4th decimal is not necessary always correct (but can be, you can't be always sure) - that is why it is recommended to use only 3 decimals in official loggings.

You can repeat this process any time you see that calibration is not on spot (this may be due to many things, f.eg. hardware temperature change).

Calibration can be done either in LIVE mode or when listening to any ARCHIVE file (in Jaguar calibration can be done also afterwards for old files).

L *** LIVE<>ARCH

Toggles between Live mode vs. last used archive file playback.

M *** MAPS or MESTOR or MIDGET

This key function can be customized (see Customization > Settings), user can select from three options:
MAPS - toggles between HOME and MAPS screen (default)
MESTOR - minimizes Jaguar into MESTOR applet (playback paused)
MIDGET - minimizes Jaguar into MIDGET mode (playback continues)

N *** NEXT FILE

Moves playback control to the next file.

O *** OPEN FILE

Select new file for playback

P *** PREV FILE

Moves playback control to the previous file

Q *** CONTINENT

Rotates active continent (MAPS/TURTLE/SPIKES) World > Europe > Africa-MidEast > Asia > Oceania > North America > Caribbean > South America

R *** REC ON/OFF

Starts/stops manual recording mode. In recording mode the progress bar color is red. Current buffer file is saved to disk when file becomes full and recording continues normally. If you stop recording pressing R again, current buffer file is saved and progress bar color returns back to green.

S *** SLIDER

Toggles slider bar display mode between AUDIO <> VISUAL buttons.

T *** TURTLE

Toggles between TURTLE database minimized <> Turtle database full screen. 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: Jaguar head, compass, BB applets.
Pressing U also clear currently active loop markers (and subsequent U press restores the earlier loop markers - "undo the undo").
Pressing U also cancels recording without saving the file if recording mode is active (confirmation is asked before cancellation).
Pressing U also stops some other active functions (f.eg. flushing audio to clipper).

V * 9>10>VFO**

Rotates frequency stepping mode 9kHz stepping > 10kHz stepping > currently active VFO/DIAL stepping.

W * WALLPAPERS**

Rotates Jaguar GUI main screens: HOME > YAS > MAPS.

X * SPIKES**

Toggles offset display ("spikes") on/off. The displayed spike mode can be selected from three options (see Jaguar GUI > Jaguar Bars > TOOLBAR > SPIKER). Toggle function can also be changed to rotate function.

Y * YASLOG**

Toggles between HOME and YAS screens (see also Jaguar GUI > Main Screens).

Z * FREQ SCROLL**

Toggles between frequency scroll on/off. When frequency scroll is enable, you'll see (( )) markers around the frequency on playbar. If those markers are visible, mouse scroll wheel changes frequency up/down based on current stepping mode << when mouse cursor is positioned over playbar >>. In addition, you can use LEFT / RIGHT ARROW keys for frequency scrolling in spite of the mouse cursor position (unless the mouse cursor point to some other scrollable object).

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ALT-Keys (A-Z)

ALT-A * AUDIO CR**

Toggles CLICK REMOVER function on/off. CLICK REMOVER is designed to eliminate audio clicks caused by electric fences and similar type short audio overload bursts.

ALT-B * BB APPLETS**

Opens/closes all BB APPLETS (see Jaguar GUI > Small Windows > BB Applets).

* If there are any visible BB APPLETS on screen, they are closed by ALT-B.
* If there are no visible BB APPLETS on screen, all applets are displayed in a circle shape. After that user can relocate the applets he wants to use (drag'n and drop the applets to desired location) and close the applets he does not not need (= right click applet).

ALT-C * ALT COBRA**

Alternate Cobra - rotates COBRA status: COBRA OFF > COBRA ACTIVE > COBRA LOCKED. COBRA functionality is described in Jaguar GUI > Jaguar Bars > Toolbar > COBRA.

ALT-D *** ALT DAYS

Alternate day --- changes day in playback: "jump to same time but previous/next day". By default ALT-D jumps to previous day. Playback starts immediately if time match is found also on the previous day. If there's no recording saved on that time, "PAUSE" is triggered and playbar text color is changed to orange. User can continue scrolling backwards by pressing ALT-D again. When the last day on disk is reached, Jaguar shows text "< CHANGING DIRECTION > and starts to scroll days forward.

ALT-E *** ALT EOF

Alternate end-of-file function. By default Jaguar continues playback (EOF function = "NEXT") on the next file when end-of-file is reached. This can be changed by ALT-E, which rotates the following options: NEXT > KEEP (control returns the beginning of the file on the current frequency) > FQUP (frequency is changed upwards based on the selected stepping) > FQDN (frequency is changed downwards based on selected stepping),

ALT-F *** SHOW NOTES

FILENOTES for current wideband file displayed on graphics screens ON <> OFF (FILENOTES must be enabled in TOOLBAR > SETTINGS > PREFERENCES > FILENOTES).

FILENOTES can contain personal notes and/or loggings, FILENOTES are saved at the end of wideband recording. You can edit FILENOTES after entering ??? or right clicking the TEXTPAD icon and selecting FILENOTES.

ALT-G *** GO PREV

Jump to previous time/frequency as specified by active JAGRUN script (see TOOLBAR > JAGRUN). Often used together with **G (GO NEXT)**..

ALT-H *** ALT-CLOUD

Alternate cloud location. Users can use personal and group clouds, with ALT-H user can switch between them. Clouds are used for saving clips to network instead of local disk.

ALT-I *** ALT TURTLE

Jaguar remembers two recently loaded/used Turtle databases. Pressing ALT-I user can toggle between them.This offers a quick way to switch between MWLI Turtle and KOJE-Turtle (or between two MWLI Turtles if you listen to older recordings at times and need the corresponding database of that era),

ALT-J *** ALT GOKEY

Rotates your GOKEY list (= JAGRUN scripts) on TOOLBAR. See Jaguar GUI > Jaguar Bars > TOOLBAR > JAGRUN.

ALT-K *** ALT KALIBRATE

Jaguar offers an interesting option to calibrate your software also using known exact offset (normally calibration is done with some station known to be on exact XXXX.0000 frequency, If you know that some station always sits at exact offset, you can tune to that frequency and press ALT-K. Then shift the visible SPECTOR peak using LEFT / RIGHT ARROW keys to position where SPECTOR peak matches the known offset and press enter. Make some additional offset checks on other frequencies to make sure that this "alternate calibration" has succeeded,

ALT-L *** ALT LOGPROFILE

User may have several "Log Profiles" for creating loggings to different publications or locations with different formats.ALT-L can be used to rotate/change currently active log profile. See Advances Usages > Log Profiles. Note: LOGPROFILE can be changed also in the LOGGERBAR.

ALT-M *** ALT MESTOR

User may have several "Mestor Plans" for various recording schemes based on locations or antennas.ALT-M can be used to rotate/change currently Mestor Plan. See Advances Usages > Multiple Mestor Plans.

ALT-N *** NA PATTERNS

Shortcut to open NA Pattern maps:see Jaguar GUI > MAPS > NA Patterns.

ALT-O *** ALT TIMEBAR

Toggles between standard TIMEBAR display vs. TRACKER display. See Jaguar GUI > Jaguar Bars > TIMEBAR.

ALT-P *** PERSESUS ATT

Rotates Perseus hardware attenuation level: 0 (default, no attenuation) > 1 (-10 dB) > 2 (-20 dB) > 3 (-30 dB).

ALT-Q *** PREV CONT

Rotates active continent (MAPS/TURTLE/SPIKES) backwards: World > South America > Caribbean > North America > Oceania > Asia > Africa-MidEast > Europe.

ALT-R *** ALT SPECTOR

Toggles between standard SPECTOR display vs. transparent SPECTOR display. In transparent mode SPIKES (offset poles) are displayed above the SPECTOR peak.

ALT-S *** SCREENSHOT

Create GIF-image of your Jaguar screen or user defined part of it. After pressing ALT-S user gets red-white square which can be used to define the area to be included in the output image. Mouse left click relocates the corner of this area, when you are ready press Enter to create the screenshot (mouse right click quits this function without creating the screenshot). The output image is saved to Jaguar folder and named as SCREENSHOT YYYY-MM-DD HH'MM'SS.GIF.

ALT-T *** TOHBOTLOOP

Creates a playback loop around the exact TOH or BOT if currently active file includes either of those.

ALT-U *** TURTLE L<>R

If you ever need to see the Turtle data saved outside screen on the right, you can use ALT-U to shift display right <> left.

ALT-V *** VERT<>HORZ

HOME spectrum can be shown also vertically - ALTV can be used for toggling horizontal <> vertical display.

ALT-W *** THEMES

Rotates all THEMES modes: WINDOWS > LONELY PLANET > DEEP BLUE SEA > COASTGUARD > TROPICANA > NOSTALGIA. See Jaguar GUI > Extra Windows > THEMES.

ALT-X *** CONDX

Toggles between CONDX screen overlay on/off. See Jaguar GUI > Extra Windows > CONDX.

ALT-Y *** ALT YOYO

Toggles between YOYOS on/off. See Jaguar GUI > Jaguar Bars > SLIDER > VISUAL SLIDER > YOYOS

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Other Keys

ARROW KEYS *** MULTIFUNCTION KEYS

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

ARROW LEFT; Scroll three seconds backwards in time OR scroll frequency down if (( )) markers are visible on playbar

ARROW: RIGHT: Scroll three seconds forward in time OR scroll frequency up if (( )) markers are visible on playbar

ARROW DOWN: Toggle between USB <> LSB

ARROW UP: Add loop marker to playbar. First press adds start point of the loop, second press adds the end point of the loop. Third press releases the loop markers.

User can override ARROW DOWN and ARROW UP functionality by enabling TOOLBAR > SETTINGS > TIMETOOLS > TIME UP/DOWN. If that option is ticked, ARROW DOWN moves playback control to the previous existing TOH and ARROW UP moves control to the next existing TOH in recordings. In these cases also "TOH latch" is displayed: when user changes frequency, control is moved to time spot just before TOH (default time spot in this is XX:59:40).

BACKSPACE *** PAUSE

Toggles playback pause/mute on/off.

DELETE *** DELETE FILE

Pressing DELETE key deletes the currently active archive file. Delete function is not allowed if user has not activated DELETE-key (SETTINGS > PREFERENCES > DELETEKEY). If DELETEKEY is ticked in PREFERENCES and user presses DELETE-key, confirmation is still asked before making the final deletion.

END *** JUMP TO LAST ARCHIVE

With END key you can jump directly to the last recorded archive file.

ESC *** STOP/CANCEL/DISABLE/QUIT

ESC is a multi-function stop/cancel/disable/quit key - whenever user has launched some extra function / tool windows, ESC will stop/cancel that function. After all the extras have been stopped/disabled (one by one when ESC is pressed again), the last ESC will close down Jaguar (confirmation is asked for this). ESC is kind of a "super key" to restore standard screen/services offering an easy way to get rid of "extras".

HOME *** JUMP TO HOME SCREEN

Pressing HOME button moves control to Jaguar's HOME screen.

PAUSE *** PAUSE

Toggles playback pause/mute on/off (same as BACKSPACE);

PGDN *** SCROLL DOWN

Scrolls objects downwards depending on the mouse cursor position. Object can be text data (TURTLE, TOMCAT), frequency/time (PLAYBAR) or YOYO list (graphics screen).

PGUP *** SCROLL UP

Scrolls objects upwards depending on the mouse cursor position. Object can be text data (TURTLE, TOMCAT), frequency/time (PLAYBAR) or YOYO list (graphics screen).

TAB *** SCROLL TO NEXT

Displays non-active BB objects one by one. However if TIMEWHEEL (see Jaguar GUI > Jaguar Bars > TOOLBAR > TIMEWHEEL) is activated, TAB rotates active scrollable objects MONTH > DAY > FREQUENCY > HOUR > MINUTE > SECOND.

SPACEBAR *** WHAT WAS IT?*

Pressing SPACEBAR creates/removes WWI-loop ("What Was It"). When hearing something interesting in playback you can quickly repeat the last few seconds by pressing SPACEBAR and Jaguar creates automatically "What Was It"-loop. Default loop length is 8 seconds, you can customize this duration with [CUSTOM] parameter WWI (see Customization > [CUSTOMS] > WWI.

. (DOT) *** TEMPORARY SETTING

PRO users can define any [CUSTOM] parameter on the fly by typing . (dot) followed by the parameter name=value. Given value is valid only during the current session, the value given will be not remembered at the next Jaguar restart.

For example if user has defined [ANTENNAS] section and wants to use function keys PF1-PF9 for antennas switching during the current session, user can type

.ANTENNAKEYS=Y
and Jaguar will use PF-keys for antenna switch till the end of the session.

? (QUESTION MARK) *** QUERY SYSTEM

? triggers Jaguar's built in query function.

The following queries are available - type ? followed by possible search word and press enter:

?	Show MESTOR recording scheme
??	Show JAGUAR.INI
???	Show FILENOTES in Textpad (see Jaguar GUI > Small Windows > Textpads)

The following queries show results on Turtle text window so in order to see the results you need to have SLIDER opened

?CALL See Advanced Usages > Phonetic Call Sign Search

Otherwise ? can be followed by any search word. The results will vary based on the database used: some advanced NA queries require NAMEX Turtle database. Query results are picked from stations on current AM frequency within active continent.

You can query networks / names / slogans / etc, for example::

List Australian stations on this frequency: ?AUS
List SER stations: ?SER

The following queries may require NAMEX Turtle (MWLI database may not contain all this information):

List stations that broadcast "Coast to Coast": ?C2C
List Fox affiliates: ?FOX
List ESPN stations: ?ESPN
List stations that use slogan "Hometown radio": ?HOMETOWN RADIO
List stations that have SPO as one of the formats used: ?SPO

/ (SLASH) * COMPARE**

/ key can be used to toggle between two last frequencies to compare the program contents: easiest way to check if parallel programming can be found on those frequencies. Jaguar keeps track on frequency history automatically so two last used frequency are kept in memory.

< > (GREATER and LESS) * FILTER PRESETS**

> rotates predefined filter presets (bw/offset) forward, < rotates them backwards.

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Mestor

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MESTOR Basics

MESTOR is the heart of JAGUAR: MESTOR subsystem controls basic operation characteristics and optionally also timered recordings.

User defines basic operation environment with "SET declaratives" and timered recording commands with "MESTOR scripts" in [MESTOR] section of JAGUAR.INI. SET declaratives define bandwidth used, center frequency, recording folder, QTH, default VFO frequency list, etc. If SET declaratives are missing, JAGUAR uses built-in defaults.

MESTOR scripts for timered recordings are not mandatory but most users leave JAGUAR open overnight in order to record TOHs, BOTs or any other desired time slots - or even the whole night based on predefined recording script(s). Defined script is repeated daily.

JAGUAR.INI may contain several [MESTOR] sections and user can also schedule the change of [MESTOR] plan itself (see Advanced Usages).

JAGUAR full installation package contains JAGUAR.INI template with example [MESTOR] section. User should modify this section after installation.
* [MESTOR] section can contain comments (lines starting with //).
* [MESTOR] lines must start from the beginning of each line and they must not contain special characters (tabulators, line breaks, etc).
The most common JAGUAR startup/operation failures are due to some invisible special character within JAGUAR.INI

SET DECLARATIVES

[MESTOR]

// Give name to Mestor section ("Mestor plan name"). Name must not include spaces.
SET NAME MESTOR1

// Use sampling rate 2 MHz, center frequency as 995kHz (PRO users can use SET SAMPLING 1600 .... which saves 20% disk space)
SET SAMPLING 2000 CENTER 995

// Define recording disk and overflow disk (if you use folders in path, f.eg.
// "SET DISK C:\RECORDINGS OVERFLOW D:", you must first create the folders manually
SET DISK C:\ OVERFLOW D:

// Define your QTH (location, lat, lon)
SET QTH LEMMENJOKI, 68.7667, 26.3167

// Set your favorite frequencies into VFO dial
SET VFO 1230,1240,1340,1400,1450,1490

// If you want to compare Jaguar audio <> Perseus.exe or HDSDR.exe, uncomment & give path to that alternate SDR (remove // comments)
//SET ALTSDR D:\PERSEUS\PERSEUS.EXE

When the primary disk becomes full, recording continues on OVERFLOW disk. When user wants to record again on the original primary disk (after creating some free space on that disk), he must switch back to it by visiting INFO window and ticking "active disk marker" (* symbol) back to primary disk (see Jaguar GUI > Small Windows > Info Window), Note that normally Jaguar's advanced "time jumps" can cover only files from either disk.

In addition, JAGUAR maintains automatically JIXHISTORY.LOG and JIXMAX.LOG saving J-Index data (see FAQ and Troubleshooting > FAQ > What is J-Index (JIX) ?) By default this is collected from "10kHz frequencies", if SET QTH defines a location in Europe/Asia and from "9kHz frequencies", if SET QTH defines a location in American continent. User can override this default by adding (remove // comment)
//SET TARGET MW9
or
//SET TARGET MW10

This SET TARGET command also controls the DAYSCAN frequencies scanned (by default DAYSCAN scans "overseas frequencies" based on user's QTH but the target frequency set can be changed with SET TARGET. For example if user's QTH is in Europe, DAYSCAN scans US-frequencies but if his only antenna is directed to Japan, he might want to use SET TARGET MW9 so that DAYSCAN scans 9-frequencies instead.

MESTOR SCRIPTS

In addition to SET declaratives [MESTOR] section can contain unlimited number of Recording timers --- template JAGUAR.INI contains two examples (uncomment and modify what you want)

// Record 8 minutes at each top of the hour 10 times starting at 21'58
//21:58 (8) x10

// Record two hours starting at 30 minutes before sunrise
//SUNRISE-30 (120)

MORE MESTOR SCRIPT EXAMPLES FOR TIMERED RECORDING

To give you an idea what you can do with MESTOR, here are a few of example scripts. You can creatively combine them for your own purposes. Place all of your MESTOR scripts in the [MESTOR] section after SET declaratives.

Important note about the time format in MESTOR scripts: We strongly recommend that you always use the colon (:) as a separator between hours and minutes (hh:mm). The apostrophe (') is supported but there has been some confusion earlier due to some apostrophe-resembling characters such as single quotation marks or accents, which do not work in the scripts. Using the colon is the safest option.

Example 1: Extended top-of-the-hour

TOH 21-05

This script will record "extended top-of-the-hours" using the defined center frequency and sampling rate. The start time is at xx:59 (including 2059 and 0459 UTC) and the duration of each recording is 8 minutes (if 2MHz bw is used) or 10 minutes (if 1.6MHz bw is used).

Example 2: Short top-of-the-hour

TOP 22-06
22:54 COPE (7) M-F

We will create "short top-of-the-hour" (2-minute) recordings between 2200 and 0600 UTC (starting at xx:59). There is one exception, however. 2300 UTC will not be included in the top-of-the-hour recordings because another function overrides it: 22:54 COPE (7) M-F . This command will record the COPE local break which starts at 2254 UTC and lasts for 7 minutes. The filename for this function will be suffixed as "…. COPE.WAV" and is recorded only from Mondays to Fridays as per the " M-F " definition. Consequently, standard TOPs starting at 2259 UTC will be run only on Saturdays and Sundays.

Example 3: Custom top-of-the-hour

SET ATT 1
21:54 (15)
22:54 (15)
23:54 (15)
00:54 (15)
01:54 (15)
SET ATT 0
02:52 SUNRISE (200)

This is a more complicated script, filled with a number of useful functions. We have defined our own "top-of-the-hour" function: at every hour, the recording starts at xx:54 and lasts for 15 minutes. We have also defined a longer recording in the morning which starts at 0252 UTC and lasts for 200 minutes. This filename will be suffixed as "... SUNRISE.WAV". The overnight recordings will use the attenuation (ATT) level 1 (-10 dB) but in the morning the attenuation level will be 0 (zero = no attenuation).

Example 4: Extended top-of-the-hour and short half-hour

TOHH 21-08

This simple script is a good example of how to record extended top-of-the-hours from xx:59 to xx:07 (or xx:59 to xx:09 if narrower bw is used) as well as half-hour spots from xx:29 to xx:31.

Example 5: Super-scheduler

21:58 (12) x10

This script is an example of a super-scheduler which is of format hh:mm (mins) xnn . It will record [mins] minutes starting at [hh:mm] and recording takes place [nn] times, x = "multiplier", [nn] can be between 1…24, [mins] can be between 1…60. The hourly start (or BREAKPOINT) happens always at the minute given in [mm]. So 21:58 (12) x10 will record 12 minutes at each top-of-the-hour (TOTH), starting at 2158 UTC. This happens 10 times so the last recorded TOTH will be between 0658-0710 UTC.

Another example:

19:54 (60) x20 : records 20 hours daily from 1954 UTC with breakpoints at every xx:54:00

Example 6: Greyzone recorder

SUNRISE-30
SUNSET-30

This script, called GREYZONE RECORDER, is an example of a dynamic script. The recording time is determined by the sunrise and/or sunset times at the location of QTH s defined in SET QTH. The recording time will vary day by day.

You can make your daily SUNRISE and SUNSET recordings run with a user-defined length (default = 60 minutes) and shift from the sunrise/sunset times.
In the example above:

SUNRISE-30 records 60 minutes daily starting 30 minutes before your local sunrise
SUNSET-30 records 60 minutes daily starting 30 minutes before your local sunset

Other examples:

SUNRISE records 60 minutes daily starting at your local sunrise
SUNRISE (30) records 30 minutes daily starting at your local sunrise
SUNRISE-15 (90) records 90 minutes daily starting 15 minutes before your local sunrise
SUNSET records 60 minutes daily starting at your local sunset
SUNSET+30 (45) records 45 minutes daily starting 30 minutes after your local sunset

Example 7: Overnight recording

21:57 (550)

Megatrend in MW DXing is to record whole night and use JAGUAR spectrum analysis tools (YAS log / DAYSCAN / EXTENDED SCAN) to pick up the interesting stations from the large amount of files which overnight recording produces. The previous script starts recording at 21:57 and records up to 07:07. File breaks will never happen at exact TOH because file length is 8 mins (2MHz bw) or 10min (1.6MHz),

JAGAR PRO users can also use CUSTOM-parameter FORCEBREAKPOINT=57 parameter (see Customization > [CUSTOM]) so that file breaks happen always at XX:57. Another possibility is to define

21:57 (60) x9
06:57 (8)

This way all the file breakpoints would happen at the same minutes (note that the last TOH 07 must be added separately to the bottom).

Checking the MESTOR syntax

After you have created the MESTOR scripts in the [MESTOR] section of JAGUAR.INI and launched JAGUAR, the program will check the script syntax and try to build the "MESTOR Control Tables" based on the given scripts. Sometimes an error message may be displayed if a fatal error is found, for example, if the hard disk drive where you want to save your recordings, is missing. After every change in MESTOR scripts, it is always a good habit to check the contents of the control tables by pressing the ? (QUESTION MARK) key in JAGUAR (and fix the scripts if the contents is not what you have planned). If you are happy with the recording scheme displayed, just leave JAGUAR as is. You can leave it in the ARCHIVE mode or in the Live mode, running or paused. JAGUAR will take care of the recordings at the programmed times whatever mode JAGUAR is in.

Mestor applet

Mestor applet is a small special window used to minimize resource consumption in overnight / 24x7 operation. User can minimize JAGUAR to Mestor applet by clicking TOOLBAR > MESTOR or selecting MENU > MESTOR or pressing M (if TOOLBAR > SETTINGS > M-KEY > MESTOR is ticked). JAGUAR also minimizes automatically to MESTOR applet mode if there's no user activity on the application within one hour (this automatic minimization can be blocked by ticking TOOLBAR > SETTINGS > PREFERENCES >

KEEP MAXIMIZED.

By default MESTOR applet shows the following data:

* REAL TIME
* REC DISK USED DATA %
* CPU %

The applet color is either red (Recording), green (Idle) or gray (hardware not connected).,

When mouse is moved over the applet, data areas change to buttons:

* SHOW
* STATUS
* RETURN

Clicking SHOW triggers MESTOR info popup window, clicking STATUS triggers JAGUAR status window and clicking RETURN restores maximized JAGUAR operation.

MESTOR info popup window shows the control declaratives and scheduled recording plan for the currently active [MESTOR] section.You can change the values dynamically (without JAGUAR restart) by answering "NO" to "(((MESTOR PLAN OK ?)))" question (MESTOR edit window appears for changes).

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Advanced Usages

In addition to control wideband recordings, MESTOR offers some other timered startup services and the support of multiple MESTOR plans.

RUN *** Any program can be scheduled in Mestor	HH:MM RUN path-to-program
CENTER ***: Center frequency can be changed	HH:MM CENTER new-center-frequency
MESTOR *** Mestor plan can be changed	HH:MM MESTOR mestor-plan-name
POWERSAVE *** Hibernate and wake up at hh:mm	HH:MM POWERSAVE hh:mm
ANTENNA *** Switch to antenna x	HH:MM ANTENNA x
EXTSCAN *** Start EXTENDED SCAN using x sec FFT interval	HH:MM EXTSCAN VFO,x
TINYTOP *** Record only one minute at the top of the hours	TINYTOP HH-HH
TINYBOT *** Record only one minute at the bottom of the hours	TINYBOT HH-HH

Additional notes:

* RUN requires valid path to desired exe
* CENTER frequency can be also the shortwaves
* MESTOR plan name given must be found in another [MESTOR] section (see below)
* POWERSAVE requires the following OS settings for correct functionality:
Your PC must support wakeup timers and they must be enabled. Also wakeup logon must be disabled;
-- 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. If so => click "Change settings that are currently unavailable" > Also "No"-option becomes available)
-- Other sleep options should be "Never"
* ANTENNA requires valid antenna definition in [ANTENNAS] section and Velleman/Devantech control board configured for JAGUAR
* EXTSCAN is supported only for VFO (but you can define VFO to contain all MW frequencies...), however "VFO" can be also replaced by single frequency. FFT interval can be 2 -> 240 seconds.
* TINYTOP and TINYBOT record one minute (XX:59:30-XX:00:30 and XX:29:30-XX:30:30) between the two

given hours.
For example "TINYTOP 15-17" will record 14:59:30-15:00:30, 15:59:30-16:00:30 and 16:59:30-17:00:30.

MULTIPLE MESTOR PLANS allow users to divide recordings to different output folders (for example based on antenna used). Also if user moves rx location often, he can keep a [MESTOR] plan ready in JAGUAR.INI for both QTH's (no need to rewrite Mestor settings when he changes rx location, just activate corresponding plan with ALT-M). User can also schedule [MESTOR]-plan change into MESTOR itself. Mestor plan names must not include spaces.

Below an example where user has three antennas and each antenna is changed automatically by MESTOR and the output is directed to corresponding folder. Mestor plan is also changed automatically. Note that antenna changes require [ANTENNAS] section and an antenna switch mechanism supported by JAGUAR (= Velleman, Devantech or 3rd party program).

```
[MESTOR]
//MIDDLE_EAST plan is launched at 15:00
SET NAME MIDDLE_EAST
SET SAMPLING 1600   CENTER 1000
SET DISK E:\MEAST   OVERFLOW C:
SET QTH MYHOME, 60.1699, 24.9384
SET VFO 1287
SET ANTENNA 1
15:56 (8) X4
BOT 16-19
19:40 MESTOR AFRICA

// Note: if DAYSCAN is activated, user should add also SET TARGET MW9 to MIDDLE_EAST plan
// in order to produce scan results for frequencies that have 9kHz stepping (instead of the default 10kHz
stepping)

[MESTOR]
//AFRICA plan is launched at 19:40
SET NAME AFRICA
SET SAMPLING 1600   CENTER 1000
SET DISK E:\AFRICA   OVERFLOW C:
SET QTH MYHOME,60.1699, 24.9384
SET VFO 891,972
SET ANTENNA 2
19:56 (8) X4
BOT 19-23
23:45 MESTOR USA

// Note: if DAYSCAN is activated, user should add SET TARGET MW9 to AFRICA plan
// in order to produce scan results for frequencies that have 9kHz stepping (instead of the default 10kHz
stepping)


[MESTOR]
//USA is launched at 23.45
SET NAME USA
SET SAMPLING 1600   CENTER 1000
SET DISK E:\USA   OVERFLOW C:
SET QTH MYHOME, 60.1699, 24.9384
SET VFO 1230,1240,1340,1400,1450,1490
SET ANTENNA 3
SUNRISE-70 (120)
23:56 (8) X5
BOT 00-05
15:00 MESTOR MIDDLE_EAST
```

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Customization

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Settings

Jaguar basic settings can be changed by clicking the SETTINGS icon on Jaguar toolbar. In addition JAGUAR PRO users can make more customization using [CUSTOM]-section in JAGUAR.INI.

Basic settings are grouped into the following groups:

* PERFORMANCE
* TIMETOOLS
* GRAPHICS +
* PREFERENCES
* YAS
* M-KEY
* LEFTPAW
* RIGHTPAW
* RIGHTCLICK
* TOOLTIPS

PERFORMANCE

* MAX CPU: Maximizes CPU usage in audio demodulation.If you disable MAX CPU, you'll get some savings in CPU usage but some calculations are skipped in audio process (but normally unnoticeable in the result).

* MAX BUFFER: LIVE buffer is maintained while you listen to ARCHIVE files => when you return to LIVE the current active backbuffer file is available. If you disable MAX BUFFER, new backbuffer file is always created when you return to LIVE. (Note: disable MAX BUFFER if you have audio drops in simultaneous ARCHIVE/LIVE use).

* TURBO +2dB: Disables DITHER function in Perseus (improves sensitivity in low signal strength areas).

TIMETOOLS

* MAP TIMES: Shows sunrise and sunset times both in DX target location and in user's QTH. In addition NOX time is shown: it is the midpoint of the midnight between user's QTH and target - experience has shown that this time (+- 15 mins) gives another potential chance for long-distance weak signal reception.

* TIMEFLAG: Shows a tiny HH'MM'SS window based on the mouse cursor position on playbar. Jump into that HH'MM'SS with a mouse click.

* TIMEBAR: Shows all recorded areas within the current DX day, mouse over bar shows the corresponding HH'MM. Jump into that HH'MM with a mouse click.

* TIME UP/DOWN: Changes UP/DOWN arrow key functionality: instead of standard loop/ssb functions UP/DOWN arrow keys can be used to move playback control very quickly to the previous/next TOH spot.

GRAPHICS +

* COMPASS: (PRO only) Quick navigation tool between the most used screens within Jaguar.

* EXTRAS: (PRO only) Extra visual add-ons/animations and enhanced graphics (contrasts/shading). Animations include f.eg. active station signaling on the maps.

* JAGUAR HEAD: Jaguar logo shown on the right side of playbar.

* SIDELINES: (PRO only) Red JIX graph, blue TRACKER graph and white signal level bar is shown on the both sides of the spectrum screens.

* SPECTOR +: (PRO only) Artificial intelligence is activated in order to automatically identify the stations shown by SPECTOR offsets. You can limit the coverage area with RADAR BB applet by defining an antenna beam for areas to be included.

* STICKERS: (PRO only) User defined stickers (visual labels) can be added to spectrum screens. Click STICKER icon on toolbar or use station popup menu for adding stickers.

PREFERENCES

* DELETEKEY: Keyboard key "DELETE" can be used to delete currently active archive file (otherwise pressing DELETE key is ignored).

* FILENOTES: (PRO only) User can add file specific notes and they will be saved at the end of active IQ-file in archive mode. . See Advanced Usages > Filenotes.

* CONFIRMATIONS: (PRO only) Extra confirmation popup is shown when logging/bookmarking/adding stickers.

* KEEP MAXIMIZED: JAGUAR does not minimize into MESTOR applet mode (normally MESTOR applet mode is triggered if there's no user activity for one hour).

* REVERSEWHEEL: Mouse wheel scroll direction functionality is reversed in main operations

* SHAREDNOTES: (PRO only) CATBOX BB applet's NOTES are saved also into the cloud so you can share the notes between your Jaguar setups. See Advanced Usages > Shared Notes.

* START AS MESTOR: Jaguar is automatically minimized into Mestor mode after startup

YAS (PRO only)

YAS options define additional features displayed on all YAS screens.

* HOTSPOT+: shows rays to hotspot (white circle as a marker telling where you are located in time / frequency space)

* MWLI LOGS: Shows your loggings for each day from MWLI Visual Logbook database.

* REC AREAS: Shows recorded areas in the background.

* SOLAR CX: Shows hourly Kyoto DST, Global A and Polar A values on the screen edges. You'll get more solar data for each time spot when clicking the non-fq area of YAS canvas.

* TIMELINES: Time raster including sunrise times.

M-KEY

M-keyboard key is the only key which can be customized.User can select from the following options:

* MAPS: M toggles between HOME <> MAPS
* MESTOR: Jaguar is minimized into MESTOR applet
* MIDGET: Jaguar is minimized into MIDGET playback mode

LEFTPAW

* LEFTCLICK: If you use this option, Jaguar asks you to press the keyboard key you want to bind to LEFTPAW left click. After that LEFTPAW triggers the function connected to the selected keyboard key,

* RIGHTCLICK: The same as LEFTCLICK, but for mouse right click.

RIGHTPAW

RIGHTPAW functionality can be selected from the following options:

* BASEBUTTON: PAWBUTTON click changes the scroll mode between time scroll vs frequency scroll (PAWBUTTON right click changes USB vs LSB).

* LOCAL LOG: (PRO only) PAWBUTTON click opens the local log file. Another click closes it.

RIGHTCLICK (PRO only)

Mouse RIGHTCLICK functionality on Jaguar screens ("wallpapers") can be selected from the following options (PRO only):

* TOP MENU: Main top menu (MENUBAR) is opened.

* MOUSETRAP: Mouse cursor is relocated back to rightmost PAWBUTTON (basebutton),

* LSB <> USB: SSB mode is toggled between LSB vs USB.

* SPECTRA: Right click rotates HOME > DAYSCAN > YASLOG.

* CUSTOMKEY: If you click this option, Jaguar asks you to press the keyboard key you want to bind to RIGHTCLICK. After that RIGHCLICK triggers the function connected to the selected keyboard key.

TOOLTIPS

Short help text is shown when mouse is hovered on buttons over sliderbar / statusbar / toolbar.

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JAGUAR.INI

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[MESTOR]

[MESTOR] section is required in JAGUAR.INI for successful JAGUAR operation. Detailed description of the use of [MESTOR] section can be found in its own chapter.

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[ANTENNAS]

User can define antenna setup in **[ANTENNAS]** section. Defined antennas are shown on ANTENNAS map (See Jaguar GUI > MAPS > Antenna map). Antenna switchers are also supported, JAGUAR has built-in support for Velleman and Devantech antenna relay boards. These boards can also be used to control preamp on/off. If user has Velleman / Devantech relay boards, their drivers must be installed first and COMPORT=port may be needed to be defined in [CUSTOM].

Let us assume that user has four beverage antennas, directed to 293, 320m 80 and 35 degrees (estimated beam is 60 degrees) and also preamp is in use. In the following example Velleman relay board is used, slots

1-4 have antennas and slot 8 has preamp

[ANTENNAS]
1 = 293, EASTCOAST, 60, VELLEMAN
2 = 320, MOUNTAIN, 60, VELLEMAN
3 = 80, JAPAN, 60, VELLEMAN
4 = 35, OCEANIA, 60, VELLEMAN
8 = 0, PREAMP_ON, 0, VELLEMAN
9 = 0, PREAMP_OFF, 0, VELLEMAN
10 = 0, RESET, 0, VELLEMAN
// note: 9 & 10 are just notational

Each [ANTENNAS] line consists of antenna number and three parameters: direction, name, beam. The fourth paramemer is optional (it can be VELLEMAN or DEVANTECH).

Antennas can now be switched
* via menu
* pressing "A" on keyboard (rotates antennas 1-4)
* clicking antenna on the bearing map
* with PF Keys 1-4 (and Preamp on with PF8, Preamp off with PF9) - if ANTENNAKEYS=Y has ben defined in [CUSTOM]
* scheduled in [MESTOR], for example
21:55 ANTENNA 2
* Note: Antenna reset (all antennas) is available via menu only

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[ALERTS]

User can add "alarm clock" functionality for LIVE listening by adding **[ALERTS]** section into JAGUAR.INI. Each alert is echoed on JAGUAR playbar at the time of scheduled alarm.

[ALERTS]
02:52 = 02:55...MALAWI SIGNON
02:57 = 03:00...SUDAN SIGNON
04:25 = 04:30...NIGERIA SIGNON
05:18 = 05:20...SER "HOY POR HOY" (M-F)...05:30,1179
05:48 = 05:50...SER "HOY POR HOY" (M-F)...06:00,1179
06:18 = 06:20...SER "HOY POR HOY" (M-F)...06:30,1179
06:47 = 06:49...SER ID 06:49 (M-F)...07:00,1179
07:17 = 07:19...SER TENERIFE LOGGED (M-F),1179
07:48 = 07:50...SER "HOY POR HOY" (M-F)...08:00,1179

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[CUSTOM]

Users can customize JAGUAR with many additional features using **[CUSTOM]** section in JAGUAR.INI.

Each [CUSTOM] parameter must start from the beginning of the line and must not contain tabulators / line breaks.

Comments can be added between parameters using lines starting with //

[CUSTOM]

EMAIL=your.email@xxxx.com
LOCATION=qth, qthname, latitude, longitude, omid

=> If you have given these two lines, you can send loggings to MWLIST
EMAIL= must contain the email address which you have defined to MWLIST
LOCATION= defines your reception location: qth is a short abbreviation (f.eg. LEM), qthname is the long name (f.eg. Lemmenjoki), latitude and longitude can have decimals and omid is the numerical value found on your MWLIST profile in MWLIST's "myAM" properties.

AUTOSAVE=Y

=> Jaguar saves currently active HOME spectrum to disk in frequent intervals (whenever you return to this file/frequency, saved spectrum is reloaded and immediately visible

CLIPPER=mins

CLIPPER uses buffer area in memory for audio clip handling and editing. Default size is CLIPPER=5 minutes but it can be extended with CLIPPER=mins parameters. For example CLIPPER=10 reserves 10 minute memory buffer for audio clips.

FILEMAIL=uid

User can define a fixed receiver (give valid JAGUAR USERID for UID) for his filemails. If this is given, JAGUAR does not ask recipient when FILEMAIL is sent.

FASTLOGGER=Y

If FASTLOGGER=Y is defined, logging is sent automatically to local log and MWLI (provided that MWLI settings are OK) with one click and logger bar is closed immediately after logging has been done. You can use also FASTLOGGER=C which creates only the selected logging but closes the logger bar automatically.

LOGMODE=parameters

User can customize the default log format Jaguar produces in many ways. For example if LOGFORMAT=OLL is used, Jaguar creates log rows which are compatible for OLL logging system. In addition, the output row can be freely customized by fixed literal strings and logmode parameters. Each parameter is four charaters log preceded by # (JAGUAR fills the parameter during logging). 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 #CALX #NAMX

For example when

LOGMODE=#FREQ #TIME #NAME #COMM #USER

is defined, LOGGERBAR generates a log lines containing frequency, time, station name, comments and userid.

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

This definition produces optimal logging line for MWC log format (#CALX and #NAMX generate strings designed for MWC in mind). USER must be replaced by user initial used in MWC (may be different than #USER which generates JAGUAR userid). All values are separated by semicolon, so the output file can be loaded to Excel.

TURTLECOLOR=BLUE/WHITE/GREEN/GRAY, BLUE/WHITE/GREEN/GRAY

Select one of the four for NAMEX Turtle (first color code) and one of the four for MWLIST Turtle (second color code)
For example TURTLECOLOR=GRAY,WHITE shows any NAMEX Turtle background always as GRAY and MWLIST Turtle always as WHITE after Jaguar restart
Color is changed automatically if you change Turtle format with ALT-I

DEBUGGER=Y

This parameter is user by request of the development staff whenever detailed troubleshooting is required. This is often related to JAGUAR.exe created specifically to the user.

GPULEVEL=2

Use only if you have problems with map display. Some older GPUs do not allow high the resolution maps in JAGUAR. If the maps are not visible, user may try
GPULEVEL=2. Also GPULEVEL=3 is available (use only if GPULEVEL=2 does not work). This may help - maps should work now but with below average/low resolution.

GRAYMODE=Y

You can change the Jaguar default color scheme (=yellow) to gray if you define GRAYMODE=Y.

MONITORFQ=freq

You can define one (nominal) frequency to be monitored more closely. This is future reservation, in V3.100 this MONITORFQ is used only in LITEMON BB Applet.

COMPORT=comport

Define Windows COMPORT for Velleman/Devantech antenna relay control board, for example COMPORT=COM3 directs antenna relay control commands to COM3.

TEAM=uid1,uid2,uid3,....

List of valid JAGUAR userids who consist a team, Used in JAGUAR Messenger.

CLIPFOLDER=path-to-clip-folder

By default the SAVE function of CLIPPER saves audio clips to CLIPS-folder located in JAGUAR main folder. User can override this default folder with CLIPFOLDER-parameter. If user has defined LOGPROFILEs, there can be max 3 separate clip folders (CLIPFOLDER1=, CLIPFOLDER2= and CLIPFOLDER3), one of each LOGPROFILE.

LOPROFILE1=log-profile-name

User can have max 3 log profiles (LOGPROFILE1=, LOGPROFILE2= and LOGPROFLE3=) and give name to each log profile, for example

LOGPROFILE1=A-QTH
LOGPROFILE2=B-QTH
LOGPROFILE3=REMOTE-QTH

These profiles are useful if user wants to make loggings to several publications, Advances Usages > Log Profiles.

LOGFOLDER=path-to-log-folder

By default all JAGUAR-produced logs are saved to LOGS-folder located in JAGUAR main folder. User can override this default folder with LOGFOLDER-parameter.

LOGTOTURTLE=Y

Whenever making a logging via LOGGERBAR, station's P-tag in TURTLE database may be automatically changed to P4 if LOGTOTURTLE is activated (required that the previous P-tag is P0).

JAGUARLITE=Y

JAGUAR PRO users can simulate JAGUAR LITE functionality by defining JAGUARLITE=Y

ANTENNAKEYS=Y

Users who have defined [ANTENNAS] section can use function keys (PF1-PF9) for antenna switching by defining ANTENNAKEYS=Y. Otherwise function keys PF-PF9 are used for changing filter presets (bw/offset),

WWI=value

Pressing SPACEBAR creates "What Was It"-loop. Default duration is 8 seconds but users can change this value. WWI-values between 0 and 10 seconds are allowed. 0 means that WWI-loop function is disabled (SPACEBAR is ignored).

TOH=startsec,endsec

JAGUAR has several functions which create automatic LOOP around top-of the-hour. This default TOH LOOP is XX:59:40 - XX:00:05. User can increase/decrease this LOOP duration by giving TOH=startsec,endsec definition. For example TOH=30,30 overrides the default TOH LOOP with new values XX:59:30-XX:00:30

BOT=startsec,endsec

JAGUAR has several functions which create automatic LOOP around bottom-of the-hour. This default BOT LOOP is XX:29:50 - XX:30:10. User can increase/idecrease this LOOP duration by giving BOT=startsec,endsec definition. For example BOT=30,30 overrides the default BOT LOOP with new values XX:29:30-XX:30:30

CITYLIST=city1,lat,lon,city2,lat,lon,city,lat,lon,....

User can give max 5 "DX-target cities" with ther corresponding latitudes and longitudes.Their sunrise times will appear in YAS logs. North American JAGUAR users can define target cities for sunset times.

KEEPZOOMPOS=Y

KEEPZOOMPOS=Y tries to keep the YAS log position fixed when the lowest YAS zoom level is used.

LEVEL= BOTTOM

If you want to run JAGUAR 100% full screen (allocating also the space reserved for Windows taskbar for JAGUAR), define LEVEL=BOTTOM.

MP3TAGS=Y

MP3TAGS=Y adds information to basic mp3 tags when creating mp3 audio clip: base frequency -> TITLE, station name -> ARTIST, date/time stamp -> ALBUM. Most mp3 players can use this data in displays in various ways.

FORCEBREAKPOINT=57

FORCEBREAKPOINT can be used to prevent TOH appearing at file break. FORCEBREAKPOINT can be any minute, but 57 or 58 are optimal values => JAGUAR makes file breakpoint always exactly at each XX:57:00 or XX:58:00.

DUALMON=xresolution,yresolution

User can define JAGUAR main display to alternate display using DUALMON-option (desired x-resolution and y-resolution must be given). These values may need to be trimmed from default resolution values in

order to get full screen coverage. Also DUALMON=xresolution,yresolution,INVERSE can be used to relocate JAGUAR on the "other side" of the main display (INVERSE may not work in every situation).

BANDSTOPPER=Y

BANDSTOPPER controls how frequency scroll behaves when either end is reached. Default is BANDSTOPPER=C (=circular mode: when either end of the dial is reached, control jumps to the beginning/end of the dial). BANDSTOPPER=Y stops scrolling when end is reached. BANDSTOPPER=N allows user access "grey area" of the bandwidth (outside the alias-free area of the wideband recording),

X1BUTTON=keyboardkey
X2BUTTON=keyboardkey

If you have a mouse with sidebuttons (X1 and X2), you can customize their functionality. Default functions are X1 = N (NEXT FILE), X2 = P (PREV FILE),

CLIPNAME=#FREQ_#CALL_#DATE_#TIME.MP3

=> Audio clip name customization. When creating audio clips with CLIPPER, the default name format is DATE TIME CLIP FREQ.MP3
or (if you have clicked station name on the map or station database before starting CLIPPER)
DATE TIME NAME FREQ.MP3

You can customize this default name with CLIPNAME parameter using 4-char symbols
#FREQ #DATE #TIME #NAME #CALL #SSB and literals.

For example if you want your audio clipname to start with frequency and use underscore in the name so that clip files can be used in URLs, you can define

CLIPNAME=#FREQ_#CALL_#DATE_#TIME_IPA.MP3

which generates clips named like 1030_WBZ_2015-11-08_06'00'00_IPA.MP3

The WAV file format is overridden by the setting in the FORMAT Menu of CLIPPER (= WAV, MP3high, MP3avg, MP3small).

RIGHTPAW-RCLICK=keyboardkey

You can reconfigure the rightmost PAW button functionality when using mouse right click here (default is SSB toggling). You can give also ALT-key as the parameter.

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[DIALS]

In addition to user configurable frequency list in VFO (= SET VFO in [MESTOR]), user can define max 200 additional frequency lists for VFO. These additional VFO lists are called DIALS and they are defined in **[DIALS]** section in JAGUAR.INI. Each DIAL definition must have short id name and each DIAL should start at new line. DIAL line should not contain line breaks but otherwise there can be as many frequencies in the DIAL as you like.

DIALs can be created based on countries, networks, area dominants, etc whatever you prefer.

DIAL summary:
* Give a name and add as many frequencies as needed
* Offsets (such as "1259.574") are allowed with frequencies
* Preferred SSB (LSB or USB) can be given by adding L or U immediately after the frequency

For example:

[DIALS]
LW = 153,162,171,177,183,189,198,207,216,225,234,243,252,261
South Sudan=558,1071,693,1602
Algeria=531,549,891,576,666,693,702,738,783,837,873,909,927,981,1017,1026,1089,1161,1422
Angola=1088L,1259.574L,945
Graveyards=1230,1240,1340,1400,1450,1490

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[FILTERS]

JAGUAR has 15 built-in filter presets (=bandwidth,offset pairs) available, these can be overridden with **[FILTERS]** section. User can rotate these presets by < and > keys and also by moving mouse cursor over AUDIO SLIDER > PRESETS button and scrolling with mouse scroll wheel (or using LEFT / RIGHT ARROW KEYS or clicking the button). The predefined preset list consists 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

Users can override these presets by giving max 40 own bandwidth,offset-pairs in [FILTERS] section in JAGUAR.INI, for example

[FILTERS]
PRESET=4.0,-0.3
PRESET=3.0,-0.3
PRESET=2.0,-0.3
PRESET=4.0,-0.2
PRESET=3.0,-0.2
PRESET=2.0,-0.2
PRESET=4.0,-0.1
PRESET=3.0,-0.1
PRESET=2.0,-0.1
PRESET=4.0,0.0
PRESET=3.0,0.0
PRESET=2.0,0.0
PRESET=4.0,0.1
PRESET=3.0,0.1
PRESET=2.0,0.1
PRESET=4.0,0.2
PRESET=3.0,0.2
PRESET=2.0,0.2
PRESET=4.0,0.3
PRESET=3.0,0.3

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[GOKEYS]

JAGUAR has some predefined JAGRUN scripts for automated archive file listening: user just selects desired script and starts JAGRUN clicking the JAGRUN cat icon.

User can override the script values temporarily editing the script directly in the script window or he can override the existing default values permanently using **[GOKEYS]** section. For example JAGUAR has built-in script TIMEJUMP which is predefined as follows:

JUMP60 PLAY4

This script plays 4 seconds before jumping 60 seconds forward. If user wants to play 10 seconds with 30 sec jump, he can define

[GOKEYS]
TIMEJUMP = JUMP30 PLAY10

Any other built-in script can be customized and in addition user can add own scripts by adding "name=script" lines into [GOKEYS] section.

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[JAGNET]

JAGUAR project has tested several interesting Internet related remote services for SDR control and also public "broadcast" type service from remote locations. We have used SHOUTCAST technology for carrying audio over the Internet. All tests have been successful but the audio delay using SHOUTCAST is several seconds so these services are pending at the moment- the code used is still available and can be restored if there will be interest in that area.

Meanwhile currently all handling for JAGUAR remote setups will be done via TeamViewer which provides very stable, fast and free platform also for audio transfer. TeamViewer use with Jaguar is meant for private / team usage so there are no public Jaguar remote servers at this moment. However we have also tested a security software on top of TeamViewer allowing only JAGUAR use via TeamViewer connection. The future of this development line depends on usage trends and user needs.

At the moment JAGUAR offers two simple Internet based services, those services can be triggered via **[JAGNET]**-section.

[JAGNET]

JAGUAR=GIFSERVER

If this is defined, JAGUAR creates automatically YAS log thumbnails and uploads it to JAGUAR server (="jaguars.kapsi.fi"). Thumbnail on server is refreshed once an hour and it can be viewed with any browser using URL http://jaguars.kapsi.fi/jagnet/jagthumb_12345678.gif. Replace 12345678 with the JAGUAR setup key (as shown on INFO window)

REMOTECLOUD=url

JAGUAR project offers unlimited free disk space for JAGUAR PRO users in JAGUAR cloud. This cloud space can be used for example for saving audio clips via CLIPPER tool (SEND>CLOUD). Users can ask for cloud services from the JAGUAR development team. In order to use use cloud via JAGUAR, the URL cloud address must be given with REMOTECLOUD=url parameter.

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[LINKS]

JAGUAR browser (TOOLBAR > WWW) has a collection of web links (WWW > MORE) which user may find useful in MW DXing. User can add also his own links of his choice into LINKS menu (omitted by default). This feature is not commonly used because JAGUAR browser uses MIcrosoft's "Embedded IE Browser" technology which may give nasty popup error messages if the website uses Javascript (and most websites use it). But if you know some good sites and want to add them to your private LINKS menu, you can use **[LINKS]** section:

[LINKS]
LEM DXPEDITION=http://www.tapiokalmi.net/dx/lem/index.html
SKYWAVES=http://skywavesdx.org/

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Advanced Usages

Some of these features are not available in JAGUAR LITE.

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24x7 Operation

BASIC 24x7 OPERATION

Many MW DXers have one or more Jaguar setups "always on" monitoring the MW dial 24x7. Jaguar is designed for continuous operation and for example YAS logger can collect information about MW cx status all the time. However because every environment is vulnerable and uninterrupted operation is rare (there may be power cuts, Windows updates, hardware problem, Jaguar crashes, etc), Jaguar uses an extra guardian angel called LIFESAVER to get Jaguar back on feet whenever issues occurs.

Tiny program called LIFESAVER.EXE is included in Jaguar full package. Don't start this program manually, just keep it in your JAGUAR folder if you want 24x7 operation. LIFESAVER can recover your setup from Perseus power breaks, hardware/I/O exceptions, program crashes and hangs even if they happen during recording => no UPS needed if you just run JAGUAR on a laptop.

Create a shortcut to LIFESAVER.EXE and move it to Windows startup folder if you want secured 24x7 operation including automatic Jaguar startup after Windows reboot (important: it must be a SHORTCUT to LIFESAVER.EXE, not the exe itself).

LIFESAVER.EXE writes event log whenever any issue is detected. You'll find the log in JAGUAR folder ("LIFESAVER.LOG"). You may see some special events in that log called "HANG": this means that for some reason the bit stream from Perseus hardware to file buffer has been interrupted and this case can not be continued automatically (you can simulate this case using JAGUAR.exe or PERSEUS.exe by unplugging the USB connection cable for a short while and then plugging it back). Also in this case LIFESAVER does the recovery by restarting JAGUAR.exe.

MOBILE 24x7 OPERATION

Some Jaguar users have a remote mobile station, running their setup using 12V car battery/batteries. In mains free setups it is essential to minimize the power consumption so all extras should be disabled in Jaguar application an in the PC environment. This special case is supported in Jaguar with two different Mestor modes: MOBILE+ and MOBILE-. You can activate either of these from STATUSBAR > green M button > tick MOBILE+ or MOBILE- depending on your operating environment.

There are some OS prerequisites and presets before you can use MOBILE+ and MOBILE-. Your PC must

support wakeup timers and they must be enabled. Also wakeup logon must be disabled:

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

MOBILE+ (for operating temperatures above zero). User must define the desired recording schedule first just as before. If user then activates MOBILE+ Jaguar will hibernate immediately and wake up 2-3 minutes before the next scheduled recording and the system hibernates again immediately after the recording has ended. This should continue 24x7 as long as the battery can provide power.

MOBILE- (for operating temperatures below zero, this requires a thermobox containing all the hardware used). Based on SW's suggestion Jaguar will be kept ON abt 50% of the real time (independent of the recordings) just in order to keep the setup warm enough in sub-zero temperatures. This is not very efficient way for cottage heating - just for your setup so that's why some kind of thermobox around the hardware. In practice this means that Jaguar will wake up always abt XX'55 (and XX'25) and hibernates abt XX'10 (and XX'40) - so you should schedule your recordings within time slots XX'55'00-XX'10'00 and XX'25'00-XX'40'00 (note: one should reserve some time before the recording starts after each "wake up call"). --- In addition Jaguar is kept powered during SUNRISE time in order to catch a longer recording during that time: automatic hibernate is skipped if the current real time is between local SUNRISE-30 mins and SUNRISE+60 mins.
So this MOBILE- feature will trigger much more extra ON/OFF Perseus relay clicks and hibernate reads/writes - but hopefully able to keep the operation temperature in the thermobox high enough.

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Station Popup Menu

If you click any station in Jaguar (star on the map or station line on Turtle window), **Station Popup Menu** appears.

This menu has the following services:

* LOGGER => Log this station => LOGGERBAR opens (see Jaguar GUI > Jaguar Bars > LOGGERBAR).

* BOOKMARK => Station bookmark is added to Bookmark file (confirmation is asked it TOOLBAR > SETTINGS > PREFERENCES > CONFIRMATIONS is ticked). Bookmark contains timestamp, frequency and station name. Bookmarks are saved in BOOMARKS.LOG which is located in your currently active file pool path.You can view your Bookmark file by selecting Jaguar GUI > Jaguar Bars > TOP MENU > LOGS > BOOKMARKS. You can click any bookmark in order to jump that specific time / frequency spot.

* LOCATOR => LOCATOR window is opened (see Jaguar GUI > Extra Windows > LOCATOR).

* TOWER => Your default browser is launched showing the satellite view of Google maps using the station coordinates. The zoom level is usually adequate to spot the tx tower itself (if not you can use standard Google maps zoom services). In addition, you can go down to street view if you like.

* CLIPPER => Make audio clip containing the name of the selected station (see Jaguar GUI > Small Windows > Clipper).

* STICKER => Create a station sticker. Station stickers are shown on all spectrum screens. See Advanced Usages > Stickers.

* SEND MSG => You can send a note to your DX team mate(s) dealing with this station. See Advanced Usages > Messenger)

* TAGGER => Select desired color from the TAGGER submenu => Station's P-tag in active Turtle is changed correspondingly and the color on map/Turtle is changed also. Tag changes can still be revoked at Jaguar signoff: if you have made tag changes, at signoff Jaguar asks "((SAVE TURTLE CHANGES ?))". If you reply no, all changes made in the current session are canceled. If you reply yes, changes will be written to your Turtle database,

* EXIT => Close Station Popup Menu

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AGC

Jaguar's **AGC** (Automatic Gain Control) system works in "semi-locked" mode. You can also turn AGC OFF but the "semi-lock" is still deployed when scanning the MW dial.

Basically all gain changes are bad for weak signals - that is why some experienced MW DXers prefer keeping AGC disabled in hardcore MW DXing and tune the gain manually in each individual case. Also when making an audio clip, one of the thumb rules is to disable AGC unless there's some specific reason to use it. However normally AGC OFF would require constant tuning for optimal gain level for each frequency - that's where semi-locked gain value jumps in in Jaguar.

Whenever user tunes to a new frequency in Jaguar it determines "semi-lock gain value" within the first 500ms of playback - whether AGC is disabled (OFF) or enabled.

* If AGC is disabled, this is the only gain change the system does automatically. In this mode user can fine tune gain value any time.
* If AGC is enabled, this gain value is kept fixed during the playback of this frequency until amplitude overflow occurs => AGC system hits and lowers the gain until the amplitude reaches normal level again and semi-lock value is deployed immediately. This is the fastest AGC recovery method possible and there is no other gain increments/decrements during the lifespan of this "semi-locked DX session".

New semi-lock is created in the following cases:

* SSB mode is changed
* Playbar is clicked (note: if AGC is OFF, the old semi-lock value is kept)
* Frequency is changed
* Filter is changed
* N/P (Next file/Prev file) is pressed (note; if AGC is OFF and there is no time gap between the files, the old semi-lock value is kept)
* Day is changed (dayscroll)
* Longer than 15 min time jump is made
* L (Live <> Archive) is pressed
* Returning from Mestor applet
* YAS log is clicked
* DAYSCAN is clicked

Note that when control jumps at the end of file situation to the new file in playback, old lock is normally maintained (unless the gap between files in ARCHIVE mode is longer than 15 minutes)..

Jaguar's AGC allows very high base gain levels. User can adjust the base gain level using VISUAL SLIDER > GAIN button: there are three gain levels available GAIN LOW / GAIN AVG / GAIN HIGH. The best gain level often varies during the day, if too much AGC hits appear user should lower the gain. One of the BB applets provide a nice tool for monitoring the AGC behavior: see Jaguar GUI > Small Windows > BB Applets > CATBOX > WAVEFORM. Continuous red flashes on CATBOX WAVEFORM applet indicate the need for lowering the gain. Yellow flashes indicate "AGC warning" (less than 50ms is suppressed but not "full AGC hit" yet)

AGC should not be mixed with CR even though both handle amplitude overflows. CR is good for recovering clicks caused by electric fences etc. very short audio bursts. Previously mentioned CATBOX WAVEFORM

is a good tool also for monitoring CR hits: green flash on that applet denotes a CR hit.

Note that there's a "magic connection" between LOW NOTCH and amplitude: LOW NOTCH not only filters out audio frequencies below speech but it also flattens the output waveform dramatically (because there is normally a lot of "power" on those low frequencies, you can see the effect on WAVEFORM applet). This may minimize AGC hits in many cases.

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Filenotes

Did you know that you can use the wideband recording file itself for documenting the contents of that file ? That's what JAGUAR's **FILENOTES** function does.

If you activate TOOLBAR > SETTINGS > PREFERENCES > FILENOTES, you can add any text to the currently active wideband file using Filenotes textpad (see Jaguar GUI > Small Windows > Textpads): enter the text you want and click SAVE. Text is saved to the tail of wideband recording and it is always displayed on graphics screens (top left corner of the screen) if yoyos (ALT-Y) are not activated. If FILENOTES is ticked but there are no notes included in the file, JAGUAR shows "((NO FILENOTES))" message.

Note that if you have FILENOTES activated, logged stations will be automatically added also to FILENOTES (no need to add them manually with textpad - but you can later edit them with it).

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Filemail

FILEMAIL offers an easy way to transfer files between your PC's or between you and other Jaguar users: no need to use email/ftp/cloud/dropbox/network shared folder/USB-stick/etc anymore for quick small file transfers

How to send ?

* Make sure that you have Jaguar Head visible (TOOLBAR > SETTINGS > GRAPHICS+ > JAGUAR HEAD must be ticked
* Press ALT-W once => you'll get Jaguar "Windows" theme: Jaguar main graphics is not visible
* Now just drag and drop your file to Jaguar's head (this can be automatized, see Notes)
* Jaguars asks to whom you want to sent this file (write your own Jag userid if you want to transfer it to your own other PC)
* You can also use your fellow DXers "JAGUAR ID" (as listed in TOOLBAR > WWW > TEAM) as the recipient

How to receive ?

* Click TOOLBAR > FILEMAIL (yellow envelope denotes that you have received FILEMAIL) - that's all.
* Files arrive into "FILEBOX" folder located in your Jaguar folder, that is opened automatically

Notes:

* You can test this function using the same PC for both "drag'n drop" & "click'n pick" (=clicking FILEMAIL icon)
* Tip: Remote users can drop a file into Jaguar head in the remote window and pick it up in local Jaguar
* Remember: wav clips are always converted to mp3 as the "primary drag'n drop function"
* You can also set a fixed receiver in [CUSTOM] ...

FILEMAIL=userid

* ... so whenever you send FILEMAIL Jaguar won't ask the receiver after dropping the file ...
* ... but you can still always change it on the fly by giving FILEMAIL as 'dotstring': just type on Jaguar playbar the following
(otheruserid must be valid JAGUAR userid):

.FILEMAIL=otheruserid

* If you don't want ever use FILEMAIL you can block it by giving the following line in [CUSTOM]:

FILEMAIL=N

* If you want to send your audio clips (taken with CLIPPER) automatically to FILEMAIL, you can use [CUSTOM] definition

CLIPFOLDER=FILEMAIL

=> clips are now automatically sent to FILEMAIL after creation OR

FILEMAIL=userid

=> most often you want to send the clips to yourself (to another PC) just as when sending FILEMAIL by drag'n drop method

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Messenger

In addition to internal FILEMAIL service between users, JAGUAR offers also **MESSENGER ("MSG MODE")** for short text messages meant for quick communication and info delivery among users/teams

RECEIVING MESSAGES:

- If you tick Service button W > MSG MODE, Jaguar starts polling message server within 30 sec intervals to check if there are messages sent to you
- When new message appears while this service is active, the message will pop up as a message box (it will disappear automatically after 4 seconds)
- You can always check your message history by clicking TOOLBAR > REMOTE or selecting MSG LOG via MENU (MENU > LOGS > MSG LOG)
- If MSG LOG is open, new messages will appear only here (no popup window triggered)
- MSG LOG keeps the latest 100 messages in the log

SENDING MESSAGES:

- You need a definition for the recipient list in [CUSTOM]

TEAM=uid1,uid2,,....

where you must list all the Jaguar userids to whom you want to send your message (the list can consist 1-10 recipients)
(this can be changed on the fly by typing .TEAM=uid1,,.... ie. using keyword TEAM preceded by a dot - in fact this is the standard way of changing any [CUSTOM] parameter on the fly).

For example if your team consists IPA,JHU,TAK,OK you can add a [CUSTOM] line

TEAM=IPA,JHU,TAK,OK

If you don't define TEAM=...., the default recipient is you yourself so you can easily test this function all by yourself

--- Now you can send a message by pressing : (colon) and typing your message and pressing enter (cancel with ESC).
--- If you identify an interesting station, you can also inform about it to others via station popup menu : SEND MSG is added there (no need to write freq / station name / time)

After you have sent a msg starting with a colon, the poll time is automatically changed into 1 second for quicker communication ("hotline" is opened for chatting) . After one minute inactivity the poll time decreases back to 30 seconds.

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Notch

Jaguar has 11 manual notches available on AUDIO BAR and a separate independent AUTONOTCH system which can be triggered from AUDIO BB applet or from AUDIO SLIDER.

AUTONOTCH

As opposite to "normal" autonotches, Jaguar's autonotch is not based on continuous scanning of the audio spectrum so there can be carriers/interferences anywhere in the spectrum not cleaned by autonotch. Those must be handled manually. According to DXers experiences "scanning autonotch" often causes more harm than is beneficial so experienced MW DXers normally don't use classic autonotch.

Jaguar's autonotch never checks if there's <really> any het/whistle/peak in the audio - it just relies on AM fq spacing. Better name for this is "Trans-Atlantic Autonotch". When you listen to 10-freqs, the autonotch notches the potential hets caused by nearby EU-freqs but when you listen to 9-freqs, autonotch notches the potential hets caused by 10-freqs (mostly useful for listeners in USA). Otherwise every other annoying het must be notched by manual notch.

So Jaguar's autonotch handles only 1kHz / 2kHz / 3kHz / etc hets based on the nearby EU (/AM) freqs and user can select from 3 different notch schemes. The widest autonotch (AUTONOTCH C) takes hets away from both sides on both SSB modes based on the frequency you are listening, for example if you are on AM 1030, autonotch C cleans always 4kHz and 5kHz when using LSB or USB.

AUTONOTCH B notches closest EU het on both SSB modes - in the example 4kHz.

AUTONOTCH A notches closest EU (4kHz) het if you are using SSB mode that is "facing" the EU fq.

Users can not relocate the AUTONOTCH position, just scroll the notch area size narrower/wider when mouse cursor is moved over the red notch area. Notching (auto & manual) always takes also part of "real audio" away so this is a challenging game. F.eg. some experinced DXers are very critical with classic autonotching but they accepts this kind of "safe autonotch" and keep AUTONOTCH C always on by default.

MANUAL NOTCH

AUTONOTCH is handy but users can get the same/better results also with manual notching using the AUDIO BAR: user can always test the effect of the notch by just moving the mouse over the offending carrier before locking the notch. AUDIO BAR (sometimes also called "NOTCH BAR") can be triggered on/off from SLIDER > AUDIO SLIDER > TOPSCREEN button. This button rotates three states OFF > AUTO > ON. If AUTO-status is selected, AUDIO BAR is visible only when AUDIO SLIDER is active.

With manual notch user can notch away any visible het peak on AUDIO BAR (sometimes the peak can be very small). Mouse cursor must be moved over that peak (area notched turns red) and mouse scroll wheel can be used to trim the notched area size (the notch area should be as minimal as possible, just wide enough that the het disappears totally). When the desired area size is achieved, user can lock this notch in place by mouse left click. If there are any other hets/annoying audio peaks, user can repeat the process. JAGUAR manual notch system has one independent notch for each full kHz (hets usually are located on

those spots) and two "free notches" to be located at any position.

Manual notches are released whenever you change frequency. You can also release notches one by one by mouse left click on each locked notch.

One of the manual notches is LOW NOTCH which can be triggered on/off also directly from STATUSBAR ("LOW" on the left). Sometimes LOW NOTCH gives remarkable improvement for audio quality filtering out all low level audio artifacts producing crystal clear background behind the speech. Also if there's any empty carrier wave(s) on the selected frequency, LOW NOTCH removes them totally and "full audio world" is revealed otherwise buried behind the dominating carrier..

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Stickers

Jaguar offers **STICKER** system for presentation graphics / "visual bookmarks". Sticker system must be enabled first via TOOLBAR > SETTINGS > GRAPHICS + > STICKERS.

New sticker is added using Station Popup Menu (see Advanced Usages > Station Popup Menu) and selecting STICKER function => station name is used in sticker. User can also click TOOLBAR > STICKER icon to add a sticker labeled as "UNID".
Current exact playback frequency is also automatically saved in sticker information.

All stickers are saved and maintained day-to-day-basis into recording day folder > SCANS folder > STICKERS file.
Saved stickers are shown if corresponding time/frequency pair is within the visible spectrum screen area.

Whenever you see a sticker on spectrum, you can jump into that time/frequency by clicking it. You can also edit the sticker by right clicking the sticker: a small edit panel appears. This panel has options to edit the short name (visible on sticker) and long name (visible when mouse cursor is hovered over the sticker, the exact playback frequency is automatically shown after the long name) "SAVE" must be clicked to make these changes permanent,

Sticker can be deleted by clicking "DELETE"-button, exit with "X".

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Log Profiles

LOGPROFILEs makes possible users to create loggings/audio clips with different formats for many publications / from various locations.

User can have max 3 LOGPROFILEs, each must be named in [CUSTOM] section with LOGPROFILE-parameter. Given LOGPROFILE name is shown on LOGGERBAR and defined LOG PROFILEs can be changed/rotated by ALT-L keyboard key.

LOGPROFILE is also identified by number 1-3. For each profile user can give independent customized logging output format (LOGMODE1 -> LOGMODE3), clipname format (CLIPNAME1 -> CLIPNAME3), clip folder location (CLIPFOLDER1 -> CLIPFOLDER3) and MWLI logging location (LOCATION1 -> LOCATION3).

Below there's an example where user has three rx locations and wants to control loggings/clips to based on current rx location. In this example logging output format and clip name format is kept the same (except the rx location string embedded in the logging/clip name) but in reality both these formats can be different in all

profiles. Valid customization parameters for LOGMODE and CLIPNAME are describd in Customization > [CUSTOM] section, as well as MWLI logging requirements (= EMAIL and LOCATION).

[CUSTOM]

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

CLIPNAME1=#FREQ #NAME #TIME #DATE A-QTH.WAV
CLIPNAME2=#FREQ #NAME #TIME #DATE B-QTH.WAV
CLIPNAME3=#FREQ #NAME #TIME #DATE REMOTE-QTH.WAV

CLIPFOLDER1=F:\Radio Clips\A-QTH
CLIPFOLDER2=F:\Radio Clips\B-QTH
CLIPFOLDER3=F:\Radio Clips\REMOTE-QTH

EMAIL=danny.dxer@gmail.com
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 rx locations (the rx location itself can be the same all the time) but profiles can be created based on any other need as well..

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Phonetic Call Sign Search

NA DXers can use Jaguar's **PHONETIC CALL SIGN SEARCH** to display possible alternatives to any uncertain heard call sign.

Type ? followed by four characters (=the call sign heard) - if the first character given is K or W, Jaguar displays phonetically matching call signs on current frequency (Turtle window must be visible for seeing the results).

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 match phonetically to that, in this case

KEZJ
KVCK
KZZJ

Tnx OJS for creating the phonetic character matching table.

In addition, you can also use wild card (*=any character is accepted) in your callsign query, for example if you give

?KQ**

on AM 1400, the result set gives stations starting with KQ and KU:

KQMS
KUKI
KUNX
KQDJ
KUNO

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Frequency Notes

JAGUAR contains a special **FREQUENCY NOTES** subsystem which allows users to add "one-line-notes" (= tips, "hunting reminders", etc) for each frequency (see also Jaguar GUI > Small Windows > BB applets > CATBOX > NOTES). These notes are saved into NOTEPAD.TXT file in Jaguar folder and they can be edited either by standard notepad or Jaguar's own NOTEPAD textpad. Lines in NOTEPAD.TXT use special syntax for separating frequencies and colors in CATBOX BB applet.

FREQUENCY NOTES should not be mixed with FILENOTES (filenotes are saved at the end of each wideband file).

For example you can create a file named NOTEPAD.TXT with the following contents (and save it in Jaguar folder);

#531
Lorem ipsum dolor sit amet, lorem egestas pellentesque eu donec pellentesque, et mollis quisque leo etiam luctus, a torquent dolor est, eget mollis dui consequat aliquam sem. Magna vestibulum a quisque risus curabitur.
#540
Lorem ipsum dolor sit amet, lorem egestas pellentesque eu donec pellentesque, et mollis quisque leo etiam luctus, a torquent dolor est, eget mollis dui consequat aliquam sem. Magna vestibulum a quisque risus curabitur, in proin mauris tempor et ridiculus
#693
Radio South Sudan was heard in SAX on 2017-01-28 at 0400 UTC
#891
Whenever you see this message in Jaguar TEXTPAD, take a beer

OR you can add also color code or/and name and title for each #FREQ line as follows (the following color codes are available: #R = red, #G = green, #Y = yellow):

#531 #R
Lorem ipsum dolor sit amet, lorem egestas pellentesque eu donec pellentesque, et mollis quisque leo etiam luctus, a torquent dolor est, eget mollis dui consequat aliquam sem. Magna vestibulum a quisque risus curabitur.
#540 #G
Lorem ipsum dolor sit amet, lorem egestas pellentesque eu donec pellentesque, et mollis quisque leo etiam luctus, a torquent dolor est, eget mollis dui consequat aliquam sem. Magna vestibulum a quisque risus curabitur, in proin mauris tempor et ridiculus
#693 South Sudan
Radio South Sudan was heard in SAX on 2017-01-28 at 0400 UTC
#891 #R, BEER TIME, Now it is time for a pint !
Whenever you see this message in Jaguar TEXTPAD, take a beer

OR you can use only colors / names / titles (no need to write text after the first #FREQ line):

#531 #R
#540 #G
#693 South Sudan
#891 #R BEER TIME, BEER TIME, Now it is time for a pint !

Use comma (,) in the first line only to separate name and title from each other. Name should be short (10-12 characters) so that it fits to CATBOX applet display. You copy and paste some of these examples to your own local NOTEPAD.TXT for testing the output as explained below.

If your Jaguar setup contains NOTEPAD.TXT, these frequency based notes are echoed on the screen for each frequency in three different ways:

* If you have "NOTEPAD" open (TOOLBAR > TEXTPADS > NOTEPAD), the contents for current frequency is displayed on NOTEPAD window (#FREQ tag is always hidden in Jaguar NOTEPAD). You can edit & save this data anytime.
* If you have CATBOX applet activated and the selected CATBOX channel is NOTES, the name (if given) is shown using the background color (if given)
* If you have selected TOOLBAR > TOPSCREEN > OFF or TOOLBAR > TOPSCREEN > AUTO, title is displayed on topscreen area (where normally AUDIO BAR is shown)

SHARED NOTES

Normally these FRQUENCY NOTES are used in one PC but if user has several JAGUAR setups and wants to share these FREQUENCY NOTES dynamically (change in NOTES is automatically reflected in other setups), user can activate SHARED NOTES by ticking TOOLBAR > SETTINGS > PREFERENCES > SHARED NOTES. If SHARED NOTES is ticked, NOTEPAD.TXT is saved to server and it can be shared among all your Jaguar PCs (and it is << as fast as >> using this feature locally). Also a local copy is saved so when you don't have Internet connection, all the data is still available (just updating should be avoided if no connection is available).

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Tips and Tricks

MINIMIZING CPU USAGE. If you have old/low end PC you can try some tricks to reduce CPU consumption:

* Untick TOOLBAR > SETTINGS > PERFORMANCE > MAX CPU
* Disable YOYOS: Press ALT-Y if YOYOS are visible
* Disable all graphics features that you do not need, for example TOOLBAR > SETTINGS > GRAPHICS+ > EXTRAS
* Minimize JAGUAR to MESTOR mode whenever you don't listen to audio (but still need to have JAGUAR connection to Perseus): TOOLBAR > MESTOR

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Best Audio Settings ?

Simple answer: no such thing exists as **"BEST AUDIO SETTINGS"**. Not only situations vary but also personal preferences vary a lot. However, some audio related aspects should be kept in mind (note that in JAGUAR LITE all these options are not available).

JAGUAR audio quality.

JAGUAR base audio can be characterized as "hard, treble and clear" - such an audio can be a real advantage in many cases. On the other hand hard audio may be tiring during long listening sessions. Output characteristics can be modified by changing filter / filter bandwidth / notching (LOW NOTCH gives often clear improvement). When comparing 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 cases on the contrary (for example one user was able to dig out three new GY-stations for himself in a short test session). That is why it is often practical to check with your other favorite SDR application if some tough case can not be easily opened up with JAGUAR - all we often need is just 1-2 legible words more for a positive ID.

Filter.

JAGUAR relies heavily on 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 "AM FILTER" - it is using CLASSIC filter processing, just the output is generated as AM mode) and (max 40 user-customizable) filter presets (= bandwidth/offset pairs). What is the best filter and optimal preset ? Here again user preferences vary a lot - I've seen some users using solely very narrow bandwidths around 2kHz (and getting good DX results) and some user using "as wide bandwidths as possible" (and getting good DX results). Default preset setting (bandwidth 3.0kHz with 0.3kHz offset) is a good compromise when scanning the dial, but when you "hit into something", quite likely you can improve the output with testing various settings. Generally CALLIOPE filter is regarded the best in tough places when its "frontend" and "backend" flters are also activated (CALLIOPE is a cascading filter with optional extra filters before and after the main filter stage): quite often setting 4kHz to both frontend and backend gives "brickwall filter pipe". But AM FILTER should not be forgotten - when the frequency is free from nearby interference, AM mode can give the best audio output.

Automatic Gain Control

Automatic Gain Control (AGC) is required to keep output audio always in "average level" smoothing amplitude changes in time / when changing frequencies. But when studying some specific weak signal / making audio clip with CLIPPER, it is recommended that AGC should be disabled (click AGC to OFF position) - every gain change has also negative effect on "real" audio.

Output audio format / compression.

MW DXing focuses solving speech elements among the noise. Human speech consists of fundamental (base) frequency and harmonics that together create the voice audio, Fundamental frequency of male voice varies between 85 and 180 Hz and female voice between 165 - 255 Hz. Normally human can hear audio up to max 20kHz (but with OM DXers the max level can be way lower :-)

Output audio sampling rate is user selectable in Jaguar: 8kHz (WAV8) / 16kHz (WAV16) / 32kHz (WAV32) if 1.6MHz bw is used or 10kHz (WAV10) / 20kHz (WAV20) / 40kHz (WAV40) if 2MHz is used) - pick up the one you prefer. The real audio range that our ears can get out these sampling rates is the selected rate / 2:

WAV 8kHz => 0-4kHz
WAV 16kHZ => 0-8kHz
WAV 32kHz => 0-16kHz.

In MW DXing we are interested in speech only and WAV 8kHz can often do the job, WAV 16kHz can (sometimes) do better and some prefer WAV32 because 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 is OK in most cases. However there are some elements in speech which require WAV16 to become "fully formed" (the richness of

s,c and z is formed there between 4-8kHz) - thus WAV16 is recommended unless you don't have your own other preference.

When saving the final audio clip, use MP3 (CLIPPER > FORMAT) especially if the clip will be sent along your reception report. "MP3 small" compresses the audio to a very small size, this format is recommended if the output quality is remains acceptable after compression (the check must be made after saving the clip and listening to the result). In very challenging cases you should use "MP3 high" compression.

Notching.

Notch is used to eliminate interfering heterodyne peaks from audio. In Jaguar it is easy to get rid of whistles etc: see detailed information in separate chapter (Advanced Usages > Jaguar Notch System). Just a reminder here: don't forget the good LOW NOTCH which sometimes improves audio superbly by clearing the background behind speech - some users keep it always on.

Click Removal.

Click Remover (CR) removes clicks in audio - or at least make those clicks smoother. CR should no be kept on by default: it can also make audio worse eliminating "real" audio parts. CR was originally implemented to handle electric (horse) fence type pulses but it may be useful for other types of clicks in audio. In later Jaguar versions the "cleanup power" will be user adjustable.

Equalizer.

Equalizer (EQ) is not yet part of JAGUAR audio tools but it may be added in the future versions. Many users post-process their audio clips with equalizer to adjust the frequency areas based on their personal preferences so why not allow it be done already in CLIPPER...

Noise Reduction.

There has been a lot of discussion about Noise Reduction (NR) in MW DXing. At the moment JAGUAR does not include NR tools. NR can clearly improve output for already good signals but in MW DXing we are often dealing with weak speech signals just on/above the noise level. And in cases like that user can often spend lots of time with NR - all in vain: NR also "eats" too much real audio and we can't get real improvements for weak signals. However situations vary and SOMETIMES you may indeed succeed in improving the output when using NR tool - it may be that you just happen to dig out one extra word after NR process - and often it may be enough for solving the station identity. Some experienced users use Adobe Audition, but there are plenty of other tools also available: Audacity is one of the most popular. If you have extra time, please test some NR audio tool and make your own opinion.

External sound card / headphones.

Another area where we have a wide variety of gear in use among DXers - and in addition many have got good results with standard laptop audio card and low-end headphones. However external sound card and good headphones may be the missing link between good and excellent results - the final nail in nailing catch of your life.

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

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

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

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

To summarize: no "best audio settings" exists but because "some settings must be used" when scanning the dial, here are good base settings: CALLIOPE filter with 3.0kHz bandwidth / 0.3kHz offset / 4kHz frontend filter / 4kHz backend filter, WAV16 output sampling rate, AUTONOTCH C activated, LOW NOTCH on and CR off. In addition, lock AGC when studying some specific DX hit.

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What is J-Index (JIX) ?

J-INDEX (JIX) is non-scientific meter for measuring true MW reception conditions. Other common indexes (A / K / solar flux / etc) just tell sun related geomagnetic charateristics but do not give real MW reception index value. JIX is scaled 1-100. By default JIX is collected from "overseas frequencies" based on user's location: JAGUAR keeps track of signal levels on the first 100 MW frequencies (overlapping NA/EU values excluded) and creates the averaged value which is named as J-INDEX.

JIX index is normally presented as a red curve on YAS screens - not only for TA frequencies but also EU-frequencies if you select 9kHz-based stepping. If you select VFO/DIAL as your frequency stepping mode, JIX curve shows the JIX value of the corresponding frequency set.,

Additionally JAGUAR collects JIXHISTORY.LOG with hourly values for overseas JIX. This log is used on CONDX screen (see Jaguar GUI > Extra Windows > CONDX) to compare classic solar index values (A / K / Kyoto / etc) with real TA reception (JIX). Also JIXMAX.LOG is maintained for quick lookup of daily max values.

In theory this overseas JIX could be used to autostart recording when user defined value is exceeded (and we have also succesfully tested that option) => all hot OUT-OF-TOH cx can be automatically recorded on MW or auto-recording can start when some user defined frequency/frequency set opens up well enough. However these days the megatrend in MW DXing is to record everything overnight and use analysis tools to pick up the results. JIX based recording is simply not good enough: there may be situations when TA cx is poor (=> automatic recording not triggered) but those few stations audible are true rarities.

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PC Recommendations ?

Most users prefer laptops in SDR use due to one good benefit: there's no need for UPS protection for power cuts (provided that you feed your Perseus power via USB3). However it is difficult to recommend any brand over some other. However there are some general guidelines that should be taken into consideration.

* CPU. Modern SDR services (if fully utilized) require lots of CPU power. So whenever you have a chance to get Intel Core i7 as your engine, go for it. Core i7 is the Rolls Royce line of CPU's and even the low voltage models can give enough CPU power for all Jaguar services. The newer i7, the better. Core i5-models are also fine, and also Core i3 will do the trick - but there are also many Pentium/Celeron/Dual Core and also AMD-processors that are OK. Just take a look at CPU Passmark benchmarks for the CPU (Google!): CPU's with Passmark value near 1000 should be avoided, the value should be from 2000 upwards, 4000 or above is recommended.

* Notebook chassis. Trend is towards slim and stylish "ultrabooks" but they are not optimal for SDR usage. They tend to have ULV processors (lower power but higher battery duration) and less USB plugs. Today a

used professional level 2-3 years old business laptop may be a very good choice: they can be purchased with good price, they have enough CPU and RAM - and they have one good thing: those laptops still have a DVD slot (disappearing from newer laptops). DVD slot can be easily rebuilt to contain extra 2TB hard disk for SDR recordings: just check if there's HDD caddy available for the laptop model in eBay.

* Disk space. In SDR use "nothing is enough", normally MW DXers fill all disk space available anyway. Probably you may want to change the internal HDD to as big as possible, SSD is fast but pricy so you can use also 2TB HDD (no problems running SDR system with low 5400prm hard disks). It seems that 2TB will remain the max size of 2.5" 9mm form factor (=laptop standard size) - this max size has not increased in the last few years, In addition you may change the DVD lot into 2TB hard disk slot. In addition, notebook should have as many USB slots as possible (even if you plan to use only one external HDD - USB ports may get faulty so it is important to have "spare USB port" available). USB hubs are often unreliable and not recommended. Don't buy any old laptop with USB2 ports only - USB3 is a must these days. USB3 slot can also be used to feed power to Perseus and external hard disks => the number of external power supply units can be minimized. Many users favor USB3-powered Seagate 5TB external "backup disks" in MW DX use (the only 5TB USB.powered external HDD at the time of writing). Latest Intel motherboards include the new USB3.1 interface and the prices of USB3.1-powered larger (8TB) external hard disks are also going down..

* Power supply. RFI generated by laptop's PSU can ruin otherwise good setup. Finding RFI-free PSU is a lottery win so when buying a laptop for SDR use please try to negotiate an option to return the unit or change the PSU if the PSU generates too much RFI-noise. The RFI can vary even within the same laptop model depending on the production line of the PSU, HP professional level laptops have at least earlier been often on the "safe side" but situation varies every year.
And the more you have PSU's (Perseus/external hard disks/etc) in your setup, the more you are vulnerable to RFI. The native PSU for Perseus is good but when using it you are vulnerable for power cuts (no worries with that, JAGUAR recovers from Perseus power failure automatically), with USB-powered Perseus there's no such risk. Also one poor PSU of an external hard disk can ruin the setup so again: USB-powered external hard disk is not a bad choice. Think again about UPS: MW DXers have often bad experiences about UPS devices - they tend to cause more harm (RFI) than benefit - it is very difficult to find a good RFI-free UPS - and you don't need it if you create your setup based on laptops own battery.

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Troubleshooting

Software support is available only for JAGUAR PRO users. Most Jaguar PROD versions are very stable while TEST executables may have issues due to fast development cycle. If Jaguar crashes, no problem: Jaguar is developed for 24x7 unattended use so LIFESAVER.EXE will normally wake up JAGUAR again and no recordings will be lost.

When you report issues they will be fixed asap - just inform the development team by giving a recipe (detailed instructions how to reproduce the problem). We cannot fix the problem without adequate details (so please don't send bug reports just mentioning "DAYSCAN failed last night" etc). If we can't reproduce the issue based on your description, we'll take contact and ask for more information and/or start detailed debugging process.

If you have any issues at Jaguar startup, quite likely the culprit is located in the SYSTEM.INI file. You can try TOOLBAR > SHUTDOWN > FULL RESET which ignores SYSTEM.INI startup parameters (or even delete the SYSTEM.INI file manually) and restart Jaguar. If that does not help, you may also try refresh install using Jaguar full package (see Getting Started > Installation).

Also if you are running old Jaguar version you should try installing the latest exe before reporting any Jaguar bug/issue (it is possible that the issue has already been fixed).

Sometimes the culprit for the problem may be within the Windows operating system itself. For example

users should enable Windows cache flushing (if external hard disk is used) and disable all sleep states in Power Settings, see Getting Started > Installation.

If you experience JAGUAR related issue, normally in those cases LIFESAVER adds a line into LIFESAVER.LOG. One common log entry is "HANG". This means that IO flow from Perseus to buffer disk is interrupted and it can't be automatically recovered without JAGUAR restart. If your LIFESAVER.LOG contains lots of these entries, changing USB port or cable may help. Note that in 24x7 operation there may be a few such HANGs weekly also in "100% healthy" setups.

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Future Plans

The next JAGUAR version V4 is scheduled to be released in summer 2019. JAGUAR V4 will contain some things listed below --- but not all (many of these may be implemented in later JAGUAR versions),

All new suggestions and wishes are welcomed.

PLATFORM ENHANCEMENTS

* CloudIQ or some other new platform support.

AUDIO ENHANCEMENTS

* AGC improvements

* Adjustable CR

* Equalizer

* Personal message recording option to audio clip header/footer (own voice message included in the audio clip sent to stations)

* CUSTOR may return back to the filter set

* Noise Reduction in post-processing (only if it can be proved to work satisfactorily with very weak signals)

* Surgical tools to dig out ID if audio contains clicks/static/etc (either S-METER or AUDIO applet will be replaced by this)

* 24-bit or 32-bit output audio

SPECTRA ENHANCEMENTS

* HOME & DAYSCAN integration into YAS-type zoom functionality

* Automatic single frequency monitoring could be restored as a long-term automatic background monitoring (in addition to DAYSCANs / EXTENDED SCANs which are available only for recorded time periods)

YAS ENHANCEMENTS

* New FFT resolution (getting valid output also from "near strong EU freqs")

* Non-relative JIX values => JIX values should be comparable between setups

MAP ENHANCEMENTS

* DX target local time could be displayed when station is pointed by mouse wheel - both in LIVE and

ARCHIVE modes
- Both UTC time and local clock running in parallel: UTC time on playbar, local time (with DST support) at the end of the mouse pointed station data

* RX QTH info saved into wideband file for automatic home QTH positioning on MAPS
- If you listen to old Archive file, no need to have valid MESTOR plan activated with the corresponding QTH

* The size of star/name on MAPS might be used for indicating TX power
- Maybe four size categories: 0.001-1kW / 1-10kW / 10-50kW / 50kW->
- Easy to see powerhouses/dominants with one glance

* Daytimer support. See the previous suggestion: day -> night power switch time could be easily seen on map:
- Daytimer stations "blinking" when the switch time is close
- At switch time user could see BOTH spectrum trace to disappear/decrease on HOME screen AND station star/label to disappear/shrink on MAPS
- This may be something that may require some manual preparing each year

MISC ENHANCEMENTS

* Visual DX MARKERS will replace/will be integrated with [ALERTS]

* Station logos for NA stations

* Frequency based filter setting memory

PERFORMANCE ENHANCEMENTS

* More code optimization

* External high-performance FFT library

JAGNET ENHANCEMENTS

* Development will be guided by users' needs. Lots of old code available to be activated. New functions might include "YAS CAROUSEL" (browser based image viewer for daily YAS thumbnails),.

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Document Changelog

2018-06-01 *** First release with no images

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