USER MANUAL - VarAC LOG MAPPER (Terminal Edition)

Software Version: v.1.41

Welcome to **VarAC Log Mapper**, an advanced tool designed for monitoring and geographically visualizing radio contacts and listeners logged by the VarAC software. This guide outlines all the features available in version 1.41.

1. Access and Startup

- **Loading the Database:** Once logged in, press the `[ SELECT VarAC.db & START ]` button. Select the `VarAC.db` (or `VarAC_backup.db`) file located on your computer.
- **Live Monitoring:** The system re-reads the file every 5 seconds to update the map with new contacts in real-time.

2. Map Visualization and Markers

The core of the program is the interactive map. There are two main visualization modes, selectable from the "CONFIGURATION" panel.

A. Standard Mode (Default)

In this mode, markers appear in different colors based on the event type:

- **GREEN (Pulsing):** Indicates the **last 10 signals** received (the most recent activity).
- **RED:** Indicates "Heard" signals (decoded but not connected).

IMPORTANT NOTE ON RED MARKER SIZES:
In Standard Mode, all red circles are programmed with a fixed size. However, you may notice that **some red spots appear larger or brighter than others**.
This is a visual effect caused by **overlapping**: if you have logged many QSOs with stations located in the same **Grid Locator**, the software draws multiple circles stacked on top of each other at the exact same point. The accumulation of borders and "glow" effects creates the illusion of a larger, more intense circle, visually indicating an area with high contact density.

B. "ALL DYNAMIC SPOTS" Mode

By activating the **"ALL DYNAMIC SPOTS (SNR SIZE)"** switch in the configuration panel, the visualization changes radically:

- **Single Color:** All markers become **Cyan (Light Blue)**.
- **Variable Diameter (SNR):** The size of the circle is no longer fixed but changes dynamically based on the received Signal-to-Noise Ratio (**SNR**):
    - **Strong Signal (High dB):** The circle will be **larger**.
    - **Weak Signal (Low dB):** The circle will be **smaller**.
    - This allows you to instantly recognize which geographic areas are coming in with the strongest signals.

3. Instrument Panel (Audio & Analysis)

Audio Spectrum Analyzer

Located above the map, this is a real-time audio spectrum analyzer that uses your computer's microphone (or radio line-in):

- **Waterfall:** a cascading visual representation of audio signals.
- **S-Meter:** A simulated analog gauge to measure audio intensity.
- **Controls (Knobs):** Retro-style knobs to adjust Zoom, Gain (Visual Contrast), and S-Meter Sensitivity.

"Last 10 Signals Heard" Panel

On the right side, a table displays the details of the **last 10 signals** decoded in real-time (Date, Call, Grid, SNR), providing quick feedback on the latest traffic.

4. Additional Features (Configuration)

From the left panel, you can activate various modules (Widgets):

1. **Light/Standard Theme:** Switches from the "Hacker Terminal" mode (black/green background) to a Light mode (white/blue) for better daylight readability.
2. **Show Today's Spots Only:** Filters the map to show only contacts made today (starting from local midnight).

3. **Show World Clocks:** Displays current times for key cities on the map (UTC, Rome, New York, Tokyo, etc.).
4. **Show NCDXF Beacons:** Activates the visualization of the international NCDXF beacon network. It includes a table highlighting which beacon is currently transmitting in real-time, synchronized with UTC.
5. **Show Sun/Moon & Greyline:** Draws the position of the Sun, the Moon, and the "Greyline" (the shadow line separating day and night), which is useful for low-band propagation.
6. **Show HF Propagation:** Downloads solar data from *HamQSL* (SFI, Sunspots, A-Index, K-Index) and provides an estimate of band conditions (Poor, Fair, Good).
7. **Show PSK Reporter:** Allows you to query the PSK Reporter database to visualize on the map who has heard your signal (or another callsign) in the last 15 minutes.

Technical Requirements:

The software requires a modern web browser (Chrome, Edge, or Opera on Desktop) that supports APIs for local file access and microphone access (for the waterfall).

Good DX and enjoy using VarAC Log Mapper!

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