GPR .V00 / .DT File Viewer
Detailed User Manual

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1 1. Basic Workflow How to Get Started

1.1 Step-by-step: Browse Load View

1. Select file

Click **Browse .V00** or **Browse .DT**

Choose your radar file (`*.v00` or `*.dt`)

The path appears in the text field

2. Load everything

Click **Load Data** (big green button)

The program automatically tries to find and read:

- Matching `line.hdr_00` or `line.hdr_dt`
- Matching `line.geox` (coordinates)

3. First view appears

Radargram shown with default `gray` colormap

Depth (m) on vertical axis (if velocity & sample interval found)

Distance (m) on horizontal axis (from .geox or trace number)

Metadata appears in the bottom text box

Tip: Always look at the metadata box after loading! It tells you:

- Number of traces & samples
- Sample interval (ns)
- Propagation velocity (m/ns)
- Whether depth axis is available

2 2. Navigation & Viewing Controls

2.1 Changing appearance

Button / Control	What it does
Colormap dropdown	Choose visual style of radargram Most useful choices in 2026: `gray` classic GPR look `seismic` red/white/blue (very popular) `RdBu_r` strong contrast `coolwarm` modern smooth look `wiggle` traditional variable area wiggle plot
Apply	Immediately update radargram with selected colormap
Zoom In / **Zoom Out**	Change view scale (buttons: 0.8 / 1.25)
Mouse Wheel Zoom	**Most convenient way!** Hover mouse over radargram Scroll wheel up zoom in Scroll wheel down zoom out (centered on current mouse position)
Save Figure	Save current view as image Supports: PNG, JPG, PDF, SVG, TIFF Suggested: PNG 300 dpi for reports

Pro tip: Use mouse wheel zoom + drag (left click & move) to quickly navigate large datasets.

3 3. A-Scan (Single Trace) Inspection

3.1 Live A-scan window most important tool for interpretation!

1. Click **A-scan** button (purple)

- Small window titled A-scan appears

2. Move your mouse over the main radargram

- The program automatically finds the nearest trace
- Shows amplitude vs depth/time plot of that trace
- Title shows trace number (or X-distance if .geox loaded)

3. Click **A-scan** button again to turn off

- Window hides, live tracking stops

When to use A-scan:

- Check exact reflection polarity
- Measure two-way travel time of layers
- Evaluate signal strength & noise level
- Compare before/after filtering

Best practice: Keep A-scan window open while scrolling slowly over interesting features.

4 4. Processing & Analysis Tools Overview

Tool	What it does / When to use
Statistics	Min/max/mean/std + percentiles of current data Useful for checking clipping / dynamic range
FIR Lowpass	Quick demo low-pass (200 MHz cutoff) Good for removing very high-frequency noise
FIR Bandpass	**Most important processing tool!** Opens dialog: set low cut, high cut (MHz), number of taps Typical values (2026): 40–80 MHz low, 220–350 MHz high
Reset Data	**Very important!** Returns to original raw data (undo all filters)
Hilbert	Envelope / Phase / Instantaneous frequency Envelope = most common for target detection
FFT / DFT	Frequency spectrum of single trace or average Helps choose good bandpass frequencies
HHT & HHT (TF)	Advanced time-frequency analysis (Hilbert-Huang) Single trace mode useful for non-stationary signals
Clear All	Reset program to initial empty state

Important workflow rule (2026):

Always press Reset Data before trying new filter settings!

Enjoy your GPR interpretation!

Happy radargram reading!