

Z3D Table Editor — User Guide

Overview

Z3D Table Editor helps you **triage, annotate, and correct** Z3D receiver files quickly, especially during large IP/Resistivity campaigns. It brings together timing, location, and station metadata so that operators and processors can spot problems early (missing channels, bad stations, time overlaps) and **fix coordinates** consistently.

Workflow Recipes

A) Day-summary with TX overlap highlighting

1. Start the app with your **RX** folder(s) for the day.
2. `File → Load TX folder` and select the day's **TX** folder.
3. The RX rows that overlapped any TX pulse window are highlighted.
4. `File → Export CSV...` and share with the crew for the day log.

B) Normalize receiver coordinates from RXC

1. `File → Load RXC (Waypoints.rxc)` to parse station positions.
2. Review auto-assigned `RXC_STN` for each row (distance shows in `dist_to_rxc_m`).
3. If needed, pick a different station via the dropdown.
4. Select rows and press **Apply RXC → Z3D** (`⌘A` / `Ctrl+Shift+A`).
This updates the row's UTM and writes `Lat` / `Lon` back into each file header.

C) Manual coordinate correction

1. Double-click `easting_m` / `northing_m` and enter the correct UTM.
 2. Select the rows and hit **Apply Changes** (`⌘C` / `Ctrl+Enter`).
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Notes on Time Handling

- Times are derived from **GPS week** and **seconds of week** present in the file.
 - The app converts GPS→UTC using a constant `GPS_UTC_LEAP_SECONDS = 18`. Update if needed.
 - The `--tz` option accepts **IANA** names (`Europe/Paris`) or **fixed offsets** (`+02:00`).
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Safety Considerations

- **Backups:** header updates are in-place. Keep a copy of raw Z3D files before batch operations.
 - **Header scan range:** only the first **2 MB** are scanned/rewritten (`HEADER_SCAN_BYTES` constant).
If header fields live deeper in some variant, increase the constant.
 - **Radians/Degrees detection:** If existing header values are within ± 3.2 , they're treated as radians; otherwise as degrees.
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Frequently Asked Questions

Q: The table shows `rate_Hz` as empty for some files.

A: The value is parsed from a `Rate=` header token. If missing, the column stays blank.

Q: Distances to RXC look wrong.

A: Ensure your RXC contains correct UTM **zone/hemisphere** fields or define `$Survey.UTMZone=` in the preamble.

Q: Can I undo a header write?

A: There's no in-app undo. Re-apply correct coordinates or restore from backup.

Q: Does it modify binary samples?

A: No. Only ASCII header strings like `Lat=...`, `Lon=...` within the scanned header region are replaced.

Q: Why is 'Apply Changes' writing radians or degrees?

A: It mirrors the original header's unit style (radians if original looked like radians, else degrees).

Advanced

- **Increase header scan window:** set `HEADER_SCAN_BYTES = 4_000_000` for larger headers.
 - **Precision/format:** the writer preserves the original field width and uses scientific notation if the original contained `E / e`.
 - **Sort & columns:** click headers to sort; use **View** options to toggle "fit columns to window".
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Support

Open an issue in your internal repo, or ping the maintainer.