

ETACHA 4.8.9-4.8.13 Modification Summary

Generated 14-AUG-2026 from the ETACHA4 project modification history and current implemented behavior.

Version Chronology

Version	Date	Area	Modification summary	Status
4.8.9	08/14/26	Command line	-q closes ETACHA after a command-line run; -r/-q parsing became order-independent; .betacha files can be passed directly to ETACHA4.exe for batch execution.	Current
4.8.10	08/14/26	Version v.34	Corrected v.34 charge-state population output so the independent n=4 shell Y(4) population is included in the charge-state distribution; v.34 option was re-enabled in the UI.	Current
4.8.11	08/14/26	Batch mode keys	Introduced -v, -i, and -e support during batch processing as per-row overrides after parsing each .betacha line.	Superseded by 4.8.13 command-line global mode keys.
4.8.12	08/14/26	Documentation and builds	Refreshed batch execution documentation, project-local MinGW/MSVC release outputs, and batch command examples.	Current documentation base, revised by 4.8.13.
4.8.13	08/14/26	Batch command behavior	-v, -i, and -e are command-line global options applied to all rows in a batch run; result CSV files include a mode suffix such as YourFile_results_v23i0e1.csv; -L/-log controls creation of detailed .txt output files.	Current

Current 4.8.13 Batch Usage

```
ETACHA4.exe input.betacha -r -q -v=23 -i=1 -e=1
```

```
ETACHA4.exe input.betacha -r -q -v=34 -i=0 -e=0 -L
```

- Mode keys are supplied on the ETACHA4.exe command line, not inside .betacha rows.
- The same .betacha file can be run repeatedly with different global mode keys to compare models.
- Generated .etacha files are always created for each batch row.
- Detailed .txt files are suppressed during command-line autorun unless -L or -log is present.
- Batch CSV files always include the effective mode suffix, for example YourFile_results_v34i0e0.csv.

Verification Notes

Check	Result
MinGW release build	_install\ETACHA4.exe rebuilt successfully.
MSVC release build	_install_MSVC\ETACHA4.exe rebuilt successfully.
No-log autorun	Batch run without -L created the mode-suffixed CSV and generated .etacha files, with zero .txt files.

Log autorun	Batch run with -L created the mode-suffixed CSV plus detailed .txt output files.
Generated inputs	Generated .etacha files preserve the effective Version, Ionization, and Excitation settings.