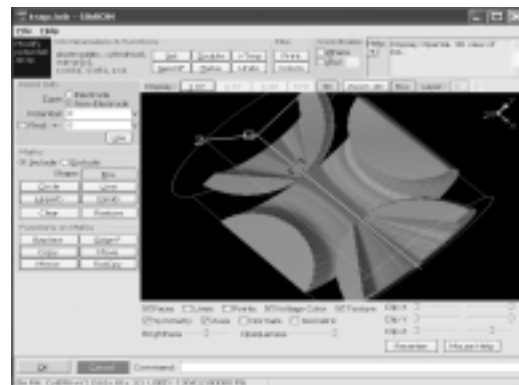


Capabilities and Features of SIMION 8.0

- **Electrostatic field solving** in 2D and 3D, up to almost 200 million points (2GB), with optimizations for symmetry and mirroring.
- **Magnetic field support:** Though SIMION is not a full magnetic field solving program (e.g. permeability is not handled), it will solve a restricted case involving scalar magnetic potential identically to the electrostatic case.
- **Low frequency time-dependent or RF support:** Electrode voltages may be adjusted in a general way during particle flight via user programming--e.g. to step or oscillate electrode voltages in some manner.
- **Particle tracing:** Particle trajectories are calculated given previously calculated or defined fields.
- **Geometry definition via multiple methods:** a 3D paint-like program (Modify), CAD import from STL format, solid geometry defined mathematically via a text file (GEM file), and programmatic manipulation of arrays from such languages as Perl, Python, and C++ (SL Libraries)
- **Contour and potential energy surface plots** (optionally with ion trajectories superimposed) are displayed interactively and are a core feature of viewing.
- **Viewing** of the system is highly interactive, allowing adjustment of parameters and viewing of the system even during ion flight.
- **Data recording** of parameters at various stages in particle flight, to screen or delimited text file, for subsequent analysis of fields and trajectories.
- **User programming:** During ion flight, you may control electrode voltages, define or modify fields, scatter or deflect ions (e.g. ion-gas collision models), compute results, export data to programs like Excel via a COM interface, and do many other things.
- **Basic charge repulsion effects** to estimate the onset of space-charge. (Note: for more advanced and numerically accurate space-charge and space-charge limited cathode emission calculations, we suggest considering the CPO software.)
- **Documentation and examples:** SIMION comes with an extensive 450-page printed manual, additional electronic documentation, example files, and ASMS course notes. There are also the online SIMION Info pages for the latest SIMION tips, articles, and resources.
- **Package contains** a 450-page printed manual, installation CD with software license key number (for receiving software updates), and quick start notes. The installation CD installs the software, examples, and additional documentation.
- **Upgrades:** Free upgrades to 8.0.x versions and versions released within a year of 8.0.0 (at least) are provided as downloads from simion.com.
- **Support:** Limited free support via email and phone is included, and there is a message board.
- **Supported systems:** Tested on Windows XP, 2003, 2000, and NT, as well as Wine/Linux.



New Features in SIMION 8.0

- **Major revamp of user interface.** Includes native GUI controls (more standard), OpenGL viewing of PA files, reduced screen flicker (double-buffering), and clearer labeling and placement of functionality to reduce learning curve.
- **Enhanced user programming:** The Lua programming language is now embedded into SIMION and replaces PRG (though PRG will still be supported for backwards compatibility). Lua also replaces the SL Compiler (which compiled down to PRG) and is much more powerful (SL programs have been found to be very easy to convert to Lua).
- **Batch mode operation:** Command-line API and Lua interfaces allow SIMION to be operated in "batch mode" from Lua or any other programming language. Operations include GEM --> PA, refine, fast adjust, and fly.
- **CAD Import:** CAD import (STL) and other import/export functions (from the SL Toolkit) are included. (Note: SIMION 8 replaces the SL Toolkit, which will no longer be sold separately.)
- **SL Libraries** from the SL Toolkit are included.
- **New particle definition format:** Support for new FLY2 particle definition format. Original FLY is still supported for backward compatibility though.
- **Max PA size** slightly increased from 50 million (in 7.0) to almost 200 million (if sufficient RAM available ~2GB). OS restrictions may apply, though the increased RAM has been tested to work at least under Windows XP.
- **Maximum fast scalable and fast adjustable electrodes** increased from 31 to 128.
- **Max number of particles** increased from 500 thousand (in 7.0) to about 10 million (if sufficient RAM available)
- **Improved performance** - Initial measurements show refine and fly times reduced by ~20-40% from 7.0, largely due to compiler optimizations, but more exact benchmarks will need to be done.
- **New/updated examples** - PRG programs have been rewritten in Lua, and documentation has been updated. A few new examples have been added such as geometry optimization, phase plotting in Excel (via Lua COM), HS1 ion-gas collision model, and beam emittance calculation, ion funnel, simplex optimization, and Biot-Savart calculations
- **Provide for future features and improvements (SIMION 8.1).** We plan to continually expand the software after the initial release of 8.0. Updates (8.0.x) will be provided as free downloads on our web site for one year. (12 months from the date of purchase.)
- **For a more information visit our web site:**

<http://www.simion.com>

Part No.	Description	Price
SIMION8	SIMION 8.0	
SIMION8A	SIMION 8.0 for US Academic or US Government Only	
SIMION8U	SIMION 8.0 Upgrade from SIMION 7.0 Only	
SIMION8U2	SIMION 8.0 Upgrade from SIMION 7.0 +SIMION SL Toolkit Only	
SIMION8LK	SIMION 8.0 Lab Kit - For Universities Use Only - Up to 30 seats	
SIMIONV	Virtual Device for SIMION 6,7, or 8 (standard version without hydrodynamics)	