Lawrence Livermore National Laboratory

NEC, v5.0

Category

Software

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Note: *NEC5 is no longer being maintained or supported. Windows 10 is the last version of Windows in which the NEC5 GUI can run. The GUI is not compatible with Windows 11.*

Description

Antennas are a foundational component of our global communication and information systems. Cell phones, Wi-Fi networks, and satellite links couldn't exist without them. LLNL scientists, Gerald Burke, Andrew Poggio, and Edmund Miller created the Numerical Electromagnetic Code (NEC), an antenna modeling system for wire and surface antennas. As computer capability to handle heavy calculations increases, new versions of the code have been released. NEC has been the most licensed technology in LLNL's software portfolio, and the most widely used code for analyzing antenna performance. NEC v5.0 is the latest version of LLNL's decades-long successful NEC antenna modeling software family.

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For a more detailed comparison of NEC-4 and NEC-5 please review the NEC 5 Validation Manual.

Update:

LLNL is now providing an update to NEC-5 provided by Roy Lewallen. A special thanks to Roy Lewallen for his long support of NEC and for providing our user community with updates. Dan Maguire also made major contributions in identifying and extensively testing and verifying the improvements.

Improvements to the command line NEC-5 program in the updated package consist of corrections of several serious bugs involving current sources and MININEC type ground among others. Corrections to the command line NEC-5 program address the following bugs:

Incorrect gain was reported when using current sources.

- Near field and surface wave results were incorrect when using MININEC type ground.

- Inhibiting Sommerfeld ground file writing by specifying NOFILE as the file name caused a crash.

- An internal array dimension (NETSOLMAXX in SUBROUTINE ALLOC_NETWORK_SOL) wasn't large enough and could cause a crash under some conditions.

- Errors could occur or the program crash if any NT or TL port was placed at end 1 of a segment.

Existing NEC 5.0 licensees can now download the updated command line program files via the download site provided at the time of your license. The updated files are contained in a separate file package to preserve the original NEC 5.0 authored by Jerry Burke and referenced in the LLNL NEC 5 Validation Manual.

LLNL continues to seek qualified distributors who are interested in maintaining and supporting NEC. Companies interested in commercializing NEC can contact softwarelicensing@llnl.gov.

U.S. Federal Government User: Free

LLNL continues to provide NEC 4.2. To order, please visit: https://softwarelicensing.llnl.gov/product/nec-v42.