

New Features in Wireless InSite 2.1

This document describes changes and new features present in Wireless InSite 2.1, including:

- Improvements to UTD irregular terrain prop model
- Enhancements to Full3D propagation model
- Enhancement of surface mounted Point-on-face transmitter and receiver sets
- Application-wide unit preferences
- Customizable viewing preferences
- JPEG export of Project view
- Animated field output and Movie player interface with MPEG export
- High- and low-range scale bar clamping
- Ideal dipole and ideal monopole antennas renamed
- Moved location of TIFF import in the menu structure
- Moved location of menu item to open transmitter and receiver set files

1. Improvements to UTD irregular terrain propagation model

Several improvements have been made which increase the accuracy of the Vertical Plane propagation model. Another improvement in this model is the determination of the best piecewise linear approximation to the terrain without the need for the user to enter a maximum allowable error.

2. Enhancements to Full 3D propagation model

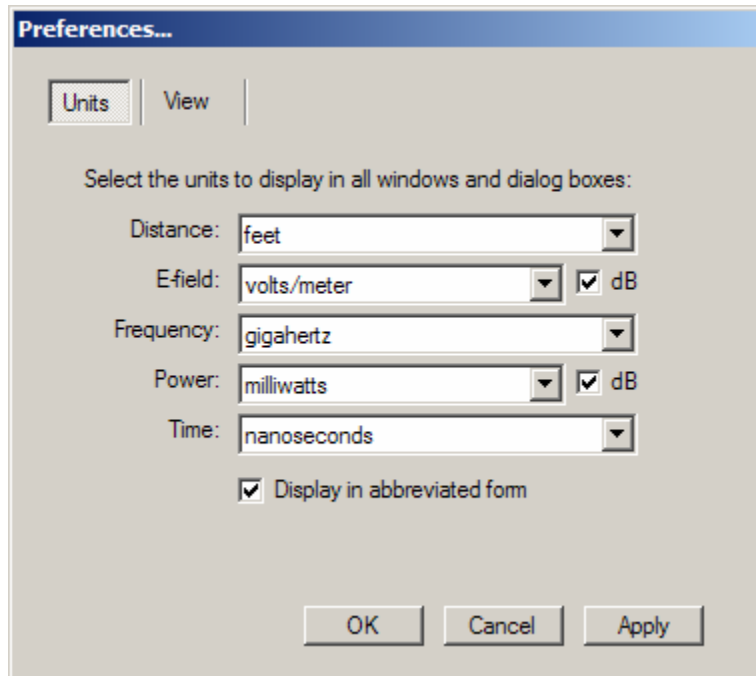
The SBR ray-tracing method in the full 3D propagation model is now able to find ray paths with two diffractions from wedges that are not coplanar. The computation of the slope diffraction coefficients for ray paths across lossy dielectric surfaces has also been improved.

3. Enhancement of surface mounted Point-on-face transmitter and receiver sets

Surface mounted Point-on-face transmitter and receiver sets have been enhanced to provide greater ease of use and robustness. Previous versions of XGTD did not allow positioning changes to be made to geometry on which surface mounted transmitters and receivers were located. This limitation has been removed, and XGTD v2.1 now permits the rotation, translation, and scaling of geometry with surface mounted points attached. All surface mounted transmitters and receivers will be rotated, scaled, or translated to maintain their relative position on the geometry. The local system origin of the geometry may also be freely modified. Simplification or deletion of geometry on which surface mounted points exist will result in those transmitter and receiver sets being deleted. Setting the geometry inactive will cause the surface mounted transmitter and receiver sets to be made inactive as well.

4. Application-wide unit preference

The units used to display and input values throughout the application can now be selected in the Preferences window which is accessible by selecting **Edit>Preferences...** in the Main window or Project view window. This setting does not change the units in project files or in output generated by Wireless InSite. Changing these settings will cause all open windows and most graphs to refresh in order to display the correct units.



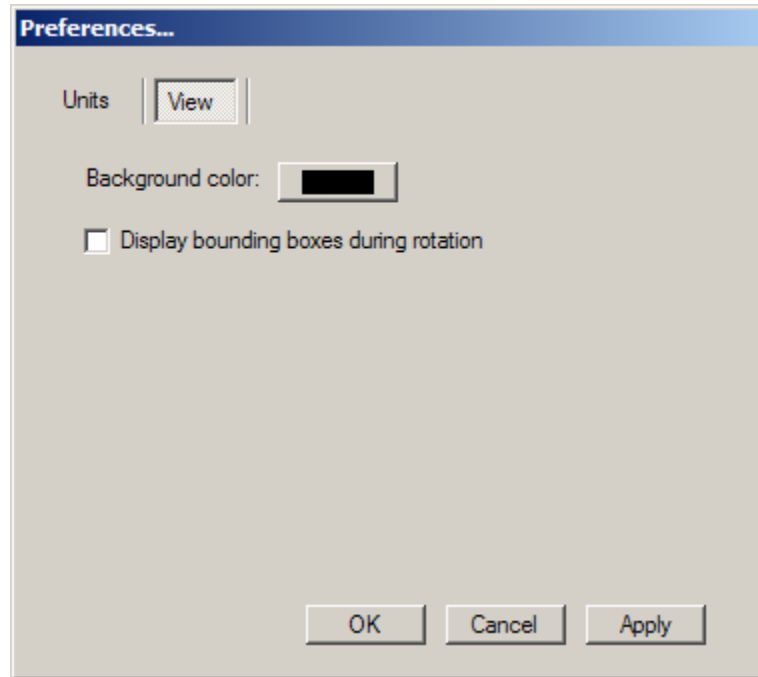
The screenshot shows the 'Preferences...' dialog box with the 'Units' tab selected. The dialog has a title bar 'Preferences...' and two tabs: 'Units' and 'View'. Below the tabs, the text 'Select the units to display in all windows and dialog boxes:' is displayed. There are five rows of settings, each with a label, a dropdown menu, and a checkbox for 'dB':

- Distance: feet (dropdown)
- E-field: volts/meter (dropdown), ☒ dB
- Frequency: gigahertz (dropdown)
- Power: milliwatts (dropdown), ☒ dB
- Time: nanoseconds (dropdown)

At the bottom, there is a checkbox labeled 'Display in abbreviated form' which is checked. At the very bottom are three buttons: 'OK', 'Cancel', and 'Apply'.

5. Customizable viewing preferences

Viewing options for the application can be adjusted in the “View” tab in the Preferences window, by selecting **Edit>Preferences....** The background color is used in all drawing and editing windows throughout the application. The display of bounding boxes during rotation of geometry can be used to optionally accelerate the rendering speed of complicated geometry.

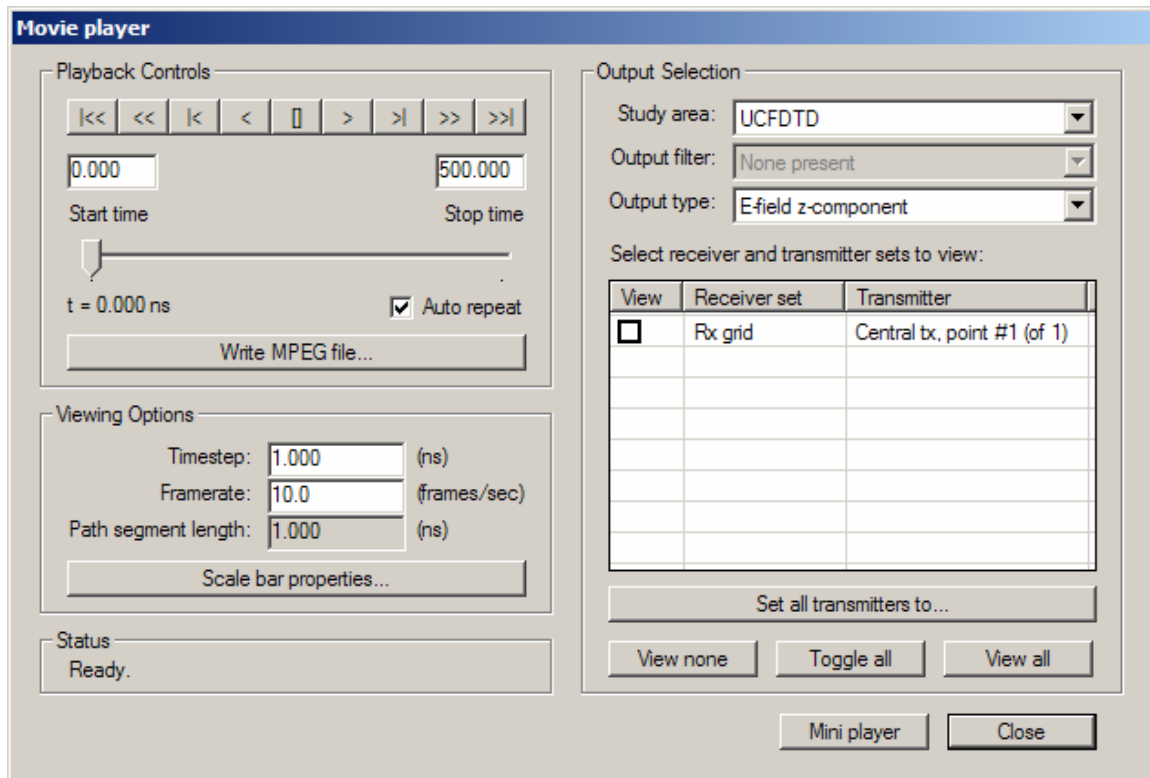


6. JPEG export of Project view

Screenshots of the Project view window can be exported by selecting View>Save as JPEG. The level of compression of the JPEG image can be selected when exporting in order to minimize file size or maximize image quality.

7. Animated field output and Movie player interface with MPEG export

In order to better visualize propagation in the time domain, the Wireless InSite Movie player is capable of displaying and saving movies which depict changing electric fields versus time, and the movement of propagation paths within the simulation space. The Movie player window contains playback controls, viewing options, and an output selection interface. Prior to this, however, predictions must be performed with the new requested output type “Animated fields” activated. These output files can also be accessed in the Project hierarchy and Main window output tab. To do so, select one, right-click on it and choose “Play”. More information on the use of the Movie player is available in Chapter 18, “Data visualization”.



8. Ideal dipole and ideal monopole antennas renamed

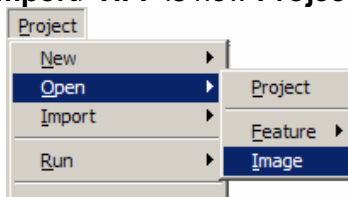
The “ideal dipole” and “ideal monopole” antenna types have been renamed “short dipole” and “short monopole”, respectively. All other aspects of these two antenna types remains unchanged.

9. High- and low-range scale bar clamping

The scale bar setting to clamp values outside the minimum-maximum range has been enhanced. Clamping can now be activated separately at the high- and low-range so values less than the minimum or greater than the maximum can be optionally colored with the nearest color on the scale bar.

10. Moved location of TIFF import in the menu structure

The location of the menu item to add a TIFF image to a project has been moved. The previous menu item **Project>Import>TIFF** is now **Project>Open>Image**.



11. Moved location of menu item to open transmitter and receiver set files

Previous versions of Wireless InSite permitted a project to contain more than one .Tx or .Rx file in which transmitter and receiver sets were saved. Wireless InSite v2.1 now saves all transmitter sets in a single .Tx file and all receiver sets in a single .Rx file. The ability to “open” transmitter or receiver sets from another project has been retained, but the loaded sets are now saved in the one .Tx or .Rx file for the project. Instead of selecting **Project>Open>Transmitter sets** or **Project>Open>Receiver sets**, the operation can now be performed by **Project>Import>Transmitter sets** and **Project>Import>Receiver sets**.

