

Electronic Design for Windows
EDWINXP



Field Analyzer

VISIONICS

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Field Analyzer

The Field Analyzer is a tool for studying the electromagnetic fields that are created when power and/or signal traces on the board are energized. The results of the analysis may be view as a color graph, isolines, 3D-wire mesh graph, etc. It must be particularly mentioned that, just as with the other two tools, the Field Analyzer does not make any decisions or suggestions about the proper functioning of the design. The Field Analyzer predicts the variations in the selected field, due to electromagnetic properties of physical connections (traces), within a spatial area and time frame specified by the user.

Field Analyzer – Operation

1. Right click on the PCB Layout in the Project Explorer. Select Board Analyzer in the list.
2. Invoke Field Analyzer from Signal Integrity Simulation window.
3. Check the option 'Display Fields' in the Signal Integrity Simulation window.
4. Click the Simulate button to open the Field Analyzer.

The Tool Box on the right side of Field Analyzer includes

Graph Modes

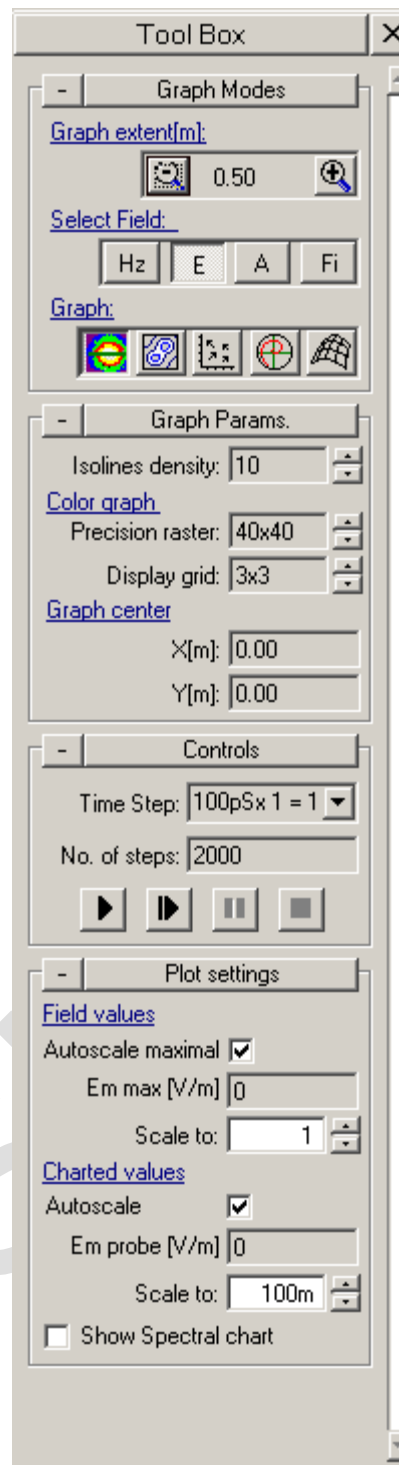
The Graph mode includes

Graph Extent:


Size of the square covered in the graph can be adjust using the zoom out and zoom in button.

Select field

It includes Electric field, Magnetic field, Vector potential, Scalar potential. Output can be viewed by selecting each field.



Graph

In this option of Field Analyzer, five types of graph can be viewed. 

Colored graph,  **Isoline,**  **field direction graph,**  **Polar coordinates graph,**  **3D graph.**

Graph Params.

Isolines density

More detailed presentation of the result can be obtained by increasing the Isolines density in the Graph Params.

Color graph:


Precision raster:


The precision to calculate the field values can be adjusted using the Precision raster.

Display grid:

Applying higher values to the Display grid will provide smoother variations to the colored graph.

Controls:

 **Run Simulation** button used to begin the Analysis. .

The simulation may be interrupted (and continued later) at any desired point by using the  **Pause button**.

In order to continue the interrupted analysis, simply click the  Continue Run button.

 **Stop button** stops the simulation.

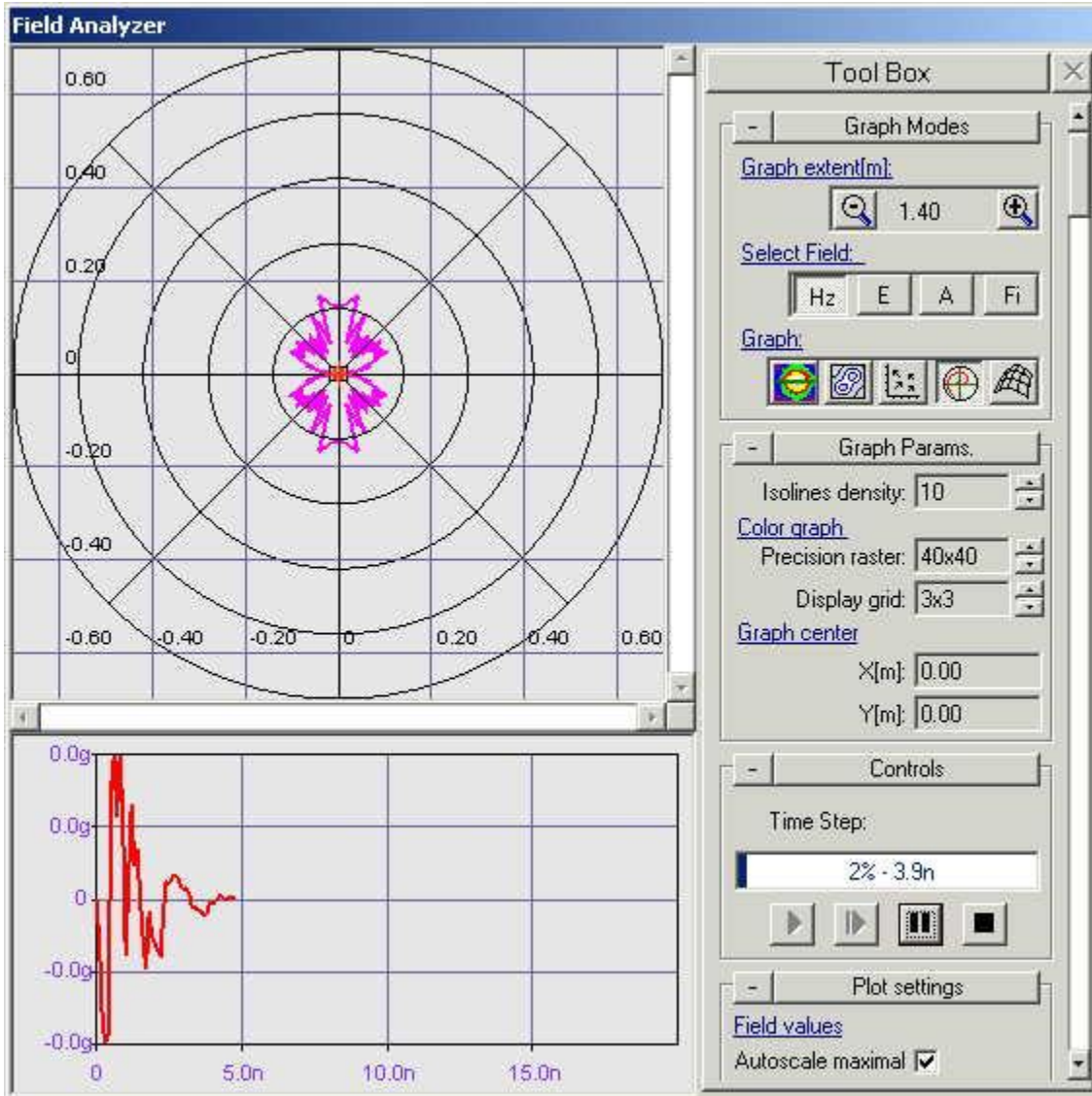
Plot settings:

You can view the Field Analyzer Diagram by setting the parameters as your need.

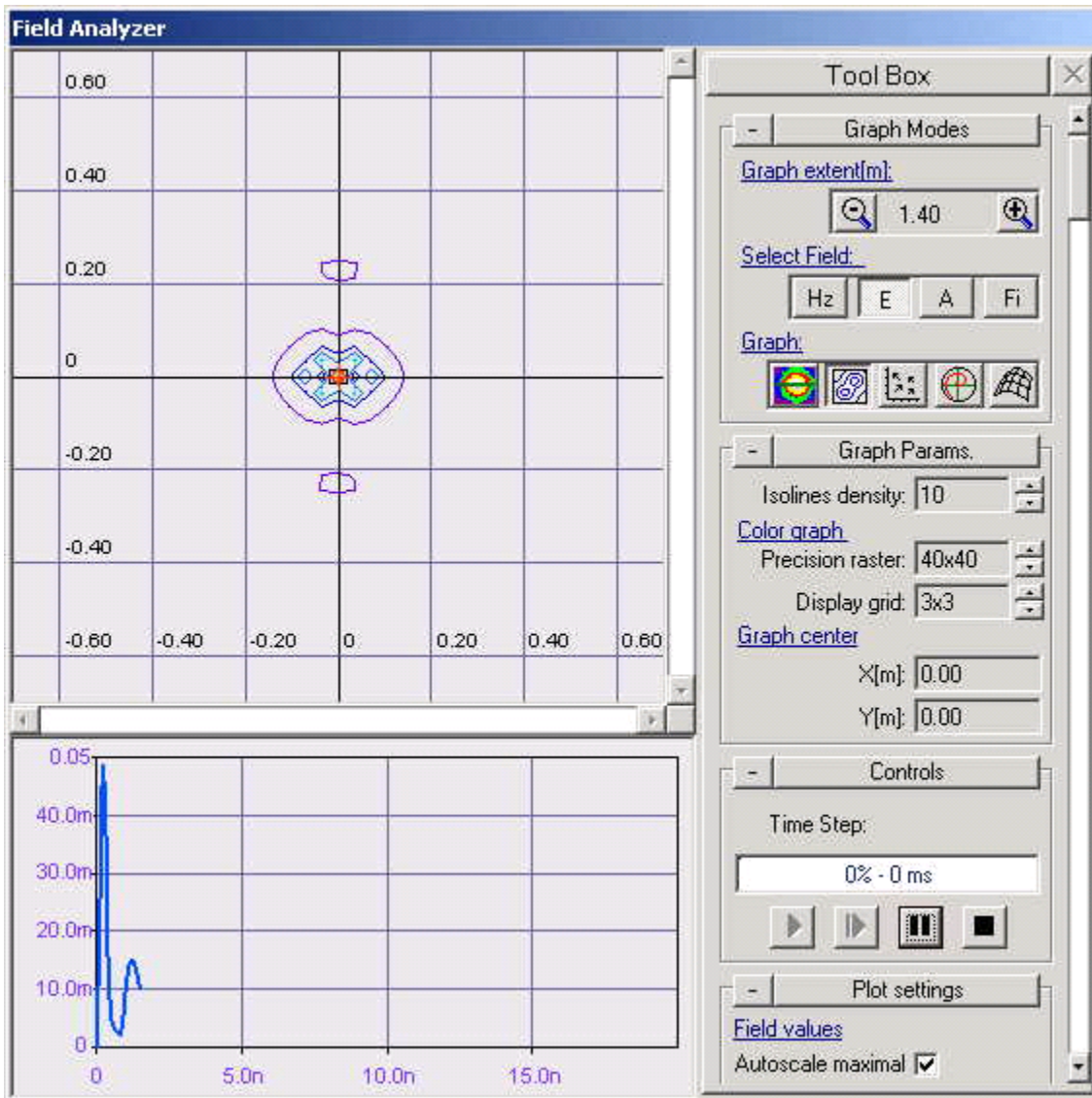
If Auto Scaling has been selected, the maximum values displayed as well as the scales of the graphs are automatically updated. On the other hand, if Auto Scaling has been turned off, these values are clipped at the values specified. (In other words, values higher than those specified are ignored.).

Different magnetic field, electric field, vector potential and scalar potential graphs can be viewed by selecting Select Field and Graph in Graph Modes.

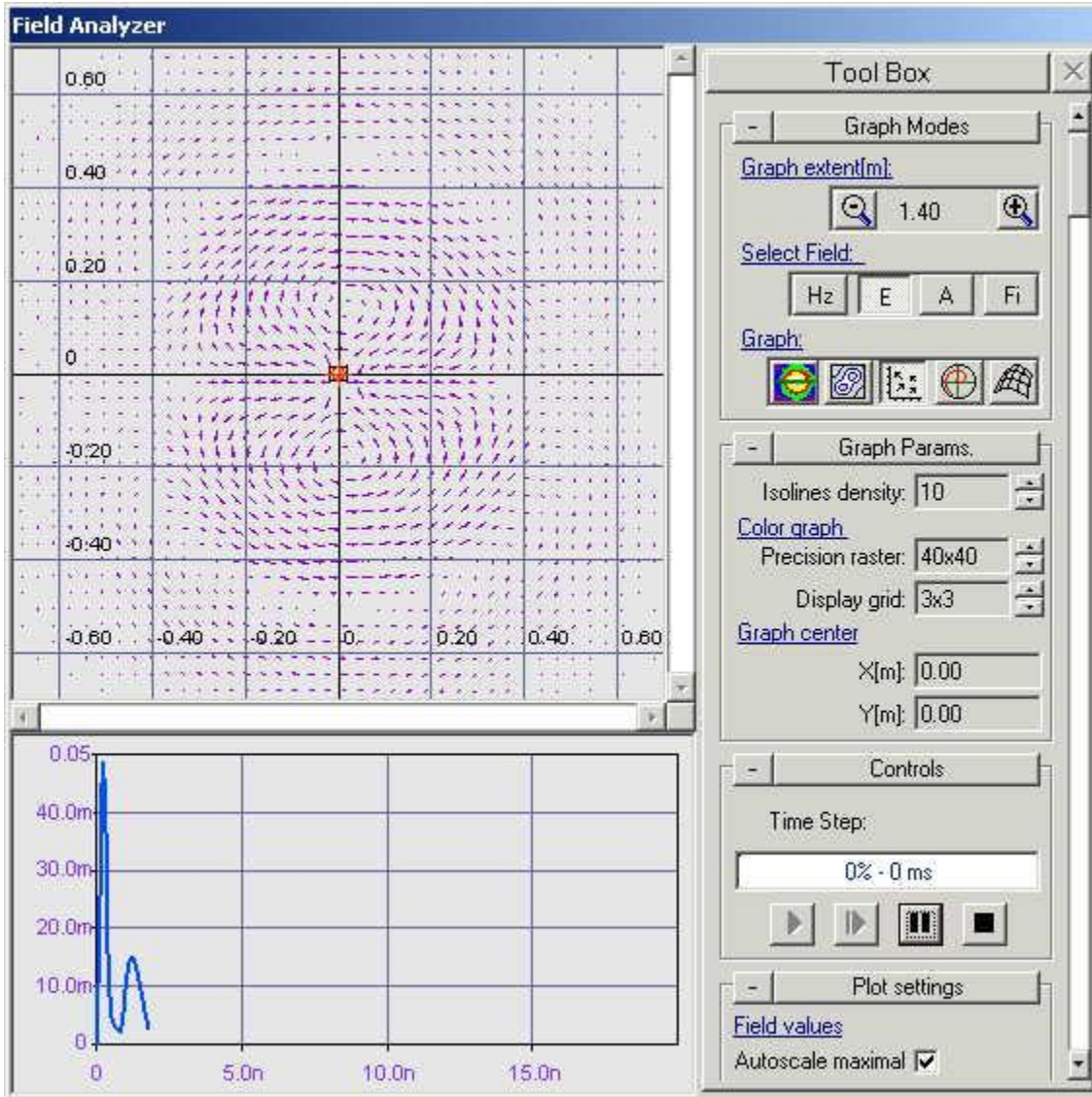
Electric Field Polar Co-ordinate Graph



Magnetic Isoline Graph



Magnetic Field Direction Graph



Magnetic Field 3D Graph

