

# XFtdt<sup>®</sup> Release 7.0

## Electromagnetic Simulation Simplified

Powerful Flexible Modeling

Mac OS X, Windows, Linux

Simple Modern Interface

Simplified Workflow

Parameters Everywhere

Custom Scripted Features

Dynamic Interactive Graphs

Capture Fields Anywhere

Fast Intelligent Meshing

Complete Result History



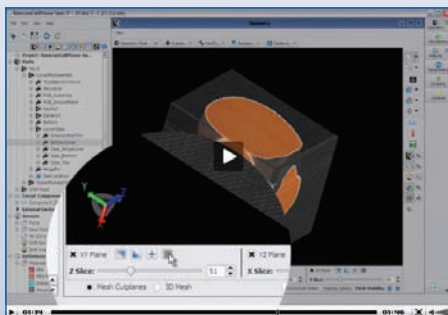
# It's Simple: XFtdt® 7 is a Breakthrough in EM Simulation.

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### XF7 Video Center at [www.remcom.com/xf7-video-center](http://www.remcom.com/xf7-video-center)

The Remcom website contains more detailed information about the XFtdt family of products. We're most excited about our new **Video Center**, where you can experience XF7 in action via flash videos that show step-by-step demonstrations of the software's ease-of-use and timesaving benefits. Visit [www.remcom.com/xf7-video-center](http://www.remcom.com/xf7-video-center) to watch the videos now.



Additional technical information on XF7 can be found on the new product pages as well, including:

- Detailed technical feature list
- Up-to-date system requirements
- Licensing information

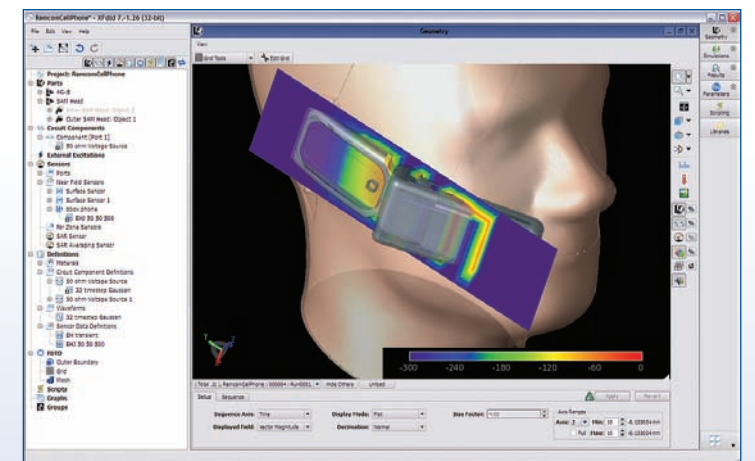
### XF7 — a better user experience.

Remcom was the first innovator to create a universally usable, FDTD-based solver for the commercial Electromagnetics market. So it's no surprise that we are now reinventing the blueprint for EM simulation software with XFtdt 7. XF7 is the next step in EM simulation, taking software beyond a collection of features and creating a **better user experience**.

### We've changed the rules — and the way our customers think about EM simulation.

Simple but sophisticated. Uncluttered and elegant. These seem like unlikely ways to describe electromagnetic simulation tools, but XF7's remarkably intuitive interface and time-saving features will convince even the skeptics. Save time and streamline your work. **We've made it easy with XF7.**

Imitators may use lots of bells and whistles as distractions, but Remcom has continued to focus on the power, speed, and usability that have always been the core strengths of our software. With XF7, we've set a new standard for excellence that other EM simulation software providers will be hard-pressed to match.



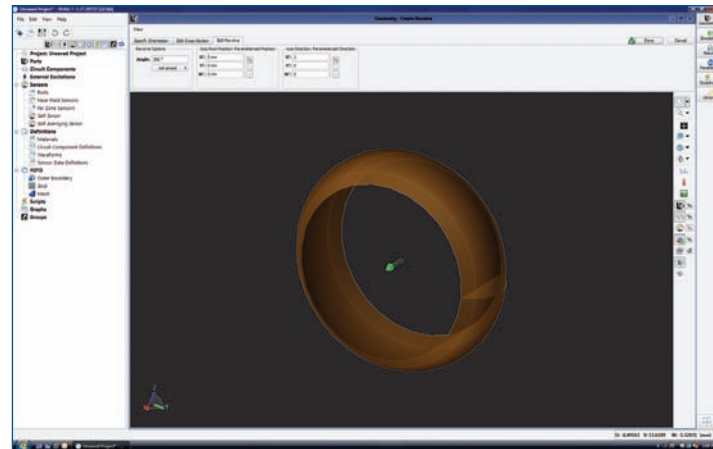
Remcom is taking the next step in EM simulation.

Join us.

## Powerful Flexible Modeling

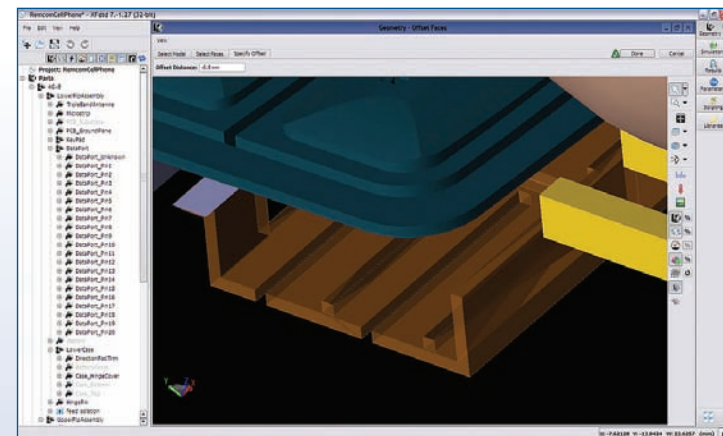
Spend less time modeling and more time getting results.

Whether you're importing CAD files or building your own models, the sophisticated modeling tools in XF7 will make your job easier. The new modeling engine in XF7 allows you to build complicated models from the ground up or apply edits to models imported from CAD files. This reduces the amount of time you spend modeling, leaving you more time to focus on your results.



### Key Features

- 2D Sketcher With Constraints
- Feature History for Objects
- Guided Modeling Processes

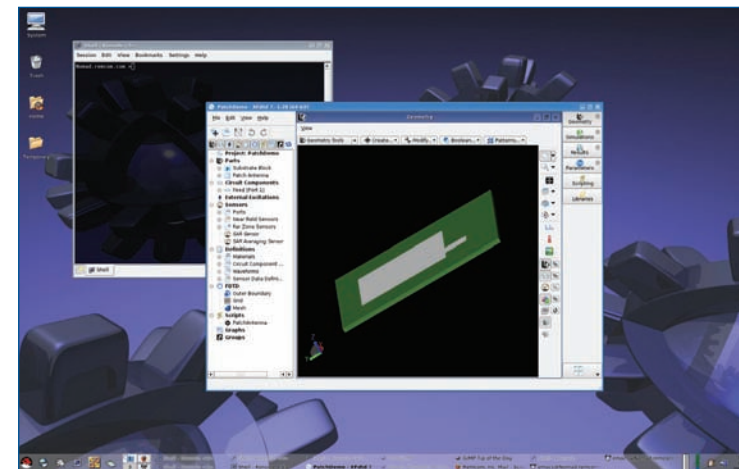


Every minute you spend waiting for a CAD engineer to provide you with an updated version of a CAD equates to lost productivity. With XF7, those delays are largely eliminated because you can add modifications to previously imported CAD models and evaluate the changes right away. Offset faces, widen gaps, perform Boolean operations, apply blends, or create arrays using the new pattern capabilities. XF7 will remember those changes and allow you to edit them again later via the feature history.

## Mac OS X, Windows, Linux

We use all three platforms and now our customers can too.

XF7 is the first EM simulation package in the industry to run natively on Windows, Mac OS X, and Linux. This ensures a consistent experience across platforms and a smooth, easy transition for those in mixed platform environments. XF7 gives you the flexibility to choose the platform you prefer most.



Many engineering software packages are limited to Windows because they're built on proprietary technology that was developed on Windows exclusively. Companies may not be willing to make the investment to expand this technology, preferring to stick with what has worked in the past.

At Remcom, we have a different perspective; we believe it's our responsibility to invest in our customers, providing them with choices and flexibility. Not only did we make the investment, we leveraged the best tools in the industry to make it happen, and took the time to do it right.



## Simple Modern Interface

With XF7, you'll spend less time finding the right tools and more time using them.

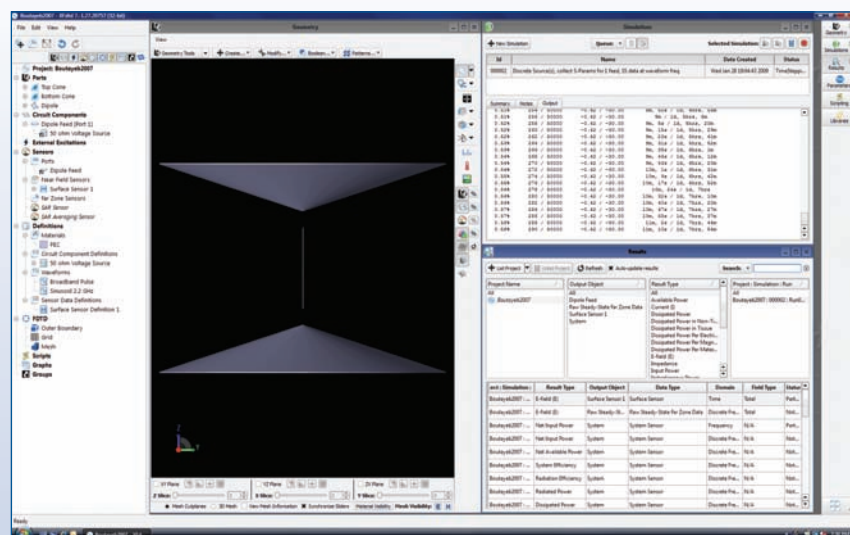
When you can't find the tools you need, you lose productivity. We have put a great deal of time and attention into making the user interface for XF7 simple and clutter-free. This means that you'll never have to scan over a confusing collection of toolbar buttons to find the one you want.

As you build projects in XF7, you will notice that each model, component, sensor, waveform, material or shared definition you create can tell you if it's invalid — or if anything it depends upon is invalid — and why. The interface checks for errors in real-time to ensure the validity of simulations and provides thorough feedback to troubleshoot difficulties.

## Key Features

- Customizable Project Tree
- Clutter-free organization of tools

XF7 is more than just simple, it's also beautiful. Attractive, professionally designed icons and eye-catching window layouts make your job a little more pleasant every time you use it.



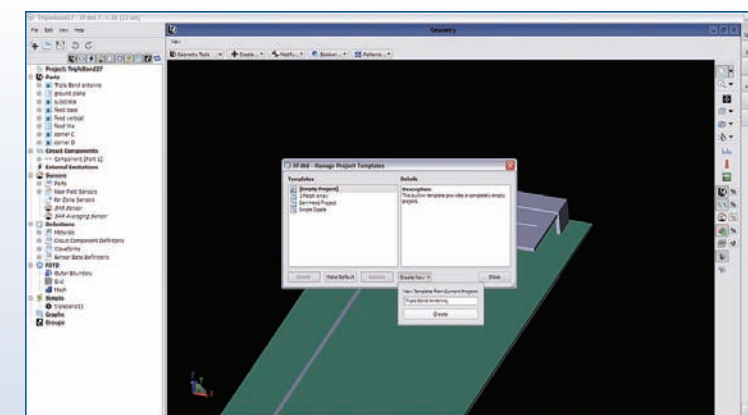
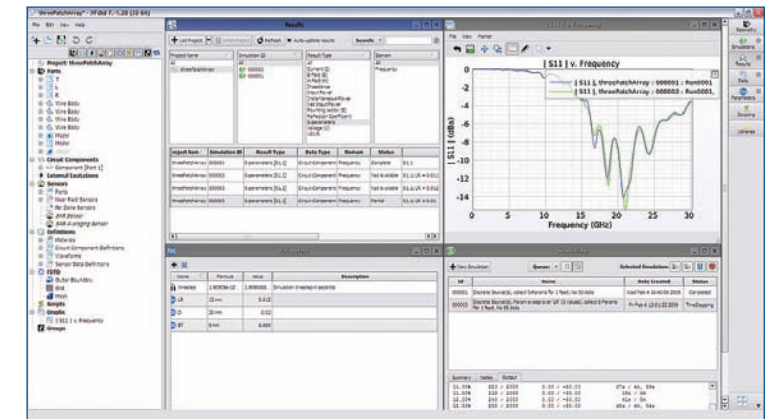
## Simplified Workflow

XF7 streamlines your workflow by eliminating time-consuming, redundant tasks.

Nothing costs you more valuable time than having to do the same work twice. XF7 multiplies your productivity by allowing you to reuse almost anything you create. Any project can be turned into a template, most parts of your project can be stored in a shared library, and any simulation you do is saved and the results easily accessed for comparison purposes.

## Key Features

- Custom Project Templates
- Simulation History with all results
- Shared Libraries
- Shared component, sensor, and waveform definitions
- Hierarchy Import



Smaller features like these can save you anywhere between five and 30 minutes each time you use them. Features like Hierarchy Import can save you hours. If you work with frequently updated CAD files, you'll only have to set up the hierarchy, material assignments and meshing priority once. XF7 preserves this information each time a new version of the file is imported, keeping your workflow as efficient as possible.

## Parameters Everywhere

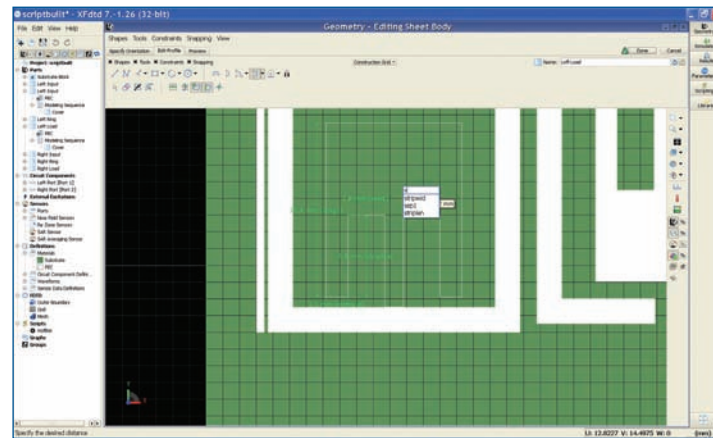
XF7 gives you more simulation control with parameterization.

Using parameters in geometric modeling is a real time saver. Using parameters everywhere else is even better. In XF7, parameters are part of the DNA of a project. Parts, components, waveforms, materials and just about everything else in your project can leverage the power of parameters. It's simple enough for anyone to use, but with some advanced capabilities that will make any power user happy.

### Key Features

- Parameters used by nearly every object
- Mathematical expressions using parameters
- Interface with scripts for parameter evaluation

Entire assemblies based on the same parameter can be modified by changing one value. Since parameters can be used almost anywhere in XF7, you can automate more things and gain complete control of your projects.



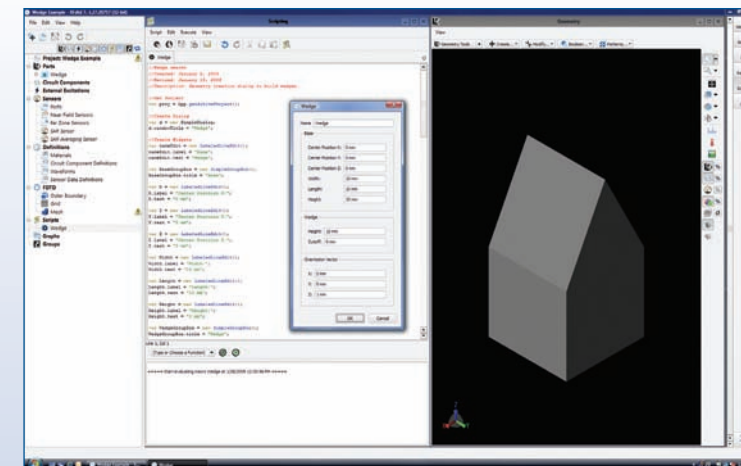
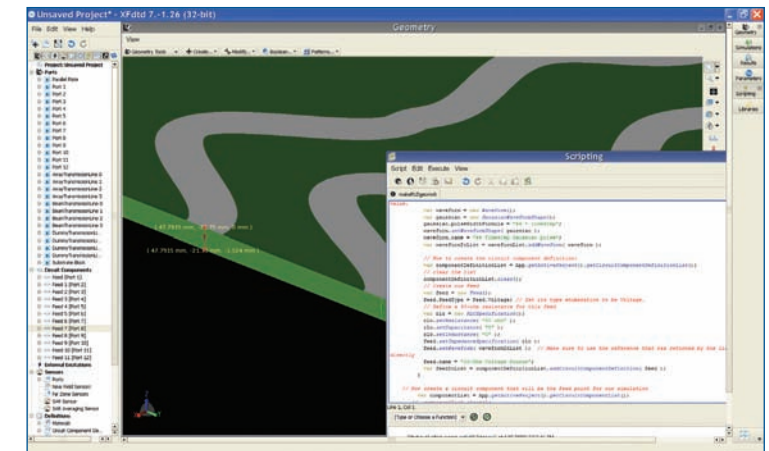
## Custom Scripted Features

XF7 allows you to create your own custom features with a powerful scripting API.

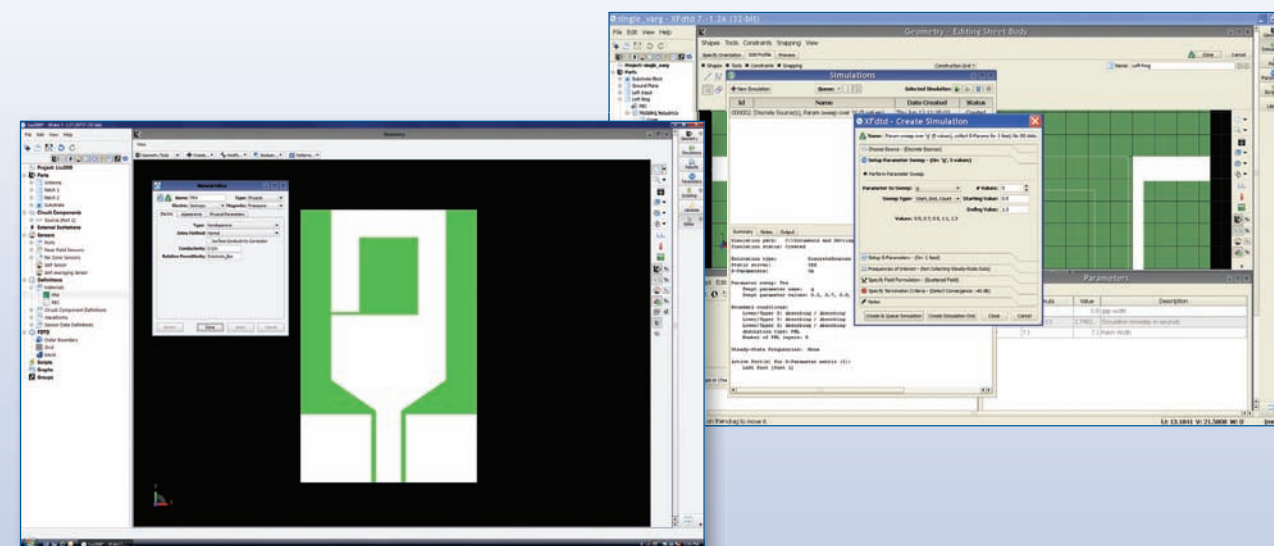
In a competitive market, missing deadlines can be costly. With XF7, the power is in your hands to create the time-saving, custom features that allow you to do your work faster. Nearly everything in the application can be controlled and accessed through a powerful scripting API. Whether you're writing custom dialogs or designing custom optimization routines, the scripting API in XF7 breaks down the walls between what you have and what you need.

### Key Features

- Function Scripts
- Macro Scripts
- Full Featured Script Editor
- Custom dialog creation through scripts



The XF7 scripting API enables the same level of user control as the GUI. Modeling functions, result data, grid and mesh operations and even creating and running simulations can all be controlled by scripts.



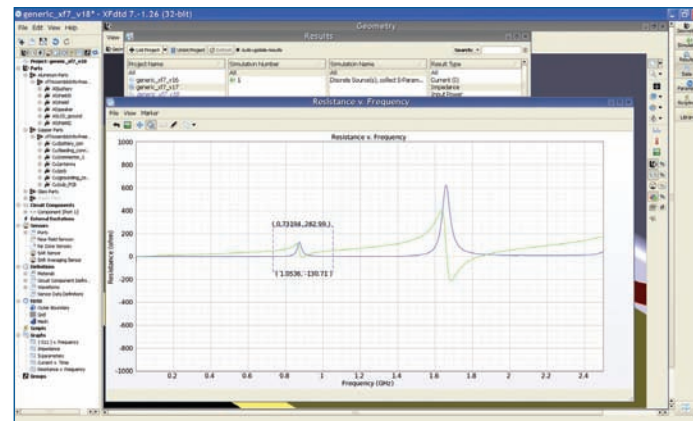
## Dynamic Interactive Graphs

Working with results just got a lot easier.

Why wait until your simulation is complete to inspect the results? With XF7, you can view your results as they are computed, and they'll automatically update as new data becomes available. You can also navigate graphs more naturally using the mouse-based graph navigation tools. The graphing engine in XF7 allows you to view your results faster and more interactively than ever before.

### Key Features

- Smooth mouse-based graph navigation
- Automatic updating during simulations
- Heads-up properties display for customizing graph appearance
- Horizontal, vertical, crosshair, and point markers
- Data and image exporting



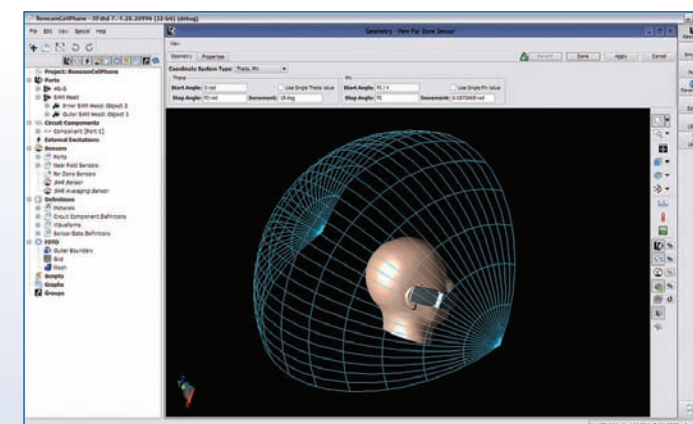
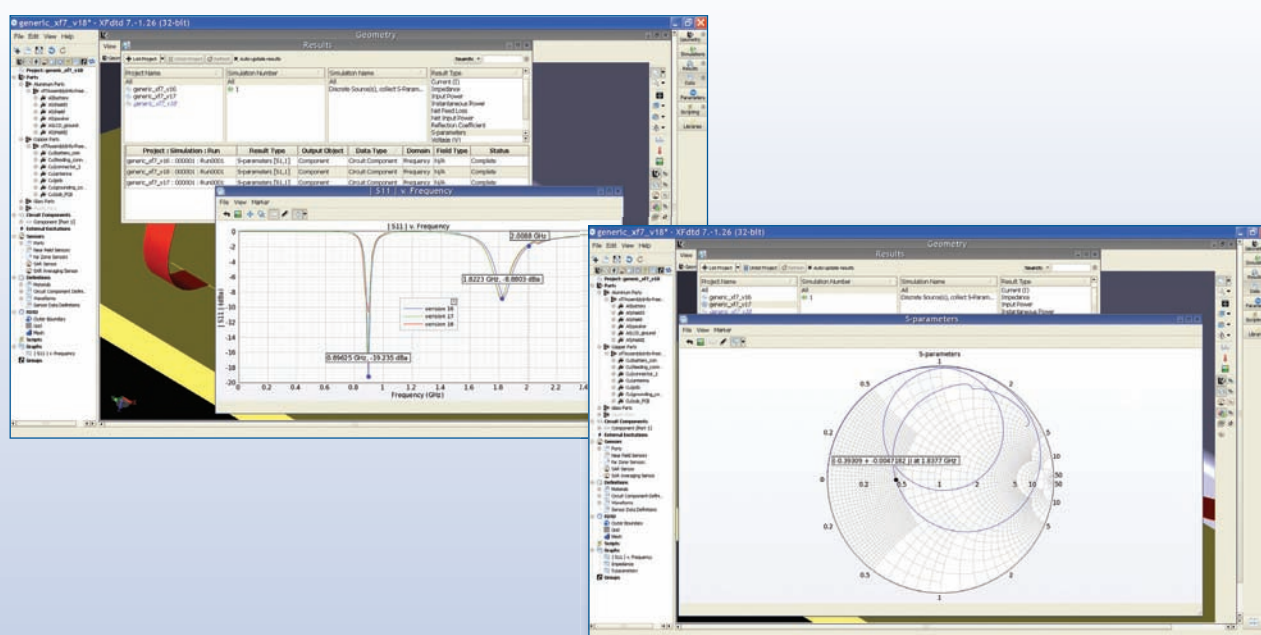
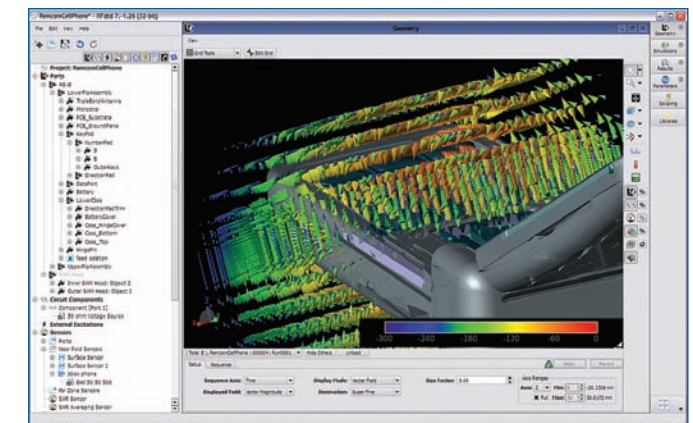
## Capture Fields Anywhere

Save fields on any point, surface, or volume in your project.

XF7 gives you more options for saving output data than ever before. Sensors are used to capture fields only where you need them. They can be attached to points, surfaces or even volumes. Each sensor saves only the fields that you request allowing you to save only as much output data as you need.

### Key Features

- Near-zone sensors can be attached to any geometric part or surface
- Non-geometric sensors can be points, planes, rectangles, or boxes
- Visualize far-zone sensors around the geometry



Far-zone sensors are drawn around the geometry, allowing you to visualize the angles being saved. And when viewing far-zone result data, all the post-processing controls are integrated with the field viewing controls.

Near-zone sensors can be attached to geometric parts, which means that as the part moves, the sensor moves along with it. You can also create near-zone sensors assigned to a plane, rectangular shape, or a volumetric box. Each sensor can save a different set of fields, and at different time intervals.

## Fast Intelligent Meshing

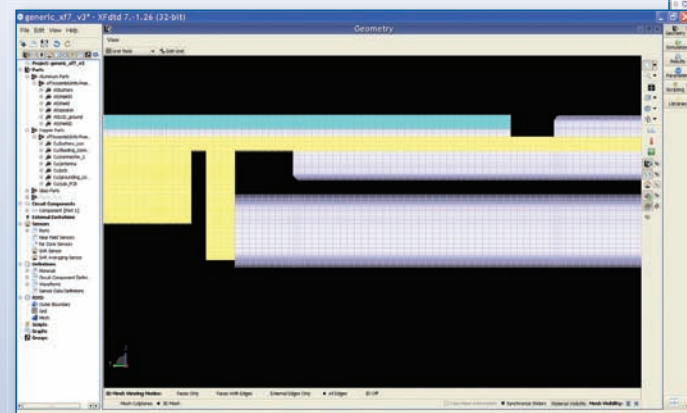
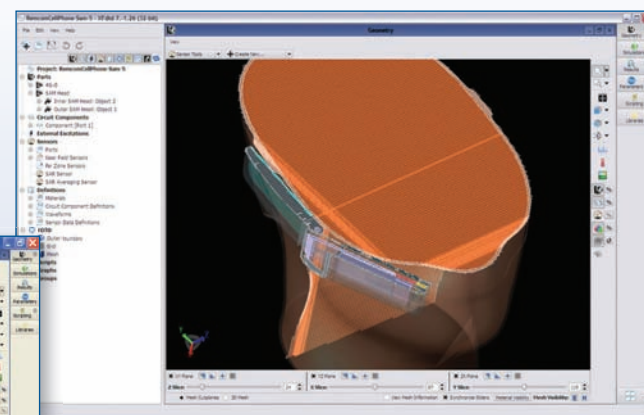
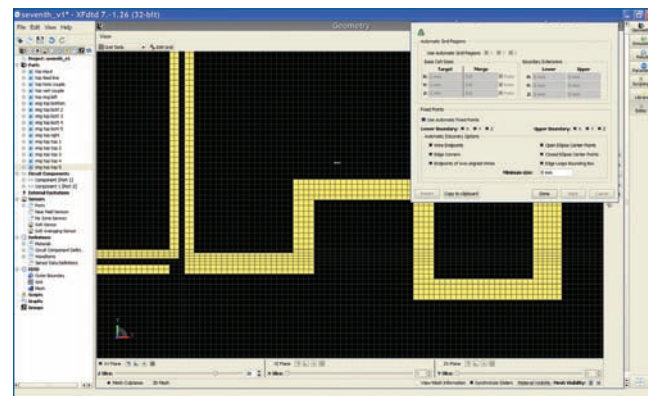
XF7 makes it easier to generate more accurate and efficient meshes with less work.

Is it possible to improve the fastest meshing engine on the market by an order of magnitude? It is, and XF7 makes it reality. Meshes that previously would have been too large to view can now be created and inspected in a fraction of the time on a desktop computer. XF7 intelligently updates the mesh only when and where it's required, allowing you to create the most accurate and efficient mesh with fewer interruptions. This also ensures that your project will have the smallest mesh necessary to perform an accurate simulation.

### Key Features

- Automatic Fixed Point Insertion
- Automatic Grid Regions
- Fast Meshing Speed
- Small memory footprint for large meshes

XFtd has always led the market with the ability to see the finished mesh with materials before the simulation ever starts. This provides the confidence that the simulation will not fail due to a meshing error. XF7's intelligent and ultra-fast mesh updating capabilities make this process even more seamless than before.

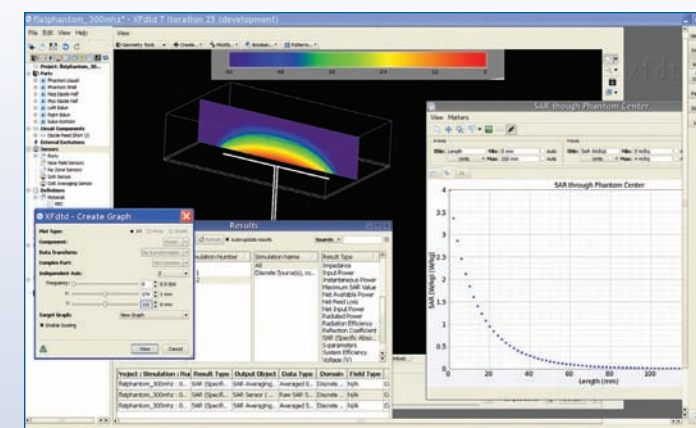
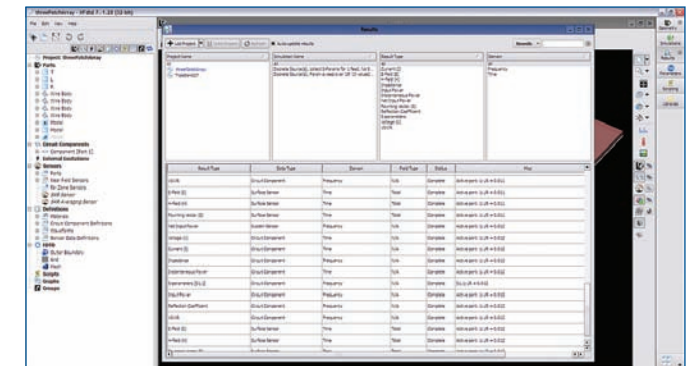


## Complete Result History

Losing your output data when you start a new simulation is out of the question.

Remcom has dedicated a great deal of time to understand real world workflows and the iterative nature of the design and testing processes that our customers use. XF7 was designed to support the way you work by keeping track of every simulation you do for each project. This means your results are never lost and you have quick and easy access to past results when you need them. Whether you are browsing results from your last simulation or searching the results from a related project, you'll do it faster in XF7.

Results from other projects or past simulations can be added to graphs, viewed in 3D, post-processed, or exported to text files. And it all starts from the same place: the Results Browser. There are fewer windows to go through, no complicated folder structures to navigate. Just a simple, yet powerful interface for finding and working with all the results from your projects.



The Results Browser in XF7 is completely customizable, allowing you to find results using the characteristics that matter to you. As you get used to having access to past results, you may find that your list of available result data becomes quite large. The filtering and searching tools in the Results Browser ensure that you can always find exactly what you're looking for with a few clicks.

## Specifications and Versions

There are two versions of XFDTD available, XFDTD Pro and XFDTD Bio-Pro:

Both XFDTD Pro and XFDTD Bio-Pro include the following:

- Pro-Analysis or Bio-Pro Analysis Module (32- or 64-bit)
- Geometric Modeler and Postprocessor (32- or 64-bit)
- XStream acceleration using NVIDIA's CUDA architecture for a single GPU
- Shared Memory (MPM) Multiprocessor for XFDTD Analysis Modules at eight cores
- 3D CAD Import Modules (Pro E, STEP, IGES, Inventor, Catia, Unigraphics, Solidworks, Parasolids, other)

XFDTD Bio-Pro includes these additional capabilities:

- SAR capability
- Hi-Fidelity Female and Male Human Body Meshes

Additional acceleration capability is available, including additional capability for multiple GPUs or MPI distributed memory. Please contact Remcom for pricing.

## Speed Comes Standard

XStream GPU acceleration is an included feature in XF7

XStream tremendously improves EM simulation performance by leveraging the powerful NVIDIA graphics processing units (GPUs) available on modern video cards to make ultra-fast FDTD numerical computations – from 30 to 300 times faster than on a modern 64-bit CPU, depending on project size and GPU card configuration. This solution has the potential to save customers months of simulation time in delivering products to market.

Now all XF7 customers can enjoy XStream speed: a license to run a single GPU is included in both XF7 Pro and Bio-Pro. Additional capability for multiple GPUs may be purchased; please contact Remcom for details.

## The Remcom Difference

### Customer Focused

Remcom is absolutely, enthusiastically devoted to listening to our customers and understanding their needs, building requested features directly into the software with each new release. And because we've been providing EM expertise and solutions since simulation software became a reality, you can be confident that many years of experience have gone into the design and functionality of the products we create and the way we support them.

*When you call Remcom for support or even just for advice, you speak directly with our most respected engineers.*

### Personal Attention

Our reputation for providing excellent and accessible technical support is a result of the talent we recruit and our willingness to put our best people in touch with customers in need. When you call Remcom for support or even just for advice, you speak directly with our most respected engineers.

### An Enjoyable Business Collaboration — it's just as important as the software you choose.

Remcom's focus on the customer, EM expertise, and agile corporate culture give us an edge over larger corporations and make doing business with us hassle-free and enjoyable. After all, your company is making an important investment and probably won't be changing tools frequently. So you need to be confident that working with your selected vendor will be a breeze.

## Remcom's Articles and Publications Library

Visit our **Articles and Publications Library** which contains technical papers, case studies and journal articles for all of Remcom's products. The library is sortable by topic, product, and date. Visit the library by going to [www.remcom.com/articles-and-papers](http://www.remcom.com/articles-and-papers)

*Remcom has been leading the EM market with innovative simulation and wireless propagation tools for 15 years. In addition to our flagship product, XFtd, we offer a suite of innovative software and services, accessible and responsive support provided by a staff of experts, and comprehensive training. Our family of products includes:*



**XFtd®:** General purpose, full wave 3D EM analysis software newly updated to Release 7. XF7 will revolutionize your simulation experience.



**Wireless InSite®:** A radio propagation analysis package for analyzing the impact of the physical environment on the performance of wireless communication systems.



**XStream®:** GPU acceleration using NVIDIA's CUDA architecture dramatically speeds numerical computations.



**VariPose®:** A geometric modeling package for the manipulation and refining of high-resolution human mesh models for the medical and biomedical markets.



**XGtd®:** A high frequency GTD/UTD based package for the design and analysis of antenna systems on complex objects such as vehicles and aircraft.



**Rotman Lens Designer™:** A tool for the design, synthesis, and analysis of Rotman Lenses.



Visit [www.remcom.com](http://www.remcom.com) for more information

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