



Datasheet driven antenna simulation with minimal knowledge of communication theory

Editorial Contact:

Viplav Dhunna
Associate – Marketing Communications
Mirabilis Design Inc.
Email: info@mirabilisdesign.com

Mirabilis Design Inc.
2010 El Camino Real Suite 1061
Santa Clara, CA 95050
Tel: 408-245-8992

VisualSim Antenna System Designer enables simulation of Antenna and Communication Systems

Sunnyvale, CA — June 13, 2022 — Mirabilis Design Inc., the leading provider of System-level Intellectual Property and Simulation Solutions for electronics and processors, announced today the release of VisualSim Antenna System Designer. This unique design environment can be configured utilizing information in datasheets. An enabler for any engineer with a computer to simulate RF and Antenna. The engineer can evaluate the feasibility of a new antenna design, select the right antenna configuration for an application and compare antennas from different suppliers. The Antenna System Designer can be used for space, terrestrial, IoT, automotive, medical, radar and networking applications.

Advantages of this new design environment - the engineer, does not need to know antenna or electromagnetic theory, can complete the analysis within days, use information exclusively from the datasheet, not dependent on an antenna expert and, work on multi-antenna scenarios.

“A number of communication system designers have approach us on simplifying the simulation of antenna systems”, said Deepak Shankar, Founder of Mirabilis Design. “Current design tools in the Antenna space require knowledge of Electromagnetics, Antenna Theory, Radio Frequency, Propagation, Transmission Line theory and Microwaves. This is beyond the scope of most antenna users. As antennas become ubiquitous, a platform to truly study their individual benefits at the application-level is critical to manage cost, quality, and efficiency.”

The VisualSim Antenna System Designer will be used by RF architects, communication designers, and system engineers to evaluate the antenna as an individual component or in the context of a complete communication system behavior (protocol, physical baseband, analog, RF, antenna, and channel). Antenna evaluation can be performed by varying the frequencies, distances between antennas, signal strength, path loss, RF gain, multi-antenna scenario, and channel types. Mirabilis Design has tested the system behavior across many antenna datasheets to verify the accuracy and the response to parameter changes.



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Users of VisualSim Antenna Designer can systematically examine the effectiveness of different stages of the communication system by listening to the RF generator output, Tx antenna, Channel and Rx antenna output. The Antenna can be simulated in a full end-to-end communications system with no knowledge of the Antenna internal proprietary specifications or of Antenna theory. Antenna developers can evaluate the feasibility of a proposal, validate the desired parameters based on the customer requirements and confirm the application of the antenna for operation in different conditions.

The innovative technology created by Mirabilis Design enables the users to emulate the accurate behavior of the antenna without the involvement of the manufacturers. Each signal is defined by the gain, coordinates, polarization, carrier frequency, RF transmitted frequency and RF transmitted power. VisualSim Post Processor combines diverse simulation parameter settings, and the VisualSim Insight Engine provides the effect on any of the variables that define the signal.

Mirabilis Design will be exhibiting the VisualSim Antenna System Designer at several Conferences in the next three months.

- Embedded World 2022 Nuremberg Germany in Booth 4-434- <https://calendly.com/mirabilisdesign/ew22>
- INCOSE International Systems Engineering Conference in Booth D3- <https://calendly.com/mirabilisdesign/incose>
- Design Automation Conference in Booth 2143- <https://calendly.com/mirabilisdesign/dac>
- Hot Chips Conference in Virtual Booth

VisualSim Antenna Designers is available now and works with VisualSim 2210. It works on Windows, MAC OS and Windows OS. The platform requires Java 18 to execute simulation. The library contains the RF Generator, Antenna, Channel and RF Receiver components. There are several templates that cover most common antenna scenarios including multi-antenna to base hub. VisualSim Post Processor and VisualSim Insight Engines are separately available products from Mirabilis Design.

About Mirabilis Design Inc.

Mirabilis Design is a Silicon Valley software company, providing software solutions to identify and eliminate risk in the product specification, accurately predicting the human and time resources required to develop the product, and improve communication between diverse engineering teams. VisualSim Architect combines Intellectual Property, system-level modeling, simulation, environment analysis and application templates to significantly improve model construction, simulation, analysis and RTL verification. The environment enables designers to rapidly converge to a design which meets a diverse set of interdependent time and power requirements. It is optimally used very early in the design process



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in parallel with (and as an aid to) the development of the product's written specification and long before an implementation (for example, RTL, software code, or schematic) of that product can even be started.

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To keep abreast with innovations in electronics and to learn about the continued development in VisualSim, you can follow VisualSim on:



Mirabilis Design Inc., 2010 El Camino Real, Suite 1061, Santa Clara, CA 95050