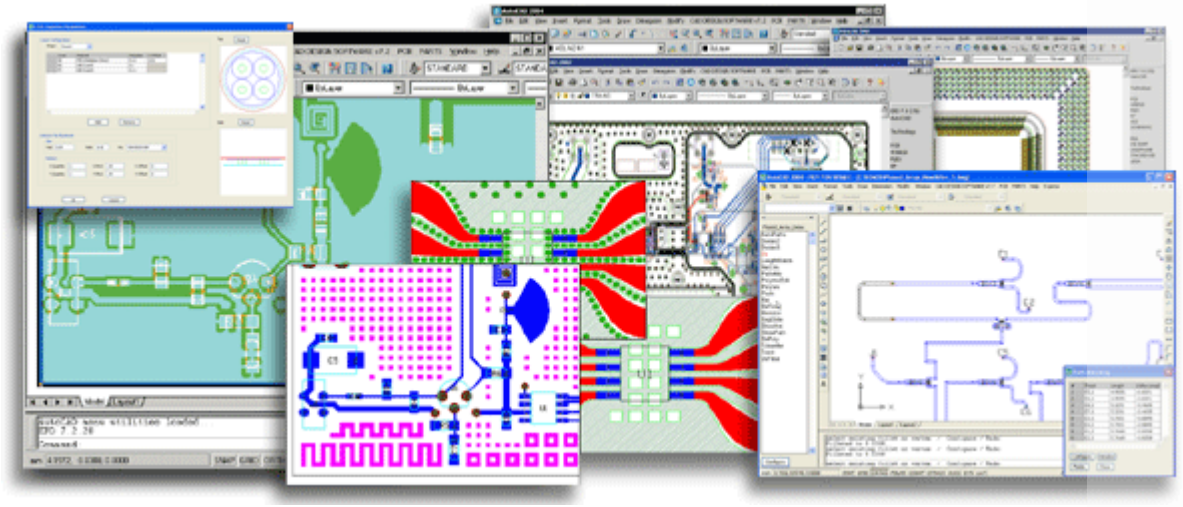
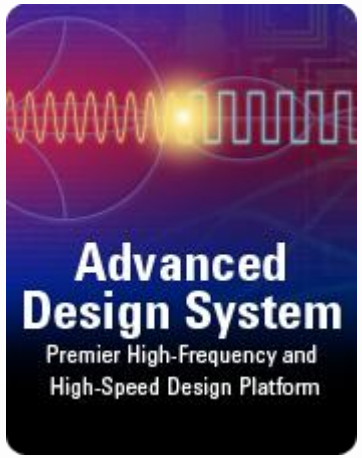


RF Components and Basic Concepts

1.20 - RF Design Software

What are the best simulations softwares ?



1) Advanced Design Systems (ADS)

Advanced Design System (ADS) is an electronic design automation software system produced by Keysight EEsof EDA, a division of Keysight Technologies.

It provides an integrated design environment to designers of RF electronic products such as mobile phones, pagers, wireless networks, satellite communications, radar systems, and high-speed data links.

Keysight ADS supports every step of the design process:

- ✓ Schematic capture
- ✓ Layout
- ✓ Design rule checking
- ✓ Frequency-domain circuit simulation
- ✓ Time-domain circuit simulation
- ✓ Electromagnetic field simulation (EM).

What are the best simulations softwares ?

2) Cadence Design Systems

Cadence Design Systems, is an American multinational electronic design automation (EDA) software and engineering services company. The **Cadence Virtuoso** Analog Design Environment is the advanced design and simulation environment for the **Virtuoso** platform. Designed to help users create manufacturing-robust designs.

Cadence Design Systems supports every step of the design process:

- ✓ Custom IC, Analog, RF Design Flows
- ✓ Library Characterization
- ✓ Circuit Design
- ✓ Circuit Simulation
- ✓ Electrically Aware Design
- ✓ Layout Design
- ✓ Layout Verification
- ✓ RF Design
- ✓ Variation-Aware Design
- ✓ Modeling

What are the best simulations softwares ?

3) AWR (Applied Wave Research)

AWR Corporation is an electronic design automation (EDA) software company, formerly known as Applied Wave Research, and then acquired by National Instruments. AWR software is used for radio frequency (RF), microwave and high frequency analog circuit and system design. Typical applications include cellular and satellite communications systems and defense electronics including radar, electronic warfare and guidance systems.

AWR Design Environment: Microwave Circuit and System Design

- ✓ Microwave Circuit Design
- ✓ RF System Simulation
- ✓ Electromagnetic Analysis

What are the best simulations softwares ?

4) CST (computer Simulation Technology)

- CST offers accurate, efficient computational solutions for **electromagnetic design** and analysis. 3D **EM simulation software** is user-friendly and enables designers to choose the most appropriate method for The design and optimization of devices operating in a wide range of frequencies.

- Products in the CST STUDIO SUITE® family can carry out electro- and magneto static, stationary, low-frequency and high-frequency simulations, as well as being able to calculate the effects of EM fields on substances as diverse as magnetic materials, biological tissues and charged particles.

- The applications of CST software are almost limitless; among the devices that CST products have been used to simulate are couplers, filters, connectors, antennas, inductors, capacitors, PCBs, waveguides, travelling wave tubes, optical devices, sensors, actuators, electrical machines, SAR, MRI coils and cable harnesses, to name but a few.

What are the best simulations softwares ?

5) HFSS (High Frequency structural simulator)

- **HFSS** is a commercial finite element method solver for electromagnetic structures from Ansys.
- It is one of several commercial tools used for

✓ Antenna design

✓ Design of complex RF electronic circuit elements including filters, transmission lines, and packaging.