EM/Circuit Co-simulation for RF PCB Designs

XDS

Highlights

1

As RF PCB/system for 5G, WiFi, and radar applications moves to higher frequencies and becomes more integrated, the traditional flow with separate circuit and EM simulation is not sufficient. Integrated EM/circuit co-simulation is required to ensure first-pass design success.

2

XDS seamlessly integrates Xpeedic's proprietary 3D full-wave EM solver into the circuit analysis flow. The EM/circuit co-simulation allows quick what-if analysis for any layout change to further optimize your system.

3

Manual and error-prone port setup for on-board components is automated

4

XDS supports multiple layout formats including GDS/ DXF/ brd/sip/mcm/ODB++.
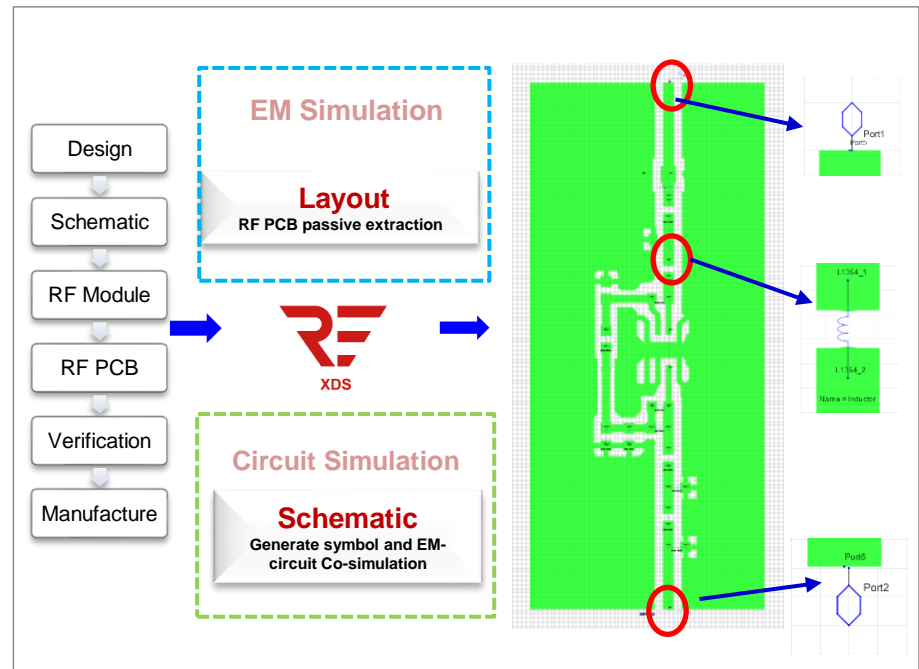
5

XDS supports component model libraries from vendors in the form of compact circuit models and S-parameters.

6

Parametric analysis and optimization allows quick what-if analysis, tuning, DOE, and yield analysis.

RF PCB Co-simulation Analysis Flow

- As RF PCB/system moves to high frequencies and becomes more integrated, layout parasitic can significantly impact the signal transmission and channel quality. RF PCB design flow with EM/circuit co-simulation seamlessly integrated is critical for first-pass design success.
- XDS is a flow that integrates the powerful 3D full-wave EM solver engine, automates the EM model setup, back-annotates the original schematic, and closes the loop with the final circuit analysis.
- Parametric analysis and optimization are supported in XDS to enable what-if analysis, tuning, DOE, and yield analysis.

RF Circuit/EM Co-simulation

- XDS extracts the EM model from the layout of RF module/PCB designs, and the generated symbol is then back-annotated to the schematic and cascaded with passive components such as inductors, capacitors, and resistors to complete the system analysis.
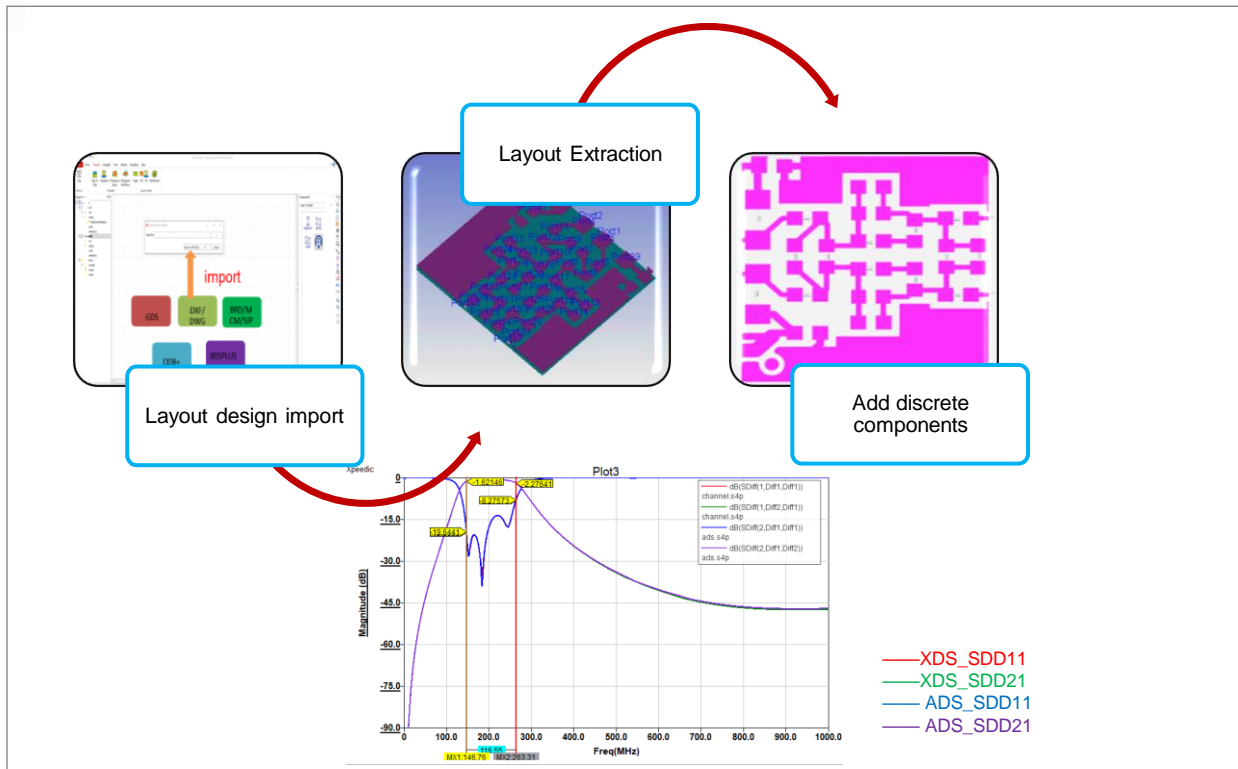
Parametric Analysis and Optimization

- Parametric analysis and optimization are supported in XDS to enable what-if analysis, tuning, DOE, and yield analysis.