

RF System Design Using MathWorks Tools

OEM: MathWorks • Duration: 2 Days (16 hrs) • Code: MW-RF-SYSTEM-DESIGN-USING-MATHWORKS-TOOL

COURSE MODULES & TOPICS

Day 1 of 2

What is RF Blockset?

- Describe what can be done with RF Blockset
- Describe the benefits of using RF simulation techniques
- Articulate why and when RF Blockset is needed

Fundamentals of RF Simulation

- Understand the RF simulation techniques supported by RF Blockset
- Decide when to use Equivalent Baseband or Circuit Envelope
- Build an RF model starting from high-level specifications

Importing S-Parameters and Modeling Linear Elements

- Understand the available techniques to simulate S-parameters in the time domain
- Choose the best modelling approach for S-parameters
- Assess the quality of S-parameters simulation results

Day 2 of 2

Fundamentals of Noise Simulation

- Follow best practices for modeling thermal noise
- Capture the effects of phase noise
- Understand the impact of frequency conversion on noise
- Validate the time-domain results of noise simulation

Modeling Nonlinear Operation

- Modeling even and odd order nonlinearities
- Modeling of AM/AM and AM/PM curves
- Manipulating interferers, spurs, and multi-carrier signals
- Modeling Power Amplifiers including memory effects

Building Tunable Networks and Developing Custom Models

- Build adaptive RF systems including control logic
- Use Simscape language to build custom models in the domain of voltages and currents
- Understand simulation results of custom models