

SimRF™ Release Notes

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SimRF™ Release Notes

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Summary by Version

This table provides quick access to what's new in each version. For clarification, see “Using Release Notes” on page 1.

Version (Release)	New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Latest Version V3.0.2 (R2011a)	No	No	Bug Reports Includes fixes
V3.0.1 (R2010bSP1)	No	No	Bug Reports Includes fixes
V3.0 (R2010b)	Yes Details	Yes Summary	Bug Reports

Using Release Notes

Use release notes when upgrading to a newer version to learn about:

- New features
- Changes
- Potential impact on your existing files and practices

Review the release notes for other MathWorks® products required for this product (for example, MATLAB® or Simulink®). Determine if enhancements, bugs, or compatibility considerations in other products impact you.

If you are upgrading from a software version other than the most recent one, review the current release notes and all interim versions. For example, when you upgrade from V1.0 to V1.2, review the release notes for V1.1 and V1.2.

What Is in the Release Notes

New Features and Changes

- New functionality

- Changes to existing functionality

Version Compatibility Considerations

When a new feature or change introduces a reported incompatibility between versions, the **Compatibility Considerations** subsection explains the impact.

Compatibility issues reported after the product release appear under Bug Reports at the MathWorks Web site. Bug fixes can sometimes result in incompatibilities, so review the fixed bugs in Bug Reports for any compatibility impact.

Fixed Bugs and Known Problems

MathWorks offers a user-searchable Bug Reports database so you can view Bug Reports. The development team updates this database at release time and as more information becomes available. Bug Reports include provisions for any known workarounds or file replacements. Information is available for bugs existing in or fixed in Release 14SP2 or later. Information is not available for all bugs in earlier releases.

Access Bug Reports using your MathWorks Account.

Documentation on the MathWorks Web Site

Related documentation is available on mathworks.com for the latest release and for previous releases:

- Latest product documentation
- Archived documentation

Version 3.0.2 (R2011a) SimRF

This table summarizes what's new in V3.0.2 (R2011a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
No	No	Bug Reports Includes fixes

Version 3.0.1 (R2010bSP1) SimRF

This table summarizes what's new in V3.0.1 (R2010bSP1):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
No	No	Bug Reports Includes fixes

Version 3.0 (R2010b) SimRF

This table summarizes what's new in V3.0 (R2010b):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	Yes—Details labeled as Compatibility Considerations , below. See also Summary.	Bug Reports

New features and changes introduced in this version are:

- “New Circuit Envelope Library” on page 5
- “New Circuit-Envelope Simulation Environment” on page 6
- “New RF System Demos” on page 7

New Circuit Envelope Library

SimRF™ 3.0 software introduces Circuit Envelope Elements, Sources, and Utilities libraries, which contain:

- Capacitor, Inductor, Resistor, and Impedance blocks that can connect in any configuration.
- A 2-port Amplifier block and a 3-port Mixer block, which support second-order and third-order nonlinearity modeling.
- An S-Parameters block for modeling black-box elements with up to four ports.
- Continuous Wave, Sinusoid, and Noise current and voltage sources that can model signals at multiple carrier frequencies simultaneously.
- A SimRF Outport block for probing signals from any location in an RF network.

For a full list of SimRF Circuit Envelope library blocks, see the *SimRF Reference* documentation.

New Circuit-Envelope Simulation Environment

SimRF 3.0 software introduces circuit-envelope simulation of RF systems into the Simulink environment. SimRF circuit-envelope simulation technology is built on the Simscape™ platform. All blocks in the SimRF Circuit Envelope library support the features available in the SimRF environment. For an introduction to circuit-envelope simulation, see the *SimRF Getting Started Guide*.

Compatibility Considerations

SimRF circuit-envelope simulation software diverges from the baseband-equivalent simulation technology of RF Blockset™ version 2.5.1 and earlier. In SimRF version 3.0, RF Blockset software is part of SimRF software. RF Blockset Mathematical and Physical libraries have been renamed SimRF Equivalent Baseband and Idealized Baseband libraries.

- SimRF Circuit Envelope library blocks have different product dependencies than Equivalent Baseband and Idealized Baseband library blocks. To run models with Equivalent Baseband or Idealized Baseband library blocks, you must install DSP System Toolbox™ software. See *Working with SimRF Software* for more information on SimRF product dependencies.
- SimRF Equivalent Baseband library and Idealized Baseband library blocks do not support features of the SimRF environment, such as multi-carrier simulation, signal probing, or general network topologies.
- Blocks in the SimRF Circuit Envelope library do not connect to blocks in the Equivalent Baseband library or Idealized Baseband library. To pass data between these blocks, convert signals from SimRF Circuit Envelope and Equivalent Baseband library blocks to Simulink signals using:
 - Circuit Envelope library SimRF Inport and SimRF Outport blocks.
 - Equivalent Baseband library Input Port and Output Port blocks.
- If you have Signal Processing Blockset™ installed, models built in RF Blockset version 2.5.1 run in SimRF version 3.0.
- RF Blockset version 2.5.1 documentation is contained within the SimRF documentation.

New RF System Demos

SimRF version 3.0 introduces eight new demos:

- AC Analysis of an RF System
- Architectural Design of a Low-IF Receiver System
- Executable Specification of a Direct Conversion Receiver
- Frequency Response of an RF Transmit/Receive Duplex Filter
- Impact of an RF Receiver on Communication System Performance
- Measuring Image Rejection Ratio in Receivers
- Two-Tone Envelope Analysis Using Real Signals
- Validating IP2/IP3 Using Complex Signals

Compatibility Summary for SimRF

This table summarizes new features and changes that might cause incompatibilities when you upgrade from an earlier version, or when you use files on multiple versions. Details are provided in the description of the new feature or change.

Version (Release)	New Features and Changes with Version Compatibility Impact
Latest Version V3.0.2 (R2011a)	None
V3.0.1 (R2010bSP1)	None
V3.0 (R2010b)	See the Compatibility Considerations subheading for each of these new features or changes: <ul style="list-style-type: none">• New Circuit Envelope Simulation Environment