

# Spirent **Wireless Channel Emulator**

## MIMO-OTA Environment Builder

Spirent's MIMO-OTA Environment Builder simplifies control over complex MIMO-OTA testing, shielding the user from the laborious calculations required.

### Applications

- Research and development & design verification
- Performance testing
- Competitive product evaluation
- Diversity & MIMO equipped devices for LTE (including carrier aggregation), Wi-Fi, WiMAX, WCDMA, HSPA(+), CDMA2000 and EV-DO

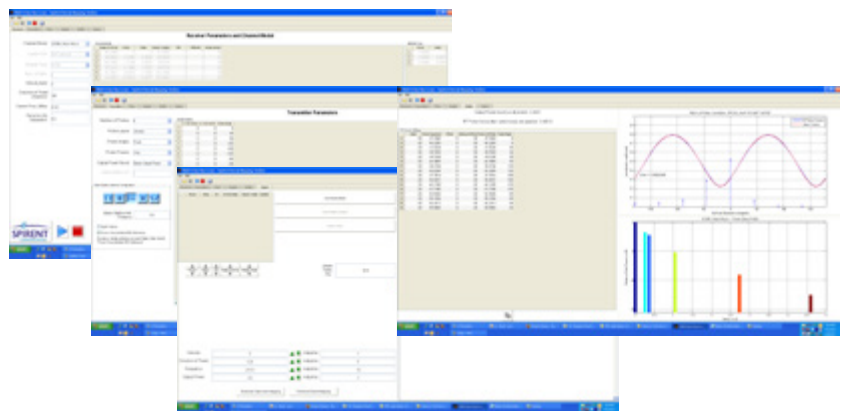
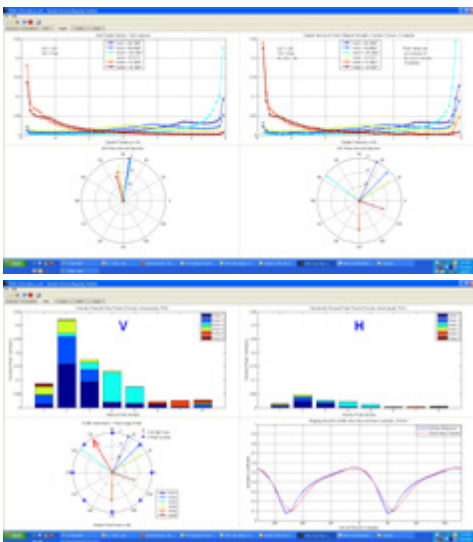
Multiple-Input, Multiple-Output (MIMO) antenna techniques promise to deliver exceptionally high data rates over new and forward-looking wireless technologies, such as LTE-Advanced Pro. The actual data speeds experienced by a user are highly dependent on how well a mobile device performs under the range of harsh mobile environments encountered in the real world. While a traditional conducted (cabled) approach can be used to test LTE device performance, only OTA test methods are able to fully characterize the effect of a device's MIMO antenna design on user experience.

Spirent's MIMO-OTA Environment Builder creates a repeatable test environment for determining the downlink over-the-air (OTA) performance of MIMO devices. By emulating a wide range of real-world spatial environments in an anechoic chamber, the tool enables a user to move beyond the limitations of conducted testing. The software facilitates comprehensive performance characterization including antenna, RF front-end, and baseband signal processing implementations.

Through the characterization of antenna gain or efficiency, branch imbalance and antenna correlation, under dual polarized antenna conditions, MIMO-OTA Environment Builder enables you to precisely characterize the difference between a good and a bad design, before deployment.

### Benefits

- **Test using real-world conditions in the lab**—Supplement conducted testing by creating OTA test signals with realistic spatial properties to evaluate UE designs from antenna to baseband
- **Flexible configurations support evolution of test requirements**—Supports user-selectable test conditions and chamber configurations to adapt to different test requirements
- **Simplify testing and reduce test time**—A straightforward, intuitive GUI lets even inexperienced users succeed; a full-featured API facilitates test automation; real-time in-test control minimizes test reconfiguration time.



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### Key Features

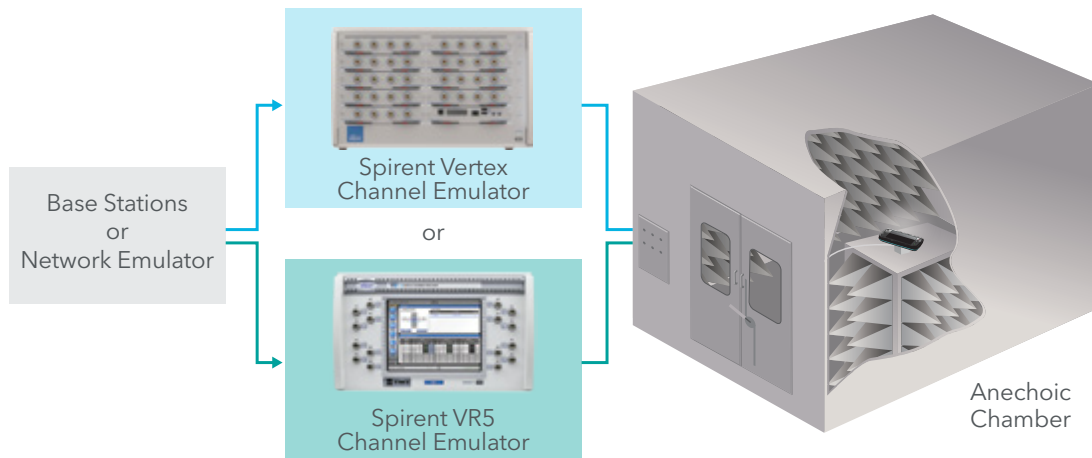
- Dynamic modeling of radiated environment conditions using the Dynamic Environment Emulation (DEE) feature
- Real-time environment re-configuration reduces test time and increases coverage
- Circular/sector probe arrangements enable testing for a wide spectrum of MIMO devices
- Emulates real-world wide-band conditions (e.g., narrow angle spread, angles of arrival)
- Graphical feedback validates accuracy of spatial field
- Spatial Channel Model support for both standard and user-defined models
- Supports multi-band carrier aggregation for LTE-Advanced and multi-RAT
- API for automation
- Multiple base-station antenna polarizations and channel parameters

### Technical Specifications

Number of antenna probes	4 to 32
Transmit antenna	2xN and 4xN MIMO 2 and 4
Probe layouts supported	Sector, circular at flexible chamber locations
Channel models	Standard channel models including 3GPP SCM/SCME, CTIA, WINNER, ITU, 802.11n/ac, and Classical User-defined channel models
Figures of merit supported	MIMO Throughput, Channel Quality Indicators (CQI), Total Radiated Power (TRP), Total Radiated Sensitivity (TRS), Spatial Correlation, Gain Imbalance, Antenna Efficiency and Mean Effective Gain
Transmit antenna polarization	Single or dual +, x, ll, l-, \/, and xx

### Ordering Information

Part Number	Description
MIMO-OTA-MEB	MIMO-OTA Environment Builder



### Contact Us

For more information, call your Spirent sales representative or visit us on the Web at [www.spirent.com/ContactSpirent](http://www.spirent.com/ContactSpirent).

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