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PRODUCT BRIEF

Advanced MIMO Platform with Leading Edge Performance, Power Consumption, Size and Noise

- Latest MIMO Channel Emulator from Azimuth optimized for the latest generation of wireless protocols.
  - Advanced Support for Carrier Aggregation including 50MHz AWGN
  - Advanced Channel Modeling
  - New Ease of Use Features
  - Scalable and Modular Solution
- Satisfies the needs of multiple departments - research, engineering, and quality assurance
- Used by leading infrastructure, device and chipset vendors, operators, test labs & universities

azimuthsystems.com

ACE MX2 MIMO Channel Emulator

2G/3G/4G LTE and beyond wireless access technologies promise speeds of 350 Mbps and higher for delivery of high-speed data, video and voice services. High throughput delivery for LTE is achieved using orthogonal frequency-division multiplexing (OFDM) and advanced antenna techniques such as Multiple-Input, Multiple-Output (MIMO). MIMO performance depends on the radio channels in which it operates, and accurate and repeatable lab characterization of RF environmental effects such as multipath and fading is critical for reliable testing of conformance, performance and interoperability of the systems. Testing such conditions can only be achieved through the use of channel emulation.



At only 60% of the noise and in only 60% of the footprint of Azimuth's earlier solutions, the ACE MX2 delivers on both the required performance and functionality while offering a solution that addresses the ever more demanding facilities requirements in the test labs at carriers, infrastructure and device OEMs as well as chipset vendors.

The ACE MX2 is a state-of-the-art channel emulator, purpose-built to address the latest challenges of "Real World" testing and is designed to meet the demanding RF needs of MIMO systems. The ACE MX2 product line combines industry-leading channel emulation capabilities in a comprehensive design to deliver a range of configurations for MIMO and/or SISO system testing, with uni- and bi-directional configurations.

The Azimuth ACE MX2 continues to deliver:

- Rapid Set-up and Automation
- Unparalleled Ease-of-Use
- Unmatched RF Performance and Fidelity
- Superior Scalability and Flexibility
- Outstanding Value

Channel Emulation Specifications

Max Number of Channels	Scalable from 4 to 64 channels
Taps per Channel	24
Channel Models - Model Packs:	Industry standard models such as: - WiMAX Forum Channel Models based on ITU M.1225 - 3GPP SCM, Channel Models (Spatial channel model for Multiple Input Multiple Output (MIMO) simulations) - 3GPP/3GPP2 GSM/CDMA/3G Channel Models (SISO Models from the 3GPP and 3GPP2 for GSM, CDMA, EDGE, HSPA etc.) - 3GPP LTE Channel Models - SCME Channel Models for link level Extended SCM Models - IMT-A and SCME-A Spatial Channel Models - High speed train model scenarios - Birth/death and moving propagation scenarios
- Custom Model mode	User friendly interface to program new or edit existing channel models/ Geometric Modeling Tool (GMT) available
- Bypass mode (identity matrix)	no correlation, no fading, no multipath
- Butler mode (Butler matrix)	no correlation, no fading, no multipath
Maximum Doppler Shift	2 kHz (>500 km/hr @ 3.6 GHz)
Programmable Propagation Delay	0 to 1.0 msec

Note: Specifications are preliminary and subject to change.

RF Specifications

RF Input Frequency	450 - 2700 MHz
Center Frequency	Tunable in 10 KHz steps
Bandwidth	50 MHz
Input Signal Level	+15 to -40 dBm
Crest Factor	15 dB
RF Attenuator Range	75 dB
RF Output Power Peak	-5 to -118 dBm
Residual EVM (Error Vector Magnitude)	< -40 dB typical With 10 MHz OFDM Signal Input power = -10dBm Output power = -43dBm
Additive White Gaussian Noise (AWGN) SNR setting - Resolution - Crest factor	 -30 to +35 dB 0.1 dB 10 dB

Physical Specifications

Dimensions	5.55" H x 17.45"W x 18" D (0.14m H x 0.45m W x 0.45m D)
Weight	~40 lbs. (~18 kgs)
Power	100 - 240 VAC, 50-60 Hz, 4.0/2.0 Amps

ACE MX Configurations

Test Configurations	- 1x1, 2x2, 2x1/1x2, 4x4, 4x1/1x4, 4x2/2x4, 8x1/1x8, 8x2/2x8, 8x4/4x8 - Uni-directional and bi-directional - SISO, SIMO, MISO, MIMO - Calibrations for beamforming - Point-to-point and point-to-multipoint (Handoff) - Single and multilink capable

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Azimuth ACE MX Wireless Channel Emulator
Test & Measurement World BEST IN TEST AWARD WINNER

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