WIRELESS SOLUTIONS AMS-8055 MIMO Single Cluster Environment Simulator

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ETS-Lindgren's AMS-8055 MIMO Single Cluster Environment Simulator is a compact, fully anechoic RF enclosure for testing a wide range of portable wireless devices and mobile handsets in free-space or using a simulated human head and hands (optional). As a self-contained freestanding system, the AMS-8055 is the ideal solution when space is limited. The enclosure provides attenuation >100 dB from 700 MHz to 18 GHz making the measurement results stable, repeatable, and undisturbed by external interference.

The AMS-8055 supports repeatable radiated performance measurements of wireless devices in a simulated multi-path environment. It can be equipped with any combination of optional Test Packages to evaluate downlink MIMO as well as SISO (pre-compliant) performance.

Using a single cluster multi-antenna array, the system supports generation of spatial field structures similar to those seen in common real-world scenarios. Standard conducted channel models can be adapted to equivalent radiated spatial channel models for evaluation of the entire device signal chain including antennas, device platform, and near-field phantom impact.

This MIMO OTA test system may be used for rapid prototyping, design validation, pre-certification testing, performance measurement, and production sampling.

5G capable with SUB-6 upgrade available. Contact your ETS-Lindgren representative for details.

Key Features

- Efficient MIMO Over-the-Air (OTA) Performance Measurement
- SISO OTA Performance Measurements
- 2D/3D Antenna Pattern Measurements
- Frequency Range 700 MHz to 6 GHz
- Path length: 1.5 m
- Ideal for Pre-Compliance Testing

Features

Single Cluster Array

The single cluster multi-antenna array includes dual-polarized Vivaldi antennas mounted to the interior of the test cell. The array is configured with RF-cables inside and outside the test cell to connect antennas to technology-specific communication test equipment through a radio channel emulator.

Integrated Multi-Axis Positioning System (MAPS)

The included positioning system allows the wireless device under test (DUT) to be rotated through the generated field structure to determine its relative performance in different orientations within the simulated environment.

- Self-Contained, Moveable Cart System
- No Special Installation/Construction
- EMQuest™ Data Acquisition and Analysis Software

8-port Power Amplifier is used to increase the channel emulator output for OTA testing.

Pre-Compliance Testing

If you're using an external test house for certification testing, our system can help you go fully prepared. OTA MIMO performance measurements made in the AMS-8055 have shown good correlation to measurements made in larger, fully compliant chambers.

Compact Anechoic RF Enclosure

The AMS-8055 is an ideal solution when space is a limitation. It can be used as a self-contained test lab for making fast, OTA performance measurements of small wireless devices and mobile handsets for both MIMO and SISO OTA.

Self-Contained Moveable System

The AMS-8055 is incorporated into a moveable chassis: the entire system can be transported between different test stations. The ability to transport the system makes it an ideal solution for use by multiple research and development groups.

Easy Installation

The AMS-8055 is easily installed into new or existing construction. Additionally, the moveable cart assembly allows for the system to be easily relocated within a testing facility.

EMQuest Data Acquisition and Analysis Software

The baseline test suite includes fully automated 2D (polar) and 3D (spherical) pattern measurement capabilities as well as various frequency response measurements for testing both passive antennas and active wireless devices in either transmit or receive mode. General post-processing capabilities include calculation of antenna properties such as half power beam-width, directivity, gain, radiation efficiency, total radiated power, and total isotropic sensitivity, as well as various partial surface performance metrics required by the different OTA test requirements. Data can be exported to Microsoft® Excel and Adobe® PDF files or saved in Microsoft® RTF format.

Specifications

Electrical Specifications

Frequency Range: 700 MHz to 6 GHz
Path Length: 1.5 m
Positioner: 0.1° Resolution
Electrical (VAC): 208/240 VAC; NEMA 6-15
Voltage (Hz): 50/60 Hz
Amps: 10 A
Plug Type: NEMA or Schuko (Please Select One)
Shield Performance: >100 dB
Shield Material: Aluminum

Physical Specifications

Dimensions (L x W x H): 2.6 m x 2.6 m x 1.9 m (8.53 ft x 8.53 ft x 6.23 ft)
Shielded Door Dimensions: 73.7 cm x 73.7 cm (29 in x 29 in)
Weight (Nominal): 953 kg (2,100 lb)

Other Specifications

- RF Shielded Enclosure with Single Leaf Manual Door
- Anechoic Absorbers on all Interior Surfaces Including Flex Coated Absorber in Accessible Regions
- Integrated Multi Axis Positioning System (MAPS)
- Free Space and Phantom Head Mounts
- Fixed Dual Polarized Vivaldi Antenna
- 8 Port Power Amplifier
- EMCenter Modular RF Platform for Positioning Control and Switching
- Ferrite Beaded Cables for Range Calibration
- Workstation Computer with Intel® Quad-core Processor
- EMQuest Data Acquisition and Analysis Software
- Design, Two Days On-site Setup and General Operating Training