WIRELESS SOLUTIONS AMS-8500 Antenna Measurement System

ETS-Lindgren's AMS-8500 Antenna Measurement System is a turnkey solution for making compliant Over-The-Air (OTA) performance measurements.

ETS-Lindgren's AMS-8500 Antenna Measurement System is a turnkey solution for making compliant Over-The-Air (OTA) performance measurements. This system is ideally suited for automated measurement of antenna performance of wireless devices, and devices with embedded wireless functions as well as traditional antenna pattern measurements for passive antennas. The AMS-8500 system is fully configured to perform both R&D and type approval measurements for transmit power and receiver performance of wireless devices in accordance to the CTIA Over-The-Air (OTA) test plan. The system can also be used to perform traditional passive antenna measurements to obtain more generic antenna properties. Our system packages offer you a choice of components to fit your custom testing needs.

The system is designed as a general platform to support testing various wireless devices at far-field test distances. It supports far-field measurements at a separation distance of approximately 4.9 m (16 ft). The measurement antenna allows testing from 690 MHz to 10 GHz. Extension to higher frequencies is also achievable via optional antennas.

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

Key Features

- Fully-compliant for CTIA Over-The-Air (OTA) Testing for Wireless Devices

- Passive Antenna Measurements

- Frequency Range:

  - 690 MHz to 6 GHz (Standard)

  - 400 MHz to 6 GHz (Optional)

  - 690 MHz to 10 GHz (Optional)

- Modular High Performance Shielded System

- Multi-Axis Positioning System (MAPS) for High Resolution 3D Pattern Testing

- Path Length 4.9 m

Features

Rectangular Chamber

The AMS-8500 is a rectangular chamber designed to operate down to 400 MHz, with the upper frequency limit of the chamber only limited by the dual-polarized measurement horn antenna; the standard measurement antenna used in AMS-8500 has an upper frequency range of 6 GHz. Additionally, this series of anechoic chambers is designed to have better than –25 dB in Quiet Zone (QZ) reflectivity.

Multi-Axis Positioner System (MAPS)

ETS-Lindgren's Multi-Axis Positioner System (MAPS) is designed with adjustment rails to position the Antenna Under Test (AUT) to the center of rotation axes (both in Theta and Phi axes) for accurate antenna measurements. The MAPS rotates the device under test (DUT) around two orthogonal axes for full spherical coverage. To minimize measurement errors, the vertical support structures are constructed from low-density dielectric material to provide RF transparency during the measurement. MAPS are available in three different models including Light Duty, Medium Duty, and Heavy Duty depending on user specific requirements. Each one of the models

- EMQuest™ Data Acquisition and Analysis Software

Instrumentation

AMS-8500 system packages can be incorporated with a variety of RF instrumentation for user specific measurement requirements. The system can be configured to perform generic antenna measurement by using a multi-channel Vector Network Analyzer (VNA). A spectrum analyzer or power meter can be used as the receiver instrument for active antenna measurements. For transceiver measurements, a digital package Communication Analyzer can be added to provide transceiver communication link measurements for sensitivity and bit error rate tests.

EMQuest Data Acquisition and Analysis Software

ETS-Lindgren's EMQuest Antenna Measurement Software supports data acquisition in either the great circle-cut or conical-cut test sequence to perform full spherical antenna measurements for Instruments Under Test (IUTs) in either transmit or receive mode. Post-processing calculations include derivation of antenna half-power beam-width, directivity, gain, radiation efficiency, total radiated power, and total optional isotropic sensitivity. AMS-8500 also provides derivation of CTIA specific near-horizon partial radiated power and near-horizon sensitivity. Advanced graphic capabilities allow acquired data to be displayed in a variety of 2D and 3D formats. Tabular data can be exported to Microsoft Excel™ spreadsheets. Reports can be exported to PDF files or saved in RTF format for import to Microsoft Word™.

Integration

ETS-Lindgren provides custom field installation of the chamber, positioner, antenna, rack with RF cable circuitry, and the antenna measurement software.

Training

ETS-Lindgren provides training on operation of the positioner device, controller, and the test and measurement software. The training package will also provide a generic theoretical review of antenna measurement principles.

Specifications

Electrical Specifications

Frequency Range:
- 690 MHz to 6 GHz
- 400 MHz to 6 GHz (Optional)
- 690 MHz to 10 GHz (Optional)

Path Length: 4.9 m
Voltage (Hz): 50/60 Hz
Shield Material: Aluminum

Physical Specifications

Shield Dimensions (L x W x H): 7.3 m x 3.7 m x 3.7 m (24 ft x 12 ft x 12 ft)
Overall Dimensions: 7.5 m x 3.9 m x 3.9 m (24.75 ft x 12.75 ft x 12. 83 ft)
Shielded Door Dimensions: 1.2 m x 2.1 m (3.92 ft x 6.83 ft)

Other Specifications

- RF-shielded Enclosure
- Single Leaf RF Shielded Personnel Door
- Waveguide Air Vents on Chamber Ceiling
- Fiber Optic LED Light System
- Connector Panel Including Four Type N, Four Type SMA, Four ST to ST-type fiber Optic Connectors and One 3.8 cm (1.5 in) Pipe Penetration with End Caps
- Fully Anechoic Absorber Lining
- Power Line Filters
- Dual-Polarized Horn Measurement Antenna on Quick Release Panel
- Multi-Axis Positioning System (MAPS) with Positioner Controller
- Two Log Spiral Communication Antennas
- Range Calibration and Ripple Test Mount Kit
- Ferrite Beaded RF Cables for Range Calibration and Passive Antenna Testing
- EMCenter™ Modular RF Platform for Positioner Controller and Switching
- Antenna Mounting Fixture for Range Calibration
- Free Space and Head & Hand Mount Kit
- Fully Integrated 19 in Rack System
- Workstation Computer with Intel® Quad-core Processor
- EMQuest EMQ-100 Antenna Measurement Software
- DockOn Quarry Advance Analysis and Reporting Tool
- Design, On-site Setup and Operating Training