

AMS-8040 Antenna Measurement System



ETS Lindgren's AMS-8040 Antenna Measurement System is a self-contained enclosure for making over-the-air testing of wireless devices in free-space. The AMS-8040 Antenna Measurement System supports over-the-air testing of mobile handsets in free-space. It is ideal for wireless device measurements including pre-certification, design verification, production sample, desense, and regression testing.

It can also be used to measure approximate EIRP, EIS, or RSSI in a given direction and polarization. These results can be used to compare the behavior of multiple identical devices or the same device under different conditions such as external interference or desensitization due to other platform components or radios.

5G FR1 Over-The-Air (OTA) test solutions are now available! ETS-Lindgren offers a turnkey package which will enable support for 5G NR SISO non-standalone [NSA] and/or standalone [SA] testing in the FR1 band.

Key Features

- Efficient Over-the-Air (OTA) Antenna Pattern Measurements
- Self-contained, Roll-about Casters for Mobility
- Frequency Range: 400 MHz to 6 GHz
- Path Length: 1 m
- DUT I/O Ports: 2 SMA Connectors and 3 Type N Connectors
- Two-axis DUT Positioner
- > 80 dB Typical RF Isolation
- No Special Installation or Construction Required
- Onsite Setup and Training

Product Features

Antennas

The AMS-8040 is equipped with a dual-polarized Vivaldi antenna (Model 3165-02) for both linear and circular measurements over the frequency range of 400 MHz to 6 GHz. The antenna is mounted on a removable access panel at the top of the enclosure. The antenna can be interchanged with another antenna of a different frequency if needed. Two dual-polarized antennas are used for communication with the DUT. Two-Axis Positioner 3D antenna measurements can be made using the AMS-8040's two-axis positioner. The positioner is constructed of low-dielectric materials and is designed for handheld devices weighing up to 454 g (1 lb). The positioner is controlled by EMQuest Software.

RF Shielding

The RF-shielded anechoic enclosure is compact and freestanding; ideal when space is limited. The portable chassis makes it an excellent choice for multiple research and development groups since it can be moved from one test group to another through doors as small as 0.9 m x 2.1 m (3 ft x 7 ft). The RF shielded door uses compressible finger stock in a "knife edge" configuration. Two latch points with a single point handle provide secure sealing and one-hand operation. Typical RF isolation of both the shielding and door is greater than 80 dBs.

Anechoic Absorber

FlexSorb, a flexible RF absorber that bends and returns to its original form, is used in AMS-8040 to eliminate breakage from extended lab use. The absorber is performance optimized and limits reflections and moding for more accurate, repeatable measurements. Tapered wedges line the walls, pyramidal absorber is used on the floor, and lossy foam lines the antenna.

Connector Panel

A connector panel (bulkhead feedthrough) is included with the AMS-8040. The panel includes a power line filter, two SMA connectors, and three type N Connectors for customer use. Two ST connectors are reserved for the two-axis positioner, and two additional type N connectors are reserved for the two DUT communication antennas.

EMQuest Data Acquisition and Analysis Software

The AMS-8040 System includes our versatile EMQ-100 Antenna Pattern Measurement Software. The software makes fully-automated pattern and frequency response measurements for active antennas. Post-processing capabilities include calculations for directivity, gain, radiation efficiency, total radiated power, and total isotropic sensitivity. EMQ-100 also calculates industry specific quantities such as Near- Horizon Partial Isotropic Sensitivity (NHPIIS) required by the CTIA Test Plan for Mobile Station Over-the-Air Performance. Advanced graphing capabilities allow data to be shown in a variety of 2D and 3D formats, exported to Microsoft Excel, PDF files, or saved in RTF format.

Specifications

Physical Specifications

Dimensions (H x W x L): 194.3 cm x 74.9 cm x 86.4 cm (76.5 in x 29.5 in x 34.0 in)
Shielded Door Dimensions: 48.3 cm x 48.3 cm (19.0 in x 19.0 in)
Weight (Nominal): 238.0 kg (525.0 lb)
Maximum DUT Weight: 454g (1 lb)

Electrical Specifications

Frequency Range: 400 MHz to 6 GHz
Cross Polarization: >25 dBs
Path Length: 1.0 m
Drive System Electrical (VAC): 208/240 VAC; NEMA 6-15
Equipment/DUT Electrical (VAC): 115/230 VAC; NEMA5-15
Voltage (Hz): 50/60 Hz
Amps: 10 A
Plug Type: IEC 320
Shield Performance: >80 dB
Shield Material: Aluminum

Product Options

- 2G/3G Cellular SISO Test Package
- Wi-Fi SISO Test Package
- LTE-SISO Test Package
- A-GNSS (A-GPS for 2G/3G) Test Package
- A-GNSS (A-GPS for 4G) Test Package
- Bluetooth Test Package
- Bluetooth Low Energy Test Package
- TD-SCDMA Test Package
- RSE Test Package

Product Configuration

- RF Shielded Enclosure
- RF Shielded Door
- Anechoic Tapered Wedge Absorber on Side Walls and Pyramidal Absorber on Ceiling & Floor
- Integrated 2-axis Positioning System
- One Dual-polarized Measurement Antenna

- Two Dual-polarized Communication Antennas
- Connector Panel with Two SMA and Three Type N Connectors for DUT I/O
- EMCenter Modular RF Platform
- Ethernet fiber Optic Media Converter
- Fully integrated Rack System
- Workstation Computer with Intel Quad-core Processor
- EMQuest EMQ-100 Antenna Measurement Software
- Design, Two Days on-site Setup and General Operating Training