

QuietBox-AVS



Antennas

The dual polarized measurement antenna has a frequency range of 700 MHz to 6 GHz, and covers all currently used wireless service frequencies. Two input feeds allow for making simultaneous measurements in two polarizations at a single angular position. An optional broad band communications antenna with frequency range of 800 MHz to 3 GHz is utilized for communications with wireless devices. Optional precision sleeved Dipoles and reference Loop Antennas are utilized for calibrating the range to CTIA measurement methods.

Software

Antenna Measurement Software (AMS) performs 2-D (polar/rectangular) and 3-D (spherical) antenna pattern measurements for passive antennas and active wireless mobile stations (cell phones). Insertion loss of passive devices is included as part of the calibration component. Data management and reporting of antenna properties such as half power beam-width, directivity, gain, radiation efficiency, total radiated power, and total isotropic sensitivity. AMS performs all measurements required by the CTIA Over-the-Air Performance Test Plan. Insertion Loss / Gain measurements can be made on cables, preamps and attenuators as part of the calibration process. Please see supplementary documentation AMS V 4.0 for a detailed description of the measurement software.

Supported Instrumentation

The AVS system supports a variety of RF instrumentation for your measurement requirements. The system can be configured to perform generic antenna measurements and or all of the CTIA OTA measurements by using a Vector Network Analyzer (VNA) and a Base Station Simulator (BSS). A VNA, Receiver, Spectrum Analyzer or Power Meter can be used as the receiver instrument for active antenna measurements. A VNA or a Spectrum Analyzer and a Signal Generator can be utilized for Passive Antenna Measurements.

Integration

Raymond RF provides field installation of the chamber, positioner, antenna, RF cable circuitry, and the antenna measurement software. After installation of the system, an optional chamber certification test can be conducted using calibrated antennas and the installed positioner and by following the test procedure defined in CTIA ERP Chamber Certification Procedure. The Ripple test will demonstrate that the measured field strength within the quiet zone is less than 2 dB peak-to-peak ripple (or +/-1.0 dB) variation due to any chamber and positioning device imperfections. As another optional feature, the antenna range calibration will be provided at any number of test frequencies specified by the customer using the standard antenna method to provide range insertion loss to be incorporated into the software.

QuietBox-AVS

The Raymond RF
Antenna Validation System

As an Industry leader,
We are committed to
providing innovative solutions
of the
highest quality



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Features



The QuietBox AVS (Antenna Validation System) performs 2-D (polar/rectangular) and 3-D (spherical) antenna measurements for passive antennas and active wireless mobile stations (cell phones). Designed as an Engineering tool for pre-compliance testing, each QuietBox AVS is delivered fully characterized.

The AVS-700 includes a portable 1200mm x 1200mm x 2100mm QuietBox-AR-700 Range for frequencies above 700 MHz and the AR-1000 a 915mm x 915 x 2100mm range for frequencies above 1000 MHz.

Fully automated measurements can be made with Raymond RF's Antenna Measurement Software (AMS) which is included with an AVS system. AMS handles the data management and reporting of antenna properties such as half power beam-width, directivity, gain, radiation efficiency, total radiated power, and total isotropic sensitivity. AMS performs and reports all measurements required by the CTIA Over-the-Air Performance Test Plan. Characterizing the Insertion loss of passive devices is also included as part of the AMS.

Standard

System Description

Each AVS includes:

- RF-shielded QuietBox-AVS anechoic chamber including RF shield and absorber.
- Each chamber is tested per IEEE-299 for RF Isolation
- Raymond RF SD-455 2D Positioner or optional SD-4553D positioner
- Dual Polarized Measurement Antenna, 700 MHz - 6 GHz
- Remote RF Switch (automated selection of polarization)
- Cables for pre-compliance system:
- National Instruments GPIB-USB-H Interface
- Raymond RF's Antenna Measurement Software, Drivers for our clients Vector Network Analyzer, Spectrum Analyzer, Power Meter, Receiver, Signal Generator, Base Station Simulator, Remote Attenuators, RF Switches, and the 2D/3D Positioner
- Turnkey software and hardware integration and system training
- Technical and Software support for one year

Anechoic Chamber

QuietBox-AR 700 1200 mm x 1200 mm x 2100 mm for frequencies above 700 MHz and QuietBox-AR 1000 915 mm x 915 mm x 2100 mm range for frequencies above 1000 MHz..

- Black Satin Powder coat finish on cart and QuietBox - AVS Range
- All aluminum Rolling Cart with middle shelf
- 2 each N-type RF Coaxial feedthroughs
- 3 each SMA RF Coaxial feedthroughs
- 15A power package including 2-wire 120VAC 15A power line filter, 10' external power cord with 15A plug, internal 15A duplex receptacle
- 10/100/1000 Base T fibreoptic network filter (100 dB shielding between 10 kHz and 10 GHz)
- 160 cfm ventilation package including 2 honeycomb vents, 160 cfm fan and switch
- See supplement document QuietBox-AR

{ 5 -455 2D Positioner

- Theta (Azimuth) Axes:
 - 18" diameter
 - Variable speed to 3 rpm., +/- 0.10 deg accuracy
 - 0-360 degree rotation.
 - 45 kg (100 lb) load rating, uniform weight distribution.
 - See supplement document- Spiratable

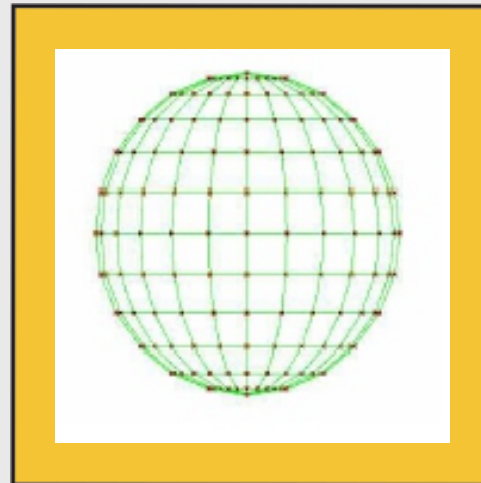
SD-455 3D Positioner (optional)

- Theta (Azimuth) Axes: (same as above)
- Phi (Elevation) Axes
 - Variable speed to 3 rpm., +/- 0.10 deg accuracy
 - 0-360 degree rotation.
 - 20 kg (44 lb) load rating
 - All dielectric construction, top treated with absorber
 - Adjustable rails to position the Device Under Test (DUT) near the center of rotation for more accurate antenna measurement of a large DUT.
 - See supplement document 3D Positioner

Optional

Optional Equipment

- Raymond RF SD-455-3D Azimuth (Theta) and Elevation (Phi) positioner
- Communications Antenna
- Precision Sleeve Dipoles and Reference Loop Antennas (824, 836, 849, 869, 881, 894, 1850, 1880, 1910, 1930, 1960, 1990 MHz) with mounts and ferrite beaded cables for range calibration and site validation (ripple test) per the CTIA OTA test plan.
- Self leveling laser level with tripod for accurate alignment
- Network Video Camera which interfaces via Ethernet to a PC.



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