

4GHz Radiation Measurement System

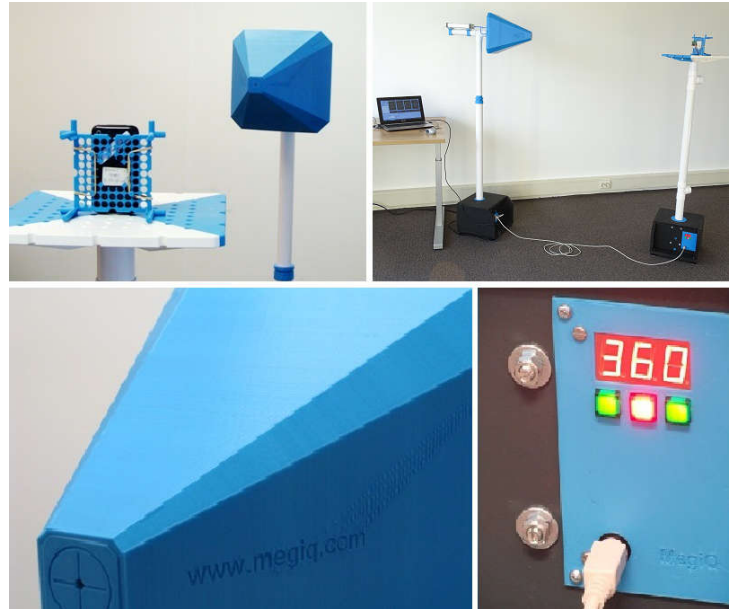
The MegiQ Radiation Measurement System (RMS) is a compact test system that performs 3-axis radiation pattern measurement in non-anechoic spaces.

With a frequency range of 700MHz to 4GHz it is well suited for characterization and measurement of **Antenna Radiation Patterns, Antenna Gain, ERP, TRP, Field Strength.**

Extensive evaluation has shown that – with proper setup - the accuracy of the RMS is similar to that of anechoic test labs.

Characterize wireless devices of today, like IOT devices, routers, phones, domotica products, electronic gadgets, tablets, laptops, RF-modules etc.

The RMS has proven to be a tremendous asset during the development and evaluation of wireless devices. The savings on time consuming range tests and test-lab measurements will pay for the RMS in just a few projects.



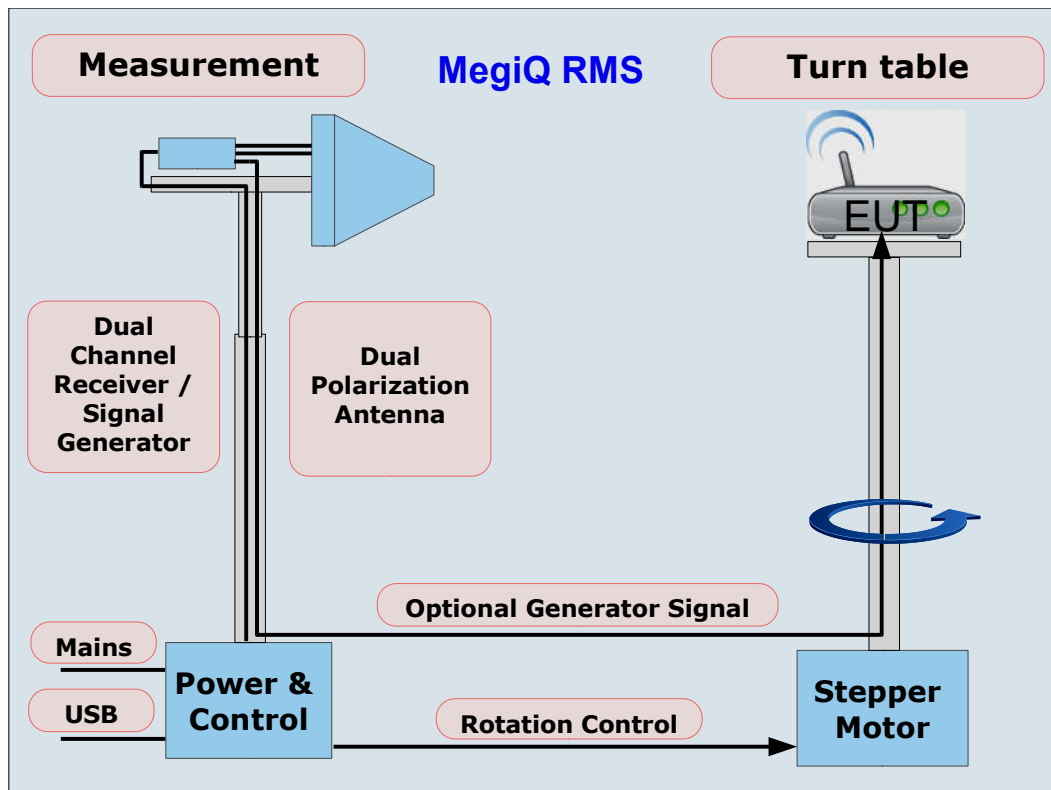
Measure Antenna Patterns in minutes

No anechoic chamber required

Features

- Measurement of RF device Constant Carrier radiation patterns.
- System frequency range 700 to 4000 MHz.
- Measuring distance 0.8 to 3 meter.
- Simultaneous Horizontal and Vertical polarization measurement.
- Simultaneous measurement of harmonic radiation.
- 3-axis measurement (1 turn per axis)
- Minimum step size 2 degrees
- Narrow antenna beam-width for non-anechoic environments.
- Narrow receiver bandwidth for non-shielded environments.
- Plots per axis and semi 3D.
- Plots of radiated power ERP (dBm), Antenna Gain (dBi), Field Strength (dBuV/m).
- Calculation of TRP, Minimum, Maximum and Average radiation.
- Integrated PC software suite supports measurement setup, rotation control, graphing, data storage and report generation.
- Optional Generator output for standalone antenna measurement.
- Optional Heavy Duty turntable (30kg).

Measurement System



Measurement

- Antenna height 100cm to 170cm
- Dual Polarization Antenna
- Dual channel measuring receiver
- Generator output (option)
- Rotation controller unit
- Power supply
- USB connection for computer control
- Mains connection

Turn Table

- Height 70cm and 130cm
- Stepper motor drive
- 30 seconds per rotation
- Smooth acceleration
- Table size 28 x 28cm
- Max EUT weight: 7.5kg
- Heavy Duty table: 100 x 50cm, 30kg

The RMS rotates an object on the turntable and measures the radiation. With a rotation around the X, Y and Z axis the software plots the patterns and calculates statistics including Total Radiated Power (TRP). Each measuring point can contain a sweep of multiple frequency, so that multiple radiation patterns can be measured in one rotation sequence.

With the Generator option the RMS can also perform an antenna sweep and show the antenna gain over frequency.

The RMS comes with an object fixture for small devices that allows easy positioning of the EUT in orthogonal positions on the object table. A labeling system helps the user to keep track of the axes.

The RMS system works well in a moderate space. A 4 x 4 x 3 meter room works well above 800MHz. For smaller spaces a few strategic absorbers may be required.

A report on accuracy evaluations of the RMS is available on request.

Software



The RMS software controls the measurement system and allows easy setup and performing the measurements, organizing the data and create reports. It will guide the user through the 3 rotation axis steps.

For EUT with a constant carrier mode the RMS is used in a passive mode to rotate the EUT and record the field strength. The receiver can measure multiple frequencies for each measurement point so that harmonic patterns (up to 4GHz) can be measured simultaneously. The minimum step size is 2 degrees.

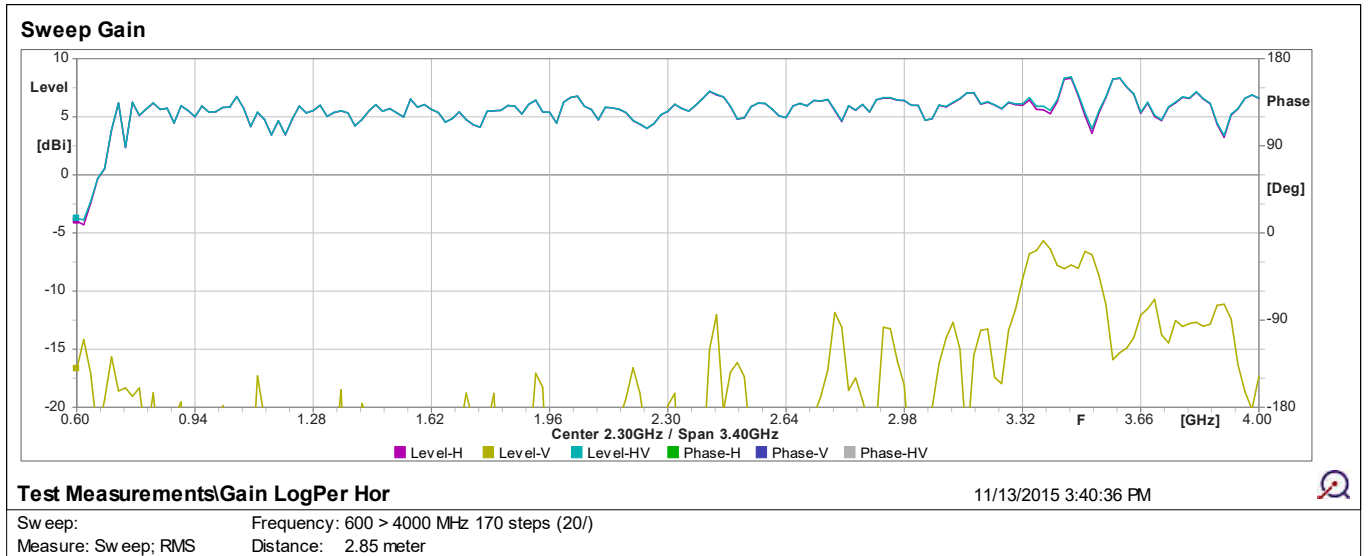
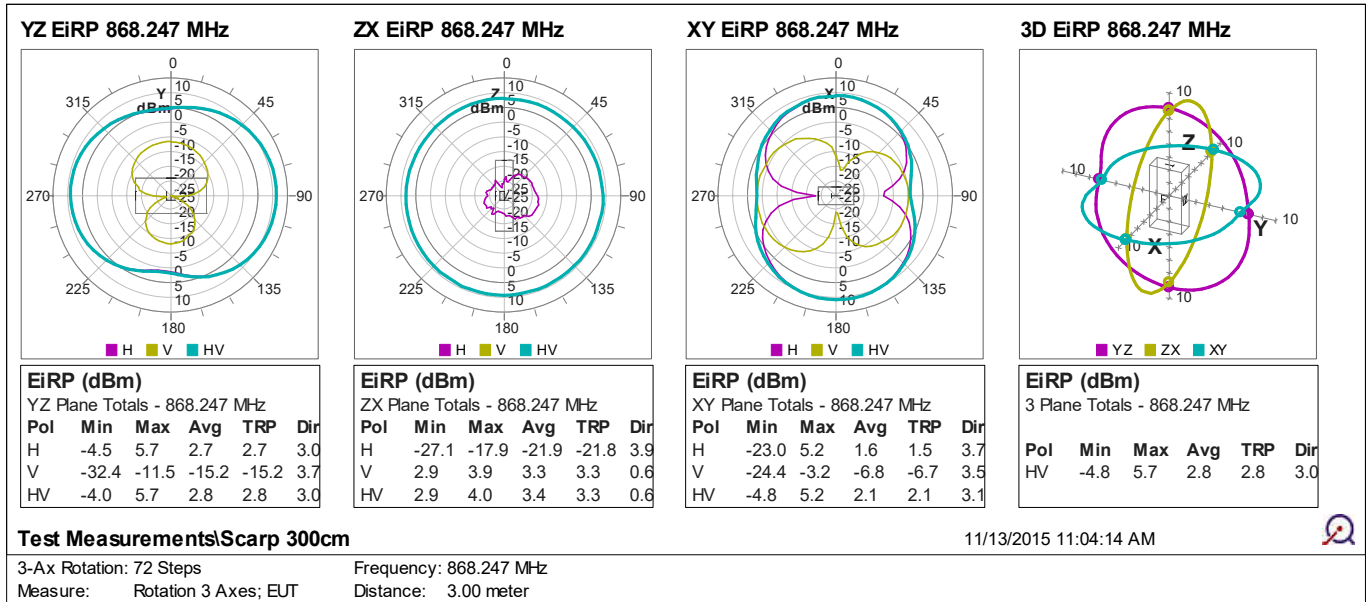
For EUT without a transmitter (prototype or standalone antenna) the Generator output can be used to feed a test signal to the EUT. In this mode the RMS can measure rotation patterns (at up to 30 frequencies simulations) or perform a frequency sweep of the antenna gain. The S-parameters of the feed coax can be imported to compensate for the loss and impedance of the cable.

In idle mode the RMS monitors the signal and shows the polarization in real time. It can also transmit a carrier with a calibrated power on the horizontal or vertical antenna.

The results can be presented in Antenna Gain (dBi), Radiated Power EIRP (dBm) or Field Strength (dBuV/m). The software calculates statistics such as Min/Max level, Average, Total Radiated Power (TRP), Antenna Efficiency (dBi) and Directivity (dB).

The rotation table can be controlled manually and a rotation offset aides in the rotation of large objects.

Reports



Reference Measurement

