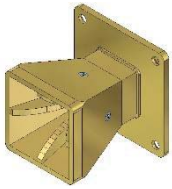
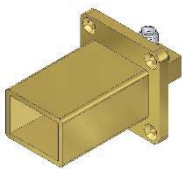
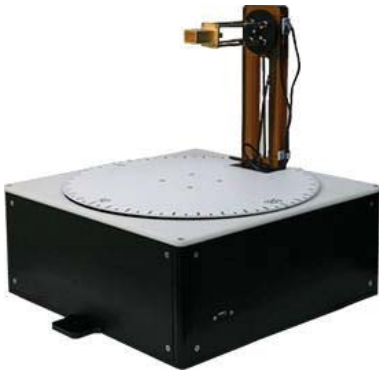
TESCOM mmWave Test System

Introduction

Due to the characteristics of radio waves, the frequency of millimeter waves with a short wavelength makes it possible to reduce the size and weight of antennas and devices. On the other hand, very strong linearity can make it somewhat unsuitable for long distance communications, and it can be highly influenced by atmospheric factors.
Therefore, the RF performance test method of the 5G terminal is not suitable when using the existing antenna connector and it is necessary to test using various measurement techniques in an OTA (Over the Air) environment.
For these tests, OTA chamber test system configuration is essential under the far-field conditions, but due to cost, space and time constraints, it is difficult to install such a system.
TESCOM's 'mmWave Test System' overcomes these limitations and provides solutions for testing transmission and reception performance of 5G terminals and antenna measurement methods in small OTA chambers.
In 5G communication, the size of the antenna used in mmWave is smaller, and the distance satisfying far-field is close to be an environment where the antenna performance of the 5G terminal can be measured even in a small chamber.
TESCOM's 'mmWave OTA Small Chamber' has a 3D Rotator to measure the 3D radiation pattern of the Mobile Handset, and has a Quad Ridged Horn Antenna and a RF Switch with Dual Polarization characteristics for Polarization conversion. (Same as conventional chamber)







(However, it may be difficult to meet the far-field condition in the TESCOM OTA chamber for an electrically large antenna like the Array antenna.)

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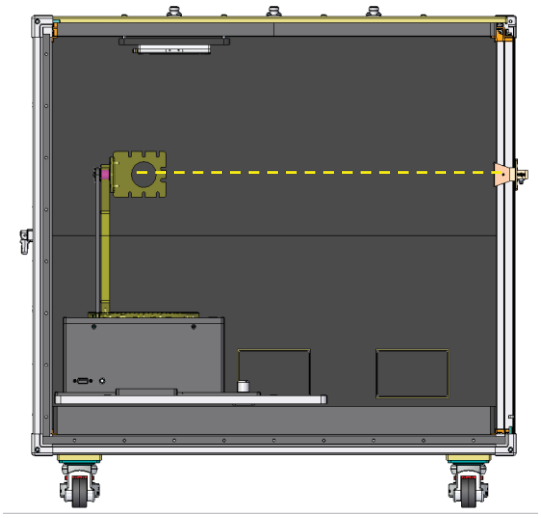

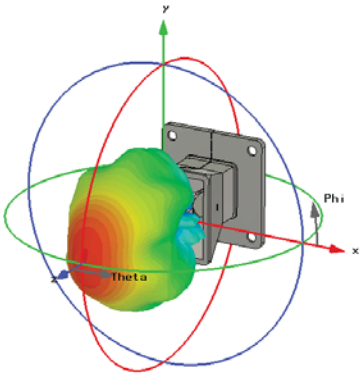

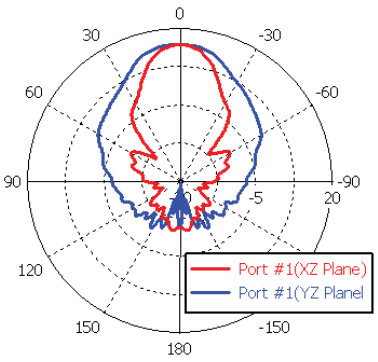

3D radiation patterns can be obtained by rotating the DUT, measuring Theta polarization and Phi polarization by angle, and summing the same location value. When the measured gain value is plotted in three dimensions, it's also possible to graph the appearance of the radiation pattern. (Antenna measurement method)

In order to change the measuring frequency range of TESCOM OTA chamber, you can change the TEST Antenna to the antenna of the desired frequency. It is in Module form type, and so it can be easily replaced by anyone.

Benefits and key features

- OTA chamber for mobile handset measurement.
- Passive and active measurement.
- Small-size chamber implementation.
- With movable wheels.
- frequency range: 18 GHz ~ 67 GHz
- QRH Antenna range: 18 ~ 40 GHz
- Shielding performance: > 60 dB in all frequency bands
- Adjustable distance between DUT and TEST antenna
- Antenna can be replaced for each module type.
- Link antenna can be installed inside.
- Internal DUT Holder and TEST Antenna can be customized.

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