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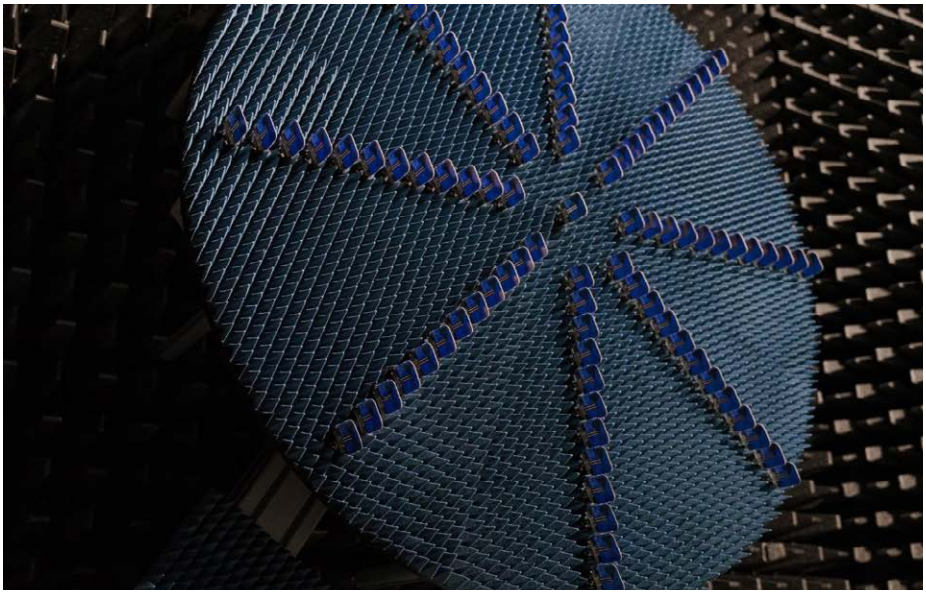
WFS - PLANE WAVE GENERATOR

4m sea container chamber



Testing solution built in 4-meter chamber.

WFS, a Plane Wave Generator solution, uses real time Near-Field to Far-Field conversion to enable sub6GHz 5G performance testing in a compact 4m chamber, removing the need for a larger 20m Far-Field chamber. This saves floorspace and cost, while allowing higher potential test capacity per square meter.

DUT Positioner

- Positioner travel
  - +-90 degree angle 1 (Theta), +-0.5deg steps
  - +-90 degree angle 2 (Phi), +-0.5deg steps
- Payload 50kg
- Max DUT dimensions 1000 x 500 x 300mm (HxWxD)
- Mounting interface:
  - Modified base station mounting bracket, no tilt

WFS Antenna Positioner

- Positioner travel
  - +-90 degree polarization rotation
- Bidirectional array of 97 antenna elements.
- Measurements:
  - Radiation pattern (2D, 3D), passive antenna gain, EIRP, EVM, ACPR and EIS.
- Frequency range 2.3- 4GHz
- Bandwidth 200MHz
- Incident power density <50mWcm^2
- Polarization: single linear
- Measurement distance: 1.5m
- Quiet zone size (spherical):
  - 2.6GHz
    - Size 1m
    - Typical RMS phase ripple 13°
    - Typical RMS amplitude ripple 0.5dB
  - 3.7GHz
    - Size 0.7m
    - Typical RMS phase ripple 5°
    - Typical RMS amplitude ripple 0.5dB

Physical Dimensions

- Anechoic chamber is built in 4m container.
- Chamber outer dimensions (HxWxD): 2.9 x 3.4 x 4m
- Measurement distance: 1.5m

Power Input Requirement

- Voltage Range: 230 Vac 50 Hz
- 2kW DUT

Chamber Interfaces

- AC 32A 230VAC
- DC 100V 30A
- Fiber feedthrough
- 8 ethernet ports inside chamber and 8 ports outside chamber
- USB 2.0
- 10MHz clock
- SMA 2pcs front side and 1pcs back side

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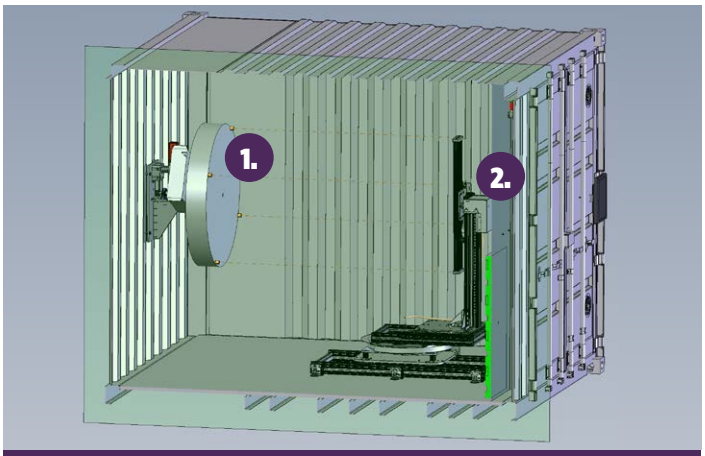
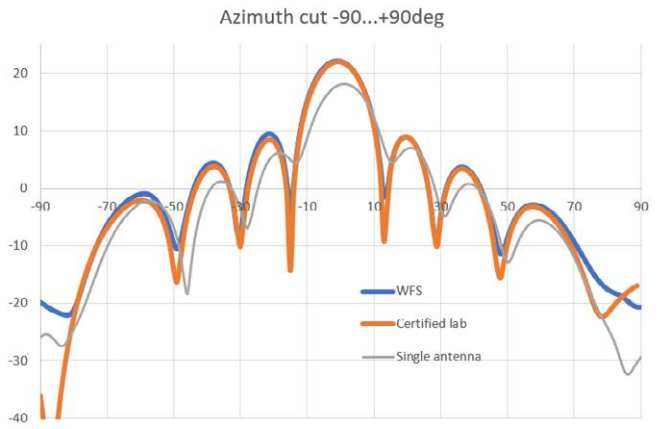
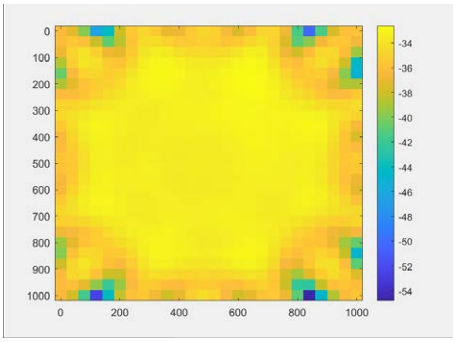
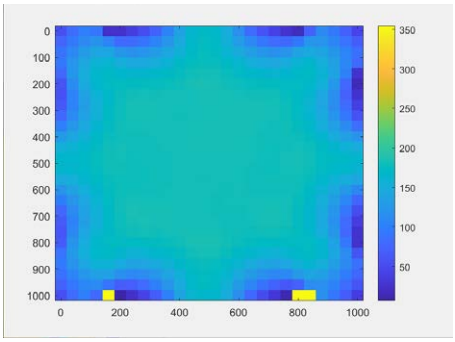


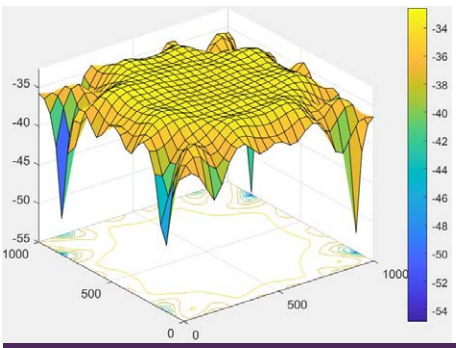
1. Automated WFS antenna positioner 2. Automated DUT positioner



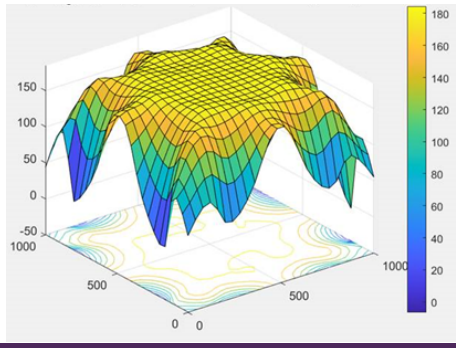
Radiated power measurement







Amplitude



Phase

Measured Field Results 3.7GHz

100cm spherical area:

- 0.86dB RMS
- 19.8degree RMS

75cm spherical area:

- 1.4dB pp
- 20degree pp

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