Antenna Test Report for Zealand UWB

2024/08/01

WNC Wistron NeWeb Corp.

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General Information

- **Antenna Information:**

  - Brand: WNC

  20 Park Ave. II, Hsinchu Science Park, Hsinchu 308, Taiwan

- **Antenna Type:**
  - **PDOA UW2-4 : Alford Loop(PCB) - IPEX - 95XEAK15.GBD**
  - **TWR : PIFA(Metal) - IPEX - 95XEAK15.GBM**

- **Connector Type**
  - **PDOA UW2-4 : IPEX**
  - **TWR : IPEX**

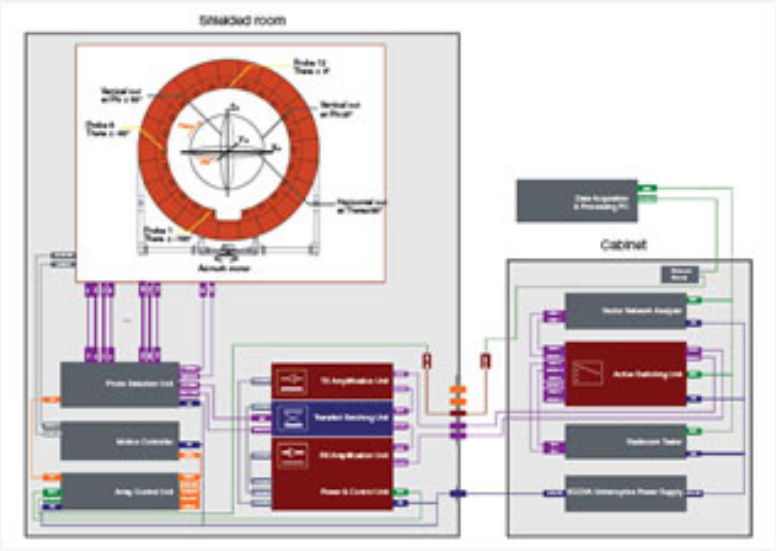
- **Test Date and Member**

  Date: 2023/12/25

  Member: Lucien Hsieh

Test Information

- Antenna Vendor : WNC
- Test Date : 20231225
- Test Engineer : Lucien Hsieh
- Measurement System : SATIMO SG24-L
- Software Name : Wave Studio
- Software Version : 22.5.6

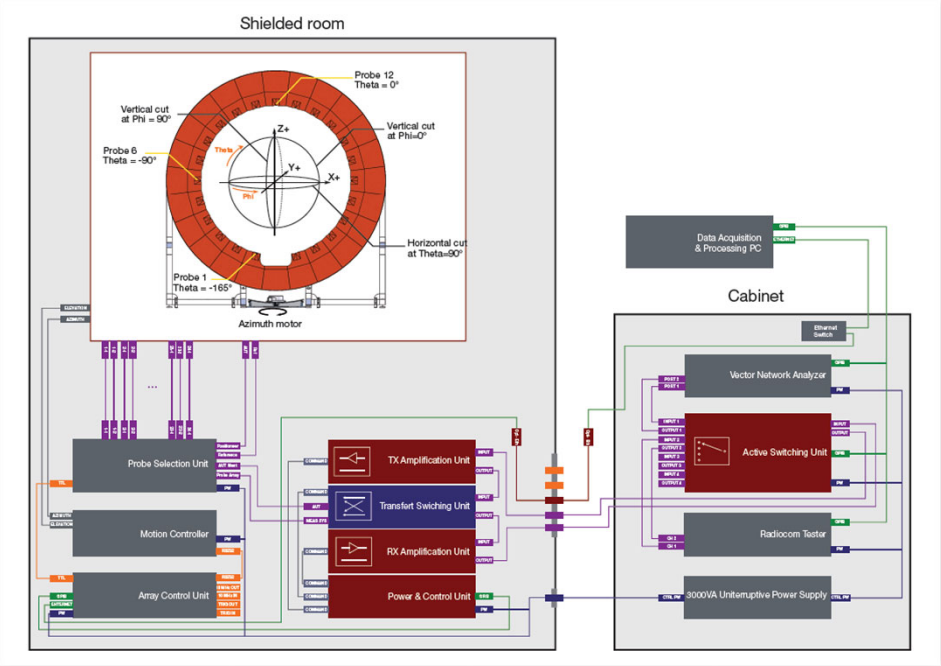


Test Equipment

- Measurement System: SATIMO SG24-L Chamber

  Measurement setup:

  - pattern & gain measurement
    1.satimo chamber (SG24-L)
    2.satimo program (wave studio)
    3.system overview :
  - test item
    1.antenna passive test 400MHz~9GHz

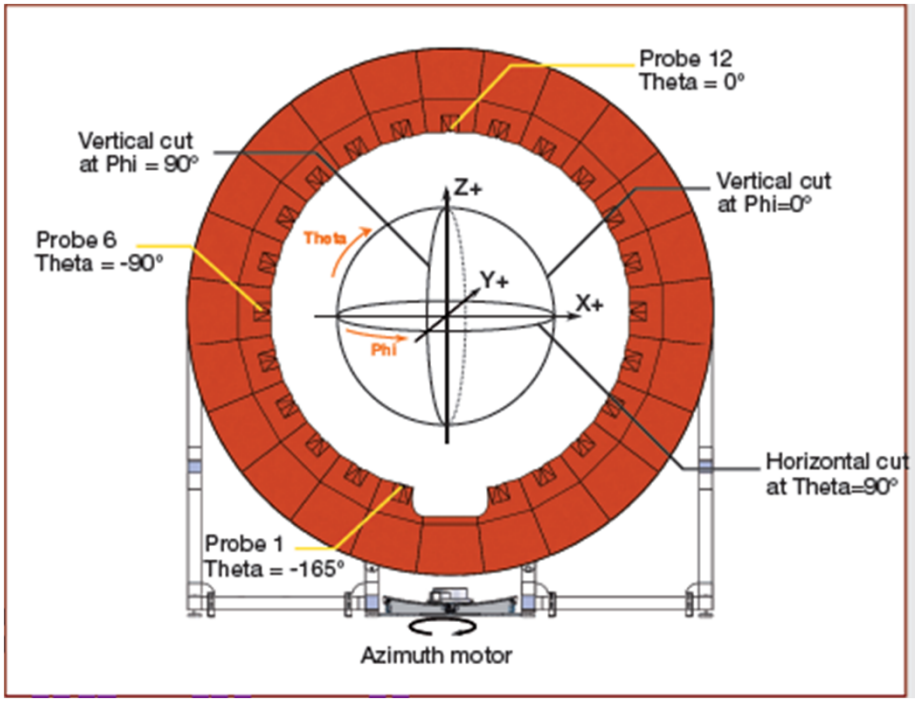


- Calibration Information

Device	Type / Model	Serial #	Manufacture	Cal. Date	Cal. Until
Antenna Measurement System	SG24-L	HKG1669S	MVG-SATIMO	2023-06-05	2024-06-03
Network Analyzer	Keysight E5080B	MY59203136	Keysight	2023-06-05	2024-06-03

Test Procedure

1. Place the device to be tested on the fixture and align it with the center of the chamber.
2. Connect the antenna cable to the RF connector of the chamber.
3. Use the SW to configure parameters (antenna name, frequency points, measurement angles, antenna dimension), and then run the test SW (wave studio).
4. By phi from 0° to 360° and theta from 0° to 180° with a step size of 3 degrees, get the 3D data, including efficiency, peak gain, 2D and 3D radiation patterns.
5. This is far field test for antenna verification.
6. This is passive measurement, which means the device is off and not in any operating mode.

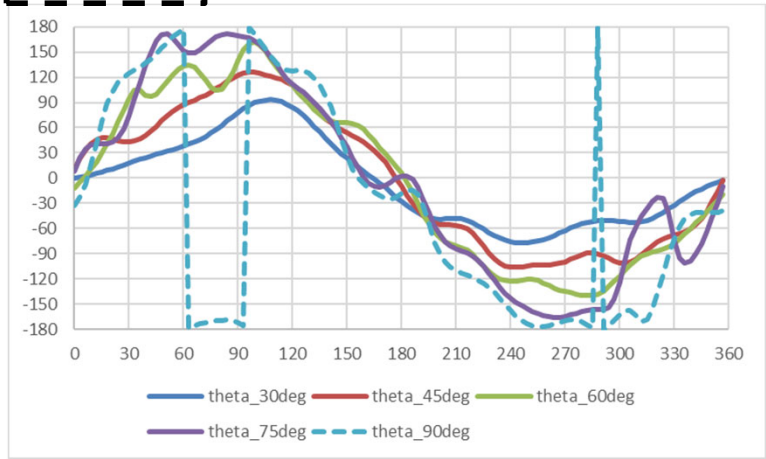


Summary

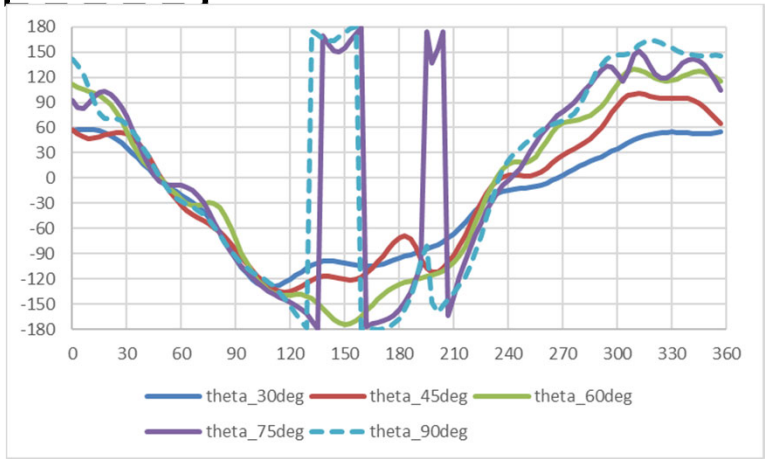
Radio	Frequency (GHz)	VSWR	Peak Gain	Efficiency	Position (θ, ϕ) of peak gain
PDOA UWB 2	7.75-8.25	< 2.0	4.2 dBi	~59 %	(θ = 42 , ϕ = 291)
PDOA UWB 3	7.75-8.25	< 2.0	5.4 dBi	~64 %	(θ = 33 , ϕ = 156)
PDOA UWB 4	7.75-8.25	< 2.0	6.5 dBi	~64 %	(θ = 33 , ϕ = 327)
TWR	7.75-8.25	< 2.0	6.3 dBi	~61 %	(θ = 69 , ϕ = 312)

Phase PDOA @8G

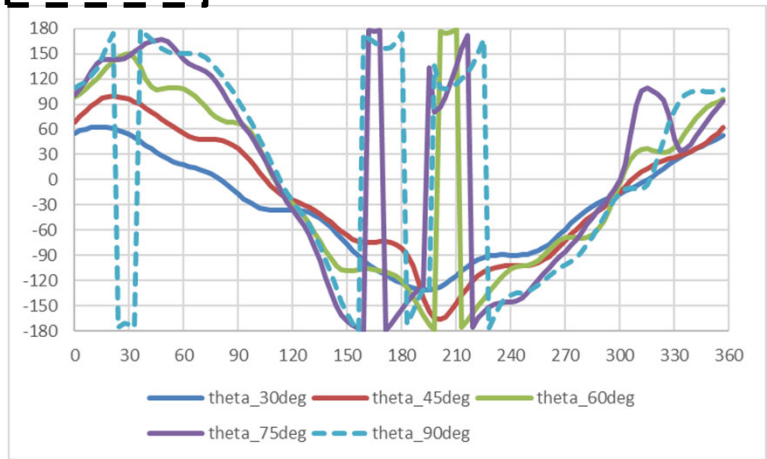
UWB 2-3



UWB 3-4

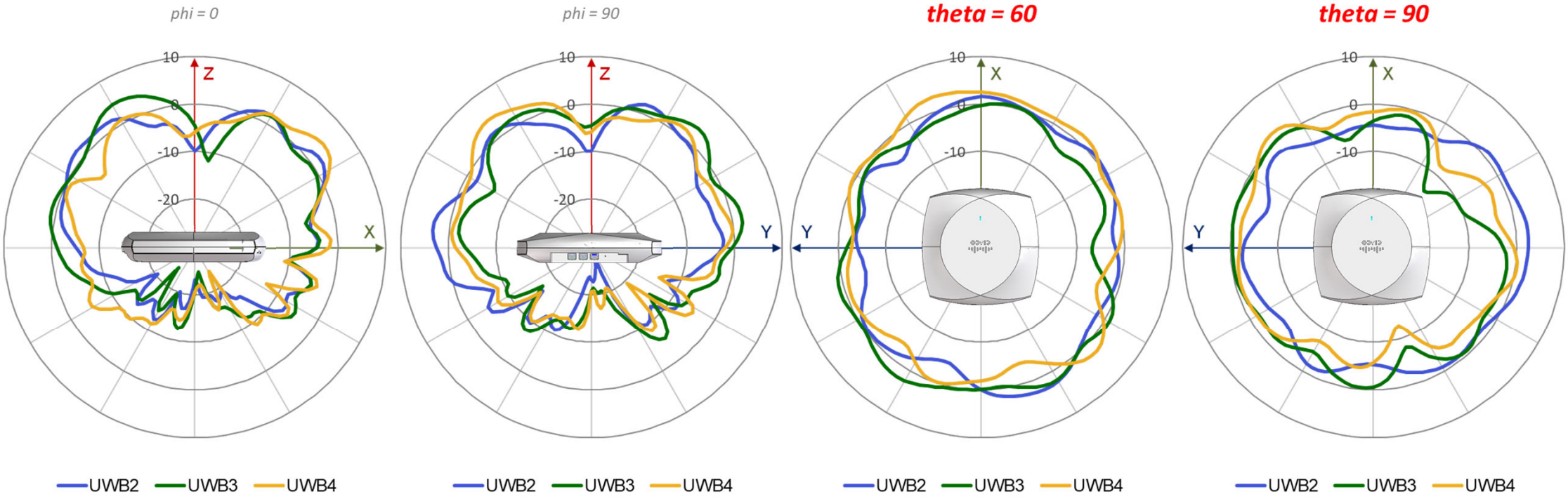


UWB 2-4



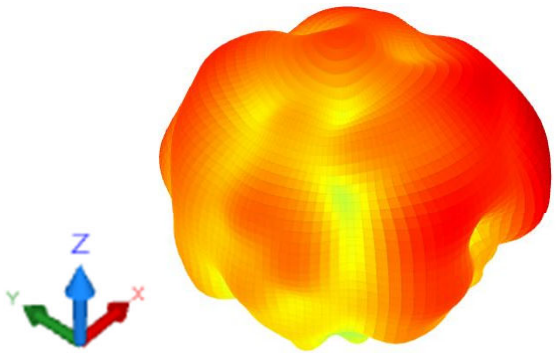
Realized Gain Pattern PDOA @8G

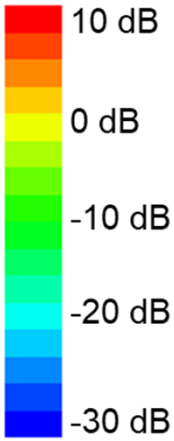
Antenna	Ripple (dB)	Antenna	Ripple (dB)
UWB2_60 deg.	8.1	UWB2_90 deg.	9.0
UWB3_60 deg.	9.3	UWB3_90 deg.	14
UWB4_60 deg.	7.5	UWB4_90 deg.	14

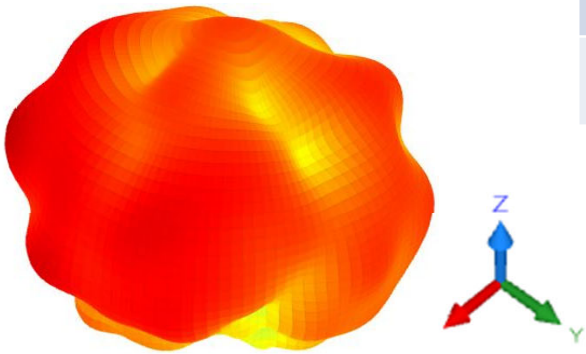


Realized Gain Pattern TWR @8G

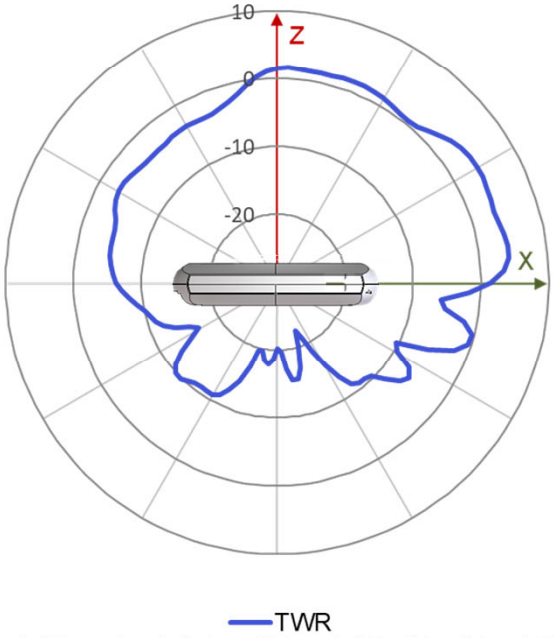
Antenna	Ripple (dB)
TWR 60 deg.	14
TWR 90 deg.	10







phi = 0



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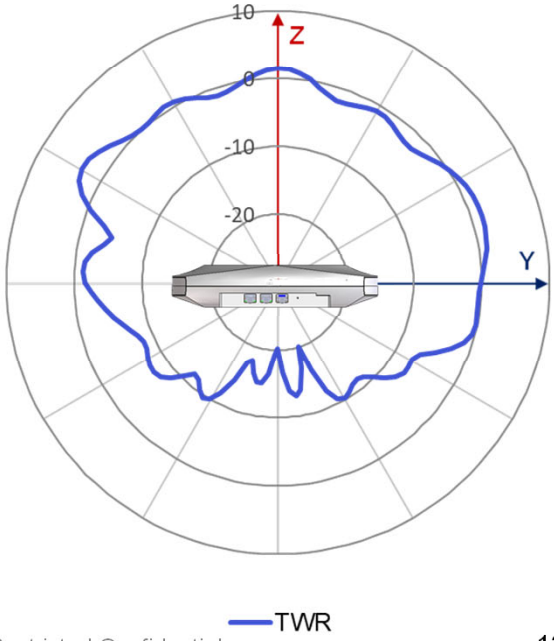

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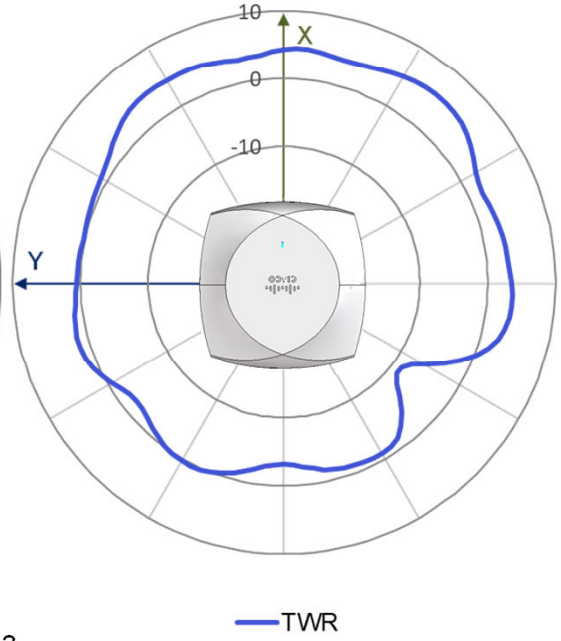
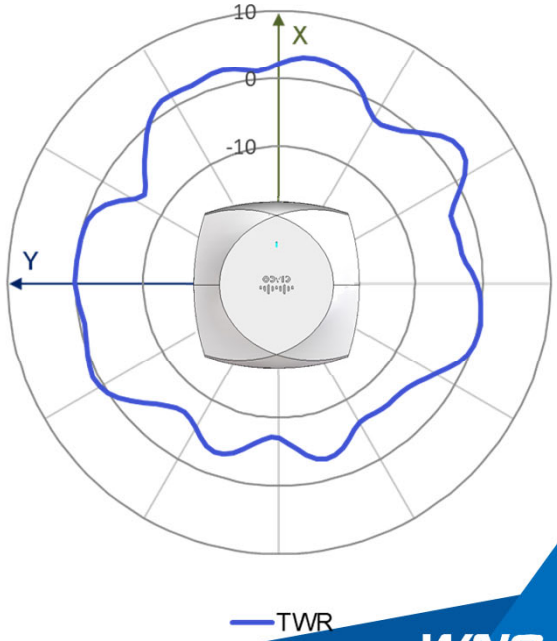


theta = 90



WNC

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