



# CI9 Antenna Datasheet

12/26/2023 -update

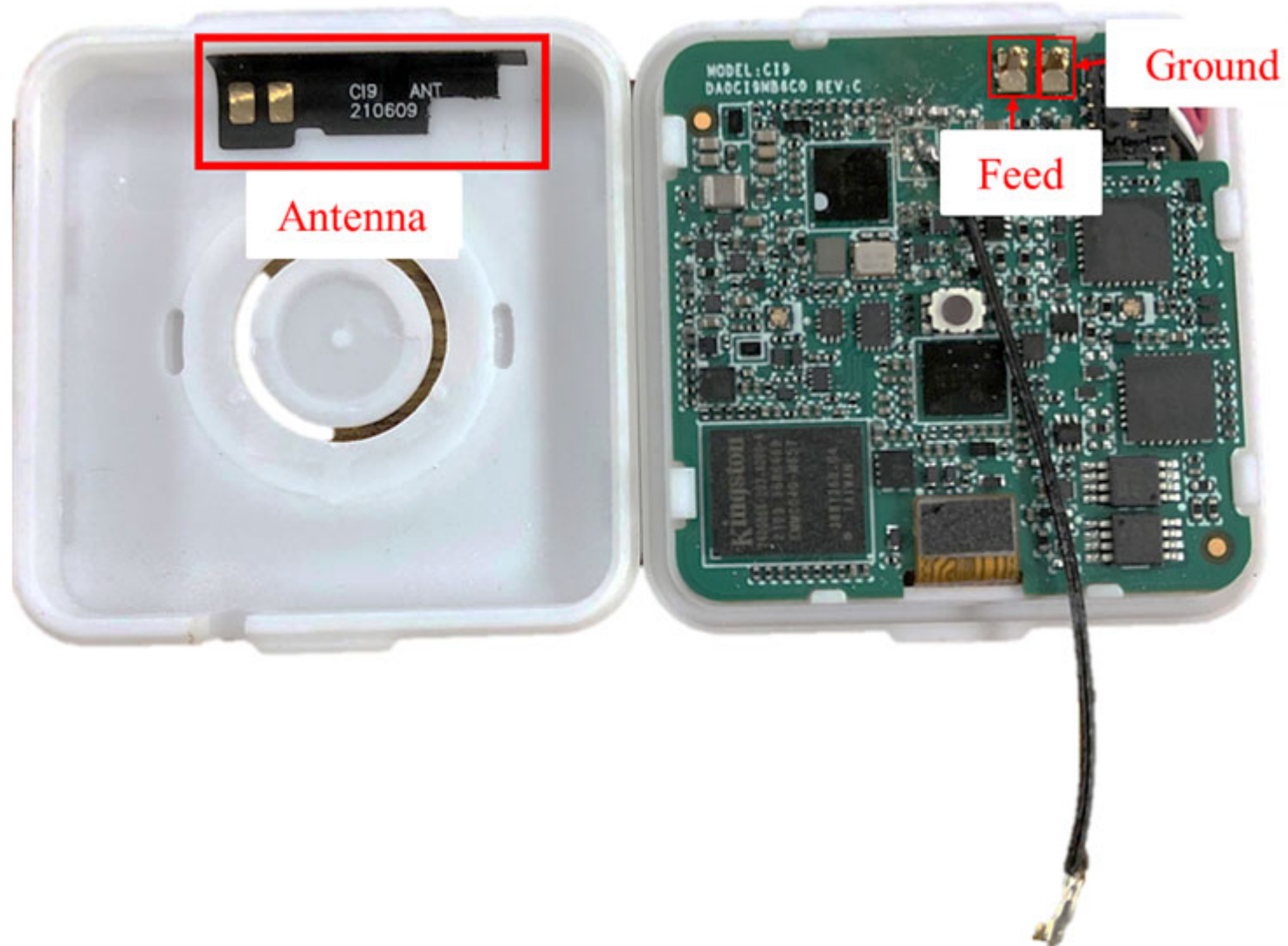
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# Antenna Manufacture Information

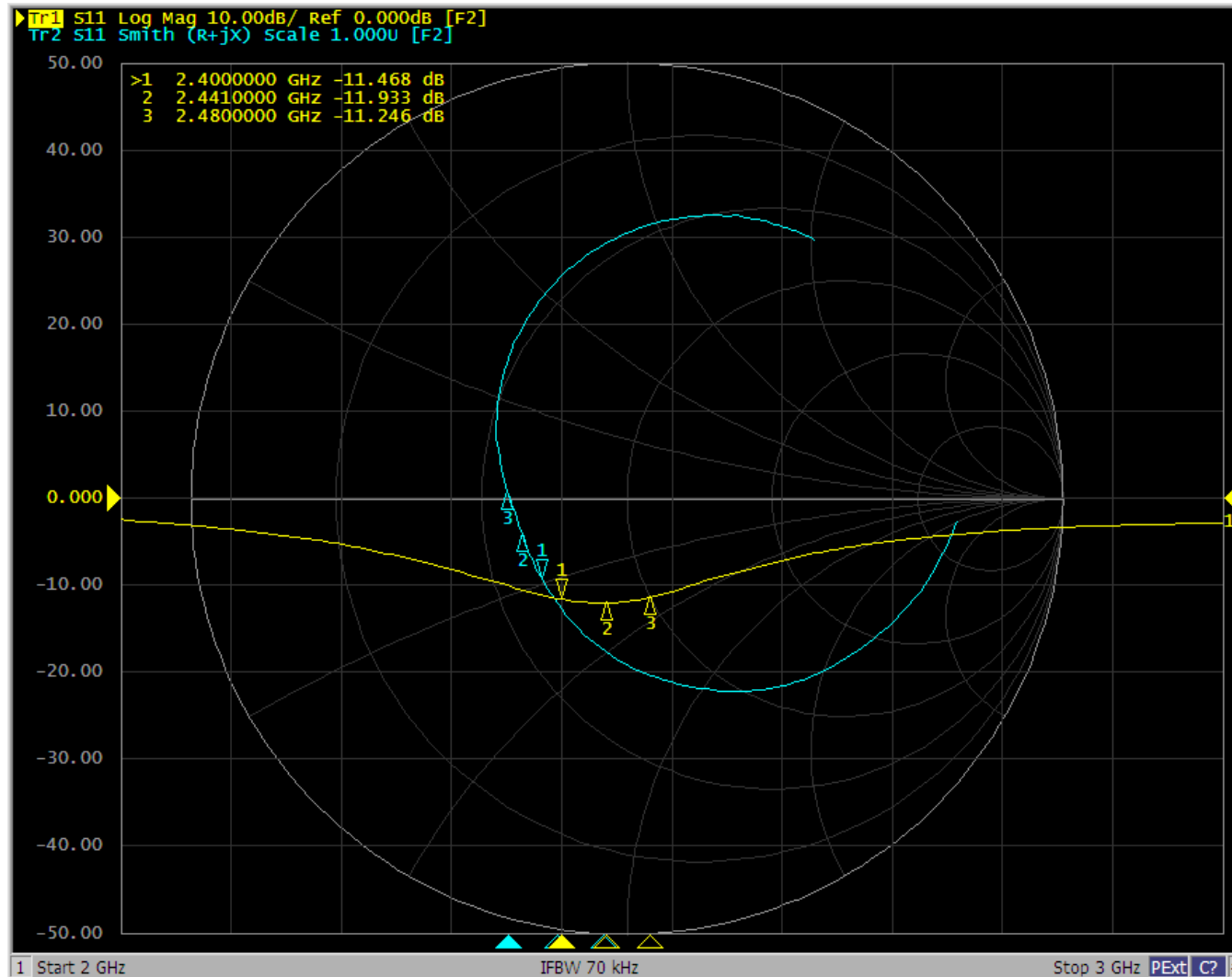
Antenna application	Bluetooth antenna
Antenna type	FPC antenna
Brand	Pulse
Model	TQ24013
Supplier Factory	Pulse (Suzhou) Wireless Product Co., Ltd.
Supplier Factory address	No. 99 Huo Ju Road, Suzhou New District Jiangsu Province, suzhou 215009, P.R. China

# EUT Antenna Placement Introduction





# Antenna Impedance Measurement - On Hand



Return loss & Smith Chart

◆ Test Location

-Quanta Computer Inc. internal ets-lindgren 3D antenna chamber

Address: No.211, Wenhua 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C.)

◆ Tester: Steve Zhao

◆ Software test tool: EMQuest

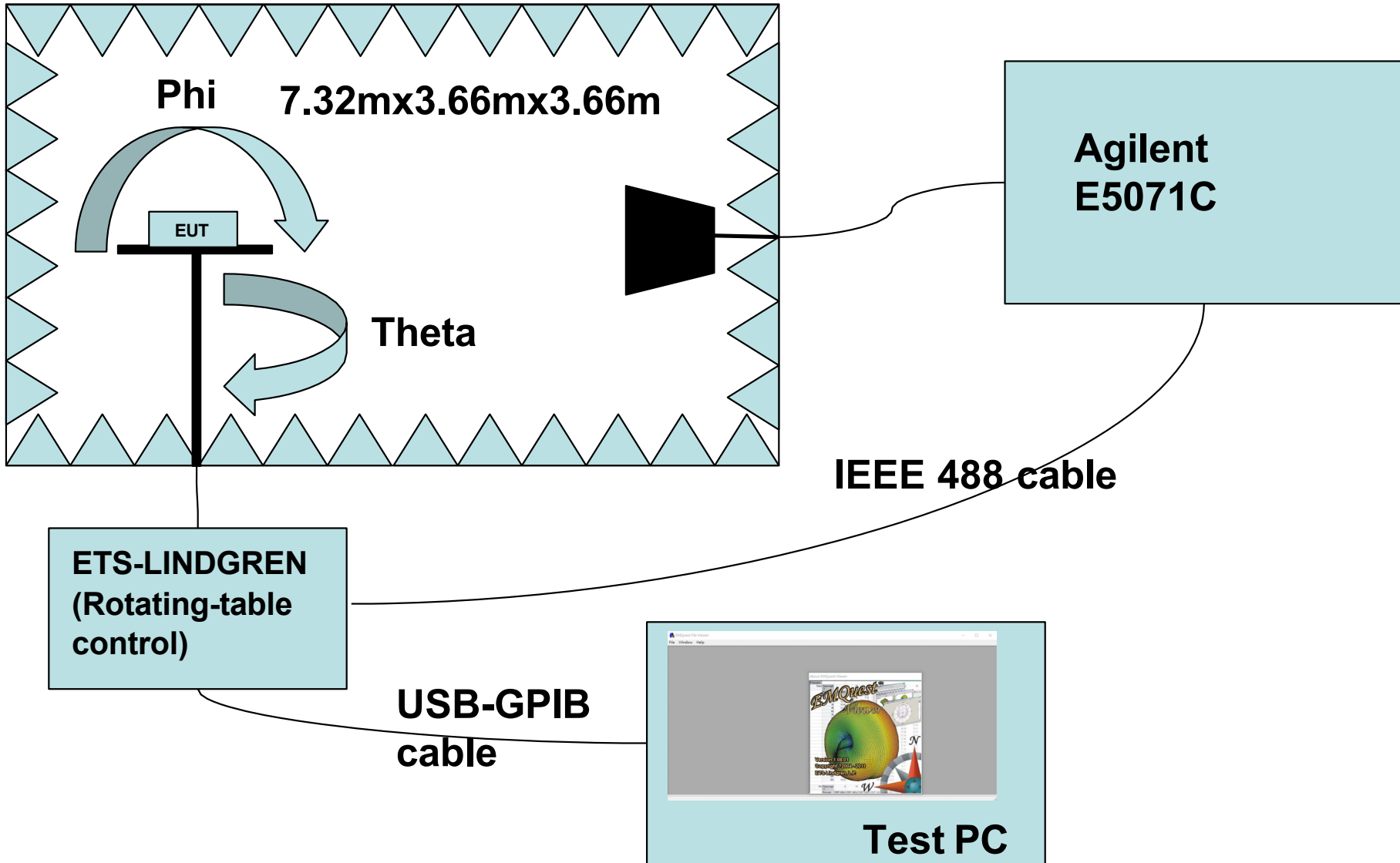
◆ Test data:8/19/2021

◆ Measurement method: According to IEEE 149 (2021)

◆ Test setup: as below page10 and page11

# Test Block Diagram

## ETS-LINDGREN antenna chamber





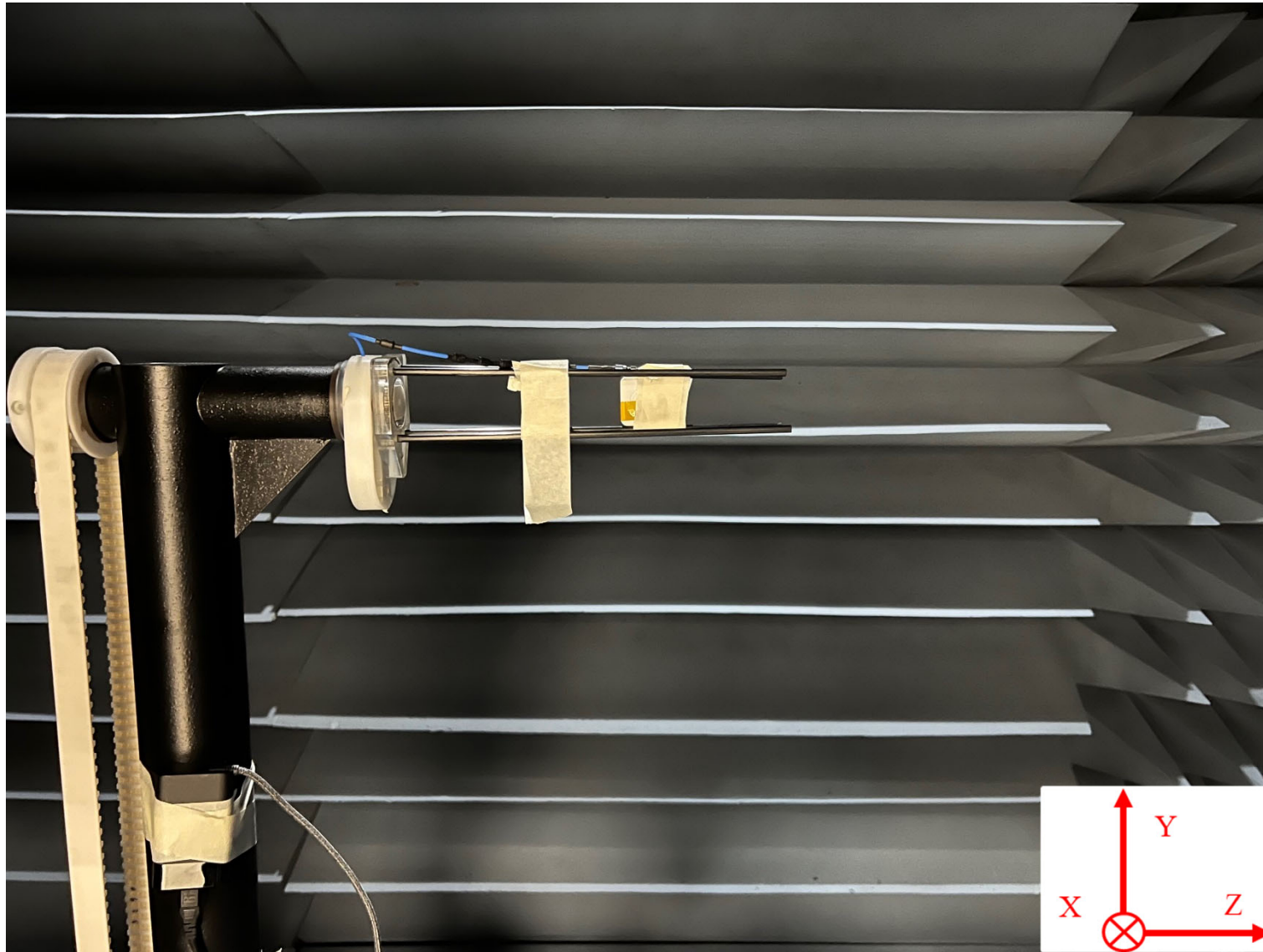
# Test Equipment List

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Equipment type	Model	Remark
ENA Series Network analyzer	Agilent E5071C	100KHz~8.5GHZ
Rotating table control	ETS-LINDGREN EMC Center	
Chamber	ETS-LINDGREN AMS8500	700MHz~6GHz
Horn Antenna	ETS-LINDGREN 6164-04	700MHz~6GHz
USB-GPIB cable	NI	
IEEE 488 cable	NI	



# EUT Setup Photograph - Free Space



# EUT Setup Photograph - On Hand



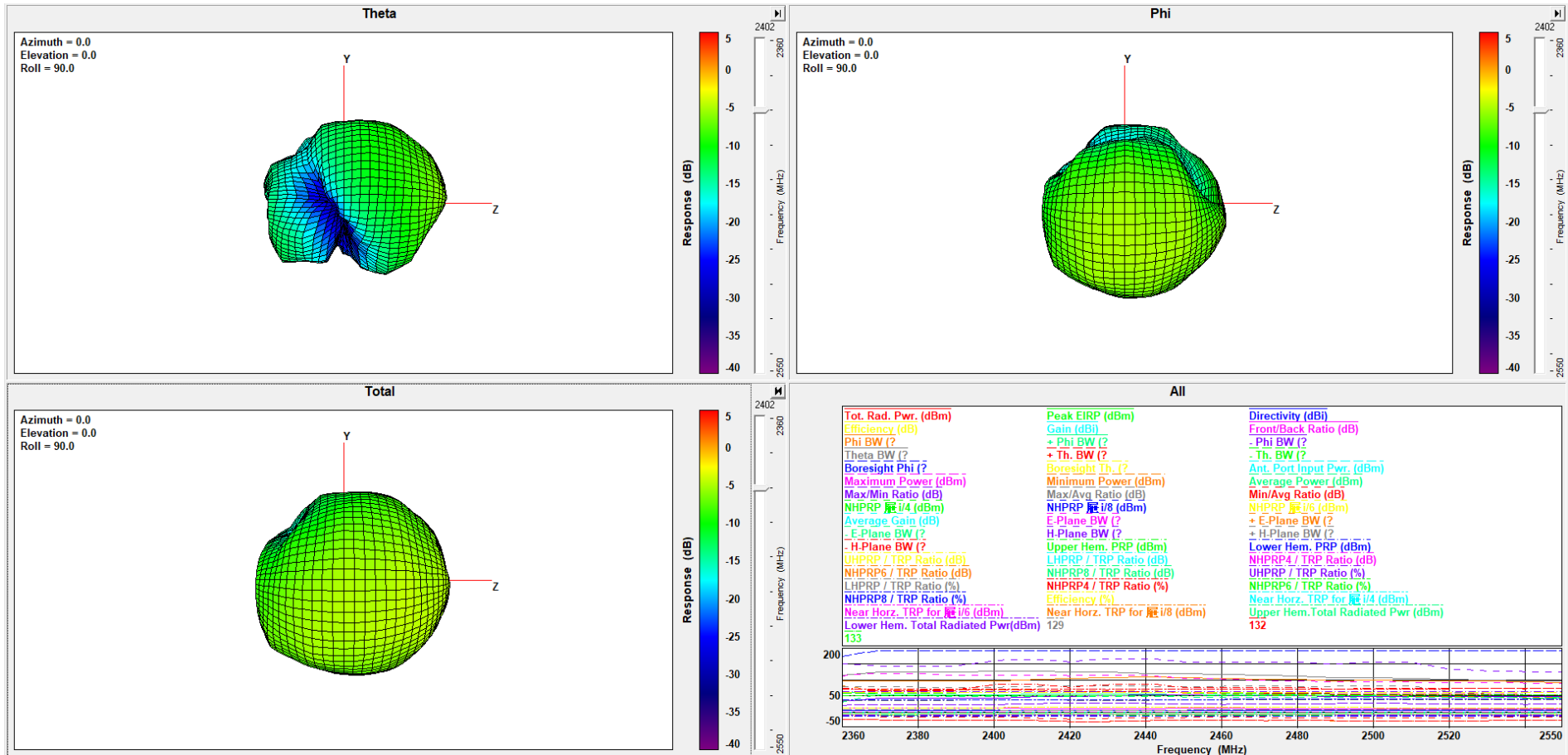


# 2.4GHz Antenna Performance/Efficiency

	CI9				
		Free Space		On Hand	
	Frequency (MHz)	Average Gain(dBi)	Peak Gain(dBi)	Average Gain(dBi)	Peak Gain(dBi)
Efficiency	2402	-4.49	-0.75	-8.93	-4.15
	2412	-4.35	-0.43	-8.80	-4.20
	2420	-4.34	-0.27	-8.74	-4.10
	2430	-4.36	-0.21	-8.66	-4.13
	2441	-4.39	-0.26	-8.60	-4.09
	2450	-4.44	-0.24	-8.59	-3.89
	2460	-4.49	-0.37	-8.61	-3.85
	2472	-4.48	-0.46	-8.54	-3.69
	2480	-4.55	-0.62	-8.60	-3.73
	2490	-4.68	-0.91	-8.71	-3.65
	2500	-4.83	-1.21	-8.84	-3.94

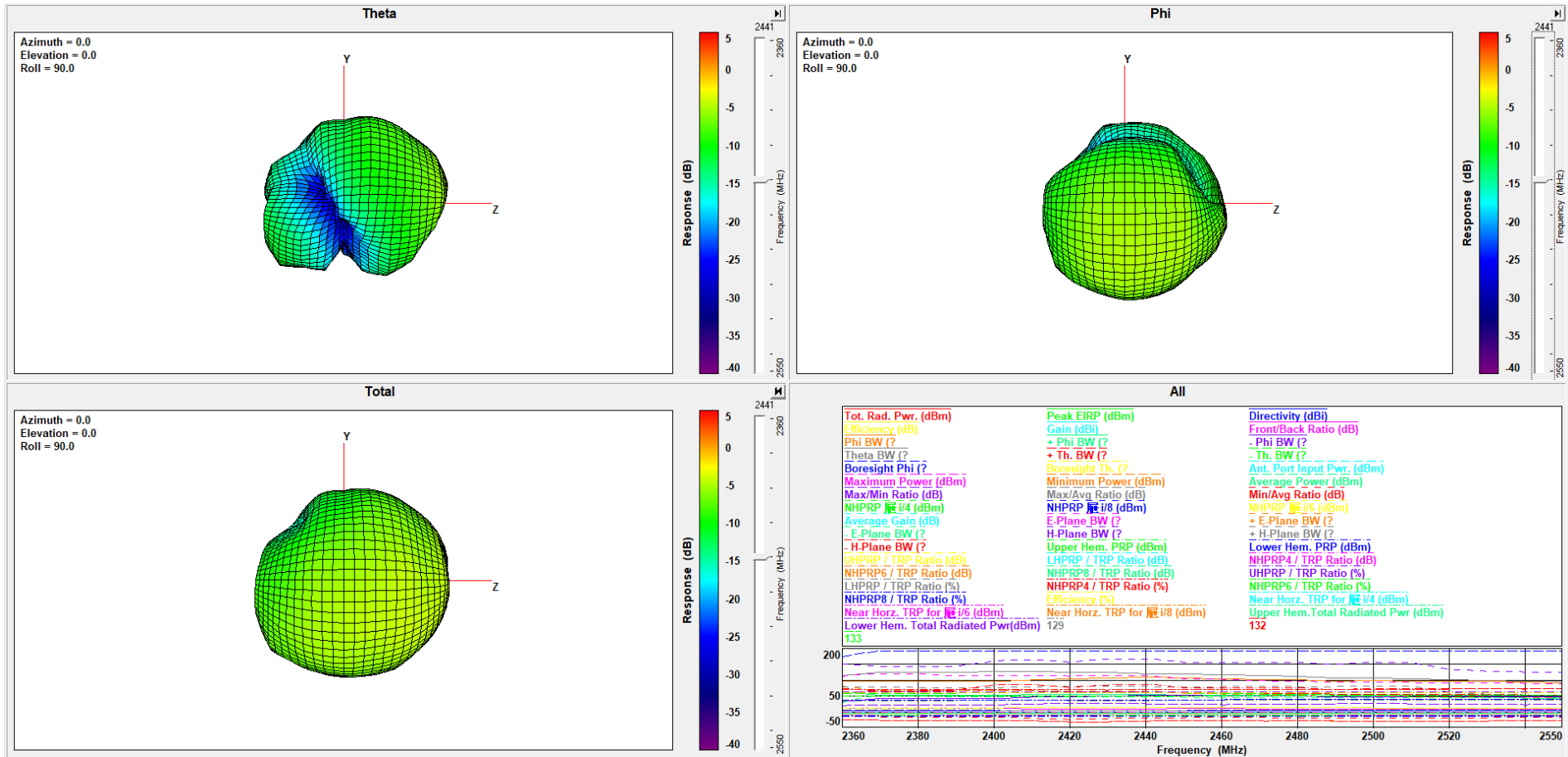
# 3D Antenna Pattern - On Hand(2402MHz)

- ◆ 2402MHz antenna pattern
- ◆ -On hand



# 3D Antenna Pattern - On Hand(2441MHz)

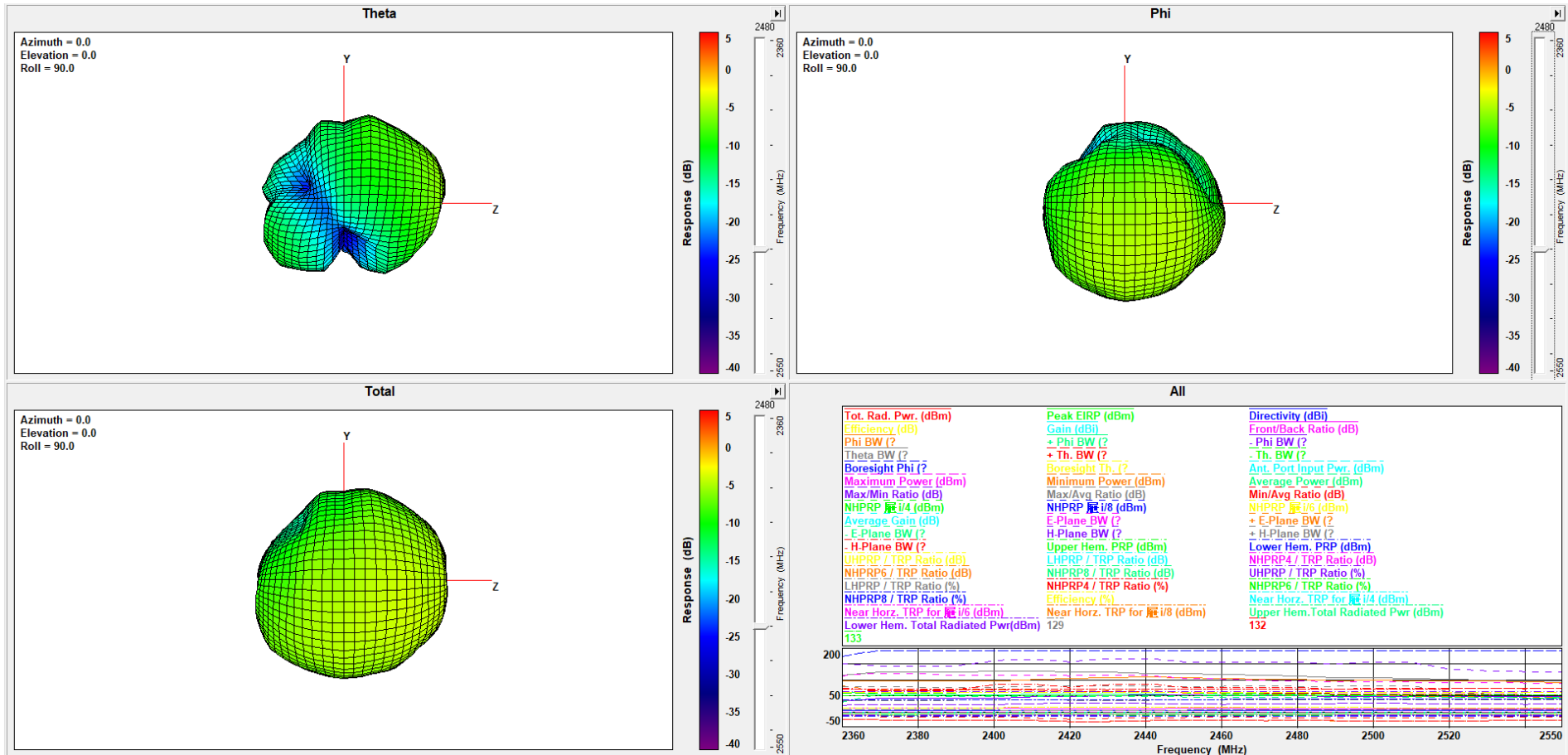
- ◆ 2441MHz antenna pattern
- ◆ -On hand





# 3D Antenna Pattern - On Hand(2480MHz)

- ◆ 2480MHz antenna pattern
- ◆ -On hand



# Antenna Design Outline

