3D Antenna Measurement Summary Report

REPORT NO.:	W7L-P22090013OT01
PLATFORM MANUFACTURER:	Synergy Consult Aps
PLATFORM NAME:	2.4GHz Multi-Protocol USB Stick
ANTENNA TYPE:	Fixed Internal
TESTED DATE:	2022.08.09
ISSUED:	2022.08.09

APPLICANT:	Synergy Consult Aps
ADDRESS :	Rundforbivej 271A DK-2850, Naerum, DENMARK
ISSUED BY :	BV 7Layers Communications Technology (Shenzhen) Co., Ltd.
ADDRESS :	No. B102, Dazu Chuangxin Mansion, North of Beihuan Avenue, North Area, Hi-Tech Industry Park, Nanshan District, Shenzhen, Guangdong, China

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RELEASE CONTROL RECORD

REPORT NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P22090013OT01	Original release	2022.08.09

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GENERAL INFORMATION

APPLICANT:	Synergy Consult Aps
MANUFACTURER:	Synergy Consult Aps
MODEL NO.:	PT24MPUSB-2

Test Standard: ANSI/IEEE Std. 149 1979.

PREPARED BY : Leon Guo **, DATE :** 2022.08.09

Leon Guo / Engineer

APPROVED BY : Luke Lu **, DATE :** 2022.08.09

Luke Lu / Manager

1. Test Equipment List

TYPE OF EQUIPMENT	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DUE DATE
Network Analyzer	E5071C	MY46214638	2023.05.06
OTA Chamber	ETS AMS8500	N/A	N/A
RF Switch	ETS EMCenter	N/A	N/A
Measurement Antenna	ETS 3164-06	N/A	N/A

2. Measurement Uncertainty

Expanded Uncertainty for Measurement (k=2 or 95% Confidence Level) at Passive antenna test over frequency range 780 – 2200MHz is +/- 1.52 dB.

3. Characteristics of antenna

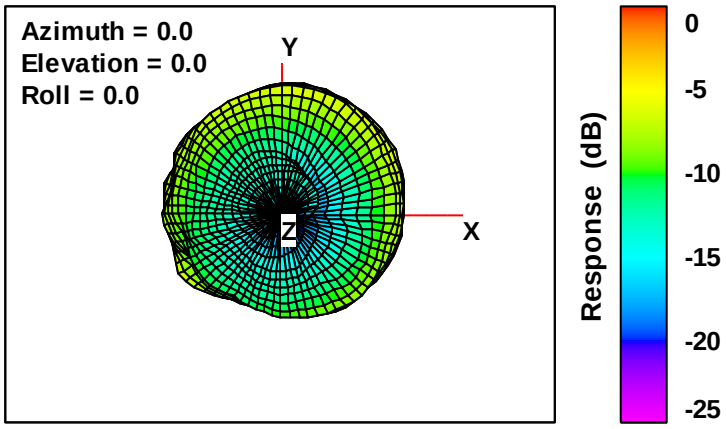
3.1. 3D Antenna Gain-Free Space

Frequency (MHz)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2400	4.77	-8.84	13.07	-4.07
2410	4.91	-8.47	14.24	-3.56
2420	4.91	-7.91	16.19	-3.00
2430	4.93	-7.59	17.42	-2.66
2440	4.93	-7.19	19.08	-2.27
2450	4.84	-6.98	20.04	-2.14
2460	4.84	-6.61	21.83	-1.77
2470	4.80	-6.37	23.09	-1.56
2480	4.86	-6.18	24.12	-1.32
2490	4.90	-6.09	24.62	-1.19
2500	4.96	-5.86	25.97	-0.90

3.2. Antenna Pattern

2400MHz

Total



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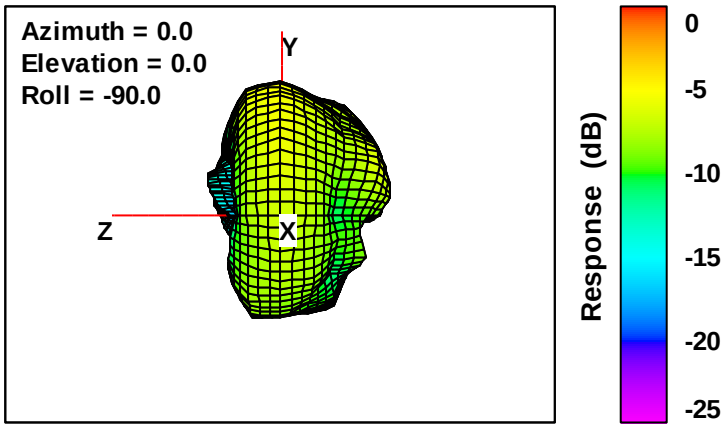

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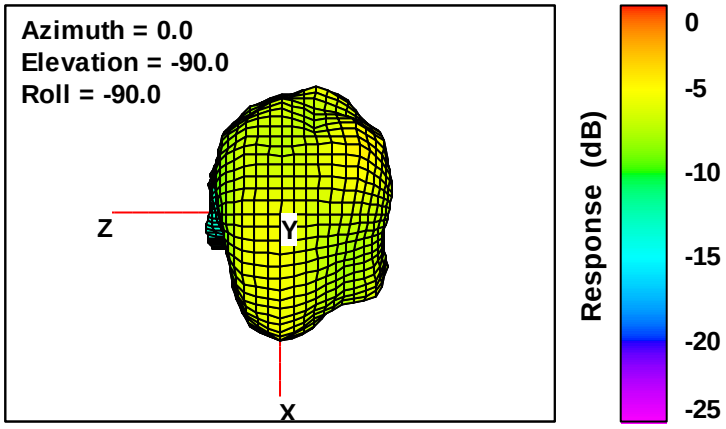
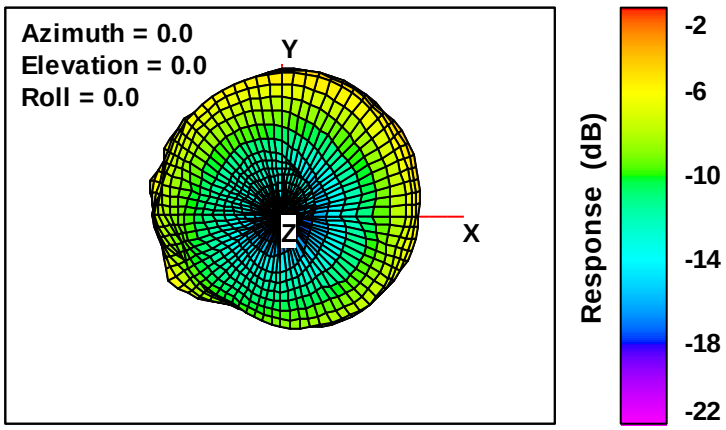


2440MHz

Total



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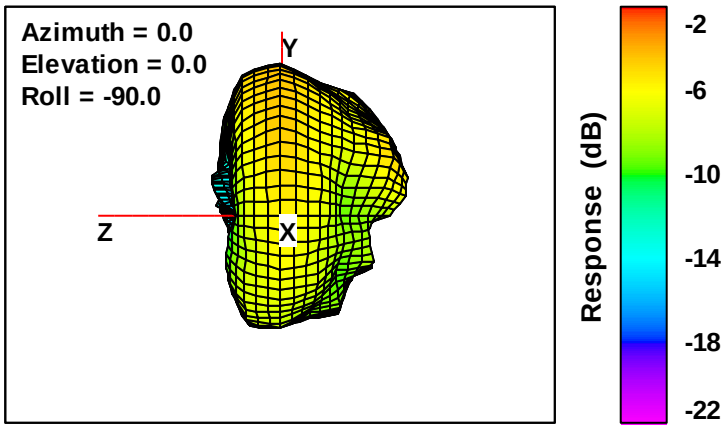

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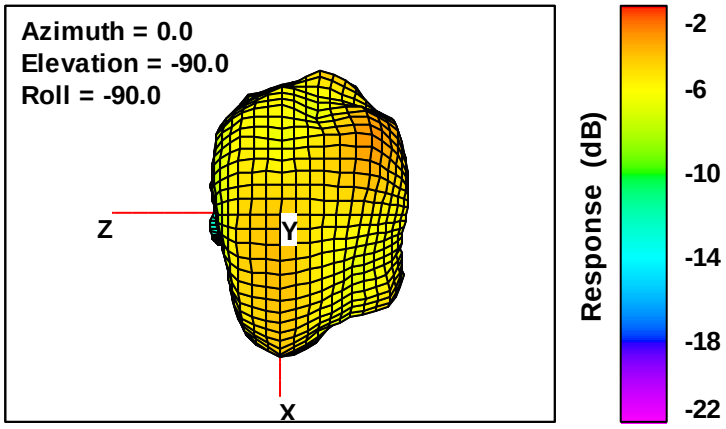
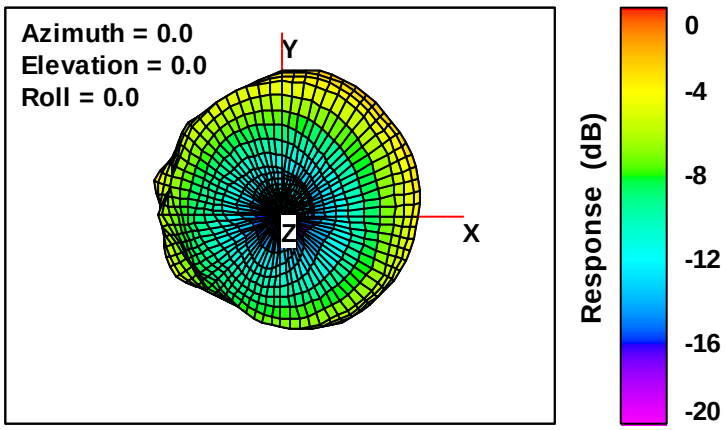


2480MHz

Total



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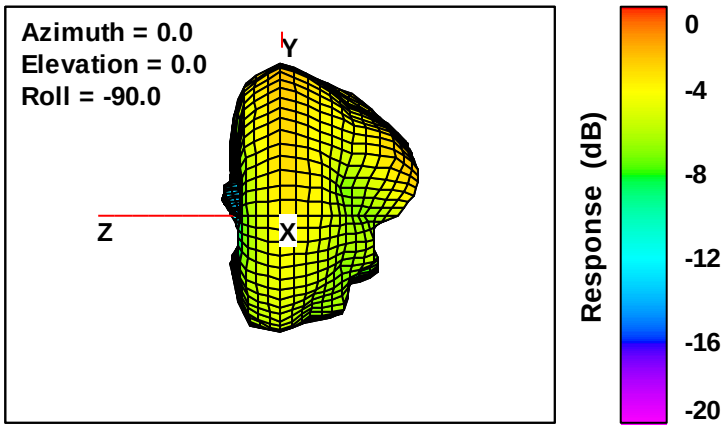

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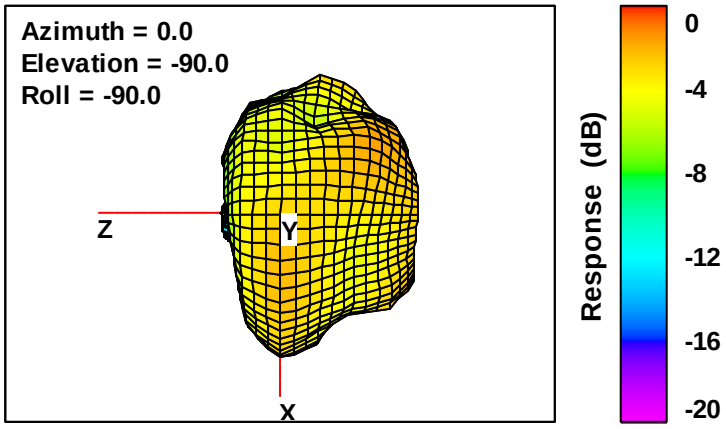
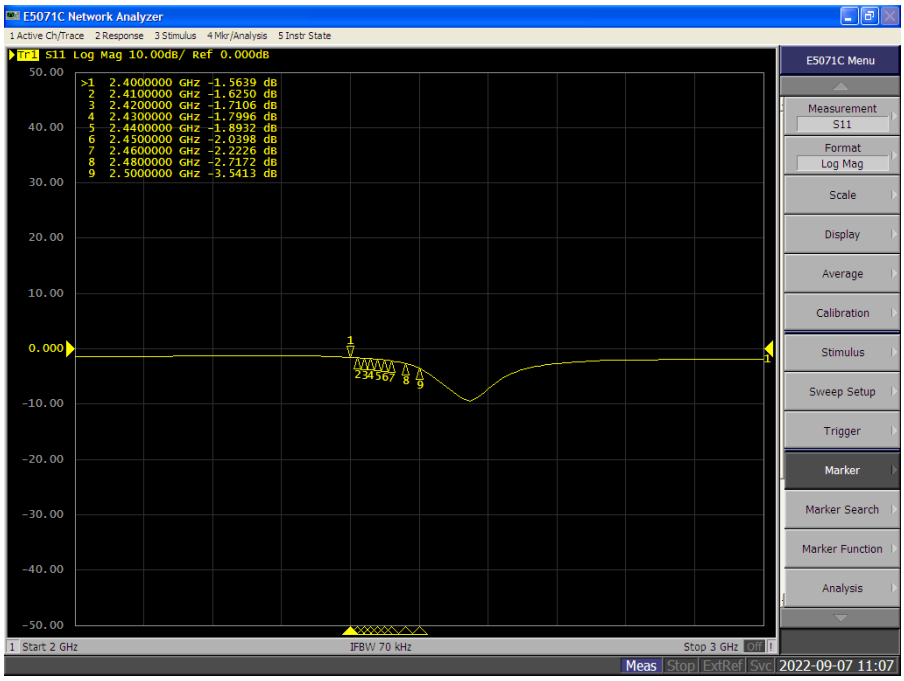
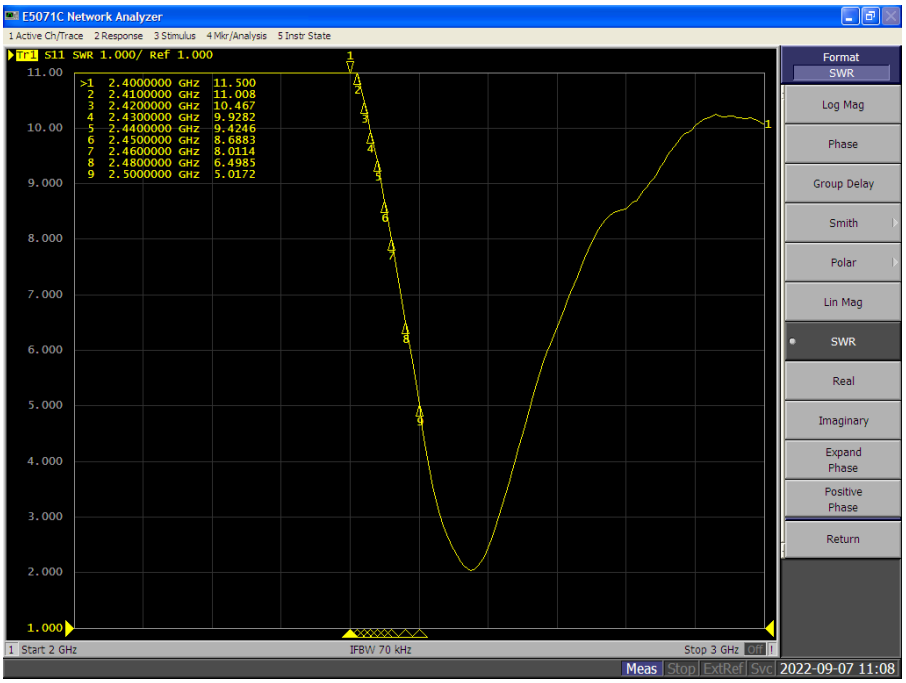


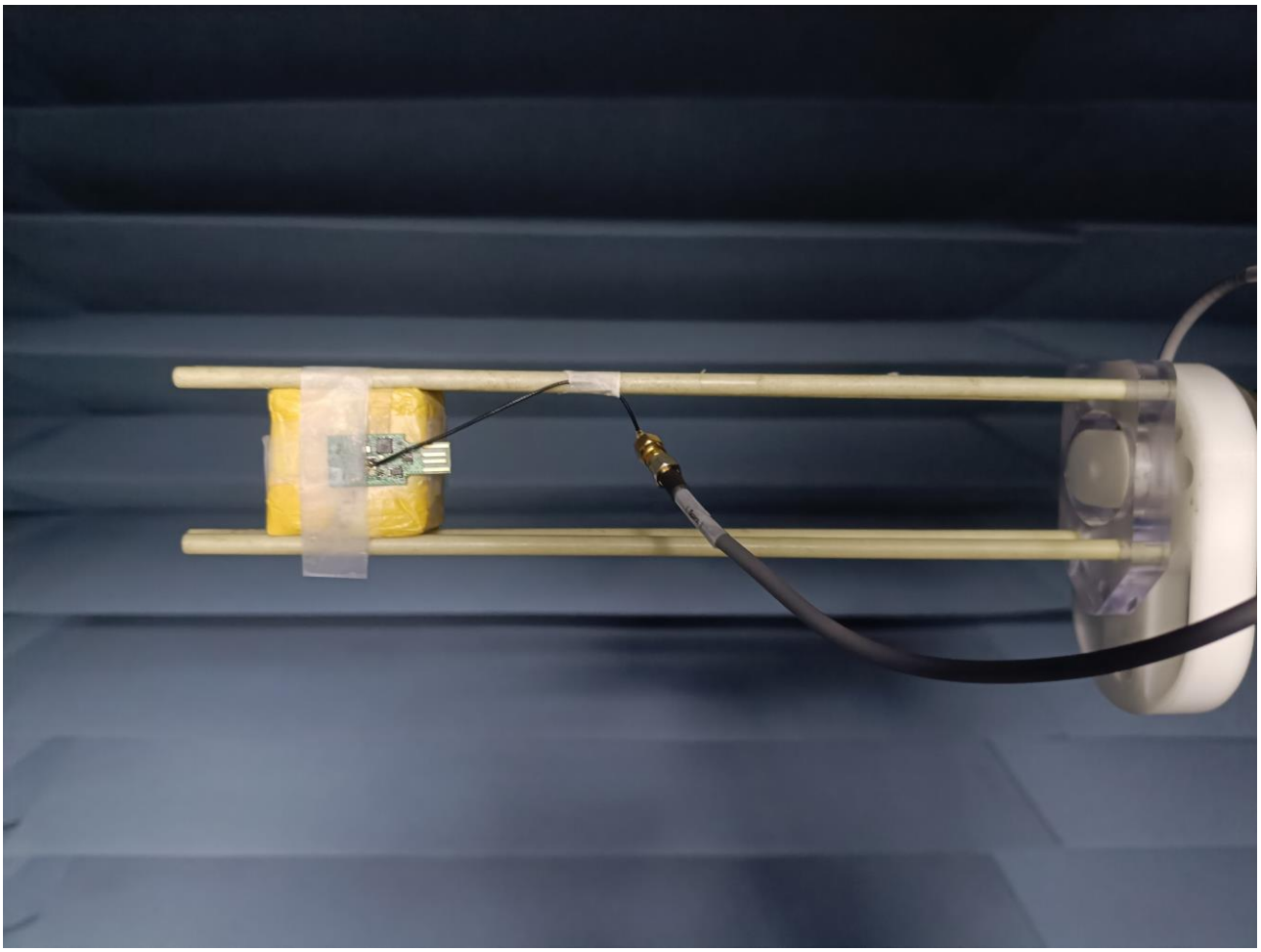
3.3. LOG MAG



3.4. SWR



Appendix A. Testing Setup Photo



Free Space