

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

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification

RELEASE CONTROL RECORD

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

Table of Contents

GENERAL INFORMATION	3
1. Test Equipment List	4
2. Measurement Uncertainty	4
3. Characteristics of antenna	5
Appendix A. Testing Setup Photo	10

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

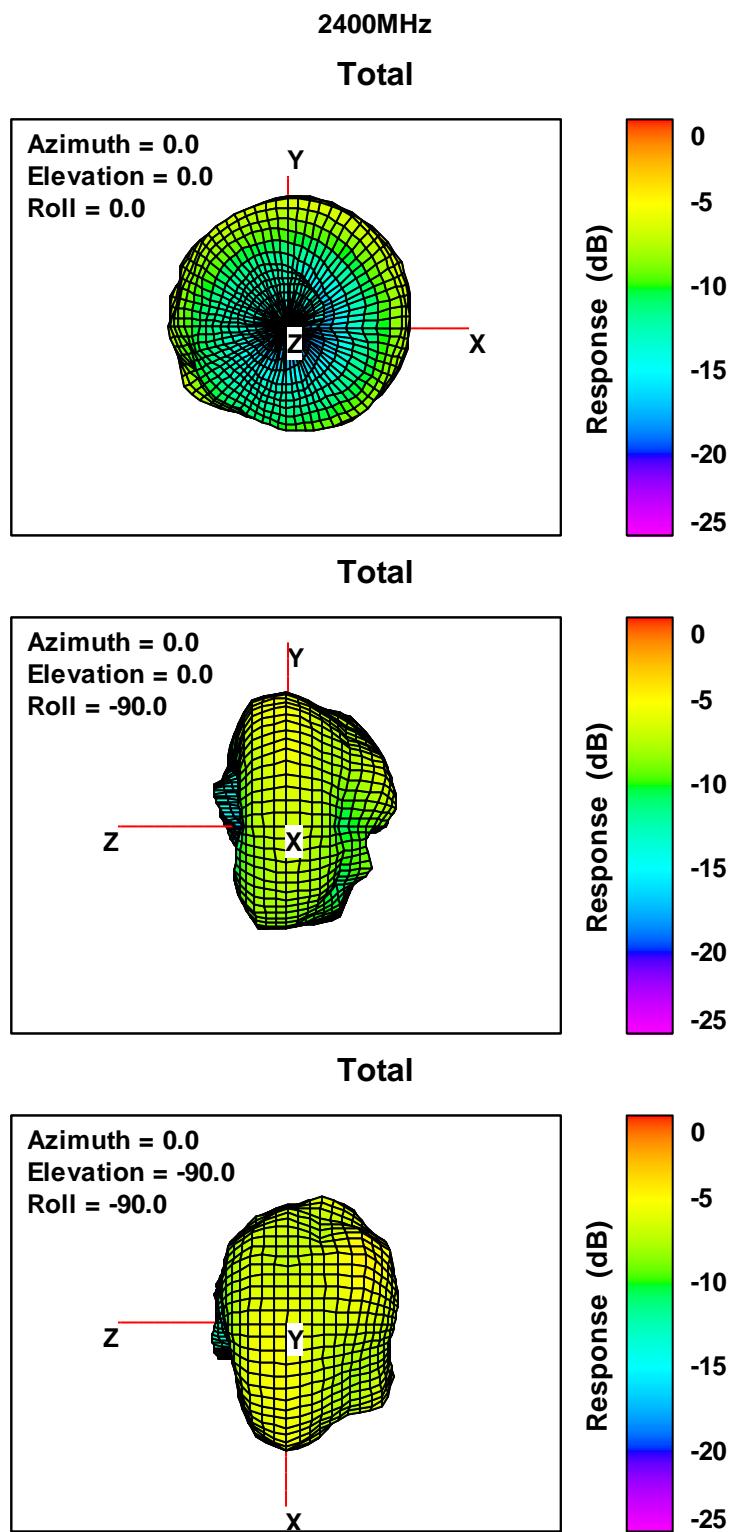
Expanded Uncertainty for Measurement (k=2 or 95% Confidence Level) at Passive antenna test over frequency range 780 – 2200MHz is +/- 1.52 dB.

3. Characteristics of antenna

3.1. 3D Antenna Gain-Free Space

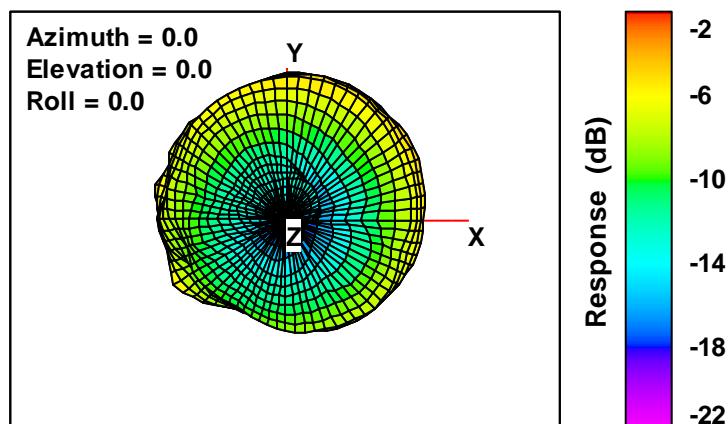
Frequency (MHz)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2400	4.77	-8.84	13.07	-4.07
2410	4.91	-8.47	14.24	-3.56
2420	4.91	-7.91	16.19	-3.00
2430	4.93	-7.59	17.42	-2.66
2440	4.93	-7.19	19.08	-2.27
2450	4.84	-6.98	20.04	-2.14
2460	4.84	-6.61	21.83	-1.77
2470	4.80	-6.37	23.09	-1.56
2480	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

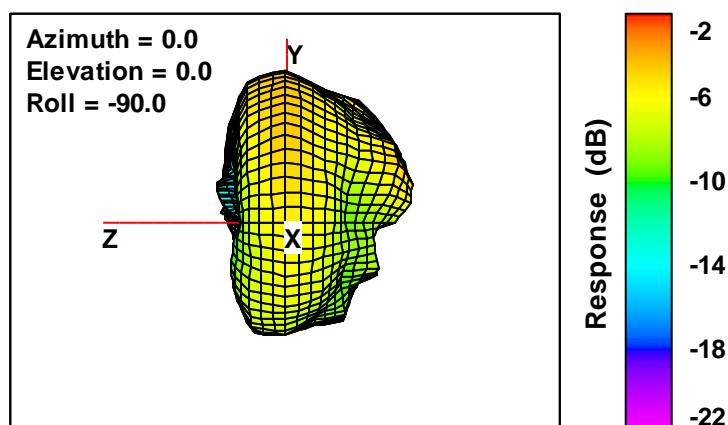


2440MHz

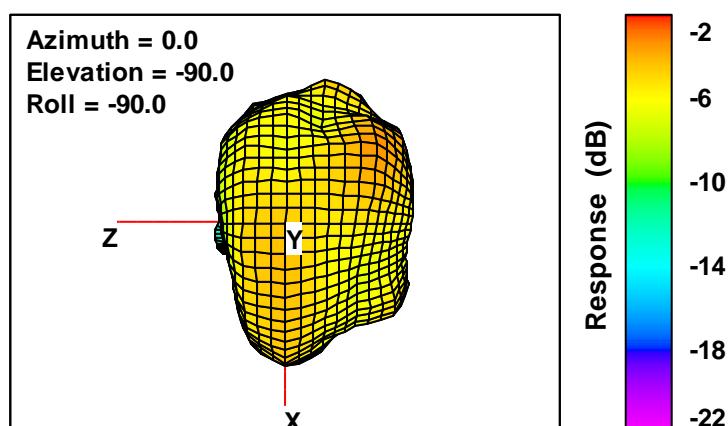
Total



Total

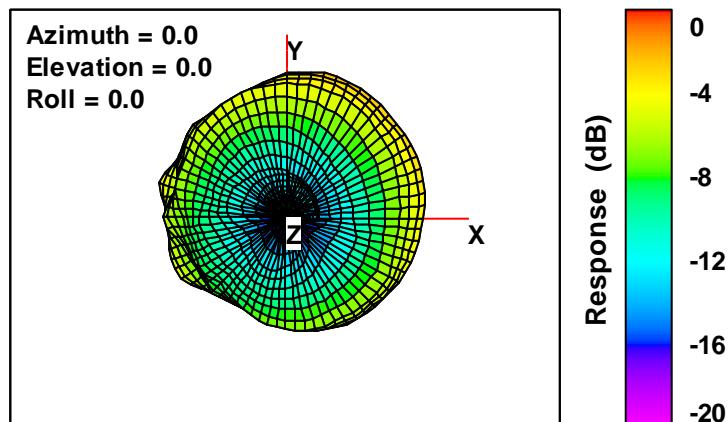


Total

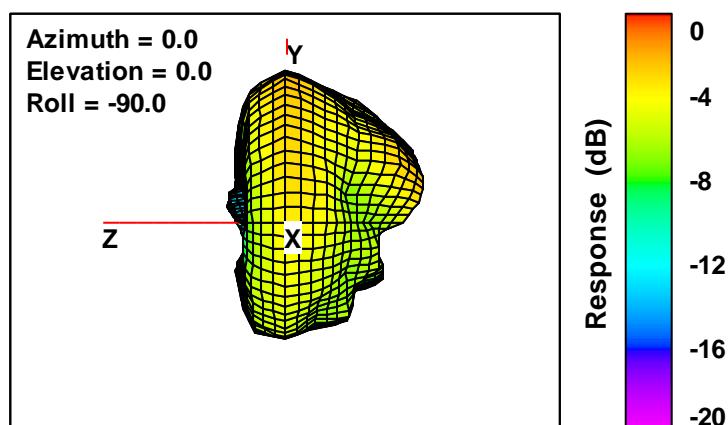


2480MHz

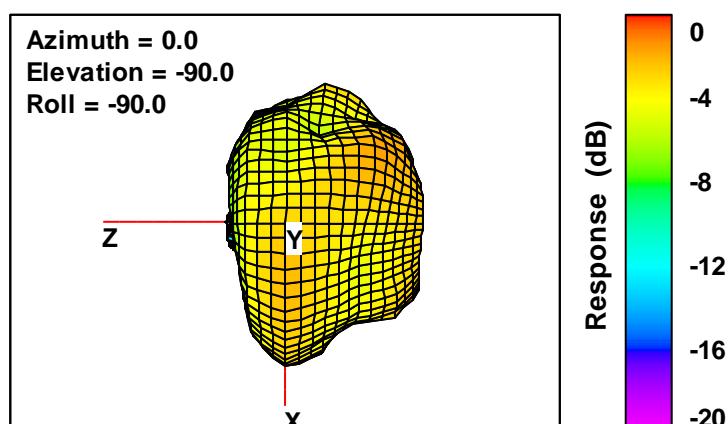
Total



Total



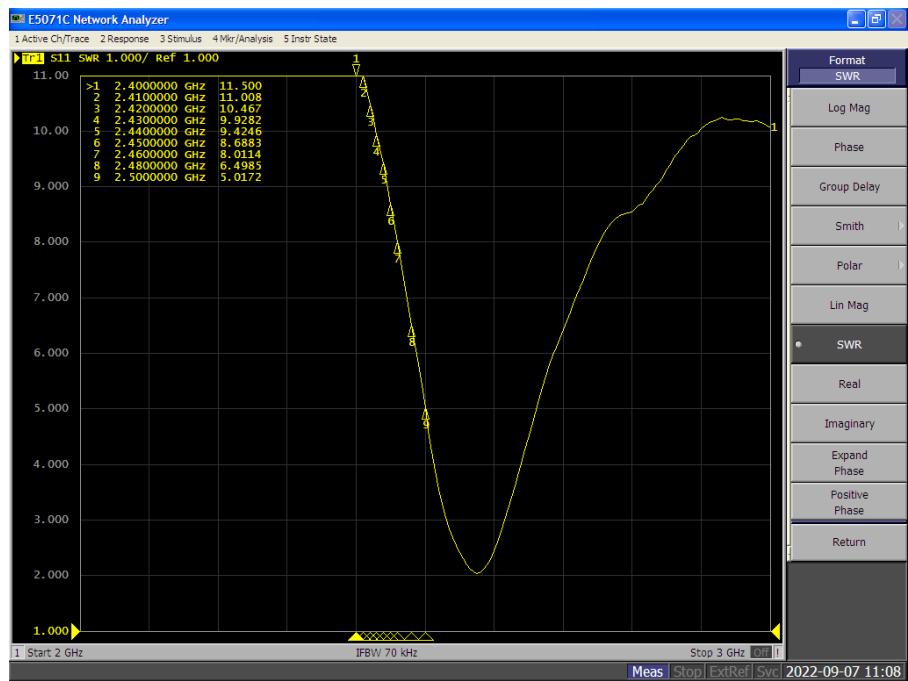
Total



3.3. LOG MAG



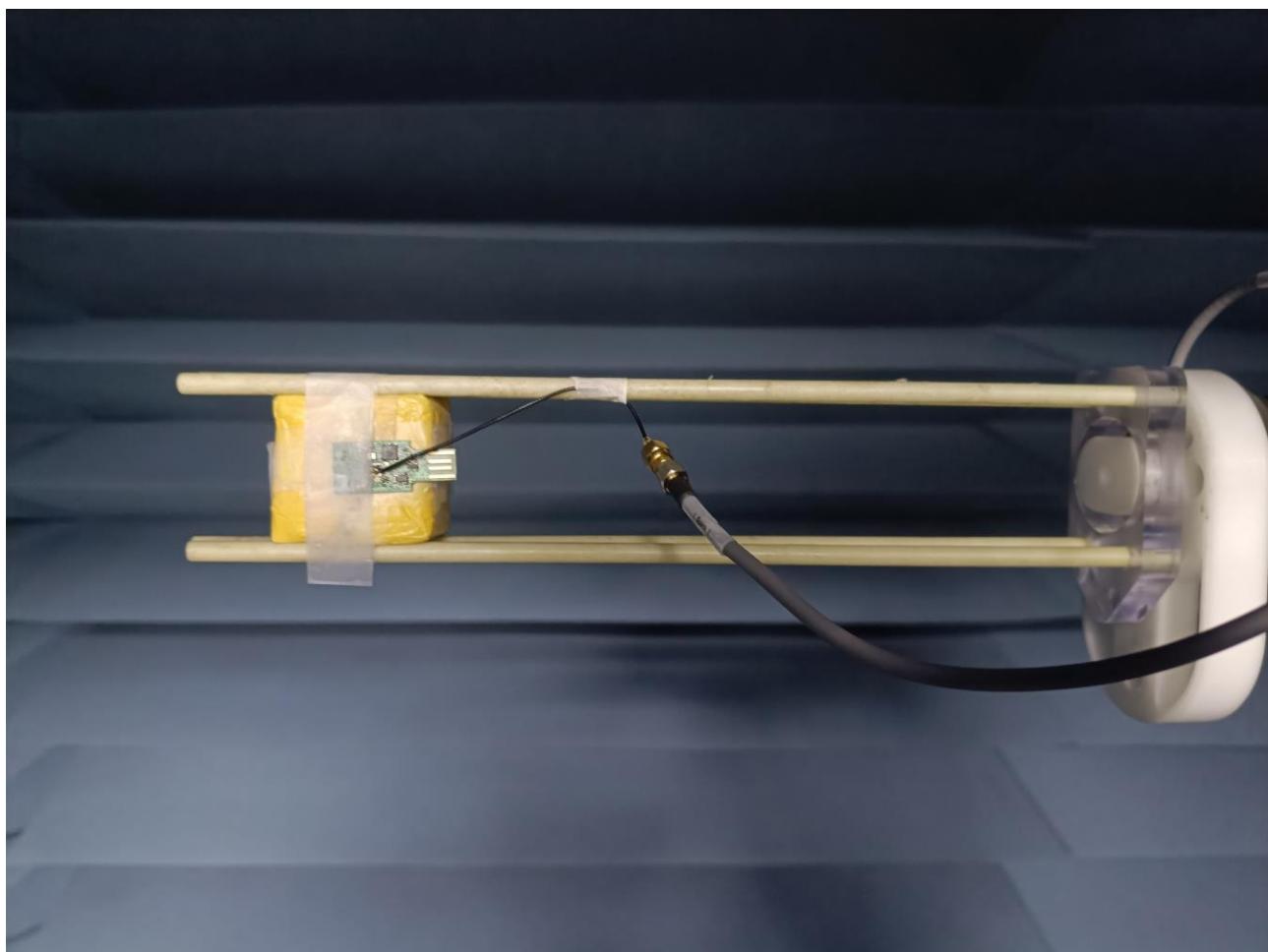
3.4. SWR





BUREAU
VERITAS

Appendix A. Testing Setup Photo



Free Space