



## SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/0 Aug01,2022

Report No.: SZCR221000365101R1

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# ANTENNA PASSIVE TEST REPORT

**Application No.** SZCR2212004286AT  
**Applicant** Voxx Accessories Corp  
**Manufacturer** Voxx Accessories Corp  
**Product Name** Universal Streaming Rechargeable Remote  
**Model No.** RCTSB3B  
**Standards** ANSI/IEEE Std 149-2008  
**Date Initial Sample(s) Received** 2023-01-10  
**Testing Start Date** 2023-01-11  
**Testing Finish Date** 2023-01-11 to 2023-01-12  
**Report Issue Date** 2023-02-01

\*In the configuration tested, the EUT detailed in this report complied with the standards specified above.

This report supersedes our previous report SZCR221200428601, issued on 2022-10-11, which is hereby deemed null and void.

Keny Xu

Keny Xu  
EMC Laboratory Manager



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Shenzhen Branch EMC Laboratory

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2022-10-11		Original
02		2023-02-01		Updated section 8

Authorized for issue by:				
		Ian. Li		
		Prepared by Ian Li		
		Mark Mao		
		Reviewed by Mark Mao		
		Eric Fu		
		Approved by Eric Fu		



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## 2 Revision Version

Report No.	Version	Date	Memo
SZCR2212004286AT	00	01/13	Initial creation of report



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## 4 General Information

### 4.1 Testing Laboratory

Test Lab	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Address	No.1 Workshop, M-10, Middle section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057
Contact	Mark Mao
Tel.	+86 (0) 755 2532 8628
Fax	+86 (0) 755 2671 0594
E-mail	Mark.Mao@sgs.com

### 4.2 Details of Applicant

Applicant's Name	Voxx Accessories Corp
Applicant's Address	3502 Woodview Trace, Suite 220, Indianapolis, IN 46268
Contact	Paul Tinaphong
Tel.	(317) 2187301
E-mail	Ptinaphong@voxxintl.com

### 4.3 Details of Manufacturer

Manufacturer's Name	Voxx Accessories Corp
Manufacturer's Address	3502 Woodview Trace, Suite 220, Indianapolis, IN 46268
Contact	Paul Tinaphong
Tel.	(317) 2187301
E-mail	Ptinaphong@voxxintl.com

### 4.4 General Description of EUT

Device Description:	Universal Streaming Rechargeable Remote
Device Manufacturer:	Voxx Accessories Corp
Device Model:	RCTSB3B
Hardware Version:	N/A
Software Version:	N/A
S/N:	N/A



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## 4.5 Test Procedure

Testing is performed according to the **ANSI/IEEE Std 149-2008**.

## 4.6 Test Specification

Identity	Document Title
ANSI/IEEE Std 149-2008	IEEE Standard Test Procedures for Antennas

## 4.7 Laboratory Environment

Temperature	Min. =19℃, Max. = 25℃	
Relative humidity	Min. =40%, Max. =72%	
Shield effect	0.7-6GHz	> 100dB
Ground resistance	<0.5Ω	



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### 4.8 Test Location

All tests were performed at:

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No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

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No tests were sub-contracted.

### 4.9 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

### 4.10 Deviation from Standards

None

### 4.11 Abnormalities from Standard Conditions

None



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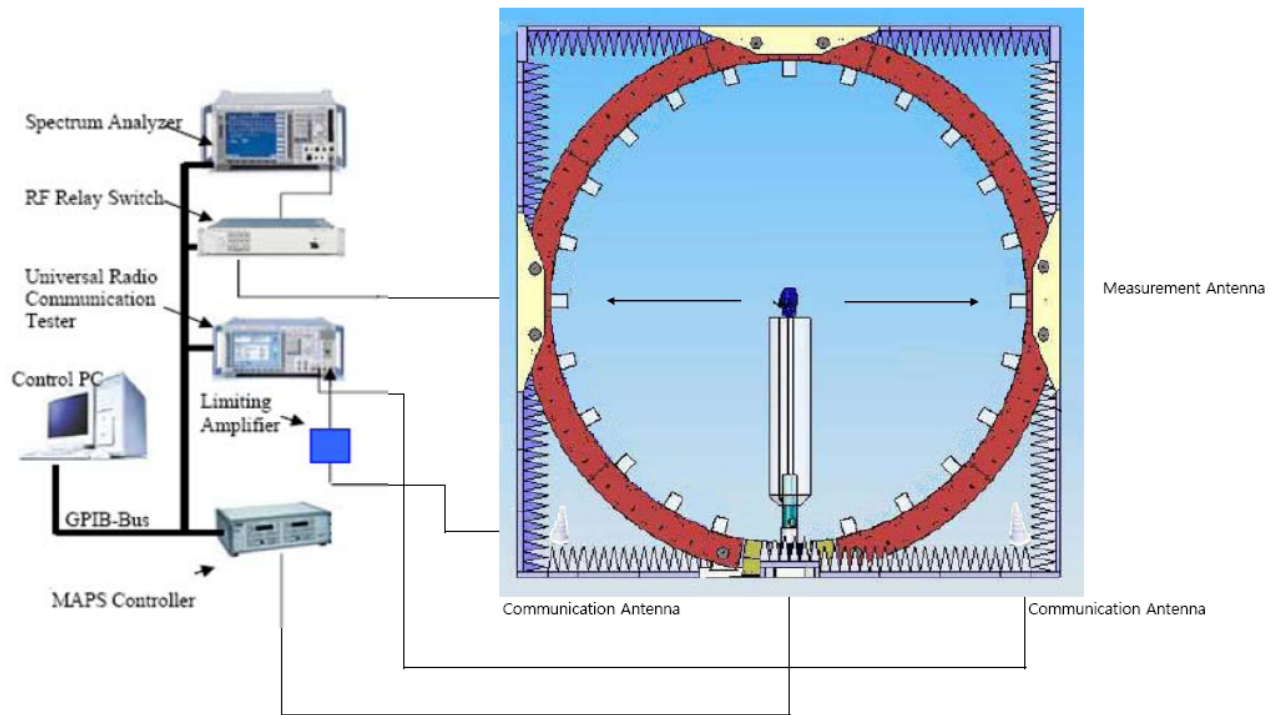
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## 5 OTA Measurements System Configuration

### 5.1 Test Configuration

Great-Circle-Cut method is used to measure the antenna 3D GAIN of EUT in OTA qualified anechoic chamber. Equipment Under Test (EUT) geometry centre vertical projection at the centre of platform, the distance from EUT to measurement antenna is 5m



F-1. OTA Measurement System Configuration



## 6 Equipment List

Type of Equipment	Model Number	Manufacture	Calibration Date	Valid Period
Network Analyzer	E5071C S/N MY46523591	Keysight	2022/4/11	2023/4/10
Quad-Ridge Horn Antenna 700 MHz-10 GHz	EMCO 3164-08 S/N 161915	ETS-Lindgren L.P.	N/A	N/A
MAPS Controller	EMCENTER S/N 160485	ETS-Lindgren L.P.	N/A	N/A



## 7 Measurement Uncertainty

Item	2400-2500 MHz (dB)
Gain	0.88
Efficiency	0.88
Measurement Uncertainty (95% CONFIDENCE INTERVAL) K=2	



## 8 Test Result

### 8.1 Test summary

product	Maximum Gain Data			
	Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
Antenna	2405	-3.77	41.98	0.34

### 8.2 Antenna Test Results

Free Space			
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2400	-3.88	40.93	0.03
2402	-3.87	41.05	0.12
2405	-3.77	41.98	0.34
2410	-3.79	41.80	0.17
2415	-3.83	41.41	0.04
2420	-3.98	40.00	-0.36
2425	-4.05	39.37	-0.43
2430	-4.11	38.86	-0.60
2435	-4.11	38.80	-0.58
2440	-4.04	39.45	-0.41
2441	-4.06	39.29	-0.41
2445	-4.09	39.00	-0.45
2450	-4.11	38.84	-0.36
2455	-4.18	38.23	-0.51
2460	-4.26	37.50	-0.54
2465	-4.25	37.55	-0.68
2470	-4.41	36.20	-0.73
2475	-4.45	35.86	-0.87
2480	-4.71	33.77	-0.98
2482	-4.74	33.55	-1.02
2485	-4.77	33.32	-1.17
2490	-4.85	32.73	-1.02
2495	-4.73	33.67	-1.06
2500	-4.71	33.78	-0.82



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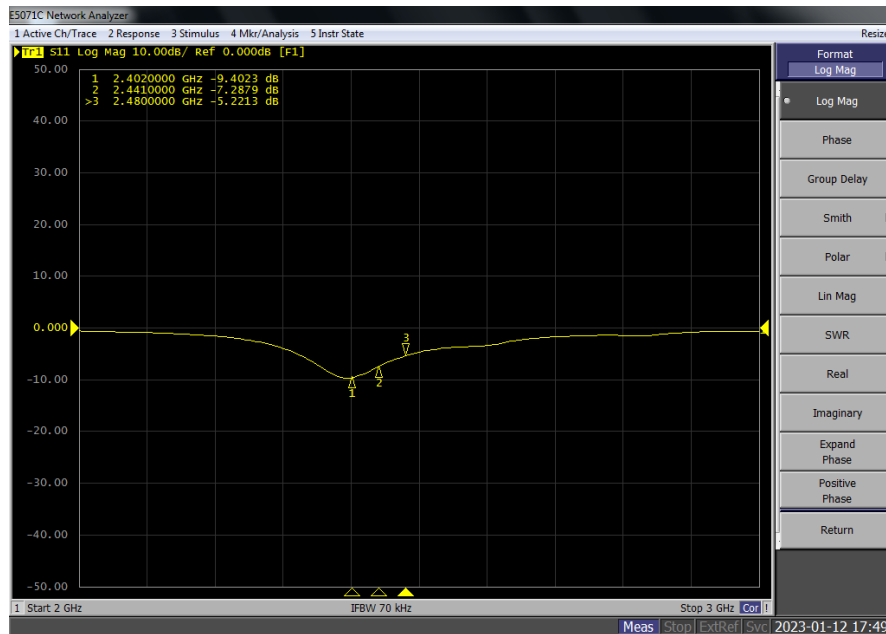
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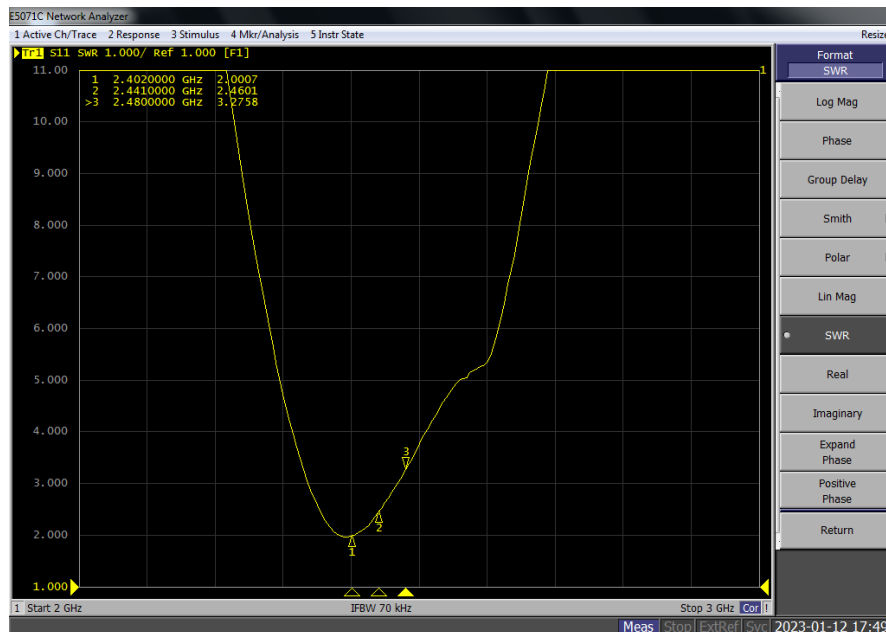
## 9 Pattern Plots

### Return Los



Free Space

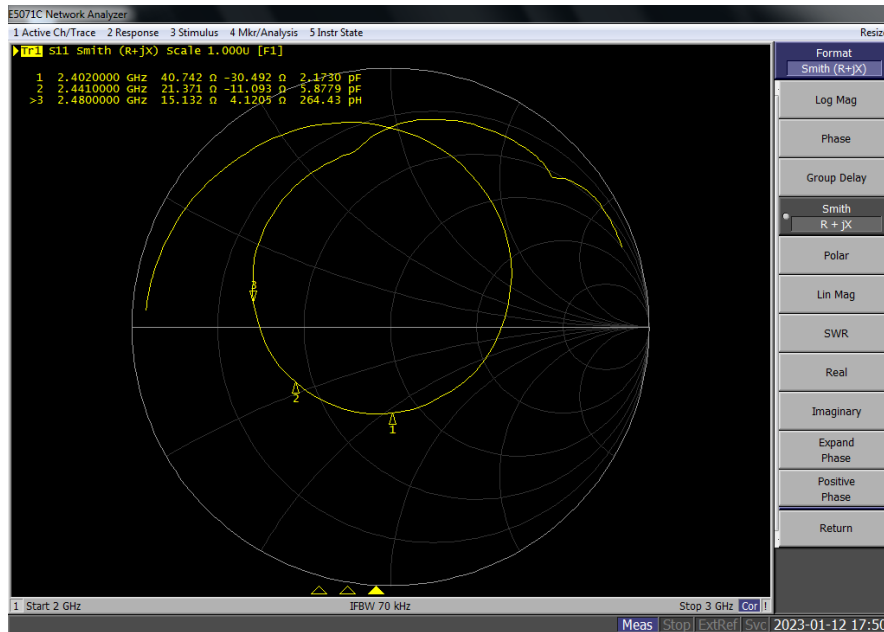
### VSWR



Free Space



### Stimulus

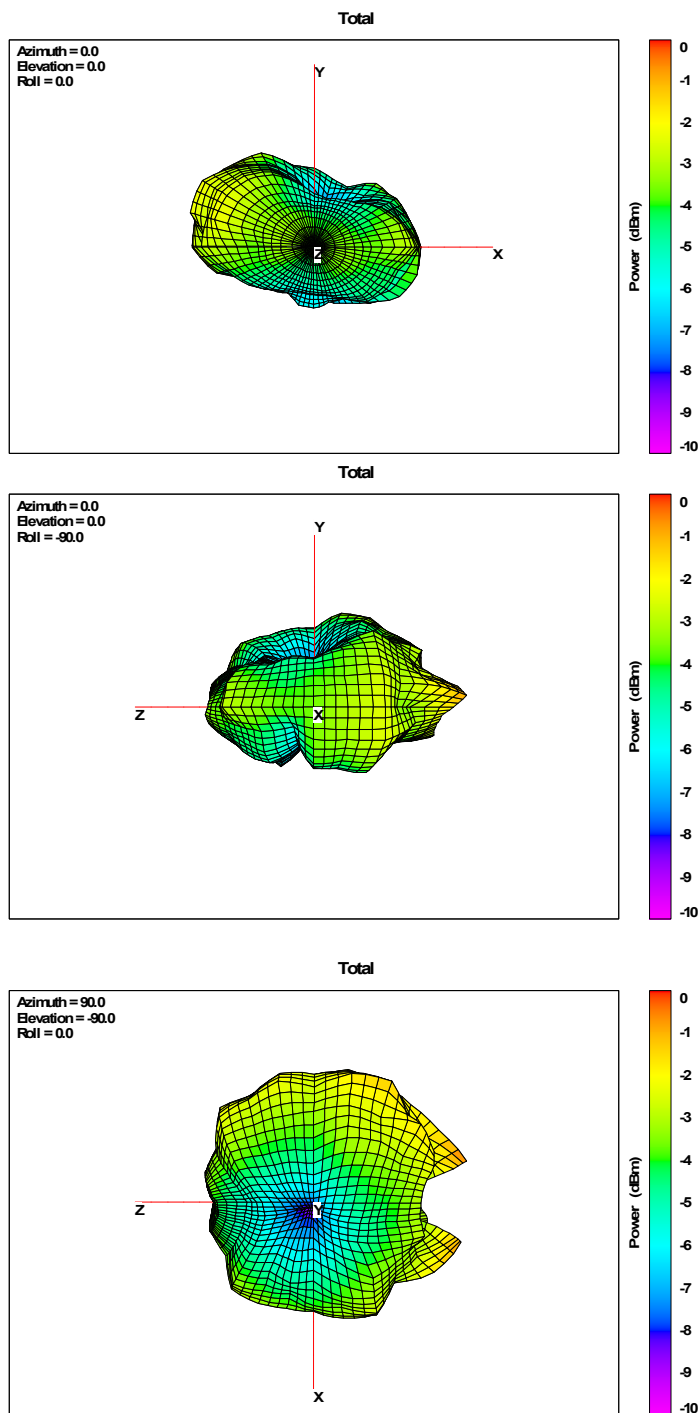


Free Space





### 10 3-D Antenna Pattern

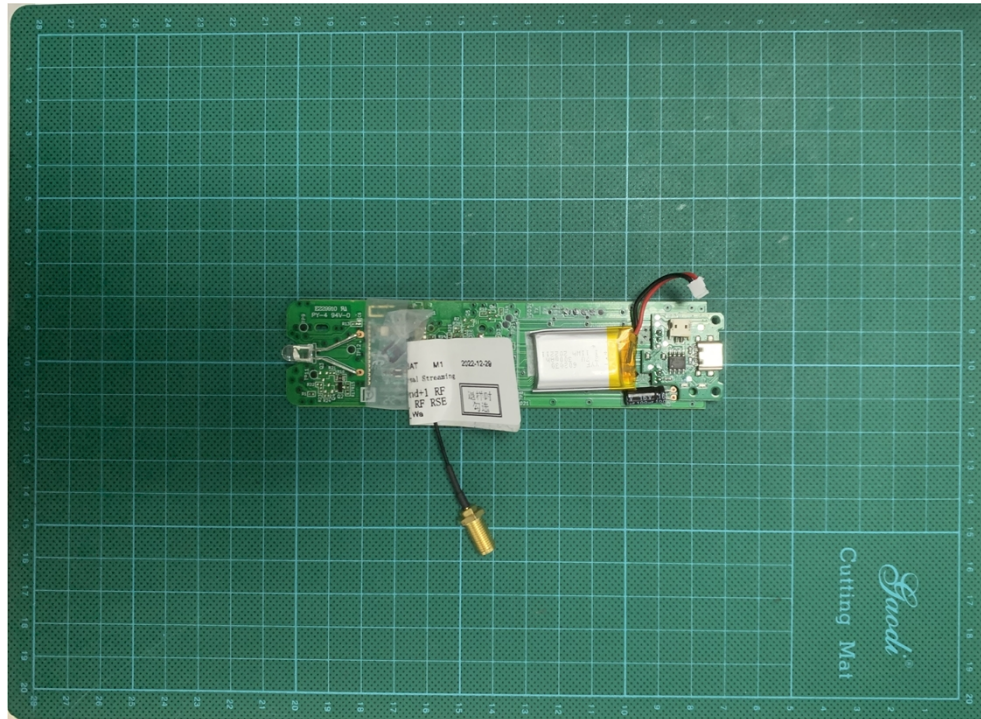


3-D Antenna Pattern

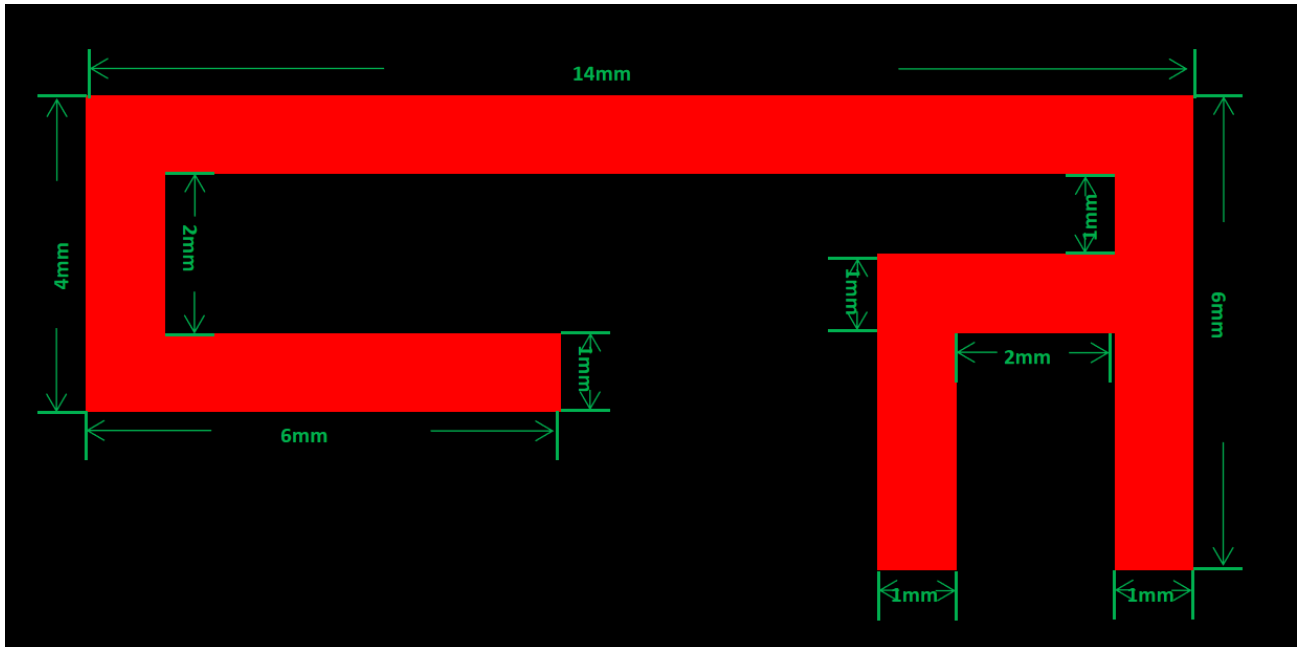


## 11 The EUT and Test Configuration

### Photo of EUT



### Size of the Antenna

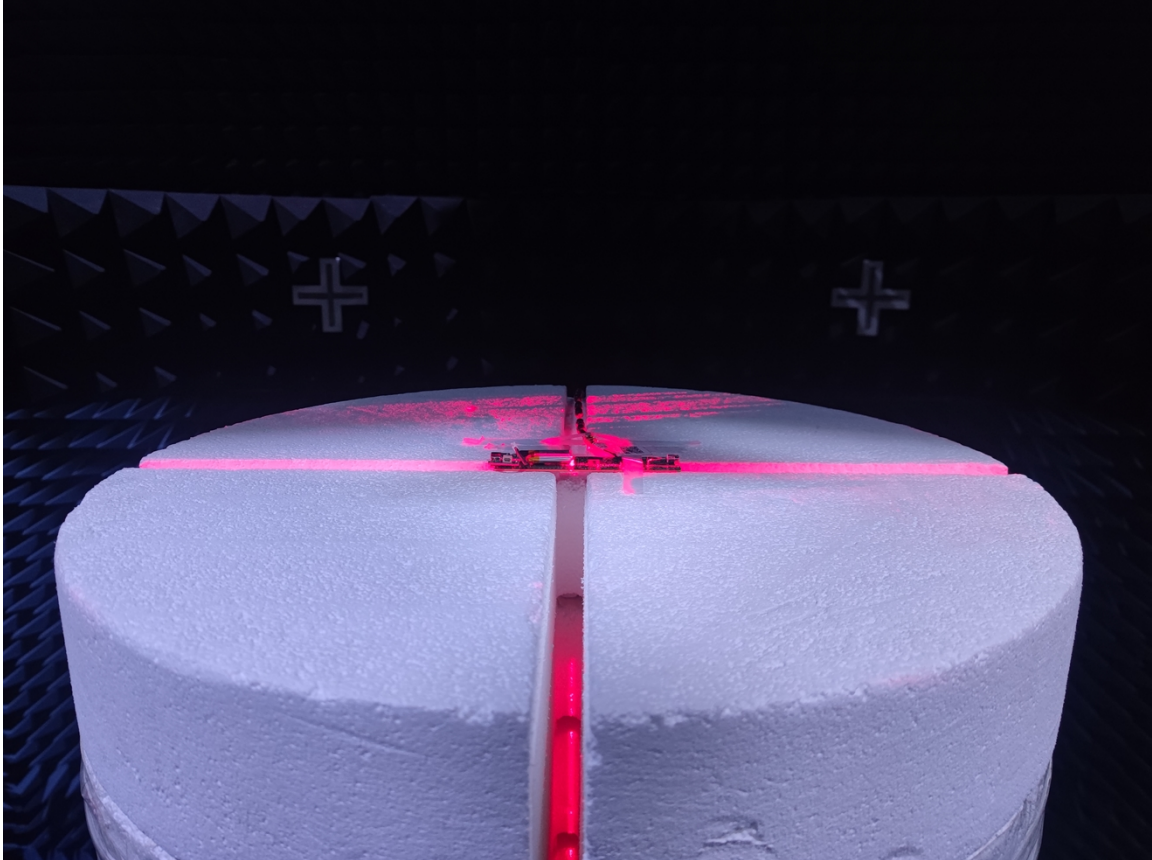


Size of the Antenna in the EUT





### Free Space View



- End of the Report -

