

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

Report No.: SZCR220900310101

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ANTENNA PASSIVE TEST REPORT

Application No. SZCR2209003101AT

ApplicantShenzhen Newidea Technology Co., Ltd.ManufacturerShenzhen Newidea Technology Co., Ltd.

2.4G Self-defined Wireless Mouse Antenna, 2.4G Self-defined

Product Name
Wireless USB Dongle Antenna

Wireless Mouse Antenna NM-401W

Model No.

USB Dongle Antenna NM401W

Standards ANSI/IEEE Std 149-2008

Date Initial Sample(s) Received 2022-09-09 Testing Start Date 2022-09-09

Testing Finish Date 2022-09-09 to 2022-9-12

Report Issue Date 2022-9-13

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

Keny Xu EMC Laboratory Manager



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	Revision Record				
Version	Chapter	Date	Modifier	Remark	
01		2022-09-13		Original	

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



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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	Shenzhen Newidea Technology Co., Ltd.
Applicant's Address	Building 31, No.5, Huaide Cuigang Industrial Zone, Fuyong Town, Bao'an District, Shenzhen, Guangdong China
Contact	Shirley Yang
Tel.	0755-33930236-802
E-mail	0755-33930235

4.3 Details of Manufacturer

Manufacturer's Name	Shenzhen Newidea Technology Co., Ltd.
Manufacturer's Address	Building 31, No.5, Huaide Cuigang Industrial Zone, Fuyong Town, Bao'an District, Shenzhen, Guangdong China
Contact	Shirley Yang
Tel.	0755-33930236-802
E-mail	0755-33930235

4.4 General Description of EUT

Device Description:	Shenzhen Newidea Technology Co., Ltd.
5 · M · ()	2.4G Self-defined Wireless Mouse Antenna, 2.4G Self-defined
Device Manufacturer:	Wireless USB Dongle Antenna
Device Model:	Wireless Mouse Antenna NM-401W
	USB Dongle Antenna NM401W
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

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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:

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

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

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

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

4.11 Abnormalities from Standard Conditions

None



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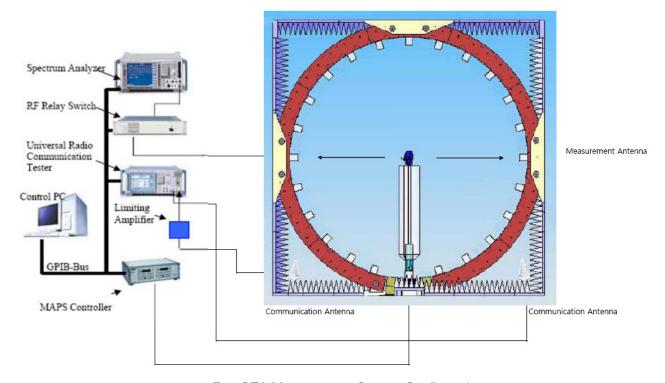
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OTA Measurements System Configuration 5

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



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Equipment List 6

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



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Measurement Uncertainty

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



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8 **Test Result**

8.1 Test summary

product	Maximum Gain Data				
product	Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)	
Wireless Mouse	2465	-4.80	33.08	-0.93	
USB dongle	2475	-12.05	6.23	-4.62	

8.2 Wireless Mouse Test Results

Free Space						
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)			
2400	-5.22	30.03	-1.28			
2402	-5.20	30.22	-1.34			
2405	-5.12	30.75	-1.20			
2410	-5.16	30.49	-1.25			
2415	-5.18	30.34	-1.30			
2420	-5.24	29.91	-1.42			
2425	-5.19	30.29	-1.34			
2430	-5.16	30.51	-1.26			
2435	-5.07	31.08	-1.20			
2440	-4.97	31.82	-1.05			
2441	-4.98	31.78	-1.04			
2445	-4.95	32.00	-1.04			
2450	-4.93	32.11	-1.06			
2455	-4.92	32.23	-1.00			
2460	-4.91	32.27	-1.08			
2465	-4.80	33.08	-0.93			
2470	-4.88	32.49	-0.99			
2475	-4.82	32.95	-0.98			
2480	-4.92	32.19	-1.11			
2482	-4.90	32.39	-1.10			
2485	-4.82	32.94	-1.07			



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8.3 USB dongle test result

Free Space						
Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)			
2400	-17.08	1.96	-10.72			
2402	-16.99	2.00	-10.45			
2405	-16.78	2.10	-10.34			
2410	-16.49	2.24	-9.82			
2415	-16.09	2.46	-9.28			
2420	-15.68	2.70	-8.78			
2425	-15.29	2.96	-8.14			
2430	-14.99	3.17	-7.94			
2435	-14.63	3.44	-7.32			
2440	-14.19	3.81	-7.03			
2441	-14.13	3.87	-6.89			
2445	-13.81	4.16	-6.48			
2450	-13.39	4.58	-6.13			
2455	-13.04	4.97	-5.70			
2460	-12.77	5.28	-5.48			
2465	-12.47	5.67	-5.08			
2470	-12.40	5.75	-5.15			
2475	-12.05	6.23	-4.62			
2480	-11.85	6.53	-4.45			
2482	-11.66	6.83	-4.29			
2485	-11.35	7.33	-3.79			



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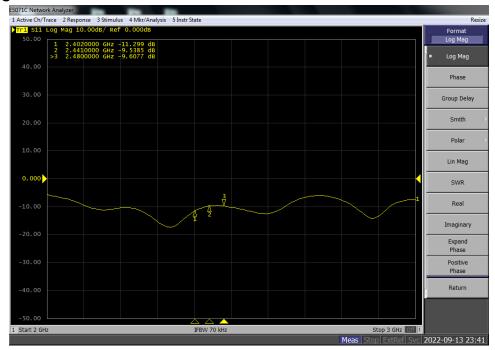
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9 **Pattern Plots**

Return Los





Free Space (USB Dongle)



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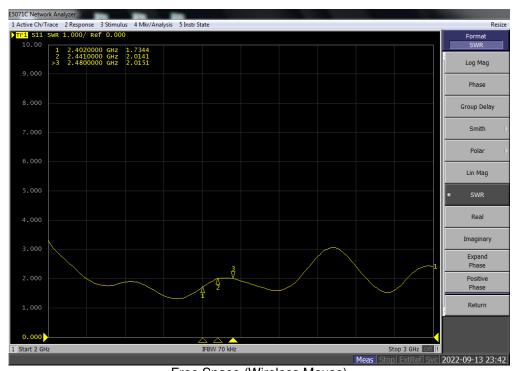


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VSWR





Free Space (USB Dongle)



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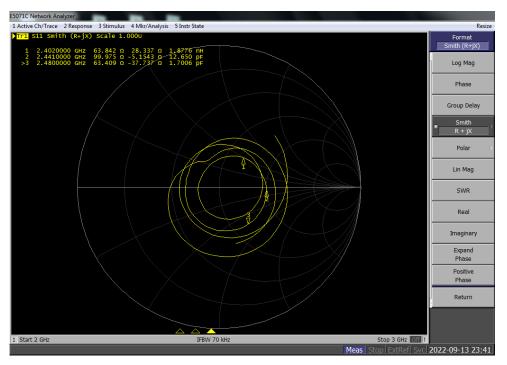


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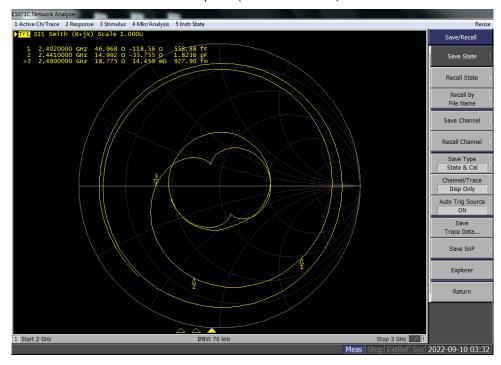
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Stimulus



Free Space (Wireless Mouse)



Free Space (USB Dongle)



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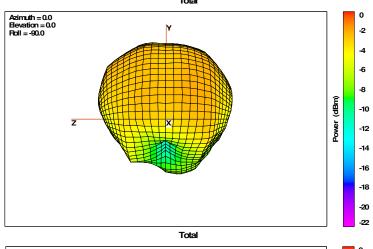
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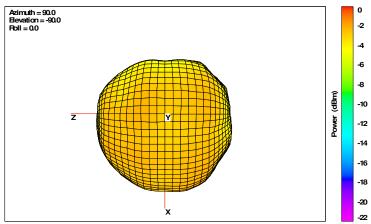
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10 3-D Antenna Pattern

10.1 Wireless Mouse 3-D Antenna Pattern

Azimuth = 0.0 Elevation = 0.0 Roll = 0.0 -6 (dBm) Power -12 -14 -18 -20





Free Space



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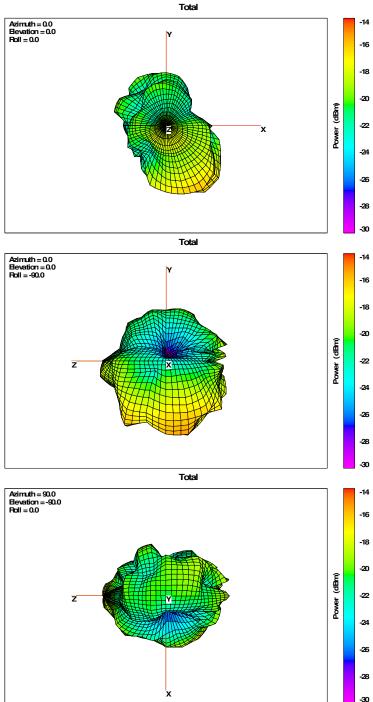


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10.2 USB Dongle 3-D Antenna Pattern







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11 Dimension

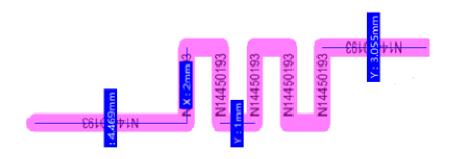


Photo of EUT (Wireless Mouse)

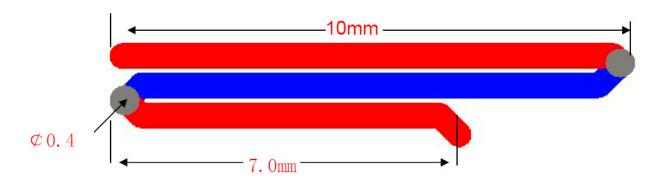


Photo of EUT (USB Dongle)



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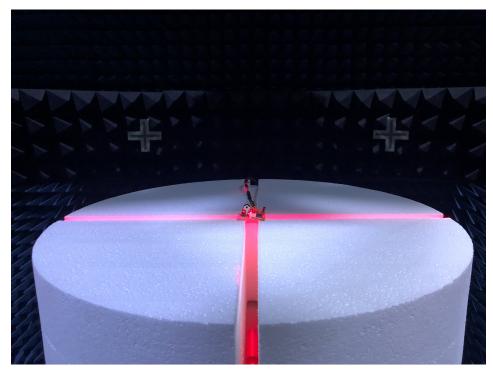


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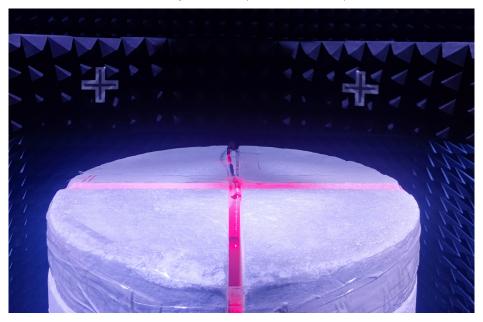
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Free Space View



Free Space View (Wireless Mouse)



Free Space View (USB Dongle)

- End of the Report -



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