



REPORT No.: SZ22030288E01

TEST REPORT

APPLICANT : Gemstar Technology (Yangzhou) Co.Ltd
PRODUCT NAME : Sensor
MODEL NAME : Aspen Low Cost Temp and Humidity Sensor 2021
TRADE NAME : N/A
BRAND NAME : N/A
STANDARD(S) : ANSI/IEEE Std 149-2008
RECEIPT DATE : 2022-05-05
TEST DATE : 2022-05-06
ISSUE DATE : 2022-05-11



Edited by:

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Approved by:

Chi Shide

Chi Shide(Supervisor)

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1. Technical Information

Note: Provide by manufacturer.

1.1. Applicant and Manufacturer Information

Applicant:	Gemstar Technology(Yangzhou) Co.Ltd
Applicant Address:	Room 606, Guofa building, #3110 Renmin Road, Suzhou,Jiangsu Province, China
Manufacturer:	N/A
Manufacturer Address:	N/A

1.2. Equipment Under Test (EUT) Description

Wireless Type	Zigbee
Frequency	2400MHz-2500MHz
IMEI	N/A
Sample No.	1#&2#



2. Test Results

2.1. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	ANSI/IEEE Std 149-2008	IEEE Standard Test Procedures for Antennas

2.2. Test Conditions

Test Environment Conditions:

Relative Humidity:	25 ... 75 %
Temperature:	+10 °C to +30 °C

2.3. Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO. When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% Confidence intervals.

Item	Measurement Uncertainty(dB)
Gain	±0.5
VSWR	±0.2
Measurement Uncertainty(95% Confidence Interval) K=2	



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2.4. Test Results lists

2.4.1. Gain and Efficiency

Frequency(MHz)	Gain(dBi)		Average Gain(dBi)		Efficiency(%)		Efficiency(dB)	
	1#	2#	1#	2#	1#	2#	1#	2#
2400	1.52	1.80	-3.01	-3.07	56.98	56.96	-2.44	-2.44
2405	1.63	1.93	-2.97	-3.00	57.73	58.01	-2.39	-2.37
2410	1.60	1.93	-3.03	-3.03	57.01	57.62	-2.44	-2.39
2420	1.53	1.93	-3.17	-3.12	55.63	56.85	-2.55	-2.45
2430	1.49	1.85	-3.25	-3.17	54.78	56.51	-2.61	-2.48
2440	1.63	1.98	-3.12	-3.02	56.40	58.55	-2.49	-2.32
2450	1.66	1.97	-3.00	-2.89	57.14	59.72	-2.43	-2.24
2460	1.77	2.10	-2.94	-2.80	57.82	60.89	-2.38	-2.15
2470	1.77	2.17	-3.06	-2.89	56.56	59.89	-2.47	-2.23
2480	1.73	2.16	-3.19	-3.01	55.56	58.92	-2.55	-2.30
2490	1.79	2.18	-3.29	-3.12	55.25	58.45	-2.58	-2.33
2500	1.88	2.20	-3.20	-3.06	56.65	59.59	-2.47	-2.25

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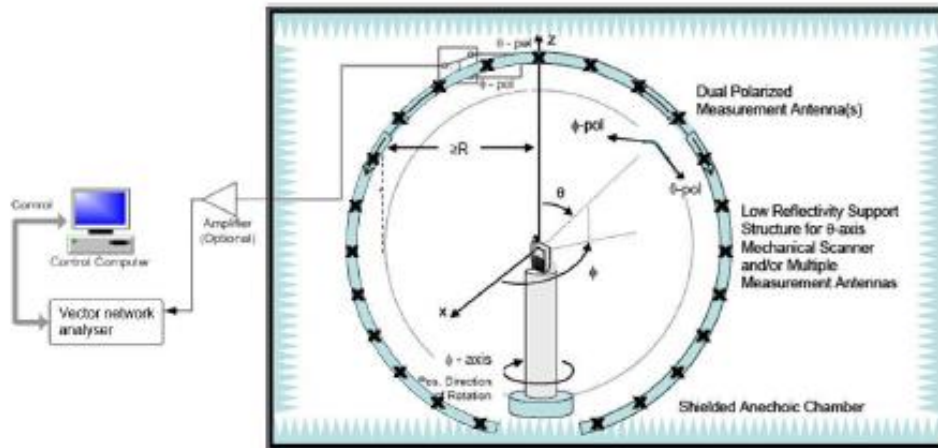
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Annex A Photographs

1. Test Setup

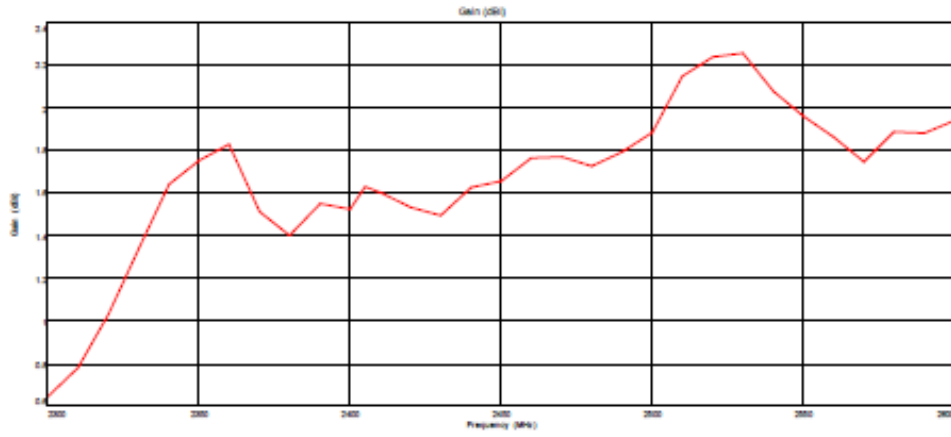




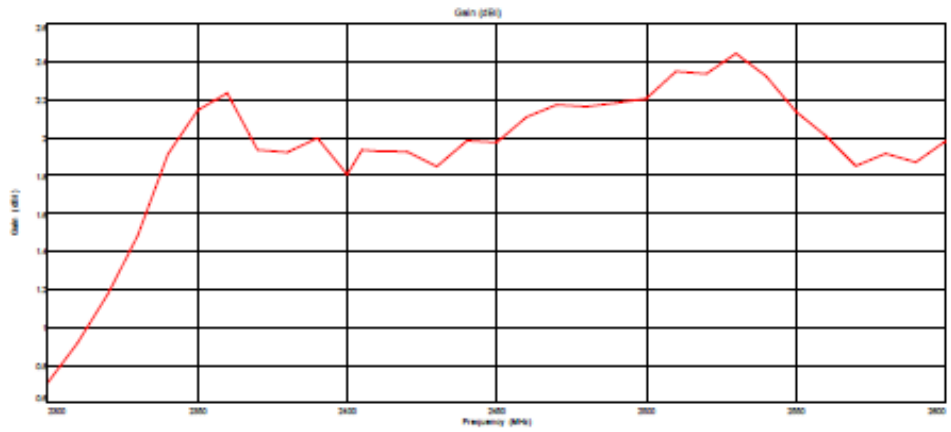
Annex B Figures

1. 2D Radiation Pattern

Gain



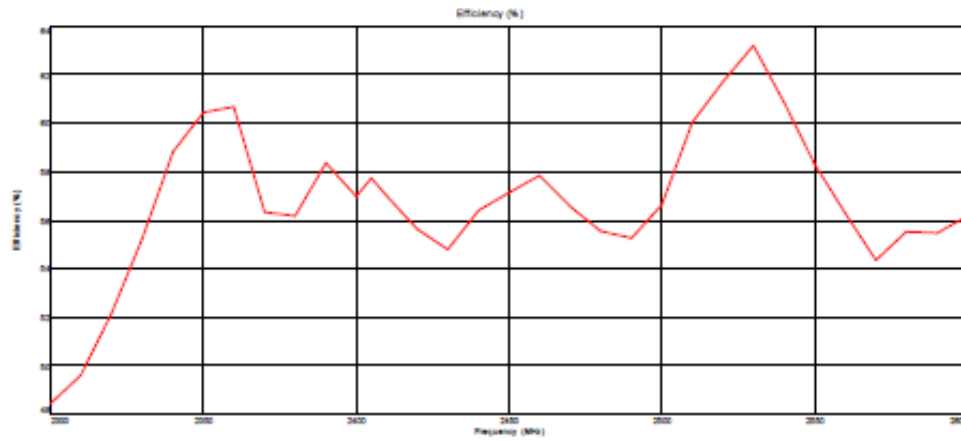
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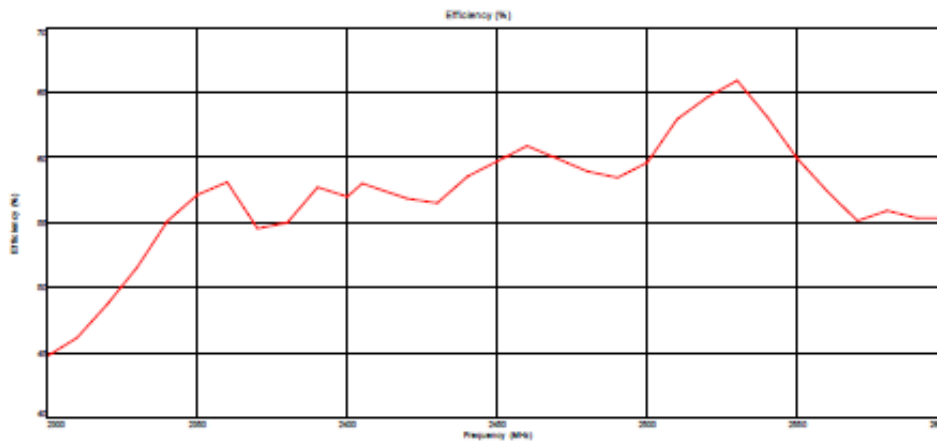
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Efficiency



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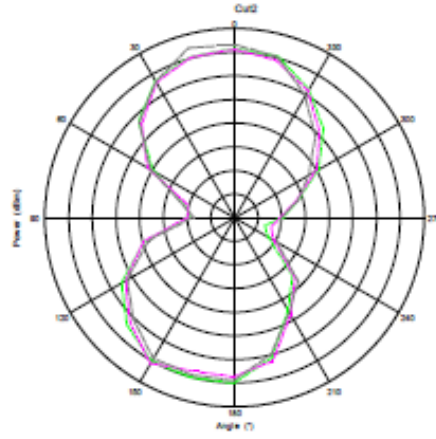


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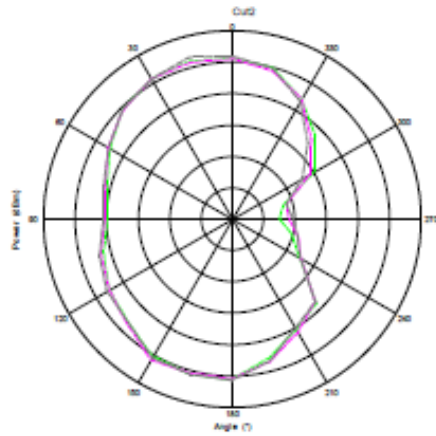
Phi=0°



Max: 7
Min: -14
Scale: 20dB



1#



Max: 7
Min: -14
Scale: 20dB



2#

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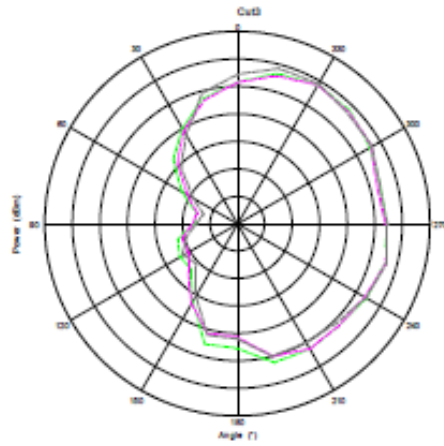
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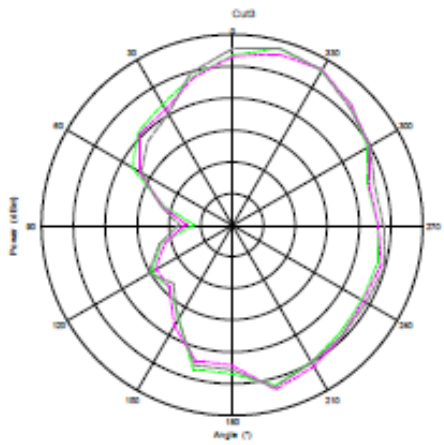
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Phi=90°



Max: 6
Min: -12
Scale: 20dB

1#



Max: 7
Min: -12
Scale: 20dB

2#

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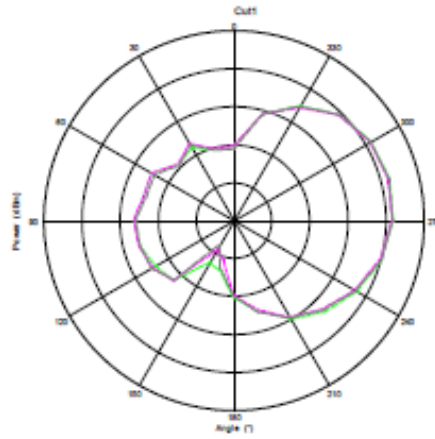
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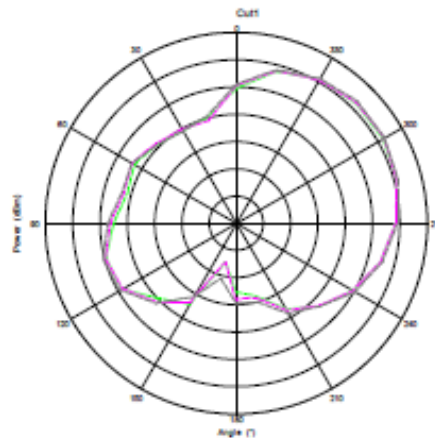
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Theta=90°



Max: 0
Min: -30
Scale: 30dB

1#



Max: 0
Min: -30
Scale: 30dB

2#

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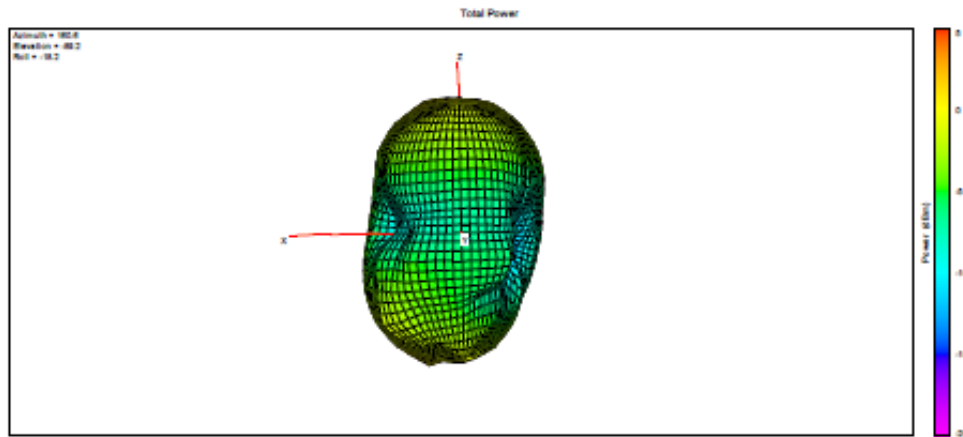
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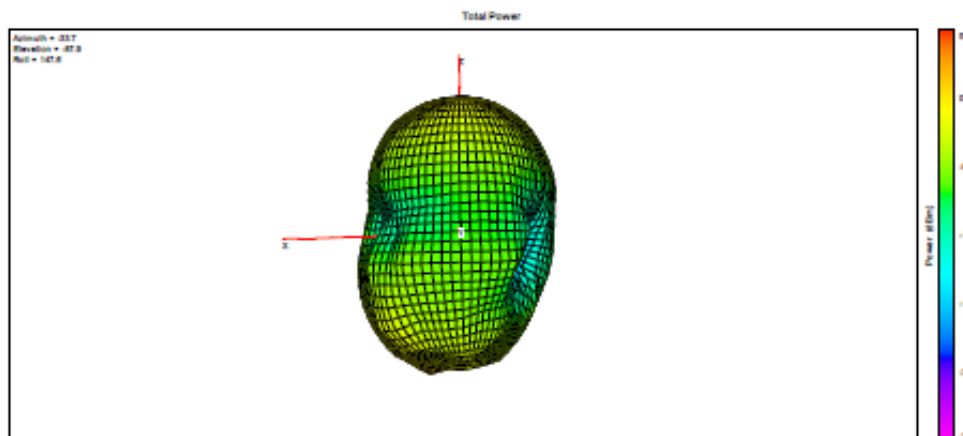
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2. 3D Radiation Pattern



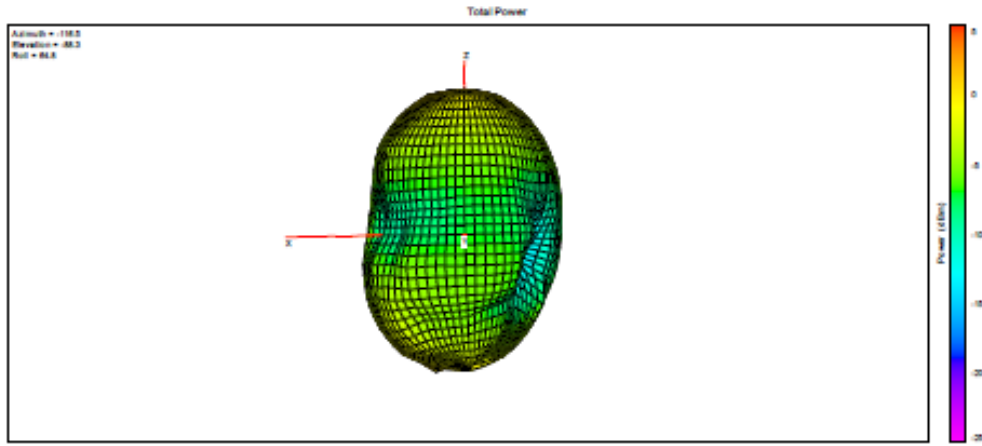
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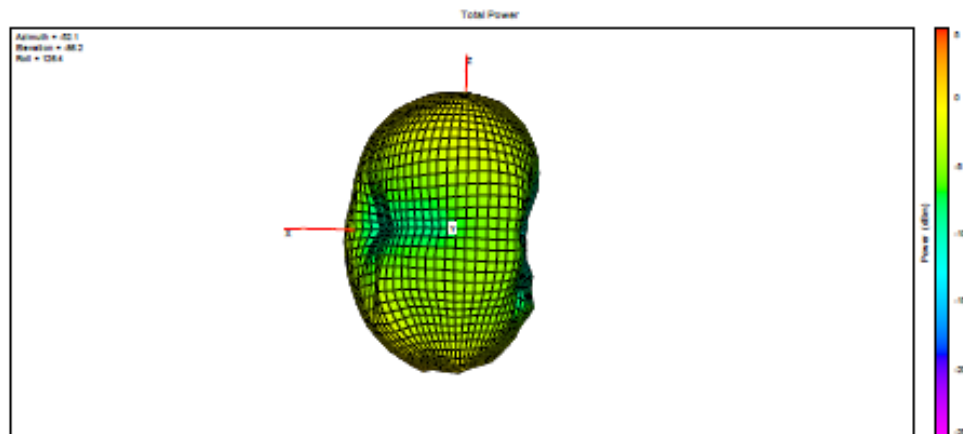
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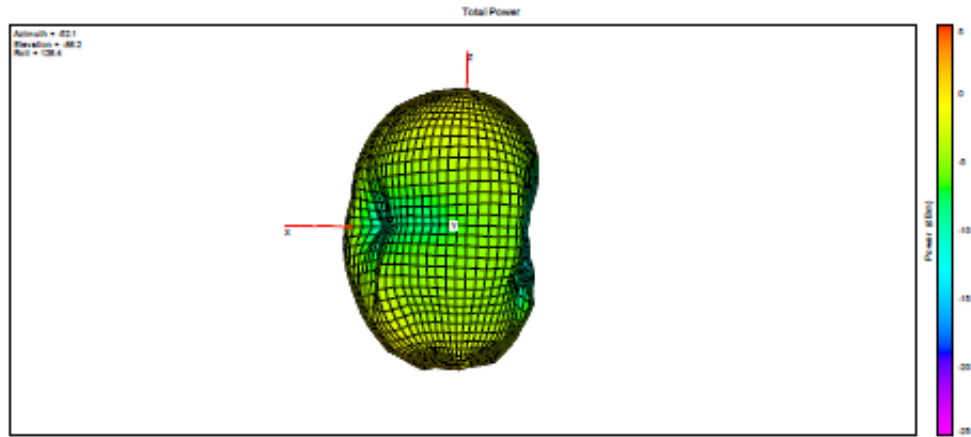
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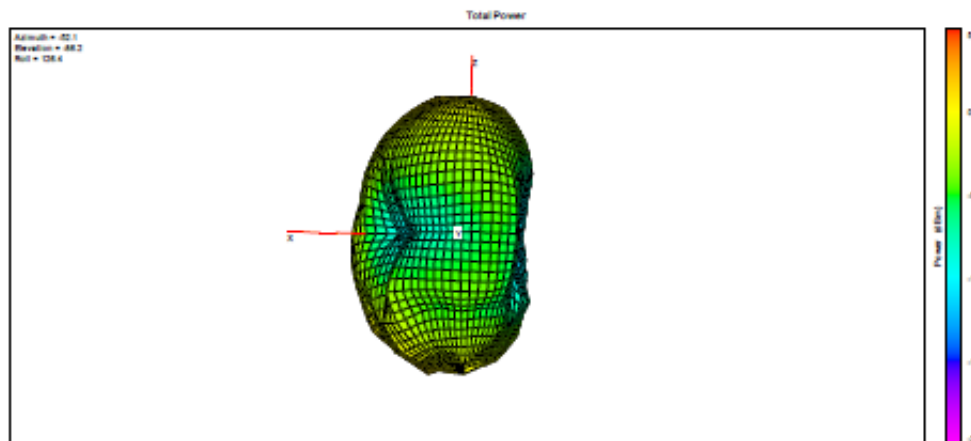
2480MHz_1#



2405MHz_2#



2440MHz_2#



2480MHz_2#