



TEST REPORT

APPLICANT : GP Electronics (SZ) Limited

PRODUCT NAME : FPC Antenna

MODEL NAME : Molex 1461530300 (Cable Length 300mm)
: Mgear C4207-510017-A(SSR-210139) Rev 3

TRADE NAME : N/A

BRAND NAME : N/A

STANDARD(S) : GB/T 9410-2008
: ANSI/IEEE Std 149-2008

RECEIPT DATE : 2021-06-02

TEST DATE : 2021-06-03

ISSUE DATE : 2021-07-27

Edited by:

Ke Zhiqing(Rapporteur)

Approved by:

Chi Shide(Supervisor)

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Change History		
Version	Date	Reason for change
1.0	2021-07-27	First edition



1. Technical Information

Note: Provide by manufacturer.

1.1. Applicant and Manufacturer Information

Applicant:	GP Electronics (SZ) Limited
Applicant Address:	14/F, T1 Building, Shumyip Upperhills, No.5001 Huanggang RD, Futian District, Shenzhen, Guangdong, China (Postal Code: 518038)
Manufacturer:	GP Electronics (Huizhou) Co., Ltd.
Manufacturer Address:	No. 76 Hui Feng Si Road, Zhong Kai Hi-Tech Ind. Dev. Zone, Huizhou, Guangdong, China (Postal Code: 516006)

1.2. Equipment Under Test (EUT) Description

Wireless Type	Antenna for WiFi / Bluetooth (S1832) & WiSA Modules
Test frequency band	2400MHz-2500MHz/5100MHz-5900MHz
Hardware Version	N/A
Software Version	N/A
IMEI	N/A
Sample number	3#/4#



2. Test Results

2.1. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	GB/T 9410-2008	General specification for antennas used the mobile communications
2	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. Test Results lists

2.3.1. Gain

Frequency	Gain(dBi)	
	Molex 1461530/14653 1 FPC	MGear C4207-510017-A (SSR-210139)
2402MHz	1.91	2.01
2412MHz	1.69	1.77
2422MHz	1.47	1.47
2432MHz	1.16	1.15
2441MHz	1.29	1.11
2442MHz	1.26	1.07
2452MHz	1.53	1.16
2462MHz	1.53	1.00
2480MHz	1.42	0.50
5180MHz	1.71	1.57
5200MHz	2.25	1.48
5220MHz	1.62	1.43
5240MHz	2.16	1.61
5260MHz	1.88	1.65
5280MHz	2.45	2.43
5300MHz	1.71	2.09
5320MHz	1.95	1.95
5500MHz	2.26	2.45
5520MHz	3.39	2.68
5540MHz	2.32	2.09
5560MHz	2.99	2.84
5580MHz	3.11	2.74
5600MHz	3.54	2.67



5620MHz	3.09	2.09
5640MHz	2.71	1.89
5660MHz	3.14	1.72
5680MHz	2.54	1.89
5745MHz	2.43	1.88
5765MHz	2.55	2.42
5785MHz	1.59	2.79
5805MHz	1.90	1.84
5825MHz	2.51	1.80

2.3.2.Efficiency

Frequency	Efficiency(%)	
	Molex 1461530/1465 31 FPC	MGear C4207-510017- A (SSR-210139)
2402MHz	55.92	51.90
2412MHz	52.90	48.02
2422MHz	51.32	45.68
2432MHz	50.44	43.87
2441MHz	51.52	44.36
2442MHz	51.07	44.06
2452MHz	53.17	46.31
2462MHz	51.56	45.36
2480MHz	47.88	43.49
5180MHz	43.88	42.14
5200MHz	47.18	40.62
5220MHz	42.11	37.54
5240MHz	44.42	41.77
5260MHz	44.85	42.14



5280MHz	48.37	46.46
5300MHz	40.88	41.08
5320MHz	44.23	39.74
5500MHz	48.83	48.71
5520MHz	53.38	51.26
5540MHz	42.62	41.34
5560MHz	49.74	50.23
5580MHz	48.17	45.59
5600MHz	51.35	49.13
5620MHz	47.43	43.02
5640MHz	43.02	39.27
5660MHz	46.21	42.11
5680MHz	42.30	40.09
5745MHz	44.18	41.73
5765MHz	49.78	46.28
5785MHz	46.58	43.63
5805MHz	43.17	39.46
5825MHz	43.51	38.14

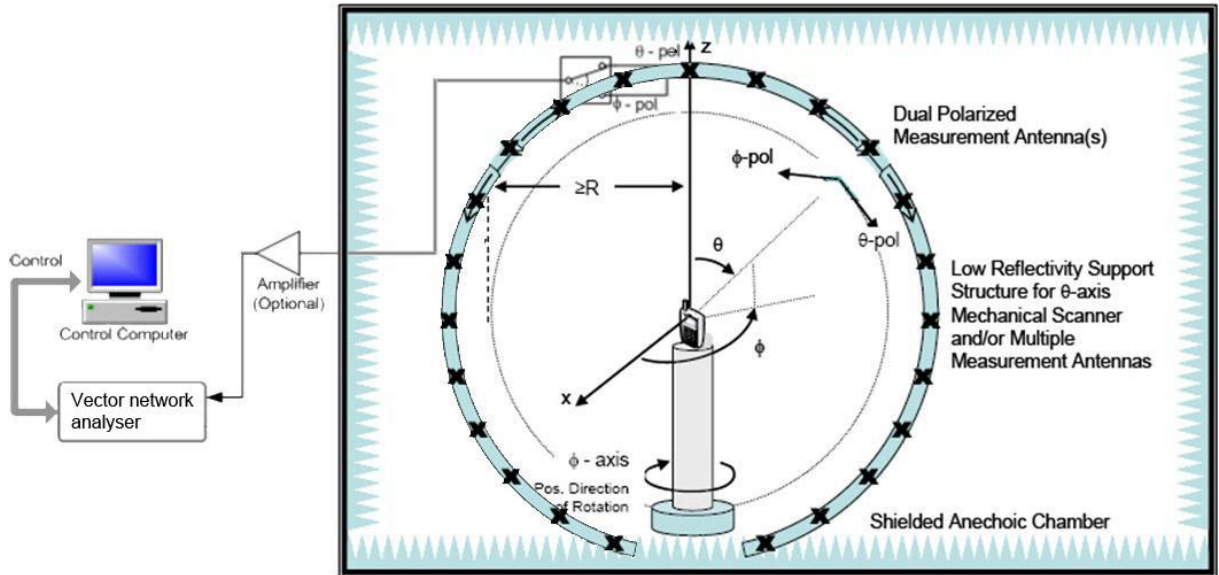


2.3.3.VSWR

Frequency	VSWR	
	Molex 1461530/146531 FPC	MGear C4207-510017-A (SSR-210139)
2402MHz-2480MHz	1.88	2.11
5180MHz-5825MHz	1.60	1.68

Annex A Photographs

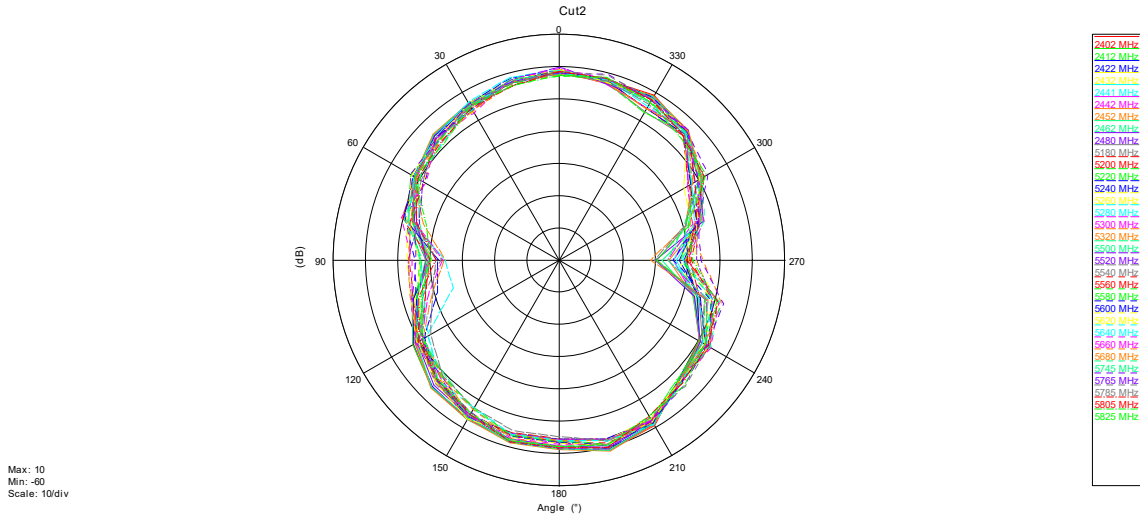
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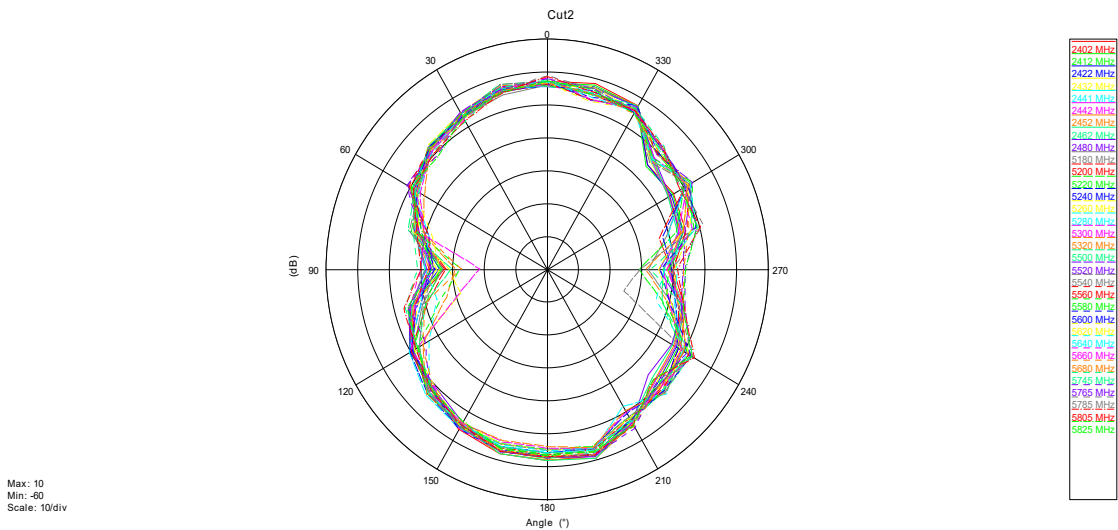
Annex B Figures

1. 2D Radiation Pattern

Phi=0°



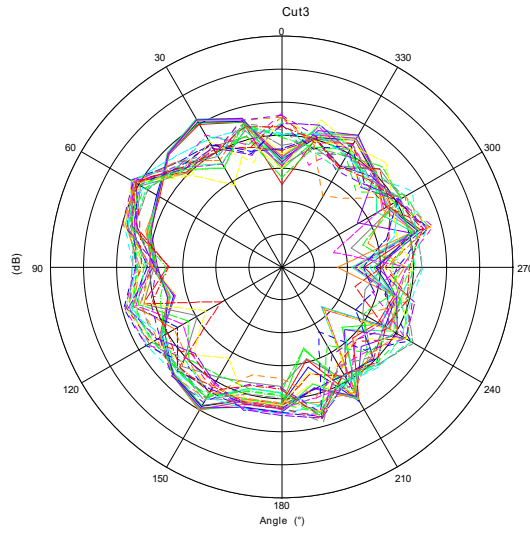
Molex 1461530/146531 FPC



MGear C4207-510017-A (SSR-210139)

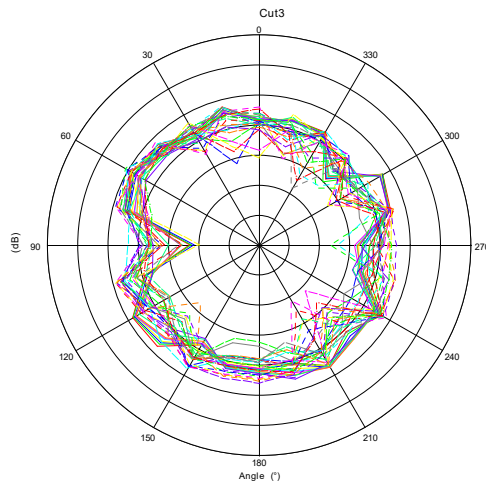


Phi=90°



Max: 10
Min: -60
Scale: 10/div

Molex 1461530/146531 FPC

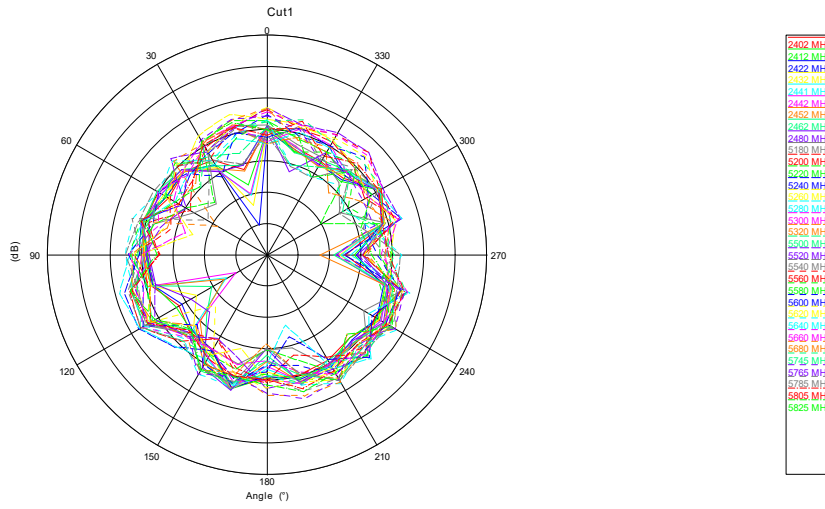


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Scale: 10/div

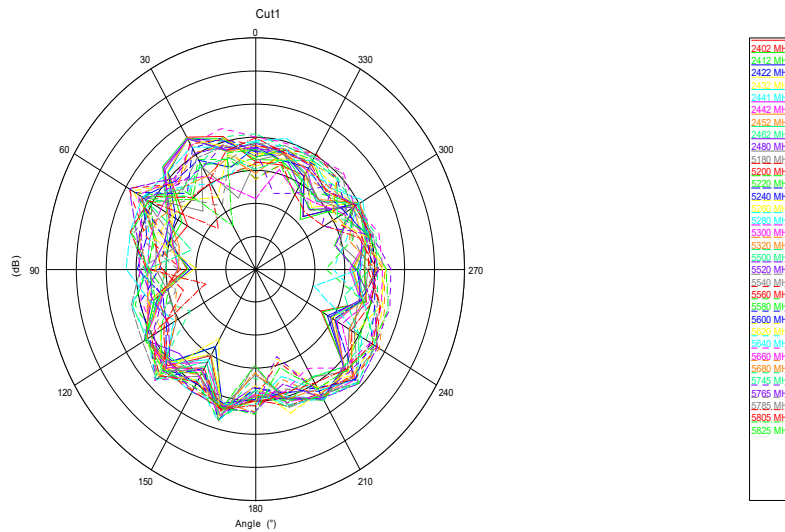
MGear C4207-510017-A (SSR-210139)



Theta=90°

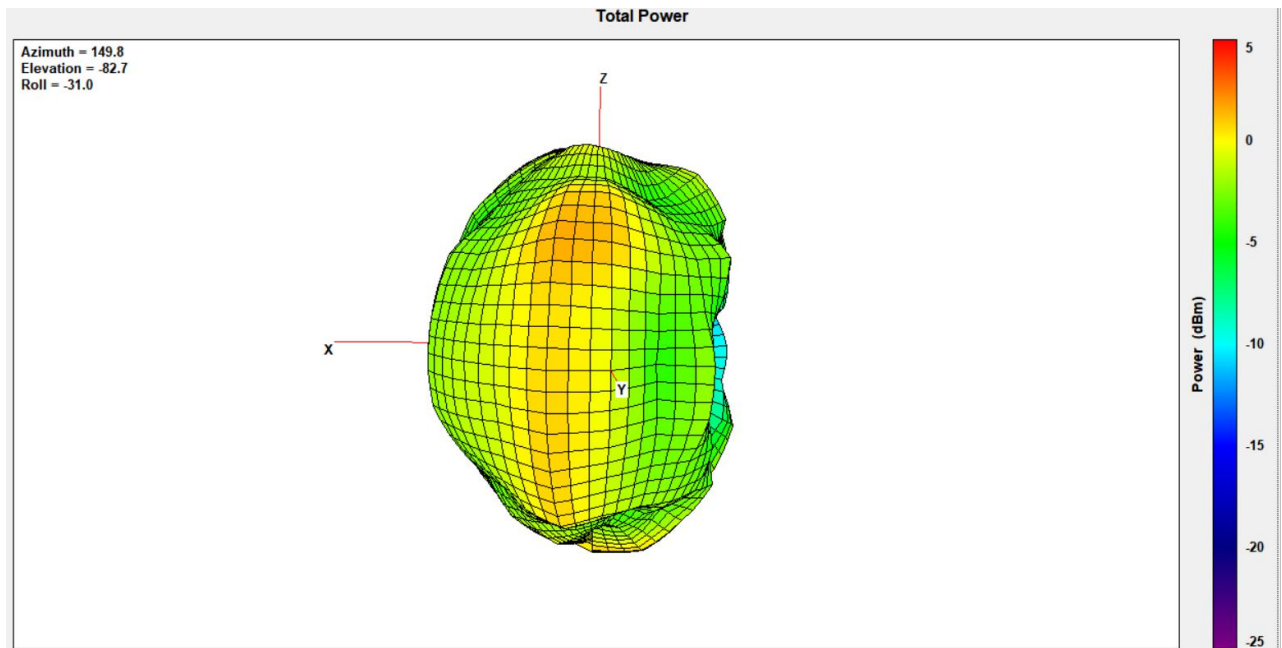


Molex 1461530/146531 FPC

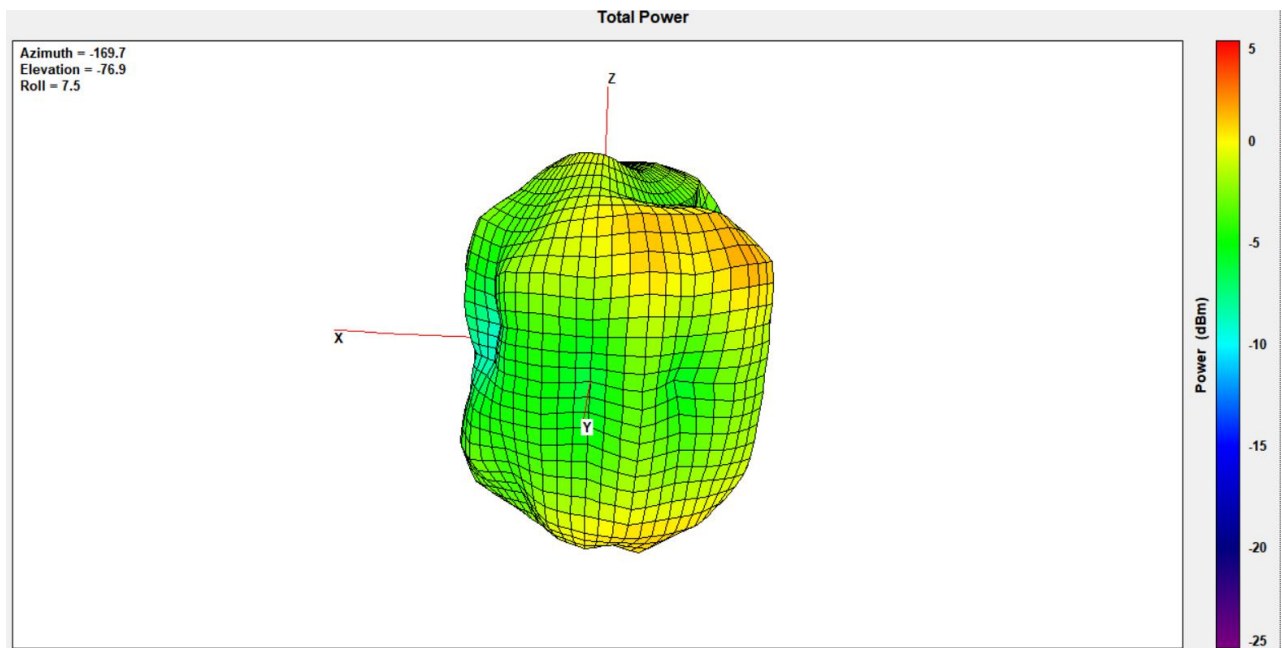


MGear C4207-510017-A (SSR-210139)

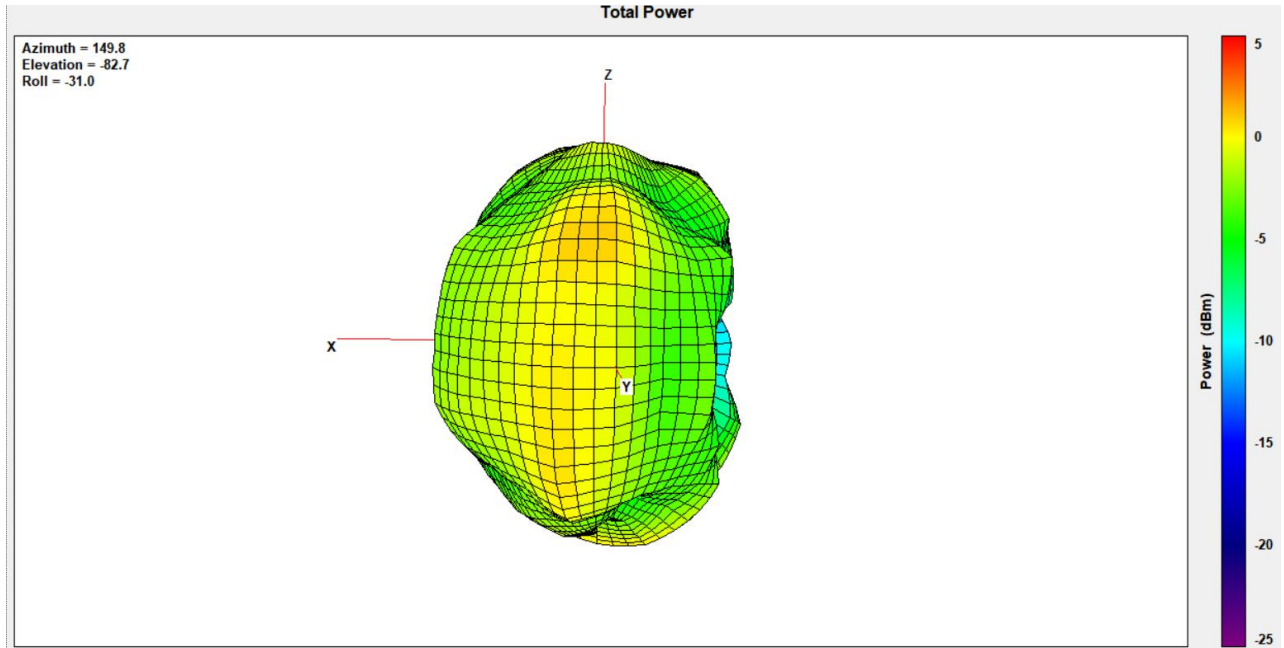
2. 3D Radiation Pattern



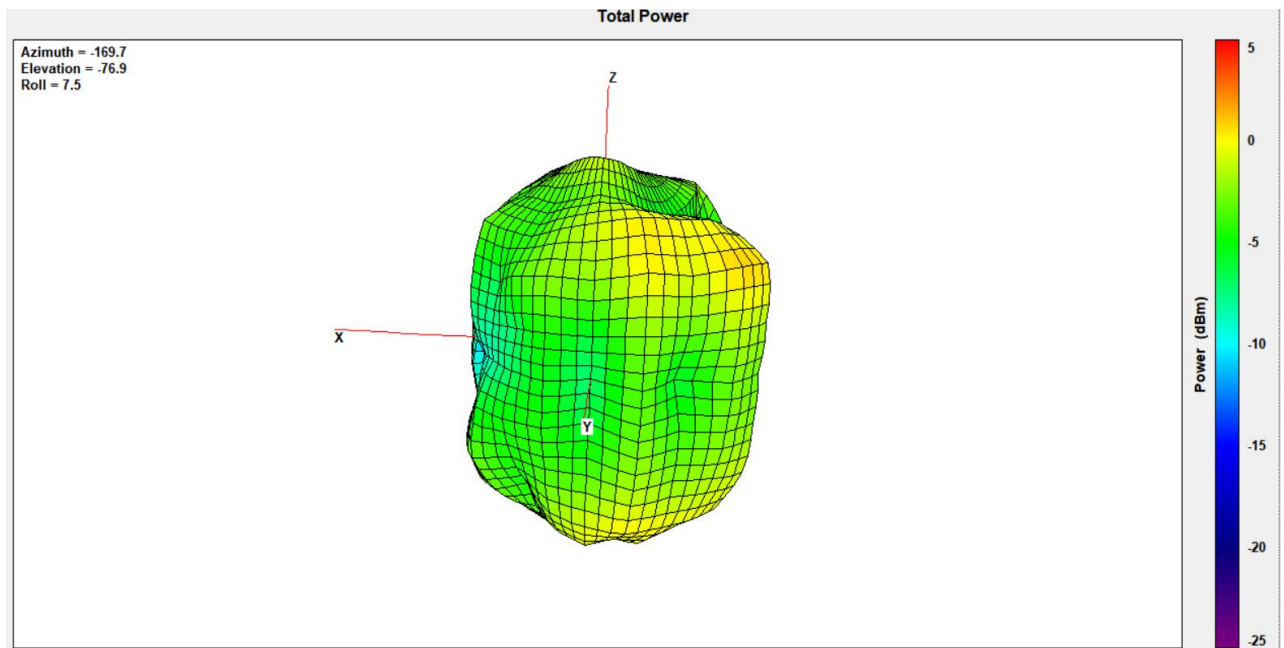
Molex1461530/146531FPC



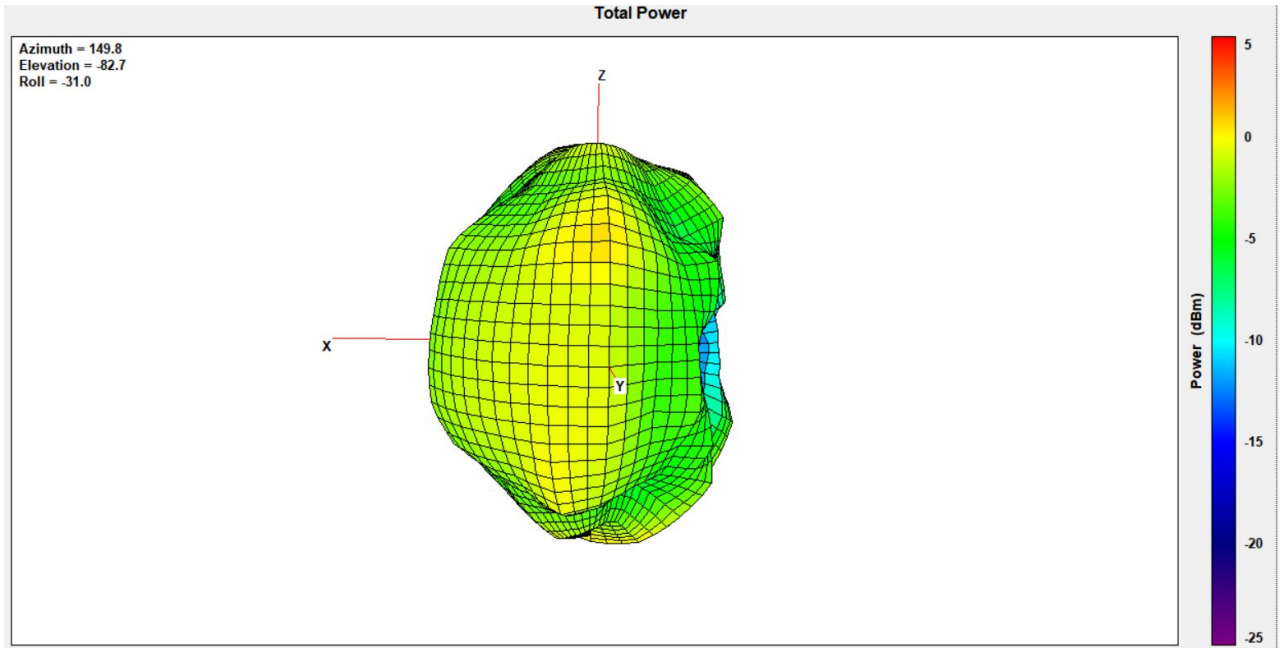
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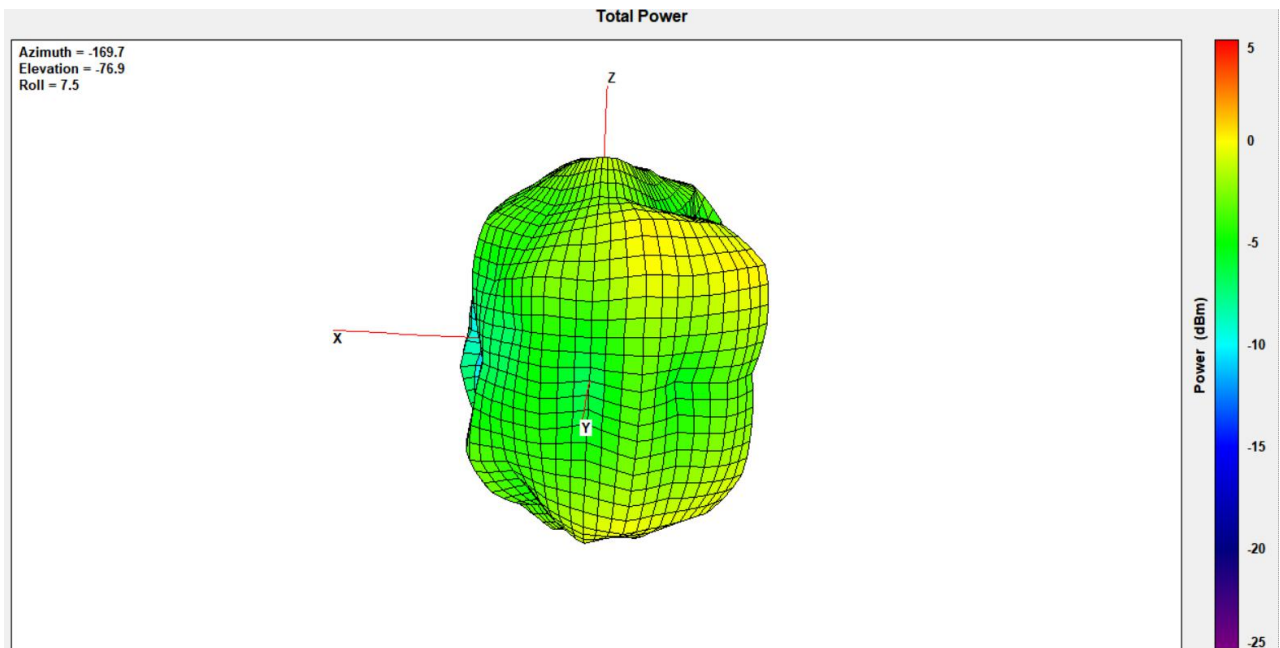
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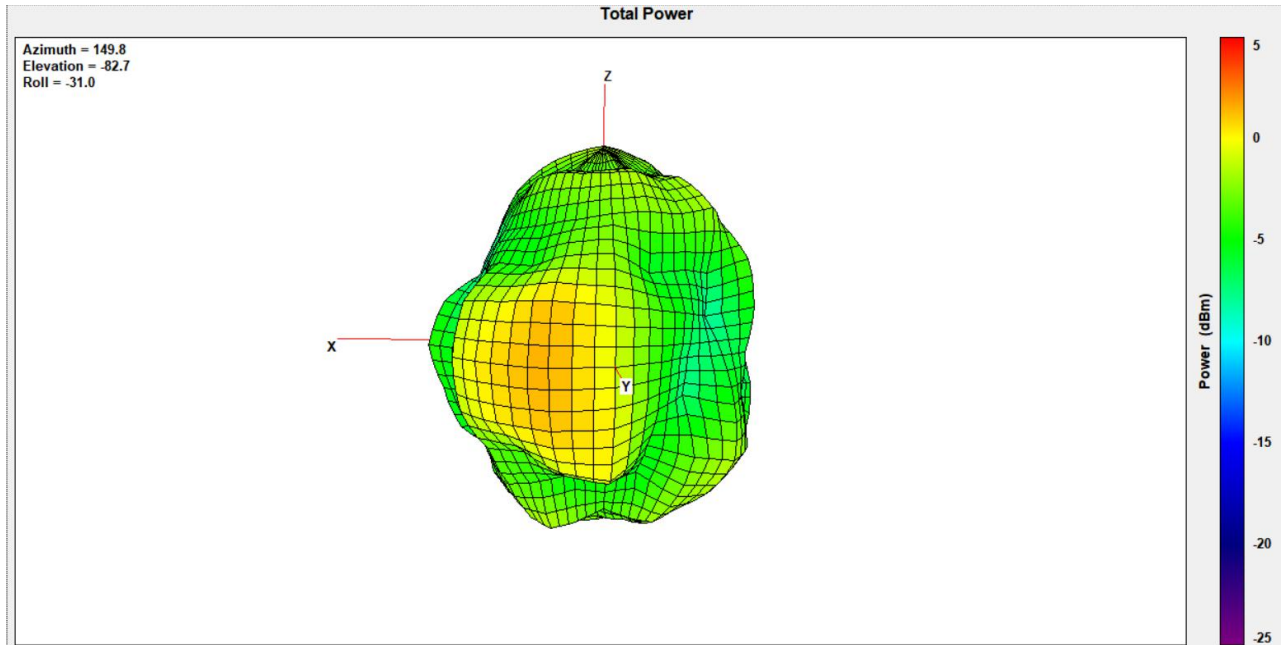
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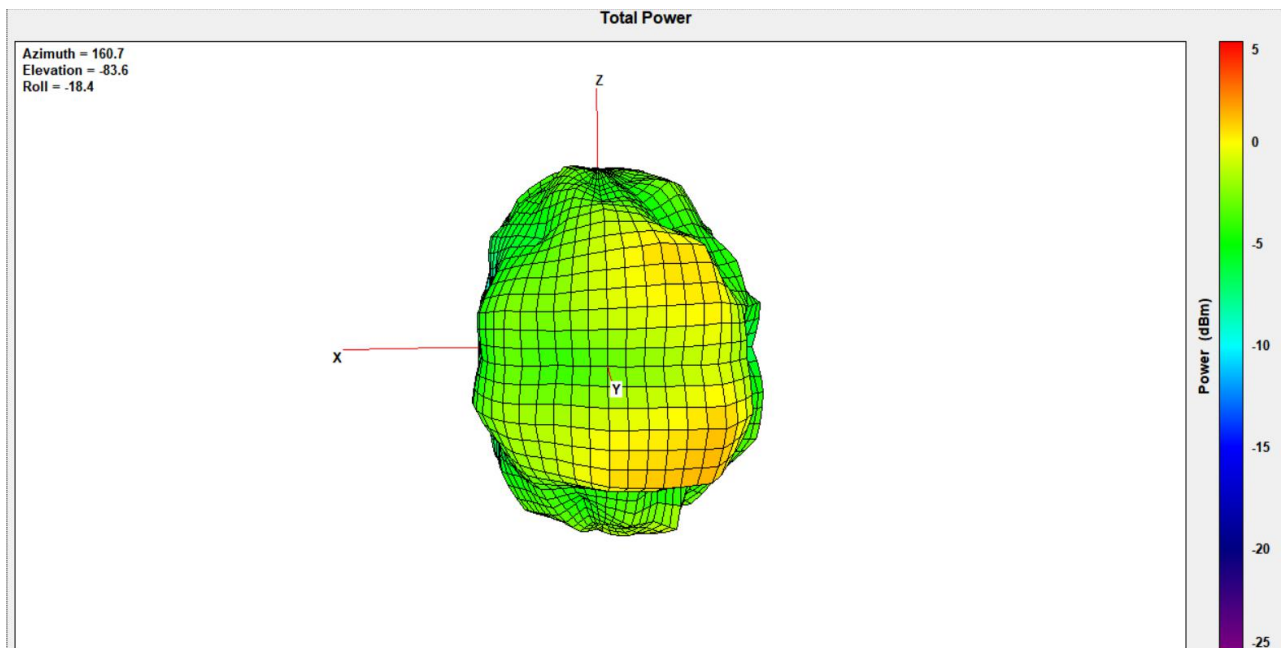
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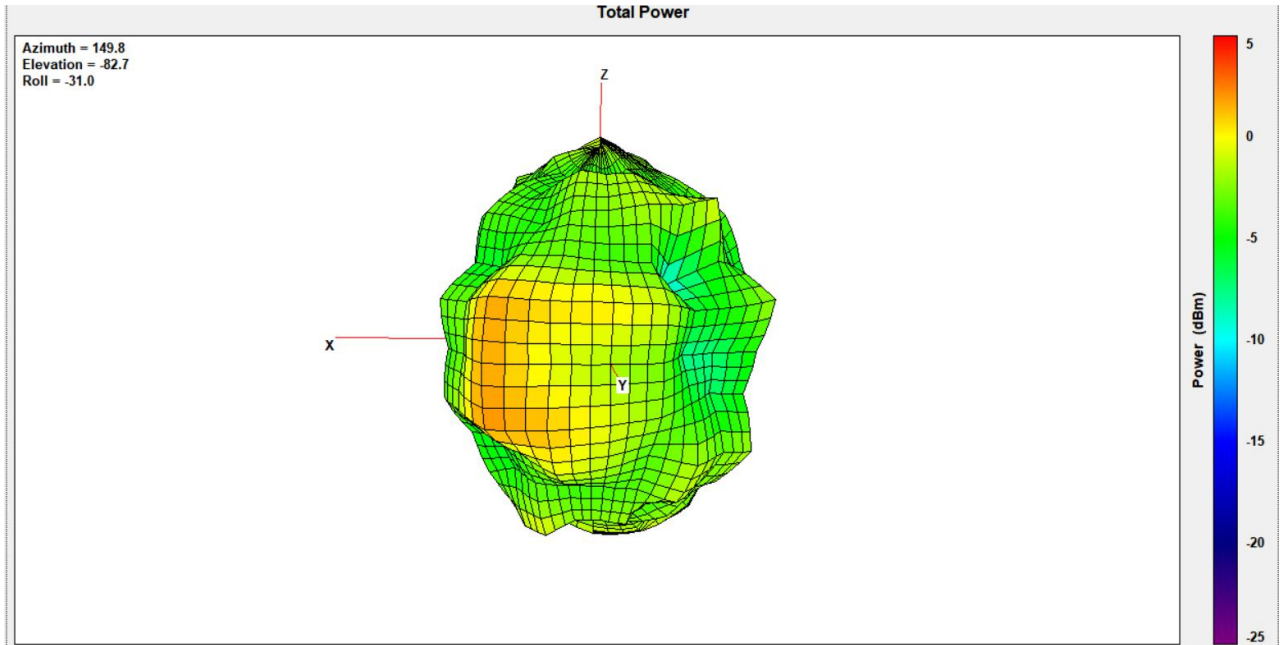
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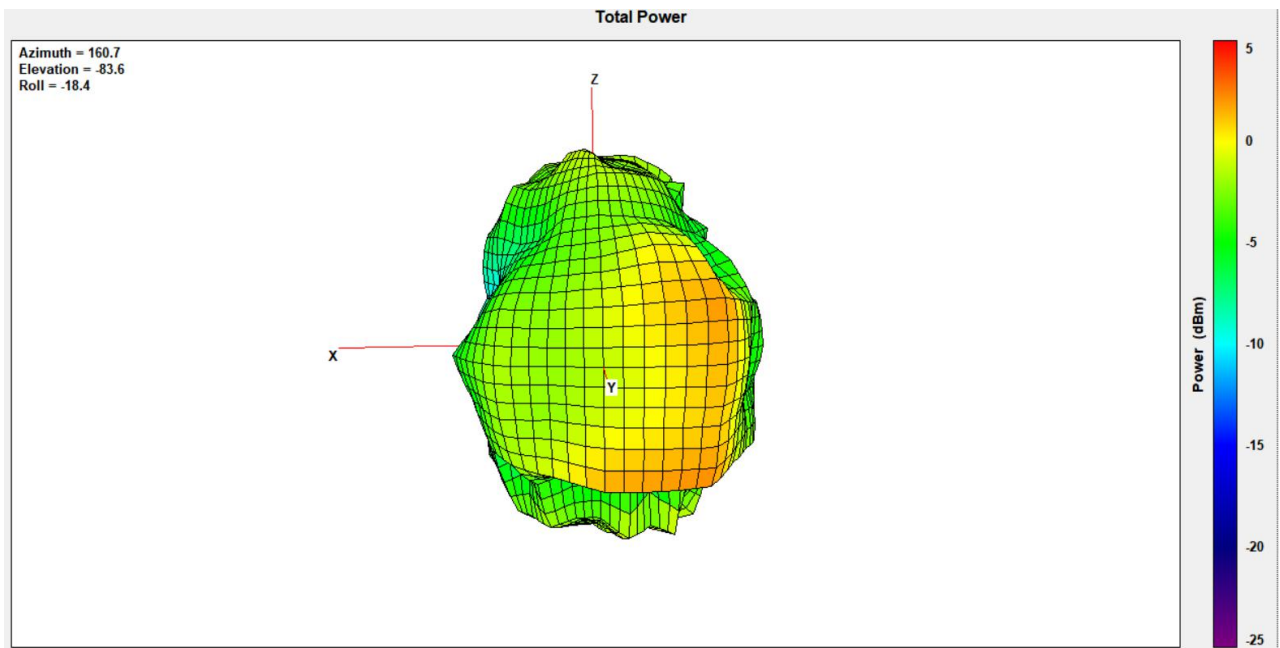
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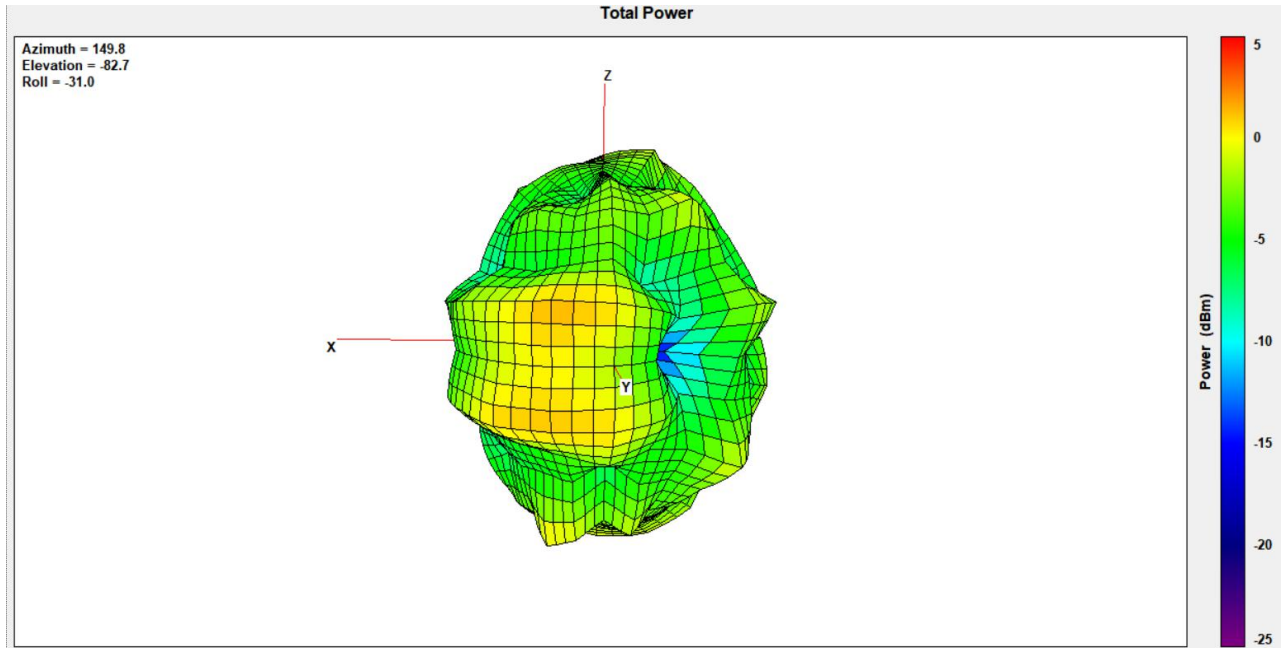
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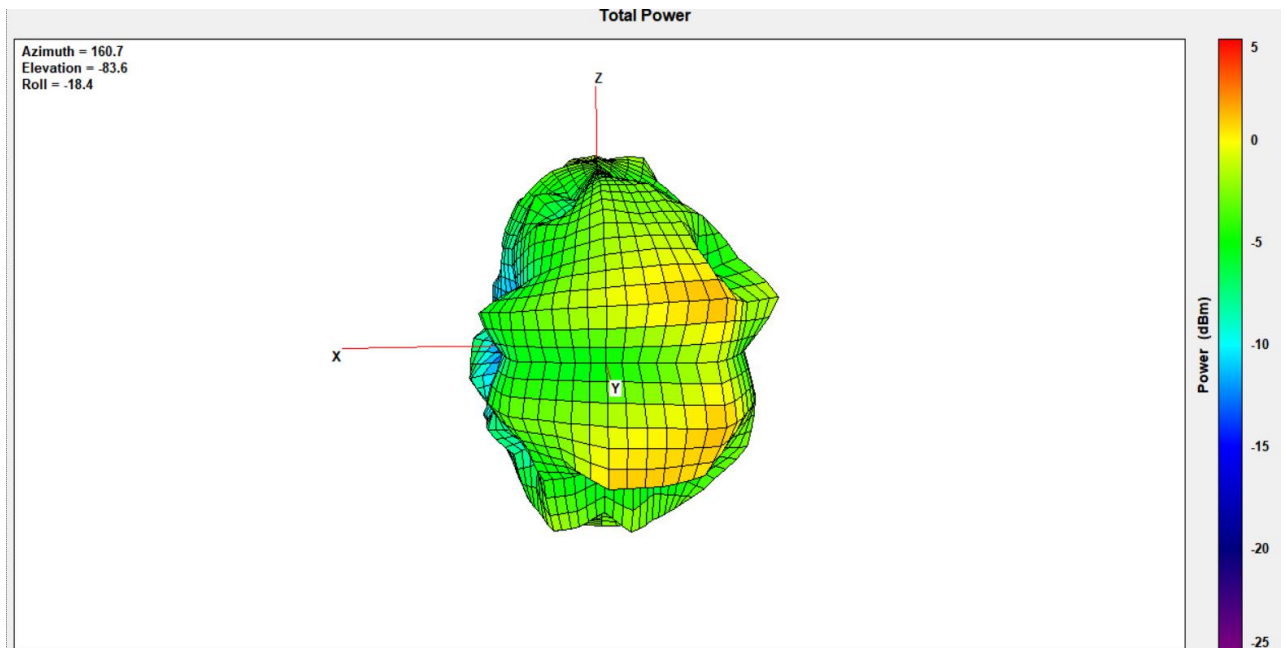
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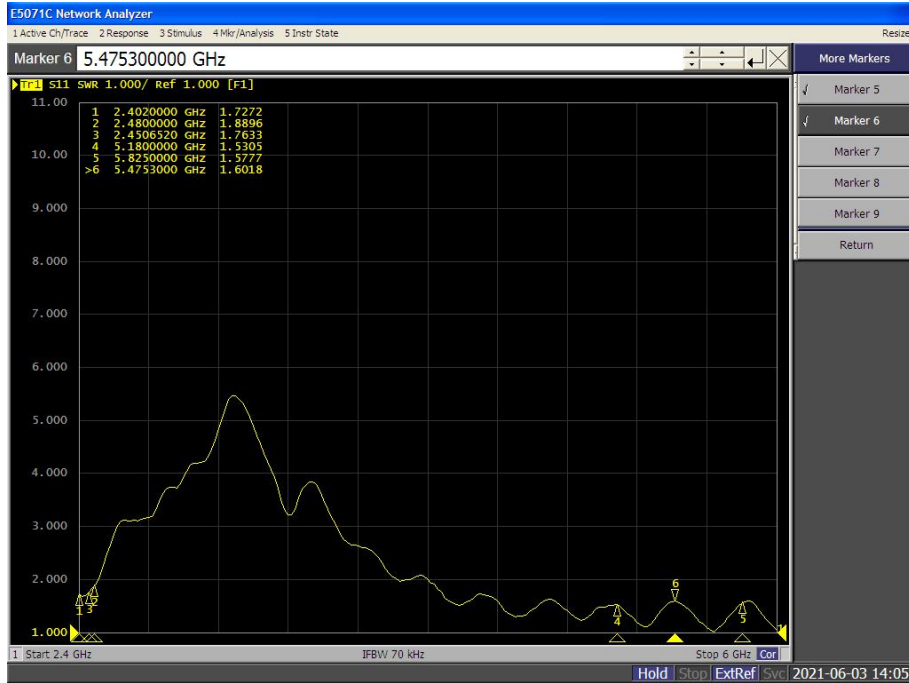
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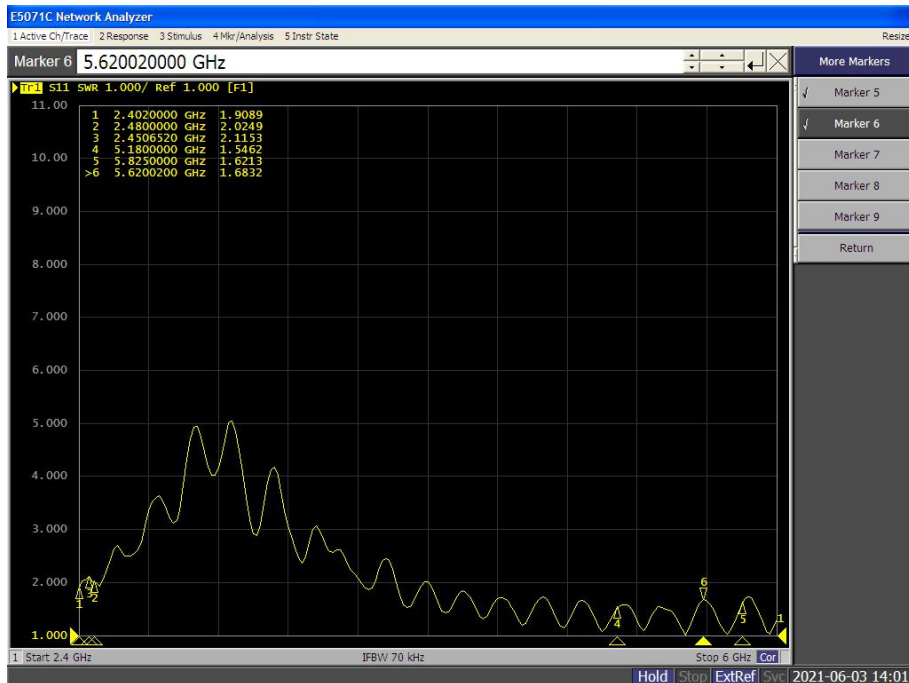
MGear C4207-510017-A (SSR-210139)



3. VSWR



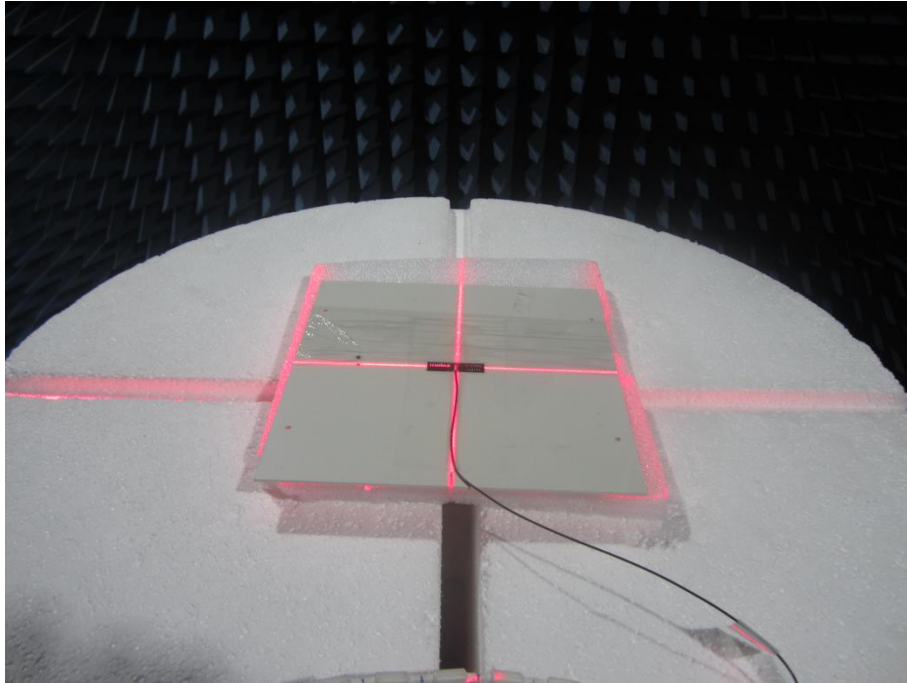
Molex 1461530/146531 FPC



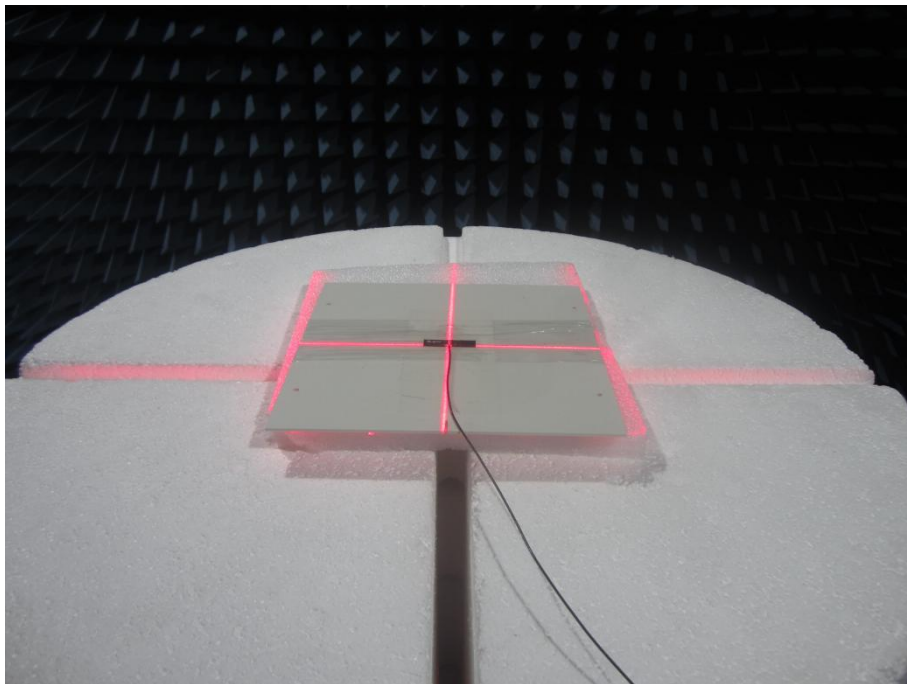
MGear C4207-510017-A (SSR-210139)

Annex C Photographs

1. Test environment

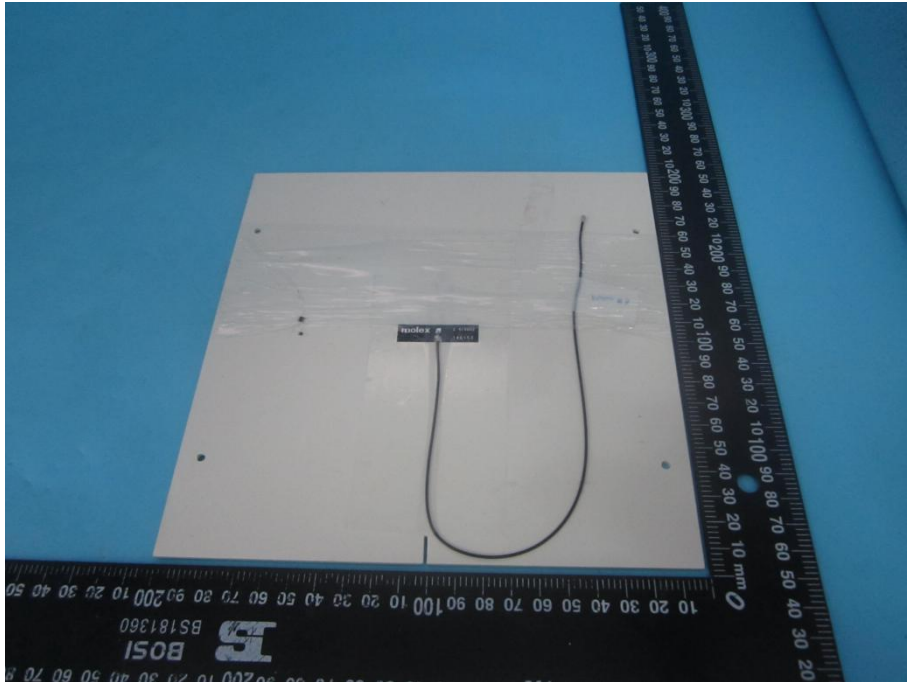


Molex 1461530/146531 FPC

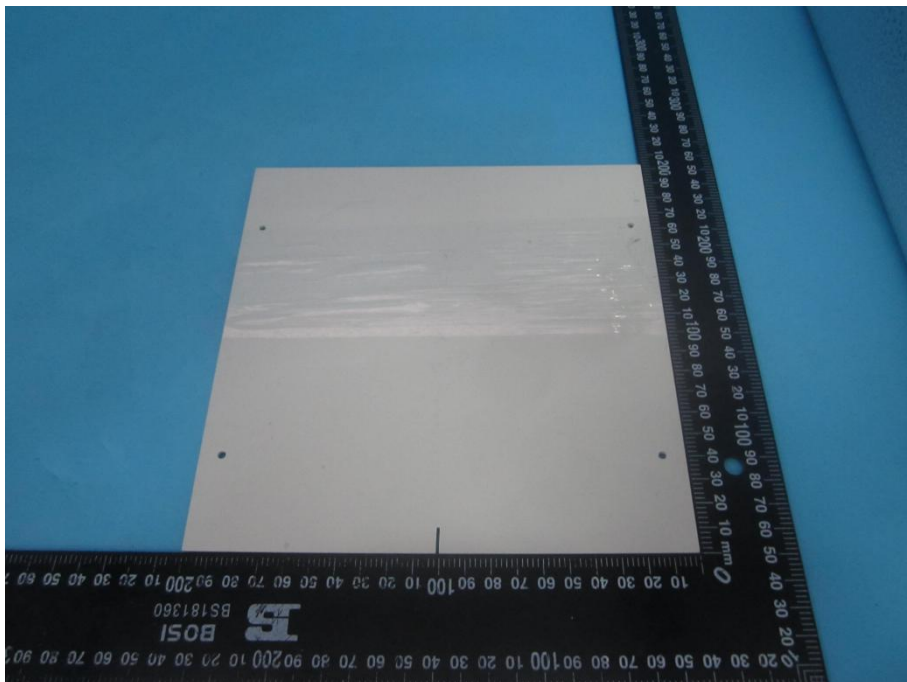


MGear C4207-510017-A (SSR-210139)

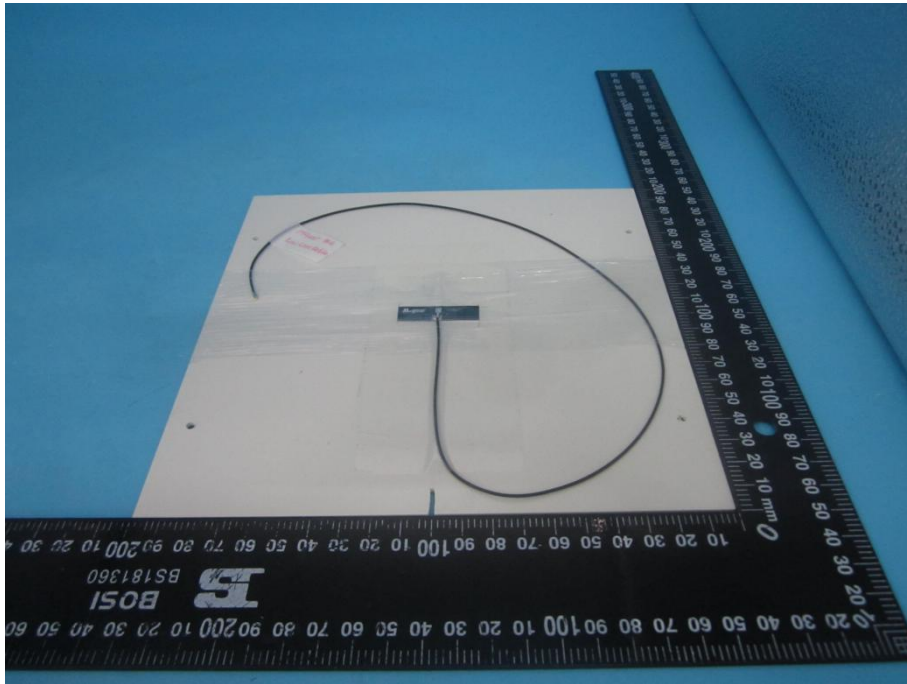
2. EUT



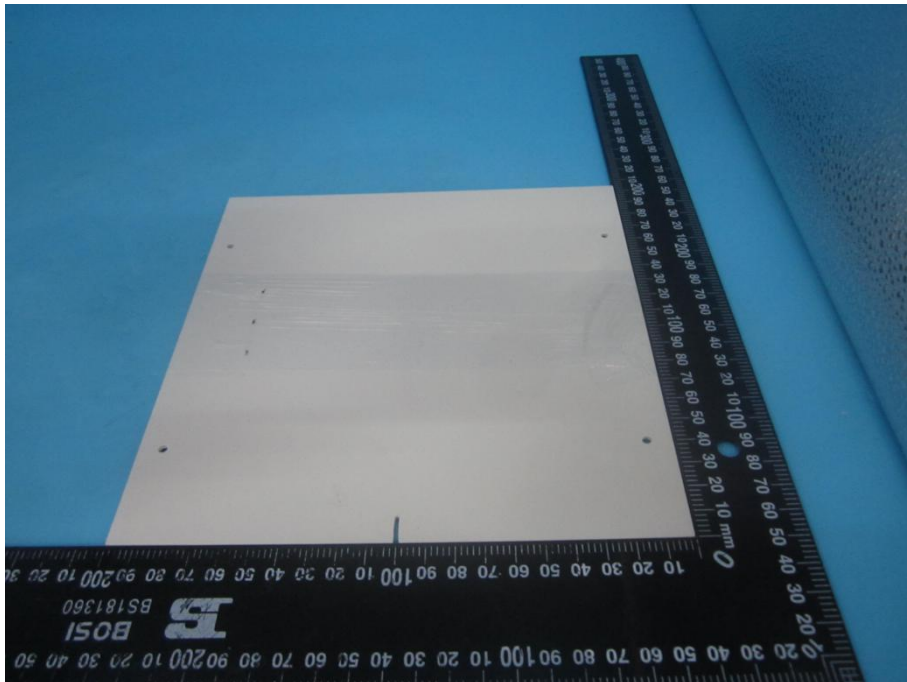
Molex 1461530/146531 FPC



Molex 1461530/146531 FPC



MGear C4207-510017-A (SSR-210139)



MGear C4207-510017-A (SSR-210139)



Annex D General Information

1.1 Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , Guangdong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

1.2 Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , Guangdong Province, P. R. China

1.3 Test Equipments Utilized

1.3.1 List of Test Equipment

NO.	Equipment Name	Serial NO.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	Vector Network Analyzer	MY46110140	E5071C	Agilent	2021.03.17	2022.03.16
2	OTA Chamber	TJ2235-Q1793	AMS-8923-150	ETS	2020.01.06	2023.01.05
3	Antenna Measurement System	1685	EMQuest EMQ-100 V 1.13 Build 21267	ETS	N/A	N/A

————— END OF REPORT —————