

## ZX10 WLAN Main & Aux Antenna Information

<b>Product Name</b>	Tablet			
<b>Host Model Name</b>	ZX10			
<b>Antenna Name</b>	<b>Vender Brand</b>			<b>Note</b>
Main	Mag.Layers Scientific-Technics Co., Ltd (美磊科技有限公司)			
AUX	Mag.Layers Scientific-Technics Co., Ltd (美磊科技有限公司)			
<b>Antenna information</b>				
<b>Type</b>	<b>Antenna name</b>	<b>Antenna Part number (Aux)</b>	<b>Spec.</b>	<b>Note</b>
PIFA	<b>Main</b>	<b>340919000003</b>	2.4~2.5 / 5.15~5.85 / 5.925~7.125 GHz	
PIFA	<b>AUX</b>	<b>340919000004</b>	2.4~2.5 / 5.15~5.85 / 5.925~7.125 GHz	

Prepare By: Jack

# Dimensioned and Photos

WLAN MAIN antenna : Antenna Manufacturer: 美磊科技有限公司 Antenna Part Number: 340919000003

**RoHS COMPLIANT**

NOTE:  
1. 膠頭方向朝上  
2. 焊線區域需與圖相符並一致性  
cable 絕緣層不可跨到芯線處

7. UV膠固定  
高度MAX 2.0mm

2. WIFI MAIN  
RF Cable 0. D1.13 low loss, L=354±2mm (黑)

LTR	DESCRIPTION	DATE	REQ. BY
△	New Release	20/11/06	Ken
△	modify 線長 & pattern	21/02/20	Ken
△	modify 線長 367→369mm	21/03/12	Ken
△	modify pattern & gasket	21/04/06	Ken
△	modify pattern	21/07/16	Ken
△	ADD 端頭保護套&cable 線長369→352	21/08/13	Ken
△	modify pattern & 型	21/10/14	Ken
△	Modify cable 線長352→354	21/01/05	Ken
△	modify pattern	21/01/16	Ken

ELECTRICAL  
Frequency:  
WIFI-Main: 2400~2500MHz, 5150~7125MHz

8	端頭保護套		1
7	UV膠		1
6	HEAT SHRINK TUBE	L=5mm(黑)	1
5	RUBBER TUBE	4FG170063L50B	1
4	GASKET	13x6.5x5mm	1
3	HOLDER	36.53x8.27x10.48mm	1
2	CABLE	1.13mm low loss(黑), L=354mm	1
1	CONNECTOR	IPEX 1代	1

ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	QTY
<b>PARTS LIST</b>			

IPEX方向管控		TOLERANCES UNLESS OTHERWISE SPECIFIED 公稱公差		<b>MAGLAYERS</b>	PART NO.
線長	角度	0-30	±0.1		
<100	±90°	30-50	±0.15	APPR:	TITLE:
100-199	±135°	50-100	±0.2	CHK:	LDA-3608-27GCT-A1
≥200	不管控	100-200	±0.25	DRAW:	DATE SCALE UNIT SHEET REV.
		200-300	±0.3	Ken	2021106 1:1 mm 1/1



**RoHS COMPLIANT**

2. WIFI AUX RF Cable 0. D1. 13 low loss, L=56±2mm (黃)

3. GPS RF Cable 0. D1. 13 low loss, L=84±2mm (灰)

9. UV膠固定 高度MAX 2.0mm

NOTE:  
1. 端頭方向朝上  
2. 焊線區域需與圖相符並一致性

標籤內容如下:  
340919000004  
WIFI AUX+GPS\_ZX10  
YYMMDD\_X0N

8. LTI-100505-56NJ X2

1. IPEX 1代頭  
11. 端頭保護管

4. Bolder  
5. GASKET  
6. rubber TUBE 4FG170063L50B  
7. heat shrink tube  
10. 導電布

中剝(不上錫)  
纏導電布 (不可鬆脫移動 & 膠不可開)

LTR	DESCRIPTION	DATE	REQ. BY
△	New Release	20/11/06	Ken
△	modify 線長 & pattern	21/02/20	Ken
△	modify pattern	21/02/24	Ken
△	modify 線長95->98&45->60mm	21/03/12	Ken
△	modify pattern	21/04/06	Ken
△	modify pattern&取消 1 GASKET	21/04/07	Ken
△	modify pattern & 增加中剝	21/07/15	Ken
△	modify 線長66->56,108->90	21/08/04	Ken
△	ADD 導電布	21/08/09	Ken
△	ADD 導電布 & modify pattern & 線長90->82mm	21/08/13	Ken
△	中剝(不上錫)線長56->37.5	21/09/14	Ken
△	modify pattern & 管	21/10/14	Ken
△	線長2->84mm	21/11/05	Ken
△	modify pattern	21/11/16	Ken

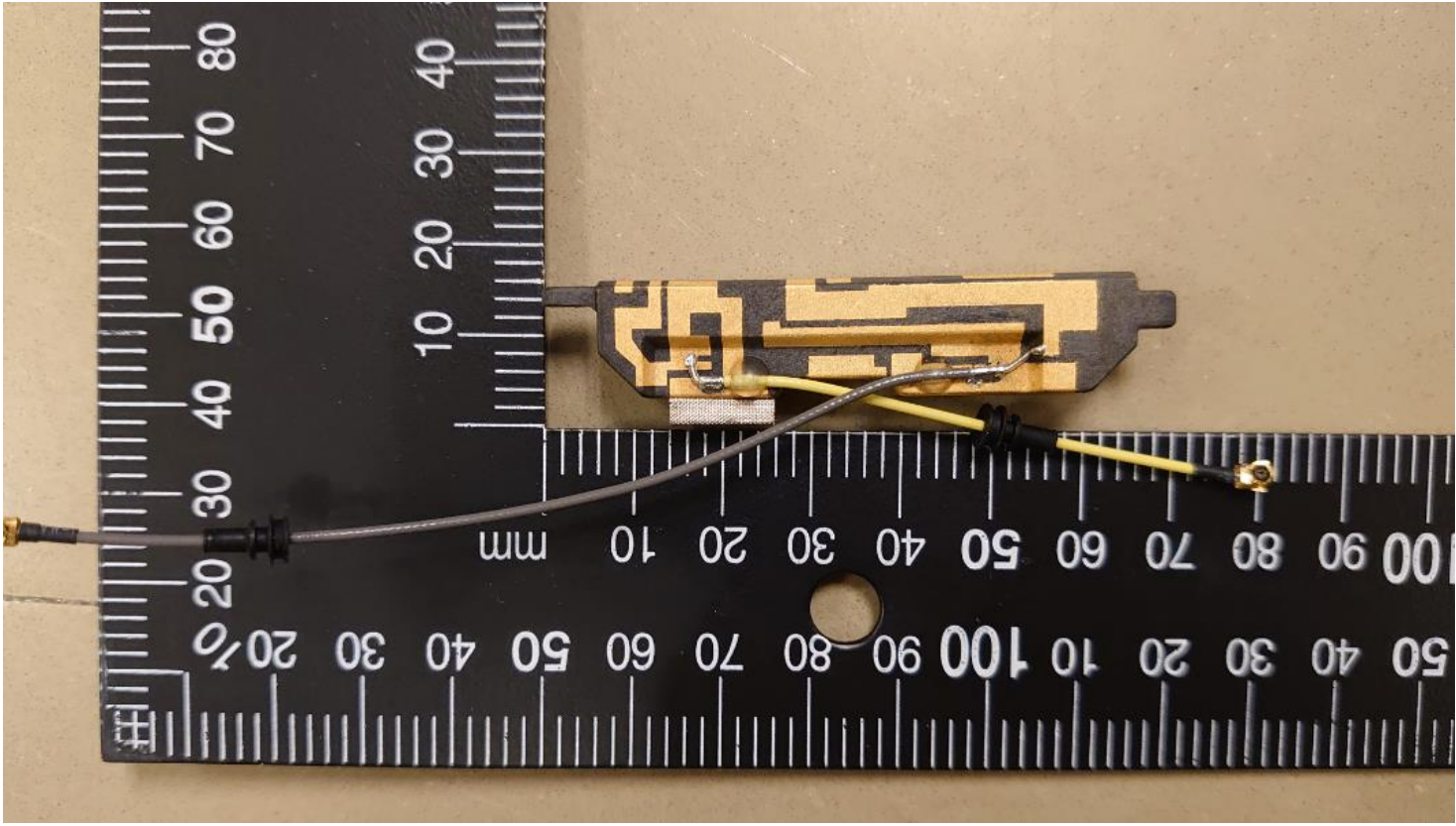
ELECTRICAL  
Frequency:  
GPS(L1+L5+GLONASS):1164~1189MHz,1575~1610MHz  
WIFI-Aux:2400~2500MHz,5150~7125MHz

GETAC P/N.  
340919000004

ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	QTY
11	端頭保護管		2
10	導電布		1
9	UV膠		2
8	Inductance	LTI-100505-56NJ	2
7	HEAT SHRINK TUBE	L=5mm(黑)	2
6	RUBBER TUBE	4FG170063L50B	2
5	GASKET	11.5x7x3mm	1
4	HOLDER	67.12x13.37x12mm	1
3	CABLE	1.13mm low loss(灰),84mm	1
2	CABLE	1.13mm low loss(黃),56mm	1
1	CONNECTOR	IIPEX 1代	2

**PARTS LIST**

IPEX方向管控		TOLERANCES UNLESS OTHERWISE SPECIFIED 公差無特別註明		MAGLAYERS	
線長	角度	0-30	±0.1	PART NO.	
<100	±90°	30-50	±0.15	TITLE:	
100-199	±135°	50-100	±0.2	LDA-6714-4G0C7-A1	
200-300		100-200	±0.25	DATE	SCALE
?	不管控	200-300	±0.3	02021105	1:1
				UNIT	SHEET
				mm	1/1
					REV



● WLAN Main ANTENNA Spec., Efficiency and Gain Table :

Spec: WIFI\_2.4~2.5 / 5.15~5.85 / 5.925~7.125 GHz

**Measurement data:**

Test Engineer: Jack

Measurement Date: 2023/Nov/17

Frequency	2300	2325	2350	2375	2400	2425	2450	2475	2500
Ant. Port Input Pwr. (dB )	0	0	0	0	0	0	0	0	0
<b>Tot. Rad. Pwr. (dB )</b>	-5.02	-4.64	-5.06	-6.02	-6.48	-5.45	-4.98	-4.62	-4.13
<b>Peak EIRP (dB )</b>	0.65	1.36	1.26	0.53	-0.02	0.54	1.14	1.39	1.84
Directivity (dBi)	5.68	6.00	6.32	6.55	6.46	5.99	6.12	6.00	5.97
Efficiency (dB)	-5.02	-4.64	-5.06	-6.02	-6.48	-5.45	-4.98	-4.62	-4.13
Efficiency (%)	31.45	34.35	31.16	24.98	22.50	28.50	31.78	34.53	38.63
Gain (dBi)	0.65	1.36	1.26	0.53	-0.02	0.54	1.14	1.39	1.84

Frequency	5000	5025	5050	5075	5100	5125	5150	5175	5200	5225	5250	5275
Ant. Port Input Pwr. (dB )	0	0	0	0	0	0	0	0	0	0	0	0
<b>Tot. Rad. Pwr. (dB )</b>	-4.42	-4.04	-4.22	-4.90	-5.63	-6.00	-5.74	-5.32	-4.95	-4.60	-4.81	-5.10
<b>Peak EIRP (dB )</b>	1.21	1.73	1.40	0.89	-0.15	-0.50	-0.36	0.27	0.41	0.74	0.62	0.43
Directivity (dBi)	5.64	5.77	5.62	5.79	5.47	5.51	5.38	5.58	5.35	5.34	5.43	5.53
Efficiency (dB)	-4.42	-4.04	-4.22	-4.90	-5.63	-6.00	-5.74	-5.32	-4.95	-4.60	-4.81	-5.10
Efficiency (%)	36.12	39.45	37.83	32.37	27.37	25.10	26.64	29.41	32.02	34.68	33.07	30.90
Gain (dBi)	1.21	1.73	1.40	0.89	-0.15	-0.50	-0.36	0.27	0.41	0.74	0.62	0.43

Frequency	5300	5325	5350	5375	5400	5425	5450	5475	5500	5525	5550	5575
Ant. Port Input Pwr. (dB )	0	0	0	0	0	0	0	0	0	0	0	0
<b>Tot. Rad. Pwr. (dB )</b>	-5.44	-5.72	-5.93	-6.05	-6.10	-6.04	-5.81	-6.05	-6.37	-6.43	-6.49	-6.88
<b>Peak EIRP (dB )</b>	0.00	-0.30	-0.61	-0.84	-0.73	-0.94	-0.42	-0.82	-1.29	-1.17	-1.39	-1.84
Directivity (dBi)	5.44	5.42	5.32	5.21	5.37	5.10	5.39	5.23	5.08	5.25	5.09	5.05
Efficiency (dB)	-5.44	-5.72	-5.93	-6.05	-6.10	-6.04	-5.81	-6.05	-6.37	-6.43	-6.49	-6.88
Efficiency (%)	28.58	26.81	25.52	24.83	24.53	24.88	26.22	24.83	23.09	22.77	22.45	20.51
Gain (dBi)	0.00	-0.30	-0.61	-0.84	-0.73	-0.94	-0.42	-0.82	-1.29	-1.17	-1.39	-1.84



Frequency	5600	5625	5650	5675	5700	5725	5750	5775	5800	5825	5850	5875
Ant. Port Input Pwr. (dB )	0	0	0	0	0	0	0	0	0	0	0	0
<b>Tot. Rad. Pwr. (dB )</b>	-6.79	-6.75	-6.80	-6.97	-7.08	-7.27	-7.29	-7.34	-7.13	-7.07	-6.92	-7.11
<b>Peak EIRP (dB )</b>	-1.73	-1.93	-2.15	-2.30	-2.23	-2.32	-2.54	-2.14	-1.96	-1.97	-2.04	-1.97
Directivity (dBi)	5.07	4.82	4.65	4.67	4.84	4.95	4.75	5.20	5.17	5.10	4.88	5.14
Efficiency (dB)	-6.79	-6.75	-6.80	-6.97	-7.08	-7.27	-7.29	-7.34	-7.13	-7.07	-6.92	-7.11
Efficiency (%)	20.92	21.15	20.88	20.10	19.60	18.76	18.68	18.45	19.37	19.61	20.33	19.46
Gain (dBi)	-1.73	-1.93	-2.15	-2.30	-2.23	-2.32	-2.54	-2.14	-1.96	-1.97	-2.04	-1.97

Frequency	5900	5925	5925	5950	5975	6000
Ant. Port Input Pwr. (dB )	0	0	0	0	0	0
<b>Tot. Rad. Pwr. (dB )</b>	-7.56	-7.83	-7.83	-8.08	-8.13	-8.07
<b>Peak EIRP (dB )</b>	-2.50	-2.72	-2.72	-2.54	-2.49	-2.60
Directivity (dBi)	5.06	5.11	5.11	5.54	5.63	5.47
Efficiency (dB)	-7.56	-7.83	-7.83	-8.08	-8.13	-8.07
Efficiency (%)	17.54	16.50	16.50	15.55	15.39	15.58
Gain (dBi)	-2.50	-2.72	-2.72	-2.54	-2.49	-2.60

WLAN Aux ANTENNA Spec., Efficiency and Gain Table:

Spec: WIFI\_2.4~2.5 / 5.15~5.85 / 5.925~7.125 GHz

**Measurement data:**

Test Engineer: Jack

Measurement Date: 2023/Nov/17

Frequency	2300	2325	2350	2375	2400	2425	2450	2475	2500
Ant. Port Input Pwr. (dB )	0	0	0	0	0	0	0	0	0
<b>Tot. Rad. Pwr. (dB )</b>	-4.86	-5.85	-7.90	-9.64	-10.45	-9.94	-9.59	-8.66	-7.88
<b>Peak EIRP (dB )</b>	0.94	-0.72	-4.21	-5.22	-5.99	-4.91	-4.39	-3.85	-3.30
Directivity (dBi)	5.79	5.13	3.69	4.42	4.46	5.03	5.19	4.81	4.58
Efficiency (dB)	-4.86	-5.85	-7.90	-9.64	-10.45	-9.94	-9.59	-8.66	-7.88
Efficiency (%)	32.67	26.03	16.22	10.88	9.02	10.14	11.00	13.62	16.28
Gain (dBi)	0.94	-0.72	-4.21	-5.22	-5.99	-4.91	-4.39	-3.85	-3.30

Frequency	5000	5025	5050	5075	5100	5125	5150	5175	5200	5225	5250	5275
Ant. Port Input Pwr. (dB )	0	0	0	0	0	0	0	0	0	0	0	0
<b>Tot. Rad. Pwr. (dB )</b>	-4.05	-3.64	-3.59	-3.74	-3.78	-3.76	-3.27	-2.82	-2.59	-2.39	-2.57	-2.50
<b>Peak EIRP (dB )</b>	1.48	1.91	1.88	2.21	2.21	2.34	2.44	2.66	2.79	3.08	2.84	2.61
Directivity (dBi)	5.52	5.54	5.47	5.95	5.99	6.09	5.72	5.48	5.38	5.47	5.41	5.11
Efficiency (dB)	-4.05	-3.64	-3.59	-3.74	-3.78	-3.76	-3.27	-2.82	-2.59	-2.39	-2.57	-2.50
Efficiency (%)	39.38	43.26	43.77	42.22	41.87	42.11	47.08	52.26	55.10	57.65	55.36	56.24
Gain (dBi)	1.48	1.91	1.88	2.21	2.21	2.34	2.44	2.66	2.79	3.08	2.84	2.61

Frequency	5300	5325	5350	5375	5400	5425	5450	5475	5500	5525	5550	5575
Ant. Port Input Pwr. (dB )	0	0	0	0	0	0	0	0	0	0	0	0
<b>Tot. Rad. Pwr. (dB )</b>	-2.43	-2.32	-2.22	-2.24	-2.41	-2.55	-2.42	-2.59	-2.78	-2.67	-2.59	-3.01
<b>Peak EIRP (dB )</b>	2.56	2.68	2.63	2.50	2.13	1.77	1.81	1.83	1.88	2.12	2.41	2.08
Directivity (dBi)	4.99	5.00	4.85	4.74	4.54	4.33	4.23	4.42	4.66	4.79	5.00	5.10



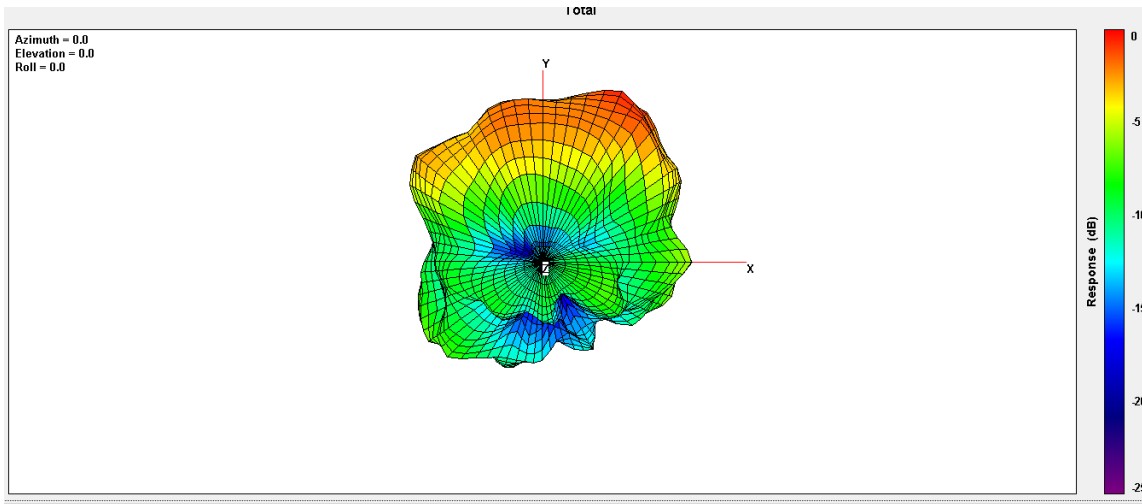
Efficiency (dB)	-2.43	-2.32	-2.22	-2.24	-2.41	-2.55	-2.42	-2.59	-2.78	-2.67	-2.59	-3.01
Efficiency (%)	57.13	58.61	59.96	59.69	57.43	55.54	57.29	55.03	52.77	54.10	55.05	49.97
Gain (dBi)	2.56	2.68	2.63	2.50	2.13	1.77	1.81	1.83	1.88	2.12	2.41	2.08

Frequency	5600	5625	5650	5675	5700	5725	5750	5775	5800	5825	5850	5875
Ant. Port Input Pwr. (dB )	0	0	0	0	0	0	0	0	0	0	0	0
<b>Tot. Rad. Pwr. (dB )</b>	-3.05	-3.07	-3.07	-3.02	-2.81	-2.75	-2.70	-2.85	-2.84	-2.99	-2.92	-2.98
<b>Peak EIRP (dB )</b>	2.21	2.29	2.19	2.13	2.59	2.58	2.90	2.68	2.64	2.59	2.34	2.29
Directivity (dBi)	5.26	5.36	5.26	5.14	5.40	5.33	5.60	5.54	5.48	5.59	5.25	5.27
Efficiency (dB)	-3.05	-3.07	-3.07	-3.02	-2.81	-2.75	-2.70	-2.85	-2.84	-2.99	-2.92	-2.98
Efficiency (%)	49.57	49.37	49.35	49.93	52.39	53.06	53.72	51.86	52.02	50.18	51.07	50.37
Gain (dBi)	2.21	2.29	2.19	2.13	2.59	2.58	2.90	2.68	2.64	2.59	2.34	2.29

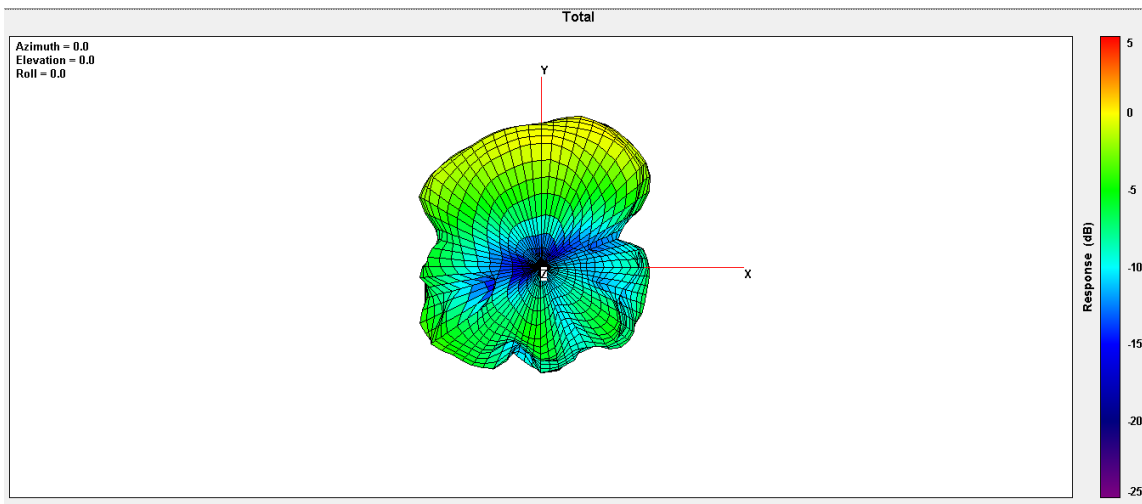
Frequency	5900	5925	5925	5950	5975	6000
Ant. Port Input Pwr. (dB )	0	0	0	0	0	0
<b>Tot. Rad. Pwr. (dB )</b>	-3.24	-3.30	-3.30	-3.43	-3.51	-3.58
<b>Peak EIRP (dB )</b>	1.86	1.92	1.92	1.84	2.02	2.07
Directivity (dBi)	5.11	5.22	5.22	5.27	5.53	5.65
Efficiency (dB)	-3.24	-3.30	-3.30	-3.43	-3.51	-3.58
Efficiency (%)	47.39	46.75	46.75	45.40	44.57	43.85
Gain (dBi)	1.86	1.92	1.92	1.84	2.02	2.07

- ANTENNA Radiation characteristics of antenna loaded in Host Platform  
Main Antenna

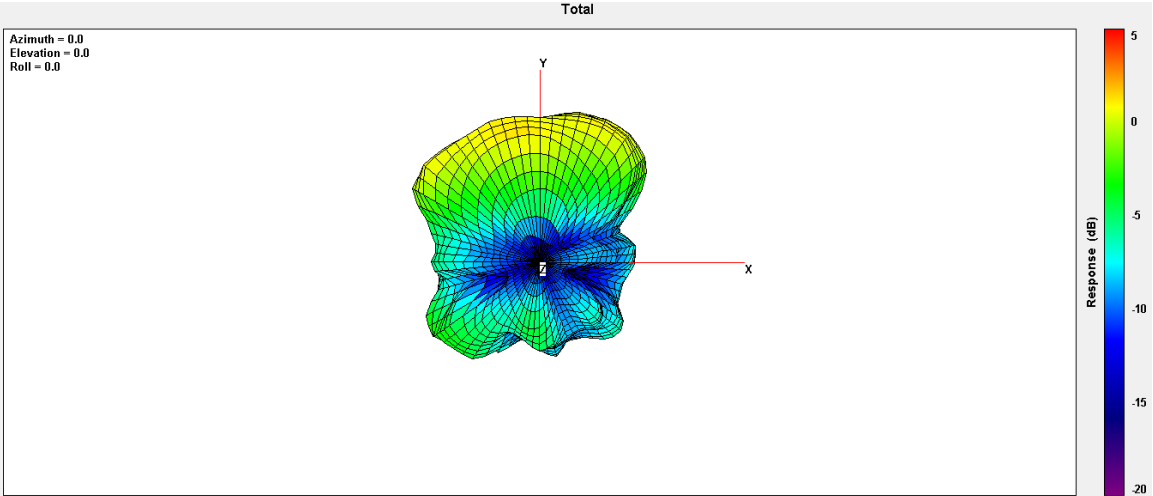
2400MHz



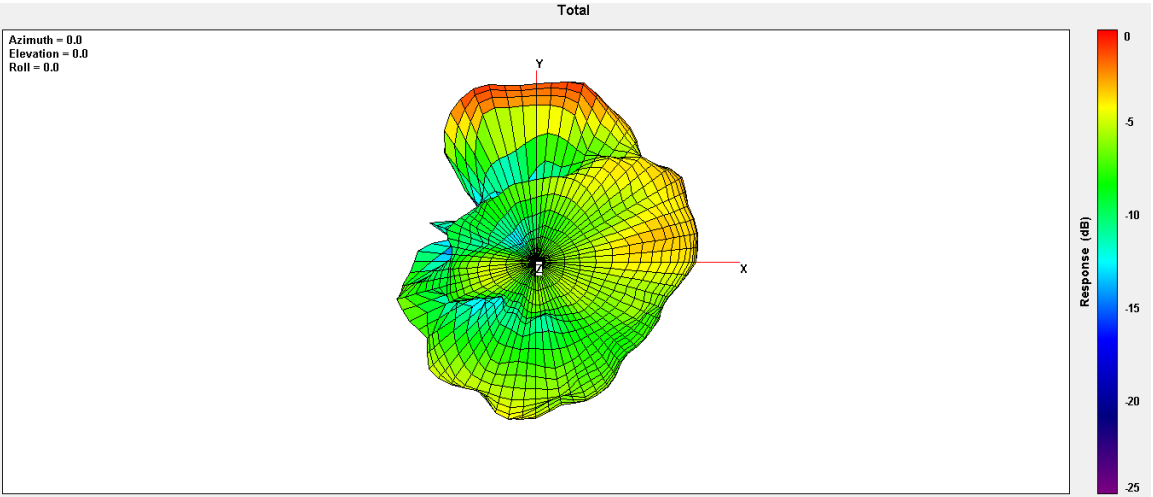
2450MHz



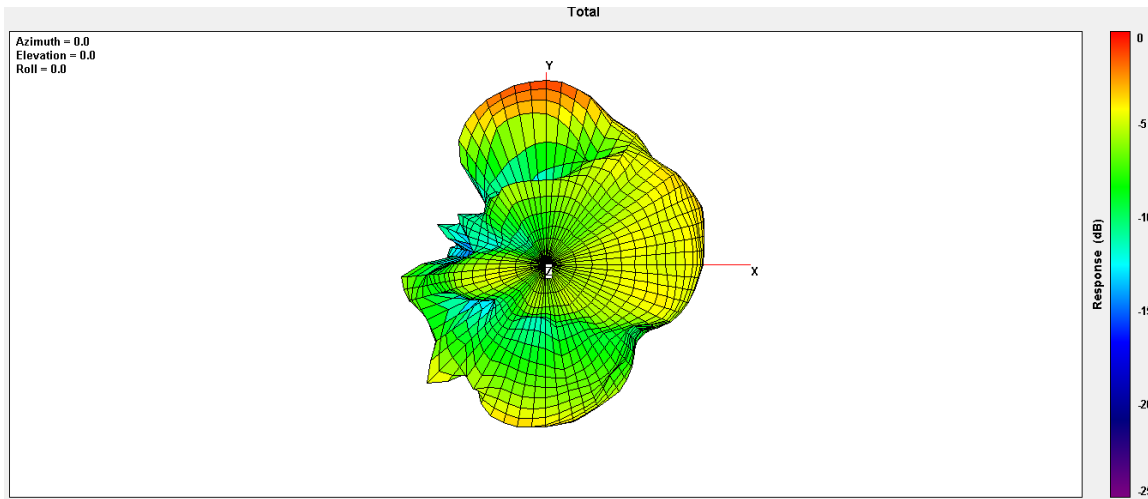
# 2500MHz



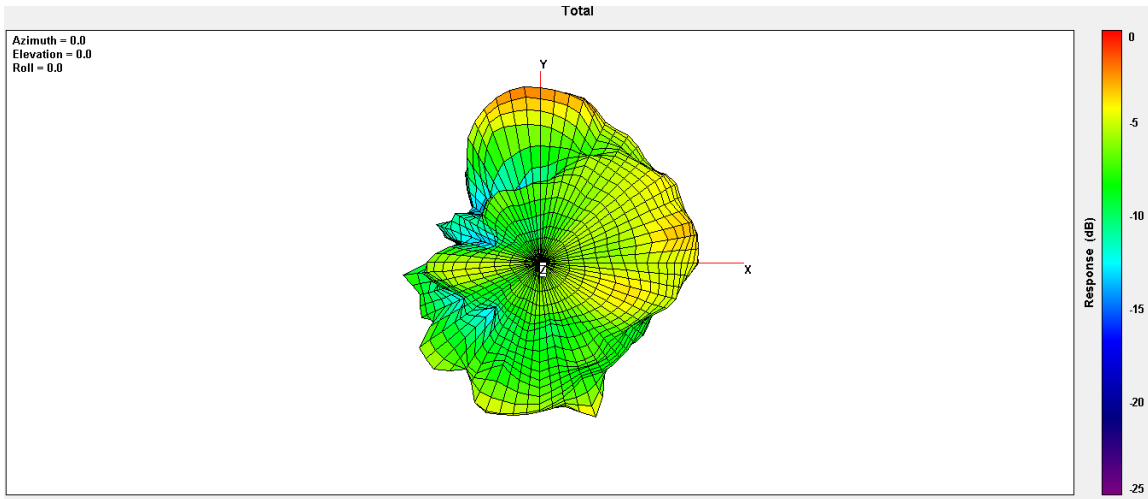
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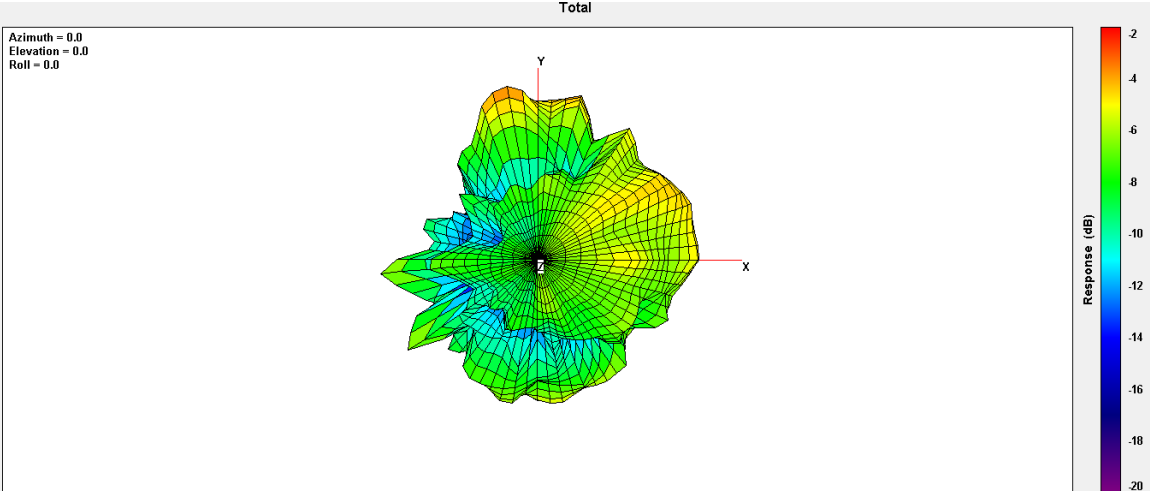
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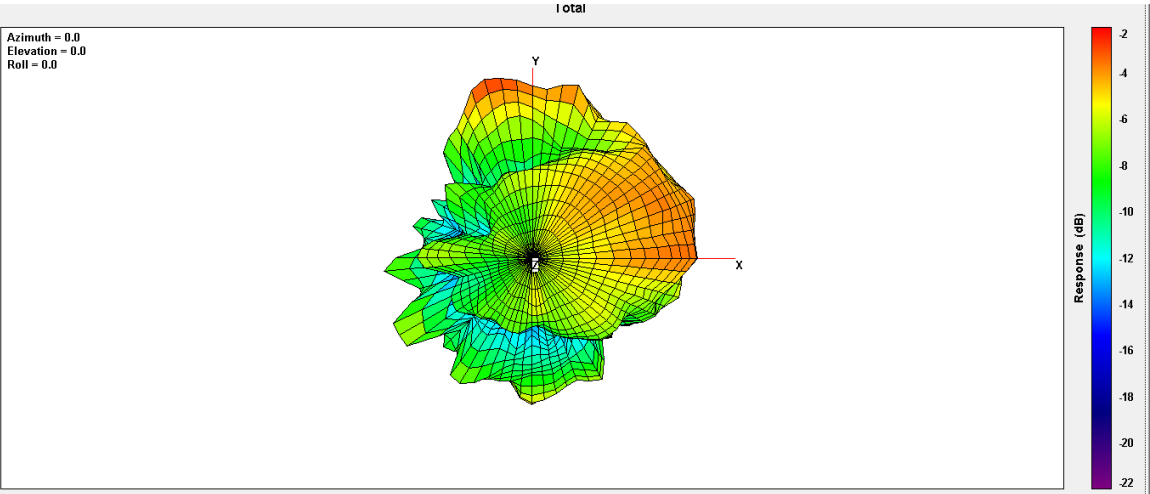
# 5550MHz



# 5750MHz

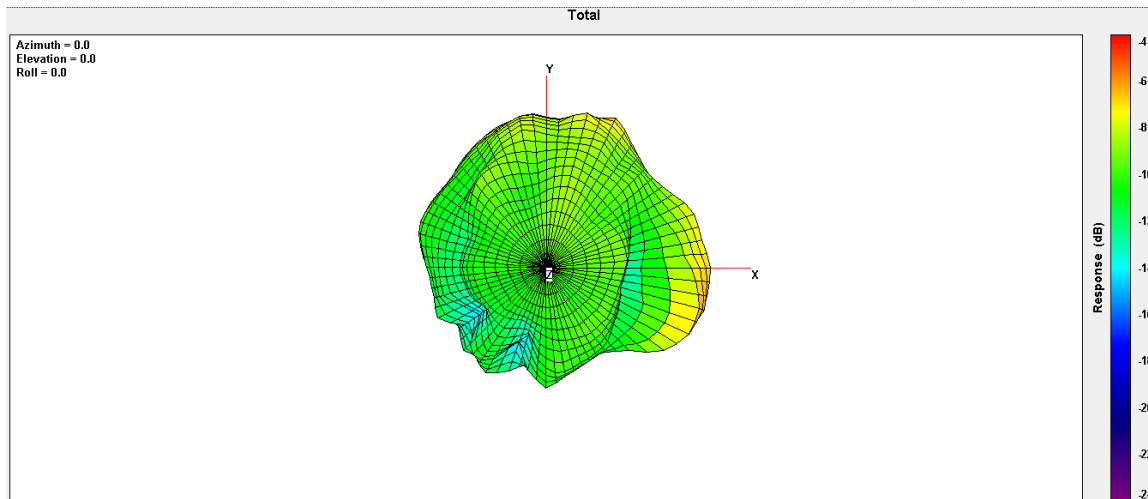


# 5850MHz

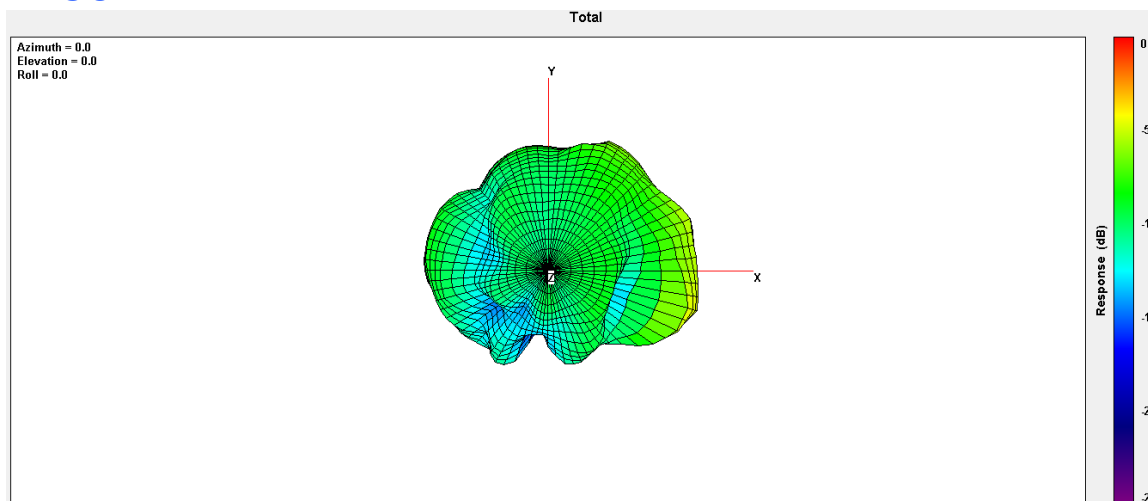


# Aux Antenna

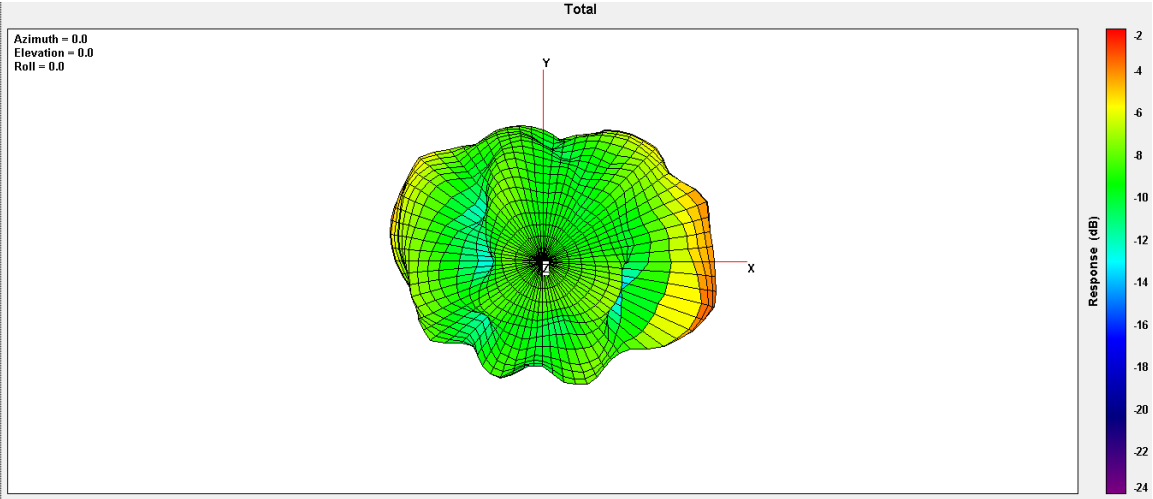
## 2400MHz



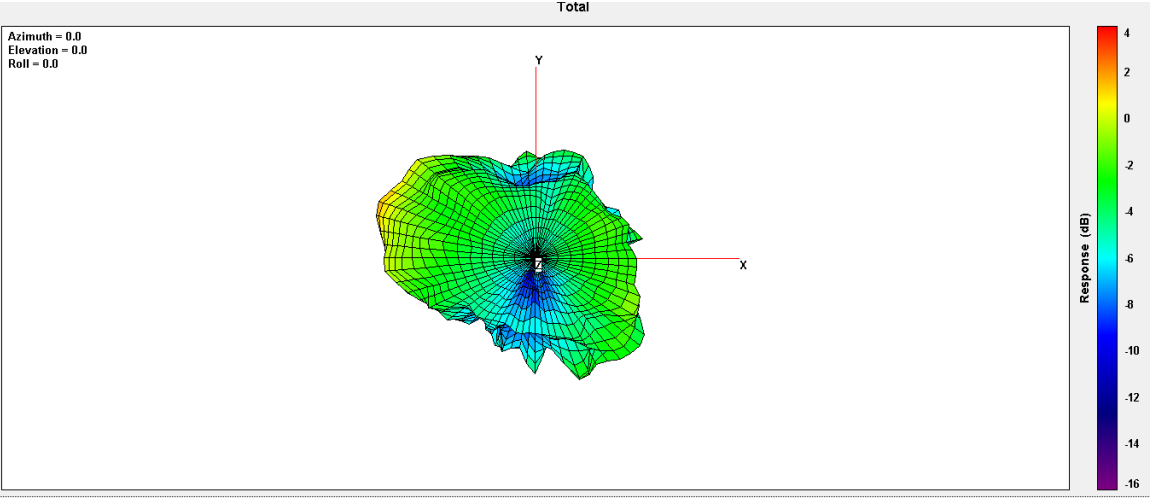
## 2450MHz



# 2500MHz

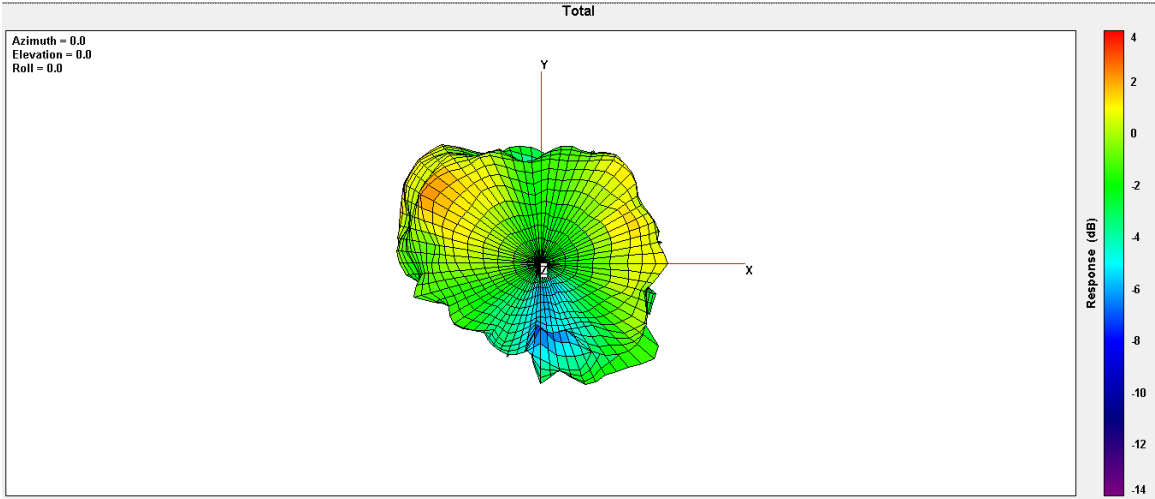


# 5150MHz

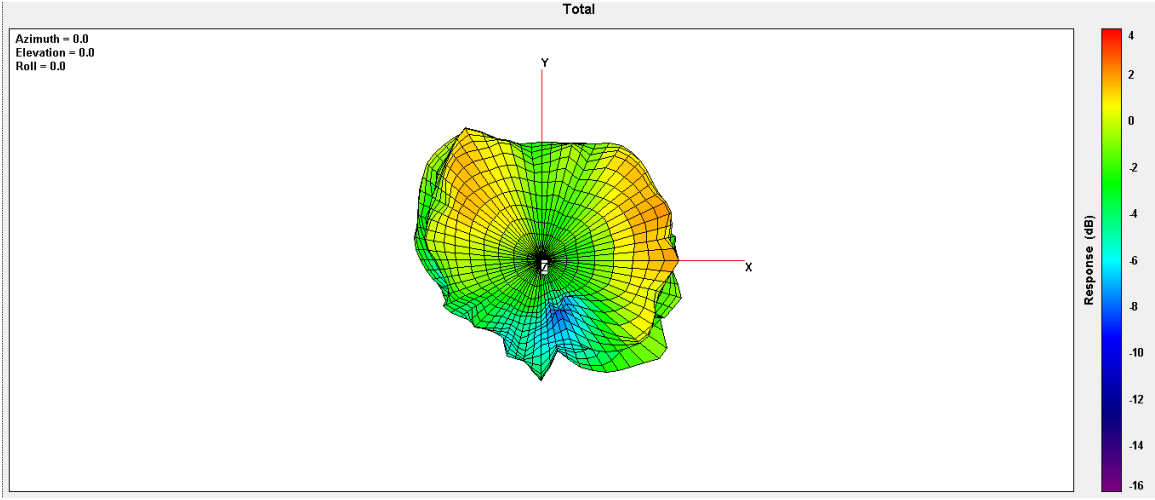




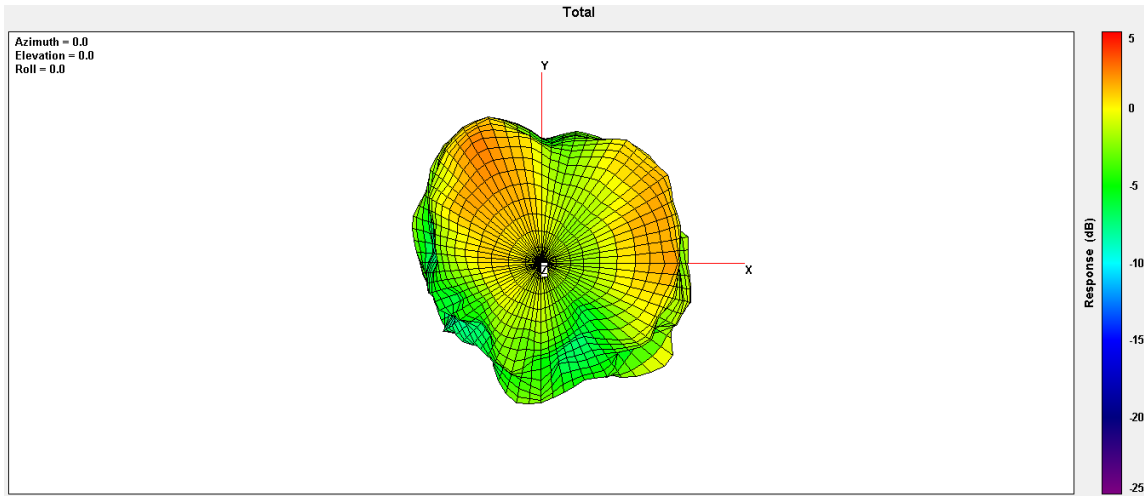
# 5350MHz



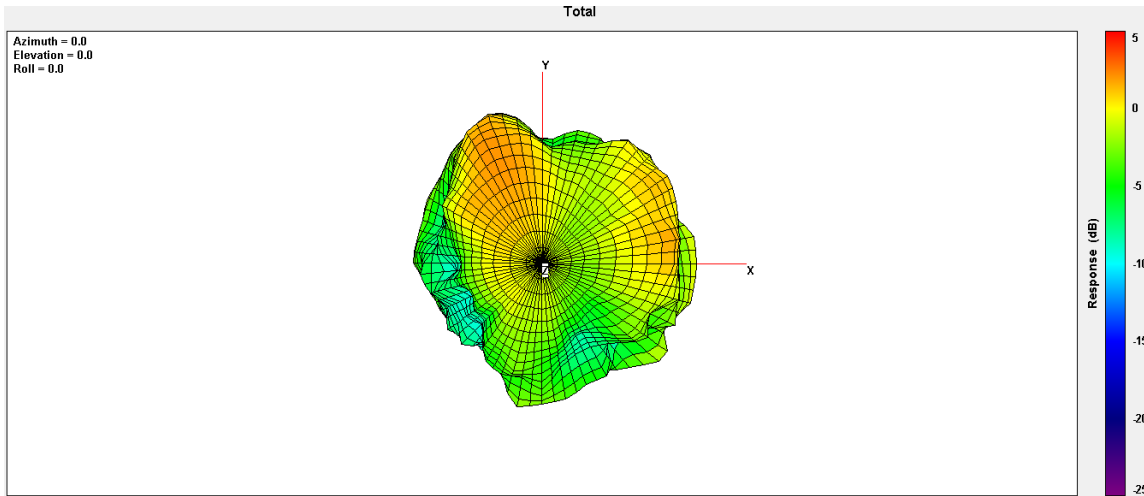
# 5550MHz



# 5750MHz



# 5850MHz

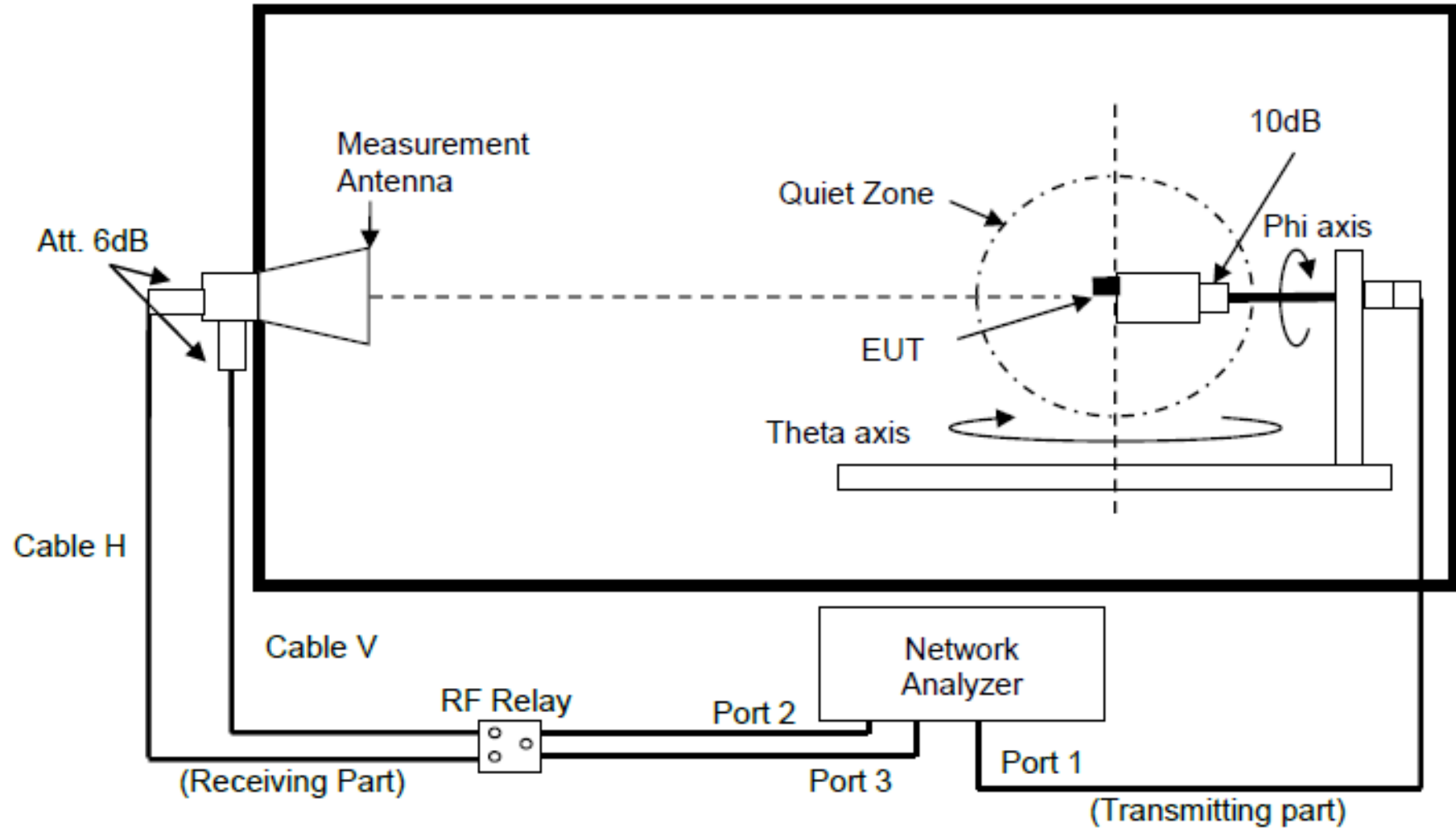


- **Applicable test methods:**

The Host antenna antenna testing under a Full Anechoic Chamber.

- **Test & System Description:**

Setup:



● **Equipment list:**

Name	Manufacturer	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
ENA Series Network Analyzer	Keysight	E5071C	MY46100746	2023/07/18	2024/07/17
RF Switch	Keysight	3499A	00155745	NCR	NCR
Multi-Axis Positioner Controller	ETS-Lindgren	2090	N/A	NCR	NCR
Medium-Duty Positioner	ETS-Lindgren	2015	N/A	NCR	NCR
Measurement Horn Antenna	EMCO	3164-08	00102092	NCR	NCR

- Setup photo:

