



好天线 · 优比造

东莞市优比电子有限公司

Dongguan UB Electronics Co., Ltd

Antenna Study

- **Client Name: ERMELECTRONICSYSTEMSLTD**
- **Project Name: GPS4GTRACKERTUBE**
- **Model: GPS4GTRACKERTUBE(cat1)**
- **Debugging frequency band: 2400-2500HMz**
- **Valuation date: 2026.5.12**

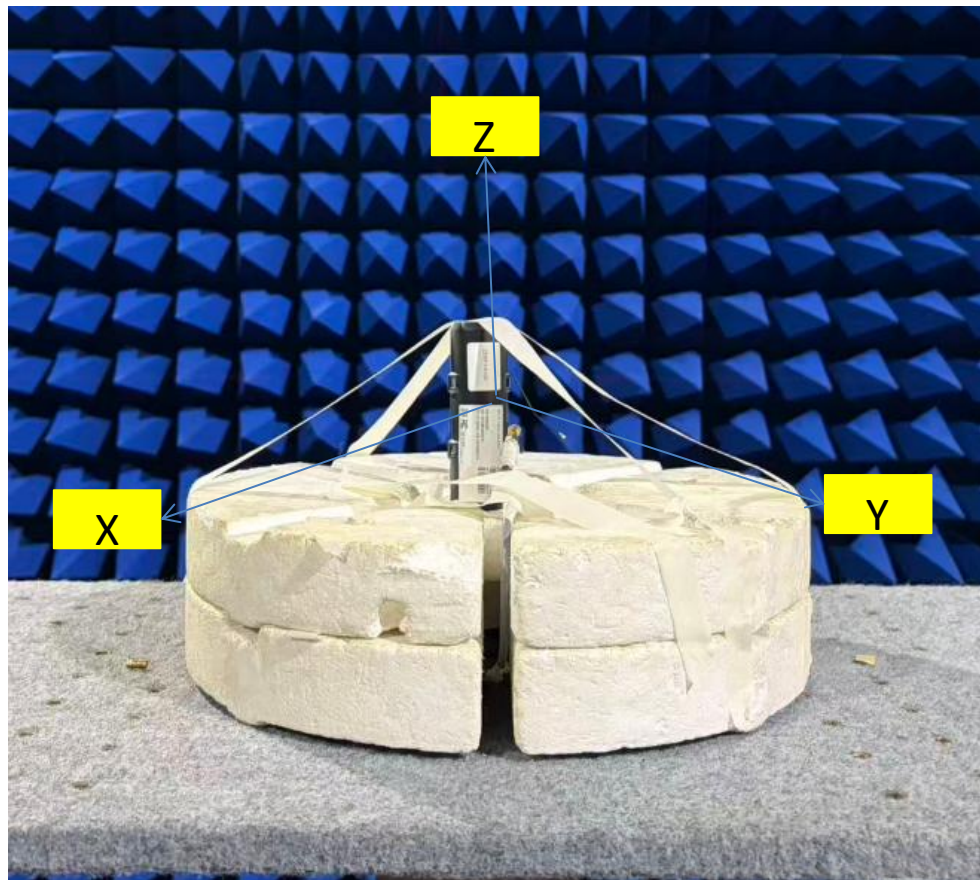
Address: Building 79, New Sun Industrial City, Lin Village Community, Tangxia Town, Dongguan (Dongguan Company) Phone: 0769-81777126

Room 106, Building 3, Lenton Technology Park, No. 500 Qiuyi Road, Binjiang District, Hangzhou (Hangzhou Branch) Fax: 0769-81777125

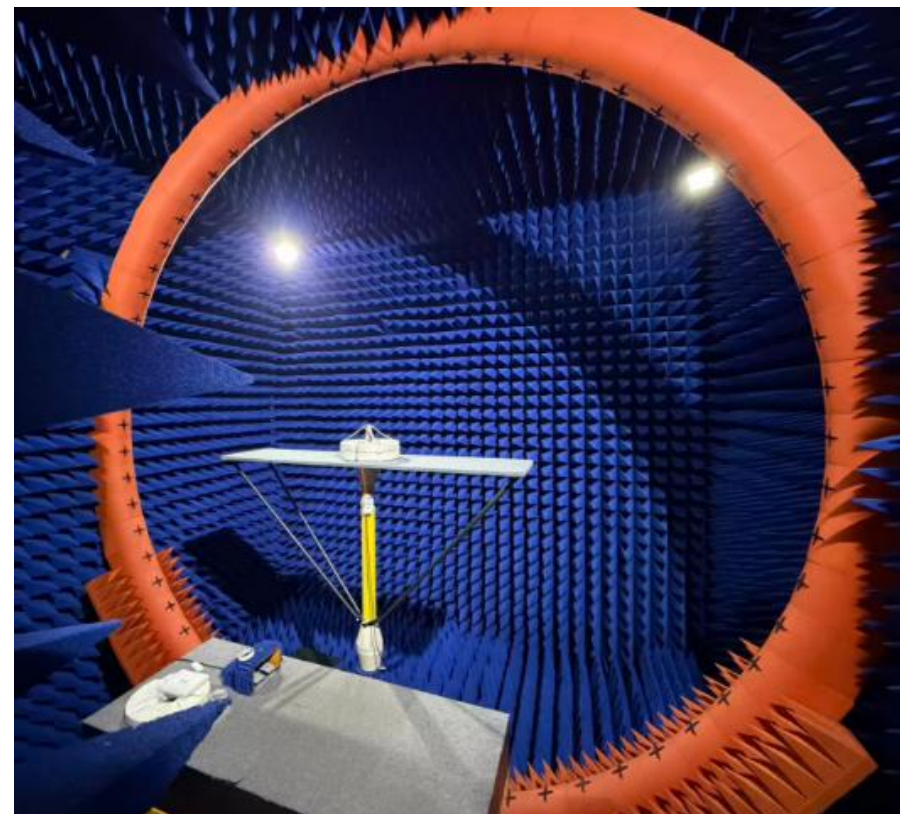
Room 106, Liuxian Second Road No. 47, LiuXian New Industrial Park, Bao'an District, Shenzhen (Shenzhen Company) Website: www.ubuant.com

Internal Antenna

Dongguan UB Electronics Co., Ltd



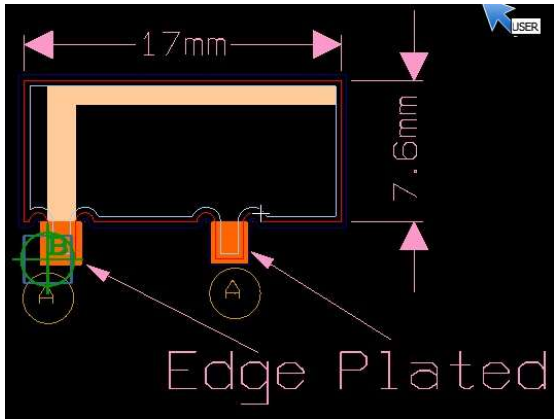
Testing environment



Testing 3D microwave darkroom(3m*3m*3m)

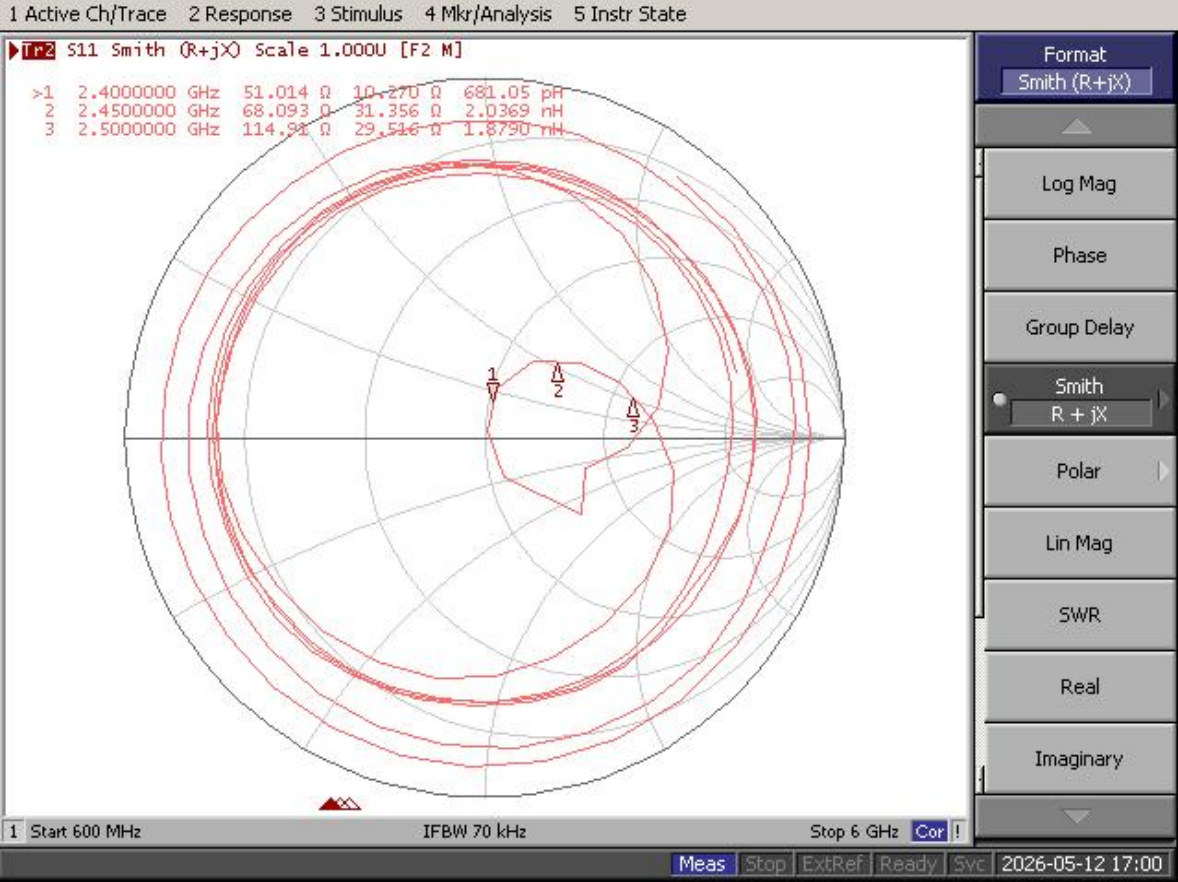
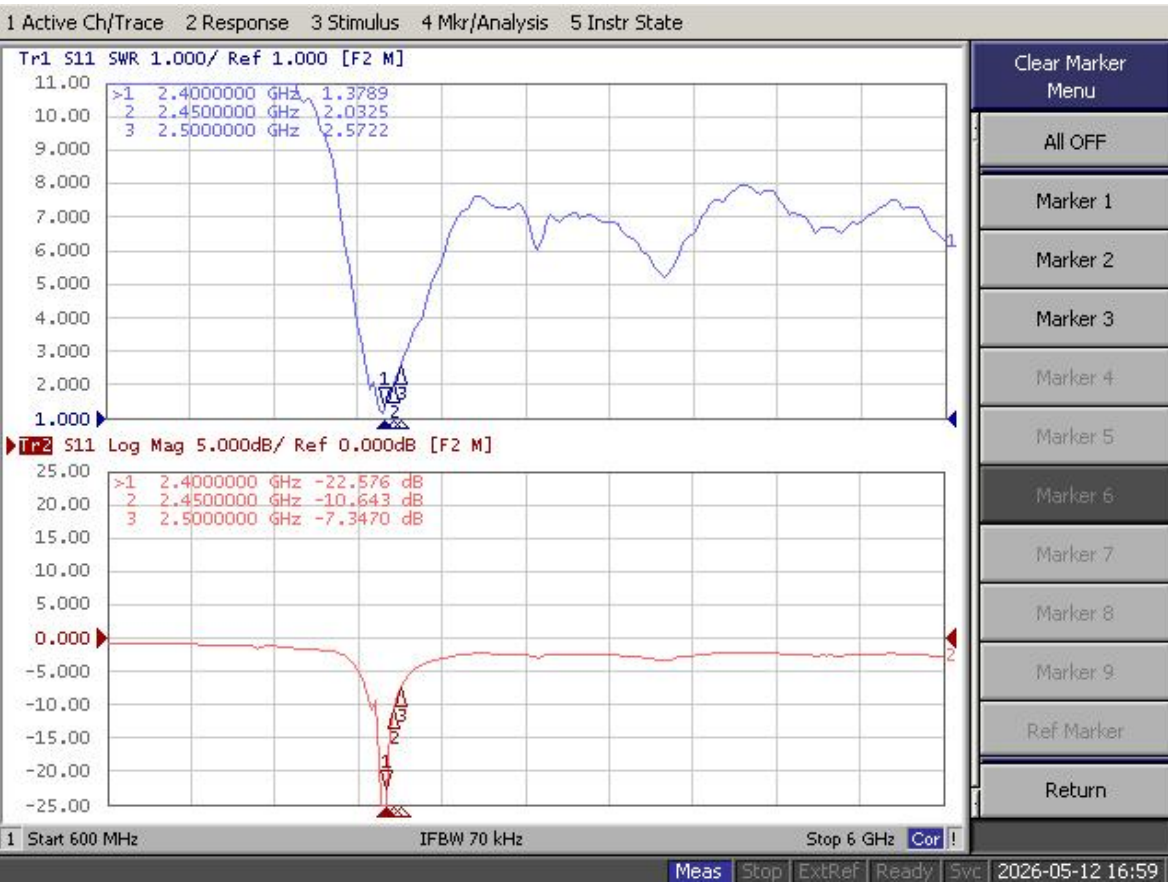
External Antenna

Dongguan UB Electronics Co., Ltd



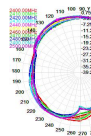
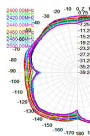
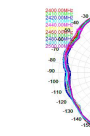
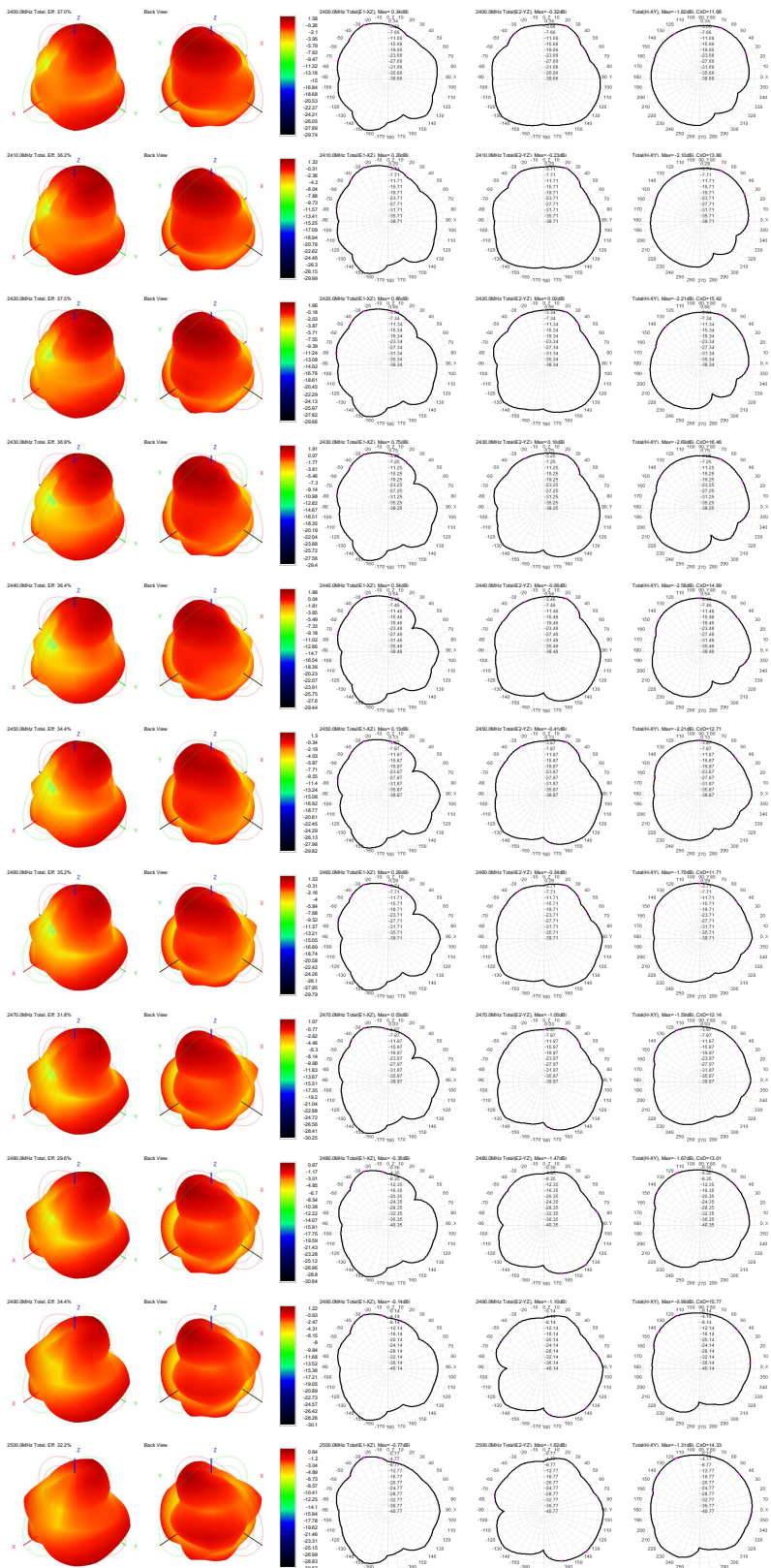
- Antenna name: GSTUBEEG8001E4
- Antenna Type: Monopole
- Covers : 2400/2500MHz

S Parameter_Return Loss&VSWR-Smith



Efficiency and Gain

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Gain (dBi)	1.58	1.33	1.66	1.91	1.88	1.50	1.53	1.07	0.67	1.22	0.64
Efficiency (%)	36.99	36.19	37.46	36.89	36.38	34.35	35.17	31.84	29.65	34.45	32.23





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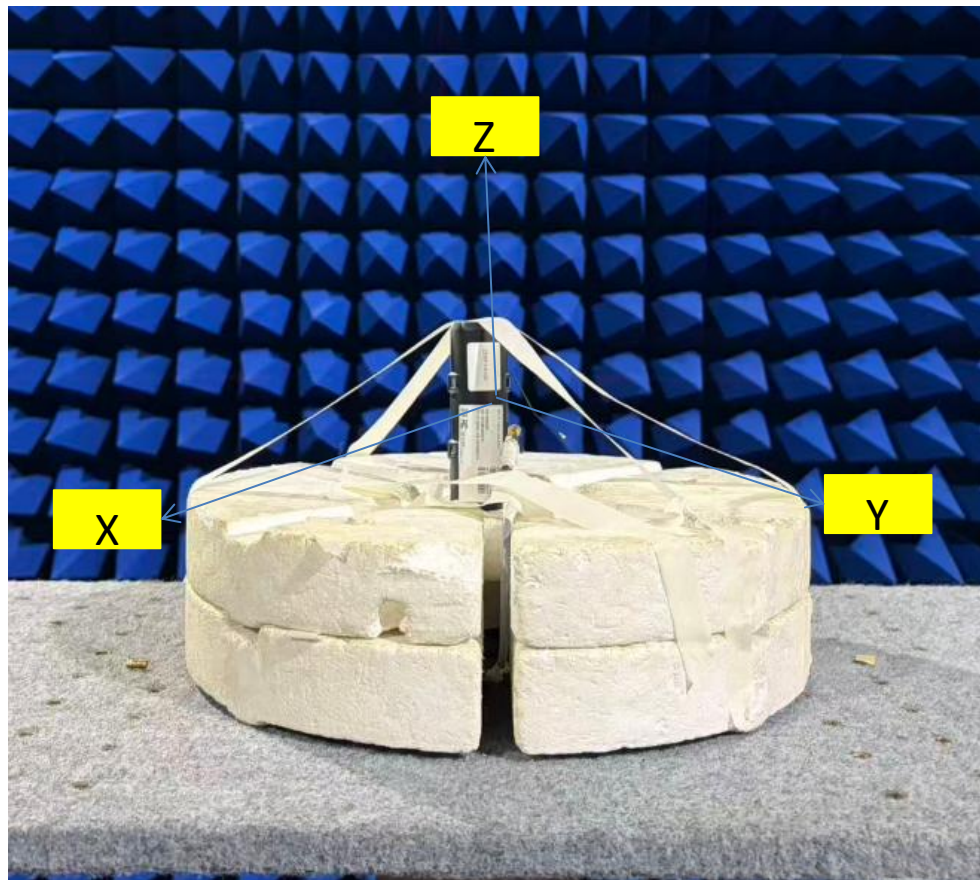
Antenna Study

- **Client Name: ERMELECTRONICSYSTEMSLTD**
- **Project Name: GPS4GTRACKERTUBE**
- **Model: GPS4GTRACKERTUBE(cat1)**
- **Debugging frequency band: 700-2700HMz**
- **Valuation date: 2026.5.12**

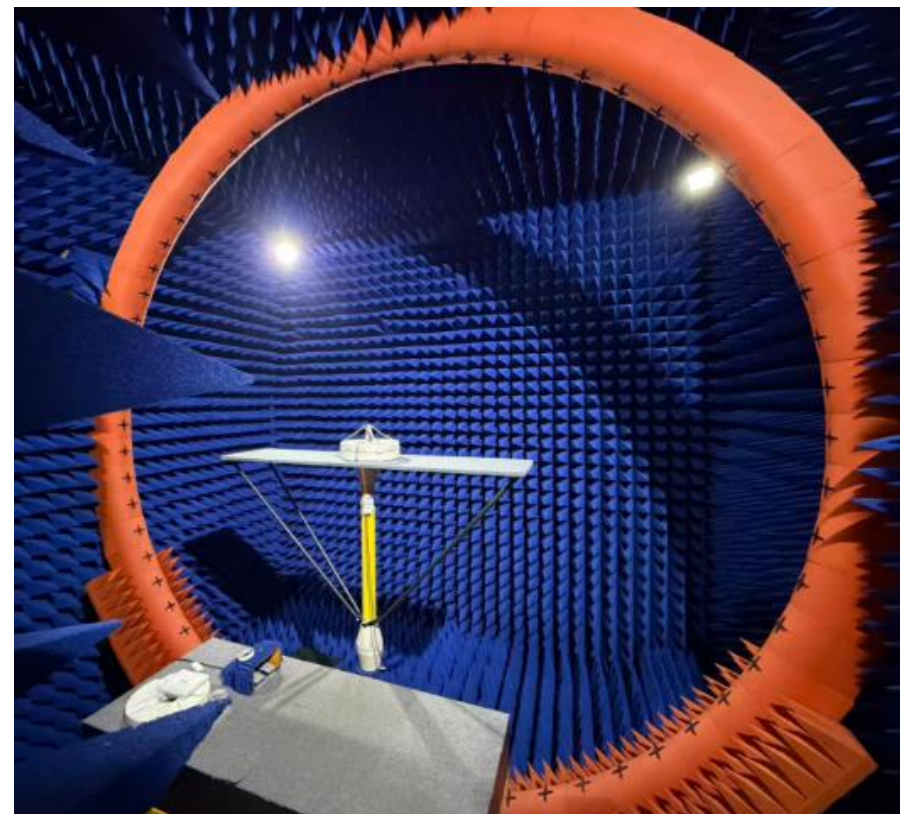
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Testing environment



Testing 3D microwave darkroom(3m*3m*3m)

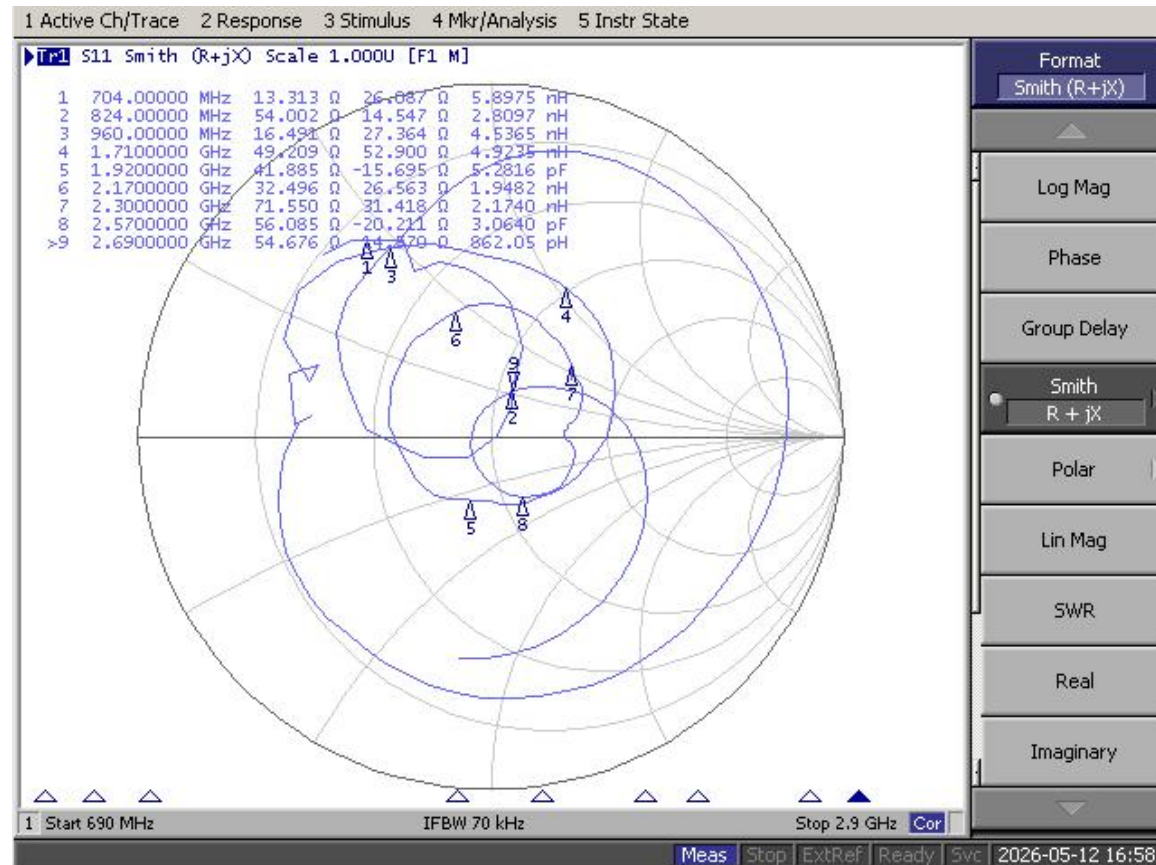
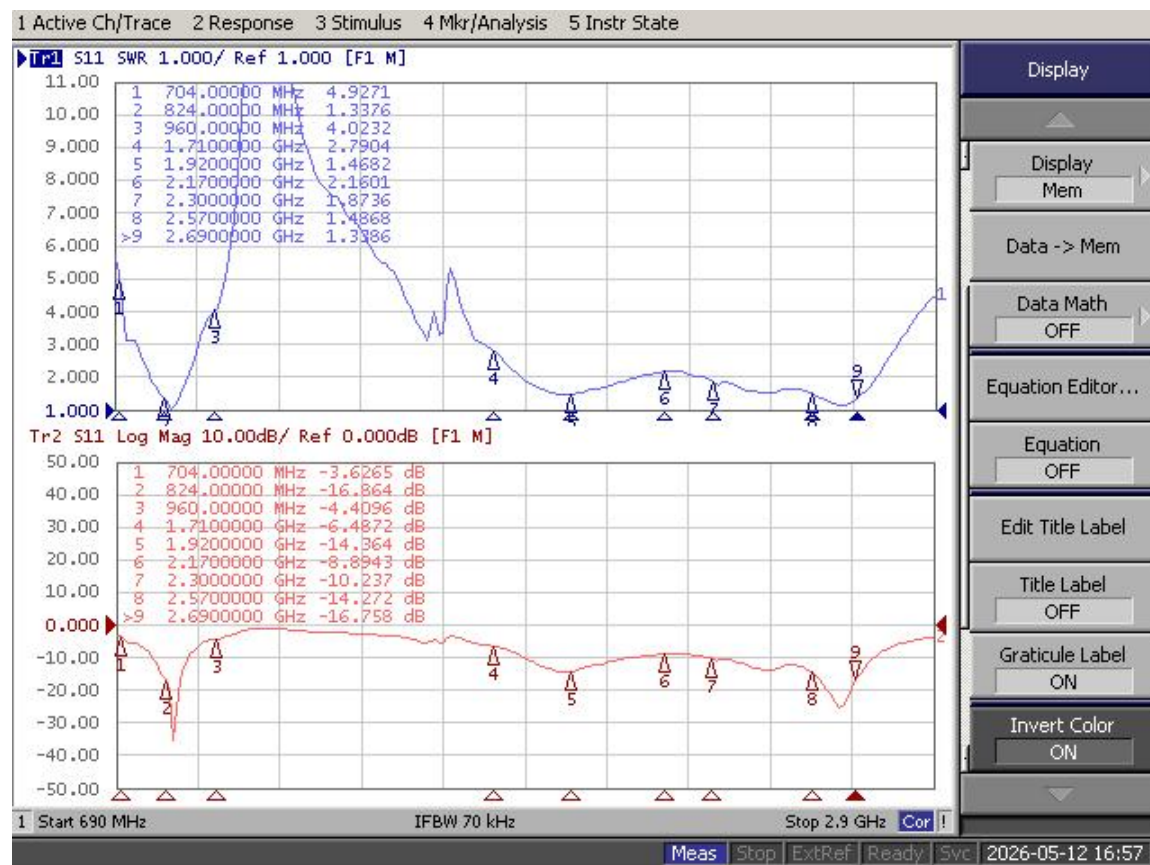
- Antenna name: 4G
- Covers : 700/2700MHz



Antenna

S Parameter_Return Loss&VSWR-Smith

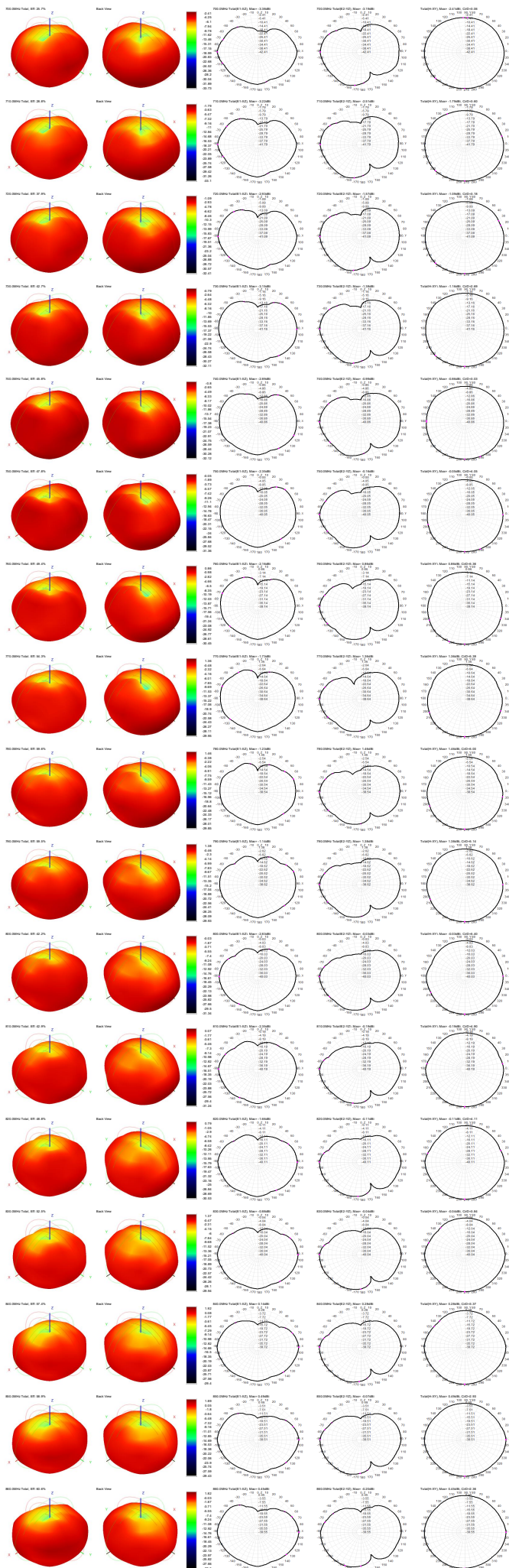
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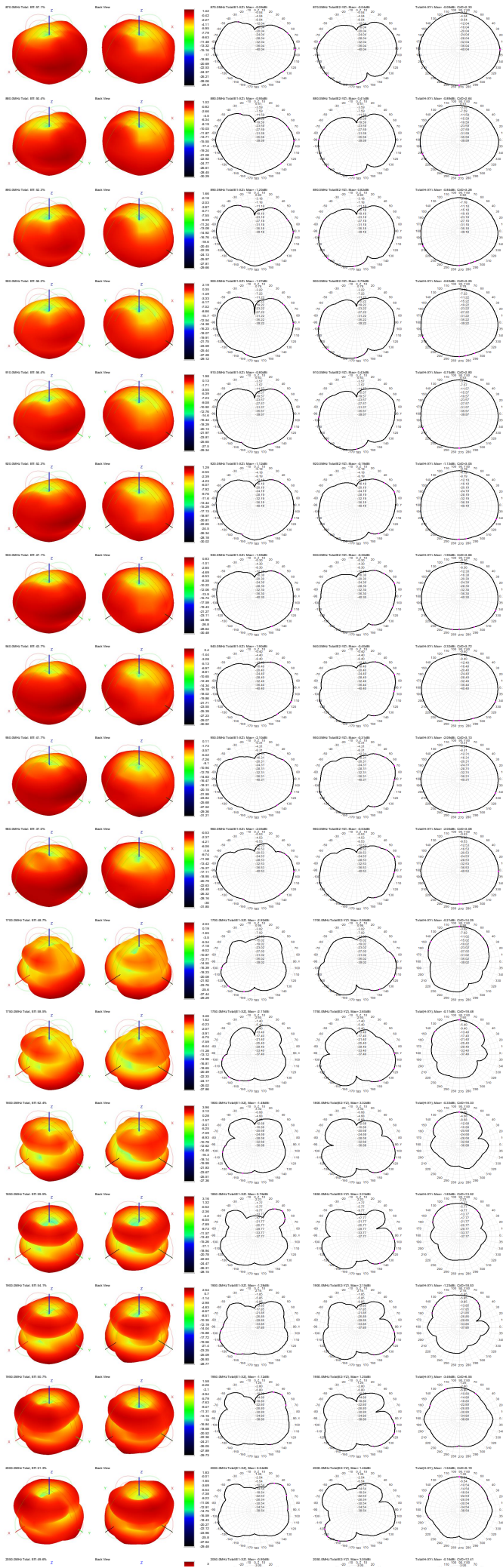


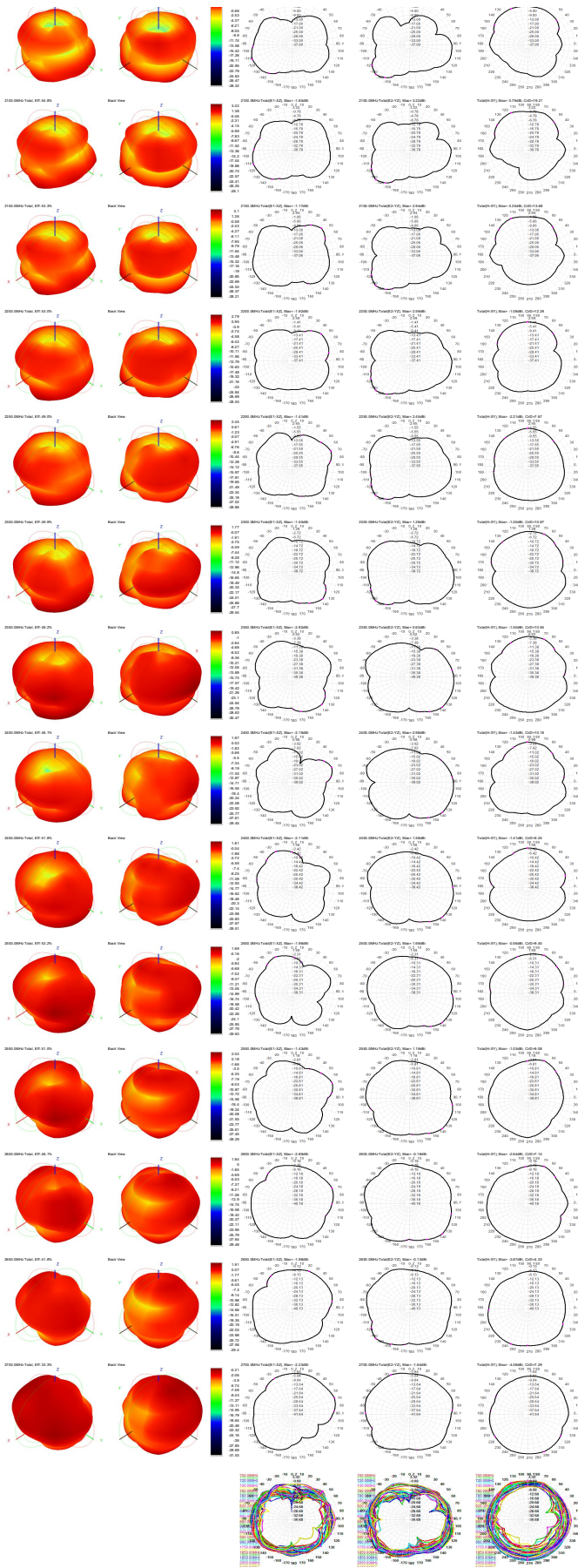
Efficiency and Gain

Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Frequency (MHz)	700.0	710.0	720.0	730.0	740.0	750.0	760.0	770.0	780.0	790.0	800.0	810.0	820.0	830.0	840.0	850.0	860.0	870.0	880.0	890.0	900.0	910.0	920.0	930.0	940.0	950.0	960.0
Gain (dBi)	-2.41	-1.79	-1.09	-0.79	-0.80	-0.05	0.86	1.36	1.46	1.38	-0.03	0.07	0.79	1.37	1.92	1.89	1.82	1.42	1.02	1.66	2.19	1.98	1.29	0.83	0.40	0.11	-0.53
Efficiency (%)	25.65	28.82	37.92	42.70	45.76	47.77	49.42	54.31	59.62	59.50	42.19	42.89	48.76	52.49	57.41	58.90	60.61	57.09	50.43	52.35	56.25	56.45	52.27	47.08	43.67	41.70	37.03

28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
1700.0	1750.0	1800.0	1850.0	1900.0	1950.0	2000.0	2050.0	2100.0	2150.0	2200.0	2250.0	2300.0	2350.0	2400.0	2450.0	2500.0	2550.0	2600.0	2650.0	2700.0
2.03	3.46	3.96	3.16	2.54	1.58	1.83	3.00	3.22	3.10	2.79	2.45	1.77	0.85	1.87	1.81	1.69	2.02	1.84	1.91	-0.21
48.75	58.55	62.44	59.52	54.08	50.69	51.25	49.65	54.80	53.33	53.01	49.03	49.94	49.19	46.09	51.77	53.22	50.99	46.08	41.80	33.28









REGULATORY TESTING FROM THE START TO CERTIFICATE

Intro

Antenna gain documentation required for all FCC Part 15 devices. Must provide either an antenna datasheet/ specification or a test report with gain measurements and plots. This Information cannot be held confidential. Additionally, proprietary information of the design itself can remain confidential in either the ' operational description' or 'schematic'.

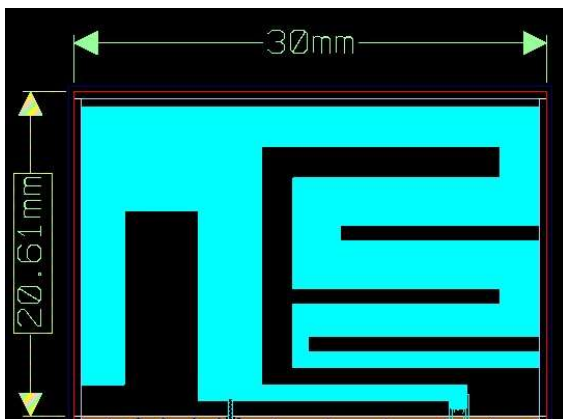
REGULATORY TESTING FROM THE START TO CERTIFICATE

Antenna specification:

1. Company: ERM Ltd.
2. Product name: TUBE
3. RF module/chip: EG800Q-NA
4. Antenna description

Antenna type	Inverted F Printed Antenna
Antenna manufacturer	
Antenna Datasheet	
Frequency range	Low Band:700~960MHz, High Band:1700~2700MHz
Modulation	
Antenna gain max (peak)	Low Band:700~960MHz +1.0dBi, High Band:1700~2700MHz +2.5dBi
Cable loss	
Connector type	

5. Antenna layout



GSTUBEEG8001E4

REGULATORY TESTING FROM THE START TO CERTIFICATE

6. Antenna photo - example

PCB antenna	UFL antenna	Coax antenna
		
explanation	explanation	explanation