

Antenna Specifications

Design Specifications	Typical	Units
Antenna type	frame LDS+foam	
working Frequency	824-960,1710-2690MHz & 1575.42MHz & 2400-2500MHz	
Gain	【DIV: -13.2 ~ -1.96】&【GPS :-1.18; WIFI: 3.06 ~ 3.57】	dBi
Antenna efficiency	【DIV: 3.10~23.50】&【GPS:28.84; WIFI: 50.08~60.31】	%
VSWR	<11	
Ploriaztion	Linear polarization	
Axial Ratio	When the antenna is circular polarization, note the axial ratio in the working bandwidth	N/A
Radiation pattern	omnidirectional	
impedance	50 ohm	
Power handling	33	dBm
Interface	Spring foot contact	
Overall dimensions	See drawing section	
Weight	no requirement	
Operatin Temp	-30 ----- 70	°
Storing Temp	-30 ----- 70	°

407D Law Enforcement Camera GWD Antenna Specification

1、 Indication

The report mainly provides the test status of various electrical performance parameters of the 407D Law Enforcement Camera GWD Antenna. (As shown in Figure 1 below)



Figure 1 407D Law Enforcement Camera GWD Antenna

2、 Electrical Performance

2.1 Specification standard

407D Law Enforcement Camera GWD Antenna working band is at 824-960,1710-2690MHz & 1575.42MHz & 2400-2500MHz.

2.2 Antenna matching circuit

407D Law Enforcement Camera GWD Antenna matches the original matching circuit.

2.3 VSWR Test

A. Test setup

VSWR measurements (S11) were performed using Agilent E5071B Network Analyzer and the previously described test fixture. A ferrite-loaded coaxial cable was used to mitigate surface currents on the outside of the cabling. The testing was performed in free space ETS AMP8500S chamber.

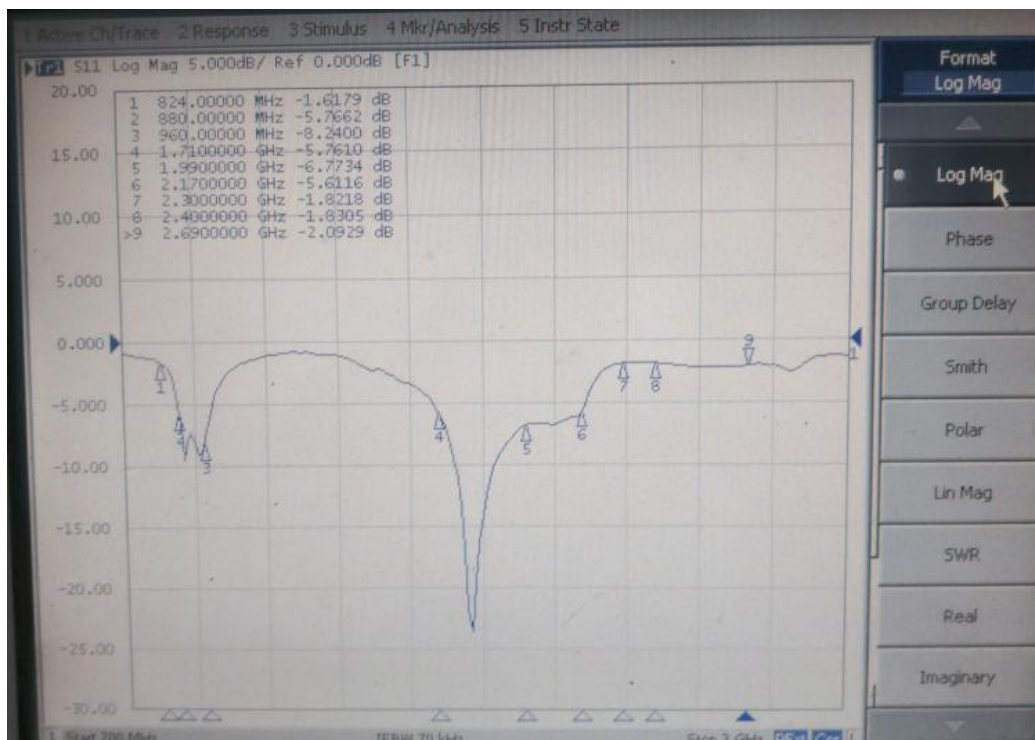
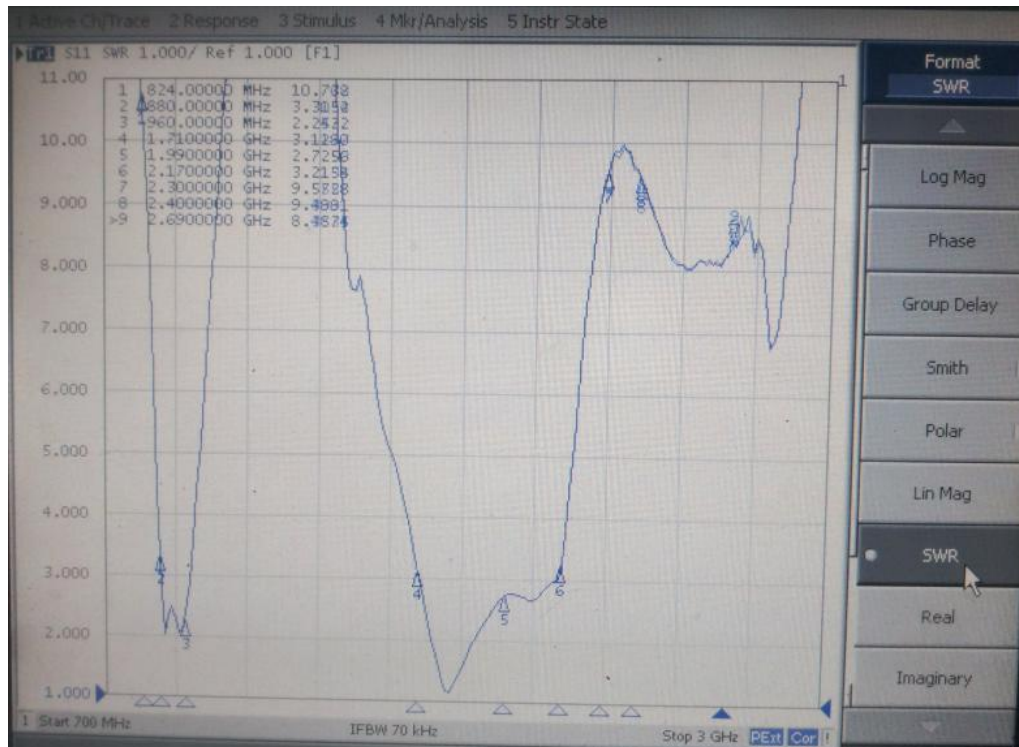
B. VSWR

The table below shows the standing wave ratio value of the edge frequency of the working band of 407D Law Enforcement Camera GWD Antenna matches the original matching circuit.

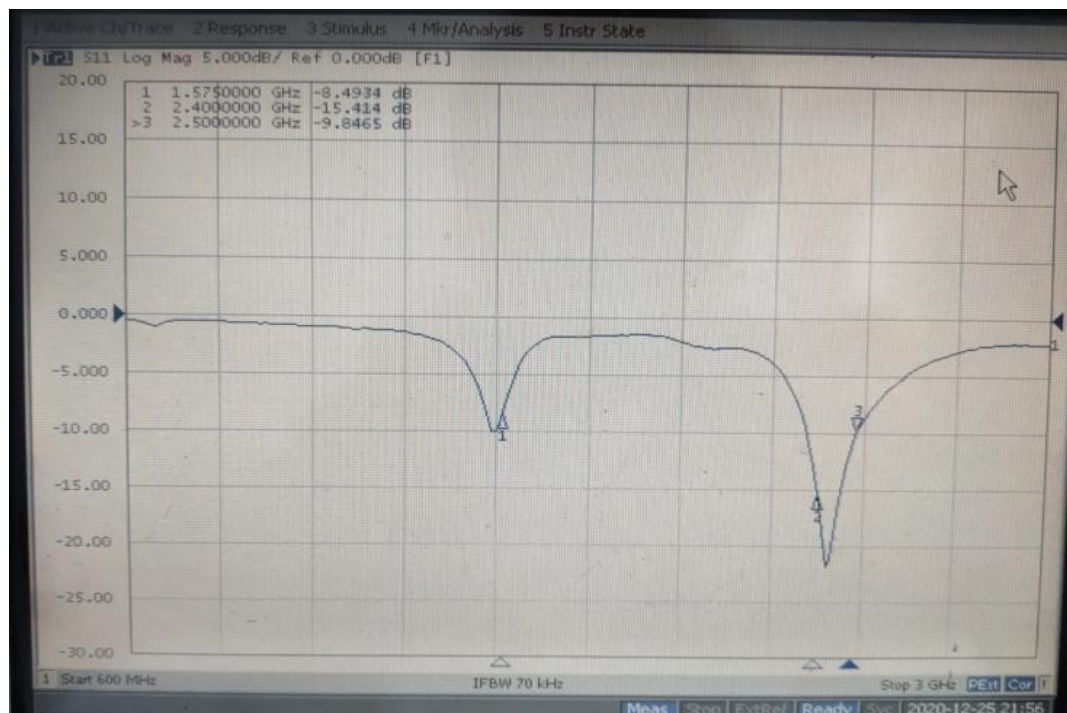
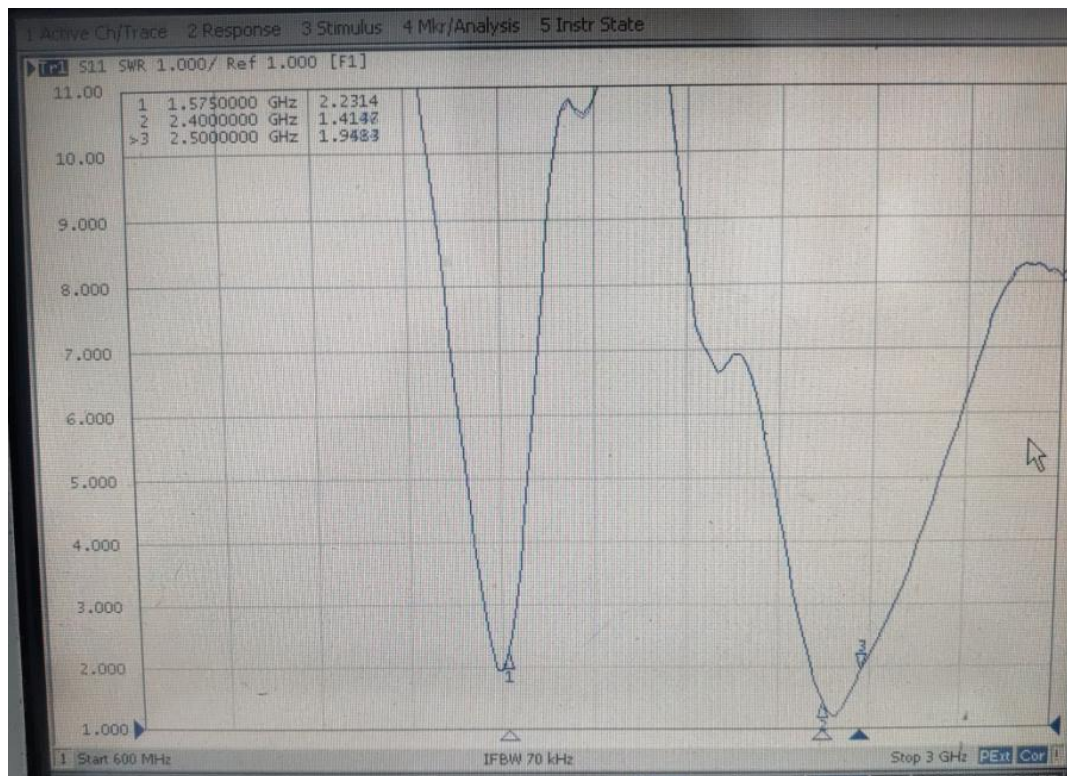
Frequency band	frequency (MHz)	VSWR
DIV	824	10.76
	960	2.26
	1710	3.12
	2170	3.21
	2300	9.55
	2690	8.48
GPS&WIFI	1575.42	2.23
	2400	1.41
	2500	1.94

2.3.1 S11 parameter

DIV:



GPS&WIFI:



Antenna Specifications

2.3.2 Antenna Passive Efficiency

DIV:

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
Frequency (MHz)	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	1710.0	1745.0	1780.0	1815.0	1850.0	1885.0	1920.0	1955.0	1990.0	2025.0	2060.0
Point Values																										
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-15.06	-14.30	-13.99	-12.87	-11.88	-10.90	-10.14	-9.70	-9.68	-9.08	-8.30	-7.90	-7.37	-7.08	-7.41	-8.19	-9.20	-9.33	-7.64	-6.73	-6.29	-6.28	-6.70	-7.20	-8.17	-8.06
Peak EIRP (dBm)	-13.22	-12.23	-11.71	-10.66	-9.75	-8.79	-7.96	-6.39	-6.05	-6.13	-6.05	-5.86	-5.50	-5.32	-5.73	-3.93	-4.34	-3.78	-2.41	-2.83	-3.02	-2.45	-1.96	-1.96	-3.34	-3.59
Directivity (dBi)	1.84	2.07	2.28	2.20	2.13	2.11	2.18	3.31	3.64	2.95	2.26	2.05	1.88	1.76	1.68	4.26	4.86	5.55	5.24	3.89	3.27	3.83	4.75	5.24	4.84	4.46
Efficiency (dB)	-15.06	-14.30	-13.99	-12.87	-11.88	-10.90	-10.14	-9.70	-9.68	-9.08	-8.30	-7.90	-7.37	-7.08	-7.41	-8.19	-9.20	-9.33	-7.64	-6.73	-6.29	-6.28	-6.70	-7.20	-8.17	-8.06
Efficiency (%)	3.10	3.70	4.00	5.20	6.50	8.10	9.70	10.70	10.80	12.30	14.80	16.20	18.30	19.60	18.20	15.20	12.00	11.70	17.20	21.30	23.50	23.50	21.40	19.10	15.20	15.60
Gain (dBi)	-13.22	-12.23	-11.71	-10.66	-9.75	-8.79	-7.96	-6.39	-6.05	-6.13	-6.05	-5.86	-5.50	-5.32	-5.73	-3.93	-4.34	-3.78	-2.41	-2.83	-3.02	-2.45	-1.96	-1.96	-3.34	-3.59
NHPRP ±Pi/4 (dBm)	-16.70	-15.94	-15.55	-14.41	-13.41	-12.50	-11.81	-11.52	-11.56	-11.04	-10.50	-10.28	-9.87	-9.75	-10.10	-11.22	-12.41	-12.62	-10.92	-9.83	-9.36	-8.76	-8.90	-9.27	-10.47	-10.44
NHPRP ±Pi/6 (dBm)	-17.95	-17.19	-16.81	-15.72	-14.77	-13.93	-13.31	-13.08	-13.05	-12.41	-11.82	-11.60	-11.21	-11.07	-11.44	-12.87	-14.20	-14.61	-12.79	-11.54	-11.05	-10.37	-10.45	-10.70	-11.78	-11.61
NHPRP ±Pi/8 (dBm)	-18.94	-18.16	-17.78	-16.73	-15.84	-15.05	-14.49	-14.32	-14.23	-13.52	-12.91	-12.71	-12.36	-12.23	-12.63	-14.10	-15.52	-15.83	-13.92	-12.64	-12.31	-11.74	-11.83	-11.88	-12.71	-12.45
Upper Hem. PRP (dBm)	-18.33	-17.73	-17.54	-16.40	-15.34	-14.25	-13.25	-12.42	-12.09	-11.58	-11.12	-11.02	-10.72	-10.60	-11.04	-12.89	-14.16	-12.72	-10.82	-10.47	-10.05	-10.04	-10.40	-11.09	-12.05	-11.89
Lower Hem. PRP (dBm)	-17.83	-16.93	-16.53	-15.41	-14.49	-13.60	-13.06	-13.03	-13.40	-12.68	-11.52	-10.81	-10.07	-9.64	-9.88	-9.98	-10.86	-11.99	-10.49	-9.11	-8.67	-8.65	-9.12	-9.47	-10.46	-10.37
Upper Hem. PRP (%)	1.47	1.69	1.76	2.29	2.92	3.76	4.74	5.73	6.18	6.95	7.72	7.90	8.46	8.71	7.88	5.14	3.84	5.35	8.27	8.97	9.89	9.91	9.12	7.77	6.23	6.47
Lower Hem. PRP (%)	1.65	2.03	2.23	2.88	3.56	4.36	4.95	4.98	4.57	5.39	7.05	8.30	9.84	10.86	10.27	10.04	8.20	6.33	8.94	12.29	13.59	13.64	12.25	11.29	8.99	9.18

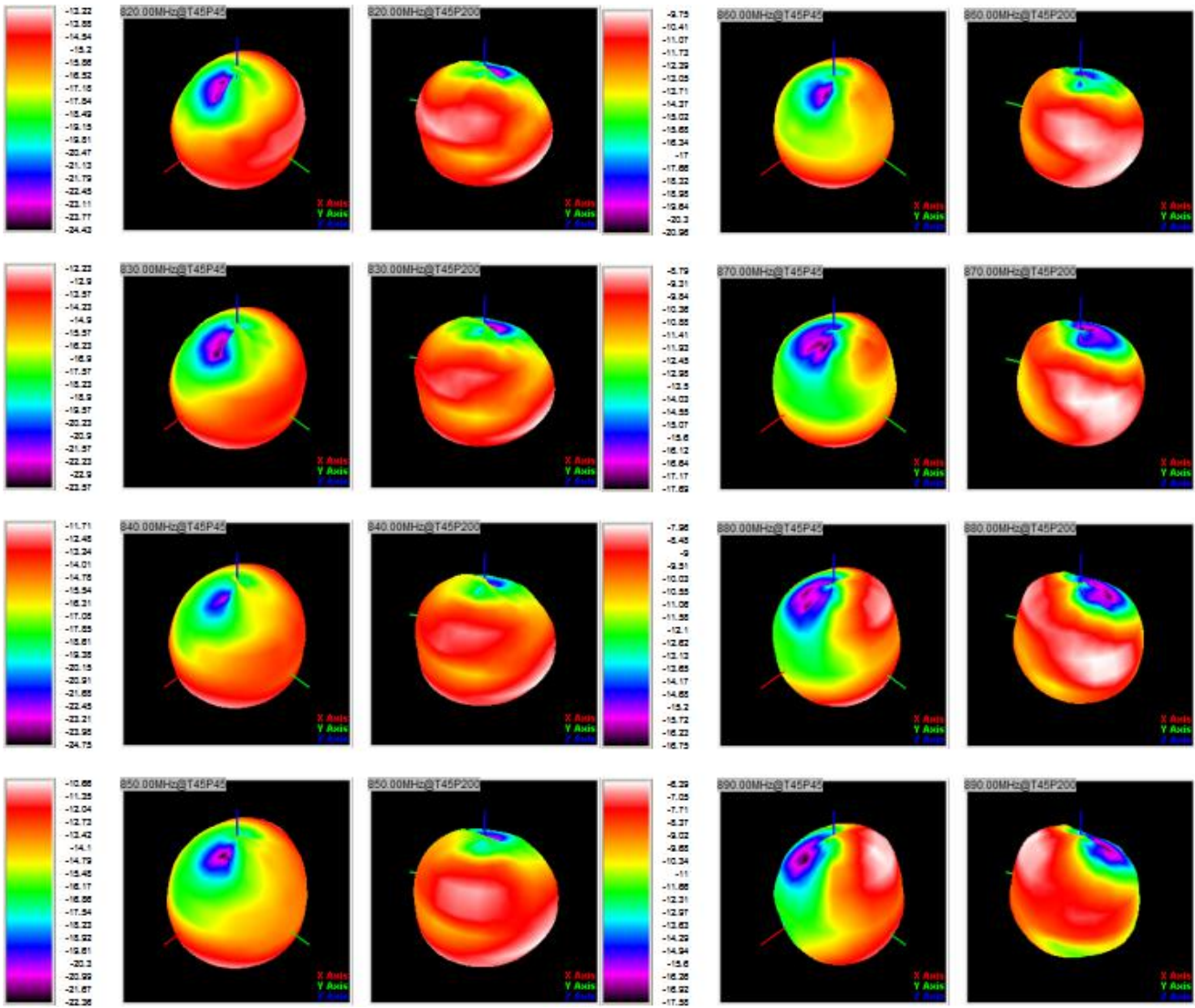
Frequency ID	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
Frequency (MHz)	2095.0	2130.0	2165.0	2200.0	2235.0	2270.0	2305.0	2340.0	2375.0	2410.0	2445.0	2480.0	2515.0	2550.0	2585.0	2620.0	2655.0	2690.0
Point Values																		
Ant. Port Input Pwr. (dBm)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-8.41	-9.37	-11.10	-11.91	-10.87	-9.82	-9.36	-10.20	-10.81	-10.19	-10.82	-11.07	-11.06	-10.66	-11.38	-12.04	-12.04	-11.83
Peak EIRP (dBm)	-3.97	-4.71	-6.01	-6.37	-4.90	-4.39	-3.97	-4.76	-4.27	-3.69	-3.96	-3.58	-4.67	-1.69	-3.43	-3.11	-3.77	-3.13
Directivity (dBi)	4.43	4.66	5.10	5.54	5.98	5.43	5.39	5.45	6.54	6.50	6.86	7.49	6.39	8.97	7.94	8.93	8.28	8.70
Efficiency (dB)	-8.41	-9.37	-11.10	-11.91	-10.87	-9.82	-9.36	-10.20	-10.81	-10.19	-10.82	-11.07	-11.06	-10.66	-11.38	-12.04	-12.04	-11.83
Efficiency (%)	14.40	11.60	7.80	6.40	8.20	10.40	11.60	9.50	8.30	9.60	8.30	7.80	7.80	8.60	7.30	6.20	6.20	6.60
Gain (dBi)	-3.97	-4.71	-6.01	-6.37	-4.90	-4.39	-3.97	-4.76	-4.27	-3.69	-3.96	-3.58	-4.67	-1.69	-3.43	-3.11	-3.77	-3.13
NHPRP ±Pi/4 (dBm)	-10.57	-11.49	-13.30	-14.69	-13.67	-12.91	-12.49	-13.06	-13.57	-13.02	-13.91	-13.61	-14.14	-13.04	-14.73	-14.87	-15.29	-14.88
NHPRP ±Pi/6 (dBm)	-11.74	-12.78	-15.03	-16.71	-15.57	-14.81	-14.33	-14.83	-15.41	-15.09	-16.01	-15.43	-15.86	-14.73	-16.54	-16.82	-17.36	-16.99
NHPRP ±Pi/8 (dBm)	-12.62	-13.75	-16.29	-18.21	-16.83	-16.10	-15.64	-16.09	-16.76	-16.65	-17.55	-16.73	-17.16	-16.09	-17.98	-18.44	-19.03	-18.73
Upper Hem. PRP (dBm)	-12.13	-12.98	-14.94	-16.51	-15.59	-14.15	-13.18	-13.80	-14.33	-13.66	-14.09	-14.09	-13.97	-13.65	-14.20	-14.18	-13.79	-13.48
Lower Hem. PRP (dBm)	-10.80	-11.85	-13.41	-13.76	-12.66	-11.82	-11.69	-12.69	-13.37	-12.79	-13.58	-14.07	-14.17	-13.69	-14.59	-16.15	-16.85	-16.84
Upper Hem. PRP (%)	6.12	5.04	3.20	2.23	2.76	3.85	4.81	4.17	3.69	4.30	3.90	3.90	4.01	4.31	3.80	3.82	4.18	4.49
Lower Hem. PRP (%)	8.32	6.54	4.56	4.21	5.42	6.57	6.77	5.38	4.60	5.26	4.39	3.92	3.82	4.27	3.48	2.43	2.06	2.07

GPS&WIFI:

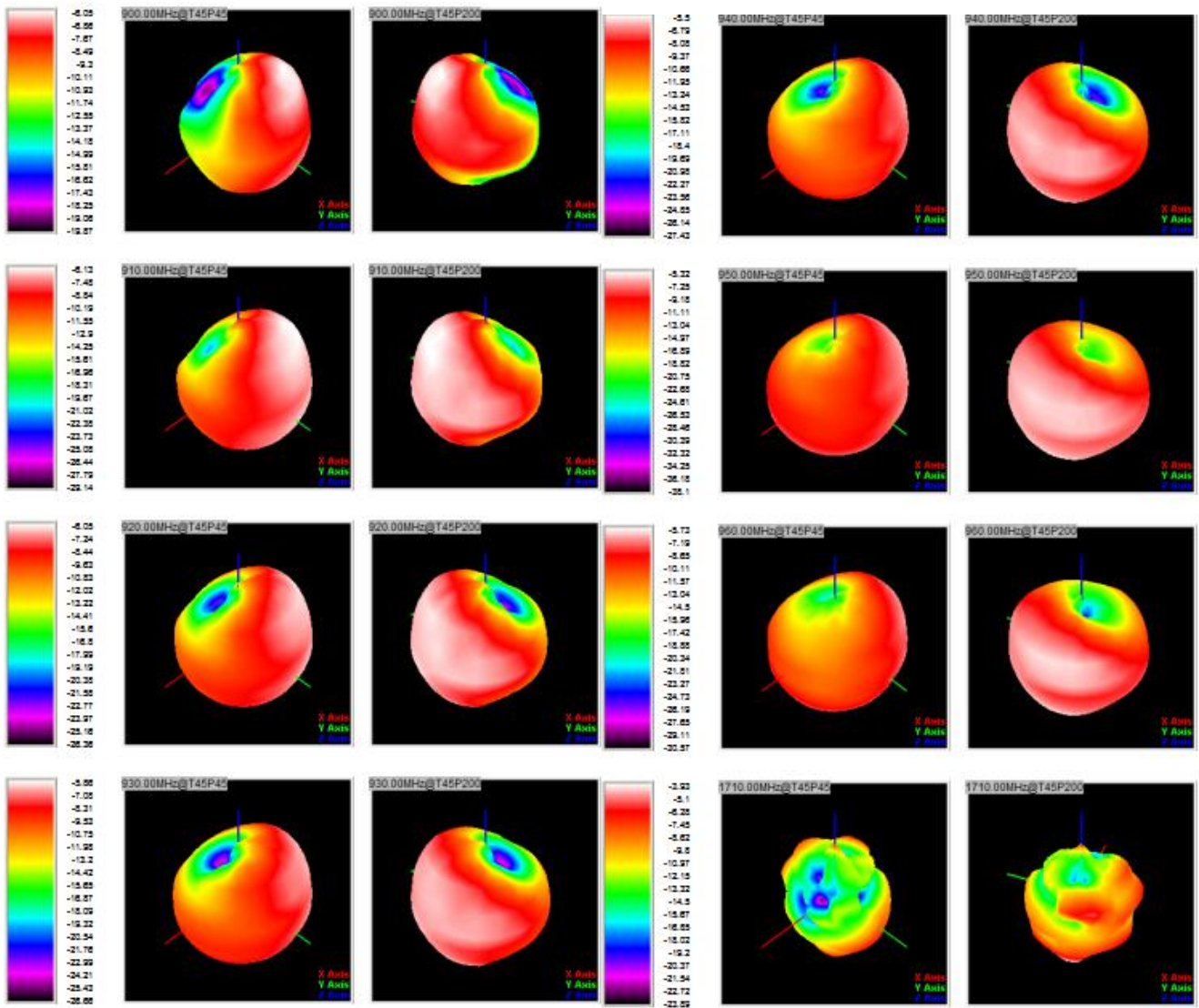
Freq(MHz)	Gain(dB)	Efficiency(dB)	Efficiency(%)
1550	-0.40	-5.29	29.55
1552	-0.46	-5.31	29.42
1554	-0.54	-5.33	29.32
1556	-0.62	-5.33	29.33
1558	-0.71	-5.33	29.31
1560	-0.78	-5.32	29.39
1562	-0.87	-5.33	29.29
1564	-0.95	-5.33	29.32
1566	-1.00	-5.33	29.30
1568	-1.04	-5.32	29.39
1570	-1.07	-5.31	29.47
1572	-1.12	-5.33	29.31
1574	-1.15	-5.36	29.11
1576	-1.18	-5.40	28.84
1578	-1.21	-5.46	28.46
1580	-1.27	-5.54	27.92
2400	3.06	-3.00	50.08
2410	3.13	-2.75	53.12
2420	3.19	-2.60	54.90
2430	3.25	-2.50	56.22
2440	3.28	-2.43	57.10
2450	3.36	-2.33	58.51
2460	3.34	-2.30	58.88
2470	3.30	-2.25	59.59
2480	3.29	-2.20	60.31
2490	3.46	-2.22	60.02
2500	3.57	-2.32	58.61

2.3.3 Pattern

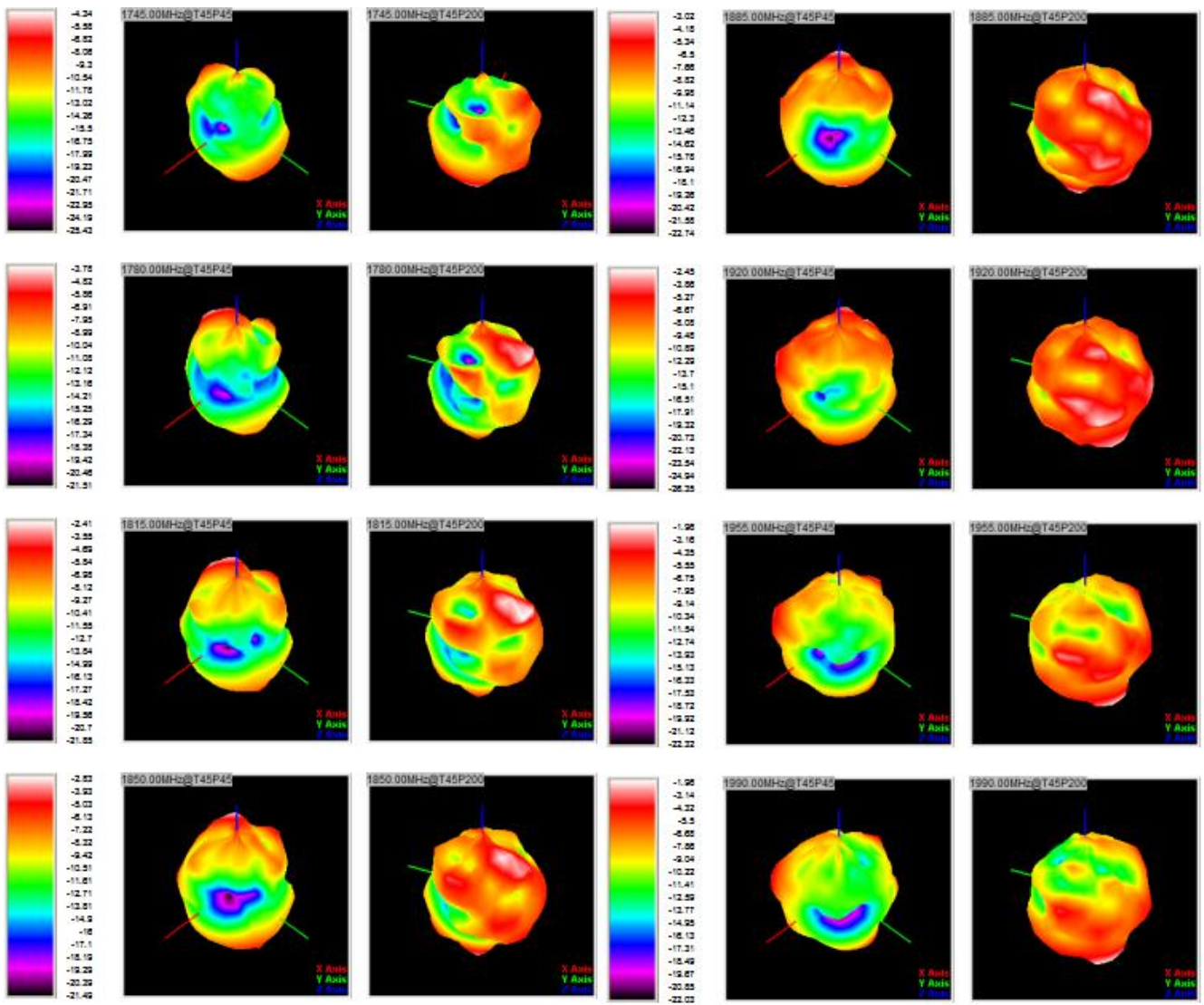
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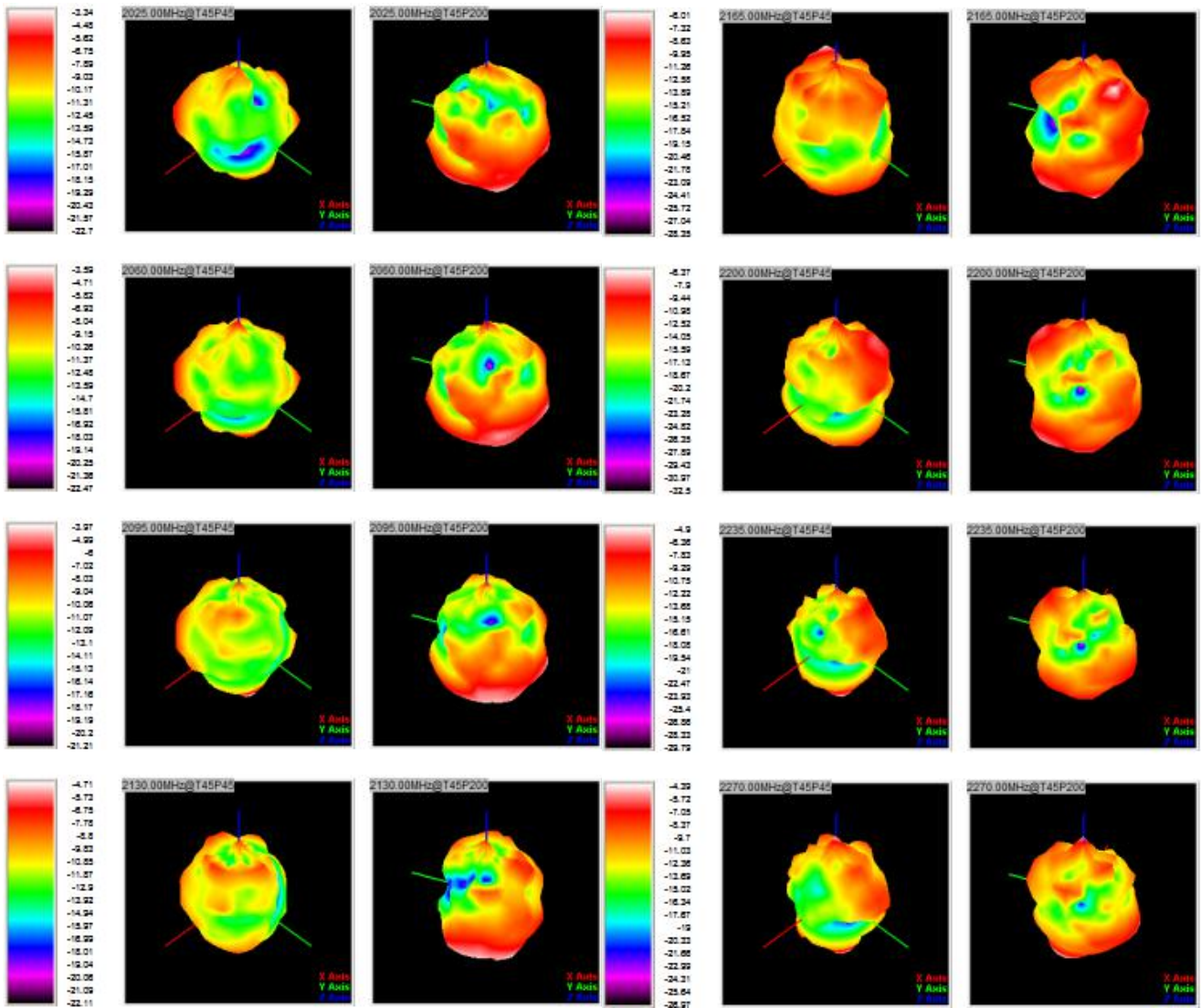
Antenna Specifications



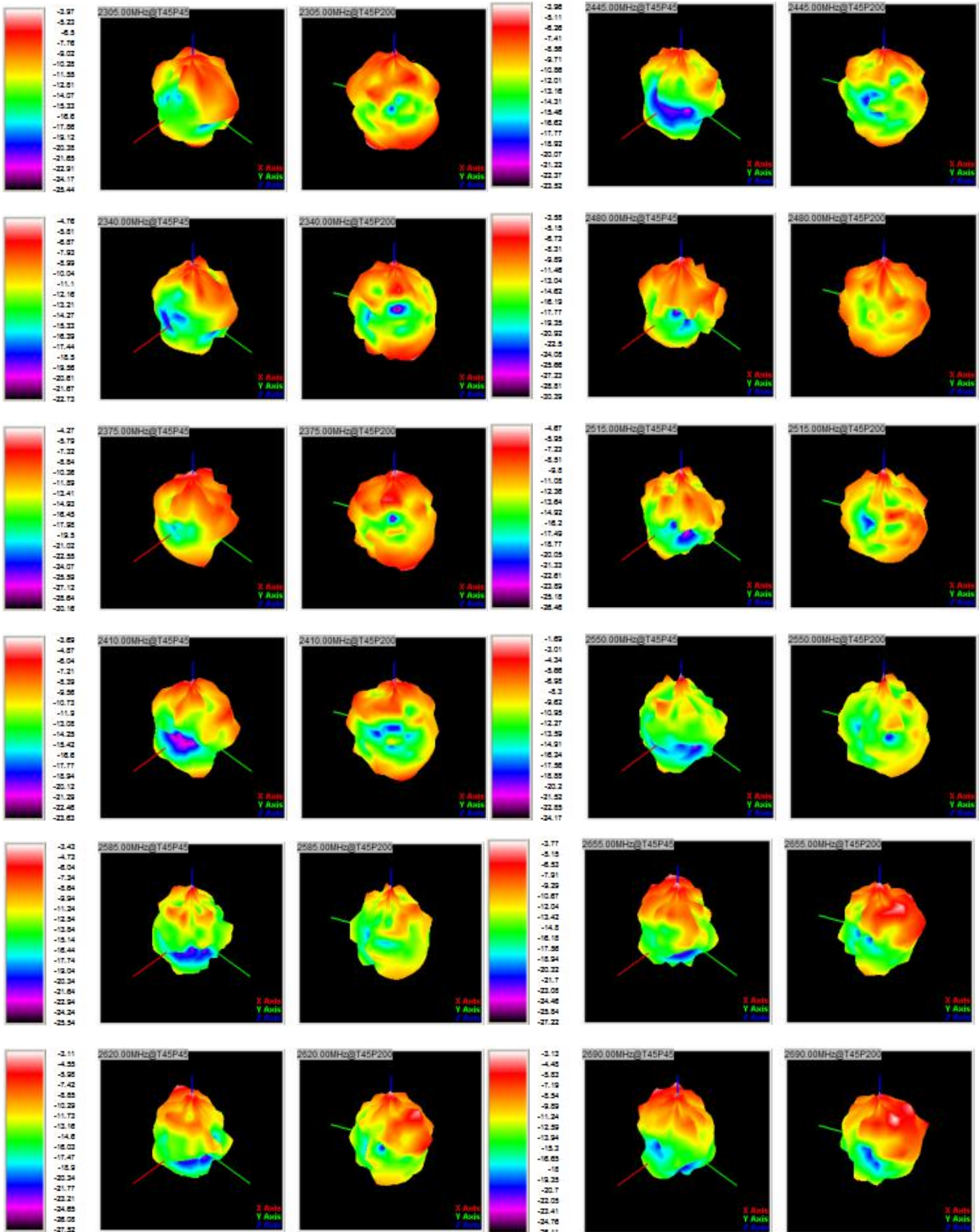
Antenna Specifications



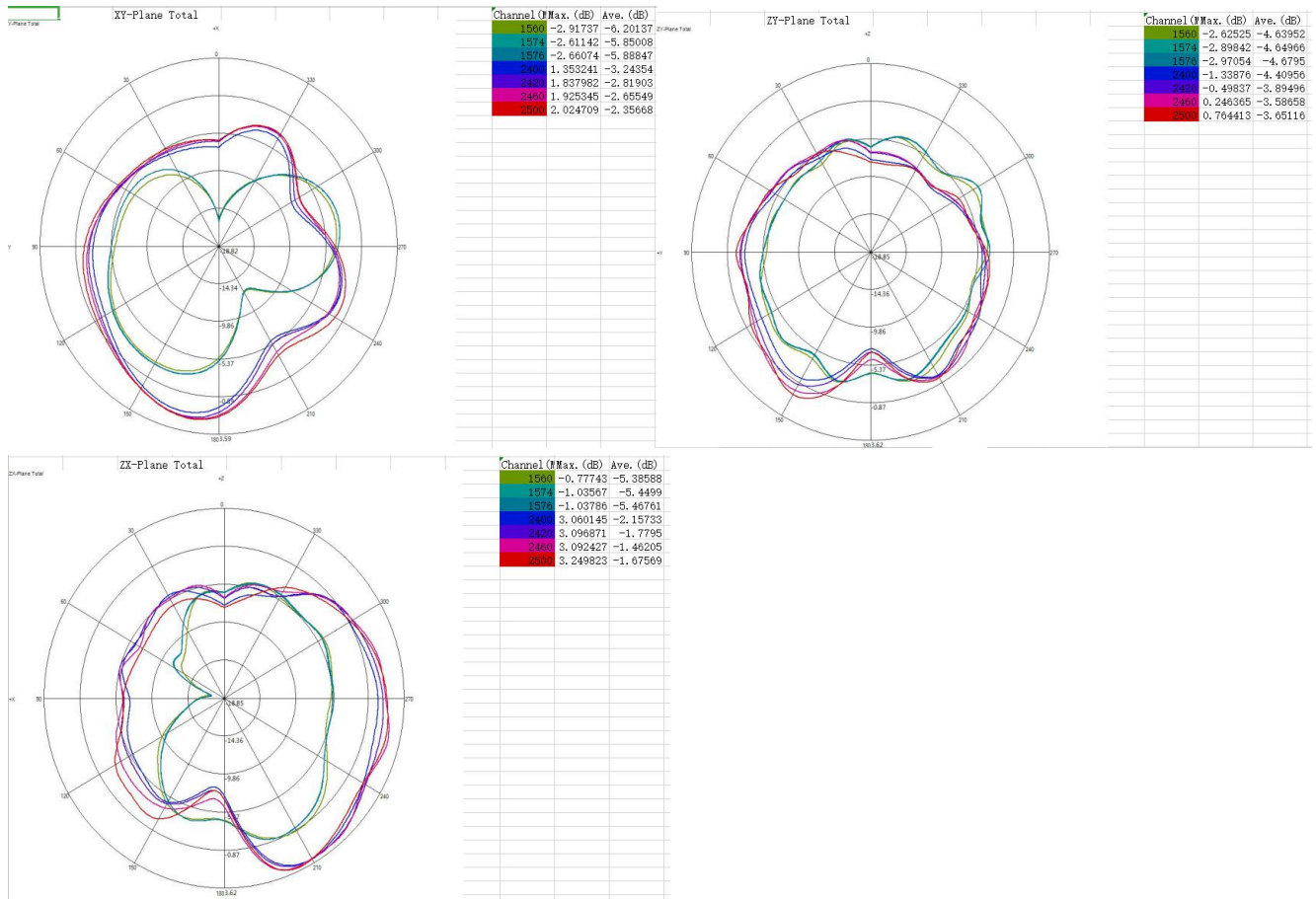
Antenna Specifications



Antenna Specifications



GPS&WIFI:



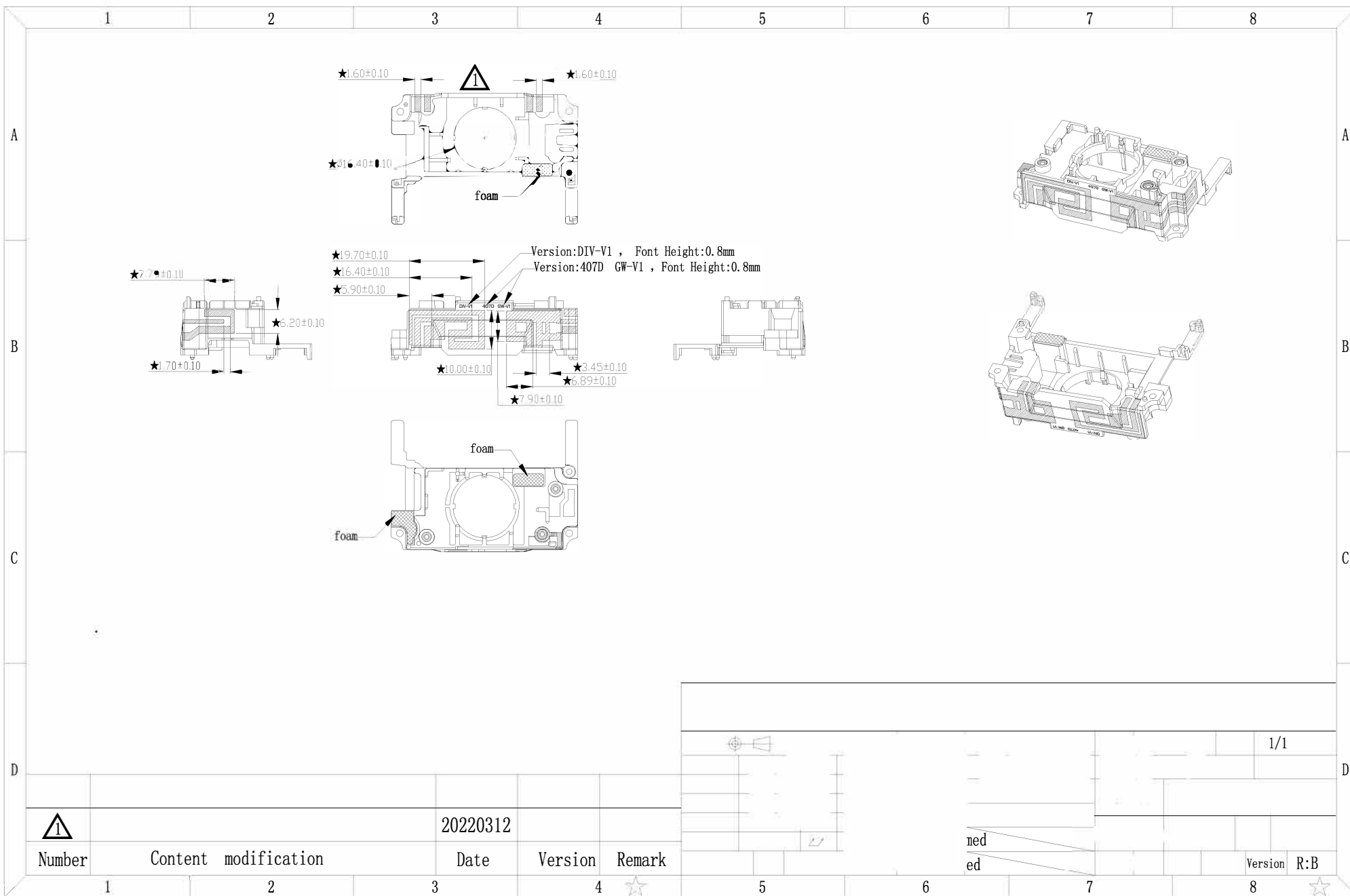
3、Suggestion And Solution

This report is according to the customer provide 407D Law Enforcement Camera GWD Antenna the final version of the electrical performance of antenna.

As can be seen from the above test data, this antenna provides better electrical performance.

We are looking forward to your confirmation. Thank you for your cooperation!

4、Appearance Drawing



Number

Content modification

20220312

Date

Version

Remark

1

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4



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