APPROVAL SHEET
FOR
S28

Revision History

Date	Revision	Description of Changes
2024-02-01	R:A	Antenna performance approved by customer

1 Summary

This report summarizes the electrical results of the proposed antenna to support the S28 program. We test the antenna with the latest version handset .

2 General Description

2.1 Definitions

VSWR: Voltage Standing Wave Rate

3 Mechanical Description

4 Electrical Performance

4.1 Set-up

4.1.1 VSWR and return loss

VSWR measurements (S_{11}) were performed using an Agilent E5070B Network Analyzer and the previously described test fixture. Coaxial chokes were used to mitigate surface currents on the outside of the cabling. The testing was performed in free space.

4.1.2 Efficiency, Gain and TRP/TIS

The gain of the antenna was measured in Dong Xin's 3D anechoic chamber in Shenzhen. The chamber is capable of doing tests from 380MHz to 6GHz. Coaxial chokes on the feed cable were used to mitigate surface currents. The measurement results are calibrated using dipole standards. For TRP and TIS the chamber uses a Agilent 8960 to establish the connection with the mobile device. During TRP tests the 8960 reads the power received through the chamber probes whilst during TIS tests the 8960 transmits through the probe. All data is afterwards corrected by a calibration table.

4.1.3 Matching Circuit Description

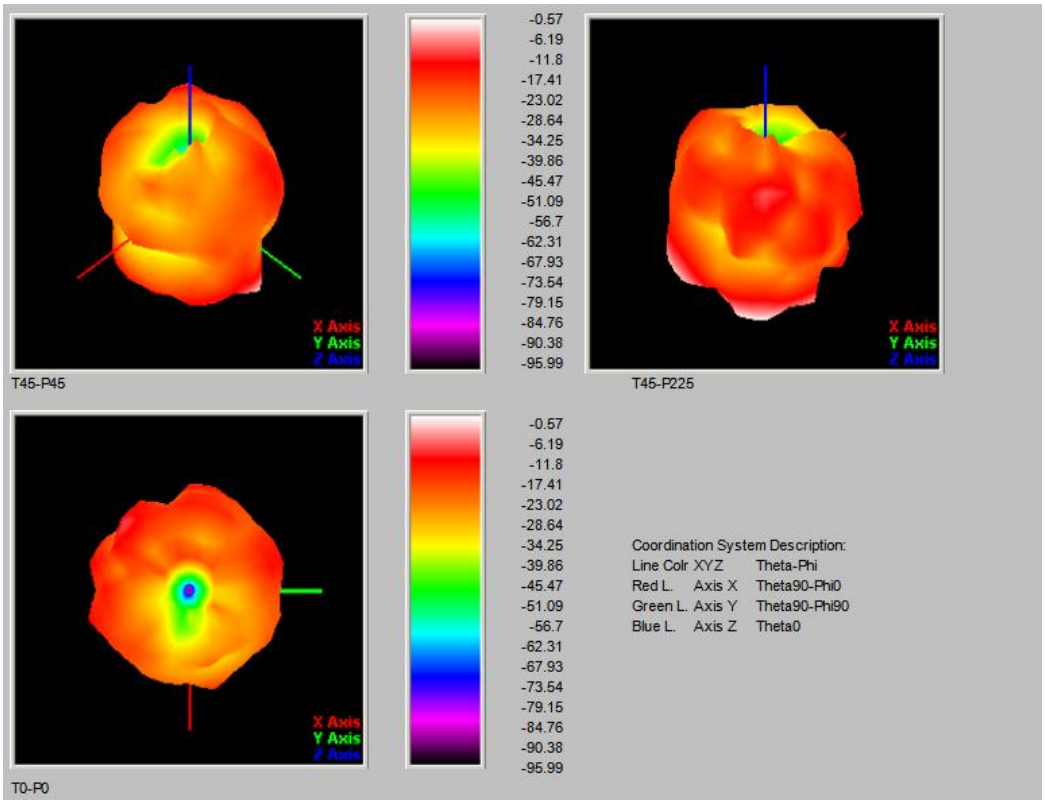
No matching.

4.2 Measurement Data

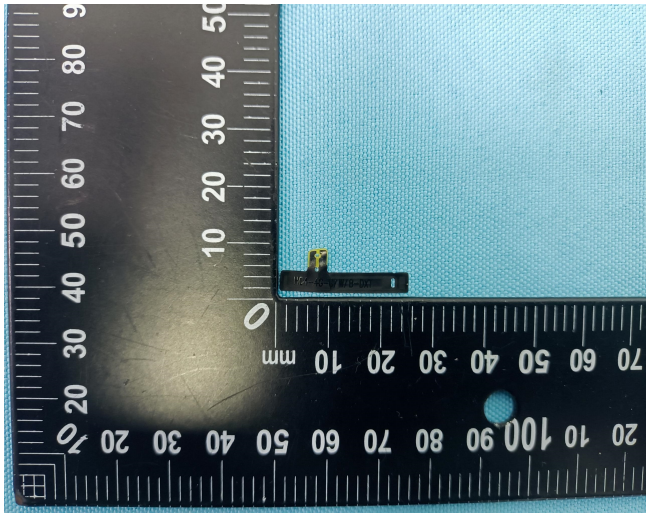
Effective Radiated Power Summation

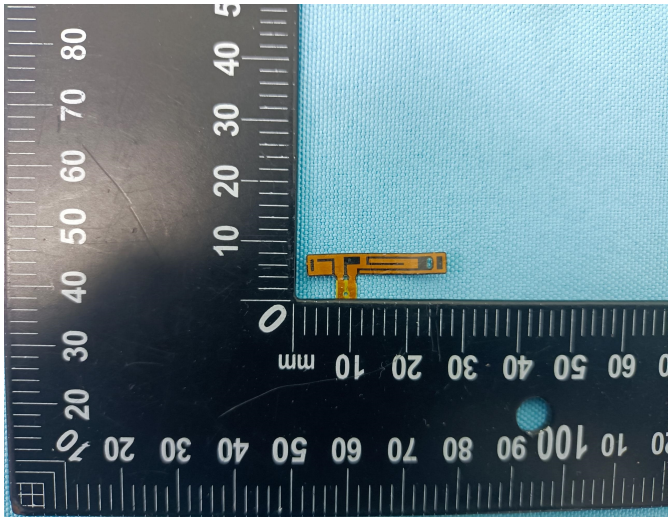
Test Point ID	Freq. (MHz)	TRP (dBm)	Gain (dBi)	Directivity (dBi)	Efficiency (%)	Efficiency (dB)	Max (dBm)
1	2400.0	2400.00	-0.57	4.61	30.3%	-5.18	-0.57
2	2410.0	2410.00	-0.68	4.32	31.7%	-4.99	-0.68
3	2420.0	2420.00	1.48	6.15	34.1%	-4.67	1.48
4	2430.0	2430.00	0.41	5.09	34.0%	-4.69	0.41
5	2440.0	2440.00	0.02	5.10	31.1%	-5.08	0.02
6	2450.0	2450.00	-0.09	4.35	36.0%	-4.44	-0.09
7	2460.0	2460.00	-0.63	4.00	34.4%	-4.63	-0.63
8	2470.0	2470.00	0.24	4.98	33.6%	-4.74	0.24
9	2480.0	2480.00	-0.97	3.10	39.2%	-4.06	-0.97
10	2490.0	2490.00	0.92	4.42	44.7%	-3.49	0.92
11	2500.0	2500.00	2.41	5.19	52.7%	-2.78	2.41
12	5100	5100	-5.31	5.36	31.2%	-6.35	-5.31
13	5200	5200	-4.60	6.27	38.6%	-6.17	-4.60
14	5300	5300	-4.86	5.66	32.9%	-6.59	-4.86
15	5700	5700	-4.75	6.98	34.8%	-6.74	-4.75
16	5800	5800	-4.60	6.25	39.5%	-6.22	-4.60
17	5900	5900	-4.95	4.68	33.6%	-6.38	-4.95

2450MHz



5 Mechanical drawing





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