

1 KEYWORDS

- *K7WBeacon*
- *6.5 GHz, 8.0G*
- *PCB Trace Monopole Antenna*

2 INTRODUCTION

The PCB antenna used on the K7WBeacon reference design is described in this application note.

This application note describes the antenna dimensions, the RF performance

and considerations for complying with regulatory limits when using this design.

The antenna design requires no more than 40 x 20 mm of space and ensures a VSWR ratio of less than 2 across the 6.5 GHz ISM band when connected to a 50 ohm source.

3 Testing Conditions

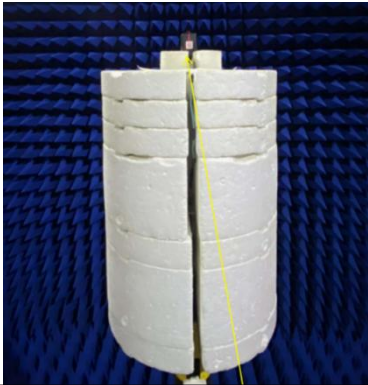


Figure 2: Testing environment

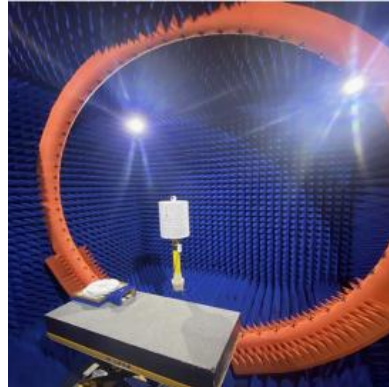
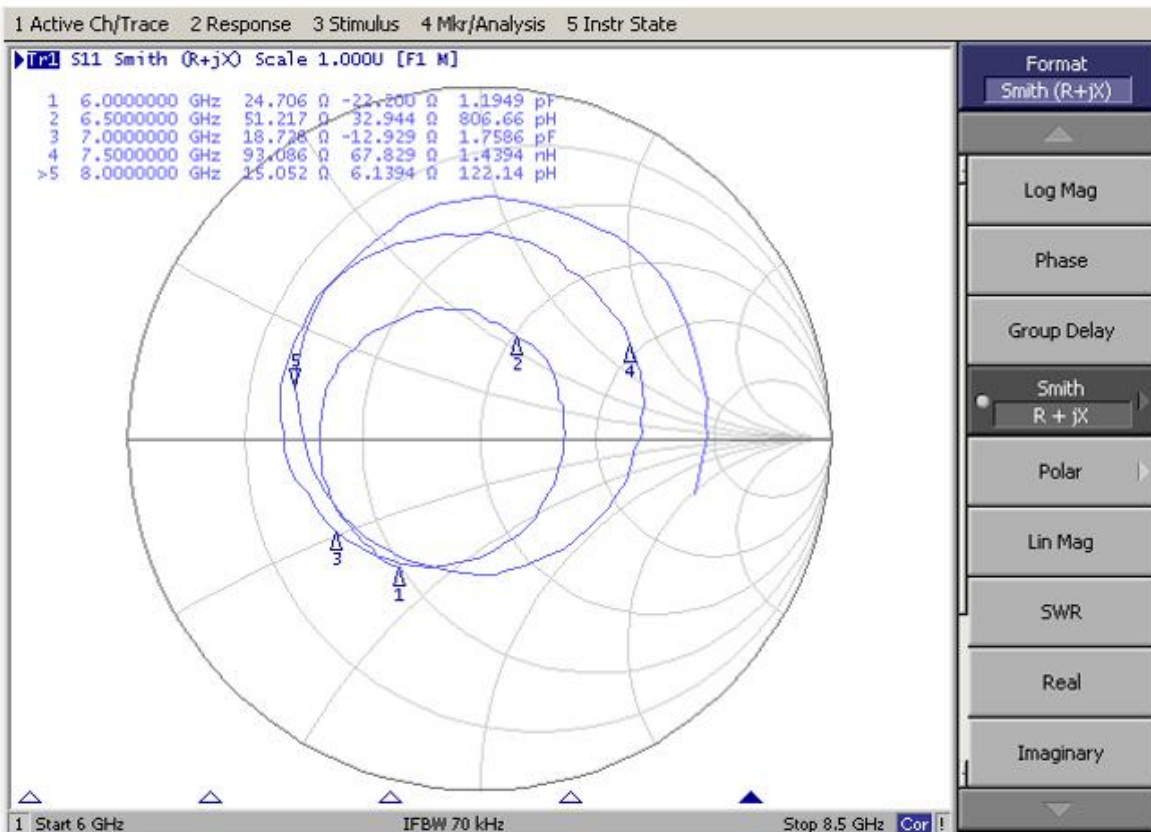
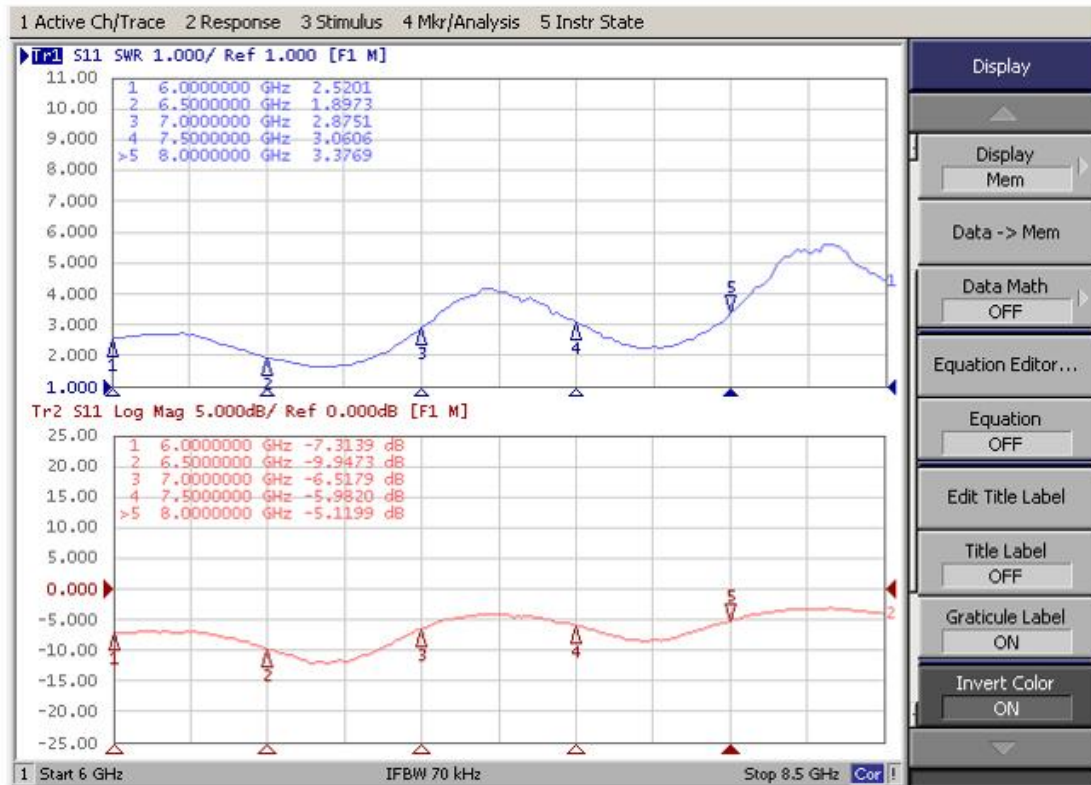


Figure 3: Testing 3D microwave darkroom(6m*6m*6m)

Product Testing Conditions

Parameters	Value
Working Temp	-30℃ ~ +60℃

4 S Parameter_Return Loss&VSWR - Smith



5 Efficiency and Gain

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	6500	6550	6600	6650	6700	6750	6800	6850	6900	6950	7000
Gain (dBi)	1.96	1.69	1.70	2.30	1.84	2.05	2.23	1.73	2.27	2.67	2.30
Efficiency (%)	63.66	60.27	58.79	69.86	63.06	66.47	67.73	58.82	60.69	60.08	54.05

12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
7050	7100	7150	7200	7250	7300	7350	7400	7450	7500	7550	7600	7650	7700	7750	7800	7850	7900	7950	8000
2.77	2.55	2.26	1.38	0.66	1.06	0.77	1.31	2.08	0.91	0.82	1.03	1.47	1.57	1.19	0.62	0.77	0.60	0.52	0.27
56.96	52.98	54.37	41.89	37.34	40.09	39.68	38.84	48.86	43.06	46.71	51.21	54.00	50.83	54.37	49.34	48.71	42.51	42.30	40.21

