

Kenmore Mouse Sample Test



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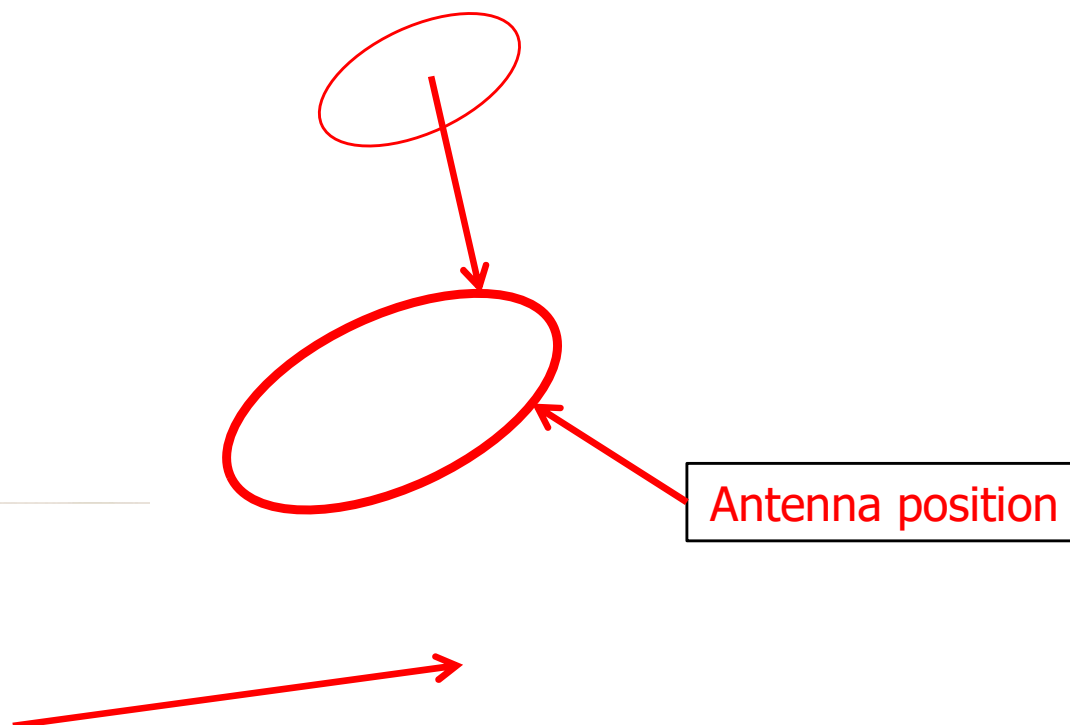
● Antenna Characteristics

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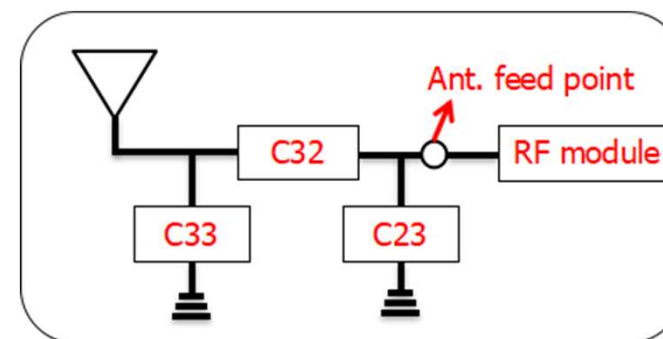
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Antenna Placement-Original



Main board



Matching Circuit

C33	N/A
C32	0 ohm
C23	N/A

Manufacturer :	Bannsan Technology(HuiZhou) CO.LTD.
Address:	Jiutan New Village, Yuanzhou Town, Boluo County, Huizhou City, China
Antenna Type:	Printed Antenna
Model No.:	ANT-IFA3
Frequency Ranger(GHz)	2.402~2.48
Antenna Dimension(mm)	17.22 X 10.27

Testing Setup(S parameter)

1.Equipment Setup



2.Test Procedure

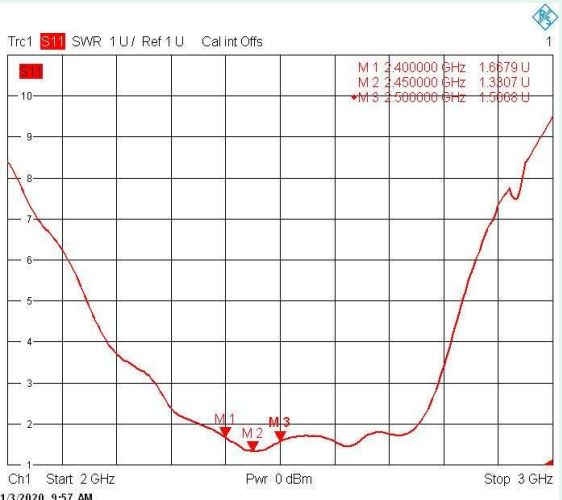
- 2.1 Set start and stop frequency and Calibrate the NA with 50 ohm calibration kit
- 2.2 Connect the NA cable to DUT antenna via SMA or I-PAX connector.
- 2.3 Measure the DUT antenna performance in the free space and record the s11.

Testing Setup(S parameter)

FreeSpace

Whit Phantom Hand

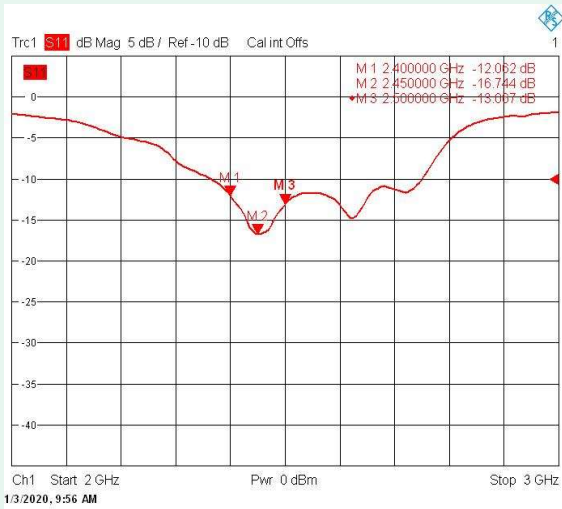
Antenna performance_VSWR

Freespace		With Phantom Hand	
	Frequency	VSWR	
	2400 MHz	1.66	
	2400 MHz	1.33	
	2400 MHz	1.56	
	Frequency	VSWR	
	2400 MHz	1.56	
	2400 MHz	1.31	
	2400 MHz	1.48	

Antenna performance_Smith Chart

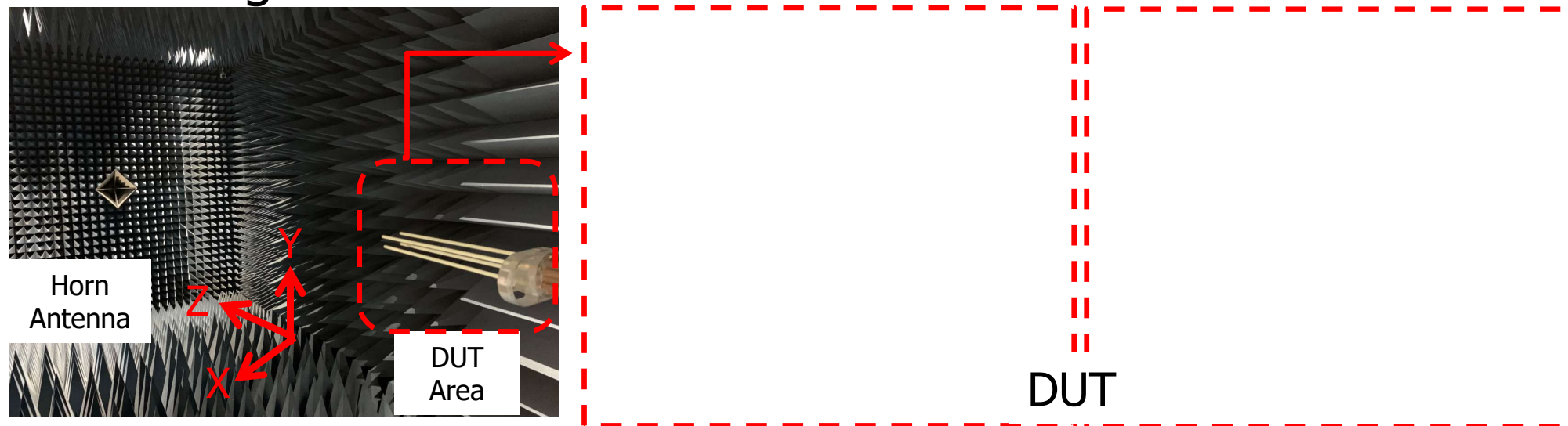
Freespace		With Phantom Hand	
	Frequency	Impedance	
	2400 MHz	65.2-j25.5 Ω	
	2400 MHz	65.4-j6.85 Ω	
	2400 MHz	77.4+j7.27 Ω	

Antenna performance_S11

Freespace		With Phantom Hand	
			
Frequency	Return Loss	Frequency	Return Loss
2400 MHz	-12.06 dB	2400 MHz	-13.14 dB
2400 MHz	-16.74 dB	2400 MHz	-17.30 dB
2400 MHz	-13.06 dB	2400 MHz	-14.13 dB

Testing Setup(Passive Testing)

1. Testing Environment



- **Lab standard** : 3D Chamber for CTIA standard
- **Chamber size** : 7.2 * 3.6 * 3.6(meter)
- **Chamber type**: Fully anechoic Chamber
- **Chamber usable frequency range** : 700~6000MHz
- **Measurement instrument** : Network Analyzer
- **Measurement Software** : EMQuest (ETS-Lindgren)
- **DUT** : Kenmore mouse sample

ETS-Lindgren
AMS-8500

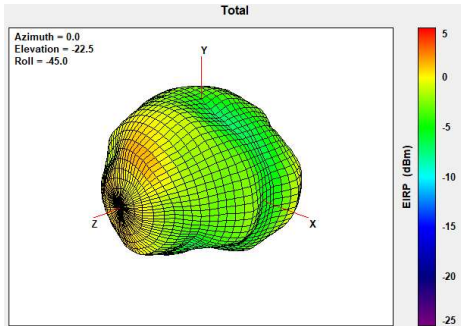
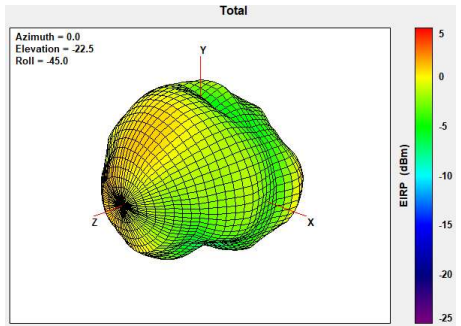
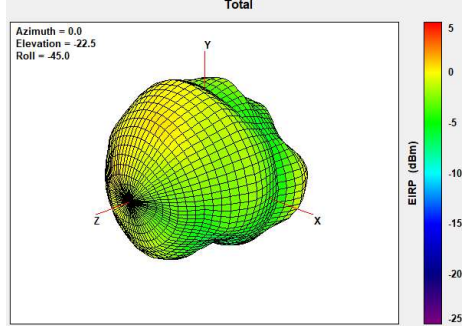
Antenna Gain table_Free Space

mouse	Frequency (MHz)	2400	2402	2441	2450	2480	2500
	Average Gain (dBi)	-2.56	-2.56	-2.39	-2.42	-2.81	-3.06
	Peak Gain (dBi)	2.71	2.71	2.08	1.75	0.74	0.32
	Efficiency(%)	55.46	55.40	57.73	57.29	52.38	49.42
	Average Efficiency (%)	54.06					

Antenna Gain table_Whit Phantom Hand

mouse	Frequency (MHz)	2400	2402	2441	2450	2480	2500
	Average Gain (dBi)	-4.34	-4.35	-4.18	-4.18	-4.64	-4.95
	Peak Gain (dBi)	-0.31	-0.37	-0.48	-0.32	-0.61	-0.96
	Efficiency(%)	36.82	36.72	38.17	38.18	34.39	31.98
	Average Efficiency (%)	35.66					

Antenna 3D Pattern_Free Space

Chamber coordinate			
	2400 MHz	2450 MHz	2500 MHz
1955 mouse			

Antenna 3D Pattern_With Phantom Hand

Chamber coordinate			
	2400 MHz	2450 MHz	2500 MHz
mouse	