



Evaluation Report on **5.3*2.0mm T5 Ceramic Chip antenna** **For Netvox Project Module**



Version:1

R&D – HF Ceramic

Antenna Team 2010/04/22



Application Note of BT Antenna

1. Purpose

Our valued customer need a ceramic chip antenna in 2.4-2.5GHz application. Therefore Yageo carried out an evaluation for reference.

We use 5320 T5 ceramic chip antenna for Bluetooth . Here we use a real board and measure 3D efficiency .

The matching circuit and test result are show as below.



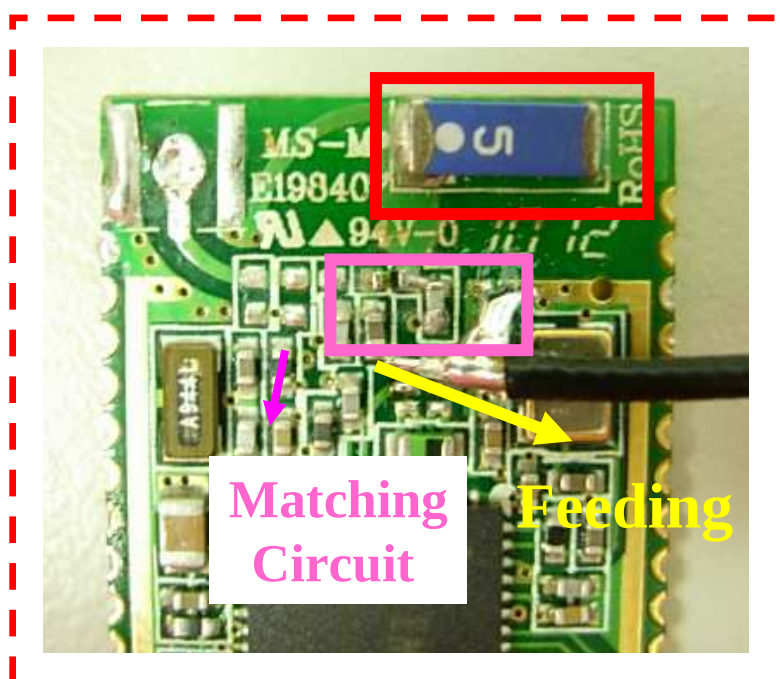


Application Note of BT Antenna

2. Experiment

2-1. 5.3*2.0 mm T5 Ceramic Chip Antenna

Position and Matching Circuit

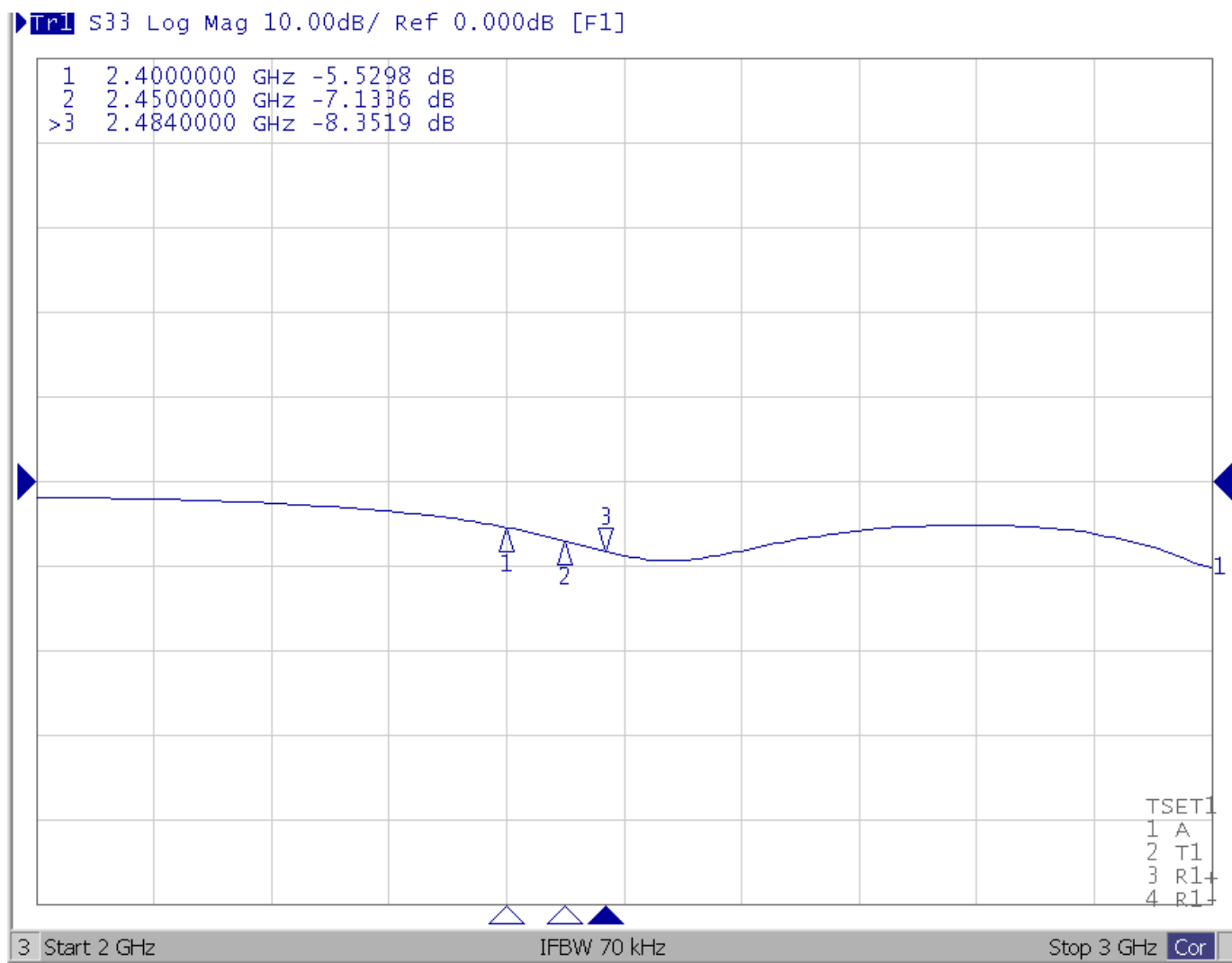


5.3*2.0 mm T5 Ceramic Chip Antenna



Application Note of BT Antenna

The Measurement of S-Parameter



Frequency	S11 (dB)
2.40 GHz	-5.5298
2.45 GHz	-7.1336
2.484GHz	-8.3519



Application Note of BT Antenna

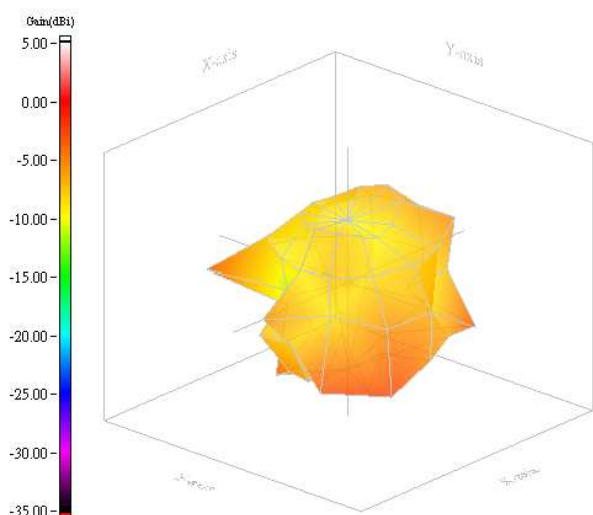
The Measurement of Radiation efficiency

Model name
5320 T5

Test mode
0422

Test frequency / Polarization
2400.00 MHz / Vector

Test date
2010/4/22



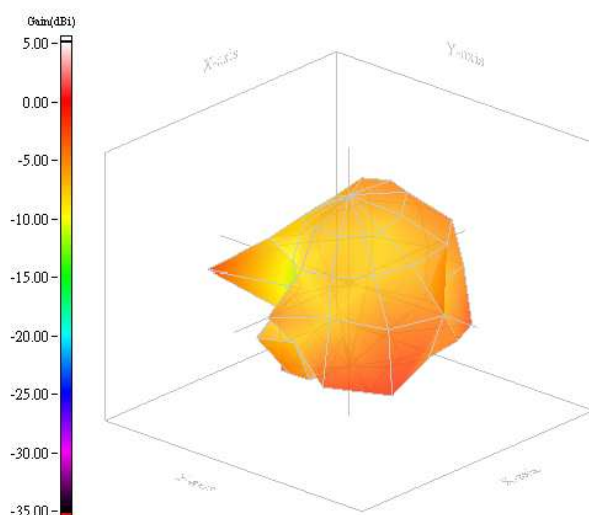
Max gain=-2.51dBi, at (120, 60)
MEG (mean effective gain)=-7.28dBi
Directivity(dB)= 4.49
Efficiency=-7.00dB, 19.97%

Model name
5320 T5

Test mode
0422

Test frequency / Polarization
2450.00 MHz / Vector

Test date
2010/4/22



Max gain=-1.31dBi, at (120, 60)
MEG (mean effective gain)=-6.14dBi
Directivity(dB)= 4.78
Efficiency=-6.09dB, 24.59%

Frequency 2.40 GHz

Max gain -2.51 dBi

Efficiency 19.97 %

Frequency 2.45 GHz

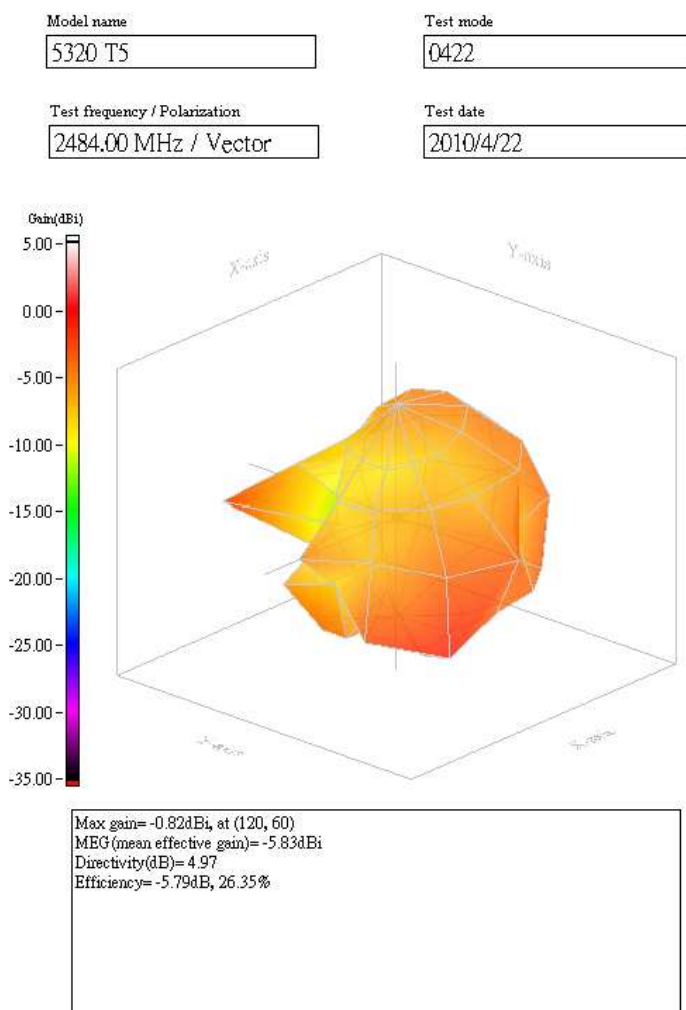
Max gain -1.31 dBi

Efficiency 24.59 %



Application Note of BT Antenna

The Measurement of Radiation efficiency



Frequency 2.484GHz

Max gain -0.82 dBi

Efficiency 26.35 %



3. Conclusion

From the result , we don't change the customer's layout.
The efficiency is 24% . The peak gain is less than -
0.82dB.

The measurement result are show as below.

Bluetooth	Freq(MHz)	Return loss (dB)	Peak Gain(dBi)	Efficiency(%)
Yageo 5320 T5	2400	-5.5298	-2.51	19.97
	2450	-7.1336	-1.31	24.59
	2484	-8.3519	-0.82	26.35



Application Note of BT Antenna

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