

Data Sheet

Product type	Bluetooth antenna
Model number	ASUS / A6J
Revision	R01
Part No. / Yageo / Bluetooth	CAN4313 382 012451B
Part No. / ASUS / Bluetooth	14G152066000

Yageo (Taiwan) Ltd.

16, west 3rd Street, N.E.P.Z Kaohsiung, 811 Taiwan, R.O.C

Yageo Electronics (China) Co, Ltd

No. 10, Zhu Yuan Road, Suzhou New District, Suzhou, PRC

2.45 GHz Single Band Bluetooth Antenna with Cable & Connector for IEEE802.11b, UNII	Yageo Part Number: Bluetooth: CAN4313 382 012451B (BT)	R01	Jan. 04 06
BY /	Howard.Chuang	DATE /	Jan 04, 2006

Table of contents

1. Specifications	
1.1 Specifications	3
1.2 Antenna dimension / Cable length	3
1.3 Packing spec.	3
1.4 Antenna pictures	3
2. Test methodology	
2.1 Test equipment	4
2.2 Test setup	4
2.2.1 Frequency range	4
2.2.2 Antenna configuration	4
2.2.3 VSWR	4
2.2.4 Radiation pattern and gain	5
3. Performance data	
3.1 VSWR in the fixture (Bluetooth antenna)	6
3.2 Radiation pattern and gain	7
3.2.1 Low Frequency (2.40GHz~2.50GHz) / Bluetooth	7
3.2.2 Average gain summary (Bluetooth antenna)	7
4. Antenna drawing	8
5. Reliability data for antenna patch	9
6. Ordering information: Yageo ordering P/N code	10
7. Revision control	11

1. Specifications

1.1 Specifications for antennas

Frequency range (GHz)	2.40 ~ 2.50 for 802.11b
VSWR	2.50 for 2.4GHz band For BT
Peak gain (dBi)	2.01 dBi for 2.4GHz band (BT)
MiniPCI Connector	Ipex / Hirose / Speed Tech or Compatible
Impedance	50Ω
Operating Temperature	-40~90°C
Maximum Power	1W
Polarization	Linear
Radiation pattern	Omni-directional

1.2 Antenna Dimension / Cable length

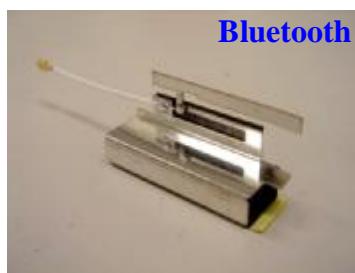
Product	ASUS / A6J
Bluetooth (Base)	33.6*9.4*0.4 mm / 30.0 mm, Color White or Black

1.3 Packing Spec.

Product	For Example
Inner tray	60
Carton box	265*100



1.4 Antenna Pictures



2. Test Methodology

2.1 Test equipment

The equipment for the antenna measurement we used is as follows.

- A. Agilent 8753ET / 8719D Network Analyzer to measure the VSWR and input impedance.**
- B. Three-dimensional anechoic chamber to measure the gain**
(Standard dipole and horn were used to calibrate the chamber)
- C. Digital caliper to measure the dimensions.**
- D. Climatic chamber for mechanical tests.**

2.2 Test setup

2.2.1 Frequency Range

2.40 ~ 2.50GHz

2.2.2 Antenna configuration

The antenna basically has two parts; the stamping and the cable assembly with the connector on one side. The detailed drawing is attached.

2.2.3 VSWR

The VSWR is measured with Agilent 8753ET / 8719D network analyzer. All the measurements are performed with the customer provided fixture. Figure 1 shows the schematic diagram for measuring VSWR.

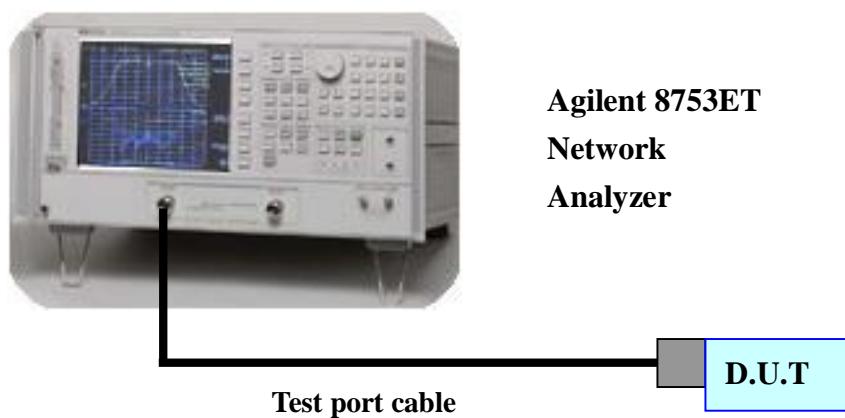


Figure 1. The schematic diagram for measuring VSWR

2.2.4 Radiation pattern and gain

The radiation pattern must have the omni-directional characteristic in both positions. The radiation pattern measurements are performed in the three-dimensional anechoic chamber. The chamber provides less than -30dB reflectivity from 800MHz through 8GHz. The chamber is calibrated using both standard dipole and horn antenna. The gain here is expressed as dBi that standardizes the isotropic antenna. The gain measurements are also performed in the same chamber described previously. Figure 2 shows the schematic diagram for measuring radiation pattern and gain.

2D Anechoic chamber

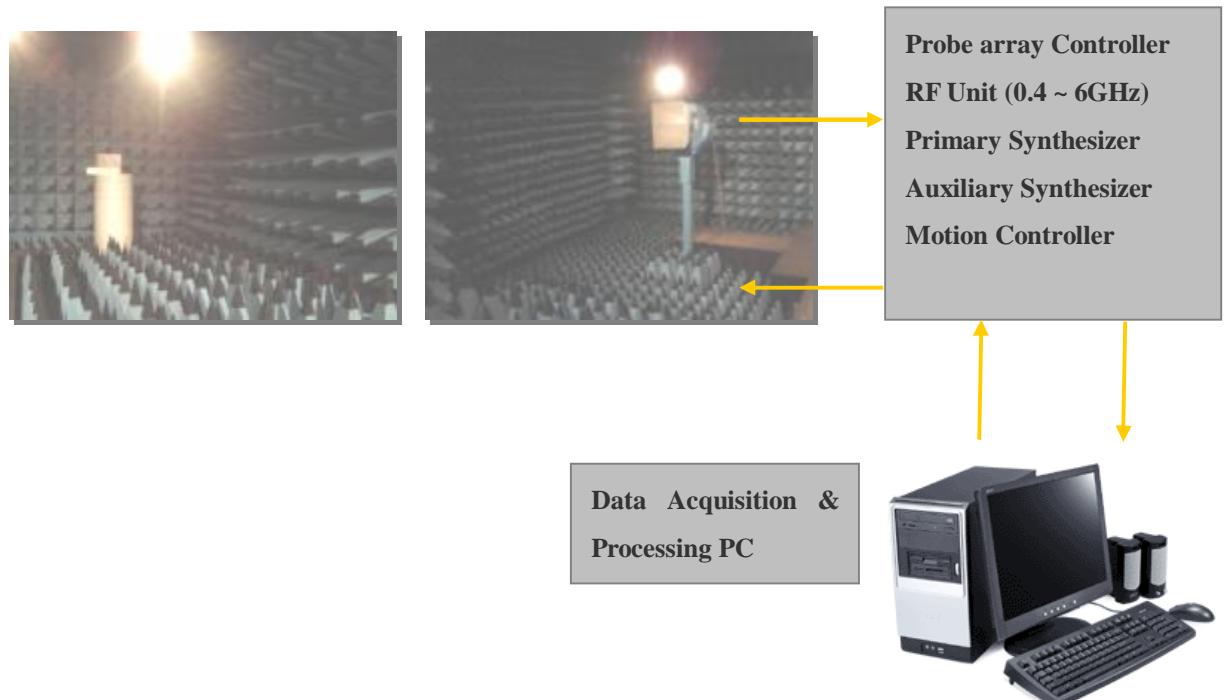


Figure 2. The schematic diagram for measuring radiation pattern and gain

3. Performance Data

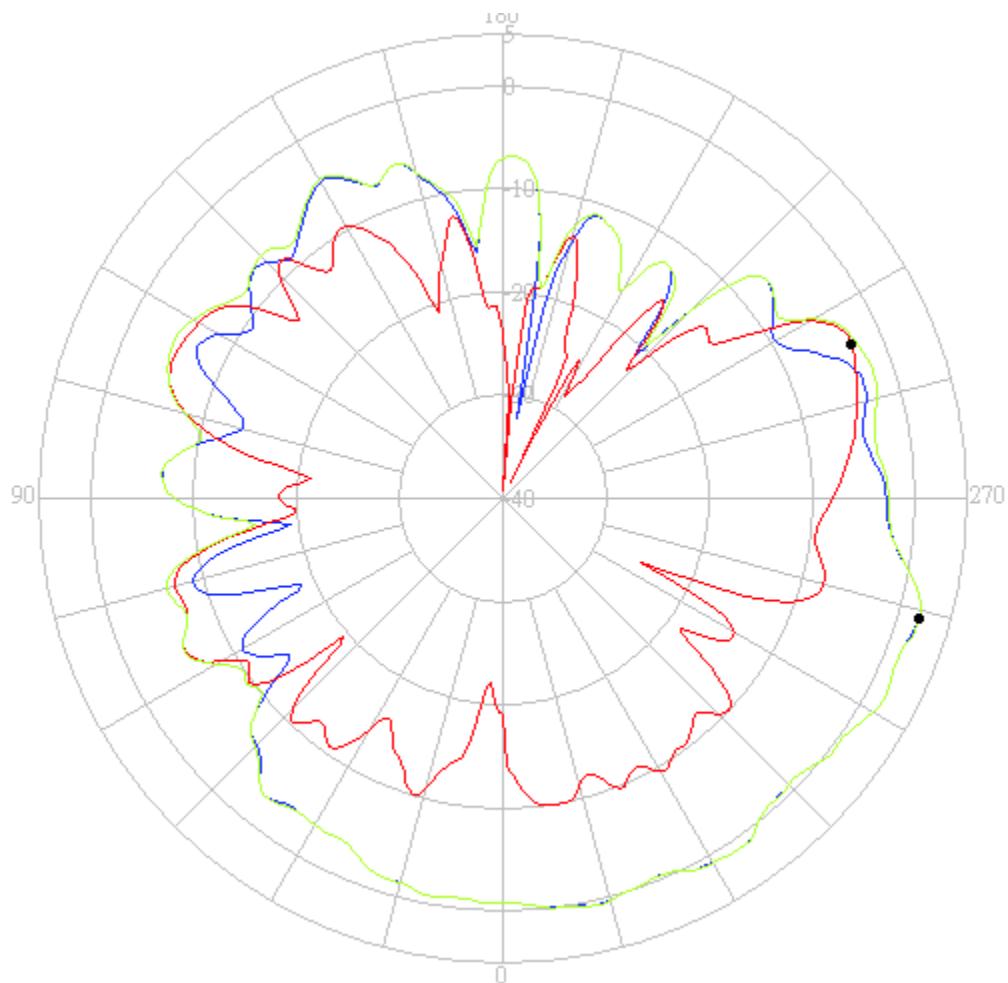
3.1 VSWR in the fixture (Main antenna)



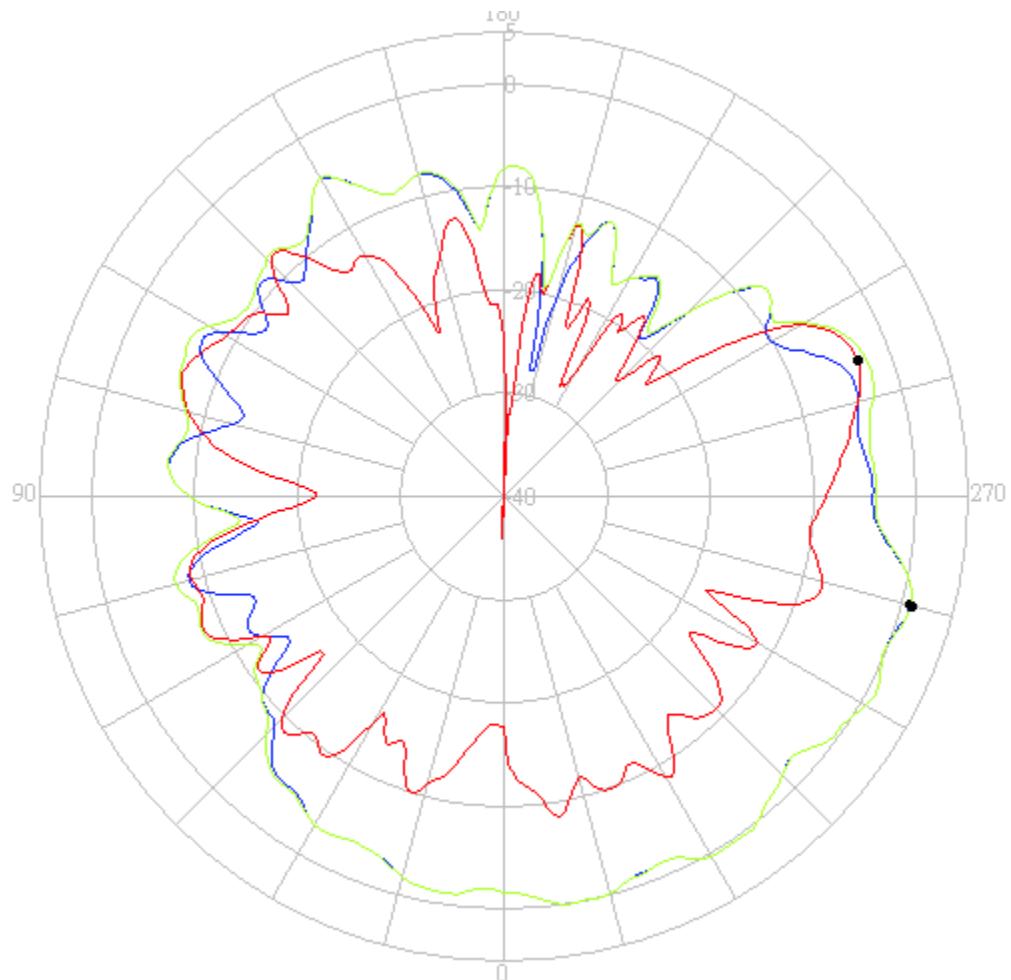
Test	Value
VSWR at 2400MHz	1.35
VSWR at 2450MHz	1.52
VSWR at 2500MHz	1.87

3.2 Radiation pattern and gain

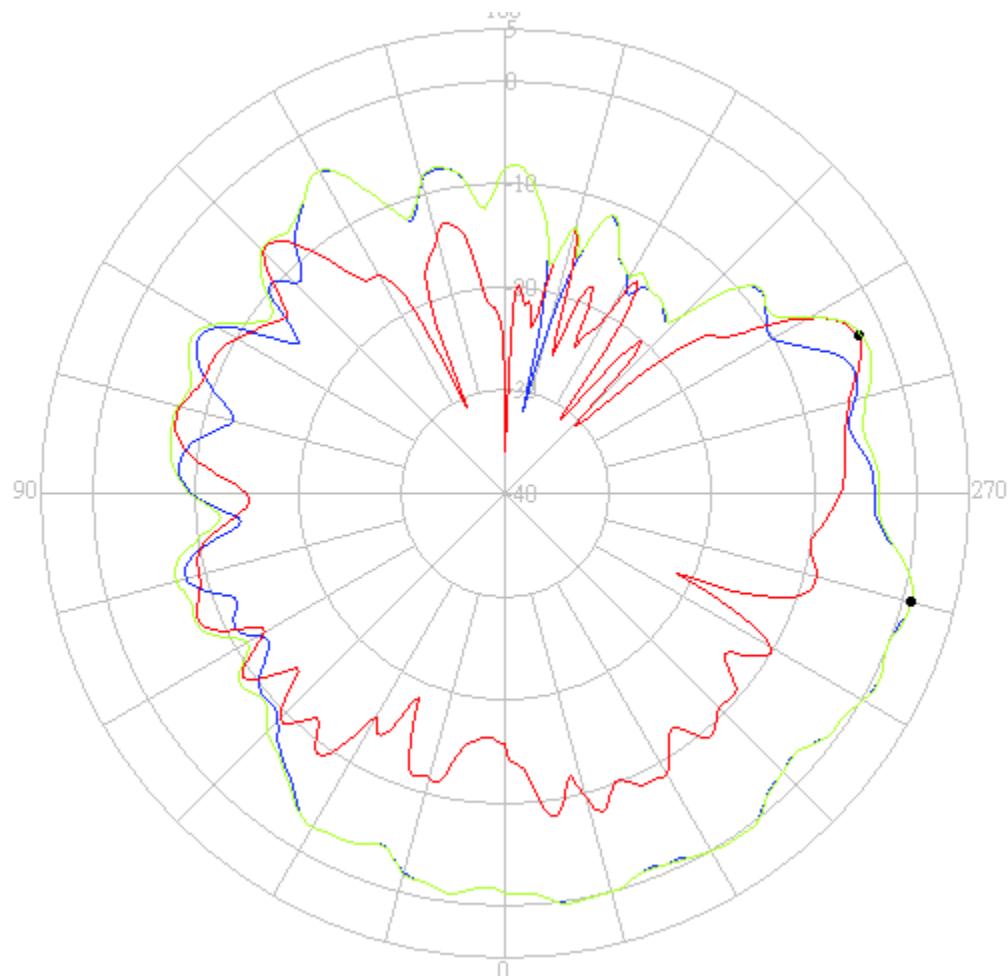
3.2.1 Low Frequency (2.40GHz~2.50GHz) / Bluetooth Antenna



2.40GHz



2.45GHz



2.50GHz

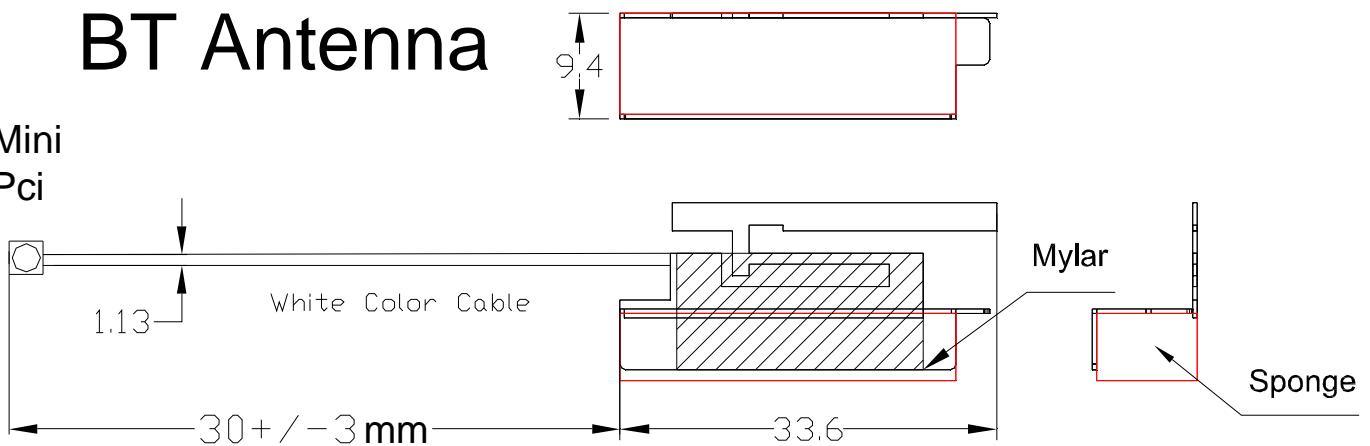
3.2.2 Average gain (dBi) summary

Bluetooth Antenna Gain						
Frequency	Max Value (dBi)			Average (dBi)		
	H-pol	V-pol	Total	H-pol	V-pol	Total
2400(MHz)	2.01	-3.05	2.03	-3.61	-10.01	-3.25
2450(MHz)	0.84	-3.26	0.88	-4.43	-10.58	-4.08
2500(MHz)	0.81	-2.51	0.83	-4.39	-10.27	-4.03

4. Antenna Drawing

BT Antenna

Mini
Pci



5. Reliability Data For Antenna Patch (Reference To IEC)

IEC 384-10/ CECC 32 100 CLAUSE	IEC 60068-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
4.12	4(Na)	Rapid change of temperature	-40 °C (30 minutes) to +90 °C (30 minutes); 5 cycles	No visible damage Central Freq. Change ± 6%
4.14	3(Ca)	Damp heat	500 ± 12 hours at 40 °C; 90 to 95 % RH	No visible damage 2 hours recovery Central Freq. Change ± 6%
4.15		Endurance	500 ± 12 hours at 90 °C;	No visible damage 2 hours recovery Central Freq. Change ± 6%

6. Ordering Information: Yageo Ordering P/N Code

The antennas may be ordered by using the Yageo P/N ordering code. These code numbers can be determined by the following rules:

CAN4313 3 82 01 245 1B
F C M S T A P

F. Family Code

CAN43 = Antenna

C. Packing Type Code

13 = Bulk (1000 pcs)

M. Materials Code

3 = High Frequency Material

S. Size/Series Code

82 = 33.6*9.4*0.4 mm Bluetooth Antenna

T. Tolerance/Cable

01 = Cable 1 Main Antenna, White or Black

A. Working Frequency

245 = 2.45 GHz Band For BT

P. Packing

1B = 1000 pcs packing

7. Revision Control

Revision	Date	Content	Remark
R01	Mar. 30, 2005	New issued, metal antenna	N/A.