

승인원

Product type	DAB Radio antenna
Model number	On board type antenna
Revision	R01

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Jan. 23, 2009

유비더블유

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1. Specifications

1.1 Specifications for antennas

Frequency range (GHz)	2.4 – 2.484
VSWR	< 2.0
Peak/Average gain (dBi)	3.0max / -8.0min
Impedance	50 ohms
Polarization	Linear
Radiation pattern	Omni-directional

1.2 Antenna Test Photo



2. Test Methodology

2.1 Test equipment

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

- A. Agilent 8753D 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

2.4 ~ 2.484GHz

2.2.2 VSWR

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

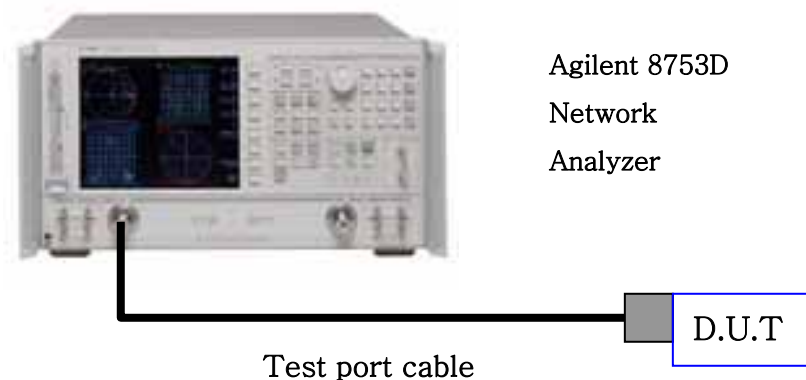


Figure 1. The schematic diagram for measuring VSWR

2.2.3 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 6GHz . 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.

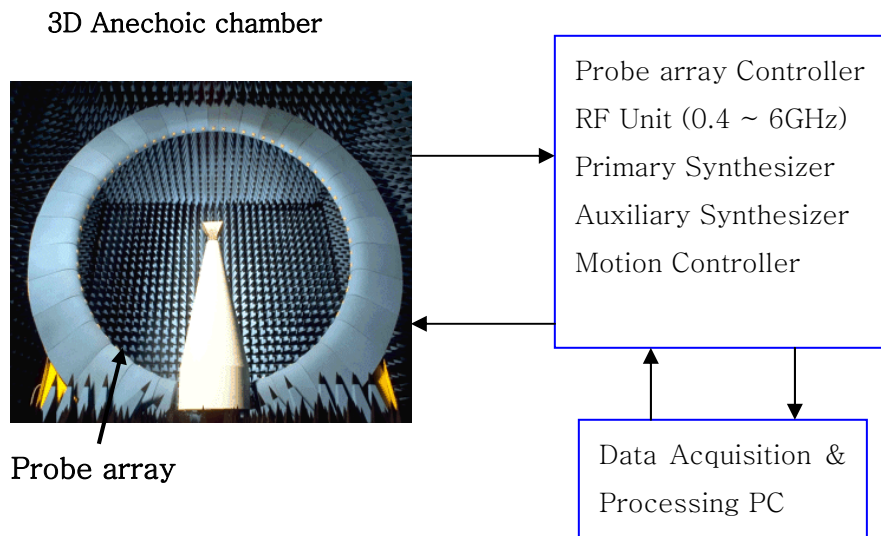
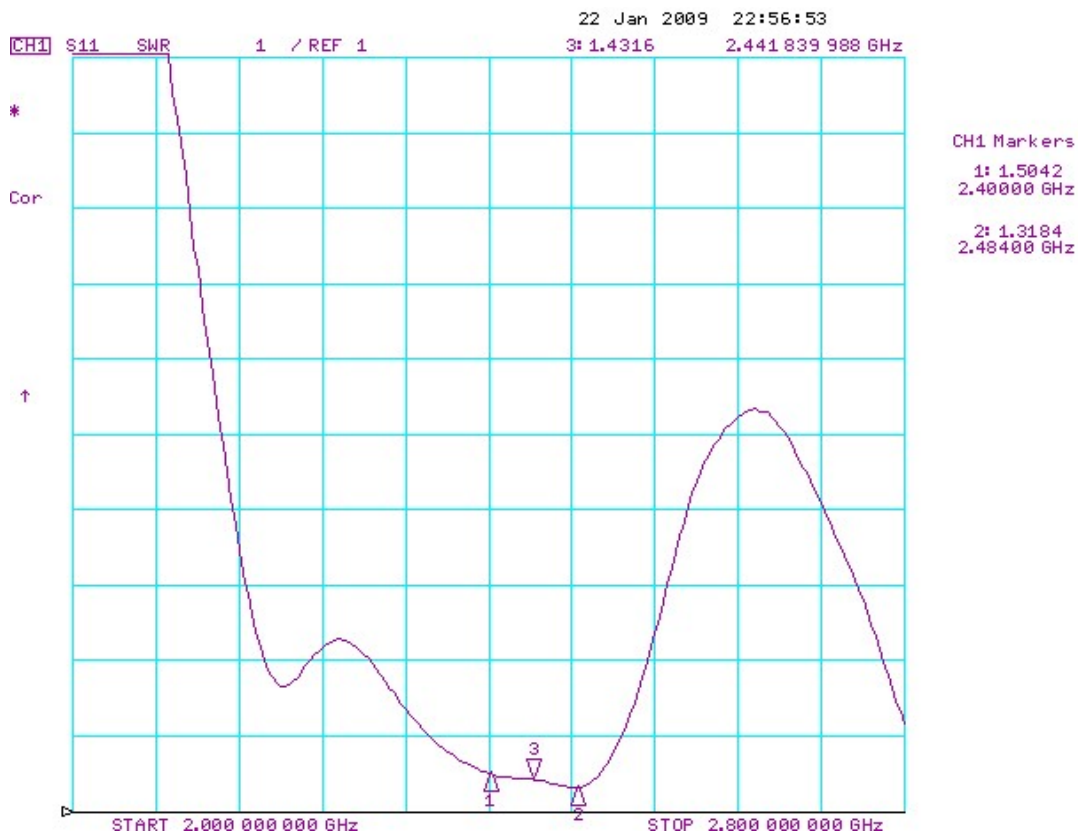


Figure 2. The schematic diagram for measuring radiation pattern and gain

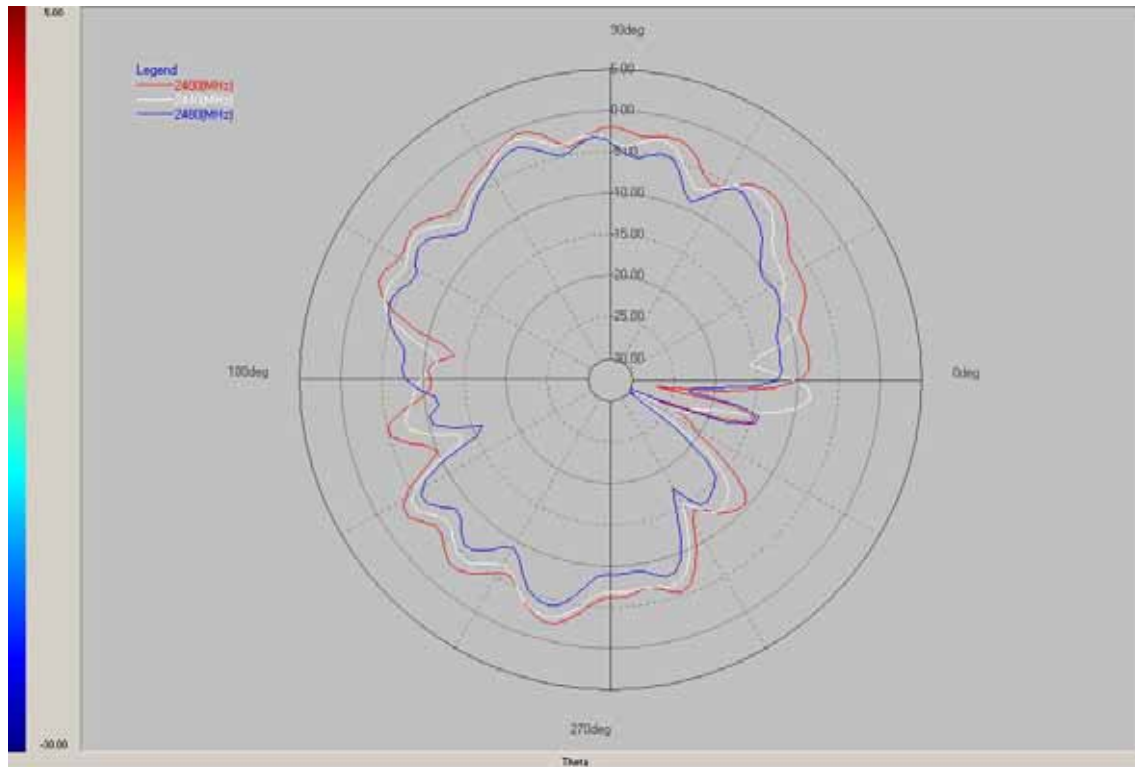
3. Performance Data

3.1 VSWR in the fixture

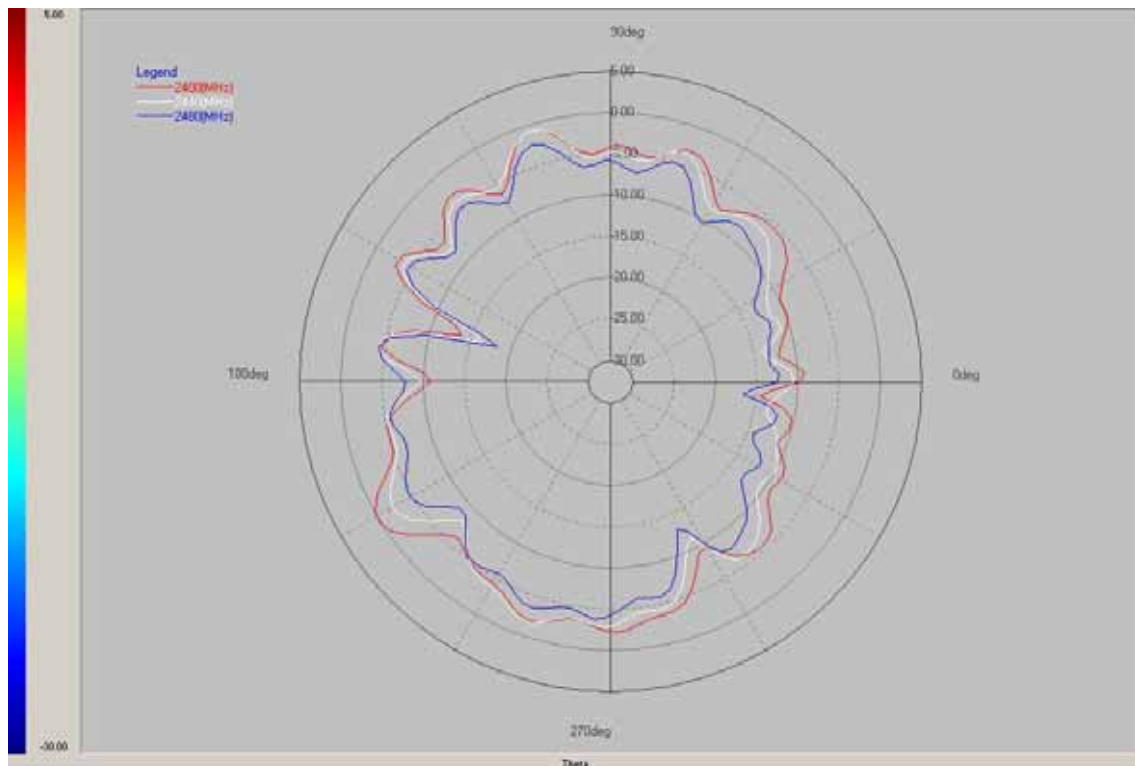


3.3 Radiation pattern and gain

3.3.1 E1-Plane



3.3.2 E2-Plane



3.3.3 H-Plane

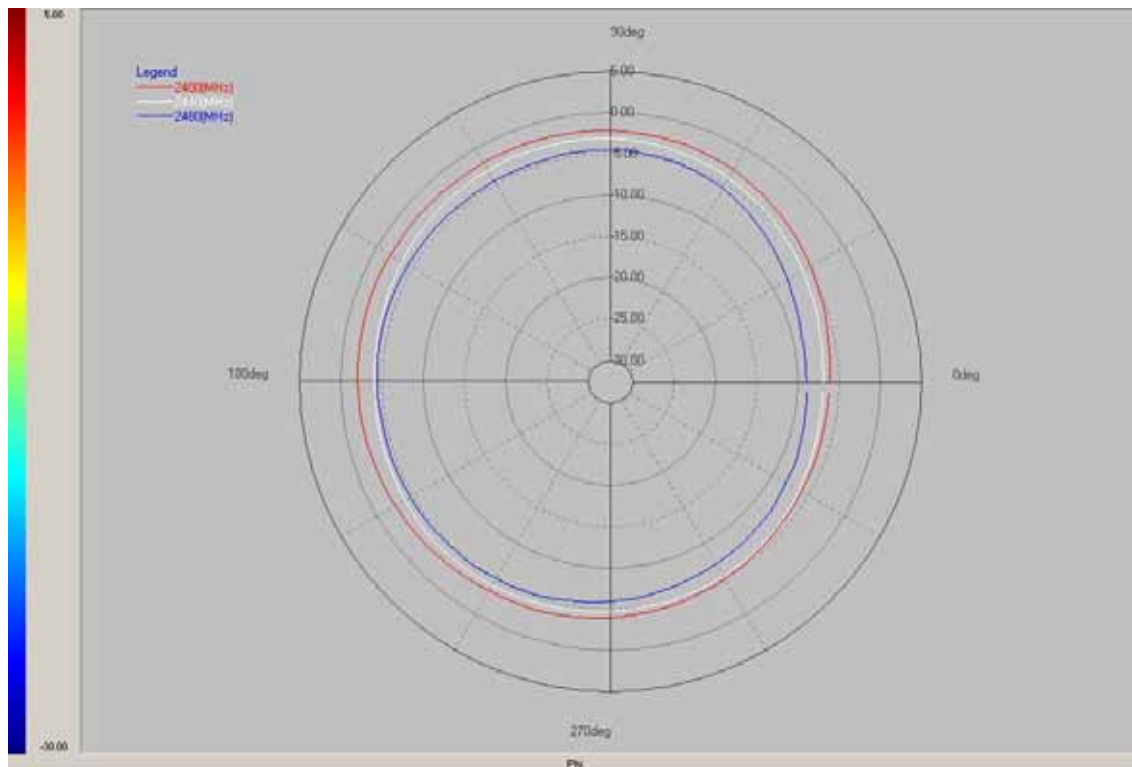


Table 1. Average gain (dBi) summary

E1-plane

Layer	Max value	Average
2400(MHz)	-0.89	-5.25
2440(MHz)	-1.38	-6.17
2480(MHz)	-2.5	-7.39

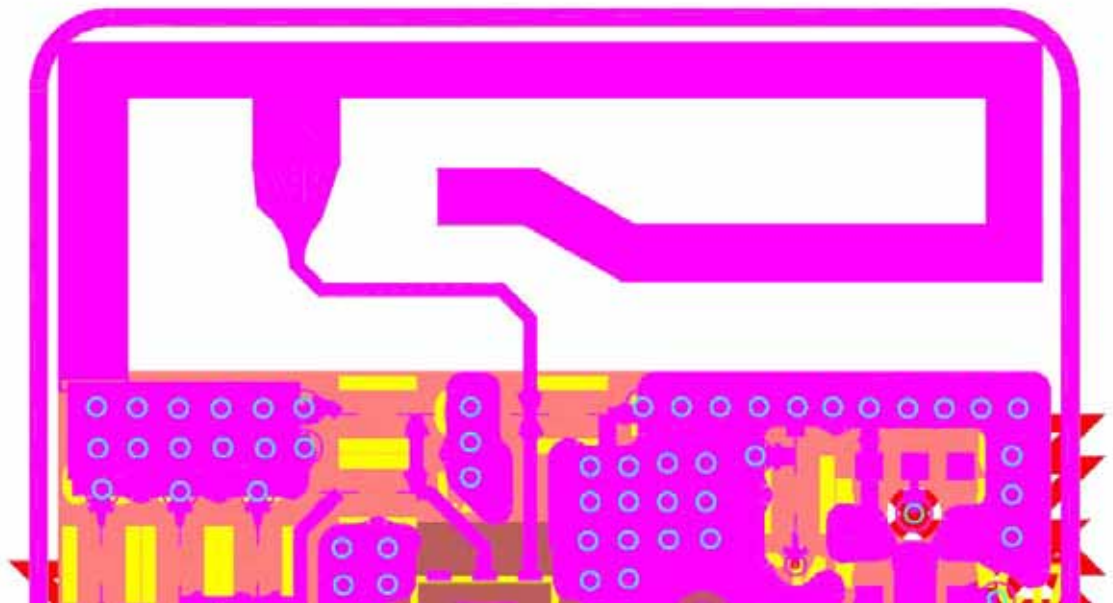
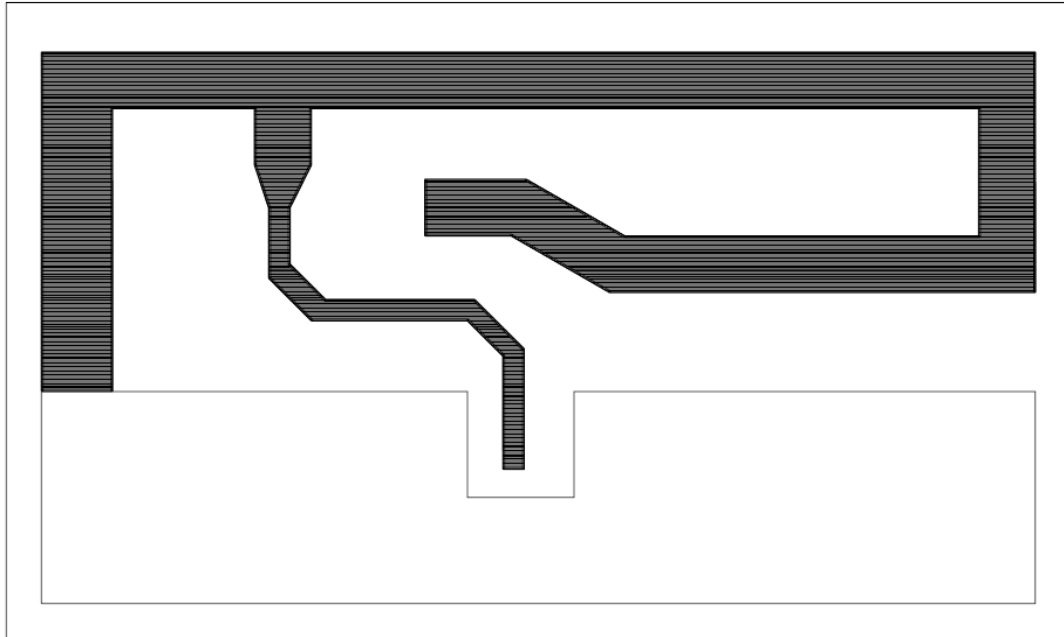
E2-plane

Layer	Max value	Average
2400(MHz)	0.07	-5.06
2440(MHz)	-0.93	-5.72
2480(MHz)	-2.5	-7.05

H-plane

Layer	Max value	Average
2400(MHz)	-1.93	-3.37
2440(MHz)	-3.07	-4.49
2480(MHz)	-4.32	-5.71

4. Antenna Drawing



5. Mechanical test

Item	Specifications	Conditions
Temperature cycle	No damage or cracks	Temperature (time): -40°C(40min) → 5 to 35°C(5min) → + 90°C(30min) → 5 to 35°C(5min)
Humidity resistance	No damage or cracks	Temperature of 40°C, humidity of 95%, let stand of 96 hours