



Measurement Report for FIC

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01/03/2005

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Abstract :

This document reports the testing results of WTC's PCA antennas solution. The testing includes the antenna characteristics measurement.



OUTLINE :

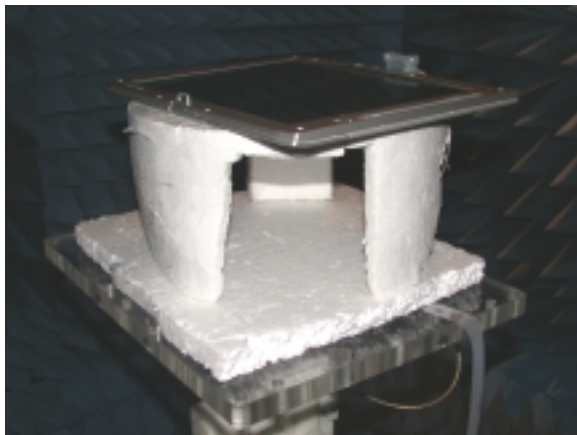
1. Experimental Setup
2. Antenna Location In Notebook
3. Return loss and VSWR and Isolation
4. Radiation Pattern

1. Experimental Setup

- Antenna under test (AUT) :



H type



V type



- Measurement Item :
 - a. Return loss
 - b. Radiation pattern
- Return Loss :
 - a. Instrument : vector network analyzer – Agilent 8719ES
 - b. Calibration method : open/short/load
- Radiation Pattern :
 - a. Instrument: WALSIN In-house antenna measurement system
 - b. Calibration method : ETS pyramidal standard horn antennas



2. Antenna Location In Notebook

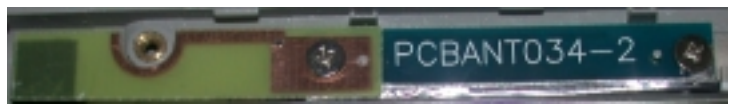
Left Antenna

Right Antenna



Left Antenna

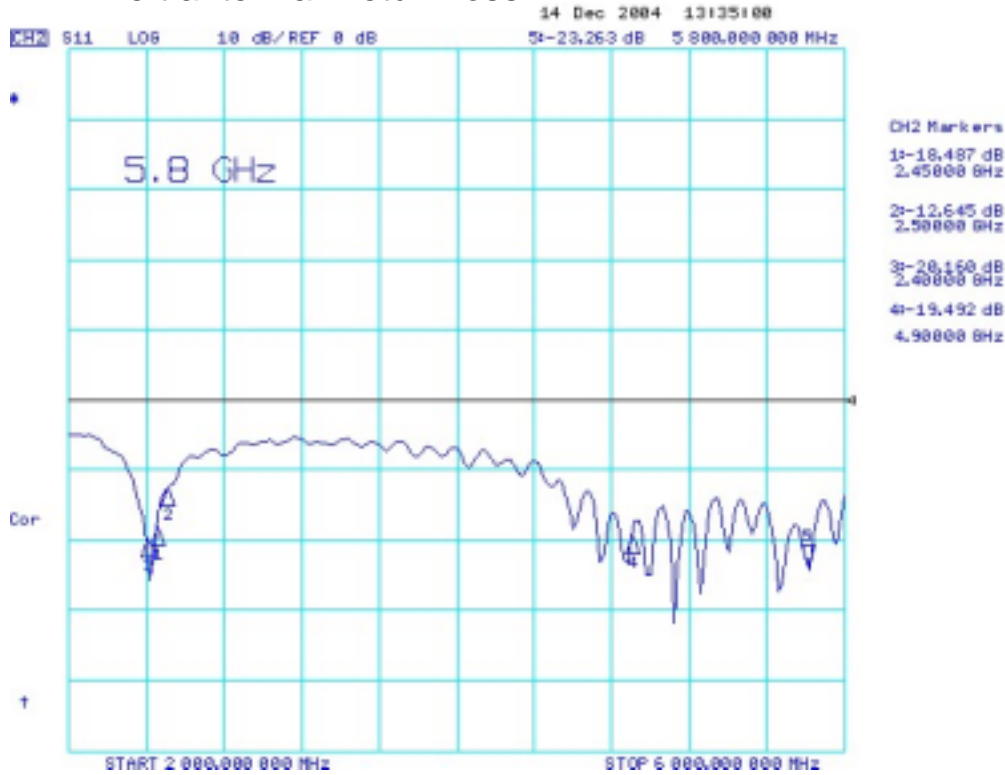
Right Antenna



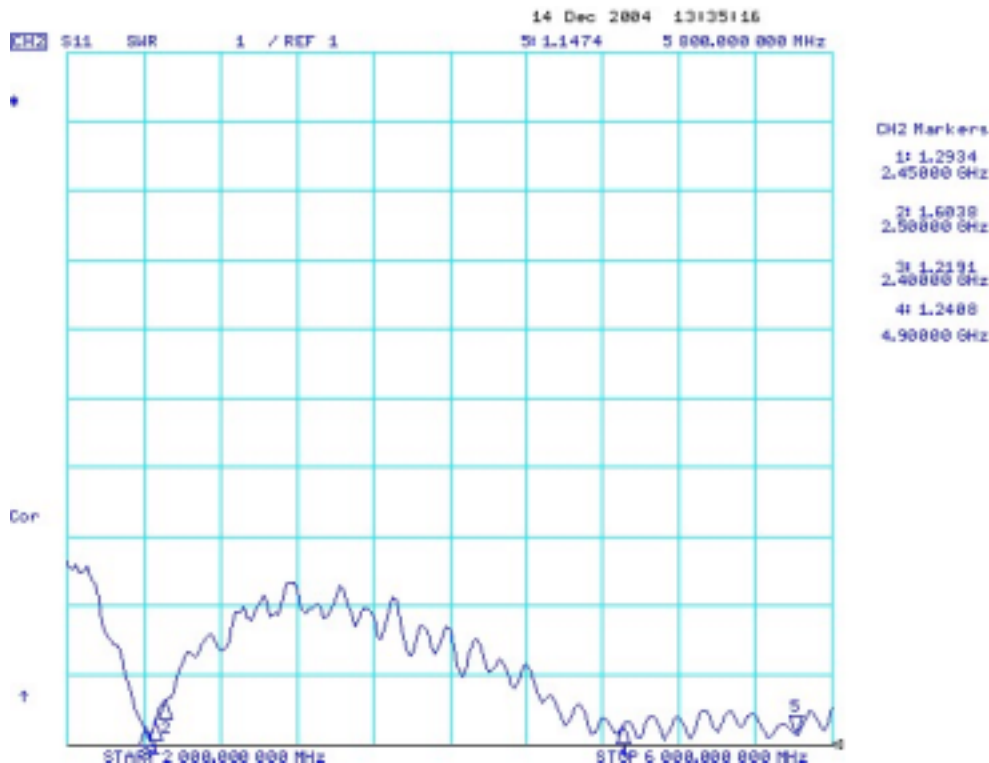


3. Return loss and VSWR and Isolation

● Left antenna Return loss :



● Left antenna VSWR :



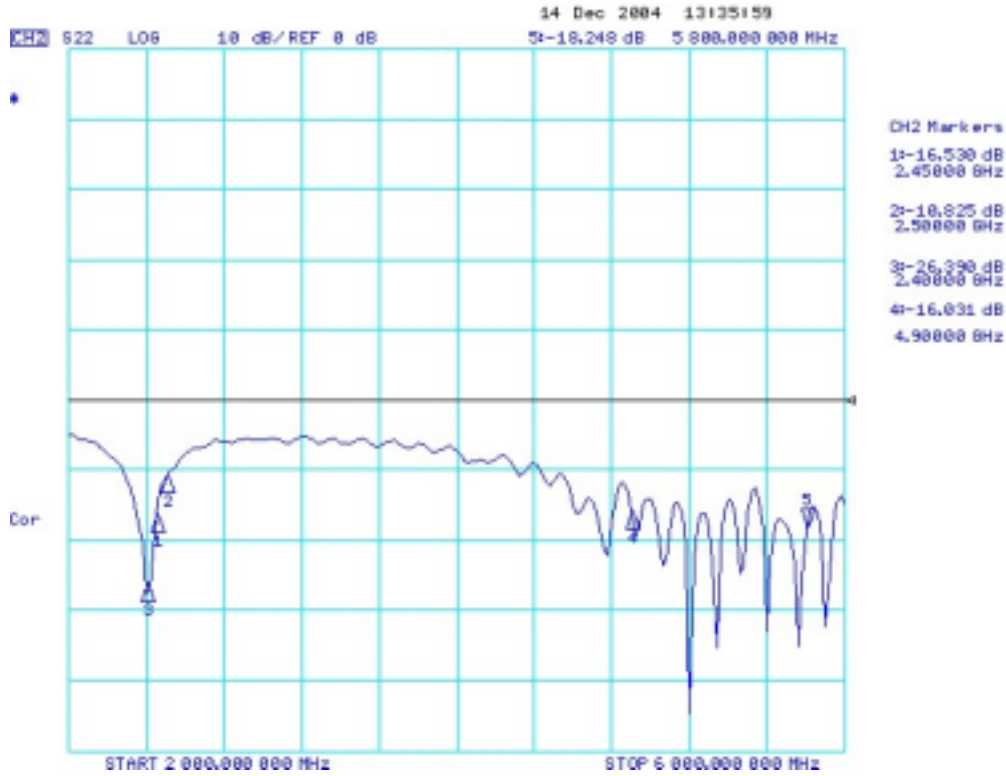


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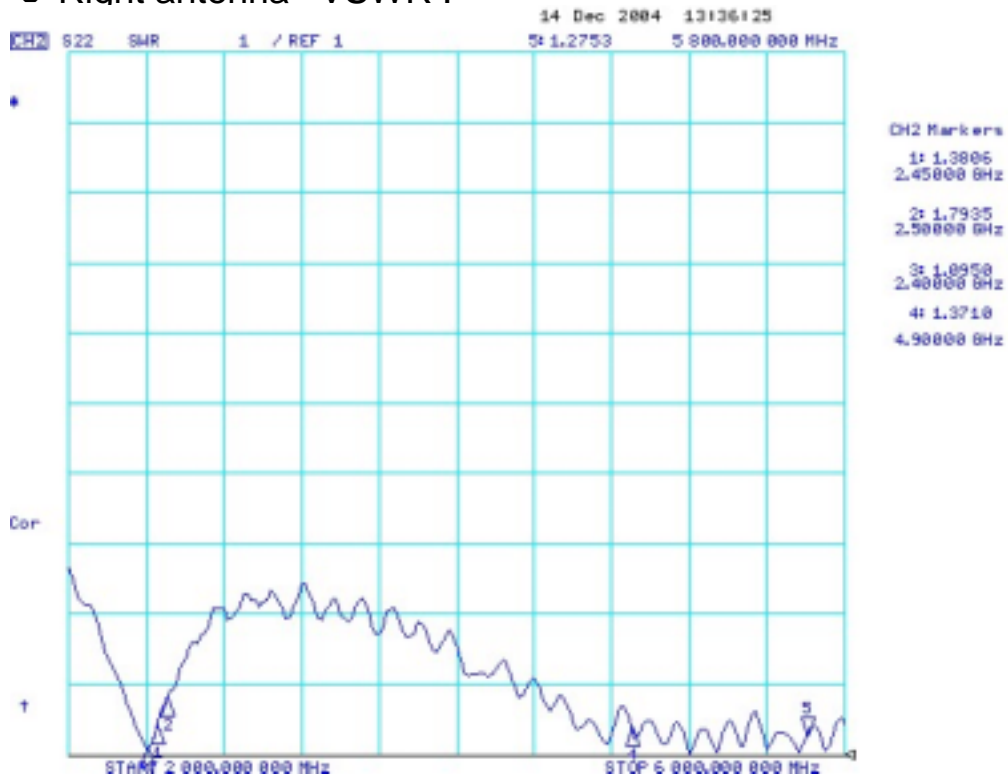
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● Right antenna Return loss



● Right antenna VSWR :



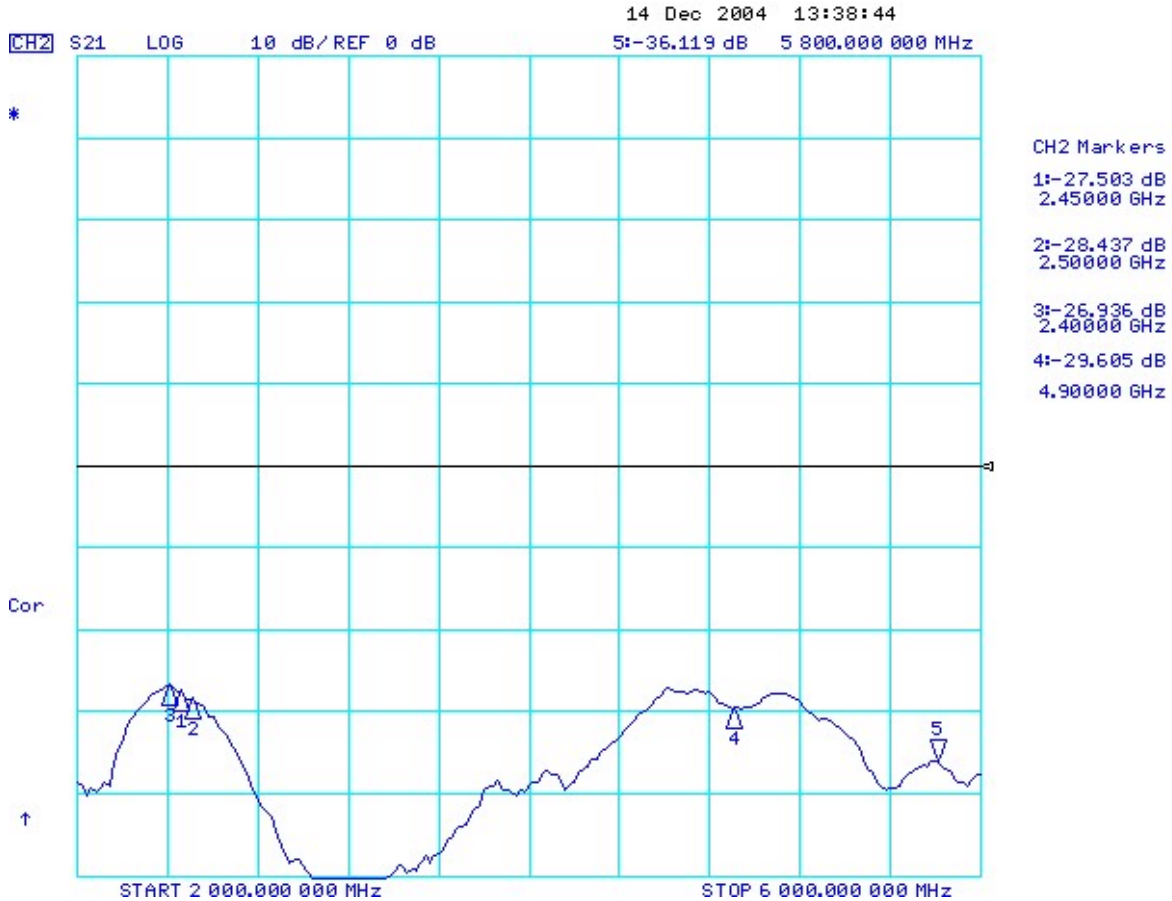


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* Isolation:



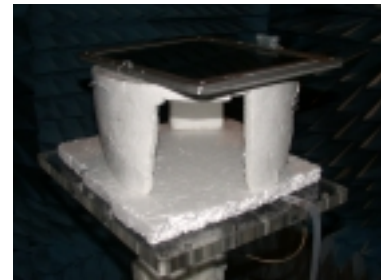
4. Radiation Patterns

Unit : dBi

Polarization directions : \longleftrightarrow parallel to paper
 \odot normal to paper

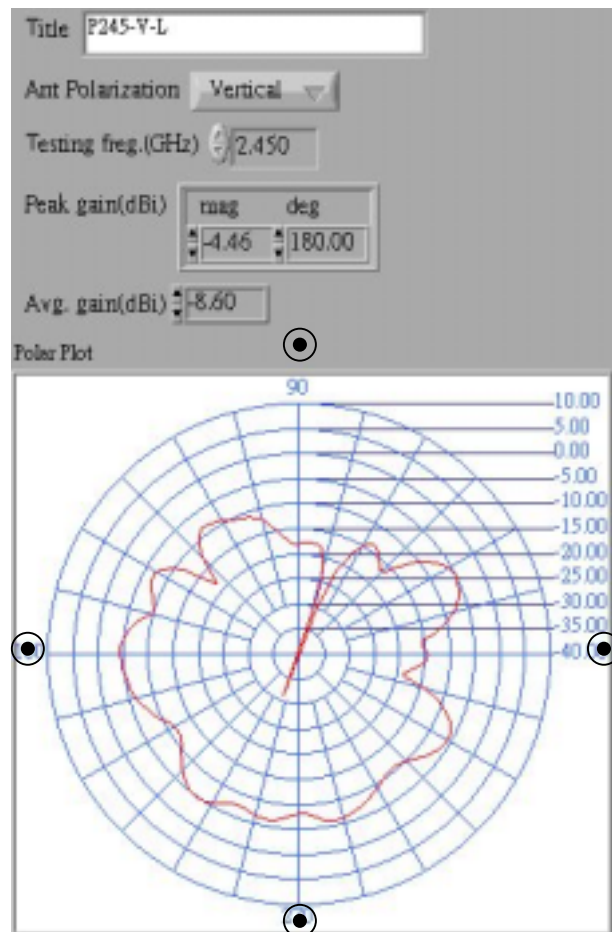
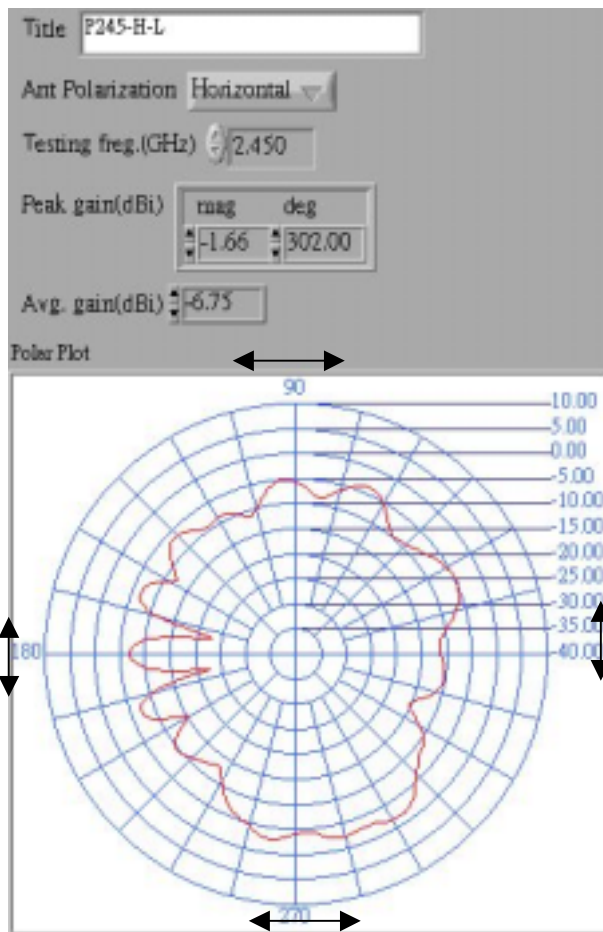
- Frequency = 2.45 GHz

Left antenna



Horizontal Polarization

Vertical Polarization

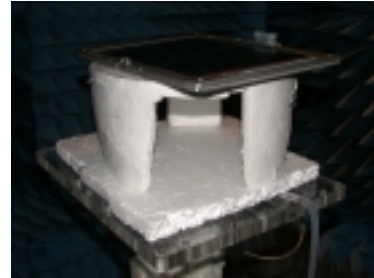


Peak Gain:-1.66dBi

V+H Average Gain:-4.567dBi

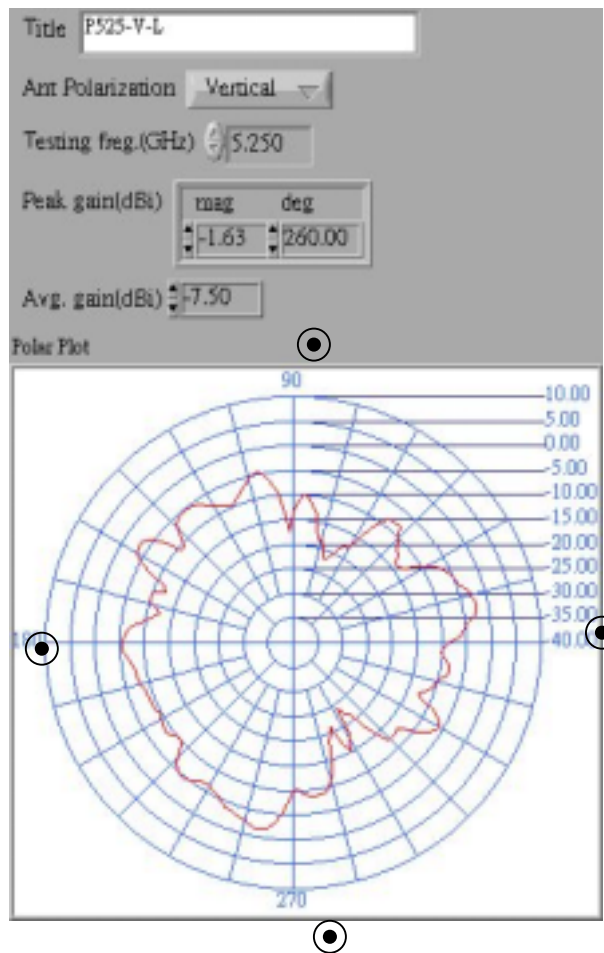
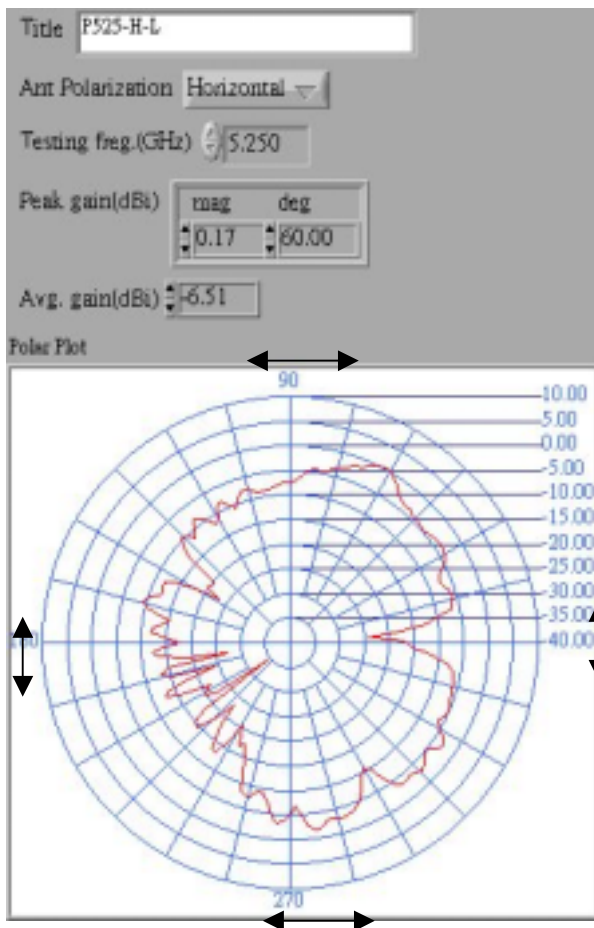
- Frequency = 5.25 GHz

Left antenna



Horizontal Polarization

Vertical Polarization

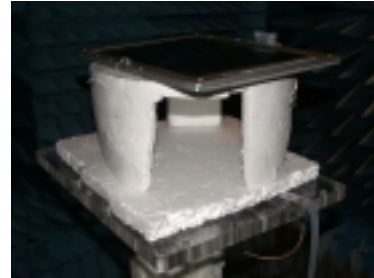


Peak Gain:0.17dBi

V+H Average Gain:-3.967dBi

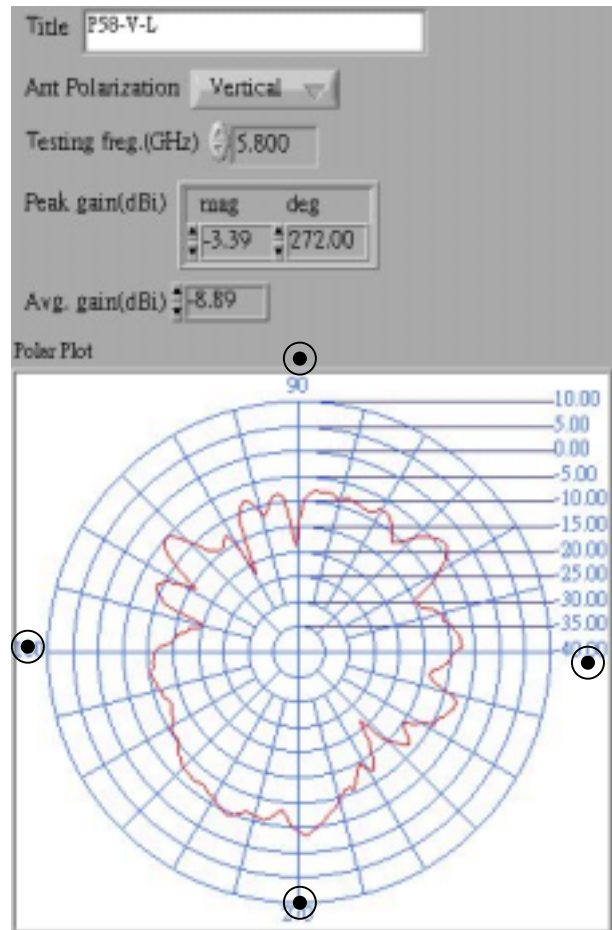
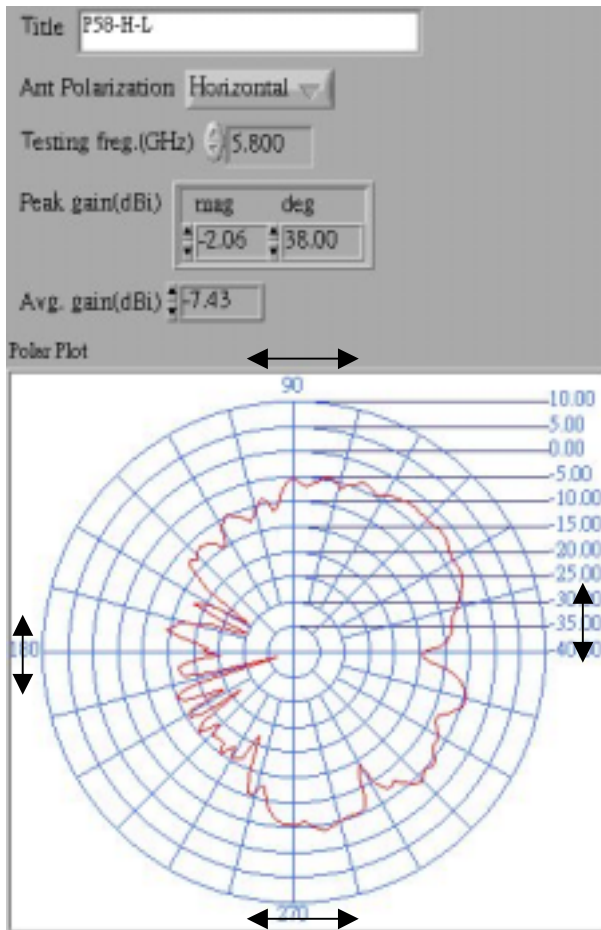
- Frequency = 5.8 GHz

Left antenna



Horizontal Polarization

Vertical Polarization

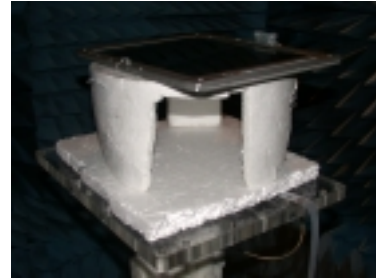


Peak Gain:-2.06dBi

V+H Average Gain:-5.089dBi

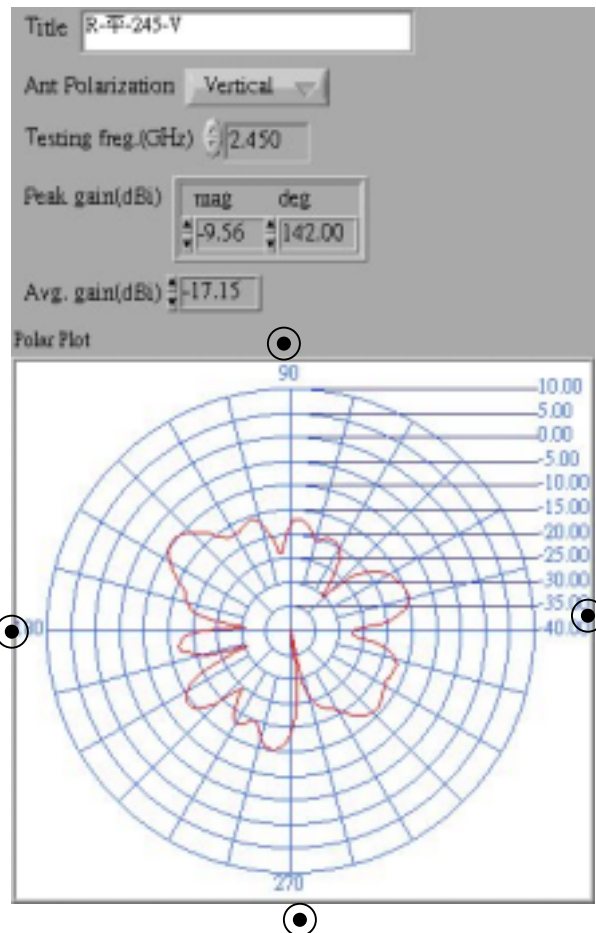
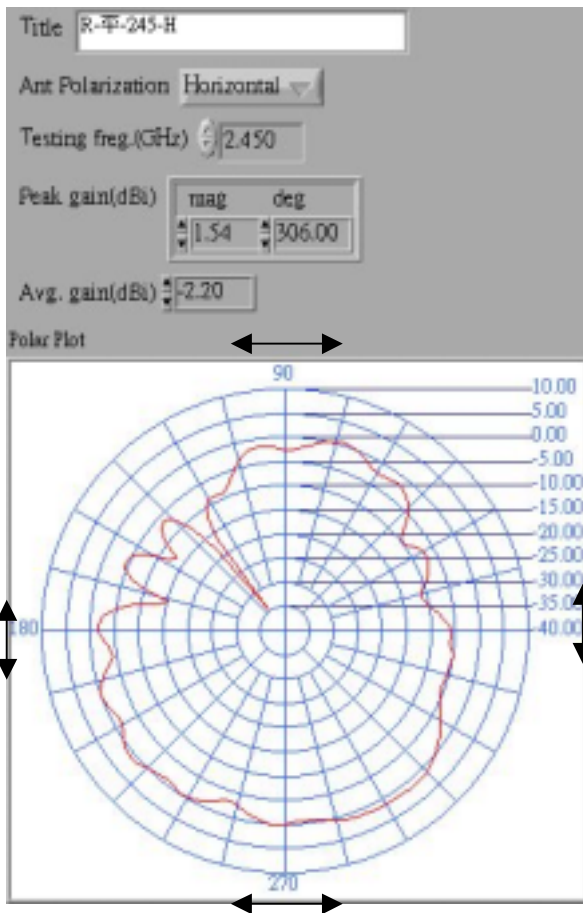
- Frequency = 2.45GHz

Right antenna



Horizontal Polarization

Vertical Polarization



Peak Gain:1.54dBi

V+H Average Gain:-2.063dBi



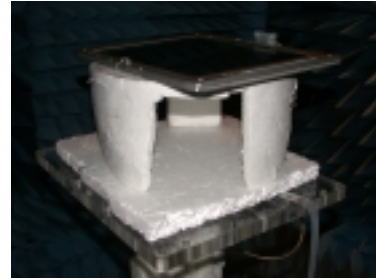
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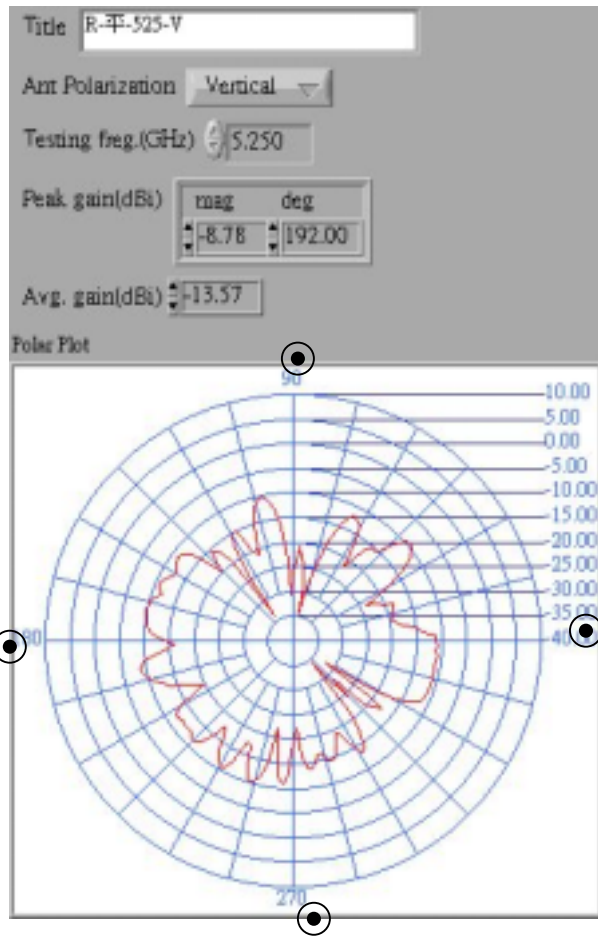
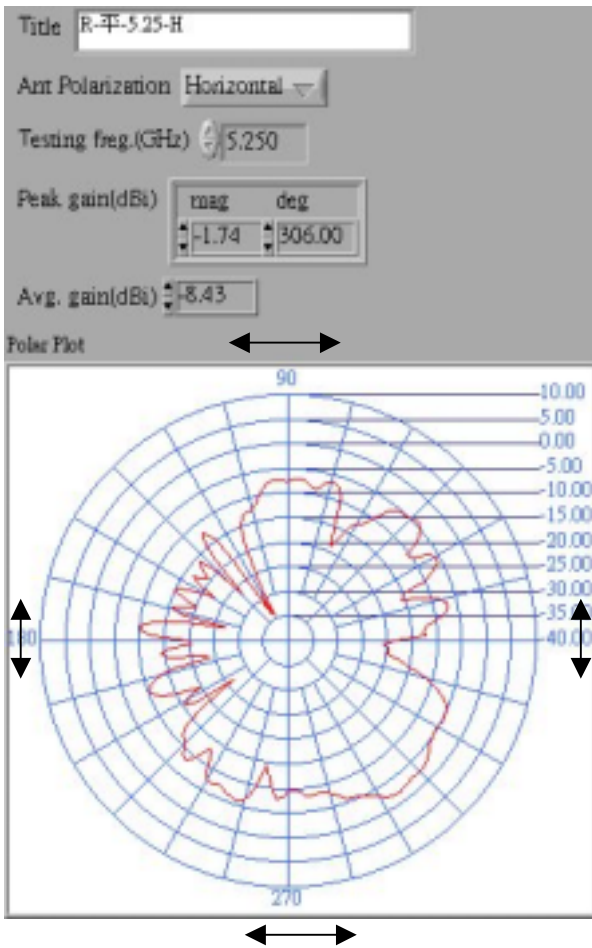
- Frequency =5.25 GHz

Right antenna



Horizontal Polarization

Vertical Polarization

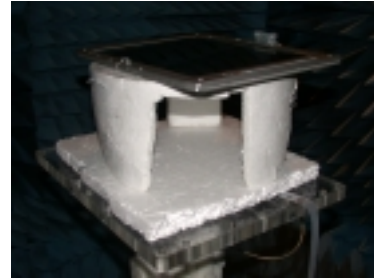


Peak Gain:-1.74dBi

V+H Average Gain:-7.27dBi

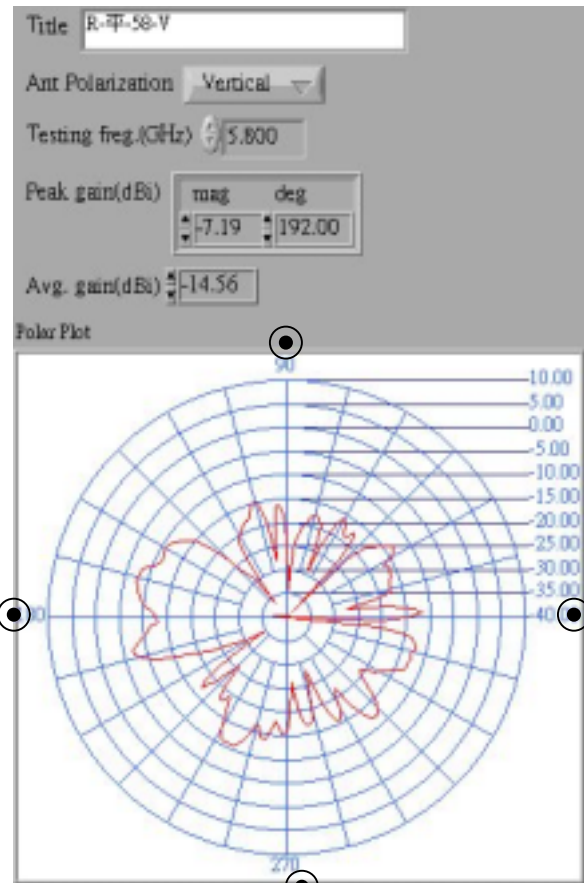
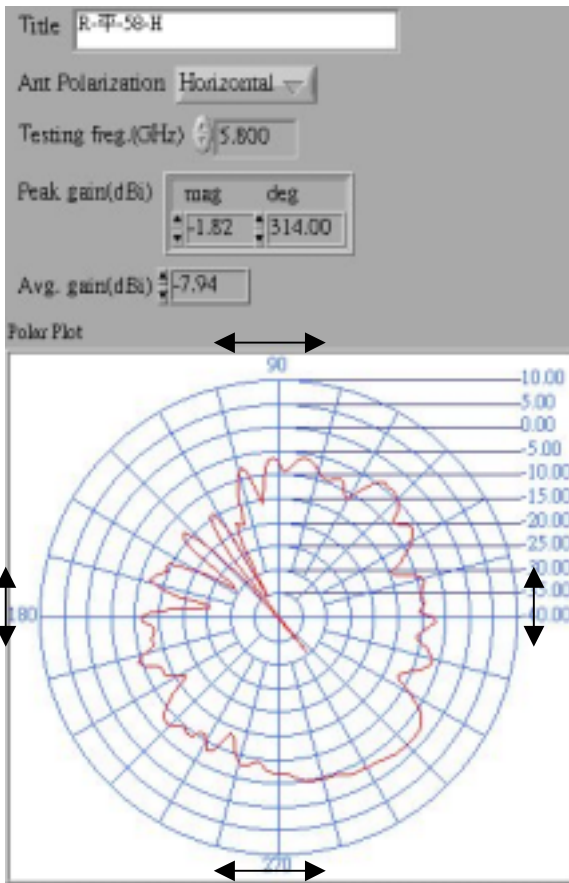
- Frequency = 5.8 GHz

Right antenna



Horizontal Polarization

Vertical Polarization



Peak Gain:-1.82dBi

V+H Average Gain:-7.084dBi

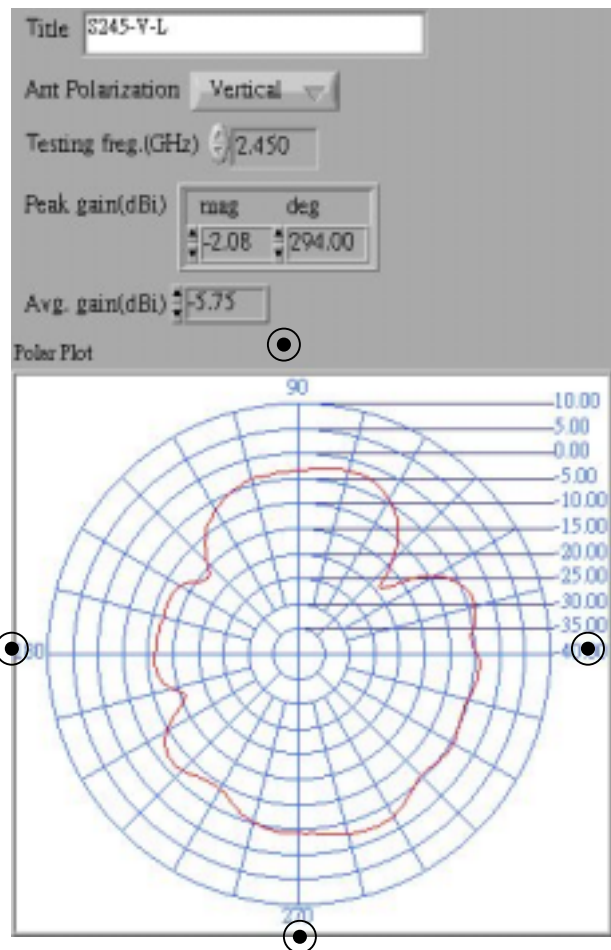
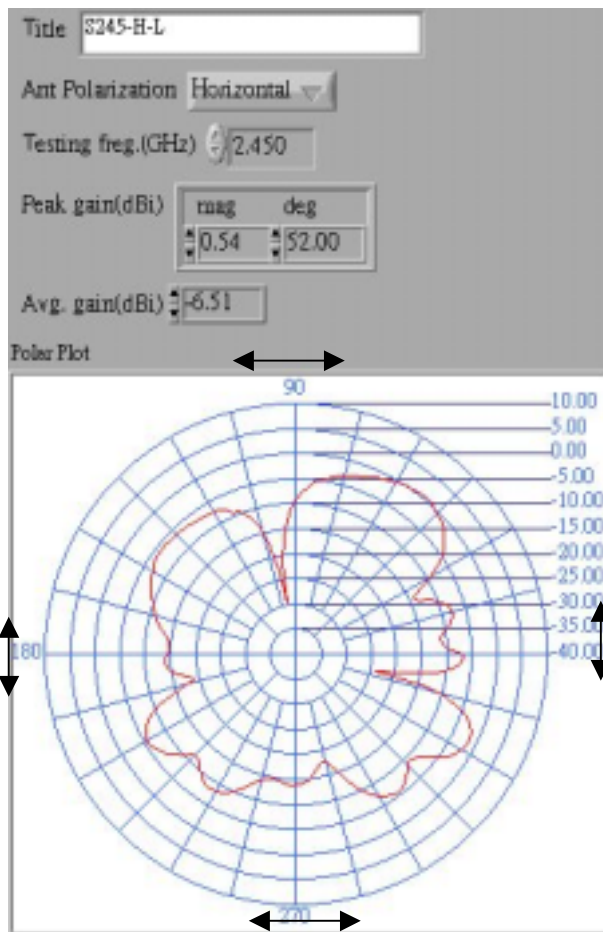
- Frequency = 2.45 GHz

Left antenna



Horizontal Polarization

Vertical Polarization



Peak Gain:0.54dBi

V+H Average Gain:-3.103dBi

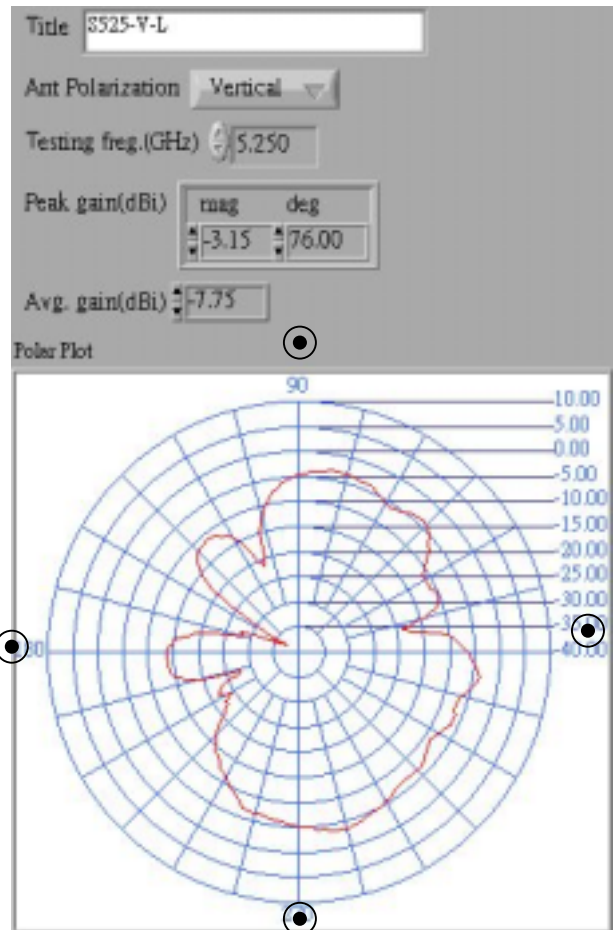
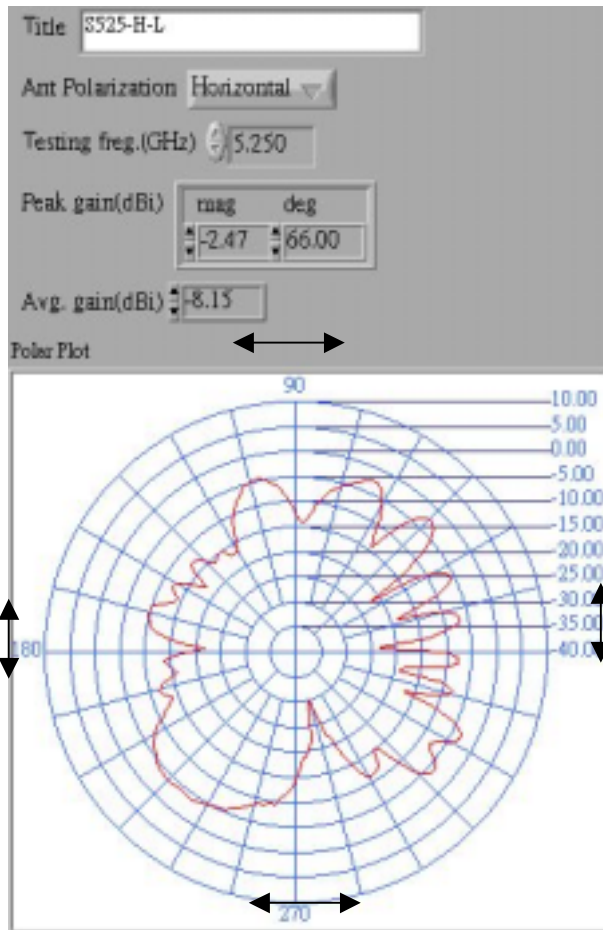
- Frequency = 5.25 GHz

Left antenna



Horizontal Polarization

Vertical Polarization



Peak Gain:-2.47dBi

V+H Average Gain:-4.935dBi

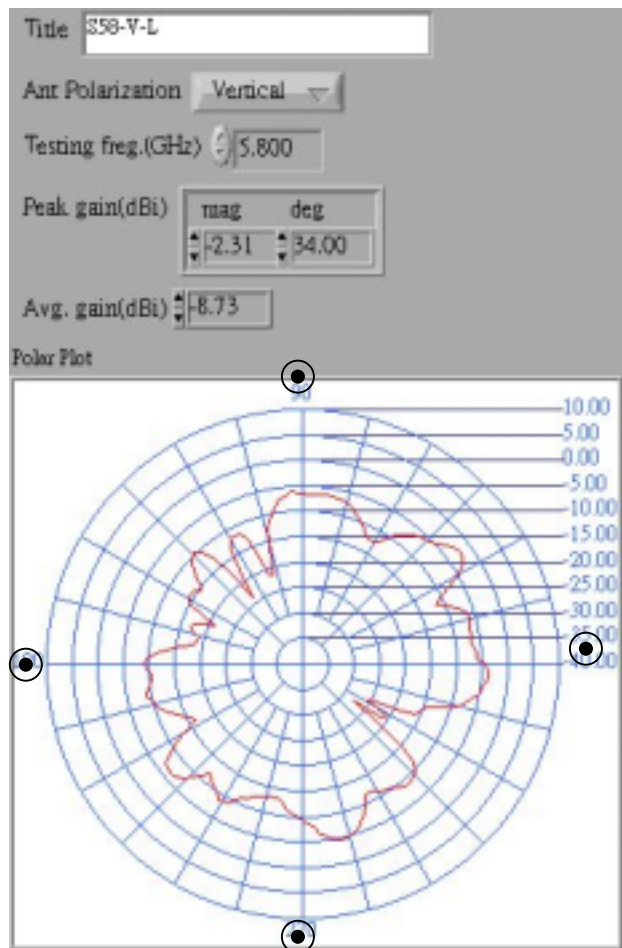
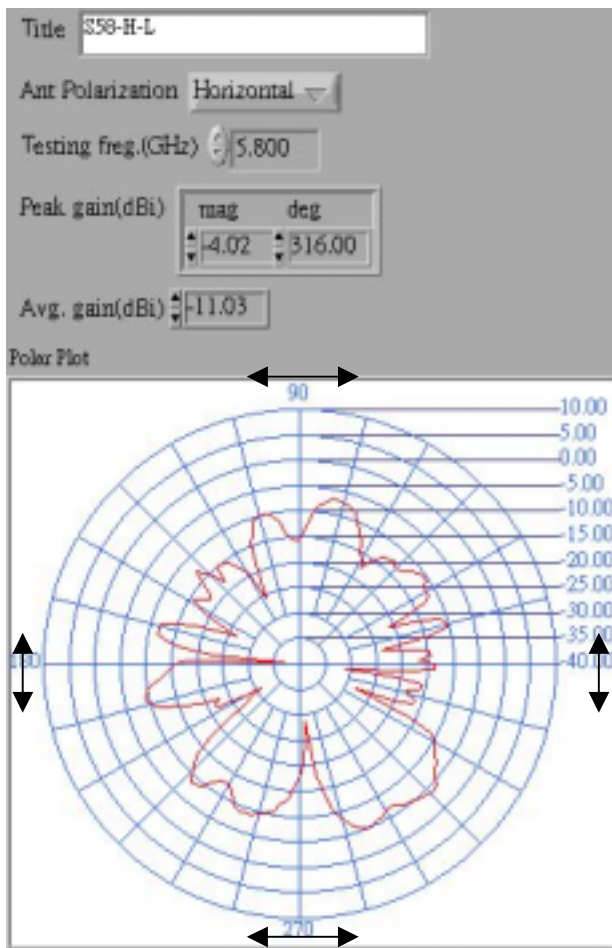
- Frequency = 5.8 GHz

Left antenna



Horizontal Polarization

Vertical Polarization



Peak Gain:-2.31dBi

V+H Average Gain:-6.719dBi

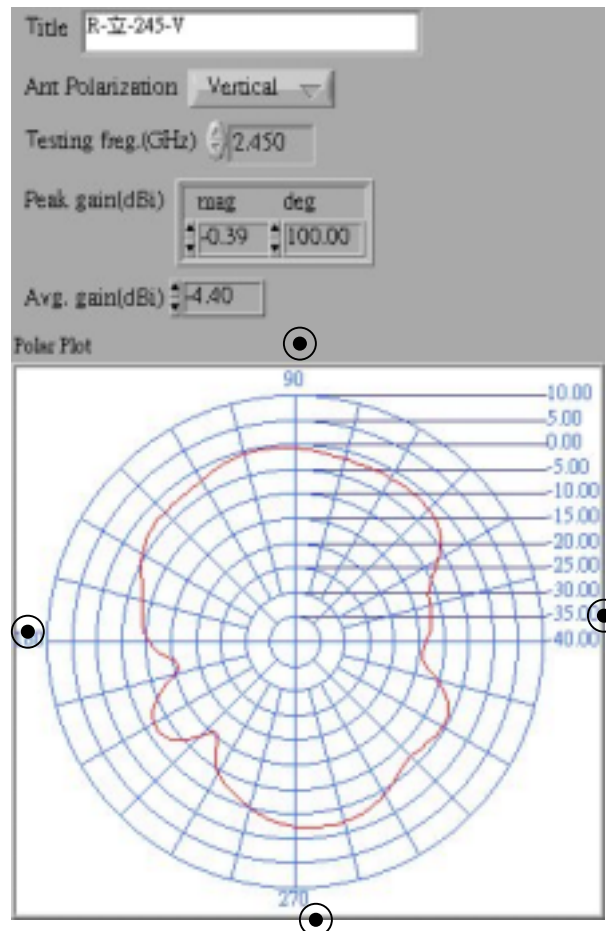
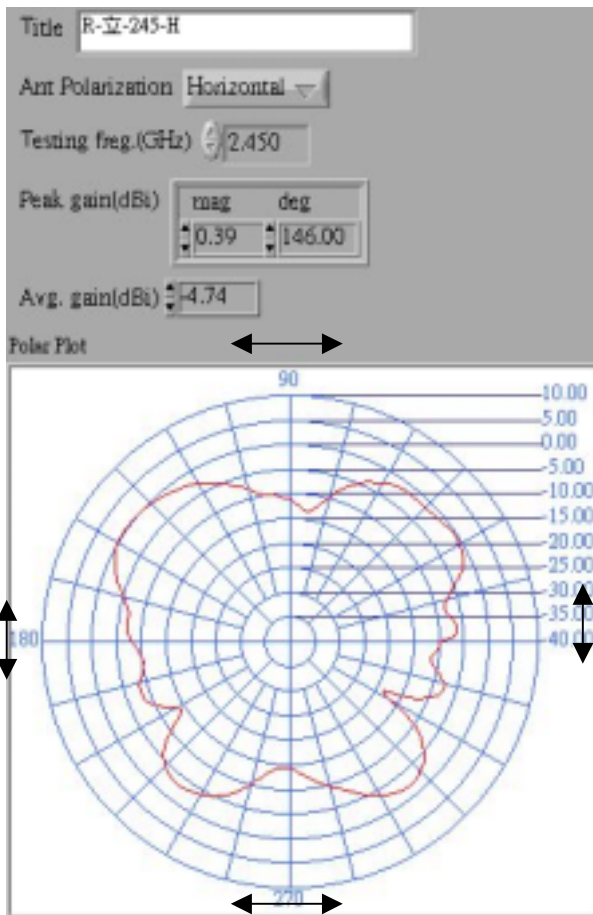
- Frequency = 2.45GHz

Right antenna



Horizontal Polarization

Vertical Polarization



Peak Gain:0.39dBi

V+H Average Gain:-1.556dBi

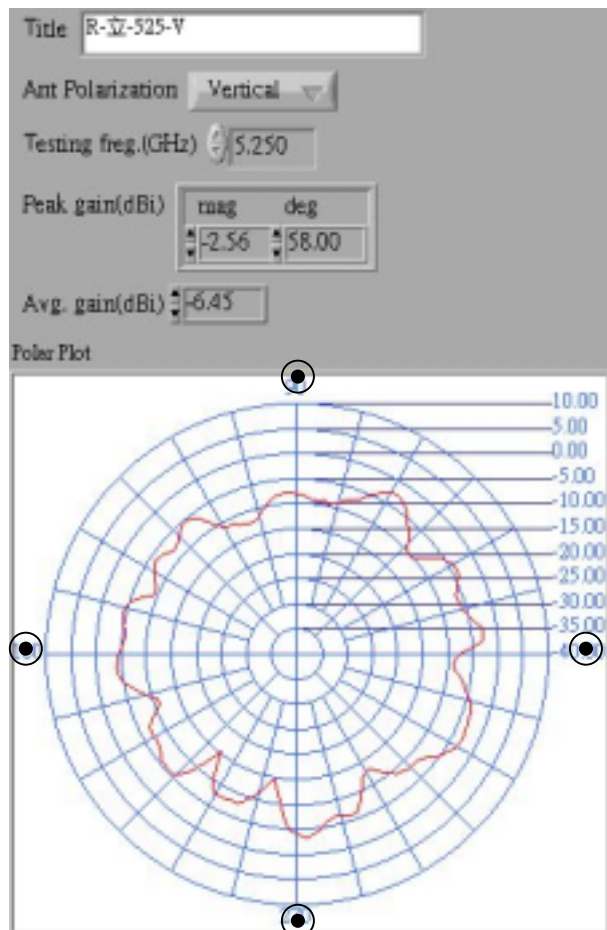
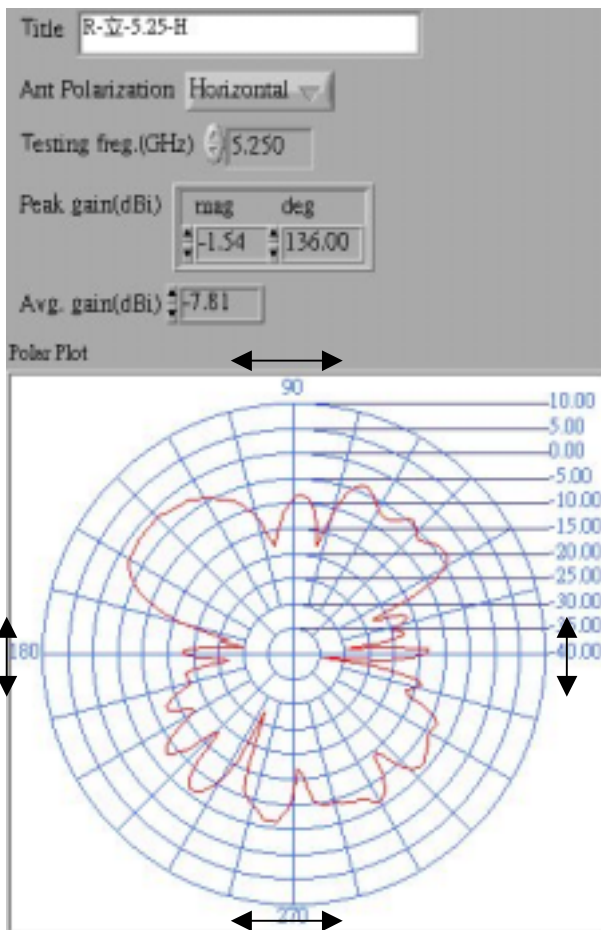
- Frequency =5.25 GHz

Right antenna



Horizontal Polarization

Vertical Polarization



Peak Gain:-1.54dBi

V+H Average Gain:-4.067dBi

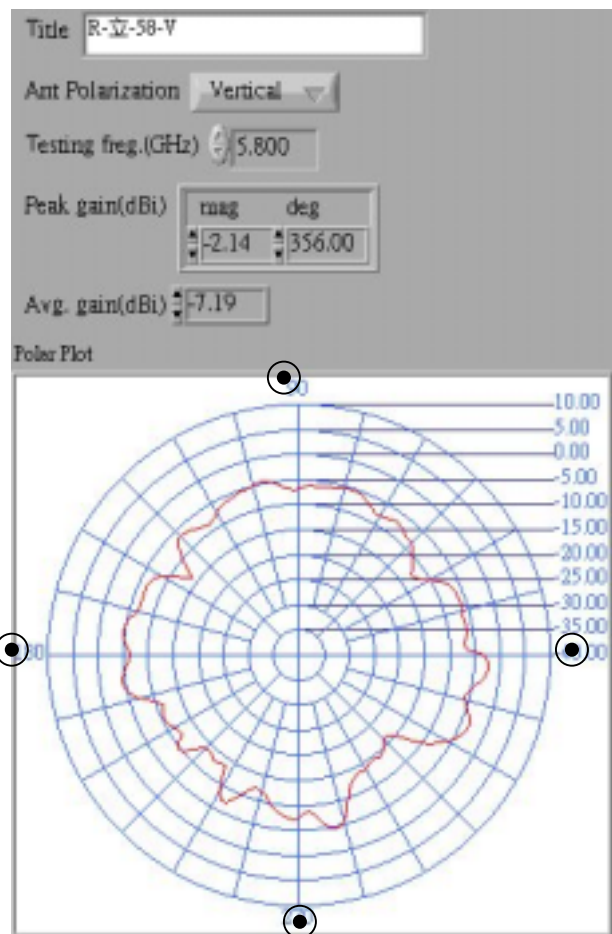
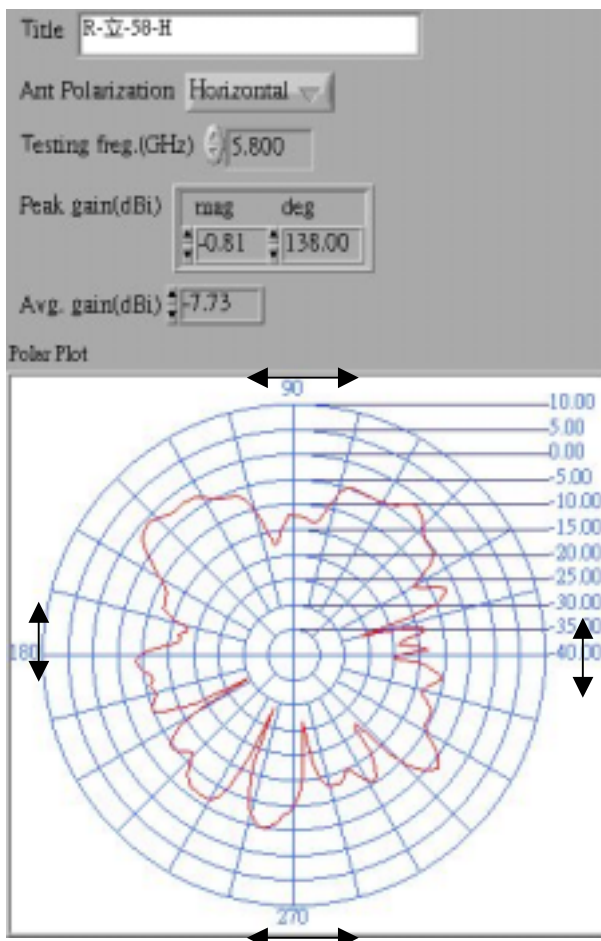
- Frequency = 5.8 GHz

Right antenna



Horizontal Polarization

Vertical Polarization



Peak Gain:-0.81dBi

V+H Average Gain:-4.441dBi