

ASUS M2NE Progress Report PCB Material

PHYCOMP Multi-Band Wireless LAN Antenna

Reported by:

Dr. Cliff Wang

WJ Tsai / Randy Lee / Mecca Mai / Howard Chuang / Dan Cao / Yun-Ming Song

Date: Apr 16, 2004



Contents

- Project Information

® Yageo M2NE Antenna

- ü Antenna Photos
- ü Antenna VSWR
- ü Antenna Gain
- ü Throughput test

- Project Information:

- Antenna Photos
 - a. M2NE Antenna

M2NE



1



2



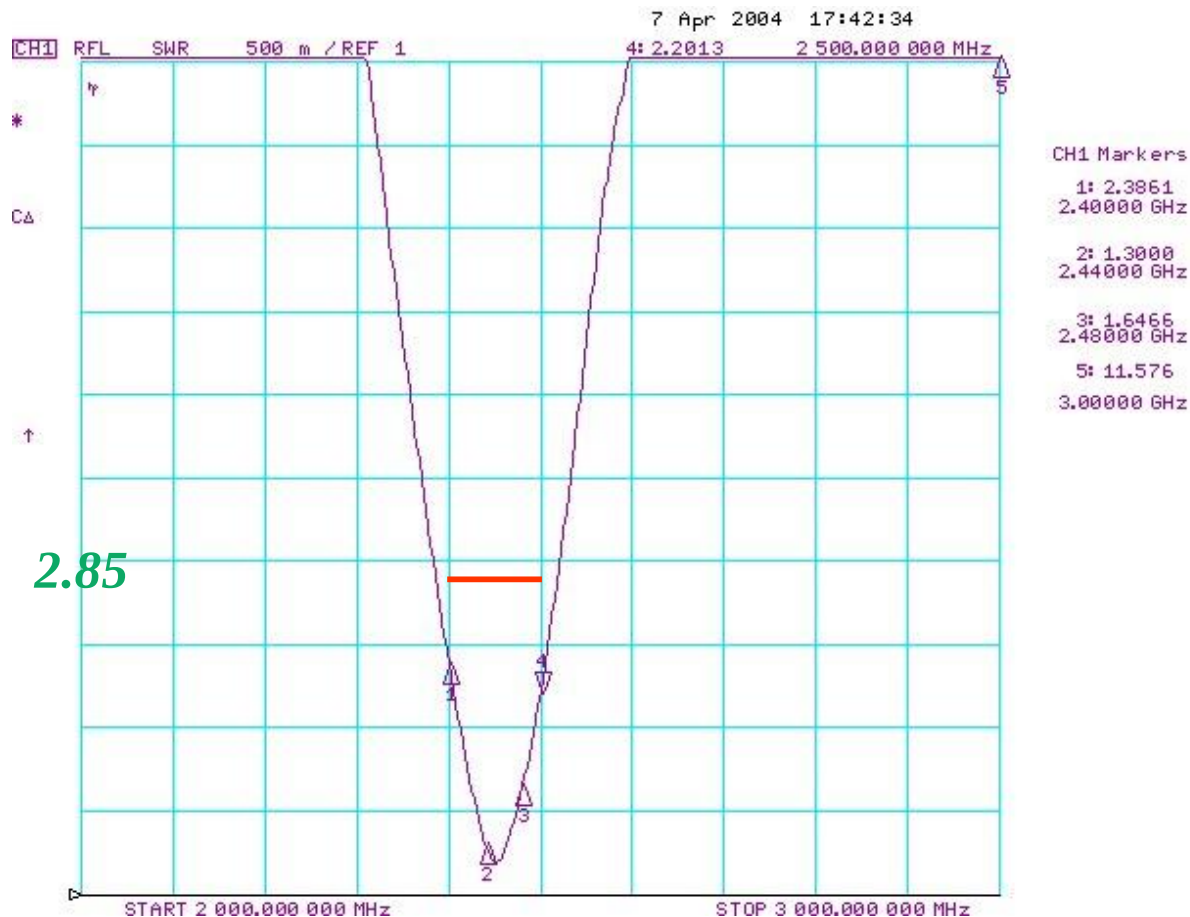
3

- Project Information:

- VSWR

a. M2NE Main Antenna

M2NE



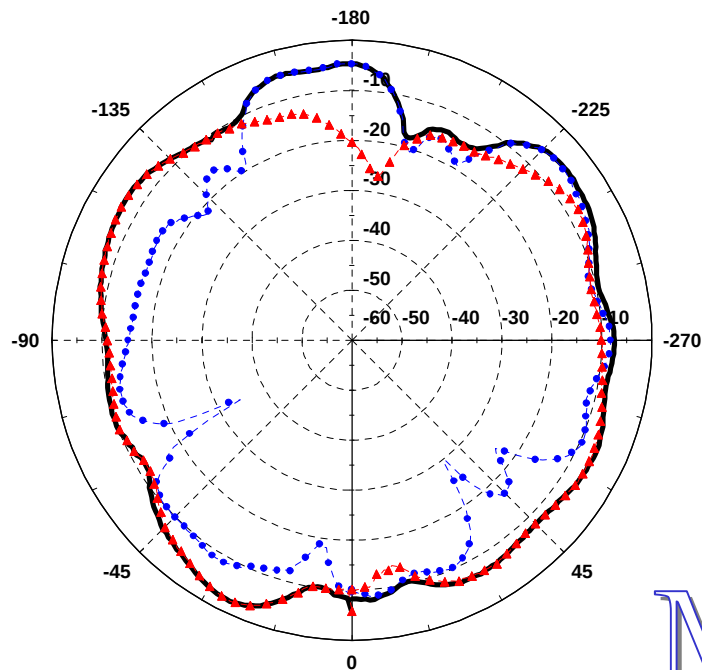
VSWR Spec:

< 2.85 for 2.4 GHz Band

- Antenna Measurement:

- Radiation Pattern

Main @2.40 GHz



M2NE

Vertical Pol.(max)=	-2.4
Vertical Pol.(avg)=	-8.9
Horizontal Pol.(max)=	-4.7
Horizontal Pol.(avg)=	-10.5
Total Gain(max)=	-2.3
Total Gain(avg)=	-7.5
Unit = dBi	

▲▲▲ Vertical Polarization

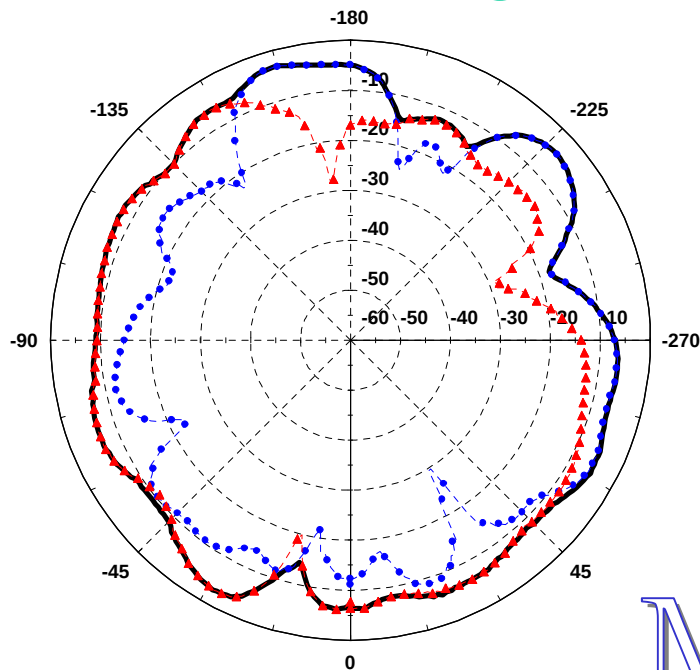
●●● Horizontal Polarization

—— Total Radiation Gain

- Antenna Measurement:

- Radiation Pattern

Main @2.45 GHz



M2NE

Vertical Pol.(max)=	-2.9
Vertical Pol.(avg)=	-9.1
Horizontal Pol.(max)=	-3.3
Horizontal Pol.(avg)=	-9.7
Total Gain(max)=	-2.9
Total Gain(avg)=	-7.1
Unit = dBi	

▲▲▲ Vertical Polarization

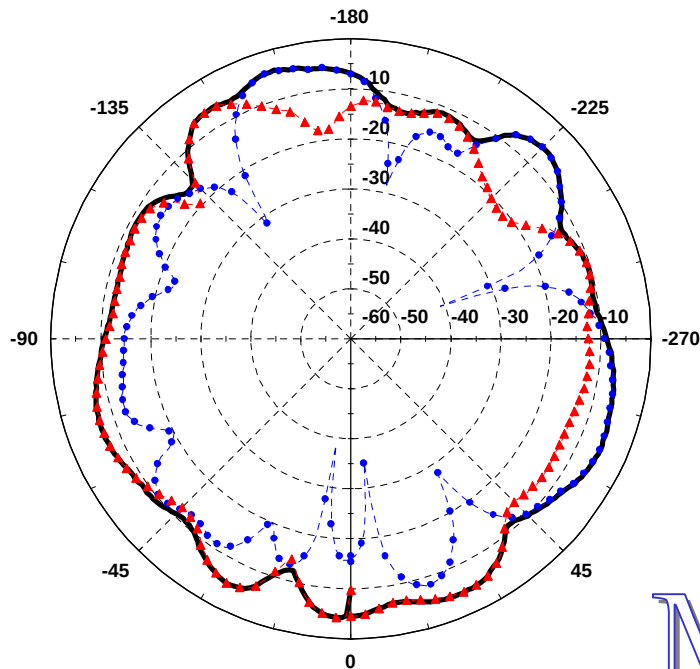
●●● Horizontal Polarization

—— Total Radiation Gain

- Antenna Measurement:

- Radiation Pattern

Main @2.50 GHz



Vertical Pol.(max)=	-4.2
Vertical Pol.(avg)=	-9.7
Horizontal Pol.(max)=	-4.2
Horizontal Pol.(avg)=	-10.6
Total Gain(max)=	-4.1
Total Gain(avg)=	-7.8
Unit = dBi	

M2NE

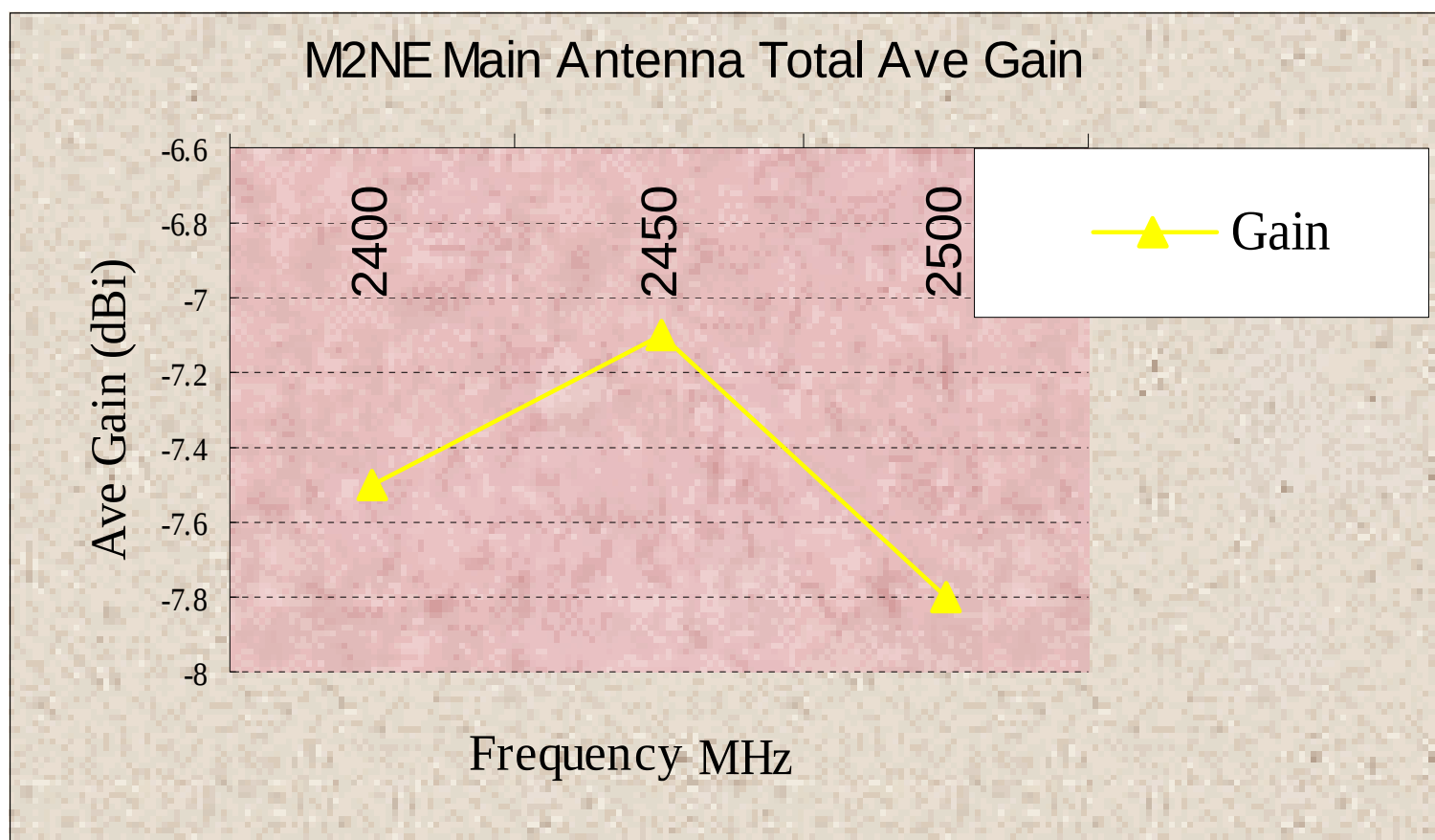
▲▲▲ Vertical Polarization

●●● Horizontal Polarization

— Total Radiation Gain

- Antenna Measurement:

- Radiation Pattern Summary:

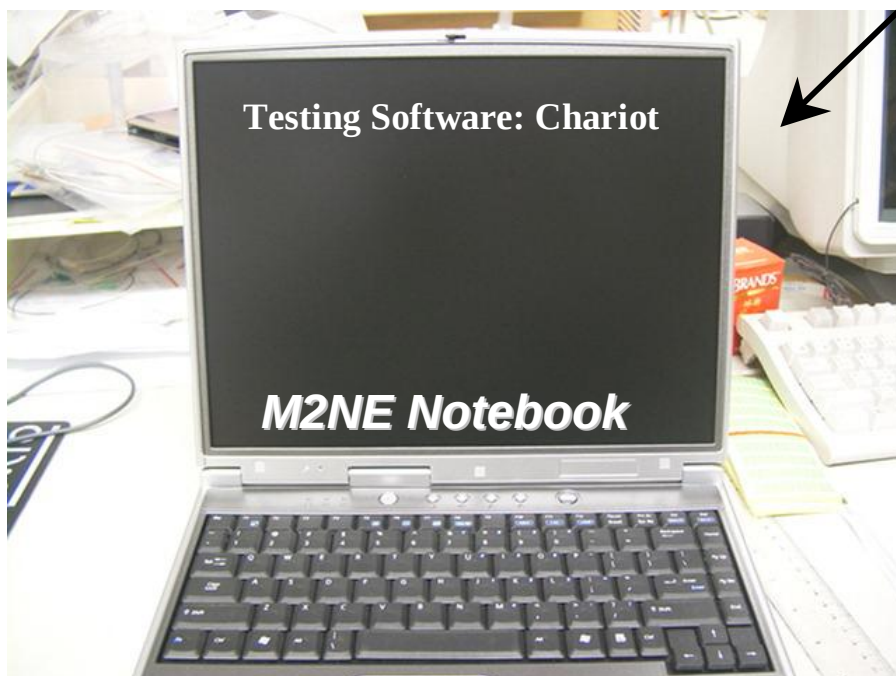


Open Field (Throughput) Test

- Test Hardware Setup

Test Platform:

- M2NE Notebook



**Wireless
Connection**

**Separation
Distance**



**Access
Point**

Server



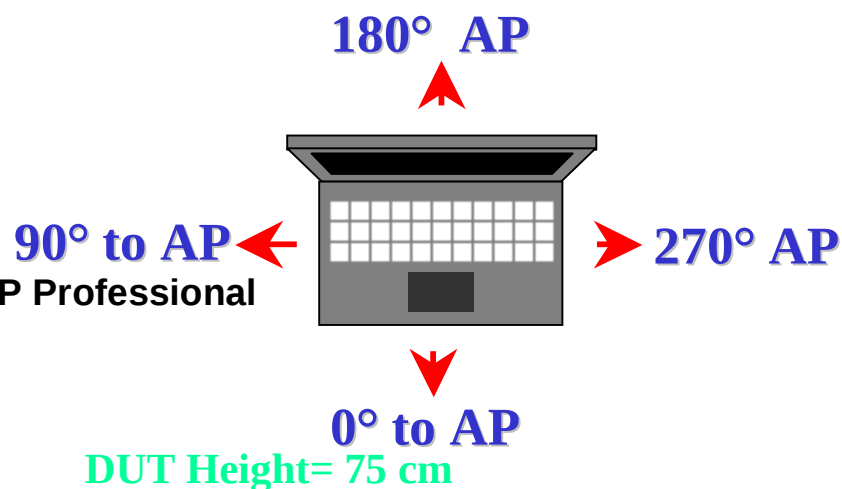
802.11b+g AP (3Com WL-525)

Open Field (Throughput) Test

- Throughput Test Environment

Test Configuration:

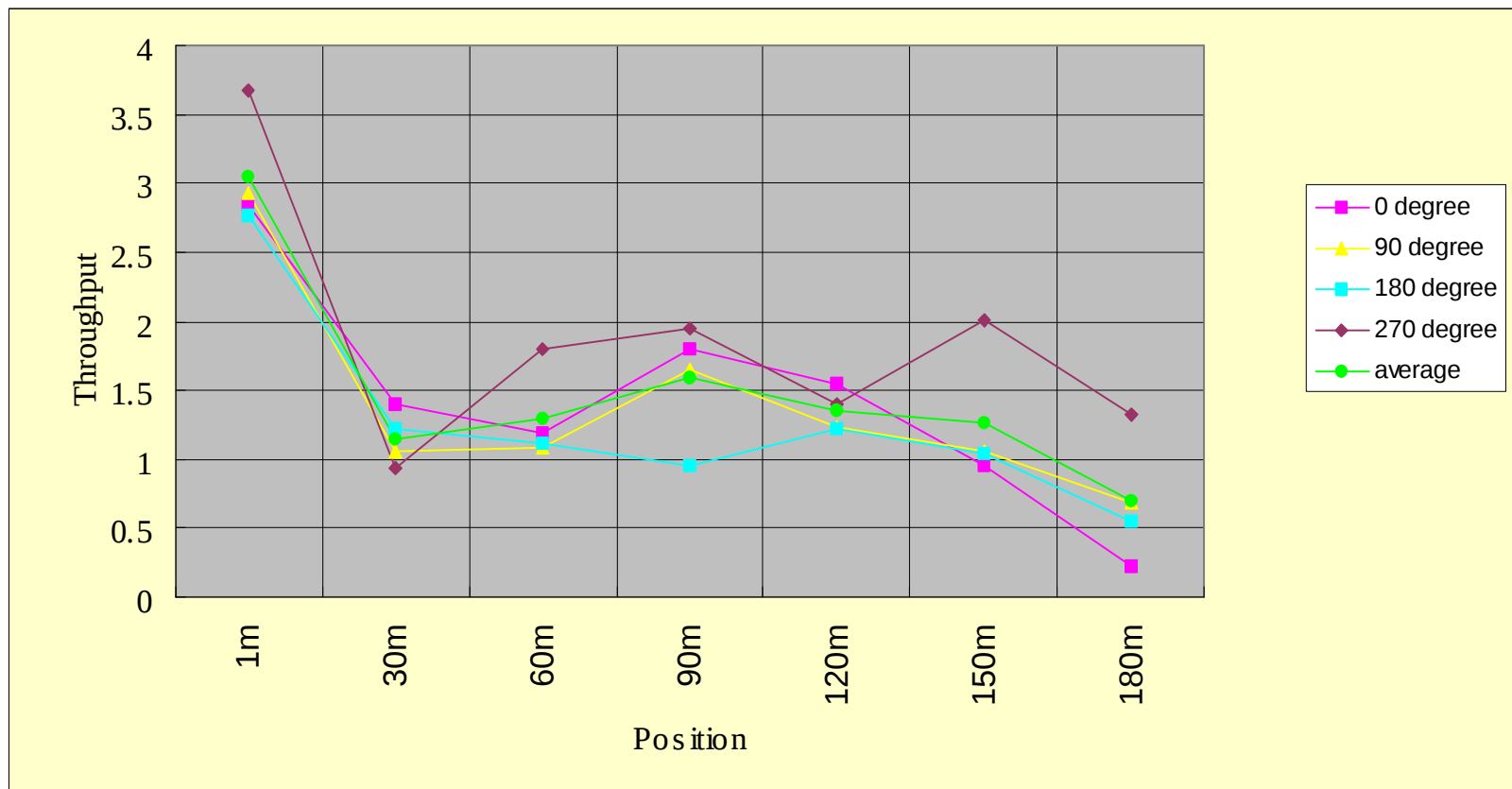
- Chariot is used to transmit a 100k file for 1 min
- CPU: Pentium M 1.7 GHz / RAM: 512 DDR / OS: Window XP Professional
- AP: 3Com WL-525
- Radio Card used: ASUS WL-120G
- Data was taken in 4 orientations: 0, 90, 180 & 270 deg
- Data was taken by each 30m (11b) / 30m (11g)



Open Field (Throughput Test)

- Test Results (802.11b, Average values):

Test Result : Throughput (Mbps) - Graph



Open Field (Throughput Test)

- Test Results (802.11g, Average values):

Test Result : Throughput (Mbps) - Graph

