

Antenna performance.

Test Reports

Chip Ceramic Bluetooth Antenna

Model: MGMA5220H2450-A01、MGMA3216H245A-02

Repon No.: SZ08010022W01

Test applicant

Shenzhen Microgate Technology Co., Ltd.

Yuxing Road, Golf Avenue, Guanlan Town, Baoan District, Shenzhen, China

Testing laboratory

Shenzhen Morlab communications Technology Co., LTD

3rd Floor, Electronic Testing Building, Xili Shahe Road, Shenzhen

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1. Overview

1.1 Declaration

- (1) This report is only responsible for the samples that have been tested.
- (2) This report is only valid in its entirety; it cannot be partially reproduced for distribution without the permission of Morlab.
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- (5) Any significance must be submitted to Morlab within 30 working days of receipt of the report, after which time it will not be processed.

1.2 Test Information

Report No: SZ08010022W01
Application Date: 2008-1-10
Test date: 2008-1-10
Laboratory Supervisor: Shu luan
Project Manager: Deng jiankun
Test Engineer: Huang pulong

1.3 Conclusion

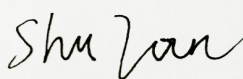
During the testing process, the tested object worked normally and the test passed.



Huang pulong
Test Engineer



Deng jiankun
Project Manager



Shu luan
Laboratory Supervisor



2. General Description

2.1 Test laboratory information

Company Name: Shenzhen Electronic Product Quality Testing Center

Department: MORLAB

Address: 3rd Floor, Electronic Testing Building, Xili Shahe Road, Shenzhen

Laboratory Supervisor: Shu luan

Tel: +86 755 86130268

Fax: +86 755 86130218

2.2 Test Address 3rd Floor, Electronic Testing Building, Xili Shahe Road, Shenzhen

Name: Morlab of Shenzhen Electronic Product Quality Testing Center

Address: 3rd Floor, Electronic Testing Building, Xili Shahe Road, Shenzhen

2.3 Recognition Certificate

Accredited Laboratory: CNAS No: L1659

(Shenzhen Electronic Product Quality Testing Center)

2.4 Test Equipment List

No.	Types	Description
1	8960-5515C System Simulator	Manufacturer: Agilent
2	CMU 200 System Simulator	Manufacturer: R&S
3	E5071B Vector Network Analyzer	Manufacturer: Agilent
4	4*4*4 Full Anechoic Chamber	Manufacturer: Satimo
5	SG24 Multi-probe Antenna Measurement System	Manufacturer: Satimo Applied Standard(s): Over the air performance test plan v2.2

3. Product technical parameters

Remarks: Provided by the applicant.

3.1 Applicant Information

Company: Shenzhen Microgate Technology Co., Ltd.
Address: Yuxing Road, Golf Avenue, Guanlan Town, Baoan District, shenzhen
Contact: Liao Cailiang
Tel: 13480808433
Fax:
E-mail:

3.2 Antenna information under test

Model Name: MGMA5220H2450-A01、MGMA3216H2450-A02

3.2.1 Photos of the tested objet

Please refer to Attachment B.

3.2.2 Sample Identification

No.	Remarks
AUT01	MGMA5220H2450-A01
AUT02	MGMA3216H2450-A02

4. Test structure

4.1 Reference Documents

Main reference documents for testing:

No.	Identity	Document Title
1	IEEE149-1979	IEEE Standard Test Procedures for Antennas

Other test reference documents

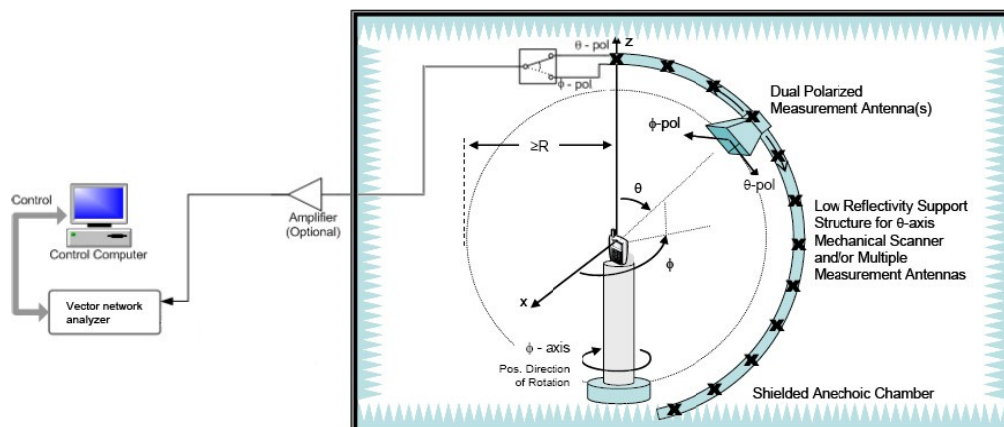
No.	Identity	Document Title
2	ETSI EN 50383	Basic standard for the calculation and measurement of electromagnetic field strength and SAR related to human exposure from radio base stations and fixed terminal stations for wireless telecommunication systems (110 MHz – 40 GHz).

4.2 Test conditions

Test environmental conditions:

- 1) Temperature: 20°C
- 2) Humidity: 60%

Test System Connection:



4.3 List of test results

4.3.1 Gain (dBi)

AUT01 Antenna

2402MHZ	2441MHZ	2480MHZ
0.280	0.411	0.170

AUT02 Antenna

2402MHZ	2441MHZ	2480MHZ
-0.081	-0.351	-0.507

4.3.2 Efficiency (%)

AUT01 Antenna

2402MHZ	2441MHZ	2480MHZ
50.5	50.6	48.8

AUT02 Antenna

2402MHZ	2441MHZ	2480MHZ
39.6	37.4	36.6

Annex A Qualifications



中国实验室国家认可委员会
认 可 证 书
(No.L1659)

兹证明:

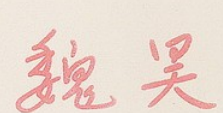
深圳电子产品质量检测中心
广东省深圳市南山区西丽沙河路电子检测大厦, 518055

经评审符合 **CNAL/AC01: 2003**《检测和校准实验室认可准则》
(等同 **ISO/IEC17025: 1999**《检测和校准实验室能力的通用要求》)
的要求, 予以认可。
获认可的技术能力范围见附件。

发证日期: 2004.10.09
有效期至: 2009.10.08

中国实验室国家认可委员会秘书长
(主任委员授权签字人)

(CNAL经国家认证认可监督管理委员会授权)





中 华 人 民 共 和 国

计量认证合格证书

METROLOGY ACCREDITATION CERTIFICATE

深圳电子产品质量检测中心

依据《中华人民共和国计量法》、《产品质量检验机构计量认证管理办法》
的有关规定,经对你机构的考核,符合计量认证要求,批准计量认证合格,
特发此证。

批准计量认证项目见证书附表。

准许在报告上使用
以下标志及证书编号:



有效日期: 2009年10月08日

发证日期: 2004年10月28日

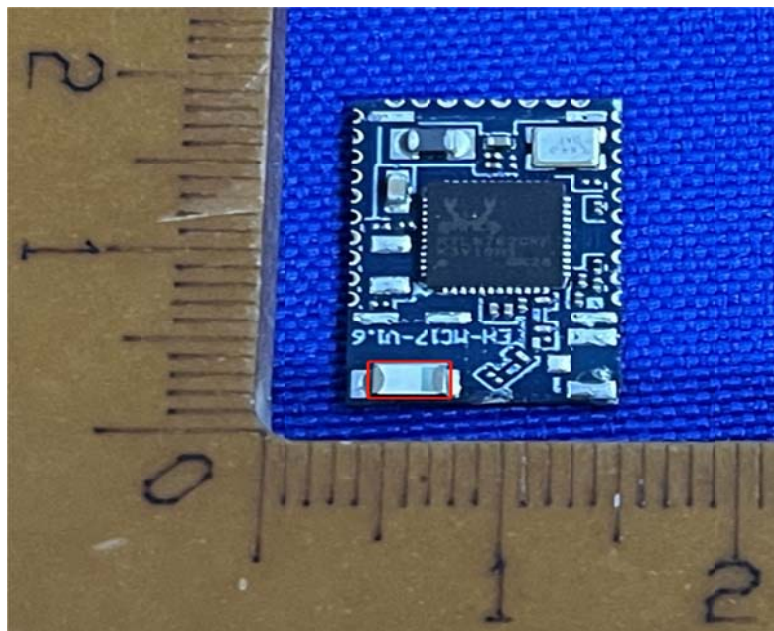
批准部



中国国家认证认可监督管理委员会制

Annex B Photo

1. Sample



Annex C Raw data and graphs

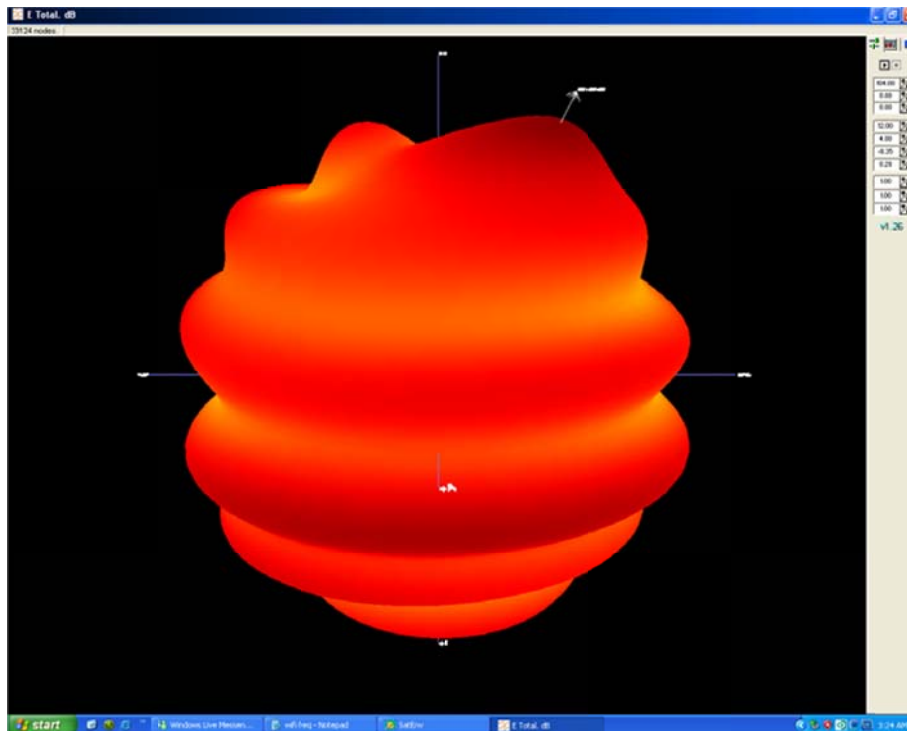
1. Raw data

Please See Annex D, separate original data file DATA.xls

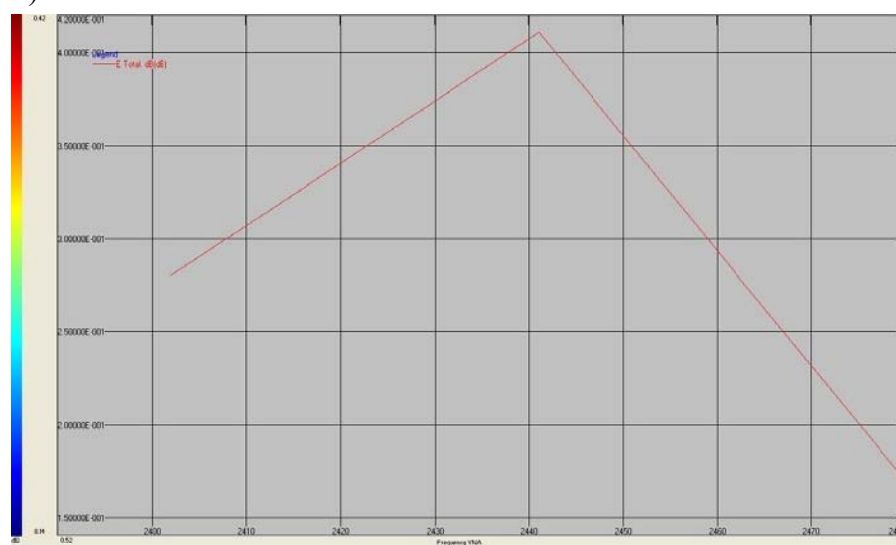
2. Measured object Radiation pattern

a) AUT01

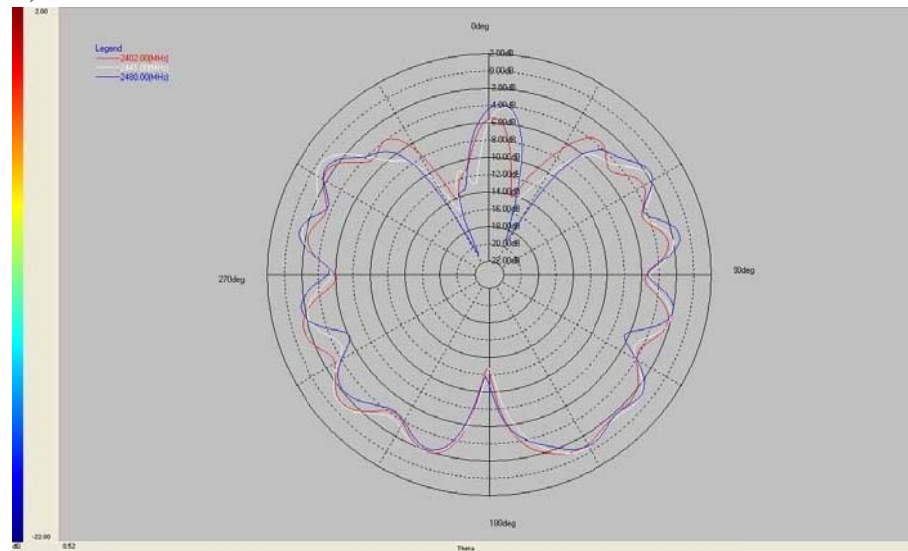
1) 3D (2402MHz)



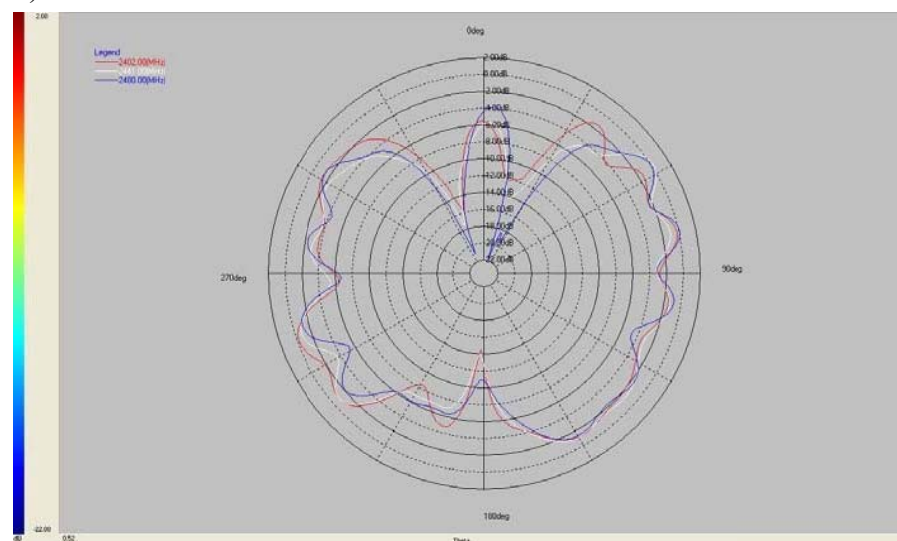
2) Etotal



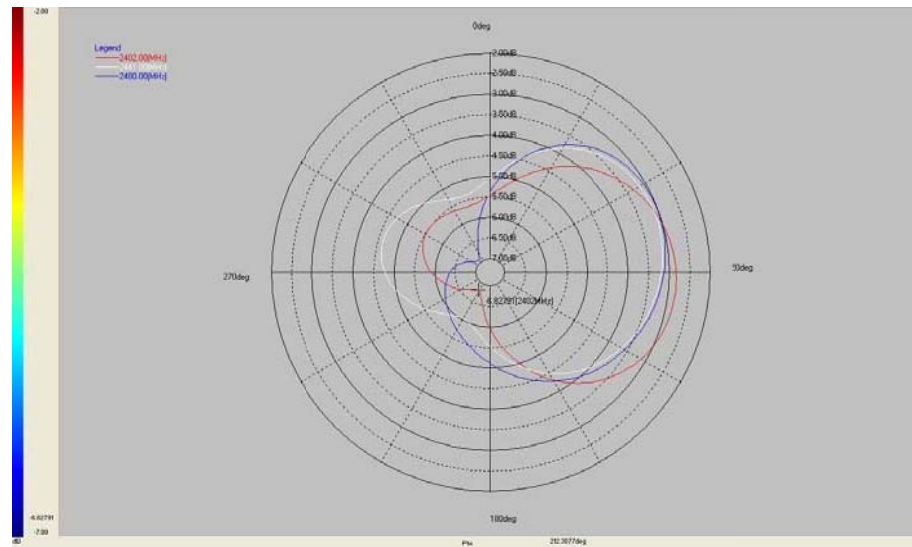
3) $\Phi=0$



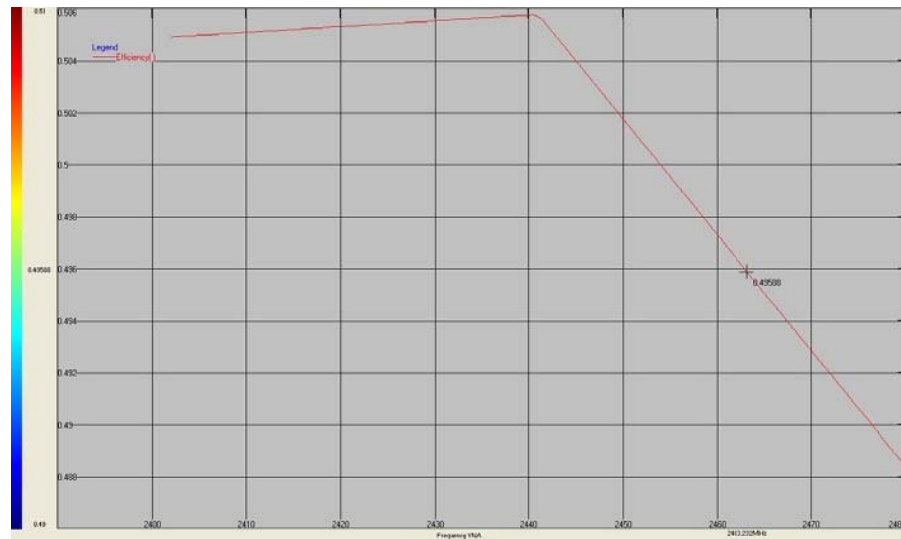
4) $\Phi=90$



5) Theta=90

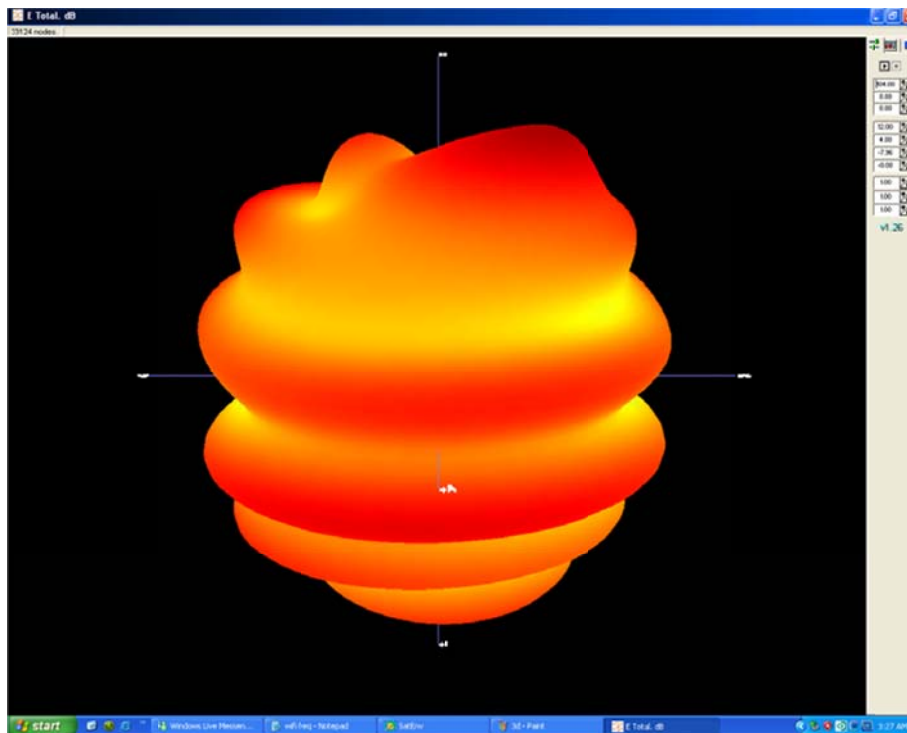


6) Efficiency

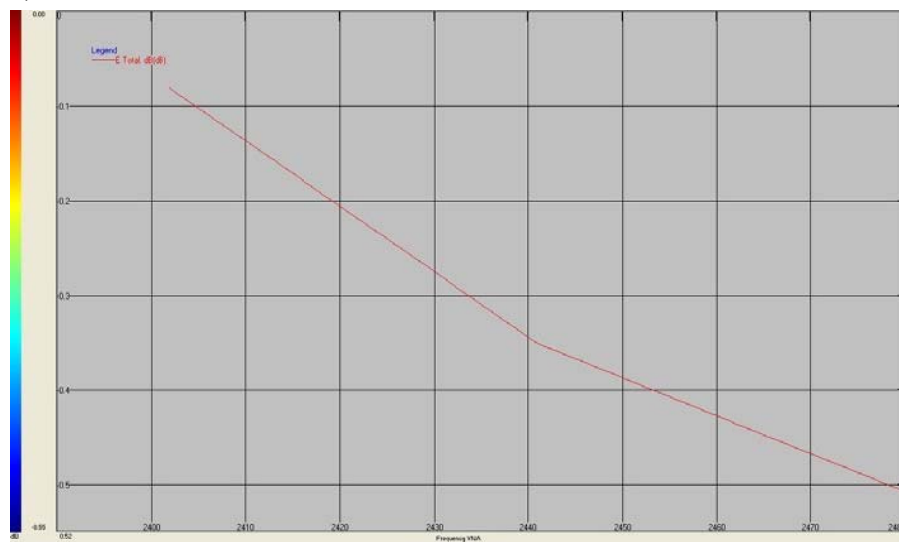


b) AUT02

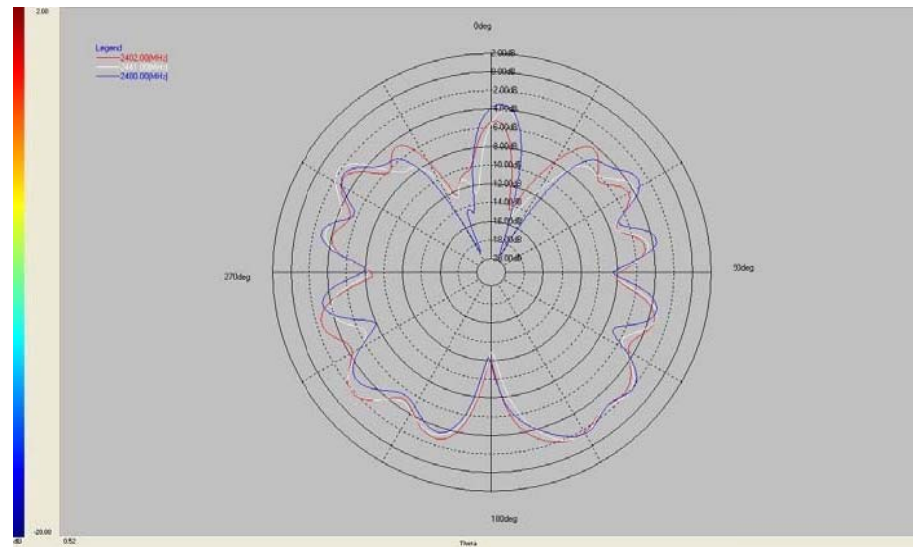
1) 3D (2402MHz)



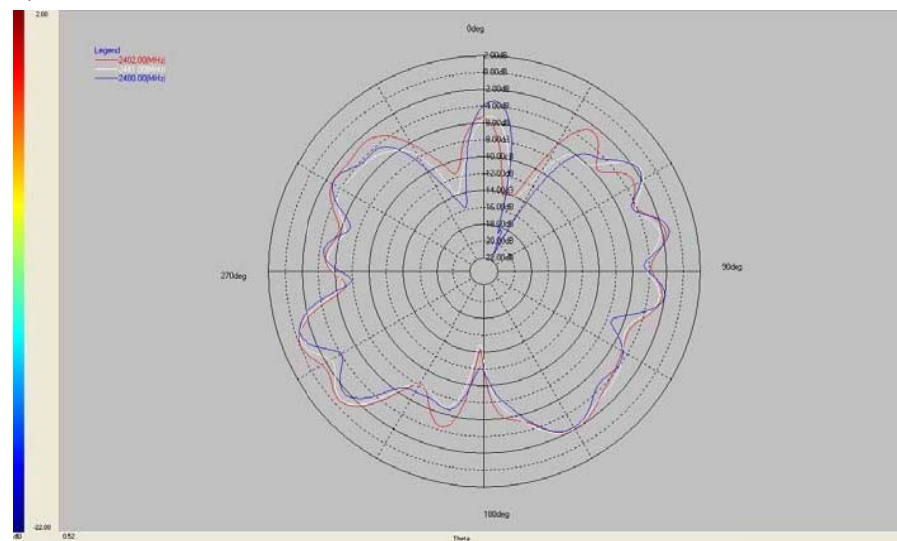
2) Etotal



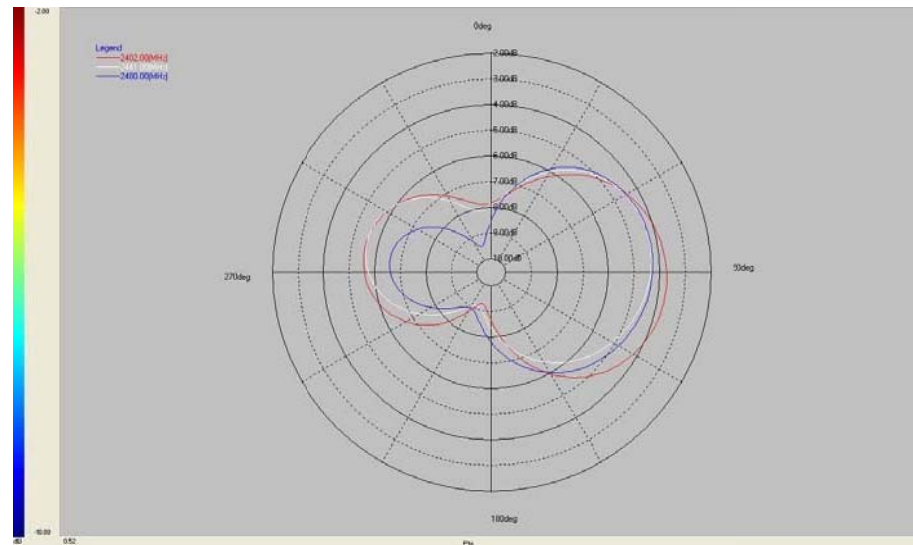
3) $\Phi=0$



4) $\Phi=90$



5) Theta=90



6) Efficiency

