

# **Regulatory Antenna Information**

**Project Name : Neon**  
**Host System : Notebook PC**  
**Antenna Vendor : Amphenol KAE**

**Samsung Electronics Co., Ltd.**

# Antenna Information

## Antenna Assembly Specifications

Antenna assembly overview: Peak Gain including cable loss

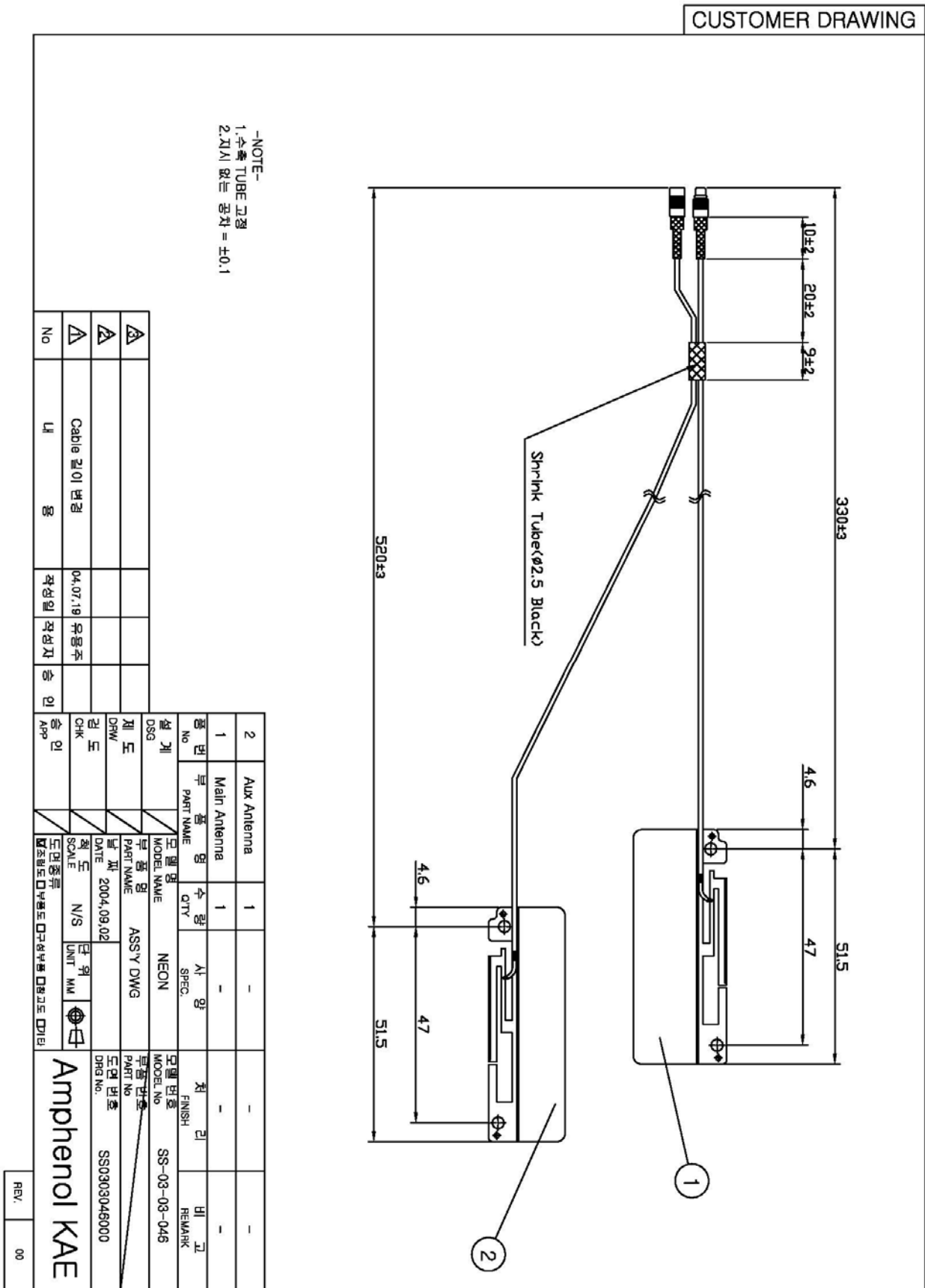
| Designator   | Manufacture              | Antenna type | Cable Assembly Info.  | Peak Gain W/ Cable loss (dBi)    |
|--|--------------------------|--------------|---|----------------------------------|
| (P/N : SS-03-03-046)<br>Main antenna<br>(Right Antenna)    | Amphenol<br>KAE Co., Ltd | PIFA         | (P/N: SS-03-03-046)<br>50 ohm Coaxial.<br>length: 550mm<br>diameter: 1.13mm<br>Connector:<br>MHC-231(KAE) | 2400-2500MHz<br>0.45 dBi (peak)  |
|  |                          |              |   | 5150-5350MHz<br>2.83 dBi (peak)  |
|  |                          |              |   | 5470-5725MHz<br>2.89 dBi (peak)  |
|  |                          |              |   | 5725-5850MHz<br>4.12 dBi (peak)  |
| (P/N: SS-03-03-046)<br>Auxiliary antenna<br>(Left Antenna) | Amphenol<br>KAE Co., Ltd | PIFA         | (P/N: SS-03-03-046)<br>50 ohm Coaxial.<br>length: 740mm<br>diameter: 1.13mm<br>Connector:<br>MHC-231(KAE) | 2400-2500MHz<br>-0.11 dBi (peak) |
|  |                          |              |   | 5150-5350MHz<br>2.37 dBi (peak)  |
|  |                          |              |   | 5470-5725MHz<br>2.59 dBi (peak)  |
|  |                          |              |   | 5725-5850MHz<br>2.51 dBi (peak)  |

Cable assembly overview: Cable loss (including connector)

| Designator  | Manufacture              | Cable type and length   | VSWR                     | Cable Loss (dBi)               |
|---|--------------------------|---|--------------------------|--------------------------------|
| (P/N:<br>SS-03-03-046)<br>For use with the<br>Main antenna      | Amphenol<br>KAE Co., Ltd | (P/N: SS-03-03-046)<br>50 ohm Coaxial.<br>length: 550mm<br>diameter: 1.13mm<br>Connector:<br>MHC-231(KAE) | 2400-2500MHz<br>1.07 max | 2400-2500MHz<br>1.67 dB (peak) |
|   |                          |   | 5150-5350MHz<br>1.19 max | 5150-5350MHz<br>2.56 dB (peak) |
|   |                          |   | 5470-5725MHz<br>1.27 max | 5470-5725MHz<br>2.68 dB (peak) |
|   |                          |   | 5725-5850MHz<br>1.16 max | 5725-5850MHz<br>2.79 dB (peak) |
| (P/N:<br>SS-03-03-046)<br>For use with the<br>Auxiliary antenna | Amphenol<br>KAE Co., Ltd | (P/N: SS-03-03-046)<br>50 ohm Coaxial.<br>length: 740mm<br>diameter: 1.13mm<br>Connector:<br>MHC-231(KAE) | 2400-2500MHz<br>1.07 max | 2400-2500MHz<br>2.24 dB (peak) |
|   |                          |   | 5150-5350MHz<br>1.19 max | 5150-5350MHz<br>3.45 dB (peak) |
|   |                          |   | 5470-5725MHz<br>1.27 max | 5470-5725MHz<br>3.57 dB (peak) |
|   |                          |   | 5725-5850MHz<br>1.16 max | 5725-5850MHz<br>3.66 dB (peak) |

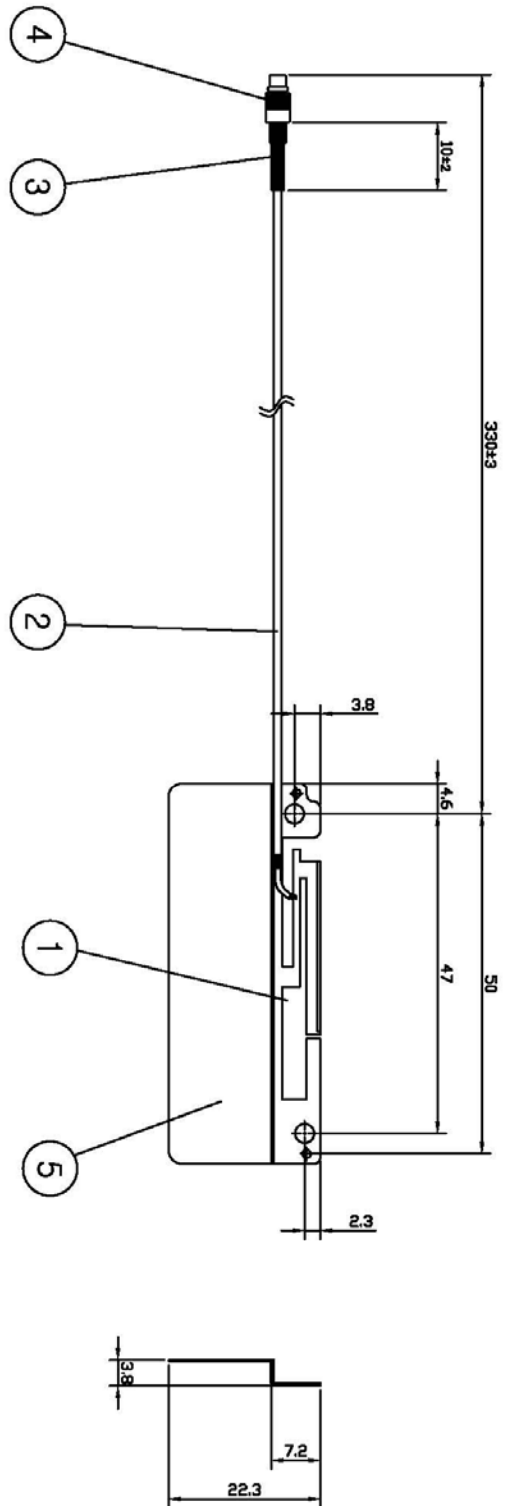
## Mechanical drawings of antenna

### Antenna Ass'y



# Main Antenna

CUSTOMER DRAWING



-NOTE-  
1. 수축 TUBE 고정  
2. 지시 없는 공차 = ±0.1

|    |   |   |     |     |    |
|----|---|---|-----|-----|----|
| △  |   |   |     |     |    |
| △  |   |   |     |     |    |
| △  |   |   |     |     |    |
| No | 내 | 용 | 작성일 | 작성자 | 승인 |

|   |                 |   |               |      |               |
|---|-----------------|---|---------------|------|---------------|
| 5 | GROUND SHEET    | 1 | ALUMINUM TAPE | -    | t=0.2         |
| 4 | MMCX Male       | 1 | 25-304A       | GOLD | Aliner        |
| 3 | SHRINK TUBE     | 1 | Sumi-f4-2.5   | -    | WHITE         |
| 2 | CABLE           | 1 | TCB-068/900mm | -    | WHITE(φ1.13용) |
| 1 | MAIN ANTENNA(R) | 1 | Q5210R-EH     | -    | t=0.4         |

|     |       |              |
|-----|-------|--------------|
| 설계  | 모델명   | NEON         |
| DSG | 모델명   | NEON         |
| 제도  | 부품명   | ASSY DWG (R) |
| DRW | 파트명   | ASSY DWG (R) |
| 검도  | 날짜    | 2004.09.02   |
| CHK | SCALE | N/S          |
| 승인  | 도면종류  | 단위           |
| App | 도면번호  | UNIT         |
|     | 도면번호  | MM           |

|      |              |
|------|--------------|
| 모델명  | SS-03-03-046 |
| 파트명  | SS0303046001 |
| 도면번호 | SS0303046001 |
| 도면번호 | SS0303046001 |

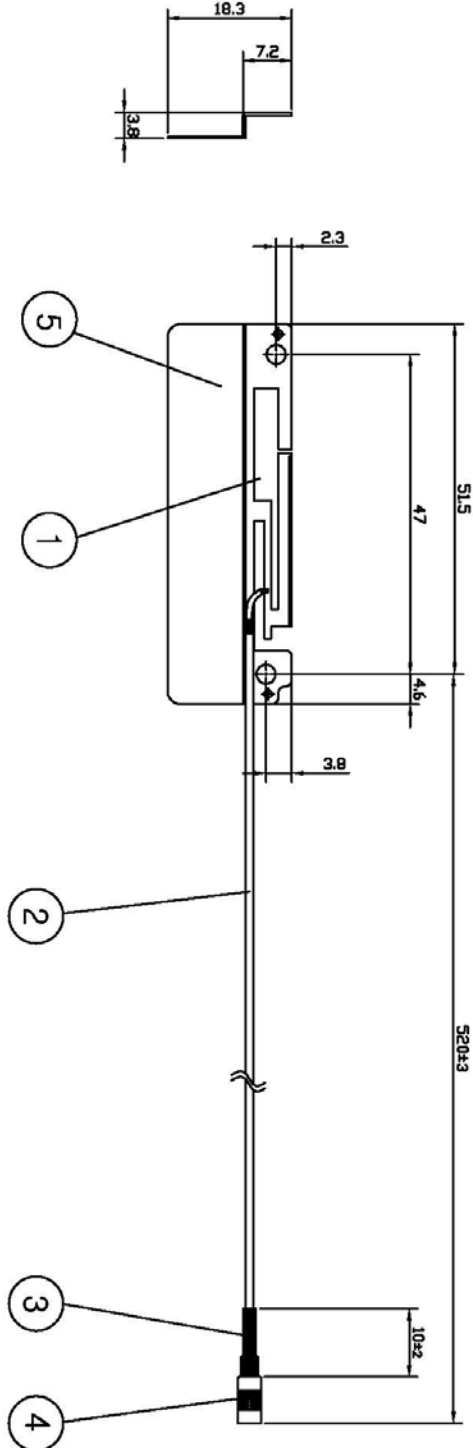
  

**Amphenol KAE**

|      |    |
|------|----|
| REV. | 00 |
|------|----|

Aux antenna

CUSTOMER DRAWING



-NOTE-  
1. 수축 TUBE 고정  
2. 지시 없는 공차 = ±0.1

|    |     |     |     |     |  |
|----|-----|-----|-----|-----|--|
| △  |     |     |     |     |  |
| △  |     |     |     |     |  |
| △  |     |     |     |     |  |
| No | 내 용 | 작성일 | 작성자 | 승 인 |  |

|   |                |   |                |      |               |
|---|----------------|---|----------------|------|---------------|
| 5 | GROUND SHEET   | 1 | ALUMINUM TAPE  | -    | t=0.2         |
| 4 | MMCX Female    | 1 | 25-122A        | GOLD | Aliner        |
| 3 | SHRINK TUBE    | 1 | Sumi-F4-2.5    | -    | BLACK         |
| 2 | CABLE          | 1 | TOB-068/1200mm | -    | BLACK(φ1.13등) |
| 1 | AUX ANTENNA(L) | 1 | Q5210R-EH      | -    | t=0.2         |

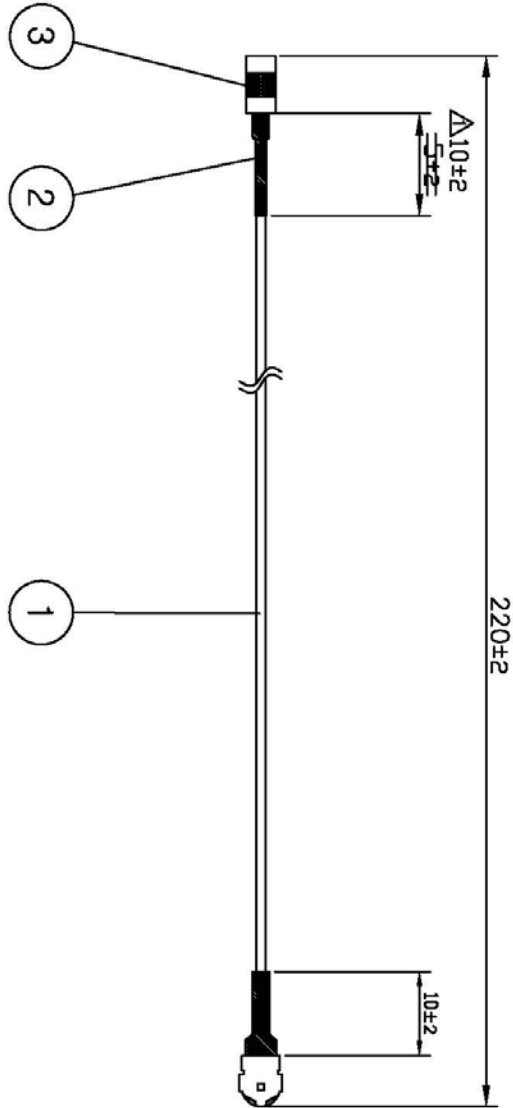
|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 설계           | 모델명          | 모델명          | 모델명          |
| DSG          | 부품명          | 부품명          | 부품명          |
| ASSY DWG (L) | NEON         | NEON         | NEON         |
| 제도           | 파트명          | 파트명          | 파트명          |
| DRW          | DATE         | DATE         | DATE         |
| 2004.09.02   | SCALE        | N/S          | UNIT         |
| MM           | 단위           | MM           | MM           |
| 검도           | 도면종류         | 도면번호         | 도면번호         |
| CHK          | SS0303046002 | SS0303046002 | SS0303046002 |
| 승인           | App          | 승인           | App          |

Amphenol KAE

|      |    |
|------|----|
| REV. | 00 |
|------|----|

# Main Cable

CUSTOMER DRAWING



- NOTE -

1. MMCX ASS'Y 시 OPEN, SHORT 검사 할 것.
2. MMCX 인장 강도 : 2kgf 이상 유지 할 것.

|    |             |          |     |     |  |
|----|-------------|----------|-----|-----|--|
| △  |             |          |     |     |  |
| △  |             |          |     |     |  |
| △  | 수속 또는 사양 변경 | 04.09.02 | 유용주 |     |  |
| No | 내 용         | 작성일      | 작성자 | 승 인 |  |

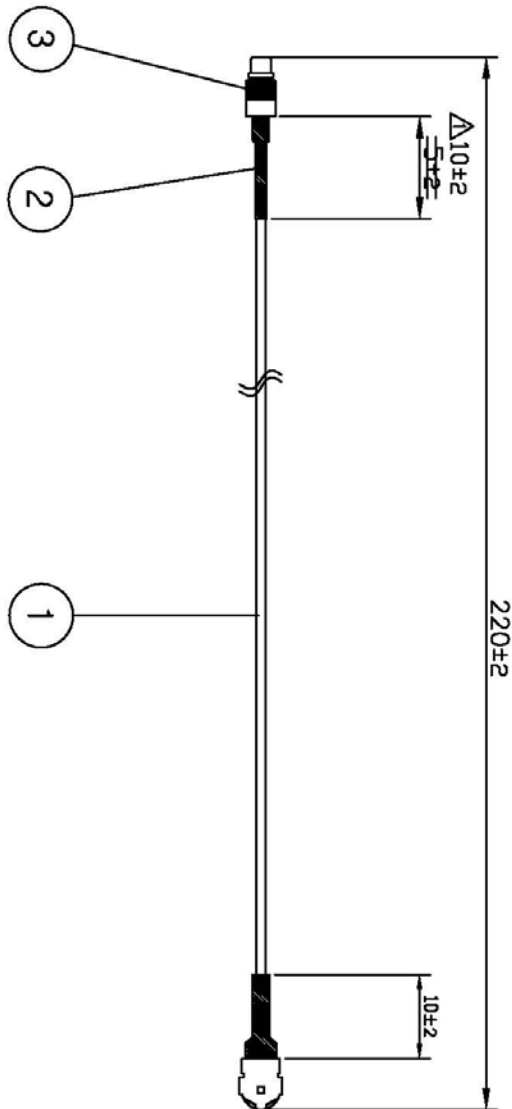
|     |                   |                      |                       |        |              |
|-----|-------------------|----------------------|-----------------------|--------|--------------|
| 3   | MMCX Female       | 1                    | 25-122A               | GOLD   | Aliner       |
| 2   | SHRINK TUBE       | 1                    | Sumi-F4-2.5           | -      | BLACK        |
| 1   | CABLE & CONNECTOR | 1                    | MHC-231/TCB-08/2.15mm | -      | WHITE(φ1.13) |
| 설계  | 모델명               | 부품명                  | 수량                    | 치 리    | 비 고          |
| DSG | MODEL NAME        | NEON                 |                       | FINISH | REMARK       |
| 제 도 | 부품명               | MAIN SYSTEM CABLE(R) |                       | 모델 번호  | SS-03-03-048 |
| DRW | PART NAME         |                      |                       | 파트 번호  |              |
| 날 짜 | DATE              | 2004.09.02           |                       | 도면 번호  | SS0303048000 |
| 검 도 | SCALE             | N/S                  | 단 위                   | MM     |              |
| CHK | 도면종류              |                      |                       |        |              |
| 승 인 | App               |                      |                       |        |              |

Amphenol KAE

REV. 00

Aux Cable

CUSTOMER DRAWING



- NOTE -

1. MMCX ASS'Y 시 OPEN, SHORT 검사 할 것.
2. MMCX 인장 강도 : 2kgf 이상 유지 할 것.

|    |            |          |     |     |  |
|----|------------|----------|-----|-----|--|
| △  |            |          |     |     |  |
| △  |            |          |     |     |  |
| △  | 수족류는 사양 변경 | 04.09.02 | 유용주 |     |  |
| No | 내 용        | 작성일      | 작성자 | 승 인 |  |

|     |                   |                     |                       |         |              |
|-----|-------------------|---------------------|-----------------------|---------|--------------|
| 3   | MMCX Male         | 1                   | 25-304A               | GOLD    | Aliner       |
| 2   | SHRINK TUBE       | 1                   | Sunt-F4-2.5           | -       | BLACK        |
| 1   | CABLE & CONNECTOR | 1                   | MHC-231/TCB-08/2.15mm | -       | BLACK(φ1.13) |
| 설계  | 모델명               | 부품명                 | 수량                    | 치 리     | 비 고          |
| DSG | MODEL NAME        | NEON                |                       | FINISH  | REMARK       |
| 제 도 | 부품명               | 부품명                 | 단 위                   | 도면 번호   |              |
| DRW | PART NAME         | AUX SYSTEM CABLE(L) | UNIT                  | PART No |              |
| 검 도 | 날 짜               | 2004.09.02          | 단 위                   | 도면 번호   |              |
| CHK | SCALE             | N/S                 | UNIT                  | MM      |              |
| 승 인 | 도면종류              | 도면종류                | 도면종류                  | 도면종류    |              |
| App | 도면번호              | 도면번호                | 도면번호                  | 도면번호    |              |

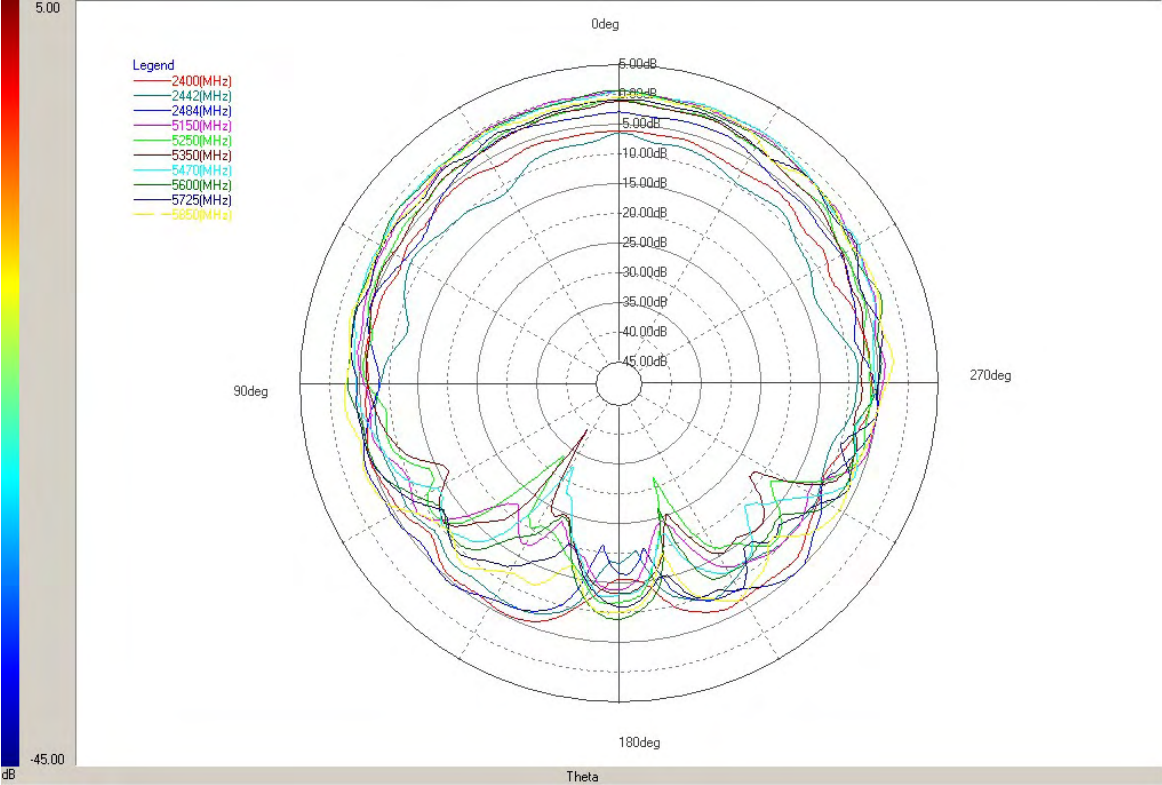
Amphenol KAE

REV. 00

# Radiation characteristic of antenna Loaded (In Host System)

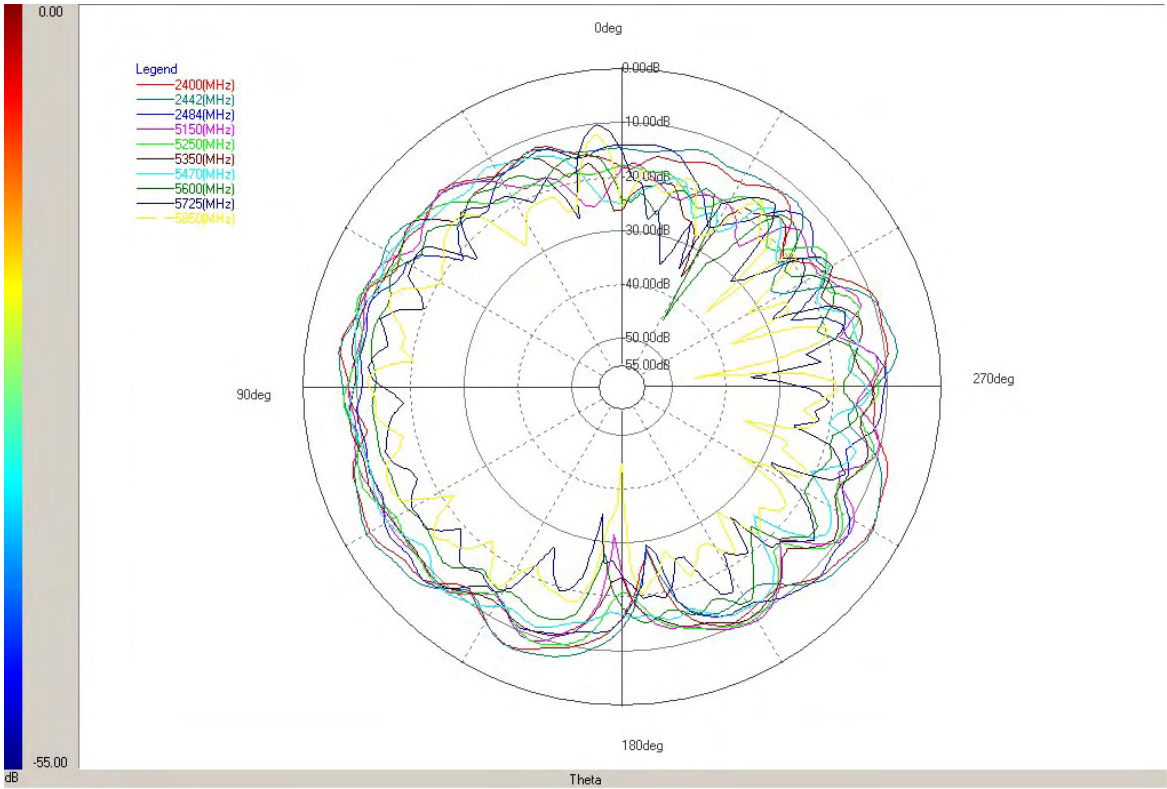
## 1. Main antenna Radiation pattern and gain

### 1.1 E1-Phi

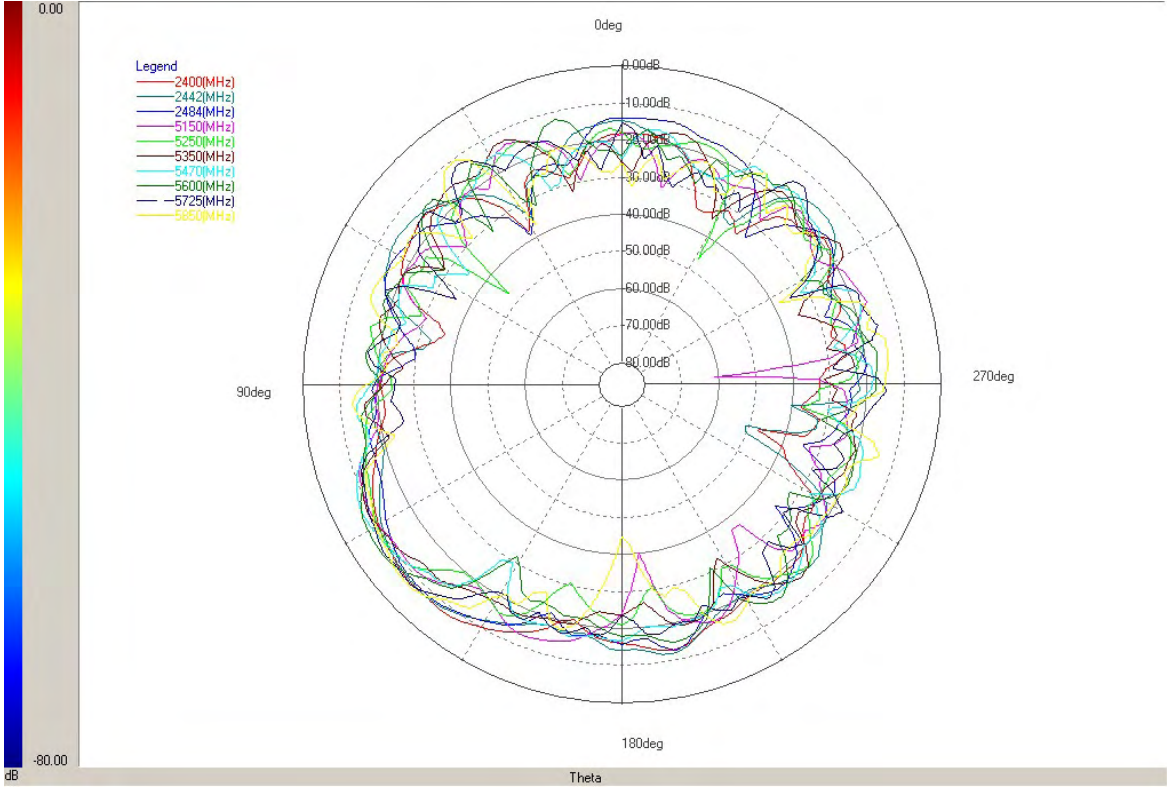


### 1.2 E1-Theta

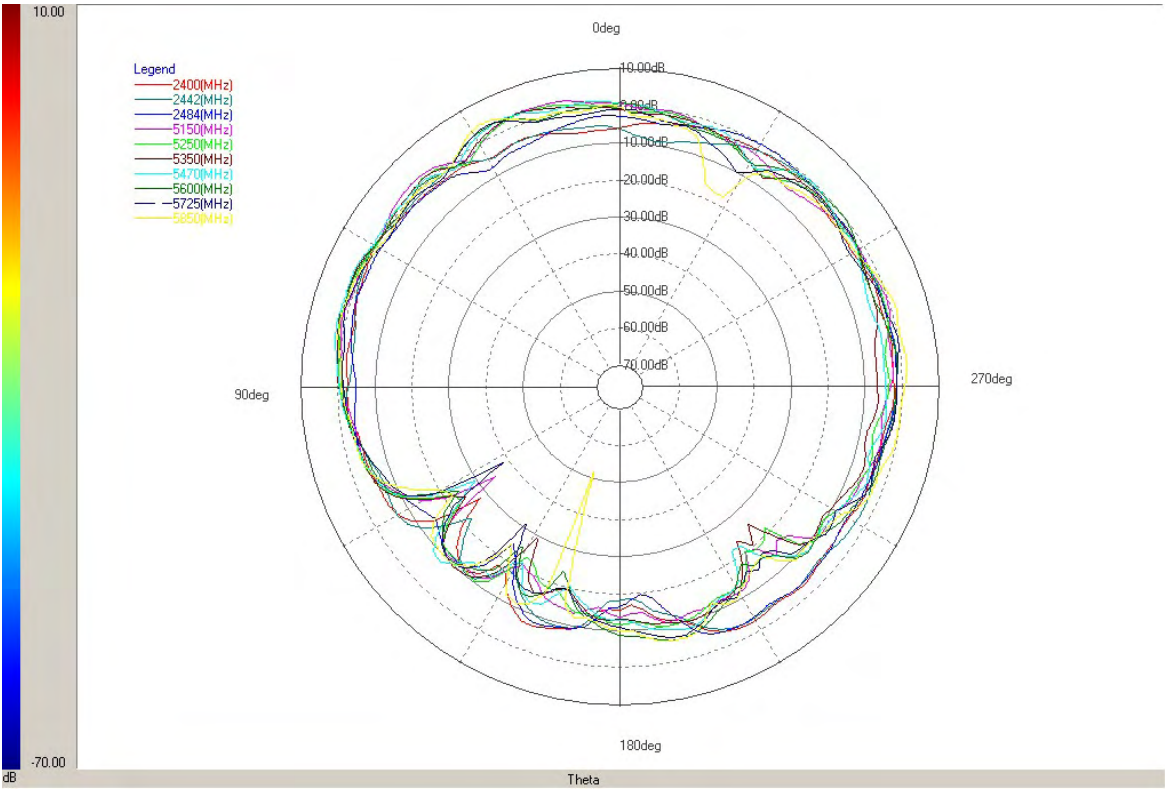




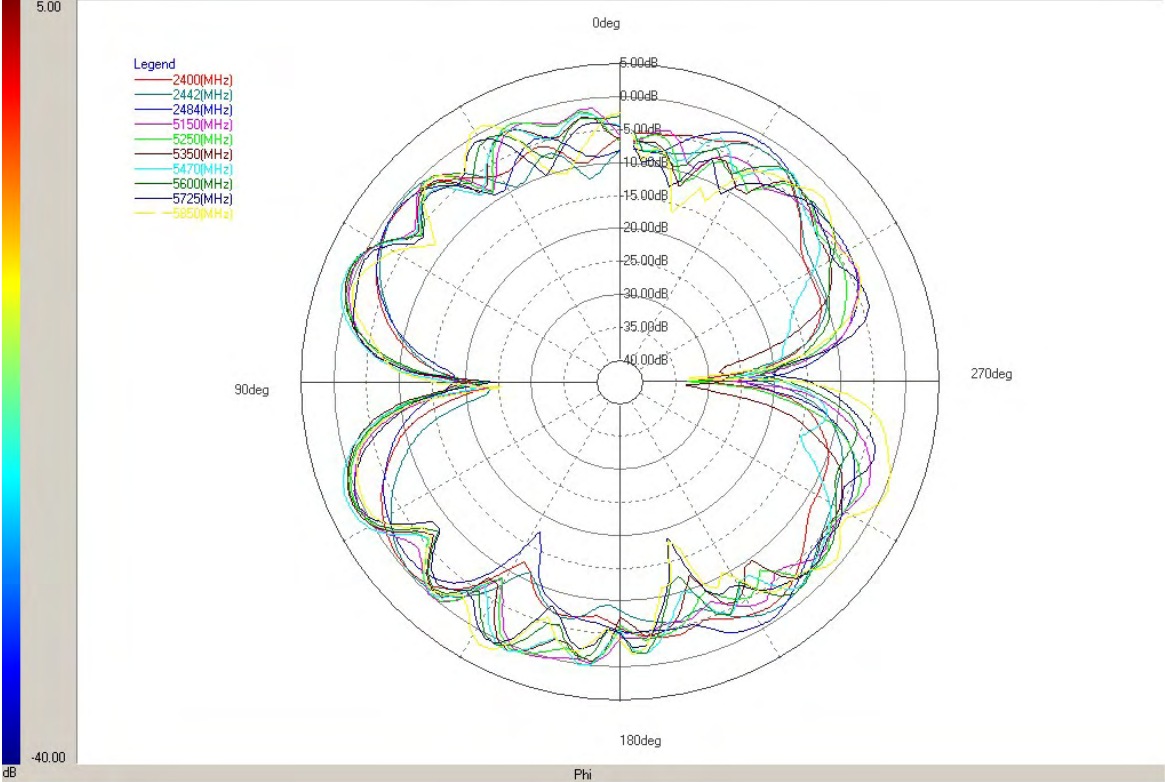
1.3 E2-Phi



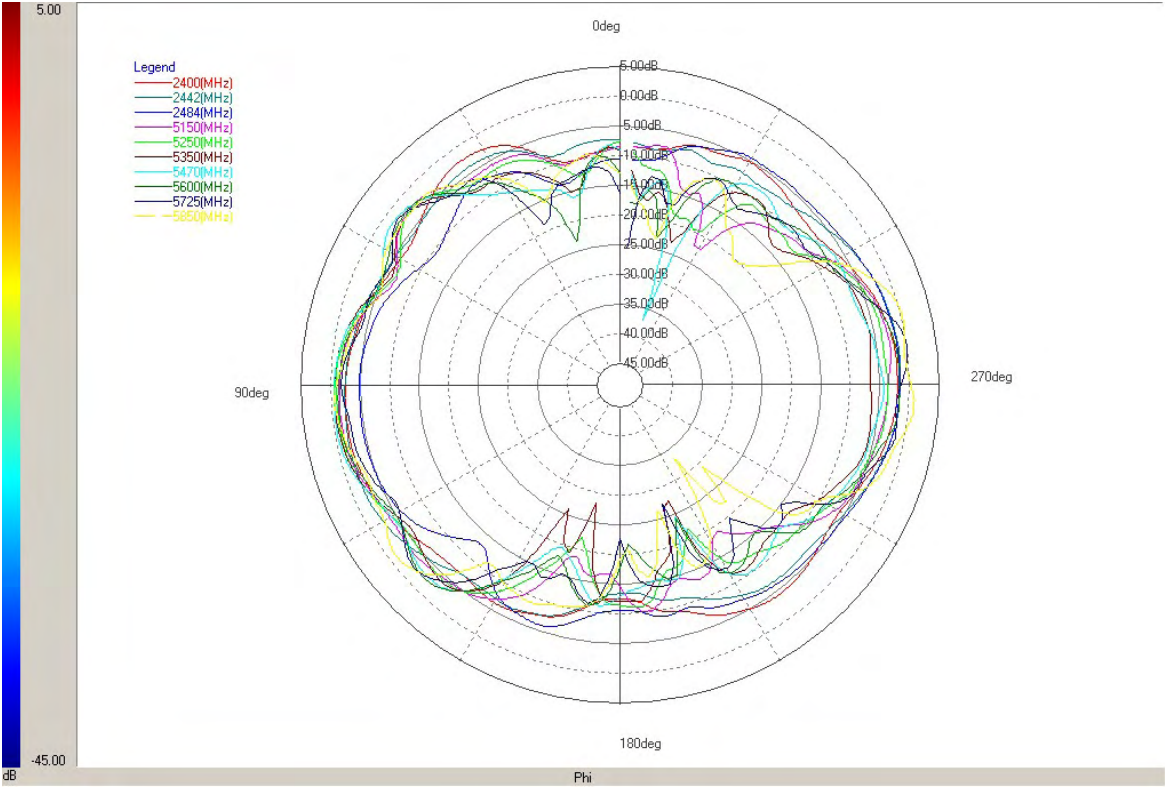
1.4 E2-Theta



### 1.5 H-Phi



### 1.6 H-Theta



1.7 Peak gain (dBi) summary

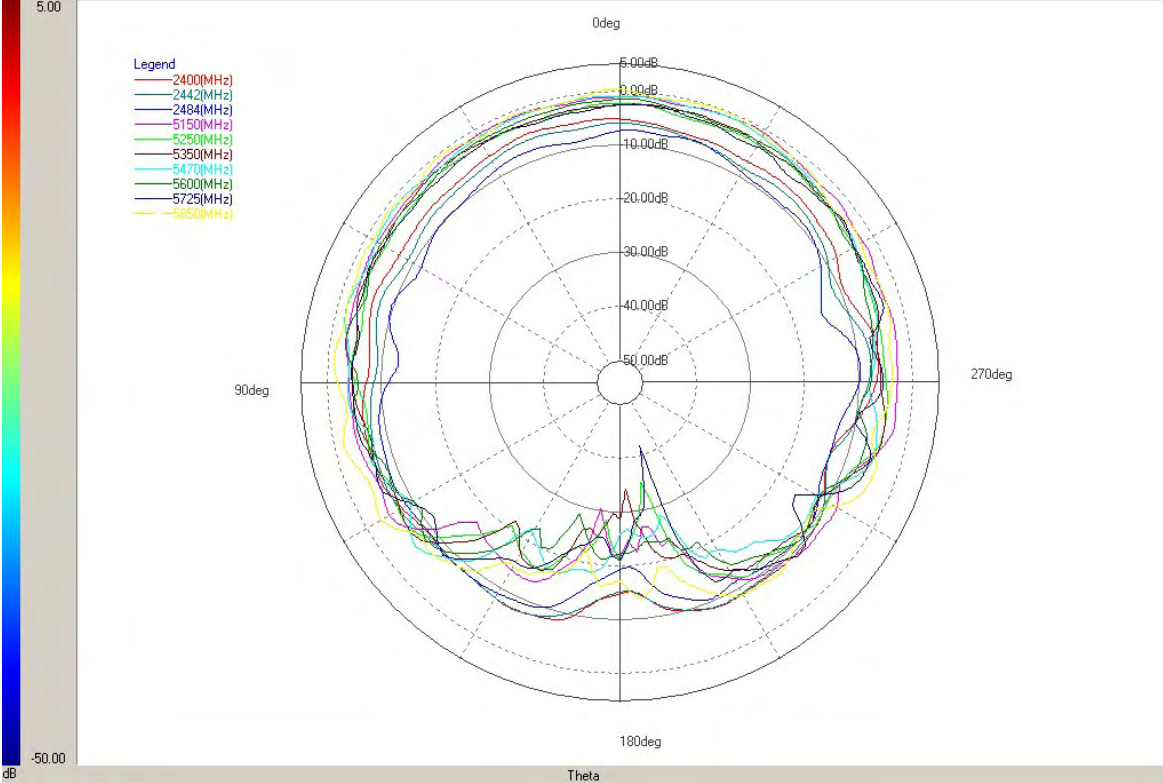
| Frequency (MHz) | E1-Phi   | E2- Phi  | H- Phi   |
|-----------------|----------|----------|----------|
| 2400            | -4.85 dB | -7.88 dB | -0.46 dB |
| 2442            | -6.59 dB | -8.12 dB | -0.38 dB |
| 2484            | -2.84 dB | -8.71 dB | -0.66 dB |
| 5150            | 0.42 dB  | -9.83 dB | 0.49 dB  |
| 5250            | -1.00 dB | -9.46 dB | 0.93 dB  |
| 5350            | -1.25 dB | -9.20 dB | 1.19 dB  |
| 5470            | 0.43 dB  | -7.86 dB | 1.77 dB  |
| 5600            | 0.46 dB  | -6.78 dB | 0.95 dB  |
| 5725            | -0.98 dB | -7.46 dB | 0.53 dB  |
| 5850            | -0.20 dB | -7.01 dB | 1.85 dB  |

| Frequency (MHz) | E1-Theta  | E2- Theta | H- Theta |
|-----------------|-----------|-----------|----------|
| 2400            | -5.17 dB  | 0.22 dB   | -2.05 dB |
| 2442            | -4.46 dB  | 0.45 dB   | -1.46 dB |
| 2484            | -7.76 dB  | -0.26 dB  | -1.59 dB |
| 5150            | -8.00 dB  | 2.83 dB   | -1.42 dB |
| 5250            | -7.51 dB  | 2.52 dB   | -0.90 dB |
| 5350            | -8.36 dB  | 2.71 dB   | -0.56 dB |
| 5470            | -8.33 dB  | 2.86 dB   | -0.46 dB |
| 5600            | -11.47 dB | 2.82 dB   | -1.20 dB |
| 5725            | -10.19 dB | 2.89 dB   | -0.02 dB |
| 5850            | -11.82 dB | 4.12 dB   | 0.90 dB  |

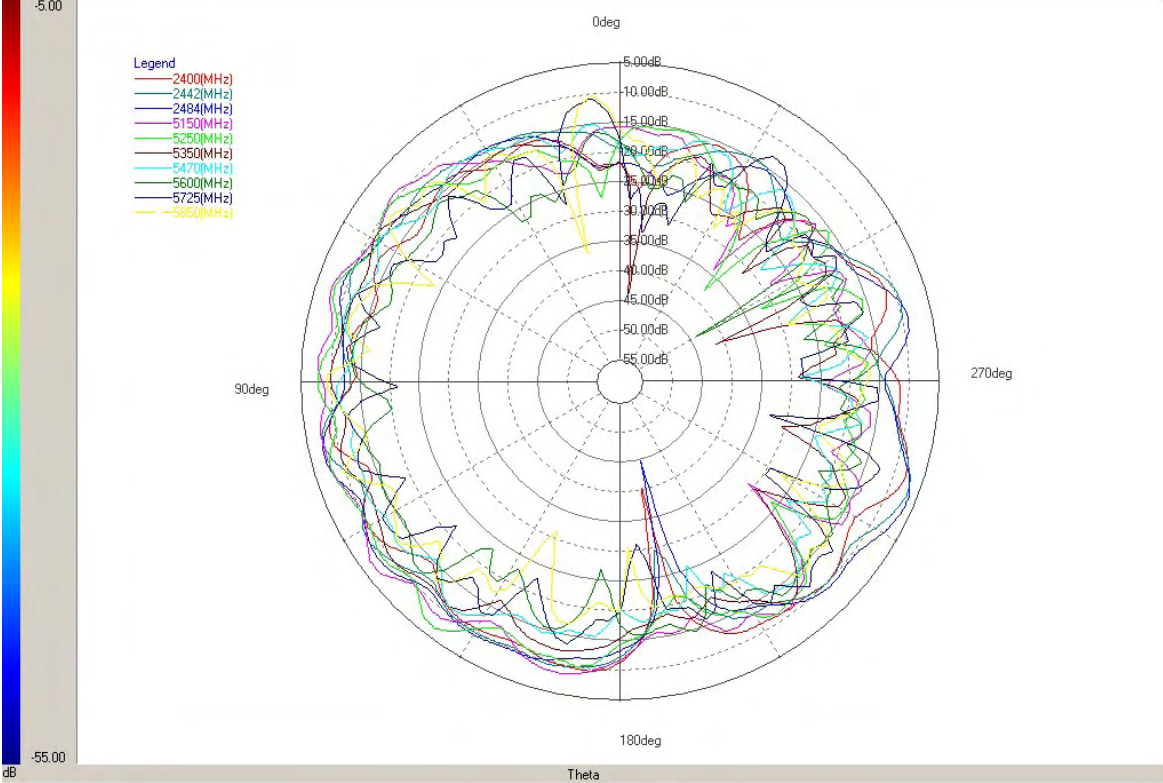


## 2. Aux antenna Radiation pattern and gain

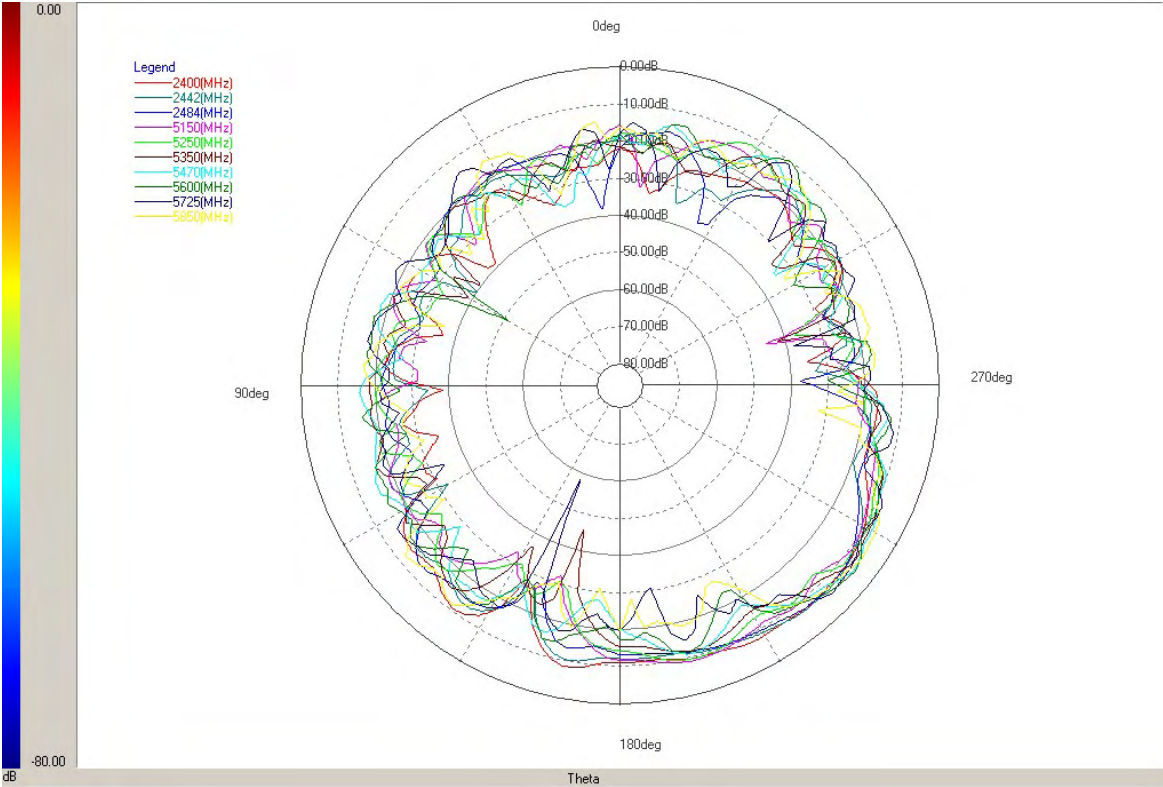
### 2.1 E1-Phi



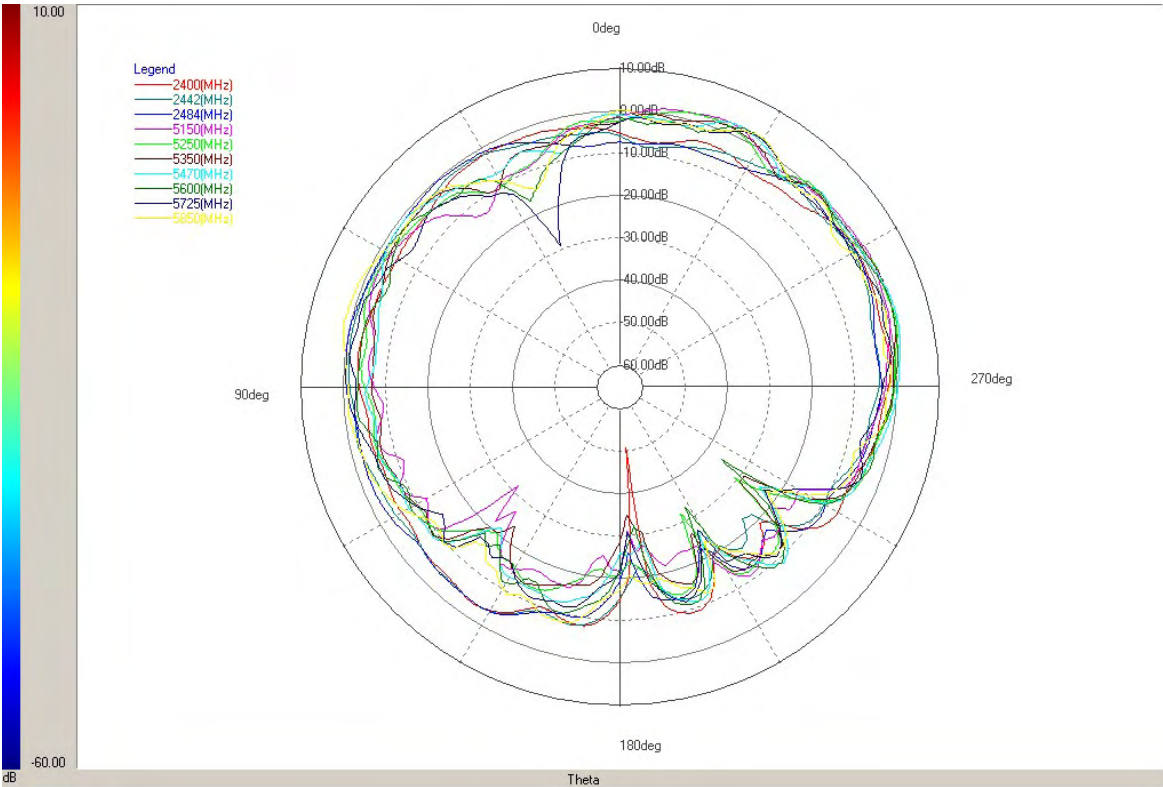
### 2.2 E1-Theta



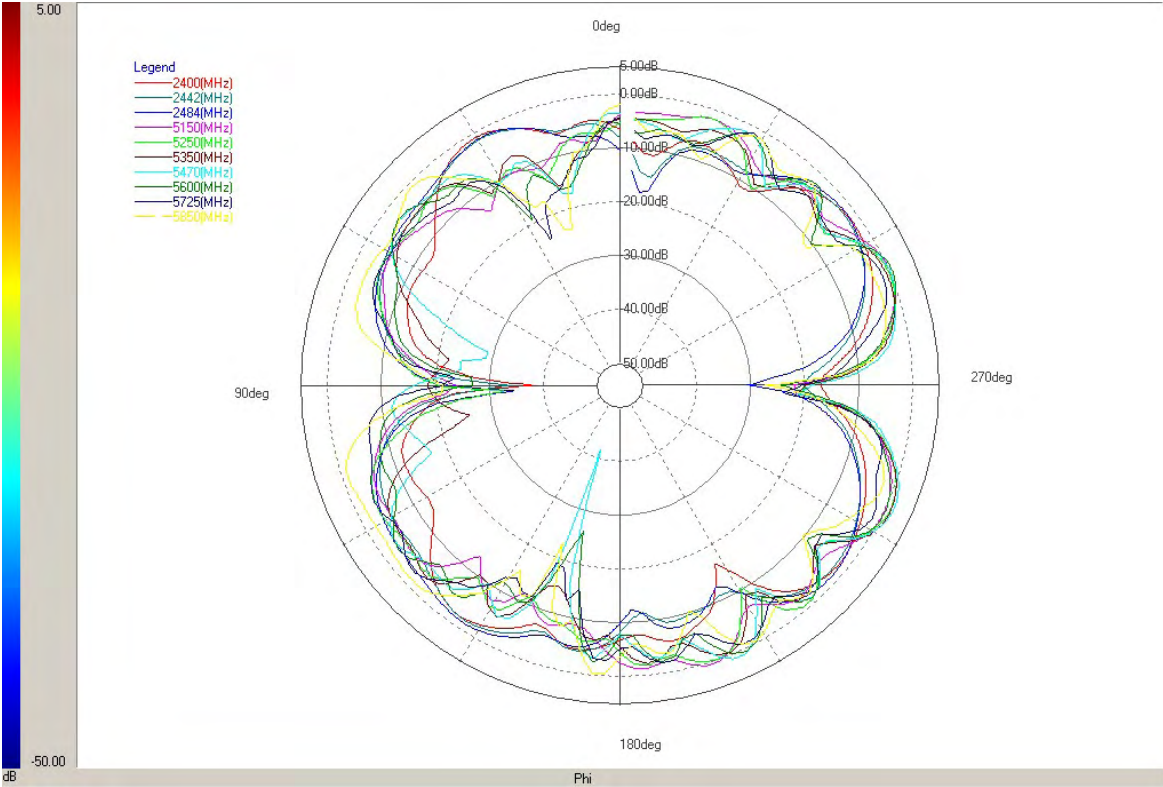
### 2.3 E2-Phi



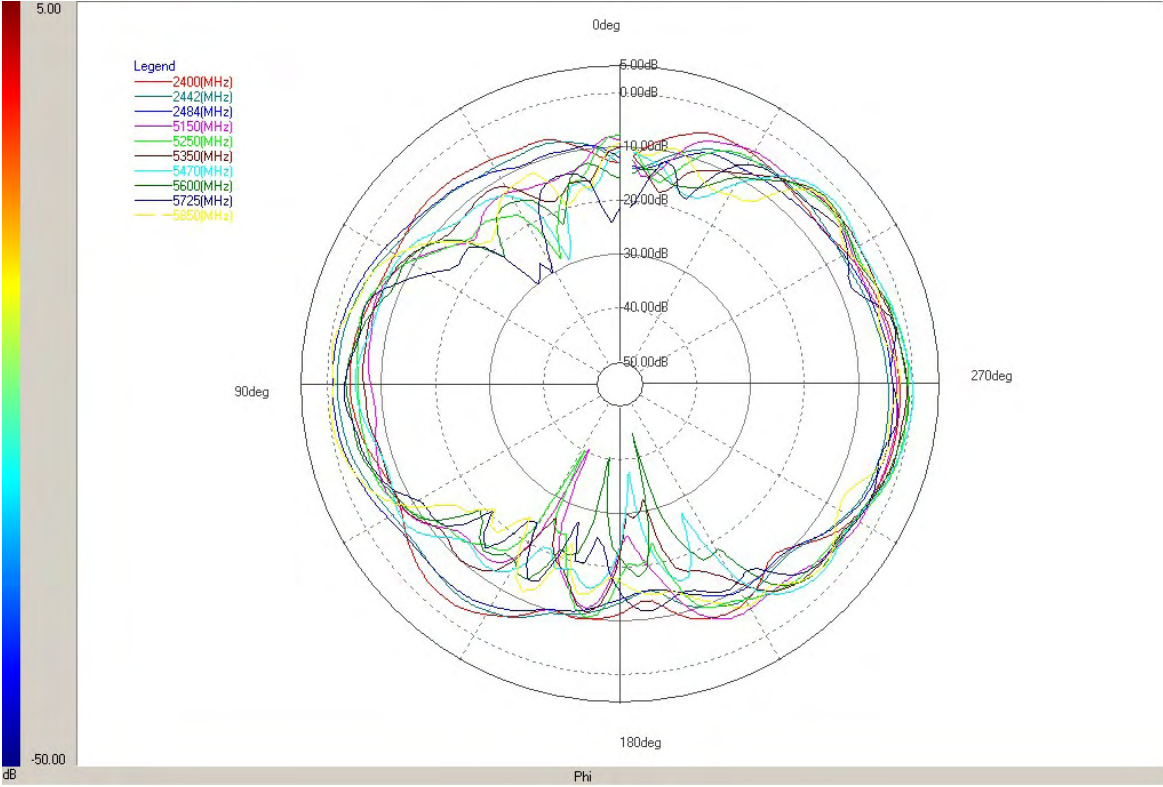
### 2.4 E2-Theta



### 2.5 H-Phi



### 2.6 H-Theta



2.7 Peak gain (dBi) summary

| Frequency (MHz) | E1-Phi   | E2- Phi  | H- Phi   |
|-----------------|----------|----------|----------|
| 2400            | -5.01 dB | -7.80 dB | -0.97 dB |
| 2442            | -6.09 dB | -7.38 dB | -1.72 dB |
| 2484            | -7.27 dB | -7.81 dB | -1.33 dB |
| 5150            | -0.63 dB | -9.26 dB | 0.18 dB  |
| 5250            | -2.45 dB | -8.75 dB | 0.96 dB  |
| 5350            | -2.29 dB | -7.08 dB | 1.11 dB  |
| 5470            | -0.96 dB | -5.61 dB | 1.49 dB  |
| 5600            | -1.63 dB | -5.32 dB | 0.58 dB  |
| 5725            | -2.51 dB | -5.92 dB | -1.08 dB |
| 5850            | 0.13 dB  | -5.74 dB | -0.53 dB |

| Frequency (MHz) | E1-Theta  | E2- Theta | H- Theta |
|-----------------|-----------|-----------|----------|
| 2400            | -8.09 dB  | -0.94 dB  | -2.12 dB |
| 2442            | -6.78 dB  | -0.79 dB  | -1.74 dB |
| 2484            | -6.39 dB  | -0.11 dB  | -0.88 dB |
| 5150            | -6.94 dB  | 2.37 dB   | -2.42 dB |
| 5250            | -6.73 dB  | 1.75 dB   | -0.66 dB |
| 5350            | -9.99 dB  | 1.51 dB   | -0.95 dB |
| 5470            | -10.91 dB | 2.59 dB   | 0.26 dB  |
| 5600            | -12.45 dB | 2.40 dB   | -0.49 dB |
| 5725            | -10.90 dB | 2.20 dB   | -2.18 dB |
| 5850            | -9.42 dB  | 2.51 dB   | -0.23 dB |



## Host PC Information

Host System : Notebook PC  
(Project and Model Name : Cygnus)

Antenna location : Top of the LCD of  
Antenna : Main = Left , Aux = Right

Photographs of the antenna location in the Neon



Antenna location

Main Antenna



Auxiliary Antenna



Full antenna picture

Main Antenna



Auxiliary Antenna

