

|                                                                                   |         |              |             |     |
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|  | Date    | 2003. 12. 23 | Version No. | 1.0 |
|                                                                                   | Subject | DSW-800      |             |     |

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## 1. Specification

### 1.1. General Standard

#### General specification

|                                                                                   |         |              |             |     |
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|                     |                                |
|---------------------|--------------------------------|
| <b>Model name</b>   | <b>DSW-800</b>                 |
| <b>Antenna type</b> | <b>Half Wavelength Antenna</b> |

## 1.2. Electrical Standard

| Electrical specification |                         |
|--------------------------|-------------------------|
| <b>Frequency range</b>   | <b>824 ~ 894MHz</b>     |
| <b>V.S.W.R</b>           | <b>1.9 : 1 Max.</b>     |
| <b>Gain(dBi)</b>         | <b>2±0.5</b>            |
| <b>Radiation pattern</b> | <b>Omni-directional</b> |
| <b>Polarization</b>      | <b>Vertical</b>         |
| <b>Max Power(W)</b>      | <b>5W Max.</b>          |
| <b>Impedance</b>         | <b>50Ω Normalizer</b>   |

## 1.3. Mechanical Standard

| Mechanical specification |                         |
|--------------------------|-------------------------|
| <b>Connector type</b>    | <b>TNC Male</b>         |
| <b>Cover material</b>    | <b>Urethane</b>         |
| <b>Color</b>             | <b>Black not bright</b> |
| <b>Temperature range</b> | <b>-30℃ ~ 70℃</b>       |
| <b>Weight</b>            | <b>37 ± 2g</b>          |
| <b>Dimension</b>         | <b>TBD</b>              |

## 2. Test Procedure & Measurement

### 2.1. External Test

To check the unity Antenna's exterior, size, connector and etc. with the exterior indicated in item #6.

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## 2.2. Electrical Feature Inspection

### 2.2.1. Materials

| Equipment        | Model                                       | Quantity | Standard                                                                                                                                                                                                                                                            |
|------------------|---------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Analyzer | HP8752C<br>Or equipment with the equivalent | 1EA      | <ul style="list-style-type: none"> <li>· Freq. Range : 300KHz ~ 3GHz</li> <li>· Accuracy : &lt;5ppm</li> <li>· Dynamic Range : 105dB</li> <li>· Trace at <math>\pm 200</math>dB</li> <li>· Resolution : 1Hz</li> <li>· Impedance : <math>50\Omega</math></li> </ul> |
| Adaptor          |                                             | 1EA      | · N(M)-TNC(F)                                                                                                                                                                                                                                                       |
| Calibration Kit  | HP85032B                                    | 1Set     | · DC ~ 6GHz (N-Type)                                                                                                                                                                                                                                                |

### 2.2.2. Inspection

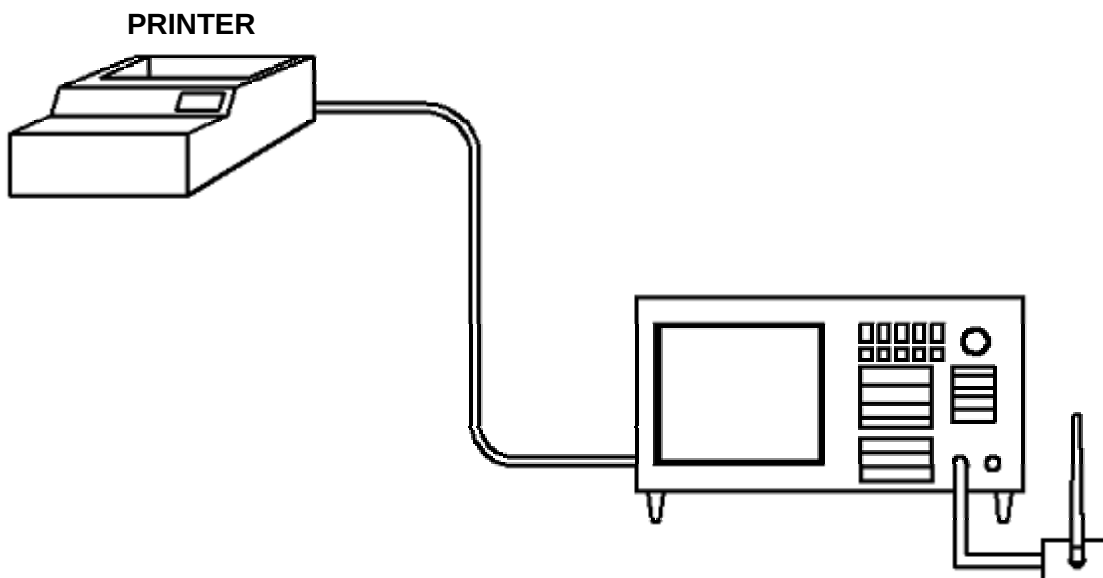


Figure 1. This how Network Analyzer is connected when inspecting the Network Analyzer

#### 2.2.2.1. Inspection

##### 가. Equipment Setting and Calibration

##### ㉠ Equipment Setting

- ㉡ Bandwidth : Center Frequency: 860.0MHz, Span :200.0MHz
- ㉢ Source Power : 10dBm,
- ㉣ IF Bandwidth : 1000Hz
- ㉤ Number of Point : 401

|                                                                                   |         |              |             |     |
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㊦ Calibration

Using N-Type Cal Kit applying O.S.L. method, Calibrate Port number 1.

- ㊦ S<sub>11</sub> Calibration : Open Port #1, Calibrate after connecting the Load short.

㊦ Calibration Check

- ㊦ Connect Load to Port #1 to check S<sub>11</sub>, V.S.W.R is less than 1.02 : 1

- ㊦ Connect Load to Port #1 to check S<sub>21</sub> is less than -80.0dB.

If not satisfied with the result, repeat procedure ㊦' s Calibration.

㊦. Inspection Method and Contents

| Item      | Inspection Method                                                                                                                                         | Standard   |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| VSWR      | Connect ANT to the positioner and measure the S <sub>11</sub> within Operating Band, as shown above on Figure 2.                                          | 1.9:1 Max. |
| Impedance | Connect ANT to the positioner and measure the S <sub>11</sub> <del>at</del> that' s on Smith Chart within the Operating Band, as shown above on Figure w. | 50 ± 20Ω   |

|                                                                                   |         |              |             |     |
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## 2.3. Beam Pattern

### 2.3.1. Materials

| Name of the Equipment | Model          | Quantity | Standard                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------|----------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Near Field Chamber    | 32 gate satimo | 1EA      | <ul style="list-style-type: none"> <li>· Freq. Range:800MHz~6GHz</li> <li>· Measurement Speed :<br/>Radiation Pattern Cuts: Real Time<br/>Full sphere far-field : &lt; 20 secs</li> <li>· Measurement Accuracy :<br/>Dynamic Range: 70 dB<br/>Cross-polar isolation &lt; -45 dB</li> <li>· Gain Accuracy :<br/>1 – 6GHz &lt; ±0.75dB<br/>0.8 – 1 GHz &lt; ±1 dB</li> <li>· Pattern Accuracy : &lt; ± 2 dB @-20dB</li> </ul> |
| Adaptor               |                | 1EA      | · N(M)-TNC(F)                                                                                                                                                                                                                                                                                                                                                                                                               |
| Computer              |                | 1EA      | · Data for Measurement                                                                                                                                                                                                                                                                                                                                                                                                      |

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### 2.3.2. Inspection

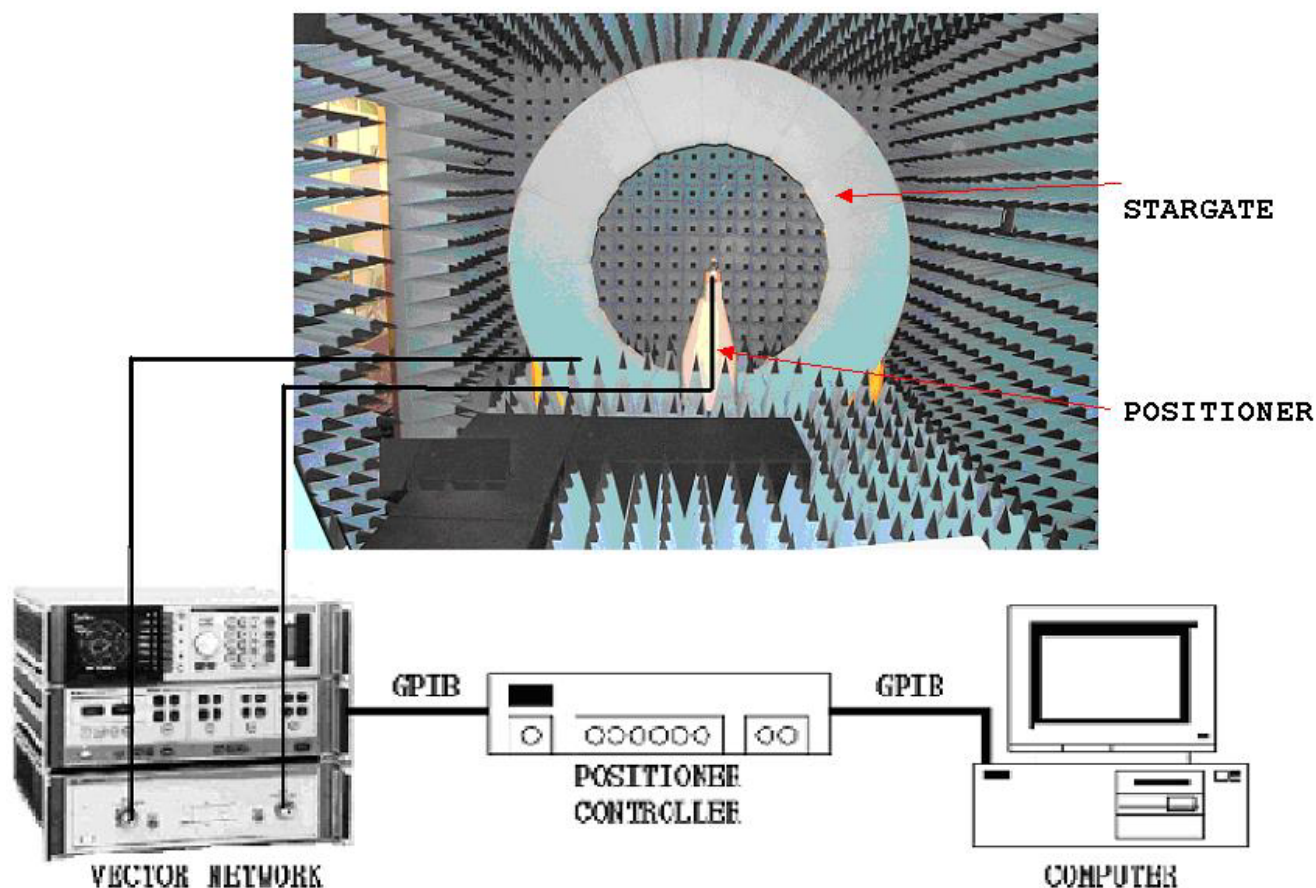


Figure 2. This how Net work analyzer is connected when inspecting the Beam Patten

#### 2.3.2.1. Inspection

##### A. Equipment Setting and Measurement

##### ① Network Analyzer Setting

- ② Calibrate Chamber System for Gain Measurement Using Stargate 32 senso. At the Same Time Set Up Software Program fir Chamber System Control.
  - Frequency Setting : 824MHz, 859MHz, 894MHz
- ③ Change Over from a Stargate 32 Sensor to the Chip Antenna(KBI-115F-141) on Target Positioner.
- ④ Start a Software Program for Chamber System Control & Measuring.
- ⑤ Measurement Data.

##### B. Inspection Method and Contents

| Item         | Inspection Method                                                                                                  | Standard                 |
|--------------|--------------------------------------------------------------------------------------------------------------------|--------------------------|
| Beam Pattern | Connect ANT to the positioner and measure the $S_{11}$ within the Near Field Chamber, as shown above, on Figure 2. | $2.0 \pm 0.5 \text{dBi}$ |

|                                                                                   |         |              |             |     |
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### 3. Packing, Shipping, Handling

#### 3.1. Exterior Option

가. Both ordering enterprise and producer' s names should be indicated.

나. Name, Serial number and quantity of the Model should be indicated.

#### 3.2. Packing

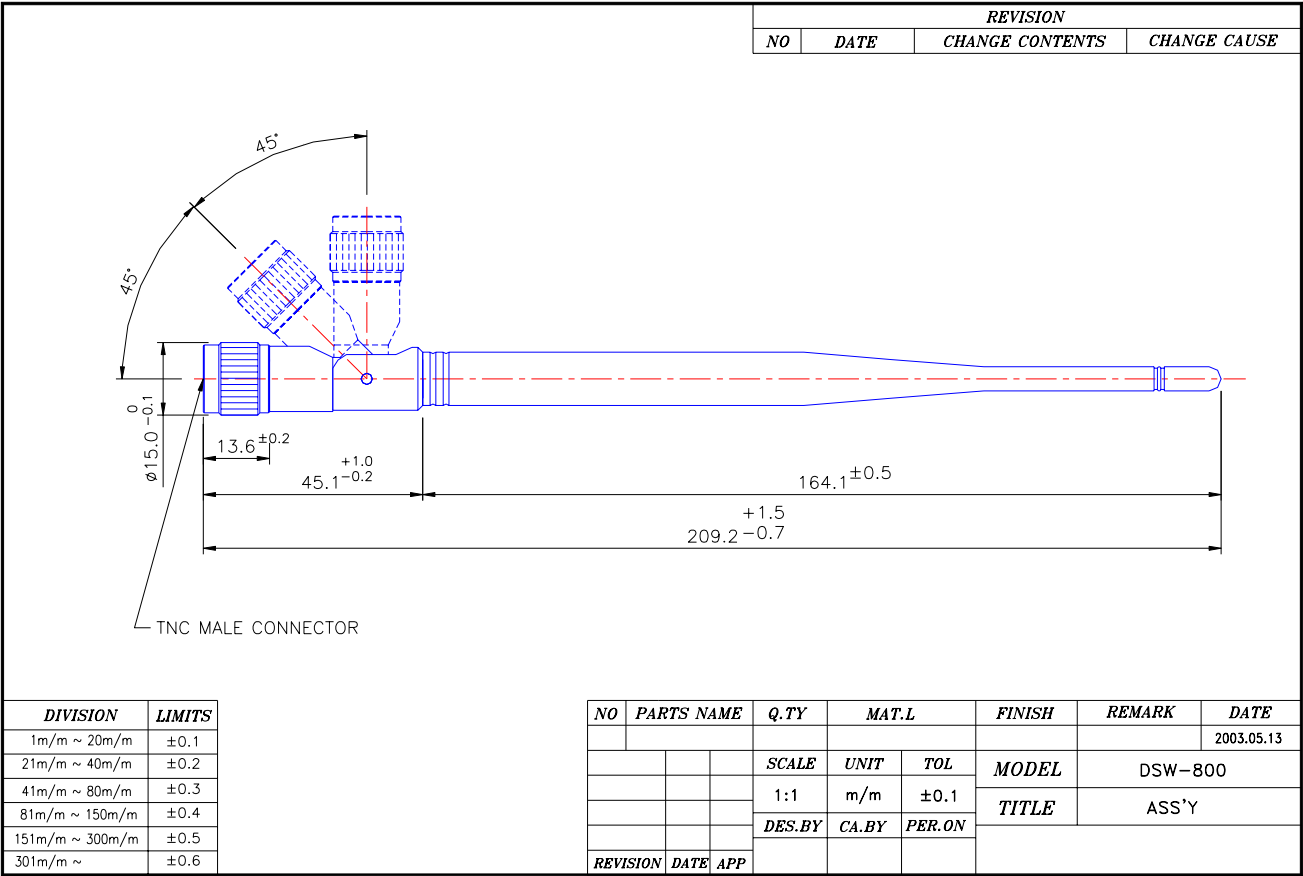
가. The product should be carefully packed and should be safe from impact or shock that could occur from shipping and handling.

나. Packing material should be paper box(DW2), which id the kind that won' t damage the product inside of the box.

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4. Exterior

| No. | DWG No.     | Product Name | REV. | Page | Note. |
|-----|-------------|--------------|------|------|-------|
| 1   | DK031223001 | ASS' Y       | 1.0  | 1/1  |       |





|                                                                                   |         |              |             |     |
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## 5. Test Data Sheet

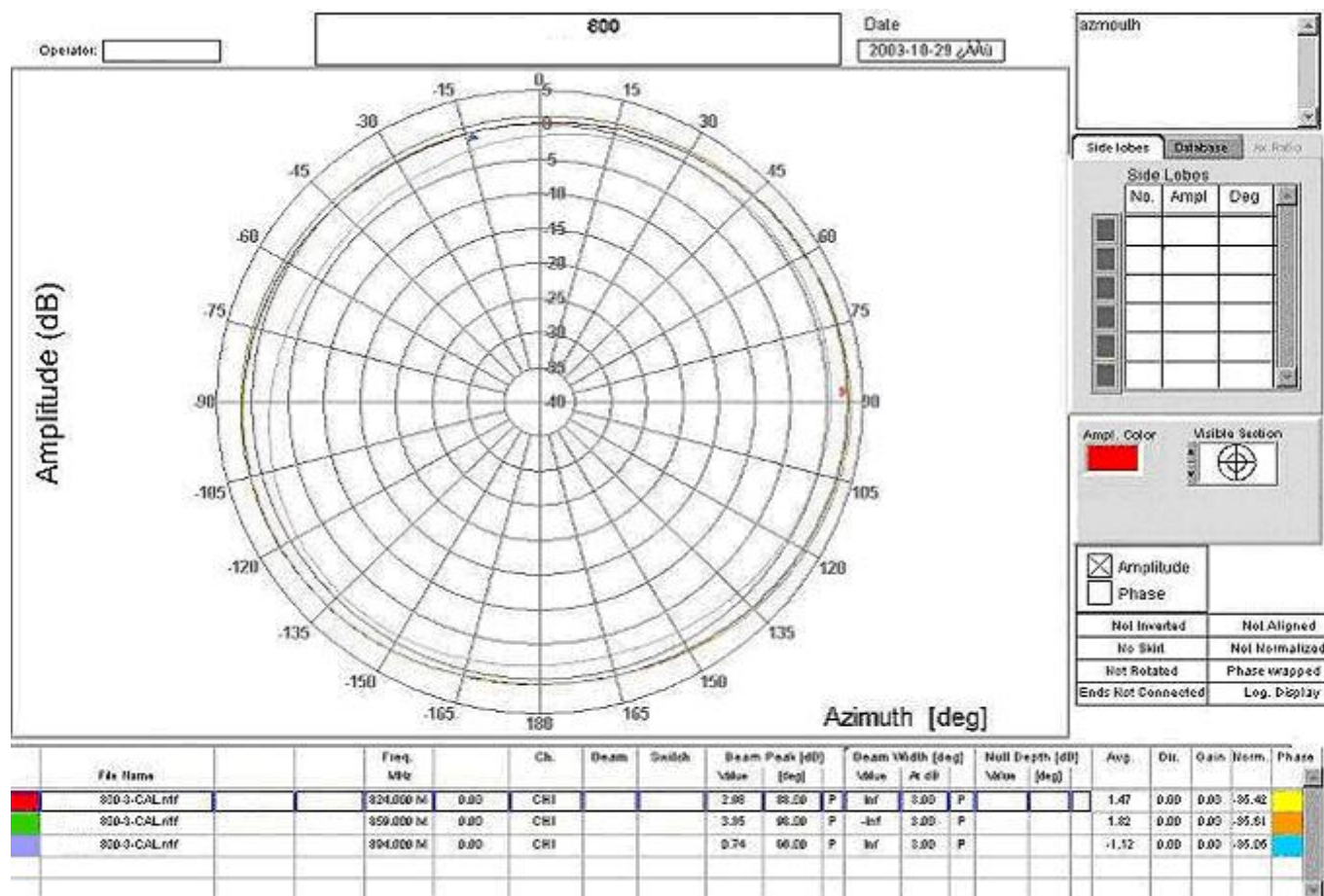
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| Parameter    | Specification | Data     |
|--------------|---------------|----------|
|              |               | 25℃      |
| V.S.W.R      | 1.9 : 1 Max.  | 1.56 : 1 |
| Beam Pattern | 2.0 ± 0.5dBi  | 3.25dBi  |
| Impedance    | 50 ± 20Ω      | 49       |

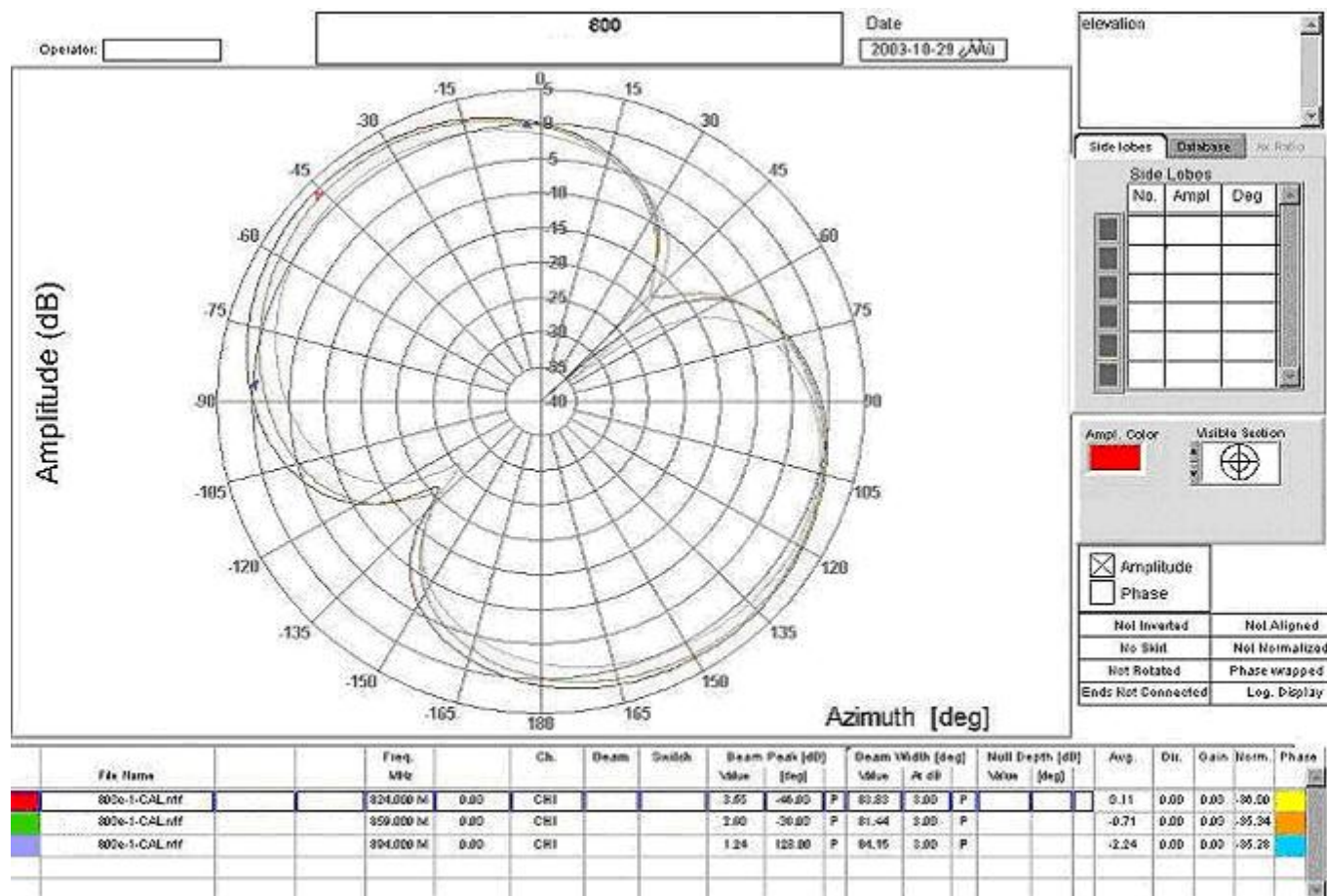


## 6.2. Beam pattern

### 6.2.1. Azimuth



## 6.2.2. Elevation



|                                                                                   |         |              |             |     |
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6.3. Impedance

