



# Specification

Model No. : FXP100

Part No. : **FXP100.07.0100A**

Product Name : Flexible WiMAX antenna

Features : High Efficiency Wide-Band Antenna  
31\*53\*0.2mm

International Patent#: US 2009/0189825 A1

**RoHS** ✓



## REVISION STATUS

| Version | Date             | Page | Revision Description | Prepared               | Approved |
|---------|------------------|------|----------------------|------------------------|----------|
| 01      | 20 November 2008 | All  | New release          | Matthias John,<br>AHFR |          |



## Specification

### 1. Introduction

This flexible wideband WiMAX antenna has been designed by DIT Antenna High Frequency and Research Centre in Dublin, Ireland. Taoglas and DIT have developed this range of solutions following years of expertise and collaboration in design of high performance antennas.

#### 1.1 Key Advantages

1. Highest efficiency in small size 31\*53\*0.2mm.
2. Flexible – can be fitted to curved surfaces
3. Highly reliable and robust
4. Rectangular shape - Easy to integrate. Other antenna designs come in irregular shapes and sizes making them hard to integrate.

#### 2.0 Electrical Characteristics

| No | Parameter             | Specification                              |
|----|-----------------------|--------------------------------------------|
| 1  | Working Frequency     | 2100~4320MHz                               |
| 2  | Dimensions            | 31*53*0.2mm                                |
| 3  | VSWR                  | 2 max (depends on the special environment) |
| 4  | Polarization          | Linear                                     |
| 5  | Impedance             | 50 $\Omega$                                |
| 6  | Operating Temperature | -40°C~+105°C                               |
| 7  | Termination           | Cu (Environmentally Friendly Pb Free)      |

\* Actual Electrical value will depend on customer ground plane size



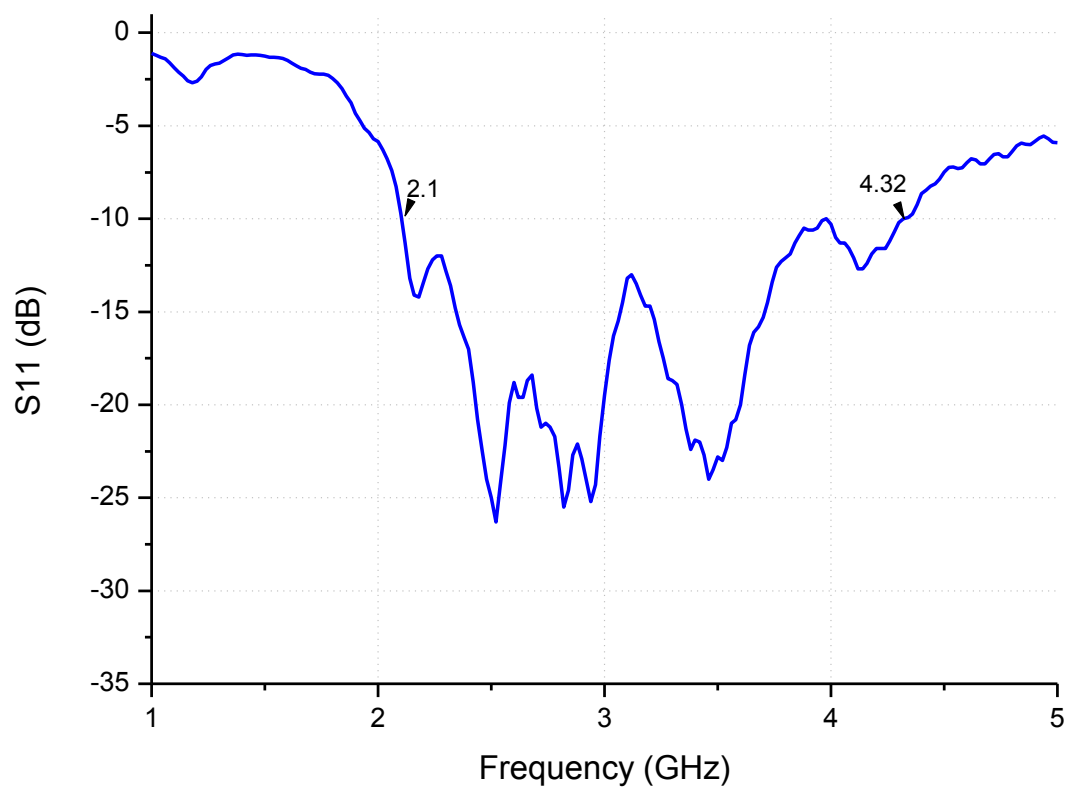
### 3.0 Key Antenna Performance Indicators

Measured in chamber

Gain (Ground Length: 33mm, Coax Cable Length: 150mm, UF-L Connector)

| WiMAX Antenna peak gain parameter Summary |     |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Band (GHz)                                | 2.1 | 2.3 | 2.5 | 2.7 | 2.9 | 3.1 | 3.3 | 3.5 | 3.7 | 3.9 | 4.1 | 4.3 |
| Peak Gain (dBi)                           | 1.2 | 1.9 | 2.1 | 2.5 | 2.6 | 3.2 | 2.1 | 1.3 | 1.5 | 1.2 | 1.5 | 2.6 |

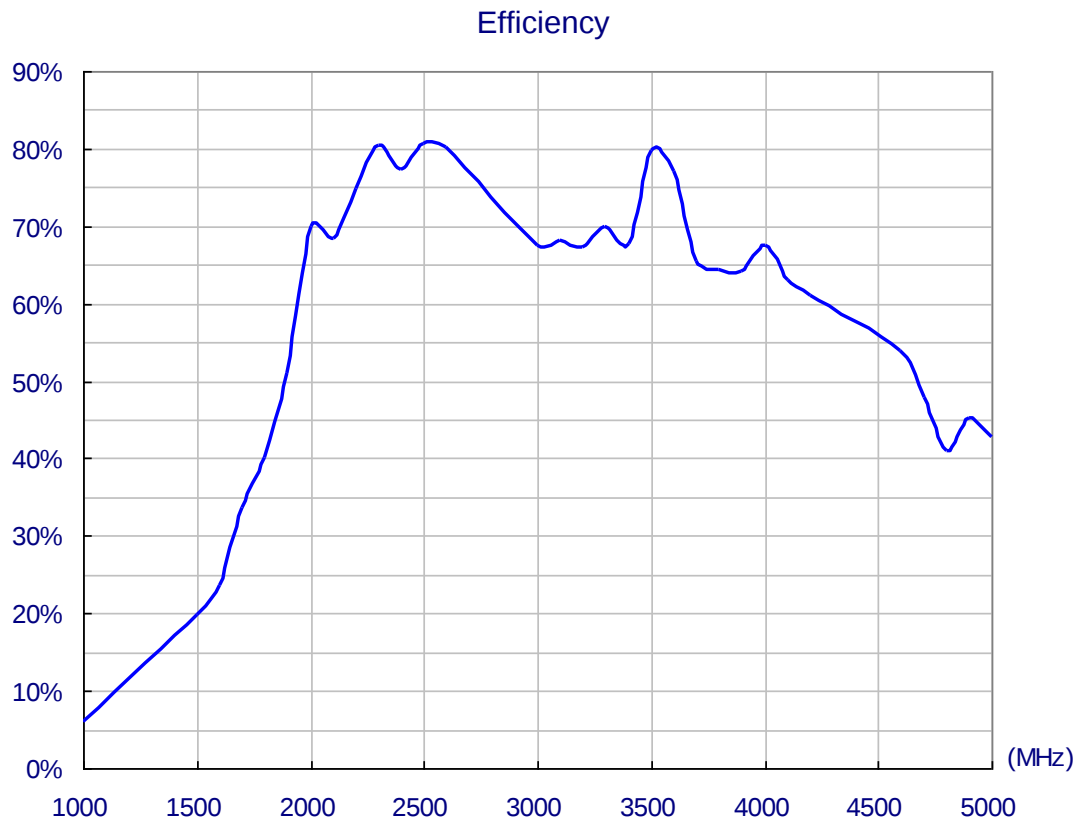
Measured S11





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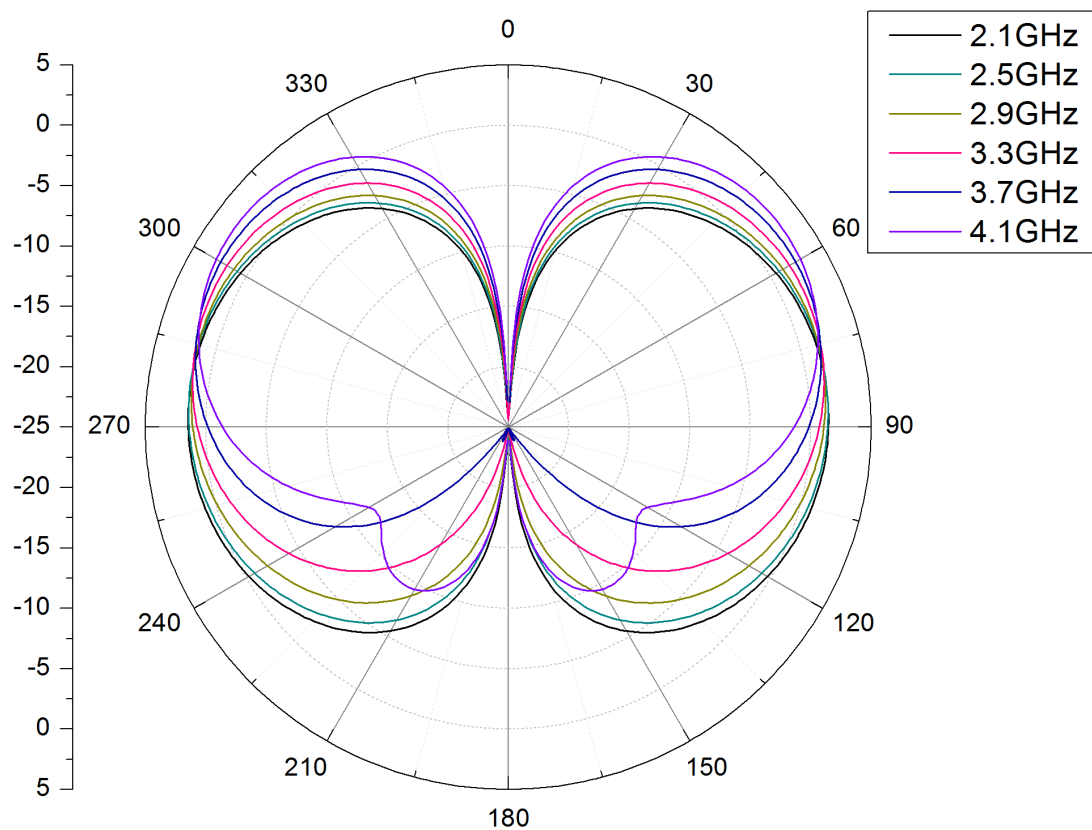
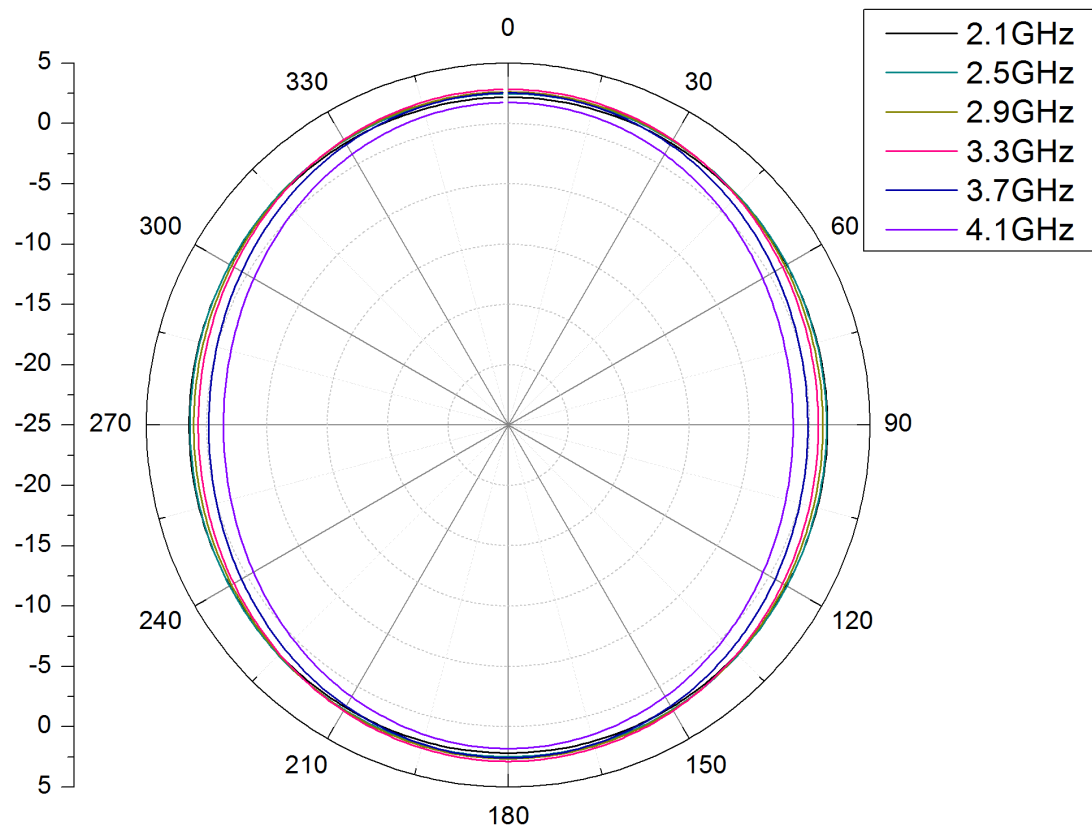
Radiation Efficiency





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Radiation Pattern

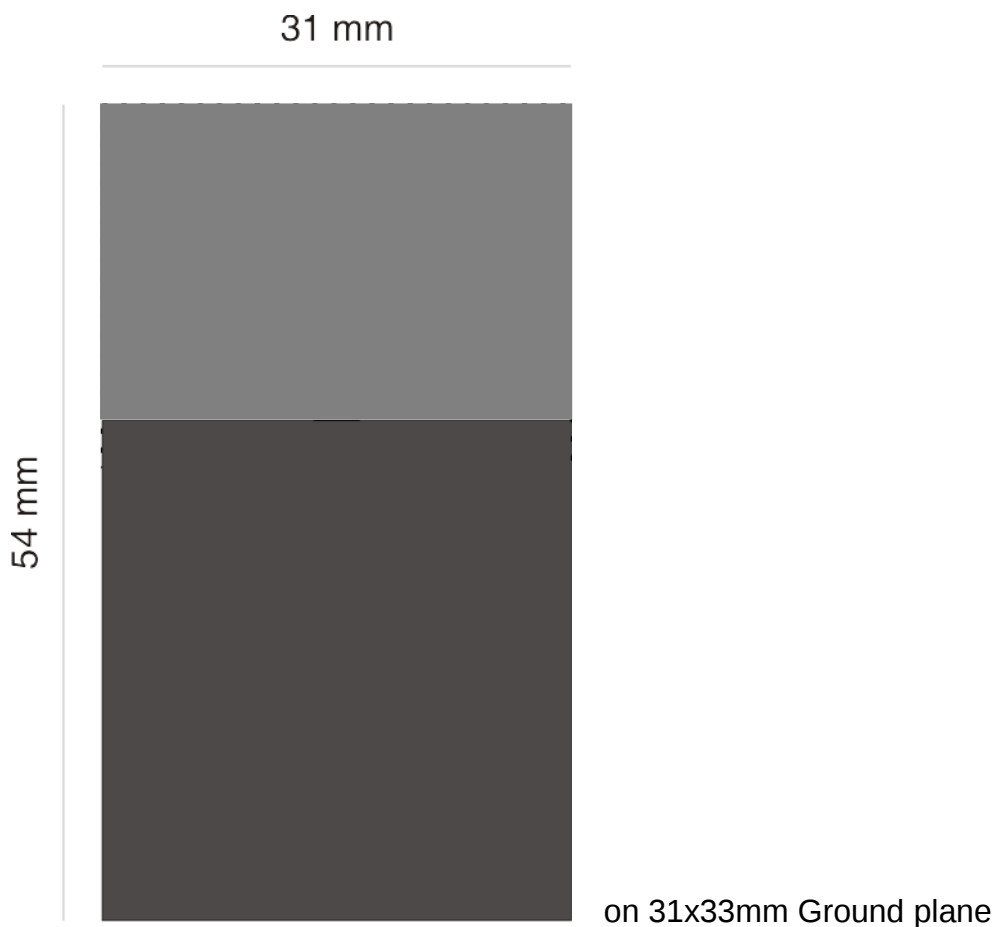
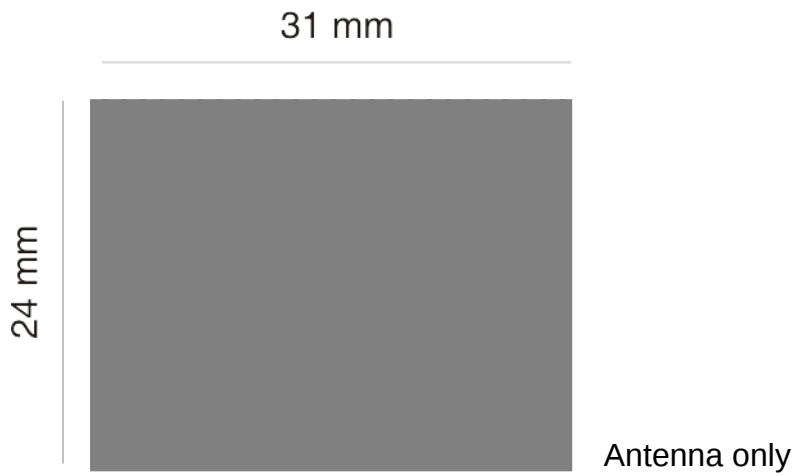




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## 4.0 Drawings

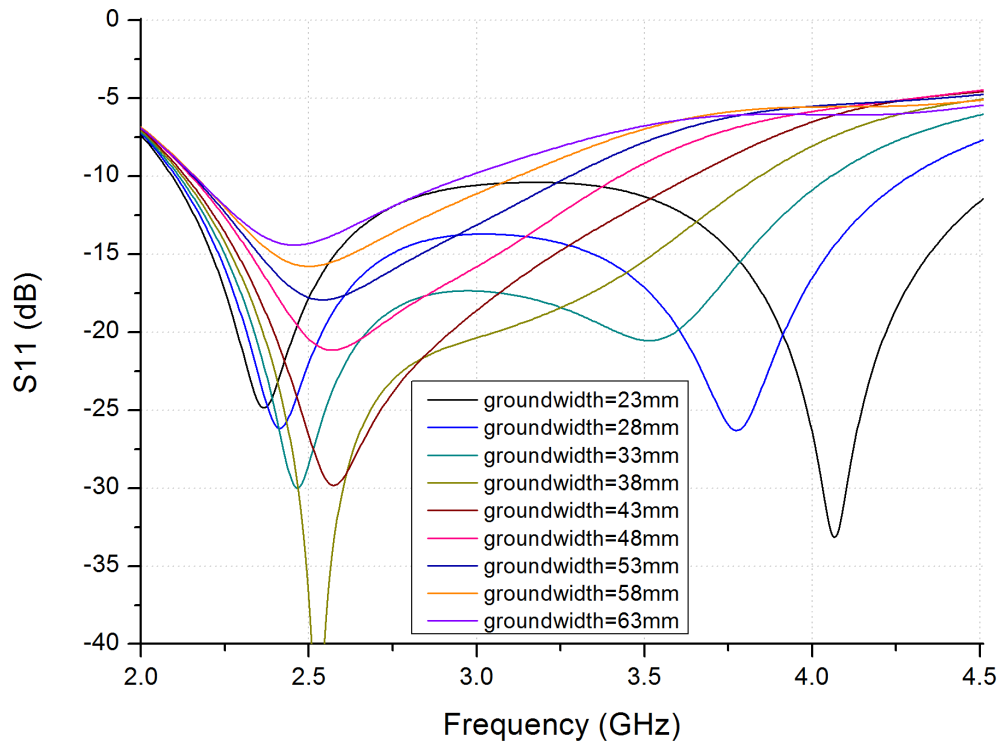
### 4.1 Shape and Dimensions



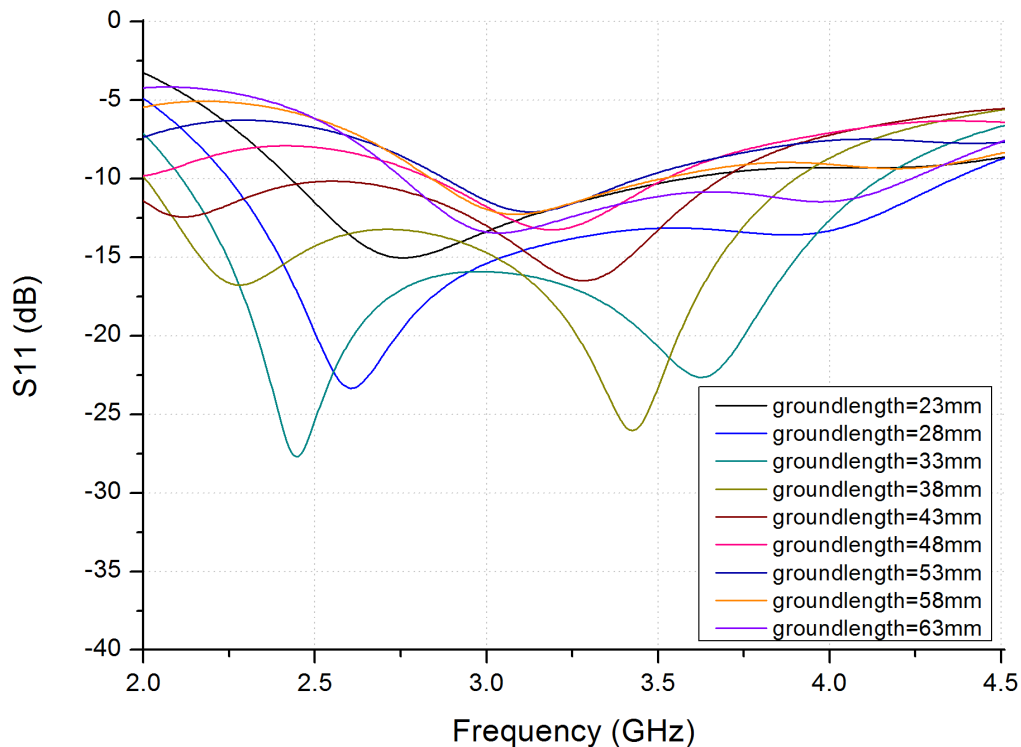


## 5.0 Sensitivity to Ground plane Dimensions (Simulation)

### 5.1 Ground plane Width $W$

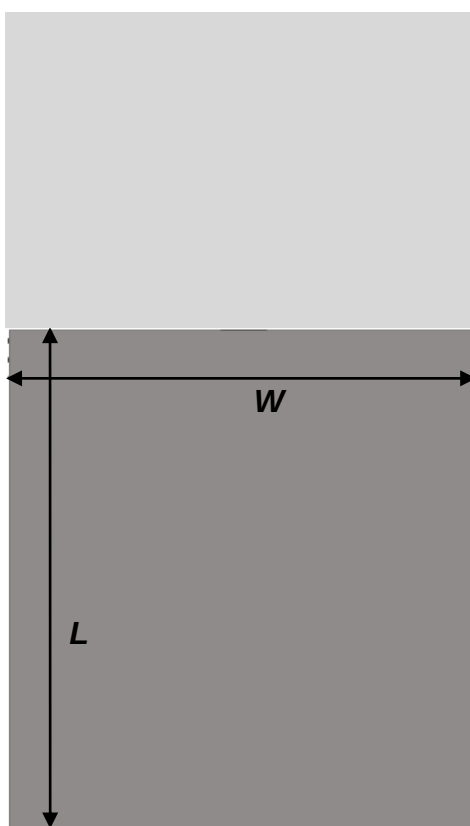


### 5.2 Ground plane Length, $L$



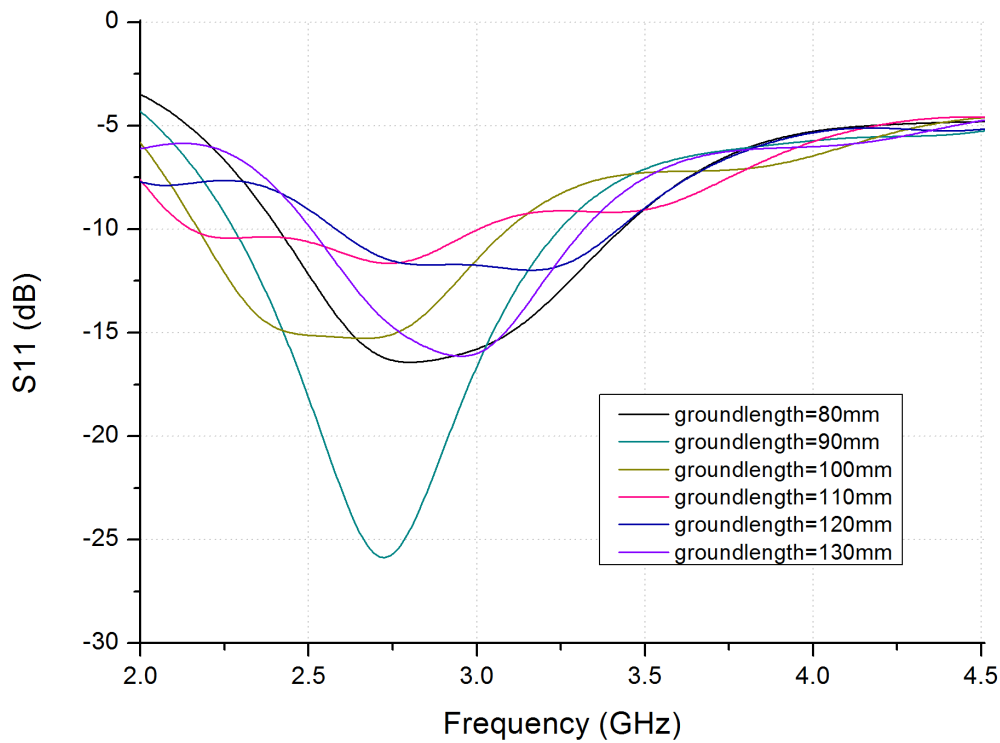


### 5.3 Handset Ground plane, 45mm × 110mm





### 5.3.1 Sweeping length $L$ , ( $W=45\text{mm}$ )



### 5.3.2 Sweeping width $W$ ( $L=110\text{mm}$ )

