taoglas

*the antenna solutions provider*

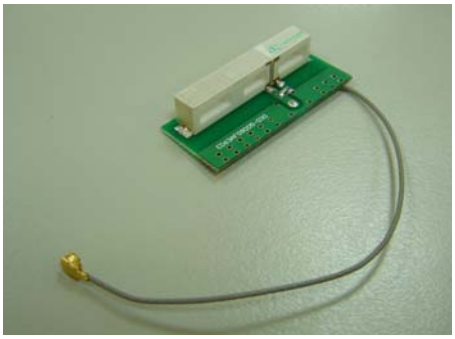
# SPECIFICATION

Specification No : PA-880-1990-00-29-B-02

Part No. : PA-24

Product Name : Triband GSM Dielectric PIFA Antenna (DPA™)
PCB with Coaxial output

Description : 880~960Mhz, 1710~1990 MHz, 0dB Gain
Size: 35mm*15mm*7mm



**Top view PA-24**

**REVISION STATUS**

| Version | Date | Page | Revision Description | Prepared | Approved |
|---|---|---|---|---|---|
| 01 | May 5th 2006 | All | New product | TW Product Centre | Ronan Quinlan |
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## 1.0 Scope

This specification is for a Triband GSM miniature PIFA (Dielectric Planar Inverted-F Type Antenna) (DPA™) Antenna on PCB board with Coaxial cable output for ease of mounting in wireless products.

## 2.0 Electrical Specifications

The antenna has the electrical characteristics given in Table 1 under the Taoglas standard installation conditions as shown in the Evaluation Board.figure.

| No. | Parameter | Specification |
|---|---|---|
| 1 | Frequency | 880~960 MHz , 1710~1990 MHz |
| 2 | Dimensions | 35*15*7 mm |
| 3 | Impedance | 50 Ohms |
| 4 | VSWR | 3.0 max (depends on environment) |
| 5 | Polarization | Linear |
| 6 | Operating Temperature | -40~85°C |
| 7 | Termination | Ag (Environmentally Friendly Lead- Free) |
| 8 | Cable | IPEX 1.13mm diameter L=100mm MHF |

* data is measured on Taoglas Standard Reference PCB.

## S11 Response Measurement (in free-space)


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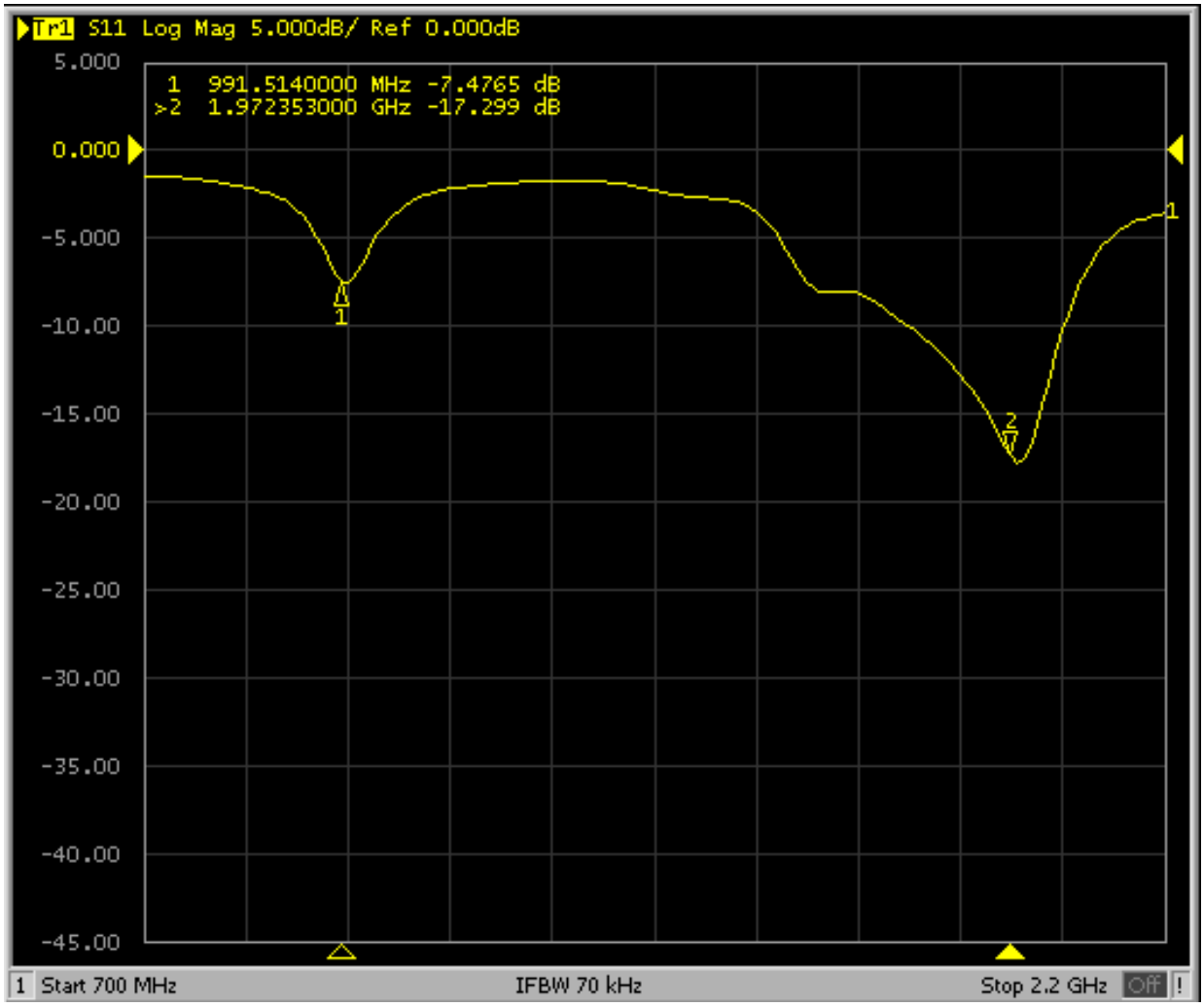


## 3.0 Environmental Conditions

### 3.1 Operating Conditions

The antenna has the electrical characteristics given in Table 1 in the temperature range of -30°C to +85°C and under the environmental conditions of +40°C and 0-95%r.h.


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### 3.2 Storage Temperature range

The storage temperature range of the product is -40°C to +100°C

## 4.0 Reliability Tests

### 4.1 Low-temperature test

Expose the specimen to -30°C for 500 hours and then to normal temperature/humidity for 24 hours or more. After that examine the appearance and functions.

### 4.2 High-temperature test

Expose the specimen to +85°C for 500 hours and then to normal temperature/humidity for 24 hours or more. After that examine the appearance and functions.

### 4.3 High-temperature/High-humidity test

Subject the object to the environmental conditions of +85°C and 90-95% r.h. for 96 hours, then expose to normal temperature/humidity for 24 hours or more. After this, check the appearance and functions.

### 4.4 Thermal Shock test

Subject the object to cyclic temperature change (-30°C, 30 minutes +85°C, 30 minutes ) for 5 cycles, the expose to normal temperature/humidity for 24 hours or more.

### 4.5 Vibration Test

#### 4.5.1 Sinusoidal Vibration Test

Subject the object to vibrations of 5 to 200 to 5Hz swept in 10 minutes, 4.5G at maximum (2mm amplitude), in X and Y directions for two hours each and in Z direction for four hours. After this, check the appearance functions.

### 4.5.2 Vibration test in packaged condition

Subject the object, which is packaged as illustrated, to vibrations of 15 to 60 to 15Hz swept in 6 minutes, 4G at maximum (2mm amplitude at maximum), applied in X, Y and Z directions for two hours each, i.e. six hours in total. After this, check the appearance and functions.

### 4.5.3 Free fall test in packaged condition

Drop the object, which is packaged as illustrated, to a concrete surface from the height of 90 cm, on one comer, three edges and six faces once each, i.e. 10 times in total. After this, check the appearance and functions.

### 4.5.4 Soldering Heat Resistance Test

The lead pins of the unit are soaked in solder bath at 270 ± 5°C for 10± 0.5 seconds and then left for more than 1 hour at 25±5°C in less than 65% relative humidity.

### 4.5.5 Adhesion Test

The device is directly soldered on test PCB. Then apply 0.5Kg (5N) of force for 10±1 seconds in a parallel direction to the substrate. (Note: the soldering should be done by reflow and conducted with care so that the soldering is uniform and free of defect by stress such as heat shock).

## 5.0 Inspection

Under mass production examination, the reception characteristic of the ratio wave sent in a shield box from the standard antenna and VSWR are confirmed by sampling.

## 6.0 Warranty

If any product defect occurs during normal use within a year after delivery, it will be repaired or replaced free of charge.

## 7.0 Other

Any questions arising from this specification manual shall be solved by arrangement made between both parties.

## 8.0 Precautions for Use

**8.1** The antenna pattern uses a Ag electrode.
**8.2** Avoid contact with corrosive gas (sulfur gas, chlorine gas) in the atmosphere.
**8.3** Do not directly solder onto the gold electrode of the Antenna pattern.


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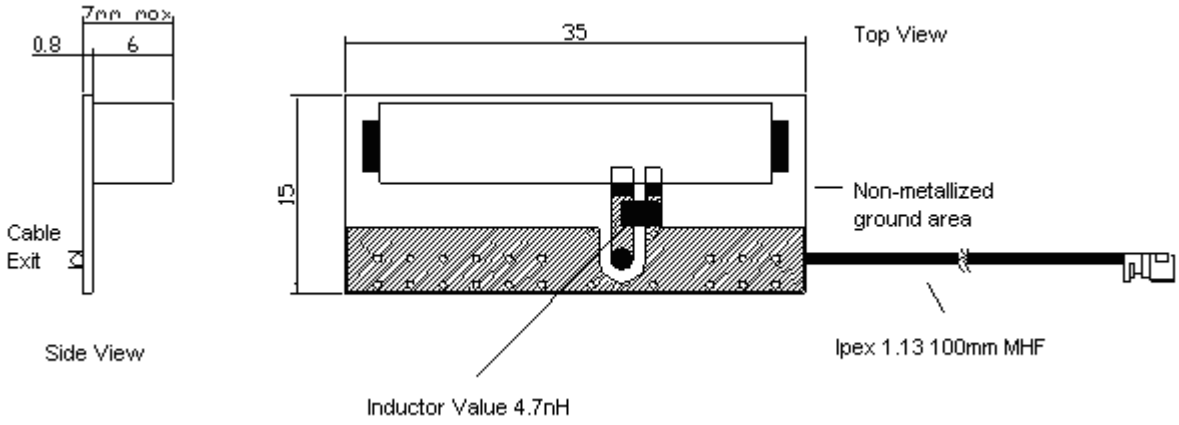
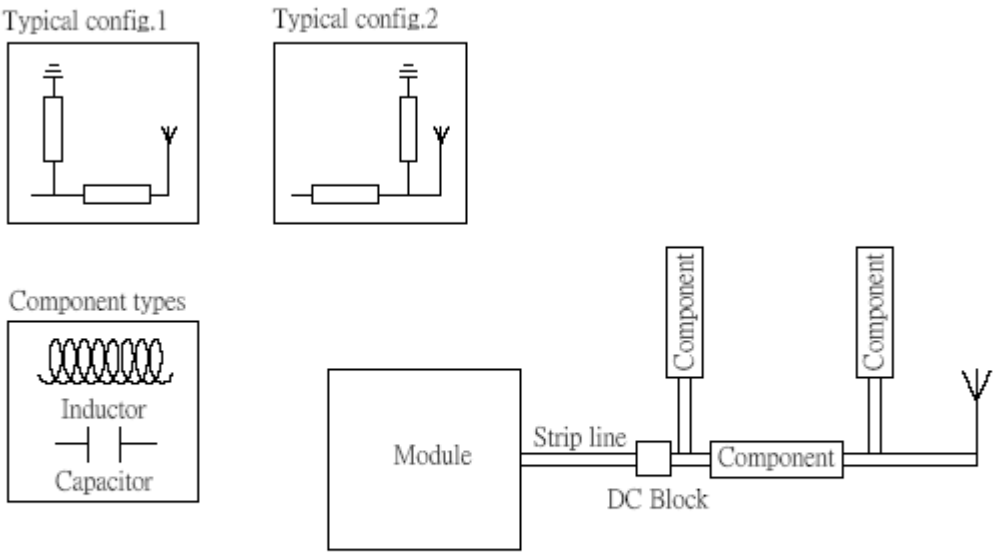
## 9.0 Drawings

### 9.1 Outline Dimensions




### 9.2 Transmission Line and Matching




The matching network has to be individually designed using one,two or three components.