TAOGLAS


# Datasheet

**Part No:**
**PC81.07.0100A.db**

## Description

TheStripe™ 868MHz PCB Antenna 100mm IPEX 1.13mm diameter MHF connector with foam attachment for assembly

## Features:

868MHz LoRA and ISM PC Antenna

Dimensions:34mm*7mm*0.8mm(PCB)

16mm*6mm*7mm(foam)

I-PEX MHF®I U.FL Connector

With 3M Adhesive, easy stick on client enclosure

RoHS and REACH Compliant

# 1. Introduction


This miniaturized low profile PCB antenna is based on smart TheStripe™ antenna technology. It consists of a PCB antenna and 1.13mm mini coaxial cable with I-PEX MHF®I (U.FL comp) connector. The PC.81 antenna has been designed to operate with optimum gain and efficiency on the 868MHz LoRA and ISM frequency band.

Typical Applications Include:

- Smart Metering
- Smart Lighting
- LoRA Gateways
- Mesh Networks

Cables and Connectors can be fully customized based on customer requirements, please contact your regional Taoglas customer support team.

# 2. Specification

| LTE Electrical | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Band** | Frequency (MHz) | Efficiency (%) | Average Gain (dB) | Peak Gain (dBi) | Impedance | Polarization | Radiation Pattern |
| **868MHz** | 863-870 | 39.8 | -4.00 | -0.17 | 50 Ω | Horizontal | Omni |

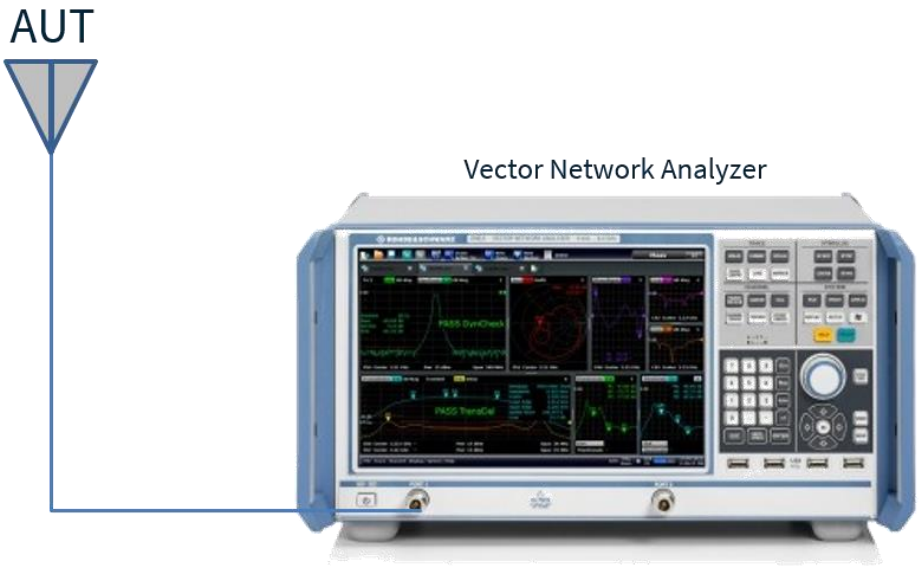
| Mechanical | |
|---|---|
| **Dimensions** | 34mm*7mm*0.8mm(PCB) 16mm*6mm*7mm(foam) |
| **Cable Type** | Ø1.13 Coaxial Cable |
| **Cable Length** | 100mm |
| **Connector** | IPEX MHFI(U.FL Compatible) |
| **Adhesive** | 3M 9472 |
| **Foam** | CR4305 |

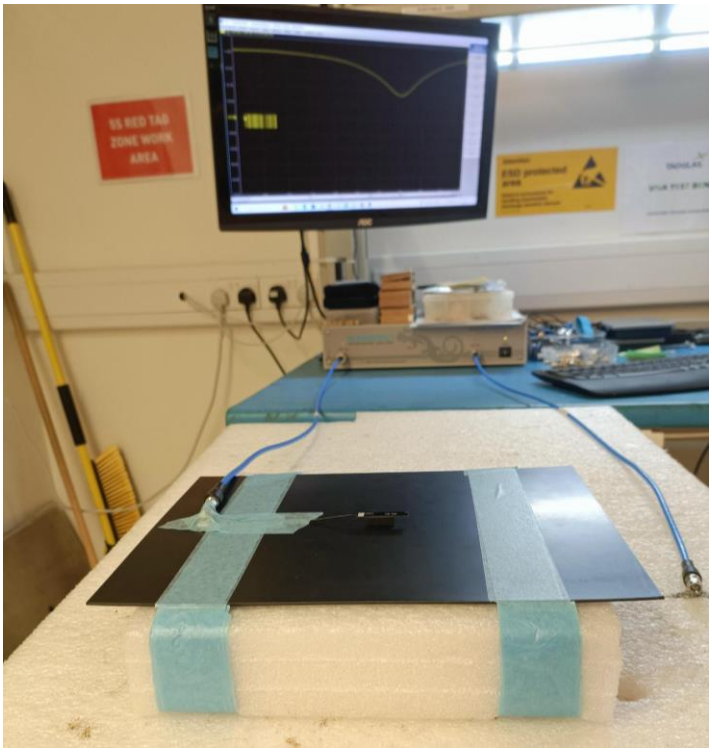
| Environmental | |
|---|---|
| **Temperature Range** | -20°C to 100°C |
| **Humidity** | Non-condensing 65°C 95% RH |

*Tested on 2mm ABS.

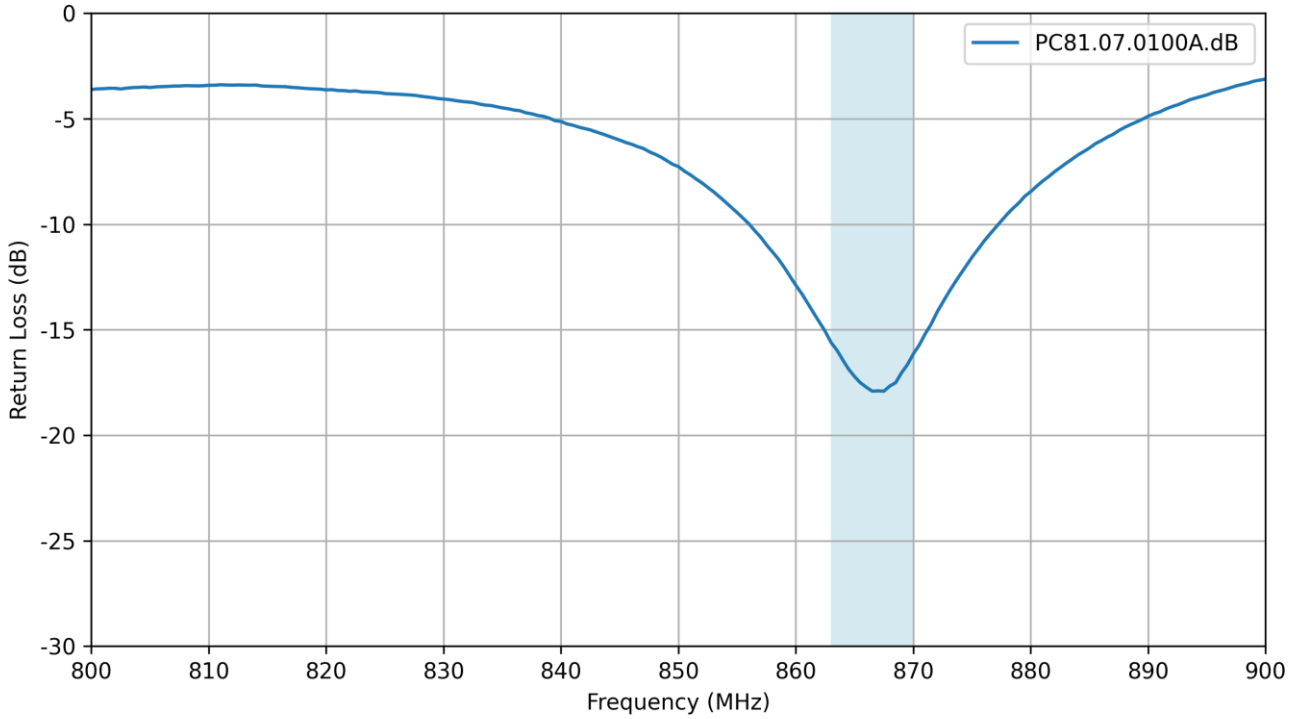
# 3. Antenna Characteristics

## 3.1 Test Setup

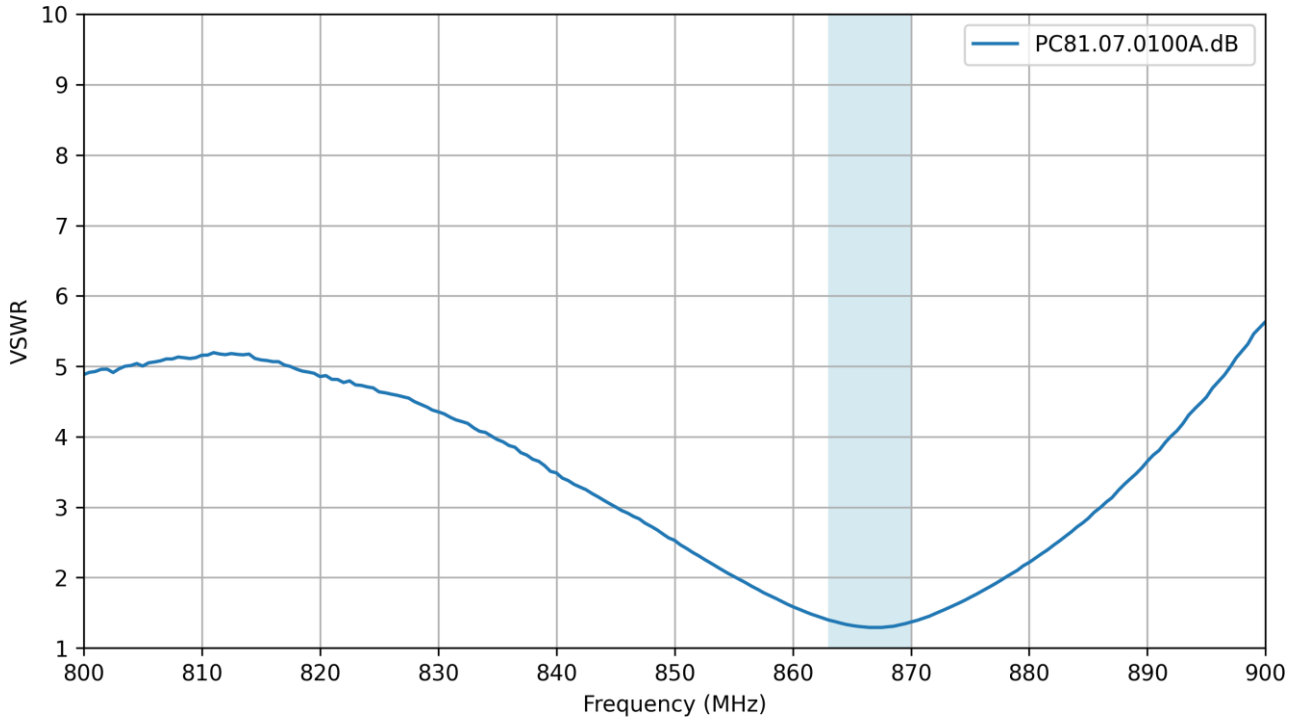


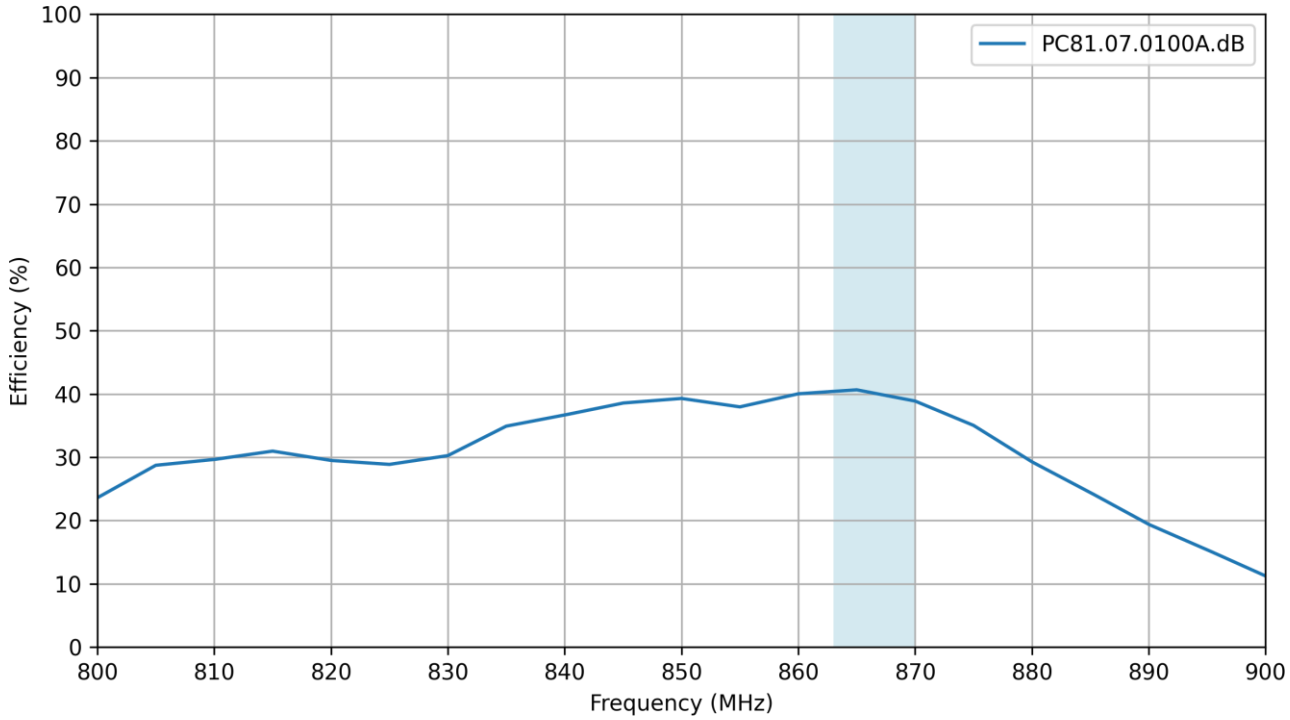
## 3.2 Return Loss



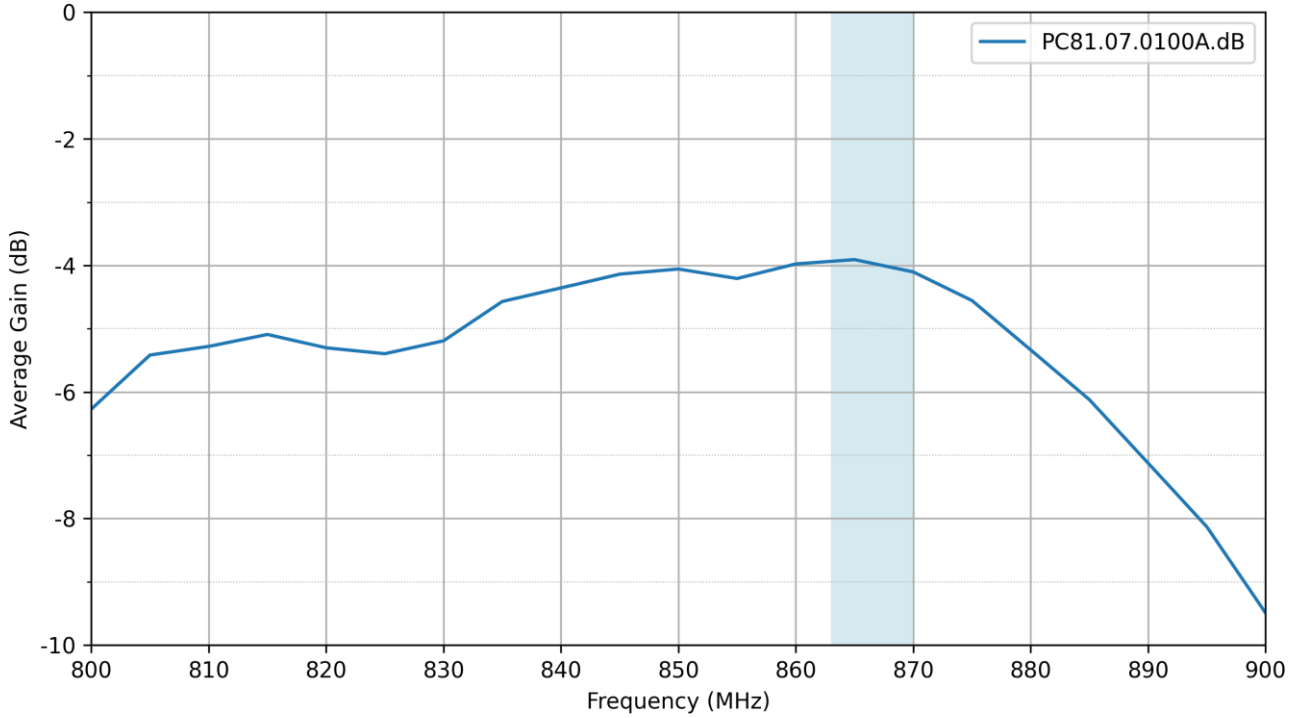

## 3.3 VSWR



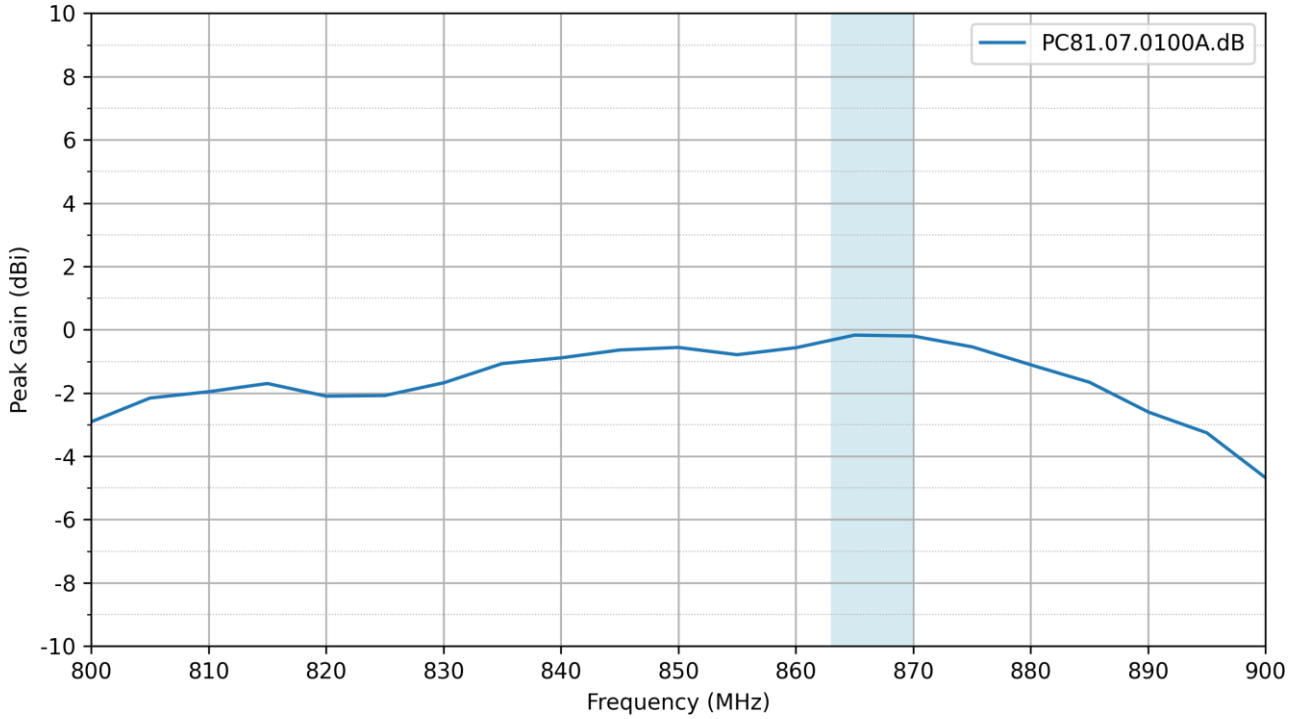
## 3.4 Efficiency




## 3.5 Average Gain

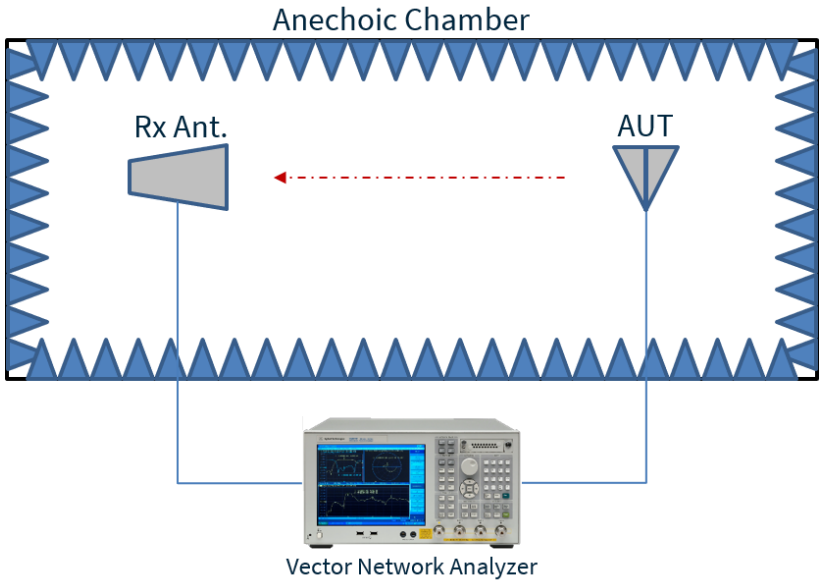


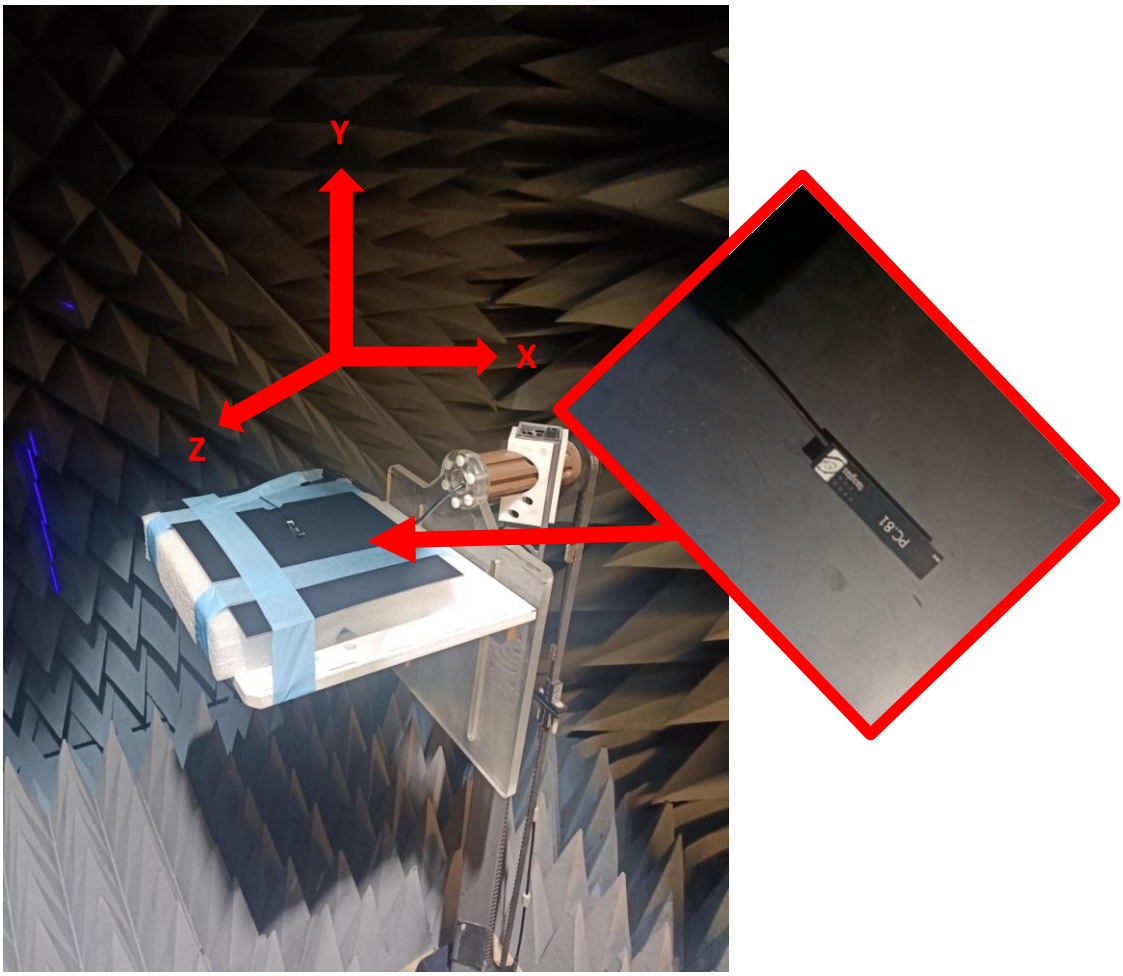
## 3.6 Peak Gain


PC81.07.0100A.dB
Peak Gain (dBi)
Frequency (MHz)
10
8
6
4
2
0
-2
-4
-6
-8
-10
800
810
820
830
840
850
860
870
880
890
900

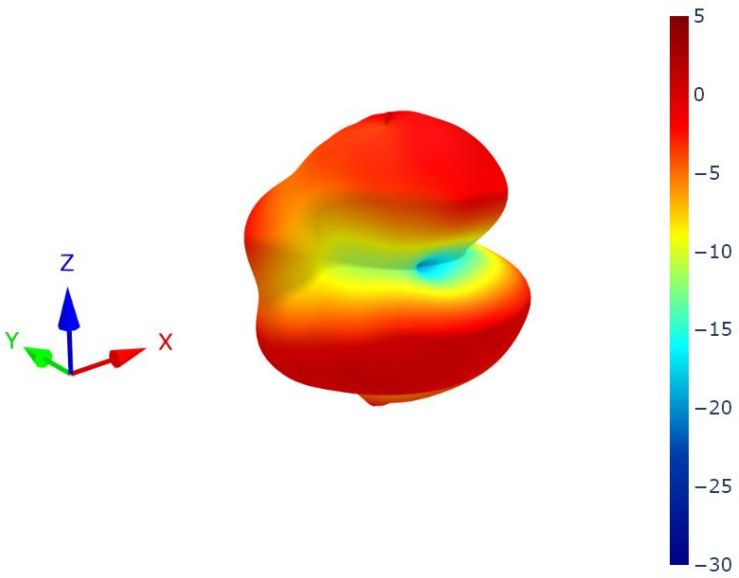
# 4. Radiation Patterns

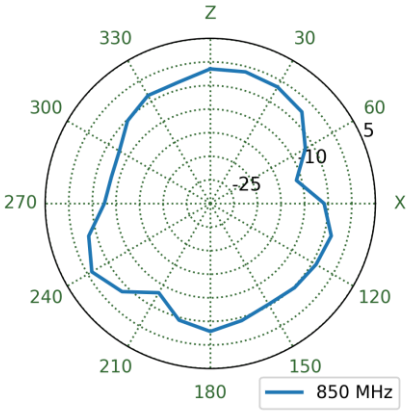
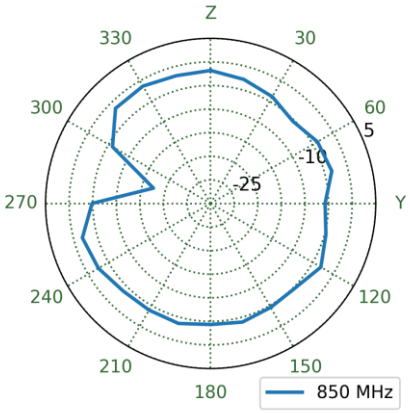
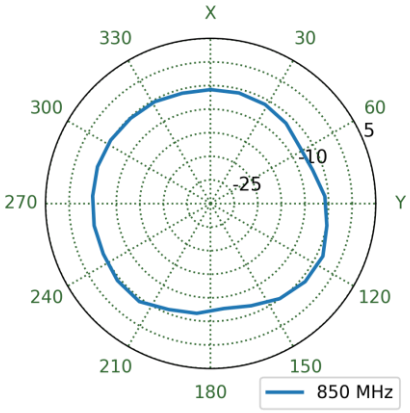
## 4.1 Test Setup



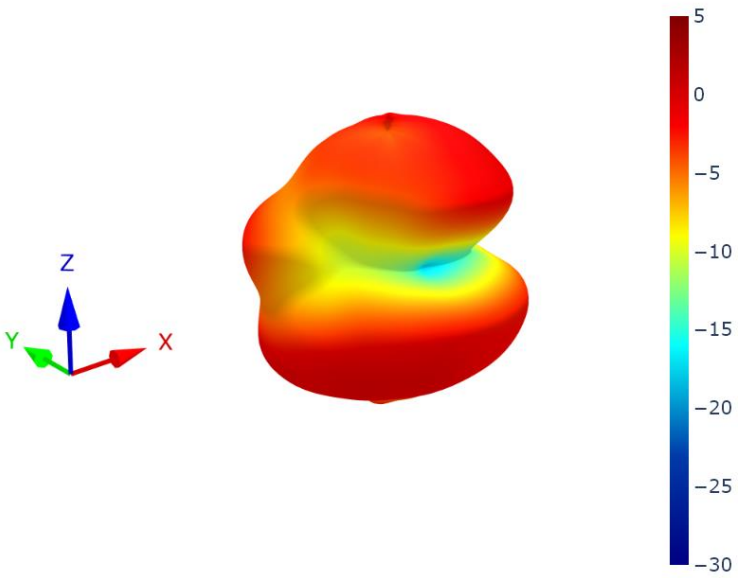



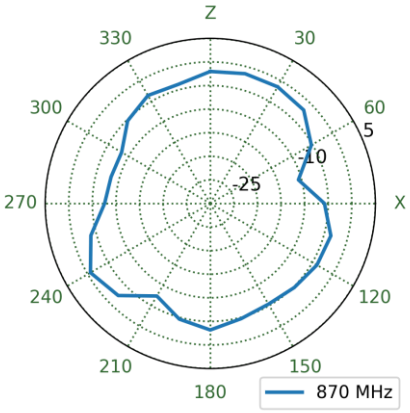
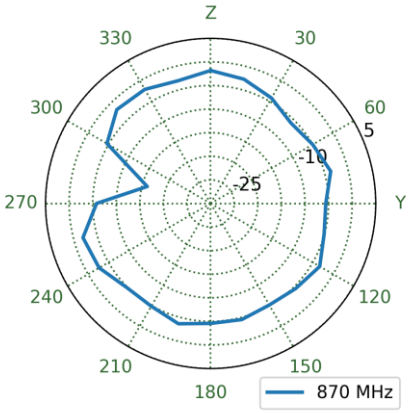
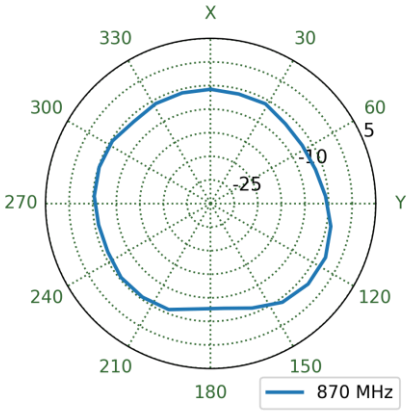
## 4.2 Patterns at 848 MHz



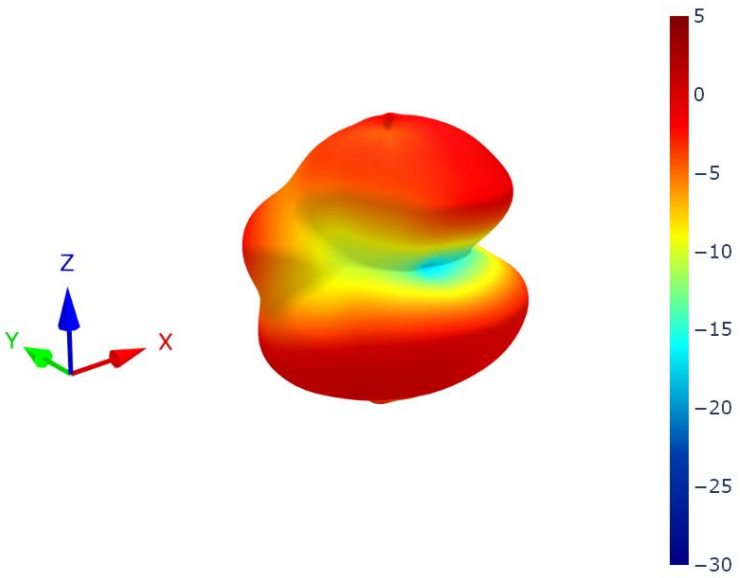

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

## 4.3 Patterns at 868 MHz

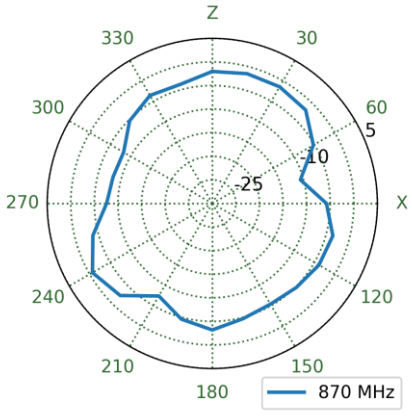


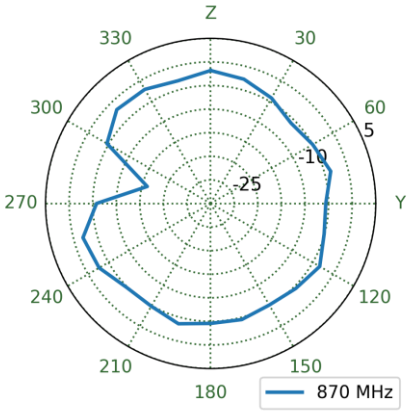

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

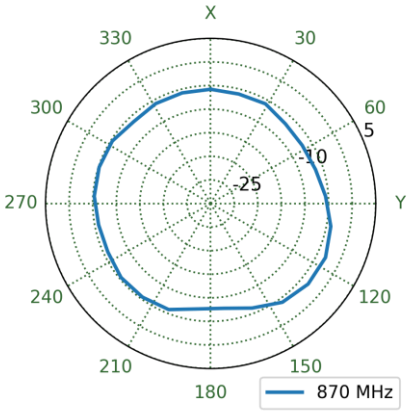
## 4.4 Patterns at 870 MHz



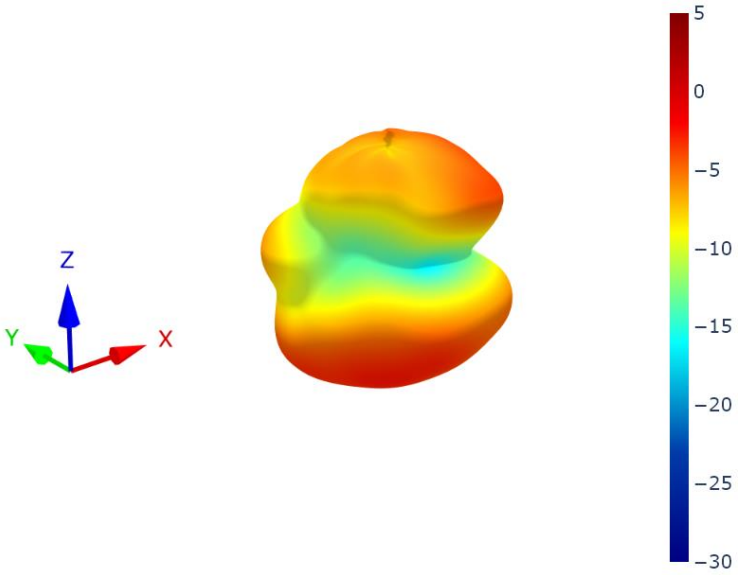

| XZ Plane | YZ Plane | XY Plane |
|---|---|---|

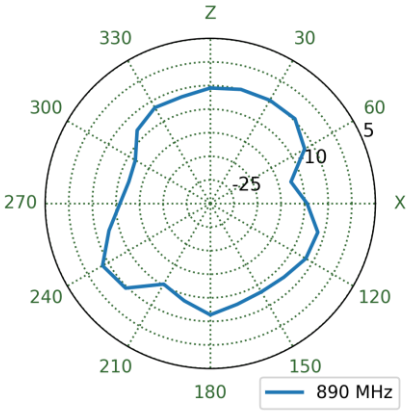
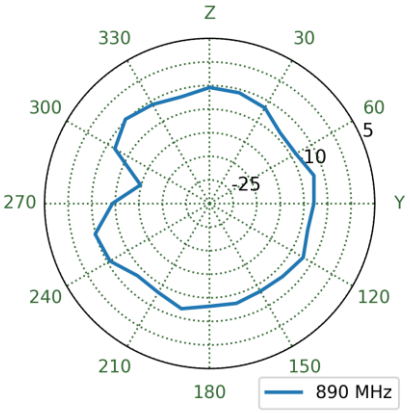
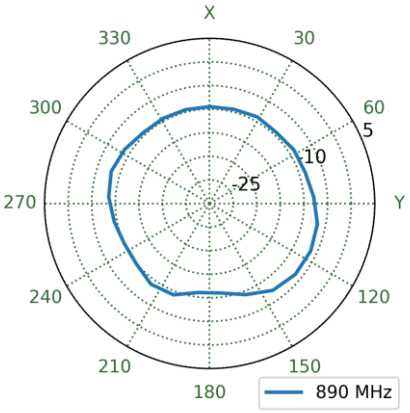


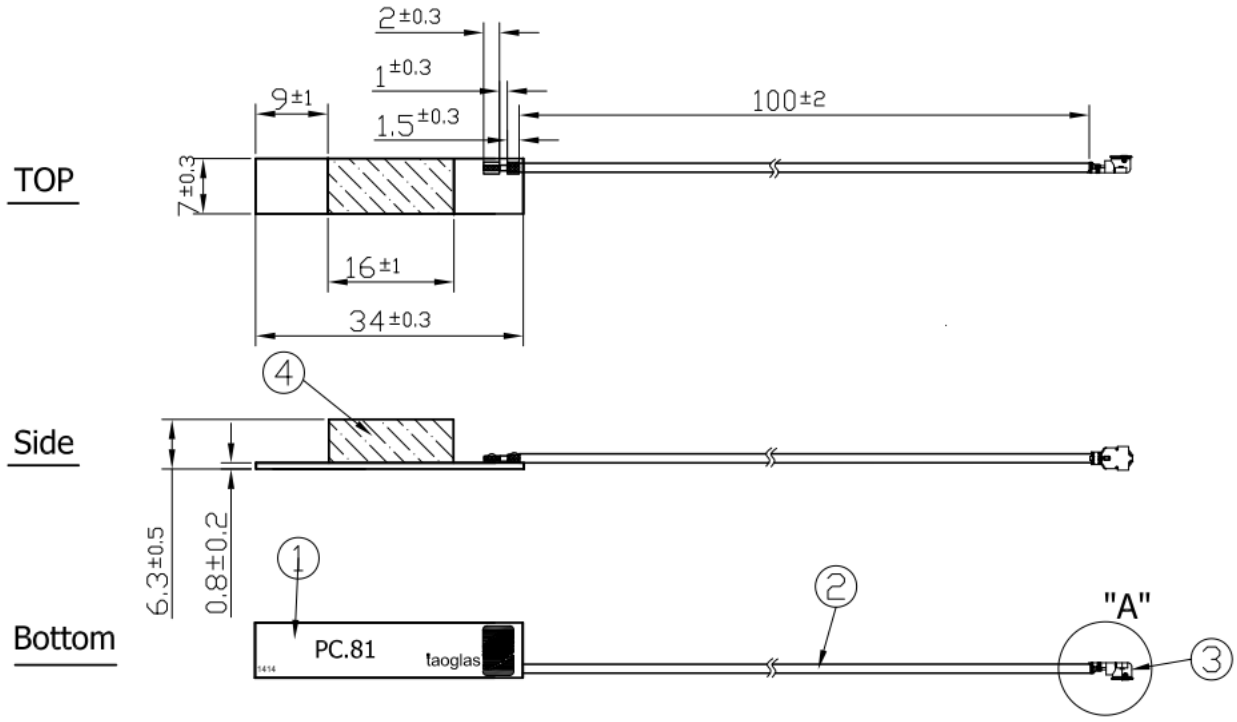



## 4.5 Patterns at 890 MHz

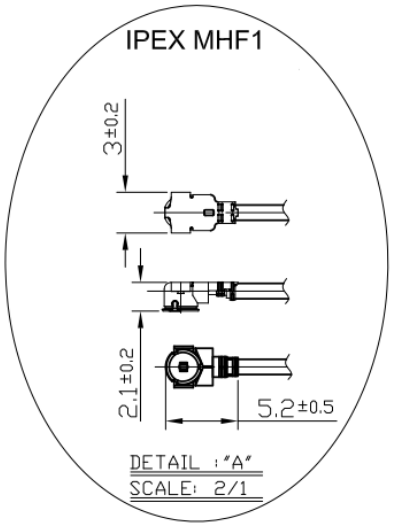



| XZ Plane | YZ Plane | XY Plane |
|---|---|---|
|  |  |  |

# 5. Mechanical Drawing

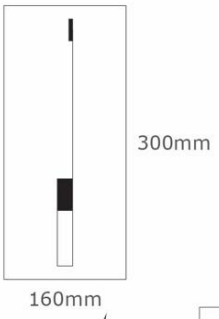



| | Name | Material | Finish | QTY |
|---|---|---|---|---|
| ① | PC81 PCB | FR4 0.8t | Black | 1 |
| ② | 1.13 Mini-Coaxial Cable | FEP | Black | 1 |
| ③ | IPEX MHF1 | Brass | Gold | 1 |
| ④ | Double Sided Adhesive + Closed Cell Foam | 3M9472+CR4305 | Black | 1 |

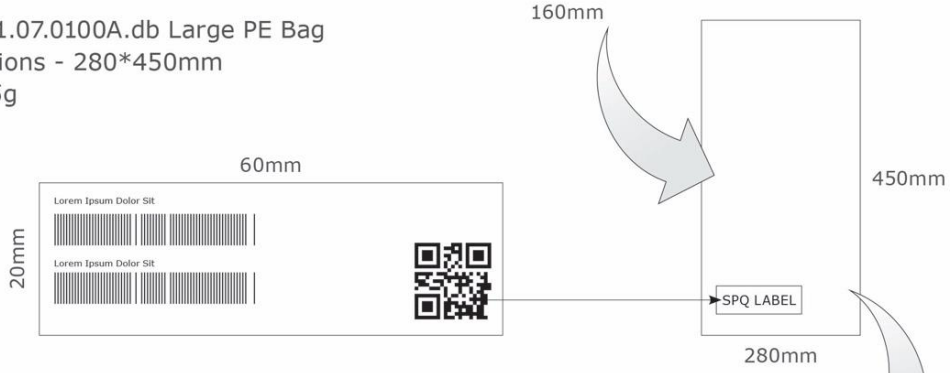


# 6. Packaging

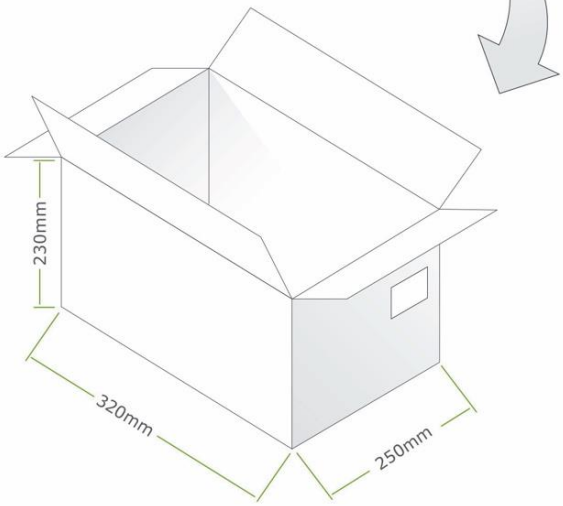
100pcs PC81.07.0100A.db per Small PE Bag
Bag Dimensions - 160*300mm
Weight - 100g



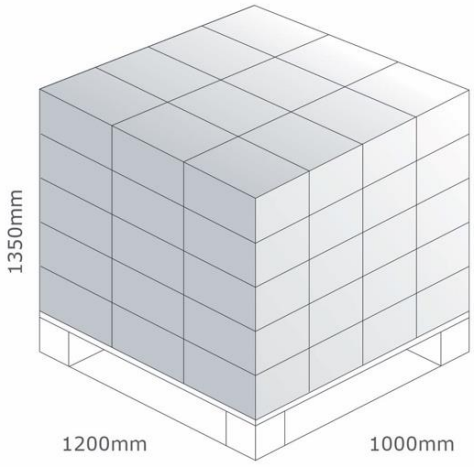

500pcs PC81.07.0100A.db Large PE Bag
Bag Dimensions - 280*450mm
Weight - 0.5g




2000pcs PC81.07.0100A.db per Carton
Carton Dimensions - 320*250*230mm
Weight - 2.5Kg




Pallet Dimensions:
1200mm*1000mm*1350mm
60 Cartons per Pallet
12 Cartons per Layer, 5 Layers



## Changelog for the datasheet

**SPE-12-8-085 – PC81.07.0100A.db**

| **Revision: E (Current Version)** | |
|---|---|
| Date: | 2023-10-26 |
| Changes: | Full Datasheet update |
| Changes Made by: | Gary West |

**Previous Revisions**

| **Revision: D** | |
|---|---|
| Date: | 2022-06-20 |
| Changes: | Full Datasheet update |
| Changes Made by: | Evan Murphy |

| **Revision: C** | |
|---|---|
| Date: | 2019-11-15 |
| Changes: | Updated imagery<br>Reference ECR-18-8-259 |
| Changes Made by: | Jack Conroy |

| **Revision: B** | |
|---|---|
| Date: | 2014-10-16 |
| Changes: | Added Mech and Environmental spec updated drawing and added packaging. |
| Changes Made by: | Aine Doyle |

| **Revision: A (Original First Release)** | |
|---|---|
| Date: | 2012-06-27 |
| Notes: | Initial Release |
| Author: | Unknown |

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