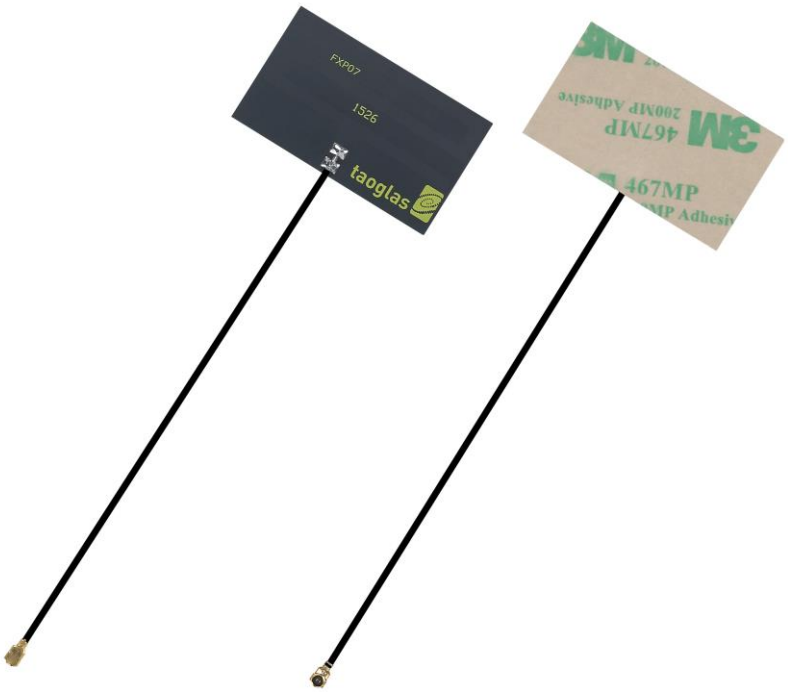
SPECIFICATION

Part No.	:	**FXP07.07.0100A**
Product Name	:	Flexible PCB Penta Band GSM Antenna, 100mm Ø1.13 cable, IPEX connector
Feature	:	Very low profile Penta band GSM Adhesive tape for easy mounting RoHS compliant



1. Introduction

FXP07.07.0100A is a general version of stick-on flexible PCB. It is designed with 100mm 1.13mm coaxial cable and the IPEX connector for easy installation. FXP07.07.0100A is ideal for initial test of FPCB type antenna.

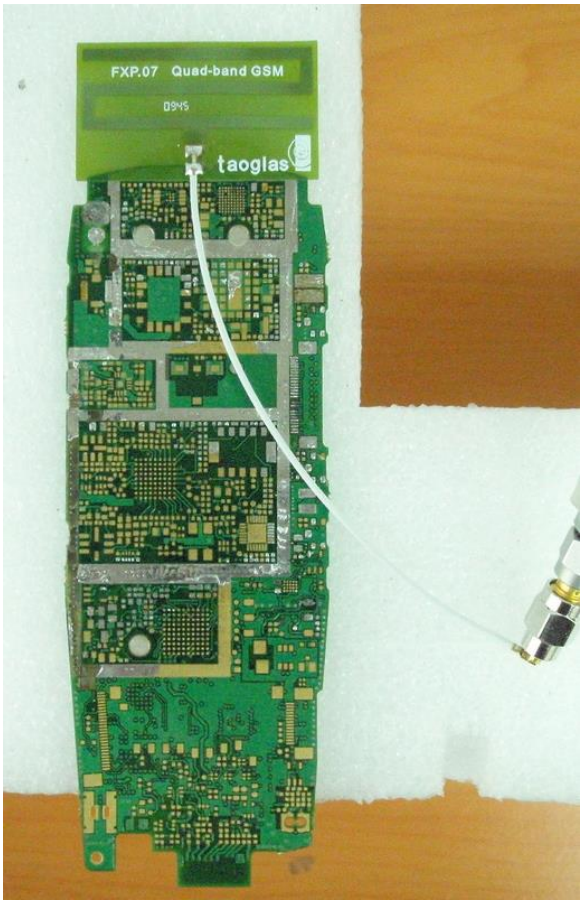
2. Specification

Communication System	Penta-band Cellular				
	AMPS	GSM	DCS	PCS	UMTS
Frequency (MHz)	824 ~ 896	880~960	1710~1880	1850~1990	1710~2170
Efficiency (ground plane)	82%	82%	29%	60%	49%
Efficiency (free space)	11%	12%	41%	32%	33%
Impedance	50 Ohm				
Radiation Pattern	Omni-directional				
Polarization	Linear				
FPCB	41.0 x 24.0 mm				
Connector	IPEX				
Cable	Ø1.13				
Cable Length	100 mm				
Adhesive Tape	3M 467				
Operation Temperature	-40℃ ~ +85℃				
Storage Temperature	-40℃ ~ +85℃				

3. Electrical Property

3.1 Test Setup

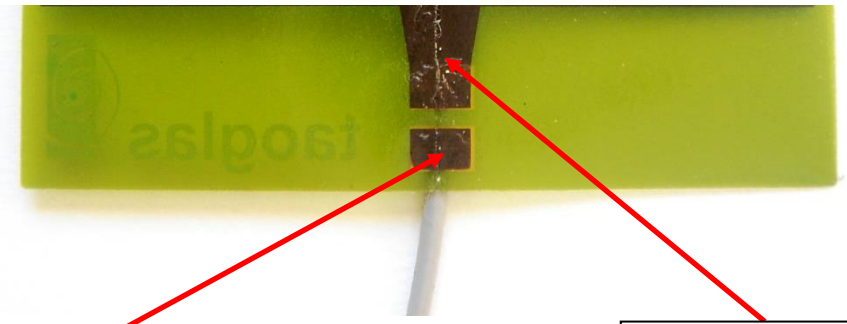
FXP.07 was design with a cell phone size ground plane (110 x 45 mm) so works the best with this ground plane. Tests were setup to demonstrate its RF properties with this ground plane, in free space and adhere to a plastic. Satimo SG64 3D-chamber is used for radiation and efficiency test with 5% tolerance.



FXP.07 with original ground plane

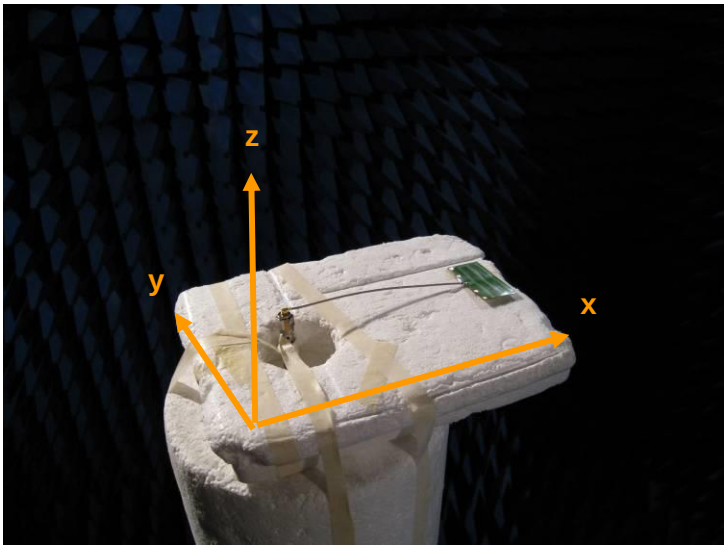
3.2 Mounting instructions and ground-plane connection

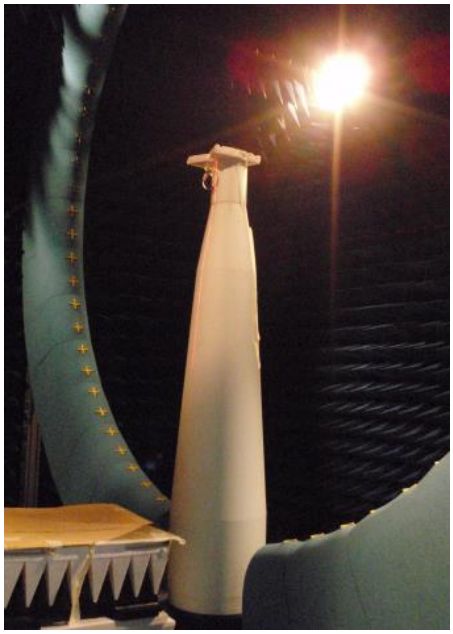
Peel back 3m paper. On the underside of the antenna is automotive grade 3m adhesive (glue) for sticking the FXP.07 directly to plastic (e.g. housing). The antenna can be curved around housing but should not be folded sharply



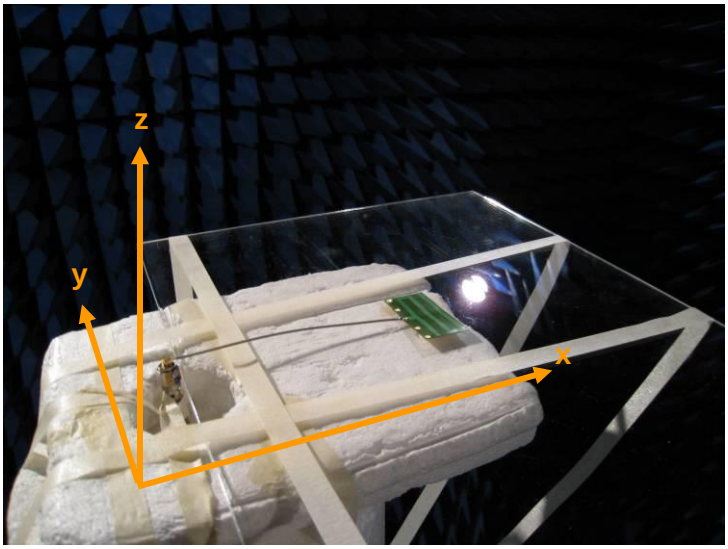
Ground connection - this small square pad at the bottom of the FXP.07 can be seen when paper is removed. This should be connected to extra ground or metal to increase efficiency (e.g. allow pad to touch the side of a PCB like the picture above

This is the antenna trace or signal feed and should be allowed to be free from the PCB and allowed to exist in free area on non metal area (plastic housing)_



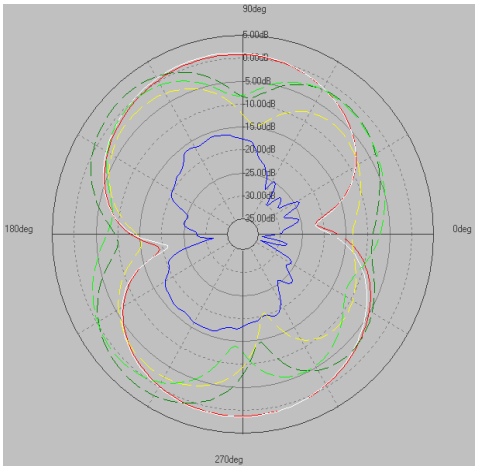
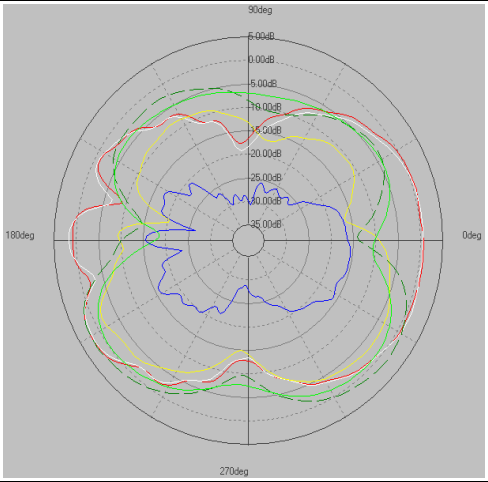
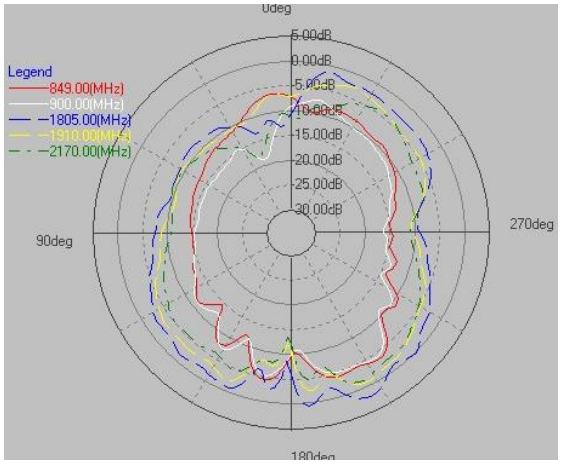
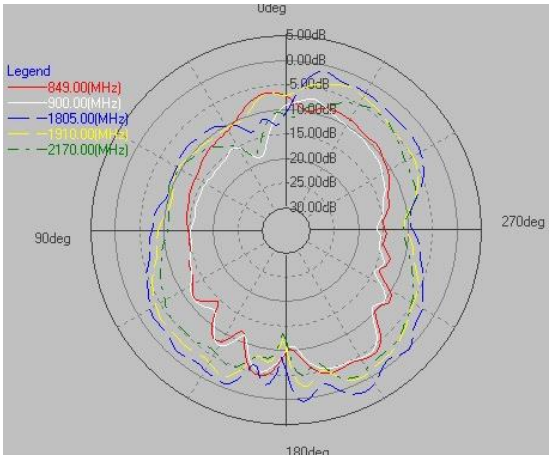


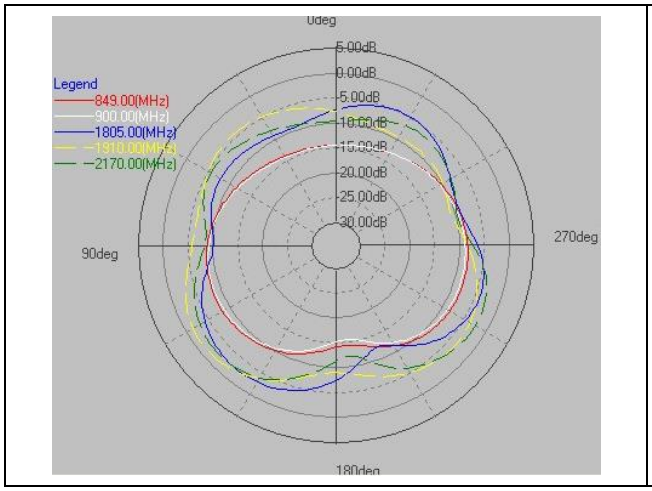
Free space antenna setup and Satimo SG64 3D-chamber.

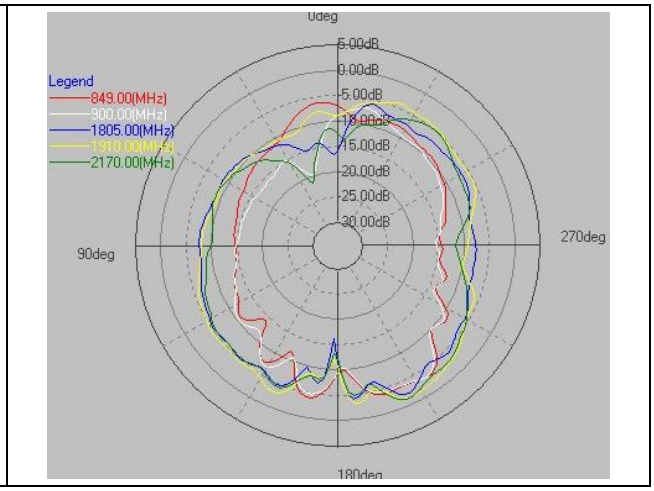


FXP.07 places on a plastic in the chamber.

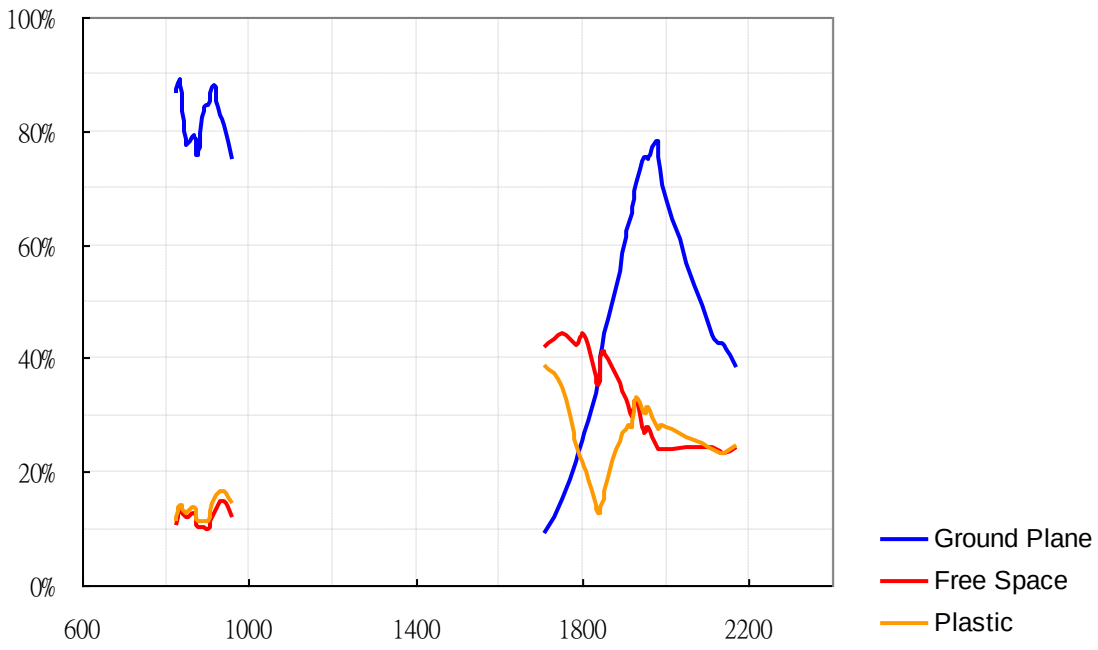
3.3 Radiation Pattern

x-y plane	x-z plane
FXP-07 with ground plane	
	
FXP-07 in free space	
	
FXP-07 adhere on plastic	



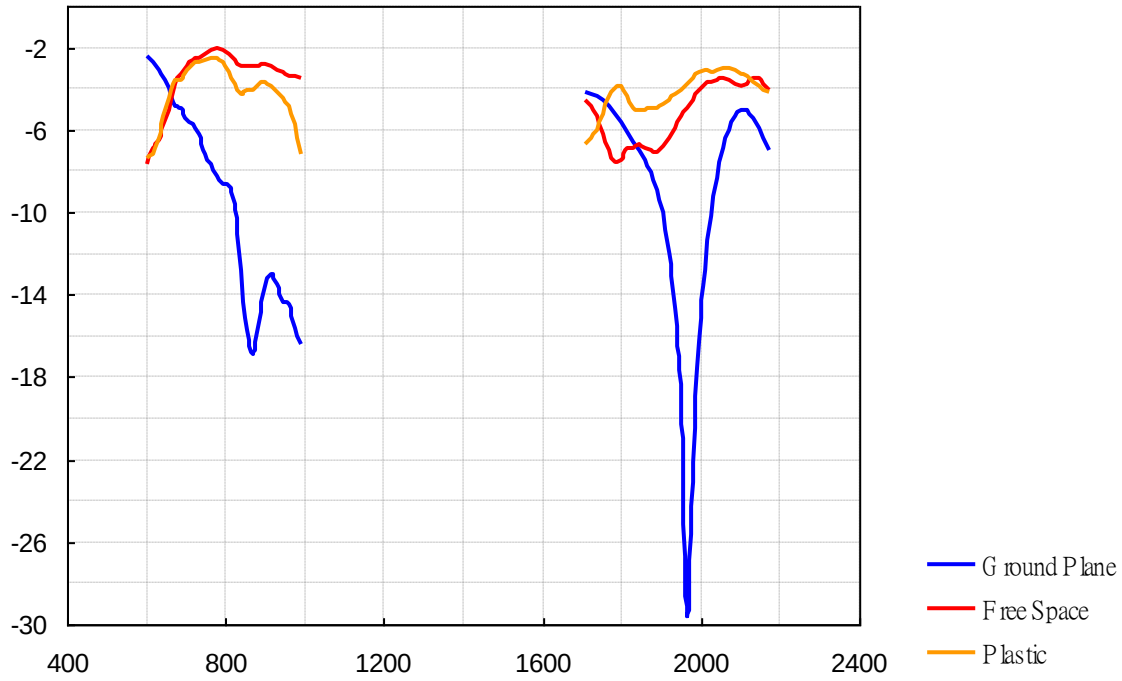


3.4 Efficiency



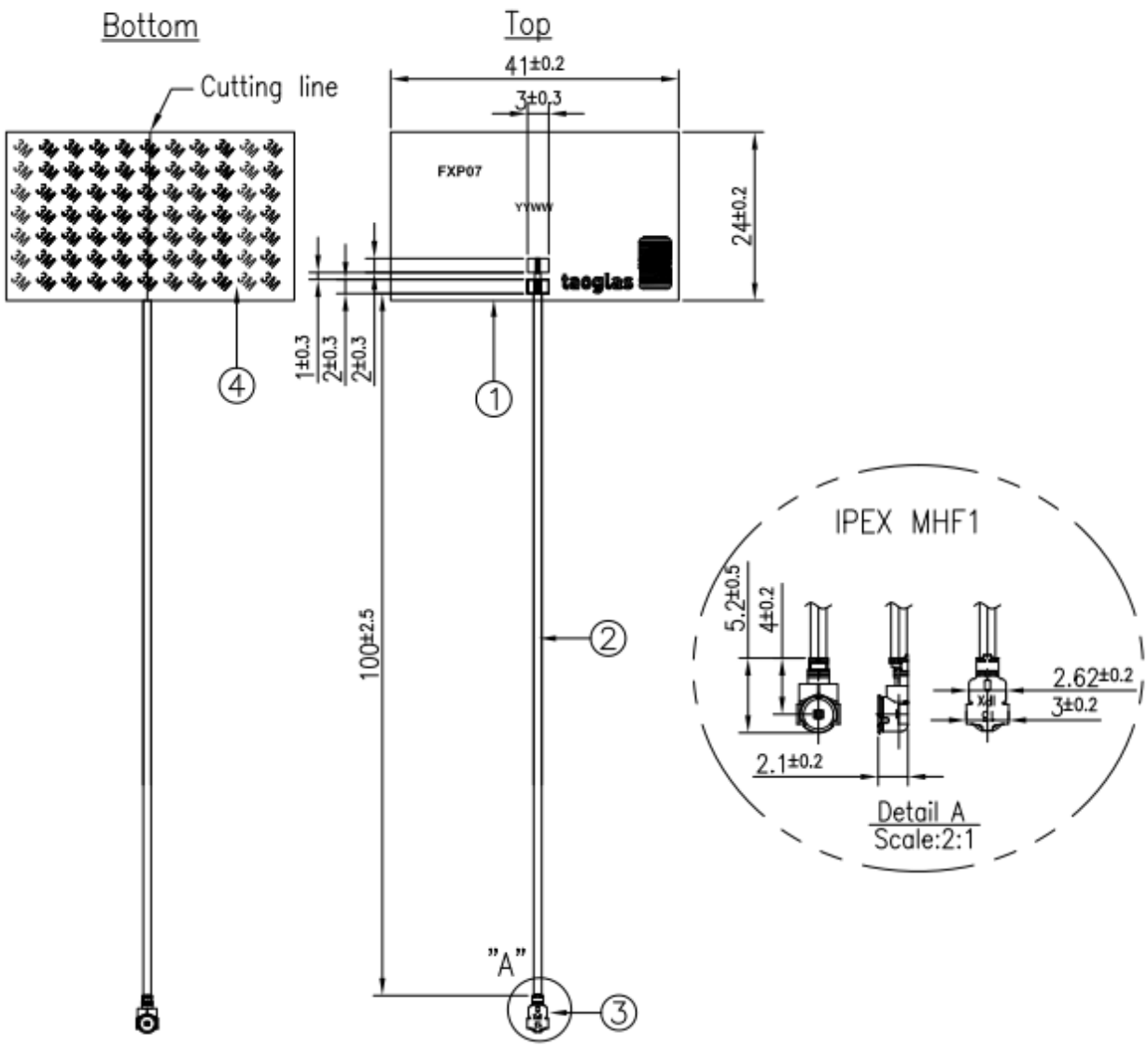
Miniature antennas couple to the ground plane for radiation so the efficiency of the antenna without a ground plane is largely degrades. These tests demonstrate the best performance (with the designed ground) and the worst performance (with no ground) possible of FXP.07. Adhere the antenna to a plastic changes the result, particularly in higher frequency bands.

3.5 Return Loss



Return loss result also indicates that FXP.07 needs to connect to a ground plane for proper operation.

4. Mechanical Drawing

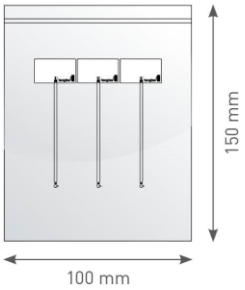


	Name	Material	Finish	QTY
1	FXP07 PCB	FPCB 0.24t	Black	1
2	1.13 Coaxial Cable	FEP	Black	1
3	IPEX MHF1	Brass	Gold	1
4	Double-Sided Adhesive	3M 467	Brown Liner	1

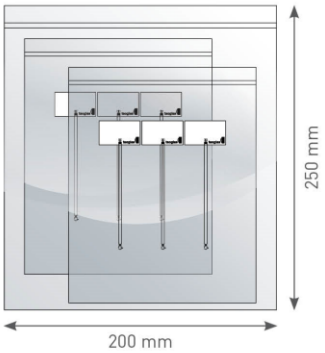
5. Packaging

FXP07.07.0100A

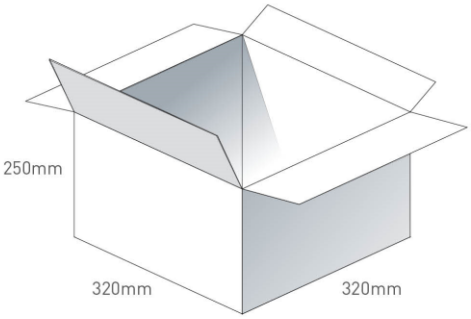
Packaging Specifications



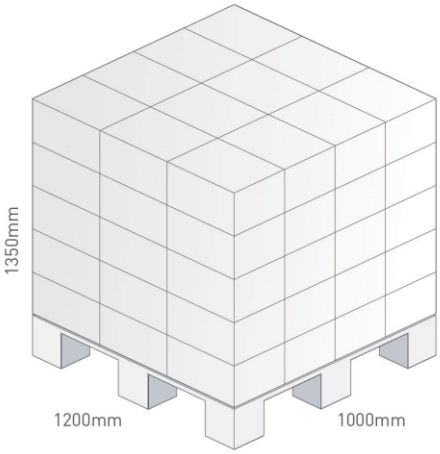
100pcs FXP07.07.0100A per PE Bag
Bag Dimensions - 150 x100mm
Weight - 80g



1000pcs FXP07.07.0100A per PE Large Bag
Bag Dimensions - 250 x 200mm
Weight - 800g



5,000 pcs FXP07.07.0100A per carton
Carton - 320 x 320 x 250mm
Weight - 4.5Kg



Pallet Dimensions 1200 x 1000 x 1350mm
60 Cartons per Pallet
12 Cartons per layer
5 Layers