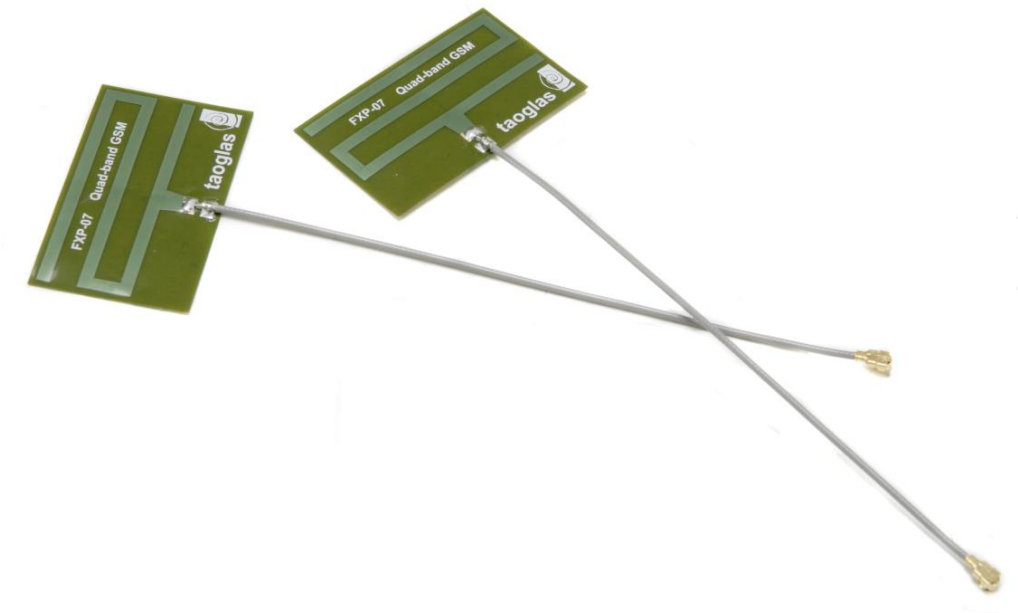




# SPECIFICATION

- 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



Version	Date	Page	Revision Description	Prepared	Approved
A	May 14 <sup>th</sup> 2008	All	New Product	TW Product Centre	Zita Lin



## I. 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.

## II. Specification

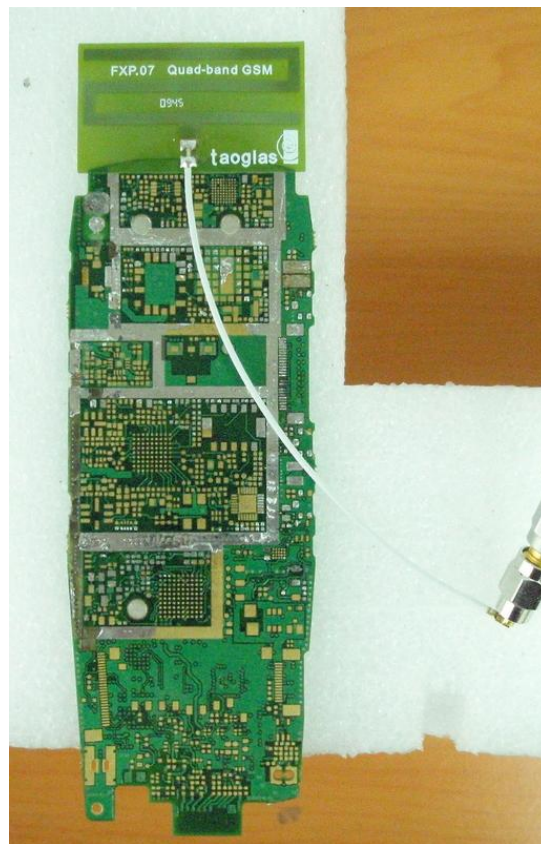
Communication System	Penta-band Cellular				
	AMPS	GSM	DCS	PCS	UMTS
Frequency (MHz)	824 ~ 896	880~960	1710~1880	1850~1990	1710~2170
Efficiency (ground plane)	82%	82%	29%	60%	49%
Efficiency (free space)	11%	12%	41%	32%	33%
Impedance	50 Ohm				
Radiation Pattern	Omni-directional				
Polarization	Linear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



### III. Electrical Property

#### Test Setup

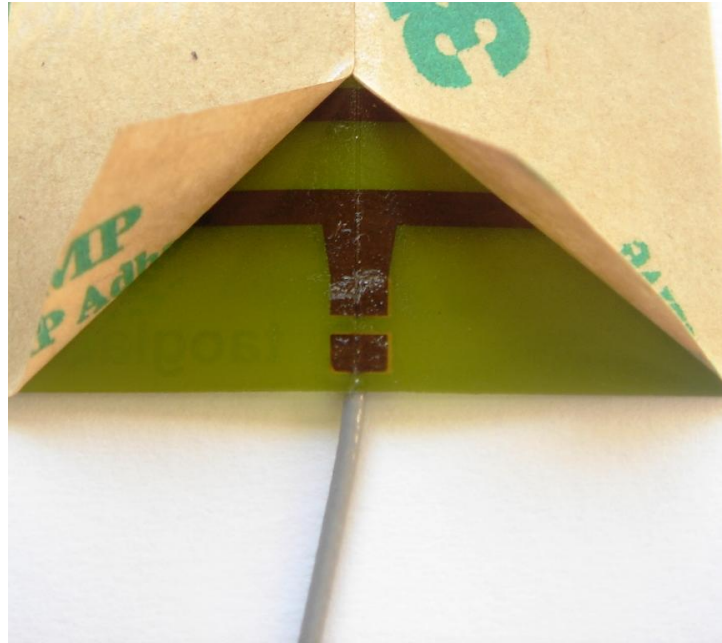
FXP.07 was design with a cell phone size ground plane (110 x 45 mm) so works the best with this ground plane. Tests were setup to demonstrate its RF properties with this ground plane, in free space and adhere to a plastic. Satimo SG64 3D-chamber is used for radiation and efficiency test with 5% tolerance.



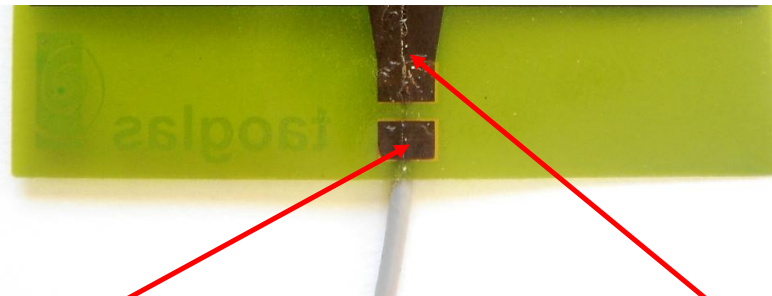
FXP.07 with original ground plane



## 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

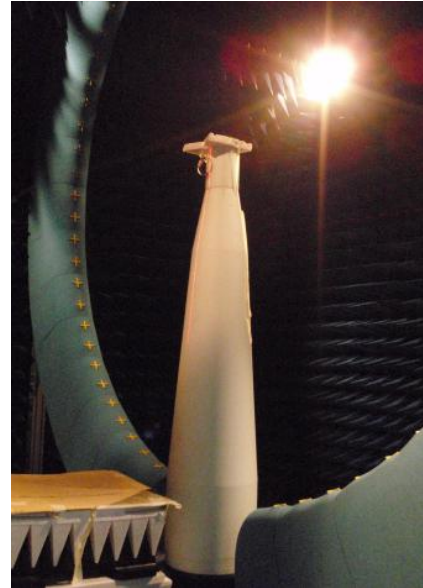
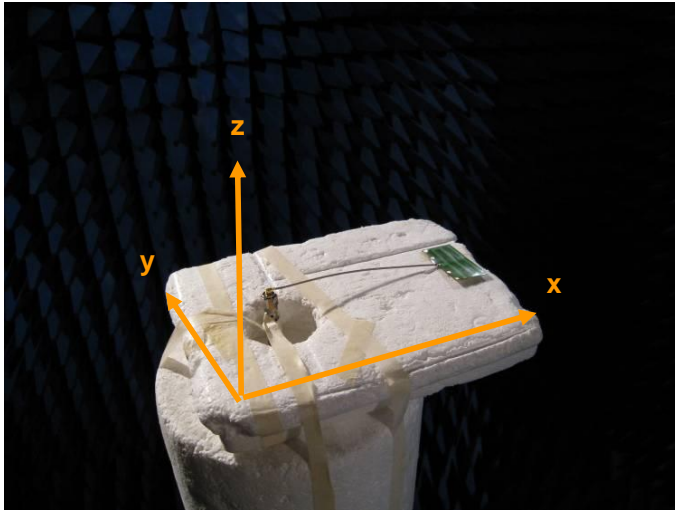


Ground connection - this small square pad at the bottom of the FXP.07 can be seen when paper is removed. This should be connected to extra ground or metal to increase efficiency (e.g. allow pad to touch the side of a PCB like the picture above

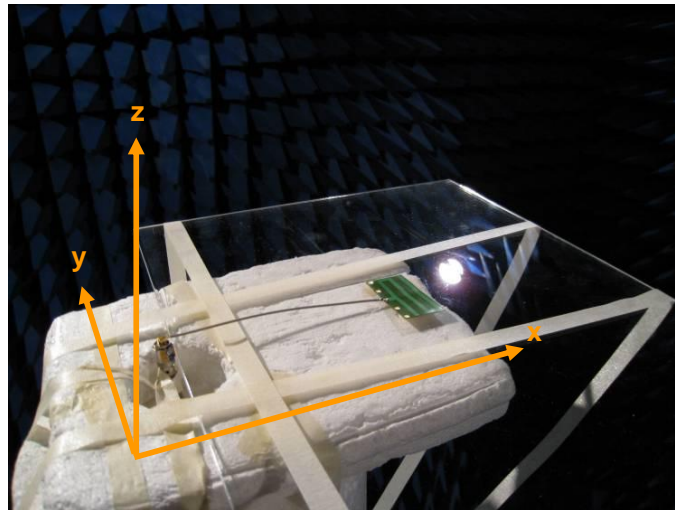
This is the antenna trace or signal feed and should be allowed to be free from the PCB and allowed to exist in free area on non metal area (plastic housing)\_



Specification



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

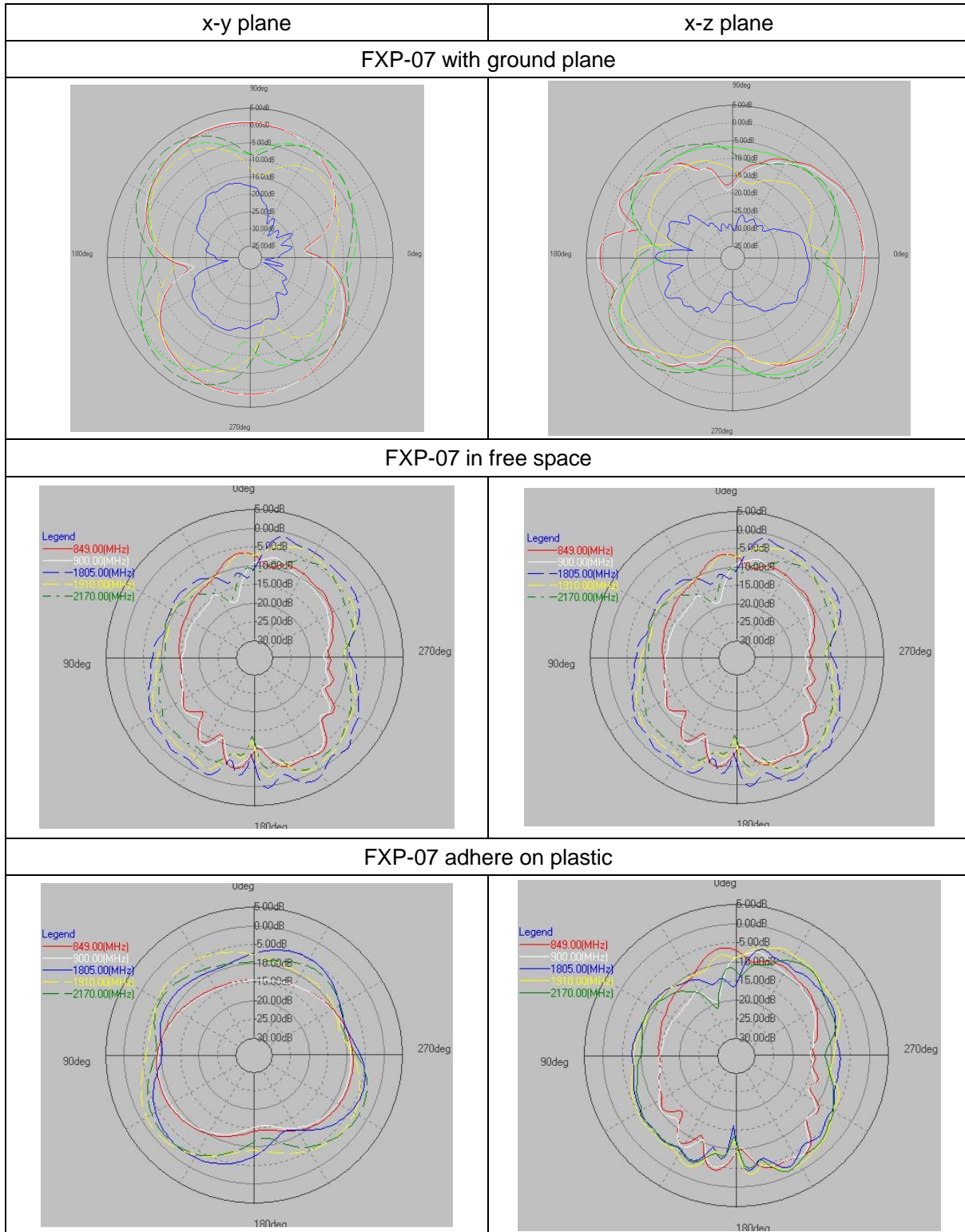


FXP.07 places on a plastic in the chamber.



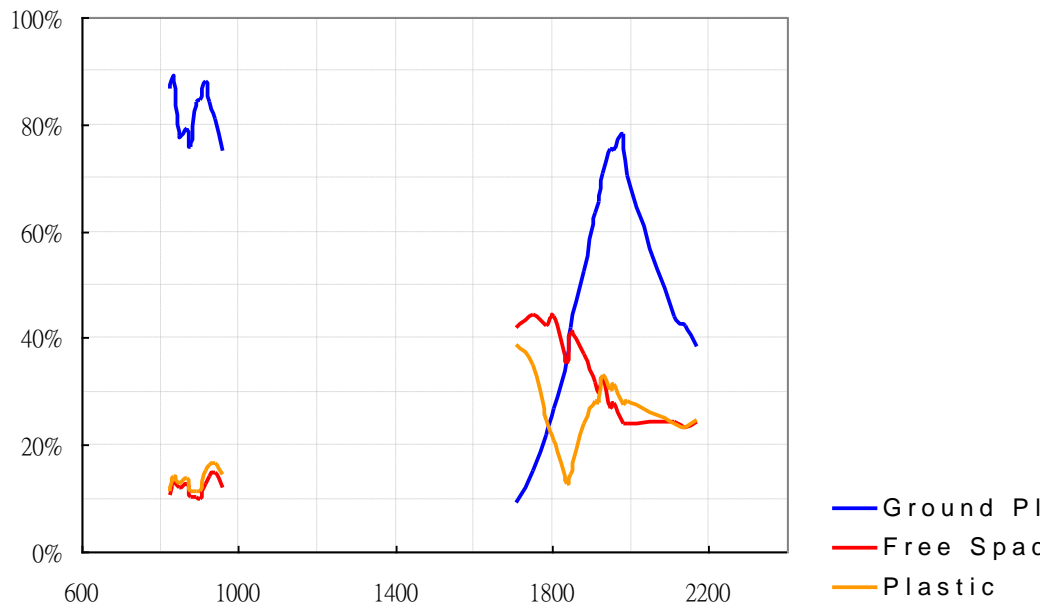


### Radiation Pattern





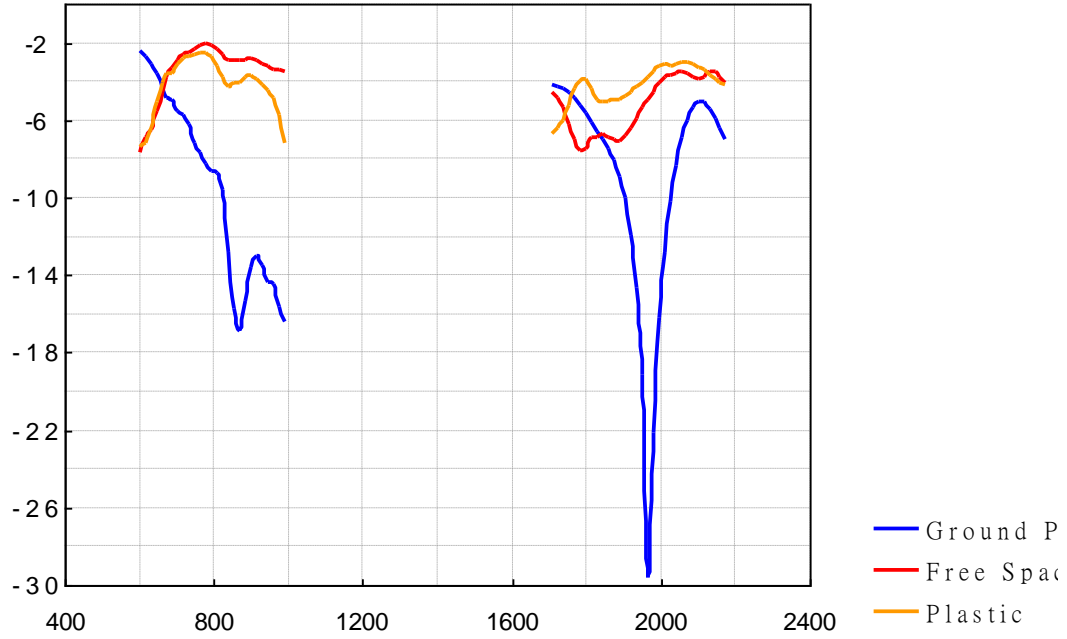
## Efficiency



Miniature antennas couple to the ground plane for radiation so the efficiency of the antenna without a ground plane is largely degraded. 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.



## Return Loss



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