

the constant

FXP40 Flexible PCB Antenna

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Part No: FXP40.07.0085A

Description:

Features:

700-960/1710-2200MHz Bands 1.9 dBi Peak Gain Easy peel and stick adhesive Dimension: 42.6*12.1*0.15mm Connector: IPEX MHFI (U.FL Compatible Cable: 85mm 1.13mm cable REACH & RoHS Compliant

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The Taoglas FXP40 is a super small monopole ultra low profile antenna for cellular and NB-IoT bands between 700 and 2200 MHz. The FXP40 has a peak gain of 1.3dBi and efficiencies of 56% are achievable if integrated correctly.

It is manufactured from a poly-flexible material, has a tiny form factor of just 42.6 x 12.1 x 0.15mm and is supplied with a double-sided 3M tape for easy "peel and stick" mounting. It is designed to be mounted directly onto a plastic and is an ideal choice for any device maker that needs to keep manufacturing costs at a minimum over the lifetime of a product.

Typical Applications include:

- Wearables
- **Remote Monitoring** _
- Handheld devices

The cables length can be customizable for customers. Contact your regional customer support team for further information.



Specifications

Electrical								
Frequency (MHz)		Efficiency (%)	Average Gain	Peak Gain (dBi)	Impedance	Max Input	Polarization	Radiation Properties
698~806	Freespace	12	-9.4	-2.7				
000 000	2mm ABS	17	-9.2	-3.1				
00 4-000	Freespace	16	-8.1	-0.5				
824~960	2mm ABS	25	-6.4	1.3	50.0		1. Second	Owni Directional
	Freespace	56	-2.5	5.3	50 Ω	5 VV	Linear	Omni-Directional
1710~2200	2mm ABS	34	-5.3	3.8				
2200~2600	Freespace	18	-7.9	0.7				
2300 2690	2mm ABS	11	-10.8	1.6				
			Mecha	nical				
Dimensions (mm)					46.2*12.3	1*0.15 m	m	
terial					Flexible	e Polymer		
or and Cable			IPE>	k Mhfi (U.	FL Compatil	ole) and 1	L.13 mm min	і соах
eight						1g		
		E	nvironı	mental				
Temperature					-40°C	to 85°C		
emperature					-40°C	to 85°C		
Humidity					40%	to 95%		
ompliant					Y	'es		
	698~806 824~960 1710~2200 2300~2690 2300~2690 cons (mm) terial r and Cable eight femperature emperature femperature Humidity	Freespace $698~806$ $Freespace2mm ABSFreespace824~9602mm ABS1710~2200Freespace2300~2690Freespace2mm ABS2mm ABS2300~2690Freespace2mm ABS2mm ABS$	Frequency (MHz)(%) $698^{\circ}806$ Freespace12 $698^{\circ}806$ $2mm ABS$ 17 $824^{\circ}960$ $2mm ABS$ 25 $1710^{\circ}2200$ $2mm ABS$ 34 $1710^{\circ}2200$ $2mm ABS$ 34 $2300^{\circ}2690$ $Freespace$ 18 $2300^{\circ}2690$ $2mm ABS$ 11 $r and Cable$ $11710^{\circ}2000$ $1110^{\circ}2000^{\circ}2000^{\circ}200^{\circ$	Frequency (MHz)Freespect (%)Average Gain698~806Freespect 2mm AB12-9.42mm AB179.2-9.2824~960Freespect 2mm AB16-8.12mm AB25-6.4-2mm AB56-2.5-2mm AB53-5.3-2mm AB114-10.8-2mm AB114-10.8-2mm AB114-10.8-2mm AB114-10.8-2mm AB114-10.8-2mm AB2mm AB1142mm AB2mm AB	Frequency (MHz)Freespace (%)Fficiency (%)Average (GainPeak Gain (dBi) $A = 0$ Freespace12-9.4-2.7 $2 m A > 3$ 17-9.2-3.1 $A = 0$ 2mm A>16-8.1-0.5 $A = 0$ 2mm A>25-6.41.3 $A = 0$ 2mm A>55-6.41.3 $A = 0$ 2mm A>54-5.33.8 $A = 0$ 2mm A>13-5.33.8 $A = 0$ 2mm A>13-5.33.8 $A = 0$ 2mm A>11-10.81.6 $A = 0$ 2mm A>11-10.81.6 $A = 0$ 2mm A>11-10.81.6 $A = 0$ 7mm A>7mm A>-10.81.6 $A = 0$ 7mm A>7mm A>7mm A>-10.8 $A = 0$ 7mm A>7mm A>7mm A> $A = 0$ 7mm A>7mm A>7mm A> $A = 0$ 7mm A>7mm A>	Frequency (MHz)Image: state of the state of	Frequency (MHz)Fficiency (%)Average Gain GainPeak Gain (dBi) (dBi)ImpedanceMax input698~806Freespera12-9.4-2.72mm AE170-9.2-3.1824~960Freespera16-8.1-0.52mm AE25-6.41.3-5.31710~2200Freespera34-5.33.82mm AE11-10.81.6 </td <td>Frequency (MHz)Free (H)Efficiency (H)Average (H)PeratorsMax (H)Polarization$698^{\circ}806$Free 2°129.9.4-2.7$2^{\circ}$-3.1$2^{\circ}$-3.1$2^{\circ}$$2^{\circ}$-3.1$2^{\circ}$</td>	Frequency (MHz)Free (H) Efficiency (H) Average (H) PeratorsMax (H) Polarization $698^{\circ}806$ Free 2° 129.9.4-2.7 2° -3.1 2° -3.1 2° 2° -3.1 2°

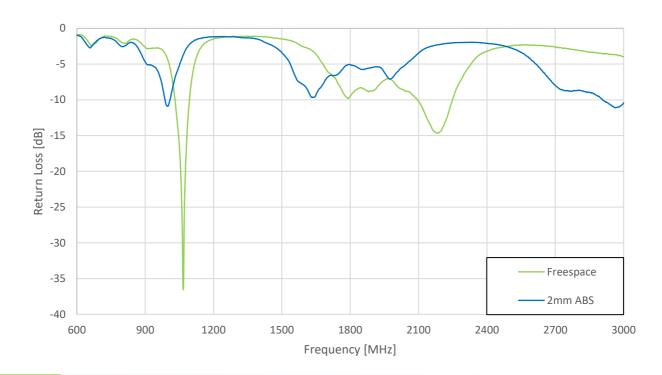
*All results were measured with 85mm length 1.13mm coaxial cable and on 2mm thickness ABS base.

2.



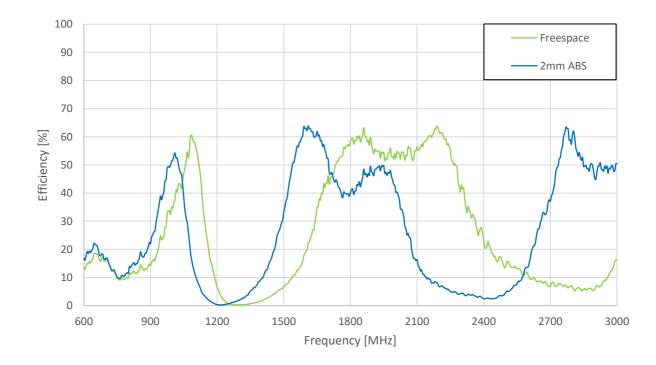




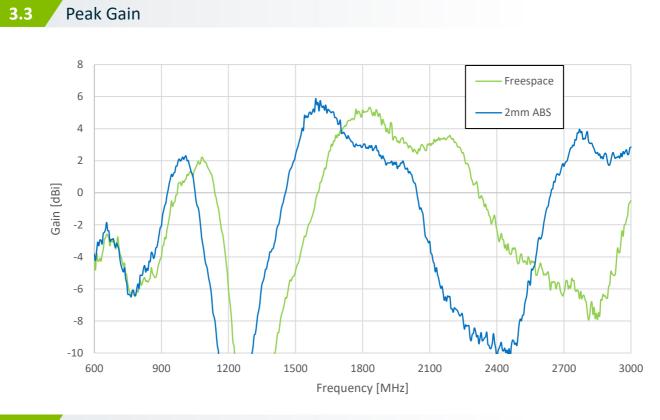




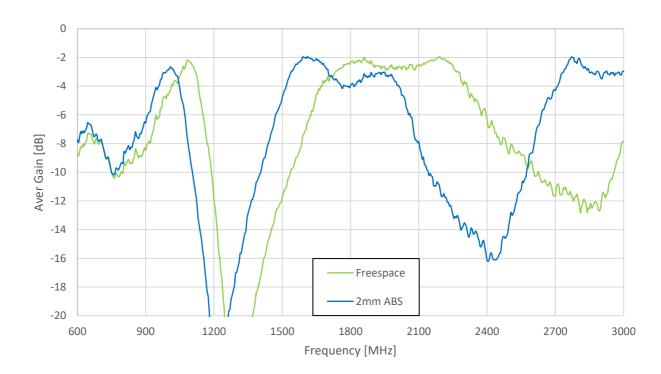
Efficiency







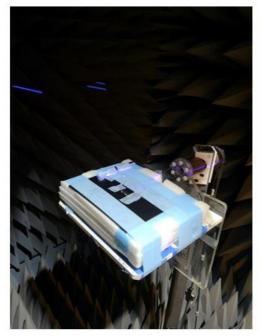




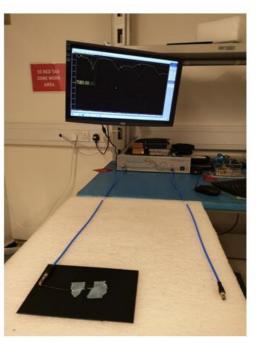


4.1 Test Setup

4.



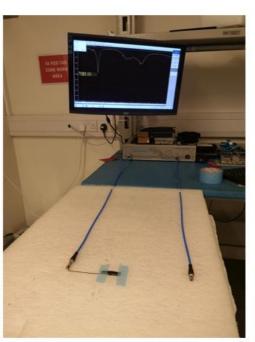
Chamber Setup on 2mm ABS



VNA Setup on 2mm ABS



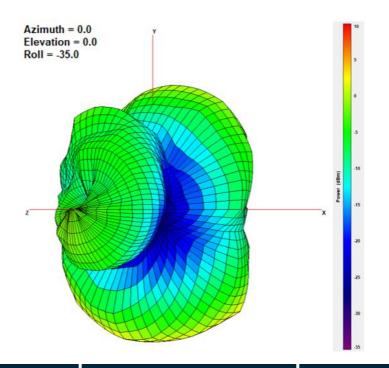
Chamber Setup In Freespace

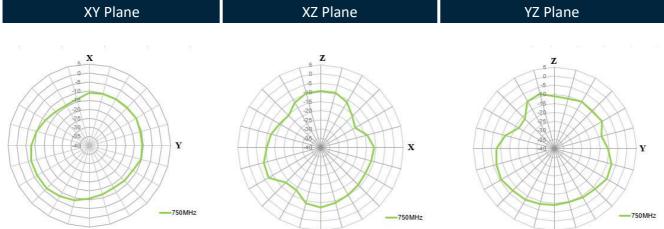


VNA Setup In Freespace



4.2 750MHz Freespace - 3D and 2D Radiation Patterns

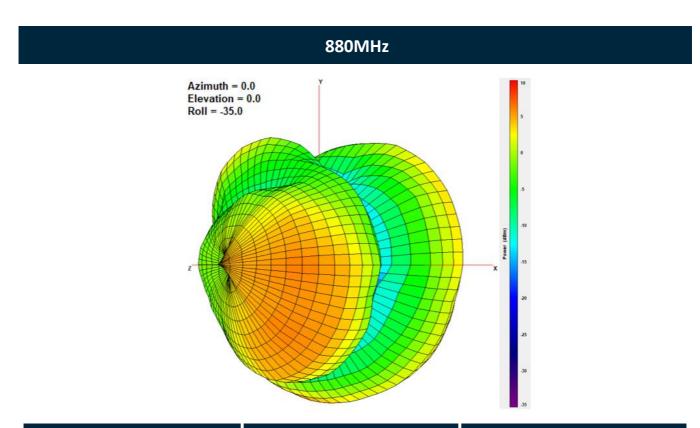






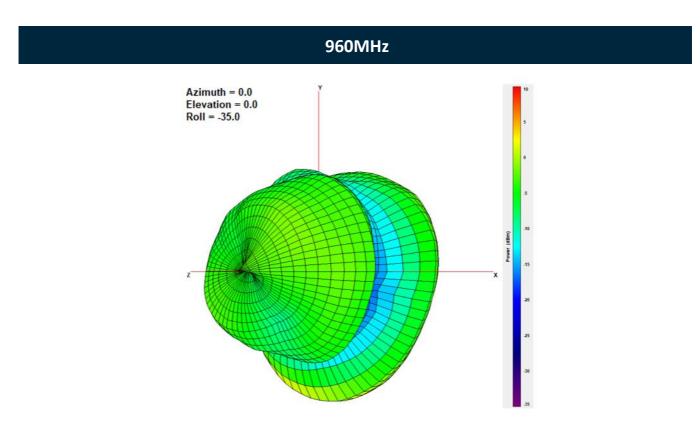
XY Plane	XZ Plane	YZ Plane
X X X X X X X X X X X X X X X X X X X	X 25 28 28 28 28 28 28 28 28 28 28 28 28 28	S S S S S S S S S S S S S S S S S S S





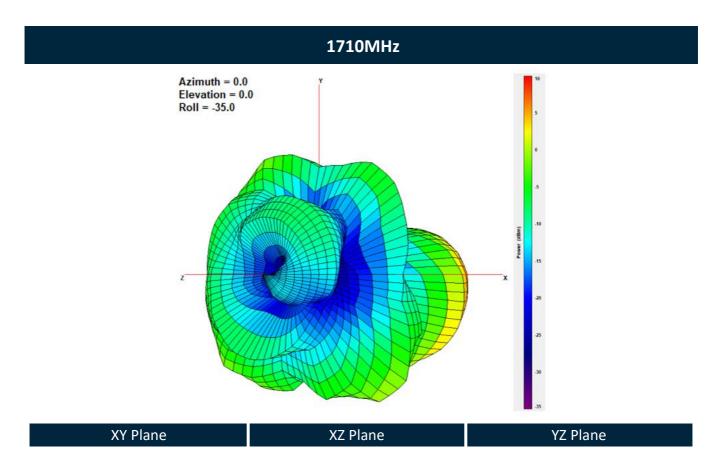
XY Plane	XZ Plane	YZ Plane
X	Z	Z
X	Z	Z
X	Z	Z
X	Z	Z
X	Z	Z
X	Z	Z
X	Z	Z
X	Z	Z
X	Z	Z
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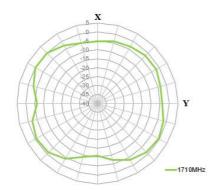


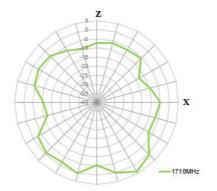


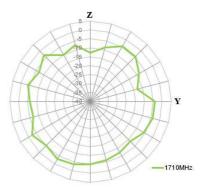
XY Plane	XZ Plane	YZ Plane
Y Second	Solution of the second	S S S S S S S S S S S S S S S S S S S









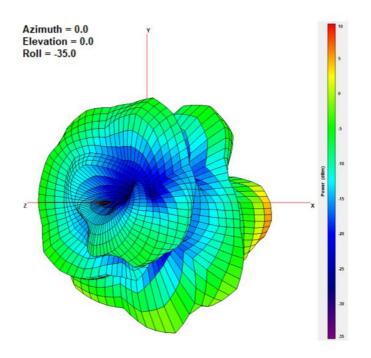




XY Plane	XZ Plane	YZ Plane
X C C C C C C C C C C C C C	The second secon	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z

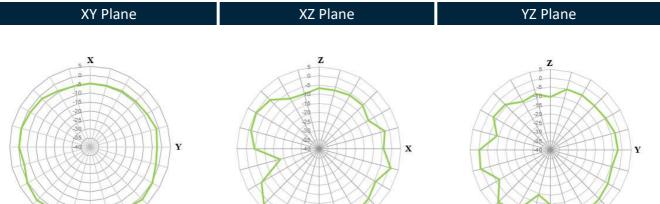


1990MHz



XY Plane	XZ Plane	YZ Plane
X X X X X X X X Y Y Y Y Y Y Y	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z





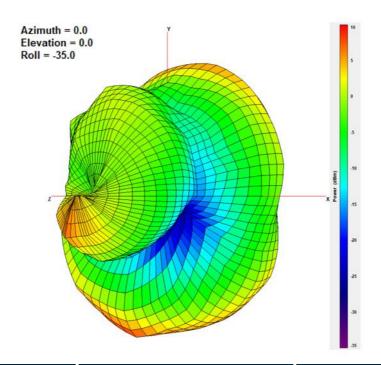
2170MHz

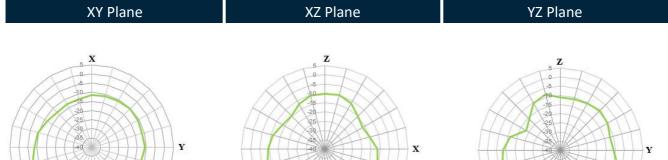
_____2170MHz

-2170MHz



4.3 750MHz On 2mm ABS - 3D and 2D Radiation Patterns



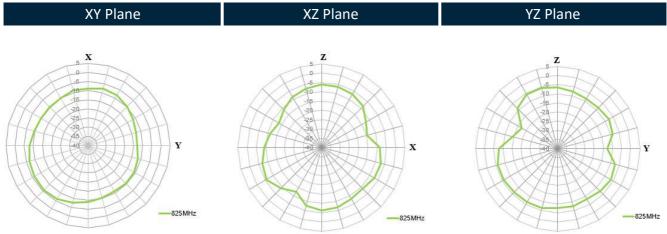


750MHz

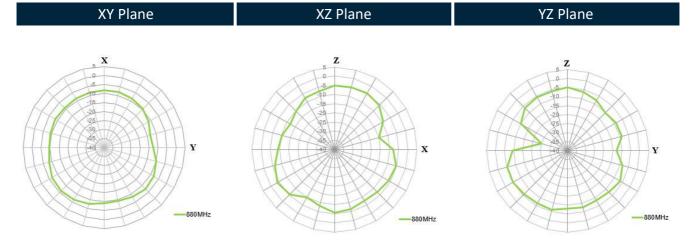
750MHz

750MHz







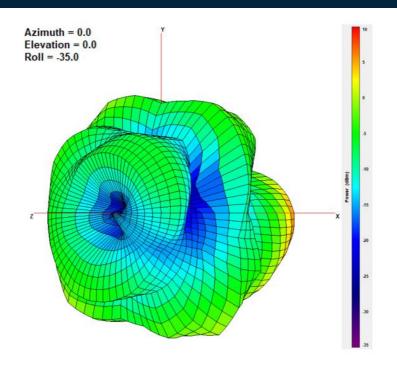




XY Plane	XZ Plane	YZ Plane
X	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S	Z	Z
S		



1710MHz



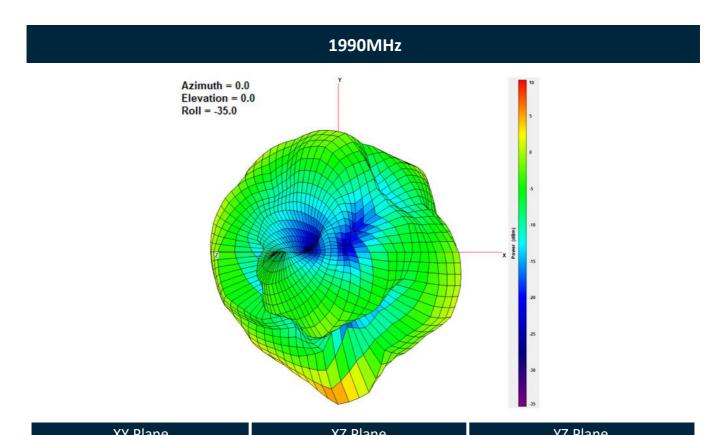
XY Plane	XZ Plane	YZ Plane
T110MHz	Z T T T T T T T T T T T T T T T T T T T	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z



LISBOMH2

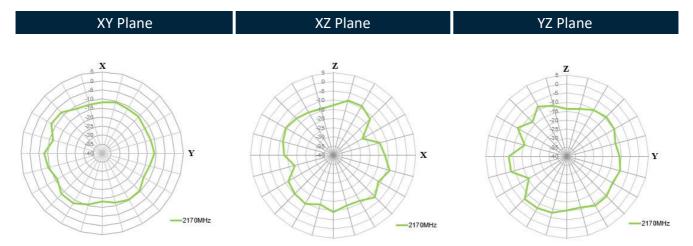
XY Plane	XZ Plane	YZ Plane
X D D D D D D D D D D D D D D D D D D D	X 1800MHz	Z T T T T T T T T T T T T T T T T T T T



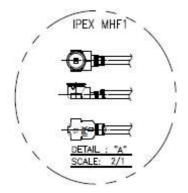


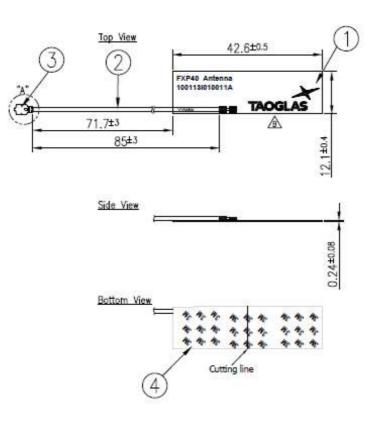
XY Plane	XZ Plane	YZ Plane
X A A A A A A A A A A A A A	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z
20 20 30 45 46 46	x	Y









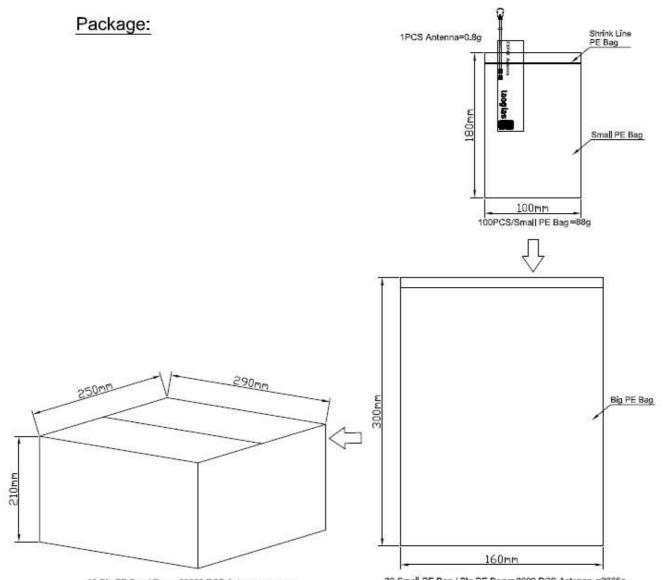


NOTES: 1.No dregs or insufficient soldering. Solder thickness 0.3 ~1.7mm 2.The solder must be smooth and full to the edges of the pad. The solder must not extend outside of the pad area. 3.The connector position has special orientation to the PCB as per drawing. 4.All material must be RoHS compliant. 5.Open/short QC, VSWR required. 6.Soldered area

	Name	P/N	Material	Finish	QTY
1	FXP40 PCB	100113010011A	FPCB 0.1t	Black	1
2	1.13 Codxid Cable	300213A000013A	FEP	Block	1
3	IPEX MHF1	204111D000013A	Brdss	Gold	1
4	Double-Sided Adhesive	100113010011A	3M 467	Brown Liner	1



6. Packaging



10 Blg PE Bag / Box = 30000 PCS Antenna =26.7Kg

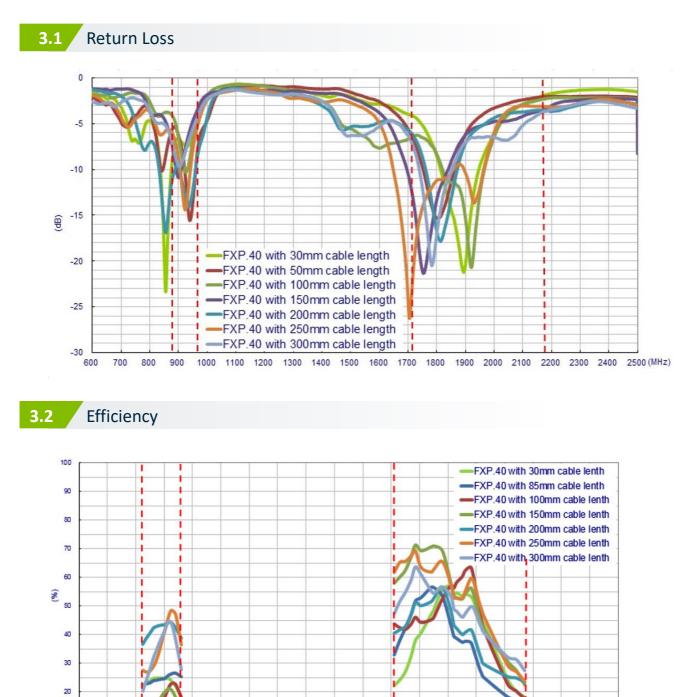
30 Small PE Bag / Blg PE Bag = 3000 PCS Antenna =2665g



Application Note

7.

The FXP40 antenna measurement with difference cable length on plastic plate of 2 mm thickness, the performance is shown as below.



I

1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 (MHz)

10

0

600

700

800

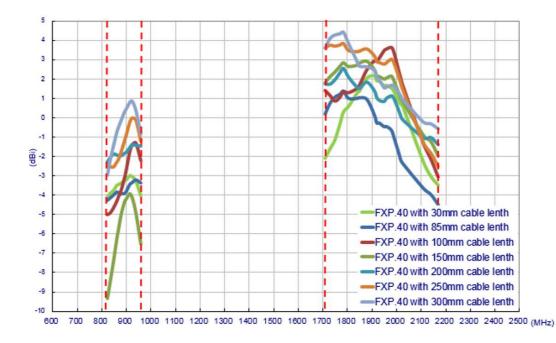
900

1000

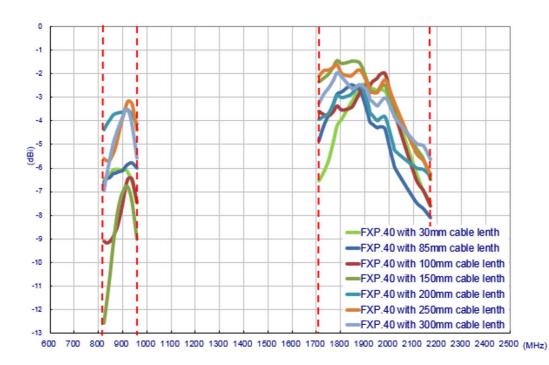
1100



3.3 Peak Gain







SPE-14-8-053-D



Chan	gelog	for	the d	latas	heet
Chung	50105		the c	acus	

SPE-14-8-053 - FXP40.07.0085A

Revision: D (Current Version)				
Date:	2022-04-21			
Changes:	Full datasheet update			
Changes Made by:	Gary West			

Previous Revisions

Revision: C	
Date:	2020-07-01
Changes:	Updated Weight
Changes Made by:	Jack Conroy

Revision: B				
Date:	2019-04-11			
Changes:	Page 1 Features, page 3 Specification, page 4~5 Antenna Characteristicspage7~9 Antenna radiation patterns, page11~12 Application Note.			
Changes Made by:	David Connolly			

Revision: A (Original First Release)			
Date:	2014-05-26		
Notes:			
Author:	Technical Writer		



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