

## SPECIFICATION

- Part No. : **FXP70.07.0053A**
- Product Name : FXP70 Freedom 2.4GHz  
Multi Standard Antenna
- Feature : Low profile SMT antenna  
High performance magnetic field antenna  
RoHS Compliant



## I. Overview

The FXP70 Freedom 2.4GHz Antenna works on WiFi, ZigBee, Bluetooth and ISM band at 2.4GHz. This antenna has been designed as a general solution to cover the current market applications, with easy installation through a cable connection. The antenna has been designed to work on different plastics material and thickness. We have selected a piece of ABS plastic with 1.5 mm of thickness as a baseline for testing.

## II. Antenna Characteristics

Parameter	Multi-Standard			
Communication System	Bluetooth	WiFi	ZigBee	2.4GHz ISM
	2401-2480	2412-2462	2410-2480	2400-2483.5
Efficiency (%)	80%			
Gain	5dBi			
Free Space Peak Gain	1.5dBi			
Return Loss	- 20dB			
Impedance	50 Ohms			
VSWR	≤1.5:1			
Polarization	Linear			
Power Handled	5 W			
Operation Temperature	-40 °C ~ +85 °C			
Storage Temperature	-40 °C ~ +85 °C			
Dimensions	27 X 25 X 0.08 mm			
Weight	1.2 g			
Connector	MHFI (U.FL Compatible)			
Cable Standard	Mini-Coax 1.13 mm			
Cable Length and color	53 mm, Black			
RoHS Compliant	Yes			
Adhesive	3M 467			

### III. TEST SET UP

A Satimo SG24 3D Scan System with Anechoic Chamber.

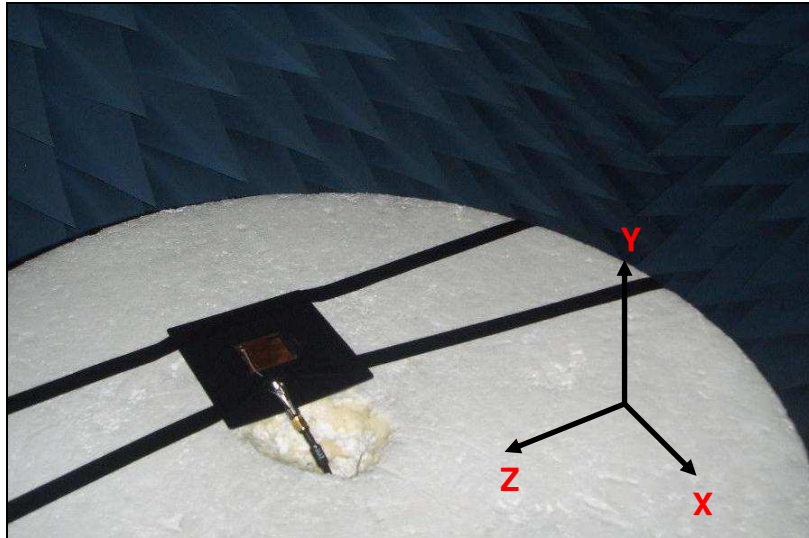


Figure 1. Satimo System.

Agilent 8753ES Vector Network Analyzer.



Figure 2. Network Analyzer.

## IV. ANTENNA PARAMETERS

The next antenna parameter graphs like Return Loss, Smith Chart and VSWR were measured in the Agilent 8753ES Vector Network Analyzer. The Gain, Efficiency and Radiation Patterns were measured in the reliable Satimo 3D Scan System.

### A. Return Loss Data

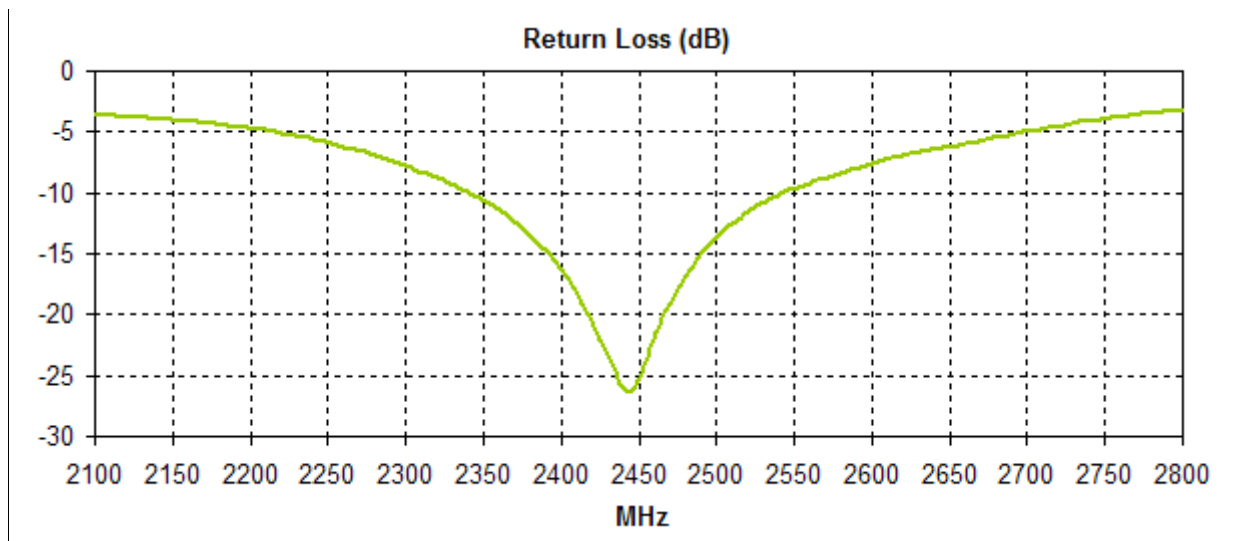


Figure 3. Return Loss for the FXP70 Antenna.

### B. VSWR Data

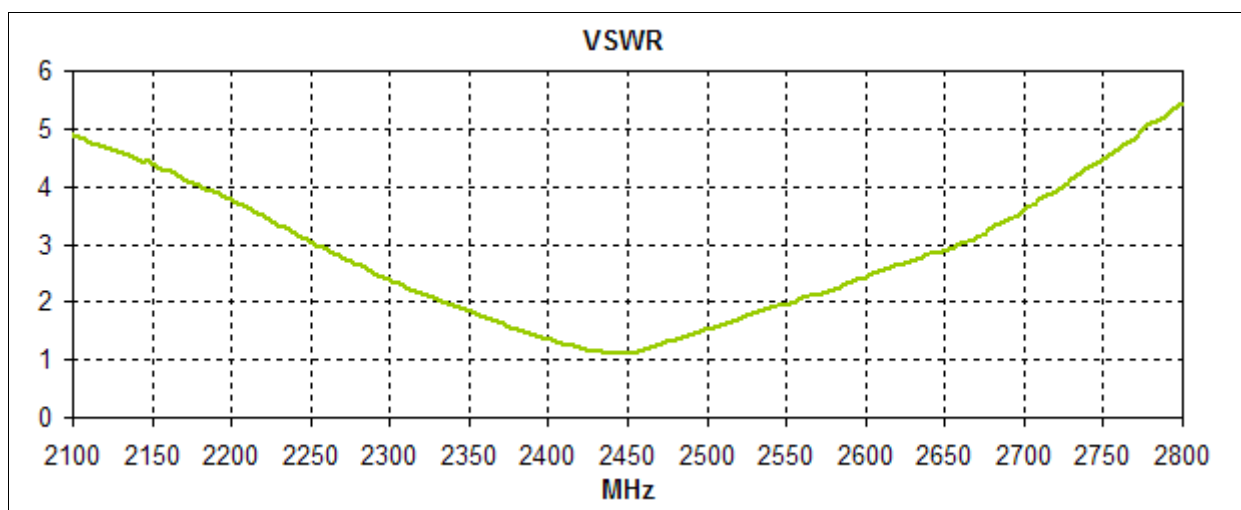
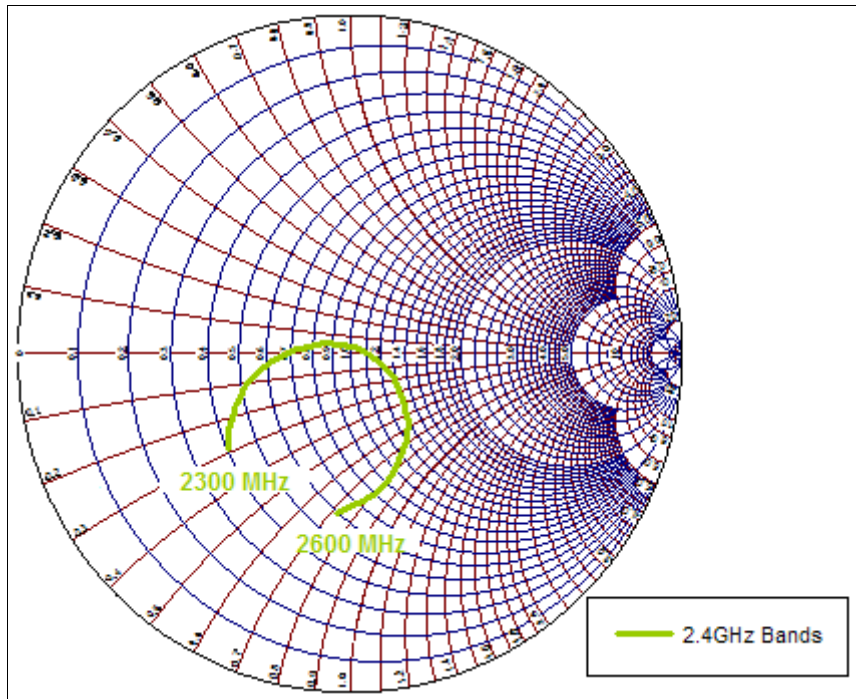


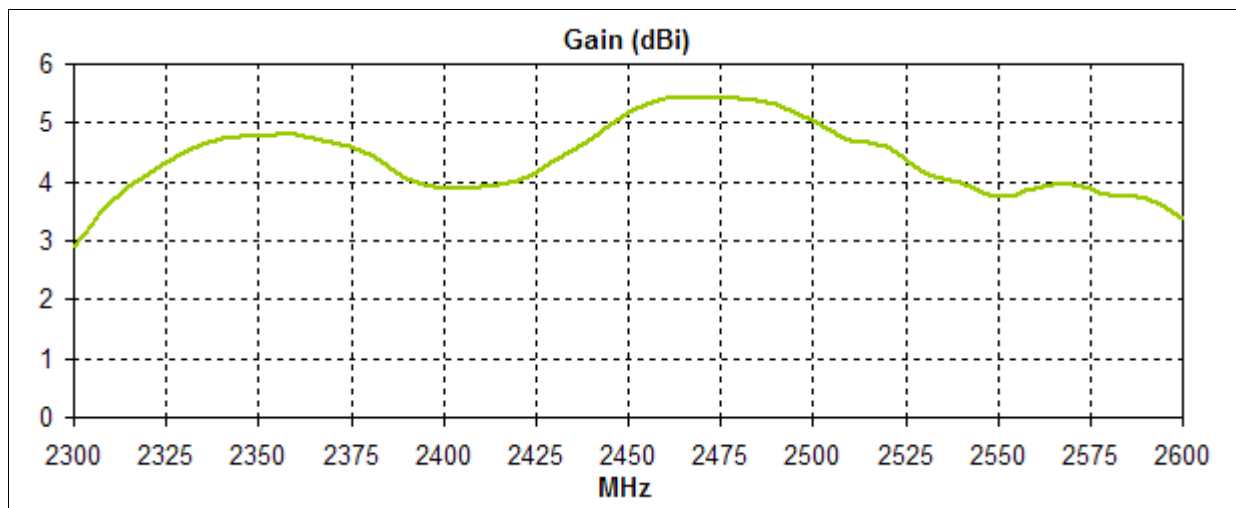
Figure 4. VSWR for the FXP70 Antenna.

### C. Smith Chart Data



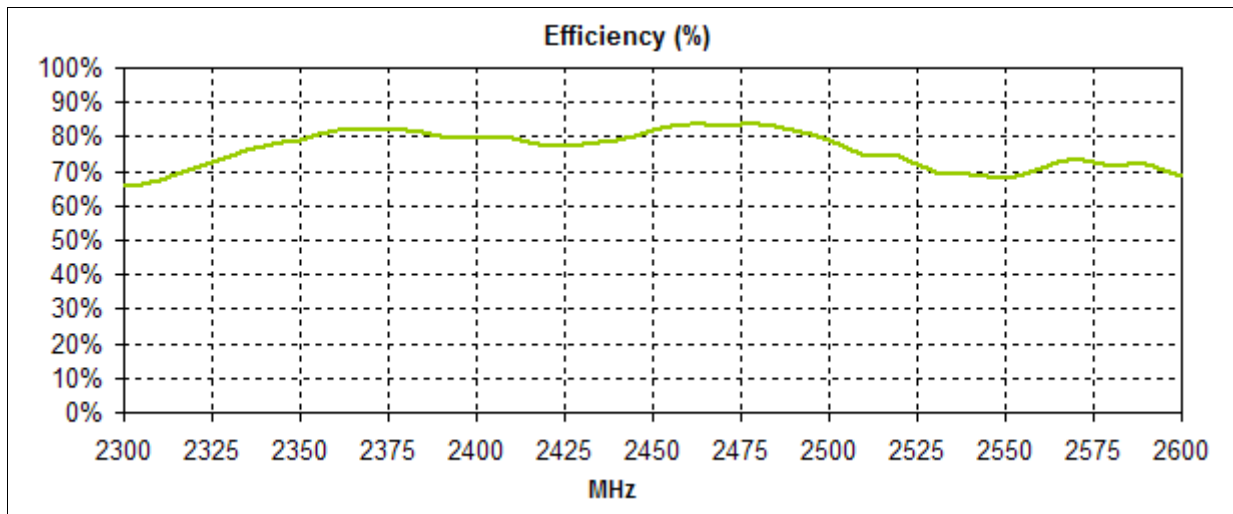
**Figure 5.** Smith Chart for the FXP70 Antenna.

### D. Gain Data



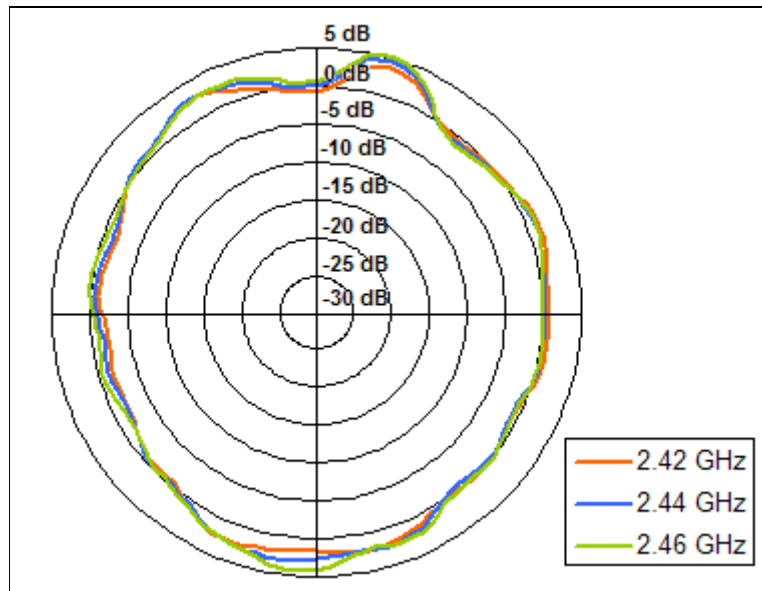
**Figure 6.** Gain for the FXP70 Antenna.

### E. Efficiency Data

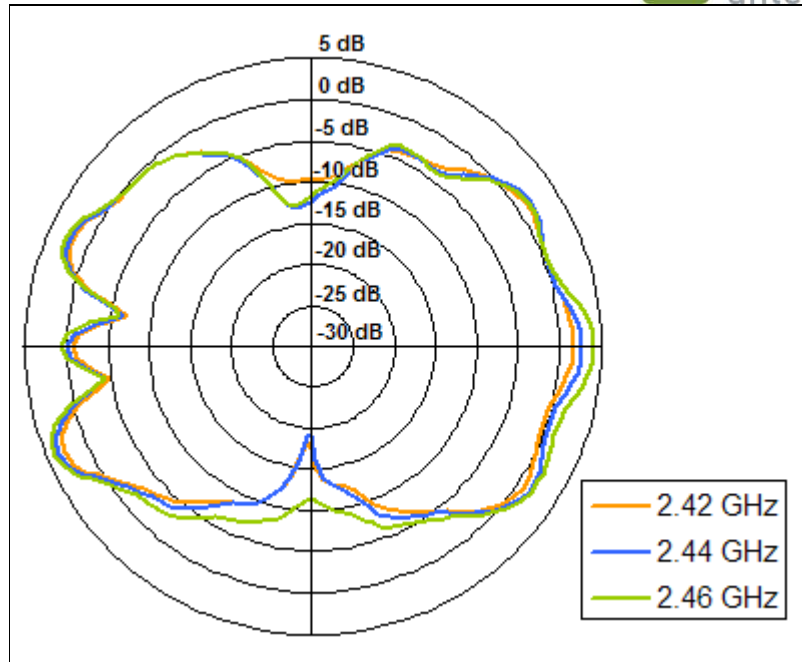


**Figure 7.** Efficiency for the FXP70 Antenna.

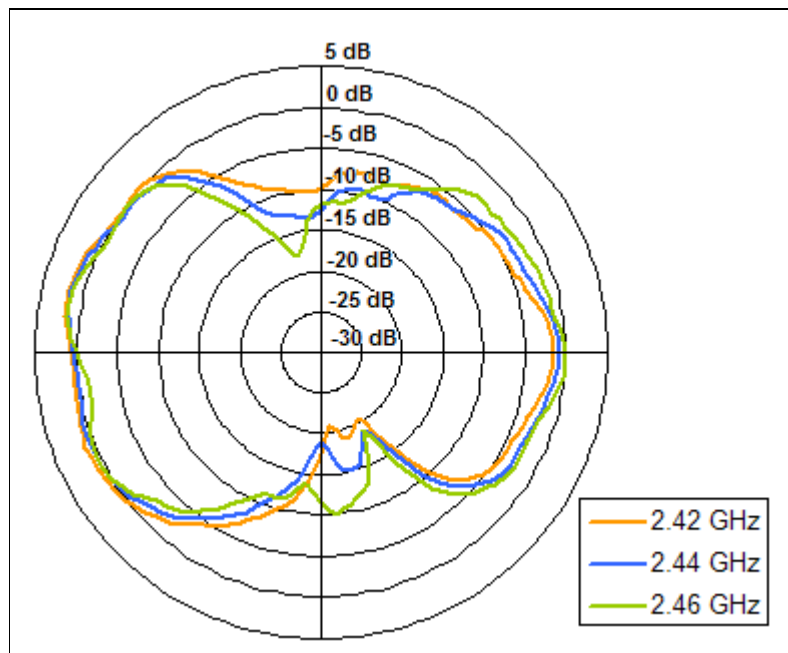
### F. Radiation Pattern Data.



**Figure 8.** Radiation pattern XZ Plane, Figure 1 as reference (dB).

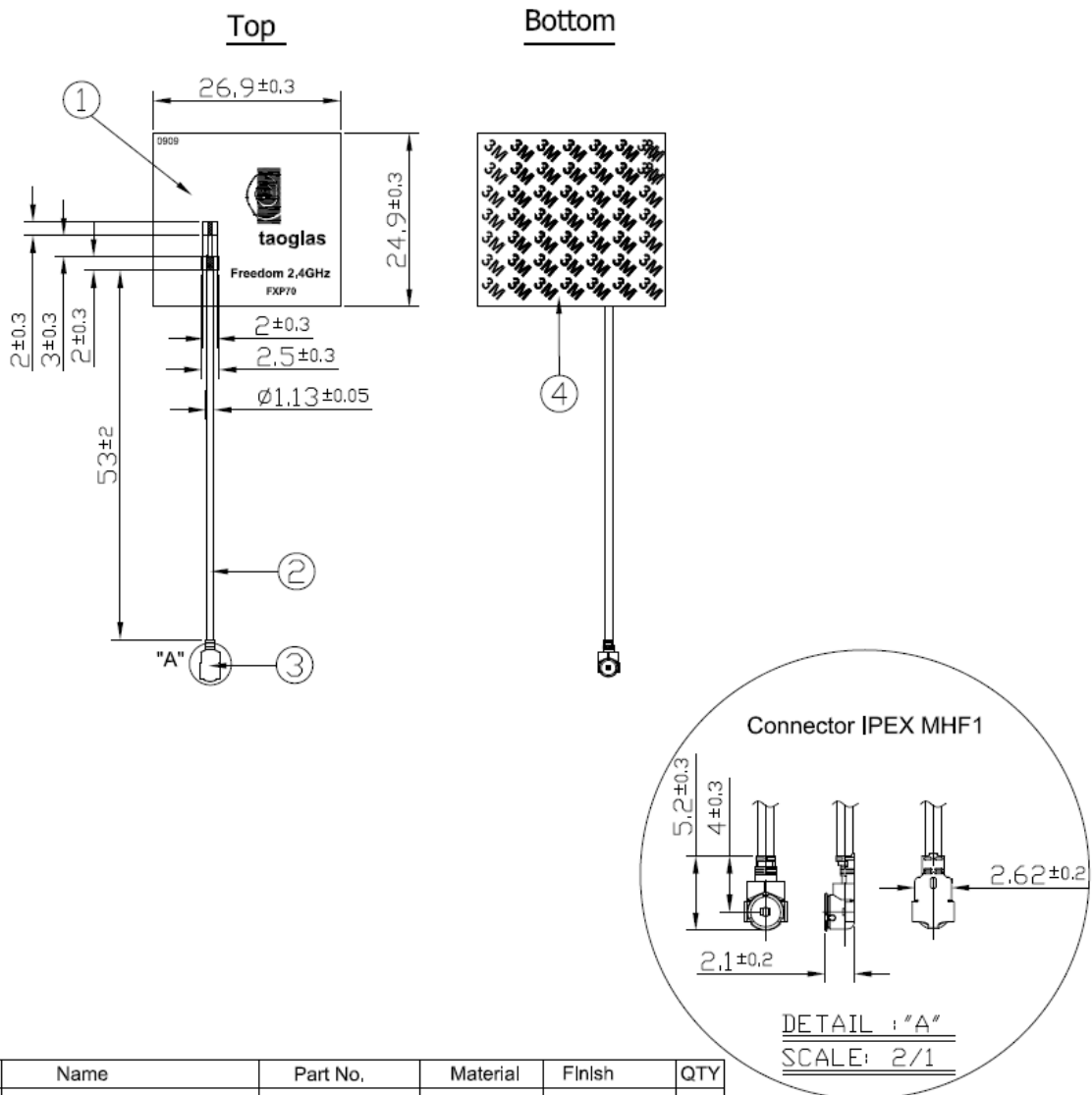


**Figure 9.** Radiation pattern YZ Plane, Figure 1 as reference (dB).



**Figure 10.** Radiation pattern XY plane, Figure 1 as reference (dB).

## V. MECHANICAL DRAWING



	Name	Part No.	Material	Finish	QTY
①	FXP70 PCB		FPCB 0.1t	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