



Close-up

**PC104.07.0165C**

**Specification**

<b>Part No.</b>	<b>PC104.07.0165C</b>
<b>Product Name</b>	<b>Penta-Band PCB Antenna</b>
<b>Feature</b>	<p>GSM / CDMA / DCS / PCS / WCDMA / UMTS / HSDPA / GPRS / EDGE              850/900/1800/1900/2100 MHz bands              High Efficiency              164.9mm Ø1.37 coaxial cable with IPEX connector              80mm*20.8mm*1mm              Low profile              With 3M adhesive, easy stick on client enclosure              RoHS Compliant</p>

# 1. Introduction

The high efficiency PC104 Penta-band PCB antenna's slim-line design allows for convenient installation inside the customer device. Omni-directional gain across all bands ensures constant reception and transmission.

With its unique dipole design, the PC104 has exceptional industry performance

characteristics considering its very low profile at 2.4mm and has a compact size 80mm\*20mm. It is suitable for clients that appreciate highest performance with lower price.

This antenna has 3M adhesive on the back, and is tuned and designed to be mounted on 2mm thickness plastic (not on metal).

Cable lengths and connectors are fully customizable. However for good efficiency performance the shortest cable length should not be less than 100mm, for requirements with shorter cable lengths the alternative product the FXP.14 can be used.

# 2. Specification

## Electrical

	GSM Band				
	GSM 850	GSM 900	DCS	PCS	WCDMA I
<b>Frequency (MHz)</b>	824~896	880~960	1710~1880	1850~1990	1920~2170
<b>Peak Gain (dBi)*</b>	0.77	0.99	2.26	2.13	2.39
<b>Average Gain (dBi)*</b>	-3.26	-2.92	-1.32	-1.59	-1.52
<b>Efficiency (%)*</b>	47	51	73	69	70
<b>Return Loss (dB)*</b>	< -7	< -5	< -10	< -10	< -10
<b>Polarization</b>	Linear				
<b>Impedance</b>	50Ω				

## Mechanical

<b>Antenna Dimensions</b>	80mm x 20mm x 1mm
<b>Material</b>	FR4
<b>Cable type</b>	Ø1.37 Coaxial Cable
<b>Cable length</b>	164.9mm
<b>Connector type</b>	IPEX
<b>Adhesive</b>	3M 467

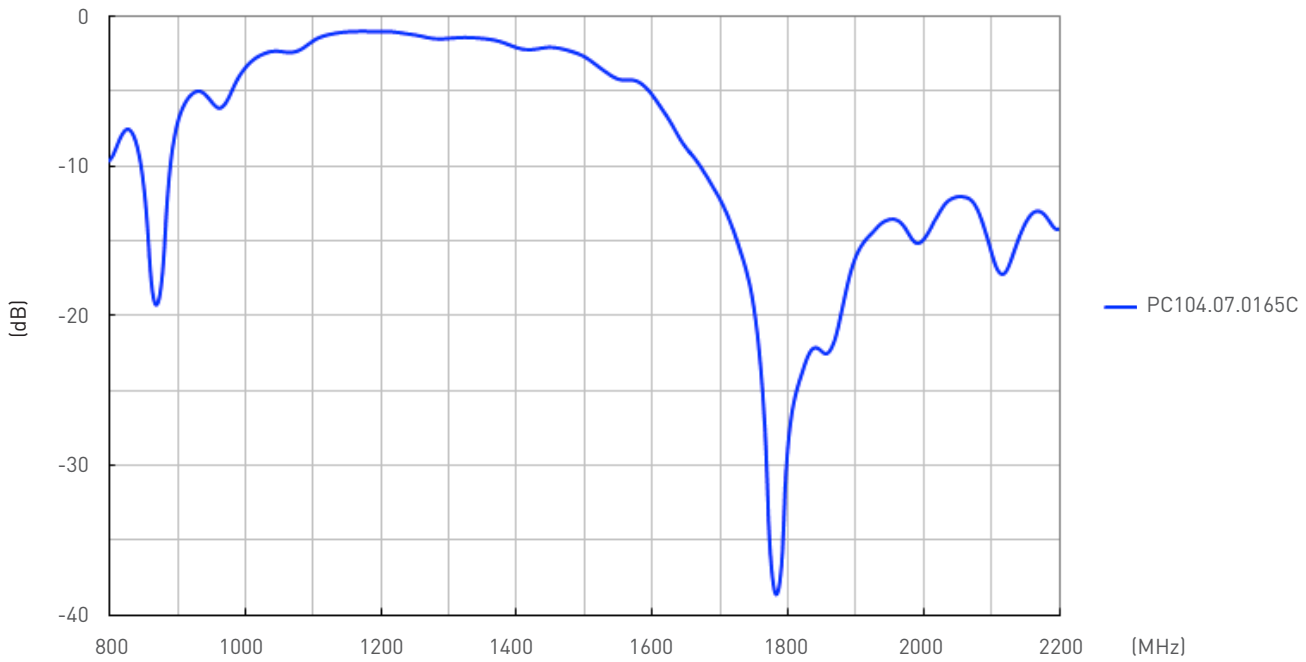
## Environmental

<b>Operation Temp.</b>	-40°C ~ +85°C
<b>Storage Temp.</b>	-40°C ~ +85°C

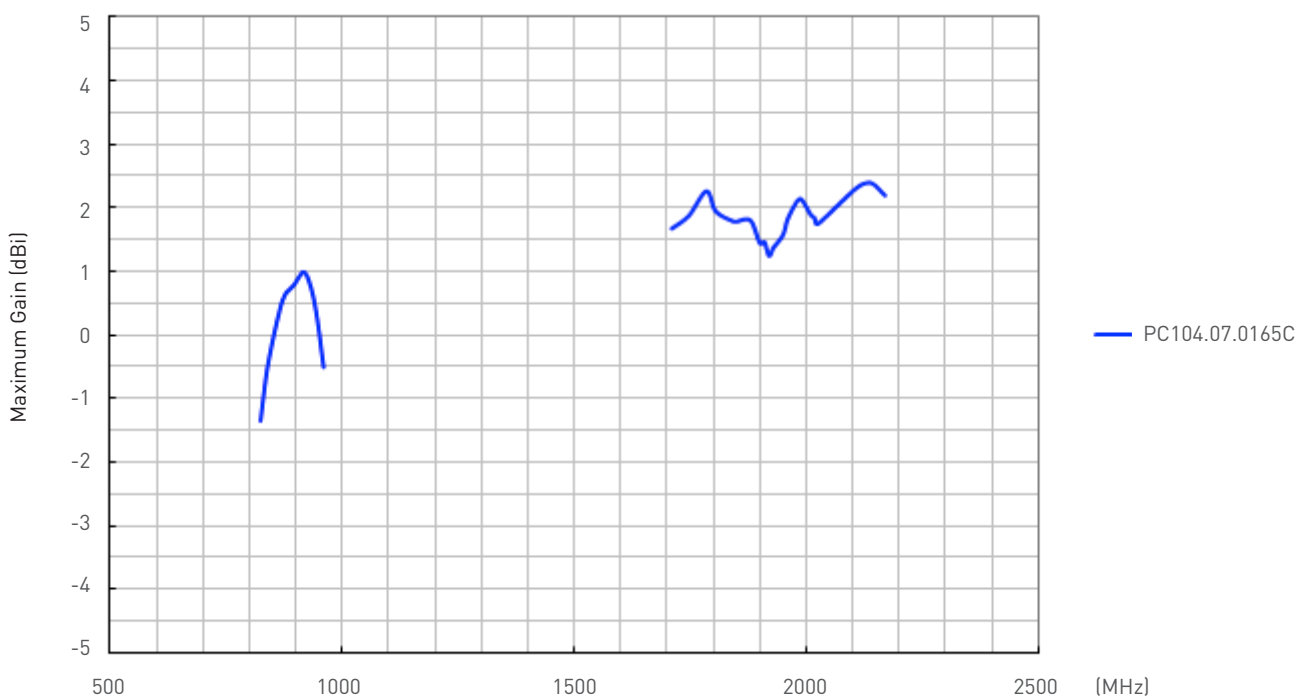
\* Antenna is tested on a 2mm thickness ABS material base substrate.

### 3. Antenna Characteristics

#### 3.1 Return Loss

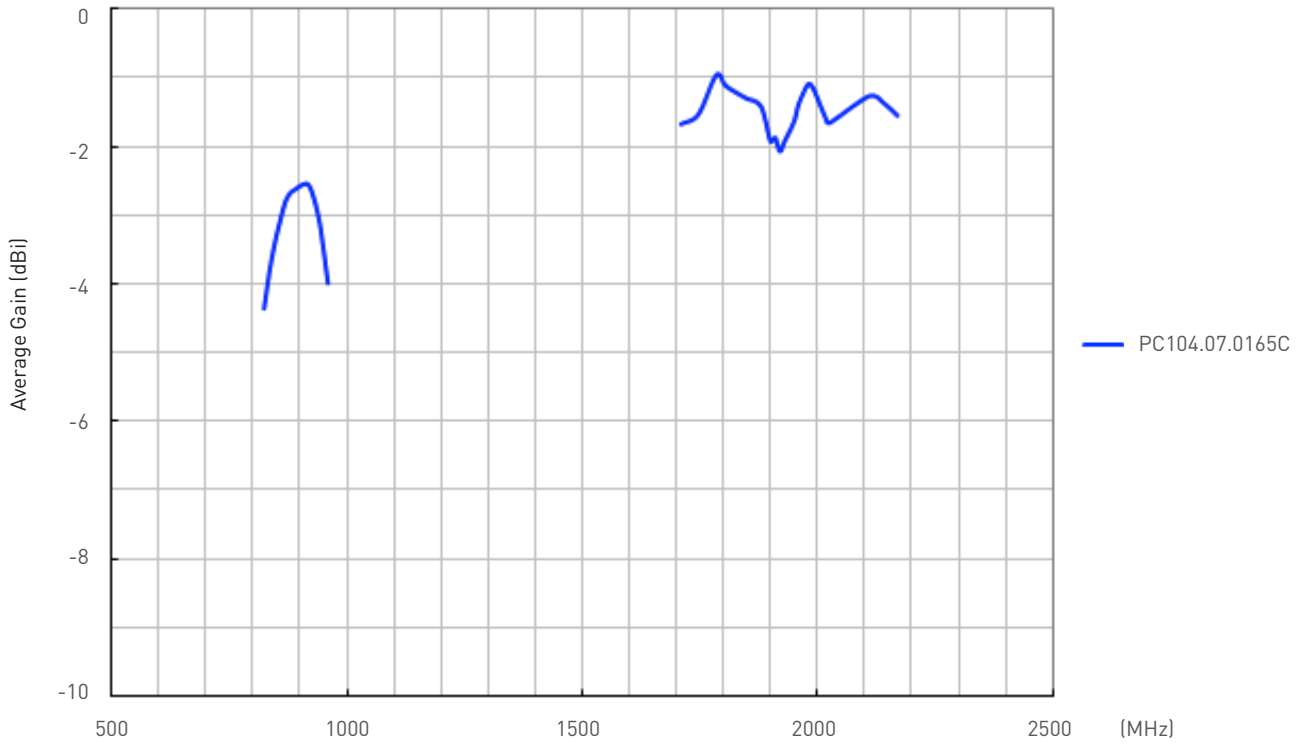


#### 3.2 Maximum Gain

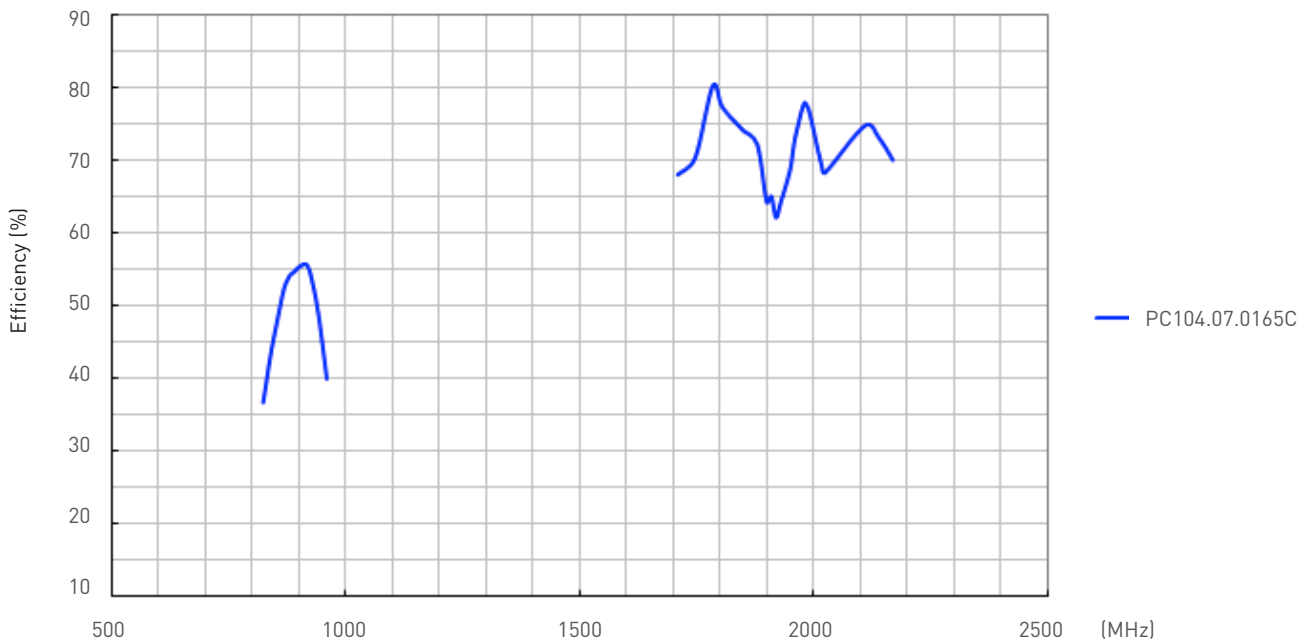


### 3. Antenna Characteristics

#### 3.3 Average Gain

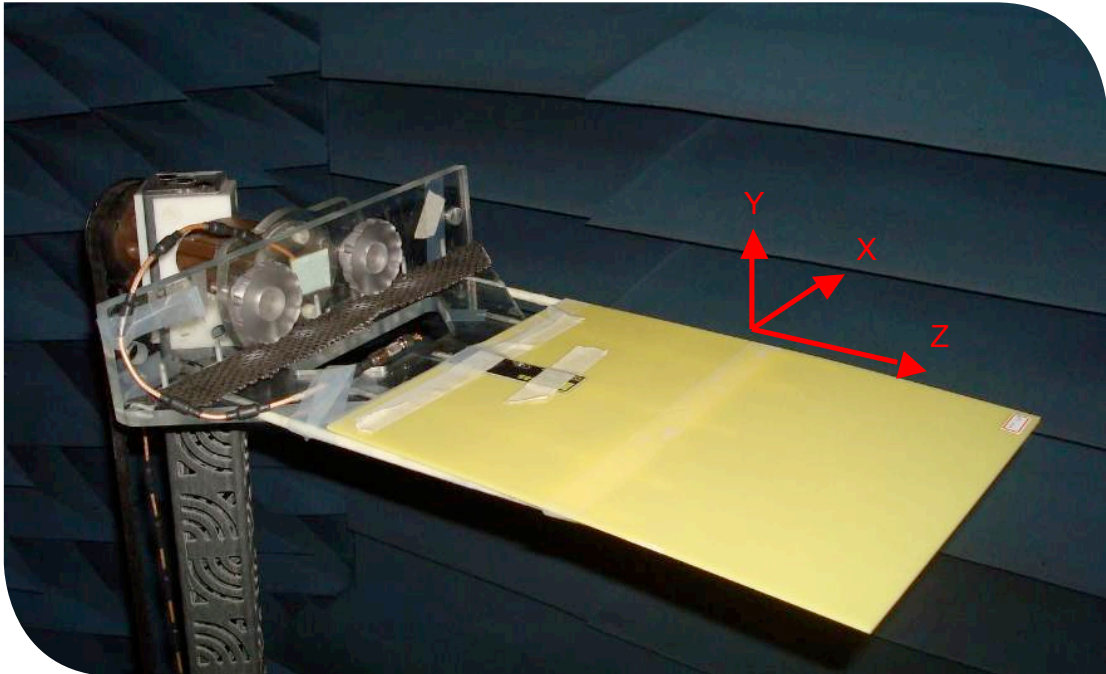


#### 3.4 Efficiency



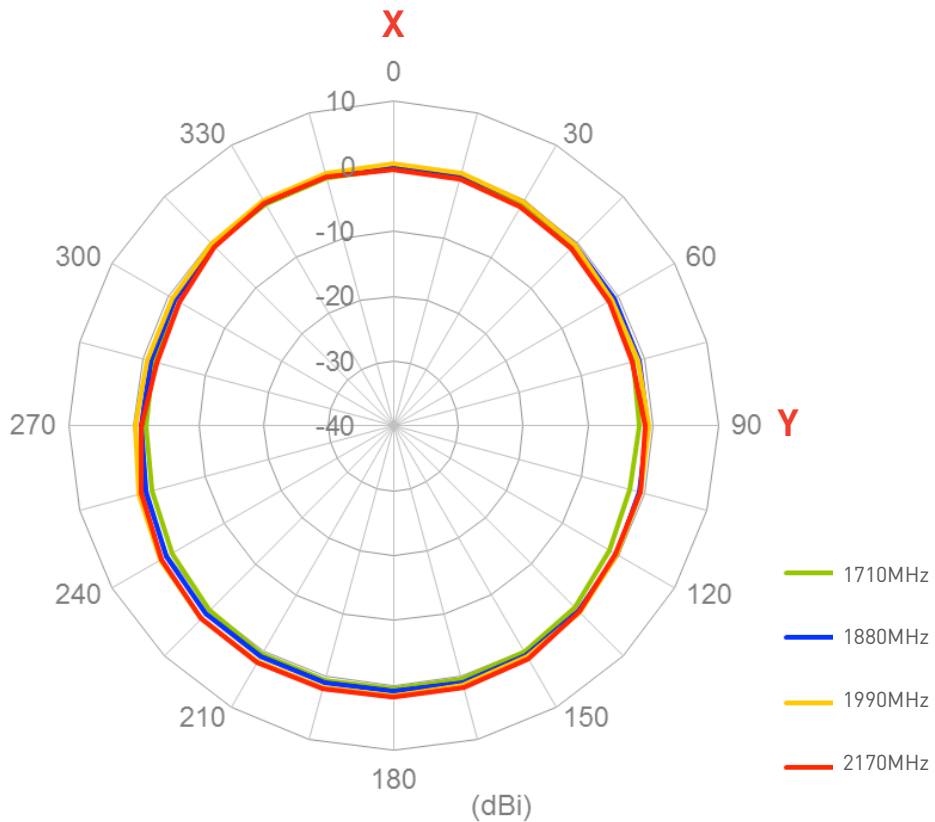
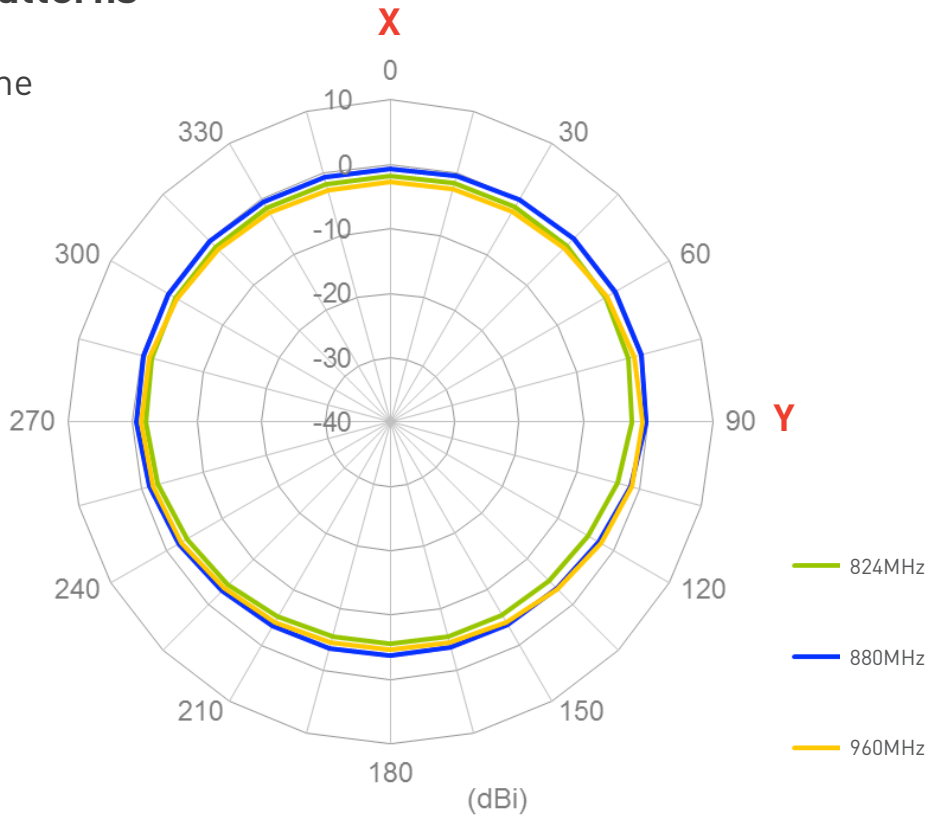
## 4. Antenna Radiation Patterns

### 4.1 Antenna setup in 3D Anechoic chamber



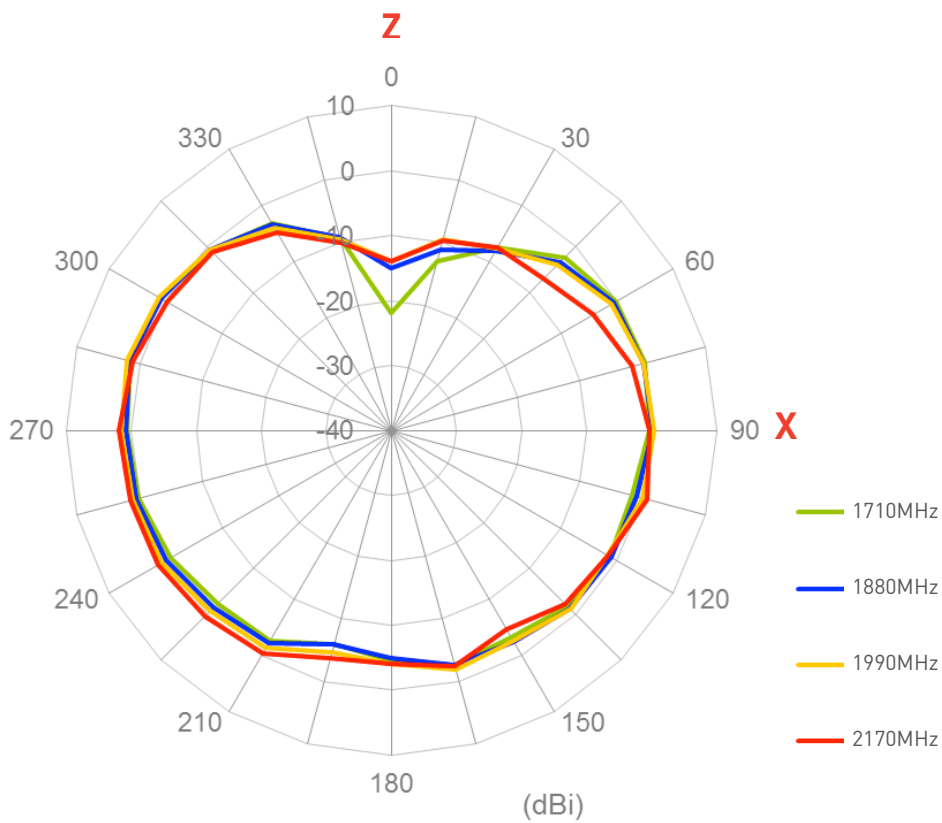
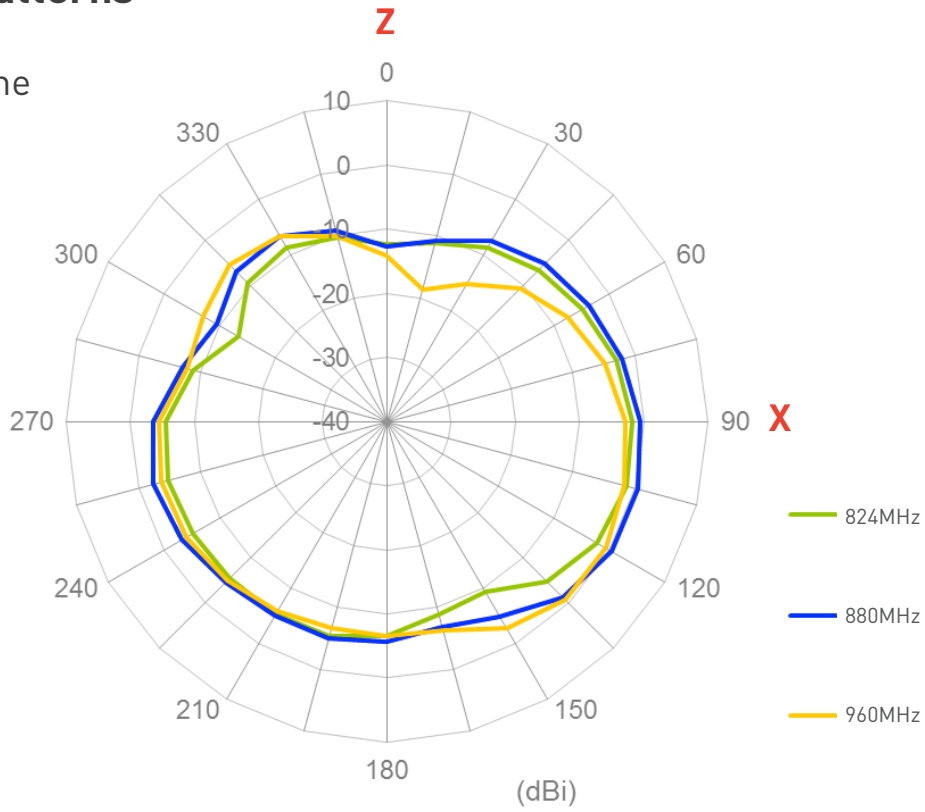
# Radiation Patterns

XY Plane

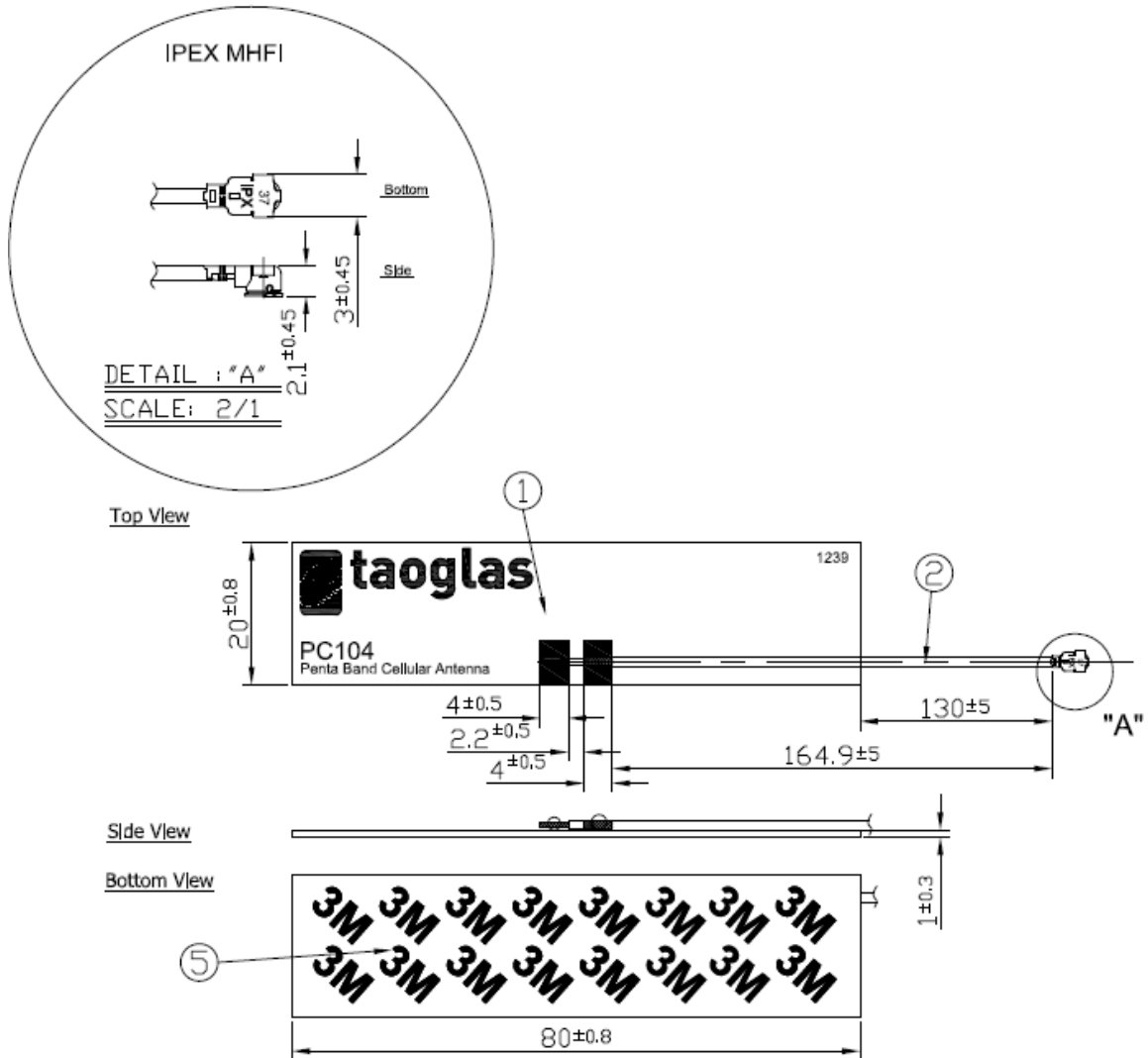


# Radiation Patterns

XZ Plane



## 5. Technical Drawing



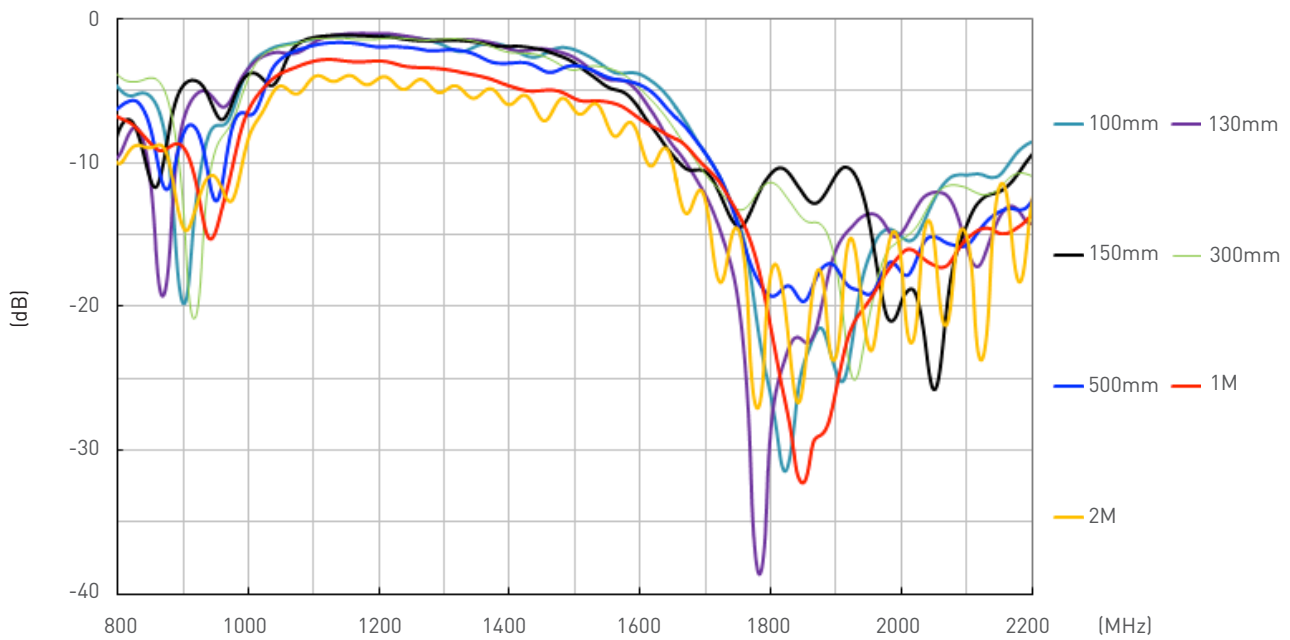
	Name	P/N	Material	Finish	QTY
1	PC104 PCB	100212K0100XXA	FR4 1t	Black	1
2	1.37 Coaxial Cable	OD.137.AD	FEP	Black	1
3	IPEX MHFI	IPEX.MHFHT.137	Brass	Gold	1
4	Heat Shrink Tube	001313E000002A	PE	Black	1
5	3M Adhesive	001012K0000XXA	3M 9448	N/A	1



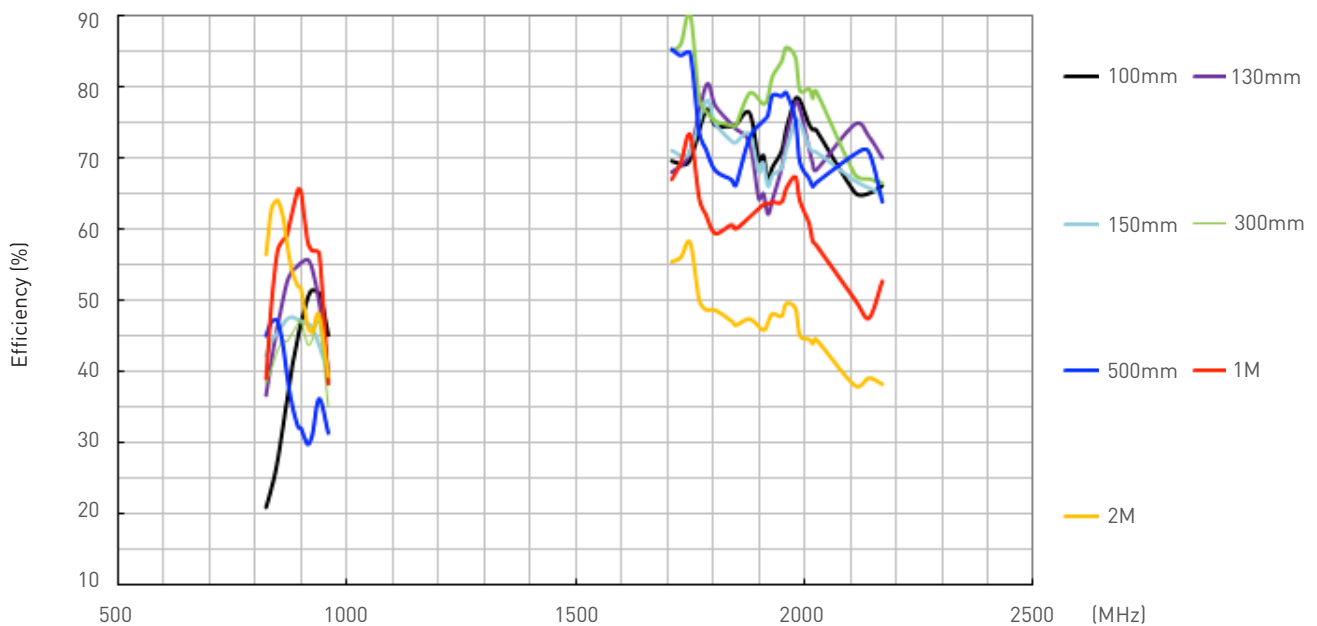
## 6. Application Note

We measured PC.104 antenna with different cable length, the results as below,

### Return Loss



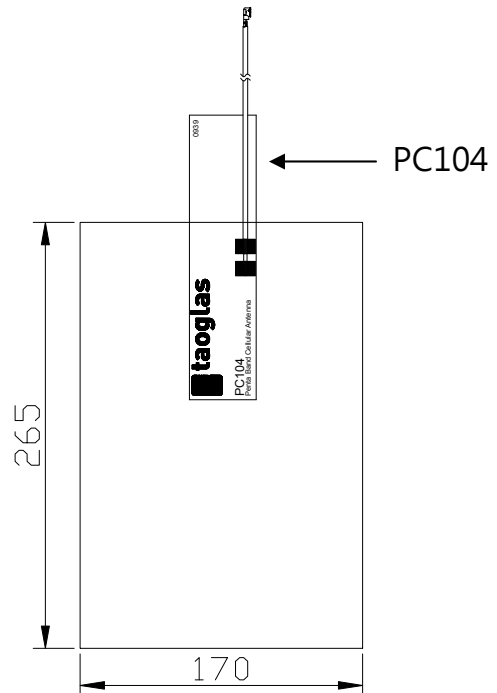
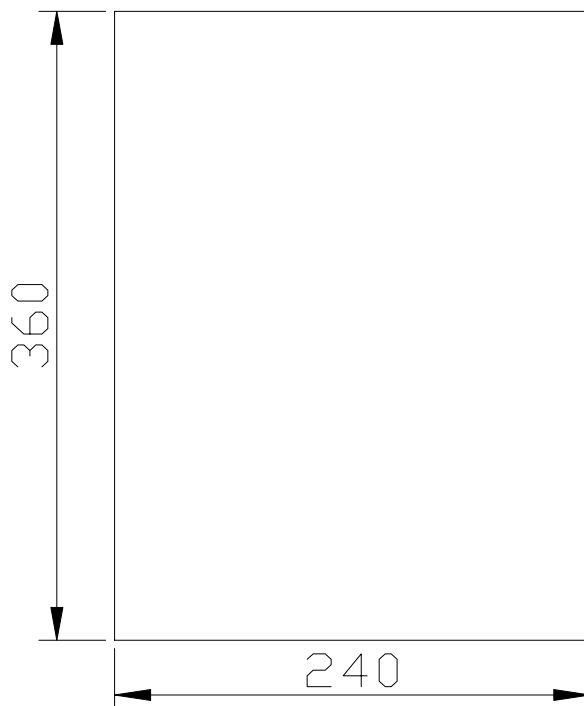
### Antenna Efficiency



## 7. Packaging

- 100pcs antenna per small PE bag
- 5 small PE bags per big PE bag
- 500pcs antennas per big PE bag

Unit : mm



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