



## Ultra-Wide Band FPC Antenna

**SZK-C-2U04**

UWB Channels 1,2,3,4,5,6,7,8,9,10,11: 3.0 - 9.0GHz

### Description

**VELORUM**, for the ultimate compact and low-profile UWB solution, VELORUM was developed to be compact but still cover the frequency range of **3.0 – 9.0GHz**.

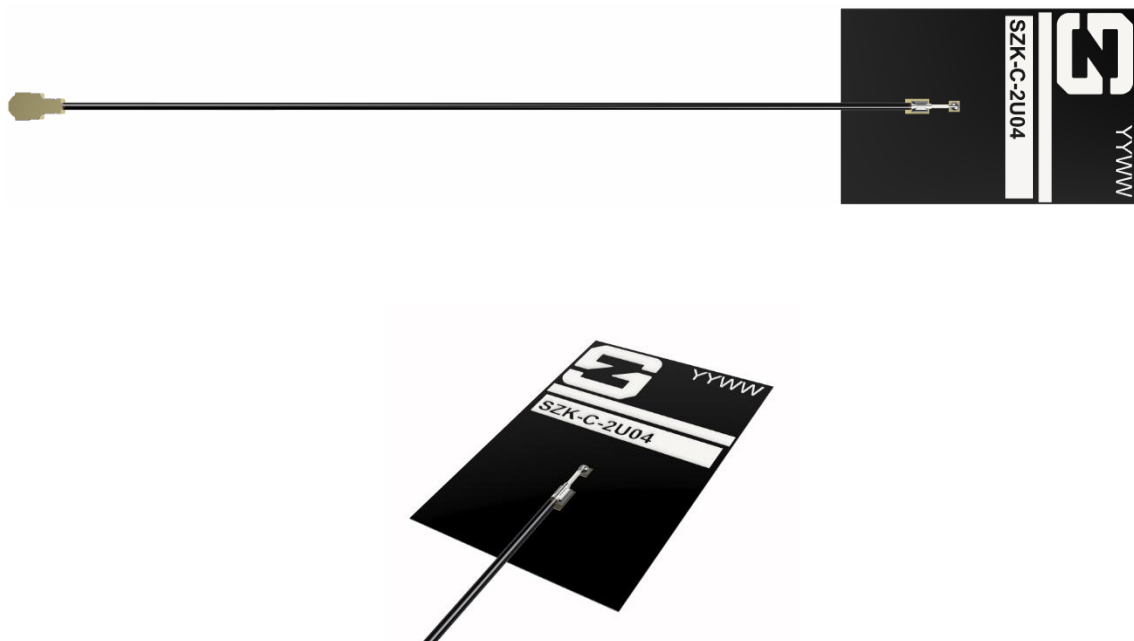
- For European and USA Ultra-Wide Band applications
- UWB Channels 1 to 11
- Small form factor of 32.0 x 21.0 x 0.2 (mm).
- Alternate cable lengths and connectors available upon request, contact [sales@synzen.com.tw](mailto:sales@synzen.com.tw)

### Applications

Automotive  
Tracking

Precision Surveying  
Entertainment Devices

Smart home  
Sensors





## General Specifications

### Mechanical Specifications

<b>Part Number</b>	SZK-C-2U04
<b>Name</b>	VELORUM
<b>Dimensions</b>	32.0 x 21.0 x 0.20 (mm)
<b>Weight</b>	<0.5g
<b>Antenna Type</b>	FPC Self-Adhesive
<b>Cable Length</b>	100mm
<b>Cable type</b>	Mini Coax $\varnothing$ 1.13mm
<b>Connector</b>	MHFI (U. FL Compatible)
<b>Adhesive backing</b>	3M 468

### RF Specifications

4G LTE/NB-IoT Bands	Frequency Range (MHz)	Efficiency (%)	Peak Gain (dBi)	Impedance	Polarization
1,2,3,4	3000-5325	>70	4.40	50 $\Omega$	Linear
5,6,7,8,9,10,11	5990-9000	>60	3.80		

### Environmental Specifications

<b>Operational Temperature</b>	-40 to +85 (°C)
<b>Storage Temperature</b>	-10 to +40 (°C)
<b>Relative Humidity</b>	$\leq$ 75%



## UWB Channel List

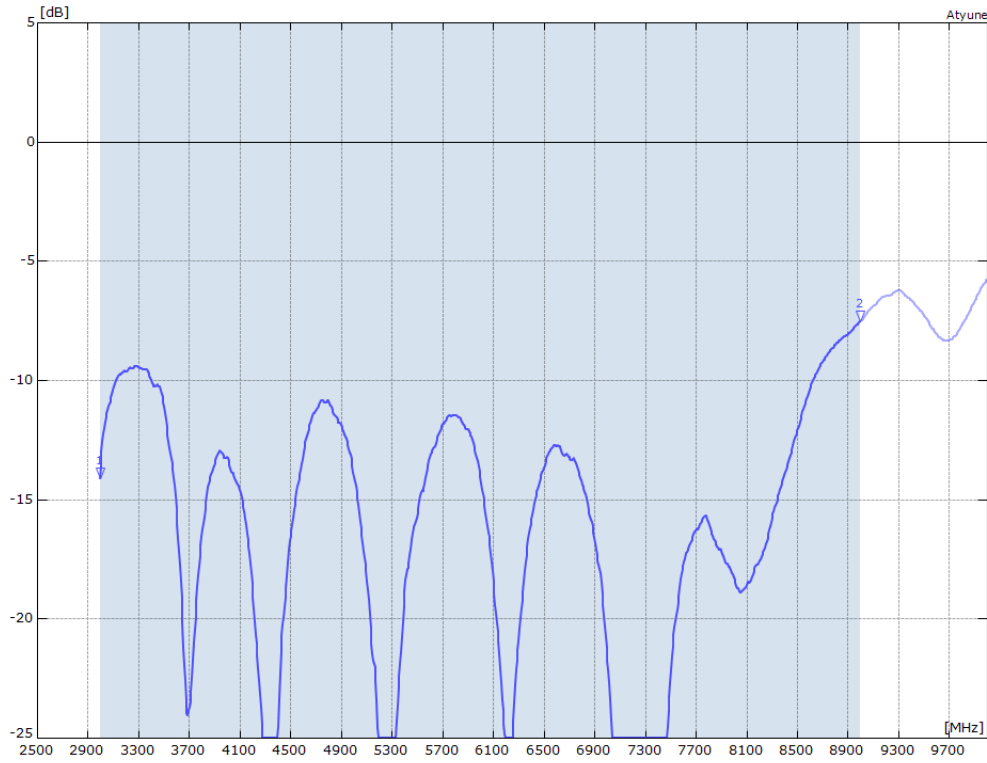
### Supported Channels

Channel	Centre Frequency (MHz)	BW (MHz)	Region	Supported
1	3494.4	499.2	USA	Y
2	3993.6	499.2	USA,Europe	Y
3	4492.8	499.2	USA,Europe, Japan, Korea	Y
4	3993.6	1331.2	USA,Europe, Japan, Korea	Y
5	6489.6	499.2	USA,Europe	Y
6	6988.8	499.2	USA,Europe	Y
7	6489.6	1081.6	USA,Europe	Y
8	7488	499.2	USA	Y
9	7987.2	499.2	USA,Europe, Japan, Korea	Y
10	8486.4	499.2	USA,Europe, Japan, Korea	Y
11	7987.2	1331.2	USA,Europe, Japan, Korea	Y
12	8985.6	499.2	USA, Japan, Korea	N
13	9484.8	499.2	USA, Japan, Korea	N
14	9984	499.2	USA, Japan, Korea	N
15	9484.8	1354.97	USA, Japan, Korea	N

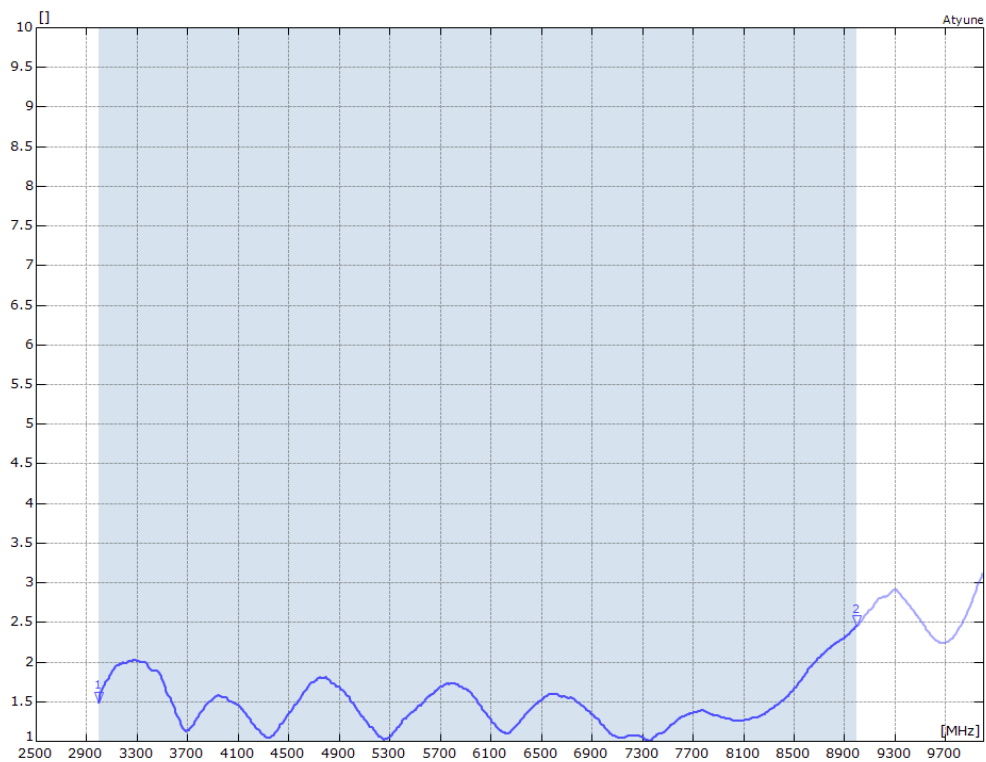


## RF Characteristics

### S11 Parameter



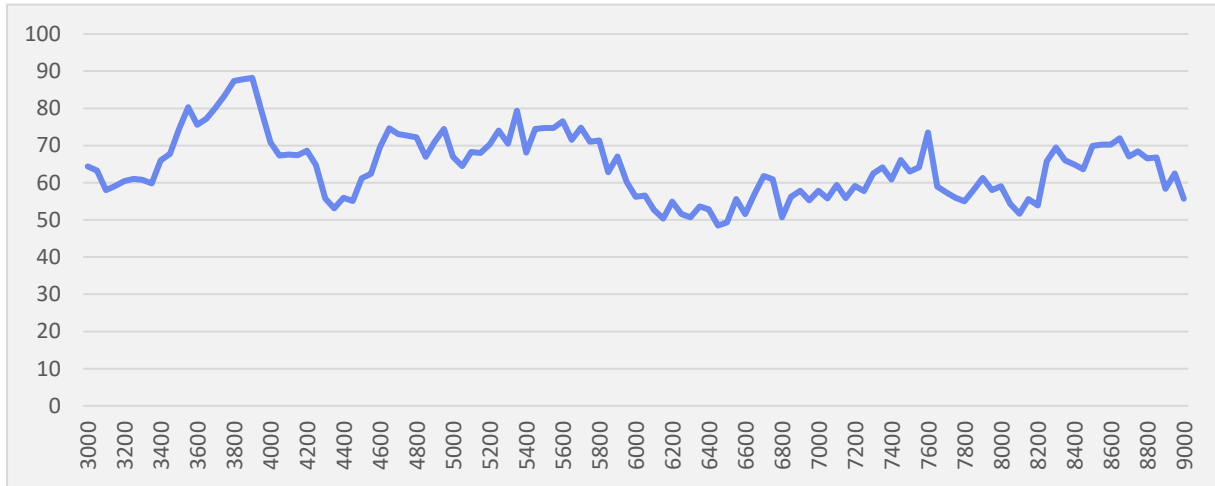
### VSWR



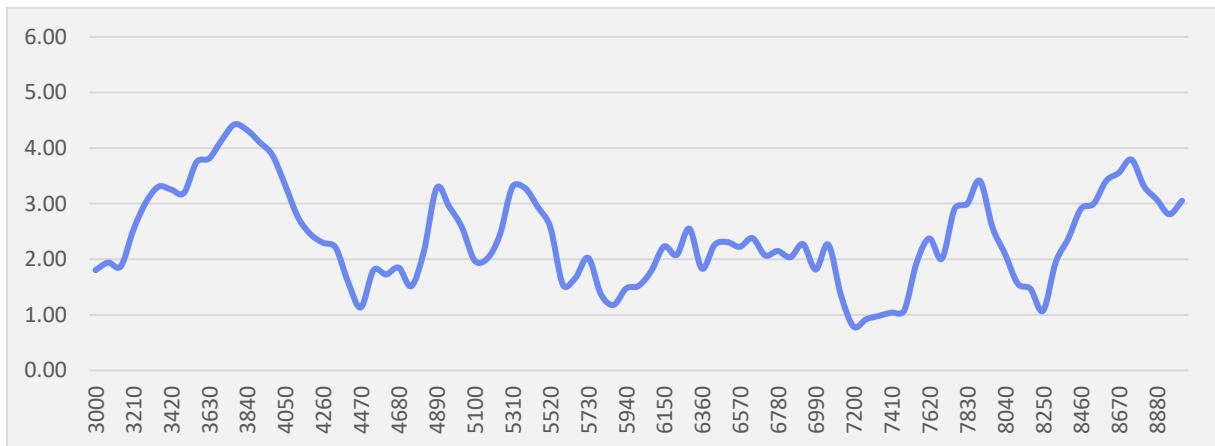


## Antenna Performance

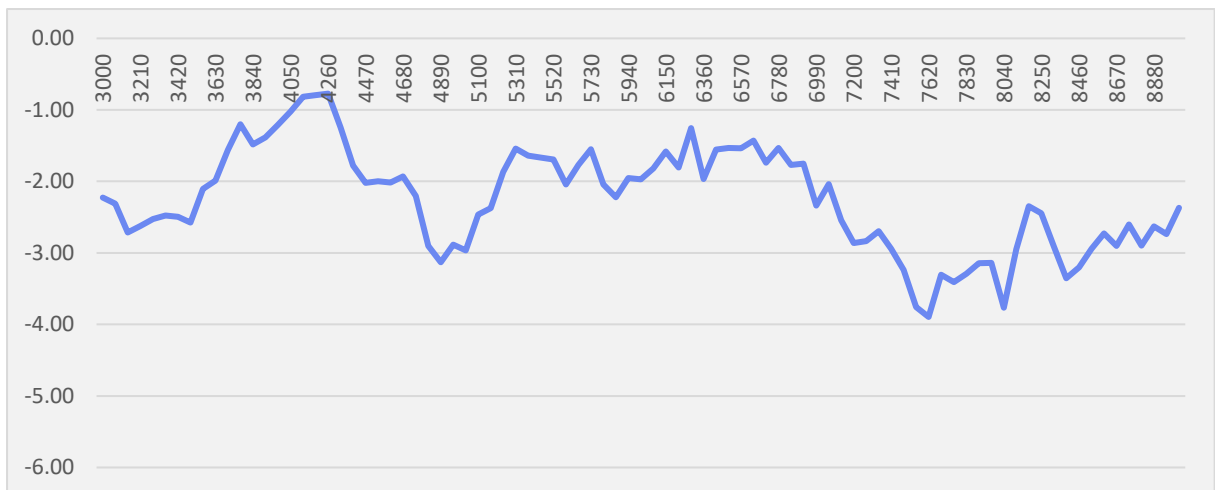
### Efficiency



### Peak Gain



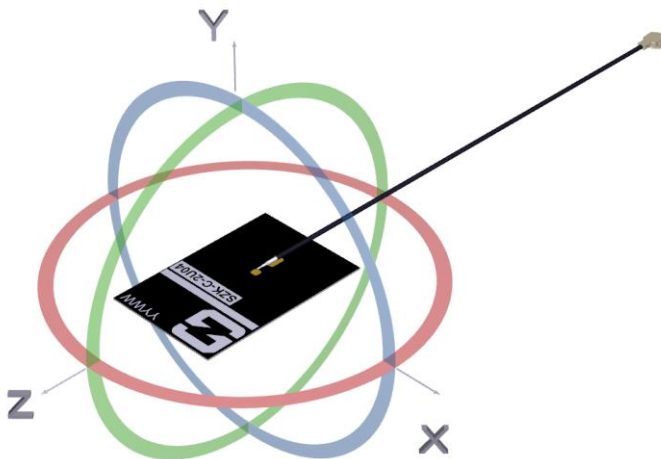
### Average Gain



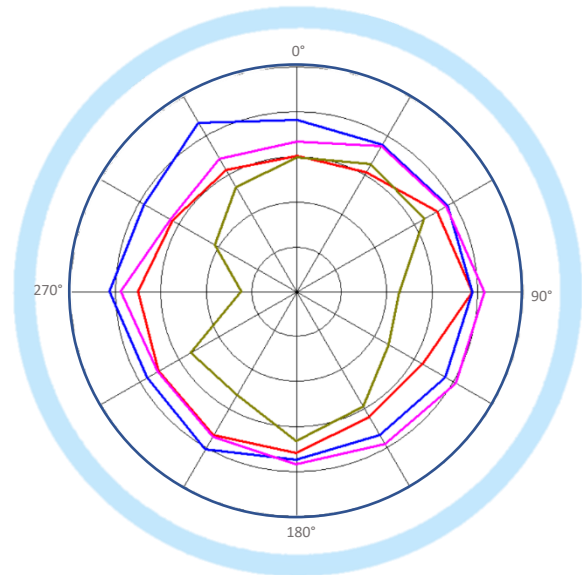


## Radiated Performance

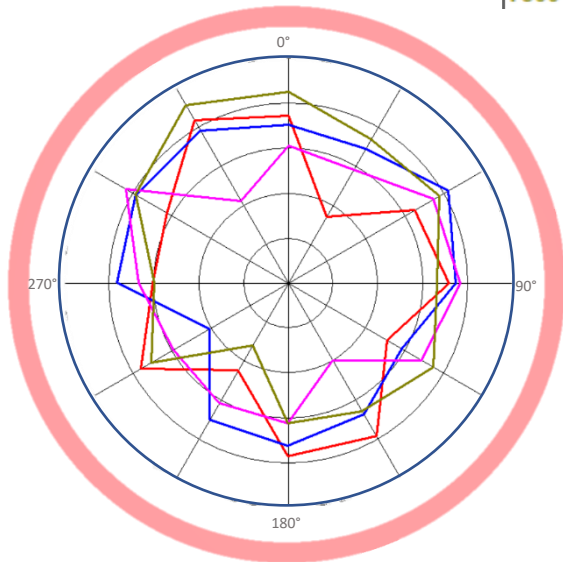
### 2D Polar Plot 3000-9000MHz



XY



XZ



YZ

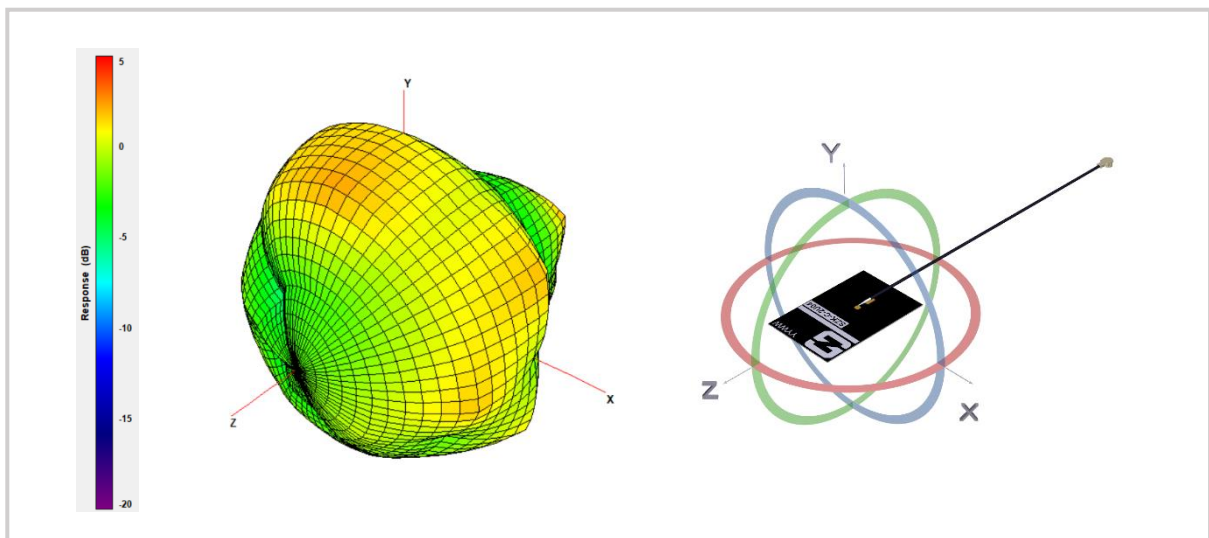
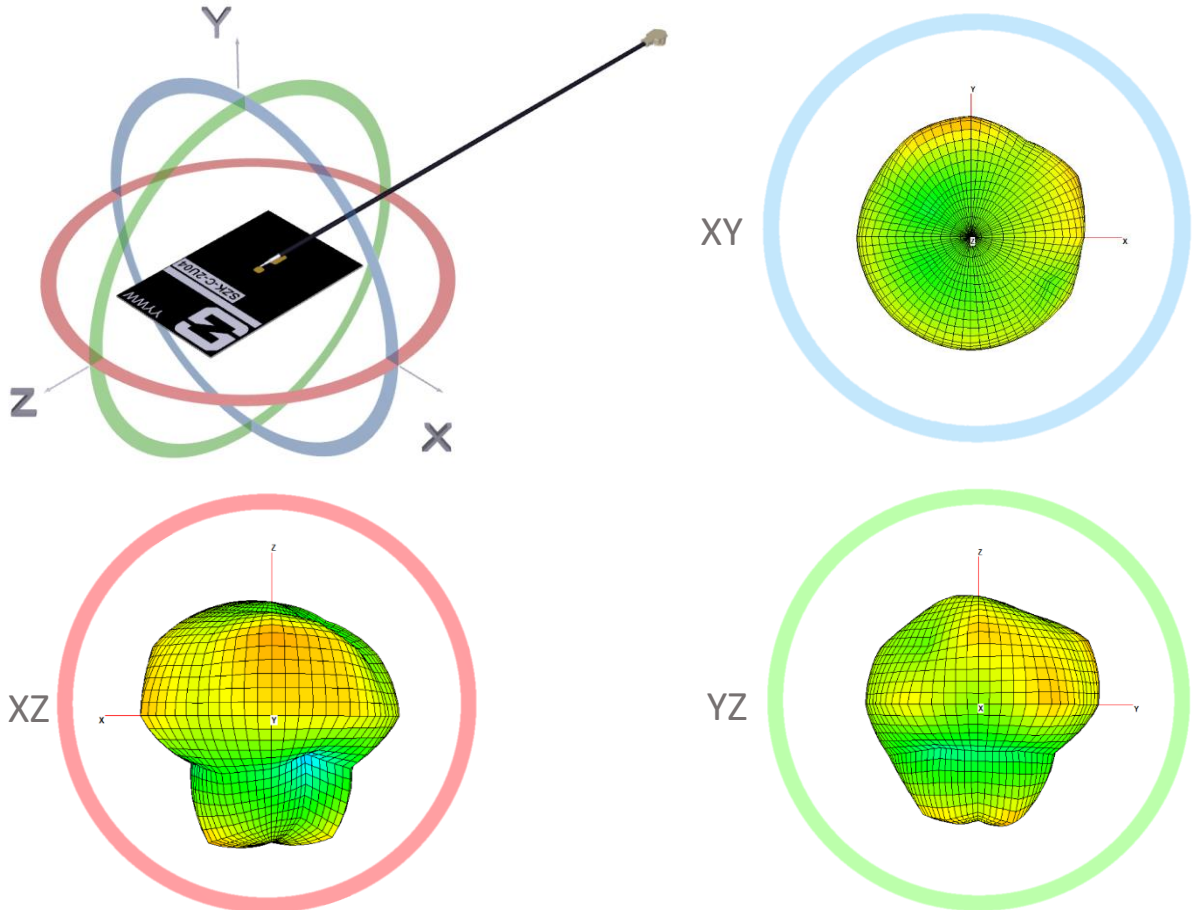




## Radiated Performance

### 3D Radiation Pattern at 4000MHz

The frequency point shown here is 4000MHz.



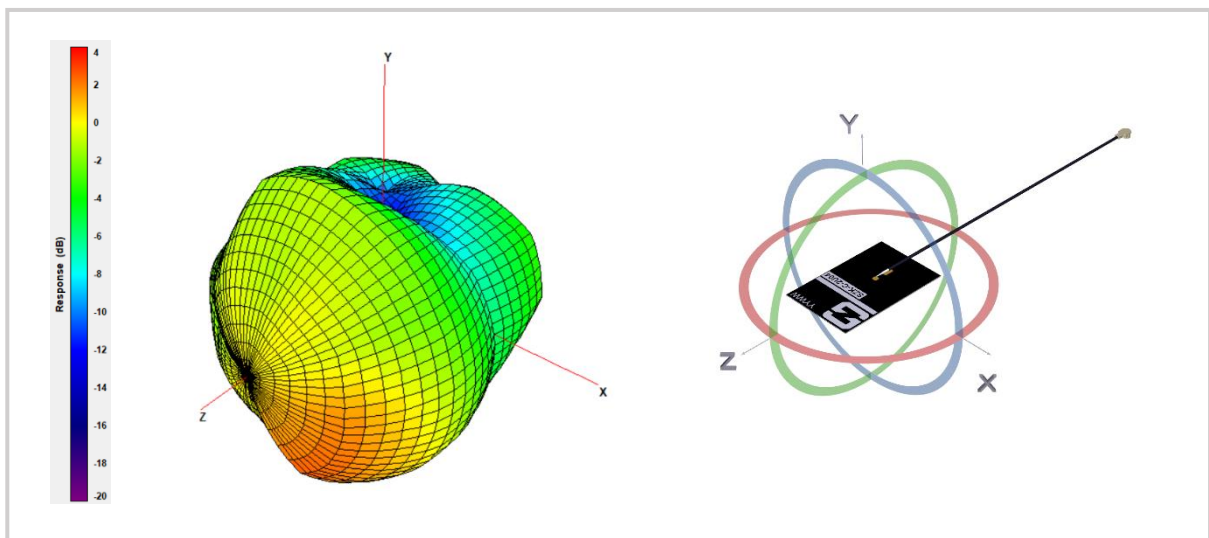
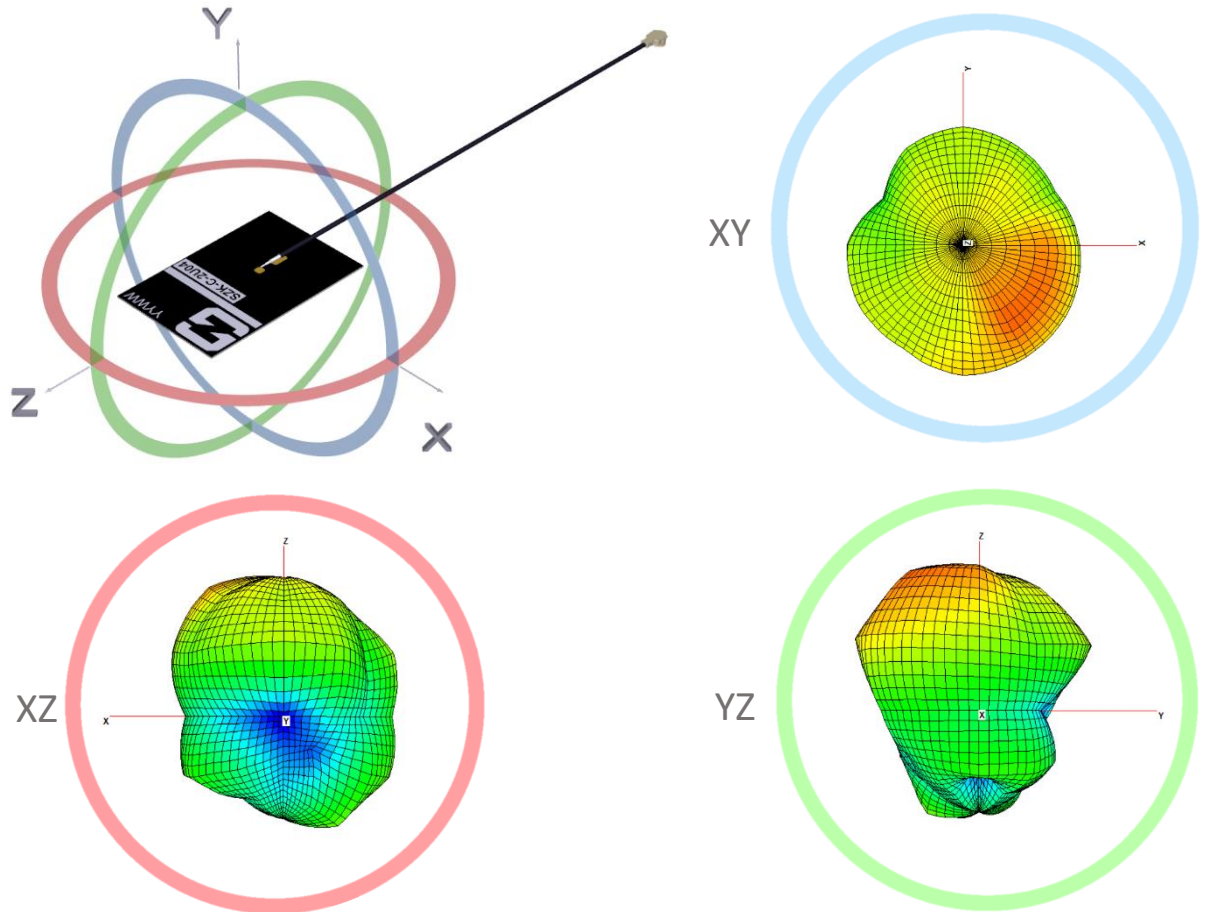




## Radiated Performance

### 3D Radiation Pattern at 7500MHz

The frequency point shown here is 7500MHz.

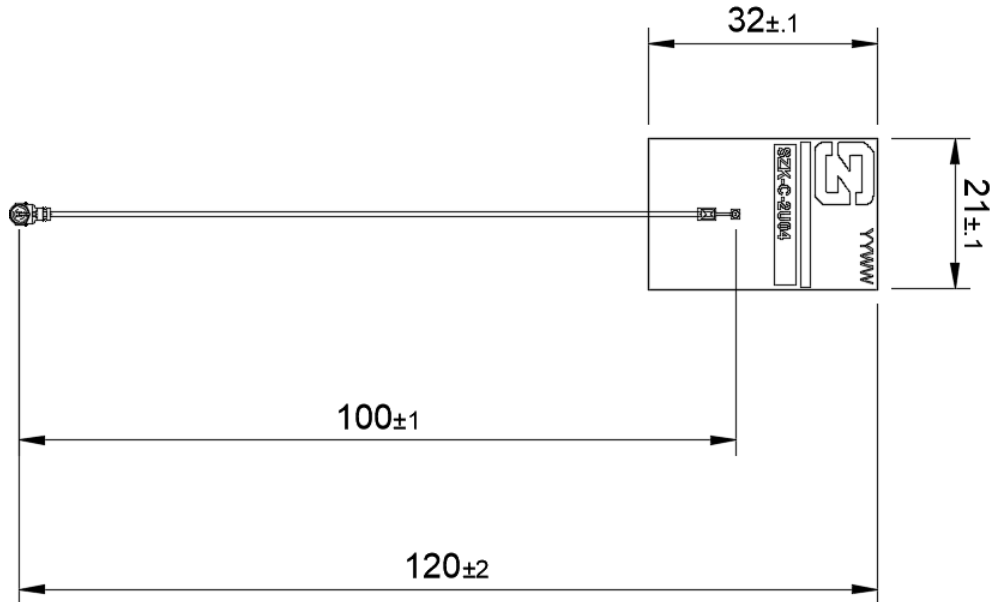






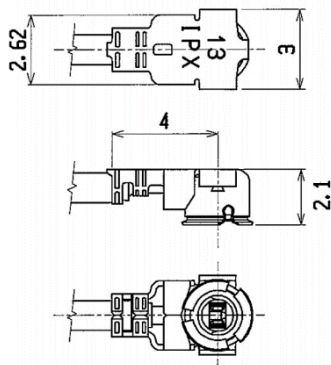
## Mechanical

### Antenna Mechanical Drawing



All Dimensions in mm

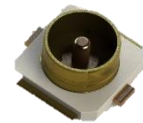
The plug connector on the antenna is an IPEX MHFI.



**Suitable PCB mating connector (U.FL) example**

**Joymax:** Model: CT-MPB01X

[www.joymax.com.tw](http://www.joymax.com.tw)



### Adhesive Backing

The antenna comes with 3M 468 adhesive backing upon a PI Kapton substrate. An easy peel cut is on the back side for easy cover removal.



## Packaging

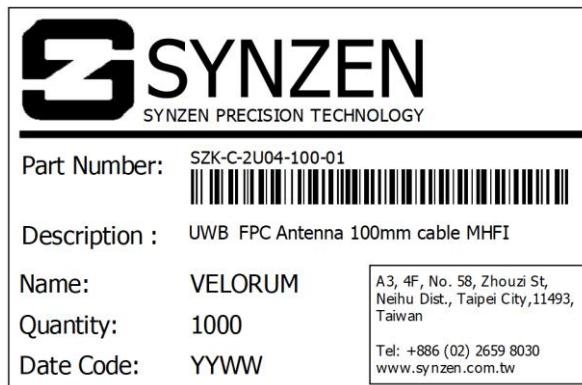
### Bag and Packaging Information

Antennas packed in PE bag (20 per bag)

Small bag dimensions: 28.5 x 9.5 (cm)

100pcs per larger PE bag with product label

Bag dimensions = 30 x 19 (cm)



Label

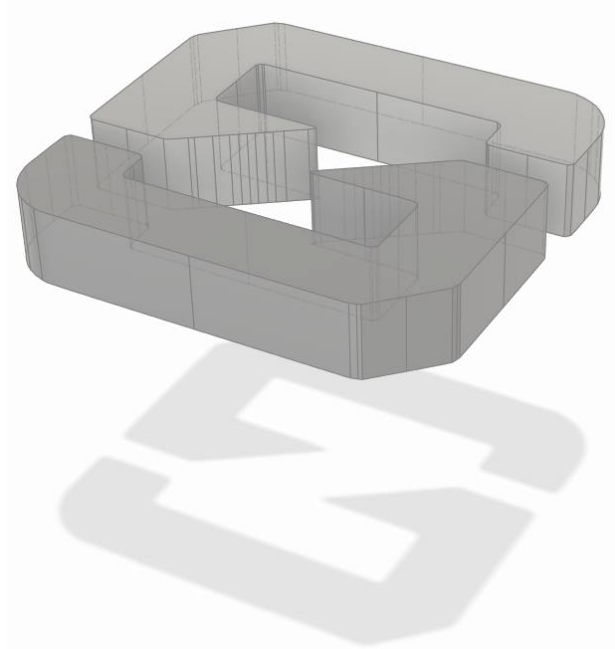
1. 1000pcs per carton
2. Carton dimensions = 33.7 x 32.2 x 10 (cm)



## **Environmental**

### **Material Regulation**

The antenna has been tested to conform to RoHS requirements. A certificate of conformance is available upon request.



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