



# SYNZEN

## PRODUCT DATASHEET

PETRA2 | FPC Adhesive Antenna | 4G LTE | NB-IoT

### Part Number / Name

- SZK-C-3L32
- PETRA2

### Features

- Constellation class ultra small
- Omnidirectional
- Dimensions: 44.0 x 15.0 x 0.2 (mm)

### Applications

- Smart Meters
- Femtocells
- Remote Monitoring
- Smart Grid
- Asset Tracking
- Wearable Tech



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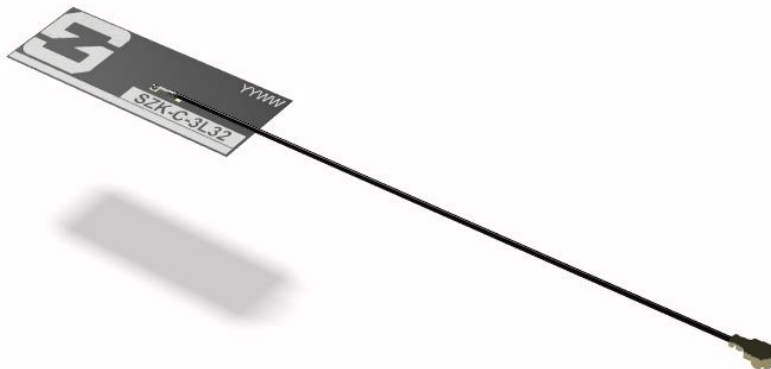
## Introduction

Embrace a new era of 4G LTE connectivity with PETRA2. Our antenna is designed to exceed industry standards, offering a superior wireless experience that's ahead of the curve.

- For 4G LTE/NB-IoT and global cellular applications
- Simple integration, plug and be operational without designing on board antenna.
- Can be tuned to your device using additional Pi network.
- Alternate cable lengths and connectors available upon request.

## Typical Applications

- Asset Tracking
- Precision agriculture
- Smart cities
- Fleet management
- Personal Safety
- Emergency response
- Wearable Tech



## General Specifications

<b>Part Number</b>	SZK-C-3L32
<b>Name</b>	<b>PETRA2</b>
<b>Dimensions</b>	44.0 x 15.0 x 0.2 (mm)
<b>Antenna Type</b>	FPC + Cable
<b>Weight</b>	<1.5g
<b>Connector</b>	MHF1
<b>Cable Length</b>	100mm
<b>Adhesive backing</b>	3M 868

\*Alternate cable length/connectors are available upon request.

## Electrical / RF Specifications\*

Band	Frequency Range (MHz)	Avg Efficiency (%)	Peak Gain (dBi)	Impedance	Polarization
4G LTE B5,8,12,13,14,17,18,20,26,27,28,29	698-960	>55	2.90	50Ω	Linear
4G LTE B1,2,3,4,9,11,21,23,24,32,35,39,45,50,51,66	1427-1660	>60	3.80		
	1710-2200	>75	4.15		
4G LTE B40	2300-2400	>80	3.45		
4G LTE B7,38,41	2490-2690	>65	2.60		

Note: All performance stated is measured 2mm ABS plastic, RF chokes used to prevent cable radiation.

## Environmental Specifications

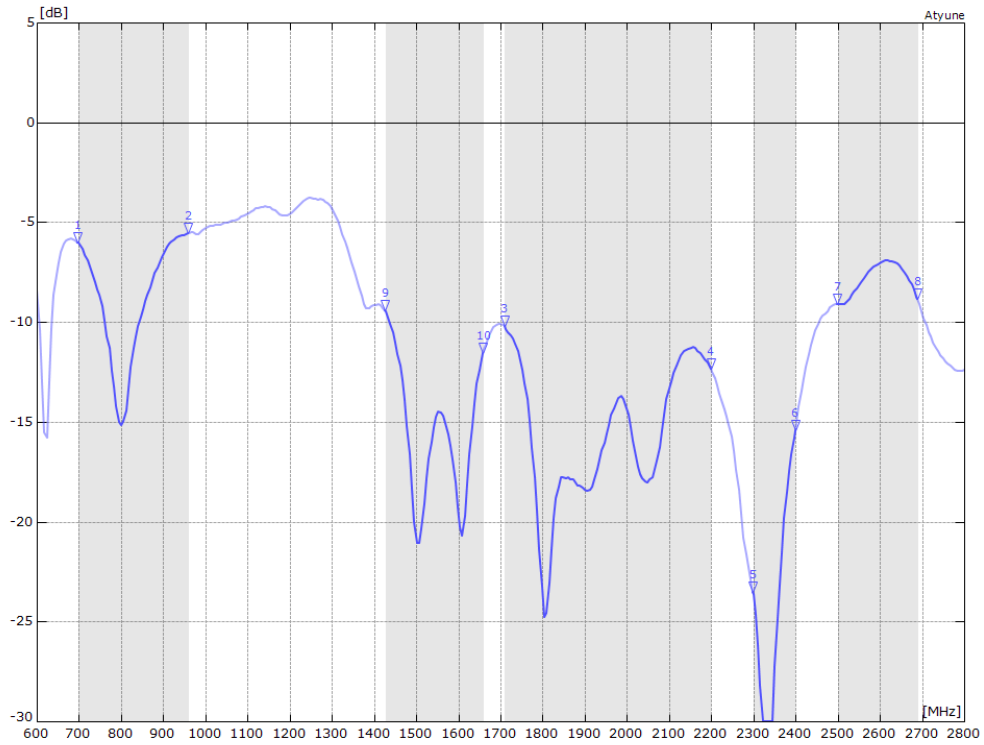
<b>Operational Temperature</b>	-40 to +85 (°C)
<b>Storage Temperature</b>	-10 to +40 (°C)
<b>Relative Humidity</b>	≤75%
<b>Moisture Sensitivity Level (MSL)</b>	NA
<b>RoHs &amp; REACH compliant</b>	Yes

## Supported Band List

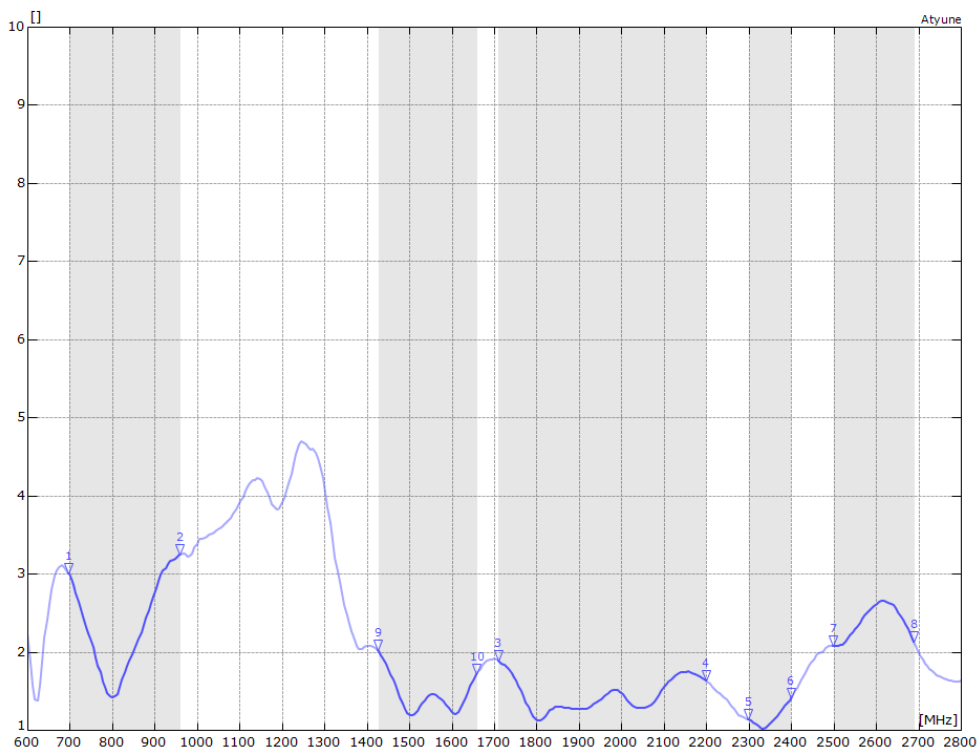
Band	Frequency Band	Uplink(MHz)	Downlink (MHz)	Supported
1	2100	1920-1980	2110-2170	YES
2	1900	1850-1910	1930-1990	YES
3	1800	1710-1785	1805-1880	YES
4	1700	1710-1755	2110-2155	YES
5	850	824-849	869-894	YES
7	2600	2500-2570	2620-2690	YES
8	900	880-915	925-960	YES
9		1749.9-1784.9	1844.9-1879.9	YES
10	1700	1710-1770	2110-2170	YES
11	1500	1427.9-1447.9	1475.9-1495.9	YES
12	700	699-716	729-746	YES
13	700	777-787	746-756	YES
14	700	788-798	758-768	YES
17	700	704-716	734-746	YES
18	850	815-830	860-875	YES
19	850	830-845	875-890	YES
20	800	832-862	791-821	YES
21	1500	1447.9-1462.9	1495.9-1510.9	YES
22	3500	3410-3490	3510-3590	NO
24	1600	1626.5-1660.5	1525-1559	YES
25	1900	1850-1915	1930-1995	YES
26	850	814-849	859-894	YES
27	800	807-824	852-869	YES
28	700	703-748	758-803	YES
29	700	N/A	717-728	YES
30	2300	2305-2315	2350-2360	YES
31		452.5-457.5	462.5-467.5	NO
32	1500	N/A	1452-1496	YES
33	2100		1900-1920	YES
34	2100		2010-2025	YES
35	1900		1850-1910	YES
36	1900		1930-1990	YES
37			1910-1930	YES
38	2600		2570-2620	YES
39	1900		1880-1920	YES
40	2300		2300-2400	YES
41	2500		2496-2690	YES
42	3500		3400-3600	NO
43	3700		3600-3800	NO
44	700		703-803	YES
45	1500		1447-1467	YES
46	5200		5150-5925	NO
47	5900		5855-5925	NO
48	3600		3550-3700	NO
50	1500		1430-1517	YES
51	1500		1427-1432	YES
65	2100	1920-2010	2110-2200	YES
66	1700	1710-1780	2110-2200	YES
67	700	N/A	738-758	YES
68	700	698-728	753-783	YES
69	2600	N/A	2570-2620	YES
70	2000	1695-1710	1995-2020	YES
71		663-698	617-652	NO
74			1427-1518	YES
77			3300-4200	NO
78			3300-3800	NO
79			4400-5000	NO
85		698-716	728-746	YES

## RF Characteristics

### S11

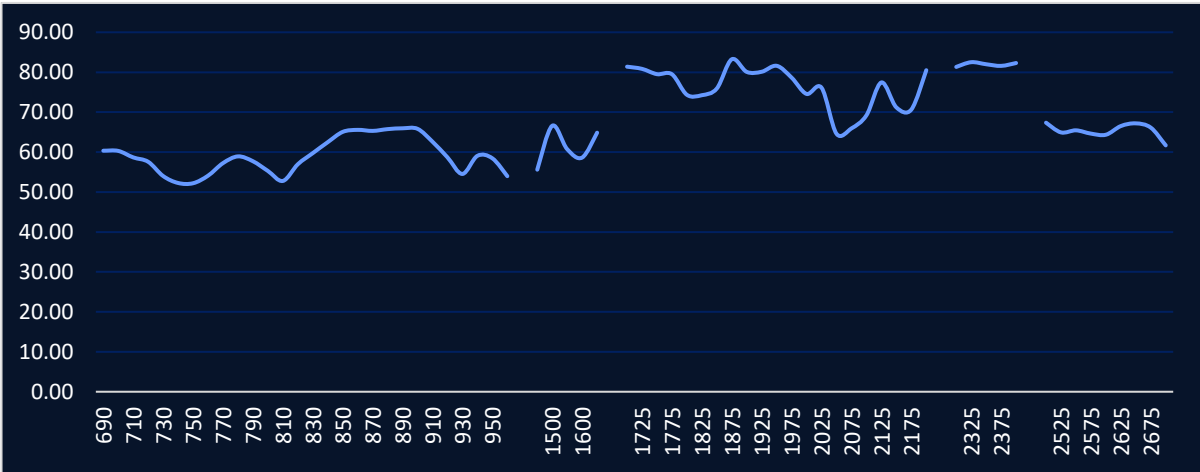


### VSWR



## Performance

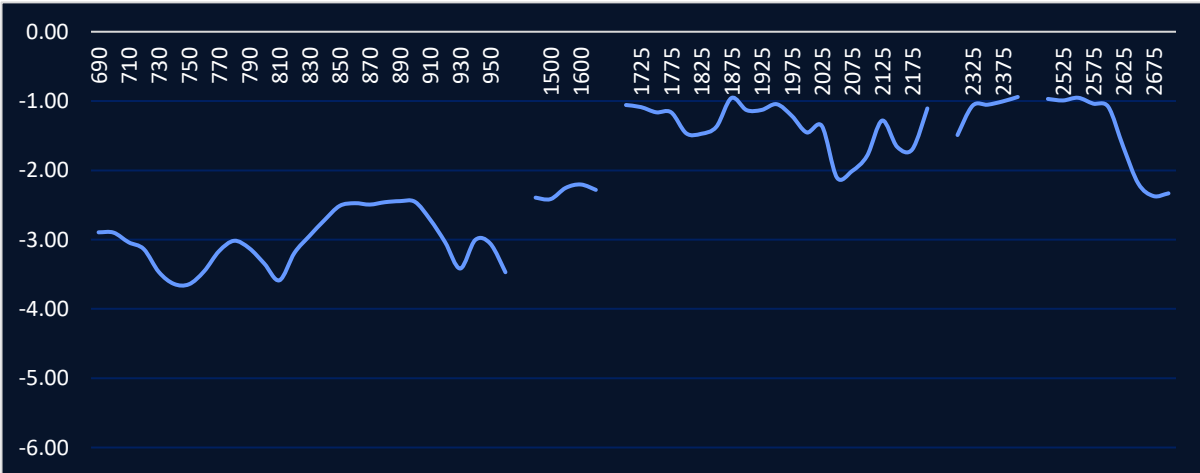
### Efficiency



### Peak Gain



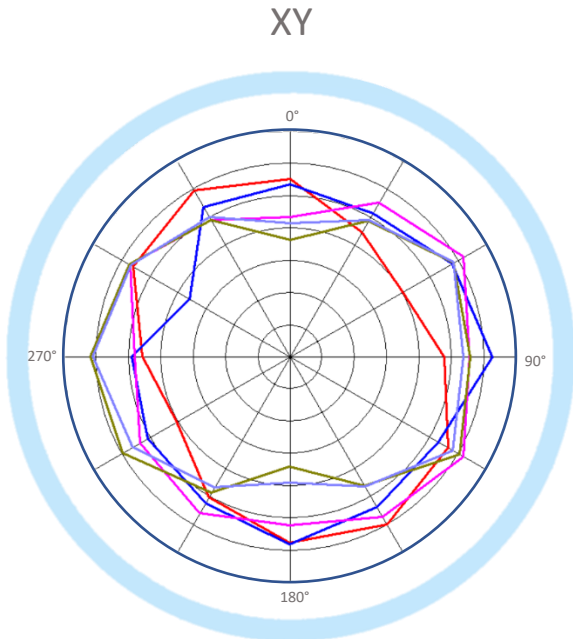
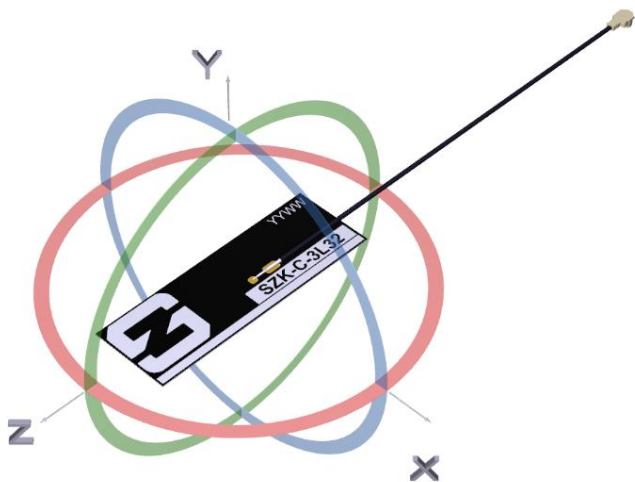
### Average Gain



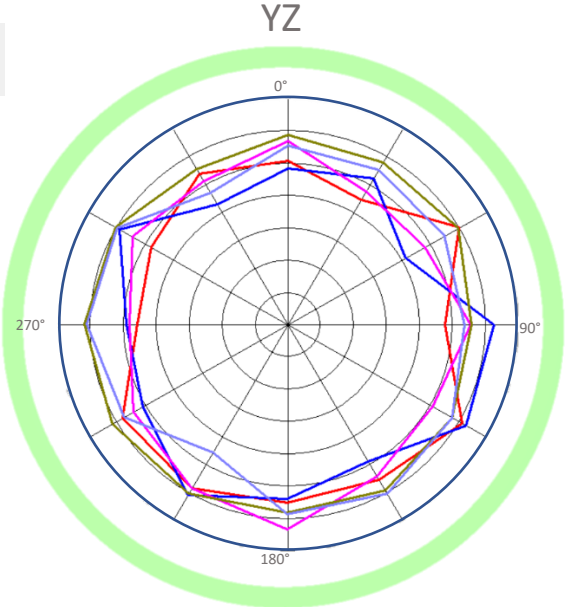
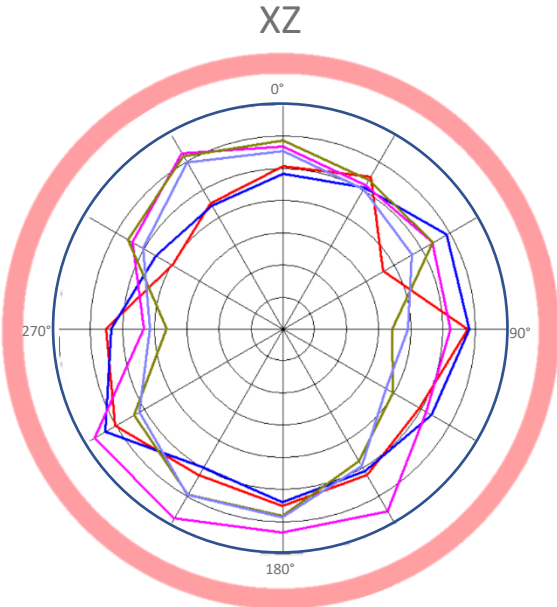
## Radiated Performance – 2D

### 2D Polar Plot 698-2700MHz

The data shown was measured on a 2mm thick section of ABS.



720  
 880  
 1875  
 2100  
 2600  
 Max: 5  
 Min: -30  
 Scale: 5/div

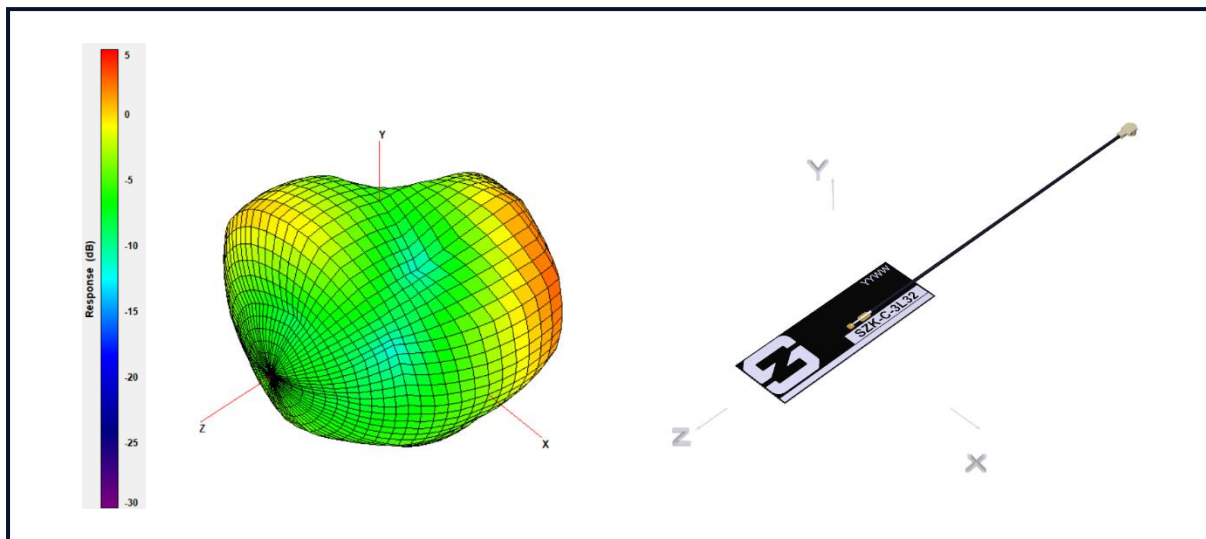
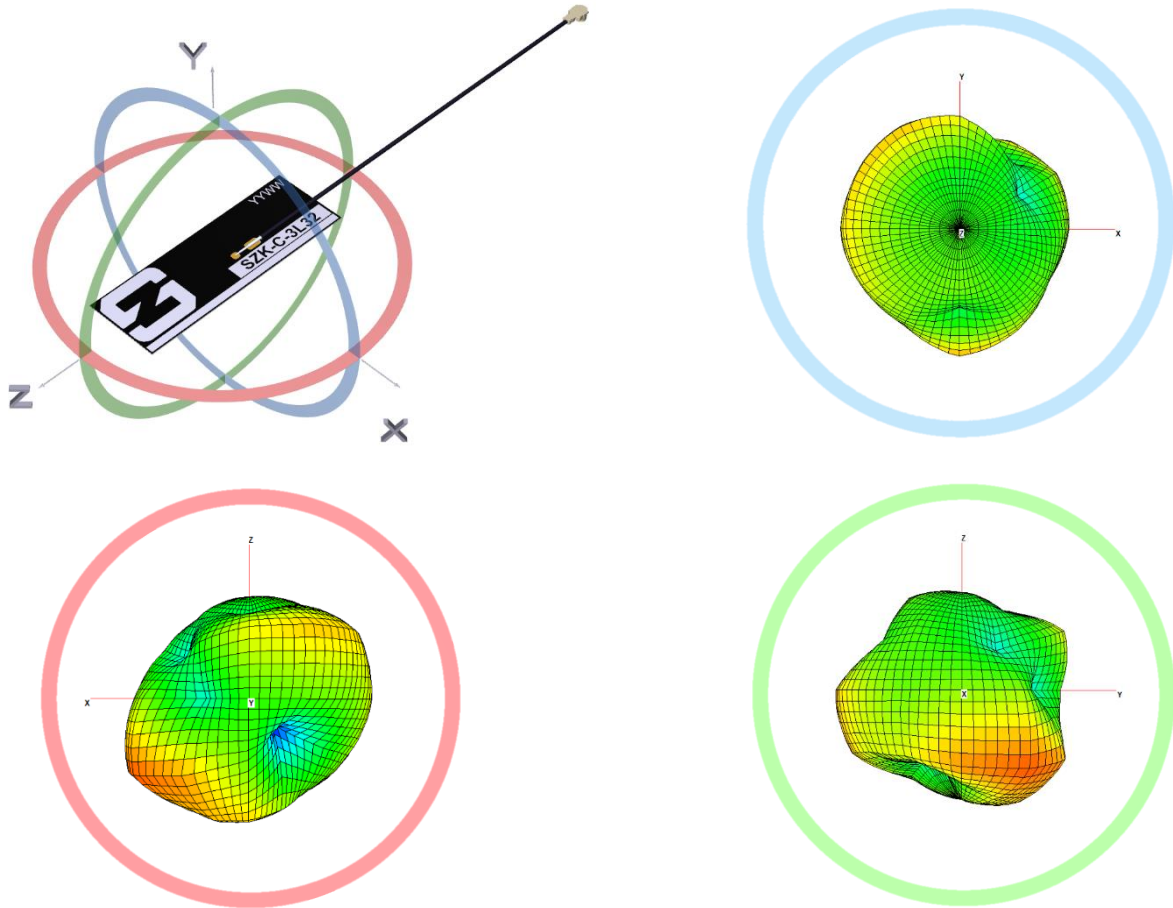






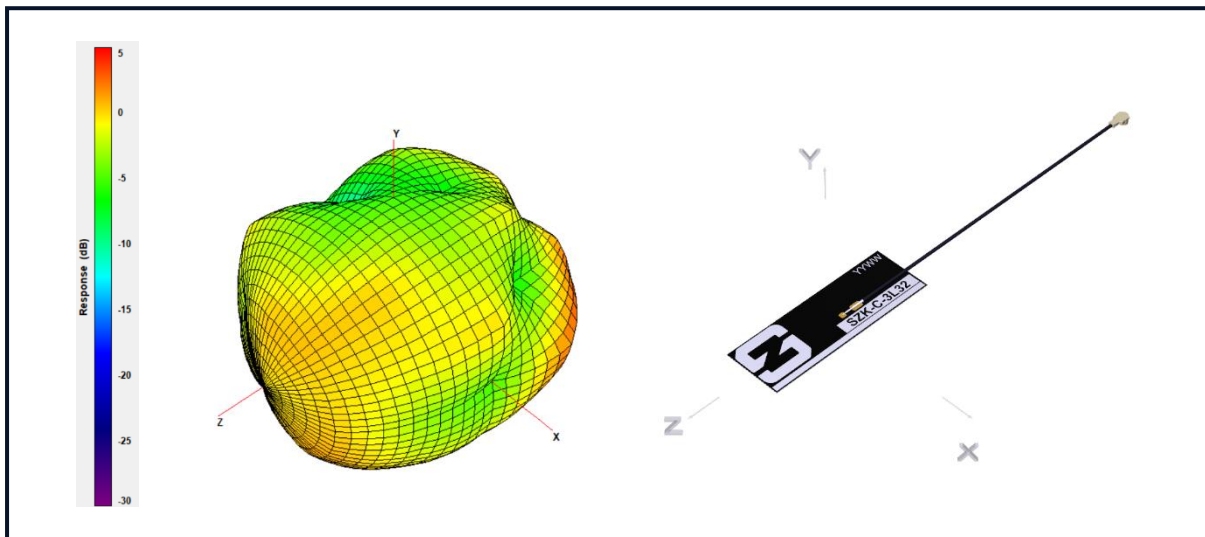
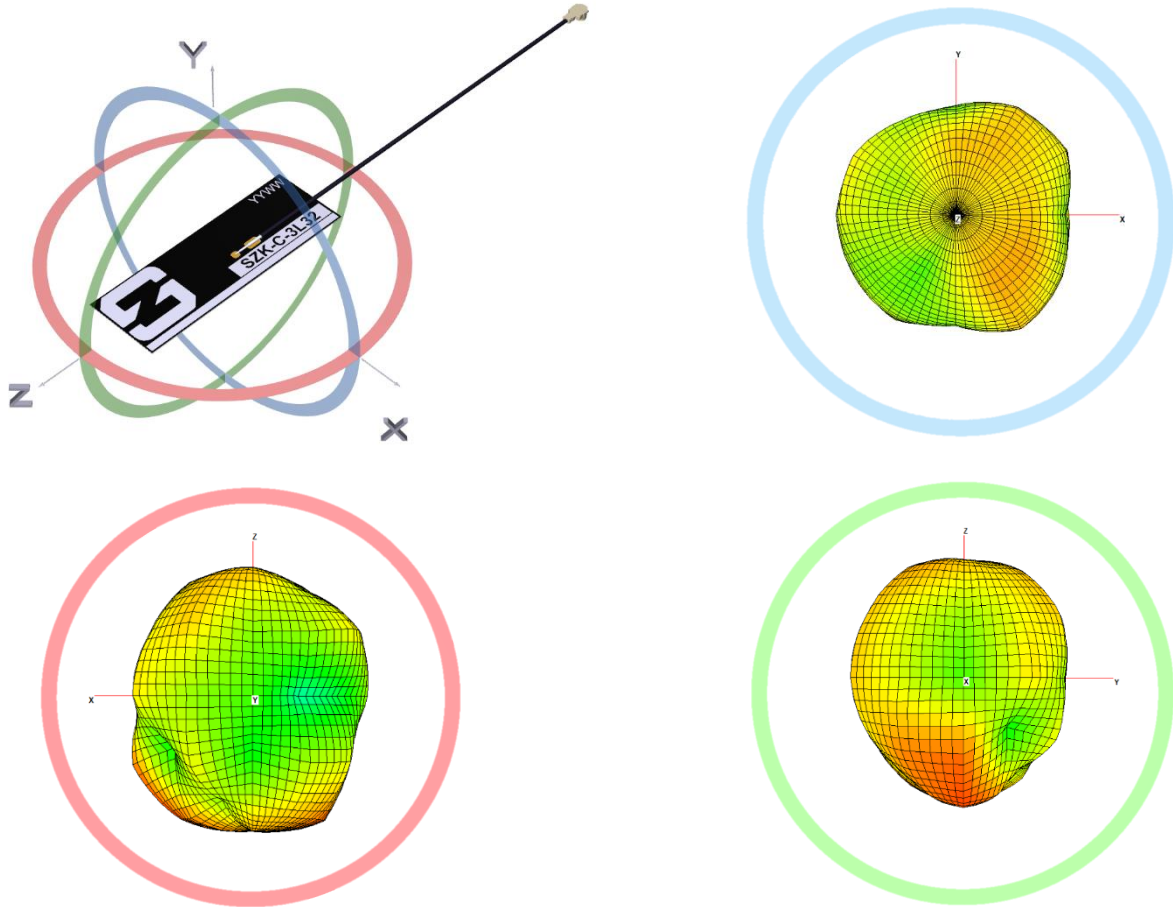
## Radiated Performance – 3D patterns at 880MHz

The data shown was measured on a 2mm thick section of ABS.



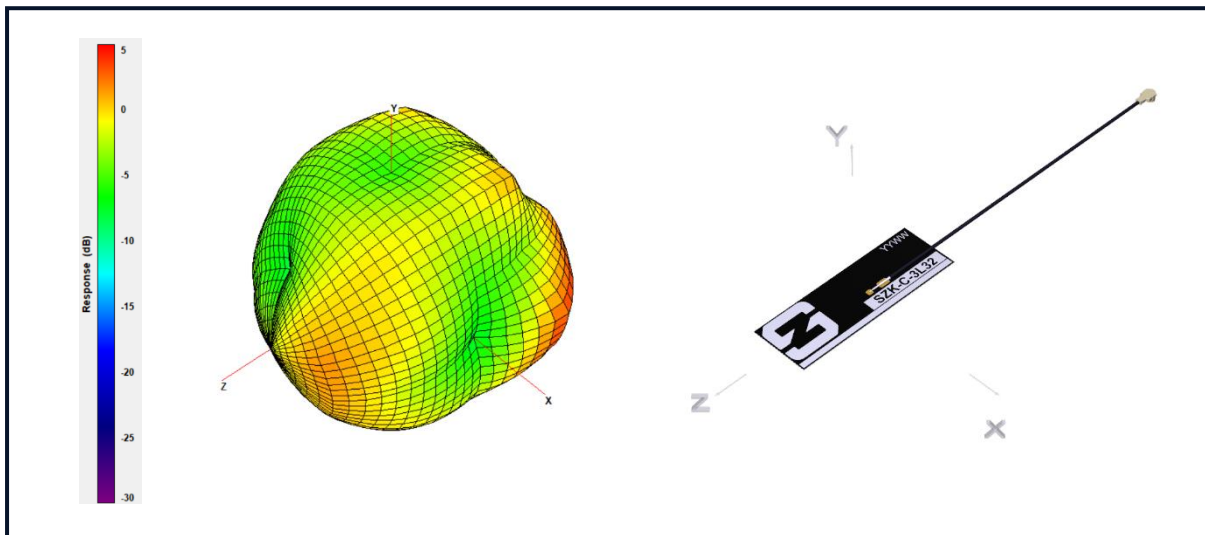
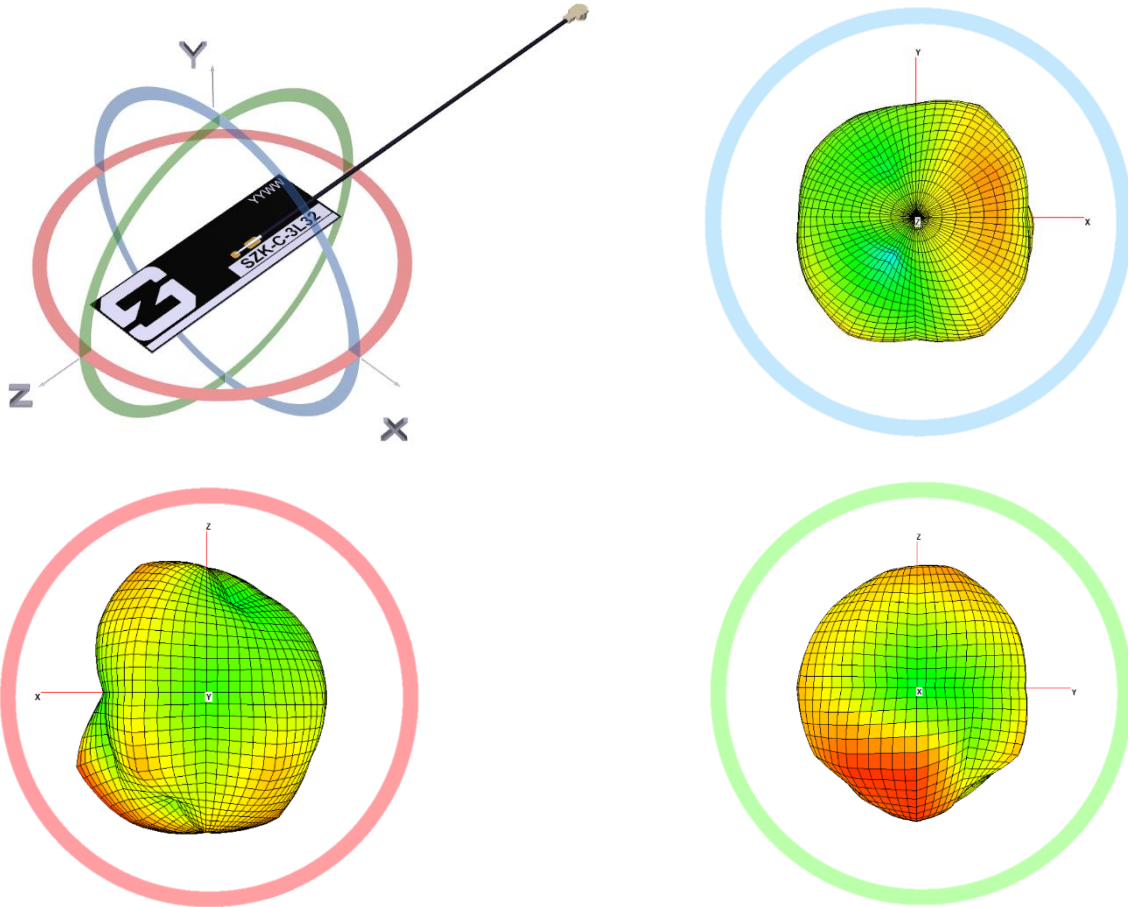
## Radiated Performance – 3D patterns at 1575MHz

The data shown was measured on a 2mm thick section of ABS.



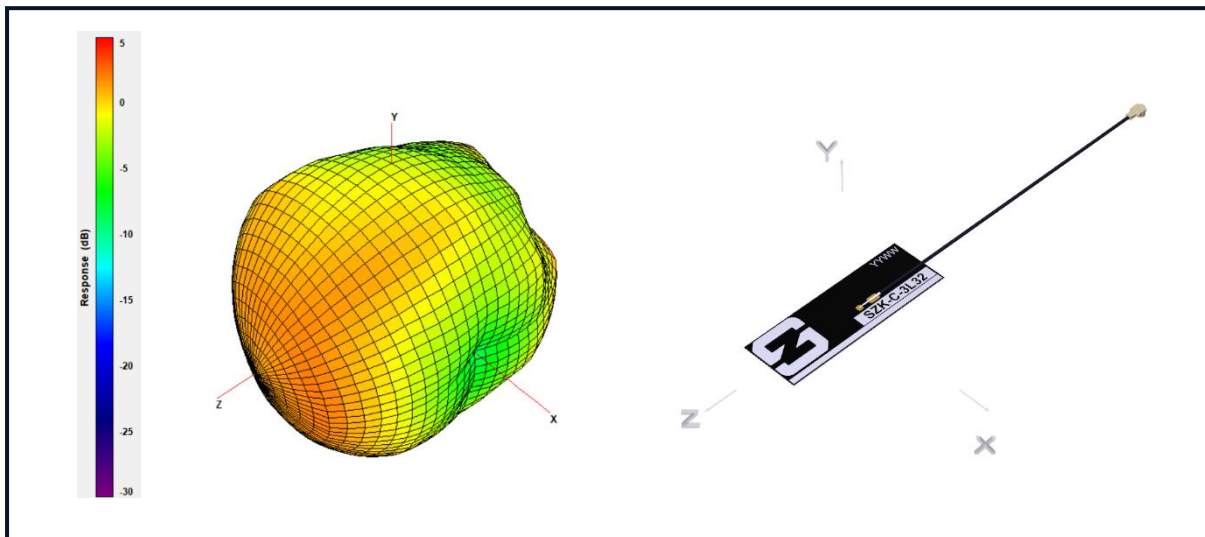
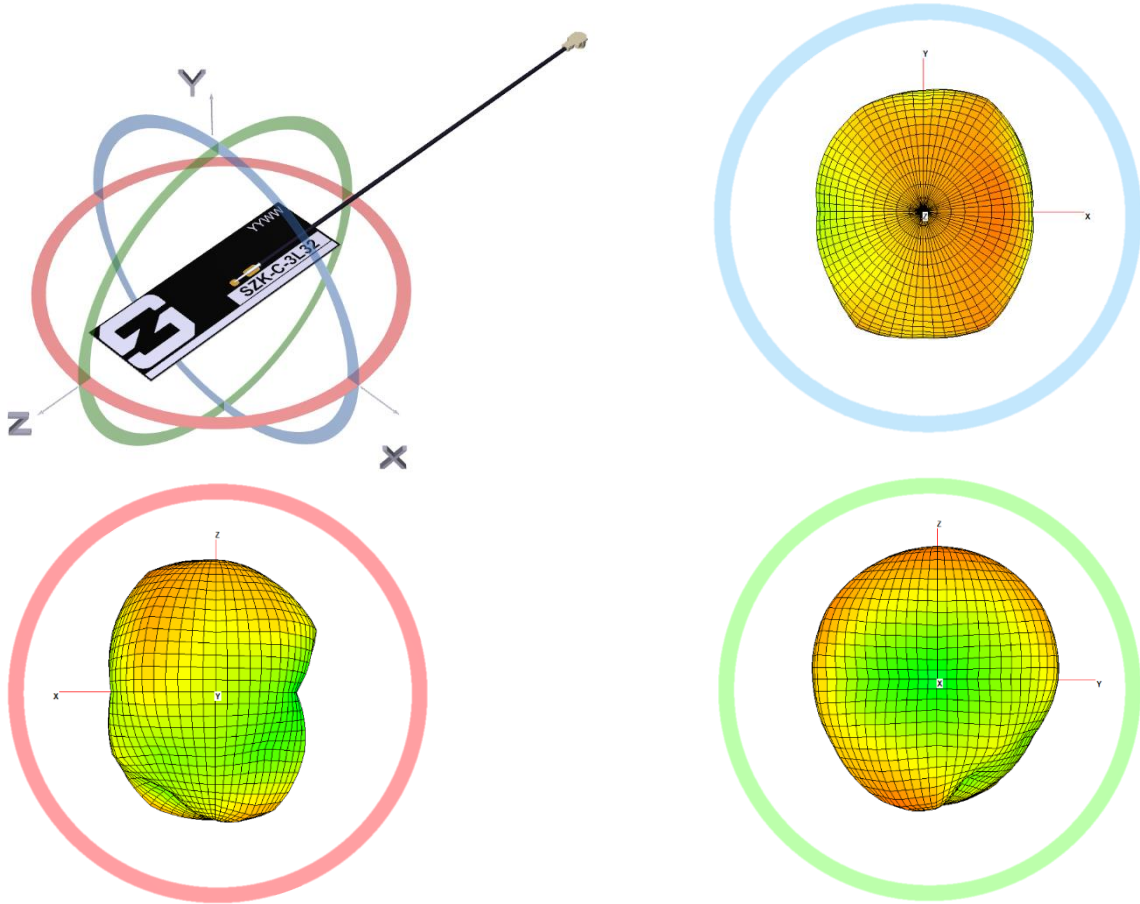
## Radiated Performance – 3D patterns at 1880MHz

The data shown was measured on a 2mm thick section of ABS.



## Radiated Performance – 3D patterns at 2350MHz

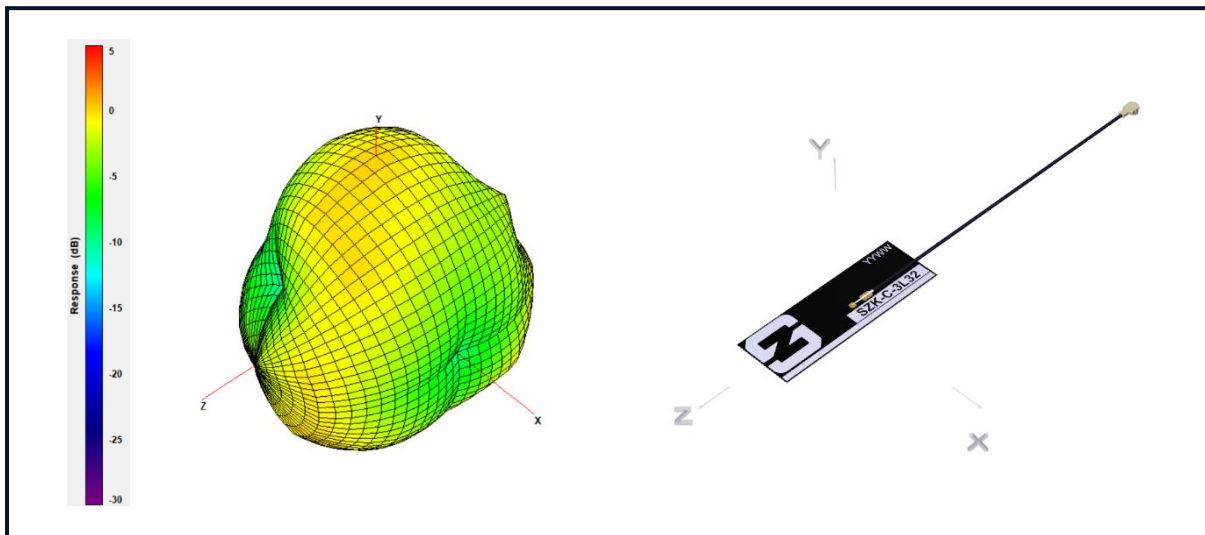
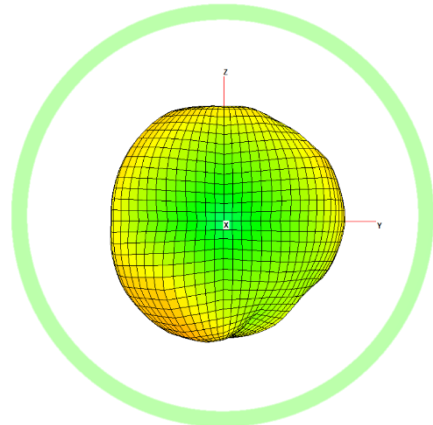
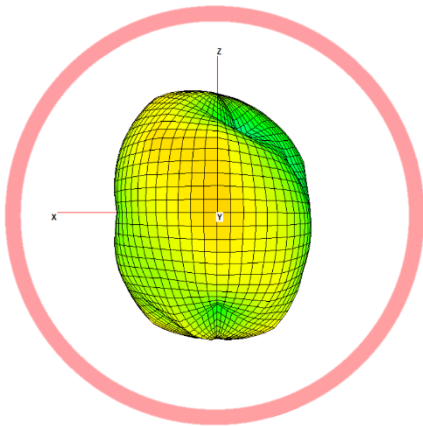
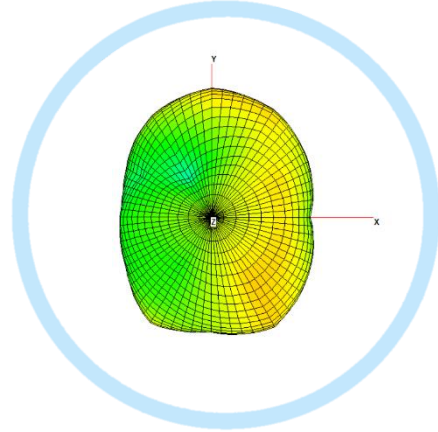
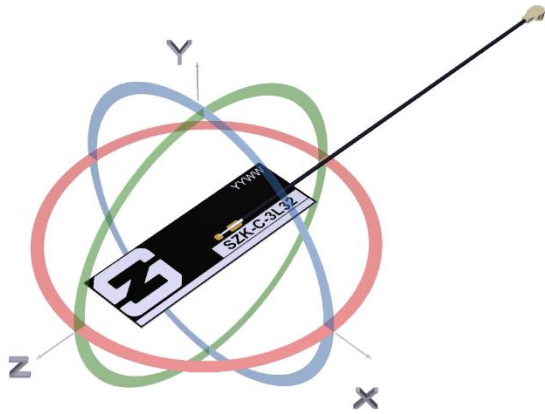
The data shown was measured on a 2mm thick section of ABS.



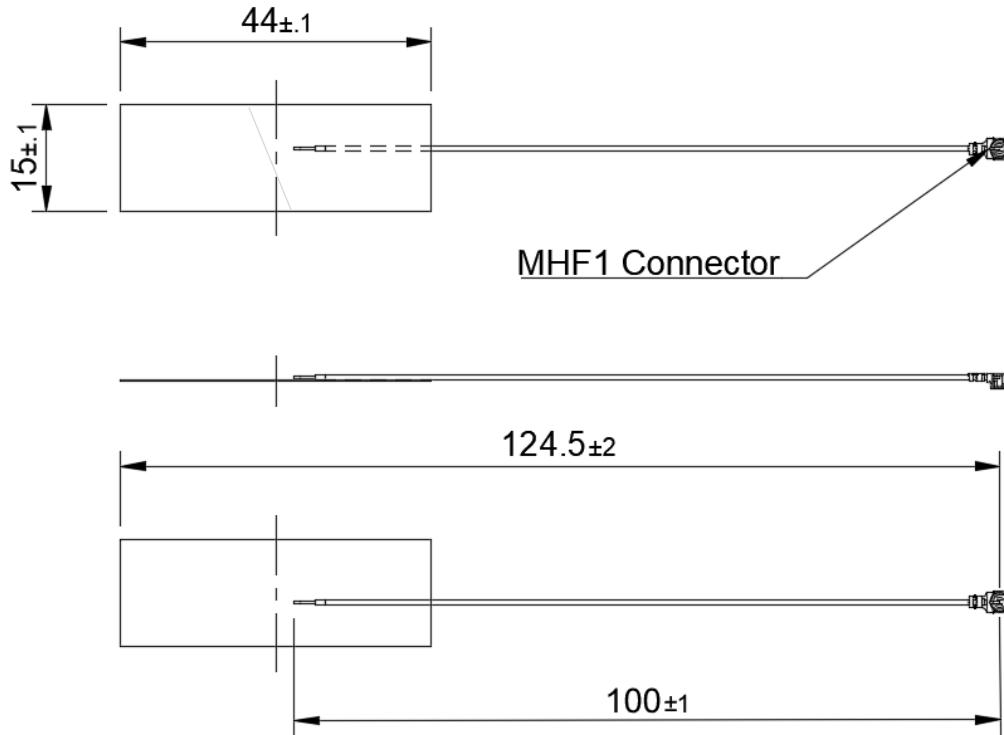


## Radiated Performance – 3D patterns at 2600MHz

The data shown was measured on a 2mm thick section of ABS.



## Mechanical Drawing



ALL DIMENSIONS IN MM

### 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.



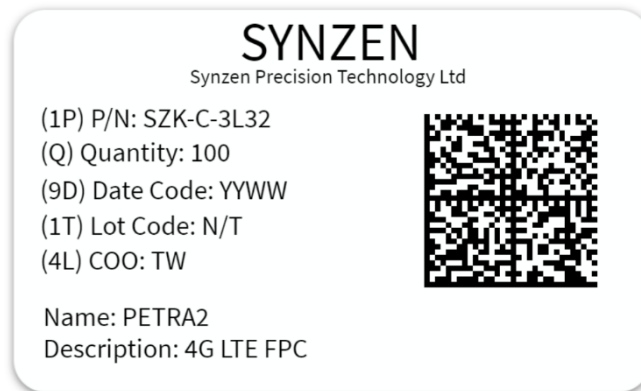
## Packaging

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)



## 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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