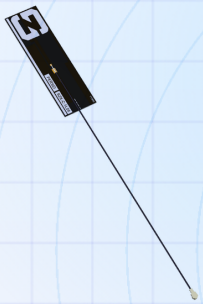
SP TECHNOLOGY

PRODUCT DATASHEET



LTE FR4 + CABLE

PERSEI

4G LTE / 3G / 2G Cellular FR4 Antenna with Cable

SZK-C-1L08

FREQUENCY	PEAK GAIN	CONNECTOR	SIZE
698 to 2690 MHz	Up to 3.50 dBi	MHF1, 150 mm	69 × 20 × 0.6 mm

LOW BAND	698 to 960 MHz	Covers B5, B8, B12, B13, B14, B17, B18, B19, B20, B26, B27, B28, B29, B44, B67, B68
MID BAND	1710 to 2200 MHz	Covers B1, B2, B3, B4, B10, B25, B33, B34, B35, B36, B37, B39, B65, B66
2.3 GHZ	2300 to 2400 MHz	Covers B30, B40
2.6 GHZ	2500 to 2690 MHz	Covers B7, B38, B69

Key Features

- Ultra-small 4G antenna
- For 4G LTE and cellular applications
- Simple integration, plug and operate the device without designing onboard antenna
- Can be tuned for various environments and plastic thickness with additional Pi network, free tuning service available
- Alternate cable lengths available upon request, contact sales@synzen.com.tw

1 Introduction

A rigid antenna with cable for 4G LTE applications. For use internal to a device which requires an integrated antenna solution. High performance with a small form factor for simple integration.

Features

- Ultra-small 4G antenna
- For 4G LTE and cellular applications
- Simple integration, plug and operate the device without designing onboard antenna
- Can be tuned for various environments and plastic thickness with additional Pi network, free tuning service available
- Alternate cable lengths available upon request, contact sales@synzen.com.tw

Applications

- Industrial / Scientific / Medical
- M2M Industrial
- Smart Meters
- Smart Grid
- Remote Monitoring
- Femtocells

2 Mechanical Specifications

Part Number	SZK-C-1L08
Name	PERSEI
Dimensions (mm)	69 × 20 × 0.6
Weight	<1 g
Antenna Type	FR4 + Cable
Cable Length	150 mm, Black
Cable Type	Mini Coax Ø 1.13 mm
Connector	MHF1 (U.FL Compatible)
Adhesive Backing	3M 468

3 RF Specifications

Frequency Range (MHz)	Average Efficiency	Peak Gain (dBi)	S11 (max) dB	VSWR (max)	Impedance
698 to 960	>60%	2.30	<-6.0	2.90:1	**50 Ω**
1710 to 2200	>70%	2.60	<-11.3	1.75:1	
2300 to 2400	>65%	2.90	<-11.4	1.70:1	
2500 to 2690	>65%	3.50	<-13.8	1.50:1	

Polarization: Linear. Max input power: 5 W. All performance stated is measured on 2.0 mm ABS plastic, RF chokes used to prevent cable radiation.

4 Environmental

Operational Temperature	-40 to +85°C
Storage Temperature	-10 to +40°C
Relative Humidity	≤75%

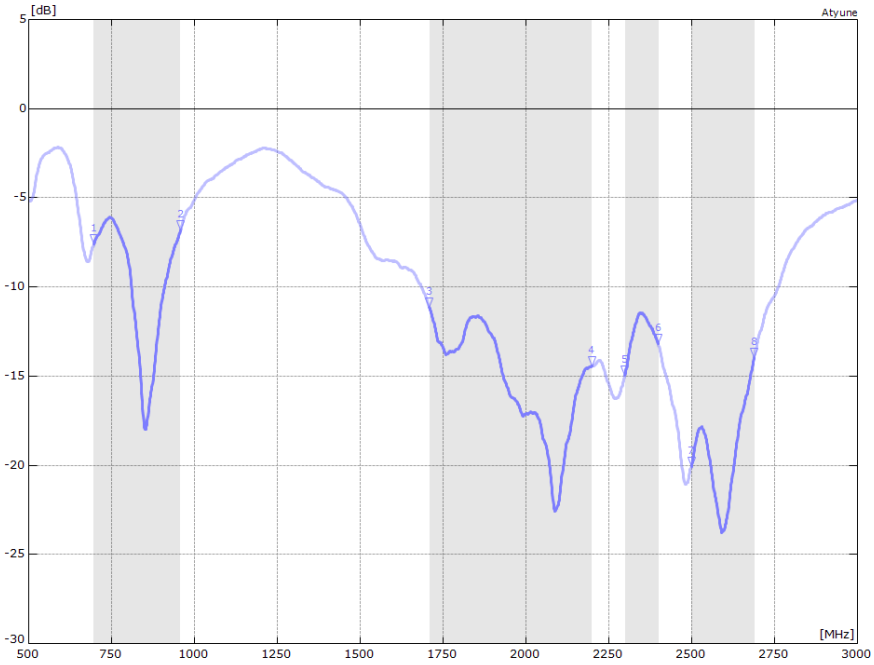
5 Supported Band List

Band	Freq. Band (MHz)	Uplink (MHz)	Downlink (MHz)	Supported
1	2100	1920 to 1980	2110 to 2170	YES
2	1900	1850 to 1910	1930 to 1990	YES
3	1800	1710 to 1785	1805 to 1880	YES
4	1700	1710 to 1755	2110 to 2155	YES
5	850	824 to 849	869 to 894	YES
7	2600	2500 to 2570	2620 to 2690	YES
8	900	880 to 915	925 to 960	YES
10	1700	1710 to 1770	2110 to 2170	YES
11	1500	1427.9 to 1447.9	1475.9 to 1495.9	NO
12	700	699 to 716	729 to 746	YES
13	700	777 to 787	746 to 756	YES
14	700	788 to 798	758 to 768	YES
17	700	704 to 716	734 to 746	YES
18	850	815 to 830	860 to 875	YES
19	850	830 to 845	875 to 890	YES
20	800	832 to 862	791 to 821	YES
21	1500	1447.9 to 1462.9	1495.9 to 1510.9	NO
22	3500	3410 to 3490	3510 to 3590	NO
24	1600	1626.5 to 1660.5	1525 to 1559	NO
25	1900	1850 to 1915	1930 to 1995	YES
26	850	814 to 849	859 to 894	YES
27	800	807 to 824	852 to 869	YES
28	700	703 to 748	758 to 803	YES
29	700	N/A	717 to 728	YES
30	2300	2305 to 2315	2350 to 2360	YES
31		452.5 to 457.5	462.5 to 467.5	NO

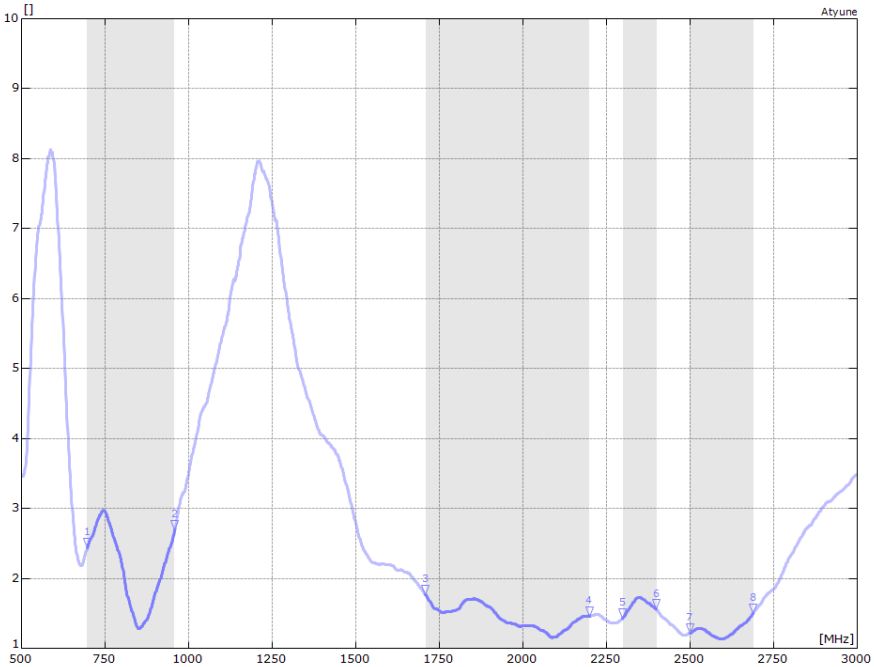
Band	Freq. Band (MHz)	Uplink (MHz)	Downlink (MHz)	Supported
32	1500	N/A	1452 to 1496	NO
33	2100	1900 to 1920		YES
34	2100	2010 to 2025		YES
35	1900	1850 to 1910		YES
36	1900	1930 to 1990		YES
37		1910 to 1930		YES
38	2600	2570 to 2620		YES
39	1900	1880 to 1920		YES
40	2300	2300 to 2400		YES
41	2500	2496 to 2690		YES
42	3500	3400 to 3600		NO
43	3700	3600 to 3800		NO
44	700	703 to 803		YES
45	1500	1447 to 1467		NO
46	5200	5150 to 5925		NO
47	5900	5855 to 5925		NO
48	3600	3550 to 3700		NO
50	1500	1432 to 1517		NO
51	1500	1427 to 1432		NO
65	2100	1920 to 2010	2110 to 2200	YES
66	1700	1710 to 1780	2110 to 2200	YES
67	700	N/A	738 to 758	YES
68	700	698 to 728	753 to 783	YES
69	2600	N/A	2570 to 2620	YES
70	2000	1695 to 1710	1995 to 2020	NO

6 RF Characteristics

S11 Parameter

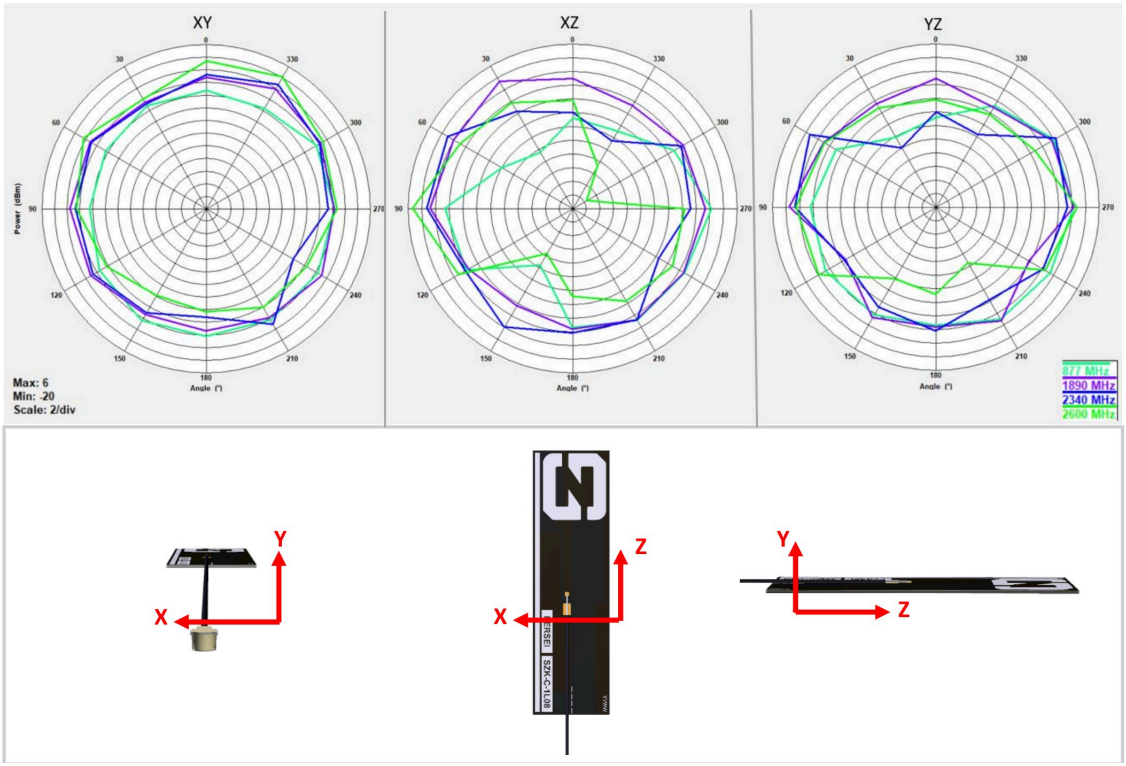


VSWR



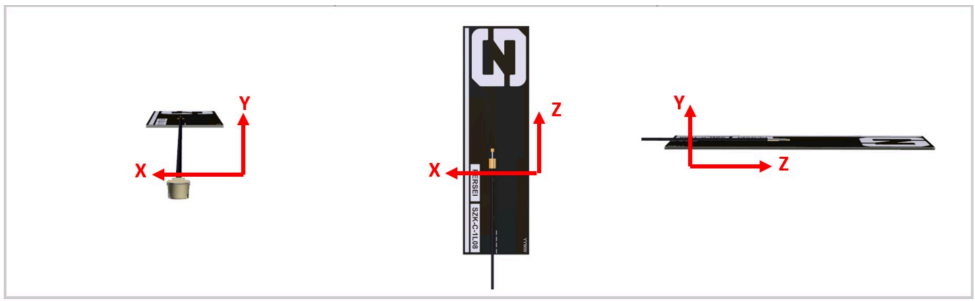
7 2D Polar Plot

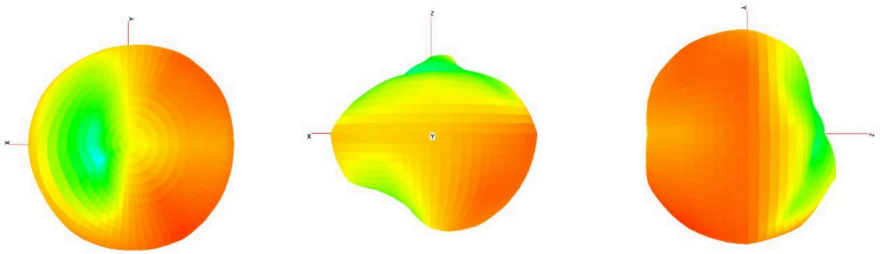
MEASURED ON 2.0 MM ABS PLASTIC, RF CHOKES USED TO PREVENT CABLE RADIATION

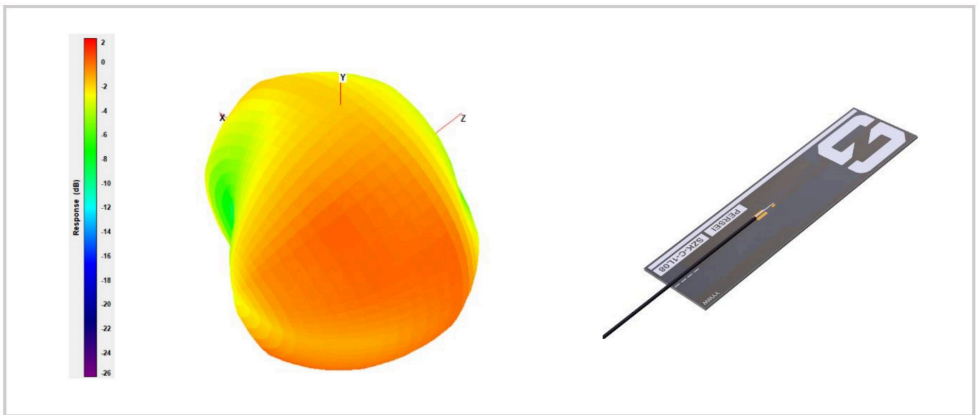


8 3D Radiation Pattern at 880 MHz

MEASURED ON 2.0 MM ABS PLASTIC, RF CHOKES USED TO PREVENT CABLE RADIATION, FREQUENCY POINT 880 MHZ

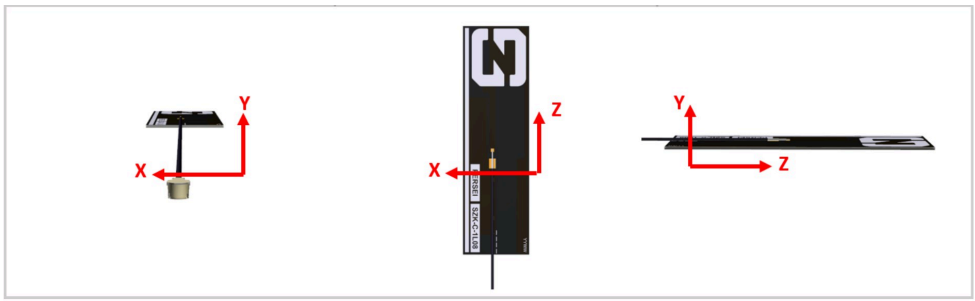


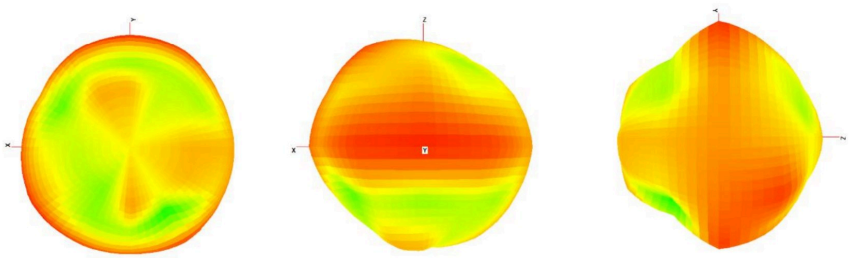


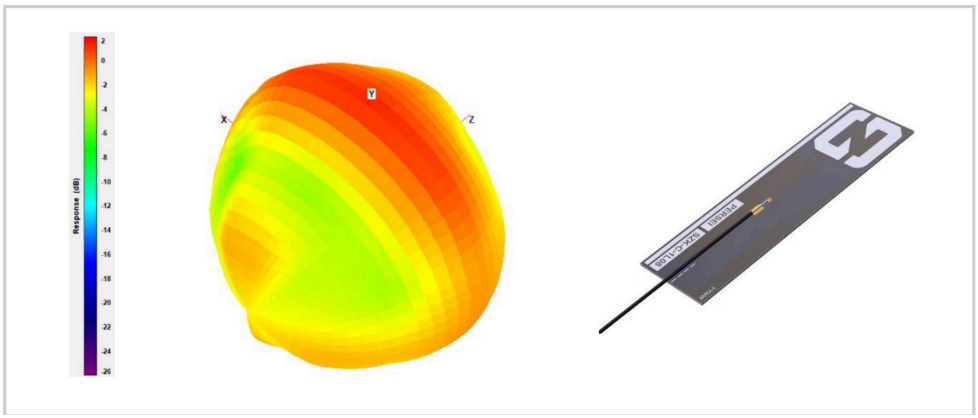


9 3D Radiation Pattern at 1880 MHz

MEASURED ON 2.0 MM ABS PLASTIC, RF CHOKES USED TO PREVENT CABLE RADIATION, FREQUENCY POINT 1880 MHZ

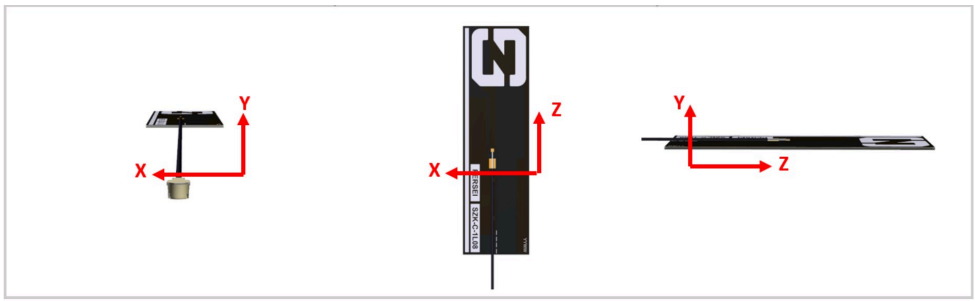


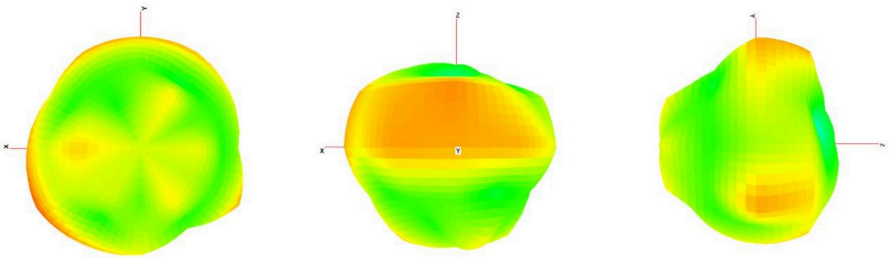


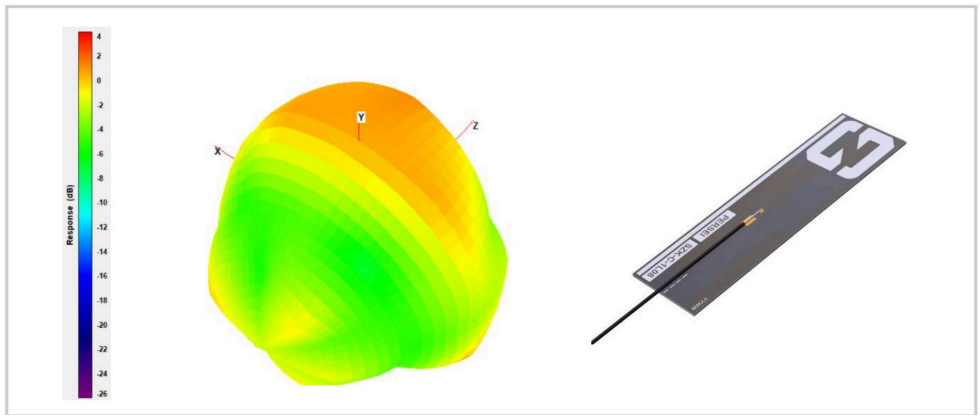


10 3D Radiation Pattern at 2350 MHz

MEASURED ON 2.0 MM ABS PLASTIC, RF CHOKES USED TO PREVENT CABLE RADIATION, FREQUENCY POINT 2350 MHZ

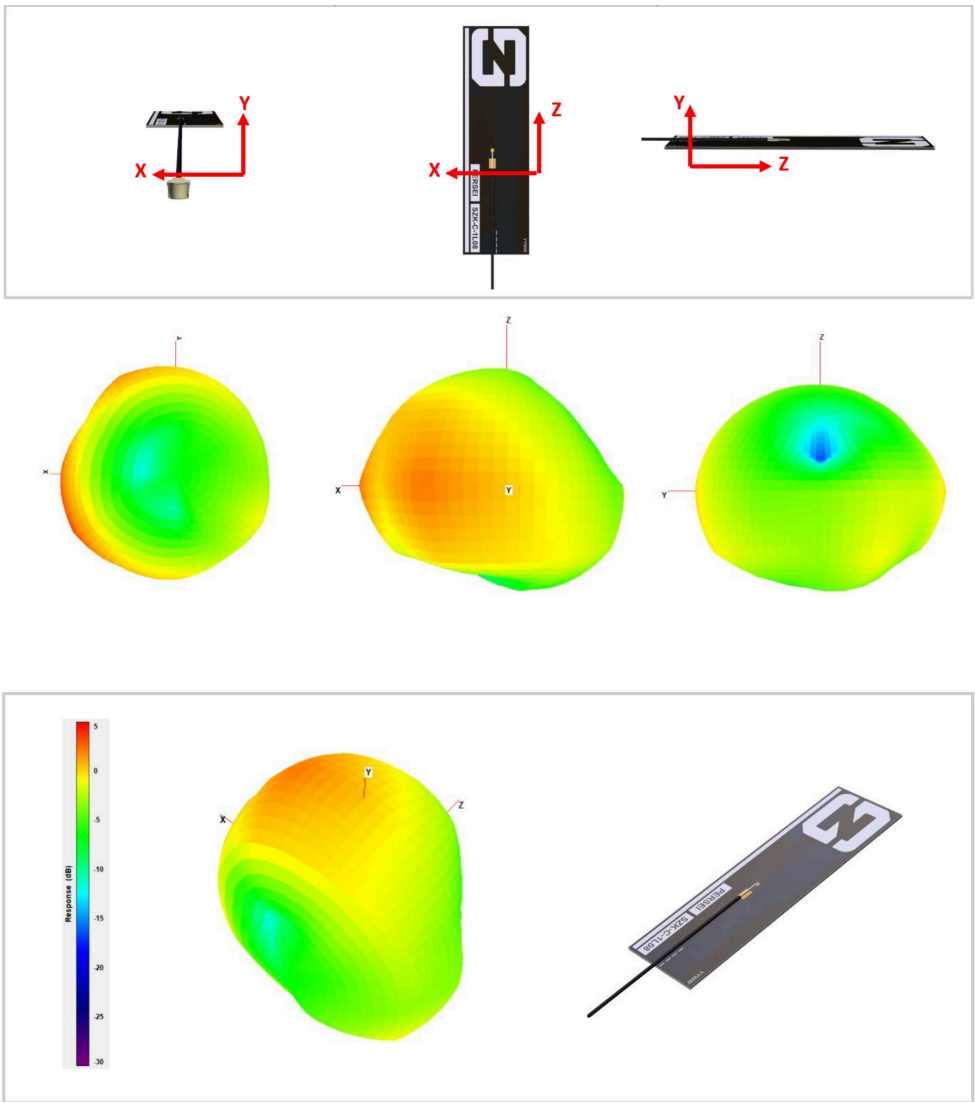




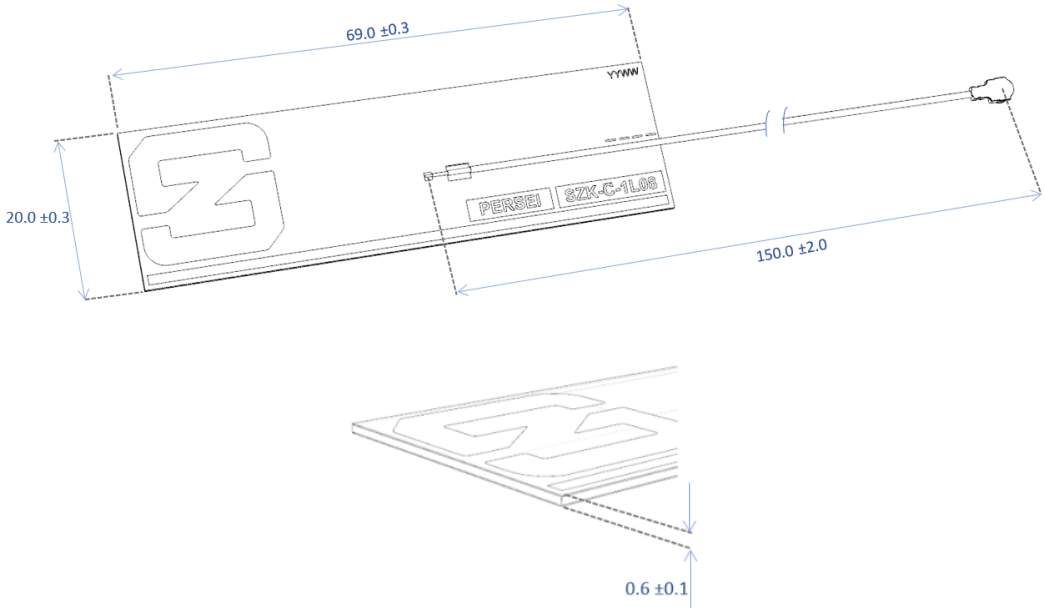


11 3D Radiation Pattern at 2600 MHz

MEASURED ON 2.0 MM ABS PLASTIC, RF CHOKES USED TO PREVENT CABLE RADIATION, FREQUENCY POINT 2600 MHZ

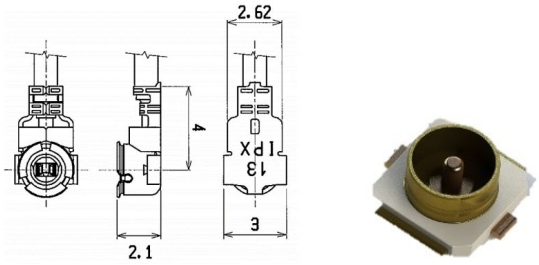


12 Antenna Mechanical Drawing



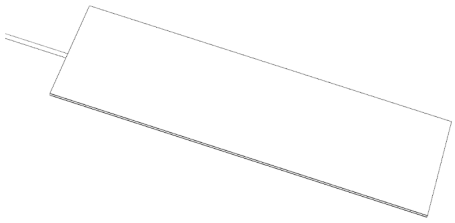
All dimensions in mm. The plug connector on the antenna is an IPEX MHF1.

13 Suitable PCB Mating Connector (U.FL)



Example: Joymax CT-MPB01X (www.joymax.com.tw)

14 Adhesive Backing



The antenna comes with 3M 468 adhesive backing upon an FR4 substrate. An easy peel cut is on the back side for easy cover removal.

15 Bag and Packaging Information



Antennas packed in PE bag (20 antennas per bag)

Small bag dimensions: 9.5 × 28.5 cm

100 pcs per larger bag with product label

Bag dimensions: 19 × 30 cm

16 Compliance

ROHS
Compliant
Conforms to EU RoHS Directive 2011/65/EU as amended by Delegated Directive (EU) 2015/863.

REACH
Compliant
Conforms to EU REACH Regulation (EC) No 1907/2006.

CERTIFICATE
On request
A certificate of conformance is available upon request from sales@synzen.com.tw.

Synzen Precision Technology Ltd makes no warranties based on the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Synzen reserves all rights to this document and the information contained herein. Reproduction, use or disclosure to third parties without express permission is strictly prohibited.