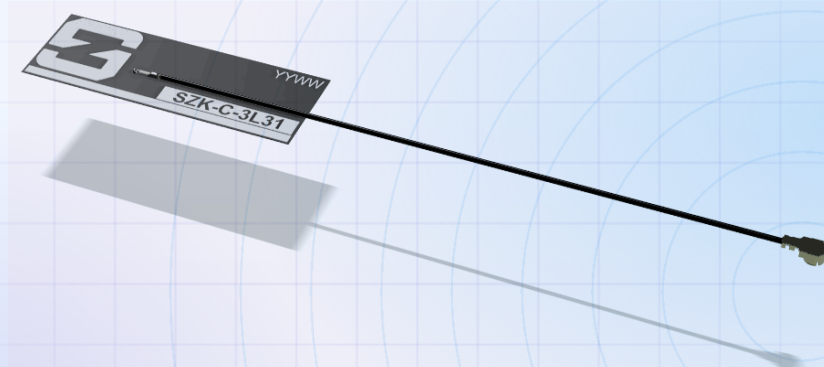




5G / LTE FPC

ALUDRA

5G FPC Adhesive Antenna

SZK-C-3L31

FREQUENCY
617 to 4200 MHz

PEAK GAIN
Up to 5.30 dBi

CONNECTOR
MHF1, 100 mm

SIZE
44 × 15 × 0.2 mm

LOW BAND	617 to 960 MHz	Covers B5, B8, B12, B13, B14, B17, B18, B20, B26, B27, B28, B29, B71
L BAND	1427 to 1660.5 MHz	Covers B24
MID BAND	1710 to 2200 MHz	Covers B1, B2, B3, B4, B9, B23, B35, B39, B66
2.3 GHZ	2300 to 2400 MHz	Covers B40
2.6 GHZ	2490 to 2690 MHz	Covers B7, B38, B41
HIGH BAND	3300 to 4200 MHz	Covers B22, B42, B43, B48, B77, B78

1 Introduction

Introducing ALUDRA innovative antenna from Synzen: Ready to transform your wireless experience with unbridled speed and efficiency, Synzen's 5G FPC antenna is here to set new standards in 5G connectivity.

— Features

- ◆ For 5G 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

— Applications

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

2 Mechanical Specifications

Part Number	SZK-C-3L31
Name	ALUDRA
Dimensions (mm)	44.0 × 15.0 × 0.2
Antenna Type	FPC + Cable
Weight	<1.5 g
Connector*	MHF1
Cable Length*	100 mm
Adhesive Backing	3M 868

*Alternate cable length and connectors available on request

3 Electrical / RF Specifications

Band	Frequency Range (MHz)	Avg Efficiency (%)	Peak Gain (dBi)	Impedance	Polarization
5G NR/4G LTE B5, 8, 12, 13, 14, 17, 18, 20, 26, 27, 28, 29, 71	617 to 960	>55	4.20	50 Ω	Linear
5G NR/4G LTE B24	1427 to 1660.5	>65	4.70		
5G NR/4G LTE B1, 2, 3, 4, 9, 23, 35, 39, 66	1710 to 2200	>65	4.44		
5G NR/4G LTE B40	2300 to 2400	>75	4.83		
5G NR/4G LTE B7, 38, 41	2490 to 2690	>75	4.69		
5G NR/4G LTE B22, 42, 43, 48, 77, 78	3300 to 4200	>70	5.30		

Note: All performance stated is measured on 2 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%
Moisture Sensitivity Level (MSL)	NA
RoHS and REACH compliant	Yes

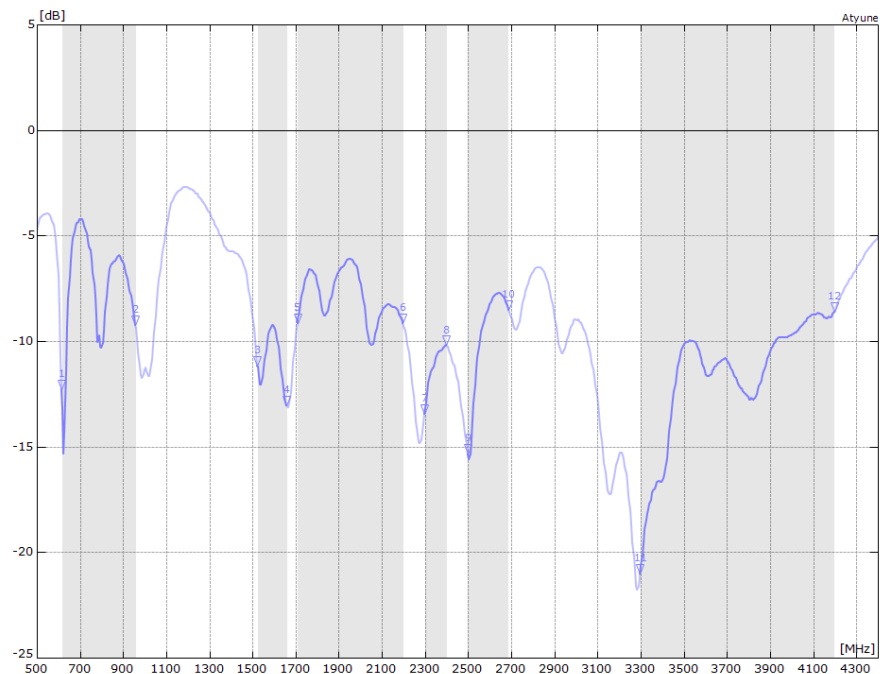
5 Supported Band List

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
9		1749.9 to 1784.9	1844.9 to 1879.9	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	YES
24	1600	1626.5 to 1660.5	1525 to 1559	YES
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
32	1500	N/A	1452 to 1496	NO
33	2100	1900 to 1920		YES

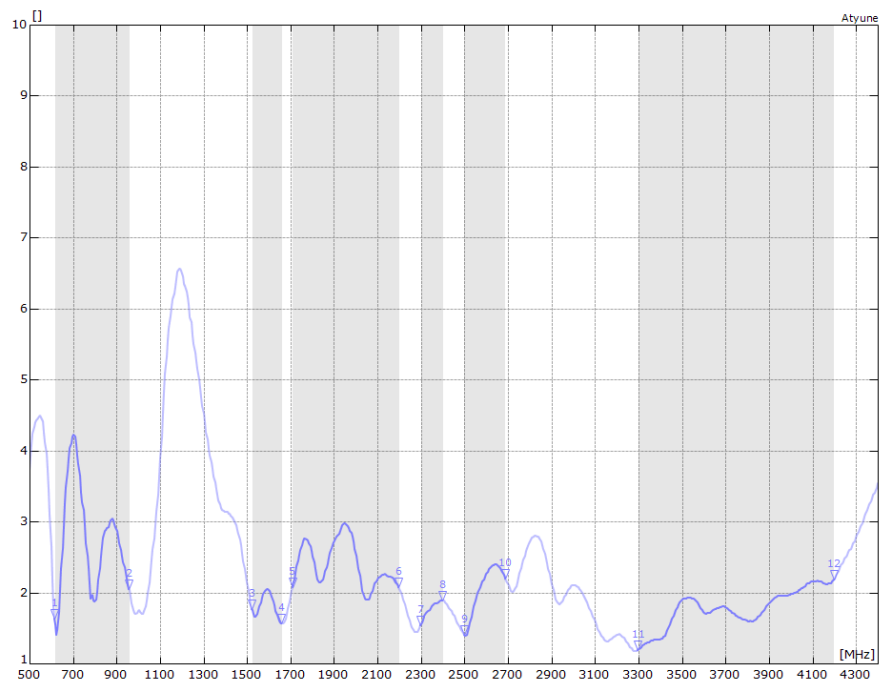
Band	Freq. Band (MHz)	Uplink (MHz)	Downlink (MHz)	Supported
34	2100	2010 to 2025		YES
35	1900	1850 to 1910		YES
36	1900	1930 to 1990		YES
37		1910 to 1930		YES
38	2600	2570 to 2620		YES
39	1900	1880 to 1920		YES
40	2300	2300 to 2400		YES
41	2500	2496 to 2690		YES
42	3500	3400 to 3600		YES
43	3700	3600 to 3800		YES
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		YES
50	1500	1430 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	YES
71		663 to 698	617 to 652	YES
74		1427 to 1518		NO
77		3300 to 4200		YES
78		3300 to 3800		YES
79		4400 to 5000		NO
85		698 to 716	728 to 746	YES

6 RF Characteristics

S11 Parameter



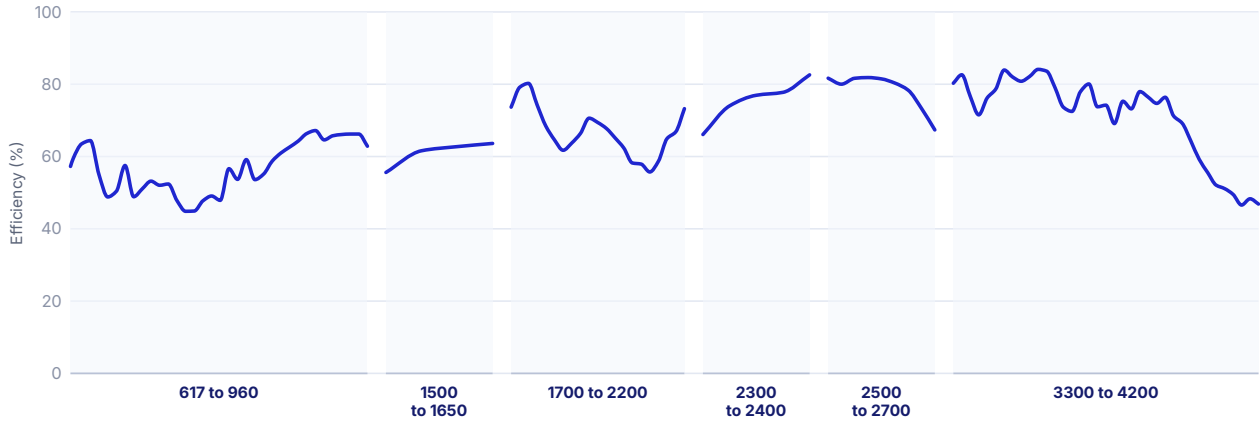
VSWR



7 Antenna Performance

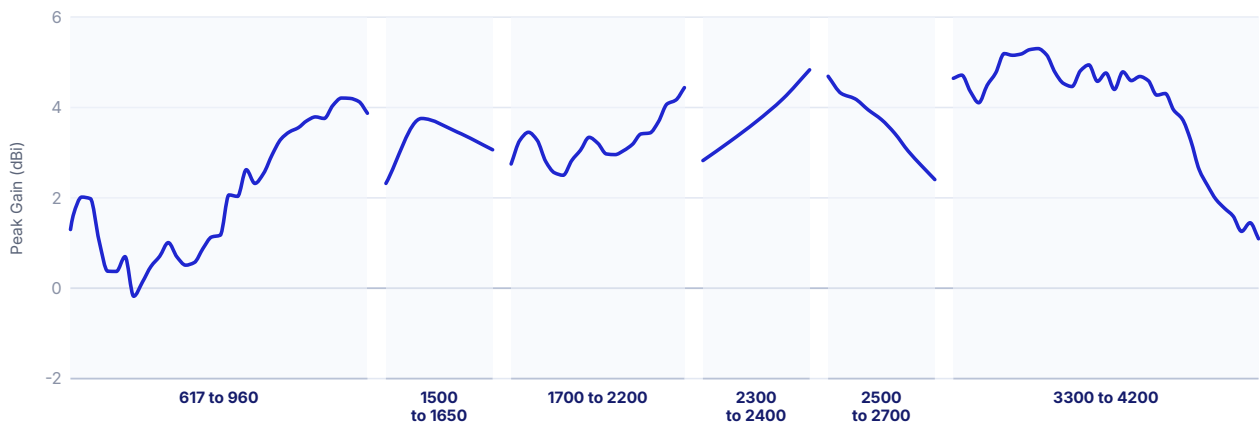
Efficiency

Frequency in MHz



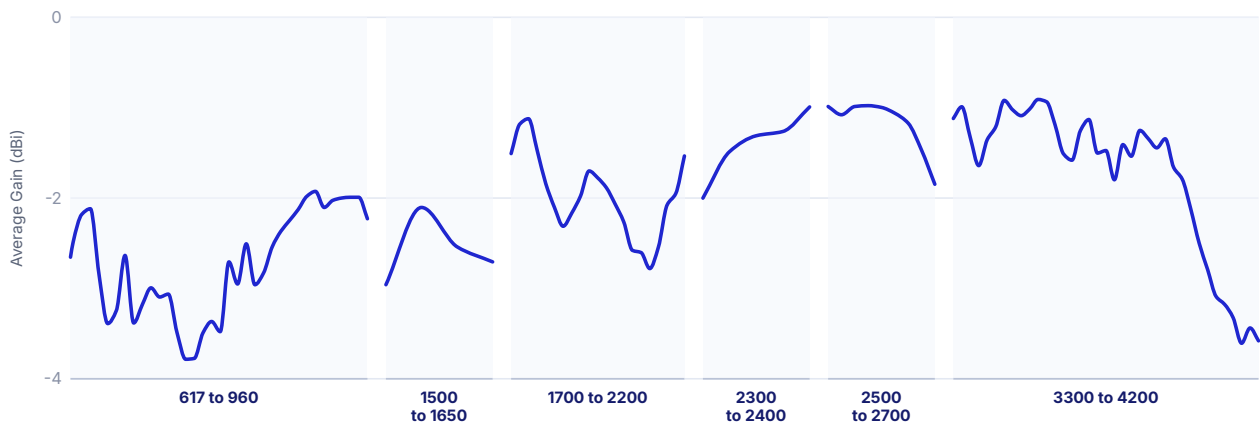
Peak Gain

Frequency in MHz



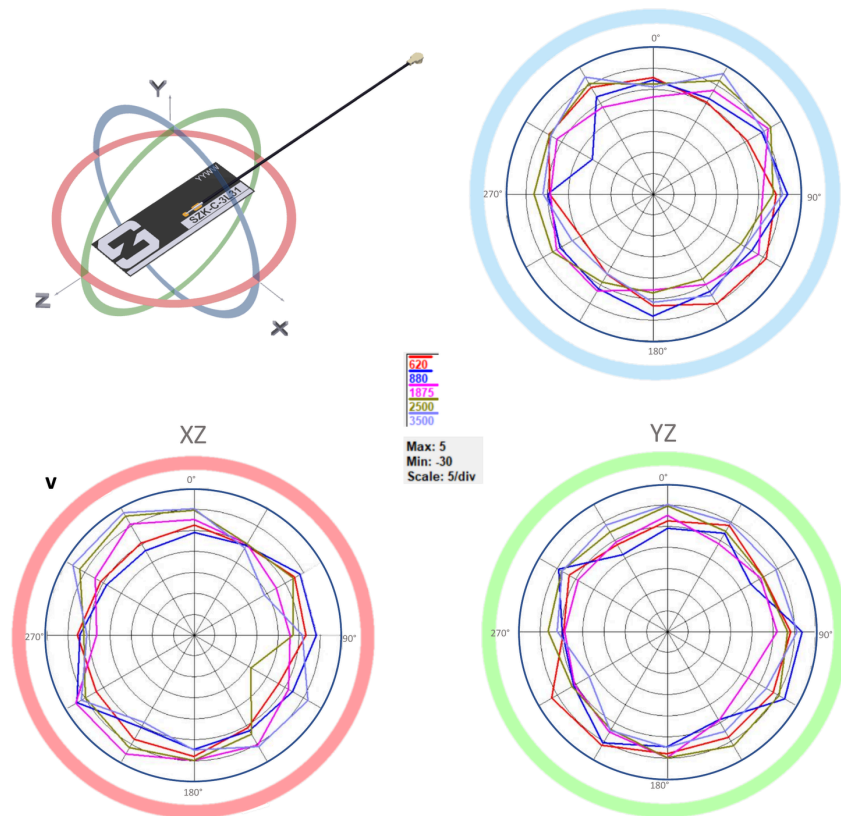
Average Gain

Frequency in MHz



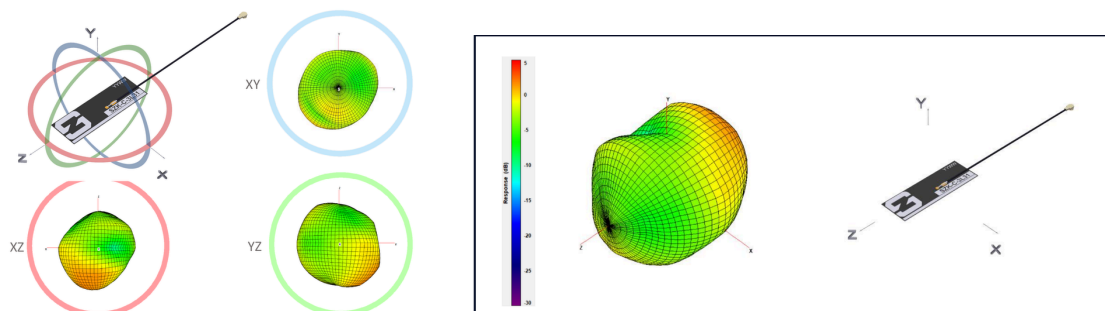
8 Radiated Performance 2D

2D POLAR PLOT 617 TO 4200 MHZ · MEASURED ON A 2 MM THICK SECTION OF ABS

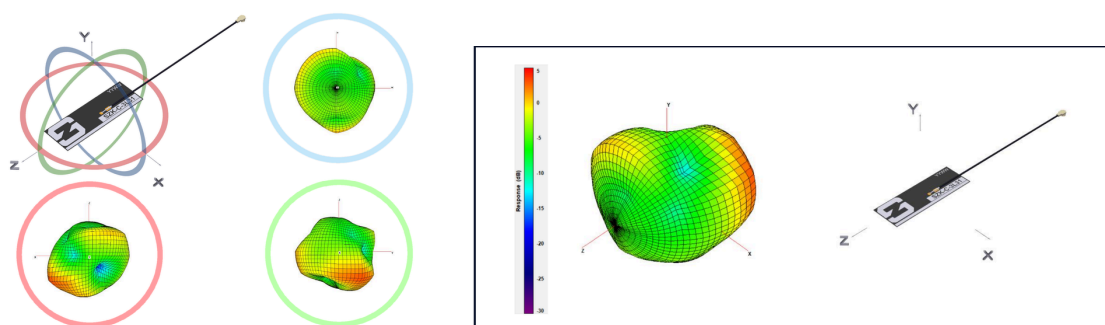


9 Radiated Performance 3D at 650 MHz

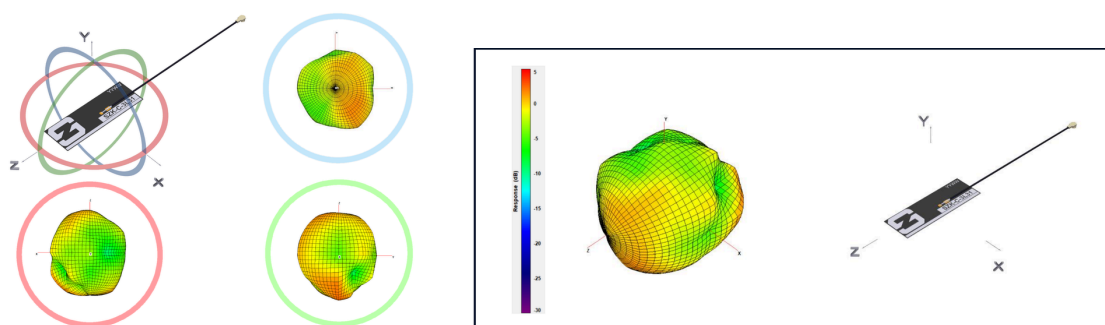
MEASURED ON A 2 MM THICK SECTION OF ABS



10 Radiated Performance 3D at 880 MHz

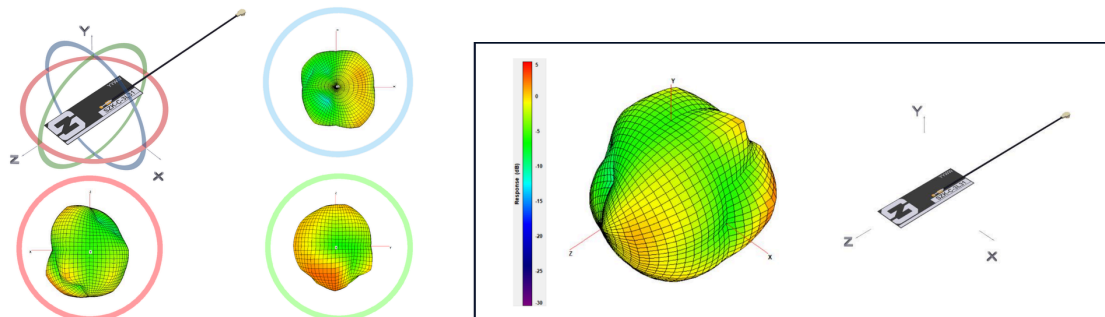


11 Radiated Performance 3D at 1575 MHz

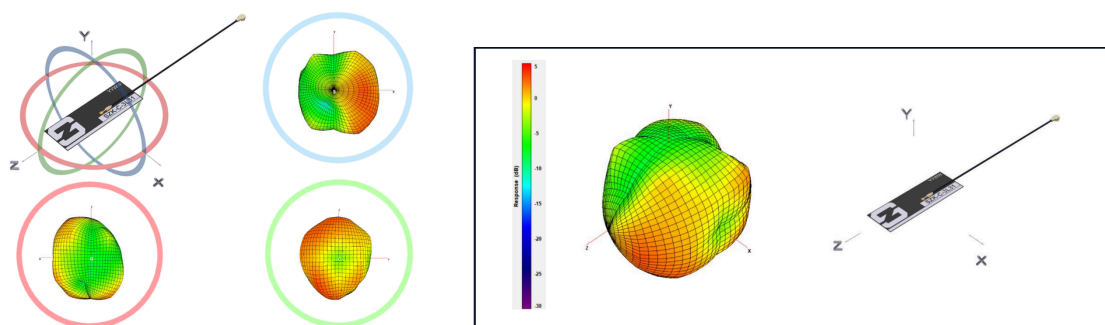


12 Radiated Performance 3D at 1880 MHz

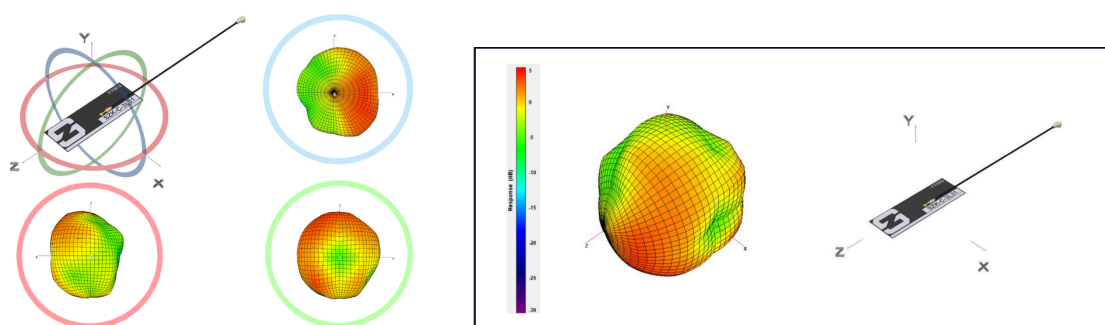
MEASURED ON A 2 MM THICK SECTION OF ABS



13 Radiated Performance 3D at 2350 MHz

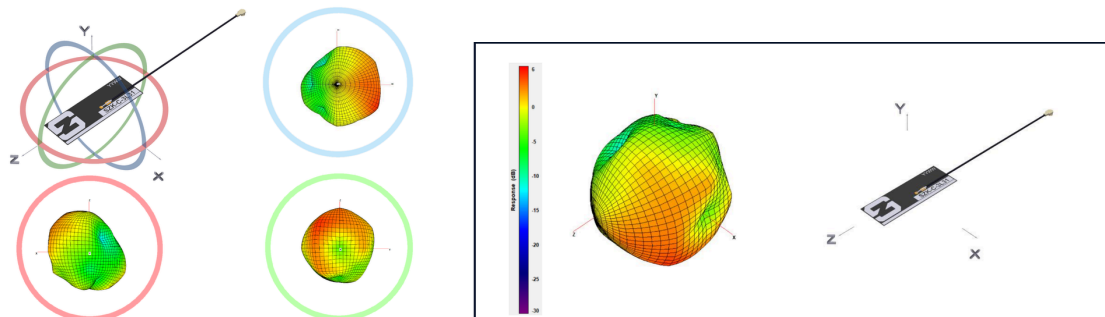


14 Radiated Performance 3D at 2600 MHz

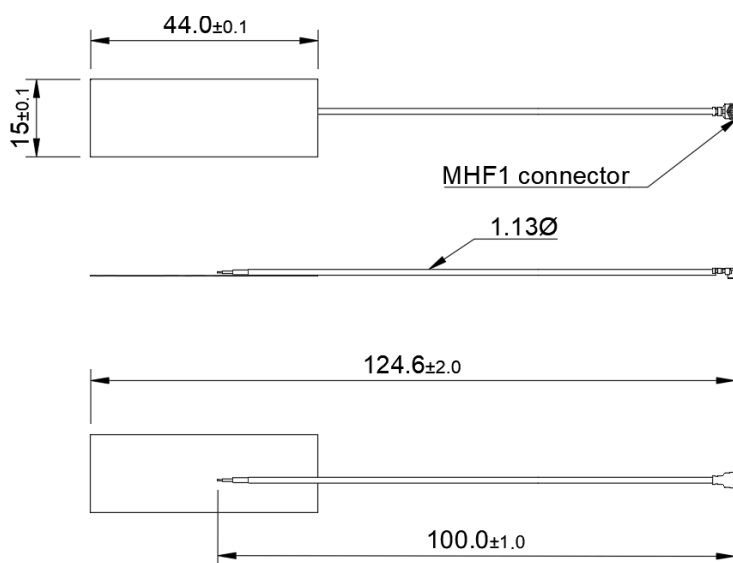


15 Radiated Performance 3D at 3500 MHz

MEASURED ON A 2 MM THICK SECTION OF ABS



16 Mechanical Drawing



ALL DIMENSIONS IN MM

17 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.

18 Packaging

- ◆ Antennas packed in PE bag (20 per bag). Small bag dimensions: 28.5 × 9.5 cm
- ◆ 100 pcs per larger PE bag with product label. Bag dimensions: 30 × 19 cm

19 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.

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