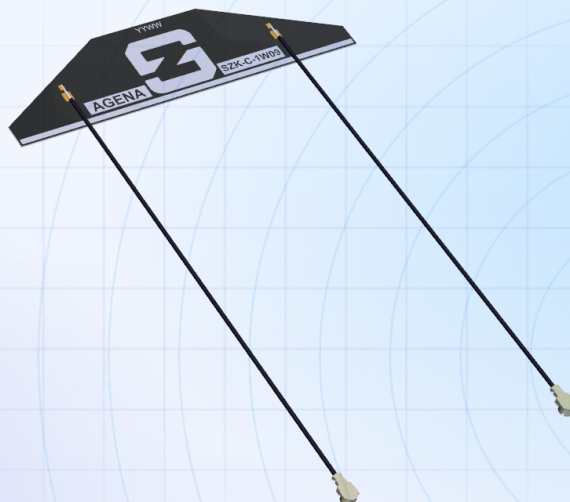




WI-FI 6 / 6E FPC

AGENA

Tri-band Wi-Fi 6E 2xMIMO FPC Antenna

SZK-C-1W09

FREQUENCY

2.4 / 5 / 6 GHz

PEAK GAIN

Up to 4.20 dBi

CONNECTOR

2 × MHF1, 100 mm

SIZE

75 × 20 × 0.2 mm

2.4 GHz	2400 to 2500 MHz	Covers Wi-Fi 2.4 GHz, BLE
5 GHz	4900 to 5850 MHz	Covers Wi-Fi 5 GHz
6 GHz	5925 to 7125 MHz	Covers Wi-Fi 6E

Key Features

- Flexible PCB antenna using 3M 468 adhesive
- Dimensions: 75 × 20 × 0.2 mm
- Cable: 2 × 100 mm length, 1.13 mm diameter, alternate cable lengths available
- Designed for MIMO with preset isolation, subject to placement
- Wi-Fi 6 and 6E compatible
- RoHS and REACH compliant

1 Introduction

For the complete Wi-Fi 2xMIMO solution, Wi-Fi 6 and 6E applications. For use internal to a device which requires an integrated antenna solution. High performance with a small form factor for simple integration.

— Features

- ◆ For WLAN Applications 2.4 to 2.5 GHz; 4.9 to 5.85 GHz; 5.9 to 7.1 GHz
- ◆ Alternate cable lengths available upon request, contact sales@synzen.com.tw
- ◆ All in one MIMO system. Can use multiple antennas to extend MIMO capacity
- ◆ 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

— Applications

- | | |
|------------------|---------------|
| ◆ Access Points | ◆ Smart Grid |
| ◆ M2M Industrial | ◆ Healthcare |
| ◆ Smart Meters | ◆ Set Top Box |

2 Mechanical Specifications

Part Number	SZK-C-1W09
Name	AGENA
Dimensions (mm)	75 × 20 × 0.2
Weight	<2 g
Antenna Type	FPC + Cable
Cable Length*	2 × 100 mm, Black
Cable Type	Mini Coax Ø 1.13 mm
Connector*	MHF1 (U.FL Compatible)
Adhesive Backing	3M 468

*Alternate cable length and connectors available on request

3 Electrical / RF Specifications

Parameter	2400 to 2500 MHz	4900 to 5850 MHz	5925 to 7125 MHz
Average Efficiency	>60%	>65%	>70%
Peak Gain	1.50 dBi	3.50 dBi	4.20 dBi
S11 (max)	<-10.1 dB	<-8.5 dB	<-7.0 dB
VSWR (max)	1.84:1	2.20:1	2.60:1
S21 (max)	<-20.2 dB	<-30.1 dB	<-28.6 dB
Impedance	50 Ω		
Polarization	Linear		
Max Input Power	3 W		

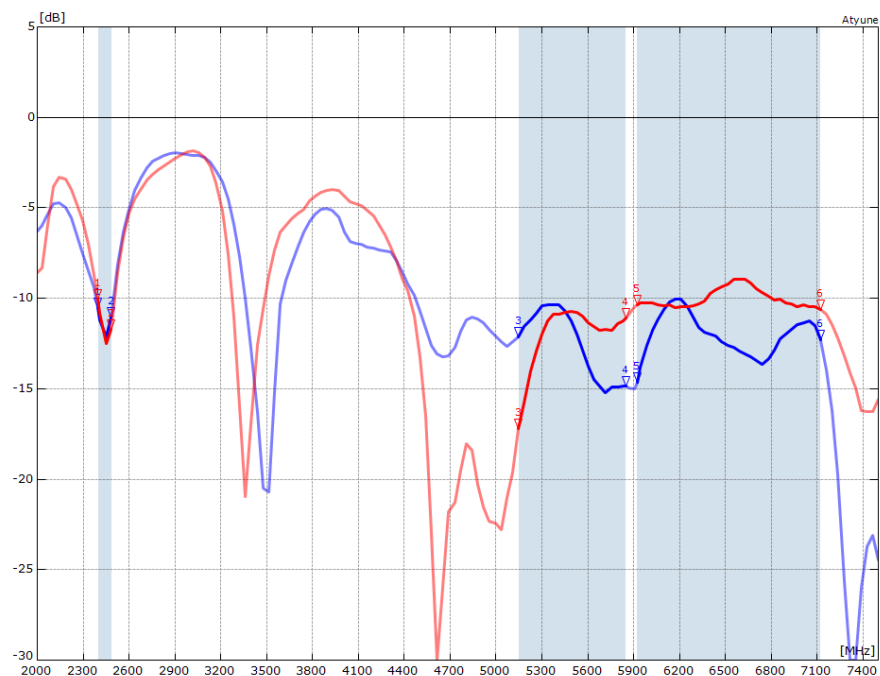
Performance shown is for each antenna within the FPC. Note: All performance stated is measured on 2.0 mm ABS plastic, RF chokes used to prevent cable radiation.

4 Environmental

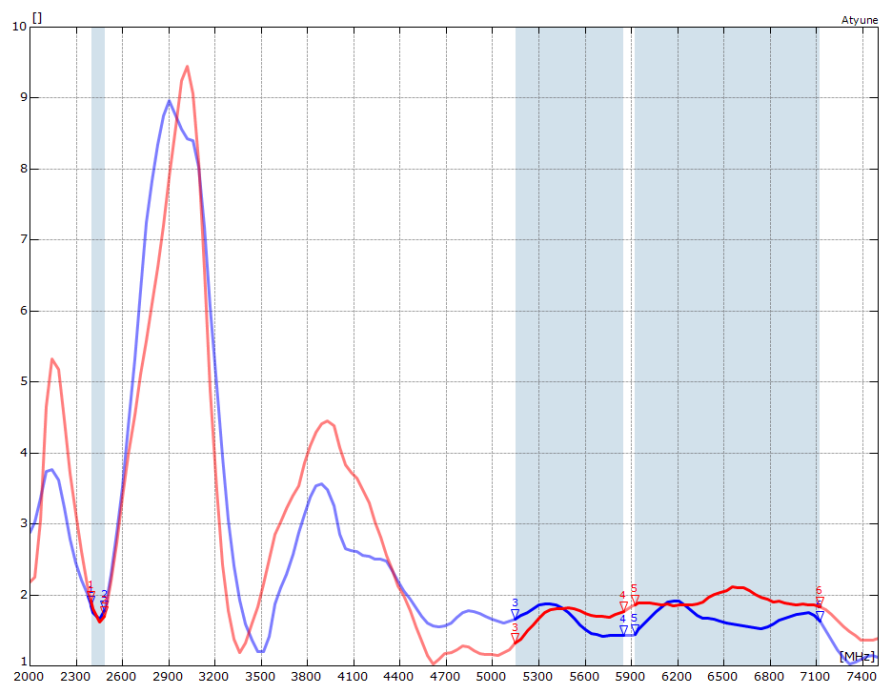
Operational Temperature	-40 to +85°C
Storage Temperature	-10 to +40°C
Relative Humidity	≤75%

5 RF Characteristics

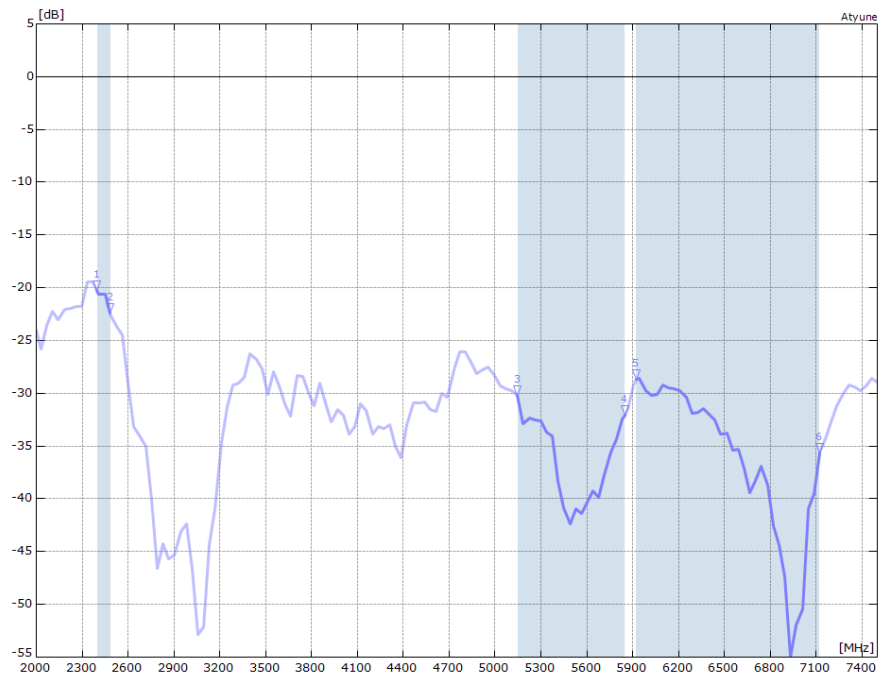
S11 Parameter



VSWR

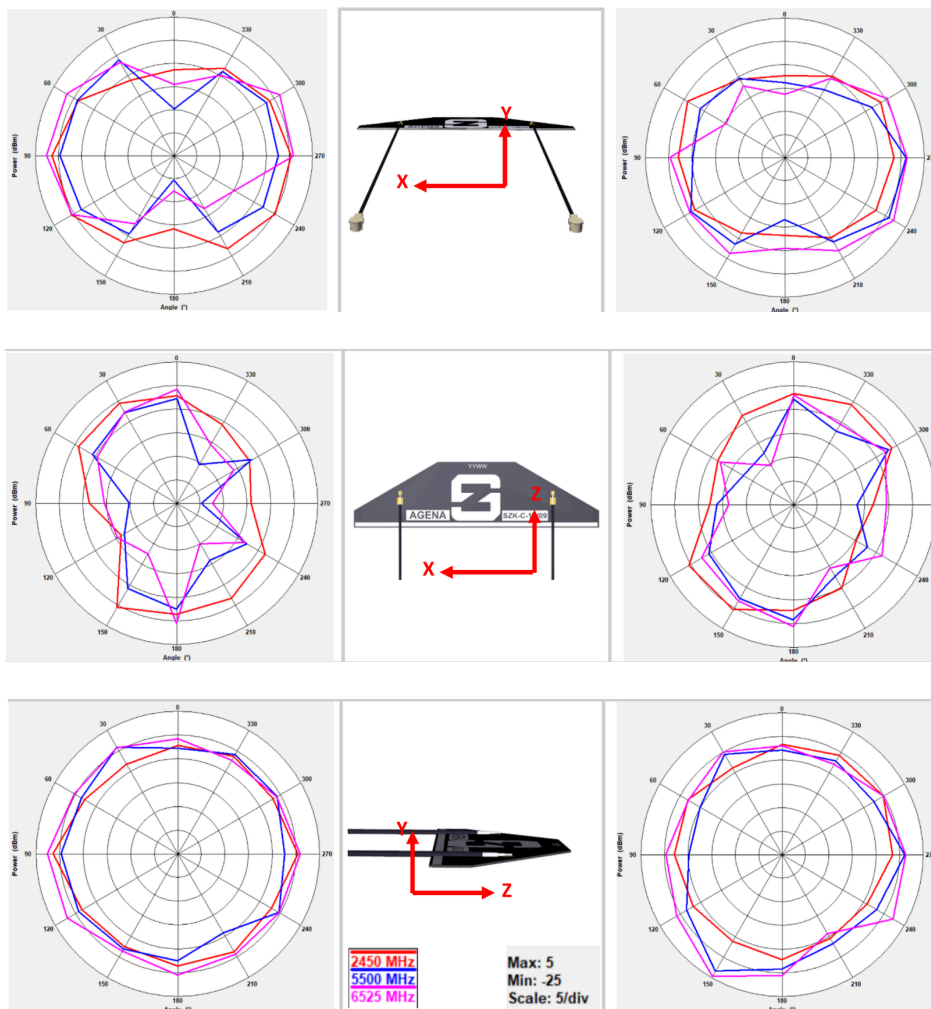


6 S21 Parameter (Isolation)



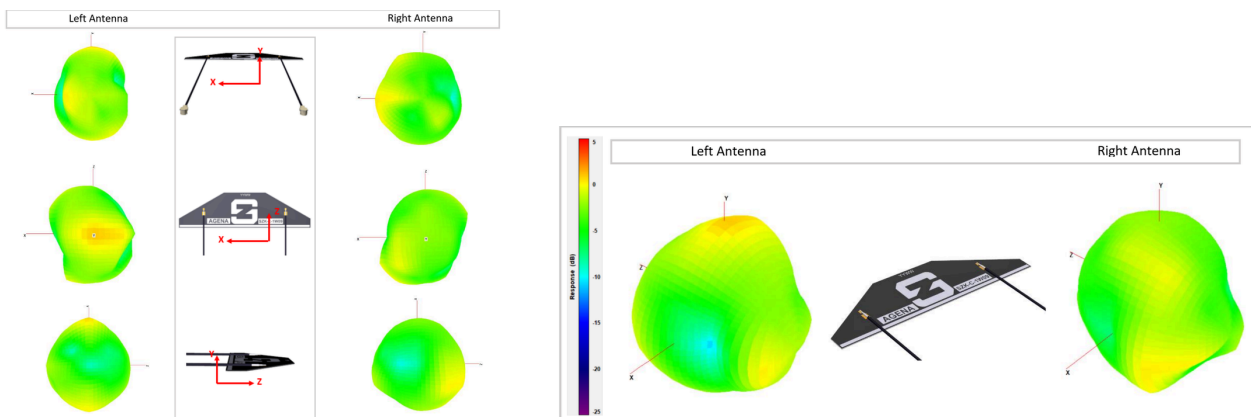
7 2D Polar Plot

MEASURED ON 2.0 MM ABS PLASTIC, RF CHOKES USED TO PREVENT CABLE RADIATION ·
LEFT AND RIGHT ANTENNA



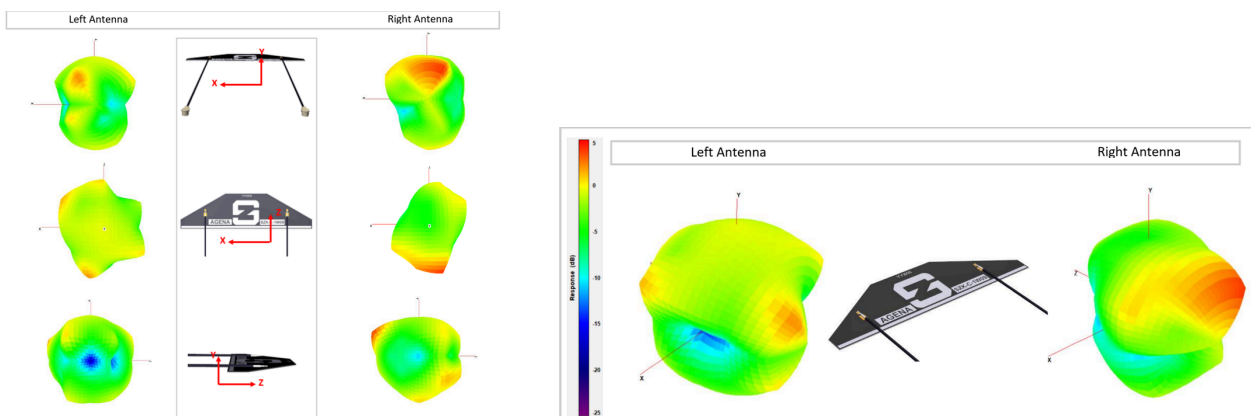
8 3D Radiation Pattern at 2450 MHz

MEASURED ON 2.0 MM ABS PLASTIC, RF CHOKES USED TO PREVENT CABLE RADIATION · LEFT AND RIGHT ANTENNA



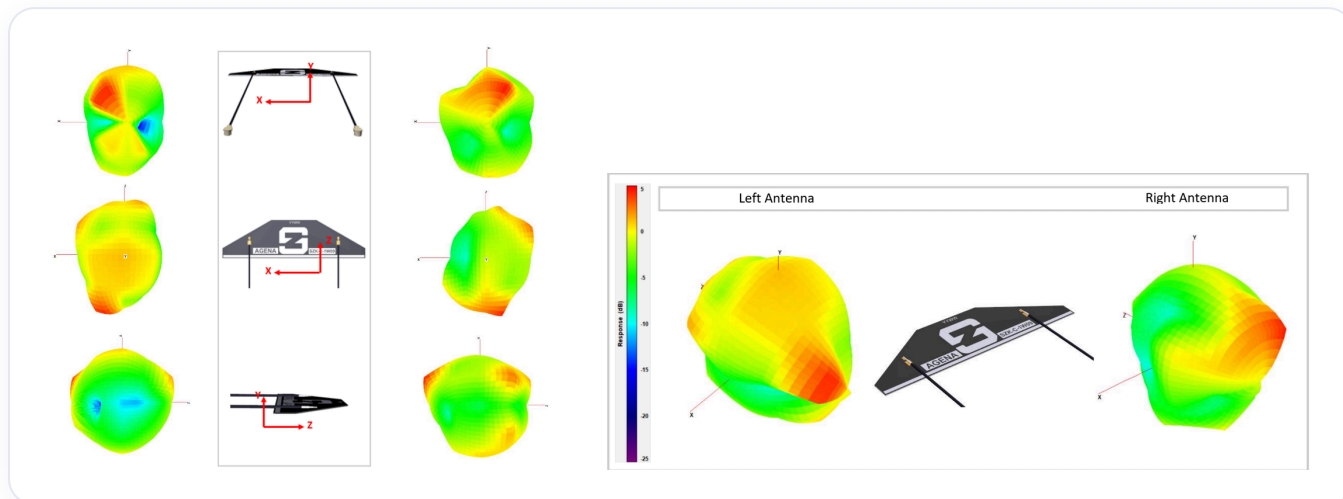
9 3D Radiation Pattern at 5500 MHz

MEASURED ON 2.0 MM ABS PLASTIC, RF CHOKES USED TO PREVENT CABLE RADIATION · LEFT AND RIGHT ANTENNA

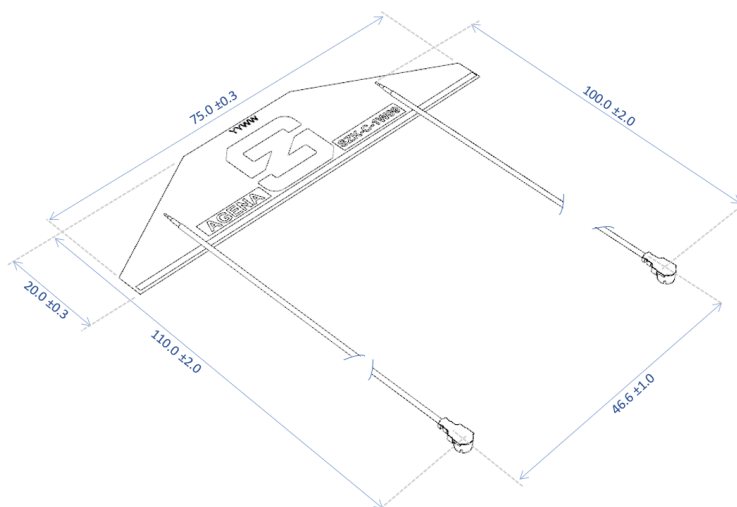


10 3D Radiation Pattern at 6500 MHz

MEASURED ON 2.0 MM ABS PLASTIC, RF CHOKES USED TO PREVENT CABLE RADIATION · LEFT AND RIGHT ANTENNA

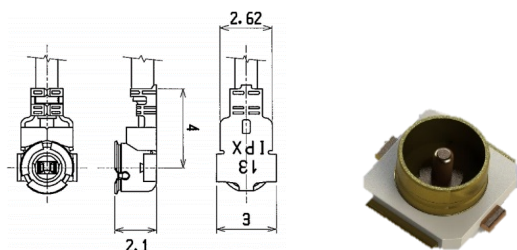


11 Antenna Mechanical Drawing



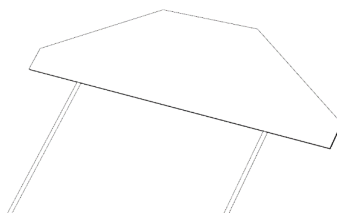
All dimensions in mm. The plug connector on the antenna is an IPEX MHF1.

12 Suitable PCB Mating Connector (U.FL)



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

13 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.

14 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
- ◆ 1000 pcs per carton. Carton dimensions: 33.7 × 32.2 × 10 cm

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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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