



WLAN/BLE/ISM SMD Antenna

SZP-N-2W05

WLAN/BLE/ISM: 2400-2500

Description

ERIDANI, surface mount antenna for working over a ground plane, for Wi-Fi/BLE/ISM applications. For use internal to a device which requires an integrated antenna solution. High performance with a small form factor for simple integration.

A surface mounted SMD antenna for use over the GND, no clearance required.

- For WLAN/ISM/BLE Applications 2.4-2.5GHz
- Ideal for wearable devices.
- Small form factor of 12.5 x 5.4 x 3.3 (mm) including clearance area.
- SMD component supplied in Tape and reel
- Suitable for sealing with resin / potting compounds
- Works over GND plane

Applications

Access Points
Smart Grid
Wearables

M2M Industrial
Healthcare
Tags

Smart Meters
Set Top Box
IoT





General Specifications

Mechanical Specifications

Part Number	SZP-N-2W05
Name	ERIDANI
Dimensions	12.5 x 5.4 x 3.3 (mm)
Weight	<0.2g
Antenna Type	Surface Mount Device (PIFA)

RF Specifications*

Band	Frequency Range (MHz)	Avg Efficiency (%)	Peak Gain (dBi)	Impedance	Polarization
2.4GHz Wi-Fi	2400-2500	>45	0.23	50Ω	Linear

*All performance stated is measured of SZDV-N-2W05 evaluation kit

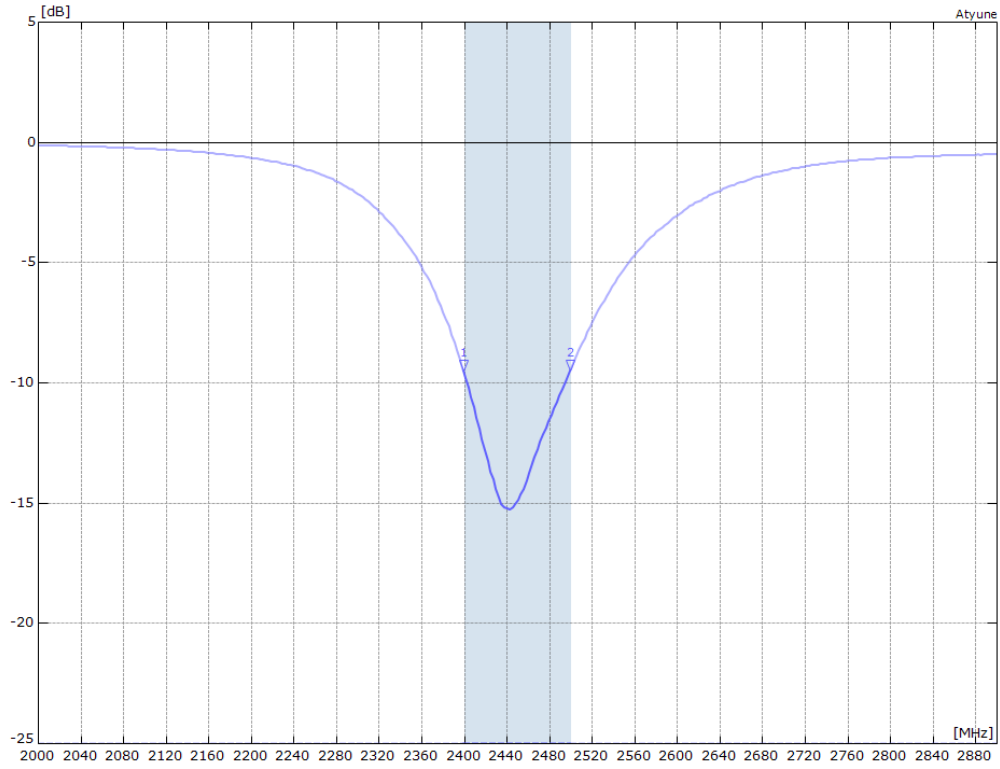
Environmental Specifications

Operational Temperature	-40 to +125 (°C)
Storage Temperature	-10 to +40 (°C)
Relative Humidity	≤75%

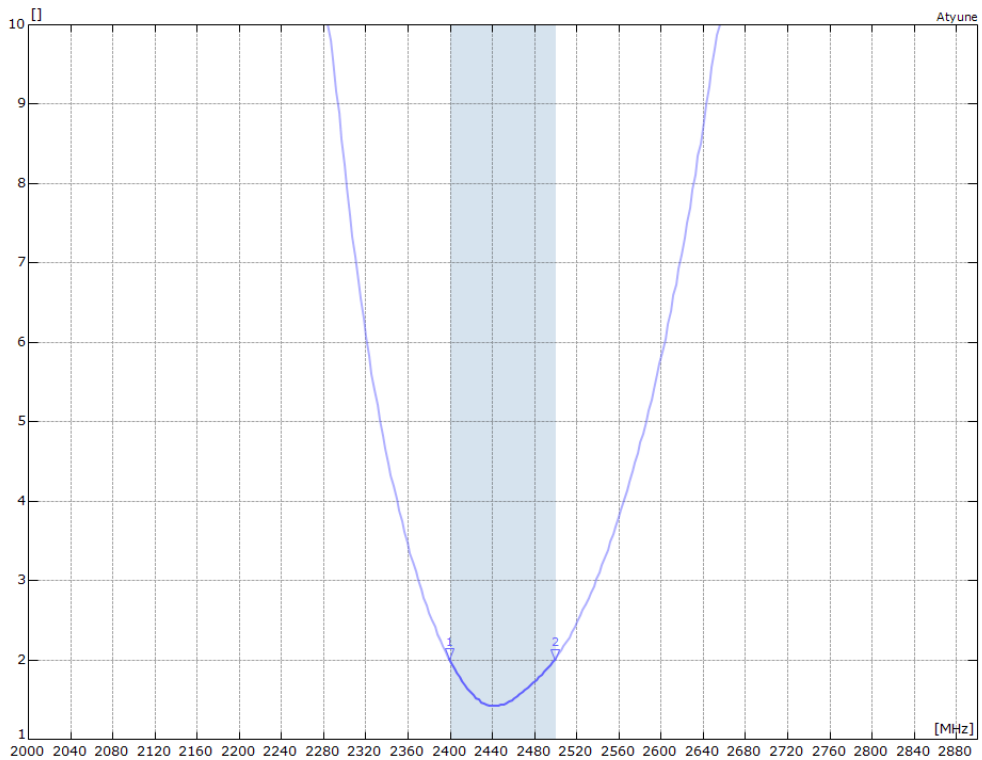


RF Characteristics

S11 Parameter



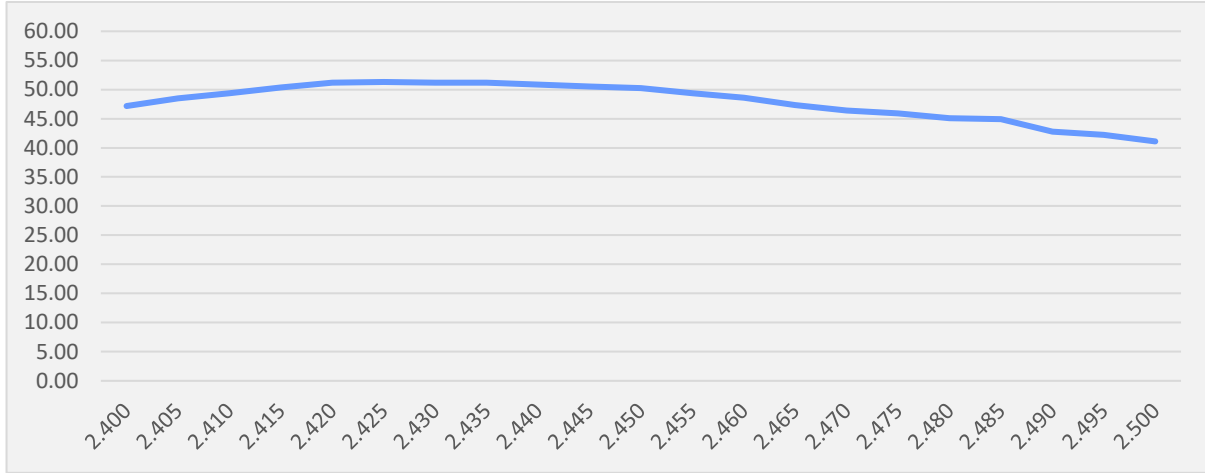
VSWR



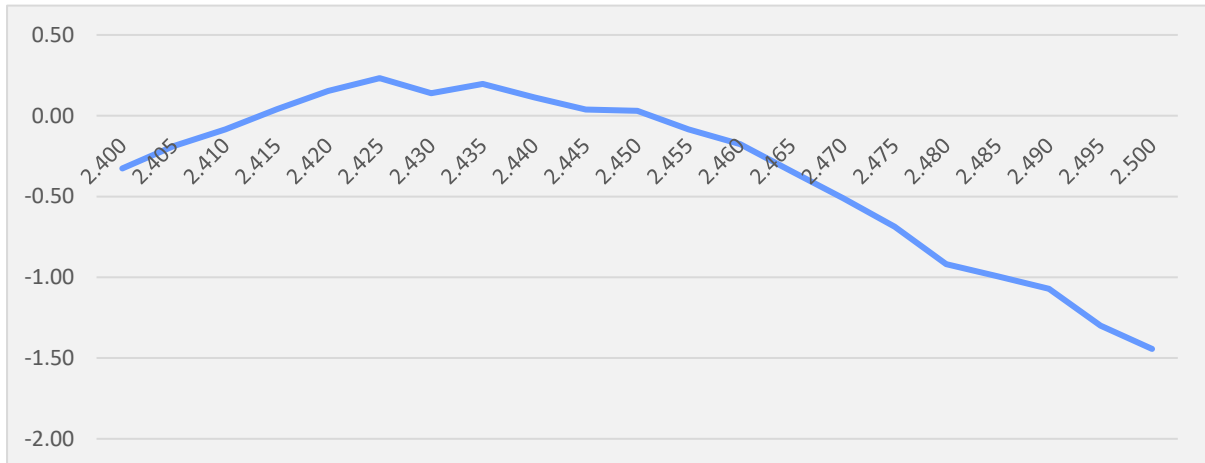


Antenna Performance

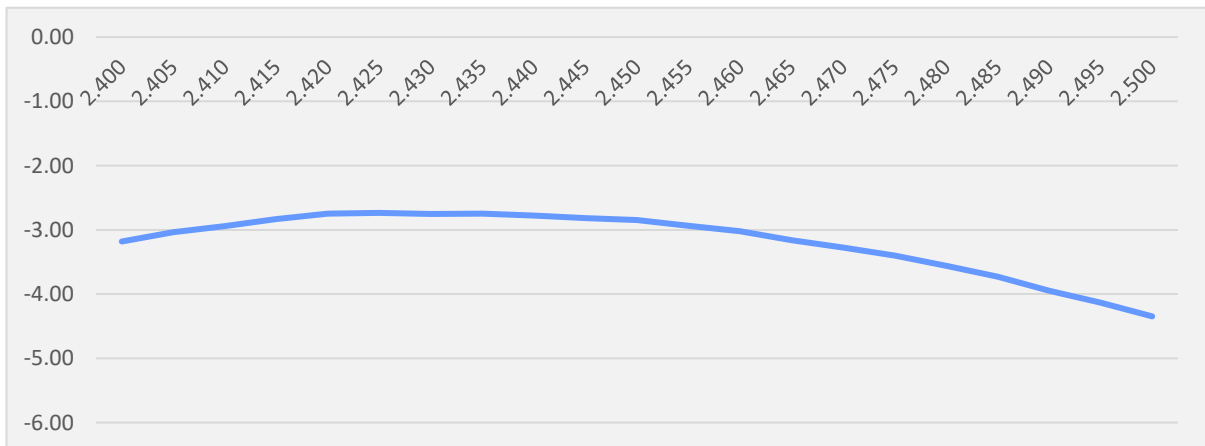
Efficiency (%)



Peak Gain (dBi)



Average Gain (dB)

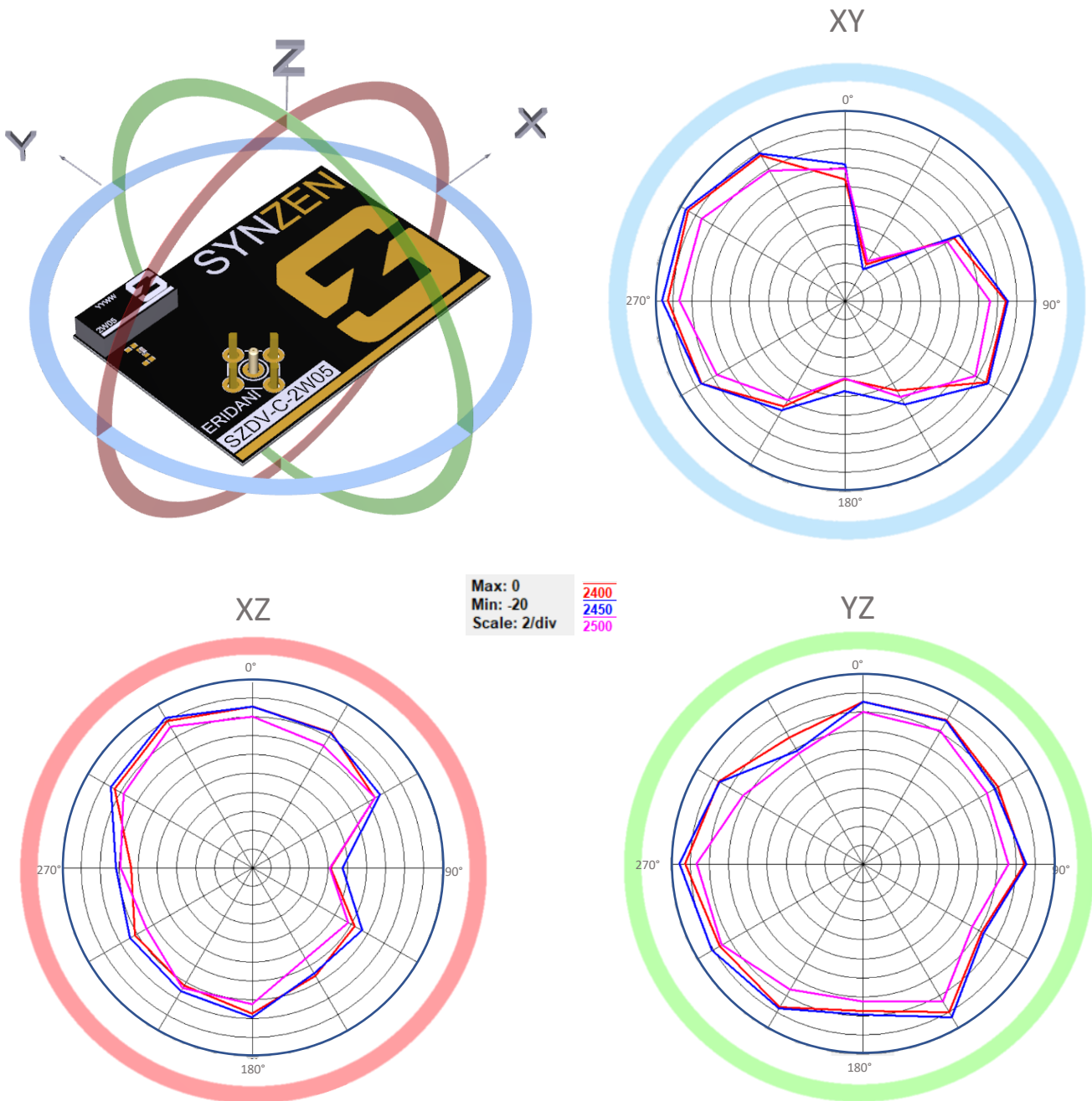




Radiated Performance

2D Polar Plot 2400-2500

The data shown was measured on Synzen EVK (SZDV-N-2W05)

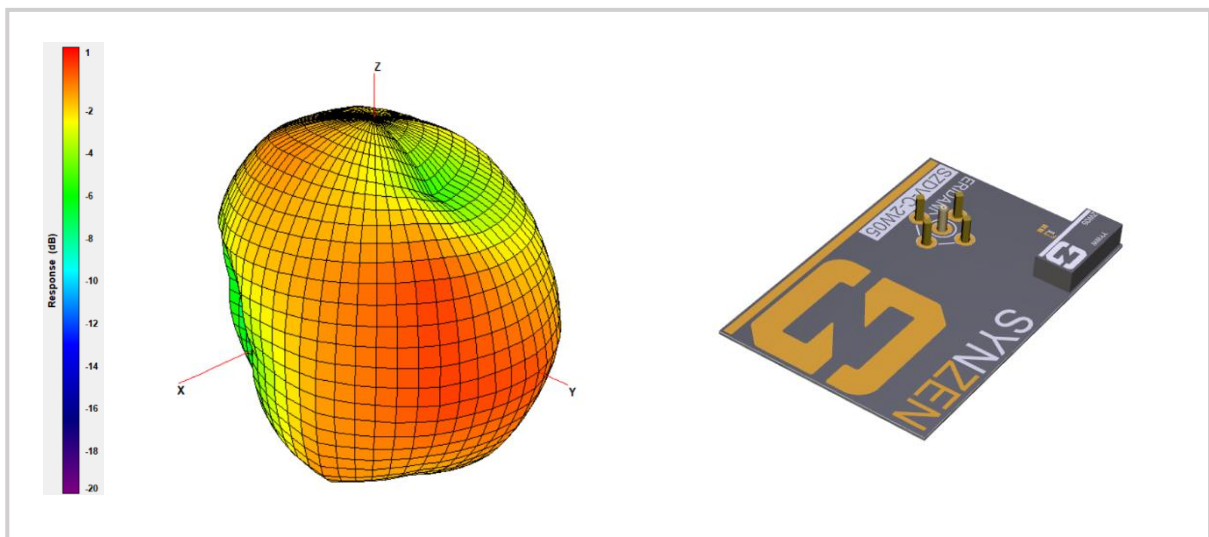
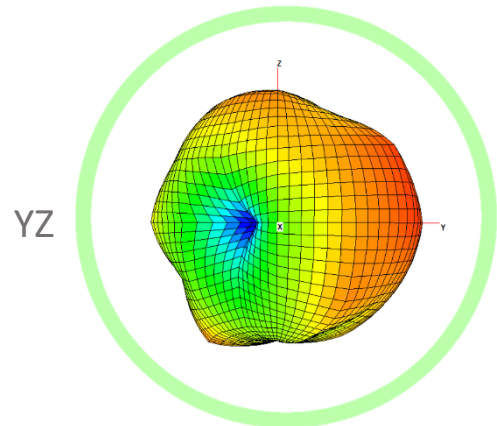
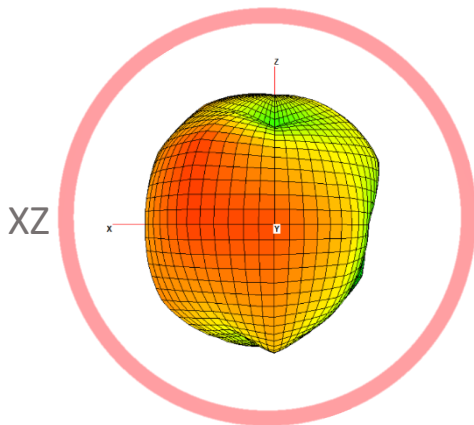
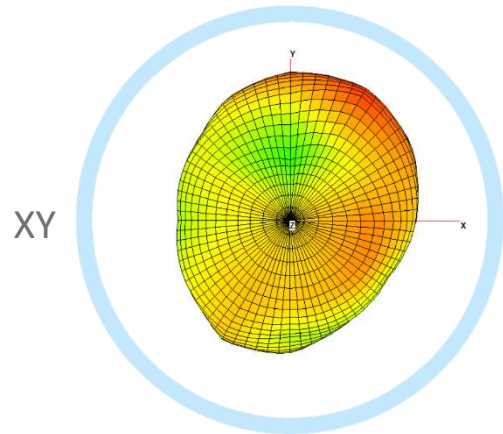
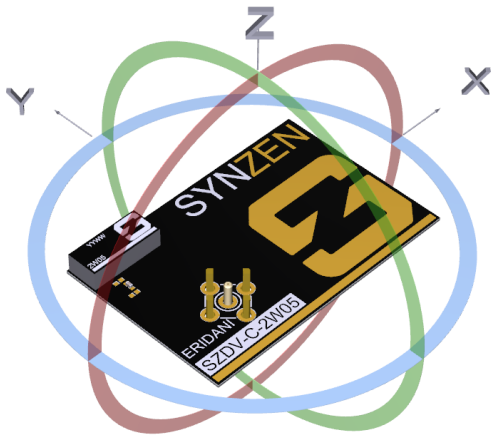




Radiated Performance

3D Radiation Pattern at 2450MHz

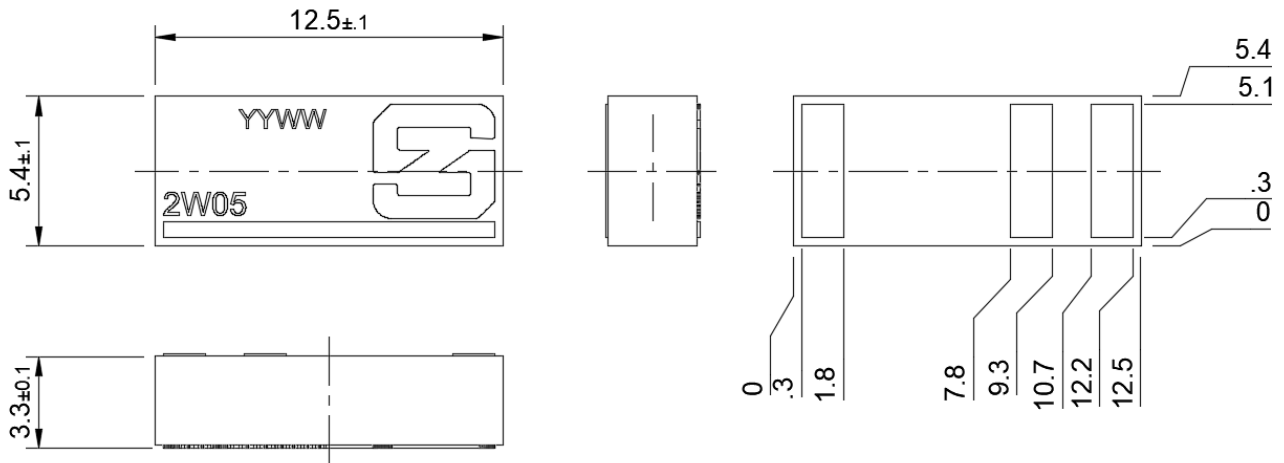
The data shown was measured on Synzen EVK (SZDV-N-2W05). The frequency point shown here is 2450MHz.





Mechanical

Antenna Mechanical Drawing



All dimensions in mm

Required Host PCB Footprint

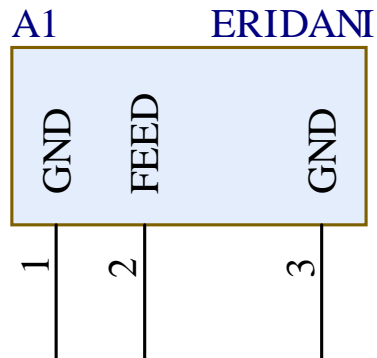
The host PCB requires the footprint shown below. PCB library files and DXF is available from our website www.synzen.com.tw/products.



Antenna Pinout

SZP-C-2W05 Schematic Symbol

The schematic symbol for the antenna is shown below with a description of each pin.



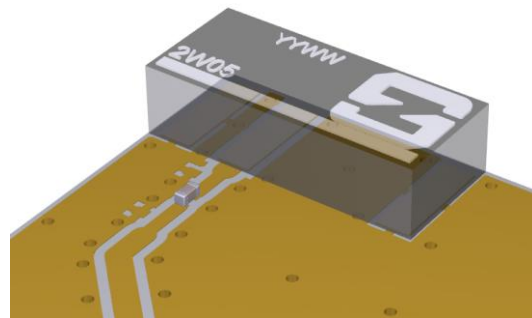
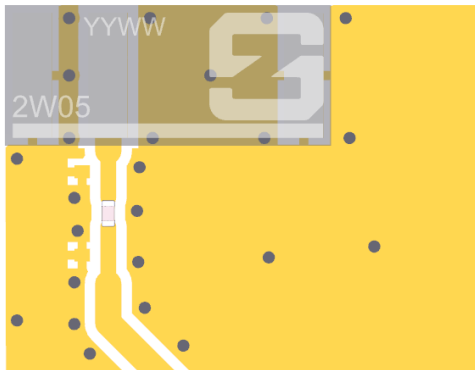
Pin	Description
1, 3	GND (Ground)
2	RF Feed



PCB Layout Requirements

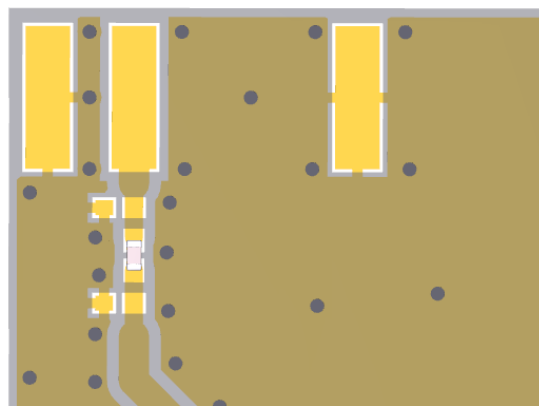
Placement

The antenna is designed to function placed towards the PCB corner. This can also be offset away from the corner while still maintaining good performance if close to the PCB edge.



Required Clearance

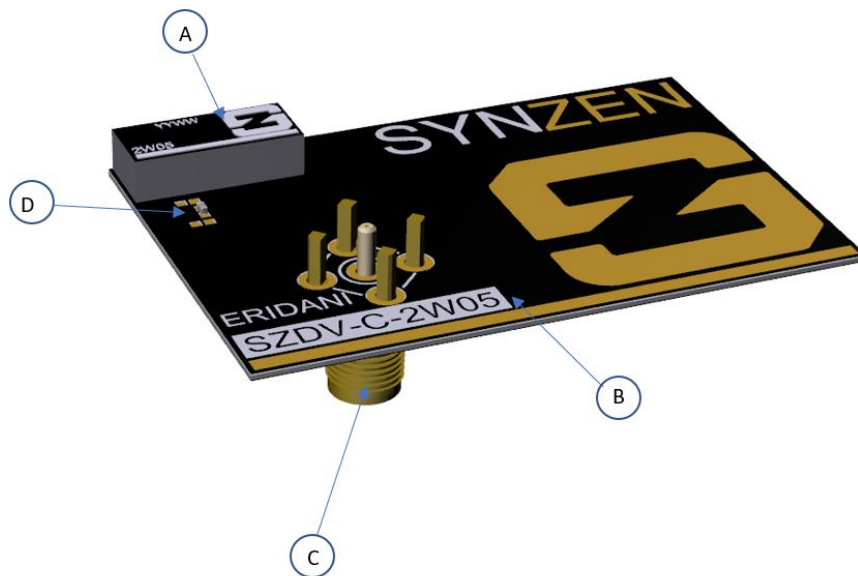
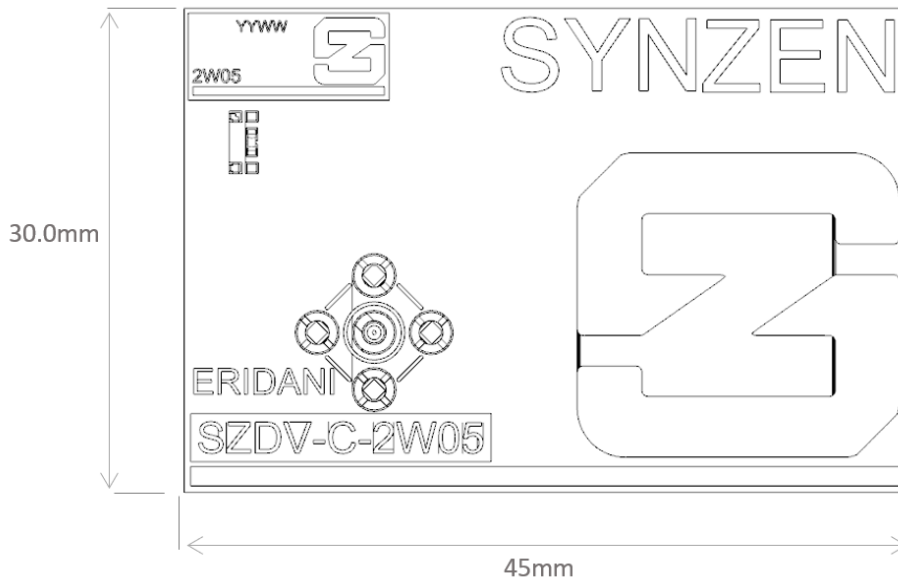
No clearance is required and GND should be flooded below the antenna.



Evaluation Kit

SZDV-N-2W05 Evaluation Kit

The SZDV-N-2W05 evaluation kit is a PCBA with the antenna (SZP-N-2W05) fitted and optimised with a matching network. Connection to the antenna is made using the fitted female SMA connector.

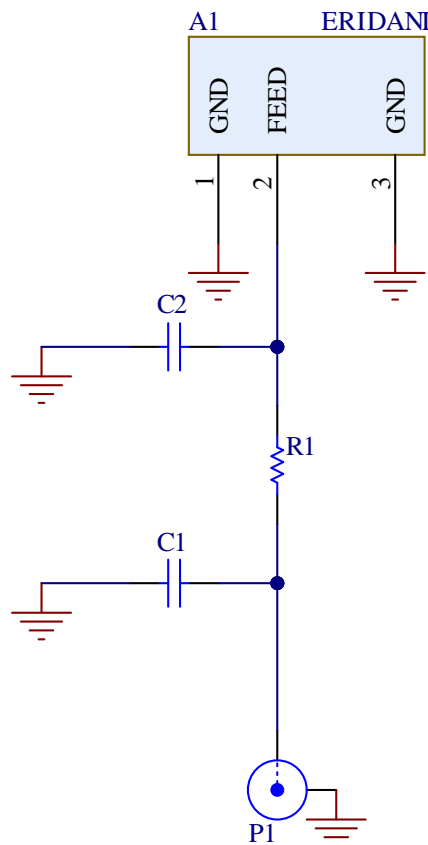


A	SZP-N-2W05 (Antenna)
B	Host PCB
C	SMA Connector
D	Matching Circuit

Evaluation Kit Schematic

Evaluation Kit Matching Circuit

The circuit of the EVK kit along with the BOM is shown below. The matching network topology should be used on the device host PCB although the matching values will be dependent on the host PCB and device environment. Synzen provide a matching service to optimise your device to ensure the best performance, please contact sales@synzen.com.tw for more information.

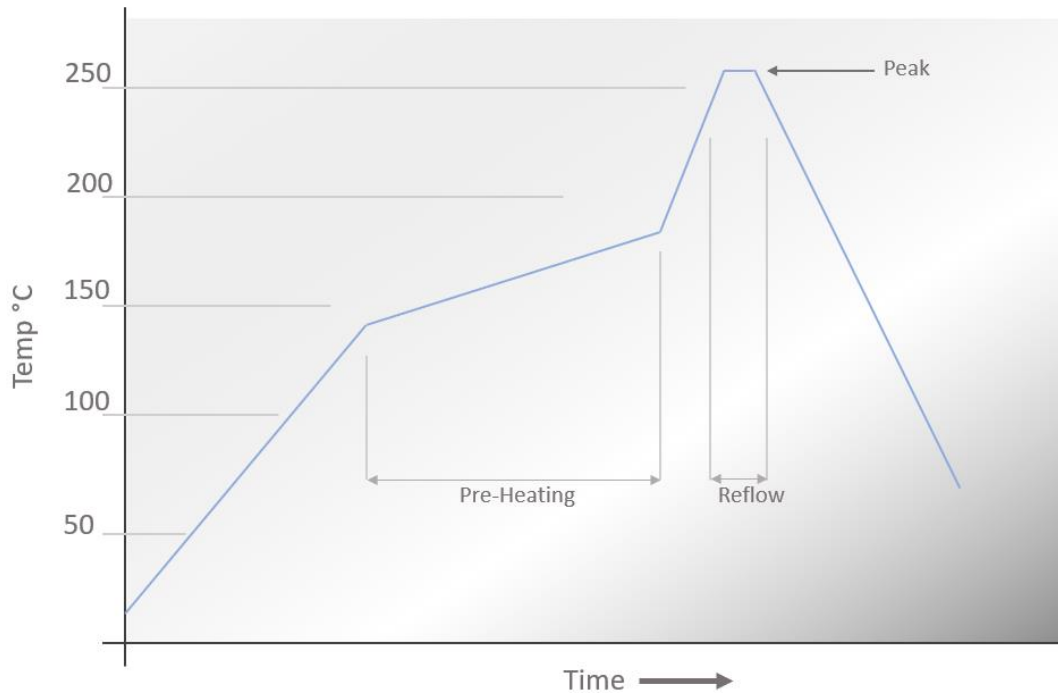


Designator	Component Type	Value	Size	Manufacturing Part No.
A1	Antenna	ERIDANI	-	SZP-N-2W05
R1	Resistor	0R	0402	Nonspecific part
C1, C2	NA	DNP	0402	Not Fitted
P1	SMA Connector		-	ACE solution A3SAFTST135



Soldering

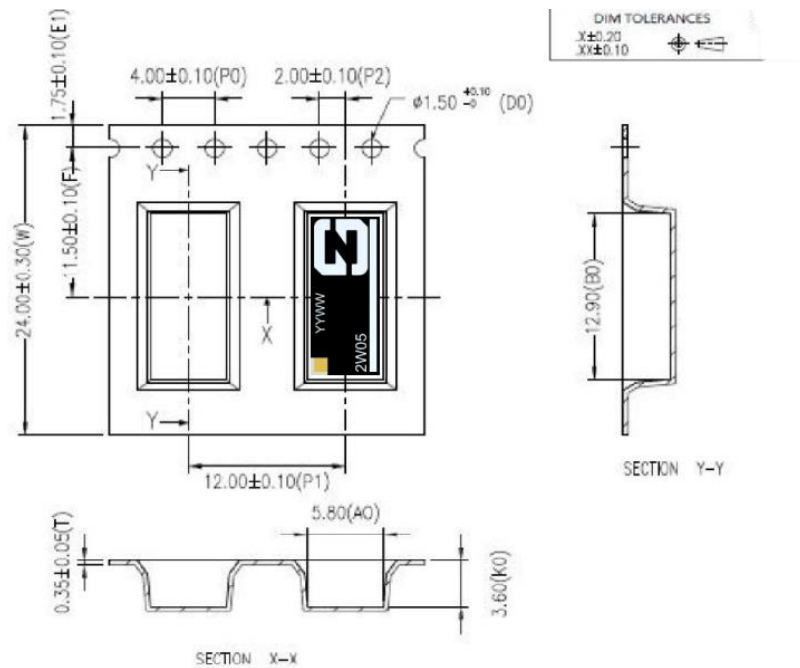
Reflow Profile



Pre-Heating	130 - 180°C	50 to 190 seconds
Reflow	>220 °C	50 to 160 seconds
Peak Temperature	260 °C	15 to 45 seconds

Packaging

Tape and Reel

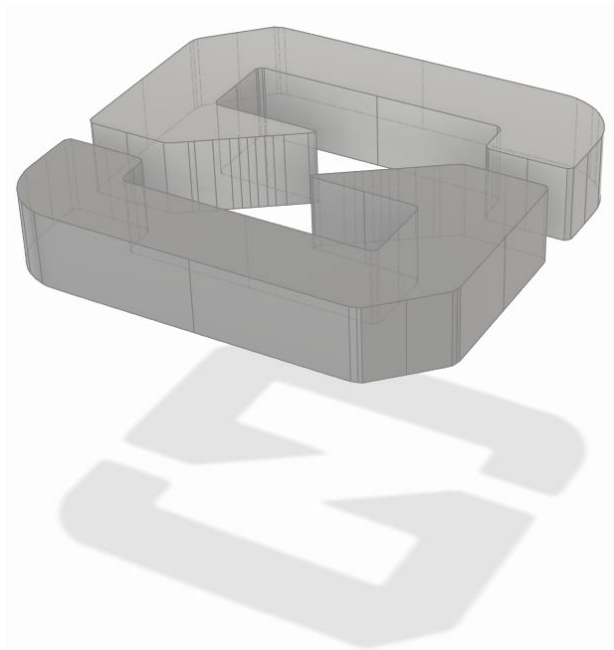


1. Part conforms to EIA-481-D standards.
2. All dimensions in millimetres unless otherwise stated.
3. Material : Conductive polystyrene.
4. Packing length for 22" reel : 51.0 Meters. (1:4)
5. Component packing to 13" reel : 1000 pcs.

Environmental

Material Regulation

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



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.