antenova

DATASHEET

Minuta

SRC2W006 • ceriiANT®

Features

- Dual Band Antenna for 2.4 – 2.5 GHz and 4.9 – 5.9 GHz applications : Wi-Fi® 802.11a/h//j/n/p/ac
- Maintains high performance on device: DFI (Designed For Integration)
- Ultra-compact ceramic solution
- SMD mounting
- Supplied on Tape and Reel

Note: This product is compatible with Bluetooth® technology but does not incorporate Bluetooth® technology

1. Description

Minuta is intended for use with 5G Wi-Fi applications. Only requires a small ground plane. Ideal for single and MIMO antenna systems.

2. Applications

- Access Points
- Portable Devices
- PC-cards
- Set-Top-Box
- Network Devices
- Wearable devices
- MIMO Systems
- IP Cameras

3. Part number

SRC2W006

4. Gerneral data

Frequency	2.4-2.5GHz 4.9-5.9GHz
Polarization	Linear
Operating temperature	-40°C to 140°C
Impedance with matching	50 Ω
Weight	<0.015g
Antenna type	SMD
Dimensions	1.0 x 0.5 x 0.5 (mm)
Footprint Area	8.0 x 5.0 (mm)

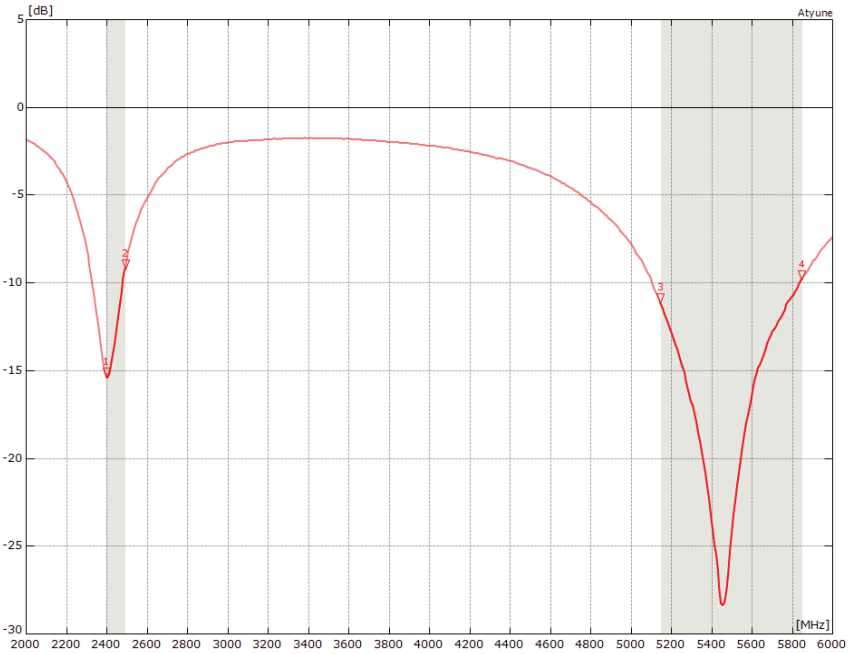
5. RF characteristics

Frequency	2.4-2.5 GHz	4.9-5.9 GHz
Peak gain	1.60dBi	4.00dBi
Average gain	-2.50dBi	-2.40dBi
Average efficiency	>55%	>50%
Maximum return loss	-9.20dB	-9.80dB
Maximum VSWR	2.20:1	1.97:1

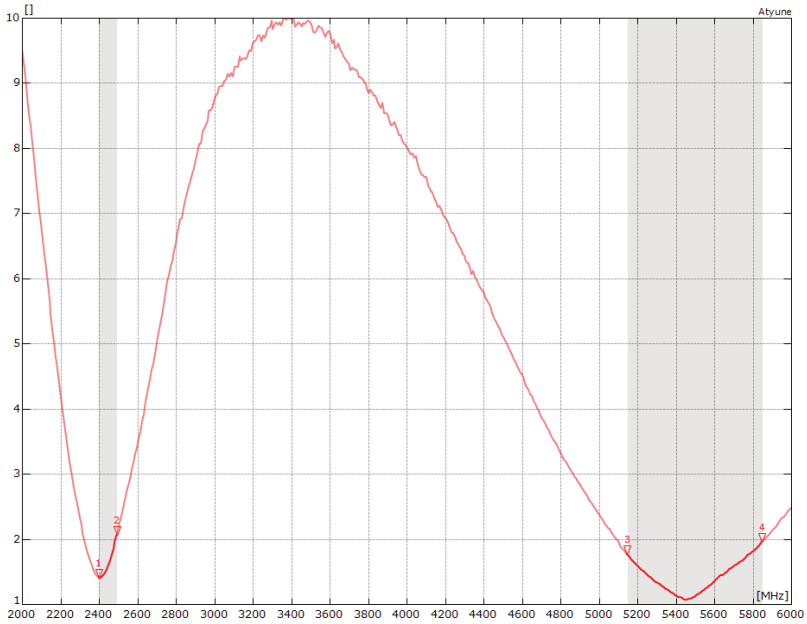
All data measured on Antenova's evaluation
PCB Part No. SRC2W006-EVB-1

6. RF performance

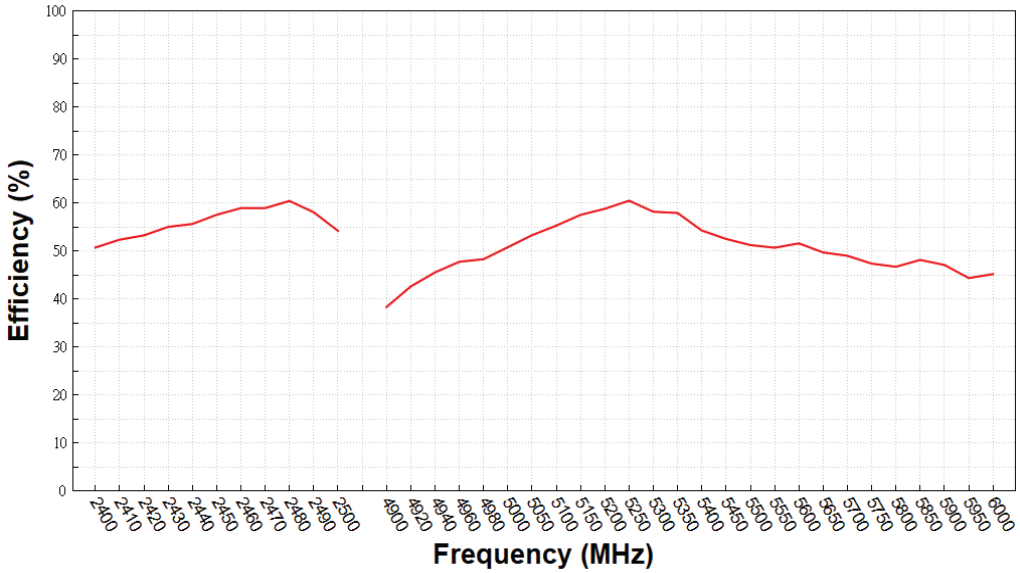
6.1. Return loss



6.2. VSWR



6.3. Efficiency

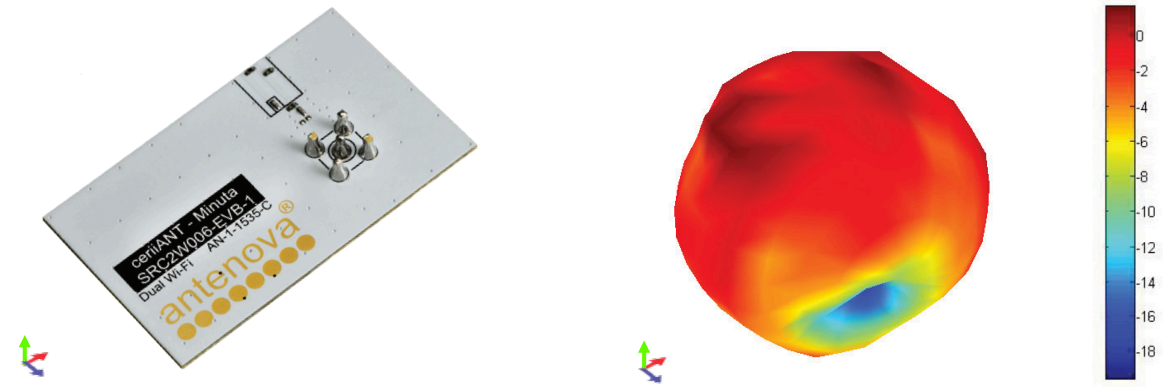


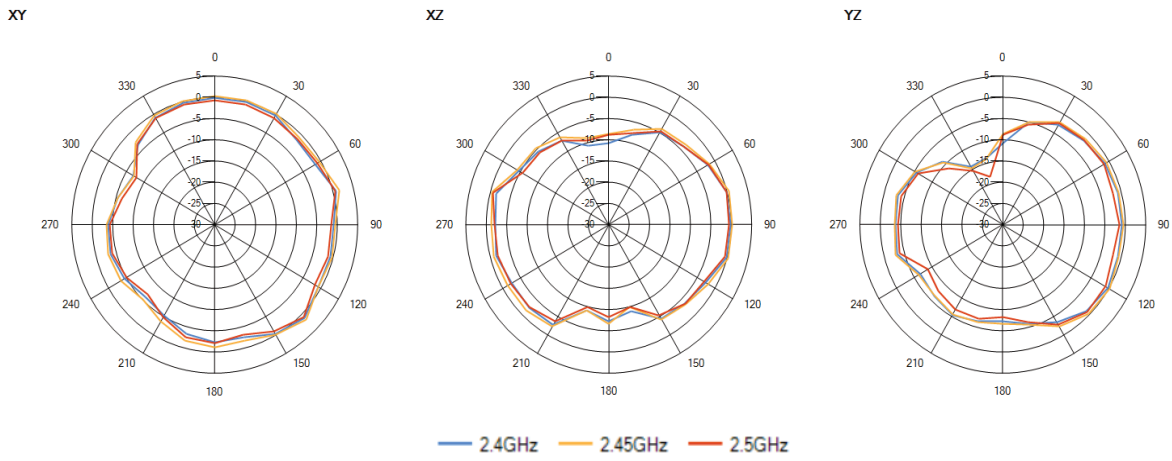
All data measured on Antenova's evaluation PCB
Part No. SRC2W006-EVB-1

6.4. Antenna patterns

6.4.1. 2400 - 2500 MHZ

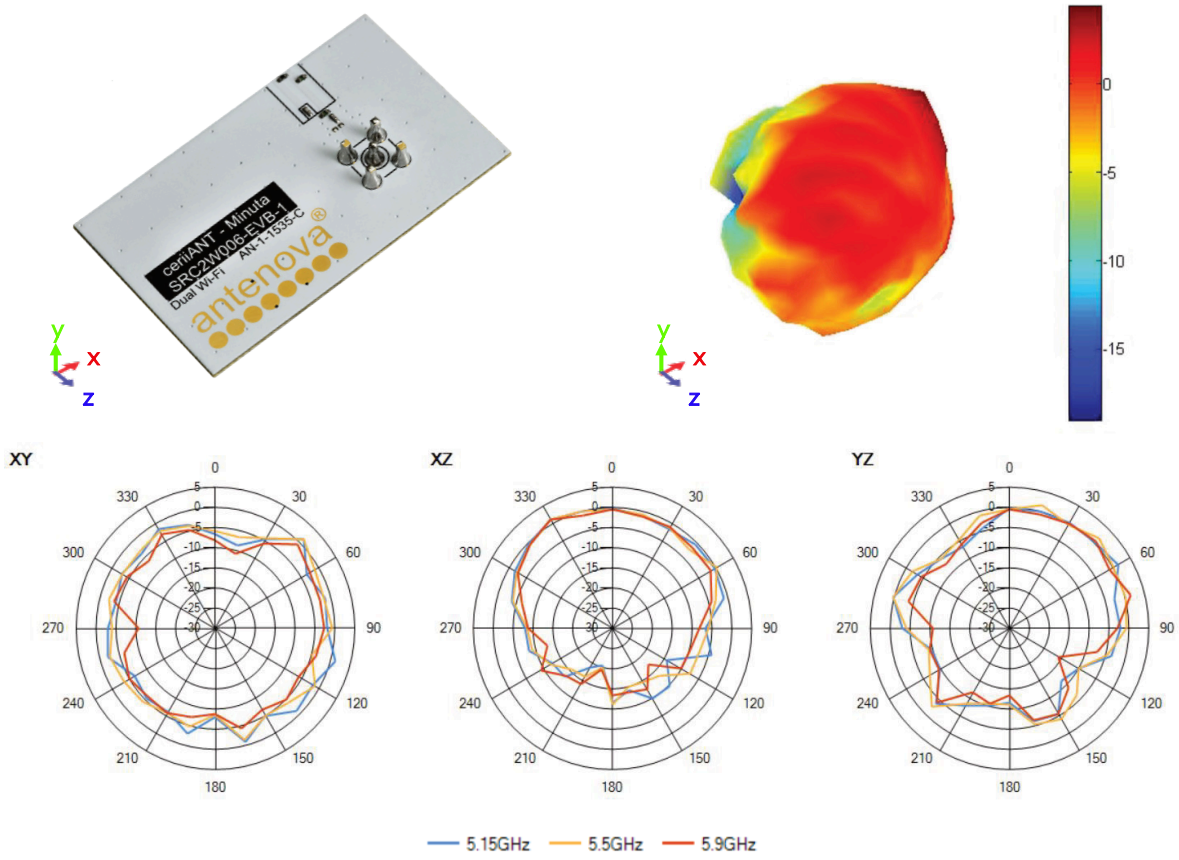
3D pattern at 2.45 GHz





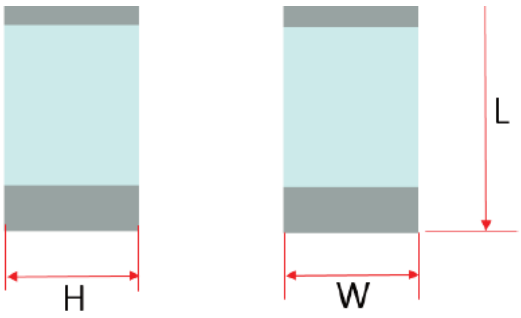
6.4.2. 4900 - 5900 MHZ

3D pattern at 5.46 GHz



7. Antenna dimensions

7.1. Antenna dimensions



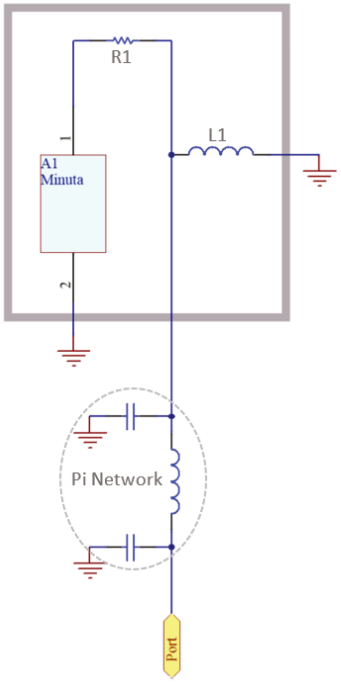
L	W	H
1.0 ±0.1	0.5 ±0.1	0.5 ±0.1

All dimensions in (mm)

8. Schematic symbol and pin definition

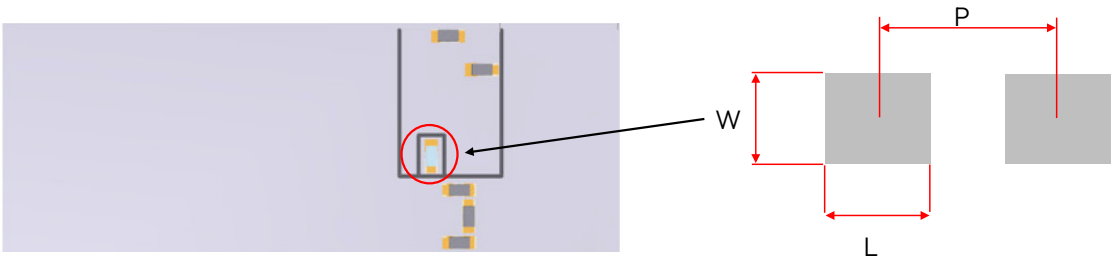
The circuit symbol for the antenna is shown below.

Name	Description
A1	SRC2W006 Antenna
R1	Tuning Component
L1	Tuning Component
Pi network	Antenna matching network



9. Host PCB footprint

The recommended host PCB footprint is below.



L	W	P
0.6 ±0.1	0.5 ±0.1	1.0 ±0.1

All dimensions in (mm)

10. Electrical interface

10.1. Transmission line

All transmission lines should be designed to have a characteristic impedance of 50Ω.

- The length of each transmission lines should be kept to a minimum
- All other parts of the RF system like transceivers, power amplifiers, etc, should also be designed to have a 50 Ω impedance

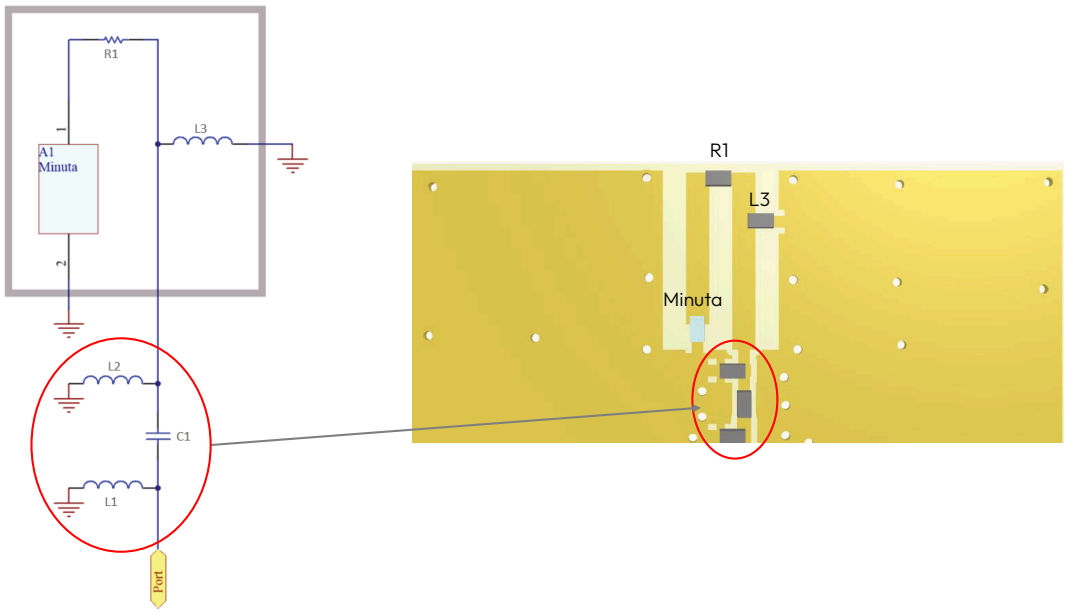
A co-planar transmission line can be designed using an online transmission line calculator tool, such as:

https://blog.antenova.com/rf-transmission-line-calculator

The PCB thickness, copper thickness and substrate dielectric constant are entered, then the tool calculates the transmission line width and gaps on either side of the track to give a 50 Ω impedance.

10.2. Matching circuit

The antenna requires a matching circuit that must be optimized for each product. The matching circuit will require up to three components and the following circuit should be designed into the host PCB. Not all components may be required but should be included as a precaution. The matching network should be placed close to the antenna feed to ensure it is optionally effective in tuning the antenna.

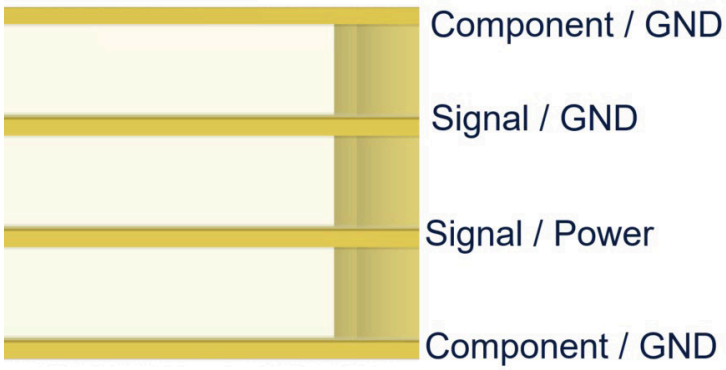


11. Antenna integration guide

We recommend the following during the design phase to maximise antenna performance and minimize noise:

- Minimum 4 layer PCB
- Route signals and power internally where possible
- Flood all layers with ground
- Knit ground on all layers together with plenty of vias

Follow placement guidance carefully. Antenova provide technical support to help you with your design, and also provide design assistance on PTCRB certification. Register for an account on https://ask.antenova. com/ to access technical support.

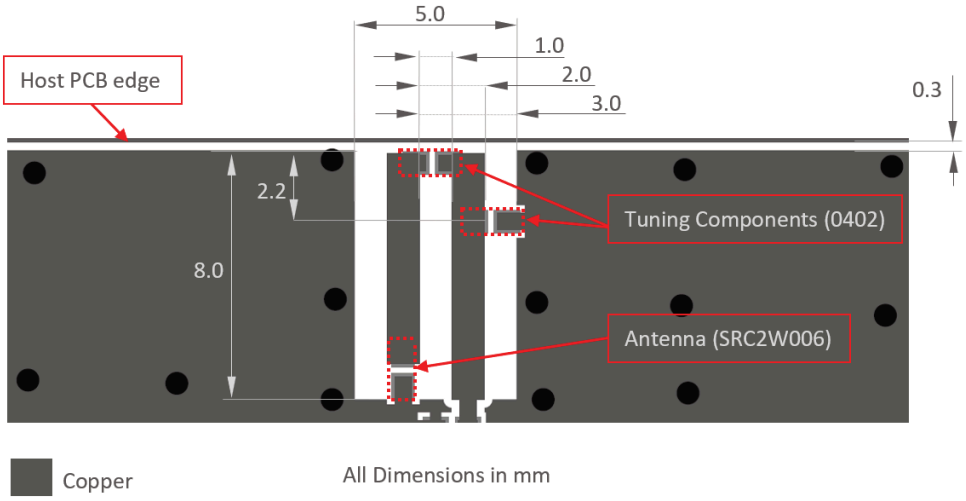


11.1. Antenna placement

The antenna should be placed on the longest side of the PCB. With the antenna greater than 6mm away from the PCB side edge.

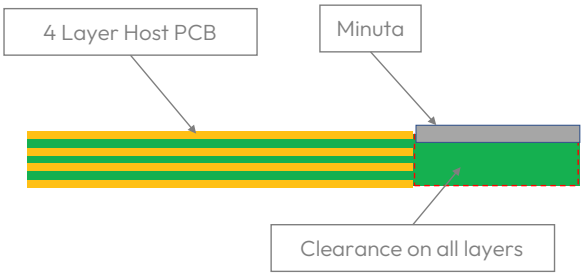
11.2. Host PCB layout

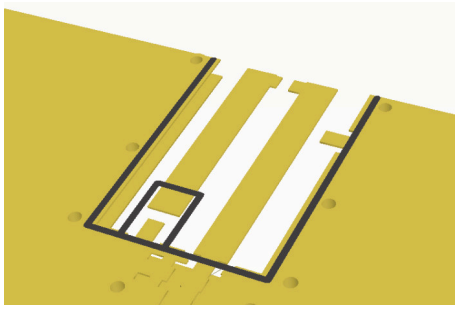
The design of the host PCB must ensure that the footprint and clearance meets the antenna specification. The layout shown forms an integral part of the antenna, and any deviation from this will result in sub optimal per formance. It is best that the copper trace layout is imported from the CAD files which are available from the Antenova website



11.3. Host PCB clearance

The antenna clearance area should be kept clear on all subsequent PCB layers. Only the top layer with the recommended layout traces are within this area.





12. Reference board

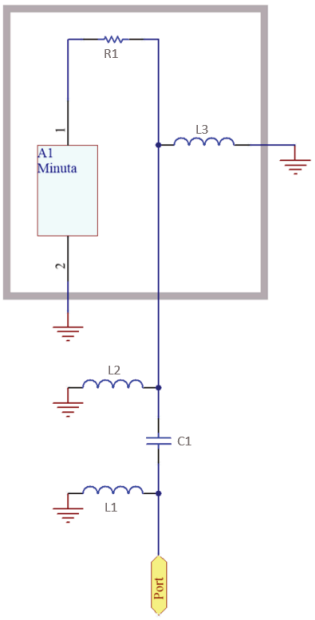
A reference board isused for evaluating the antenna SRC2W006 and it includes a SMA female connector. (PN: SRC2W006-EVB-1)

To order a reference board please see antenova.com

12.1. Reference board matching circuit

The antenna should be placed on the longest side of the PCB. With the antenna greater than 6mm away from the PCB side edge.

Designator	Type	Value	Description
L1	DNP	Not Fitted	Not Fitted
C1	Capacitor	56pF	Murata GJM15 series
L2	Inductor	2.7nH	Murata LQG15HN series
L3	Inductor	4.7nH	Murata LQG15HN series
R1	Capacitor	4.7pF	Murata GJM15 series



13. Soldering

This antenna is suitable for lead free soldering. The reflow profile should be adjusted to suit the device, oven and solder paste, while observing the following conditions:

- For leaded soldering, the maximum temperature should not exceed 240 °C.
- For lead free soldering, a maximum temperature of 255 °C for no more than 20 seconds is permitted.
- The antenna should not be exposed to temperatures exceeding 120 °C more than 3 times during the soldering process.

14. Hazardous material regulation conformance

The antenna has been tested to conform to RoHS and REACH requirements.
A certificate of conformance is available from Antenova's website.

15. Packaging

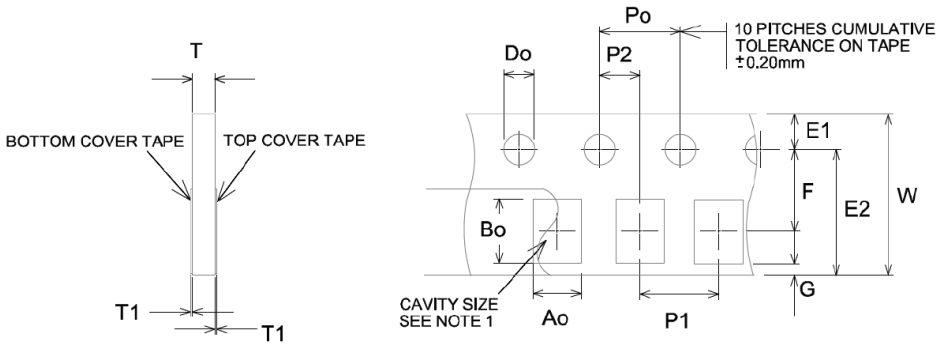
15.1. Optimal storage conditions

Temperature	-10°C to 40°C
Humidity	Less than 75% RH
Shelf life	24 Months
Storage place	Away from corrosive gas and direct sunlight
Packaging	Reels should be stored in unopened sealed manufacturer's plastic packaging.

Note: Storage of open reels of antennas is not recommended due to possible oxidization of pads on antennas. If short term storage is necessary, then it is highly recommended that the bag containing the antenna reel is re-sealed and stored in conditions as described in the table above .

The shelf life of the antenna is 2 years provided the factory seal on the package has not been broken.

15.2. Tape characteristics



All dimensions in mm

Do	E1	E2	F	G	Po
1.50 ± 0.1	1.75 ± 0.1	6.25 ± 0.1	3.50 ± 0.05	0.75 min	4.00 ± 0.5

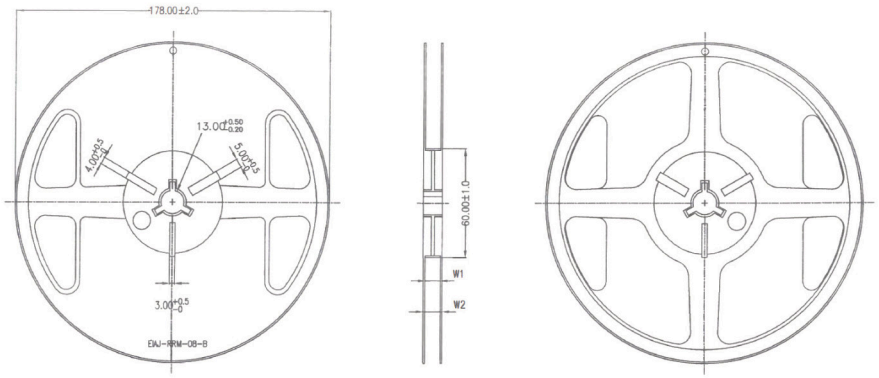
P1	P2	T	T1	W	Ao & Bo
4.00 ± 0.1	2.00 ± 0.05	1.10 max	0.1 max	8.00 ± 0.3	See note 1

Notes:

The cavity defined by Ao, Bo and T shall be configured to provide sufficient clearance surrounding the antenna so that:

a) The component does not protrude beyond either surface of the carrier.
b) The component can be removed from the cavity in a vertical direction without mechanical restriction after the top cover tape has been removed.
c) Rotation of the component is limited to 20 degrees maximum.
d) Lateral movement of the component is restricted to 0.5mm maximum.

15.3. Reel Dimensions

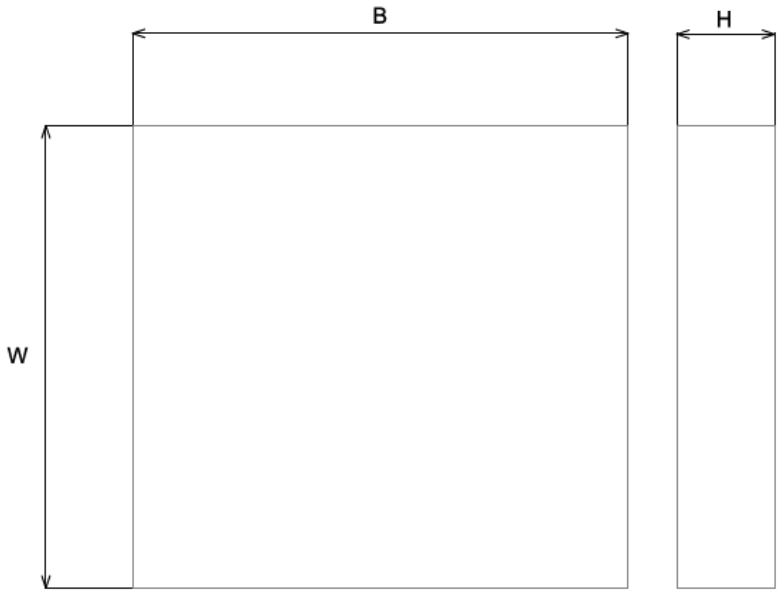


W1	W2
9.0 ±0.5mm	11.4 ±0.5mm

All dimensions in (mm)

Quantity	Leading space	Trailing space
10000 pcs/reel	16 blank holders	24 blank holders

15.4. Box Dimensions



Width (W)	Breadth (B)	Height (H)
200 mm	185 mm	40mm

15.5. Bag properties

Reels are supplied in protective plastic packaging.

15.6. Reel label information

Quality statements

Antenova's products conform to REACH and RoHS legislation. For our statements regarding these and other quality standards, please see

antenova.com

RoHS compliant

REACH COMPLIANT

ISOQAR REGISTERED UKAS MANAGEMENT SYSTEMS 0026
Certificate No. 11070
ISO 9001

Prop 65

Datasheet version

2.03 released 9th April 2026

antenova

Antenna design, integration and test resources

Product designers – the details contained in this datasheet will help you to complete your embedded antenna design. Please follow our technical advice carefully to obtain optimum antenna performance.

We aim to support our customers to create high performance wireless products. You will find a wealth of design resources, calculators and case studies to aid your design on our website.

Antenova's design laboratories are equipped with the latest antenna design tools and test chambers. We provide antenna design, test and technical integration services to help you complete your design and obtain the required certifications.

If you cannot find the antenna you require in our product range, please contact us to discuss creating a custom antenna to meet your exact requirements.

Share knowledge with RF Experts around the world

ask.antenova is a global forum for designers and engineers working with wireless technology

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