antenova

DATASHEET

Aurata

SR4L112 • IamiiANT®



Features

- Antenna for cellular 4G/LTE applications on a long/narrow PCB applications
- High efficiency on a 160mm PCB length, very compact form factor - 28.0 x 10.0 x 3.3(mm)
- Placement on the short edge of the PCB
- High performance: DFI (Designed For Integration)
- Evaluation PCB size: 160x29mm
- No ground plane required on either side of the antenna

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1. Description

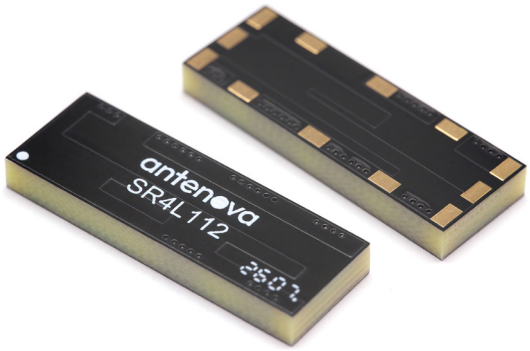
A surface-mount antenna to be soldered onto a PCB. The antenna operates on the most common 4G bands: LTE 700, GSM850, GSM900, DCS1800, PCS1900, WCDMA2100, LTE B7 (2500-2690MHz), and LTE B40 (2300 – 2400MHz).

2. Applications

- Internet of Things (IoT) Sensors
- Smart Metering (water, electricity, natural gas)
- Telematics and tracking devices
- M2M (Machine to Machine) / Remote monitoring

3. Part number

SR4L112



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4. General data

Frequency	698-960MHz 1710-2200MHz 2300-2400MHz 2500-2700MHz
Polarization	Linear
Operating temperature	-40°C to 140°C
Environmental condition test	ISO16750-4 5.1.1.1/5.1.2.1/5.3.2
Impedance with matching	50 Ω
Weight	<2.6g
Antenna type	SMD
Dimensions	28.0 x 10.0 x 3.3 (mm)

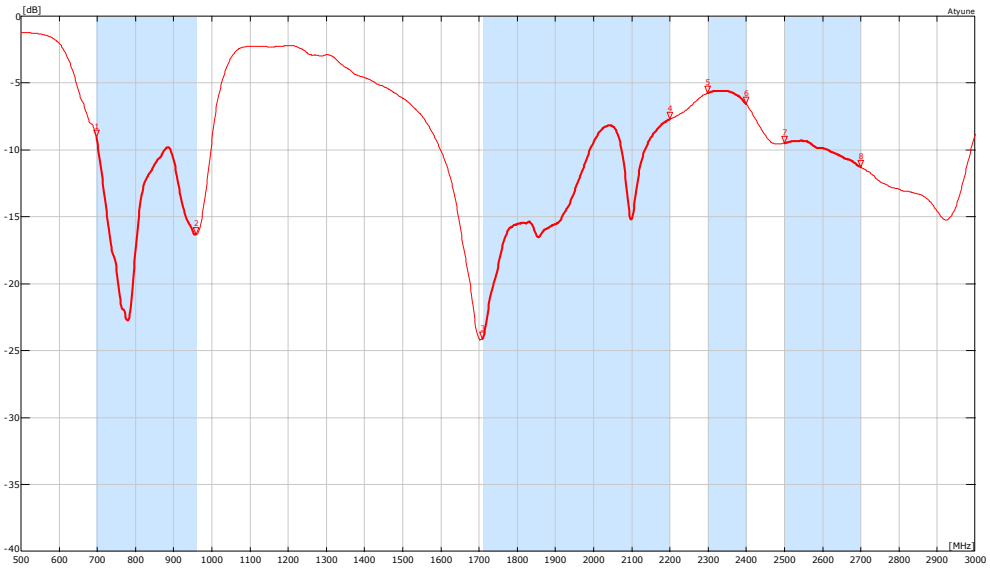
5. RF characteristics

Frequency	698-960MHz	1710-2200MHz	2300-2400MHz	2500-2700MHz
Peak gain	3.2dBi	4.4dBi	4.4dBi	5.6dBi
Average gain (Linear)	-1.8dB	-1.8dB	-2.5dB	-1.7dB
Average efficiency	67%	66%	57%	68%
Average efficiency	-9.0dB	-8.3dB	-5.7dB	-9.4dB
Maximum VSWR	2.1:1	2.3:1	3.2:1	2.0:1

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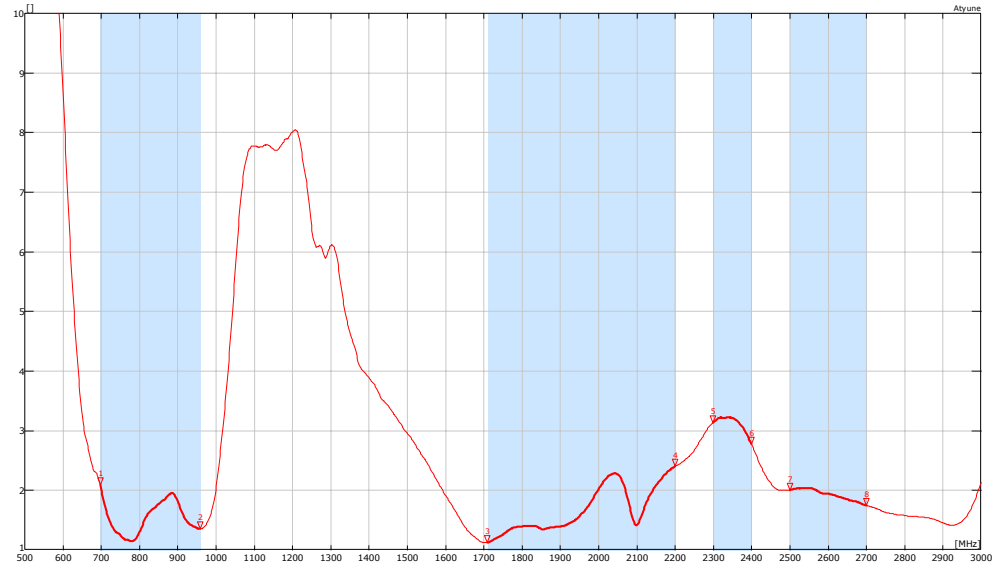
6. RF performance

6.1. Return loss



All data measured on Antenova's evaluation PCB Part No. SR4L112-EVB-1 .

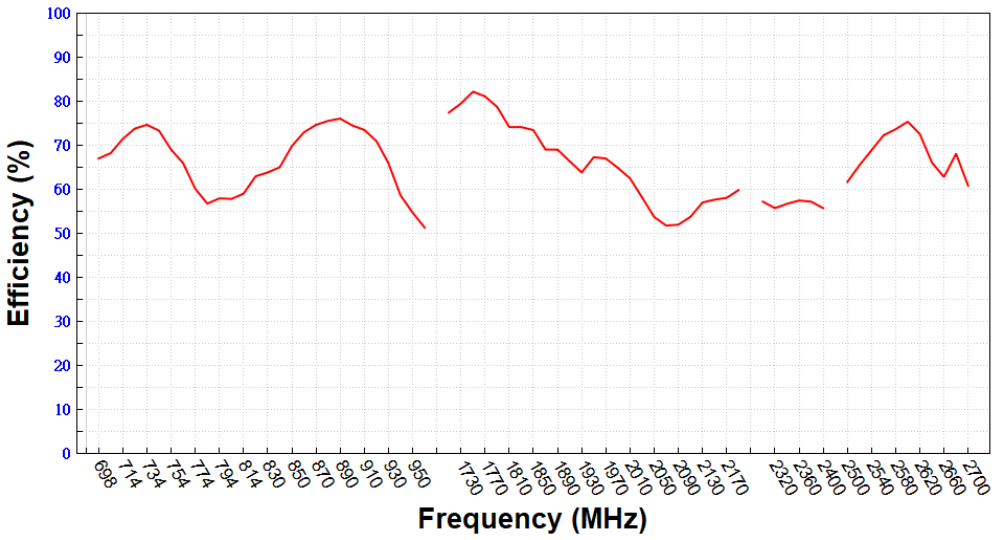
6.2. VSWR



All data measured on Antenova's evaluation PCB Part No. SR4L112-EVB-1 .

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6.3. Efficiency



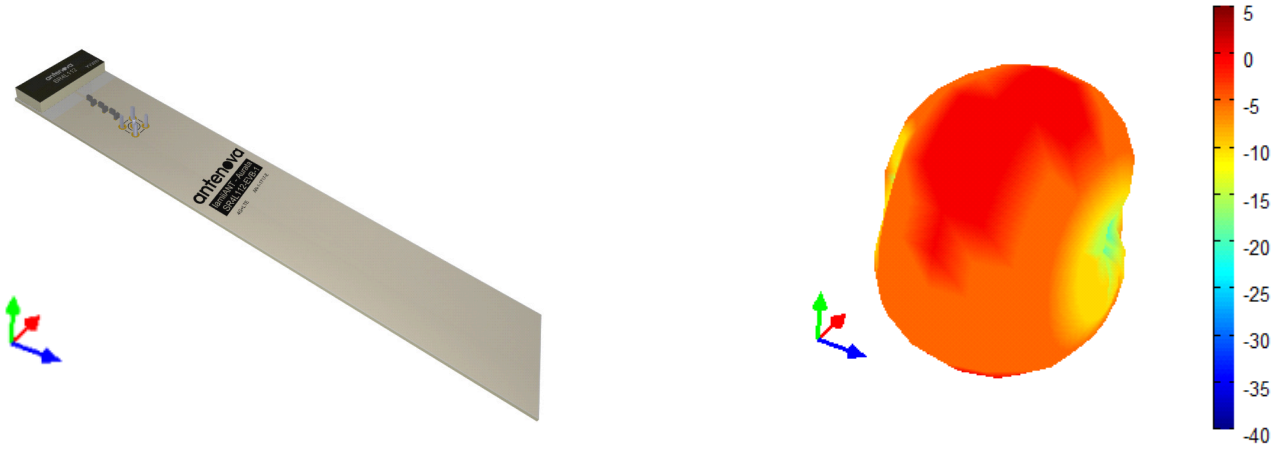
All data measured on Antenova's evaluation PCB Part No. SR4L112-EVB-1

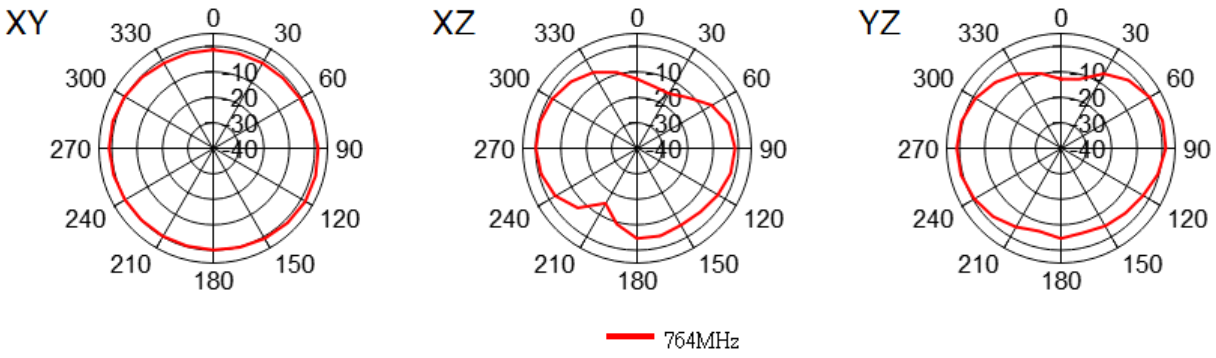
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6.4. Antenna pattern

6.4.1. 764MHz

3D pattern at 764MHz

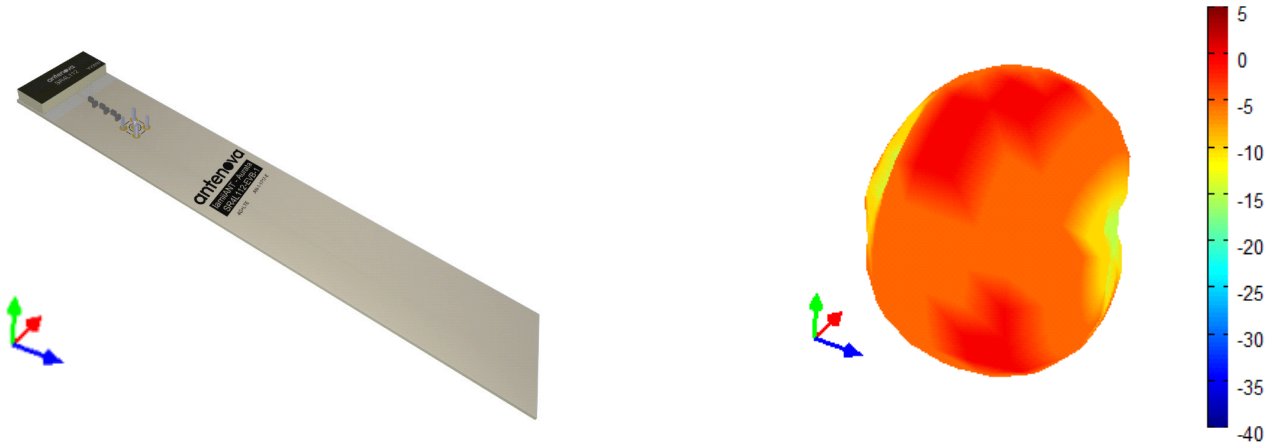


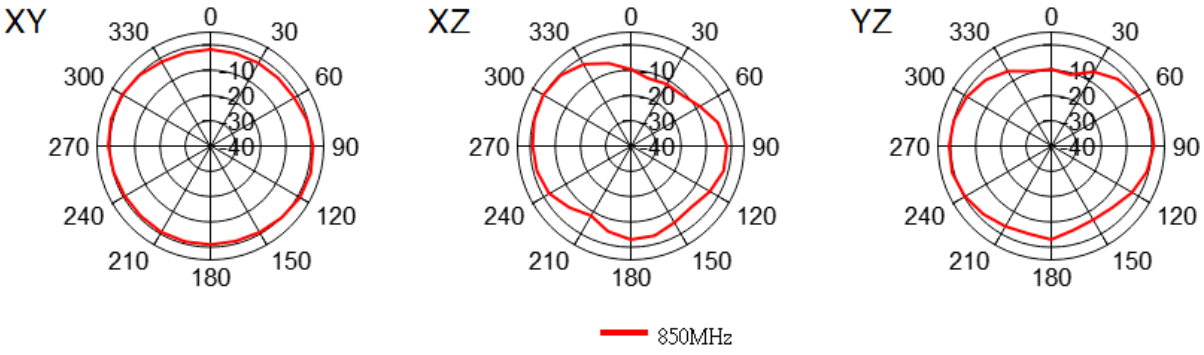


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6.4.2. 850MHz

3D pattern at 850MHz

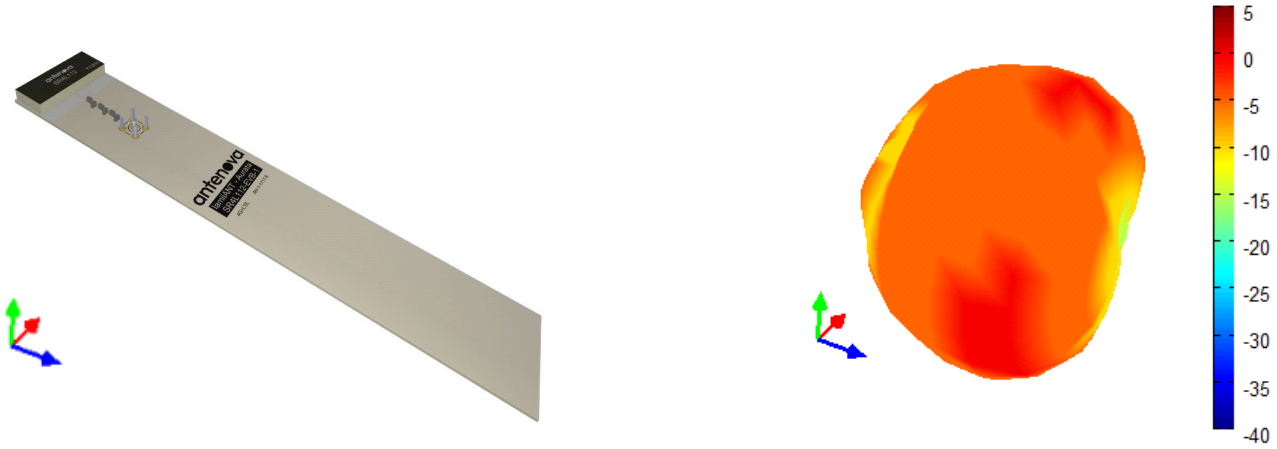


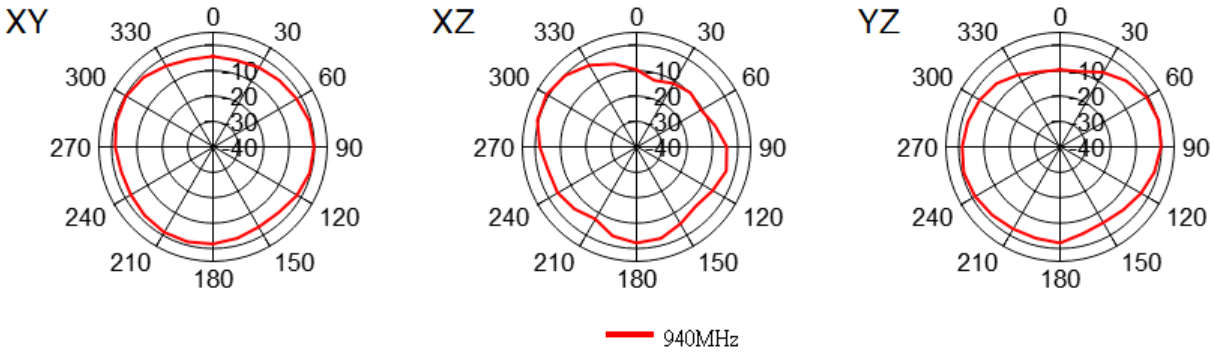


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6.4.3. 940MHz

3D pattern at 940MHz



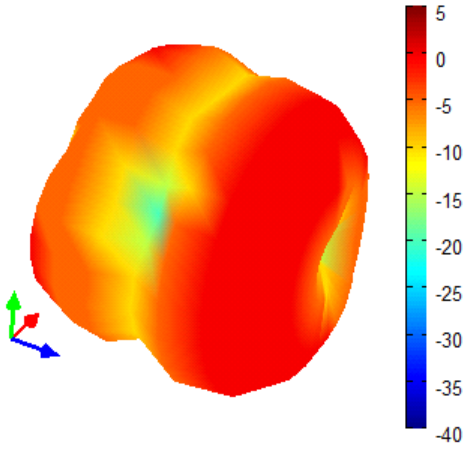


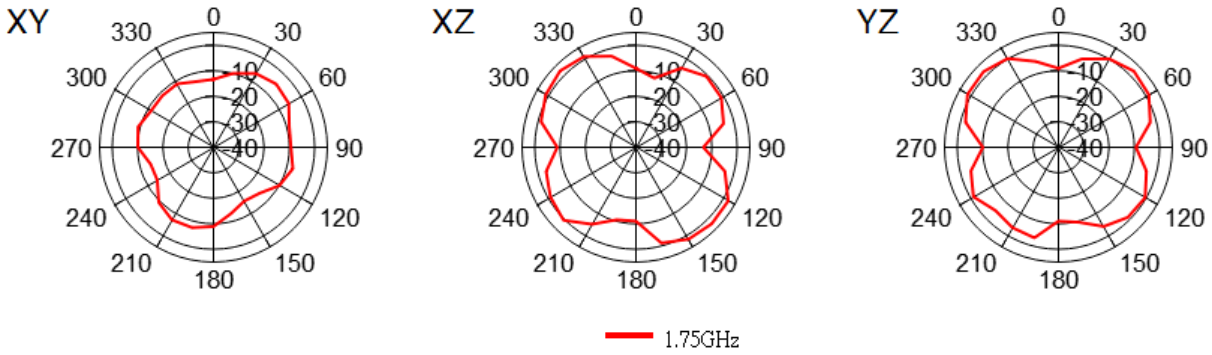
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6.4.4. 1750MHz

3D pattern at 1750MHz





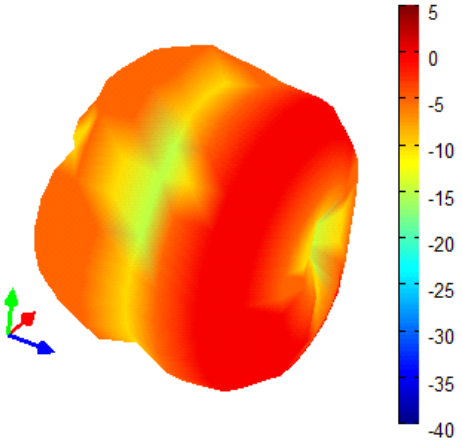


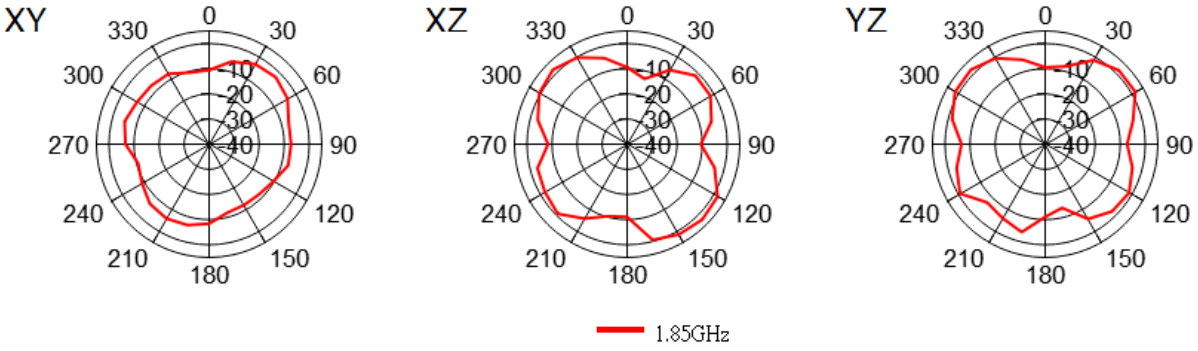
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6.4.5. 1850MHz

3D pattern at 1850MHz





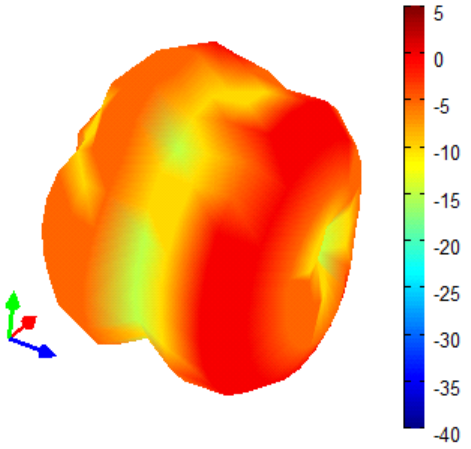


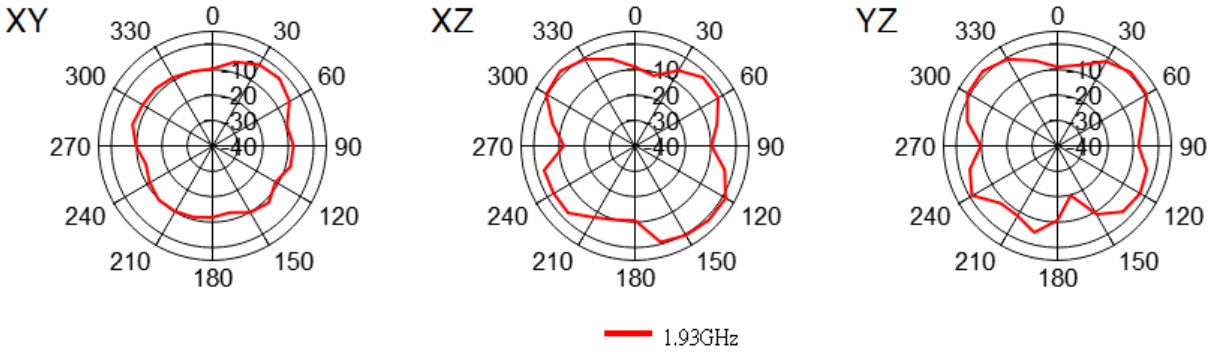
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6.4.6. 1930MHz

3D pattern at 1930MHz





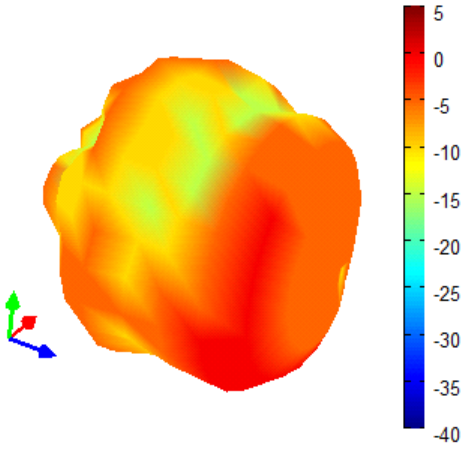


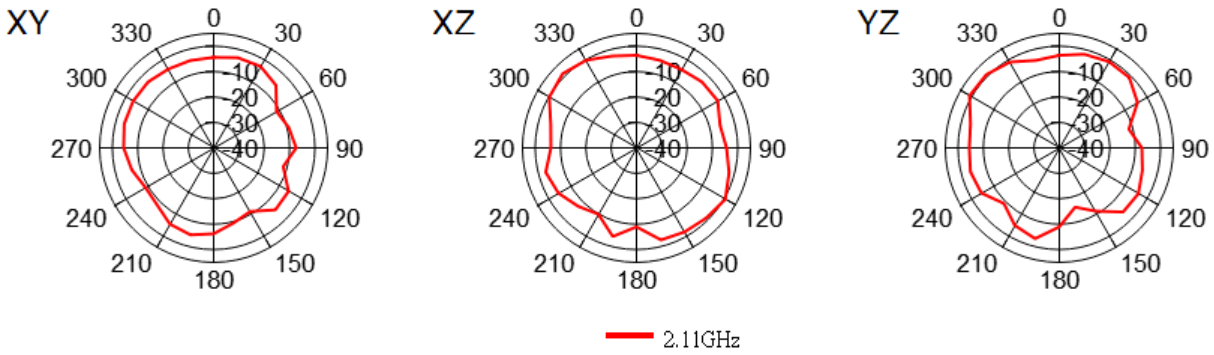
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6.4.7. 2110MHz

3D pattern at 2110MHz





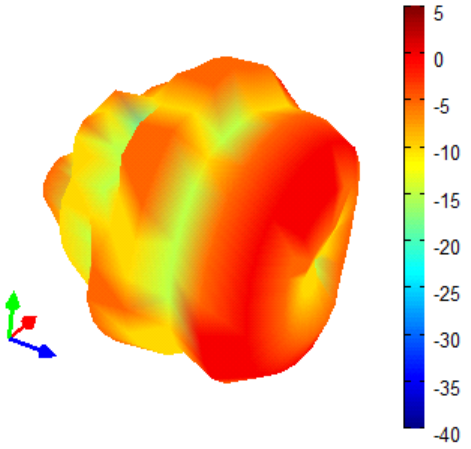


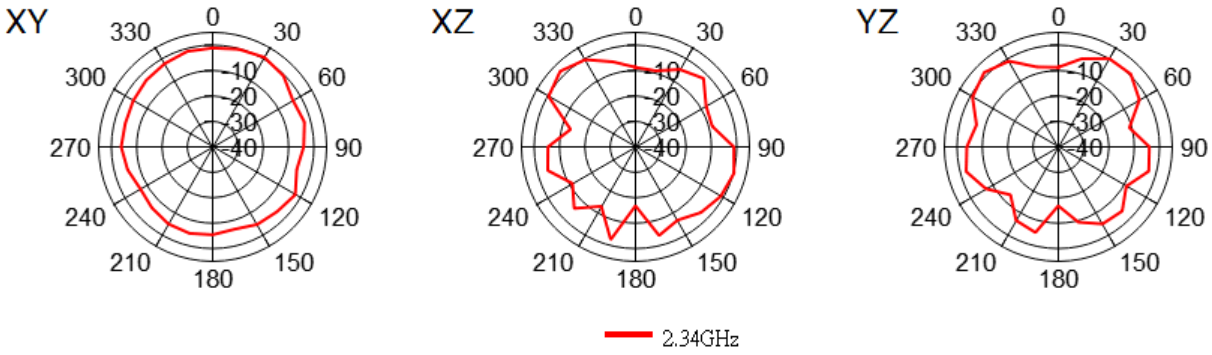
Downloaded from Arrow.com.

6.4.8. 2340MHz

3D pattern at 2340MHz





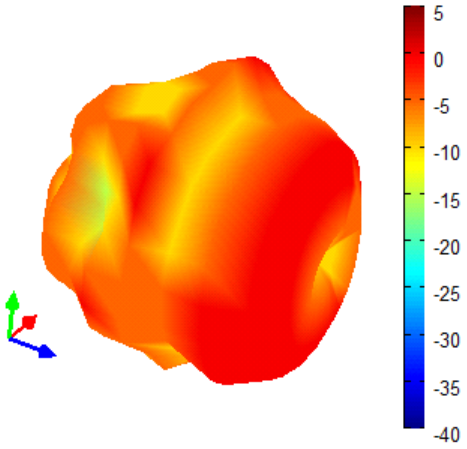


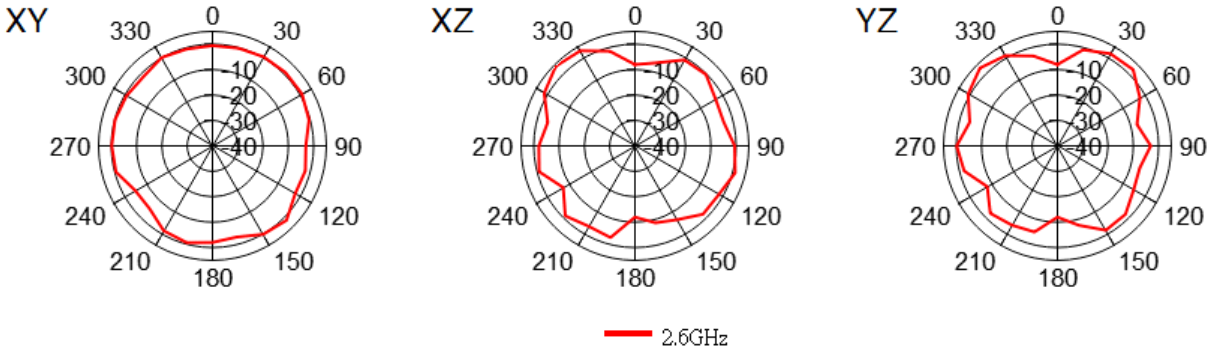
Downloaded from Arrow.com.

6.4.9. 2600MHz

3D pattern at 2600MHz







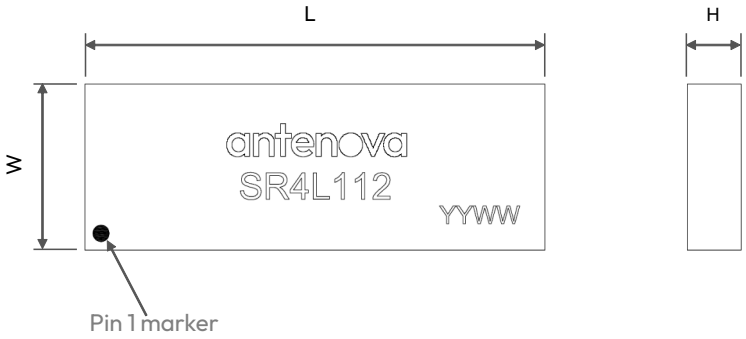
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7. Antenna dimensions

7.1. Dimensions Assembled

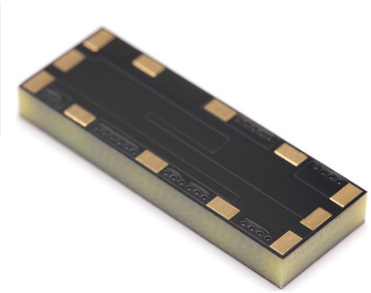
Top view

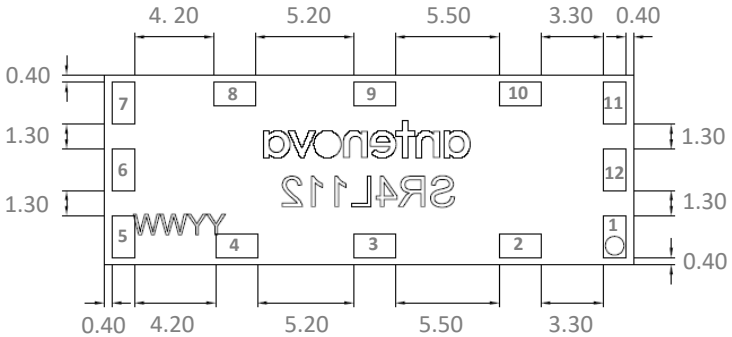




L	W	H
Length	Width	Height
28 ± 0.1	10.0 ± 0.1	3.3 ± 0.2

Bottom view



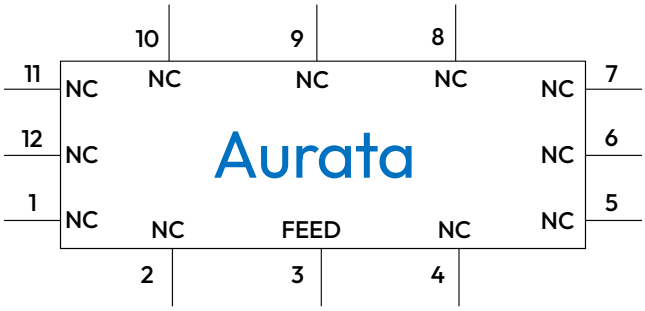


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8. Schematic symbol and pin definition

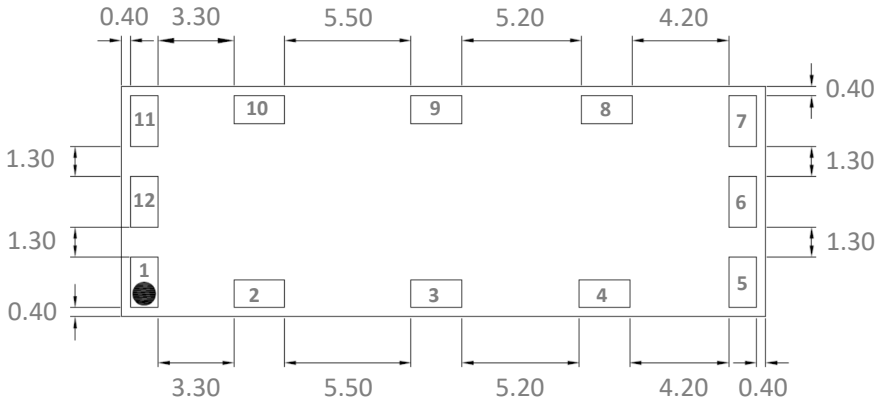
The circuit symbol for the antenna is shown below. The antenna has 12 pins with 1 as functional. All other pins are for mechanical strength.

Pin	Description
3	Feed
Others	Not used (Mechanical only)



9. Host PCB footprint

The recommended host PCB footprint is below.



Pads 1-12= 2.2 x 1.2 (mm)

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10. Electrical interface

10.1. Transmission line

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

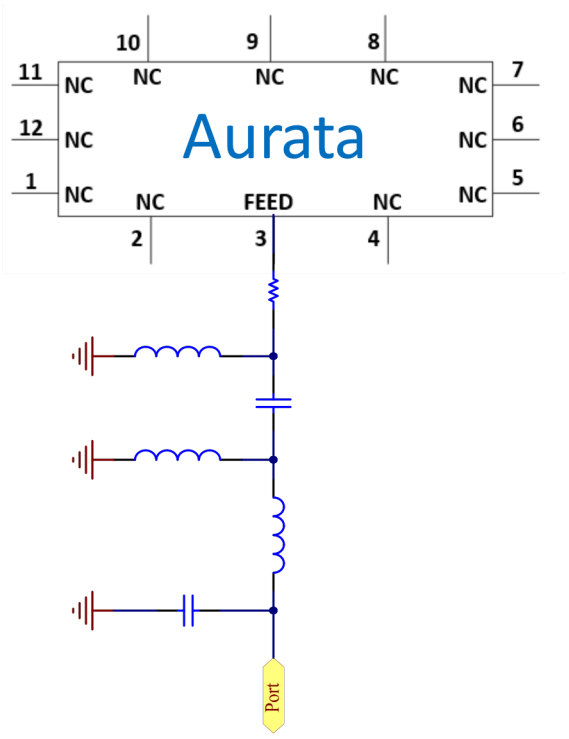
- The length of each transmission lines should be kept to a minimum
- All other parts of the RF system like transceivers, power ampliffers, etc, should also be designed to have a 50 Ω impedance

A co-planar transmission line can be designed using an online transmission line calculator tool, see TOOL at https://www.antenova.com/

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 six 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.



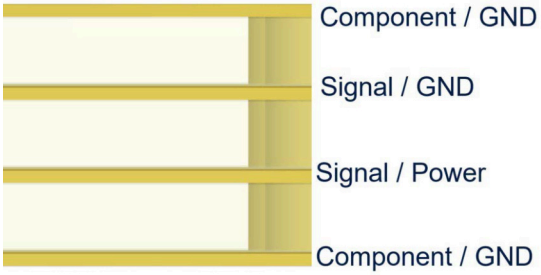
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11. Antenna integration guide

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

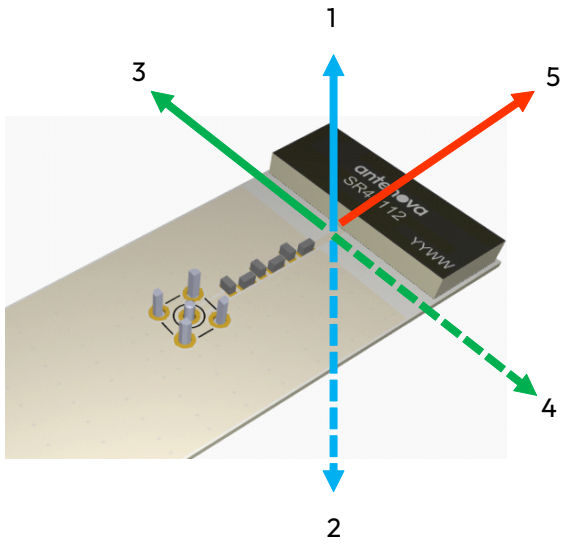
Follow placement guidance carefully, in addition Antenova provide technical support to help you through all stages of your design. Register for an account on https://ask.antenova.com/ to access technical support.



11.1. Antenna placement

The antenna requires clearance ideally in 5 spatial directions in antenna area as shown below.

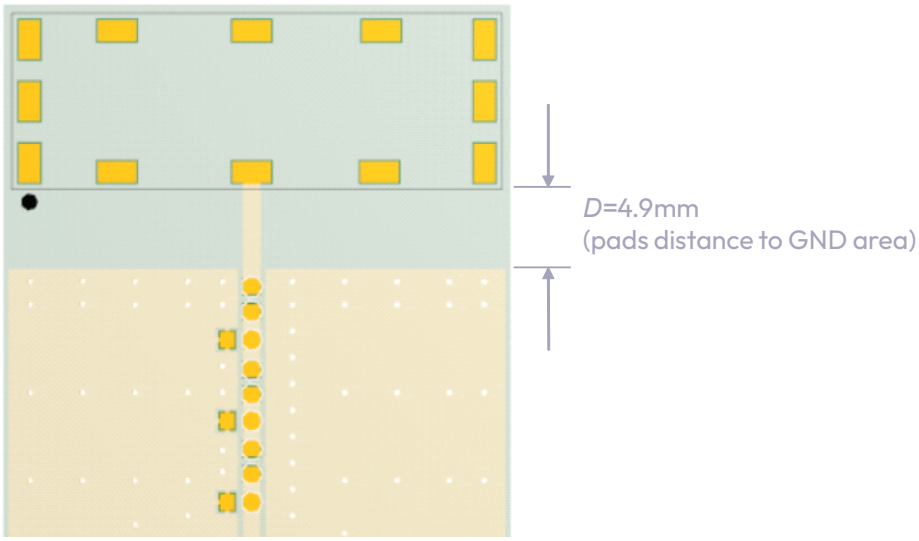
The Antenova placement tool can be used to advise on antenna placement, see TOOL at https://www.antenova.com/



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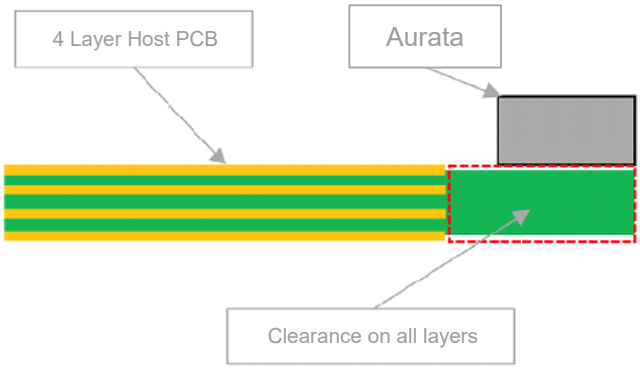
11.2. Host PCB layout

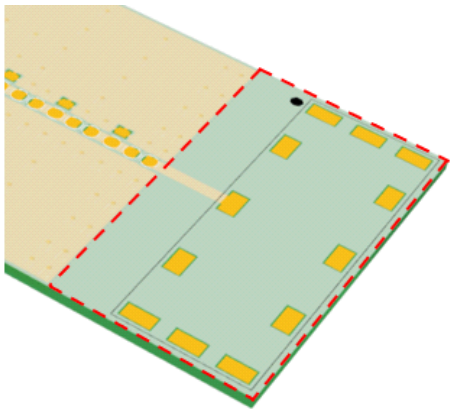
The host PCB must be designed using the PCB footprint shown with the correct clearances. An example of the PCB layout shows the antenna footprint. Please note this clearance area is critical to the performance of the antenna and must be applied through all layers of the PCB.



11.3. Host PCB clearance

The host PCB must be designed using the PCB footprint shown with the correct clearances. An example of the PCB layout shows the antenna footprint. Please note this clearance area is critical to the performance of the antenna and must be applied through all layers of the PCB.





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12. Reference board

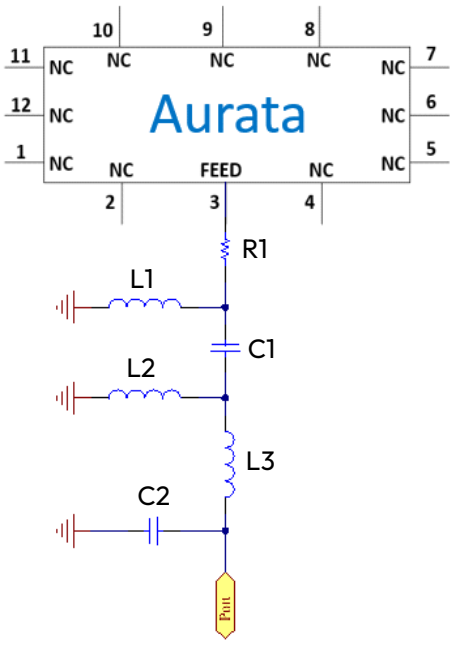
A reference board is used for evaluating the antenna SR4L112 and it includes a SMA female connector. (part number SR4L112-EVB-1)

To order a reference board
Please see antenova.com



12.1. Reference board matching circuit

Designator	Type	Value	Description
L1	Inductor	8.2nH	Murata LQG1HS series
L2	Inductor	39nH	Murata LQG1HS series
L3	Inductor	2.7nH	Murata LQG1HS series
C1	Capacitor	2.7pF	Murata LQG1HS series
C2	Not Fitted	Not Fitted	Not Fitted
R1	Resistor	0 ohm	Non-specific (0402)



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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 than20 seconds is permitted.
- The antenna should not be exposed to temperatures exceeding 120 °C morethan 3 times during the soldering process.

14. Hazardous material regulation conformance

The antenna has been tested to conform to RoHS and REACH requirements.

A certiffcate of conformance is available from Antenova's website.

15. Packaging

15.1. Optimal storage conditions

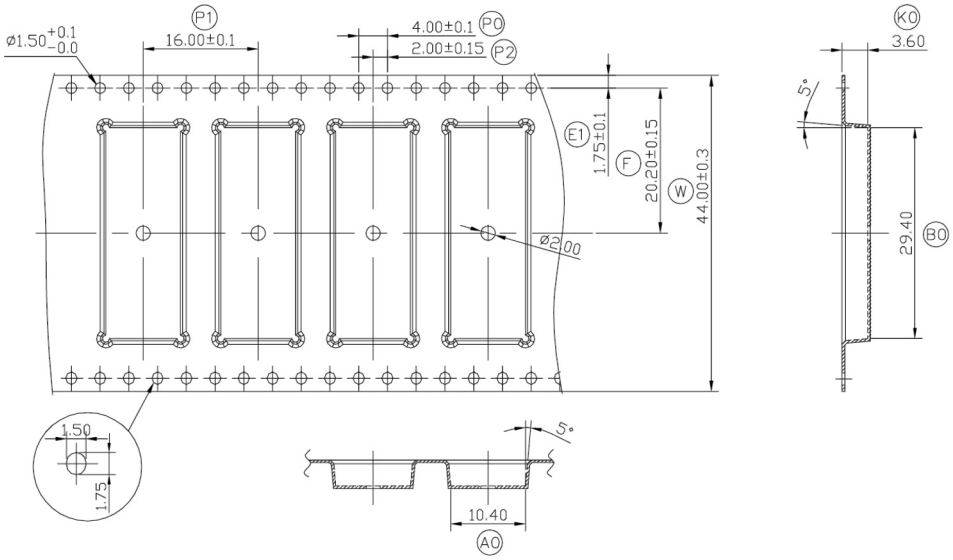
Temperature	-10°C to 40°C
Humidity	Less than 75% RH
Shelf life	24 Months
Storage place	Away from corrosive gas and direct sunlight
Packaging	Reels should be stored in unopened sealed manufacturer's plastic packaging.
MSL level	1

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.

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15.2. Tape characteristics



P0	P1	P2	A0	K0	B0
4.00± 0.10	16.00 ± 0.10	2.00 ± 0.15	10.40 ± 0.10	3.60 ± 0.10	29.40 ± 0.10

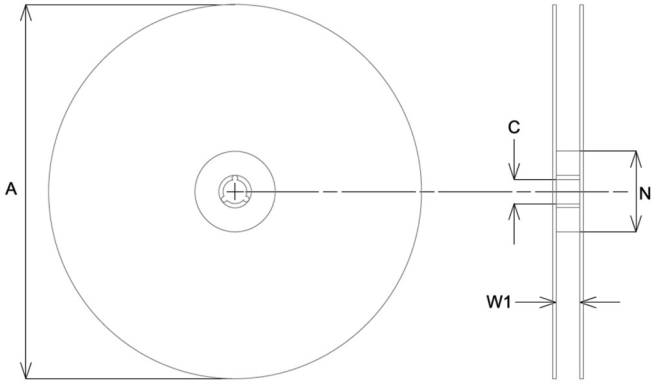
E1	F	W
1.75 ± 0.10	20.20 ± 0.15	44.00 ± 0.30

All dimensions in (mm)

Quantity	Leading space	Trailing space
1000 pcs / reel	30 blank antenna holders	30 blank antenna holders

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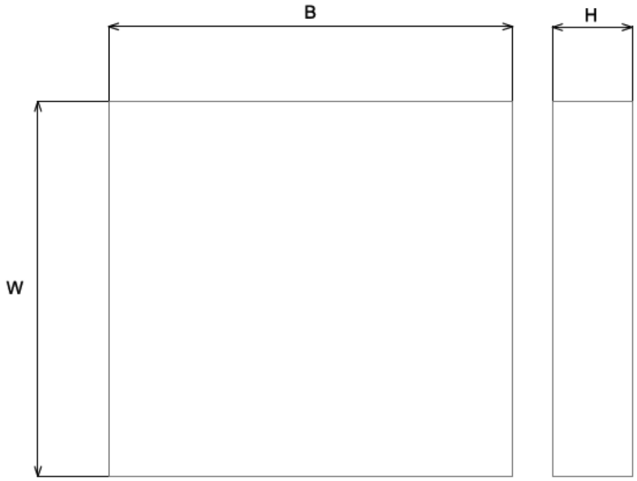
15.3. Reel dimensions



A	C	N	W1
330.0 ± 2.0	13.0 ± 0.5	80.0 ± 0.2	44 ± 0.3

All dimensions in (mm)

15.4. Box Dimensions



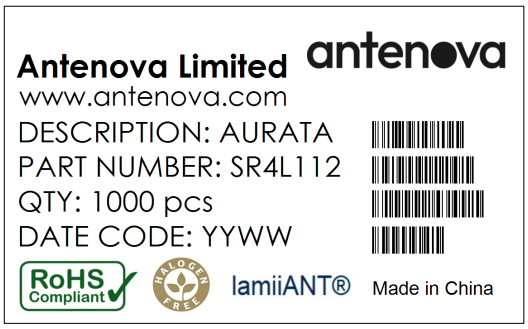
Width(W)	Breadth(B)	Height(H)
350mm	340mm	65mm

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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**.

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Certificate No. 11070
ISO 9001

Datasheet version

1.01 release 10th June 2026

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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.

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sales@antenova.com

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