
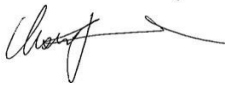


CU24004-1
Product Specification
Rev.01

| For Antenova | | | | | |
|--------------|-------------------------------------------------------------------------------------|------------|-------------|---------------------------------------------------------------------------------------|------------|
| Author | Signature | Date | Approved by | Signature | Date |
| Tim Lin |  | 20/08/2024 | Christy Lin |  | 20/08/2024 |

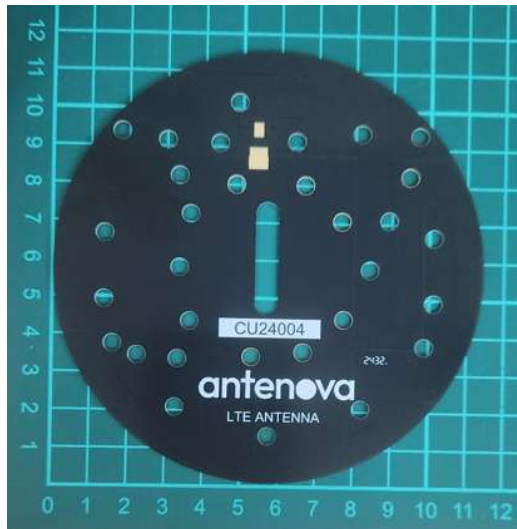
| | | | |
|------------------|-------------|-----------|------|
| For Badger Meter | | | |
| | Approved by | Signature | Date |
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1. PART NUMBER

| Part Number |
|-------------|
| CU24004-1 |



2. GENERAL DATA

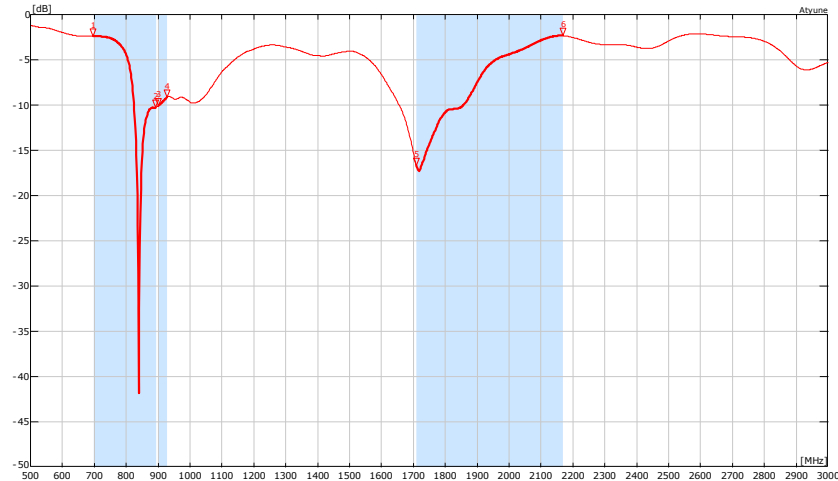
| | |
|-----------------------|---------------------------------|
| Antenova P/N | CU24004-1 |
| Frequency | 698-894,902-928,1710-2170 (MHz) |
| Polarization | Linear |
| Operating Temperature | -40 to +140°C |
| Impedance | 50Ω |
| Weight | <25g |
| Antenna Type | Monopole |
| Dimensions | Dia. 114mm |

3. RF CHARACTERISTICS SUMMARY

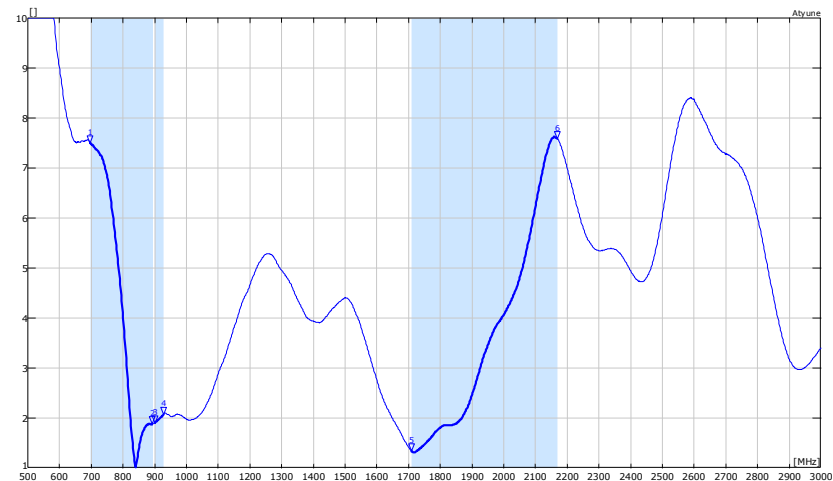
| Frequency | 698 – 894 MHz | 902– 928 MHz | 1710 – 2170 MHz |
|--------------------|---------------|--------------|-----------------|
| Average Efficiency | 58.9% | 75.9% | 39.0% |
| Average Gain | -2.3dB | -1.2dB | -4.1dB |
| Peak Gain | 2.3dBi | 2.1dBi | 3.2dBi |
| Maximum S11 | -2.3 dB | -9.1 dB | -2.3 dB |
| Maximum VSWR | 7.5:1 | 2.1:1 | 7.6:1 |

4. RF PERFORMANCE

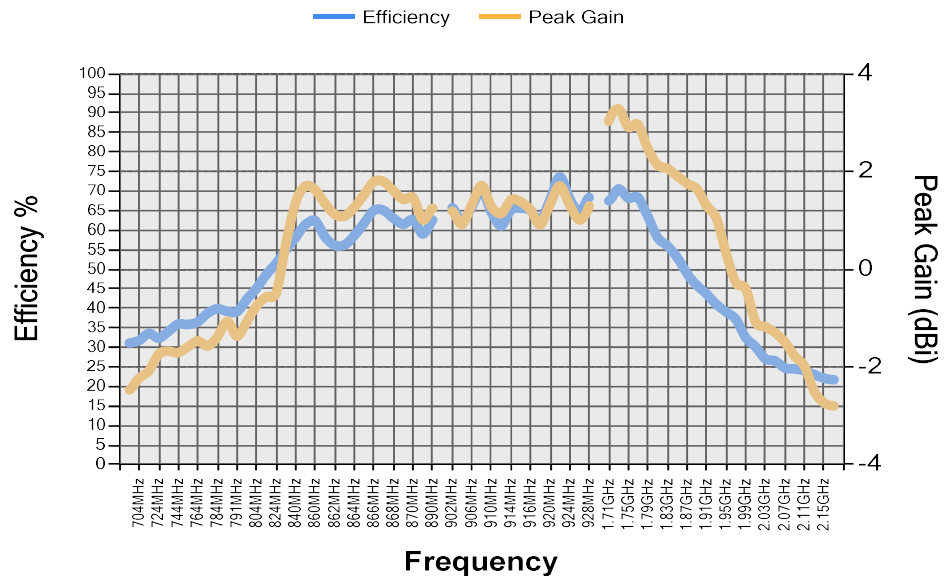
4.1 S Parameter



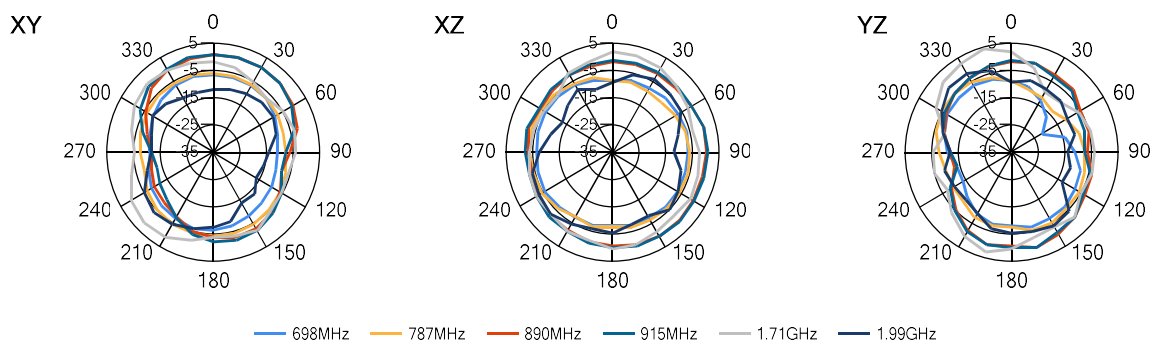
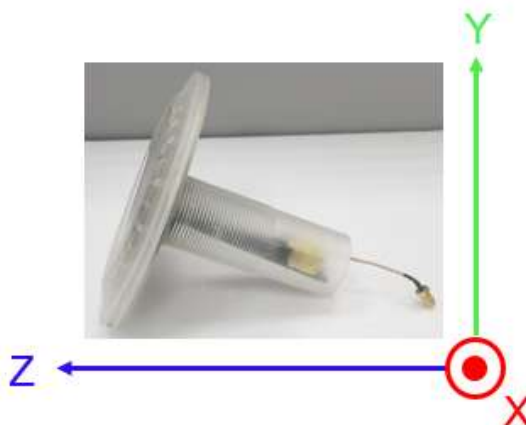
4.2 VSWR



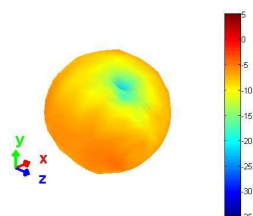
4.3 Antenna Efficiency And Peak Gain



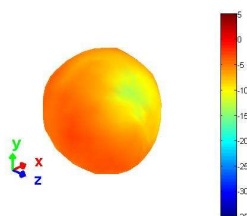
4.4 Antenna Radiation Pattern



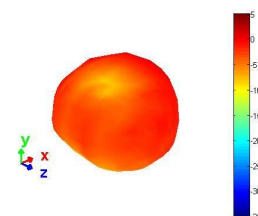
3D Radiation @698MHz



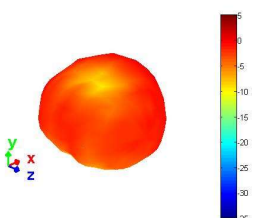
3D Radiation @787MHz



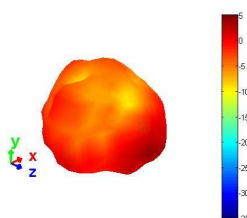
3D Radiation @890MHz



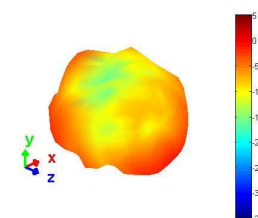
3D Radiation @915MHz



3D Radiation @1710MHz



3D Radiation @1990MHz

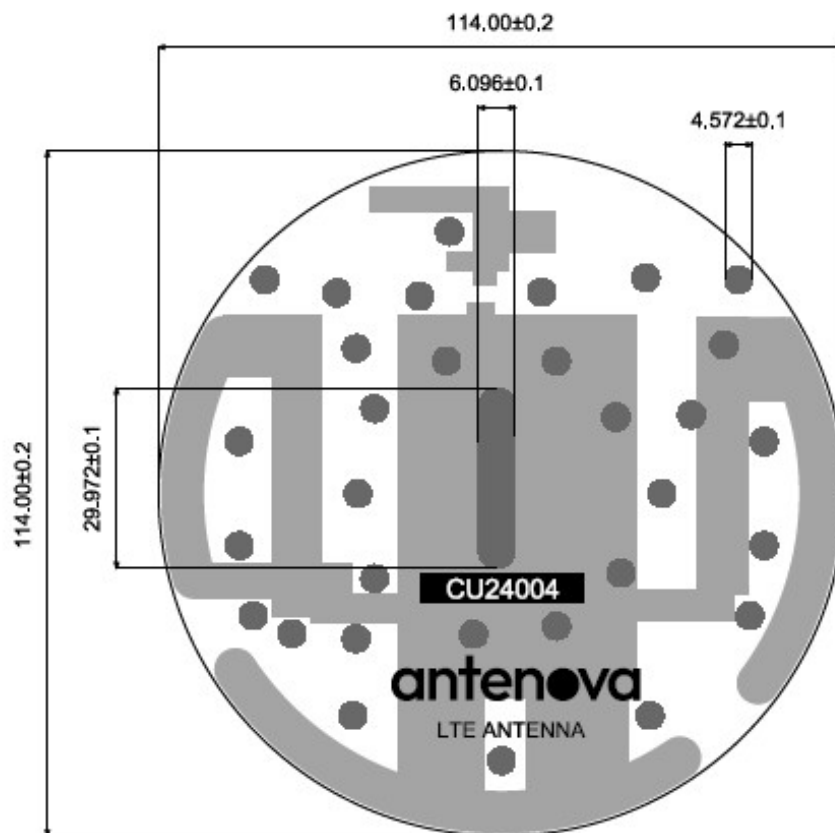


5. DIMENSIONS

5.1 Antenna Dimensions

Units: mm

| D | T |
|----------|-----------|
| Diameter | Thickness |
| 114 ±0.2 | 0.9 ±0.1 |



6. ELECTRICAL INTERFACE

The Host PCB should ensure that the transmission lines are designed to have a characteristic impedance of 50 Ω

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

Once the material for the PCB has been chosen (PCB thickness and dielectric constant), a coplanar transmission line can easily be designed using any of the commercial software packages for transmission line design. For the chosen PCB thickness, copper thickness and substrate dielectric constant, the program will calculate the appropriate transmission line width and gaps on either side of the track so the characteristic impedance of the coplanar transmission line is 50 Ω

7. HAZARDOUS MATERIAL REGULATION CONFORMANCE

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

8. STATEMENT ON INTELLECTUAL PROPERTY

It is the policy of Antenova Ltd to file worldwide patents on all novel technology and exploitable ideas developed within the company. All information provided in this document is, and shall remain, the property of Antenova. Nothing herein shall be construed as granting or conferring any rights by license or otherwise in the Information except as expressly provided herein. A recipient acquires hereunder only a limited right to use the Information solely for the purpose of evaluation of the technology, subject to the terms and conditions set out in an associated Non Disclosure Agreement.

Disclaimer

Antenova accepts no responsibility for injury to the individual resulting from the use or misuse of this product.

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