

SPECIFICATION

- Part Number: **RI.02.01.3000W**
- Product Name: 915MHz oad Marker Kit - Quad Band Cellular Antenna RI.01 with CAB.826 Cable Assembly
- Features: Low Profile - Diameter 101.4mm*Height 17.6 mm
UV and Vandal resistant PP housing
RI.01: 1.5M WY-100 cable SMB(M) Jack
CAB.826: 1.5M WY-100 SMB(F) to SMA(M)ST
- RoHS Compliant**

Top



Bottom



Side Profile



1. Introduction

Taoglas USA has designed a range of efficient antennas inside US standard raised non reflective roadmarkers. These are designed for, and installed inside, the low profile “Bott’s dots” that can to be mounted directly on the pavement and road in the USA.

These antennas exhibit remarkably high efficiencies in such small packages and live in a very low profile enclosure. They are designed to be mounted directly on the road or pavement, just like a standard roadmarker.

These antennas have been potted with the epoxy that is traditionally used to secure the roadmarker itself to the ground. There are no air gaps whatsoever inside the new type approved roadmarker with antenna, in order to maintain the mechanical integrity. It is presumed that the standard black epoxy will also be used to install the roadmarker in its final resting place on the ground.

The CAB.826 cable assembly is included so the antenna cable can be easily disconnected if desired. This is useful if the antenna is mounted on a movable area, as the cable will split at the push-pull connectors, preventing damage to the cable.

2. Specification

| ELECTRICAL | |
|-------------------------|---|
| Band | 915 MHz ISM |
| Frequency (MHz) | 902-928 |
| Polarization | Linear |
| Impedance (Ohms) | 50 Ohms |
| Peak Gain (dBi) | 3.2 |
| Efficiency (%) | 26 |
| Return Loss (dB) | -18 |
| Radiation Properties | Omni-directional |
| Max Input Power (Watts) | 10 |
| MECHANICAL | |
| Dimensions | Height = 17.6 mm and Diameter = 101.4mm |
| Cable | WY100 Coaxial cable |
| Connector | SMB (M) Jack Straight 50 Ohms |
| Casing | UV Resistant PP |
| Sealant | Potting |
| ENVIRONMENTAL | |
| Protection | IP67 |
| Corrosion | 5% NaCl for 96hrs |
| Temperature Range | -40°C to +85°C |
| Thermal Shock | 100 cycles -40°C to +85°C |
| Humidity | Non-condensing 65°C 95% RH |
| Shock (Drop Test) | 1m drop on concrete 6 axes |
| Cable Pull | 8 Kgf |

3. Test Set Up

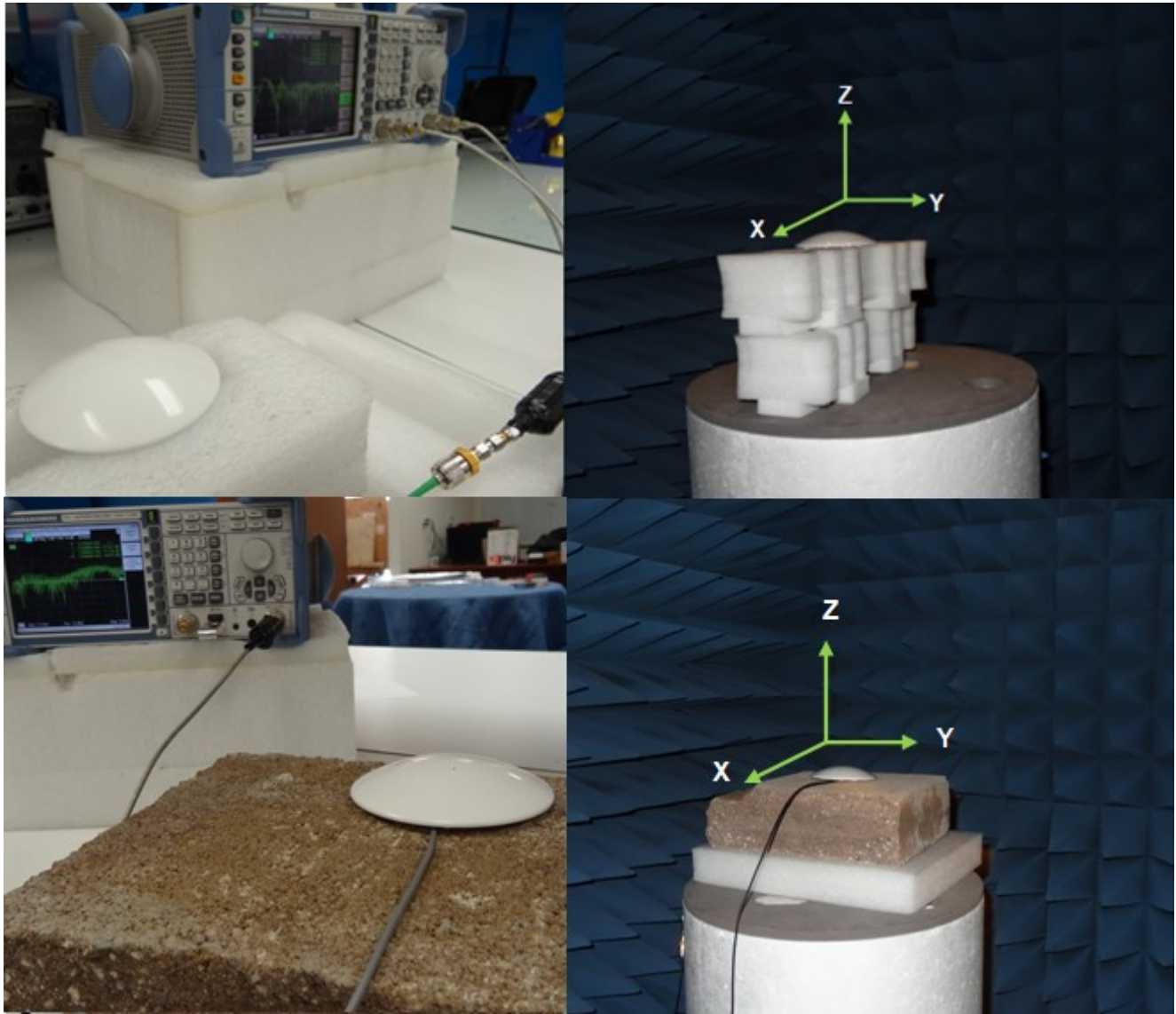


Figure 1. Impedance (left hand) and peak gain, efficiency and radiation pattern measurements (right hand).

4. Antenna Parameters

4.1. Return Loss

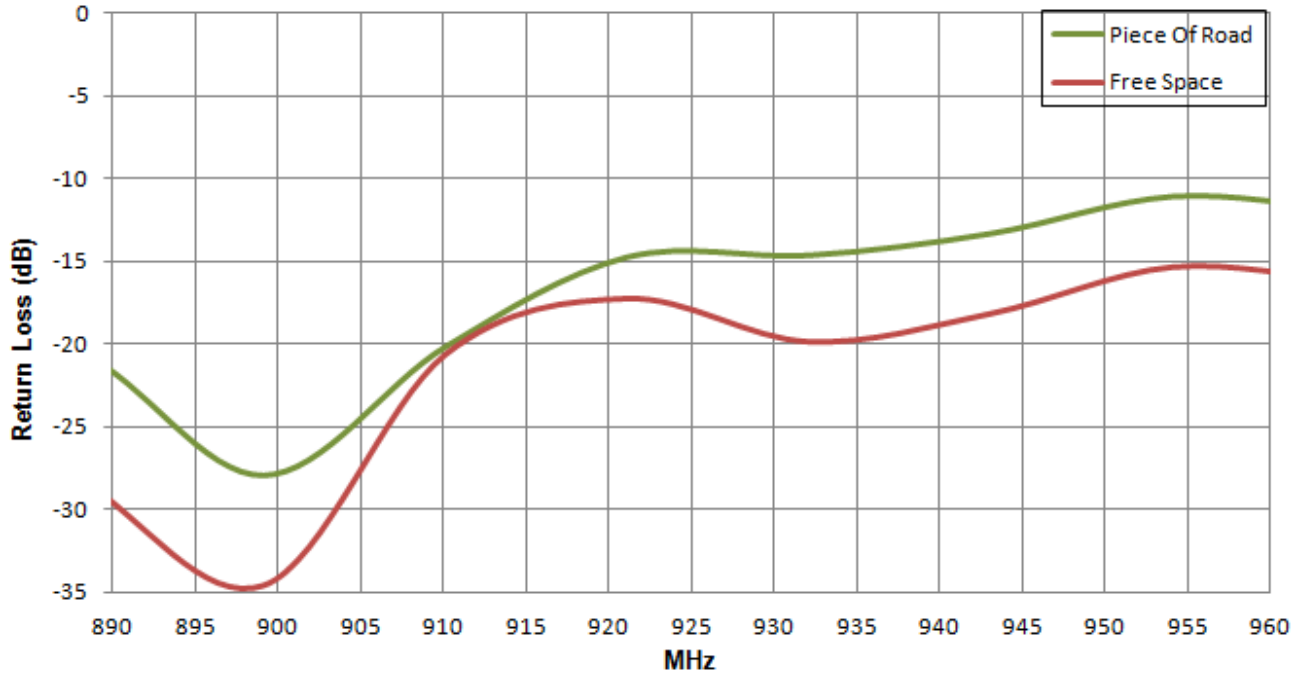


Figure 2. Return Loss 915MHz Road Marker in Free Space and on Piece of Road.

4.2. Efficiency

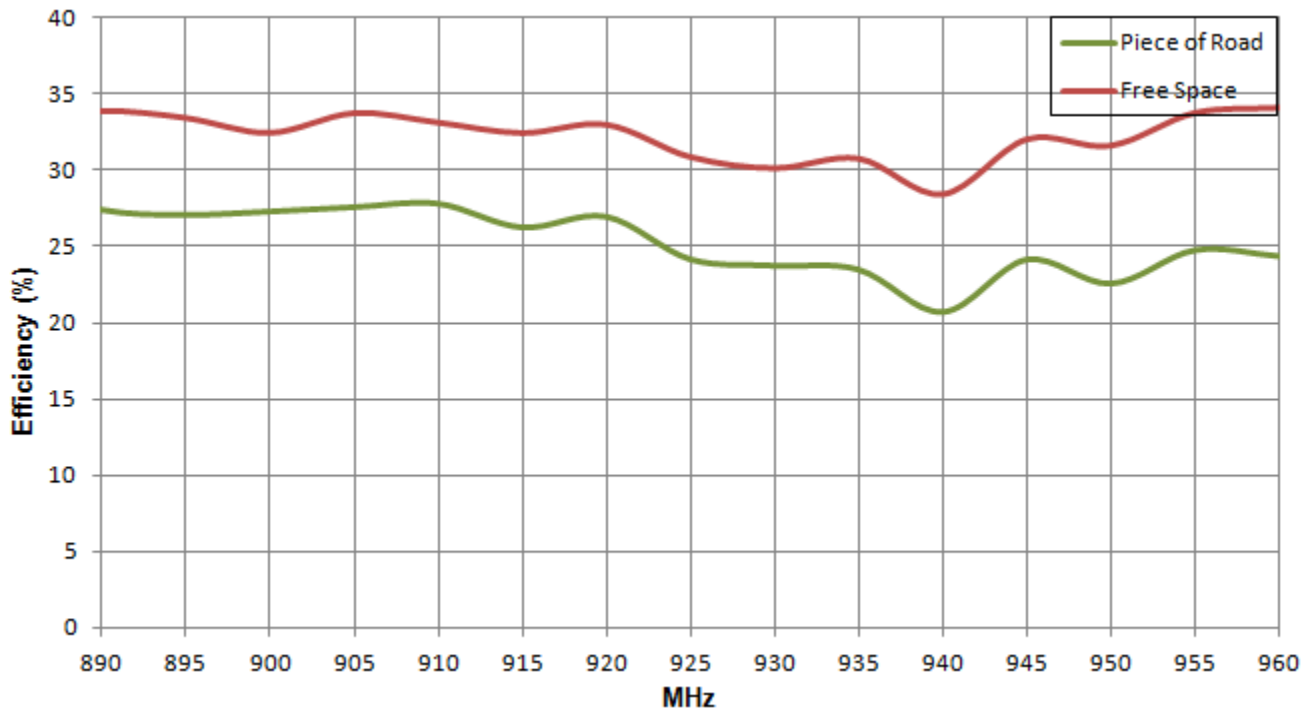


Figure 3. Efficiency of the 915MHz Road Marker in Free Space and on Piece of Road.

4.3. Peak Gain

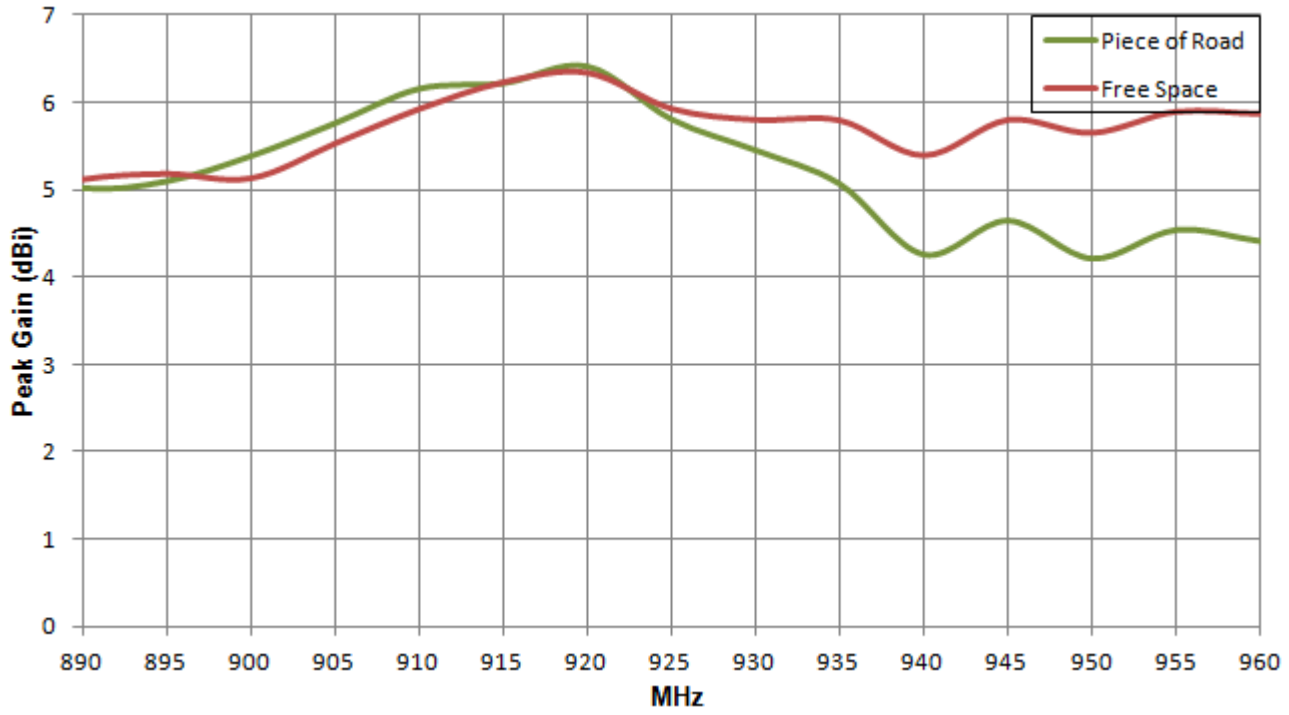


Figure 4. Peak Gain 915MHz Road Marker in Free Space and on Piece of Road

4.4. Radiation Pattern

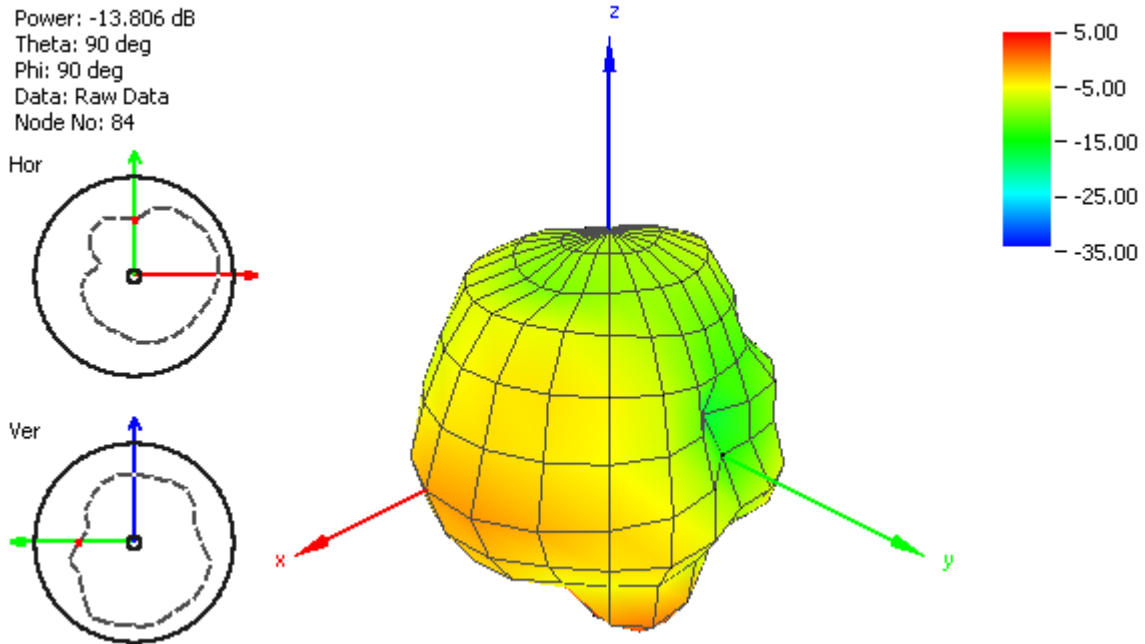


Figure 5. Road Marker ISM Antenna radiation pattern at 900 MHz on Piece of Road.

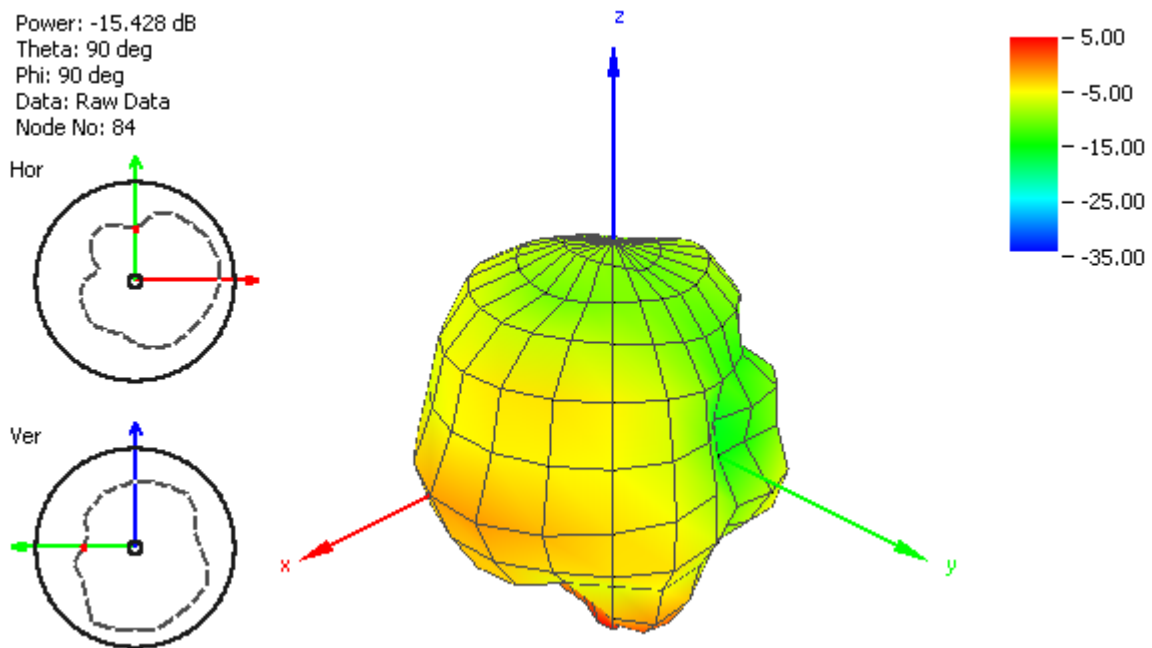


Figure 6. Radiation pattern at 915 MHz on a Piece of Road.

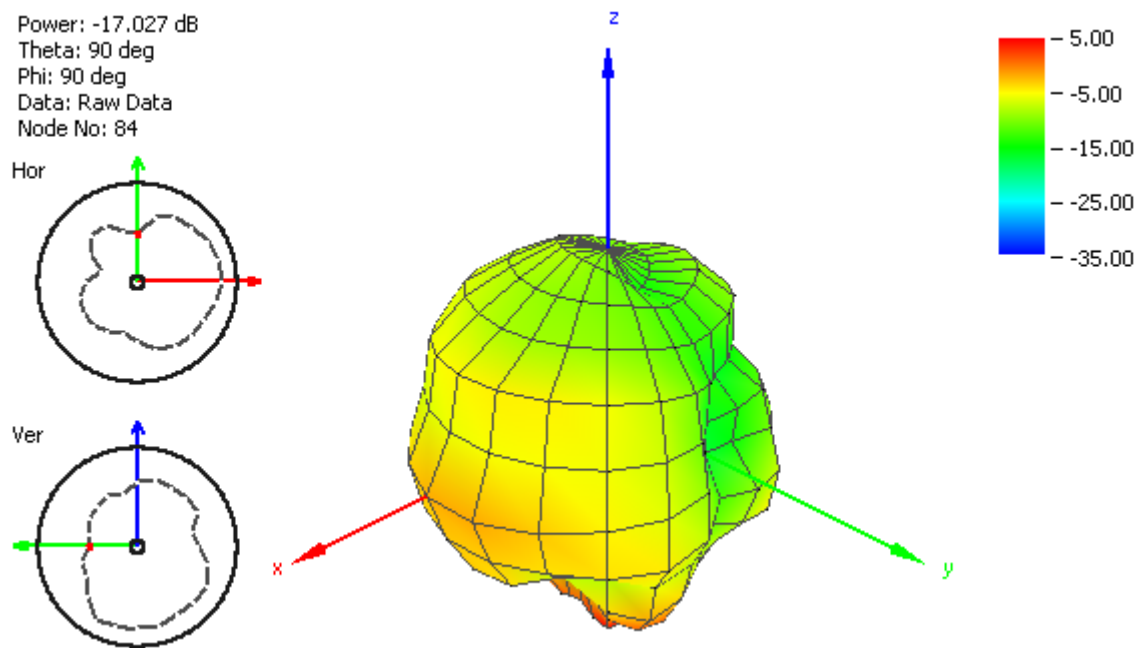


Figure 7. Radiation pattern at 930 MHz on a Piece of Road.

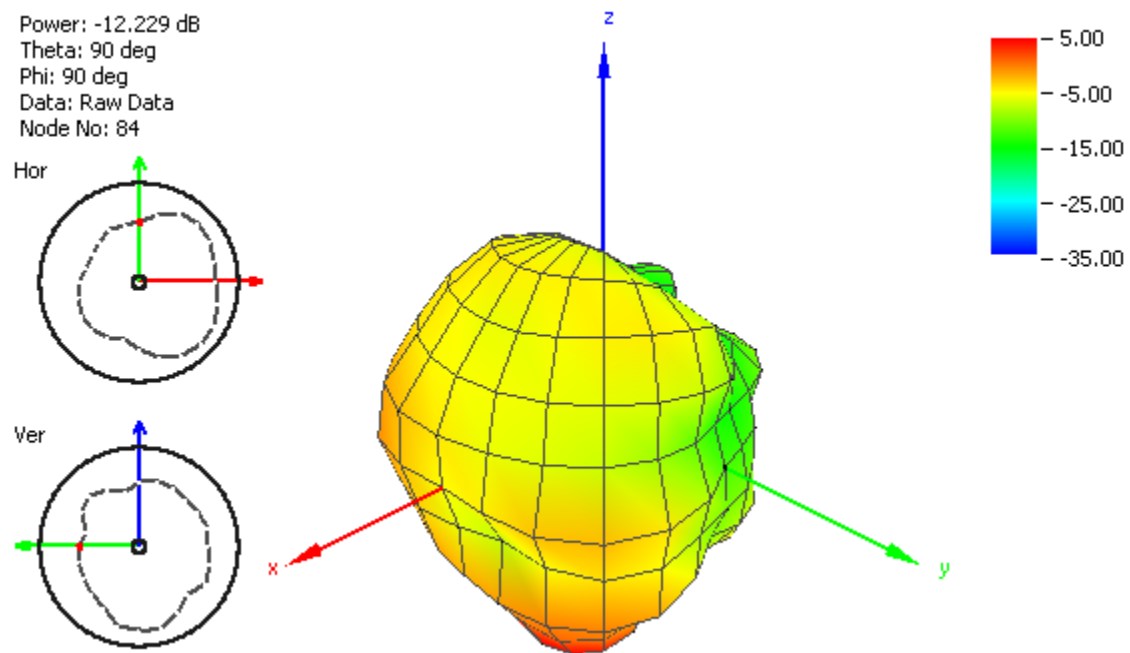


Figure 8. Radiation pattern at 900 MHz in Free Space.

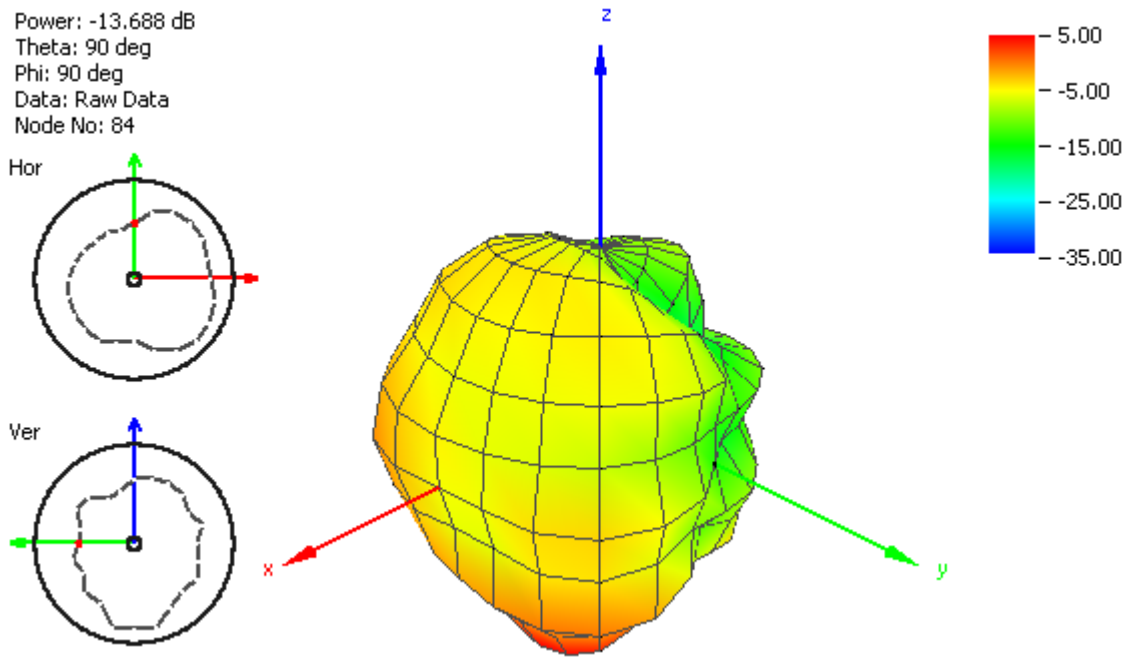


Figure 9. Radiation pattern at 915 MHz in Free Space.

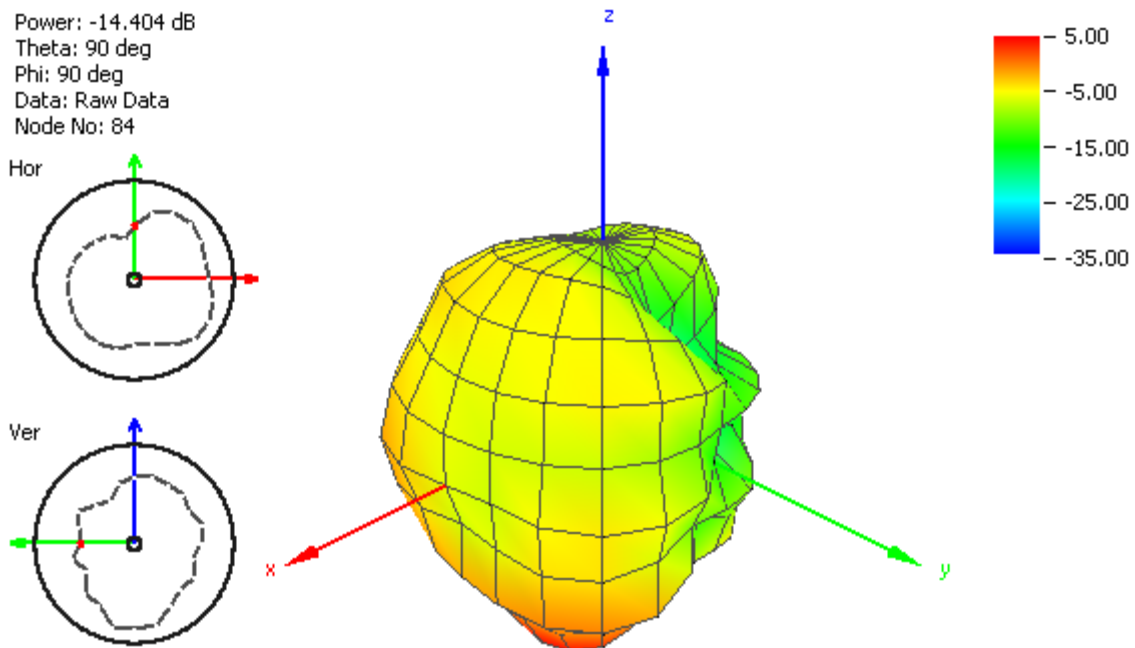
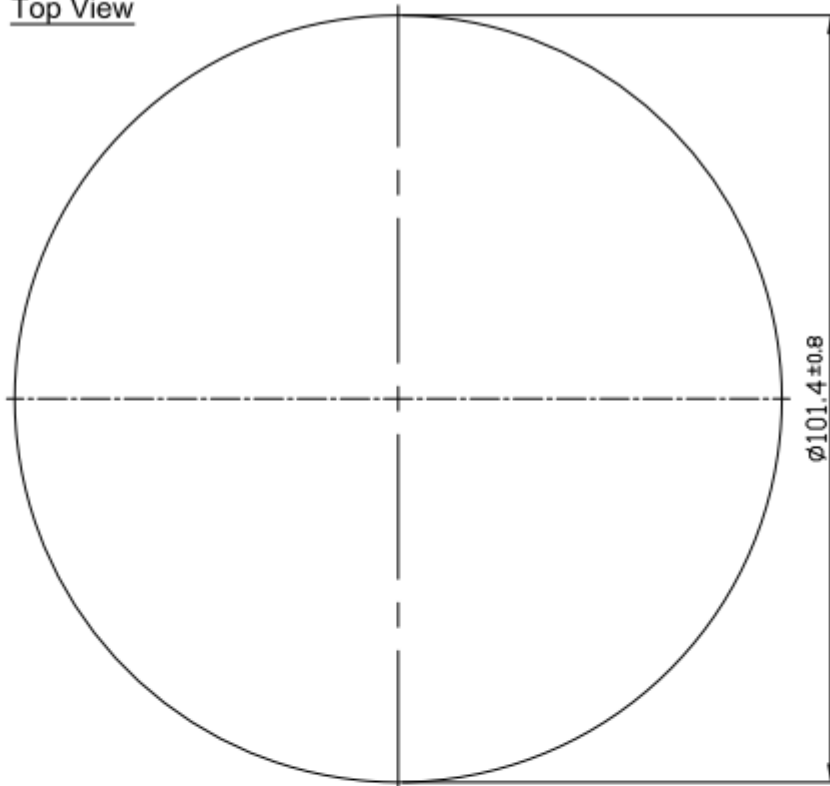


Figure 10. Radiation pattern at 930 MHz in Free Space.

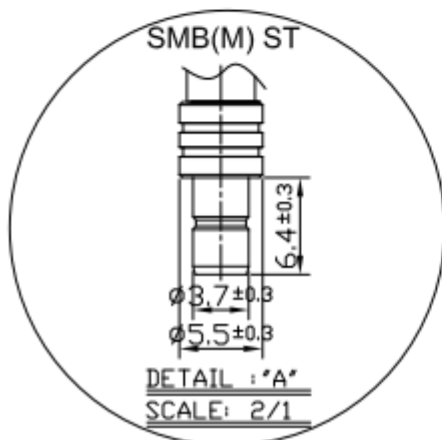
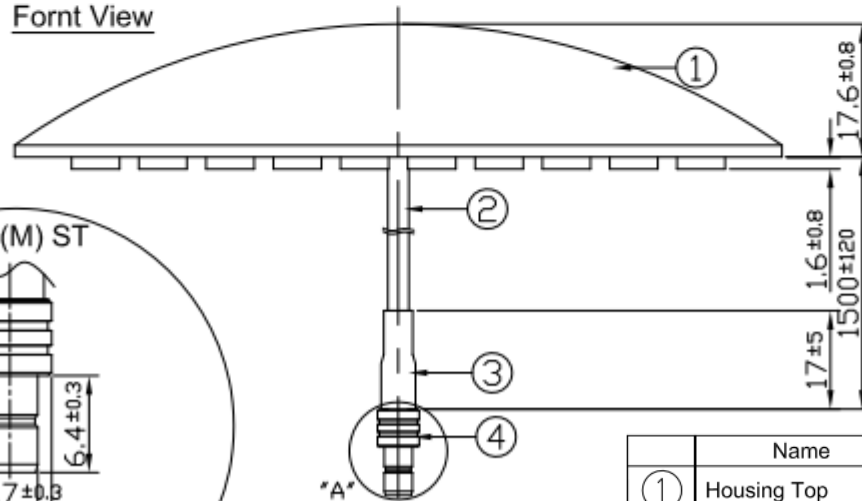
5. MECHANICAL DRAWING

5.1 RI.01 Antenna

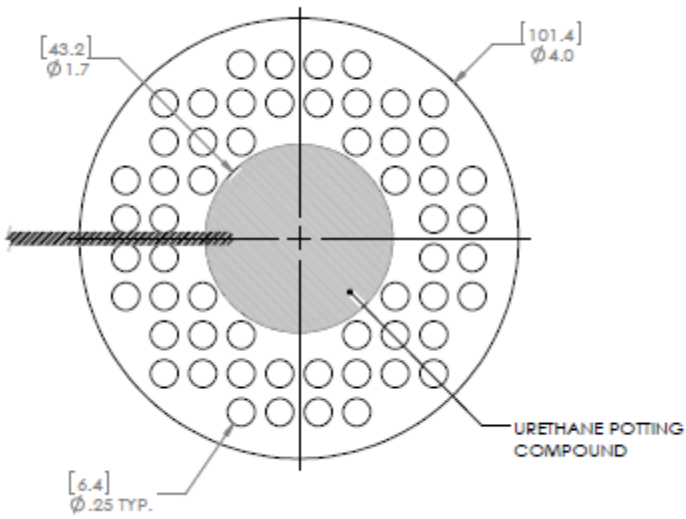
Top View



Front View



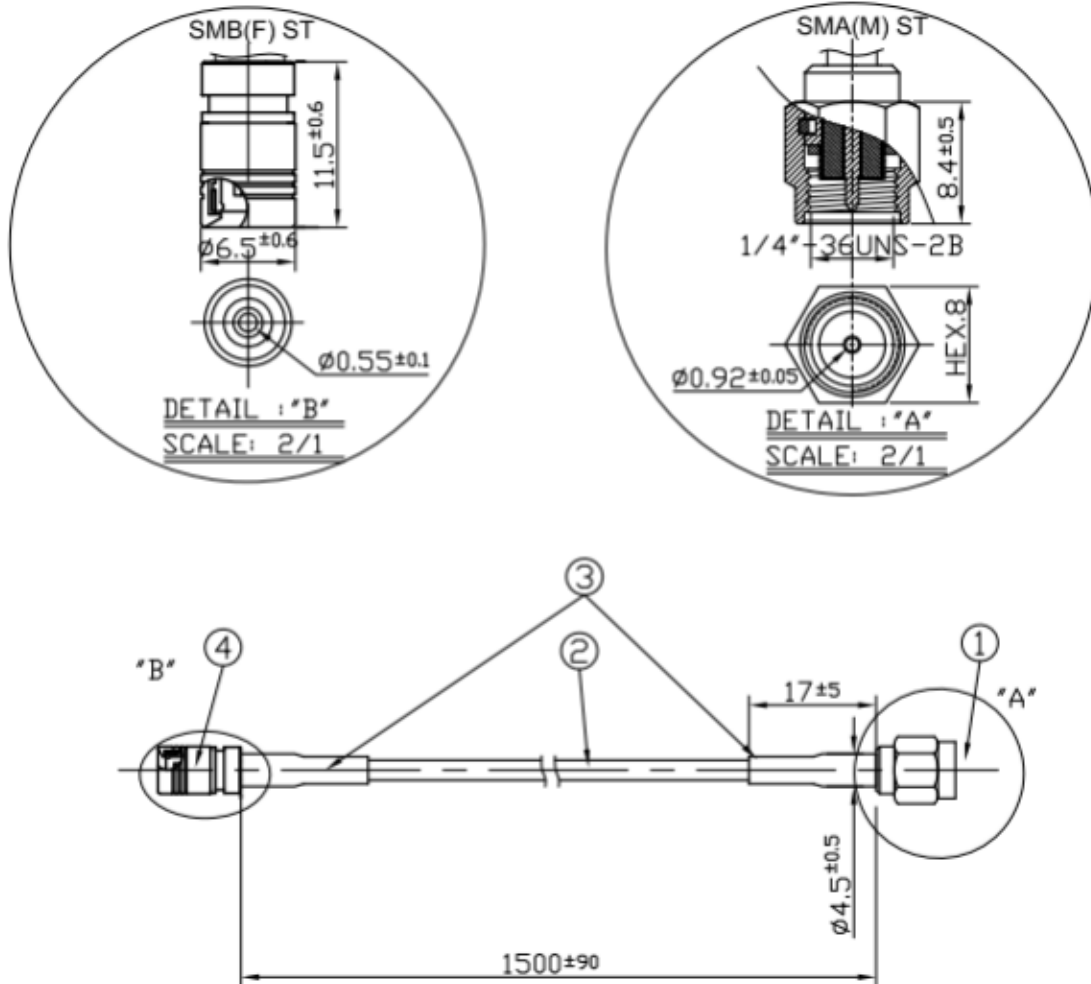
| | Name | Material | Finish | QTY |
|---|---------------------|----------|--------|-----|
| ① | Housing Top | PP | White | 1 |
| ② | WY100 Coaxial Cable | PVC | Black | 1 |
| ③ | Heat Shrink Tube | PE | Black | 1 |
| ④ | SMB(M) ST | Brass | Gold | 1 |



Note: Configuration of bumps or protrusions subject to change without notice

Unit: mm (unless stated otherwise)

5.2 CAB.826 Cable Assembly



| | Name | Material | Finish |
|---|----------------------|----------|--------|
| 1 | SMA(M)ST | Brass | Gold |
| 2 | WY-100 Coaxial Cable | PVC | Black |
| 3 | Heat Shrink Tube | PE | Black |
| 4 | SMB(F) Plug ST | Brass | Gold |

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