

# SPECIFICATION

Part Number: **RI.01.26.1500Q**

Product Name: 915MHz Road Marker Antenna

Features: High performance antenna solution inside a standard road marker

## 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.

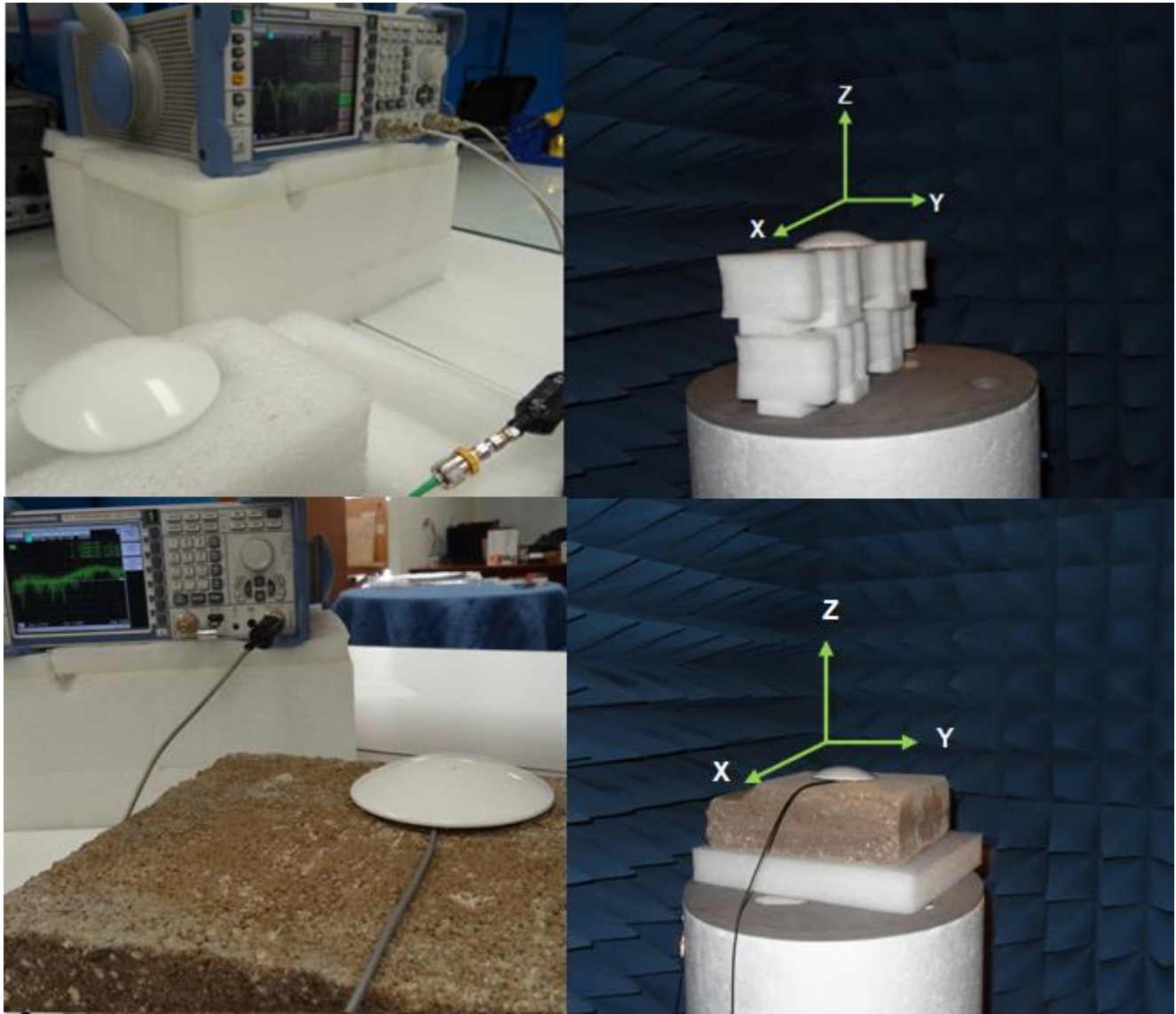
These antennas exhibit remarkably high efficiencies in such small packages and live in a very low profile enclosure. They are designed to be mounted directly on the road, pavement or manhole cover, just like a standard roadmarker.

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.

## 2. Specification

ELECTRICAL	
<b>Band</b>	<b>915 MHz ISM</b>
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 = 19 mm and Diameter = 99mm
Cable	Belden 7805R Coaxial cable
Connector	SMB (M) Jack Straight 50 Ohms
Casing	UV Resistant ABS
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

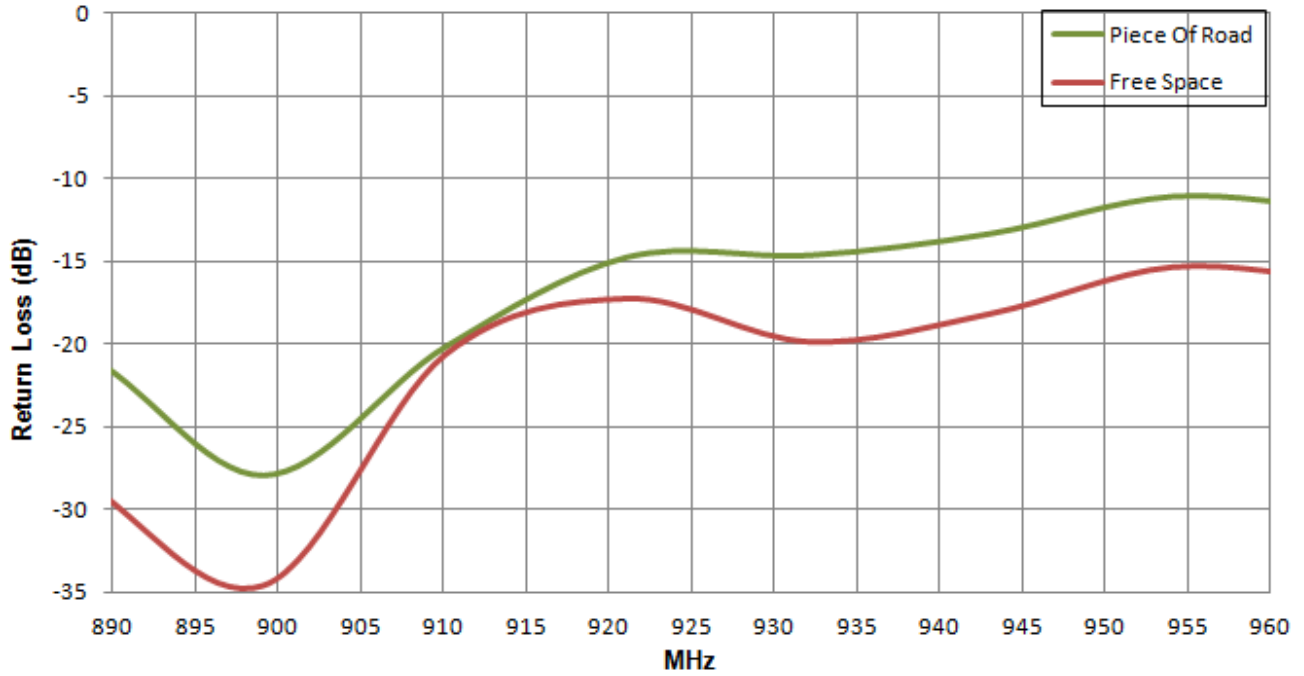


Figure 2. Return Loss 915MHz Road Marker in Free Space and on Piece of Road.

### 4.2. Efficiency

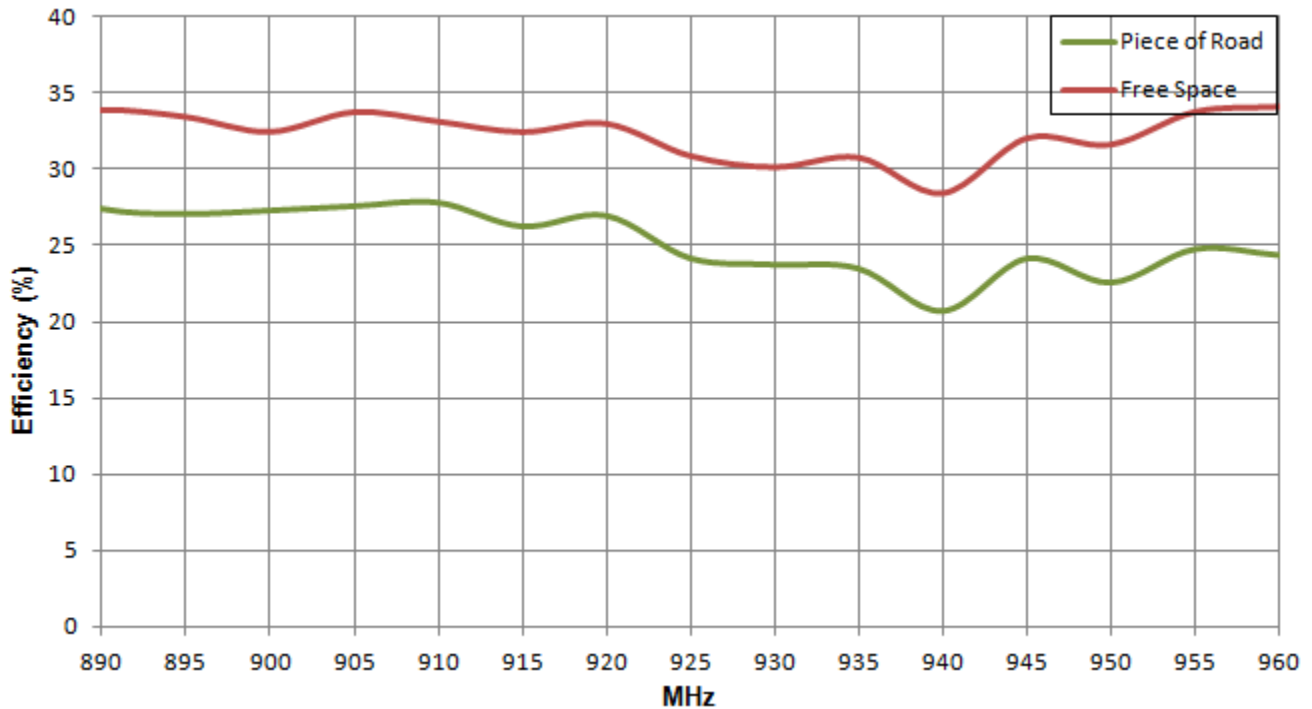
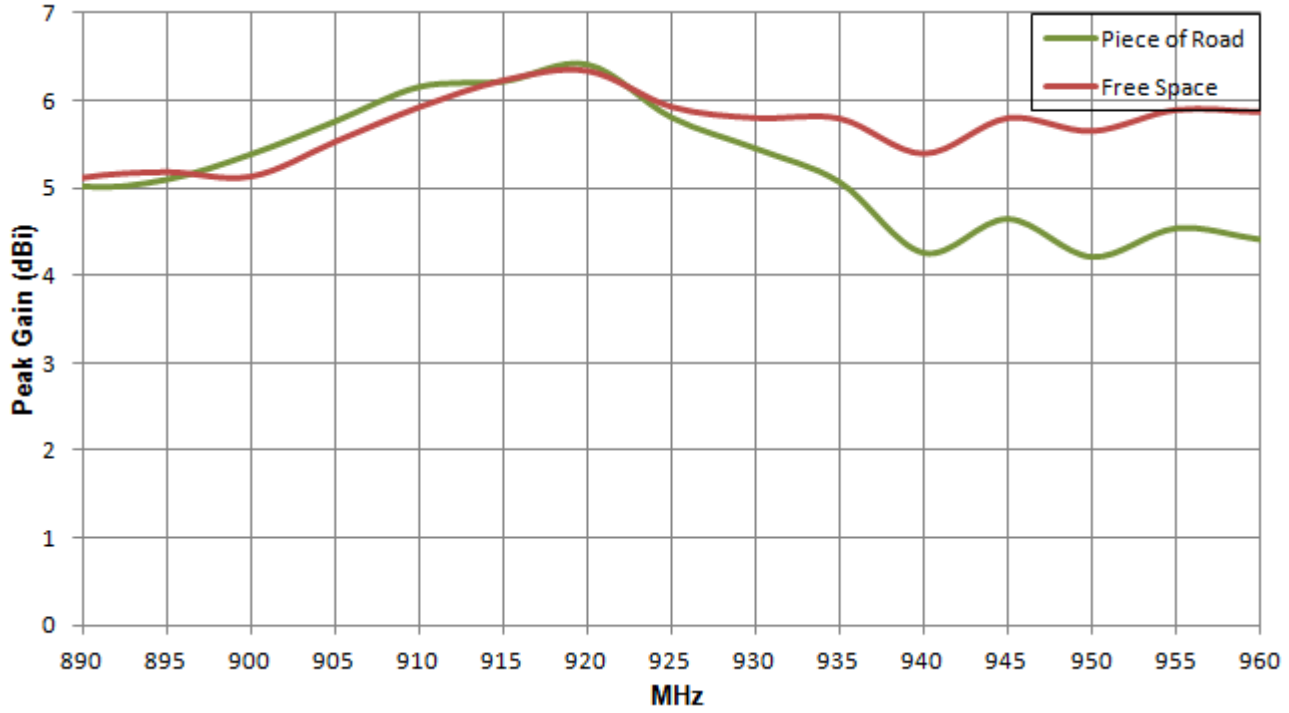


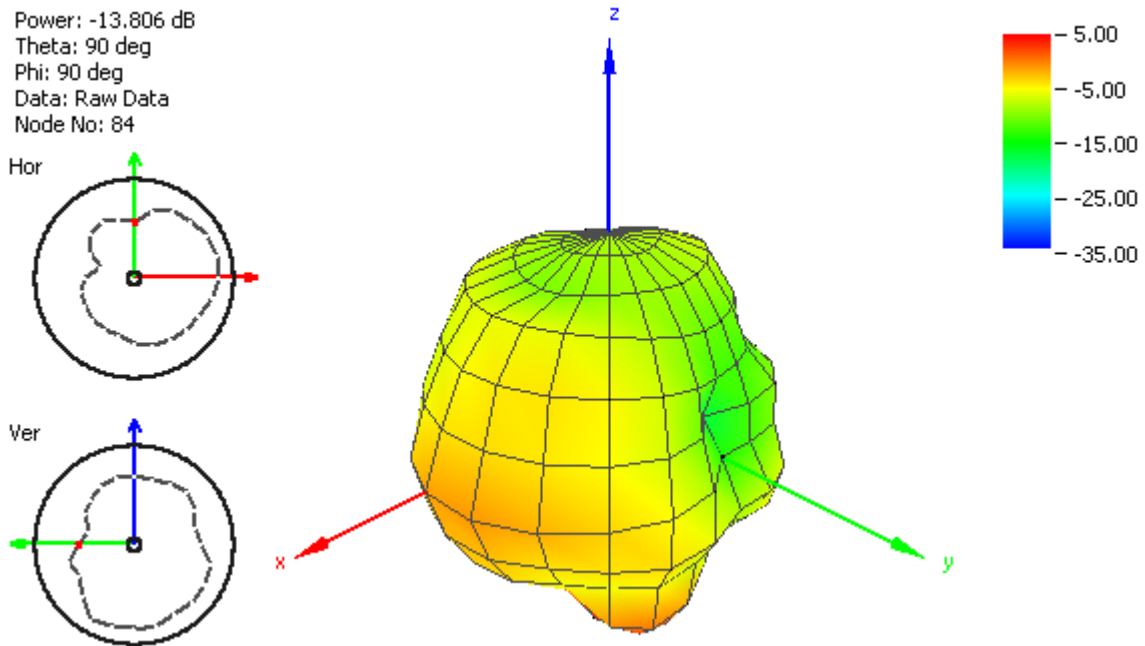
Figure 3. Efficiency of the 915MHz Road Marker in Free Space and on Piece of Road.

### 4.3. Peak Gain

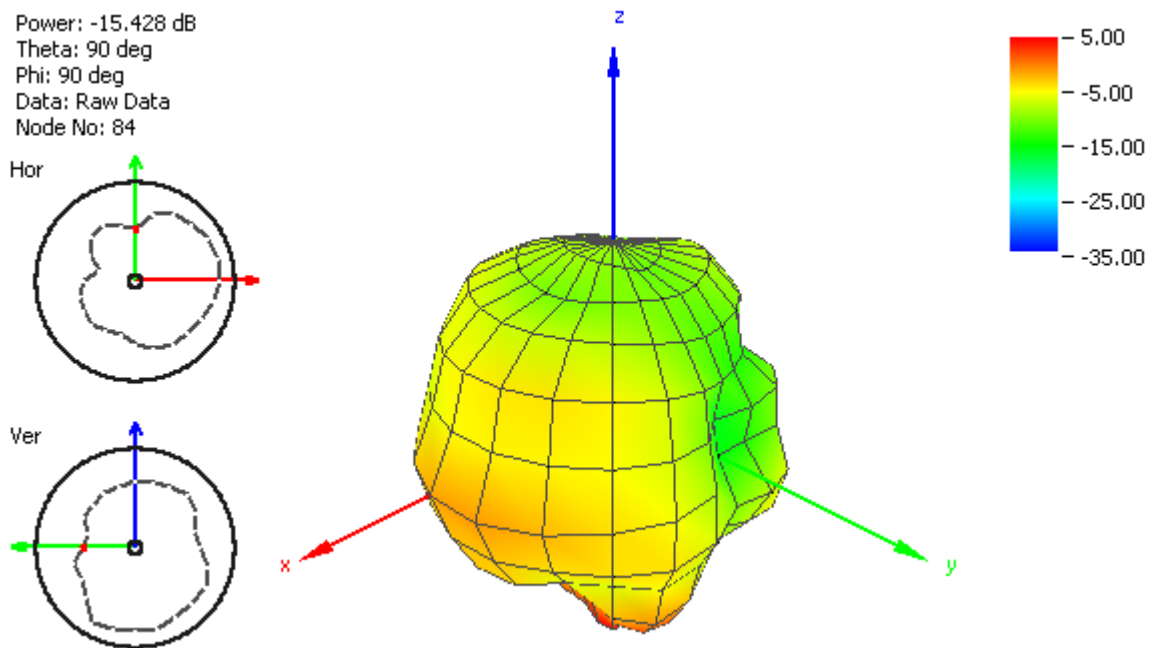


**Figure 4.** Peak Gain 915MHz Road Marker in Free Space and on Piece of Road

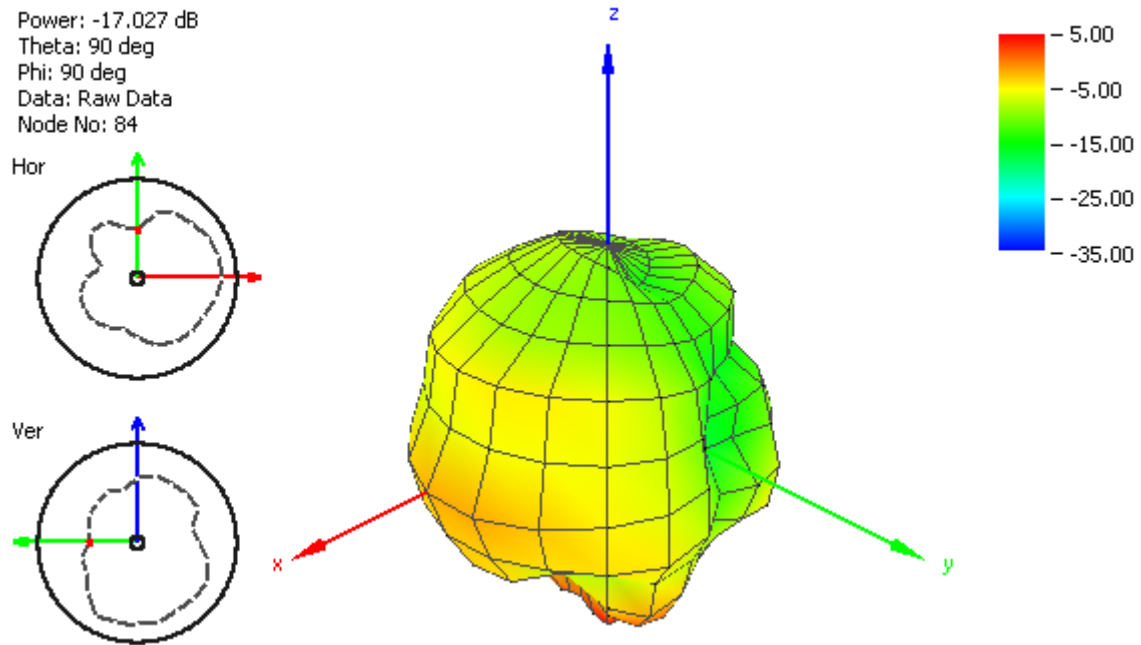
### 4.4. Radiation Pattern



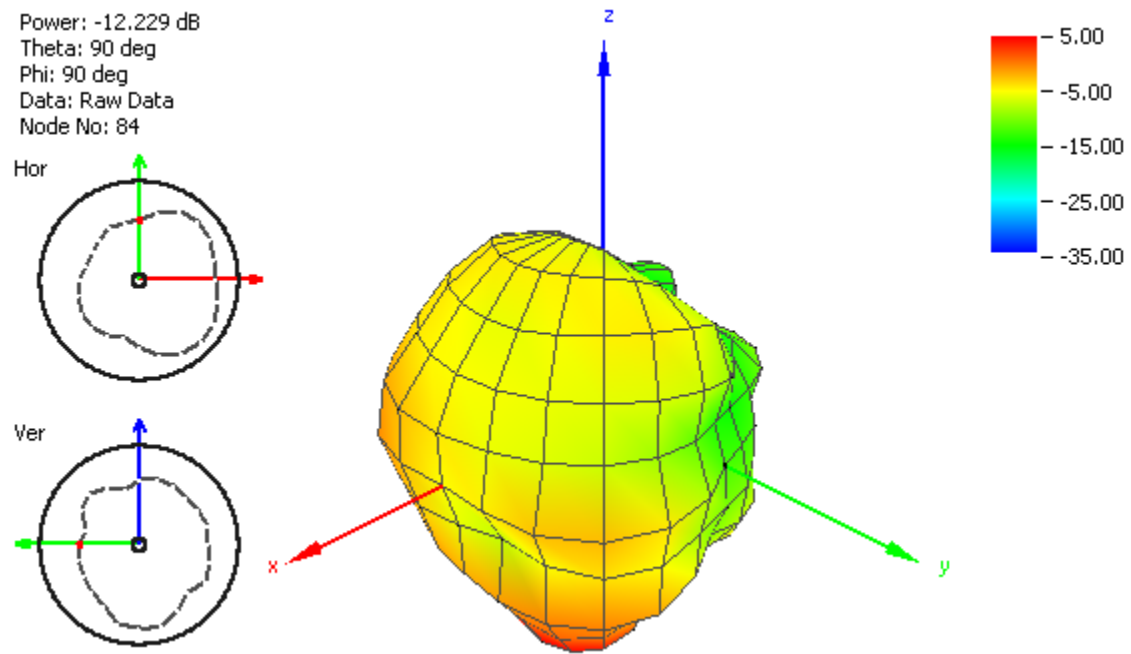
**Figure 5.** Road Marker ISM Antenna radiation pattern at 900 MHz on Piece of Road.



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

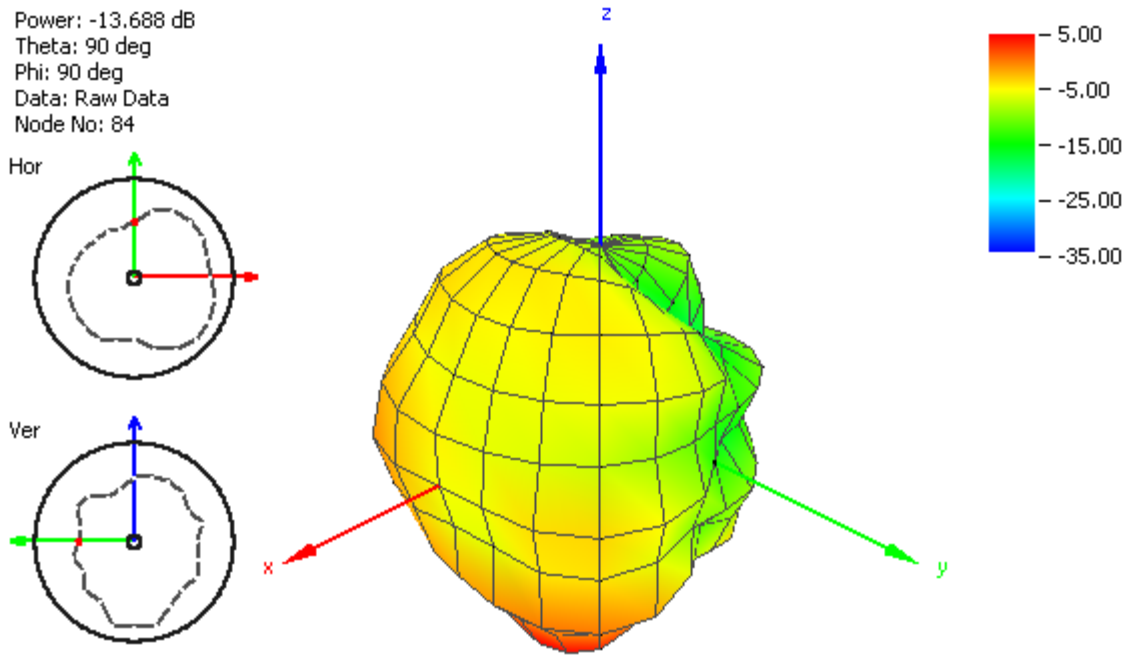


**Figure 7.** Radiation pattern at 930 MHz on a Piece of Road.

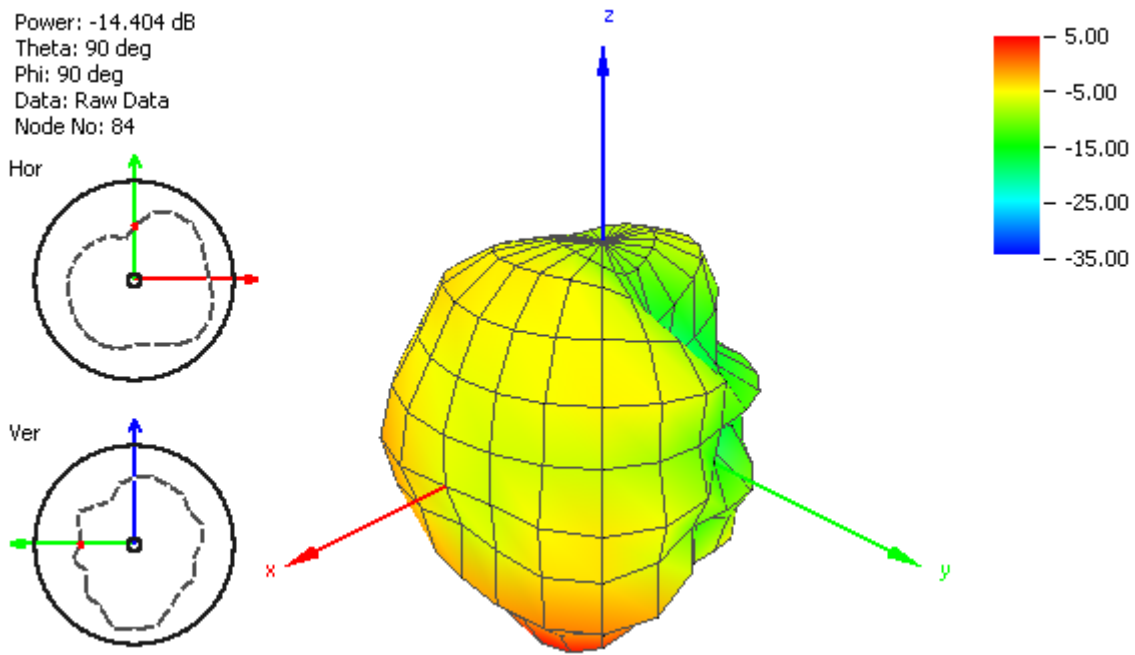


**Figure 8.** Radiation pattern at 900 MHz in Free Space.



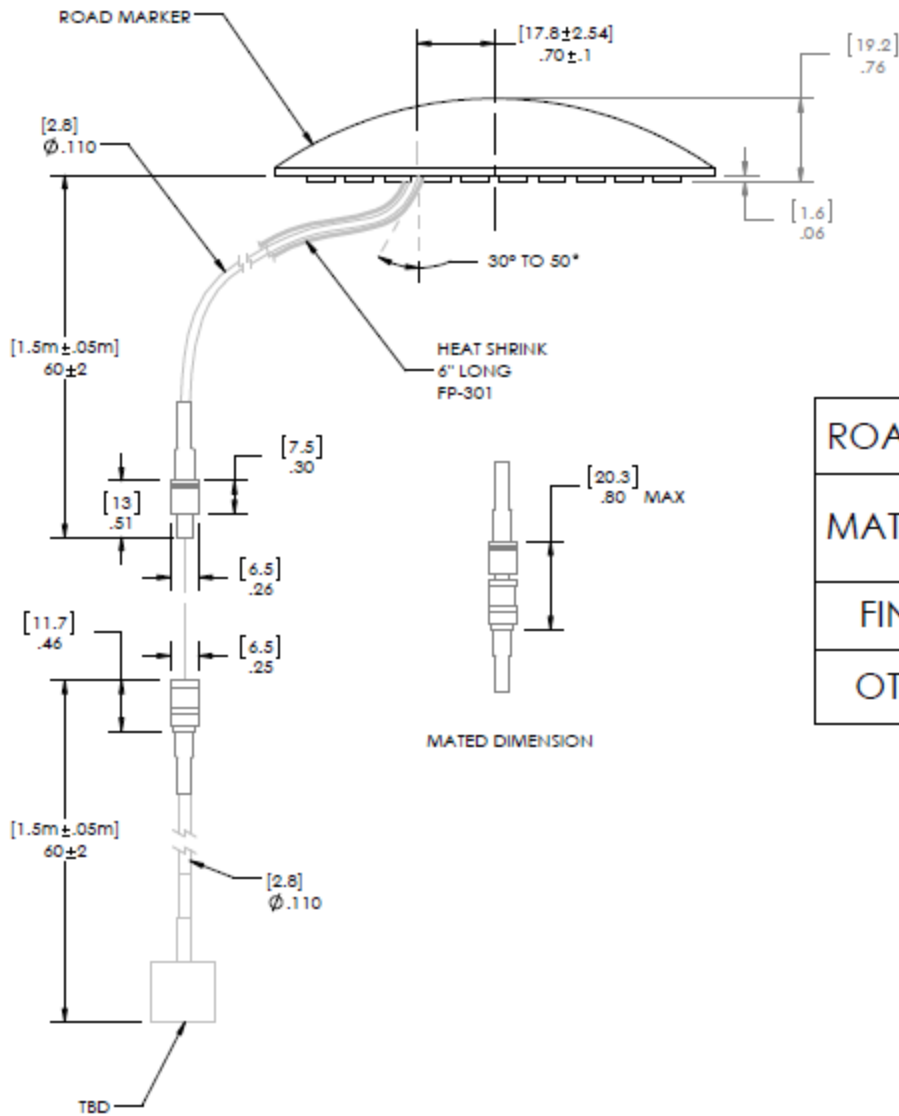


**Figure 9.** Radiation pattern at 915 MHz in Free Space.



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

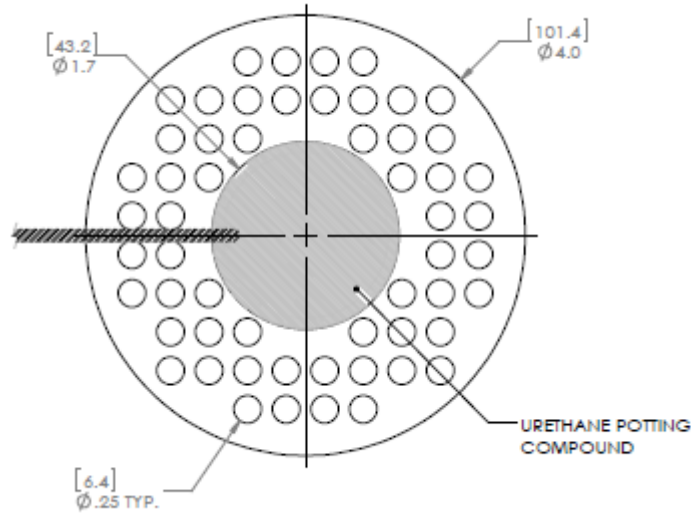
## 5. MECHANICAL DRAWING




ROAD MARKER SPECIFICATIONS	
MATERIAL	ABS OR POLYPROPYLENE
FINISH	WHITE
OTHER	NON-REFLECTIVE

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. CONFIGURATION OF BUMPS OR PROTRUSIONS SUBJECT TO CHANGE WITHOUT NOTICE.



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		DIMENSIONS ARE IN INCHES		NAME	DATE
		TOLERANCES:		DRAWN	TKV 06/07/2013
		FRACTIONAL ±		CHECKED	
		ANGULAR: MACH ± BEND ±		ENG APPR	
		TWO PLACE DECIMAL ±.05		MFG APPR	
		THREE PLACE DECIMAL ±.01		Q.A.	
		MATERIAL		COMMENTS:	
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			
				 <b>ANTENNA, ROAD MARKER, PLASTIC</b>	
		SIZE	DWG. NO.	REV.	
		<b>A</b>	MARKER 1	<b>X1</b>	
		SCALE:1:2	WEIGHT:	SHEET 1 OF 1	