SPECIFICATION

Part Number:	**RG.01.26.1500Q**
Product Name:	Road Marker Quad Band Cellular Antenna
	AMPS/GSM/PCS/DCS
	850/900/1800/1900
Features:	Low Profile - Diameter 99mm*Height 19 mm
	UV and Vandal resistant ABS housing
	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				
Band	**AMPS**	**GSM**	**DCS**	**PCS**
Frequency (MHz)	824-894	880-960	1710-1880	1850-1990
Polarization	Linear			
Impedance (Ohms)	50 Ohms			
Peak Gain (dBi)	2.5	2.5	1	0.6
Efficiency (%)	30	28	18	18
Return Loss (dB)	-18	-18	-18	-16
Radiation Properties	Omni-directional			
Max Input Power (Watts)	10			
MECHANICAL				
Dimensions	Height = 19 mm and Diameter = 99mm			
Cable	Belden 7805R Coaxial Cable			
Connector	Fully Customizable			
Casing	UV Resistant ABS			
Sealant	Potting			
ENVIRONMENTAL				
Protection	IP67			
Corrosion	5% NaCI 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

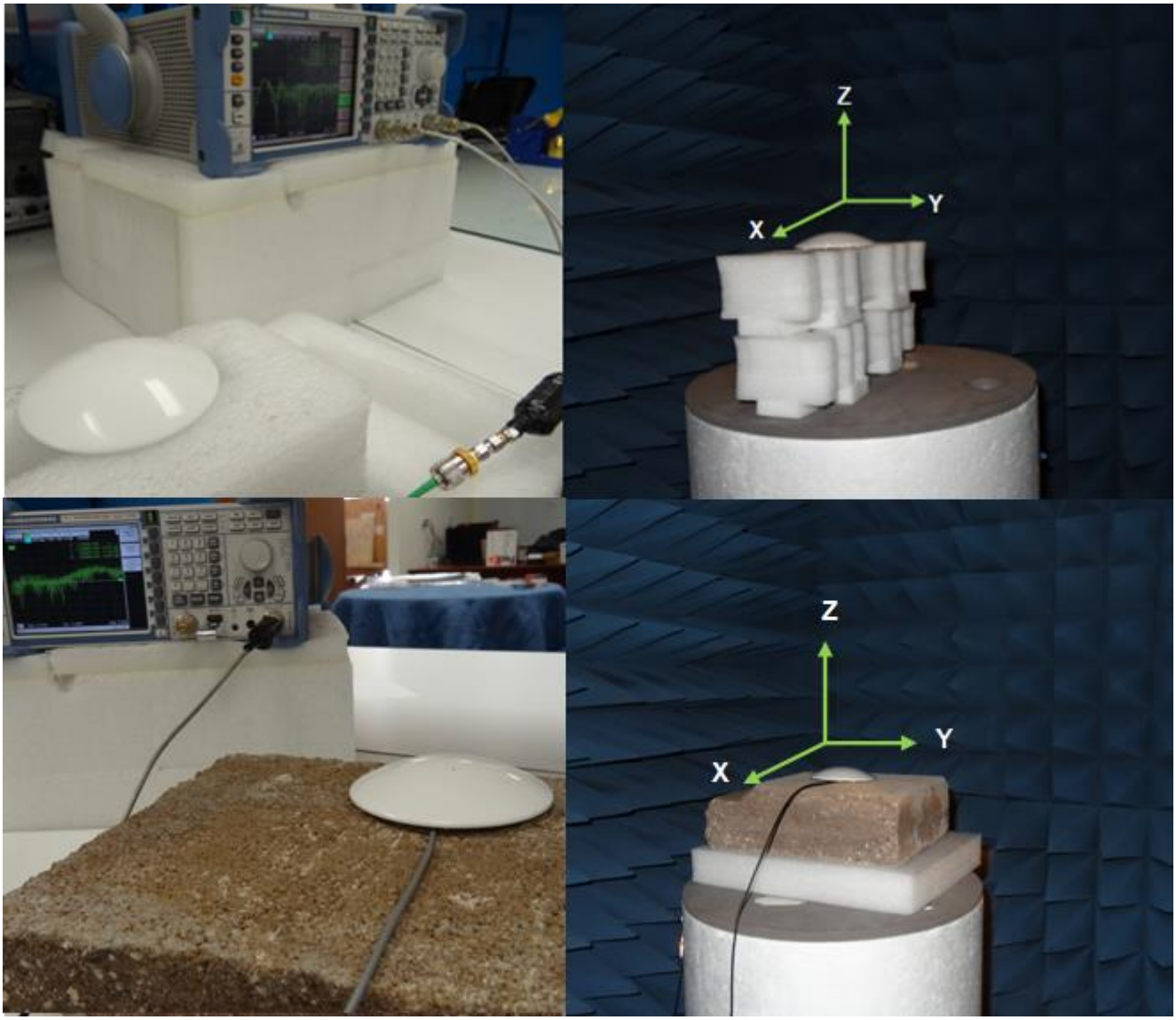


Figure 1. Impedance (left hand)
and peak gain, efficiency and radiation pattern measurements (right hand).

4. Antenna Parameters

4.1. Return Loss

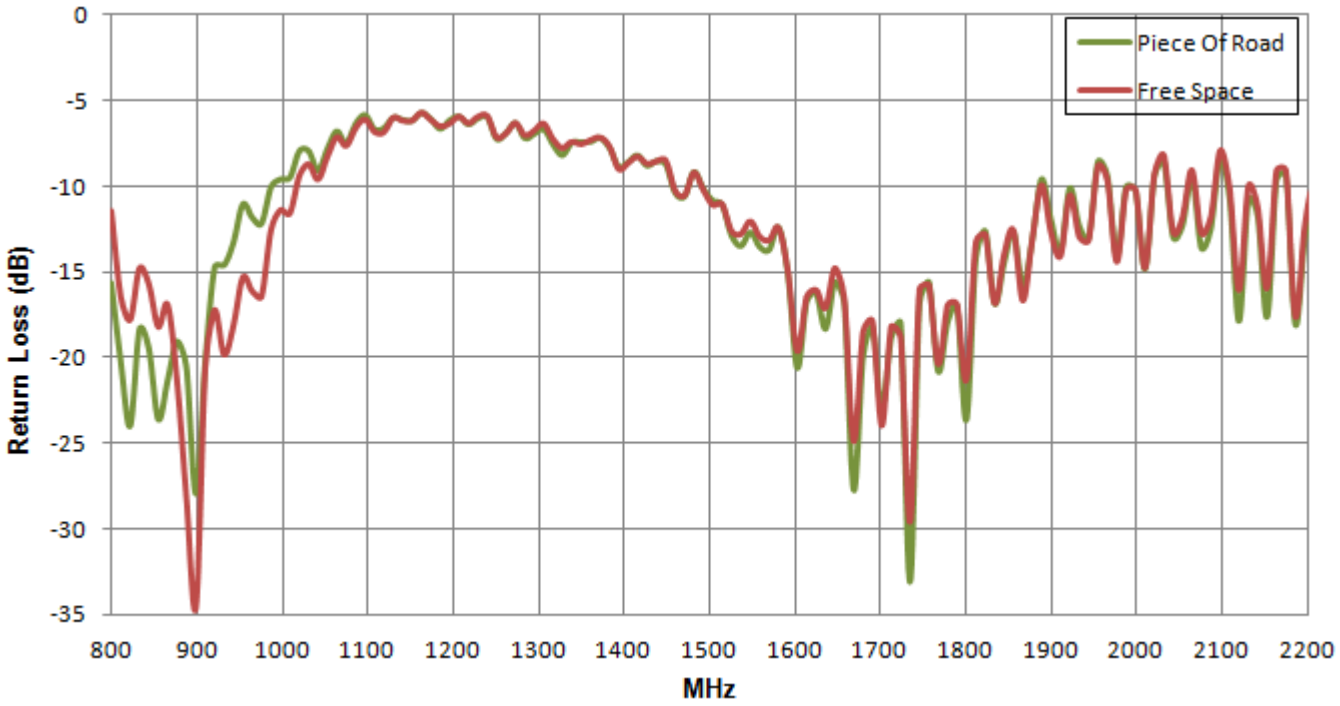


Figure 2. Return Loss Cellular Road Marker in Free Space and on Piece of Road.

4.2. Efficiency

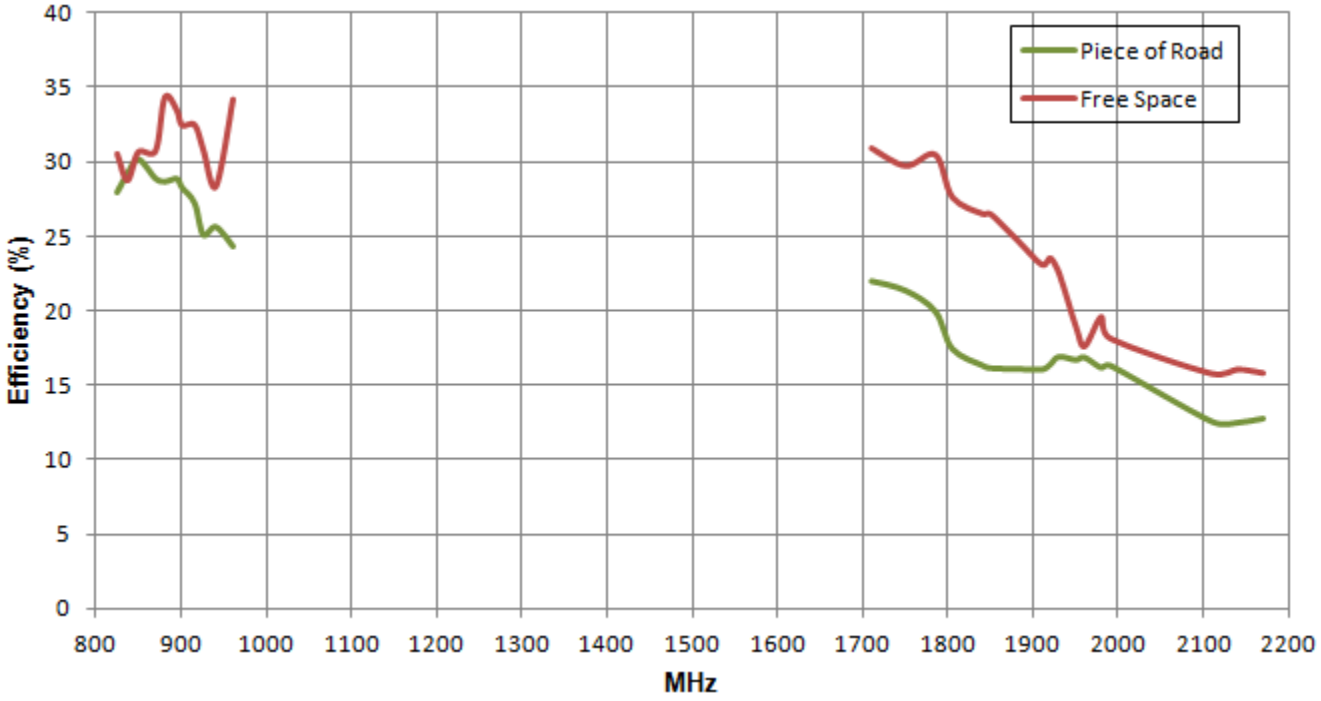


Figure 3. Efficiency Cellular Road Marker in Free Space and on Piece of Road.

4.3. Peak Gain

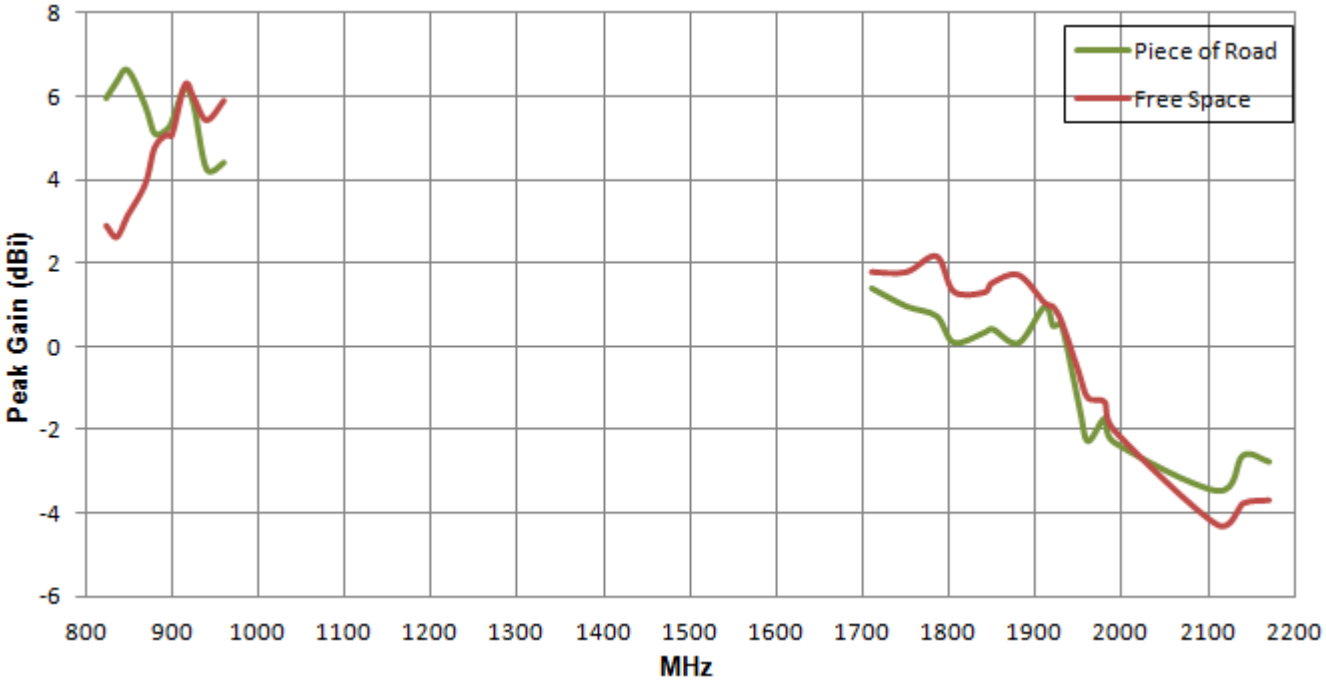


Figure 4. Peak Gain Cellular Road Marker in Free Space and on Piece of Road

4.4. Radiation Pattern

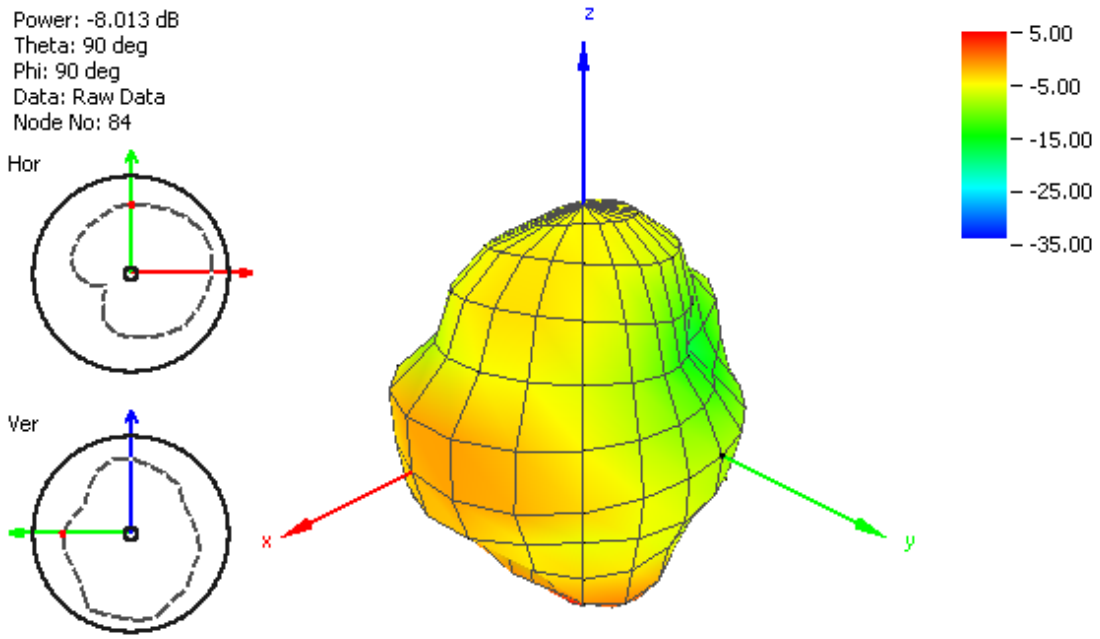


Figure 5. Cellular Road Marker radiation pattern at 849 MHz on Piece of Road.

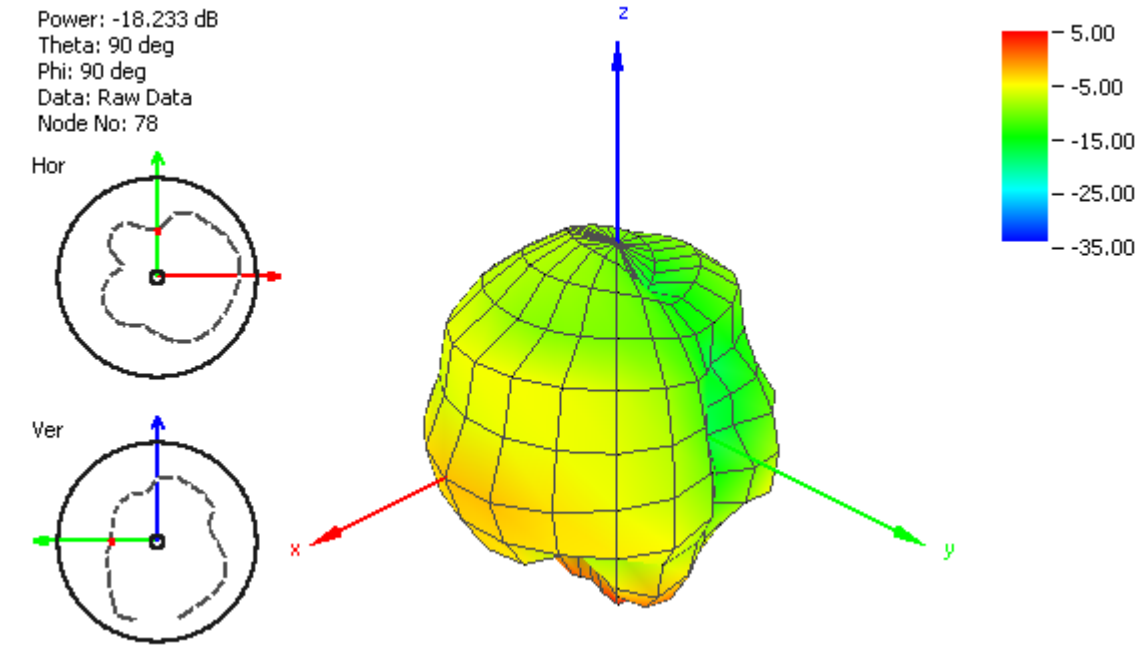


Figure 6. Cellular Road Marker radiation pattern at 940 MHz on Piece of Road.

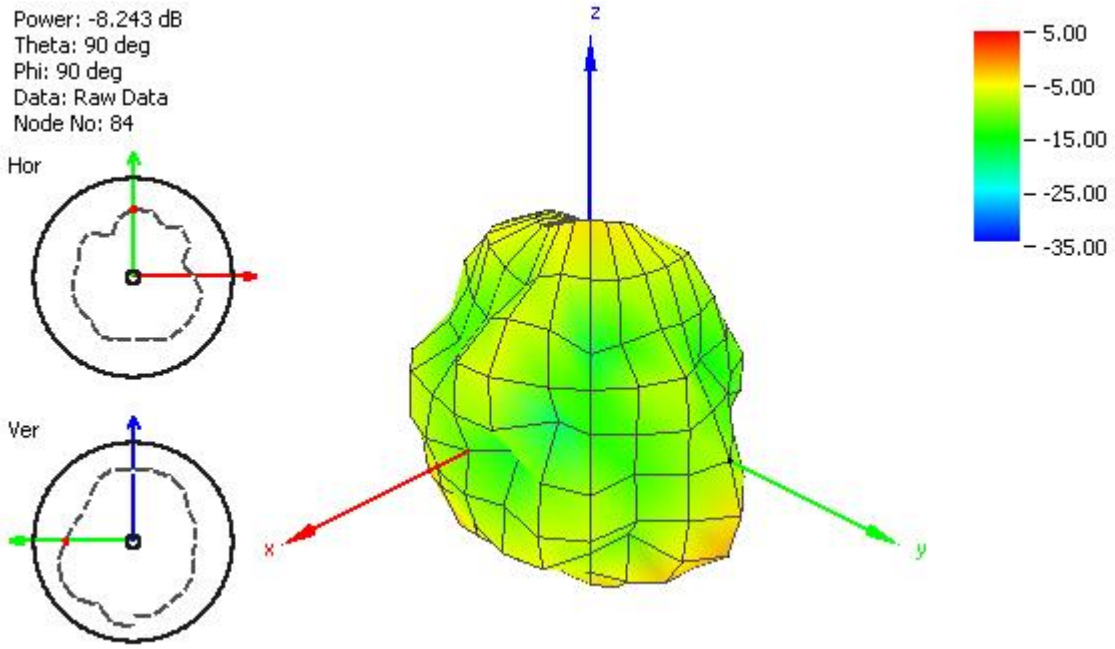


Figure 7. Cellular Road Marker radiation pattern at 1840 MHz on Piece of Road.

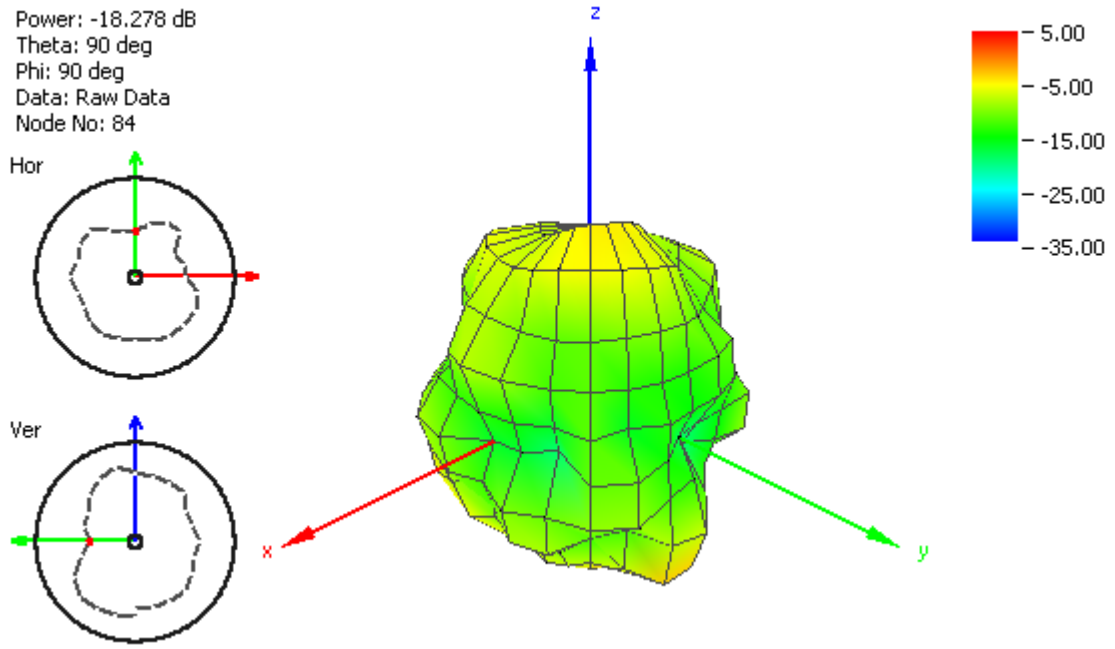


Figure 8. Cellular Road Marker radiation pattern at 1950 MHz on Piece of Road.

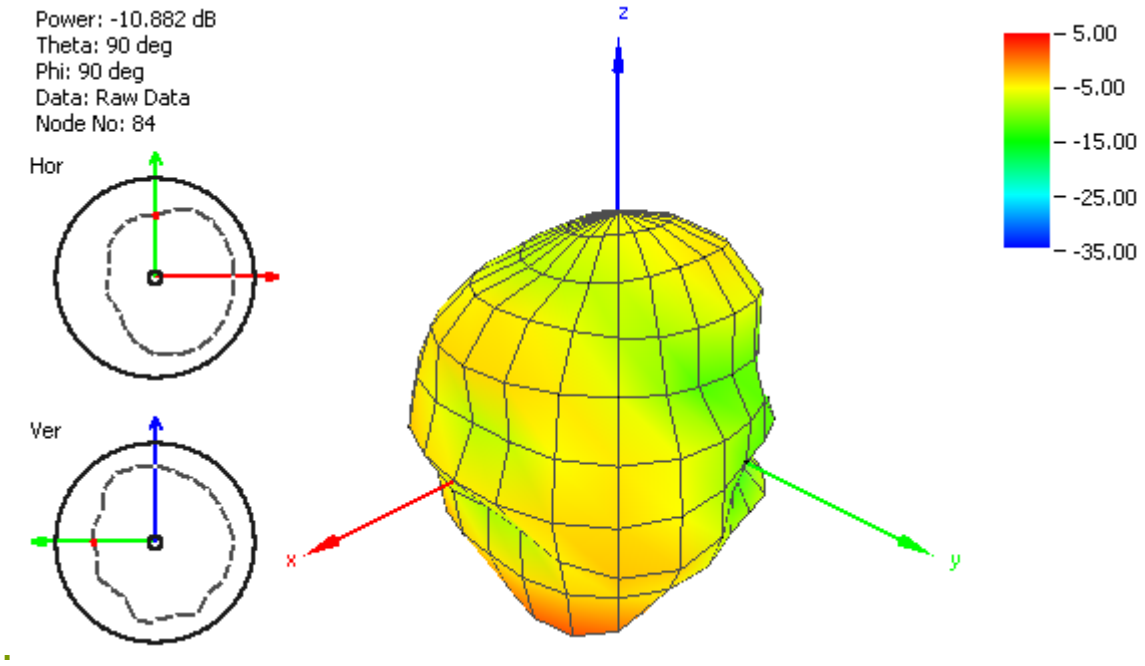


Figure 9. Cellular Road Marker radiation pattern at 849 MHz in Free Space.

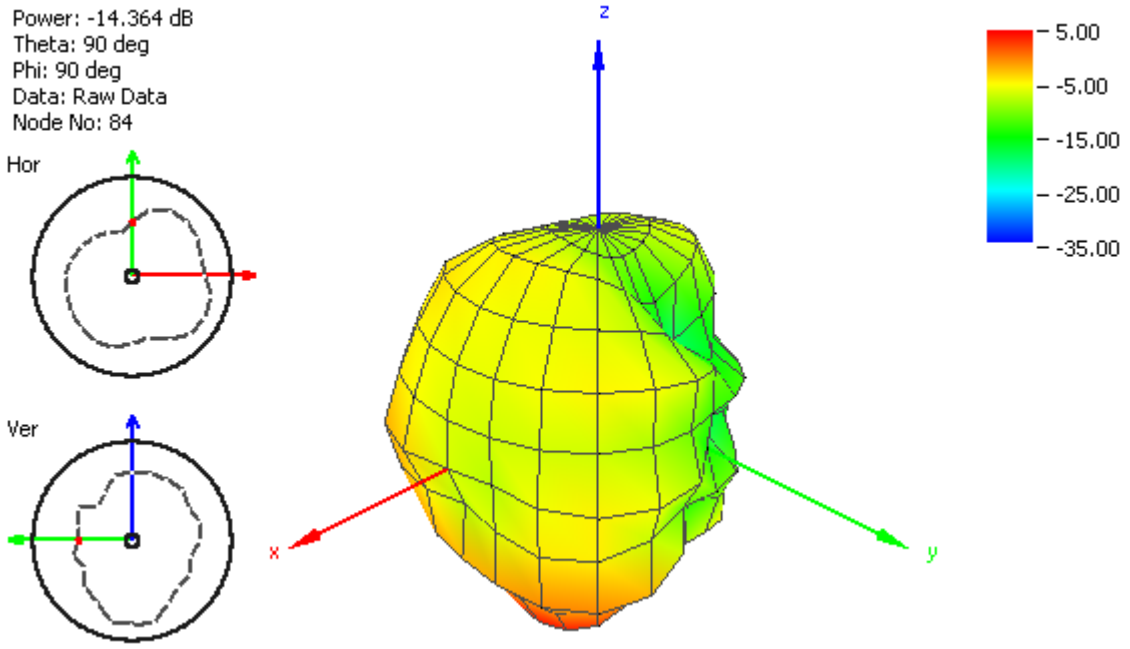


Figure 10. Cellular Road Marker radiation pattern at 940 MHz in Free Space.

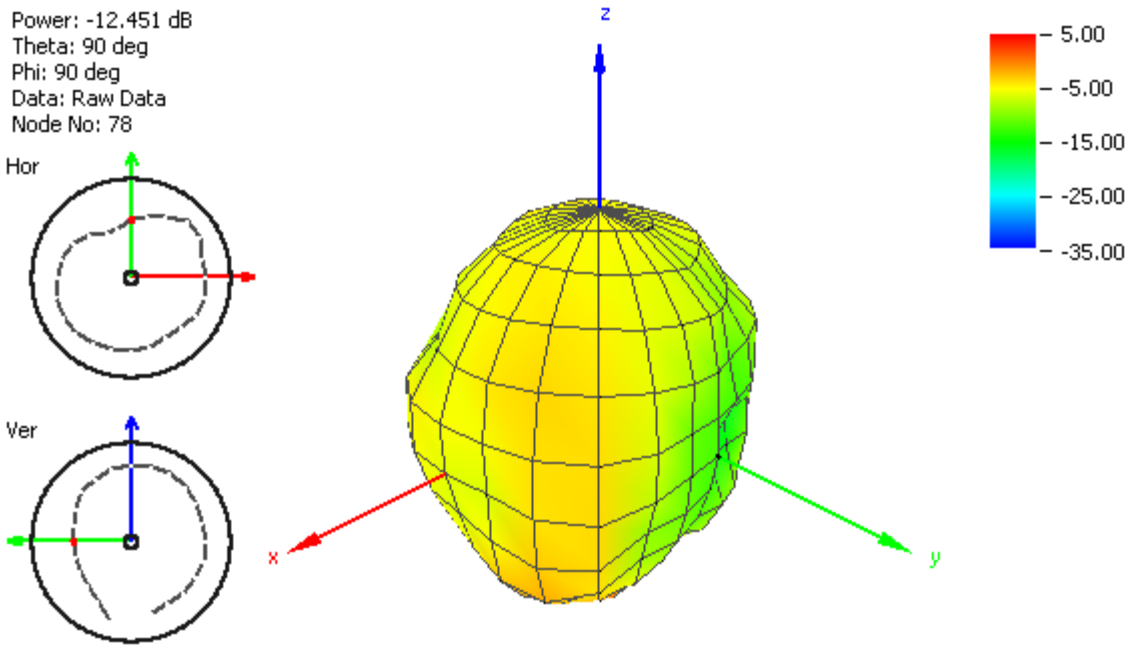


Figure 11. Cellular Road Marker radiation pattern at 1840 MHz in Free Space.

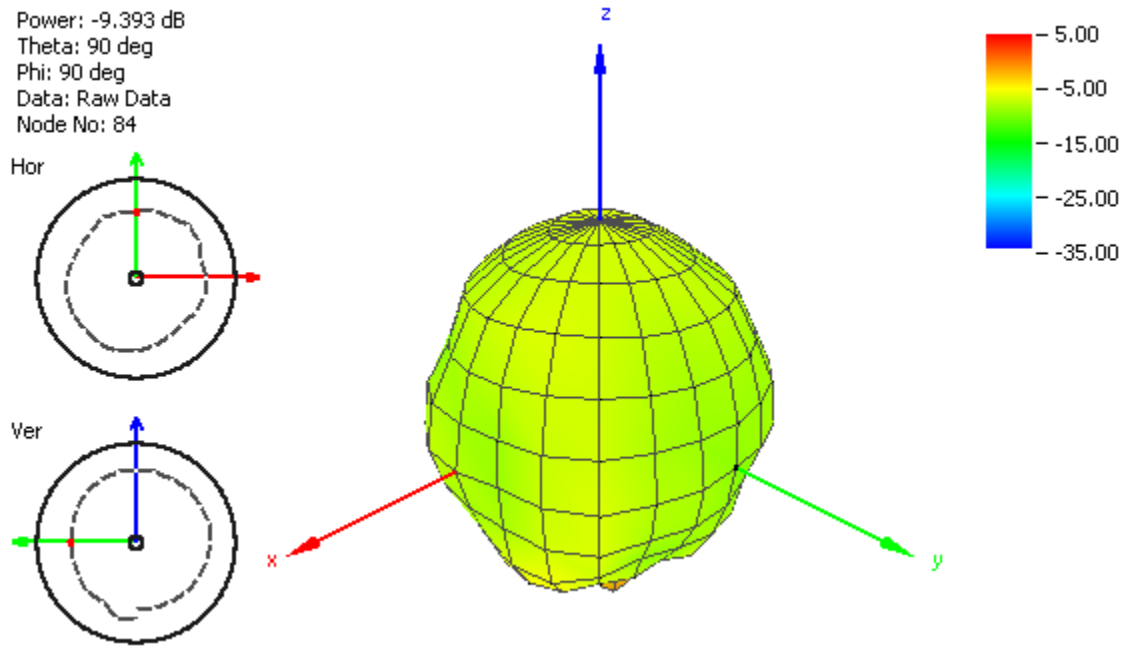
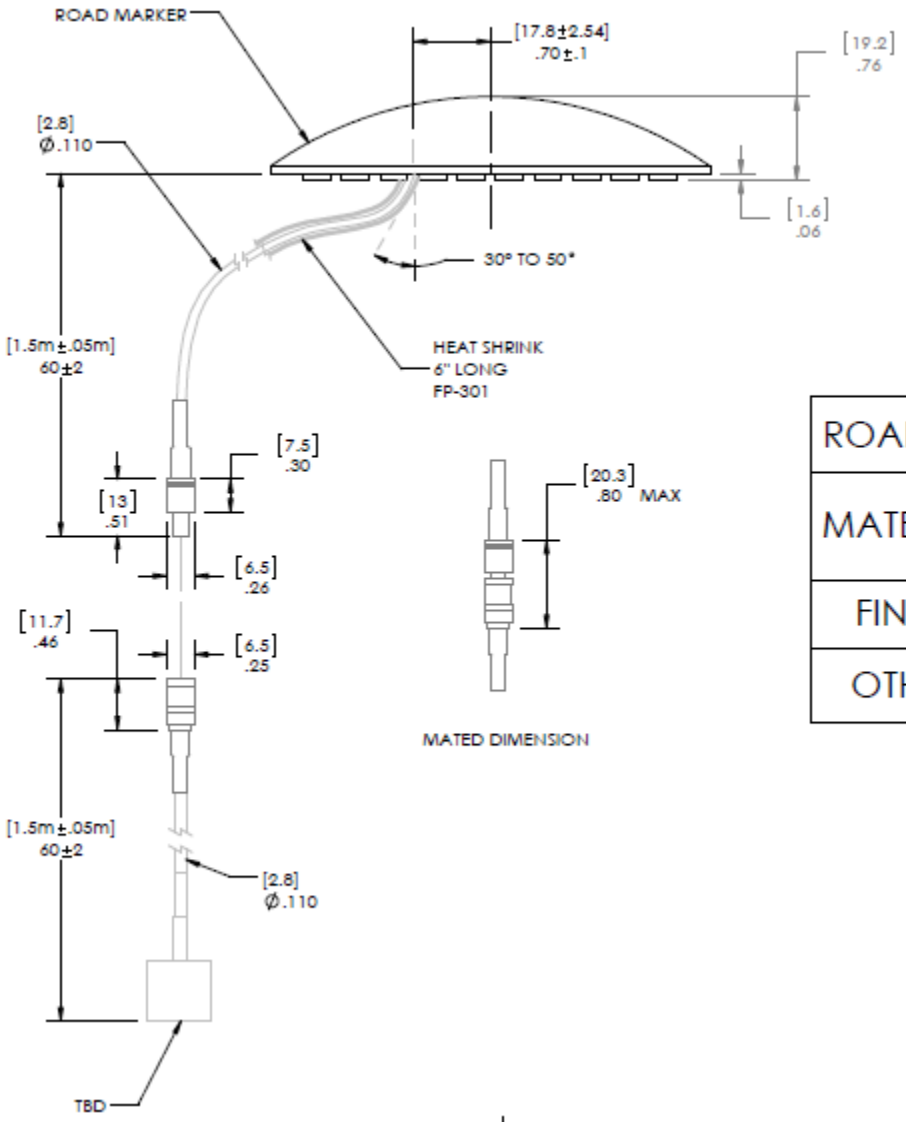


Figure 12. Cellular Road Marker radiation pattern at 1940 MHz in Free Space.

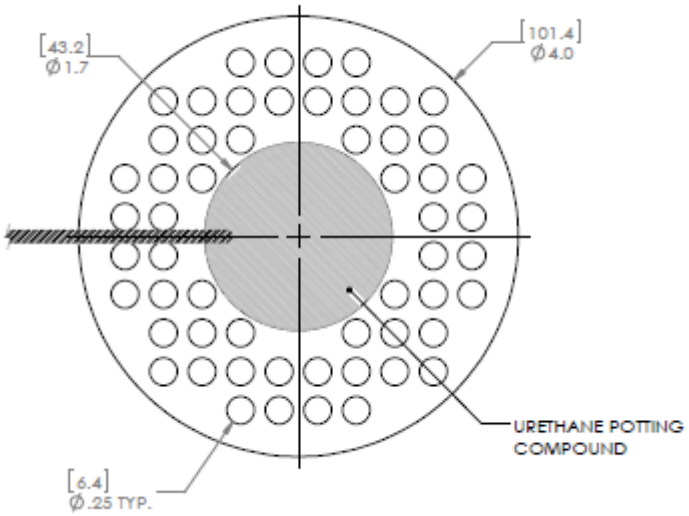
5. MECHANICAL DRAWING



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.



		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ±.05 THREE PLACE DECIMAL ±.01		NAME	DATE
			DRAWN	TKV	06/07/2013
			CHECKED		
			ENG APPR		
			MFG APPR		
		MATERIAL	Q.A.		
			COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

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taoglas antenna solutions

ANTENNA, ROAD MARKER, PLASTIC

SIZE	DWG. NO.	REV.
A	MARKER 1	X1
SCALE:1:2	WEIGHT:	SHEET 1 OF 1