

RF
NEXUS

Product Datasheet

NEX15-EXT-KB3-001

Key Features

- LoRa
- Sigfox/Z-Wave/ISM
- 865/870 & 902/928 MHz
- Screw Mount
- Usable With/Without Ground Plane
- Water Resistant
- Dimensions
Ø 42 × 94 mm



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1- Introduction

The NEX15-EXT-KB3-001 antenna is engineered for reliable performance across a range of wireless communication protocols, including LoRa, Sigfox, Z-Wave, and ISM bands, covering the 865/870 MHz and 902/928 MHz frequencies. Its versatile design makes it ideal for use in IoT applications that require robust and long-range communication in both urban and remote environments.

With a screw-mount system, the NEX15-EXT-KB3-001 offers easy installation and secure attachment, ensuring stability in various deployment scenarios. It is designed to operate efficiently with or without a ground plane, providing flexibility for integration into different systems. Furthermore, this antenna is built to be water-resistant, making it suitable for outdoor and harsh environments where durability is essential.

Measuring $\varnothing 42 \times 94$ mm, the NEX15-EXT-KB3-001 combines high performance with a compact, space-efficient design, making it an excellent choice for applications in smart cities, agriculture, logistics, and other IoT-focused industries. Its durable construction and wide frequency support ensure consistent and reliable communication even in challenging conditions.

2- Specifications

Mechanical		
Size	94mm	
Diameter	42 mm	
Connector	SMA(M)	
Screw	M12 (1.75)	
Casing	ABS(UV)	
Weight	36g	
Electrical		
Frequency (GHz)	865/870	902/928
Return Loss (dB)	-6	-11
VSWR	3:1	1.78:1
Efficiency	4.8	1.1
Peak Gain (dB)	-0.8	-1.7
Impedance	50Ω	
Polarization	Linear	
Pattern	Omnidirectional	

*Data are given for antenna in free space with 3m LMR195 cable .

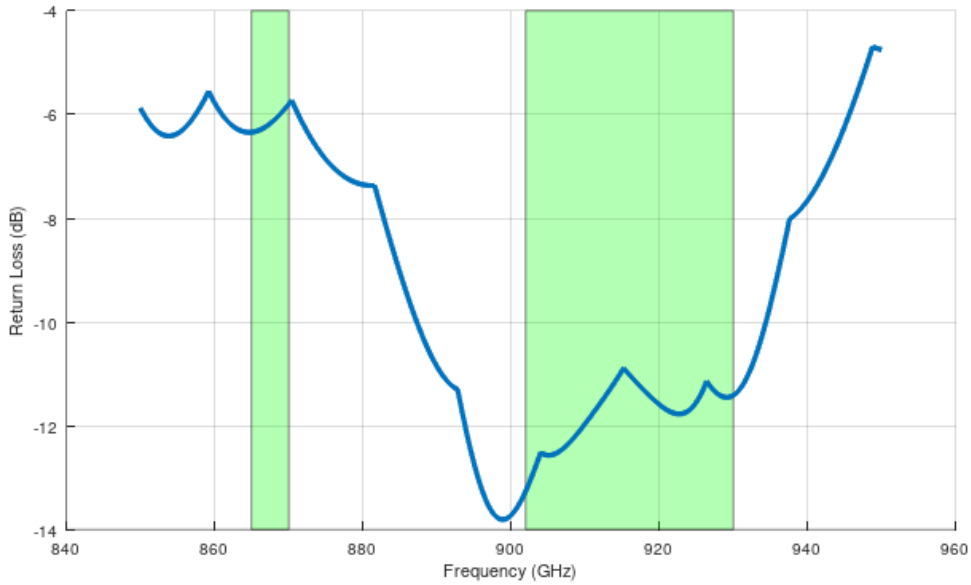
3- Antenna Parameters

The reflection performance of the NEX15-EXT-KB3-001 antenna was assessed for different scenarios:

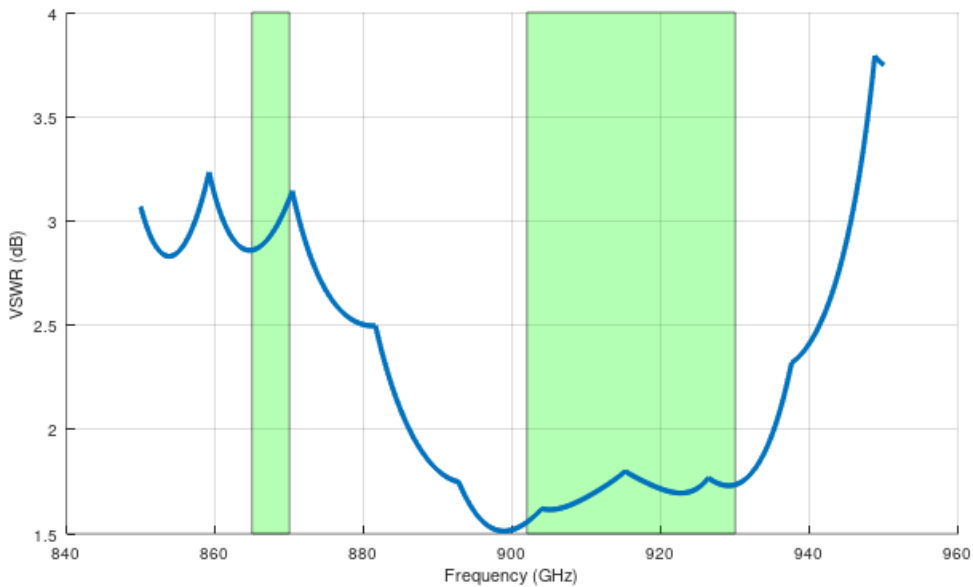
- In free space with 3m LMR195 cable
- In free space with different cable lengths
- On 30cm diameter metal ground plane with 3m LMR195 cable.

The efficiency results indicate that the antenna characteristic does not change with variations in cable length. It performs equally well in both free space and on a ground plane.

3.1- Return Loss

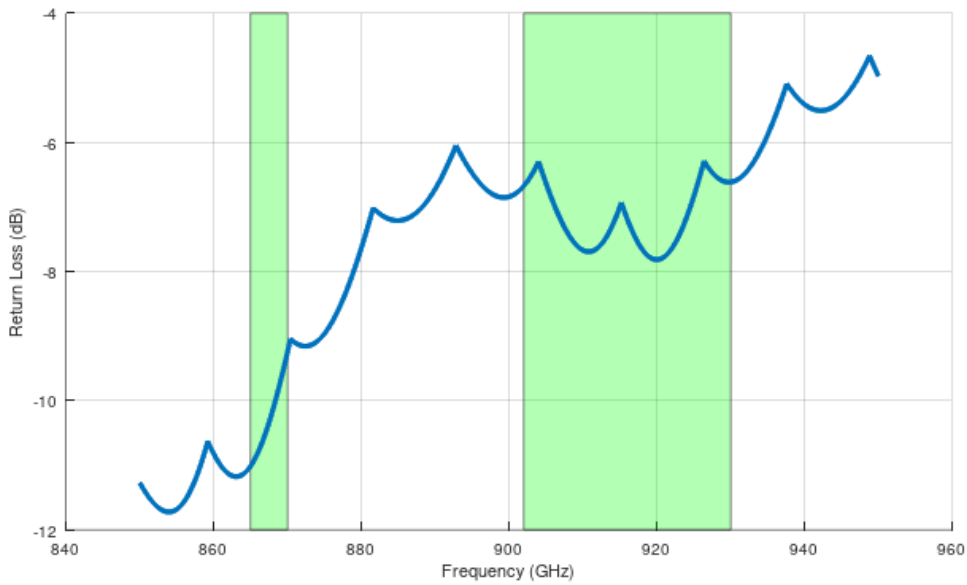


3.2- VSWR

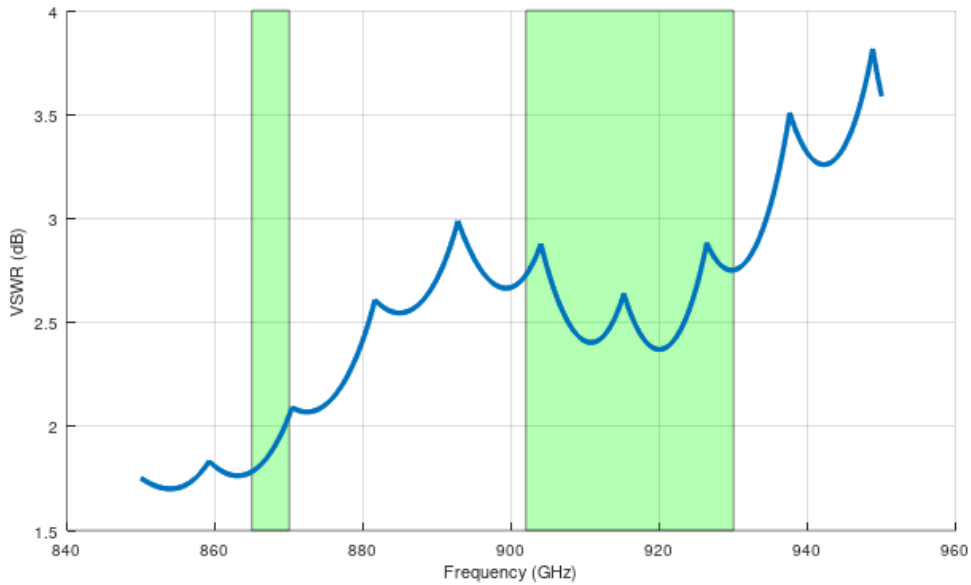


*Data are given for antenna in free space with 3m LMR195 cable .

3.3- Return Loss

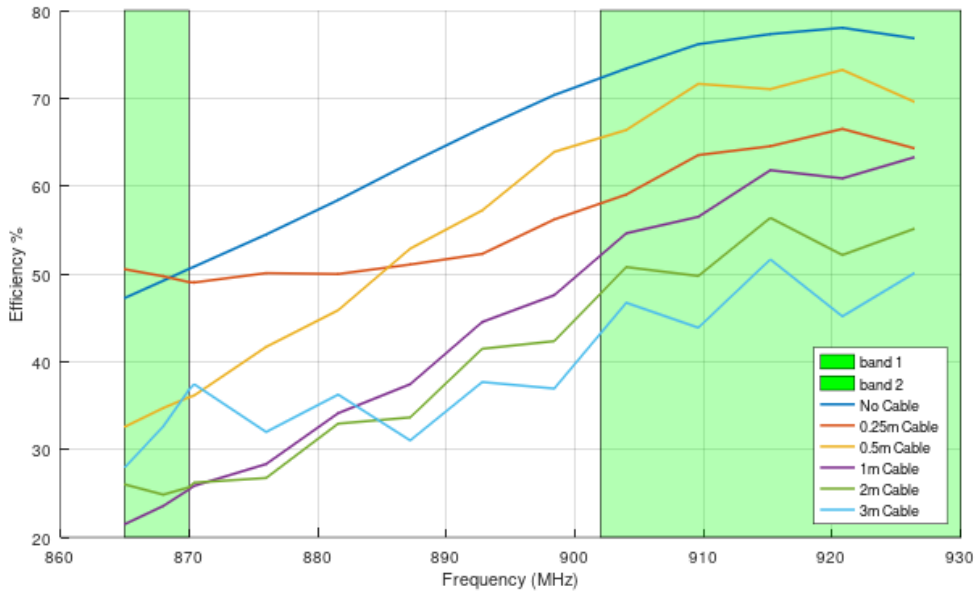


3.4- VSWR



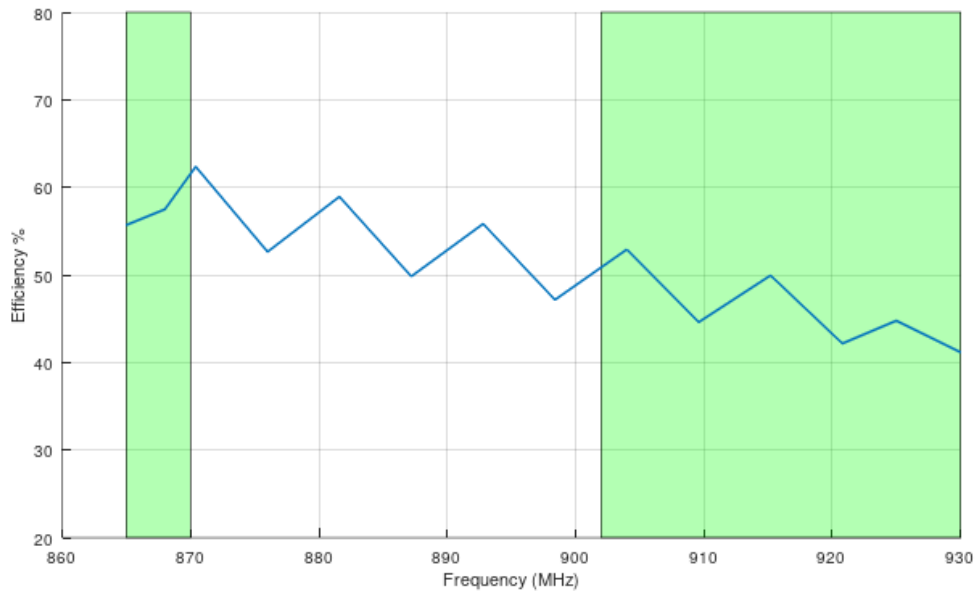
*Data are given for antenna on ground plane with 3m LMR195 cable .

3.5- Efficiency



*Data are given for antenna in free space with various LMR195 cable .

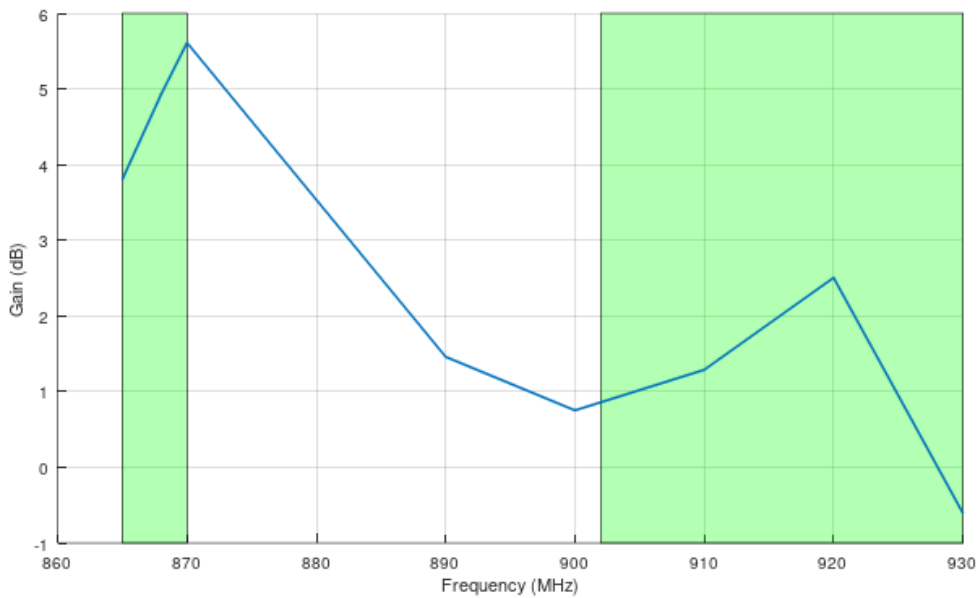
3.6- Efficiency



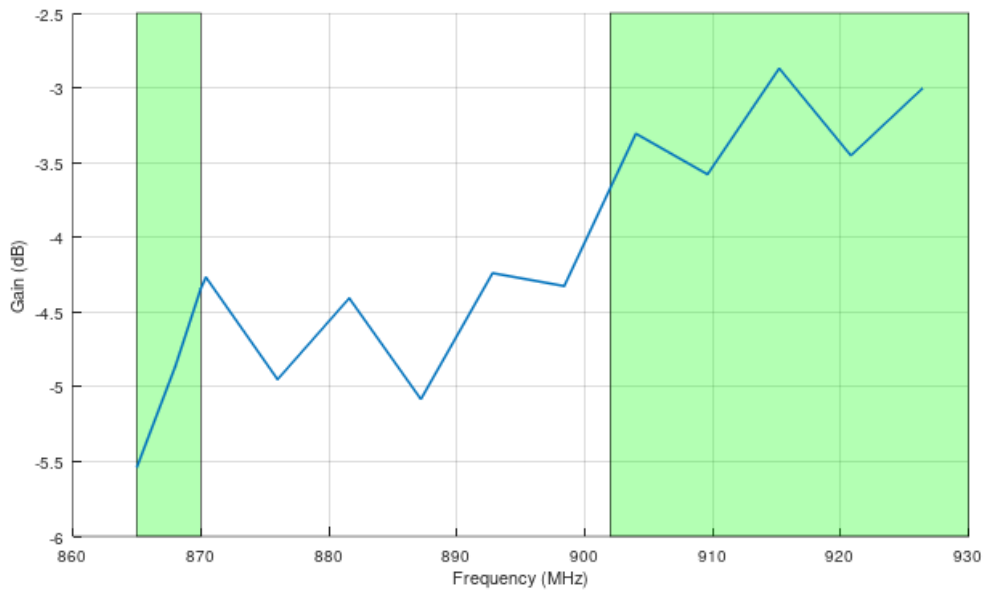
*Data are given for antenna on ground plane with 3m LMR195 cable .

4- Radiator Patterns

4.1- Peak Gain

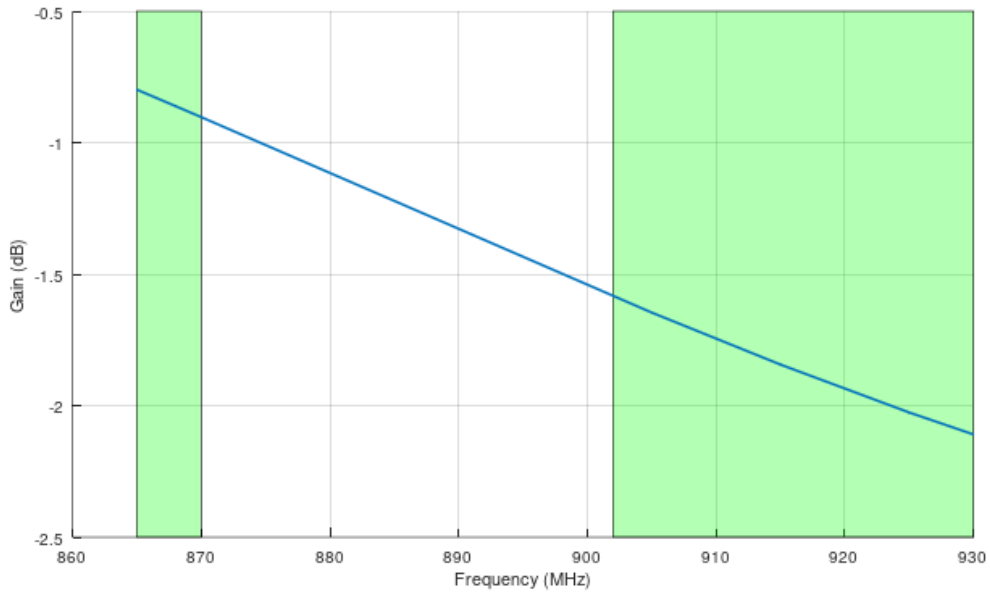


4.3- Average Gain

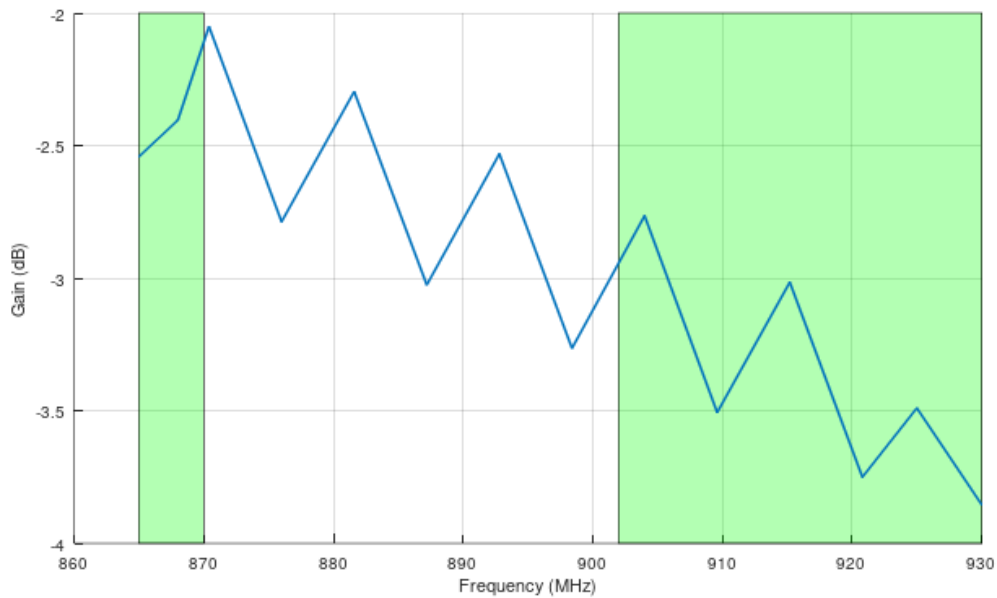


*Data are given for antenna in free space with 3m LMR195 cable .

4.2- Peak Gain

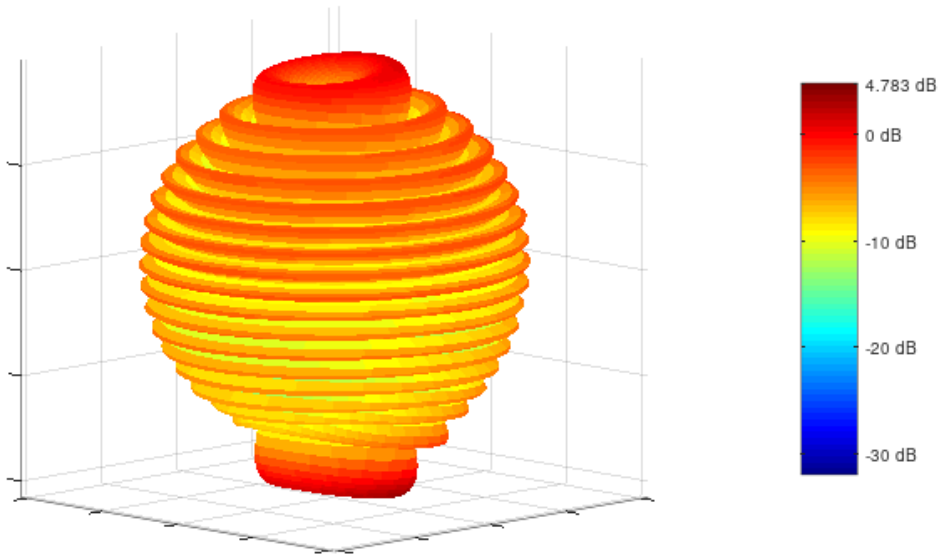


4.4- Average Gain

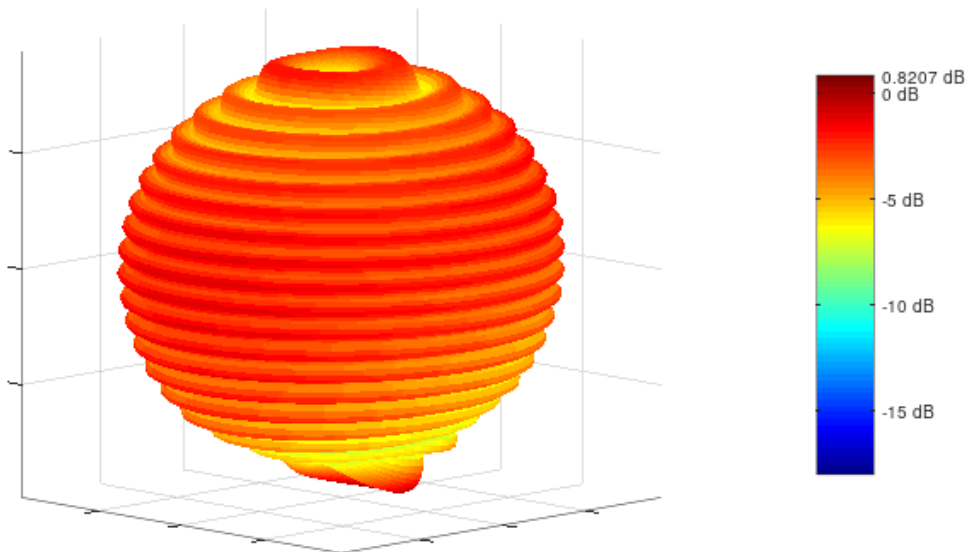


*Data are given for antenna on ground plane with 3m LMR195 cable .

4.5- 868 MHz Pattern

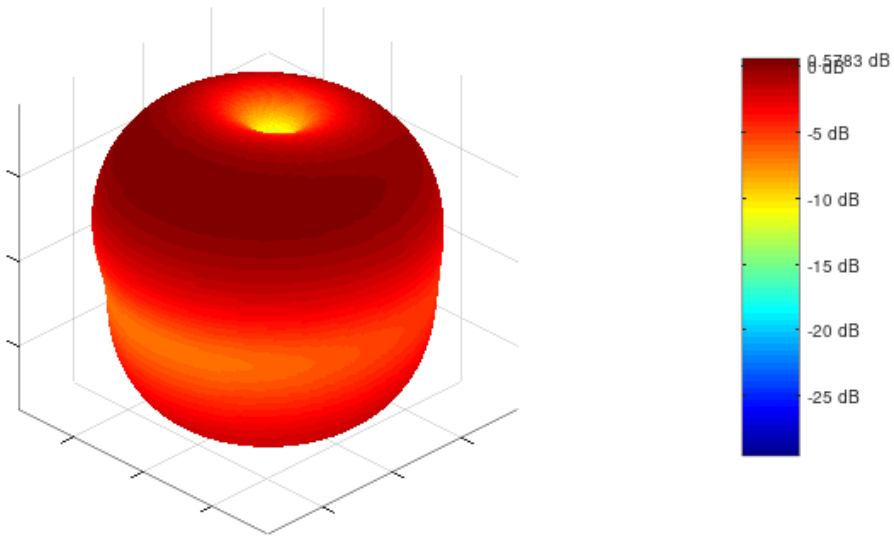


4.7- 915 MHz Pattern

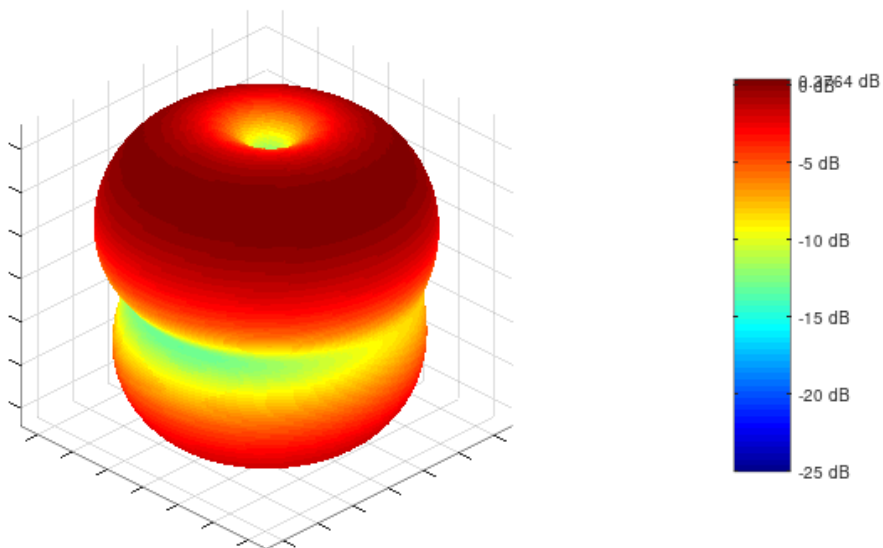


*Data are given for antenna in free space with 3m LMR195 cable .

4.6- 868 MHz Pattern

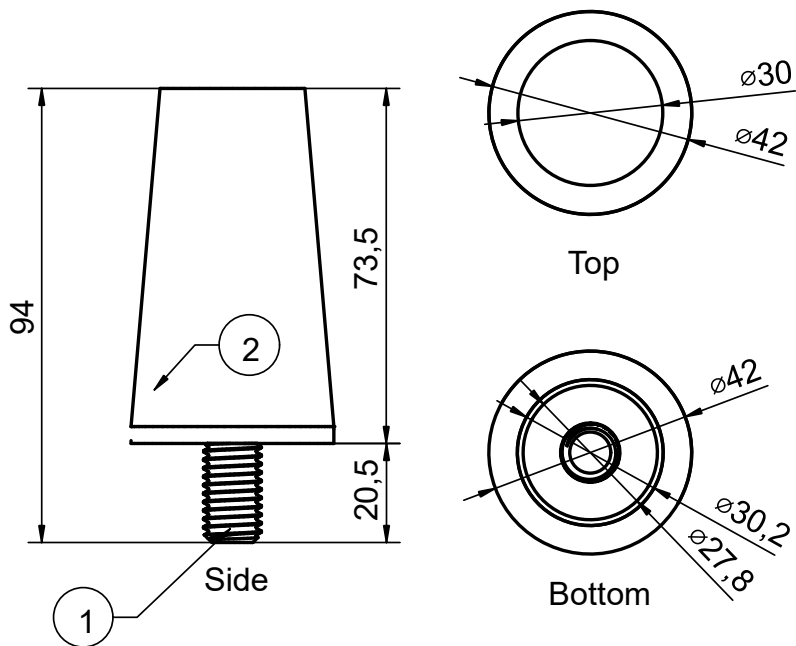


4.8- 915 MHz Pattern




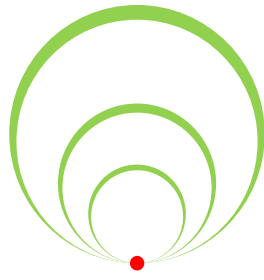
*Data are given for antenna on ground plane with 3m LMR195 cable .

5- Technical Drawing



1	M12 Screw with 1.75 step size
2	ABS-UV

Author: Talha Çalış	Legal owner: RF NEXUS Corp.	Scale: M 1:1	Sheet of 1
Appr.: Talha Çalış		Toler. #: - ?	Size: A4
TITLE: Plastic Based Cylinder Radom		Part material:	
		Part number:	
		Drawing no.: 1	
		Date: 2024-08-04	Revision: REV A
 Document type: Mechanical assembly drawing (R) DO NOT DUPLICATE THIS DRAWING TO THIRD PARTIES WITHOUT OWNER'S PERMISSION !			



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