



**AOS** (Antenna Optimisation Service)

**Customer:** Buddi

**Project:** Sure Tag

**Report:** SZ23-018-R05

18 JULY 2023



## Introduction

- Buddi supplied a full device for re-testing/matching DRACONIS for 928MHz ISM band.

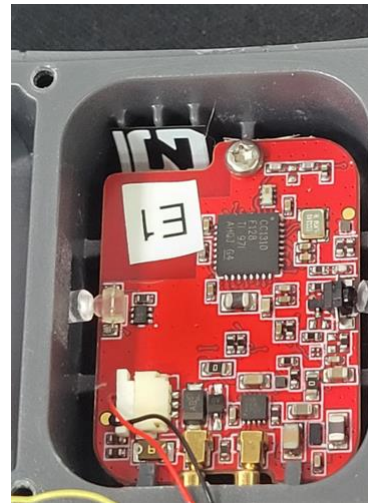
Antenna Requirements	
Application	Smart Wearable
Frequency Range (MHz)	902-928
Solution used	DRACONIS



## Test Setup

- The antenna designed was placed .
- A matching circuit was also used to optimise the impedance match.

Antenna adhered to the inside of the top lid enclosure. With the position defined with the plastics.

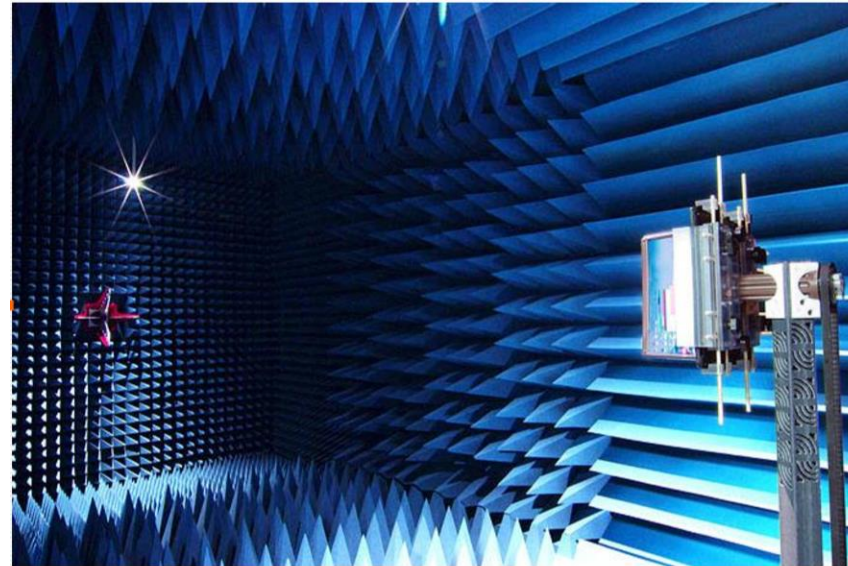


Final assembled device.



## Test Equipment

Equipment	Model/Type	Calibration due date
Network Analyser	Rhode&Schwarz ZNB-8	02/2024
Calibration Kit	Rhode&Schwarz ZV-Z132	02/2024
Chamber	AMS-8500	CTIA Approved IST



## Result Summary

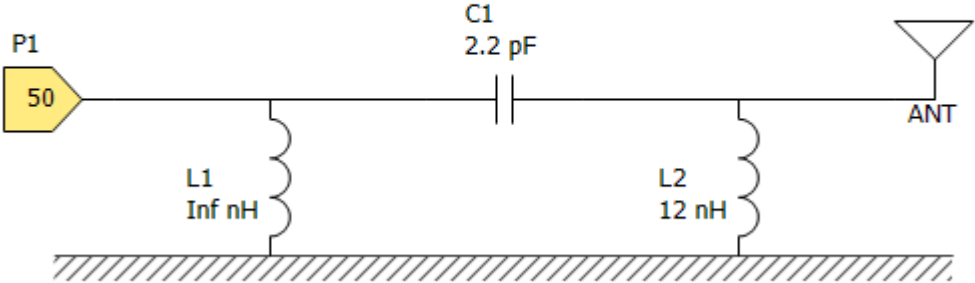
### DRACONIS Free space

Frequency Range (MHz)	902-928
Peak Efficiency (%)	15.4
Avg Efficiency (%)	12.9
Peak Gain (dBi)	-5.30

### DRACONIS Phantom17.6

Frequency Range (MHz)	902-928
Peak Efficiency (%)	18.5
Avg Efficiency (%)	17.6
Peak Gain (dBi)	-3.40

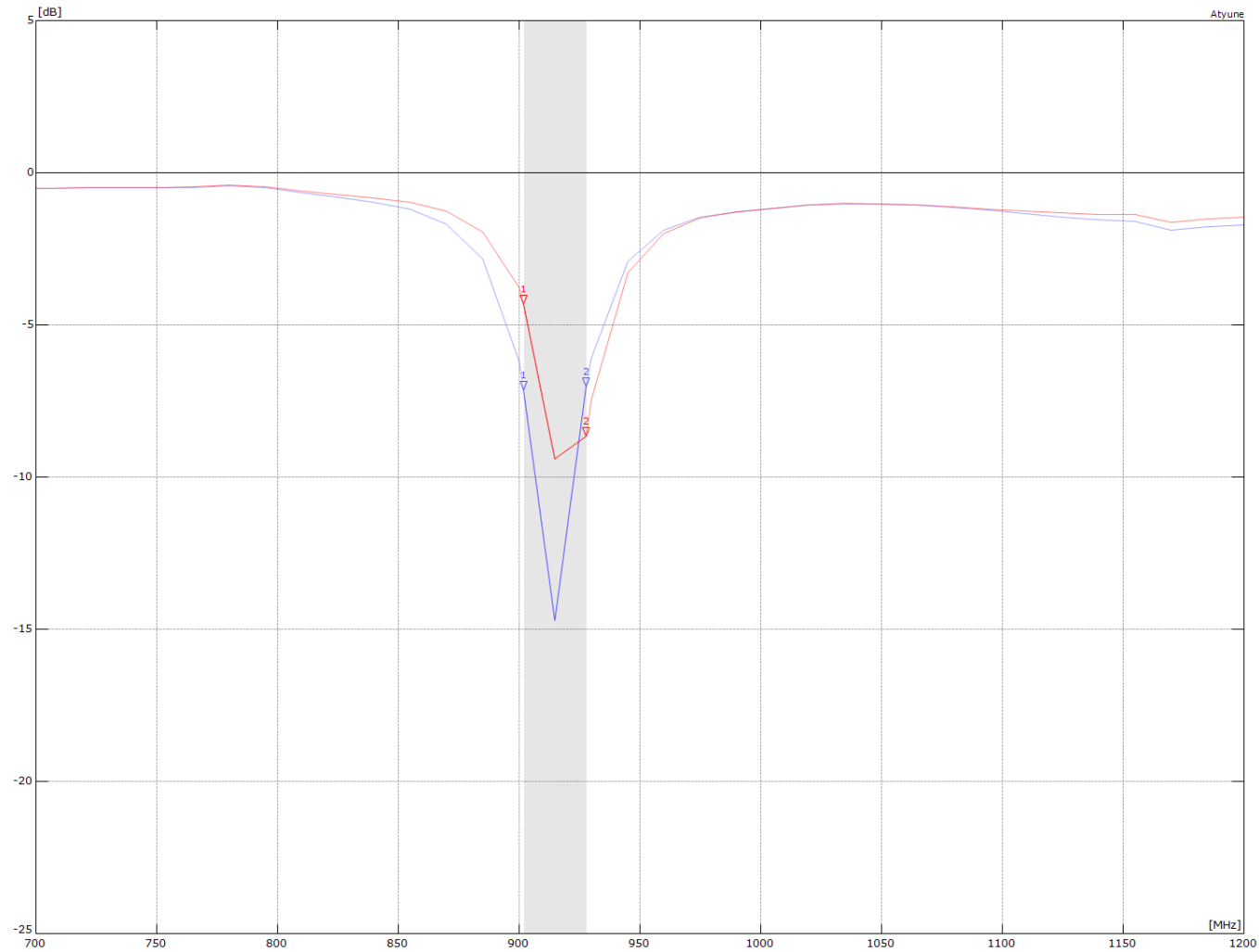




Designator	Type	Value	Package	MPN
L1	NA	DNP	0402	Not Fitted
C1	Cap	2.2pF	0402	GRM1555C1H2R2CA01D
L2	Ind	10nH	0402	LQG15HN10NJ02D



## S-Parameters



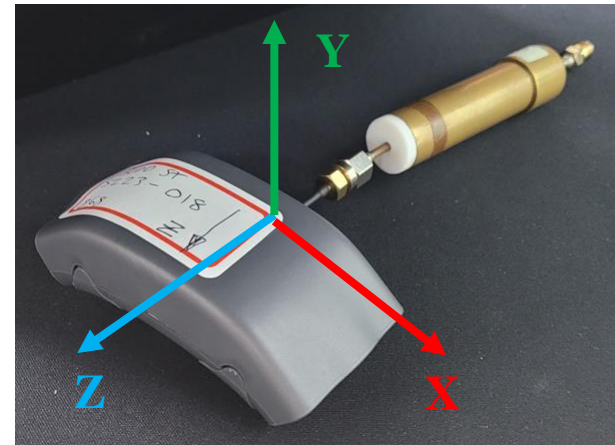
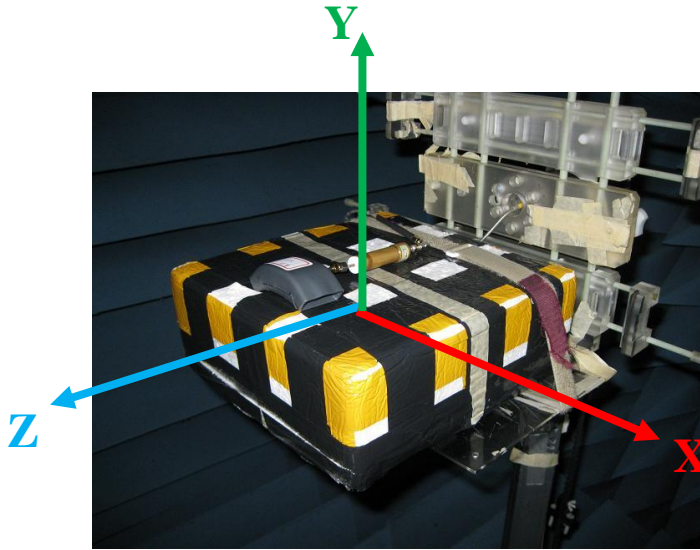
MARKERS: MHz		dB
915-2P2FSER-10NHSHUPH.S1P - S11		
1: 902	-7.13	
2: 928	-7.02	
915-2P2FSER-10NHSHUFS.S1P - S11		
1: 902	-4.30	
2: 928	-8.65	

- DRACONIS Free Space
- DRACONIS Phantom



## Chamber Test Setup

- The device was placed in the chamber as shown. The antenna under test used the required RF choke to prevent cable radiation which can give false high performance and incorrect radiation pattern data.



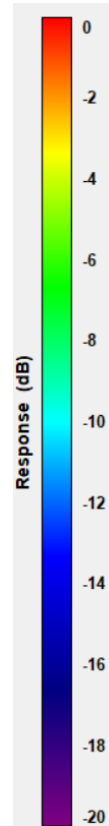
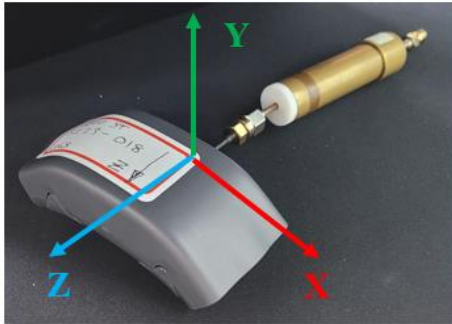


Antenna Efficiency / Peak Gain

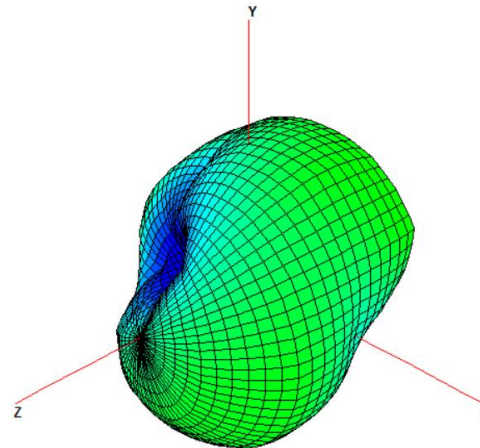


## 3D Radiation Pattern

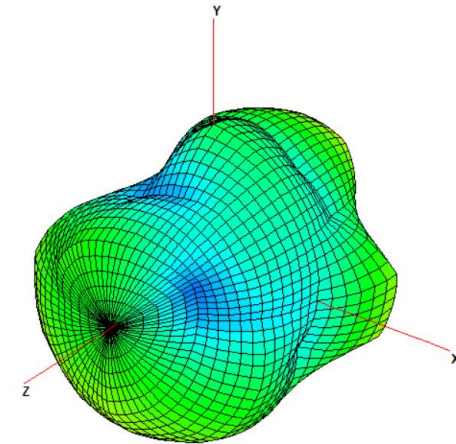
Patterns at 915MHz



Free space



Phantom





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