



## Door sensor BLE antenna analysis



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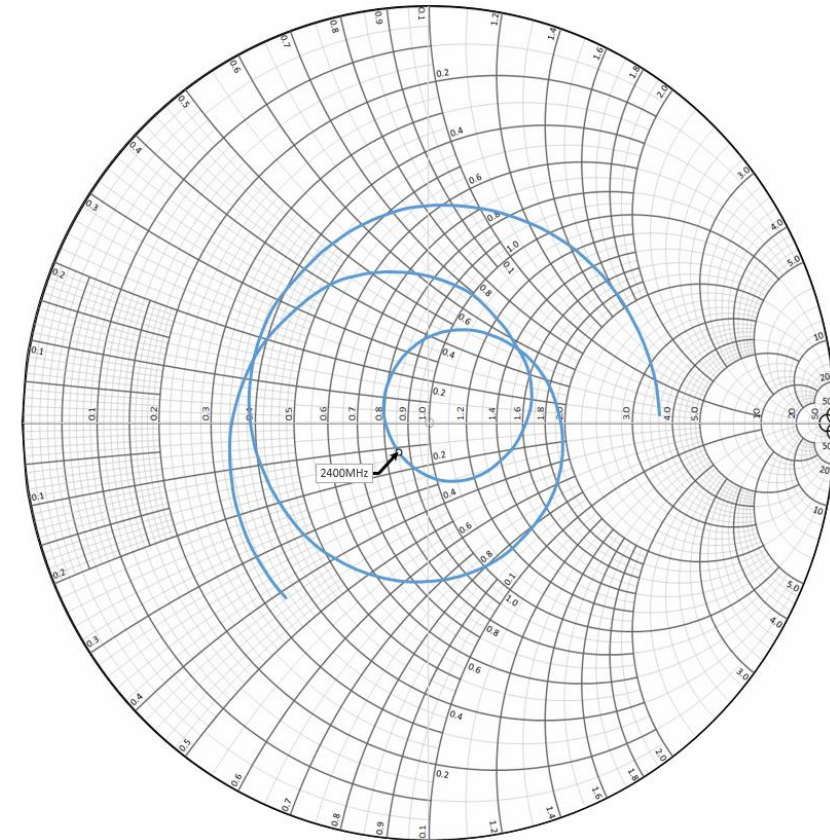
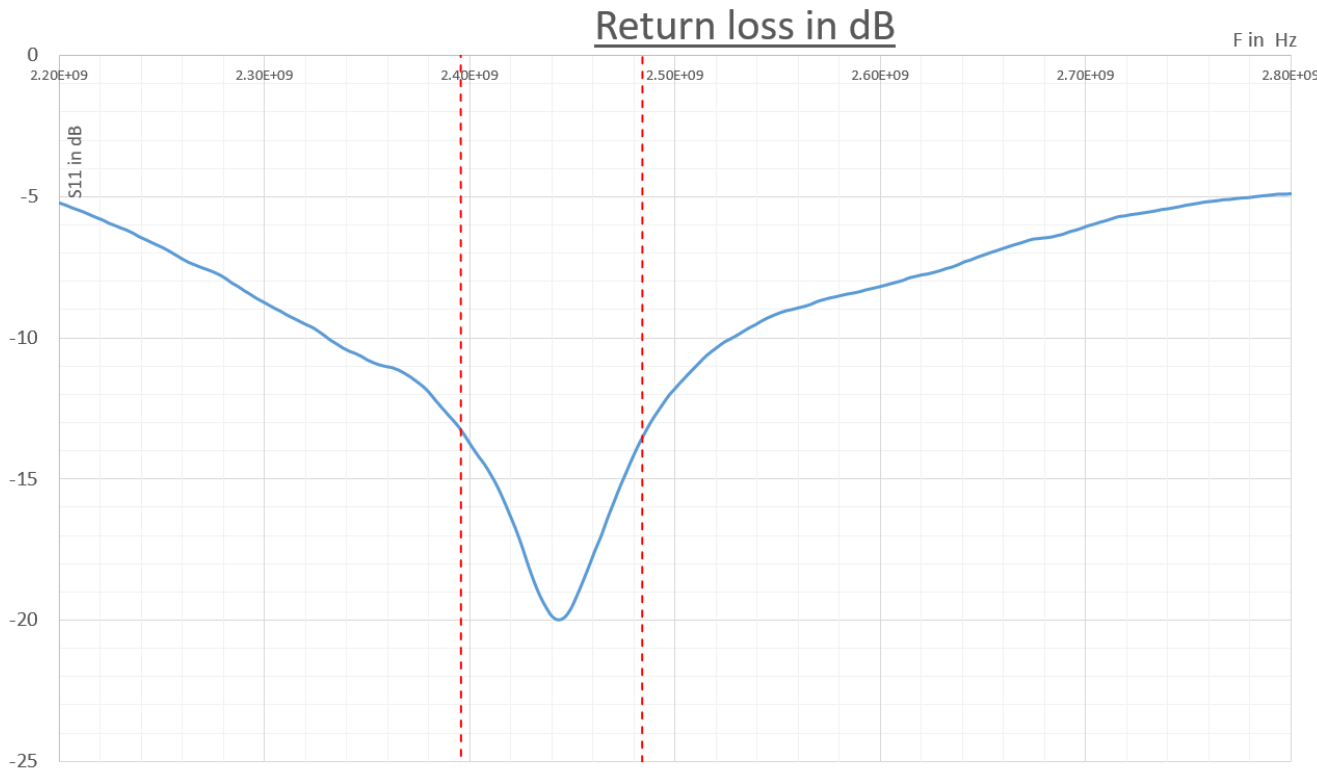
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## 1. Background

This report presents results about BLE Antenna performances of door sensor device. Return loss, Diagram plot, average and peak gain results are provided for all frequencies of interest. The analysis is done in free space.

## 2. Return loss



## 3. Antenna Gain

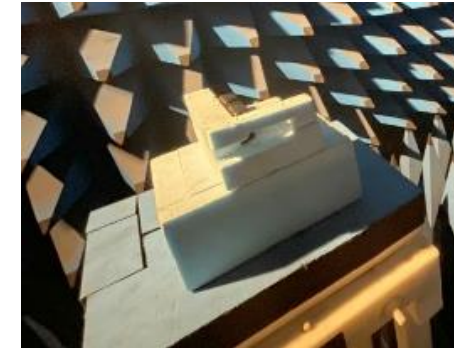
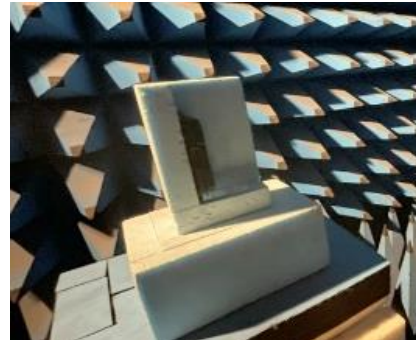
### 3.1. Instrumentation:

Category	Mark	Type
Anechoic Test Site	Internal Sensata equipment	
Spectrum analyser	Anritsu	MS2830A
Coaxial cable		RG214U 50 Ohm 11m
Open Boundary Quad-Ridged Horns antenna	ETS Lindgren	3164-06
Signal generator	Dialog	DA 14531 module (Internal Sensata)

### 3.2. Antenna parameters

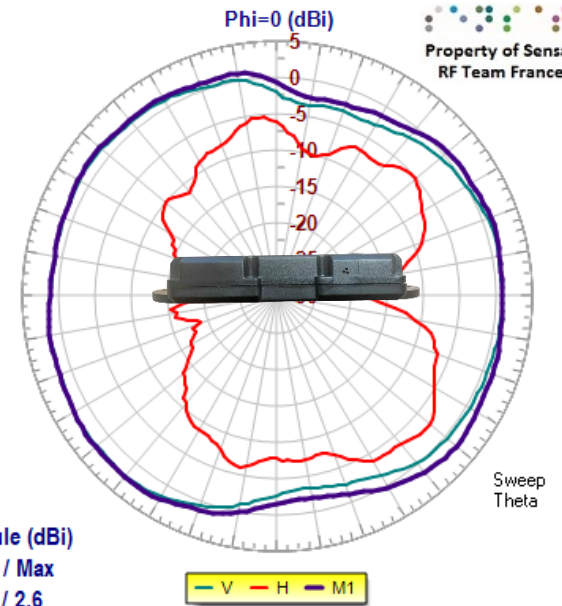
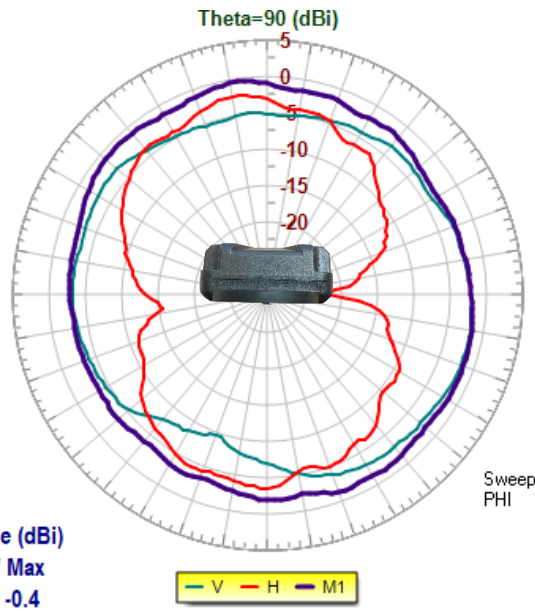
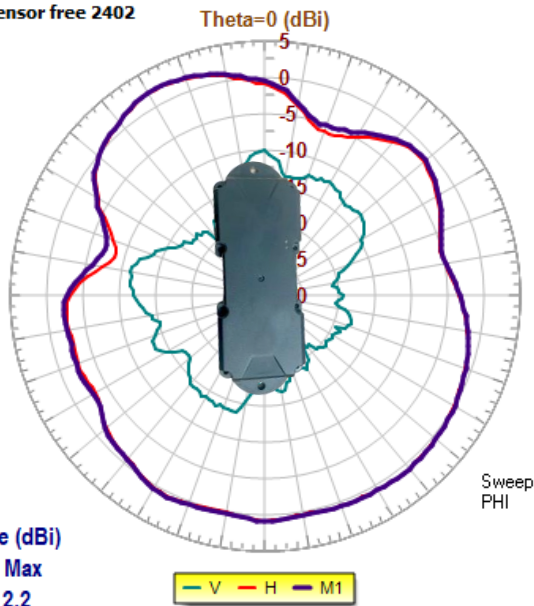
Parameter	Description
Frequency (GHz)	2.4-2.48
Peak Gain (dBi)	≤3
Efficiency from 2D plots data (%)	≤74.1
Type	Trace antenna

### 3.3. Radiation patterns results in free space



#### 3.3.1. At 2402MHz

Door sensor free 2402

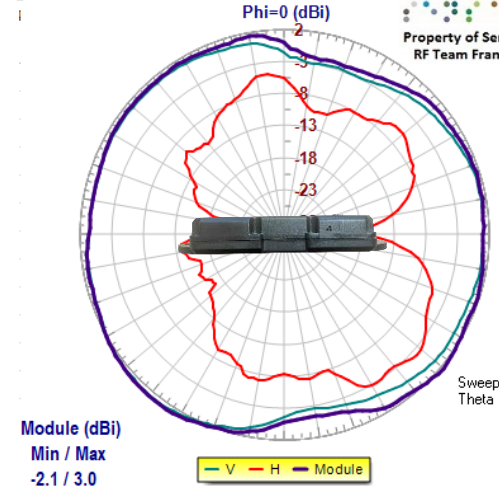
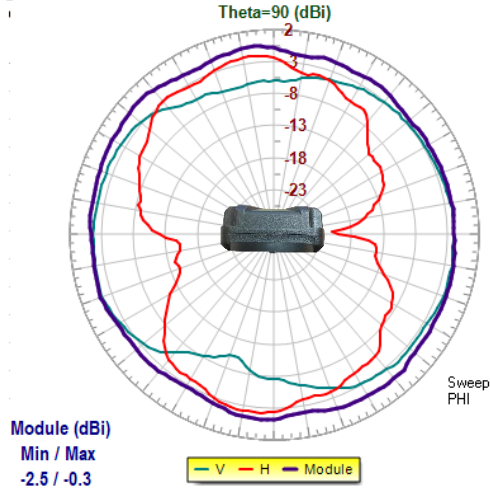
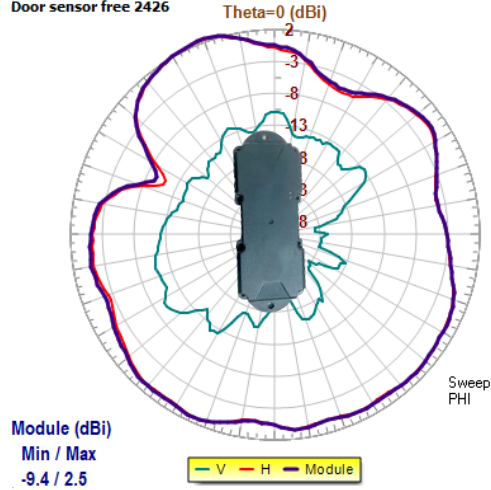


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RF Team France



### 3.3.2. At 2426MHz

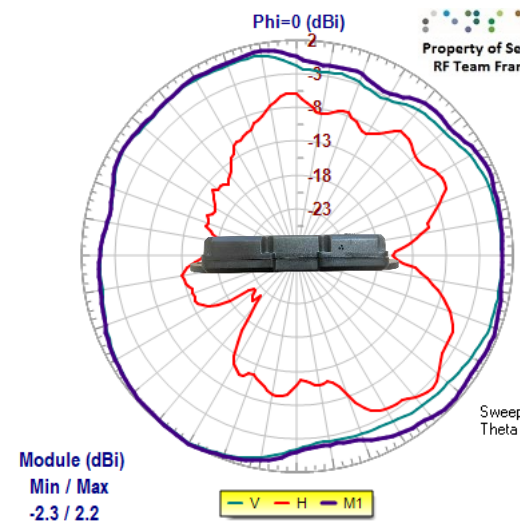
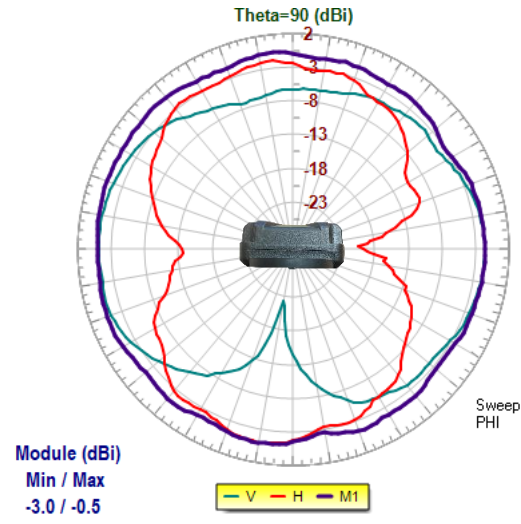
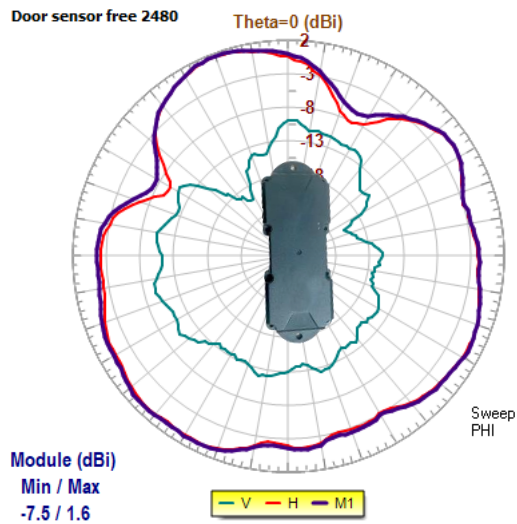
Door sensor free 2426



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### 3.3.3. At 2480MHz

Door sensor free 2480



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## *4. Conclusion:*

The BLE IFA meander antenna shows expected results.