



## **ANTENNA REPORT**

Date: 09/04/2025

Model Number: FBO-3004-ANT4

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Checked by: Jeffrey Hom

Approved by: Patrick Muggler

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## 1.0 GENERAL INFO

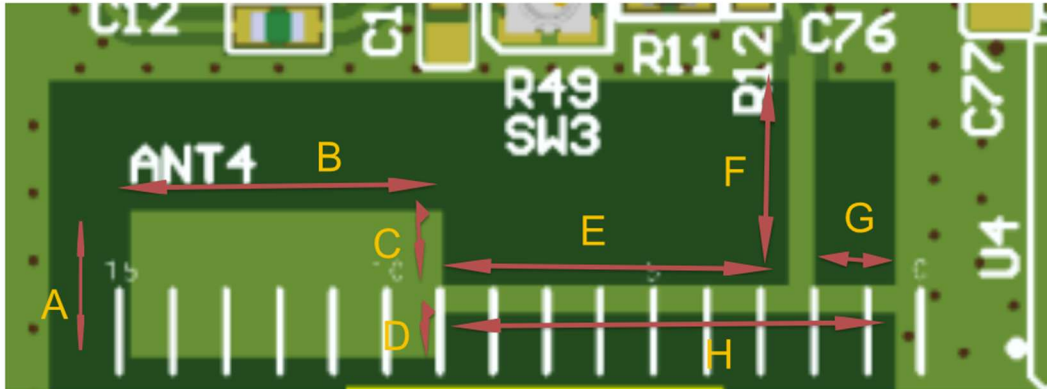
|                      |                                                    |
|----------------------|----------------------------------------------------|
| Brand Name           | Trackonomy Systems or Trackonomy                   |
| Manufacturer         | Trackonomy Systems, Inc.                           |
| Manufacturer Address | 214 Devcon Dr, San Jose, CA 95112<br>United States |
| Model Number         | FBO-3004-ANT4                                      |
| Antenna Type         | Inverted F with embedded ground plane              |
| Radio Function       | Bluetooth                                          |
| Max Gain             | 2.47 dBi                                           |

## 2.0 Antenna Parameters (including Gain)

| Freq [GHz] | dB(AcceptedPower)<br>Setup3 : Sweep1 | dB(IncidentPower)<br>Setup3 : Sweep1 | dB(RadiationEfficiency)<br>Setup3 : Sweep1 |
|------------|--------------------------------------|--------------------------------------|--------------------------------------------|
| 2.075000   | -26.069646                           | -19.998130                           | -0.269898                                  |
| 2.100000   | -25.281012                           | -19.997564                           | -0.221403                                  |
| 2.125000   | -24.544516                           | -19.996858                           | -0.185547                                  |
| 2.150000   | -23.876224                           | -19.996016                           | -0.159815                                  |
| 2.175000   | -23.284672                           | -19.995044                           | -0.140887                                  |
| 2.200000   | -22.773821                           | -19.993957                           | -0.127253                                  |
| 2.225000   | -22.343852                           | -19.992774                           | -0.118440                                  |
| 2.250000   | -21.992535                           | -19.991507                           | -0.114872                                  |
| 2.275000   | -21.705672                           | -19.990262                           | -0.114650                                  |
| 2.300000   | -21.488635                           | -19.988980                           | -0.112162                                  |
| 2.325000   | -21.325670                           | -19.987567                           | -0.103674                                  |
| 2.350000   | -21.201338                           | -19.986120                           | -0.101610                                  |
| 2.375000   | -21.111994                           | -19.984620                           | -0.103007                                  |
| 2.400000   | -21.052295                           | -19.983054                           | -0.106900                                  |
| 2.425000   | -21.018184                           | -19.981419                           | -0.113603                                  |
| 2.450000   | -21.010082                           | -19.979740                           | -0.124537                                  |
| 2.475000   | -21.031433                           | -19.978101                           | -0.146433                                  |
| 2.500000   | -21.084976                           | -19.976994                           | -0.204797                                  |
| 2.525000   | -21.166412                           | -19.978648                           | -0.348388                                  |
| 2.550000   | -21.305239                           | -19.977682                           | -0.268544                                  |
| 2.575000   | -21.510581                           | -19.975454                           | -0.221165                                  |
| 2.600000   | -21.756786                           | -19.974620                           | -0.250125                                  |
| 2.625000   | -22.050533                           | -19.974278                           | -0.267346                                  |
| 2.650000   | -22.435724                           | -19.974504                           | -0.250557                                  |
| 2.675000   | -22.853199                           | -19.975508                           | -0.258332                                  |
| 2.700000   | -23.293443                           | -19.976741                           | -0.258199                                  |
| 2.725000   | -23.748256                           | -19.978334                           | -0.272563                                  |
| 2.750000   | -24.198906                           | -19.980199                           | -0.290427                                  |
| 2.775000   | -24.627972                           | -19.982317                           | -0.306162                                  |
| 2.800000   | -25.011544                           | -19.984620                           | -0.325883                                  |
| 2.825000   | -25.328322                           | -19.986993                           | -0.350849                                  |
| 2.850000   | -25.589892                           | -19.989261                           | -0.360551                                  |
| 2.875000   | -25.798535                           | -19.991403                           | -0.350798                                  |

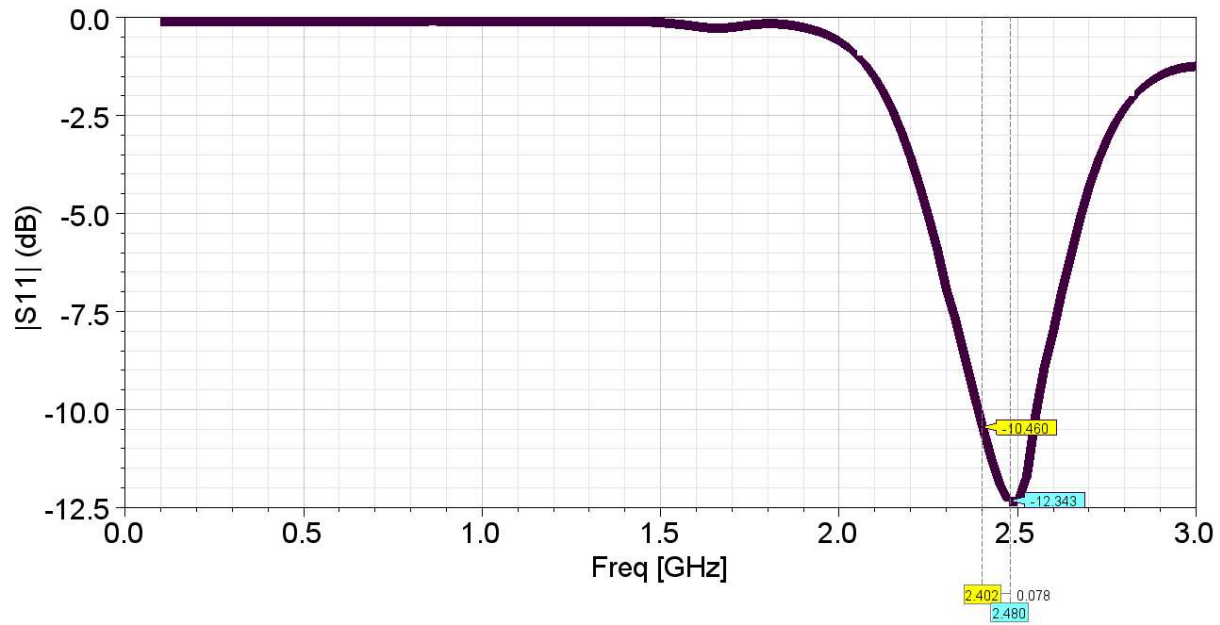
### 3.0 ANTENNA DIMENSIONS & S11 Waveform

Antenna trace width: 0.5 mm



| Section | Dimension (mm) |
|---------|----------------|
| A       | 2.75           |
| B       | 6.83           |
| C       | 1.41           |
| D       | 0.83           |
| E       | 6.52           |
| F       | 3.85           |
| G       | 1.5            |
| H       | 8.48           |

## S11 Waveform

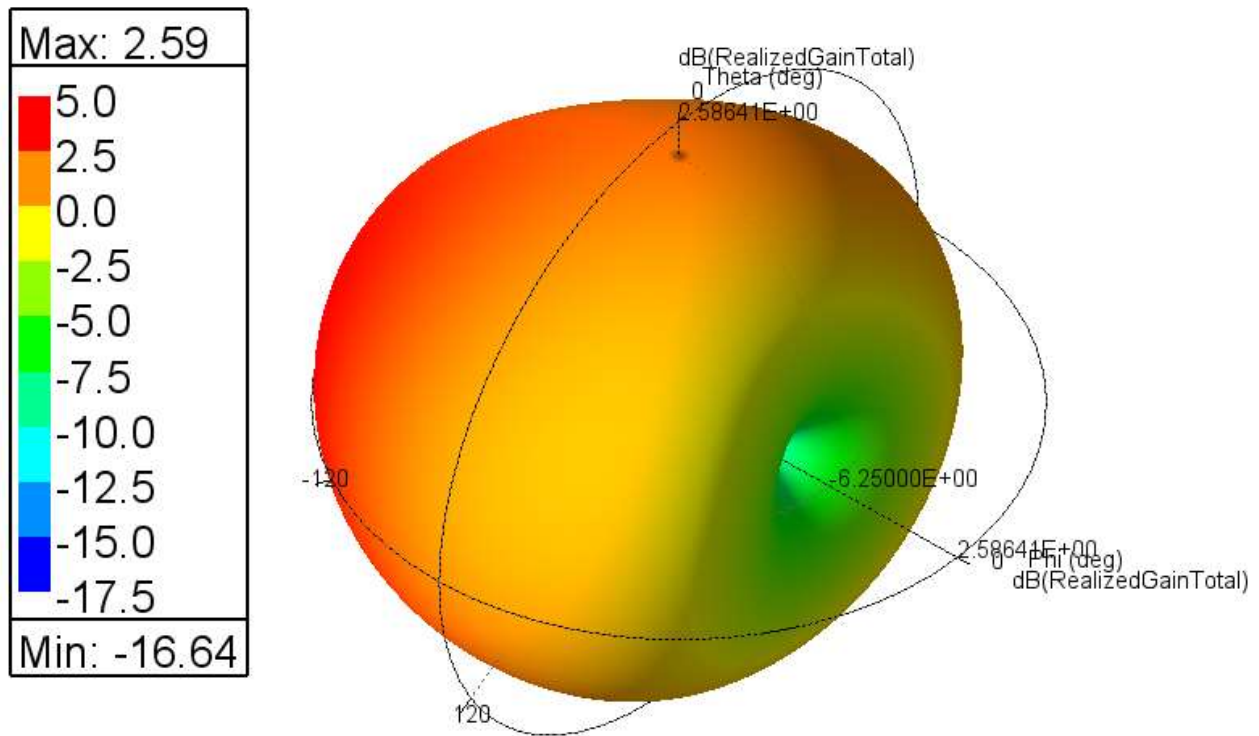


## Efficiency

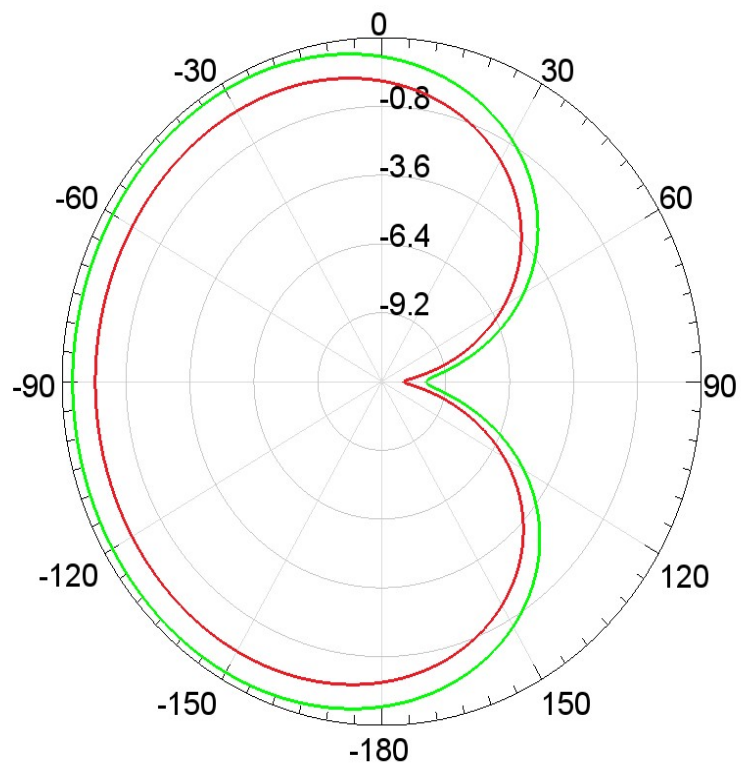
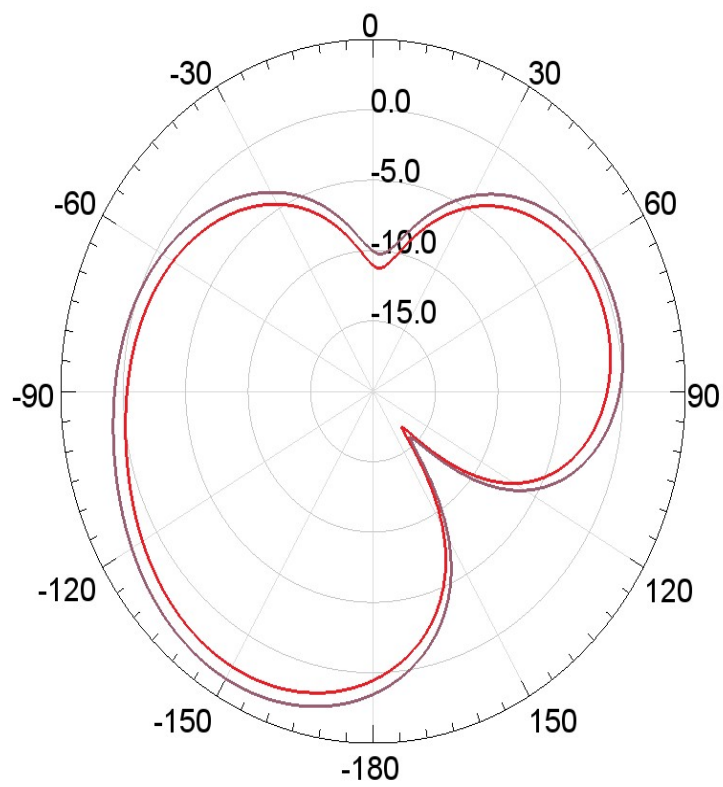
| Freq [GHz] | dB(RadiationEfficiency)<br>Setup3 : Sweep1 |
|------------|--------------------------------------------|
| 2.250000   | -0.114872                                  |
| 2.275000   | -0.114650                                  |
| 2.300000   | -0.112162                                  |
| 2.325000   | -0.103674                                  |
| 2.350000   | -0.101610                                  |
| 2.375000   | -0.103007                                  |
| 2.400000   | -0.106900                                  |
| 2.425000   | -0.113603                                  |
| 2.450000   | -0.124537                                  |
| 2.475000   | -0.146433                                  |
| 2.500000   | -0.204797                                  |
| 2.525000   | -0.348388                                  |
| 2.550000   | -0.268544                                  |
| 2.575000   | -0.221165                                  |
| 2.600000   | -0.250125                                  |
| 2.625000   | -0.267346                                  |
| 2.650000   | -0.250557                                  |
| 2.675000   | -0.258332                                  |
| 2.700000   | -0.258199                                  |

## 4.0 RADIATION PATTERNS - 3D & 2D

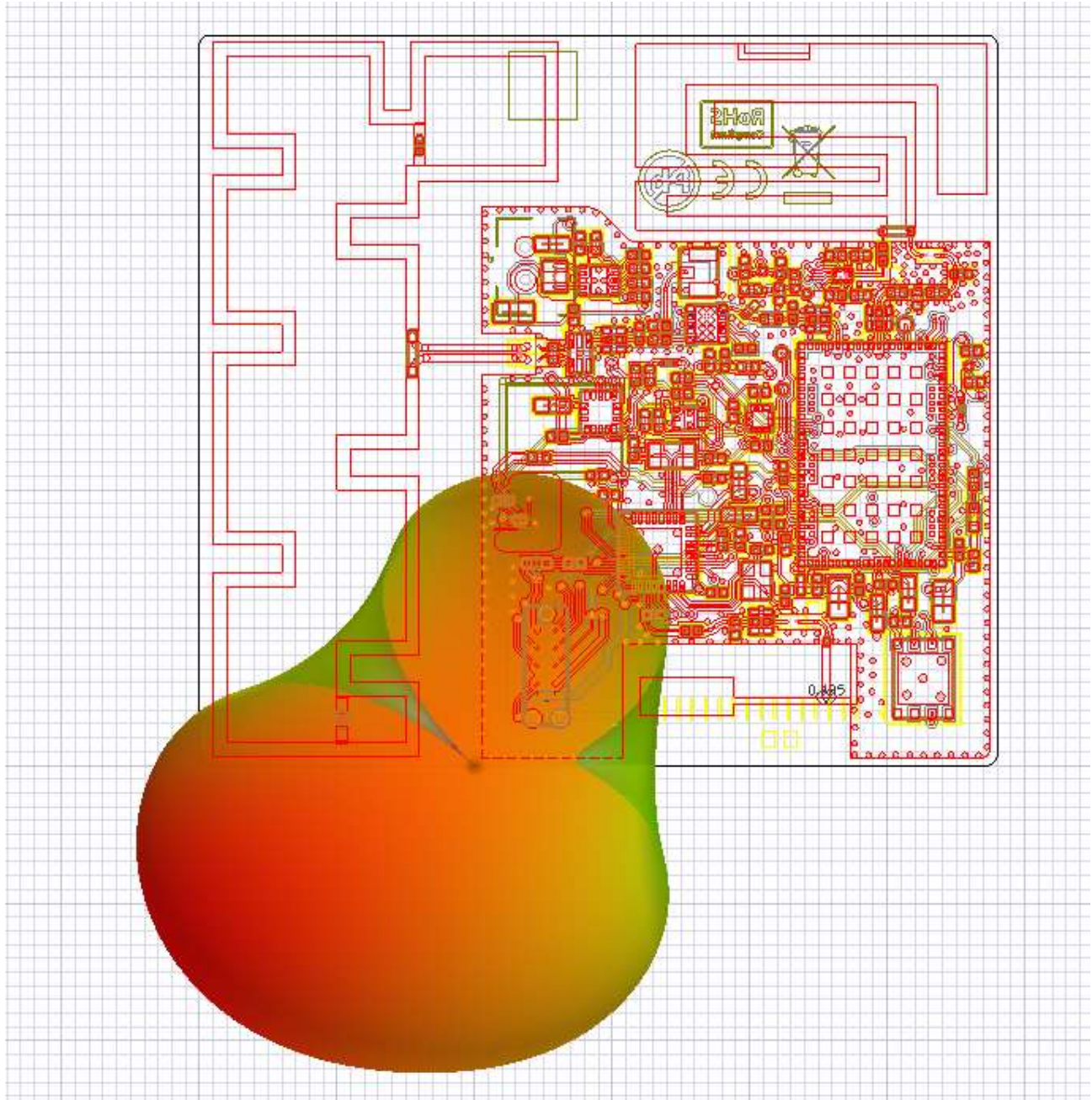
### 3D RADIATION PATTERN



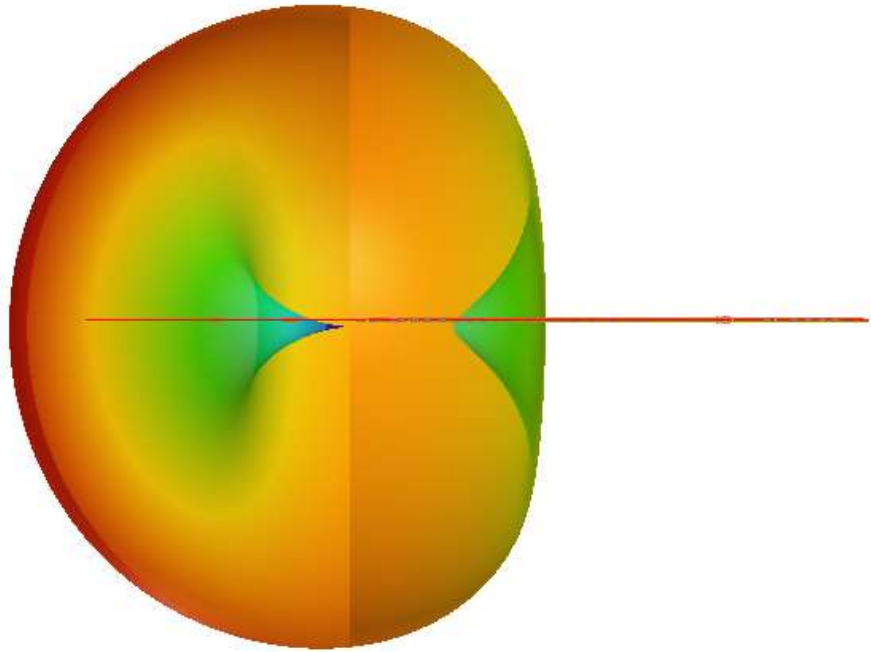
2D RADIATION PATTERN  
(Freq.= 2.45 GHz)



View in relation to PCB



View in relation to PCB (Side view of PCB)



Gain Chart

